Operation Manual

WAVELAB ELEMENTS 12

Personal Audio Editing System

steinberg

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This document provides improved access for people who are blind or have low vision. Please note that due to the complexity and number of images in this document, it is not possible to include text descriptions of images.

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Table of Contents

New Features

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

New Features in Version 12.0.20

Highlights

Startup Assistant: Design Improvements

- The design of the **Startup Assistant** has been optimized, with a special focus on ease of use. See Startup Assistant Window.

Audio Montage: New Option for Resolving Sample Rate Mismatches

- If the sample rate of your audio montage differs from the sample rates of the audio files that you want to insert into it, as an alternative to creating and using copies of the audio files and setting them to the sample rate of the audio montage, you can now also choose to set the audio montage to the sample rate of the audio files. See Resolving Sample Rate Mismatches between Audio Montages and Audio Files.

More New Features

Improved Search Function for Effect Plug-ins in the Inspector Window and in the Master Section

- You can now use key commands to search for and select a particular plug-in after typing part of its name into the **Search** field. See Adding Effects via the Inspector Window.

Last but Not Least

Zero Crossing Point Detection: Upward Crossing Point/Any Crossing Point

- You can now choose whether you want WaveLab Elements to detect any zero crossing point in the audio, or to limit the search to zero crossing points that mark an upward slope. See Editing Tab (Audio Files Preferences).

New Features in Version 12.0.0

Highlights

New Language: Simplified Chinese

- Simplified Chinese has been added to the languages available in the application.

Startup Assistant

- The new **Startup Assistant** allows you to choose the working environment that suits your workflow, to create and open files, and to establish your audio connections – all in a single place. In addition to this, it offers you WaveLab-related information and news and provides useful links. See Startup Assistant Window.

Steinberg Built-in ASIO Driver

- A new Steinberg built-in ASIO driver with automatic sample rate conversion is now available. See Selecting the Steinberg Built-In ASIO Driver (Windows only).

Cross-Application Copying Operations

- To optimize cross-application workflows, WaveLab offers new drag and drop/copy and paste options that allow you to transfer any audio range from WaveLab to any other application, either with or without effects. See Cross-Application Copying Operations.

More New Features

Improved Help System: Comprehensive Tooltips for Controls in All Dialogs

- Tooltips are now provided for the controls in all dialog boxes. See Help System.

Displaying Keyboard and Mouse Input

- You can now display your mouse and keyboard input activity in real time, which is useful for screenshots and screencasting purposes, such as demos, presentations, and tutorials. See Visualization of Keyboard and Mouse Input.

Navigation Sync

- The new **Navigation Sync** feature helps you to compare audio material by synchronizing different views of audio files and audio montages, so that any scrolling or zooming actions you perform in one of them are automatically applied to the others in real time. See Navigation Sync.

Loudness Overlay

- You can now overlay the **Waveform** or the **Rainbow** view in the **Audio Editor** and the **Audio Montage** window with an **RMS Loudness** view and adjust the transparency of the **RMS Loudness** overlay. See Loudness Overlay.

Audio Editor: New Automatic Crossfade Option

- You can now activate automatic crossfading for operations such as cutting, pasting, inserting, muting, cropping, or deleting segments of your audio. See Edit Tab (Audio Editor).

Opus File Format

- WaveLab now supports the Opus file format, both for decoding and encoding. See Opus Audio File Encoding Dialog.

Audio Editor: Crossfade Options in the Gain Dialog

- You can now apply crossfades while adjusting the gain of a specific audio range, to create a seamless transition and to prevent abrupt clicks between the selected range and the surrounding audio on playback. See Gain Dialog.

Audio Montage: Options to Quickly Reduce the Level of an Audio Selection

- Two new options in the Level section of the **Envelope** tab allow you to reduce the level of an audio selection by -6 dB or -9 dB via a single mouse click. See Envelope Tab (Audio Montage).

Audio Montage: Separate Sliders for Pre-Gain and Post-Gain Adjustments

- The **Gain** pane now has separate sliders for each stage of the audio chain. See Inspector Window.

Color-coded Plug-in Caption Bars

- You can now use context-based color-coded caption bars for plug-in windows, which make it easier to distinguish the effect plug-in types. See Color Codes for Effect Plug-ins.

Chapter Generator for YouTube and Spotify

- The new **Chapter Generator** allows you to divide your audio material into chapters via marker pairs and to create a text file listing them, for use on YouTube or Spotify. See Generating Chapters for YouTube and Spotify via Markers.

Plug-ins: Option to Ignore VST 2 Plug-ins

- You can now prevent WaveLab Elements from searching for and displaying plug-ins using the old VST 2 standard. See Plug-ins Tab (Preferences).

Last but Not Least

Quantizing Audio Selections based on Time Ruler Marks

- You can now make audio selections snap to time ruler marks and quantize the audio selection at the same time. See Quantizing Audio Selections based on Time Ruler Marks.

Option to Synchronize Cursors

- You can now synchronize the edit cursor position with the playback cursor position via the status bar. You can also use this option to activate a clip that is currently located at the cursor. See Status Bar.

New Refresh Button in the File Browser Window

- In the **File Browser** window, there is now a button to manually reload the content, to reflect any updates and changes. See File Browser Window.

Zooming while Selecting an Audio Range

- You can now zoom in or out while selecting an audio range. See Zooming while Selecting an Audio Range.

Second Timecode Window

- You can now open a second **Timecode** window, to display the time from two different reference points. See Timecode Window.

Option to Indicate the Timeline position of Rendered Regions and a Date and Time via BWF Metadata

- In the **Metadata** dialog, WaveLab Elements now allows you to generate BWF time references for rendered audio files, and to automatically add the creation time and date of your audio files via the **BWF** tab. See Metadata Dialog.

Global Terminology Changes

- "CD", in the sense of a compilation of songs or titles, respectively, has been renamed to the more general term "album". The term "CD" is now reserved for referring to compact disks as a medium. In addition to this, "CD track" has been replaced by the more general term "title". See Audio Montage Window.

Improved Clip Cue Point Options

- The cue point options have been revised and extended. See Edit Tab (Audio Montage).

Independent Folders for Each Source File on Rendering

- In the **Audio Editor** or in the **Audio Montage** window, the new **Keep Independent Folder for Each Source File** option allows you to maintain independent render paths for individual audio montages or audio files and ensures that, when switching audio montages or audio files, the render path changes accordingly. See Render Tab (Audio Montage).

Option to Reveal Selected Files in the Explorer

- This option automatically opens the File Explorer/macOS Finder to indicate the location of selected audio files after rendering them. See Render Tab (Audio Montage).

Audio Montage: Copying Audio Files to the Audio Montage Folder on Importing

- When importing audio files into audio montages, you can now choose to create a copy of the original audio file in the audio montage folder or one of its subfolders, and whether or not to save this choice for future imports. See Import Files Dialog.

Audio Montage: Assigning Random Colors to Clips

- To make it easier to identify individual clips, you can now prompt WaveLab to automatically assign a random color to each of your selected clips. See Coloring Clips.

Audio Montage: New Option to Move the Edit Cursor to an Envelope Point

- You can now easily move the edit cursor to the exact position of an envelope point via the **Envelope** context menu of the **Audio Montage** window. See Moving the Edit Cursor to an Envelope Point.

New Insert Mode Option for Effect Plug-ins

- With **Insert Mode** activated, all plug-ins below the selected slot are automatically moved one step down when you add a new plug-in. See Effects Pane.

Customizable Playback Cursor

- You can now customize the playback cursor according to your requirements, and to better distinguish it from the edit cursor. See Display Tab (Global Preferences).

Customizable Tooltip Display Delay

- You can now set the time after which tooltips appear when you move the mouse over user interface controls. See Display Tab (Global Preferences).

Audio Montage: Envelope Points Snapping to Anchors

- When you edit envelope points with the mouse, you can now set them to snap to active anchors. See Snapping Envelope Points to Anchors.

WaveLab Elements Introduction

Platform-Independent Documentation

The documentation applies to the operating systems Windows and macOS.

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

Some points to consider:

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

Help System

You can access the help system in several ways. The documentation is available online, on steinberg.help.

Documentation

The documentation consists of several documents.

To visit steinberg.help, do one of the following:

- Enter **www.steinberg.help** in the address bar of your web browser.
- In WaveLab, select **Help** > **steinberg.help**.
- To open the help for an active dialog on steinberg.help, click the question mark button  at the bottom right, or press **F1** (Windows)/ **Cmd**-**?** (macOS).

Operation Manual

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

Plug-in Reference

Describes the features and parameters of the included plug-ins.

DDP Player

Describes the features and functions of the included **DDP Player**.

Tooltips and Further Information

- To display tooltips, hover over an interface item, such as a control in a dialog box, and briefly wait without moving the mouse any further.

  TIP

  You can customize the time it takes for the tooltip to appear via the **Tooltip Display** option on the **Display** panel of the **Global Preferences**.

NOTE

Many tooltips contain a **Tell me more** field, which you can click to view additional information.

- To use the menu help, move the mouse over a menu item.
- To see information on how to perform editing in the **Audio Montage** window via the mouse and the modifier keys, move the mouse over the **Audio Montage** window. The help text is displayed on the info line at the bottom of the window.

What's This

The **What's This** help feature provides extended tooltips about interface icons and functions. Some **What's This** tooltips include a link to a dedicated help topic on steinberg.help.

To access the **What's This** help feature, do one of the following:

- In a window, press **Shift** - **F1**, and move the mouse over an interface item, or select **Help** > **What's This?**.

RELATED LINKS
Info Line on page 235
Display Tab (Global Preferences) on page 407

Visualization of Keyboard and Mouse Input

You can set WaveLab to display your mouse activity and the modifier and navigation keys you press in real time. This feature is useful for screenshots and screencasting purposes, such as demos, presentations, and tutorials.

To display your mouse input as you click and modifier and navigation keys as you press them, do one of the following:

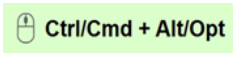
- Select **Help** from the menu bar at the top of the workspace, and activate **Visualize Mouse and Modifier Keys** in the pop-up menu.
- Press **Alt/Opt** - **F1**.

As a result, a small window is displayed, which reflects your mouse and key input activity.

Examples: Visualization of Input Activity

Left mouse button

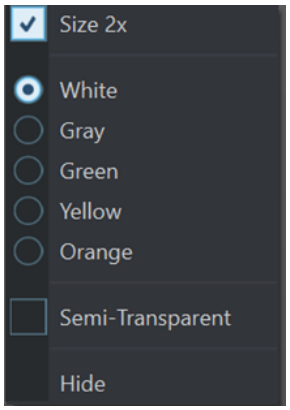
Right mouse button



Modifier keys

In addition to this, you can drag and move the small window to any position on the screen, and you can customize the display.

To customize the display, right-click to open a menu with the following options:



Size 2x
Scales the display of the mouse input and the modifier keys to twice the original size.

White
Sets the background color of the window to white.

Gray
Sets the background color of the window to gray.

Green
Sets the background color of the window to green.

Yellow
Sets the background color of the window to yellow.

Orange
Sets the background color of the window to orange.

Semi-Transparent
Reduces the opacity of the window.

Hide
Hides the display of the window.

To deactivate the display of the mouse and key input activity, deselect **Visualize Mouse and Modifier Keys** in the **Help** menu, or press **Alt/Opt** - **F1**.

Documentation Structure

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

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

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

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

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

TIP

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

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

Typographical Conventions

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

Structural Elements

Prerequisite

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

Procedure

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

Important

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

Note

Informs you about issues or other relevant information.

Tip

Adds further information or useful suggestions.

Example

Provides you with an example.

Result

Describes the result of the procedure.

After Completing This Task

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

Related Links

Lists related topics that you can find in this documentation.

Markup

Bold text indicates the name of a menu, option, function, dialog, window, and so on.

EXAMPLE

In the **Audio Montage**, click **Edit**.

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

EXAMPLE

Select **File** > **Preferences** > **Audio Connections**.

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

EXAMPLE

`example_file.txt`

Key Commands

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

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

EXAMPLE

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

Getting Started

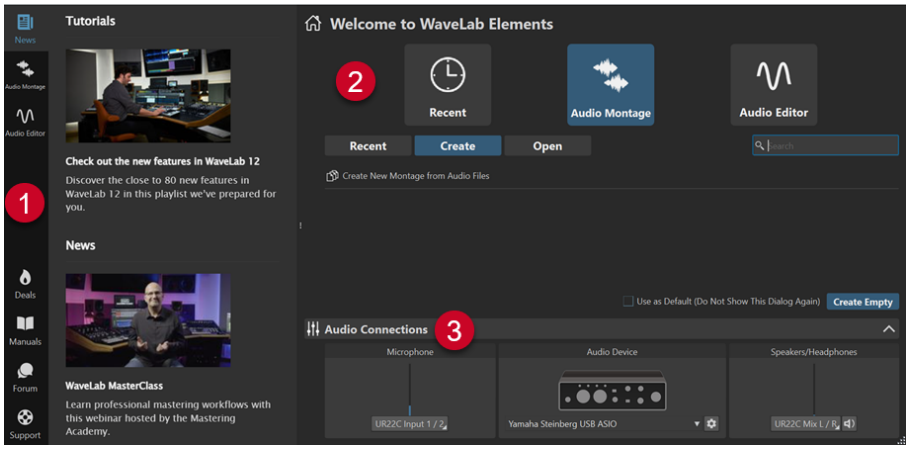
Once you have set up your system, the **Startup Assistant** provides easy access to common workflows and the related information, so that you can instantly start working in WaveLab.

RELATED LINKS
Setting Up Your System on page 20

Startup Assistant Window

The **Startup Assistant** allows you to choose the working environment that suits your workflow, to create and open files, and to establish your audio connections. In addition to this, the **Startup Assistant** offers you WaveLab-related information and news and provides useful links.

On starting WaveLab, the **Startup Assistant** window is opened automatically.



The **Startup Assistant** window is composed of the following elements:

1 Info panel:

- **News** displays Steinberg-related news.
- **Audio Montage** displays general information about audio montages.
- **Audio Editor** displays general information about audio file editing.
- **Deals** displays information about current and upcoming Steinberg promotions and discounts.
- **Manuals** links to the WaveLab documentation. The user manuals are available as PDF files and in WebHelp format.
- **Forum** links to the WaveLab forums, where WaveLab users share their experiences and provide help to each other.
- **Support** links to the Steinberg Support Team, where our WaveLab experts are always happy to help you solve any issues and to answer your questions.

2 Options to choose from:

- **Recent**: Allows you to choose from a list of your most recently used files and to open them by clicking the **Open** button or to open an empty workspace by clicking **Create Empty**.

  TIP

  To show **Create Empty** again after inadvertently selecting an item in the list, click the empty space right below the last entry in the list, or deselect an entry by **Ctrl/Cmd**-clicking on it.

  TIP

  You can use a filter to exclusively display recently used files of a particular type by clicking one of the buttons to the right of the **Recent** tab:

  - **Show All File Types** is the default setting, with no filter applied.
  - **Only Show Audio Montage Files** exclusively displays recently used audio montages.
  - **Only Show Audio Files** exclusively displays recently used audio files.

  Search allows you enter text to find a particular file.

- **Audio Montage**: Allows you to create or open audio montages.
- **Audio Editor**: Allows you to create or open audio files.

Use as Default (Do Not Show This Dialog Again) allows you to skip the **Startup Assistant** from now on and to set the currently selected workflow as the default workspace.

TIP

With WaveLab Elements already started, you can prevent the **Startup Assistant** window from automatically opening in the future by manually opening it and deactivating **Show This Dialog At WaveLab Startup**.

To activate the **Startup Assistant** again, do one of the following:

- On starting the application, press and hold **Ctrl/Cmd** until the **Startup Assistant** opens.
- With WaveLab Elements already started, open the **Startup Assistant**, and activate **Show This Dialog At WaveLab Startup**.

3 **Audio Connections** panel:

- **Microphone**: Allows you to select your microphone.
- **Audio Device**: Allows you to select your audio interface. Clicking the cogwheel button opens a dialog, where you can set parameters for your device.
- **Speakers/Headphones**: Allows you to select your speakers or headphones.

NOTE

The **Audio Connections** panel in the **Startup Assistant** allows you to set basic parameters. You can access more advanced settings by selecting **File** > **Preferences** > **Audio Connections**.

TIP

To prevent WaveLab Elements from scanning all of your devices each time you start the application and the **Startup Assistant** is opened, you can close the **Audio Connections** panel by clicking the upward arrow on the right side of its header. With complex setups, this results in a significantly shorter startup time.

NOTE

The **Startup Assistant** offers shortcuts to particular features and alternatives to established workflows of WaveLab Elements. This means that you can also accomplish all the tasks and access all the features that are available in the **Startup Assistant** in different ways and/or from other locations in the application. You can find the corresponding instructions in this manual.

Opening the Startup Assistant Manually

By default, the **Startup Assistant** window is opened automatically, each time you start WaveLab. After starting WaveLab, you can manually open the **Startup Assistant** window.

Do one of the following:

- Click **File** on the menu bar at the top of the workspace, and select **Open Startup Assistant**.
- Click the **Open Startup Assistant** icon on the command bar.
- Press **Alt/Opt** - **Home**.

RELATED LINKS
Startup Assistant Window on page 15

Audio Montage Creation via the Startup Assistant

The easiest and quickest way to produce output made up of several audio files, such as a podcast episode or an album, is to create an audio montage via the **Startup Assistant**.

TIP

To display general information on using audio montages in WaveLab Elements, click the **Audio Montage** tile on the info panel on the left side of the **Startup Assistant** window.

There are several ways of creating audio montages via the **Startup Assistant**. You can choose the approach that best suits your workflow:

- You can use existing audio files, optionally in conjunction with a template, as a basis and create an audio montage from them.

  As a result, a new audio montage is created in the **Audio Montage** window, which includes your audio files.
- You can start with the general setup of the audio montage by choosing a template. This allows you to select or record the corresponding audio files at a later point in time.

  As a result, a new audio montage is opened in the **Audio Montage** window, with the tracks and the sample rate set up as specified by the template.

NOTE

There are other ways to create audio montages in WaveLab, which may be more convenient for you, depending on your workflow. You can find the descriptions in the corresponding sections of this manual.

RELATED LINKS
Startup Assistant Window on page 15
Audio Montage on page 194
Creating Audio Montages from an Audio File on page 213
Inserting Audio Files into Audio Montages on page 221

Creating an Audio Montage based on Existing Audio Files

The **Create** button in the **Startup Assistant** allows you to set up a new audio montage using existing audio files.

PREREQUISITE

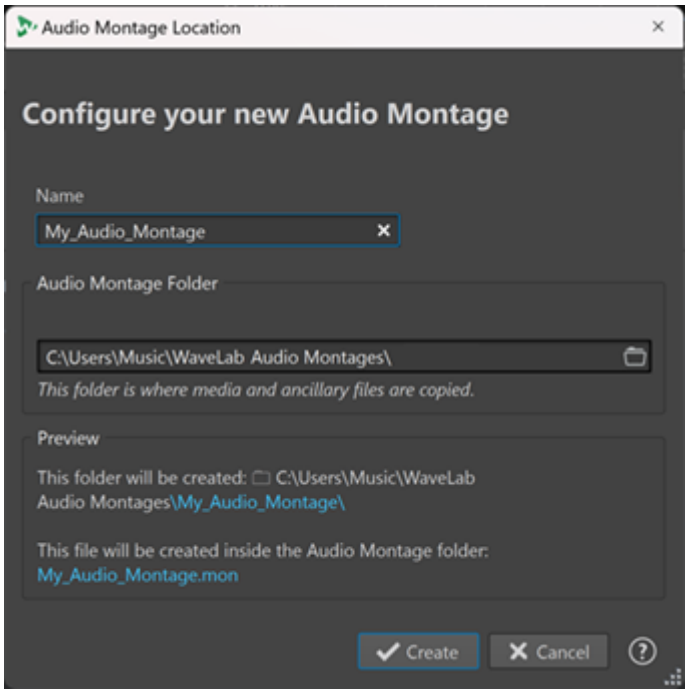
You have access to one or several audio files.

PROCEDURE

1. In the **Startup Assistant** window, select **Audio Montage**.
2. Select **Create New Montage from Audio Files**, and click **Create**.

   The file browser is opened.

   Navigate to your audio files, select them, and click **Open**. In the **Audio Montage Location** dialog, enter a name, and define a target location for your audio montage folder. Click **Create** to create your audio montage.



RELATED LINKS
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Audio Montage Location Dialog on page 212

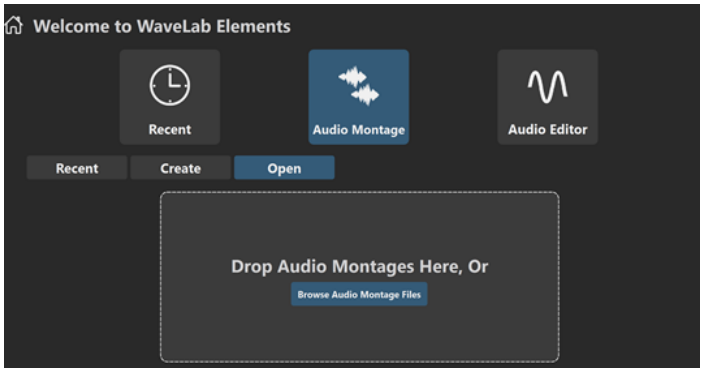
Audio Montage on page 194
Audio Montage Creation via the Startup Assistant on page 17
Creating Audio Montages from an Audio File on page 213

Opening an Audio Montage via the Startup Assistant

Using the **Open** button in the **Startup Assistant**, you can drag and drop to open existing audio montages or navigate to audio montage files to open them.

PROCEDURE

1. In the **Startup Assistant** window, select **Audio Montage**.
2. Click **Open**.



3. Drag one or several existing audio montage files onto the panel, or click **Browse Audio Montage Files** to navigate to the files.

RESULT

The audio montage files are opened in the **Audio Montage** window.

RELATED LINKS

Startup Assistant Window on page 15
Audio Montage Location Dialog on page 212
Audio Montage on page 194
Audio Montage Creation via the Startup Assistant on page 17
Creating Audio Montages from an Audio File on page 213

Setting Up Your System

Before you can start working, you need to set up your system.

IMPORTANT

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

Your system setup depends on many different factors, such as the kind of project, the external equipment that you want to use, or the computer hardware available to you.

RELATED LINKS
Defining Audio Connections on page 21

Audio Cards and Background Playback

You can run WaveLab Elements together with other applications, granting the currently active application access to the audio card.

When you activate playback or recording in WaveLab Elements, other applications cannot access the audio card. Likewise, if another application uses the audio card, WaveLab Elements is unable to play back.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.
2. Select the **Options** tab.
3. Activate **Release Driver**.
4. Do one of the following:
   - To release the driver when WaveLab Elements is in the background, activate **When WaveLab Elements is in Background**.
   - To release the driver only when Cubase/Nuendo is in the foreground, activate **When Cubase/Nuendo is in Foreground**.

RELATED LINKS
Audio Connections Tab on page 23

Latency

Latency is the delay between when audio is sent from the application and when you actually hear it. While a very low latency can be crucial in a real-time DAW application such as Steinberg Nuendo or Cubase, this is not as relevant for WaveLab Elements.

When working with WaveLab Elements, what matters most are a stable playback and high editing precision.

The latency in an audio system depends on the audio hardware, its drivers and settings. In the event of dropouts, crackles, or glitches during playback, we recommend raising the **ASIO-Guard**

value on the **Options** tab in the **Audio Connections** or to increase the buffer size for the respective audio card via the ASIO control panel.

RELATED LINKS
ASIO-Guard on page 21
Audio Connections Tab on page 23

ASIO-Guard

The ASIO-Guard allows you to pre-process all channels as well as VST plug-ins, which prevents dropouts and allows you to process more tracks or plug-ins.

High ASIO-Guard levels result in an increased ASIO-Guard latency. For example, when you adjust a volume fader, you hear parameter changes with a slight delay.

NOTE

Resampler plug-ins and other plug-ins with high latencies accumulate samples prior to processing them. This requires a higher ASIO-Guard setting.

RELATED LINKS
Setting up the ASIO-Guard on page 21

Setting up the ASIO-Guard

You can specify the length of the ASIO-Guard buffer.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.
2. Click the **Options** tab.
3. In the **ASIO-Guard** menu, specify the length of the ASIO-Guard buffer.
   The higher the level, the higher the processing stability and audio processing performance. However, higher levels also lead to an increased ASIO-Guard latency and memory usage.

RELATED LINKS
Audio Connections Tab on page 23

Defining Audio Connections

To be able to play back and record audio in WaveLab Elements, you must specify how to connect the internal input and output channels in WaveLab Elements to your sound card and indicate the device to be used for audio playback and recording.

You can define the buffer settings for your device. We recommend that you select at least two channels for stereo playback and recording.

If you have no third-party audio card, you can select the **Steinberg built-in ASIO** driver or **Built-in Audio** (macOS only) options. You can also use the **Steinberg built-in ASIO** driver with most third-party audio cards. This allows you to record and play at different sample rates.

RELATED LINKS
Selecting an Audio Driver on page 22

Audio Connections Tab on page 23
Recording on page 284

Selecting an Audio Driver

By selecting an audio driver, you allow WaveLab Elements to communicate with the audio hardware.

NOTE

On Windows operating systems, we recommend that you access your hardware via an ASIO driver developed specifically for the hardware. If no ASIO driver is installed, contact the manufacturer of your audio hardware for information on available ASIO drivers. In case no specific ASIO driver is available, you can use the **Steinberg built-in ASIO** driver.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.
2. Open the **Audio Device** pop-up menu, and select your driver.
3. Optional: Click **Control Panel**, and make the required adjustments.

RELATED LINKS

Audio Connections Tab on page 23
ASIO Driver on page 22
Selecting the Steinberg Built-In ASIO Driver (Windows only) on page 22

ASIO Driver

Audio Stream Input/Output (ASIO) is a computer device driver protocol for digital audio specified by Steinberg. It provides a low-latency and high fidelity interface between a software application and the sound card of a computer.

RELATED LINKS

Selecting an Audio Driver on page 22
Selecting the Steinberg Built-In ASIO Driver (Windows only) on page 22

Selecting the Steinberg Built-In ASIO Driver (Windows only)

If no specific ASIO driver is available, you can use the **Steinberg built-in ASIO** driver.

The **Steinberg built-in ASIO** driver gives you access to the audio inputs and outputs provided by the Windows audio subsystem. In addition to this, the **Steinberg built-in ASIO** driver automatically performs sample rate conversion if the sample rate of a source audio file deviates from the sample rate of your audio device.

NOTE

The documentation for the **Steinberg built-in ASIO** driver is located here: `C:\Program Files\Steinberg\Asio\Help`

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.
2. Open the **Audio Device** pop-up menu, and select the **Steinberg built-in ASIO** driver.

3. Optional: Click **Control Panel**, and make the required adjustments.

RELATED LINKS
Selecting an Audio Driver on page 22
Audio Connections Tab on page 23

Audio Connections Tab

This tab allows you to specify how to connect the internal input and output buses in WaveLab Elements to your sound card and to choose a device for audio playback and recording.

- To open the **Audio Connections** tab, select **File** > **Preferences** > **Audio Connections**.

Global Settings

Audio Device

Allows you to select the audio device that you want to use for playback and recording audio. If you do not have a third-party audio card, you can select the **Steinberg built-in ASIO** driver or **Built-in Audio** (macOS only) options.

Port Names

Opens the **Audio Port Names** dialog, where you can specify a custom name for each input and output audio port.

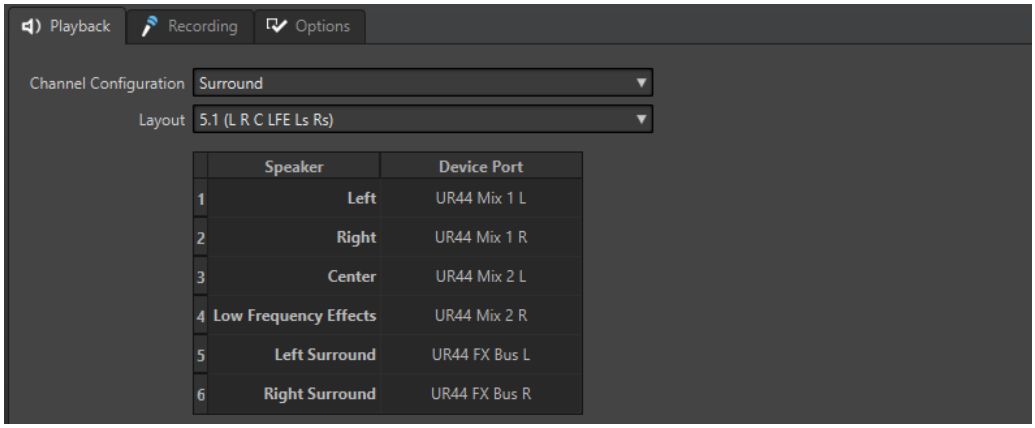
Control Panel

When you select an ASIO driver, the **Control Panel** button is activated. Click the button to open the settings application of your sound card, which is usually installed with the sound card. Depending on your sound card and driver, this provides settings for buffer size, digital formats, additional I/O connections, etc.

Refresh

This button causes audio devices to be evaluated again to reflect device changes.

Playback Tab



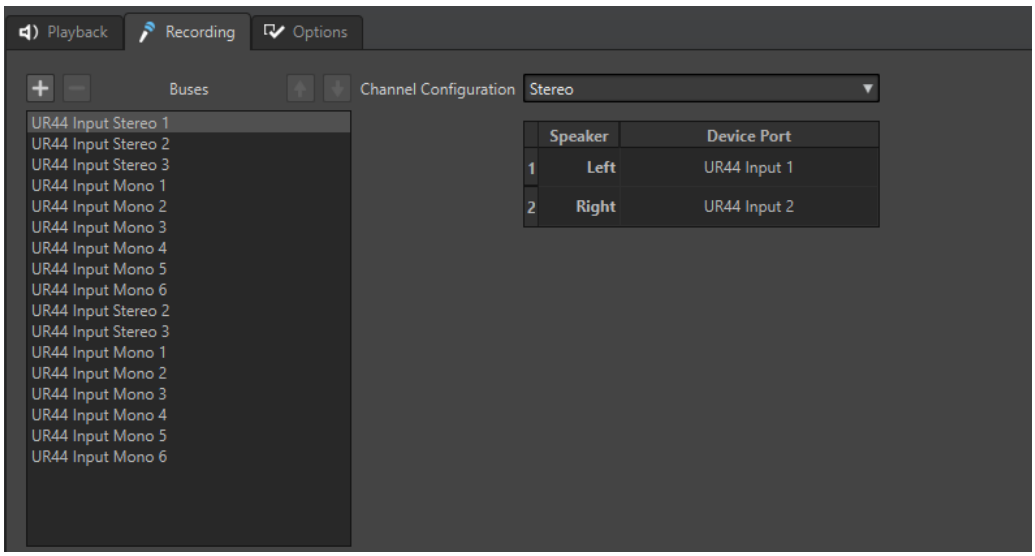
This tab allows you to select buses that are used for playback.

Channel Configuration

Allows you to route playback buses to device ports. You can choose **Universal**, **Stereo**, **Surround**, or **Ambisonics**. In the table below the **Channel Configuration** menu, you can specify the **Device Port** for each channel of a playback bus.

Recording Tab

The first time an audio device is detected, WaveLab Elements automatically assigns input buses. You can use this configuration or edit the input buses.



This tab allows you to add buses that are used for recording and input monitoring. The inputs that you define here are then available in the **Recording** dialog.

Add Bus

Adds a new recording bus to the bus list.

Remove Selected Bus

Removes the selected bus from the bus list.

Move Bus Up

Moves the selected bus up in the bus list. This also modifies the bus order in the WaveLab Elements menus.

Move Bus Down

Moves the selected bus down in the bus list. This also modifies the bus order in the WaveLab Elements menus.

Channel Configuration

Allows you to route recording buses to device ports. You can choose **Mono**, **Stereo**, **Surround**, or **Ambisonics**. In the table below the **Channel Configuration** menu, you can specify the **Device Port** for each channel of a recording bus.

Buses List

Displays all buses. You can rename and move buses in the list. To rename a bus, double-click it, and enter a new name.

Options Tab

This tab allows you to specify the number of buffers and the control driver functionality.

ASIO-Guard

Increasing this value improves the elasticity of audio streaming to avoid dropouts. The higher the level, the higher the processing stability and the audio processing performance. However, higher levels also lead to an increased ASIO-Guard latency and memory usage.

Perform Short Fade In When Starting Playback

If this option is activated, a short fade in is performed when you start playback. This avoids clicks caused by waveforms that do not start at a zero-crossing point.

The fade is linear and either ten milliseconds long or corresponds to the audio device block size if the block size is below ten milliseconds.

Perform Short Fade Out When Stopping Playback

If this option is activated, a short fade out is performed when you stop playback. This avoids clicks caused by waveforms that do not end on a zero-crossing point. This also discards any audio signal that is caused by latency and any tail that is caused by reverb plug-ins.

The fade is linear and either ten milliseconds long or corresponds to the audio device block size if the block size is below ten milliseconds.

Release Driver

Allows you to run WaveLab Elements together with other applications and always gives the active application access to the audio card.

- If **When WaveLab Elements is in Background** is activated, the driver is released when WaveLab Elements is in the background.
- If **When Cubase/Nuendo is in Foreground** is activated, the driver is released when Cubase/Nuendo is in the foreground.

Preferred Sample Rate

Allows you to specify the **Preferred Sample Rate** for playback.

Sample Rate Change Timeout

After WaveLab Elements requests the audio device to operate at a new sample rate, the driver sends WaveLab Elements feedback when the task has been completed.

Most drivers do not require you to specify a sample rate change timeout. However, some drivers send delayed feedback or no feedback at all. For these cases, you can specify a timeout.

After the time you specify here, WaveLab Elements assumes the sample rate was accepted and attempts to start playback or recording. However, if WaveLab Elements receives feedback from the driver, the timeout expires.

If you experience sample rate change issues, increase the timeout to three or more seconds. The ideal time is the shortest time that works.

The bottom right of the **Master Section** displays a progress bar while waiting for the driver feedback.

RELATED LINKS
ASIO-Guard on page 21
Master Section on page 296
Playback and Transport on page 97
Recording on page 284

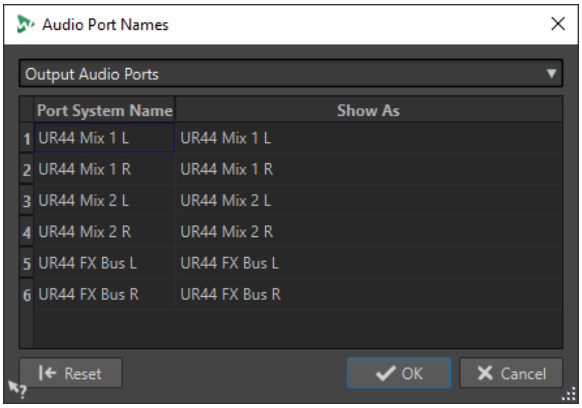
Specifying Custom Names for Audio Ports

You can specify custom names for each input and output audio port of your connected audio gear. When you save an audio connections preset, the custom audio port names are part of the

preset. You can save multiple audio connections presets with different names for the same audio device.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Connections**.
2. Click **Port Names**.
3. At the top of the **Audio Port Names** dialog, select **Output Audio Ports** or **Input Audio Ports** from the pop-up menu.
4. In the audio port list, double-click the port name that you want to edit, and enter a new name.



5. Optional: Repeat this for all the port names that you want to change.
6. Click **OK**.

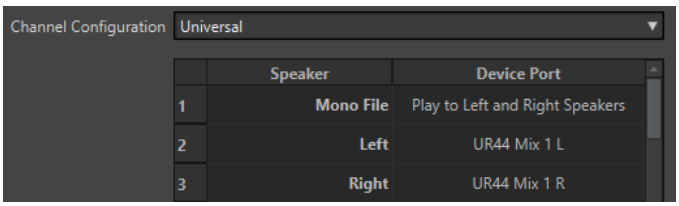
RELATED LINKS
Audio Connections Tab on page 23

Sending Mono File Audio Streams to a Dedicated Speaker

You can choose to send the audio stream of mono files to a dedicated speaker.

PROCEDURE

1. On the **Audio Connections** tab, click **Playback**.
2. From the **Channel Configuration** menu, select **Universal**.
3. Specify a **Device Port** for the **Mono File**.



RELATED LINKS
Audio Connections Tab on page 23

Combining Multiple Audio Devices on macOS

On macOS, you can combine several audio interfaces so that they appear and act as a single aggregate device.

To use a different audio device for output than for input in WaveLab, or to extend the number of inputs and outputs available to you, on macOs, you can combine multiple audio devices and create an aggregate device.

PREREQUISITE

You have connected all external audio devices that you want to use.

PROCEDURE

- Follow the detailed step-by-step instructions on the official Apple Support sites.

  TIP

  We recommend using “Aggregate Device” as a search term.

CD/DVD Recorders

For general instructions on installing internal recorders or on connecting external recorders via USB or Firewire, refer to the user manual of your computer or recorder.

Verify that you have the latest firmware version installed on your recorder unit. For CD recorders, the existing firmware must support disc-at-once mode. In addition, running a unit with older firmware can prevent you from writing sub-index markers into the tracks, for example.

Remote Control Devices

You can use Steinberg devices to remote-control WaveLab Elements.

You can control several operations with the knobs and sliders of your remote control device.

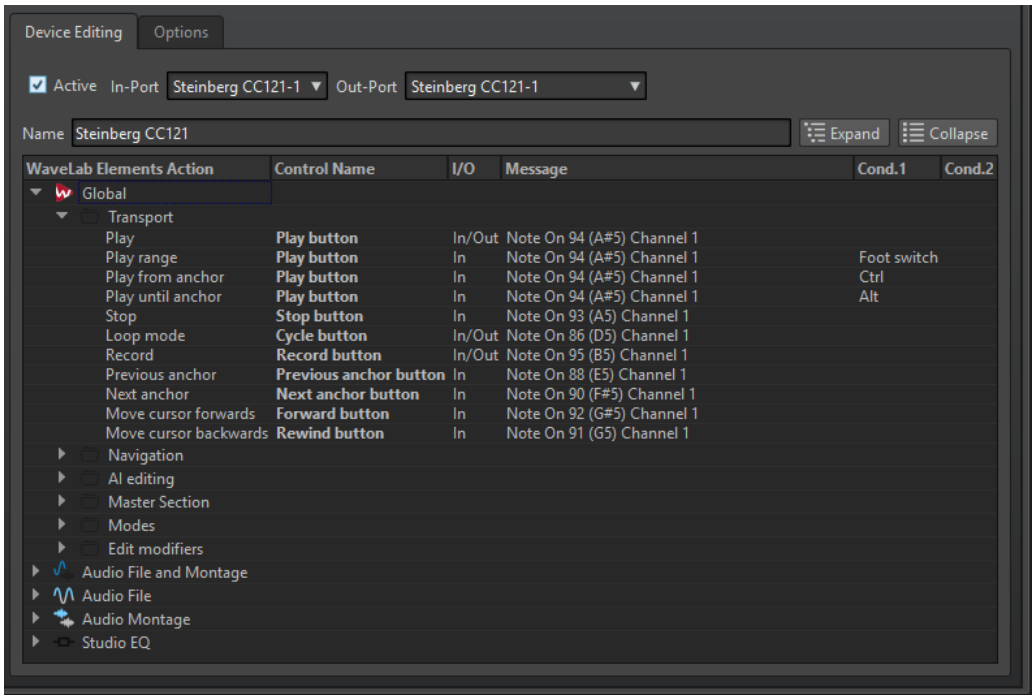
NOTE

Only genuine Steinberg remote control devices are supported.

Remote Devices Tab

This tab allows you to select a Steinberg device to remote-control WaveLab Elements, and to see the control map of MIDI control devices.

- To open the **Remote Devices** tab, select **File** > **Preferences** > **Remote Devices**.



Device Editing Tab

This tab allows you to select a MIDI control device and to see the control map.

Active

Activates the selected device and scans the MIDI ports.

In-Port/Out-Port

Selects the MIDI input/output ports of the device that you want to use.

Name

Allows you to enter a map name.

Expand/Collapse

Expands/collapses the folder tree of the control map.

WaveLab Elements Action List

This folder tree lists the parameters that you can remote-control. The top folder represents contexts. The related parameters can only be controlled if the context, such as an audio file, is active.

A remote control can be used in several contexts, provided that these are exclusive; for example, parameters that can be used for an active audio file or an active audio montage.

The **Global** folder contains the parameters that can be controlled at all times.

Options Tab

Emulate Mouse Wheel

If this option is activated, the AI knob of Steinberg controllers acts as a mouse wheel on the WaveLab Elements user interface, except for plug-ins.

Edit Focused Numeric Field

If this option is activated, you can use the AI knob Steinberg controllers to edit the focused numeric field that you can find in many WaveLab Elements windows and dialogs.

CC121 Advanced Integration Controller

You can use Steinberg's CC121 Advanced Integration Controller to control WaveLab Elements.

NOTE

The CC121 was originally designed for Cubase.

The information in this manual describes the WaveLab Elements factory presets for the CC121. The mapping combines the WaveLab Elements functionality with the CC121 controls. The controls that are not listed are not assigned to a parameter.

For detailed information on using the controller, refer to the manual that came with the CC121.

Channel Section

You can use all controls of the CC121 channel section, except the fader, to control the elements of the active track in a WaveLab Elements audio montage. You can use the fader for the **Master Section**.

Fader

Controls the **Master Section** fader.

PAN knob

Controls the gain of the active track.

Mute

Mutes/Unmutes the active track.

Solo

Activates/Deactivates solo for the active track.

CHANNEL SELECT

Selects the previous/next track in the audio montage.

To move the cursor to the previous/next clip edge in the audio montage, hold **Alt**. To move the cursor to the previous/next region edge, hold **Shift**. To move the cursor to the previous/next marker in the **Audio Editor**, hold **Ctrl/Cmd**.

EQ Section

With the EQ section, you can easily control the Steinberg Studio EQ plug-in.

If **EQ TYPE** is activated on the CC121, you can adjust the parameters of the focused Studio-EQ. All necessary EQ parameters, such as **Q**/**F**/**G** of each band, **EQ TYPE** selection, and **ALL BYPASS** on/off can be set. You can switch to WaveLab Elements navigation mode by deactivating **EQ TYPE**. In WaveLab Elements navigation mode, you can access alternative functions, such as scrolling, zooming, and switching between windows.

With **EQ TYPE** activated:

Bandwidth knobs (Q)

Adjusts the Q (bandwidth) of each EQ band.

Frequency knobs (F)

Adjusts the center frequency of each EQ band.

Gain knobs (G)

Adjusts the gain of each EQ band.

ON

Activates/Deactivates the EQ bands.

ALL BYPASS

Activates/Deactivates bypass for all plug-ins in the **Master Section**.

EQ TYPE deactivated:

LOW ON

Opens the **Audio Editor**.

LOW-MID ON

Opens the **Audio Montage** window.

HIGH ON

Opens the preferences tab.

EQ-1 knob for the EQ Gain (G)

Scrolls left/right on the timeline.

EQ-2 knob for the EQ Gain (G)

Adjusts the horizontal zoom on the timeline.

EQ-3 knob for the EQ Gain (G)

Adjusts the vertical zoom on the timeline.

EQ-4 knob for the EQ Gain (G)

Scrolls tracks in the **Audio Montage** window or scrolls vertically in the **Audio Editor**.

EQ-1 knob for the EQ Frequency (F)

Scrolls left/right on the overview timeline of the **Audio Editor**.

EQ-2 knob for the EQ Frequency (F)

Horizontally zooms in/out on the overview timeline of the **Audio Editor**.

EQ-3 knob for the EQ Frequency (F)

Vertically zooms in/out on the overview timeline of the **Audio Editor**.

EQ-4 knob for the EQ Frequency (F)

Vertically scrolls on the overview timeline of the **Audio Editor**.

Transport Section

The Transport section allows you to control the transport functions of WaveLab Elements.

Previous button

Moves the cursor position to the left.

Rewind button

Moves the edit cursor position to the left.

Forward button

Moves the edit cursor position to the right.

Next button

Moves the cursor position to the right.

Cycle button

Activates/Deactivates Cycle mode.

Stop button

Stops playback. Press again to move the cursor to the previous start position. Press a third time to move the cursor to the beginning of the project.

Play button

Starts playback.

Record button

Press once to open the **Recording** dialog. Press again to start the recording. Press a third time to stop recording. The recorded file opens in the **Audio Editor**.

Function Section

The Function section allows you to adjust functions, such as fades and envelope level, by using the VALUE knob.

VALUE knob

Rotate this knob to adjust the assigned function. Press the knob to reset the parameter to its default value.

FUNCTION button 1

Adjusts the fade in settings of the active clip.

FUNCTION button 2

Adjusts the fade out settings of the active clip.

FUNCTION button 3

Adjusts the envelope level of the active clip.

FUNCTION button 4

The element clicked last in the **Nudge** section of the **Edit** tab in the **Audio Montage** window is assigned to this button.

AI Knob Section

WaveLab Elements can be controlled with the AI knob of Steinberg's CC121, CI2+, and CMC-AI controllers. With the AI knob, you can control the parameter that the mouse points to.

NOTE

The AI knob only works on parameters that are automatable.

The AI Knob Section allows you to control parameters via the AI knob.

AI KNOB

Controls the VST 3 plug-in parameters, emulates the mouse wheel, for example, for scrolling, and allows you to edit a focused numeric field. To control a parameter with the AI knob, move the mouse cursor over the parameter that you want to control, and move the AI knob. You can activate/deactivate the emulation of the mouse wheel and the editing of the focused numeric field in the **Options** tab.

LOCK

When the mouse cursor points to a parameter, press LOCK to control this parameter, regardless of the position of the mouse cursor.

CUBASE READY Indicator

The CUBASE READY indicator has no function in WaveLab Elements.

Foot Switch Section

The foot switch has the same function as **Shift**. Press and hold the foot switch while turning the AI knob to fine-tune parameters.

WaveLab Elements Concepts

We recommend that you familiarize yourself with the general concepts of WaveLab Elements, to ensure the highest possible efficiency when using the application.

RELATED LINKS
General Editing Rules on page 33
Basic Window Handling on page 33

General Editing Rules

The common editing operations apply to any Steinberg product.

- To select and move interface items, and to select ranges, click and drag with the mouse.
- Use the keys of your computer keyboard to enter numeric values and text, to navigate lists and other selectable interface items, and to control the transport functions.
- Common operations like cutting, copying, pasting, or selecting multiple items can be performed using standard keyboard shortcuts.

NOTE

The behavior of your product is also governed by your preference settings.

RELATED LINKS
WaveLab Elements Concepts on page 33

Basic Window Handling

WaveLab Elements adheres to the basic conventions for the Windows/macOS interface, which means that standard Windows/macOS procedures apply.

RELATED LINKS
WaveLab Elements Concepts on page 33

Selecting Audio

Almost all types of editing and processing that you perform in WaveLab Elements take effect on an audio selection. There are numerous ways to make an audio selection.

- To select the entire audio file, double-click it.
- To select an audio file that contains markers, triple-click it.

RELATED LINKS
Selecting a Range by Dragging on page 34
Selecting Channels in Audio Files on page 35

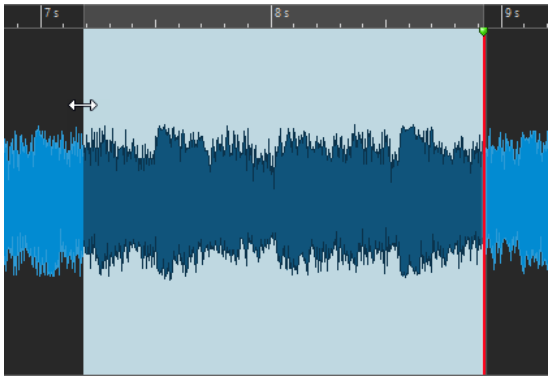
Selecting a Range by Dragging

The standard way to select a range in the **Audio Editor** or in the **Audio Montage** window is to click and drag.

CHOICES

- To select a range, drag all the way to the left or right side of the **Audio Editor** or the **Audio Montage** window.

  The waveform scrolls automatically, allowing you to select larger sections than what can be shown in the wave window. The speed of the scrolling depends on how far from the window edge you are.
- To resize a selection range horizontally or vertically in the **Audio Editor**, click and drag the selection box.



- To resize a selection range vertically in the **Audio Montage** window, click and drag the selection box.

RELATED LINKS
Selecting Audio on page 33
Audio Editor Window on page 115
Audio Montage Window on page 196

Audio Range Selection in an Audio File

You can edit, process, or play back selections of an audio file.

- To access the audio range selection options, in the **Audio Editor**, select the **Edit** tab.

The following selection options are available in the **Time Selection** section:

All

Selects the entire waveform.

Toggle

Switches the selection range on/off.

Extend

Opens a menu that allows you to choose from the following options for creating or extending selection ranges:

- **Extend to Start of File** extends the selection to the start of the audio file. If there is no selection, a selection is created from the edit cursor position.
- **Extend to End of File** extends the selection to the end of the audio file. If there is no selection, a selection is created from the edit cursor position.

- **Extend to Previous Marker** extends the left edge of the selection to the nearest marker to the left or the start of the audio file. If there is no selection, a selection is extended to the previous marker position.
- **Extend to Next Marker** extends the right edge of the selection to the nearest marker to the right or the end of the audio file. If there is no selection, a selection is extended to the next marker position.
- **Extend to Cursor** extends the selection to the edit cursor position.
- **From Start of File Until Cursor** selects the range between the start of the audio file and the edit cursor position.
- **From Cursor to End of File** selects the range between the edit cursor position and the end of the audio file.
- **From Cursor to Previous Marker** selects the range between the edit cursor position and the previous marker or the start of the audio file.
- **From Cursor to Next Marker** selects the range between the edit cursor position and the next marker or the end of the audio file.
- **Shift Selection to the Left** moves the selection lengthwise to the left.
- **Shift Selection to the Right** moves the selection lengthwise to the right.
- **From Playback Position to End** creates a selection range from the playback position to the end of the selection, or to the end of the file, if there is no selection. If playback is not active, the position of the edit cursor is used.
- **From Start to Playback Position** creates a selection range from the playback position to the start of the selection, or to the start of the file, if there is no selection. If playback is not active, the position of the edit cursor is used.
- **Double Selection Length** doubles the length of the current selection range.
- **Halve Selection Length** reduces the length of the current selection range to 50% of the original length.

Channels

Opens a menu, where you can choose from the following options:

- **Extend to All Channels** extends the current selection range to all channels.
- **Left Channel Only** reduces the current selection range to the left channel.
- **Right Channel Only** reduces the current selection range to the right channel.

Regions

Opens a menu, where you can choose from the following options:

- **Loop Region** selects the range between the two loop markers that encompass the edit cursor.
- **Generic Region** selects the range between the two generic markers that encompass the edit cursor.

RELATED LINKS
Audio Editor on page 46

Selecting Channels in Audio Files

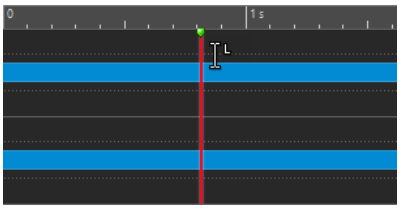
In the **Audio Editor**, you can select individual channels, both channels of a stereo file, or channel clusters of a multichannel audio file. This allows you to apply an operation to one channel only, to both channels of a stereo file, or to channel clusters of a multichannel file.

CHOICES

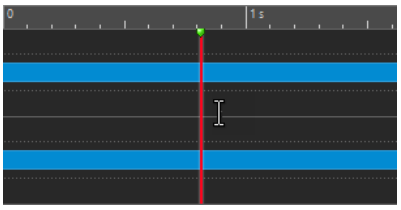
- Which channel is selected when you click in the **Waveform** window of the **Audio Editor** depends on where you click.

  The edit cursor shows which channel is selected. The mouse pointer indicates which channel is affected.

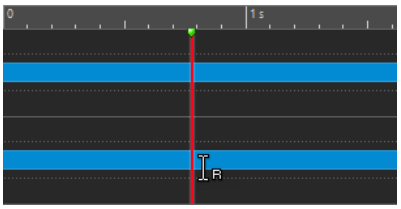
  - To select the left channel, click the upper half of the left channel.

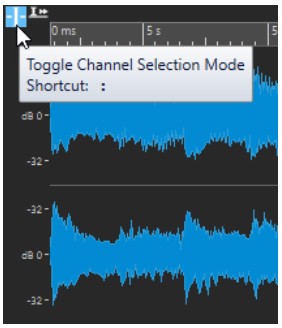
  - To select both channels, click the middle area between the left and the right channel.

  - To select the right channel, click the lower half of the right channel.

- To switch from selecting all channels to selecting individual channels, and vice versa, when you click in the **Audio Editor**, click **Toggle Channel Selection Mode** to the left of the timeline.

- To move the edit cursor to the next/previous channel, press **Alt**-**Page Down** or **Alt**-**Page Up**.

RELATED LINKS

Selecting Audio on page 33
Moving the Selection Range to Other Channels on page 37
Audio Editor Window on page 115
Playing Back Focused Audio Channels on page 107

Quantizing Audio Selections based on Time Ruler Marks

In the **Audio Editor**, you can make audio selections snap to time ruler marks and quantize the audio selection at the same time.

PREREQUISITE

You have set the time ruler to the desired unit; for example, to **Bars and Beats** or **Samples**.

PROCEDURE

1. Zoom in or out to display the audio to be quantized.
2. Hover the mouse over the time ruler.
3. Press **Alt/Opt**.

   The mouse pointer turns into the square brackets symbol [ ].
4. Click and drag to select an audio range.

   NOTE

   This feature is available anytime, and it is independent of the snapping options.

   We recommend activating the **Time Ruler Marks** option in the **Magnets** menu of the **Audio Editor**, so that snapping is enabled. You can access it via **Edit** > **Snapping** > **Magnets**.

RELATED LINKS

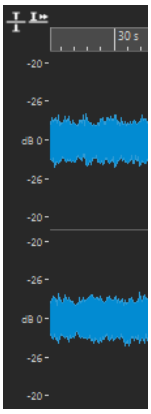
Magnets Menu on page 119
Edit Tab (Audio Editor) on page 123
Time Ruler and Level Ruler on page 55

Moving the Selection Range to Other Channels

You can move the selection range that you have made for a channel to all channels or to another channel.

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, select a range.
2. Do one of the following:
   - On the **Edit** tab, in the **Time Selection** section, click **Channels**, and select **Extend to All Channels**, **Left Channel Only**, or **Right Channel Only**.
   - In the channel control area, click the channel to which you want to move the selection range.



- To extend the selection range from its original channel cluster vertically to other channel clusters, **Shift**-click the channel cluster to which you want to extend the selection range.
- To move the selection range to the next/previous channel via key commands, press **Alt**-**Page Down** or **Alt**-**Page Up**.
- To move the selection range to another channel via the mouse, press **Ctrl/Cmd**-**Shift**, and drag the selection to another position.

RELATED LINKS
Selecting Channels in Audio Files on page 35
Channel Control Area on page 118
Audio Editor Window on page 115

Selecting in the Overview of the Audio Editor

The ranges that you select in the overview of the **Audio Editor** also apply to the main view.

PROCEDURE

- In the **Waveform** view of the **Audio Editor**, hold down **Ctrl/Cmd**, and click and drag in the overview.

RELATED LINKS
Audio Editor Window on page 115

Moving a Selection Range

If a selection range has the correct length but the wrong position, you can move it.

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, hold down **Ctrl/Cmd**-**Shift**.
2. Click in the middle of the selection, and drag to the left or to the right.

RELATED LINKS
Audio Editor Window on page 115

Extending and Reducing the Selection

You can resize a selection range in the **Audio Editor** or in the **Audio Montage** window.

To extend/reduce the selection, you have the following options:

Using the Mouse and Key Commands

- To extend the selection, select a range, **Shift**-click outside the selection range, and drag to the left/right. You can also click and drag the edges of the selection range to the left/right.
- To extend the selection to the previous/next boundary (marker or start/end of file), press **Shift**, and double-click the non-selected area between the boundaries.

Using Key Commands

- To move the start or end of a selection in the **Waveform** view of the **Audio Editor** to the left or right, hold down **Shift**, and press the **Left Arrow**/**Right Arrow**. To move it in bigger steps, hold down **Shift**, and press **Page Up** or **Page Down**.
- To extend a selection to the previous or next boundary in the **Waveform** view of the **Audio Editor** (marker or start/end of the audio file), hold down **Ctrl/Cmd**-**Shift**, and press the **Left Arrow** or **Right Arrow**.

Deleting Selections

There are several options for deleting a selected range.

Audio Editor

The following options can be found on the **Edit** tab in the **Cut Copy Paste** section.

Crop

Removes the data outside the selection.

Delete

Removes the selection. The audio to the right of the selection is moved to the left to fill the gap.

Audio Montage Window

The following option can be found on the **Edit** tab, in the **Removal** section.

Erase Selected Range

Erases the clip parts inside the selection range on the active track, without filling the gap.

Delete Selected Clips/Delete Selected Range

If there is a selection range, the clip parts inside the selection range on the active track are deleted, and the right section of the clips is moved to the left, to fill the gap.

If there is no selection, the selected clips are deleted.

Value Editing

In various areas of the application, you can edit numerical values by using a combination of text fields and dials.

Values are sometimes composed of several elements, for example, 12 mn 30 sec 120 ms. You can edit values by one of the following methods:

- To change a value, click in a value field, and type in a new value, or click the small arrows in the value field.
- To change the value by one unit at a time, press **Up Arrow** or **Down Arrow**.
- To change the value using the mouse wheel, position the mouse cursor over a value, and use the mouse wheel, or use the AI knob of your MIDI controller.
- To change the value with the mouse, click a value, and drag the mouse up or down.
- To jump to the maximum and minimum values, press the **Home** or **End** key, respectively.
- To move from one element of the value to another, press **Left Arrow** or **Right Arrow**.

Sliders

In various places in WaveLab Elements, you can change parameters and the respective values via slider controls.

To adjust a value via a slider, you have the following options:

- Position the mouse over the slider, and use the mouse wheel without clicking. Hold **Ctrl/Cmd** while using the mouse wheel to scroll faster. This modifier also applies to the zoom wheels.
- To move a slider, click and drag it.
- To move the slider handle to a specific position, click the slider at the position.
- To move the slider handle in smaller steps, right-click, or click below the handle. Keep the mouse button pressed to automatically step to the next value.
- To reset the slider to the default value, if available, **Ctrl/Cmd**-click the slider, or click using the middle mouse button, or double-click the handle.

RELATED LINKS
WaveLab Elements Concepts on page 33

Renaming Items in Tables

You can rename items in tables in the **Markers** window and in the **Album** window.

- To rename an item, double-click it, or select it. Press **Return**, and enter the new name.
- To rename the previous item, press the **Up Arrow**. This moves the focus to the previous item, while staying in edit mode.
- To rename the next item, press the **Down Arrow**. This moves the focus to the next item, while staying in edit mode.

RELATED LINKS
Markers Window on page 320
Album Window on page 276

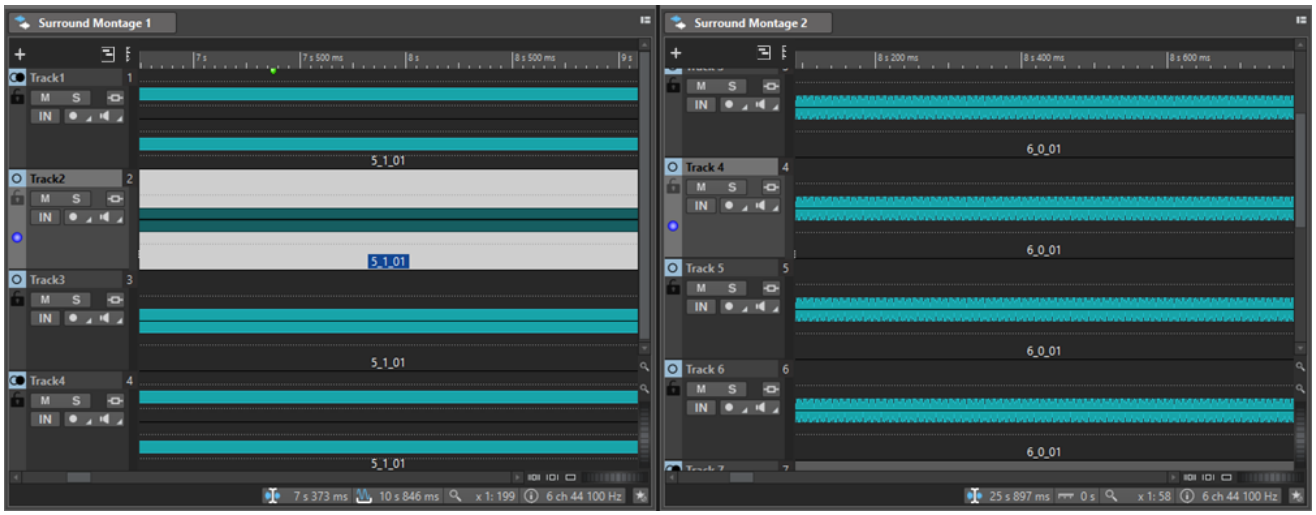
Tab Groups

With tab groups, you can view the content of different files, tool windows, or meters at the same time, without having to navigate through different windows. Each tab group has its own content and tab bar.

You can have two file tab groups.

Empty File Tab Groups

File Tab Groups with Audio Montages

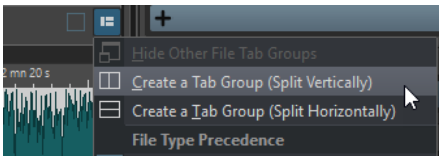


RELATED LINKS
Creating File Tab Groups on page 41
Using Tab Groups on page 42

Creating File Tab Groups

PROCEDURE

1. In the top right of a file tab window, open the **Tab Group** pop-up menu.



2. Select **Create a Tab Group (Split Vertically)** or **Create a Tab Group (Split Horizontally)**.

RELATED LINKS
Tab Groups on page 41
Using Tab Groups on page 42

Creating File Tab Groups in Empty Tab Groups

PROCEDURE

- In the top right of an empty file tab group, click **Create a Tab Group (Split Vertically)** or **Create a Tab Group (Split Horizontally)**.

RELATED LINKS
Tab Groups on page 41
Using Tab Groups on page 42

Using Tab Groups

The **Tab Group** button in the top right corner of each tab window allows you to maximize, move, and close tab groups. You can use tabs in different ways and for different purposes, depending on the type of window.

Tool Window Tab Groups

- To hide a tool window tab group, open the **Tool Window Tab Group Options** pop-up menu, and select **Hide All**.
- To reorder tabs in a tab group, drag the tab horizontally to a new position on the tab bar.
- To dock the tab group to another location, open the **Tool Window Tab Group Options** pop-up menu, and select **Dock Tab Group Elsewhere**. Now you can select where to dock the tab group.

File Tab Groups

- To close a file tab group, click the **Tab Group** button, and select **Hide All**.
- To reorder tabs in a tab group, drag the tab horizontally to a new position on the tab bar.
- To move a tab to another project, drag the tab to another project.
- To paste the content of a tab into an audio file, drag the tab onto the waveform. The tab is inserted at the cursor position.
- To maximize the active file tab group, open the **File Tab Group Options** pop-up menu, and select **Hide Other File Tab Groups**.

  To show all file tab groups, open the **File Tab Group Options** pop-up menu, and select **Show Other File Tab Groups**.

  You can also double-click the file tab header of a tab group to show/hide other file tab groups.

RELATED LINKS
Tab Groups on page 41
Creating File Tab Groups on page 41

Peak Files

A peak file (extension `.gpk`) is automatically created by WaveLab Elements each time an audio file is modified or opened in WaveLab Elements for the first time. The peak file contains information about the waveform and determines how it is drawn in the **Audio Editor** or in the **Audio Montage** window.

Peak files reduce the time it takes to draw the corresponding waveform.

RELATED LINKS
Rebuilding or Updating Peak Displays on page 43

Rebuilding or Updating Peak Displays

WaveLab Elements automatically updates peak files when the peak file is older than the audio file. If, for any reason, the audio file is not automatically updated, you can force a rebuild of the peak file in the **Audio Editor** or update the peak files manually in the**Audio Montage** window.

PROCEDURE

1. Select the **View** tab.
2. In the **Peaks** section, do one of the following:
   - In the **Audio Editor**, click **Rebuild Display**.
   - In the **Audio Montage** window, click **Update Peak Files**.

RELATED LINKS
Peak Files on page 43
View Tab (Audio Editor) on page 121

Ancillary Files

Ancillary files (extension `.vs`) contain view settings for audio files.

Ancillary files can enhance the speed and efficiency of your editing workflow, but they are not essential. Deleting them does not result in any data loss, as they are automatically regenerated when required.

Among others, the following view settings can be included in ancillary files:

- Window size and position
- Zoom level
- Scroll position

To specify where to save ancillary files, select **File** > **Preferences** > **Audio Files**, and choose an option in the **Location of Associated Files** section of the **File** tab.

RELATED LINKS
Master Section Presets on page 314
File Tab (Audio Files Preferences) on page 413

Processing Precision

WaveLab Elements can load audio samples in many formats. Internally, it processes them as 64-bit float samples.

Mixing inside WaveLab Elements is also done in 64-bit float. 32-bit PCM samples can be transferred to 64-bit float and back.

Plug-ins are processed in 64-bit float by default. You can also set the plug-in processing to 32-bit float.

You can set up the processing precision for plug-ins and for temporary files via the **Audio** tab of the **Global Preferences**.

NOTE

Processing in 64-bit float results in double precision but slightly longer processing times than 32-bit float.

Temporary files in 64-bit float are processed with double precision but take longer to read and write than 32-bit float, and their file size is twice as big.

RELATED LINKS
Temporary Files on page 73
Audio Tab (Global Preferences) on page 408

EBU Loudness Standard R-128

The EBU loudness recommendation R-128 establishes well-defined methods to measure loudness, dynamics, and peak values, and also defines reference values to achieve for these measurements. Though the reference values are intended for the broadcast world, the measurement methods are helpful in any application dealing with audio and loudness control.

WaveLab Elements supports these audio measurements for metering, audio analysis, and processing in many places.

Loudness Measurement

Loudness measurement takes the frequency sensitivity of the human ear to loudness levels into account. There are three types of measurements:

- Integrated loudness, also called program loudness, establishes the average loudness of an audio piece. This measurement uses a gating method to ignore long periods of silence.
- Short-term loudness measures the loudness once a second, on an audio block of three seconds. This provides you with information about the loudest audio passages.
- Momentary loudness measures a range of 400 ms of audio at intervals of 100 ms. This provides you with instantaneous feedback on the loudness.

Loudness Range

The loudness range measurement serves to establish the dynamics of the audio signal. It reports the ratio between the loudest and the quietest (but non-silent) sections. The audio is divided into small blocks. There is one audio block every second, and each block lasts three seconds. Analyzed blocks overlap.

The top 10% of the quiet blocks and the top 5% of the loud blocks are excluded from the final analysis. The calculated loudness range is the ratio between the loudest and the quietest

remaining audio blocks. This measurement helps you to decide if and how much compression or expansion to apply to the audio.

True Peaks

When a digital signal is converted to an analog signal, EBU R-128 recommends measuring an estimation of the real peaks, rather than relying on digital peaks, to avoid clipping and distortion. This is accomplished by over-sampling the signal four times, while retaining the peak values.

Naming and Units

EBU R-128 proposes the following naming and unit conventions:

- A relative measurement, such as a value relative to a reference level:

  “LU” as “Loudness Unit” (1 LU is 1 dB).
- An absolute measurement, “LUFS” as “Loudness Unit Full Scale”. 1 LUFS corresponds to 1 dB in the AES-17 scaling.

When WaveLab Elements relates to the EBU R-128 loudness, it uses these units rather than dB.

RELATED LINKS
Loudness Normalizer on page 180
Audio Editor Only: Global Analysis on page 165
Formats Tab (Global Preferences) on page 409

Resetting Default Answers

In WaveLab Elements, you can set some dialogs and warning messages to **Do not show again**. To show these dialogs and messages again, you must reset the default answers.

PROCEDURE

1. Select **File** > **Preferences** > **Global**.
2. Click **Options**.
3. Click **Reset Default Answers**.

RESULT

All message box options are reset to their default settings.

RELATED LINKS
Options Tab (Global Preferences) on page 410

Workspace Window

The **Workspace** window provides a range of editing and playback environments whose functions are tailored to the specific purposes of particular file types.

WaveLab Elements allows you to choose from different editors and windows, designed to accommodate different needs and serving different purposes:

- The **Audio Editor** for viewing and editing audio files.
- The **Audio Montage** window, a non-destructive editing environment for assembling and editing audio clips on tracks.

You can customize the **Workspace** window to suit your needs and your workflow.

Elements of the Workspace Window

The **Workspace** window contains the following elements:

- A menu bar
- A set of tool windows. Their availability depends on the file type you are working on. The tool windows can be activated/deactivated individually.
- Tab groups to host the files to edit. You can move the content of a tab to another tab, create a new empty tab, display the file path, and access other functions by right-clicking.

RELATED LINKS
Audio Editor on page 46
Audio Montage on page 46

Audio Editor

The **Audio Editor** provides tools and functions for sample-accurate audio editing, high-quality analysis, and processing.

The **Audio Editor** includes various metering tools.

RELATED LINKS
Audio Editor Window on page 115

Audio Montage

In the **Audio Montage** window, you can assemble audio clips to create a montage. You can arrange, edit, and play back clips on stereo or mono tracks.

Features include track- and clip-based effects, volume and pan automation, and various fade and crossfade functions.

You can place any number of clips on an audio track. A clip represents a reference to a source audio file on your hard disk, as well as to the start and end positions in the file. Editing clips in an audio montage is non-destructive; that is, the original audio files are unaffected by it.

The **Audio Montage** window provides you with a graphical representation of the clips on tracks. It enables you to view, play back, and edit the tracks and clips.

RELATED LINKS
Audio Montage on page 194

Tool Windows

WaveLab Elements offers various tool windows that allow you to view, analyze, and edit your audio.

Generally, the content of a tool window is synchronized with the active file, with the exception of the audio meters, which display the audio file being played back. Tool windows can be docked and undocked, and saved in your custom layouts. Some tool windows are only available for specific file types.

You can access the tool windows via the **Tool Windows** menu.

RELATED LINKS
Opening and Closing Tool Windows on page 47

Opening and Closing Tool Windows

You can close tool windows that are not relevant for your project, or you can open additional tool windows.

- To open a tool window, select **Tool Windows**, and choose a tool window.
- To close a docked tool window, right-click the tool window tab, and select **Hide**.
- To close an undocked tool window, click its **X** button.

RELATED LINKS
Tool Windows on page 47

Docking and Undocking Tool Windows and Meter Windows

Tool windows and meter windows can be used as docked windows, as floating windows, or as slide-out windows. You can freely drag around the windows and dock them to various locations.

- To undock a tool window or a meter window, drag the corresponding tab to another position.

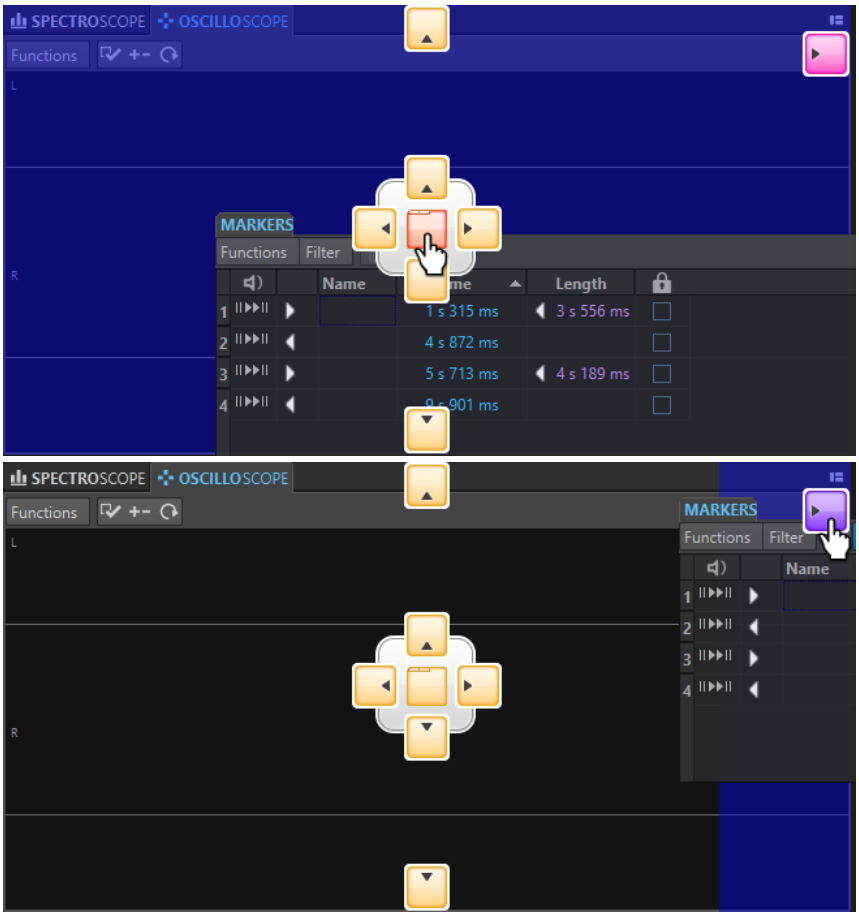
  Now the tool window or meter window is a floating window, which you can freely move around.
- To dock a tool window or a meter window, click and hold the caption bar, or click the **Options** button to the right of the caption bar, and select **Dock Tab Group Elsewhere**.

  NOTE

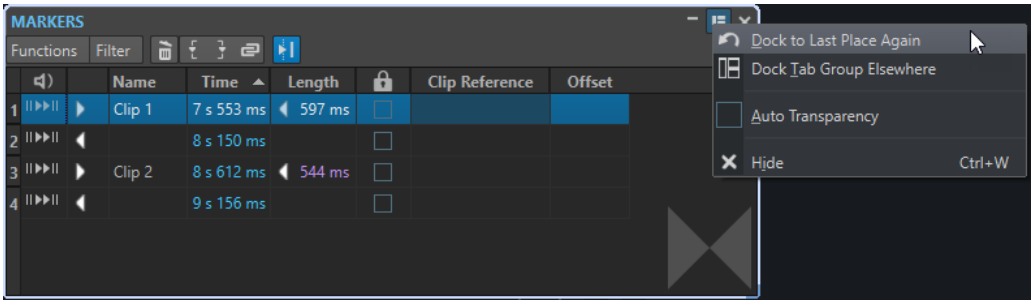
  Yellow symbols indicate locations for docked windows.

  Pink symbols indicate locations for slide-out windows.

  Drag the window to one of the locations.



- To dock a floating tool window or a meter window to its last docked position, click the **Options** button to the right of the caption bar, and select **Dock to Last Place Again**.



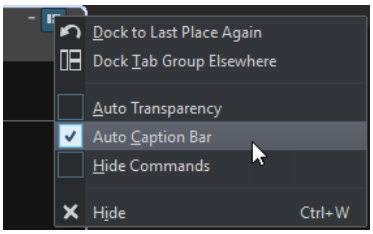
RELATED LINKS
Slide-Out Windows on page 49

Hiding the Caption Bar in Floating Meter Windows

To save screen space, you can automatically hide the caption bar of floating meter windows, when the window is not the active window. You can adjust the setting for each individual floating window.

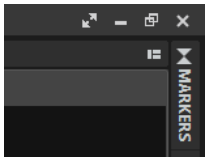
PROCEDURE

1. In a floating meter window, click the **Options** button at the top right of the window.
2. Select **Auto Caption Bar**.

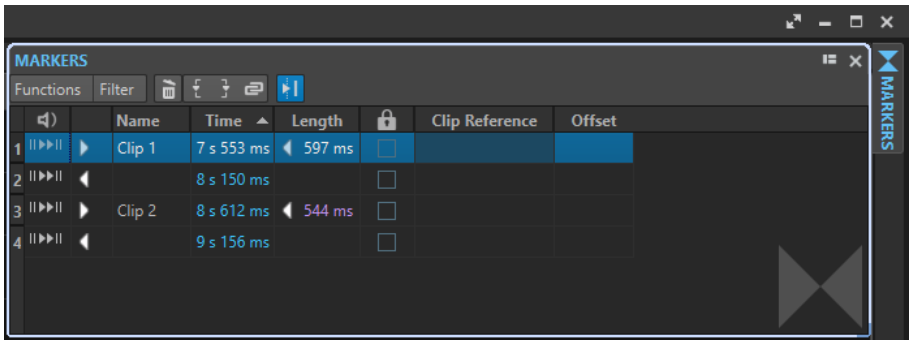


Slide-Out Windows

Slide-out windows are hidden in the frame of the **Workspace** window. When you hover the mouse pointer over the window name, the window slides out. It is hidden again when you click anywhere else.



Slide-out window tab

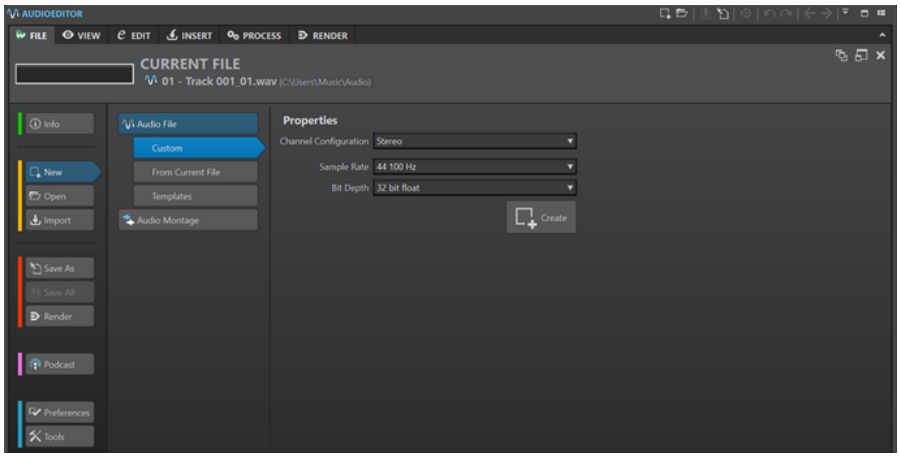


An open slide-out window

File Tab

The **File** tab is the control center of WaveLab Elements.

The **File** panel is where you save, open, render, or import audio files or audio montages. It also gives you detailed information about your files and allows you to set up the WaveLab Elements preferences.



Info

Provides information about the active file and allows you to edit the audio properties of audio files and audio montages.

New

Allows you to create audio files or audio montages. You can create new files or use a template.

Open

Allows you to open audio files or audio montages, to revert to saved files, and to open audio montages in **Safe Mode**.

You can also open files that you have previously copied to the clipboard in the File Explorer/macOS Finder.

Import

Allows you to open different file formats. The following formats are supported:

- **Audio File to Montage**
- **Video**
- **Unknown Audio**

  Allows you to specify how WaveLab Elements interprets the format of the audio file that you want to open.
- **Audio CD**

Save As

Allows you to save the active file or the project. You can specify the name, file format, and location. You can also save a copy of the active file.

Save All

Allows you to save all changed files of your project at the same time. The file list gives you an overview of all files that have been changed.

You can use the filter to show all changed files, only audio files, or only audio montages.

Render

Allows you to render the active file or audio montage, the active track, a range of an active video clip, or a specific marked audio region.

Podcast

Allows you to publish podcasts.

Preferences

Allows you to view and change the preferences of WaveLab Elements. You can set up the preferences for the following parts of WaveLab Elements:

- **Global**
- **Audio Connections**
- **Shortcuts**
- **Plug-ins**
- **Remote Devices**
- **Folders**
- **Audio Files**
- **Audio Montages**

Tools

Allows you to access the following tools:

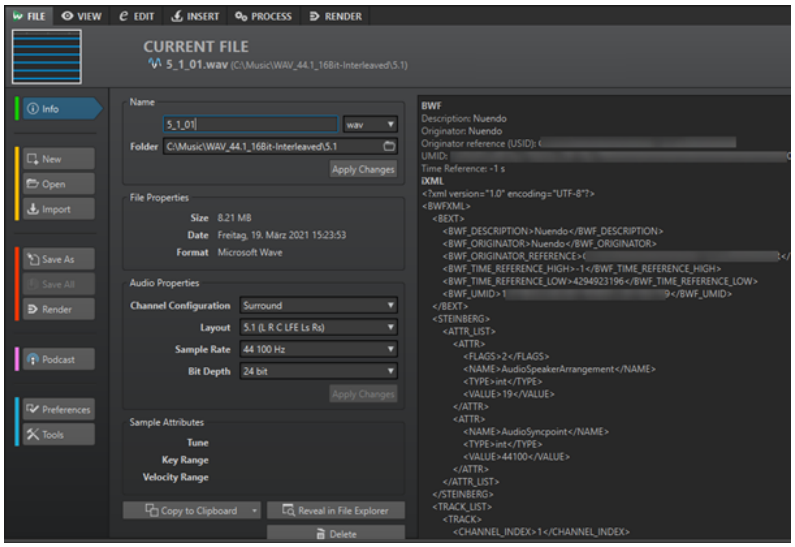
- **Batch Conversion**

RELATED LINKS
Info Dialog on page 51
Configuring WaveLab Elements on page 405
Special File Format Dialog on page 150

Info Dialog

The **Info** dialog provides information about the active file and allows you to edit the audio properties of audio files and audio montages.

- To access the **Info** dialog, select the **File** tab, and click **Info**.



Depending on the selected file, different information and options are available.

Name

Displays the name, file extension, and file location of the active file. You can edit these attributes.

File Properties

Displays the size, date, and file format of the active file.

Audio Properties

For audio files, this displays the **Channel Configuration**, the **Sample Rate**, and the **Bit Depth** of the active file.

For audio montages, this displays the **Channel Configuration** and the **Sample Rate** of the active file.

You can edit these attributes.

Sample Attributes (audio files only)

Displays the musical attributes tune, key range, and velocity range.

Metadata

Displays the metadata of the active file or the file that you have selected in the **File Browser** window.

Copy to Clipboard

Opens a menu from which you can select which information about the active file you want to copy to the clipboard.

Reveal in File Explorer/macOS Finder

Opens the File Explorer/macOS Finder to show the location of the active file.

Delete

Deletes the active file.

RELATED LINKS
File Browser Window on page 69

Command Bar

The command bar at the top of the editor windows allows you to create, open, and save files, and to undo/redo changes.

Open Startup Assistant

Opens the **Startup Assistant** window, which is also opened on starting the application.

New

Allows you to create an audio file or an audio montage. You can create new files or use a template.

Open

Allows you to open an audio file or an audio montage.

Save

Saves the active file.

Save As

Allows you to save the active file. You can specify the name, file format, and location. You can also save a copy of the active file.

Trigger Cubase/Nuendo Update

Updates the Cubase/Nuendo project if the active file was opened via the **Edit in WaveLab** option.

Undo

Allows you to undo changes.

Redo

Allows you to redo changes that were undone.

Navigate Backwards/Navigate Forwards

In the **Audio Editor** and in the **Audio Montage** window, this allows you to navigate to the previous/next cursor position, zoom factor, or selection range without undoing/redoing the edit operation.

Customize Command Bar

Allows you to select the buttons to be displayed on the command bar.

Maximize Window

Maximizes the window. To restore the window size, click the button again.

Layout Options

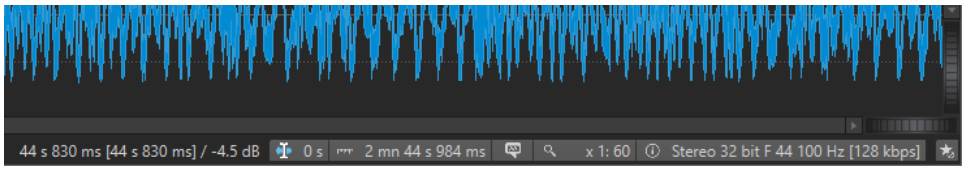
Allow you to determine the position of the command bar and the transport bar.

RELATED LINKS
WaveLab Exchange on page 380

Status Bar

The status bar at the bottom of the **Audio Editor** and the **Audio Montage** window shows information about the active window using the units specified for the rulers.

The information displayed on the status bar is continuously updated, based on the movement of the cursor and on your audio selections.



Time/Level (dB)

Displays the time of the audio file at the mouse cursor position. In the **Audio Editor**, it also displays the level.

The value in brackets shows the time from the edit cursor position to the mouse cursor position.

Synchronize Cursor

- Left-clicking this button (key command: **!**) synchronizes the playback cursor with the edit cursor; that is, while audio is being played back, the edit cursor is moved to the position of the playback cursor.

  If the specified position is currently not in view, WaveLab automatically scrolls to the position.

  In the **Audio Montage** window, this feature activates the clip that is located at this position, if any.

  As a result, if the clip plug-in chain window is open, the plug-ins of the activated clip are displayed and synchronized.
- Right-clicking this button allows you to edit the edit cursor position by adjusting the values in the corresponding dialog.

NOTE

The editing unit that is used in the dialog corresponds to the unit that is set for the time ruler.

Audio Selection Indicator (Audio Editor)/Audio Range Indicator (Audio Montage)

In the **Audio Editor**, this displays the length of the current selection, or the total length of the audio file if no selection has been made.

In the **Audio Montage** window, this displays the length of the audio selection if a clip is selected, or the size of the audio montage.

If you have zoomed in, you can right-click the indicator to display the selected audio range, the active clip, or the whole file. Left-click the indicator to open the **Range Selection** dialog, where you can define or refine a selection.

Sampler Key Indicator (Audio Editor only)

Indicates the key of the current audio file (if defined). Click the indicator to open the **Sample Attributes** window.

Zoom Indicator

Displays the current zoom factor.

- To open a pop-up menu that allows you to set additional parameters for zooming, click the indicator.
- To open the **Zoom Factor** dialog that allows you to edit the zoom factor, right-click the indicator.

Audio File Properties/Audio Montage Properties

In the **Audio Editor**, this displays the bit depth and the sample rate. It also indicates whether the audio file is mono or stereo. Click the indicator to open the **Audio Properties** dialog.

In the **Audio Montage** window, this displays the sample rate of the audio montage. Click the indicator to open the **Sample Rate** dialog.

Bypass Master Section

If this option is deactivated, the **Master Section** is ignored during playback. However, rendering still takes all plug-ins into account.

Background Information

The status bar shows the progress of some background operations, such as rendering an effect. The operation can be paused or canceled using the corresponding buttons.

RELATED LINKS
Time Ruler and Level Ruler on page 55

Context Menus

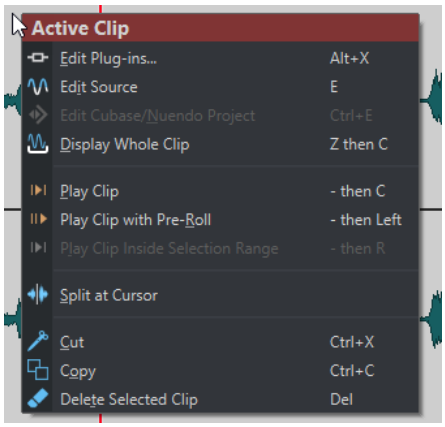
WaveLab Elements offers various context menus, which contain commands and/or options pertaining to the active window.

Context menus appear when you right-click in specific areas.

TIP

Most commands and options that you can find in context menus are also accessible via other control elements of the application, such as windows, dialogs, or main menus. Context menus are mainly intended to speed up your workflow by allowing you to access the corresponding features more quickly.

However, some options are exclusively available in context menus. When looking for a specific feature, right-click the active window to check if it provides a context menu.



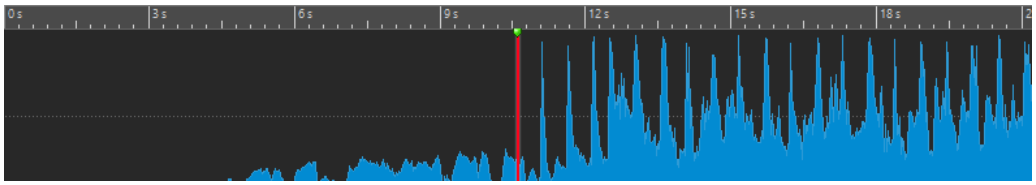
Context menu in the Audio Montage window

RELATED LINKS
Time Ruler and Level Ruler on page 55

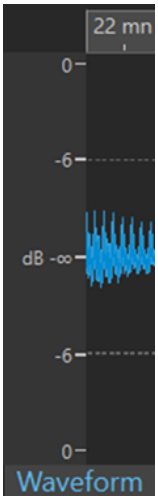
Time Ruler and Level Ruler

Both in the **Audio Editor** and in the **Audio Montage** window, you can display a time ruler. In addition to this, a level ruler is available in the **Audio Editor**.

Time Ruler



Level Ruler (Audio Editor only)



Level Ruler in the Audio Editor

RELATED LINKS
Audio Montage Window on page 196
Time Ruler and Level Ruler Options on page 56
Time Format Dialog on page 59

Time Ruler and Level Ruler Options

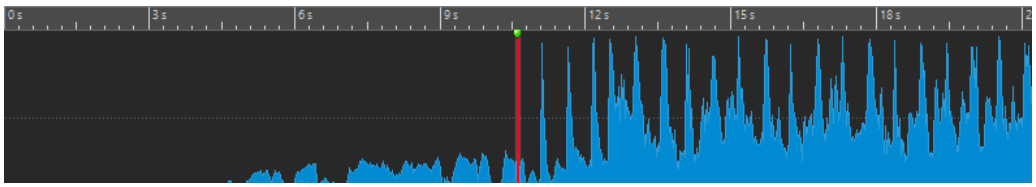
In the **Audio Editor**, you can specify a time and level (amplitude) format for each individual ruler. In the **Audio Montage** window, you can define a format for the time ruler display.

RELATED LINKS
Time Ruler and Level Ruler on page 55
Time Ruler Menu on page 56
Level Ruler Menu (Audio Editor only) on page 58

Time Ruler Menu

The time ruler menu allows you to set up the time ruler display, such as the timecode and the time format.

- To open the time ruler menu, right-click the time ruler.



Timecode

Displays frames per second for various SMPTE timecode types and for CD resolution.

You can specify the timecode type in the **Time Format** dialog.

Clock

Displays time units. You can set additional parameters for the time units in the **Time Format** dialog.

Samples

Displays positions based on the number of samples. The number of samples per second depends on the sample rate of the audio file. For example, at 44.1 kHz, there are 44100 samples per second. You can set additional parameters for the samples in the **Time Format** dialog.

Bars and Beats

Displays bars and beats. You can set additional parameters for bars and beats in the **Time Format** dialog.

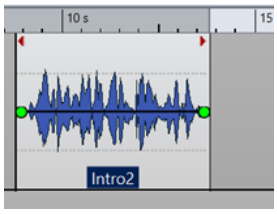
File Size (Audio Editor only)

Displays positions in megabytes. Decimals represent kilobytes.

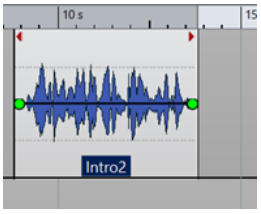
(Show) Grid

Displays a grid in the **Audio Editor** or in the **Audio Montage** window, aligned with time ruler marks; that is, the major ticks on the time ruler.

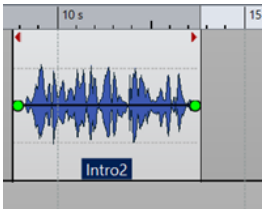
- In the **Audio Editor**, you can apply the setting for the main view and the overview individually.
- In the **Audio Montage** window, you have three further options:
  - **Hide**
  - **Show in the Background**
  - **Show Over Clips**



Hide



Show in the Background



Show Over Clips

NOTE

This option is independent of the **Time Ruler Marks** setting in the **Snapping** section, but the alignment is based on the same concept.

Time Format

Opens the **Time Format** dialog, which allows you to edit the appearance of the time ruler formats.

Save Current Settings as Default

If this option is activated, the time ruler uses the current time format in all new **Audio Editor** or **Audio Montage** windows.

Set Ruler's Origin to Start of File

If this option is activated, the ruler's zero position is set to the beginning of the first sample.

Set Ruler's Origin at Cursor

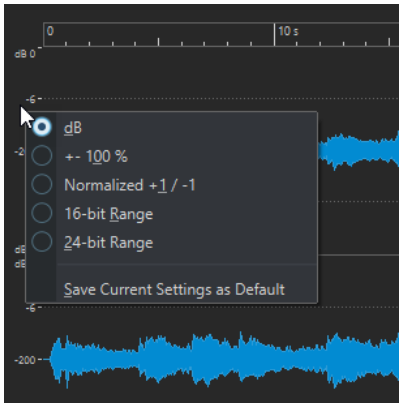
If this option is activated, the ruler's zero position is set to the current edit cursor position.

RELATED LINKS
Time Ruler and Level Ruler on page 55
Time Format Dialog on page 59
Level Ruler Menu (Audio Editor only) on page 58

Level Ruler Menu (Audio Editor only)

The level ruler menu allows you to set up the level format of the level ruler.

- To open the level ruler menu, right-click the level ruler in the **Audio Editor**.



dB

Sets the level format to decibels.

+-100%

Sets the level format to percentage.

Normalized +1/-1

Sets the level format to a ruler gradation corresponding to 64-bit float audio.

16-bit Range

Sets the level format to a ruler gradation corresponding to 16-bit audio.

24-bit Range

Sets the level format to a ruler gradation corresponding to 24-bit audio.

Save Current Settings as Default

If this option is activated, the level ruler uses the current level format in all new **Audio Editor** windows.

RELATED LINKS
Time Ruler and Level Ruler on page 55
Time Ruler Menu on page 56

Working with a Meter-Based Display

If your working material is tempo-based, you can select the meter format (bars, beats, and ticks) for the ruler legend. This makes it easier to find musically related cutting points.

PROCEDURE

1. In the **Audio Editor** or in the **Audio Montage** window, right-click the time ruler, and select **Bars and Beats**.
2. Right-click the time ruler, and select **Time Format**.

3. On the **Bars and Beats** tab, set **Time Signature** and **Tempo** to values that match your audio file.
4. Set **Ticks per Quarter Note** to a number that you feel comfortable with.

   This can be the same value that is used by your MIDI sequencer, for example.
5. Click **OK**.

RELATED LINKS
Time Ruler and Level Ruler on page 55
Time Format Dialog on page 59

Setting the Edit Cursor Position

Many operations, such as playback and selection, depend on the current edit cursor position. For example, playback often starts at the edit cursor position. The current edit cursor position is indicated by a vertical flashing line.

There are various ways to move the edit cursor:

- Click anywhere in the **Audio Editor**, the **Audio Montage** window, or the time ruler. After making a selection, click the time ruler to prevent deselecting.
- Click and drag in the time ruler.
- Use the transport controls.
- In the **Audio Editor** or in the **Audio Montage** window, select the **View** tab, and use the options in the **Cursor** section.
- Use the cursor keys.
- Double-click a marker.

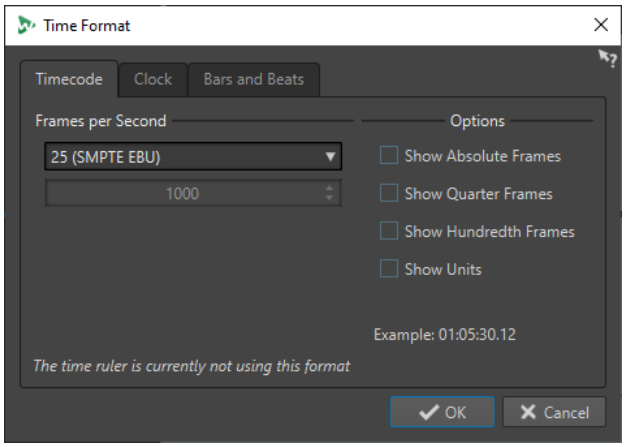
RELATED LINKS
Time Ruler and Level Ruler on page 55
Time Format Dialog on page 59

Time Format Dialog

In the **Time Format** dialog, you can customize the time format of the ruler. The time format of the ruler is also used in various time fields, for example, the status bar and some dialogs.

- To open the **Time Format** dialog, right-click the ruler in the **Audio Editor** or in the **Audio Montage** window, and select **Time Format**.

  In the **Audio Editor**, you can set different time formats for the overview display and the main display.



Timecode Tab

On this tab, you can configure the appearance of the **Timecode**.

Frames per Second

Lists standard frame rates. From the pop-up menu, select **Other** to enter a custom frame rate. You can also choose which frames or units to display.

Show Absolute Frames

Shows the time format as a number of frames, without other time elements.

Show Quarter Frames

Adds the quarter frame number to the time format.

Show Hundredth Frames

Adds the number of a hundredth of a frame to the time format.

Show Units

Adds time units to the time format of the ruler.

Clock Tab

On this tab, you can configure the appearance of the **Clock** ruler.

Show Units

Adds time units to the time format of the ruler.

Compact

Shows the time without unit indicators.

Bars and Beats Tab

On this tab, you can configure the appearance of the **Bars and Beats** ruler.

Time Signature

Allows you to edit the time signature used to display the time represented as a musical notation.

Tempo

Allows you to edit the tempo used to display the time represented as a musical notation.

Ticks per Quarter Note

Allows you to edit the number of ticks per quarter note. These are used to display times that are compatible with your sequencer.

Show Ticks

Allows you to show/hide ticks on the **Bars and Beats** ruler.

RELATED LINKS

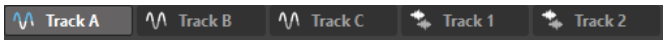
Time Ruler and Level Ruler on page 55

Managing Tabs in the Audio Editor / Audio Montage Window

A tab that is situated in the **Audio Editor** or the **Audio Montage** window is a container for a file in WaveLab Elements. You can open several tabs, but only one can be active at a time. The **Tabs** context menus offer tab-related options.

File Tabs

The following options are available when you right-click a file tab.



Create Audio Montage

Allows you to select **From Current Audio File** to create an audio montage with the current audio file as a clip.

Add to

Allows you to add the active file to another editor.

Close

Closes the active tab.

Close All But This

Closes all files but the active file.

Close All Audio Files

Closes all audio files.

Info

Displays information about the active file.

Reveal in File Explorer/macOS Finder

Opens the File Explorer/macOS Finder to show the location of the file.

Copy to Clipboard

Opens a menu, from which you can select which information about the file you want to copy to the clipboard.

Recent Files

Allows you to open recently used files.

RELATED LINKS

Closing Files on page 65
Creating Audio Montages from an Audio File on page 213

Activating Full Screen Mode

You can use WaveLab Elements in full screen mode.

PROCEDURE

- Select **Workspace** > **Full Screen**.

Resetting the Default Workspace Layout

PROCEDURE

- Select **Workspace** > **Reset Default Layout**.

File Handling

WaveLab Elements offers you many options to handle your files. For example, you can rename files from within WaveLab Elements or save files in various ways.

RELATED LINKS
Opening Files via the File Tab on page 63
Saving Files on page 65
File Browser on page 68

Opening Files

WaveLab offers multiple options for opening files, either before or after starting the application.

You can open one file or several files at a time

- via the **Startup Assistant**
- via the **File** tab
- via the File Explorer/macOS Finder
- from the clipboard
- via drag and drop

Opening Files via the Startup Assistant

You can open recently used files or navigate to files to be opened via the **Startup Assistant**.

PROCEDURE

1. Start WaveLab.
2. In the **Startup Assistant** window, do one of the following:
   - To open a recently used file, select **Recent**, select a file type; for example, **Audio File**. Choose a file from the **Recently Used Files** list below, and double-click to open it.

     TIP

     You can narrow down the list entries by entering a part of the file name into the **Filter** entry field.

   - To navigate to a file in your system, click **Browse**, select **Audio File** from the pop-up menu. Navigate to the file, and click **Open**.

Opening Files via the File Tab

You can open one file or several files at a time via the **File** tab.

PROCEDURE

1. Select **File** > **Open**.

2. Select a file type; for example, **Audio File**.
3. Choose from the following options:
   - Click **Browse**, navigate to the files that you want to open via the **File Browser**, and select them.
   - Click **Recent Files**, and select one or several files from the list.
4. Click **Open** in the lower right corner.

RESULT

If you selected a single file, it is opened.

If you selected more than one file, the selected files are opened in separate file tabs.

RELATED LINKS

Closing Files on page 65
Saving Files on page 65
Opening Files from the Clipboard on page 64
Automatically Opening Files in a Dedicated Tab Group on page 65

Opening Files from the Clipboard

You can open files that you have previously copied to the clipboard in the File Explorer/macOS Finder.

PROCEDURE

1. In the File Explorer/macOS Finder, copy the files to the clipboard.
2. Select **File** > **Open**.
3. Click **Open Files from Clipboard**.

RESULT

The files are opened in new file tabs.

Starting WaveLab by Opening Files

Using drag and drop or the File Explorer/macOS Finder, you can select files that you want to open in WaveLab prior to starting the application.

Do one of the following:

- Select one or several files in your system. Right-click it/them, and choose **Open with**. Select WaveLab.
- Drag one or several files onto the WaveLab icon on your desktop.

RESULT

WaveLab is started, and the file is/the files are opened in the application.

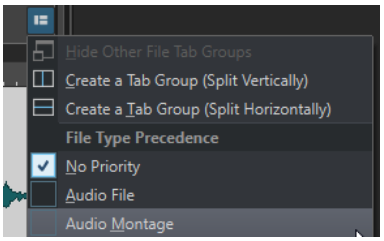
RELATED LINKS

Display Tab (Global Preferences) on page 407
Opening Files on page 63

Automatically Opening Files in a Dedicated Tab Group

You can specify a file type for each tab group. Files that open after rendering, audio files that you open from an audio montage, or files that you open via the File Explorer/macOS Finder are automatically opened in the corresponding tab group for this file type.

- To specify a precedented file type for a tab group, click **File Tab Group Options** at the header of a tab group, and select a file type.

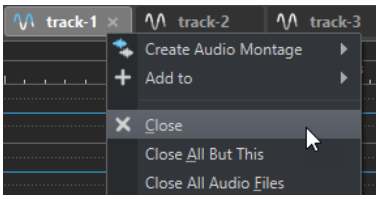


Closing Files

You can close a single file, multiple files, or all files but the selected one by closing the file tabs.

CHOICES

- To close a file tab, click the **X** button of the corresponding tab, or press **Ctrl/Cmd** - **W**, or right-click the file tab, and select **Close**.



- To close a file tab without saving your changes, hold **Ctrl/Cmd** - **Shift**, and click the **X** button of the tab. This avoids having to confirm a warning message whenever you want to close an unsaved tab.
- To close all file tabs but the selected file tab, right-click a file tab, and select **Close All But This**.

RELATED LINKS

Opening Files via the File Tab on page 63

Saving Files

You can choose to save files under an existing name, in the same location, or to specify a new name, location, and file format when saving.

IMPORTANT

In the **Audio Editor**, all save operations except **Save Copy** clear the undo history, which means that after saving, you cannot undo or redo any operations.

CHOICES

- Once a file has been saved, select **File** > **Save**, or press **Ctrl/Cmd** - **S** to update the file and make the changes permanent.
- To specify a new name, location, and/or file format, select **File** > **Save As**.

RELATED LINKS
Tab Change Indicators on page 66
Saving Multiple Files at Once on page 66

Tab Change Indicators

File tabs are color-coded. The colors provide information on whether a file is saved or not, whether a tab is associated with a file, and whether the file has been rendered in Cubase.

Colors in the Top Right Corner of a Tab

White

The file is not modified.

Green (Audio Editor only)

The file uses a decoded file format and is saved.

Red

The file has been modified, but the changes have not been saved yet.

Yellow

The file has been rendered in Cubase.

Unsaved Changes Indicator

When you have made changes to a file, an asterisk is displayed next to the file name until you save the file.

Tab Name Color

Purple

A purple tab name indicates that no audio file is associated with the tab (yet).

Saving Multiple Files at Once

You can save some or all open files in one go.

PROCEDURE

1. Open the **File** window, and click **Save All**.
2. Select the files that you want to save.
3. Click **Save**.

Saving Copies of Files

You can save copies of the files that you are working on.

PROCEDURE

1. Select **File** > **Save As**.
2. Specify a name and a location.
3. Activate the **Save Copy. Don't Change Current File** checkbox.
4. Click **Save**.

Reverting to Saved File

You can set a file back to its last saved state. This reverts all the changes made to the file since the last time it was saved.

PROCEDURE

1. Select **File** > **Open**.
2. Select a file type.
3. Click **Revert to Saved File**.
4. In the warning dialog, click **Yes** to revert to the last saved state.

RESULT

The most recently saved version of the file is loaded from disk.

Automatic Backups

You can automatically create backups of your files to prevent data loss.

For example, if you select **Save As** and specify a file name that is already used in the folder, you can choose to replace the existing file or to replace the existing file and to keep the old file. If you click **Replace and Keep Old**, the backup audio file assumes the original name, with `.bak` added at the end.

Saving Audio Montages

The saving procedures for audio montages are the same as for audio files. However, there are a few things to keep in mind when saving audio montages.

- Audio montage files only contain references to audio files. To rename audio files that are referenced by audio montages, rename the audio files in the **Info** window of the **Audio Editor**. All clip references are updated automatically.
- If the audio montage contains clips that refer to untitled audio files, you have to save these audio files before saving the audio montage.

RELATED LINKS

Renaming Files on page 68
Saving Files on page 65

Deleting Files

You can delete active files from within WaveLab Elements.

PREREQUISITE

The file that you want to delete has neither been copied to the clipboard nor pasted into another open file, and it is not open in another application.

PROCEDURE

1. Open the file that you want to delete.
2. Select the **File** tab.
3. Click **Info**.

4. Click **Delete**.
5. Click **OK**.

RESULT

The file, including its peak and marker files, is deleted.

File Renaming

You can rename a file and update all references automatically. For example, if you rename an audio file named **India** to **Sitar**, all open files that reference the file **India** are updated to reference the file as **Sitar**.

Audio files, peak files, and marker files are also renamed accordingly.

RELATED LINKS

Peak Files on page 43
Renaming Files on page 68

Renaming Files

You can rename files from within WaveLab Elements.

PREREQUISITE

To rename a file that is referenced by other files, you have opened the files that reference the file you are about to rename in WaveLab Elements.

PROCEDURE

1. Open the file that you want to rename.
2. Do one of the following:
   - Select the **File** tab, click **Info**, specify a new **Name**, **Folder**, and/or file extension, and click **Apply Changes**.
   - Press **F2**, specify a new **Name**, **Folder**, and/or file extension, and click **OK**.

RELATED LINKS

File Renaming on page 68
File Tab on page 49

File Browser

The **File Browser** window allows you to navigate to files from within WaveLab Elements.

The **File Browser** window provides you with all the standard browsing functions.

You can use the **File Browser** to open files, or you can insert files by dragging them to another location.

You can also choose to exclusively view specific file types.

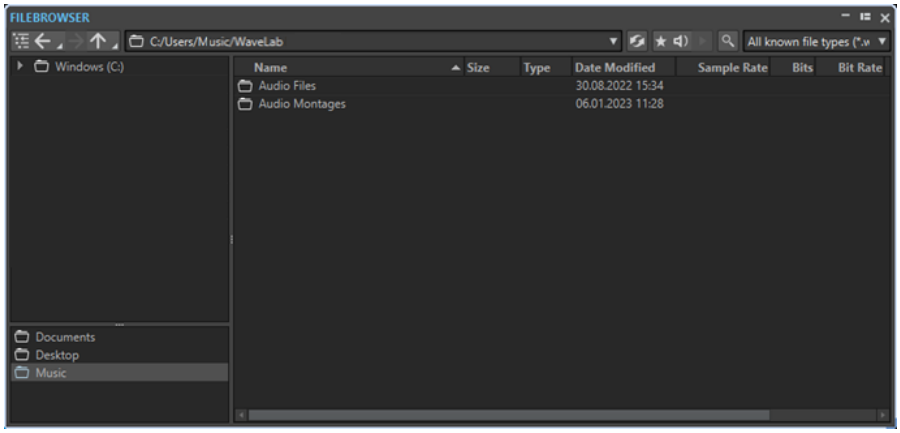
The **Auto Play Mode** is useful for speeding up the process of auditioning sound files.

RELATED LINKS
File Browser Window on page 69

File Browser Window

In the **File Browser** window, you can look for files and open them in WaveLab Elements.

- To open the **File Browser** window, select **Tool Windows** > **File Browser**.



Show Current Folder in Folder Tree

Synchronizes the folder tree to the file list, so that the folder selected in the file list is also shown in the folder tree.

Back/Forward/Parent Directory

Allows you to navigate through the list and file hierarchy.

Location

Allows you to select a file location to navigate to and lists the recently used locations.

Refresh

Allows you to manually reload the content, to reflect any updates and changes.

NOTE

Alternatively, with the **File Browser** window in focus, you can also press **F5** to refresh.

Play through Master Section

When you start playback with this option activated, the audio file is played back through the **Master Section** plug-ins.

Auto Play Mode

With this button activated, playback starts automatically when you select a file.

Play Selected Audio File

Plays the selected audio file.

Search

With this button activated, you can enter text in the search field. If it is deactivated, you can search specific file formats.

File type list

Allows you to choose which file type and file format to display.

Folder tree

Shows the folders that are available on your computer.

Favorite folders

The favorite folders list allows you to quickly access folders. Each file type has its own favorite folder. You can add folders to the favorite folders list by dragging them from the folder tree to the favorite folders area, or by right-clicking a folder and selecting **Add to Favorite Folders List**.

File list

Shows the following information about each file:

- **Name** shows the name of the audio file.
- **Size** shows the size of the audio file.
- **Type** shows the file type of the audio file.
- **Date Modified** shows the date on which the audio file was last saved.
- **Sample Rate** shows the sample rate in Hz.
- **Bits** shows the bit depth in bits. “32F” means 32-bit float, and “64F” means 64-bit float.
- **Bit Rate** shows the bit rate in kbps.
- **Length** shows the length of the audio file.
- **Channels** shows the number of channels.

When you select an audio file in the **File Browser** window, the corresponding metadata is displayed in the **Metadata** window and the **Metadata** section of the **Info** tab. When you click elsewhere, the **Metadata** window displays the metadata of the selected audio file, audio montage, or batch process.

Reveal in File Explorer/Reveal in macOS Finder

If you right-click in the file list, you can select **Reveal in File Explorer/Reveal in macOS Finder** to open the selected file in the File Explorer/macOS Finder.

Create Folder

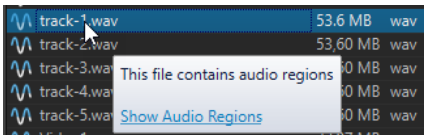
If you right-click in the file list, you can select **Create Folder** to add a new folder for structuring your files.

Audio Regions

If the selected file contains markers, the markers are displayed in the audio regions section.

If the audio regions section is hidden, select a file that contains markers, and click **Show Audio Regions**.

To hide the audio regions section, right-click it, and select **Hide**.



RELATED LINKS
File Browser Window on page 69
Folders Tab (Preferences) on page 93
Adding Folders to the Favorite Folders List on page 71
Metadata Window on page 159
Info Dialog on page 51

Adding Folders to the Favorite Folders List

The favorite folders list in the **File Browser** window allows you to quickly access folders. Each file type has its own favorite folder.

PROCEDURE

- In the **File Browser** window, do one of the following:
  - Drag a folder from the folder tree to the favorite folders area.
  - Right-click a folder, and select **Add to Favorite Folders List**.
  - Right-click the favorite folders area, and select **Add Selected Folder to Favorite Folders List** to add the selected folder to the favorite folders list.

RELATED LINKS
File Browser Window on page 69

Switching Between Files

You can have multiple files open and switch between them.

CHOICES

- To move a file to the front, click the corresponding tab.
- To switch between the files, hold **Ctrl/Cmd**, and press **Tab** continuously.
- To switch back and forth between the last two active files, press **Ctrl/Cmd** - **Tab**. Be sure to release all keys after each step.
- To switch backwards, press **Ctrl/Cmd** - **Shift** - **Tab**.
- To switch from the active file to the most recently edited file, and vice versa, press **F5**.

Recently Used Files

All files that you have recently used in WaveLab Elements are saved in a list. This gives you quick access to recent projects.

Opening Recently Used Files

You can open recently used files via the **File** menu or the **Recent Files** tab. The latter displays more files and offers additional options.

PROCEDURE

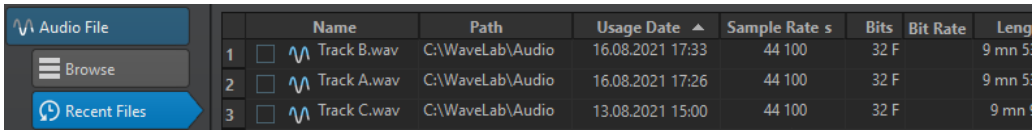
1. Select **File** > **Open**.
2. Select the file type that you want to open.
3. Click **Recent Files**.
4. Optional: Use the search field to enter the name of the file that you are looking for.
5. Select the file that you want to open.
6. Click **Open**.

RELATED LINKS
Recent Files Tab on page 72

Recent Files Tab

This tab allows you to view and manage files that you have recently used in WaveLab Elements. You can search for files, open multiple files at once, and remove individual files or files that cannot be located.

- To open the **Recent Files** tab, select **File** > **Open**, select one of the file types, and click **Recent Files**.



Only Show Files Created by WaveLab Elements

Only shows the files that have not been opened since they were created by WaveLab Elements. For example, a file that is rendered has this status until it is opened.

Search field

Allows you to search for text in the **Name** or **Path** column, depending on which column is selected.

Remove Non-Existing Files

Removes files from the list that cannot be located on the medium.

Remove Selected Files

Removes all selected files from the list.

Open

Opens the selected files.

Filtering Recently Used Files by Name

The search field in the **Recent Files** tab allows you to filter the files list by name.

- To specify whether the **Name** or the **Path** column is used, click the **Name** or **Path** column header.
- To search for a file, enter text into the search field.

- To switch the focus from the search field to the list of recently used files, press **Down Arrow**.
- To switch the focus from the list of recently used files to the search field, press **Ctrl/Cmd**-**F**.

Setting the Number of Recently Used Files to Display

You can specify how many files to display in the list of recently used files.

PROCEDURE

1. Select **File** > **Preferences** > **Global**.
2. Select the **Display** tab.
3. In the **History** section, set the maximum number of items to be listed on the **Recent File** menu.

Temporary Files

WaveLab Elements creates temporary files to save intermediary results of the audio file processing, and for the undo/redo functions. You can specify where WaveLab Elements saves its temporary files, and you can set the processing precision of temporary files.

By default, WaveLab Elements creates temporary files in 32-bit float. Use the **64 bit float** option to create 64-bit float audio files or 32-bit PCM files.

NOTE

Temporary files in 64-bit float result in double precision but take longer to read and write than 32-bit float, and their file size is twice as big.

You can change the processing precision of temporary files with the **Temporary Files** option. You can set this option in the **Global Preferences** on the **Audio** tab.

RELATED LINKS
Specifying Folders for Opening and Saving Files on page 93
Audio Tab (Global Preferences) on page 408

Undoing and Redoing Operations

You can undo and redo as many operations as you like, even after saving the file. The only limitation is the available hard disk space.

When undoing or redoing any operation in the **Audio Editor** or the **Audio Montage** window, the zoom factor, cursor position, scroll position, clip selection status, and time range are restored to the state before the operation.

- To undo or redo an operation, click **Undo** or **Redo** in the command bar bar of the **Audio Editor** or **Audio Montage** window.

RELATED LINKS
Version History on page 74
Undoing Effect Changes on page 270

Version History

The version history allows you to view a history of all versions and to revert to a previous version. In the **History** window, you can see all versions of the audio montage or audio file that you are working on.

In the WaveLab Elements history, each version consists of an audio file or audio montage that can be restored. Each edit to the audio file or audio montage creates a new version.

The **Audio Montage** window and the **Audio Editor** have independent **History** windows.

You can undo and redo operations, and restore previous versions, even after saving the file. The initial version is at the top of the list, the most recent version is at the bottom of the list.

The name of the operation that created the version is shown in the **Version** row of the **History** window.

RELATED LINKS
History Window for Audio Montages on page 74
History Window in the Audio Editor on page 75

History Window for Audio Montages

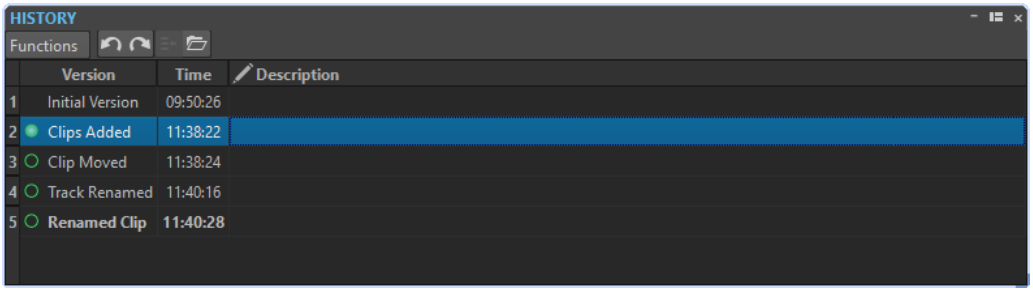
The **History** window for audio montages shows all available versions of the active audio montage. You can undo and redo operations, and restore previous versions.

NOTE

The initial version is at the top of the list.

The most recent version is at the bottom of the list.

- To open the **History** window, select **Tool Windows** > **History**.



History List

In the history list, the following columns are available:

Version
Shows the type of operation that created the corresponding version.

Time
Shows the time of the operation.

Description
Allows you to add a descriptive text to a version.

Functions Menu

The following options are available via the **Functions** menu:

Undo/Redo

Undoes/Redoes the last operation. You can use undo/redo even after saving.

Restore Selected Version

Restores the selected version.

Open Selected Version in New Tab

Opens the selected version in a new tab.

Delete Selected Version

Deletes the selected version from the history.

Clear History

Clears the history. This frees up memory and hard disk space. If you clear the history, you cannot undo any previous operations.

Keep Undone Versions

By default, once you revert to a previous version, all versions created after this version are deleted. To keep all versions in the history, even after reverting to previous versions, activate **Keep Undone Versions**.

History Window in the Audio Editor

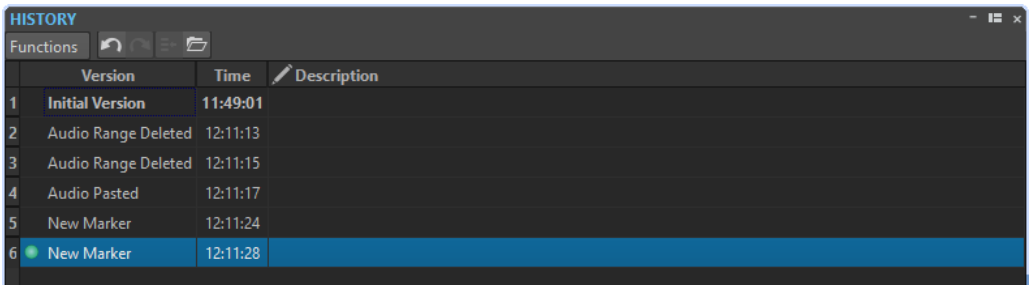
The **History** window in the **Audio Editor** shows all versions of the audio file that you are working on. You can undo and redo operations, and restore previous versions.

NOTE

The initial version is at the top of the list.

The most recent version is at the bottom of the list.

- To open the **History** window, select **Tool Windows** > **History**.



History List

In the history list, the following columns are available:

Version

Shows the type of operation that created the corresponding version.

Time

Shows the time of the operation.

Description

Allows you to add a descriptive text to a version.

Functions Menu

The following options are available via the **Functions** menu:

Undo/Redo
Undoes/Redoes the last operation. You can use undo/redo even after saving.

Restore Selected Version
Restores the selected version.

Open Selected Version in New Tab
Opens the selected version in a new tab.

Delete Selected Version
Deletes the selected version from the history.

Clear History
Clears the history. This frees up memory, hard disk space, and any involved audio files. If you clear the history, you cannot undo any previous operations.

Keep Undone Versions
By default, if you revert to a previous version, all versions that were created after the selected version are deleted. To keep all versions, activate **Keep Undone Versions**.

Drag Operations

WaveLab Elements requires you to use drag-and-drop techniques to perform various operations, some of which can only be performed in this manner.

- To drag an object, click and hold down the mouse button when positioned on the object, and drag it. Drop the object by releasing the button.

You can drag many types of objects across different source and destination locations; for example, files, text, clips, items in a list, and markers.

NOTE

It is also possible to drag and drop files from WaveLab Elements to Steinberg's Nuendo.

- To reorder a tab within its own tabbed group, drag horizontally.
- To move a tab to another window, drag vertically.
- To open a file, drag it from the **File Browser** window of WaveLab Elements, from the File Explorer/macOS Finder, or from another application to the tab bar.
- To create a copy of a file, drag its tab vertically to another position of the tab bar, then press **Ctrl/Cmd**, and release the mouse button.
- You can dock and undock tool windows and meter windows via dragging.

RELATED LINKS
Docking and Undocking Tool Windows and Meter Windows on page 47

Dragging in the Audio Editor and in the Audio Montage Window

You can perform different operations, depending on where in the **Audio Editor** or in the **Audio Montage** window you drag.

- To insert an audio file into another audio file, drag the title bar of the file onto the waveform of another file. You can also drag an audio file from the **File Browser** window, the File Explorer/macOS Finder, or from another application into the **Audio Editor**.
- To move a marker, drag it to another position on the time ruler.
- To create a copy of a marker, press **Shift**, and drag it to another position on the time ruler.
- To delete a marker, drag it upwards outside the time ruler.
- To copy an audio selection, drag a selected region of audio onto the waveform area of the same file or another file.
- To change the extent of a selection range, position the edit cursor at the start/end of the selection range, and drag to the left or right.
- To move the edit cursor without losing the current selection, and to snap it to an anchor, press **Shift**, and move the mouse near the audio file/montage cursor. The mouse cursor shape changes, and you can drag the cursor left and right.
- To move the edit cursor without changing or losing the current selection, press **Shift**, click the edit cursor, and drag it to another position.
- To scroll the waveform horizontally, click the bar above the time ruler, and drag left or right. You can also click anywhere on the waveform using the middle mouse button, and drag left or right.
- To create a generic marker from a selected text, drop the text that you have selected in an external application onto the time ruler. The text becomes the marker name.
- To create a stereo copy of a mono file, or a mixed copy of a stereo file, drag a tab to another position of the tab bar, press **Ctrl**-**Alt** /-**Opt**, and release the mouse button.

RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196
File Browser Window on page 69

Dragging in the Master Section

You can reorder effects in the **Master Section** via dragging.

- To change the order of processing in the **Master Section**, drag effects to different effects slots.

RELATED LINKS
Master Section Window on page 296

Zooming

WaveLab offers you a wide range of options and tools for zooming in the **Audio Editor** and in the **Audio Montage** window.

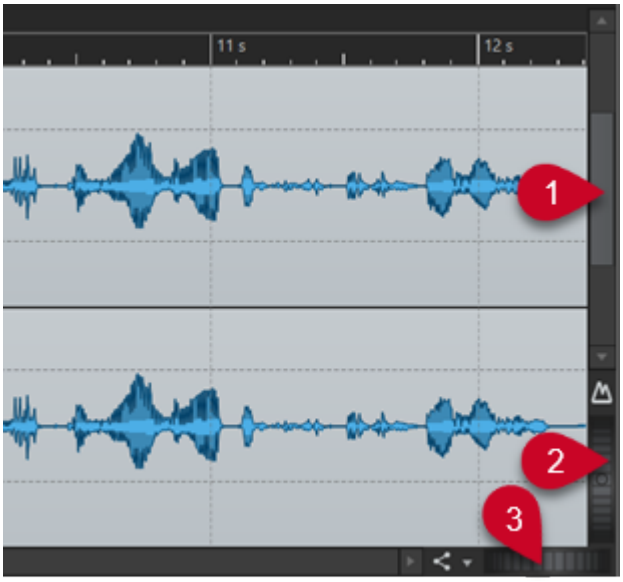
To zoom in or out, you can choose from dedicated controls, tools, and buttons, and you can use the mouse or the computer keyboard, so that, regardless of what part of the workspace you are

currently working in, you can easily access the zooming features best suited to your workflow and goals.

Zooming via the Scroll Wheels

In the **Audio Editor** or in the **Audio Montage** window, you can use the scroll wheels to zoom in or out.

PROCEDURE

- Do one of the following:
- 

  To zoom horizontally, click the **Horizontal Zoom** scroll wheel (**3**), and drag left or right, or use the mouse wheel.

  To fully zoom out, double-click the **Horizontal Zoom** scroll wheel (**3**).

  NOTE

  - When you zoom out as far as possible, the entire file fits in the window.
  - When you zoom in as far as possible, each sample occupies several pixels on the screen. This allows for sample-accurate editing of waveforms.

- To zoom vertically, click the **Vertical Zoom** scroll wheel (**2**), and drag up or down, or use the mouse wheel.

  To switch between an optimized height and the default zoom, double-click the **Vertical Zoom** scroll wheel (**2**).

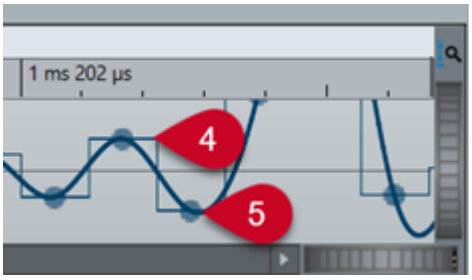
  NOTE

  As you progressively zoom in, only part of the total height of the waveform is displayed. The vertical scrollbar (**1**) allows you to precisely determine which area to display. You can check the ruler to see which detail of the waveform is currently displayed.

  To optimize the vertical zoom of the waveform, press **Ctrl/Cmd**, then the time ruler. Keep the mouse button pressed, and drag the mouse up or down.

NOTE

- When the zooming level is very high, each sample is represented by a step (**4**) and a dot (**5**). The steps show the actual digitized state. The dots make it easier to identify the samples, especially with zeroed samples.



- The curve also represents an estimation of the analog reconstructed signal, to provide hints on true peaks.

RELATED LINKS
Zooming on page 77

Zooming with the Mouse

In the **Audio Editor** or in the **Audio Montage** window, you can click and drag or use the mouse wheel to zoom in or out.

PROCEDURE

- You have the following options:
  - To zoom horizontally, position the mouse pointer over the time ruler. Click, and drag up or down.

    TIP

    To maintain the mouse pointer position while doing so, press **Shift** before you drag. Alternatively, press **Ctrl/Cmd** - **Shift**, point at a waveform, and use the mouse wheel.
  - To zoom horizontally around the edit cursor position, press **Ctrl/Cmd** - **Shift**, point at a waveform, and use the mouse wheel.

    TIP

    To zoom around the mouse pointer position, press **Ctrl/Cmd** instead.
  - To zoom vertically, press **Shift**, point at a waveform, and use the mouse wheel.

RELATED LINKS
Zooming on page 77

Zooming while Selecting an Audio Range

In the **Audio Montage** window and in the **Audio Editor**, you can zoom in or out while selecting an audio range.

PROCEDURE

1. In the **Audio Montage** window or in the **Audio Editor**, click and drag to select an audio range.
2. Click into the selection and, with the mouse button pressed, press and hold down **Shift**.
3. Move the mouse up to zoom in or down to zoom out.
4. To adjust the selected audio range, with the mouse button still pressed, release **Shift**, and drag to the left or to the right.

RELATED LINKS
Zooming on page 77

Zooming with the Keyboard

A quick way to zoom in or out in the **Audio Editor** or in the **Audio Montage** window is to use the arrow keys on your computer keyboard.

PROCEDURE

- You have the following options:
  - To zoom horizontally, press the **Up Arrow** or the **Down Arrow**.
  - To zoom vertically, hold **Shift**, and press the **Up Arrow** or the **Down Arrow**.
  - To zoom vertically to fit the available height, press **Ctrl/Cmd** - **Shift** - **Up Arrow**.
  - To fully zoom out, press **Ctrl/Cmd** - **Down Arrow**.
  - To fully zoom in, press **Ctrl/Cmd** - **Up Arrow**.

RELATED LINKS
Global Preferences on page 405
Zooming on page 77

Zoom Options on the Tab Bar

Various zoom options are available via the tab bar, both in the **Audio Montage** window and in the **Audio Editor**.

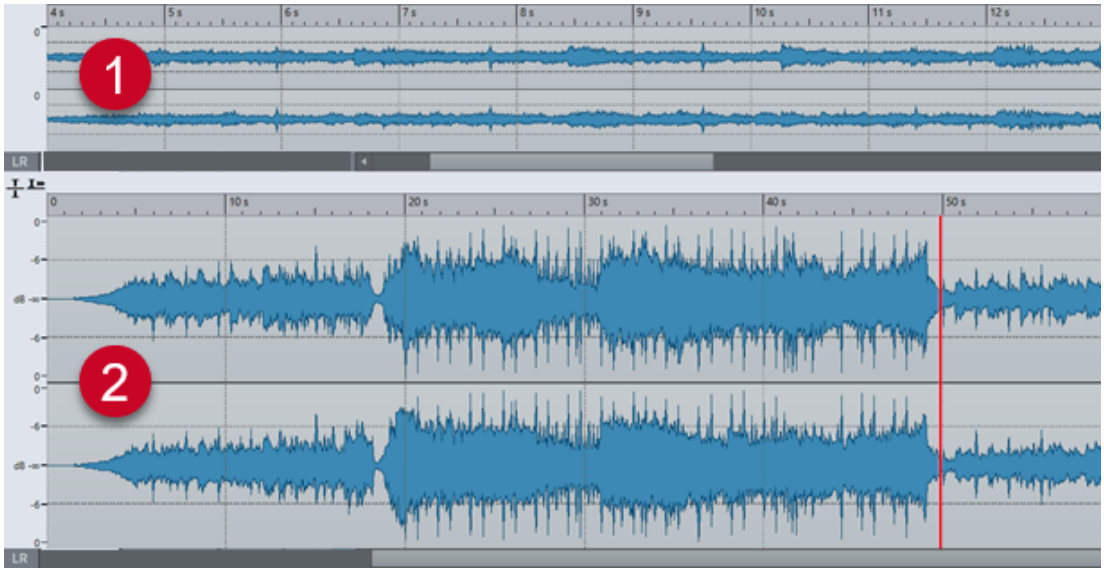
The zoom options are available in the **Zoom** section of the **View** tab, in the **Audio Editor** and in the **Audio Montage** window.

RELATED LINKS
View Tab (Audio Editor) on page 121
View Tab (Audio Montage) on page 201
Edit Tab (Audio Montage) on page 204
Zooming on page 77

Audio Editor-Specific Zoom Options

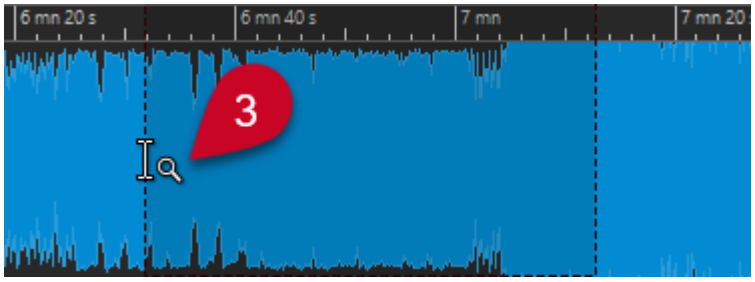
The **Audio Editor** offers a few zoom options that are exclusively available in this editor, such as an additional **Zoom** tool.

The **Audio Editor** allows for separate zoom level settings for the overview (**1**) and the main view (**2**).



In the overview, a range indicator on the time ruler indicates which section of the file is displayed in the main view.

You can use the **Zoom** tool (**3**) in both the main view and the overview, to zoom in on a detail of the waveform so that it occupies the entire window.



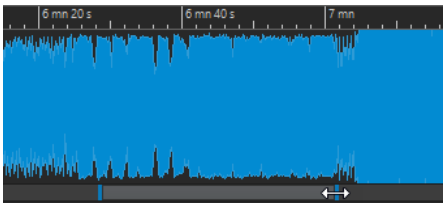
RELATED LINKS
Zooming on page 77
Setting Zoom Levels in the Audio Editor on page 81
Zooming with the Zoom Tool on page 82
Zooming via the Level Ruler on page 83

Setting Zoom Levels in the Audio Editor

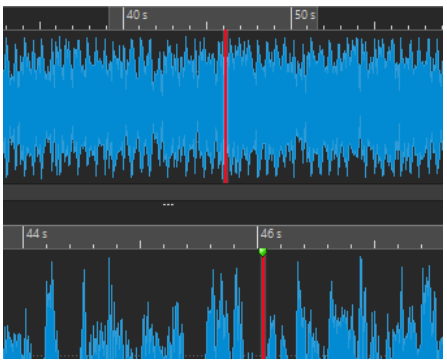
In the **Audio Editor**, you can set different zoom levels for the overview and the main view area.

PROCEDURE

- You have the following options:
  - To adjust the zoom level using the scrollbar, drag the edges of the scrollbar.



- To scroll in the main view, drag the range indicator. The range indicator is located at the top of the overview display.



- To adjust the zoom level, drag the edges of the range indicator.

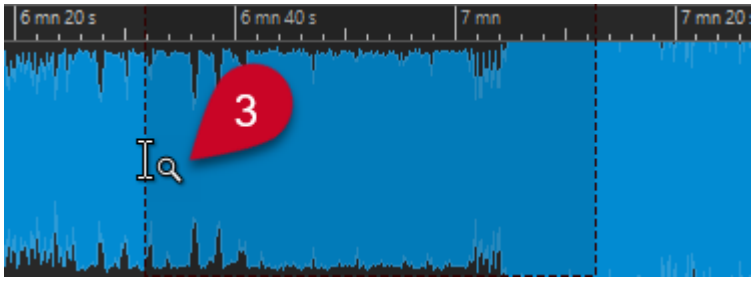
RELATED LINKS
Zooming on page 77
Audio Editor-Specific Zoom Options on page 81

Zooming with the Zoom Tool

You can use the **Zoom** tool to enlarge a detail of the waveform and to display it in the main view.

PROCEDURE

1. In the **Audio Editor**, activate the **View** tab.
2. In the **Zoom** section, click **Zoom**. When you hover the mouse over the main view, the mouse pointer changes to a magnifying glass icon (**3**).



3. Click and drag left or right to make a selection.
4. Release the mouse button.

TIP

Alternatively, you can skip the first two steps and make a selection in the overview. Regardless of the status of the **Zoom** button in the **Zoom** section, when you hover the mouse over the overview, the mouse pointer corresponds to the **Zoom** tool.

RESULT

The selection is magnified and fills up the entire main view.

RELATED LINKS

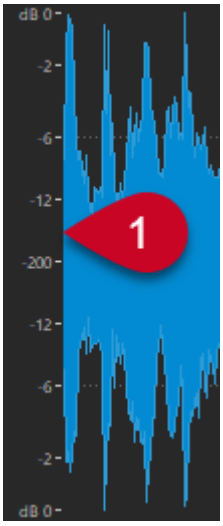
Audio Editor-Specific Zoom Options on page 81
Zooming on page 77

Zooming via the Level Ruler

With the waveform displayed in the **Audio Editor**, you can perform zoom options via the level ruler.

PROCEDURE

- You have the following options:
  - To zoom vertically, position the mouse pointer over the level ruler (**1**). Click, and drag left or right.



  - To reset the vertical zoom to 0 dB, double-click the level ruler.
  - To set the vertical zoom to the best level, that is, the currently displayed minimum and maximum samples, set the level ruler to 0 dB, and double-click the level ruler.

RELATED LINKS

Audio Editor-Specific Zoom Options on page 81
Zooming on page 77

Audio Montage-Specific Zoom Options

The **Audio Montage** window offers a few zoom options that are exclusively available in this editor.

You can use additional zoom buttons in the **Audio Montage** window, and there are track-related zoom options.

RELATED LINKS

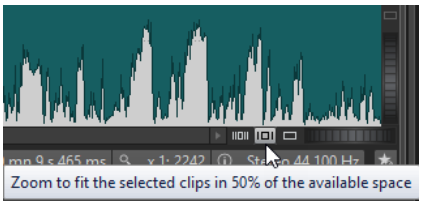
Zooming with the Zoom Buttons on page 84
Zooming to Display More or Less Tracks on page 84

Zooming with the Zoom Buttons

The zoom buttons in the **Audio Montage** window allow you to apply zoom presets.

PROCEDURE

- You have the following options:
  - To fit the active clips into 25%, 50%, or 100% of the available space, click the corresponding buttons.



  - To select a specific area, click **Ctrl/Cmd**, and drag the rectangle over the tracks and clips that you want to zoom in on.

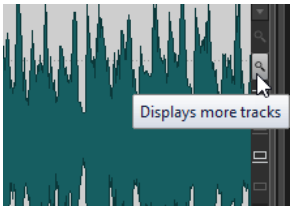
RELATED LINKS
Audio Montage-Specific Zoom Options on page 83
Zooming on page 77

Zooming to Display More or Less Tracks

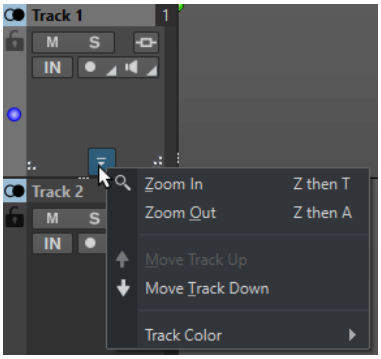
You can zoom in and zoom out to display more or less tracks in the **Audio Montage** window.

PROCEDURE

- You have the following options:
  - To display more tracks, click the smaller magnifying glass icon.



  - To display fewer tracks, click the larger magnifying glass icon.
  - To make a single track fit the entire **Audio Montage** window, click the down arrow at the bottom of the track control area. Select **Zoom In** from the **Track Settings** pop-up menu.
  - To zoom out again, click the down arrow at the bottom of the track control area, and select **Zoom Out**.



You can also right-click a track and select **Display Whole Clip** from the pop-up menu.

RELATED LINKS
Audio Montage-Specific Zoom Options on page 83
Track Control Area on page 196
Zooming on page 77

Presets

You can create presets to save your preferred settings.

WaveLab Elements includes a selection of factory presets that are available for most dialogs.

In addition to this, you can save customized presets, which are available after restarting the application.

Presets are saved as single files and can be organized in subfolders. The root folder of the preset is unique for each type of preset and cannot be changed.

RELATED LINKS
Saving Presets on page 85
Loading Presets on page 85
Saving Default Presets for VST Plug-ins on page 87

Saving Presets

You can save presets and load them at a later point in time.

PROCEDURE

1. Open the dialog that you want to use, and modify the parameters.
2. Open the **Presets** pop-up menu, and select **Save As**.
3. Optional: Click the folder icon, and enter a name for the subfolder that you want to use as the location for this preset.
4. Type in a name.
5. Click **Save**.

RELATED LINKS
Loading Presets on page 85

Loading Presets

To apply a saved preset or a factory preset to a dialog or to a plug-in, you must load the preset.

PROCEDURE

1. In the dialog, open the **Presets** pop-up menu.
2. Select the preset that you want to apply.

RELATED LINKS
Saving Presets on page 85

Modifying Presets

You can modify presets and save the changes.

PROCEDURE

1. Open the dialog that you want to use.
2. Load the preset that you want to modify.
3. Modify the parameters of the dialog.
4. Open the **Presets** pop-up menu, and select **Save**.

Deleting Presets

PROCEDURE

1. Open the dialog that you want to use.
2. Select the preset that you want to delete.
3. Open the **Presets** pop-up menu, and select **Organize Presets**.
4. In the File Explorer/macOS Finder, select the preset file that you want to delete, and press **Delete**.

Temporary Presets

Some dialogs allow you to save and load up to five temporary presets, which is useful to quickly test and compare different settings.

RELATED LINKS
Saving Presets Temporarily on page 86
Restoring Temporary Presets on page 86

Saving Presets Temporarily

PROCEDURE

1. Open the dialog that you want to use, and make adjustments as required.
2. Open the **Presets** pop-up menu.
3. From the **Store Temporarily** submenu, select a slot.

RELATED LINKS
Temporary Presets on page 86
Restoring Temporary Presets on page 86

Restoring Temporary Presets

PROCEDURE

1. Open the dialog in which you have saved a preset.
2. Open the **Presets** pop-up menu.
3. From the **Restore** submenu, select a preset.

RELATED LINKS
Temporary Presets on page 86
Saving Presets Temporarily on page 86

Saving Default Presets for VST Plug-ins

You can save your effect parameter settings for VST 3 and VST 2 plug-ins as the default effect preset, which allows you to load them automatically, every time you create a new instance of the effect.

PROCEDURE

1. Open the plug-in for which you want to customize the default preset.
2. At the top of the plug-in window, click the **Presets** button.

3. Do one of the following:
   - For VST 3 plug-ins, select **Default Preset** > **Save as Default Preset**.
   - For VST 2 plug-ins, select **Default Bank** > **Save as Default Bank**.

RESULT

The effect settings are saved as the default preset. Every time that you open a new instance of the effect, the default preset is loaded automatically.

RELATED LINKS
Loading Default Presets on page 87
Removing Default Presets on page 88

Loading Default Presets

You can load plug-in parameter settings that you have saved as the default preset.

PROCEDURE

1. Open the plug-in for which you want to load the default preset.
2. At the top of the plug-in window, click the **Presets** button.

3. Do one of the following:
   - For VST 3 plug-ins, select **Default Preset** > **Load Default Preset**.
   - For VST 2 plug-ins, select **Default Bank** > **Load Default Bank**.

RELATED LINKS
Saving Default Presets for VST Plug-ins on page 87
Removing Default Presets on page 88

Removing Default Presets

You can remove the preset that you have saved as the default preset.

PROCEDURE

1. Open the plug-in for which you want to remove the default preset.
2. At the top of the plug-in window, click the **Presets** button.

3. Do one of the following:
   - For VST 3 plug-ins, select **Default Preset** > **Remove Default Preset**.
   - For VST 2 plug-ins, select **Default Bank** > **Remove Default Bank**.

RESULT

The next time that you open a new instance of the selected plug-in, the factory default preset is applied.

RELATED LINKS

Saving Default Presets for VST Plug-ins on page 87
Loading Default Presets on page 87

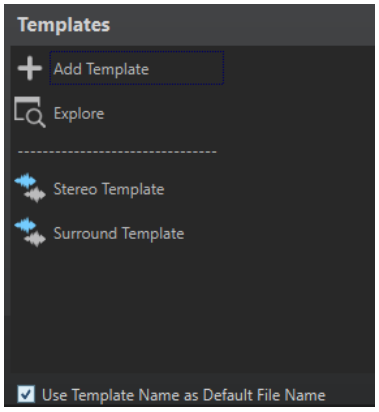
Templates

You can save your preferred file settings as templates, which saves you time and effort when creating new audio files or audio montages.

Templates Tab

The **Templates** tab displays all templates and allows you to create and open templates.

- To open the **Templates** tab, select **File** > **New**, select a file type, and click **Templates**.



List of the available templates

Lists all saved templates.

Add Template

Allows you to add a new template or update an existing template.

Explore

Opens the folder where the template files are located and allows you to rename and delete templates.

Use Template Name as Default File Name

If this option is activated and you click **Add Template**, a new file is created and uses the name of the template. If this option is deactivated, the name of the new file is “untitled”.

Creating Templates

You can create a template from an active audio montage or audio file and use it as a basis for new files.

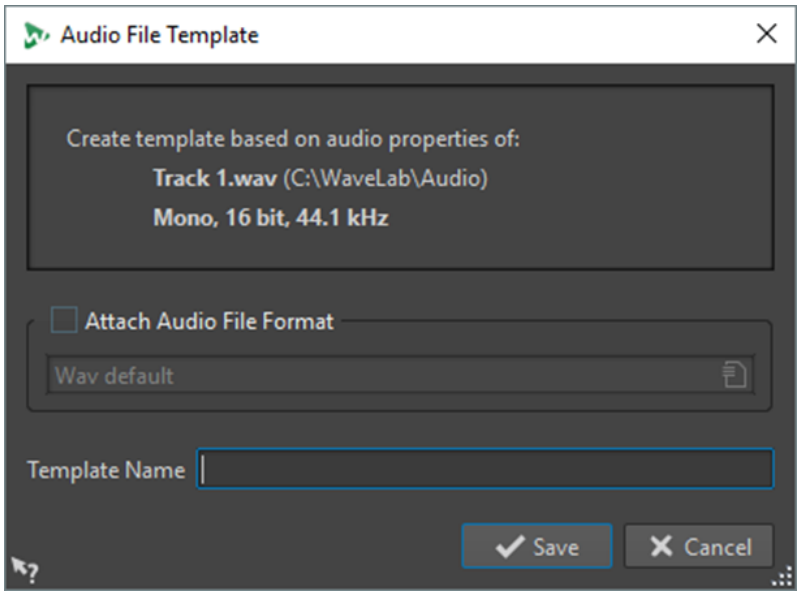
PROCEDURE

1. Select **File** > **New**.
2. Select the file type for which you want to create a template.
3. Click **Templates**.
4. In the **Templates** tab, do one of the following:
   - To create a new template, click **Add Template**, make adjustments as required, and click **Create**.
   - To update an existing template, click **Add Template**, enter the name of the template that you want to update, and click **Create**.
5. Optional: If you want to use the template name as the default file name, activate **Use Template Name as Default File Name**.
6. When saving or updating an audio file template or an audio montage template, you can set additional parameters.
   - When saving an audio file template, the **Audio File Template** dialog opens, allowing you to choose if you want WaveLab Elements to attach an audio file format.
   - When saving an audio montage template, the **Audio Montage Template** dialog opens, allowing you to select whether to include track plug-ins, clips, and/or markers. You can also choose if you want WaveLab Pro to attach an audio file format.

Audio File Template Dialog

The **Audio File Template** dialog displays the audio properties of the audio file template that you create. You can also specify whether to always associate a specific audio file configuration with optional metadata when creating an audio file template or not.

- To open the **Audio File Template** dialog, select **File** > **New**. Click **Audio File**, and click **Templates**. On the **Templates** tab, click **Add Template**.



Attach Audio File Format

Proposes the audio file configuration specified below by default, whenever you open the **Render** or **Save As** dialogs.

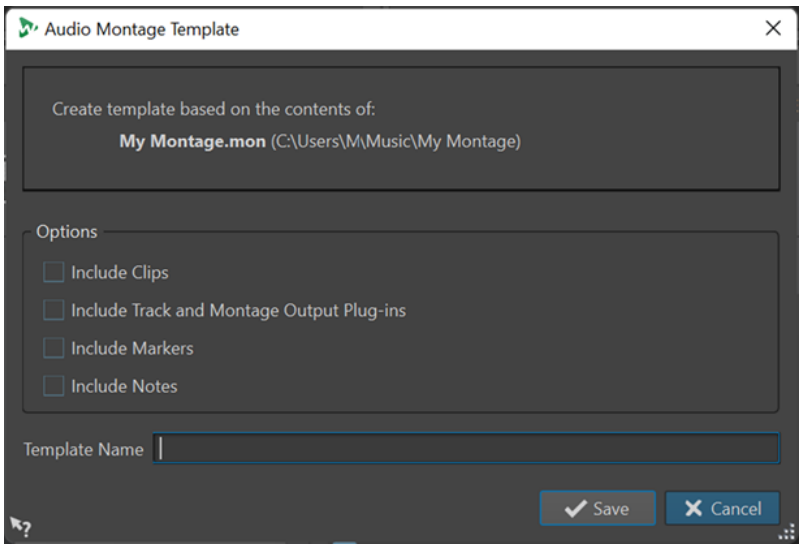
Template Name

Allows you to enter a name for the template.

Audio Montage Template Dialog

In the **Audio Montage Template** dialog, you can choose from various options when creating an audio montage template.

- To open the **Audio Montage Template** dialog, select **File** > **New**. Click **Audio Montage**, and click **Templates**. In the **Templates** tab, click **Add Template**.



Include Clips

Saves clips in the template.

Include Track and Montage Plug-ins

Saves track plug-ins and montage plug-ins as part of the template.

Include Markers

Saves markers as part of the template.

Include Notes

Saves notes that you have written in the **Notes** window as part of the template.

Template Name

Allows you to enter a name for the template.

RELATED LINKS
Notes Window on page 282

Creating Files From Templates

You can create a file from a template to use its settings.

PROCEDURE

1. Select **File** > **New**.
2. Select the file type that you want to create.
3. Click **Templates**.
4. From the list of available templates, select a template as the basis for the new file.

Deleting Templates

PROCEDURE

1. Select **File** > **New**.
2. Select the file type for which you want to delete templates.
3. Click **Templates**.
4. Click **Explore**.
5. In the File Explorer/macOS Finder, delete the templates.

Renaming Templates

PROCEDURE

1. Select **File** > **New**.
2. Select the file type for which you want to rename templates.
3. Click **Templates**.
4. Click **Explore**.
5. In the File Explorer/macOS Finder, rename the templates.

Setting Templates as Default

You can set a template as the default template, so that it opens when you click **New** on the command bar.

PROCEDURE

1. Select **File** > **New**.
2. Select the file type that you want to open.
3. Select **Templates**.
4. Right-click a template, and select **Set as Default**.

RELATED LINKS
Command Bar on page 52

Defining Shortcuts for Templates

You can define key sequences and keywords for templates. This allows you to quickly open a template.

When you create templates from shortcuts, the option **Use Template Name as Default File Name** on the **Templates** tab is taken into account.

PROCEDURE

1. Select **File** > **New**.
2. Select the file type that you want to open.
3. Select **Templates**.
4. Right-click a template, and select **Define Shortcut**.
5. In the **Shortcut Definitions** dialog, edit the shortcut for the selected template.
6. Click **OK**.

RELATED LINKS
Templates Tab on page 88

Work Folders vs. Document Folders

WaveLab Elements distinguishes between two types of folders: work folders and document folders.

- **Work folders** are used for saving temporary files.
- **Document folders** contain WaveLab Elements-specific files, such as audio files and audio montages.

RELATED LINKS
Folders Tab (Preferences) on page 93

Specifying Folders for Opening and Saving Files

You can choose which document folder to open when you perform an open or save operation. You can also specify up to three work folders for temporary files.

PROCEDURE

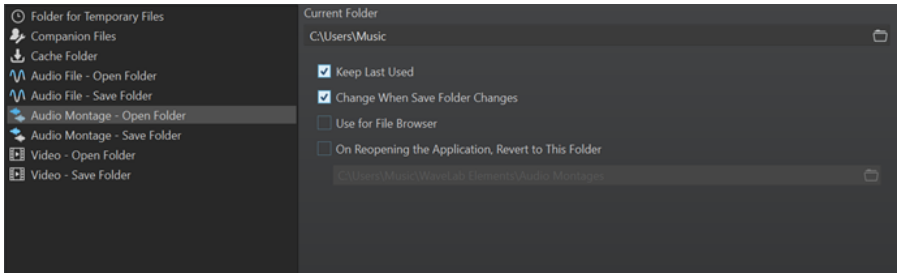
1. Open the file for which you want to specify folders.
2. Select **File** > **Preferences** > **Folders**.
3. On the **Folders** tab, select the type of folder.
4. Specify a location in the **Folder** field.
5. Optional: Depending on the selected type of folder, you can set additional parameters.

RELATED LINKS
Folders Tab (Preferences) on page 93

Folders Tab (Preferences)

On the **Folders** tab, you can specify default document folders and work folders for each file type.

- To open the **Folders** tab, select **File** > **Preferences** > **Folders**.



In the list on the left, you can specify the folder type that you want to make adjustments for.

Folder for Temporary Files

Allows you to specify a folder for saving temporary files.

Cache Folder

You can activate **Use Cache Folder for Decoded Files** to specify a cache folder. The cache folder contains wave files that are created when you are working with files in compressed file formats, such as MP3 files. To prevent the cache folder from growing indefinitely, WaveLab Elements checks the date of each file in this folder and deletes files that were created before a specific number of days. You can specify the number of days with the **Delete Files Older Than** option.

If **Use Cache Folder for Decoded Files** is deactivated, the compressed files are decoded each time they are opened.

Audio File – Open Folder/Save Folder

The default Open and Save folders for audio files.

Audio Montage – Open Folder/Save Folder

The default Open and Save folders for audio montage files.

Depending on the selected item, different settings are available on the right side of the dialog.

Current Folder

Displays the folder that is used as default. You can click the folder button to the right to navigate to a folder or to create a new folder.

Keep Last Used

Uses the last folder for saving or opening files of the selected type.

Change When Save Folder Changes/Change When Open Folder Changes

Updates the default Open folder when you change the default Save folder, and vice versa. You can activate this option for both the Save folder and the Open folder if you want a specific file type to use the same folder for saving and for opening this type of file.

Use for File Browser

In the **File Browser**, the folder does not change when you switch between file types by default.

If you activate **Use for File Browser** and deactivate **Keep Last Used**, the folder location that you have selected in the **Current Folder** field of each file type is displayed when you switch between file types in the **File Browser**.

If you activate **Use for File Browser** and **Keep Last Used**, the folder that you have selected in the **Current Folder** field of each file type is displayed when you select a file type for the first time. When you then browse to another folder in the **File Browser**, the **Keep Last Used** behavior is used. That is, the last used folder for this file type is displayed when you select the file type.

You can set these parameters for each file type independently.

On Reopening the Application, Revert to This Folder

Allows you to restore a specific folder, each time you open WaveLab Elements. As a result, any changes to Save/Open folders are only temporary and reset when you restart WaveLab Elements.

Copying Audio Information to the Clipboard

You can copy information about the name and location of the selected audio file, including any selection information and the cursor position. This information can be pasted into an external text application.

This is useful if you need accurate file path/selection information when writing a script, for example.

PROCEDURE

1. Click the **File** tab.
2. Click **Info**.
3. Click **Copy to Clipboard**, and select the information that you want to copy to the clipboard.

Setting the Focus on the Current File

When you are editing inside a floating window or a tool window and you want to switch the focus back to the **Audio Editor** or the **Audio Montage** window, you can use the **Set Focus on Current File** option.

PROCEDURE

- In any window, press **Ctrl/Cmd** - **F12** to set the focus on **Audio Editor** or the **Audio Montage** window.

Navigation Sync

Navigation Sync helps you to compare audio material by synchronizing different views of audio files and audio montages, so that any navigation actions you perform in one of them are automatically applied to the others in real time.

- Synchronization encompasses the scroll position, horizontal and vertical zooming, time selections, and the edit cursor position.
- The option to synchronize navigation is available in both the **Audio Editor** and the **Audio Montage** window. Comparison is not restricted to files in the same editor; that is, you can also synchronize an **Audio Editor** view with an **Audio Montage** view.
- It is possible to compare files with different sample rates and of different lengths.

NOTE

In the **Audio Editor**, **Navigation Sync** is exclusively available for the main view.

Synchronizing Navigation Actions for Selected Views

To automatically propagate navigation actions that you perform in one view of the **Audio Editor** or the **Audio Montage** window to other views in real time, you can activate **Navigation Sync** for each of them. This allows you to compare different versions of your audio material and to continuously keep an eye on the relevant areas in all views.

PROCEDURE

- To select a view for **Navigation Sync** in the **Audio Editor** or the **Audio Montage** window, activate the feature via the **Navigation Sync** button at the bottom of the view.

  NOTE

  - You can activate as many views as you like. The number of views that can be synchronized simultaneously is not limited.
  - The respective views do not have to be fully visible for the synchronization to take effect.

  TIP

  To switch between the last two active tabs, press **F5**.

RESULT

Once you perform any of the following navigation actions in one of the views, they are automatically applied in all other views whose **Navigation Sync** button is activated:

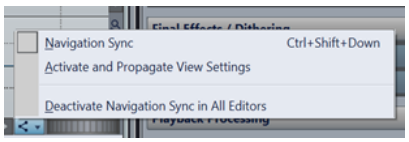
- Scrolling
- Zooming
- Making time selections
- Moving the edit cursor

RELATED LINKS
Navigation Sync on page 95
Navigation Sync Menu on page 96

Navigation Sync Menu

You can set parameters for the **Navigation Sync** feature via the **Navigation Sync** menu.

To open the **Navigation Sync** menu, click the down arrow to the right of the **Navigation Sync** button.



Navigation Sync

Activates **Navigation Sync** for this view. As a result, the view automatically inherits the settings of any other view whose **Navigation Sync** button is activated. In other words, the active view acts as the receiver, in the way that the navigation settings of any other view with **Navigation Sync** activated, which you can think of as the sender, are copied to it.

NOTE

Selecting this option corresponds to clicking the **Navigation Sync** button.

Activate and Propagate View Settings

Activates **Navigation Sync** and automatically propagates the navigation settings of this view to all other views whose **Navigation Sync** button is activated. In other words, the active view acts as the sender, in the way that its navigation settings are copied to other views with **Navigation Sync** activated, which act as the receivers.

TIP

Alternatively, to apply this option, you can also press **Ctrl/Cmd** while clicking the **Navigation Sync** button.

Deactivate Navigation Sync in All Editors

Deactivates **Navigation Sync** for all views.

TIP

Alternatively, to apply this option, you can also press **Alt/Opt** while clicking the **Navigation Sync** button.

Playback and Transport

WaveLab offers you a wide range of options for playback and transport.

RELATED LINKS
Transport Bar on page 97

Transport Bar

The **Transport Bar** allows you to control the playback of an audio file or an audio montage, to navigate to various positions in your audio, and to open the **Recording** dialog.

The entire range of features of the transport bar is available in the **Audio Editor** and in the **Audio Montage** window.

By default, the extended transport bar options are hidden.

- To activate the extended transport bar, click **Extend Transport Bar** .

Presets

Allows you to save and apply presets.

Skip Range

If this button is activated, playback skips the selected range and any region within exclusion markers.

Perform Pre-Roll/Perform Post-Roll

Activates pre-roll or post-roll for the commands **Play from Anchor**, **Play until Anchor**, and **Play Audio Range**.

NOTE

Pre-roll allows you to start playback slightly before a specific position.

Post-roll stops playback slightly after a specific position.

Right-click the button to select the pre-roll or post-roll length and to specify which commands you want to apply pre-roll/post-roll to. To edit the pre-roll/post-roll times, select **Edit Pre-Roll and Post-Roll Times**.

Play Audio Range

Plays the selected audio range. Post-roll and pre-roll settings are taken into account. Right-click the button to open a menu with related options and auto selection modes.

- If **Auto Select Range** is activated, the range is automatically selected according to the editing actions.
- If **Play from Start of New Time Selection** is activated when you select a range by dragging the mouse from left to right and starting playback, playback starts from the beginning of the selection. If you stop and start playback again or move the edit cursor, playback starts from the edit cursor position. If this option is deactivated, playback always starts from the edit cursor position.

If **Play from Start of New Time Selection** and **Loop** are activated, playback restarts automatically when you select a new range.

- If **Solo Track When Editing** is activated and you keep the mouse button pressed when editing ranges in the **Audio Montage** window, the track is soloed when you start playback using the shortcuts for **Play Audio Range**, **Play from Anchor**, or **Play until Anchor**. This option is only available in the **Audio Montage** window.

You can choose from different audio ranges for playback:

- **Time Selection**
- **Region between Marker Pairs**

Additional options that are exclusively available in the **Audio Montage** window:

- **Clip**
- **Crossfade**
- **Fade In**
- **Fade Out**

Play until Anchor/Play from Anchor

Plays until or from the anchor. Pre-roll and post-roll settings are taken into account. Right-click the button to open a menu with related options and auto selection modes.

- If **Auto Select Anchor** is activated, the anchor is automatically selected according to the editing actions.
- If **Space Bar Triggers Play from Anchor** is activated and you press **Space** to start playback, the selected **Play from Anchor** setting is taken into account. If the selected anchor is not available, playback starts from the default playback position.
- If **Solo Track When Editing** is activated and you keep the mouse button pressed when editing anchors in the **Audio Montage** window, the track is soloed when you start playback using the shortcuts for **Play Audio Range**, **Play from Anchor**, or **Play until Anchor**. This option is only available in the **Audio Montage** window.

You can select which anchor to use as a reference for the commands **Play from Anchor** and **Play until Anchor**. In case there are multiple possibilities, such as multiple markers, the last selected item is used as a reference anchor or, if no item was selected, the closest item near the edit cursor position is used.

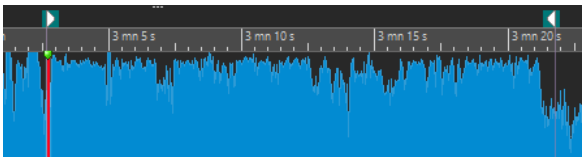
You can select one of the following anchors:

- **Edit Cursor**
- **Start of File**
- **Start of Selected Time Range**
- **End of Selected Time Range**
- **Any Marker**
- **Region Start Marker**
- **Region End Marker**

Additional options that are exclusively available in the **Audio Montage** window:

- **Clip Start**
- **Clip End**
- **Selected Envelope Point in Active Clip**

When an anchor is detected, for example, a region marker pair, this is indicated by a green anchor marker.



Move Cursor to Start of File/Move Cursor to End of File

Moves the edit cursor to the start/end of the file.

Move Playback Position Backwards/Move Playback Position Forwards

Moves the edit cursor position to the left/right. If you click during playback, playback jumps to the new edit cursor position.

To move the edit cursor to the start/end of the file, press **Ctrl/Cmd**, and click the **Move Playback Position Backwards/Move Playback Position Forwards** buttons.

Navigation anchors allow you to move the edit cursor to specific positions in the audio file or audio montage. Right-click the **Move Playback Position Backwards/Move Playback Position Forwards** buttons to open the **Navigation Anchors** pop-up menu. Here, you can set the type of navigation anchor. If you click during playback, playback continues from the anchor position.

Loop

Activates loop mode. Right-click the loop button to select whether to loop continuously or only a few times.

Stop Playback

Stops playback. If playback is already stopped, the edit cursor is moved to the previous start position. Right-click the button to open the **Move Cursor Back to Start Position** pop-up menu.

- If **After Standard Playback** is activated, the edit cursor jumps back to the start position when regular playback stops.
- If **After Automated Playback** is activated, the edit cursor jumps back to the start position when playback stops after **Play from Anchor**, **Play until Anchor**, or **Play Audio Range**.

Start Playback from Edit Cursor

Starts playing back the active audio file or audio montage from the edit cursor position.

If the audio being played back is not the active audio file, the **Play** button has a different color. This happens if you switch to another file window during playback, for example.

The playback button when playing back in the active window (left) and when playing in another window (right)

You can also start playback from the last stop position. Right-click the button to open the **Lead Sequence** pop-up menu.

- If you select **Start**, playback starts from the cursor position.
- If you select **Resume from Last Interruption**, playback starts from the last stop position.

Record

Opens the **Recording** dialog.

Time Display

Displays the edit cursor or playback position. Click to select another time unit.

RELATED LINKS
Pre-Roll and Post-Roll on page 104

Play Button

Clicking the **Play** ▸ (**Start Playback from Edit Cursor**) button on the transport bar starts playing back the active audio file, an audio montage, or the active clip from the edit cursor position.

You can also use **Space** or the **Enter** key on your keyboard to start playback. Pressing **Space** during playback stops playback. Pressing **Enter** during playback makes playback restart from the last start position.

If the **Loop** button is activated, the audio selection is looped, if available. Otherwise, the region defined by loop markers is looped. If there are no selection ranges or loop markers, the entire file is looped.

The standard play command is not influenced by the **Play Audio Range**, **Play from Anchor**, and **Play until Anchor** options.

Stop Playback Button

The result of clicking the **Stop Playback** button ■ on the transport bar or **0** on your numeric keypad depends on the context.

- If you trigger **Stop Playback** in stop mode, the edit cursor moves either to the previous playback start marker or to the selection start (whichever is closer), until the start of the file is reached.
- If there is no selection or if the edit cursor is positioned to the left of the selection, it is moved to the beginning of the file instead.

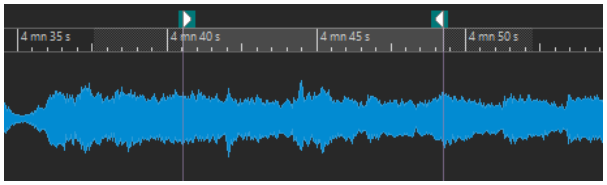
Playing Back Audio Ranges

You can play back audio ranges using the **Play Audio Range** options on the transport bar.

PROCEDURE

1. On the transport bar, right-click **Play Audio Range**, and select the range type that you want to play back.
2. Optional: Activate **Perform Pre-Roll** and/or **Perform Post-Roll**.
3. Position the edit cursor inside the range that you want to play back, or make a selection range.

   The selected range and, if activated, the pre-roll and post-roll times, are displayed on the time ruler.

4. To play back the selected range, click **Play Audio Range** on the transport bar, or press **F6**.

RESULT

The selected range is played back. Any pre-roll and post-roll settings are taken into account. If the **Loop** mode is active, pre-roll is used before the first loop only, and post-roll is only used after the last loop.

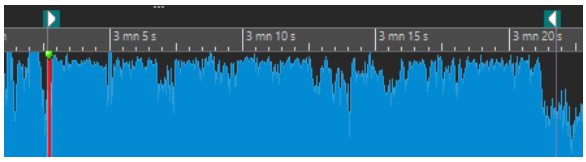
Playing Back from an Anchor or up to an Anchor

You can play back audio from an anchor or up to a specific anchor using the **Play from Anchor** or **Play until Anchor** options on the transport bar.

PROCEDURE

1. On the transport bar, right-click **Play from Anchor** or **Play until Anchor**, and select an anchor type.
2. Depending on the selected anchor type, in the **Audio Editor** and in the **Audio Montage** window, position the edit cursor within the range that you want to play back.

   Example: Select **Region Start Marker**, and click in the area of the region marker pair that you want to play back from/to. As a result, the green anchor marker jumps to the selected anchor.

3. Optional: Activate **Perform Pre-Roll** and/or **Perform Post-Roll**.
4. To play back from the anchor marker, click the **Play from Anchor** button on the transport bar, or press **F7**. To play back to the anchor marker, click the **Play until Anchor** button on the transport bar, or press **F8**.

RESULT

Playback starts from the anchor or stops at the anchor. Pre-roll and post-roll settings are taken into account.

“Play from Anchor” and “Play until Anchor”

The behavior of the **Play from Anchor** or **Play until Anchor** functions on the transport bar depends on the pre-roll and post-roll settings.

Play from Anchor

- If post-roll is activated, playback starts at the anchor position and stops after the post-roll time. If no post-roll is selected, playback continues until the end of the audio file or audio montage.
- If pre-roll is activated, playback starts from the selected anchor, minus the pre-roll time.
- If pre-roll and post-roll are activated, playback starts from the selected anchor, minus the pre-roll time, and stops after the anchor point plus the post-roll time.
- With the loop mode activated, the pre-roll and post-roll settings are taken into account. This enables you to play a loop around the edit cursor position, without further adjustments.

Play until Anchor

- Playback starts from the cursor and stops at the selected anchor. If the cursor is beyond the selected anchor, playback starts at the selected anchor. If pre-roll is activated, it is taken into account.
- If pre-roll is activated, playback starts from the selected anchor, minus the pre-roll time, up to the selected anchor.
- If no anchor is selected, **Play until Anchor** is deactivated.
- The loop settings have no effect.

Using the Auto Selection Mode

Using the auto selection mode, in combination with the playback shortcuts, for playing back audio ranges or anchors makes it easy to monitor your editing operations.

PROCEDURE

1. On the transport bar, right-click the **Play from Anchor** or **Play until Anchor** button, and activate **Auto Select Anchor**.
2. Right-click the **Play Audio Range** button, and activate **Auto Select Range**.
3. In the **Audio Editor** or in the **Audio Montage** window, do one of the following:
   - Make a selection range.
   - Click inside the area of a marker pair.
   - Click a fade in, fade out, or crossfade.
   - Click anywhere in the **Audio Editor** or in the **Audio Montage** window.
   - Drag a marker.

   Depending on your action, the most appropriate range, or anchor, is selected. For example, if you click inside a marker pair, this region is selected as the playback range.

   The time ruler shows the selected range or anchor.

   NOTE

   In **Auto Select Anchor** and **Auto Select Range** mode, you can still change some range and anchor options on the transport bar to play a different range/anchor. However, the range/anchor is reselected when you start editing again with the mouse.
4. Use the playback shortcuts to start playback.
   - To play back the selected audio range, press **F6**.
   - To play back from an anchor, press **F7**.
   - To play back up to an anchor, press **F8**.

RESULT

The selection range is played back, or playback starts from the anchor or stops at the anchor. Pre-roll and post-roll settings are taken into account.

NOTE

A selection range has priority over any other range. To grant other ranges permission to be auto-selected, deselect the selection range.

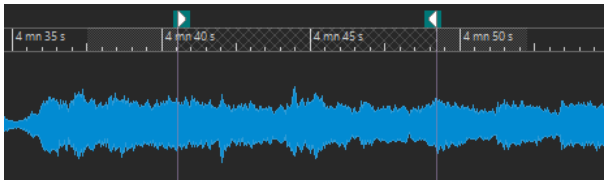
Skipping Sections During Playback

You can automatically skip a selected audio range during playback, which allows you to exclude specific sections from auditioning.

PROCEDURE

1. On the transport bar, activate **Skip Range**.
2. Activate **Perform Pre-Roll** and **Perform Post-Roll**.
3. To be able to use the **Play Audio Range** function, activate one of the **Ranges** modes.
4. Depending on the **Ranges** mode, do one of the following:
   - If you have activated **Time Selection**, make an audio selection in the waveform window.
   - If you have activated **Region Between Marker Pairs**, click between a marker pair.

   The audio range to be skipped is displayed on the time ruler, along with the pre-roll and post-roll times.



5. Select **Play Audio Range**, or press **F6**.

RESULT

The selected range is skipped during playback.

TIP

You can also use the factory preset for skipping selections during playback. Activate **Skip Range**, make an audio selection, and press **Shift** - **F6**.

NOTE

With a time selection or exclusion start and end markers set, this mode also works with the **Play** ▸ (**Start Playback from Edit Cursor**) button. In this case, the pre-roll and post-roll times are ignored.

Loop Playback

You can loop an audio selection, if available.

Loop points are continuously updated during playback. If you change the loop start or end during playback, the loop changes. This allows you to audition selection points for rhythmic material.

If there is no selection range, the entire file is looped.

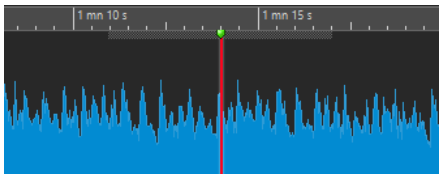
If you loop a section in an audio montage, playback loops within the boundaries of the current selection range. You can define a selection range on any track, even on an empty one. The vertical position of the selection range is of no relevance for loop playback. Only the left and right selection boundaries are taken into account.

RELATED LINKS
Loops on page 351

Pre-Roll and Post-Roll

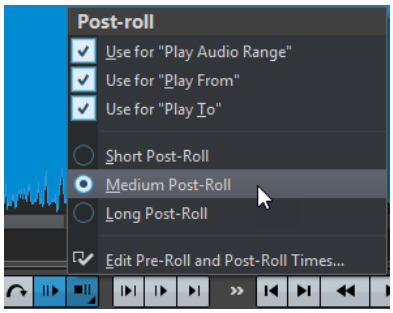
You can start playback slightly before a specific position (pre-roll) and stop it slightly after another position (post-roll).

The position to be defined can be an anchor or the start or end of a range. The pre-roll and post-roll times are displayed on the time ruler.



To activate pre-roll and/or post-roll, activate **Perform Post-Roll** and/or **Perform Pre-Roll** on the transport bar.

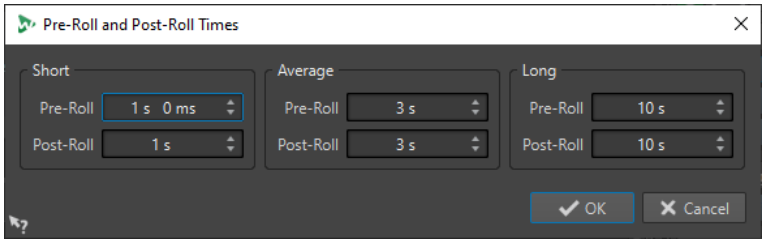
When right-clicking the pre-roll or post-roll button on the transport bar, you can select a pre-roll/post-roll time. You can also select a play option and open the **Pre-Roll and Post-Roll Times** dialog.



Pre-Roll and Post-Roll Times Dialog

The **Pre-Roll and Post-Roll Times** dialog allows you to specify exact pre-roll and post-roll times.

- To open the **Pre-Roll and Post-Roll Times** dialog, right-click the pre-roll or post-roll button on the transport bar, and select **Edit Pre-Roll and Post-Roll Times**.



NOTE

The parameters you set in this dialog are globally applied throughout WaveLab Elements.

Playback Shortcuts

In addition to the buttons on the transport bar, you can use shortcuts to control the playback.

Space

Starts or stops playback. This shortcut can even be used when the **Audio Editor** or the **Audio Montage** window is not the active window.

0 on numeric keypad

Stops playback. If the playback is stopped and you press this shortcut, the edit cursor moves either to the previous playback start marker or to the selection start (whichever is closer), until the start of the file is reached. This is identical to clicking **Stop Playback** on the transport bar. The shortcut is available even when the **Audio Editor** or the **Audio Montage** window is not the active window.

Enter

Starts playback. If pressed during playback, playback restarts from the previous start position. This is the same as clicking **Start Playback from Edit Cursor** on the transport bar.

Alt-Space

Starts playback from the mouse cursor position.

F6

Starts playback of the selected range, depending on the selected option in the **Ranges** section of the transport bar.

F7

Starts playback from the selected anchor, depending on the selected option in the **Anchors** section of the transport bar.

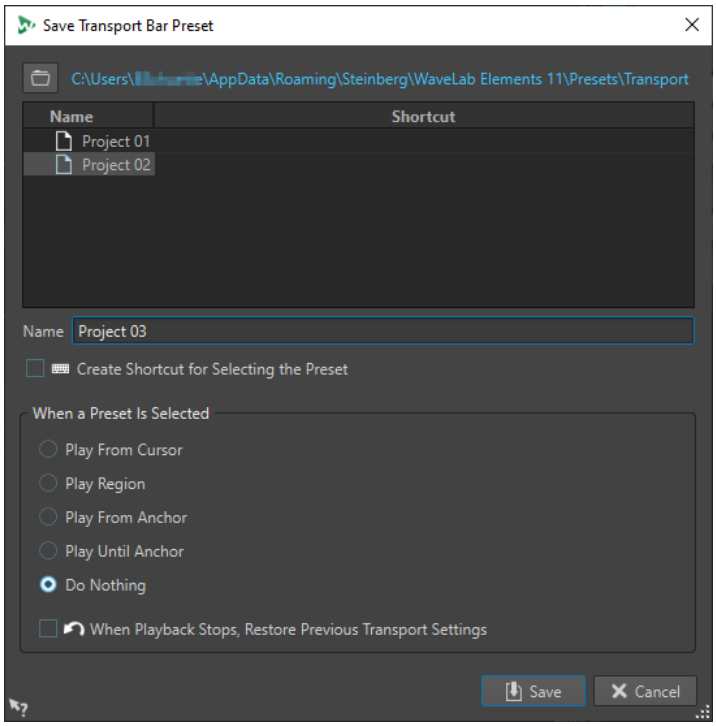
F8

Starts playback and stops it at the selected anchor, depending on the selected option in the **Anchors** section of the transport bar.

Save Transport Bar Preset Dialog

The **Save Transport Bar Preset** dialog allows you to save your preferred transport bar setup as a preset.

- To open the **Save Transport Bar Preset** dialog, click the **Presets** field on the transport bar, and select **Save As**.



Path

Opens the root folder of the preset in the File Explorer/macOS Finder and allows you to create subfolders for your presets.

Presets list

Lists all existing presets.

Name

Allows you to specify a name for your preset.

When a Preset Is Selected

Allows you to assign a customized playback command to a shortcut. For example, you can set a shortcut to play a range with a short pre-roll/post-roll, and another shortcut to play a range without a pre-roll/post-roll.

When Playback Stops, Restore Previous Transport Settings

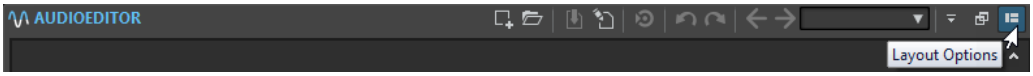
Restores the settings to the state prior to starting the playback. This allows you to trigger a special play task and to automatically switch back to the standard settings as soon as playback is finished.

Changing the Position of the Transport Bar

You can position the transport bar at the top, in the middle, or at the bottom of an editor window.

PROCEDURE

1. On the command bar of the **Audio Editor** or **Audio Montage** window, click **Layout Options**.



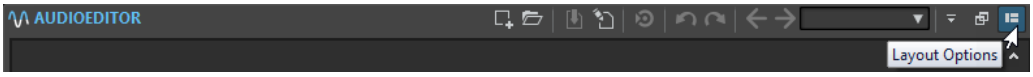
2. In the **Transport Bar** section, select whether to position the transport bar at the **Top**, in the **Middle**, or at the **Bottom**.

Hiding the Transport Bar

You can hide the **Transport Bar** to save screen space.

PROCEDURE

1. On the title bar of the **Audio Editor** or the **Audio Montage** window, click **Layout Options**.



2. In the **Transport Bar** section, select **Hidden**.

Audio-Processing Load

The **Audio-Processing Load** display on the **Transport Bar** shows the average audio-processing load of plug-ins during playback. This allows you to monitor the number of plug-ins you can use.

The green bar displays the average audio-processing load of all active plug-ins. With a load of 100%, dropouts are likely to happen. The red bar displays the load of the most recently processed audio.

- To activate/deactivate the **Audio-Processing Load** function, right-click the **Transport Bar**, and click **Audio-Processing Load**.

Starting Playback From the Time Ruler

You can use the time ruler to jump to a position and start playback from there.

- Double-clicking the time ruler starts playback from that position. Playback continues until you click **Stop Playback** or until the end of the audio file or audio montage.
- To set the playback position to a specific location, click the time ruler during playback. This also applies for clicking the time rulers of another audio file or audio montage, which allows you to quickly switch playback between audio files or audio montages.
- To start playback from a marker position, press **Ctrl/Cmd**, and double-click the marker.

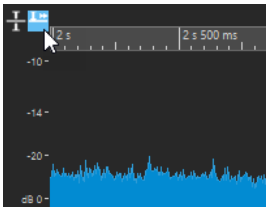
RELATED LINKS
Time Ruler and Level Ruler on page 55

Playing Back Focused Audio Channels

During playback, you can alternate between playing back the left/right, mid/side, channel clusters of multichannel audio files, or both audio channels.

PROCEDURE

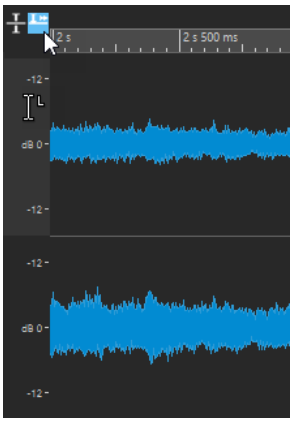
1. In the **Audio Editor**, activate **Play Back Focused Audio Channels**.



NOTE

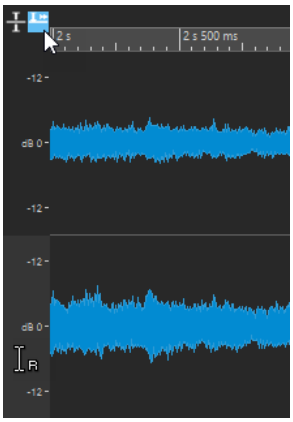
If you are using the **Play Back Focused Audio Channels** option for multichannel audio files, the **Mute** and **Solo** buttons are not available.

2. Start playback.
3. To switch playback between the different audio channels, do one of the following:
   - To play back the left or mid audio channel, click the upper area of the level ruler.



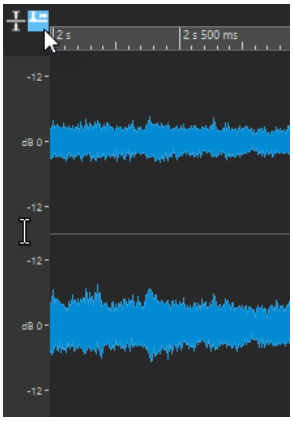
Cursor position for playing back the left audio channel

   - To play back the right or side audio channel, click the lower area of the level ruler.



Cursor position for playing back the right audio channel

   - To play back both audio channels, click the middle area of the level ruler.



Cursor position for playing back the left and right audio channels

- To play back a channel cluster of a multichannel audio file, click the channel control area of the channel cluster.
- To switch through the audio channels via key commands, press **Alt** - **Page Down** or **Alt** - **Page Up**.

RELATED LINKS
Time Ruler and Level Ruler on page 55
Multichannel Audio Files on page 130

Playing Back Multichannel Files

You can play back multichannel files according to your audio device setup.

PREREQUISITE

Via the **Audio Connections** tab, you have specified the input and output buses and the device to be used for audio playback.

NOTE

If, with your setup, you cannot play back all audio channels, you can play back the multichannel file in stereo.

PROCEDURE

1. Open a multichannel audio file in the **Audio Editor** or in the **Audio Montage** window.
2. Start playback.

   If your audio device setup is correct, the multichannel file is played back. If your audio device setup does not allow playing back all channels of the multichannel file, the **Incomplete Audio Device Connections** dialog opens.
3. In the **Incomplete Audio Device Connections** dialog, do one of the following:
   - To stop playback, click **Stop (No Playback)**.
   - To open the **Audio Connections** tab and make changes to your audio device setup, click **Open Audio Connections**.
   - To start playback but mute all channels that cannot be played back, click **Continue (Some Audio Channels Will Be Muted)**.
   - To play back the multichannel audio file in stereo, click **Activate the Master Section "Mix to Stereo" Option for Playback**.

     NOTE

     We recommend using the **MixConvert V6** plug-in in the **Master Section** to mix the multichannel file to stereo.

RELATED LINKS
Audio Connections Tab on page 23
Opening Files via the File Tab on page 63
Master Section on page 296

Playback Scrubbing

Playback scrubbing helps you to find a specific position in an audio file by restarting playback repeatedly while you click and drag on the time ruler during playback or using the **Play** tool.

RELATED LINKS
Scrubbing Using the Play Tool on page 110
Scrubbing Using the Time Ruler on page 110

Scrubbing Using the Play Tool

The **Play** tool allows you to play back from any position, on one or both stereo channels.

PROCEDURE

1. In the **Audio Editor**, select the **Edit** tab.
2. In the **Tools** section, select the **Play** tool, or press and hold **Alt**.
3. Click in the waveform window.
4. In the waveform window, click at the position where you want playback to start.

   The cursor shape indicates whether the left (L) or the right (R) channel is played back. Using the **Play** tool in the middle of the channels plays back both channels.

RESULT

Playback continues for as long as you keep the mouse button pressed, or until the audio file ends. After playback has stopped, the cursor moves back to the playback start position.

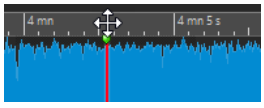
RELATED LINKS
Playback Scrubbing on page 110
Playback Scrubbing Preferences on page 111

Scrubbing Using the Time Ruler

During playback, you can click the time ruler to play back from the selected position.

PROCEDURE

1. Start playback.
2. Click the time ruler, hold the mouse button pressed, and drag left or right.



3. When you are done scrubbing, release the mouse button.

   The audio is played back from the edit cursor position, and a small section is looped once.

RELATED LINKS
Playback Scrubbing on page 110

Playback Scrubbing Preferences

You can define the behavior of the **Play** tool in the **Audio Files Preferences**.

Select **File** > **Preferences** > **Audio Files**. The following options are available in the **Playback Scrubbing** section of the **Editing** tab:

- If **Restrict to Play Tool** is activated, scrubbing is not available when you click and drag on the time ruler during playback.
- The **Sensitivity** setting determines the length of the audio loop that is played once, when you click and drag on the time ruler with the **Play** tool.

RELATED LINKS
Playback Scrubbing on page 110
Editing Tab (Audio Files Preferences) on page 411

Timecode Window

The **Timecode** window can display the recorded time, the time offset in relation to various positions, and dynamic colors, based on the context.

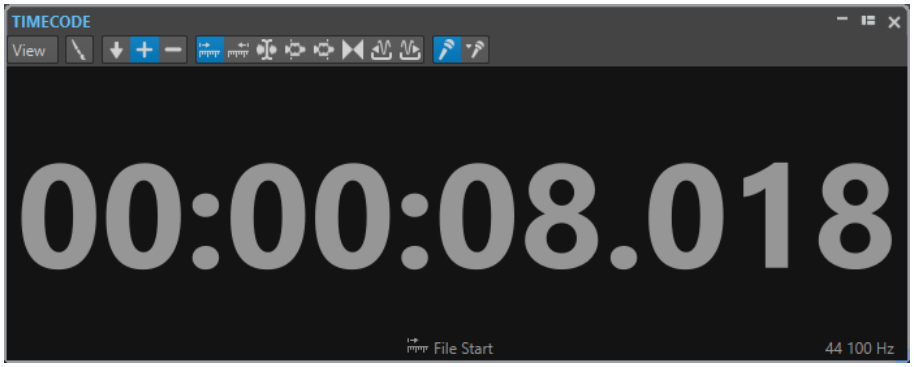
NOTE

During playback, the song position is displayed. If nothing is played back, the edit cursor position is displayed.

- To open a **Timecode** window, select **Meters** > **Timecode #1**.
- To open a second **Timecode** window, select **Meters** > **Timecode #2**.

TIP

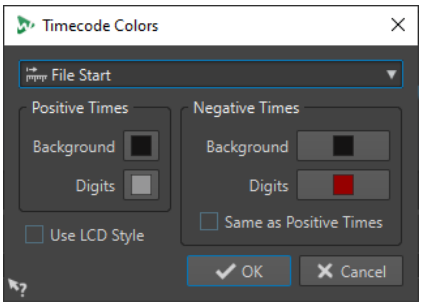
Opening two **Timecode** windows allows you to view the time from two different reference points. For example, you can display the edit cursor position from the start of the audio montage and from the start of the active clip at the same time.



View Menu

Edit Colors

Opens the **Timecode Colors** dialog, where you can edit the colors of the **Timecode** window.



Reduced Precision

Causes the timecode display to show fewer digits.

Positive Times

Displays positive values. With **Negative Times** activated as well, the closest offset, negative or positive, is displayed.

Negative Times

Displays negative values. With **Positive Times** activated as well, the closest offset, negative or positive, is displayed.

File Start

Displays the position in relation to the start of the time ruler. The time format display is based on the ruler.

File End

Displays the position in relation to the end of the time ruler. The time format display is based on the ruler.

Offset Display

Allows you to select the position from which to display the offset. The following positions are available: **Edit Cursor**, **Selection Start**, **Selection End**, **Marker**, **Title Start**, **Title End**, **Clip Start**, **Clip End**.

Recorded Time

Causes the **Timecode** window to display the recorded time when you start recording.

Recorded Time (from Last Marker)

Causes the **Timecode** window to display the recorded time from the last dropped marker when you start recording.

Scrolling During Playback

You can determine how to scroll the view in **Play** mode.

- To set the scroll mode, open the **Audio Editor** or the **Audio Montage** window. Select the **View** tab, and activate one of the options in the **Playback** section.

Static View

Disables scrolling.

View Follows Cursor

Automatically scrolls the view to keep the playback cursor visible.

Scroll View

Scrolls the view to keep the playback cursor centered.

TIP

If you get dropouts during playback, activate **Static View**.

Playback in the Audio Montage Window

Controlling playback in the **Audio Montage** window basically works just like in the **Audio Editor**, aside from a few features that are exclusively available for audio montages.

Mute and Solo

You can mute or solo tracks in an audio montage via the corresponding buttons in the track control area.

CHOICES

- In the track control area of a track, do one of the following:
  - To mute a track, click **Mute**.

    When a track is muted, the mute button is yellow.
  - To solo a track, click **Solo**.

    When a track is soloed, the solo button is red.
  - To solo multiple tracks, **Ctrl/Cmd**-click **Solo** for all tracks that you want to solo.
  - To activate solo defeat for a track, press **Ctrl/Cmd**-**Alt/Opt**, and click **Solo**.

    In this mode, the track is not muted when you solo another track. To deactivate solo defeat, click **Solo** again.

RELATED LINKS
Track Control Area on page 196

Playing Back Individual Clips

You can play back an individual clip on a track.

PROCEDURE

1. In the **Audio Montage** window, right-click the lower part of the clip that you want to play back.
2. On the menu, select one of the following play options:
   - To play back the clip, select **Play Clip**.
   - To play back the clip with pre-roll, select **Play Clip with Pre-Roll**.

   Overlapping clips or clips on other tracks are muted.

Playing Back a Selection Range of a Track

You can select a section of a clip and play it back.

PROCEDURE

1. In the **Audio Montage** window, make a selection range, either in a clip or in an empty section of a track.

2. Right-click the selection range, and select **Play Clip Inside Selection Range**.
   Overlapping clips or clips on other tracks are muted.

Audio File Editing

Audio file editing encompasses opening, modifying, and saving audio files.

RELATED LINKS
Audio Editor Window on page 115
File Handling in the Audio Editor on page 130
Mixing Down and Rendering on page 156

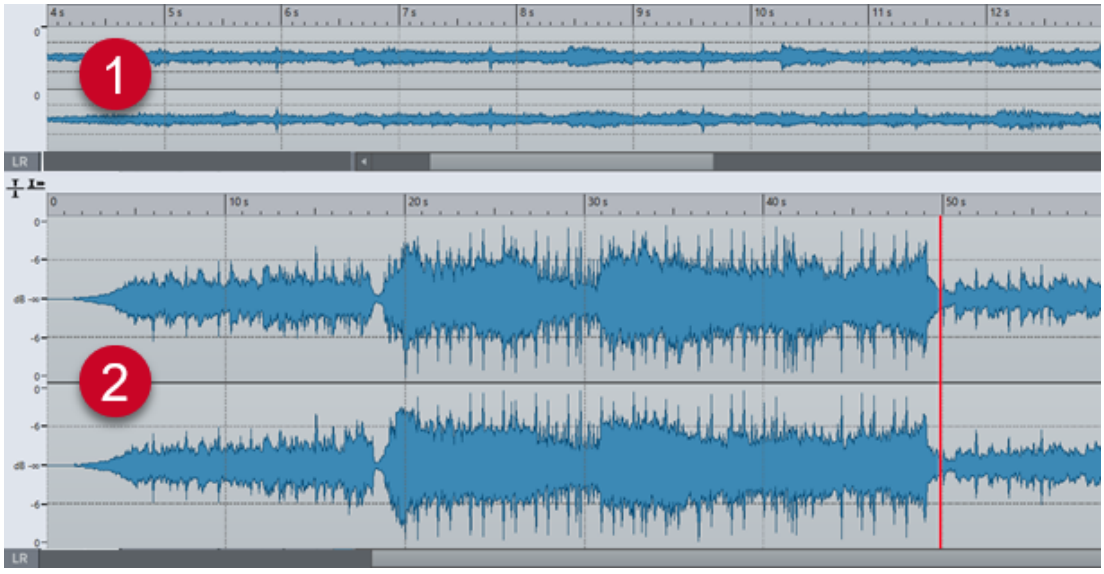
Audio Editor Window

The **Audio Editor** window displays audio files graphically. It allows you to view, play back, and edit individual audio files.

The **Audio Editor** displays your audio in two views:

The **Overview** (**1**) serves to navigate in the project.

The **Main View** (**2**) is the area where you can edit your audio files.



Clicking **Sync with Other View** at the bottom synchronizes the two **Audio Editor** views, so that they display the same part of the audio file.

Display Modes

You can choose a display mode for the **Audio Editor**. It is possible to set different modes for the **Overview** and the **Main View**.

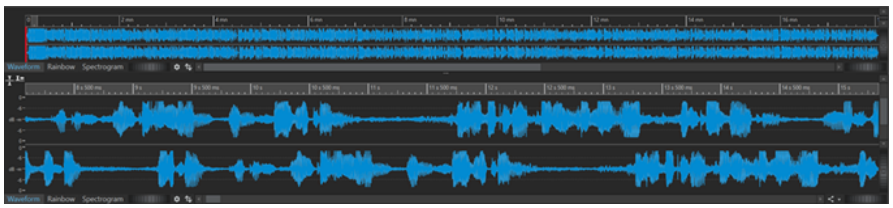
- The **Waveform** tab displays the waveform of the audio file.
- The **Rainbow** tab displays the spectral properties as a multi-colored waveform.
- The **Spectrogram** tab displays the audio as a spectrogram.

RELATED LINKS
Waveform Display on page 116
Rainbow Display on page 116
Spectrogram Display on page 117

Waveform Display

The **Waveform** display visualizes the waveform of the audio file. The horizontal axis shows the time. The vertical axis represents the amplitude.

To open the **Waveform** display, click **Waveform** at the bottom of the **Audio Editor** window.

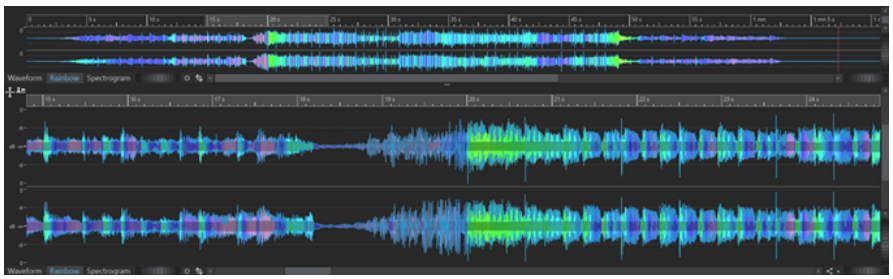


RELATED LINKS
Audio Editor Window on page 115
Display Modes on page 116
Audio Files Preferences on page 411

Rainbow Display

With the **Audio Editor** set to the **Rainbow** display, the spectral properties of an audio file are indicated by colors in the waveform.

To open the **Rainbow** display, click **Rainbow** at the bottom of the **Audio Editor** window.



Representing the spectral properties of audio material by multiple colors in the waveform in this way enables you to perform a quick visual analysis of the audio file. Hence, the **Rainbow** display can serve purposes such as the following:

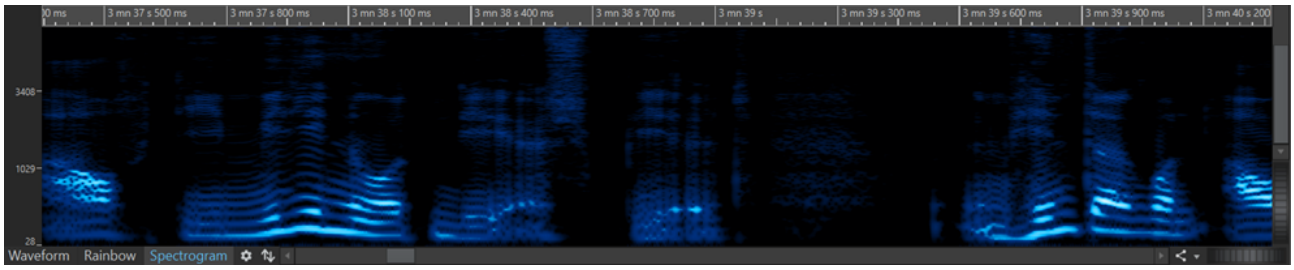
- In music production and mastering, it allows you to identify patterns, such as the presence of specific timbres, and to locate problematic areas in the audio material; for example, too much bass or too many high frequencies.
- In forensics, it facilitates the identification and subsequent extraction of significant signals, even in extremely noisy recordings.
- In educational contexts, it constitutes a visual aid for explaining and learning about sound structure.
- In linguistics and speech analysis, it provides insight into how different spectral features correlate with phonemes, intonation, and other elements of speech.

Spectrogram Display

The **Spectrogram** allows you to view the level intensity of each area in the frequency spectrum.

You can use the WaveLab Elements editing tools to edit the spectrogram.

To open the **Spectrogram** display, click **Spectrogram** at the bottom of the **Audio Editor** window.



Loudness Overlay

You can overlay the **Waveform** or the **Rainbow** view of the **Audio Editor** with an **RMS Loudness** view and adjust the transparency of the overlay.

The **RMS Loudness** overlay allows you to keep a constant eye on both peaks and loudness, so that you can easily identify audio sections with varying dynamics.

To overlay the **Waveform** or the **Rainbow** view with the **RMS Loudness** view, use the scroll wheel (**1**) at the bottom. The farther you turn the scroll wheel to the right, the higher the opacity of the **RMS Loudness** overlay (**2**); that is, the more prominent it becomes. The farther you turn the scroll wheel to the left, the more transparent the **RMS Loudness** overlay. Turning the scroll wheel all the way to the left sets the transparency to 100%, so that the **RMS Loudness** overlay is not visible.

To activate/deactivate the **RMS Loudness** overlay display (**2**), double-click on the scroll wheel (**1**).

NOTE

This feature is also available in the **Waveform** and the **Rainbow** view of the **Audio Montage** window.

NOTE

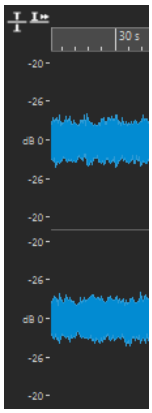
- The transparency settings for the **Waveform** and the **Rainbow** view are independent of each other, because of their different graphics rendering.
- The transparency settings for the **Audio Editor** and the **Audio Montage** window are independent of each other as well.

To access further settings, select **File** > **Preferences** > **Audio Files** > **Editing**, and set the desired parameters in the **Loudness Waveform Overlay** section.

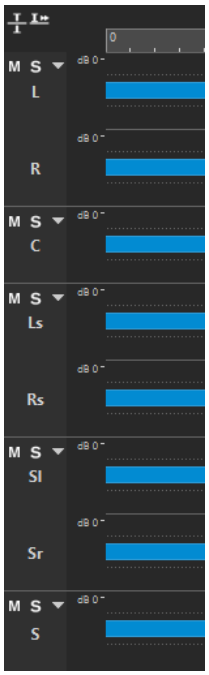
RELATED LINKS
Editing Tab (Audio Files Preferences) on page 411

Channel Control Area

The channel control area to the left of the waveform in the **Audio Editor** allows you to select channels, and to mute and solo single channels of multichannel audio files.



Channel control area of a stereo audio file



Channel control area for channel clusters of a multichannel audio file

Mute

Mutes the channel cluster. This only affects playback, not rendering.

Solo

Solos the channel cluster. This only affects playback, not rendering.

Fold/Unfold Channel Cluster

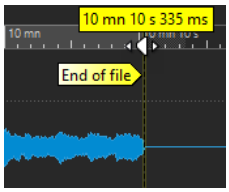
Switches from expanding to reducing the space for individual channel clusters, and vice versa.

RELATED LINKS
Audio Editor Window on page 115
Multichannel Audio Files on page 130

Magnetic Bounds in Audio Files

Some positions, such as markers or selection edges, can be defined as magnetic. Dragged elements can snap to these positions. This makes it easier to position items accurately.

For example, if you move a marker and it gets close to one of the magnetic bounds, the marker snaps to this position. A label is displayed, indicating the snap position.



You can place the cursor at a magnetic position by clicking the timeline and keeping the mouse button pressed. When you now move the cursor, it jumps to the next magnetic bound.

RELATED LINKS
Magnets Menu on page 119

Magnets Menu

The **Magnets** pop-up menu allows you to define positions as magnetic. With **Snap to Magnets** activated, items that you move snap to magnetic positions.

- To open the **Magnets** pop-up menu, select the **Edit** tab in the **Audio Editor**, and click **Magnets** in the **Snapping** section.

You can make items snap to the following positions:

Start of File

Elements snap to the start of the file when you move them close to it.

End of File

Elements snap to the end of the file when you move them close to it.

Time Ruler Marks

Elements snap to the time ruler grid when you move them close to the time ruler.

Markers

Elements snap to marker positions when you move them close to markers.

Selection Edges

Elements snap to the selection edges when you move them close to them.

Cursor

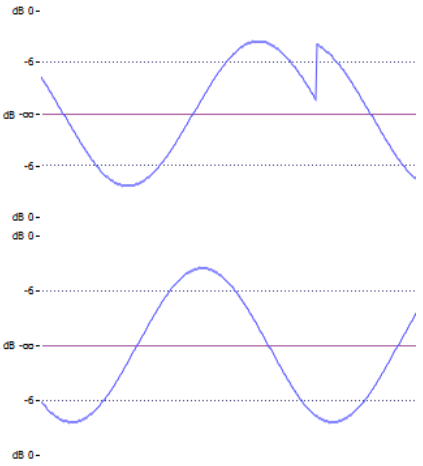
Elements snap to the edit cursor when you move them close to the cursor.

RELATED LINKS
Quantizing Audio Selections based on Time Ruler Marks on page 37

Zero Crossing

A zero crossing is a point where the waveform crosses the zero level axis. To perform editing operations such as cutting, pasting, or dragging, we recommend inserting the audio material at a zero crossing.

If you do not perform these operations at zero crossings, this can result in discontinuities in the wave, which are perceived as clicks or pops in the sound.



Activate **Zero-Crossing** on the **Edit** tab of the **Audio Editor** to ensure that any selections you make start and end at the nearest zero crossing.

Setting Up the Zero Crossing Detection

You can set selection edges so that they automatically snap to the nearest zero crossing point. In the **Audio Files Preferences** dialog, you can choose whether or not to enable snapping at high zoom factors, and you can define the scan range for zero crossing detection.

PROCEDURE

1. In the **Audio Editor**, select the **Edit** tab.
2. In the **Snapping** section, activate **Zero-Crossing**.
3. Select **File** > **Preferences** > **Audio Files**.
4. In the **Audio Files Preferences** tab, select the **Editing** tab.
5. Set the required parameters in the **Snap Selection to Zero-Crossing** section.

RELATED LINKS
Audio Files Preferences on page 411

Moving the Cursor Position to the Closest Zero Crossing

You can automatically move the cursor position to the closest zero crossing.

PROCEDURE

1. In the **Audio Editor**, select the **View** tab.

2. In the **Cursor** section, click **Snap to Zero-Crossing**.

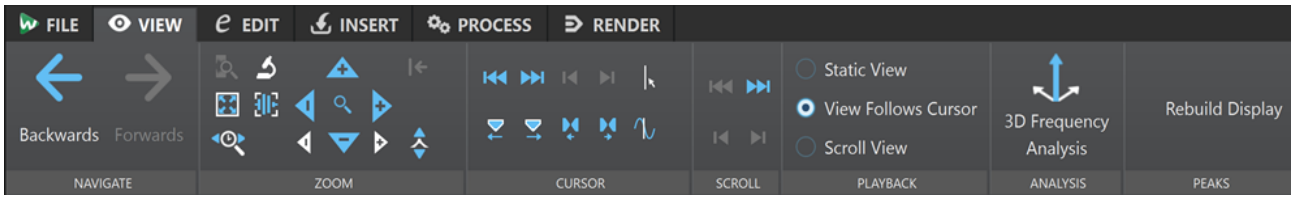
Audio Editor Tabs

The tabs in the **Audio Editor** give you access to the tools and options you need to edit audio files.

RELATED LINKS
View Tab (Audio Editor) on page 121
Edit Tab (Audio Editor) on page 123
Insert Tab (Audio Editor) on page 127
Process Tab (Audio Editor) on page 128
Render Tab (Audio Editor) on page 128

View Tab (Audio Editor)

- In the **Audio Editor**, click **View**.



Navigate

Backwards/Forwards

Navigates to the previous/next cursor position, zoom factor, and selection range.

Zoom

Time

Opens a pop-up menu that allows you to adjust the zoom to display the selected time range. **Zoom in 1:1** zooms in so that one pixel on the screen represents one sample.

You can edit the zoom factor by clicking **Edit Zoom Factor**. This opens the **Zoom Factor** dialog, where you can choose from the following options:

- **Set Time Range** allows you to define the time range to be displayed.
- **Samples per Screen Point** allows you to specify the number of audio samples encompassed by each screen point.
- **Screen Points per Sample** allows you to specify the number of screen points that represent a single audio sample.

Zoom

Activates the **Zoom** tool, which allows you to define a time range that is zoomed in.

Zoom Selection

Zooms the window so that the current selection occupies the entire montage window.

Microscope

Zooms in as far as possible.

Zoom in Audio (10x)/Zoom out Audio (10x)

Zooms in/out in big steps.

View All

Zooms out as far as possible.

Zoom in Audio/Zoom out Audio

Zooms in/out in small steps.

Level

Adjusts the zoom to only display samples below the selected dB value.

Reset Zoom to 0 dB

Adjusts the zoom to display audio levels up to 0 dB.

Zoom in Vertically/Zoom out Vertically

Zooms in/out to show waveforms at a lower/higher level.

Cursor

Move Cursor to Start of File/Move Cursor to End of File

Moves the cursor to the start/end of the file.

Previous Marker/Next Marker

Moves the cursor to the previous/next marker.

Start of Selection/End of Selection

Moves the cursor to the start/end of the selected time range.

Previous Region Edge/Next Region Edge

Moves the cursor to the previous/next region edge.

Snap to Zero-Crossing

Moves the cursor to the nearest zero-crossing point.

Edit Cursor Position

Opens the **Cursor Position** dialog, where you can edit the cursor position.

Scroll

Start/End

Displays the start/end of the audio without moving the cursor.

Start of Selection/End of Selection

Displays the start/end of the audio selection without moving the cursor.

Playback

Static View

Deactivates scrolling.

View Follows Cursor

Automatically scrolls the view to keep the playback cursor visible.

Scroll View

Automatically scrolls the view to keep the playback cursor centered.

Analysis

3D Frequency Analysis

Opens the **3D Frequency Analysis** dialog, where you can choose the frequency range to be analyzed and modify the appearance of the graph for the 3D frequency analysis.

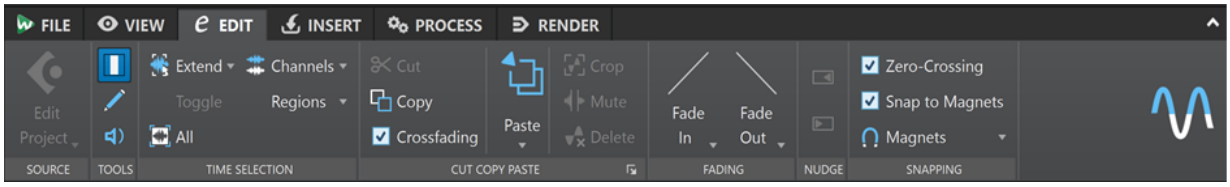
Peaks

Rebuild Peak Display

Generally, peak files are automatically updated if the peak file is older than the audio file. However, in case the date indicated for the audio file is incorrect and the file is thus not automatically updated, this option allows you to force a rebuild of the peak file.

Edit Tab (Audio Editor)

- In the **Audio Editor**, click **Edit**.



Source

Edit Project

While working on an audio file or clip in WaveLab Elements, you can open the project of the audio file in Cubase/Nuendo. This allows you to fix issues identified during the mixing phase in Cubase/Nuendo.

Edit Project opens the corresponding sequencer project of the audio file.

Tools

Time Selection

Allows you to select a time range.

Pen

Allows you to redraw the waveform in the **Audio Editor**. This helps you to quickly repair waveform errors.

Play

Allows you to play back the audio file at the position where you click.

Time Selection

Extend

Opens a menu that allows you to choose from the following options for creating or extending selection ranges:

- **Extend to Start of File** extends the selection to the start of the audio file. If there is no selection, a selection is created from the edit cursor position.
- **Extend to End of File** extends the selection to the end of the audio file. If there is no selection, a selection is created from the edit cursor position.
- **Extend to Previous Marker** extends the left edge of the selection to the nearest marker to the left or the start of the audio file. If there is no selection, a selection is extended to the previous marker position.
- **Extend to Next Marker** extends the right edge of the selection to the nearest marker to the right or the end of the audio file. If there is no selection, a selection is extended to the next marker position.
- **Extend to Cursor** extends the selection to the edit cursor position.

- **From Start of File Until Cursor** selects the range between the start of the audio file and the edit cursor position.
- **From Cursor to End of File** selects the range between the edit cursor position and the end of the audio file.
- **From Cursor to Previous Marker** selects the range between the edit cursor position and the previous marker or the start of the audio file.
- **From Cursor to Next Marker** selects the range between the edit cursor position and the next marker or the end of the audio file.
- **Shift Selection to the Left** moves the selection lengthwise to the left.
- **Shift Selection to the Right** moves the selection lengthwise to the right.
- **From Playback Position to End** creates a selection range from the playback position to the end of the selection, or to the end of the file, if there is no selection. If playback is not active, the position of the edit cursor is used.
- **From Start to Playback Position** creates a selection range from the playback position to the start of the selection, or to the start of the file, if there is no selection. If playback is not active, the position of the edit cursor is used.
- **Double Selection Length** doubles the length of the current selection range.
- **Halve Selection Length** reduces the length of the current selection range to 50% of the original length.

Toggle

Activates/deactivates the current audio selection.

All

Selects the entire waveform.

Channels

Allows you to change the channel selection.

- **Extend to All Channels** extends the current selection range to all channels.
- **Left Channel Only** restricts the current selection range to the left channel.
- **Right Channel Only** restricts the current selection range to the right channel.

Regions

Allows you to select a range between two markers.

- **Loop Region** selects the range between the two loop markers that encompass the edit cursor.
- **Generic Region** selects the range between the two generic markers that encompass the edit cursor.

Cut Copy Paste

Cut

Cuts the selected audio range and saves it to the clipboard.

Copy

Copies the active clip or the selected audio range to the clipboard.

Crossfading

With this option activated, WaveLab automatically applies crossfades to the right and left boundaries of an audio selection when you perform one of the following editing operations on it:

- **Cut**
- **Paste**
- **Crop**
- **Mute**
- **Delete**
- **Prepend**, **Append**, **Overwrite**, or **Multiple Copies** from the **Paste** menu

  In addition to this, the option automatically generates a crossfade at the designated insertion point when you insert audio by dragging or when you choose an option from the **Audio File** panel of the **Insert** tab.

NOTE

We recommend that you keep this option activated, as it avoids common editing issues, such as abrupt volume shifts or audible clicks. It ensures smooth, natural transitions between audio segments by seamlessly conjoining a fade out and a fade in.

However, to prevent WaveLab from automatically generating crossfades for particular editing tasks; for example, to perform a sharp cut or to insert audio segments that are not linked to the audio before or after it in any way, you can deactivate the option at any time.

Paste

Pastes the clipboard content.

Right-clicking **Paste** opens a pop-up menu that allows you to select a paste type.

- **Prepend** inserts the audio prior to the beginning of the file.
- **Append** inserts the audio after the end of the file.
- **Crossfade Over Selected End** pastes the clipboard content to a position after the end of the selected audio file and creates a crossfade. Once you have defined the length of the crossfade by making a selection at the end of the audio file, moving the mouse over **Crossfade Over Selected End** opens a pop-up menu. This menu allows you to select a crossfade type, which is applied to smoothen the transition between the audio file and the pasted audio content that follows it:
  - **Linear (Equal Gain)** changes the level linearly.
  - **Sinus (Equal Power)** changes the level according to a sine curve, while the power of the mix remains constant.
  - **Square-Root (Equal Power)** changes the level according to a square-root curve, while the power of the mix remains constant.
- **Overwrite** replaces the audio from the edit cursor position.
- **Multiple Copies** opens a dialog which allows you to enter the number of copies that you want to create.
- **Mix** blends two files into each other, starting at the selection or, if there is no selection, at the cursor position.

  If you select **Mix**, a dialog opens, allowing you to specify the gain and phase for the audio on the clipboard and at the destination. The clipboard data is mixed in, regardless of the length of the selection.

Crop

Deletes any data outside the selection.

Mute

Replaces the audio selection with silence.

Delete

Deletes the selection. The audio to the right of the selection is moved to the left, to fill the gap.

Fading

Fade In/Fade Out

Allows you to apply a fade in or fade out. Right-click the button to open the **Curve** pop-up menu.

Curve

Allows you to select preset fade curves.

- **Linear** changes the level linearly.
- **Sinus (*)** changes the level according to a sine curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Square-Root (*)** changes the level according to a square-root curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Sinusoid** changes the level according to a sine curve.
- **Logarithmic** changes the level according to a logarithmic curve.
- **Exponential** changes the level according to an exponential curve.
- **Exponential+** changes the level according to a more pronounced exponential curve.

Nudge

Nudge Left

Nudges the audio selection to the left.

Nudge Right

Nudges the audio selection to the right.

Snapping

Zero-Crossing

If this option is activated, the start and the end of a selected range snap to a zero-crossing point of the waveform.

If **Zero-Crossing** is activated and you add markers during playback via key commands, the markers snap to the nearest zero-crossing point of the waveform.

This works for the following markers types:

- Generic markers
- Region markers
- Loop markers

Snap to Magnets

If this option is activated, any elements that you have activated in the **Magnets** pop-up menu, such as clip starts, time selection edges, or markers, snap to magnets.

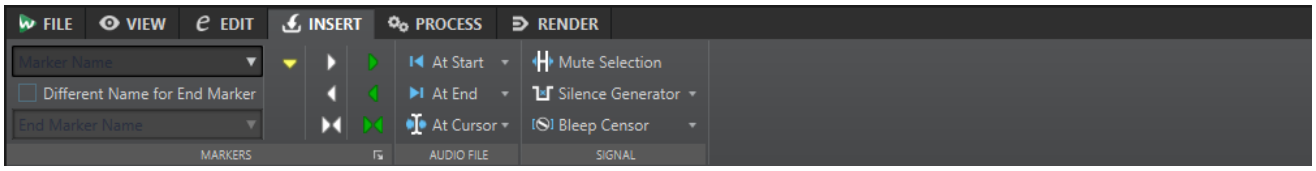
Magnets

Allows you to set the behavior of particular elements to magnetic.

Insert Tab (Audio Editor)

The **Insert** tab allows you to add markers, audio files, and signals to your audio file.

- In the **Audio Editor**, click **Insert**.



Markers

Marker Name

Allows you to enter the name of the start marker. Otherwise, a generic name is used.

To edit the default names, open the **Markers** window, and select **Functions** > **Default Marker Names**.

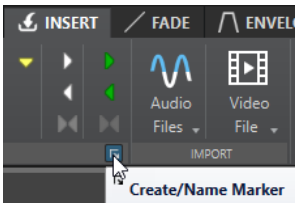
Different Name for End Marker

Allows you to enter a different name for the end marker in the **End Marker Name** field.

If this option is deactivated, the name of the start marker is also used for the end marker.

Create/Name Marker

The **Create/Name Marker** button in the lower right corner of the **Markers** section opens the **Create Marker** dialog, which allows you to create markers and marker pairs at the edit cursor position.



Audio File

At Start

Allows you to insert an audio file at the start of the active audio file.

At End

Allows you to insert an audio file at the end of the active audio file.

At Cursor

Allows you to insert an audio file at the cursor position.

Signal

Mute Selection

Replaces the audio selection with silence.

Silence Generator

Opens the **Silence Generator** dialog, which allows you to add silence or ambience sounds to an audio file.

Bleep Censor

Opens the **Bleep Censor** dialog, which allows you to replace a part in an audio file with a beeping sound; for example, to cover up a swear word.

RELATED LINKS
Silence Generator Dialog on page 161
Bleep Censor Dialog on page 163

Process Tab (Audio Editor)

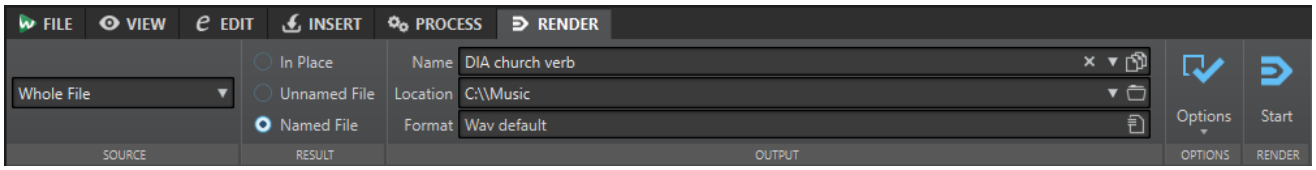
The **Process** tab gives you access to the offline processing tools.

RELATED LINKS
Offline Processing on page 177

Render Tab (Audio Editor)

The **Render** tab allows you to mix down audio files.

- In the **Audio Editor**, click **Render**.



Source

The **Source** pop-up menu allows you to select which part of the audio file to process. The following options are available:

Whole File

Processes and renders the whole audio range.

Specific Marked Region

Processes and renders a specific audio range to an independent file.

You can specify the region to process via the pop-up menu.

Result

In Place

Replaces the source audio range with the rendered audio range.

Unnamed File

Renders a temporary untitled file.

Named File

Allows you to specify a name for the rendered file.

Output

Name

Allows you to enter a name for the rendered file. Clicking the arrow icon opens a pop-up menu that offers you several naming options.

Location

Allows you to select a destination folder for the rendered files.

NOTE

To maintain independent render paths for audio slices and to ensure that, when switching audio files, the render path changes accordingly, you can activate **Keep Independent Folder for Each Source File**.

Format

Opens a pop-up menu, where you can select a file format.

Options

Depending on the selected source, different options are available.

Bypass Master Section

Bypasses the plug-ins and the gain of the **Master Section** when rendering.

Auto Save Master Section Preset

Automatically saves the **Master Section** preset in the ancillary file of the audio file when you render the file. You can load the **Master Section** preset via the **Load Master Section Preset** option in the lower right corner of the **Audio Editor**.

Add Reverb Tail

Includes the audio tail that is produced by effects such as reverb in the rendered file.

Some plug-ins do not transfer information on the tail duration to WaveLab Elements. In this case, this option has no effect. For such plug-ins, you can add the **Silence** plug-in to add extra samples to the end of the file.

Copy Markers

Copies the markers that are included in the range to process to the rendered file.

Skip Exclusion Regions

Skips muted audio ranges instead of including them in the result.

Open Resulting Audio File

Opens every rendered file in a new window.

Bypass Master Section on Resulting Audio File

Causes playback of the resulting audio file to bypass the entire **Master Section**. You can turn this setting on and off by clicking the button at the bottom right of the **Audio Editor** or the **Audio Montage** window.

NOTE

We recommend that you activate this option, as this prevents monitoring new files through effects that have already been applied to them.

Render

Start

Starts the rendering process.

RELATED LINKS
Ancillary Files on page 43

File Handling in the Audio Editor

Before you start editing files in the **Audio Editor**, we recommend that you familiarize yourself with some basic file handling procedures, as editing in the **Audio Editor** is not non-destructive, unlike editing clips in the **Audio Montage** window, which leaves the source files untouched.

RELATED LINKS
Audio Montage on page 194
Audio Montage Window on page 196

Mono/Stereo Handling

WaveLab Elements is very flexible with regard to handling mono and stereo files. As for stereo files, you can perform all editing operations either on one channel or on both channels.

Multichannel Audio Files

A multichannel audio file is a set of audio channels. The channels are organized in channel clusters. A channel cluster is a logical group of channels, consisting of a single channel or a channel pair.

EXAMPLE

- Front left/right is a stereo channel cluster.
- Back left/right is a stereo channel cluster.
- Center is a mono channel cluster.
- LFE is a mono channel cluster.

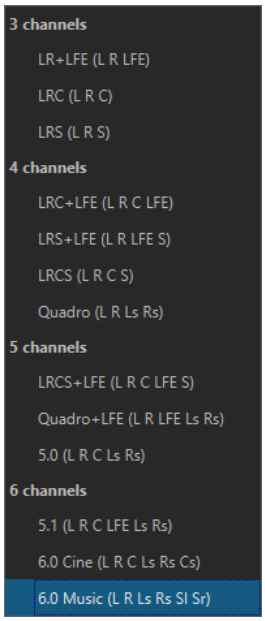
You can edit multichannel audio files and their channel clusters in the same manner as you edit stereo and mono audio files in WaveLab Elements.

Supported Multichannel File Formats

WaveLab Elements supports Wave multichannel files up to a 5.1 channel layout.

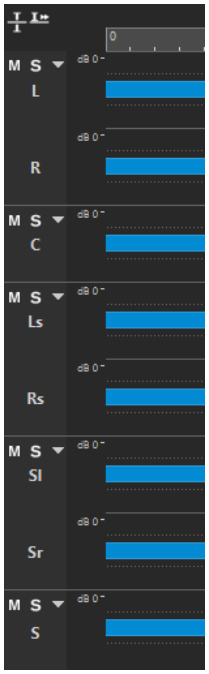
Available Multichannel Layouts

The following multichannel layouts from three channels up to six channels are available:



Multichannel Audio Editor

Multichannel audio files are displayed in the **Audio Editor** as channel clusters. Each channel cluster has a channel control area that allows you to mute, solo, and fold/unfold a channel cluster.



Channel control area

RELATED LINKS
Editing Multichannel Audio Files on page 132
Supported File Formats on page 134
Channel Control Area on page 118

Editing Multichannel Audio Files

You can use the WaveLab Elements tools to edit multichannel audio files.

You can make selections on one or multiple channels of a multichannel audio file, and copy and paste the selections.

You can edit one or multiple channels of a multichannel audio file with external editors. For example, you can select four channels and edit them in SpectraLayers.

The offline processing tools of WaveLab Elements are compatible with multichannel audio files.

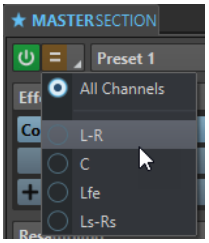
RELATED LINKS
Supported File Formats on page 134
Selecting Channels in Audio Files on page 35
Duplicating Audio by Copying and Pasting on page 155
Master Section Tools on page 297
Offline Processing on page 177

Processing Individual Channel Clusters via the Master Section

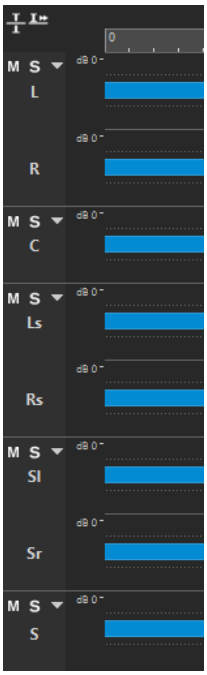
You can select individual channel clusters of multichannel audio files to play them back or render them through the **Master Section**.

PROCEDURE

1. To select a channel cluster, do one of the following.
   - In the **Master Section**, click **Channel Selector**, and select a single channel cluster or **All Channels**.



   - In the channel control area, double-click a channel cluster. To select all channel clusters, double-click the channel control area again.



The selected channel cluster is displayed in the **Channel Selector** menu of the **Master Section**.

2. In the **Master Section**, make the required adjustments, and do one of the following:
   - To play back the channel cluster via the front left/right audio ports or the mono audio port, start playback.

     You can set up the audio ports in the **Audio Connections** tab.
   - To render the selected channel cluster, right-click **Render**, and select **Render in Place**.

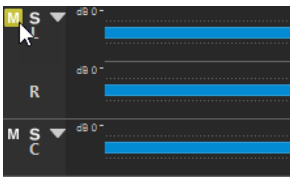
RELATED LINKS
Selecting Channels in Audio Files on page 35
Master Section Tools on page 297
Offline Processing on page 177
Audio Connections Tab on page 23

Muting and Soloing Channel Clusters

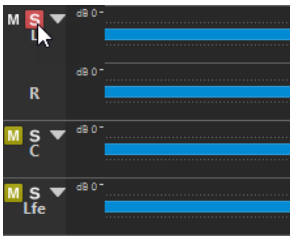
You can mute and solo each channel cluster of a multichannel audio file individually.

CHOICES

- In the channel control area, do one of the following:
  - To mute a channel cluster, click **Mute**.



  - To solo a channel cluster, click **Solo**.



- To solo multiple channel clusters, **Ctrl/Cmd**-click **Solo** for all channel clusters that you want to solo.
- To activate solo defeat for a channel cluster, press **Ctrl/Cmd**-**Alt/Opt**, and click **Solo**.

  NOTE

  In this mode, the channel cluster is not muted when you solo another cluster. To deactivate solo defeat, click **Solo** again.

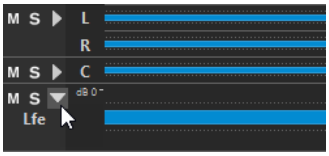
RELATED LINKS
Multichannel Audio Files on page 130
Channel Control Area on page 118

Folding and Unfolding Channel Clusters

You can fold and unfold each channel cluster of a multichannel audio file individually.

CHOICES

- In the channel control area, do one of the following:
  - To fold a channel cluster, click **Fold/Unfold Channel Cluster**.



  - To unfold a channel cluster, click **Fold/Unfold Channel Cluster**.
  - To fold all channel clusters except one, **Ctrl/Cmd**-click **Fold/Unfold Channel Cluster** for the channel cluster that you want to keep unfolded.
  - To unfold all channel clusters, **Shift**-click **Fold/Unfold Channel Cluster** for any channel cluster.

RELATED LINKS
Multichannel Audio Files on page 130
Channel Control Area on page 118

Supported File Formats

WaveLab Elements can open and save audio files in a number of file formats.

AAC/MPEG-4 (.m4a, mp4)

Advanced Audio Coding (AAC) is a codec that allows for lossy compression of digital audio.

IMPORTANT

The OEM version of WaveLab Elements does not support AAC.

ADPCM – Microsoft/Dialogic (.vox)

This is a format commonly used for games and telephony applications. It offers a lower bit rate than linear PCM and therefore requires less storage space/bandwidth.

AIFF (.aif, .aiff, .snd)

Audio Interchange File Format, a standard defined by Apple Computers Inc. The following bit depths are supported: 8 bit, 16 bit, 20 bit, 24 bit, and 32 bit float.

A-LAW (.alaw, .vox)

An audio encoding and compression technique for telephony, using 8-bit precision. The EU telephone system uses A-law encoding for digitization.

Ambisonics (.amb/.ambix)

WaveLab Elements can open and write Ambisonics files (first order, four channels).

FLAC (.flac)

Free Lossless Audio Codec (FLAC) is a codec which allows digital audio to be losslessly compressed.

MPEG-1 Layer 2 (.mp2, .mpa, .mpg, .mus)

MP2 (sometimes referred to as “Musicam files”) is a common file format in the broadcast industry.

MPEG-1 Layer 3 (.mp3)

The most common audio compression format. The major advantage of MPEG compression is that the file size is significantly reduced, while there is little degradation of the sound quality.

NOTE

When you open an MPEG compressed file in WaveLab Elements, the file is converted to a temporary wave file. On saving, the temporary wave file is converted back to MP3.

Ogg Vorbis (.ogg)

Ogg Vorbis is a compressed file format that is open, patent-free, and creates very small audio files while maintaining a comparatively high audio quality.

Opus (.opus)

Opus is a lossy file format that is particularly suited for streaming. It can be regarded as the successor of Ogg Vorbis and represents a good alternative to other lossy formats in that, similarly to its predecessor, it offers a comparatively high audio quality.

Sound Designer II (.sd2)

This audio file format is used by Digidesign applications (such as Pro Tools). The following bit depths are supported: 8 bit, 16 bit, and 24 bit.

Sun/Java (.snd, .au)

This is an audio file format used on Sun and NeXT computers. The following bit depths are supported: 8 bit, 16 bit, and 24 bit.

Text/Excel (.atxt)

This is a text representation of a waveform. By saving an audio file as a text file and then opening it in a spreadsheet application such as Excel, you can view it in textual,

decimal form, and edit the sample values. When you open a text file representing a waveform in WaveLab Elements, it is decoded and opened as an audio file. These files are not compressed in any way, so they can become very large. When using 64-bit float files, the .atxt format is not 100% lossless. This is because it is not possible to express a binary floating point value in textual decimal form without some precision loss.

U-LAW (.ulaw, .vox)

This is an audio encoding and compression technique supported by Windows and Web phones, using 8 bit precision. The U.S. telephone system uses U-law encoding for digitization.

Wave (.wav)

The following bit depths are supported: 8 bit, 16 bit, 20 bit, 24 bit, 32 bit, 32 bit float, and 64 bit float.

WaveLab Elements supports Wave multichannel files up to a 5.1 channel layout.

WavPack (.wv/.wvc)

This file format allows digital audio to be losslessly compressed, including 32 bit float audio files.

Windows Media Audio (.wma, .asf)

Microsoft's own compressed format. WaveLab Elements allows you to import/export audio in this format (Windows only). To import/export audio in WMA surround format, Windows Media Player 9 or later must be installed on your system.

RF64

In the **Audio Files Preferences**, on the **File** tab, you can activate the RF64 file format support. If this is activated, the standard Wave file format switches automatically to the RF64 file format, as soon as the file size exceeds 2 GB, without any performance loss or interruption. This is useful when recording very long sessions. A RF64 file has the extension `.wav`, but it can only be opened with an application that supports the RF64 standard if the file exceeds 2 GB.

Original Sound Quality (.osq, read-only)

This is the proprietary lossless compressed audio format of WaveLab.

RELATED LINKS
Windows Media Audio Encoding Dialog on page 147
Ogg Vorbis Dialog on page 145
FLAC Encoding Dialog on page 145
MP3 Encoding Dialog on page 142
MPEG-1 Layer 2 Encoding Dialog on page 144
20-bit, 24-bit, and 32-bit Float Files on page 136

20-bit, 24-bit, and 32-bit Float Files

You do not need a 20-bit or 24-bit audio card to take advantage of the fact that WaveLab Elements can handle 20-bit and 24-bit audio files. Any processing or editing of the files is performed with full precision (64-bit float), even if your card does not support this degree of precision.

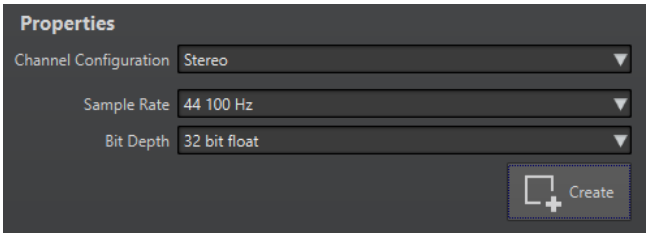
For playback, WaveLab Elements automatically adapts to the card that you have installed.

Creating New Audio Files

You can create an empty audio file, which allows you to assemble material from other audio files, for example.

PROCEDURE

1. Select **File** > **New**.
2. Select **Audio File** > **Custom**.
3. Specify the audio properties, and click **Create**.



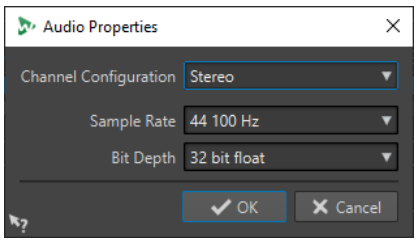
RELATED LINKS
Audio Properties Dialog on page 137

Audio Properties Dialog

You can define the channel configuration, the sample rate, and the bit depth of the audio file.

You can set these properties when you create a new audio file.

- To change the properties for the selected audio file, select the **File** tab, and click **Info**, or click the **Audio Properties** button at the bottom right of the **Audio Editor**.



Channel Configuration

Allows you to select the number of audio channels.

Sample Rate

Allows you to select the number of audio samples per second.

Bit Depth

Allows you to select the accuracy of samples in the audio stream.

RELATED LINKS
Info Dialog on page 51

Saving an Audio File

PROCEDURE

1. Do one of the following:

- To save an audio file for the first time, select **File** > **Save As**.
- To save an audio file that has been saved before, click the **Save** button, or select **File** > **Save**.

2. In the **Save As** window, specify a file name and a location.
3. Click **Save**.

RESULT

You can use undo/redo even after saving.

Saving in Another Format

You can change the file format, the sampling frequency, the bit depth, and the stereo/mono status when saving.

PROCEDURE

1. Select **File** > **Save As**.
2. In the **Save As** window, specify a file name and a location.
3. Click in the **Format** field, and select **Edit**.
4. In the **Audio File Format** dialog, set the file format, and specify the properties.
5. Click **OK**.
6. Click **Save**.

RESULT

A new file is created. The original file is not affected by the operation.

RELATED LINKS

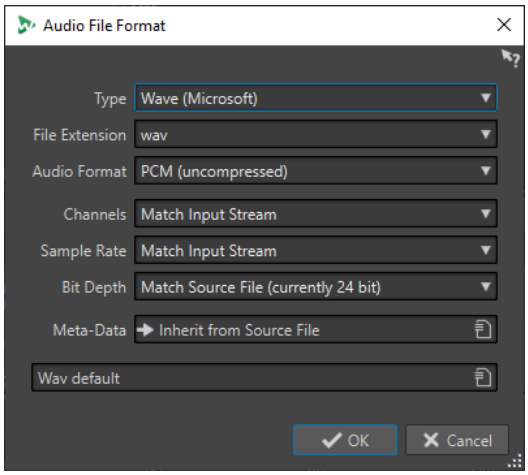
Audio File Format Dialog on page 138
Format Changes on page 140

Audio File Format Dialog

The **Audio File Format** dialog allows you to change various file settings when saving.

- To open the **Audio File Format** dialog, select **File** > **Export**, and **Render**. Activate **Named File**, click in the **Format** field, and select **Edit**.

This dialog can also be opened from various other locations in WaveLab Elements.



Type

Allows you to select an audio file type. This affects which options are available on the **Audio Format** pop-up menu.

File Extension

Allows you to select a file extension that is compatible with the current file type.

Audio Format

Allows you to select an audio format that is compatible with the current file type.

Channels

Allows you to specify the number of audio channels for the files to be created.

The following channels are available:

- **Match Input Stream**
- **Mono**
- **Stereo**

Sample Rate

Allows you to select a sample rate for the audio file. If you change this setting, a sample rate conversion takes place.

IMPORTANT

We recommend that you use this for simple conversions only. For professional results, using the **Resample** plug-in and adding limiting and dithering is a better option.

Bit Depth

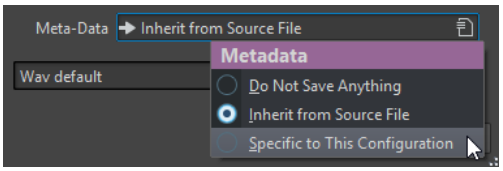
Allows you to select a bit depth for the audio file. This option is only available for specific file types.

IMPORTANT

We recommend that you reduce the bit depth for simple conversions only. For professional results, adding dithering in the **Master Section** is a better option.

Metadata

Allows you to apply metadata settings that are saved with the file. This option is not available for all file types.



- If **Do Not Save Anything** is selected, no metadata is saved with the file.
- If **Inherit from Source File** is selected, the metadata of the source file is used. If the source metadata is empty, the default metadata is used, if available.
- If **Specific to This Configuration** is selected, you can edit the metadata or replace it with a metadata preset. To edit the metadata, open the metadata pop-up menu again, and select **Edit**.

RELATED LINKS
Saving in Another Format on page 138

Format Changes

When you change the sample rate, the bit depth, and the number of channels of an audio file, several operations are performed.

Sample Rate

After specifying a new sample rate, a sample rate conversion is performed.

Bit Depth

After specifying a new bit depth, the file is either truncated down to 8 bits or padded up to 64 bits. For converting to a lower bit depth, we recommend adding dithering.

Mono/Stereo

If the file is converted from mono to stereo, the same material is used in both channels. For a conversion from stereo to mono, a mix of the two channels is created.

NOTE

- If you only want to change the bit depth, you can do this in the **Audio Properties** section of the **Info** window instead, and then save the audio file.
- For high quality mastering purposes, we recommend not to change the sample rate and the number of channels using the **Audio Properties** section, but to use plug-ins and features of the **Master Section** instead.

Rendering a Selection as an Audio File

You can render a selection in an open audio file as a new audio file.

PROCEDURE

1. In the **Audio Editor**, select an audio range.
2. Select the **Render** tab.
3. In the **Source** section, open the pop-up menu, and select **Selected Audio Range**.
4. In the **Output** section, specify a file name, a location, and a file format.
5. In the **Render** section, click **Start**.

RELATED LINKS
Audio Editor Window on page 115

Edit Tab (Audio Editor) on page 123
Audio File Format Dialog on page 138

Rendering the Left/Right Channel as an Audio File

You can save each individual channel as a separate file.

PROCEDURE

1. In the **Audio Editor**, select the **Render** tab.
2. In the **Output** section, specify a file name and a location.
3. Open the **Format** pop-up menu, and select **Edit**.
4. In the **Audio File Format** dialog, open the **Channels** pop-up menu, and select **Left Channel** or **Right Channel**.
5. Set additional parameters for the output, and click **OK**.
6. In the **Render** section, click **Start**.

RELATED LINKS

Render Tab (Audio Editor) on page 128
Audio File Format Dialog on page 138

Creating Audio File Format Presets

PROCEDURE

1. In the **Audio File Format** dialog, specify the audio file format.
2. Open the **Presets** pop-up menu, and select **Save As**.
3. Enter a name for the preset, and click **Save**.

RELATED LINKS

Audio File Format Dialog on page 138

Encoding Audio Files

You can save audio in different formats. The process of converting audio to another format is called encoding. When saving audio files, many file formats allow you to choose from a variety of encoding parameters.

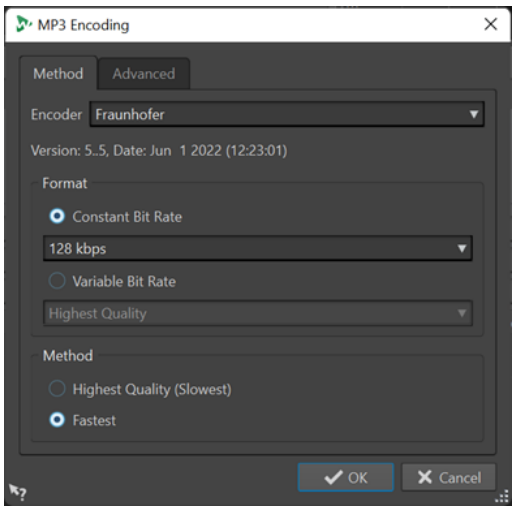
RELATED LINKS

MP3 Encoding Dialog on page 142
MPEG-1 Layer 2 Encoding Dialog on page 144
FLAC Encoding Dialog on page 145
Ogg Vorbis Dialog on page 145
Opus Audio File Encoding Dialog on page 146
Windows Media Audio Encoding Dialog on page 147

MP3 Encoding Dialog

On saving an MP3 audio file, you can adjust the encoding settings.

You can open the **MP3 Encoding** dialog from most places where you can select an output file format.



EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, set **MPEG Layer-3** as the type. Click in the **Encoding** field, and select **Edit**.

Method tab

Encoder

Allows you to select the encoder (**Fraunhofer** or **Lame**).

Constant Bit Rate/Variable Bit Rate

The bit rate is related to the quantity of data used to encode the audio signal. The higher the value, the better the quality, but the larger the output file. If you choose **Variable Bit Rate**, the rate changes according to the complexity of the audio material.

Highest Quality (Slowest)/Fastest

Allows you to select the quality to achieve. The higher the quality, the more resources and time are required to analyze and compress the audio signal.

NOTE

Highest Quality (Slowest) can require a specific sample rate for the audio file. If this is the case and the sample rate is different from the input sample rate, a warning message is displayed.

Advanced tab

Add File Length and Playback Position Information to VBR Header

Adds additional data to the VBR (variable bit rate) header that allows the playback device to estimate the length of the MP3 file and to jump to any time position in the MP3 file.

NOTE

This option is exclusively available for the Fraunhofer encoder.

Embed Ancillary Data for Time and Delay Compensation

Embeds ancillary data so that the duration of the resulting decoded file exactly matches the duration of the original file.

NOTE

This option is exclusively available for the Fraunhofer encoder.

The following options are exclusively available for the **Lame** encoder:

Allow Intensity Stereo Coding

Decreases the bit rate by reorganizing the intensity information between the channels.

Specify as Original Recording

Marks the encoded file as the original recording.

Write Private Bit

A custom flag.

Write Copyright Flag

Marks the encoded file as copyright-protected.

Write Check-Sum

Allows other applications to check the integrity of the file.

Create Long Frames

Saves space by writing fewer headers in the file (not compatible with all decoders).

RELATED LINKS
Encoding Audio Files on page 141

AAC Encoding Dialog

On saving an AAC audio file, you can adjust the encoding settings.

NOTE

The availability of options for AAC encoding depends on your operating system.

You can access the **AAC Encoding** dialog in most parts of WaveLab Elements where you can select an output file format.

EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, select **AAC (Advanced Audio Coding)** as the type. Click in the **Encoding** field, and select **Edit**.

Encoder

Allows you to select an encoder.

- **Microsoft Media Foundation** is the default encoder on Windows.
- **Apple Audio Toolbox** is the default encoder on macOS.

Bit Rate

The bit rate is related to the quantity of data that is used to encode the audio signal. The higher the value, the better the quality, but the larger the output file.

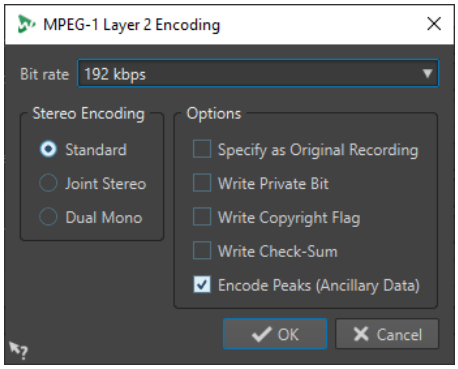
On Windows, you can only select **Constant Bit Rate**, whereas macOS allows you to choose from various bit rate modes.

RELATED LINKS
Encoding Audio Files on page 141

MPEG-1 Layer 2 Encoding Dialog

On saving an MPEG-1 Layer 2 (MP2) audio file, you can adjust the encoding settings.

You can open the **MPEG-1 Layer 2 Encoding** dialog from most places where you can select an output file format.



EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, set **MPEG Layer-2** as the type. Click in the **Encoding** field, and select **Edit**.

Bit Rate

Determines the bit rate. The bit rate is related to the quantity of data that is used to encode the audio signal. The higher the value, the better the quality, but the larger the output file.

Stereo Encoding

In **Standard** mode, the encoder does not use the correlation between channels. However, the encoder can take space from a channel that is easy to encode and use it for a complicated channel.

In **Joint Stereo** mode, the encoder uses the existing correlations between the two channels to increase the ratio quality/space.

In **Dual Mono** mode, both channels are independently encoded. We recommend using this mode for signals with independent channels.

Specify as Original Recording

Marks the encoded file as the original recording.

Write Private Bit

A custom flag.

Write Copyright Flag

Marks the encoded file as copyright-protected.

Write Check-Sum

Allows other applications to check the integrity of the file.

Encode Peaks (Ancillary Data)

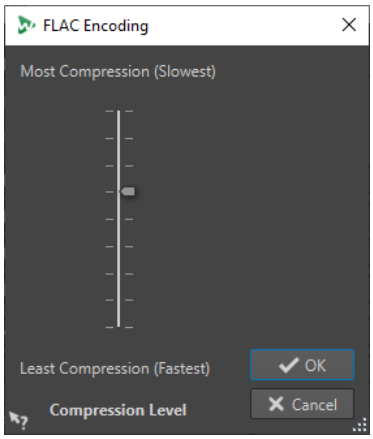
Must be activated for compatibility with specific systems, such as DIGAS.

RELATED LINKS
Encoding Audio Files on page 141

FLAC Encoding Dialog

On saving a FLAC audio file, you can adjust the encoding settings.

You can open the **FLAC Encoding** dialog from most places where you can select an output file format.



EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, set **FLAC** as the type. Click in the **Encoding** field, and select **Edit**.

Compression Level

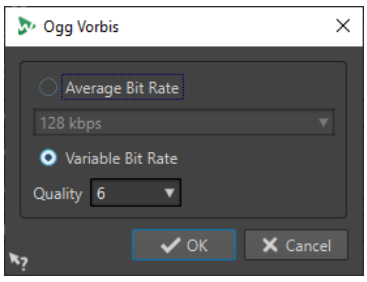
Allows you to specify the compression level. The more compression, the slower the encoding.

RELATED LINKS
Encoding Audio Files on page 141

Ogg Vorbis Dialog

On saving an Ogg Vorbis audio file, you can adjust the encoding settings.

You can open the **Ogg Vorbis** dialog from most places where you can select an output file format.



EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, set **Ogg Vorbis** as the type. Click in the **Encoding** field, and select **Edit**.

Average Bit Rate

If this option is activated, the average bit rate in the file remains constant during encoding. As the file size is proportional to the time, this makes the localization of a given point easier, but it can result in a lower quality, compared to the **Variable Bit Rate** option.

Variable Bit Rate

If this option is activated, the bit rate in the file varies during encoding, depending on the complexity of the material. This can produce a better quality/size ratio in the resulting file.

In the **Quality** field, select the quality. Lower quality settings result in smaller files.

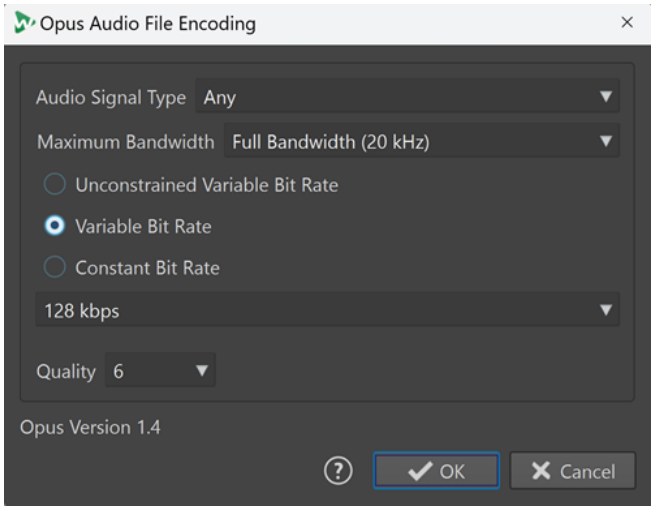
RELATED LINKS

Encoding Audio Files on page 141

Opus Audio File Encoding Dialog

On saving an audio file in the Opus file format, you can adjust the encoding settings.

You can open the **Opus Audio File Encoding** dialog from most places where you can select an output file format.



EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, set **Opus** as the type. Click in the **Encoding** field, and select **Edit**.

Audio Signal Type

Allows you to indicate the content type of your audio material (**Music**, **Voice**, or **Any**). For **Music** or **Voice**, this can enhance the resulting audio quality, as the encoding process is automatically adapted to the audio signal type.

Maximum Bandwidth

Ensures that the bandwidth of your audio file does not exceed a specific maximum value. As a result, the encoder discards any frequencies above this threshold.

Unconstrained Variable Bit Rate

With this option activated, the bit rate in the file is dynamically adjusted and varies while encoding, without any restrictions, based on the complexity of the material. This can enhance the quality/size ratio of the resulting file, compared to the **Constant Bit Rate** setting.

Variable Bit Rate

With this option activated, during the encoding process, the bit rate in the file is dynamically adjusted, based on the complexity of the material, and continuously approximated to the specified bit rate value. This can enhance the quality/size ratio of the resulting file, compared to the **Constant Bit Rate** setting.

Constant Bit Rate

With this option activated, the bit rate in the file remains constant during the encoding process, regardless of the complexity of the audio material.

NOTE

This can reduce the quality/size ratio of the resulting file, compared to a variable bit rate setting.

NOTE

The bit rate is related to the quantity of data that is used to encode the audio signal. The higher the value, the better the quality, but the larger the output file.

Quality

Allows you to choose the quality, with the scale ranging from **0** (very low) to **10** (very high).

NOTE

Lower quality settings result in smaller files. The higher the settings, the better the quality,but the longer it takes for the encoder to process the audio file.

RELATED LINKS
Encoding Audio Files on page 141

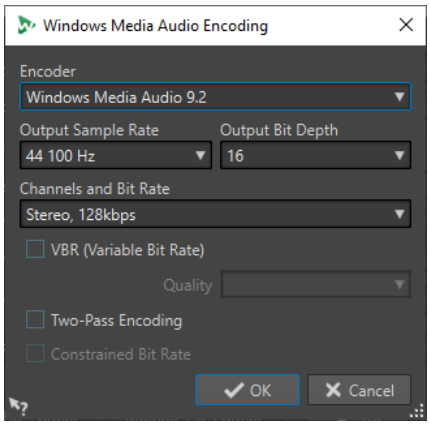
Windows Media Audio Encoding Dialog

On saving a Windows Media Audio (WMA) file, you can adjust the encoding settings.

NOTE

This dialog is only available for Windows.

You can open the **Windows Media Audio Encoding** dialog from most places where you can select an output file format.



EXAMPLE

Open an audio file. Select **File** > **Save As**. Click in the **Format** field, and select **Edit**. In the **Audio File Format** dialog, set **Windows Media Audio (WMA)** as the type. Click in the **Encoding** field, and select **Edit**.

Encoder

Sets the encoder.

Output Sample Rate

Sets the output sample rate of the encoded file. The higher the sample rate, the higher the quality, but the larger the output file.

Output Bit Depth

Sets the output bit depth of the encoded file.

NOTE

This parameter is not available for all encoders.

Channels and Bit Rate

The available items depend on the selected encoding method and the output sample rate.

VBR (Variable Bit Rate)

If this option is activated, the bit rate in the file varies during encoding, depending on the complexity of the material. This can produce a better quality/size ratio in the output file.

In the **Quality** field, select the quality. Lower quality settings result in smaller files.

Two-Pass Encoding

If this option is activated, the encoding quality increases, but the process takes twice as long.

Constrained Bit Rate

Only available with **VBR** and **Two-Pass Encoding** activated, you can use this option to avoid peaks by limiting the bit rate. We recommend using it for media, such as CDs or DVDs.

RELATED LINKS

Encoding Audio Files on page 141

Inserting Audio Files into Another Audio File

You can assemble an audio file from several audio files.

PROCEDURE

1. In the **Audio Editor**, open the audio file into which you want to insert another audio file.

   To insert an audio file at the edit cursor position, make sure that **Snap to Magnets** is activated, and that **Cursor** is activated on the **Magnet** pop-up menu. This causes the edit cursor to snap to the nearest zero crossing, which avoids glitches.
2. Select the **Insert** tab.
3. In the **Audio File** section, select one of the following insert options:
   - **At Start**
   - **At End**
   - **At Cursor**

   If you select **At Cursor**, the audio file is split at the insert position. The part after the split is moved to the right.
4. Select the audio file that you want to insert from the pop-up menu.

RELATED LINKS
Magnetic Bounds in Audio Files on page 119

Turning Selections Into New Files

You can turn selections into new files via drag and drop, via the context menu in the **Audio Editor**, or by using the **Render** tab in the **Audio Editor**.

RELATED LINKS
Render Tab (Audio Editor) on page 128
Turning Selections Into New Files By Dragging on page 149
Turning Selections Into New Files via the Menu on page 149

Turning Selections Into New Files By Dragging

PROCEDURE

1. Make a selection in **Waveform** window of the **Audio Editor**.
2. Drag the selection to the tab bar above the **Waveform** window, and release the mouse button.

RESULT

The selection is opened in a new stereo window.

RELATED LINKS
Audio Editor Window on page 115

Turning Selections Into New Files via the Menu

PROCEDURE

1. Make a selection in the **Waveform** window of the **Audio Editor**.

2. Right-click the selection, and select **Copy Selection to New Window**.
3. From the submenu, select one of the following options:
    - **Duplicate**
    - **Stereo Version**
    - **Mono Mixdown**
    - **Mono Mixdown (Subtract Right Channel from Left Channel)**

RESULT

The selection is opened in a new stereo or mono window.

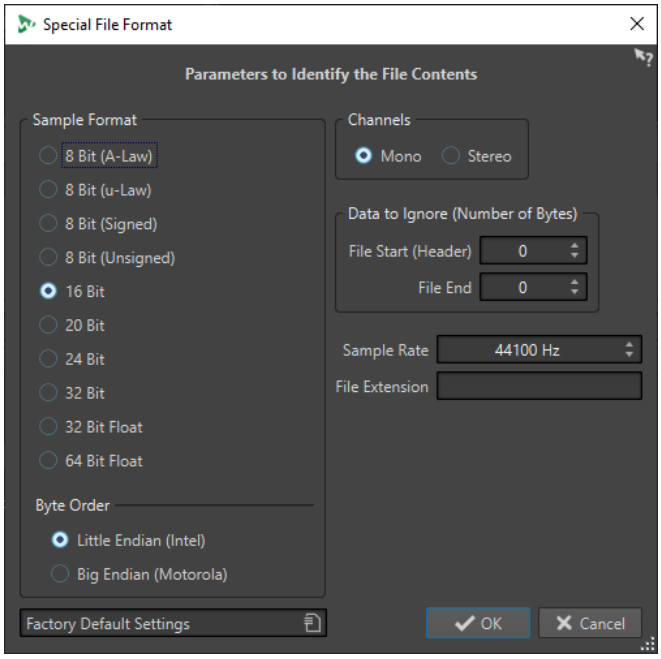
RELATED LINKS

Audio Editor Window on page 115

Special File Format Dialog

When opening files via the **Unknown Audio** option, you can specify how to interpret the format of the audio file.

- To open the **Special File Format** dialog, select **File** > **Import**. Click **Unknown Audio**, and select the file that you want to open.



Sample Format

Specifies the binary representation of the samples in the file.

Byte Order

Specifies the order in which to interpret bytes. This only applies for 16 bit or more.

Channels

Specifies the number of audio channels in the audio file.

Data to Ignore (Number of Bytes)

Specifies how many bytes at the start and at the end of the audio file to ignore.

Sample Rate

Specifies the sample rate of the audio file.

File Extension

Specifies the default file name extension for the audio file. When the file selector opens after closing this dialog, only the file with this extension is displayed.

Converting From Stereo to Mono/From Mono to Stereo

You can convert audio files from mono to stereo and from stereo to mono.

Converting a mono file into a stereo file produces an audio file that contains the same material in both channels; for example, for further processing into real stereo. Converting a stereo file into a mono file mixes the stereo channels to a mono channel.

RELATED LINKS
Converting a Selection From Stereo to Mono on page 151
Converting From Stereo to Mono While Saving on page 151
Converting a Selection From Mono to Stereo on page 152

Converting a Selection From Stereo to Mono

PROCEDURE

1. Make a stereo selection in the **Audio Editor**.
2. Select **File** > **New**.
3. Select **Audio File** > **From Current File**.
4. Select one of the following options:
   - To mix the left and right stereo channels when converting to mono, click **Mono Mixdown**.
   - To mix the left channel with the inverse of the right channel when converting to mono, click **Mono Mixdown (Subtract Right Channel from Left Channel)**.

     The resulting mono waveform contains the difference between the channels. This enables you to check if a wave file is a genuine stereo file or a mono file converted to stereo, for example.

RESULT

The selection is opened in a new mono window.

RELATED LINKS
Audio Editor Window on page 115

Converting From Stereo to Mono While Saving

PROCEDURE

1. Make a stereo selection in the **Audio Editor**.
2. Select **File** > **Save As**.
3. In the **Save As** window, specify a file name and a location.
4. Click in the **Format** field, and select **Edit**.

5. In the **Audio File Format** dialog, open the **Channels** pop-up menu, and select one of the mono settings.

   For example, when selecting **Mono (Mix -3 dB)**, the resulting audio file is attenuated by 3 dB.
6. Click **OK**.
7. Click **Save**.

RELATED LINKS
Audio Editor Window on page 115
Audio File Format Dialog on page 138

Converting a Selection From Mono to Stereo

PROCEDURE

1. Make a mono selection in the **Audio Editor**.
2. Select **File** > **New**.
3. Select **Audio File** > **From Current File**.
4. Click **Stereo Version**.
5. Click **Create**.

RESULT

The selection is opened in a new stereo window.

RELATED LINKS
Audio Editor Window on page 115

Swapping Channels in a Stereo File

You can swap the two channels in an audio file; that is, you can move the audio in the left channel to the right channel, and the audio in the right channel to the left channel.

- To swap the channels of the whole audio file in the **Audio Editor**, select the **Process** tab. In the **Other** section, click **Swap Stereo Channels**.
- To swap the channels of a selected range of the audio file, make a selection range in the **Audio Editor**, and select the **Process** tab. In the **Other** section, click **Swap Stereo Channels**.

RELATED LINKS
Process Tab (Audio Editor) on page 128

Special Paste Options

The **Paste** pop-up menu in the **Audio Editor** offers additional paste options.

- To access the special paste options, open the **Audio Editor**, and select the **Edit** tab. In the **Cut Copy Paste** section, right-click **Paste**.

Overwrite

Overwrites data in the destination file, rather than moving data to make room for the inserted audio. How much is overwritten depends on the selection in the destination file:

- If there is no selection in the destination file, a section of the same length as the pasted selection is overwritten.
- If there is a selection in the destination file, the pasted selection replaces the selection.

Append

Adds the pasted audio after the end of the file.

Prepend

Adds the pasted audio before the beginning of the file.

Multiple Copies

Opens a dialog, in which you can enter the number of copies that you want to create.

Mix

Opens the **Mix** dialog, which allows you to blend two files into each other, starting at the selection or, if there is no selection, at the cursor position. You can specify the gain for the audio on the clipboard and at the destination.

All the data on the clipboard is mixed in, regardless of the length of the selection.

Moving Audio

You can rearrange the order of the audio in a file by dragging, and by cutting and pasting.

Moving Audio by Dragging

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, make a selection.
2. Drag the selection to a position outside the selection in the same file, or to another waveform window.

RESULT

The selection is removed from its original position and inserted where you drop it.

NOTE

To undo a transfer to another file, you must first undo the paste operation in the destination window and then undo the cut operation in the source window.

RELATED LINKS

Audio Editor Window on page 115

Moving Audio by Cutting and Pasting

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, make a selection.
2. Cut the audio in one of the following ways:
   - Select the **Edit** tab, and click **Cut**.
   - Press **Ctrl/Cmd** - **X**.
3. Select how to insert the selection:

- To insert the audio, click the position in the same file or in another file.
- To replace a section of the audio, select it.

4. To paste the selection, do one of the following:
   - Select the **Edit** tab, and click **Paste**.
   - Press **Ctrl/Cmd**-**V**.

RESULT

The selection is removed from its original position and inserted where you drop it.

NOTE

To undo a transfer to another file, you must first undo the paste in the destination window and then undo the cut operation in the source window.

RELATED LINKS

Audio Editor Window on page 115
Edit Tab (Audio Editor) on page 123

Moving Audio by Nudging

You can use the nudge tools to gradually move a selection within an audio file to the left or to the right.

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, make a selection.
2. Select the **Edit** tab.
3. In the **Nudge** section, click **Nudge Left** or **Nudge Right**.

RESULT

The audio is moved by one pixel. The exact distance depends on how far you have zoomed in.

EXAMPLE

If the status bar displays **x1:256**, the selection is moved by 256 samples. The moved section overwrites the audio at that position.

RELATED LINKS

Audio Editor Window on page 115
Edit Tab (Audio Editor) on page 123

Copying Audio

You can copy sections of audio within the same file or from one audio file to another.

Stereo/Mono Handling when Copying or Dragging

When you drag or copy stereo or mono files to other locations, the target location determines how the files are inserted.

When you drag across files, stereo/mono is handled as follows:

Dragged section	Drop wave	Action
Stereo	Stereo	The dragged audio is always inserted into both channels.
Stereo	Mono	Only the left channel is inserted.
Mono	Stereo	What happens depends on the vertical drop position. This is indicated by the cursor shape. The selection can be inserted into only one of the channels, or the same material can be inserted into both channels.

When you copy and paste files, stereo/mono is handled as follows:

Copied section	Paste wave	Action
Stereo	Stereo	If the cursor extends across both channels of the destination file, the material is inserted into both channels.
Mono	Mono	If the cursor is only in one channel, the audio is only pasted in that channel. Material from the left channel is pasted in the left channel and material from the right channel is pasted in the right channel.
Stereo	Mono	Only the left channel is pasted.
Mono	Stereo	What happens depends on whether the cursor is in one channel or both. The audio is either pasted in one of the channels, or the same material is inserted into both channels.

Sample Rate Conflicts

If you copy or move audio from one window to another and the sample rates of the two files are not the same, the copied/moved sound plays back at the wrong pitch (speed). WaveLab Elements warns you if this is about to happen.

While mixing sample rates can be used as an effect, more often than not, it is not intended. You have two options to prevent sample rate conflicts:

- You can convert the sample rate of the source file to the same sample rate as the destination file before editing.
- You can convert the sample rate of the destination file to the same sample rate as the source file before adding the audio.

Duplicating Audio by Copying and Pasting

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, make a selection.
2. Use one of the following copying methods:

- Select the **Edit** tab, and click **Copy**.
- Press **Ctrl/Cmd**-**C**.

3. Select how to insert the selection:
   - To insert the audio, click at the desired position, either in the same file or in another file.
   - To replace a section of an audio file, select it.
4. To paste the selection, do one of the following:
   - Select the **Edit** tab, and click **Paste**.
   - Press **Ctrl/Cmd**-**V**.

RELATED LINKS
Audio Editor Window on page 115
Edit Tab (Audio Editor) on page 123

Copying Audio by Dragging

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, make a selection.
2. Click the middle of the selection, and drag it to a position outside the selection in the same file, or to another waveform window.

RESULT

The selection is inserted at the indicated point. The audio that previously started at that point is moved to the right.

RELATED LINKS
Audio Editor Window on page 115

Mixing Down and Rendering

You can render regions of an audio files or whole audio files to a single audio file.

RELATED LINKS
Rendering in the Master Section on page 310
Rendering Audio Files on page 156

Rendering Audio Files

PREREQUISITE

You have set up your audio file.

PROCEDURE

1. In the **Audio Editor**, select the **Render** tab.
2. In the **Source** section, specify which part of the audio file you want to render.
3. In the **Result** section, activate **Named File**.
4. In the **Output** section, indicate where to save your rendered file via the **Location** field.
5. In the **Output** section, click the **Format** field, and click **Edit**.

6. Set the required parameters in the **Audio File Format** dialog.
7. Click **OK**.
8. Optional: Make additional adjustments via the **Render** tab.
9. In the **Render** section, click **Start Rendering**.

RESULT

The audio file is rendered.

RELATED LINKS

Render Tab (Audio Editor) on page 128
Audio File Format Dialog on page 138

Changing the Audio Properties

You can change the sample rate and the bit depth of audio files.

Changing values for audio properties does not process the audio file in any way (in contrast to using **Save As**). However, the following rules apply:

- If you change the sample rate, the file plays back at a new pitch.
- If you change the bit depth, the file is converted to the new precision the next time you save it.

NOTE

There is no undo for this. If you save a file with a lower bit depth, the file is converted permanently.

PROCEDURE

1. In the **Audio Editor**, open an audio file.
2. Select the **File** tab.
3. Click **Info**.
4. In the **Audio Properties** section, select a new **Sample Rate** and/or **Bit Depth**.
5. Click **Apply Changes**.

RELATED LINKS

Info Dialog on page 51

Metadata

Metadata consists of attributes that describe the audio contents; for example, the titles of an album, the author, or the recording date of a title. The availability of the data varies, depending on the file format of the selected audio file.

When opening an audio file or audio montage, the metadata found in the file is loaded. You can create different metadata presets for audio files and audio montages. When creating a new file from a template, this file can inherit the metadata of the preset, if available.

A preview of the metadata is displayed in the **Metadata** window. To view the complete metadata of a file and to be able to edit the metadata, open the **Metadata** dialog.

Not all file formats can save metadata. Depending on the output file format, all metadata or only part of the metadata is saved in an audio file. The following file formats can contain metadata:

- .wav
- .mp3
- .ogg
- .wma
- .flac
- .m4a
- .mp4

For MP3, the following metadata types are available:

- ID3v1 and ID3v2, including picture support

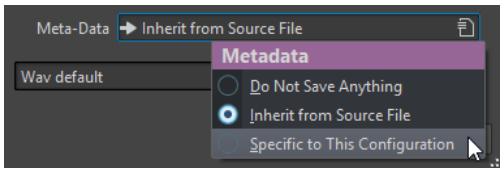
NOTE

- MP4 is not ID3v2-compatible. However, in WaveLab Elements, it uses the same editor.
- The metadata codes that are followed by an “(i)” indicate the iTunes-compatible fields. Lyrics and pictures are also iTunes-compatible.

For WAV, the following metadata types are available:

- RIFF
- BWF
- BWF markers
- CART (AES standard, dedicated to broadcast needs)
- ID3, including picture support

When saving or recording an audio file in the **Audio File Format** dialog, you can choose not to use any metadata, to inherit the metadata from the source file, or to edit the metadata of the file.



Metadata can be entered manually or generated automatically.

The following options can be generated automatically:

- Unique Source Identifier (USID)
  You can activate **USID** on the **Basics** tab of the **BWF** tab.
- Time markers (**CART** tab)

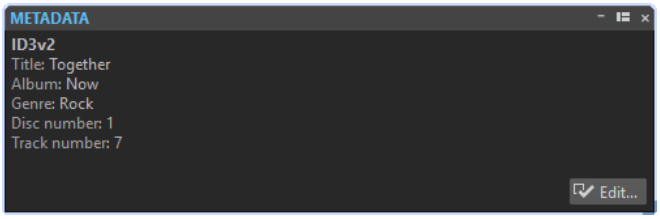
WaveLab Elements includes several metadata presets. They are used as examples and can be customized to your needs. You can load metadata presets from the **Metadata Presets** pop-up menu in the **Audio File Format** dialog or from the **Metadata** dialog.

RELATED LINKS
Metadata Window on page 159
Metadata Dialog on page 159
Audio File Format Dialog on page 138
Metadata Presets on page 161

Metadata Window

In the **Metadata** window, you can see and edit metadata of the file in the **Audio Editor**, the **Audio Montage** window, or the **Batch Processor** window.

- To open the **Metadata** window, open the **Audio Editor**, the **Audio Montage** window, or the **Batch Processor** window, and select **Tool Windows** > **Metadata**.



When you select an audio file in the **File Browser** window, the corresponding metadata is displayed in the **Metadata** window and the metadata section of the **Info** tab. When you click elsewhere, the **Metadata** window displays the metadata of the selected audio file, audio montage, or batch process.

Preview

Displays the metadata of the selected audio file, audio montage, or batch process.

Edit

Opens the **Metadata** dialog, where you can view and edit the entire metadata of the selected file.

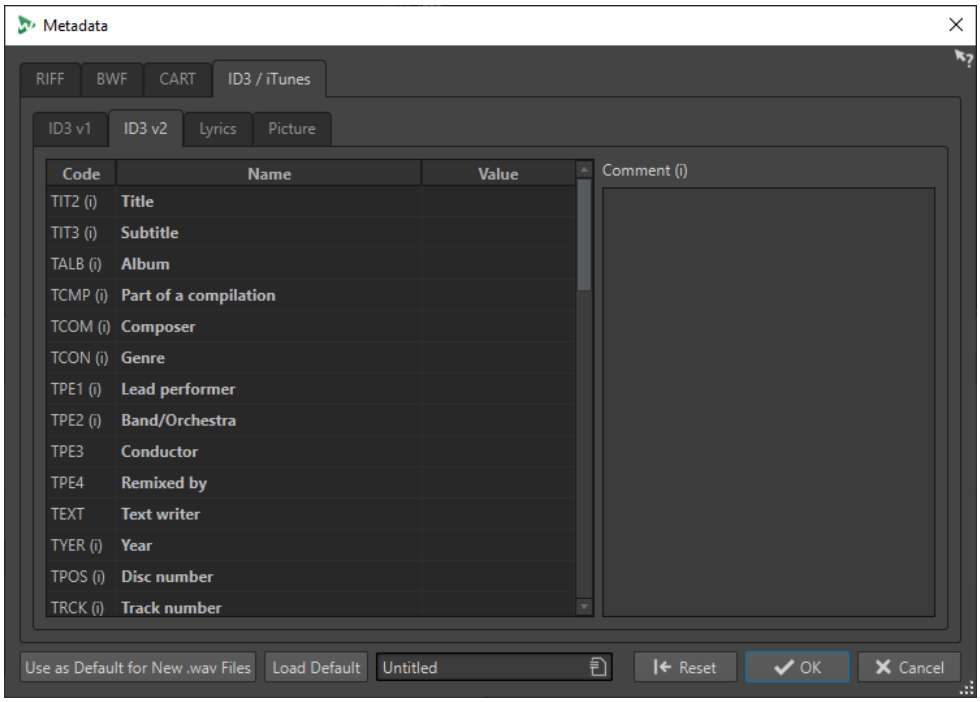
RELATED LINKS
Metadata on page 157
Metadata Dialog on page 159
Editing Metadata on page 160
File Browser Window on page 69

Metadata Dialog

The **Metadata** dialog allows you to define the metadata to be embedded in your audio file.

- To open the **Metadata** dialog, open the **Metadata** window, and click **Edit**.

Further processing of the metadata may vary, depending on the particular file type.



Metadata dialog for WAV files

When opening the **Metadata** dialog for files in the **Audio Editor**, you can edit the metadata that is saved with the audio file. This metadata is saved to disk at a later point in time.

When opening the **Metadata** dialog for files in the **Audio Montage** window, you can edit the metadata for the audio files that are created when rendering the audio montage. If you render to WAV or MP3 formats, the metadata is associated to these files.

RELATED LINKS
Metadata on page 157
Metadata Window on page 159
Editing Metadata on page 160

Editing Metadata

You can edit metadata for audio files, audio montages, and batch processes.

PREREQUISITE

You have opened an audio file, audio montage, or batch process.

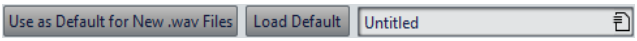
PROCEDURE

1. In the **Metadata** window, click **Edit**.
2. In the **Metadata** dialog, make the required adjustments.
3. Click **OK**.

RELATED LINKS
Metadata on page 157
Metadata Window on page 159
Metadata Dialog on page 159

Metadata Presets

In the **Metadata** dialog, you can save metadata presets and apply these presets to WAV, MP3, MP4, and M4A files.



The **Use as Default for New .wav Files** option allows you to define a set of metadata as default.

When you create a new file and do not add any metadata, this default metadata is applied to the file when saving or rendering it. For example, you can save or record WAV files with BWF metadata and automatically add a Unique Material Identifier.

To edit the default metadata preset, select **Load Default**, and edit the preset.

RELATED LINKS
Metadata Dialog on page 159

CART and Markers

WaveLab Elements reads the CART markers, if available, and merges them with the existing markers of the file.

The CART standard can contain up to eight markers. WaveLab Elements saves them if their names conform to the CART standard.

If **Generate Time Markers** is activated on the **CART** tab of the **Metadata** dialog, the markers are generated, provided that at least one CART text field contains content.

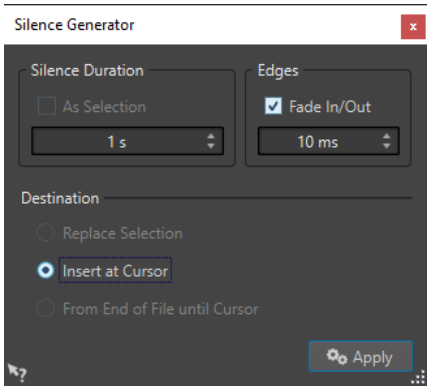
To be able to merge the CART markers with the markers of a file when rendering a file, the option **Copy Markers** must be activated via the **Render** function in the **Master Section**.

RELATED LINKS
Metadata on page 157
Metadata Dialog on page 159
Master Section Window on page 296

Silence Generator Dialog

The **Silence Generator** dialog allows you to add silence to an audio file.

- To open the **Silence Generator** dialog, select the **Insert** tab in the **Audio Editor**, and click **Silence Generator**.



Silence Duration

As Selection uses the duration of the active audio selection as the duration of the silent section. You can specify the duration of the silent section in the value field below.

Edges

Fade In/Fade Out performs a crossfade at the start and at the end of the silent section, for smoother transitions. You can specify the fade time in the value field below.

Destination

- **Replace Selection** replaces the current audio selection with the silent section.
- **Insert at Cursor** inserts the silent section at the cursor position.
- **From End of File Until Cursor** extends the audio file with silence up to the cursor position. Activating this option also defines the silence duration and ignores the **Silence Duration** setting.

RELATED LINKS
Inserting Silence and Replacing Audio with Silence on page 162

Inserting Silence and Replacing Audio with Silence

You can insert a specified length of silence at any position of the audio file, and you can replace an existing section of an audio file with silence.

PROCEDURE

1. Do one of the following:
   - To insert silence, in the **Audio Editor**, set the cursor where you want the silence to begin.
   - To replace an existing audio section with silence, make a selection in the **Audio Editor**.
2. Select the **Insert** tab.
3. In the **Signal** section, click **Silence Generator**.
4. Do one of the following:
   - To insert silence, in the **Silence Generator** dialog, deactivate **As Selection**, and specify the length. Set the destination to **Insert at Cursor**.
   - To replace an existing audio section with silence, in the **Silence Generator** dialog, set the silence duration to **As Selection**, and the destination to **Replace Selection**.
5. Click **Apply**.

RELATED LINKS
Insert Tab (Audio Editor) on page 127
Silence Generator Dialog on page 161

Muting a Selection

The **Mute Selection** function replaces the selection with true silence.

PROCEDURE

1. In the **Waveform** view of the **Audio Editor**, make a selection.
2. Select the **Insert** tab.

3. In the **Signal** section, click **Mute Selection**.

RELATED LINKS
Insert Tab (Audio Editor) on page 127

Replacing Audio with a Beep Sound

You can replace a part of an audio file with a beep sound, to cover up a swear word, for example.

PROCEDURE

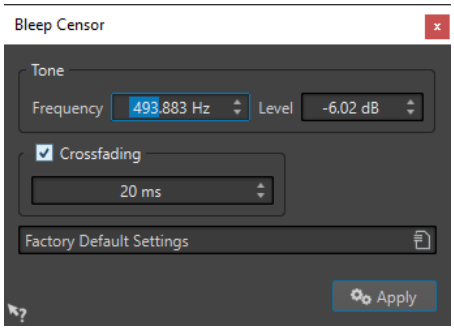
1. In the **Audio Editor**, make a selection.
2. Select the **Insert** tab.
3. In the **Signal** section, click **Bleep Censor**.
4. In the **Bleep Censor** dialog, specify the frequency and the level of the bleep censor tone.
5. Optional: Activate **Crossfading**, and specify the crossfade time.
   This creates a crossfade at the start and the end of the bleep censor region.
6. Click **Apply**.

RELATED LINKS
Insert Tab (Audio Editor) on page 127
Bleep Censor Dialog on page 163

Bleep Censor Dialog

The **Bleep Censor** dialog allows you to specify the bleep censor tone.

- To open the **Bleep Censor** dialog, select the **Insert** tab in the **Audio Editor**, and click **Bleep Censor** in the **Signal** section.



Frequency

Allows you to specify the frequency of the bleep censor tone.

Level

Allows you to specify the level of the bleep censor tone.

Crossfading

If this option is activated, WaveLab Elements creates a crossfade at the start and the end of the bleep censor region for a smoother transition. You can specify the crossfade time.

Presets

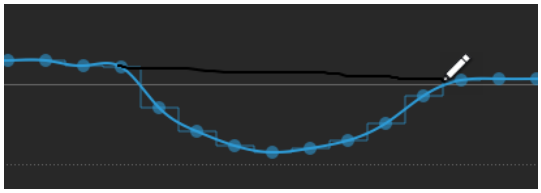
Allows you to save and restore bleep censor presets.

RELATED LINKS
Insert Tab (Audio Editor) on page 127
Replacing Audio with a Beep Sound on page 163

Waveform Restoration with the Pen Tool

The **Pen** tool allows you to redraw the waveform in the **Waveform** view, which enables you to quickly repair waveform errors.

The **Pen** tool can be used if the zoom resolution is set to 1:8 (one pixel on the screen equals 8 samples) or higher.



- To redraw the waveform, select the **Pen** tool on the **Edit** tab of the **Audio Editor**, click in the waveform, and draw the new waveform.
- To redraw the waveform of both channels at once, press **Shift** during the drawing process.

RELATED LINKS
Edit Tab (Audio Editor) on page 123

Audio Analysis

WaveLab Elements includes a comprehensive set of tools for analyzing your audio and for detecting errors.

For example, you can use the suite of audio meters or the **3D Frequency Analysis**. There are also several tools that help you examine any sample of your audio for errors or anomalies.

RELATED LINKS
Audio Editor Only: 3D Frequency Analysis on page 174
Audio Editor Only: Global Analysis on page 165

Audio Editor Only: Global Analysis

In the **Audio Editor**, you can perform an advanced analysis of your audio to identify areas with specific properties. This helps you to find problem areas such as glitches or clipped samples. You can also check general information, such as the pitch of a sound.

If you analyze a section of an audio file, WaveLab Elements scans the section or the audio file and extracts information, which is displayed in the dialog. WaveLab Elements also marks sections of the file that meet specific characteristics; for example, sections that are very loud or almost silent. You can then navigate between these points, set markers, or zoom in on markers. Most of the tabs allow you to determine exactly how to perform the analysis. Each tab focuses on a particular area for the analysis.

The **Global Analysis** dialog consists of the following tabs, which represent different types of analysis:

- The **Peaks** tab allows you to identify individual samples with very high values.
- The **Loudness** tab allows you to identify sections with a high intensity.
- The **Pitch** tab allows you to determine the exact pitch of a sound or section.
- The **Extra** tab provides information about DC offsets and the significant bit depth.
- The **Errors** tab allows you to find glitches and sections where the audio is clipped.

Most of the analysis types display “hot points”; that is, positions in the file that indicate peaks, glitches, etc.

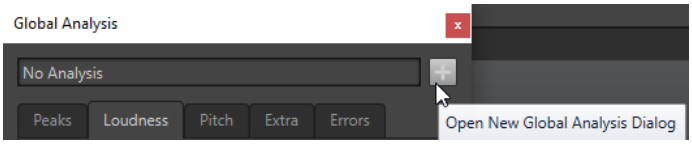
Preparing the Global Analysis

The **Global Analysis** dialog provides various analysis options.

PROCEDURE

1. In the **Audio Editor**, select the audio range that you want to analyze.
   To analyze the entire file, press **Ctrl/Cmd** - **A**. If **Process Whole File If There Is No Selection** is activated in the **Audio Files Preferences**, the whole file is analyzed automatically, provided that no selection has been made.
2. In the **Audio Editor**, select the **Process** tab.
3. In the **Analysis** section, click **Global Analysis**.

4. Optional: Click **Open New Global Analysis Dialog** at the top of the **Global Analysis** dialog to open another **Global Analysis** dialog.



RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Choosing the Analysis Type

You can choose from several types of analysis.

NOTE

Analyzing files takes some time, regardless of the analysis type. For this reason, we recommend that you exclusively select the types required to obtain the desired information.

You can select the analysis types in the **Global Analysis** dialog by activating them via the corresponding tabs.

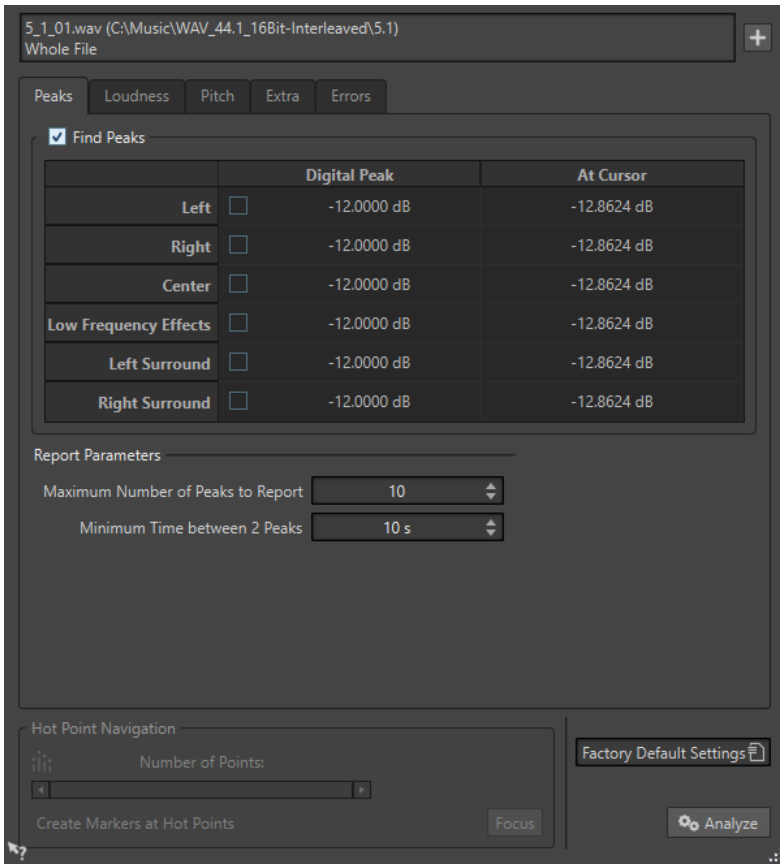
- To perform a peaks analysis, select the **Peaks** tab, and activate **Find Peaks**.
- To perform a loudness analysis, select the **Loudness** tab, and activate **Analyze Loudness**.
- To perform a pitch analysis, select the **Pitch** tab, and activate **Find Average Pitch**.
- To perform a DC offset analysis, select the **Extra** tab, and activate **Find DC Offset**.
- To perform an error analysis, select the **Errors** tab, and activate **Find Possible Glitches** and/or **Find Clipped Samples**.

RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Peaks Tab (Global Analysis)

The **Peaks** tab allows you to apply settings that help you to find digital peak values in your audio material; that is, single samples with very high values.

- In the **Global Analysis** dialog, select the **Peaks** tab.



Find Peaks

Enables the peak analysis.

Digital

Displays the highest peak in the analyzed section. When you click this value, the number of peaks that are detected in the selection is shown in the **Number of Points** section in the lower left corner of the dialog. You can use the hot points to move the cursor between the peaks.

At Cursor

Displays the level at the current audio file cursor position at the time of the analysis.

Maximum Number of Peaks to Report

Restricts the number of reported peaks. For example, setting this to **1** reports only the highest peak.

Minimum Time between 2 Peaks

Controls the distance between peaks, so that they do not appear too close to each other. For example, setting this to **1 s** ensures that two reported peaks are at least one second apart from each other.

Results of the Analysis

The **Find Peaks** fields show the highest peak in the analyzed section and the level of the sample at the cursor position at the time of the analysis.

RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Loudness Tab (Global Analysis)

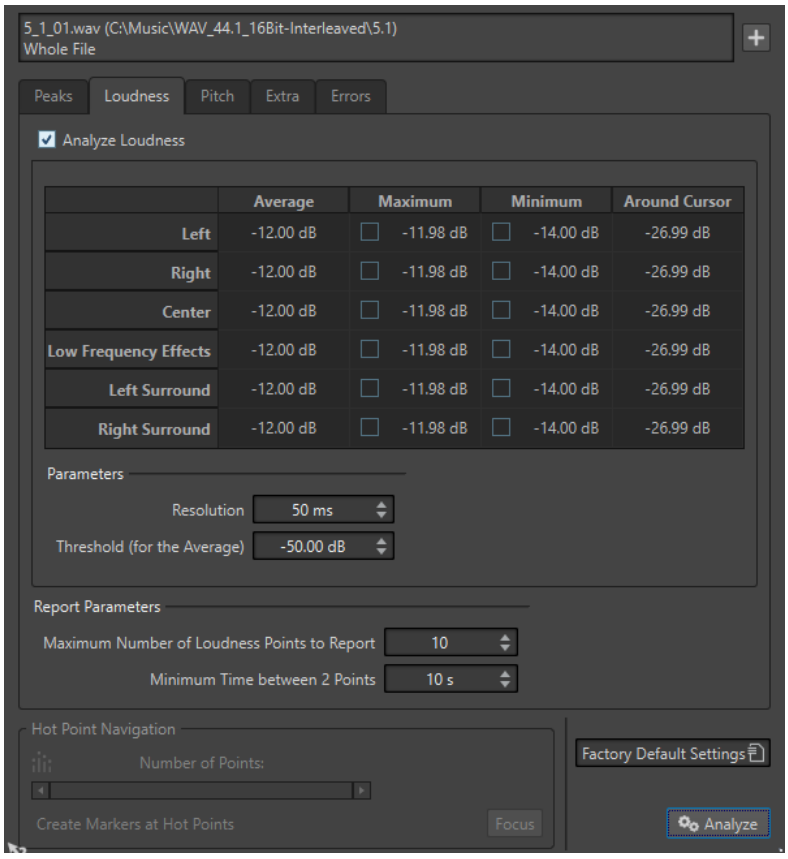
The **Loudness** tab allows you to apply settings that help you to find sections that are perceived as louder or weaker in volume by the human ear.

NOTE

To identify sections that the ear perceives as significantly high in terms of volume, you must look at a longer section of audio.

- In the **Global Analysis** dialog, select the **Loudness** tab.

Loudness Settings



Analyze Loudness

Enables the RMS loudness analysis.

Average

Displays the overall loudness of the analyzed selection.

Maximum

Displays the level of the loudest section in the analyzed selection. Clicking this value displays the number of loud sections detected within the selection in the **Number of Points** section in the lower left corner of the dialog.

Minimum

Displays the level of the quietest section in the analyzed selection. Clicking this value displays the number of weak sections that are detected within the selection in the **Number of Points** section in the lower left corner of the dialog. This provides adequate information about the signal-to-noise ratio (SNR) of the audio material.

Around Cursor

Displays the loudness at the audio file cursor position at the time of the analysis.

Resolution

The length of audio to be measured and averaged. If this value is lowered, short passages of loud/weak audio are detected. If the value is raised, the sound must be loud/weak for a longer period to result in a hot point.

Threshold (for the Average)

Ensures that the average value is calculated correctly for recordings with pauses. The value that you set here determines a threshold below which any detected audio is considered to be silence, and is therefore excluded from average value calculations.

Maximum Number of Loudness Points to Report

Restricts the number of reported hot points. The highest points are reported. For example, setting this to **1** reports only the loudest section or one of the sections with the same highest value.

Minimum Time between 2 Points

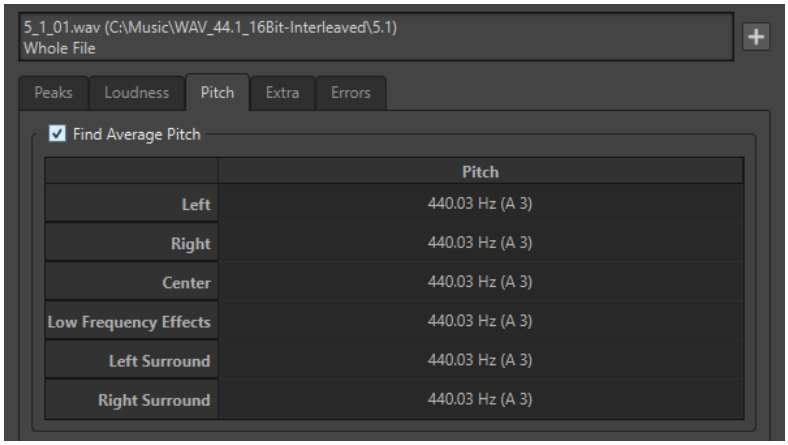
Controls the distance between points, so they do not appear too close to each other. For example, setting this to **1 s** ensures that there is always at least one second between reported points.

RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Pitch Tab (Global Analysis)

On this tab, you can apply settings that help you find the average pitch of an audio section.

- In the **Global Analysis** dialog, select the **Pitch** tab.



Settings on this tab allow you to gather information for pitch shifting, for example, to get one sound in tune with another. The display shows the pitch for each channel, in Hertz (Hz) and as semitones and cents (hundredths of a semitone). Because the display shows an overall value for the entire analyzed section, the hot point controls in the lower section of the dialog are not used on this tab.

Usage guidelines for the **Pitch** tab:

- The result is an average value for the whole selection.
- The method only works on monophonic material, not on chords or harmonies.
- The algorithm assumes that the analyzed section has a reasonably stable pitch.

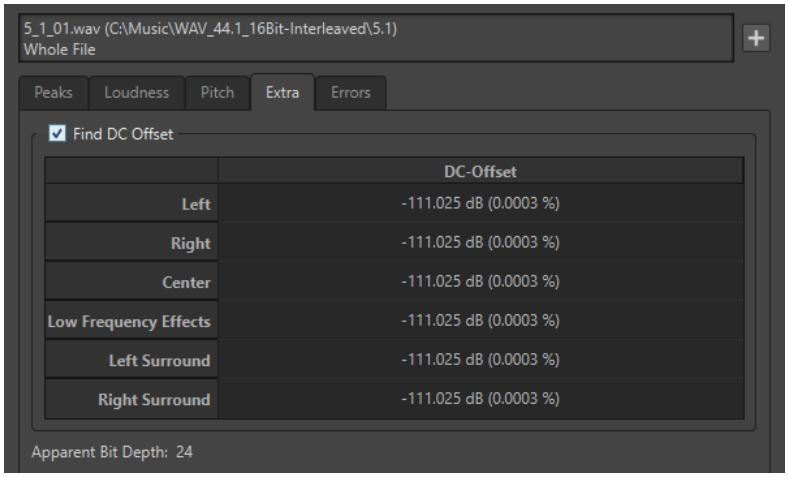
- The material must be relatively well isolated from other sounds.
- It is preferable to analyze the sustain portion of a sound rather than the attack. The pitch is usually not stable during the attack.
- Some synthetic sounds may have a weak fundamental (first harmonic) which can irritate the algorithm.

RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Extra Tab (Global Analysis)

This tab shows the average DC Offset of the analyzed section and the **Apparent Bit Depth**.

- In the **Global Analysis** dialog, select the **Extra** tab.



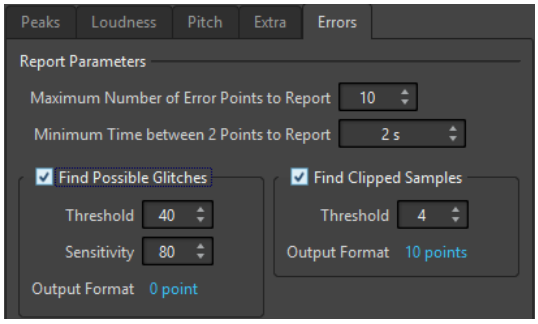
The **Apparent Bit Depth** attempts to detect the actual precision in the audio. This is useful, for example, if you want to check, whether a 24-bit file really uses 24 bits or if it was actually recorded with 16-bit precision and then expanded to 24 bits.

RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Errors Tab (Global Analysis)

This tab helps you find glitches and sections where the audio has clipped.

- In the **Global Analysis** dialog, select the **Errors** tab.



Maximum Number of Error Points to Report

Allows you to restrict the reported number of hot points.

Minimum Time between 2 Points to Report

Controls the distance between points, so they do not appear too close to each other. For example, setting this to **1 s** ensures that there is always at least one second between reported points.

Find Possible Glitches

Enables glitch analysis.

- **Threshold** sets the value at which a change in level is considered to be a glitch. The higher the value, the less sensitive the detection.
- **Sensitivity** is a length value that represents the length of time in which the waveform must exceed the threshold to be reported as a glitch. The higher the value, the less sensitive the detection.
- **Output Format** displays the number of clipping occurrences that are detected by the analysis. Clicking this value displays the number of clips in the **Number of Points** section in the lower left corner of the dialog.

NOTE

Make sure that the points that are detected by the algorithm are real glitches. Zoom in and play back to check whether the detected points really indicate a problem.

Find Clipped Samples

Enables clipping analysis.

- **Threshold** checks for a number of consecutive samples at full value to determine whether clipping has occurred. The **Threshold** setting determines the exact number of these consecutive samples that must occur for the program to report clipping.
- **Output Format** displays the number of clipping occurrences that are detected by the analysis. Clicking this value displays the number of clips in the **Number of Points** section in the lower left corner of the dialog.

RELATED LINKS
Audio Editor Only: Global Analysis on page 165

Error Detection

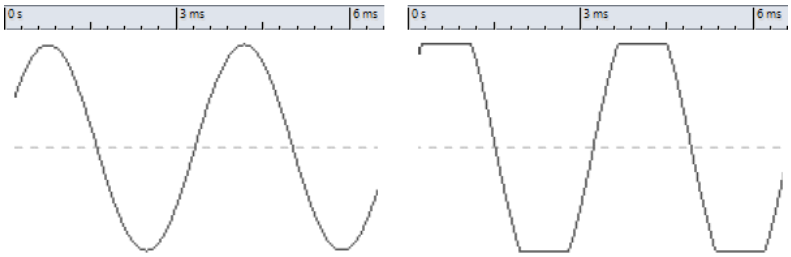
You can detect errors, such as glitches and sections where the audio has clipped.

Glitches

- These are disruptions in the audio. Glitches may occur after problematic digital transfers, after careless editing, etc. They manifest themselves as “clicks” or “pops” in the audio.

Clipping

- A digital system has a finite number of levels that it can represent properly. When recorded sound levels are too high or when the system cannot handle levels that have been raised by digital processing, hard clipping occurs that you can hear as strong distortion.



A sine waveform before clipping and after.

Result of the Analysis

This reports the number of glitches and clipping instances that have been detected.

Performing a Global Analysis

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and select the tab that you want to include in the analysis.

PROCEDURE

1. In the **Global Analysis** dialog, set up the parameters.

   Most of the tabs have settings that determine how the analysis should be performed.
2. If the **Peaks** or **Loudness** tab is selected, move the cursor to the position that you want to analyze.

   The **Peaks** and **Loudness** tabs report values for the position of the cursor.
3. Click **Analyze**.

Results of the Global Analysis

Depending on the analysis type, one or several values are returned for the analyzed audio.

For the **Pitch** and **Extra** analyses, only one value is returned. The other analysis types provide a number of positions in the file that indicate peaks, glitches, etc. These points are called hot points.

RELATED LINKS

Checking the Results of the Global Analysis on page 172

Checking the Results of the Global Analysis

The results of the global analysis are marked with hot points. You can browse through these points to see the results of the analysis.

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and perform the analysis.

PROCEDURE

1. In the **Global Analysis** dialog, click the tab that represents the values that you want to check.
2. Check the display for maximum/minimum values in the entire analyzed section.
3. Decide which of these values you want to check.

4. Click the value.
5. Check the **Number of Points** value at the bottom of the dialog.

   The value shows the number of positions that were detected by the analysis.
6. Use the scrollbar below the **Number of Points** value to browse between the detected positions.

   The edit cursor shows the position in the wave window.
7. To browse another property, click the corresponding tab, and then the value button.

   NOTE

   The result of the analysis is saved until you close the dialog or click **Analyze** again.

RELATED LINKS
Performing a Global Analysis on page 172
Creating Markers at Hot Points on page 173

Creating Markers at Hot Points

Creating markers at hot points simplifies browsing the results of the global analysis.

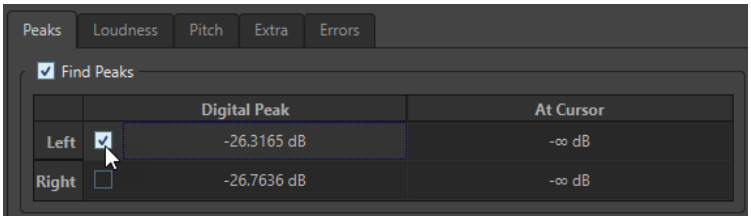
PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and perform the analysis.

PROCEDURE

1. In the **Global Analysis** dialog, select the analysis type for which you want to create markers at hot points.

   You can add markers for only one channel at a time.



2. Click **Create Markers at Hot Points** at the bottom of the **Global Analysis** dialog.

   Temporary markers are added at all hot points on the corresponding channel.

RESULT

The markers are named using the following principle: “Hot point number (Channel)”. For example, a marker at the third hot point in the left channel would be labeled “3 (L)”.

RELATED LINKS
Performing a Global Analysis on page 172
Checking the Results of the Global Analysis on page 172
Focusing Hot Points on page 174

Focusing Hot Points

After a global analysis, you can set the focus of the display to a specific hot point.

PREREQUISITE

In the **Audio Editor**, select the **Analyze** tab, click **Global Analysis**, and perform the analysis.

PROCEDURE

1. Use the **Number of Points** scrollbar to move the position indicator to the position in which you are.
2. Click **Focus**.

   The wave window zooms in on the selected point. The **Global Analysis** dialog is reduced to the bottom part.
3. To return to the full view of the **Global Analysis** dialog, click **Focus** again.

RELATED LINKS

Performing a Global Analysis on page 172
Creating Markers at Hot Points on page 173
Checking the Results of the Global Analysis on page 172

Audio Editor Only: 3D Frequency Analysis

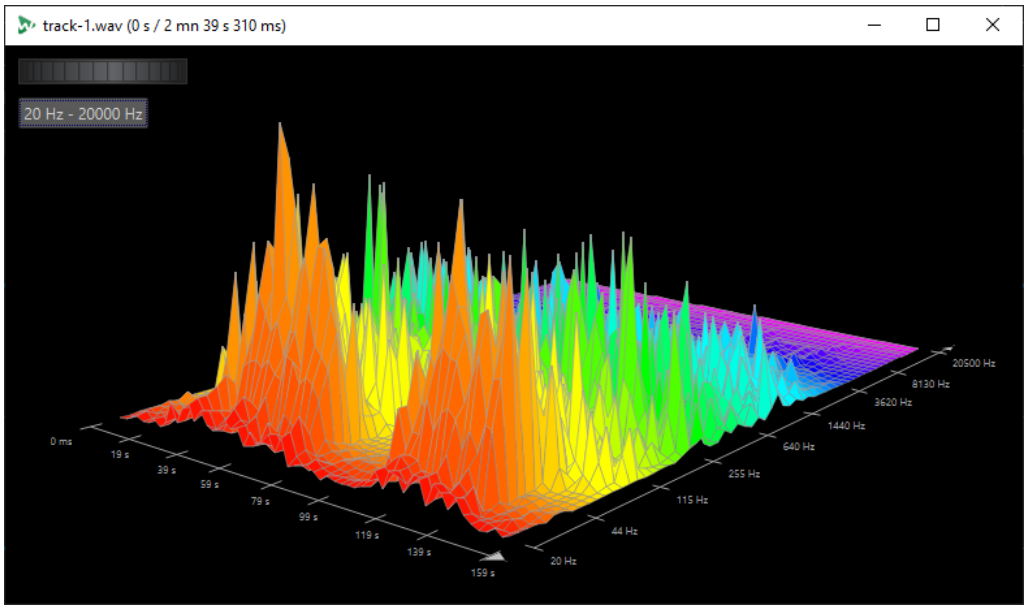
Using the 3D Frequency Analysis, you can view an audio file in the frequency domain.

Use the 3D Frequency Analysis for the following:

- Viewing the frequency spectrum distribution in a mix
- Identifying which frequencies can be reduced or boosted as a basis for equalizing
- Viewing parts of the frequency spectrum that are occupied by an ambience sound that you want to filter out

A wave display (time domain) informs you about the start and end of a sound in a file, but lacks information about the timbral contents of the file that a frequency graph (frequency domain) provides. The graph that is used in WaveLab Elements is often referred to as an FFT (Fast Fourier Transform) plot. If you select a stereo recording, a mix of the two channels is analyzed.

The wheel control allows you to view the frequency spectrum from different angles. For example, you can open several **3D Frequency Analysis** windows, each with a different perspective. This allows you to get a better view of an otherwise cluttered graph.



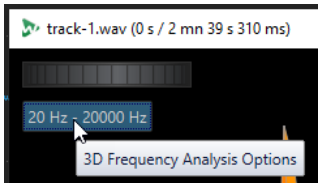
RELATED LINKS
Creating a Graph for 3D Frequency Analysis on page 175
3D Frequency Analysis Options Dialog on page 176

Creating a Graph for 3D Frequency Analysis

The length of the selected audio affects the accuracy of the analysis. For short selections, the result is more detailed. Consider making a separate analysis of the attack in which the most drastic variations occur.

PROCEDURE

1. In the wave window, select the section of the file that you want to analyze.
   If you make no selection, the whole audio file is analyzed.
2. In the **Audio Editor**, select the **View** tab.
3. In the **Analysis** section, click **3D Frequency Analysis**.
4. To edit the analysis parameters, click **3D Frequency Analysis Options**.



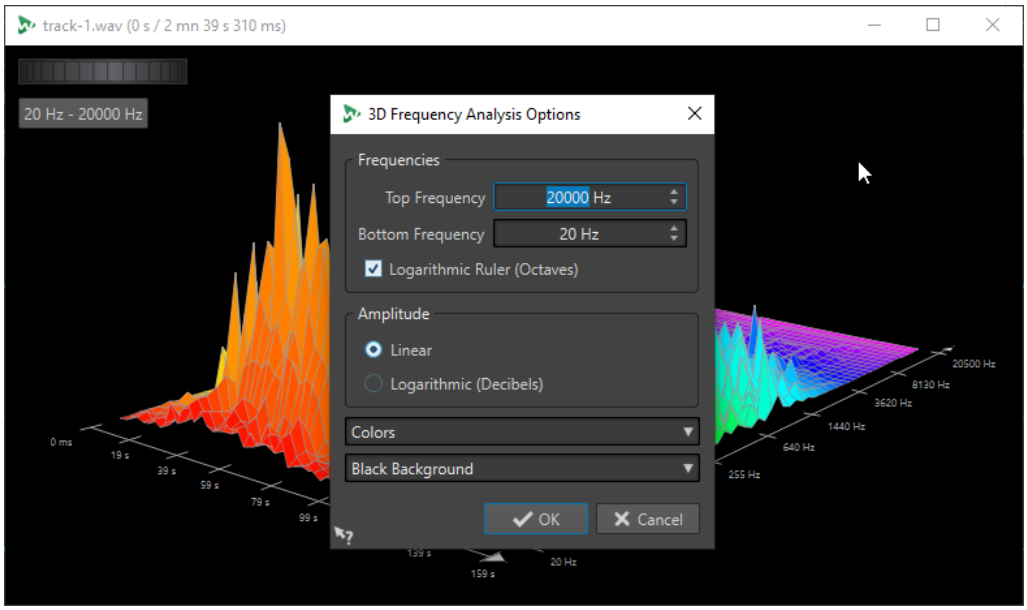
5. Adjust the parameters and click **OK**.
   The audio is re-analyzed.

RELATED LINKS
Edit Tab (Audio Editor) on page 123
3D Frequency Analysis Options Dialog on page 176

3D Frequency Analysis Options Dialog

In the options dialog of the **3D Frequency Analysis** dialog, you can define which frequency range is analyzed and modify the appearance of the graph for the 3D frequency analysis.

- In the **3D Frequency Analysis** dialog, click the **3D Frequency Analysis Options** button.



Top Frequency/Bottom Frequency

Specifies the highest/lowest frequency of the range.

Logarithmic Ruler (Octaves)

Divides the frequency ruler in equally spaced octaves.

Amplitude

Select whether you want the peaks to be proportional to their amplitude (**Linear**) or to their power (**Logarithmic Decibels**).

Colors

Defines the color scheme of the graph.

Background

Defines the background color.

RELATED LINKS

Audio Editor Only: 3D Frequency Analysis on page 174

Offline Processing

Offline processes are useful for a variety of editing purposes and creative effects, for example, if the computer is too slow for real-time processing or if the editing requires more than one pass.

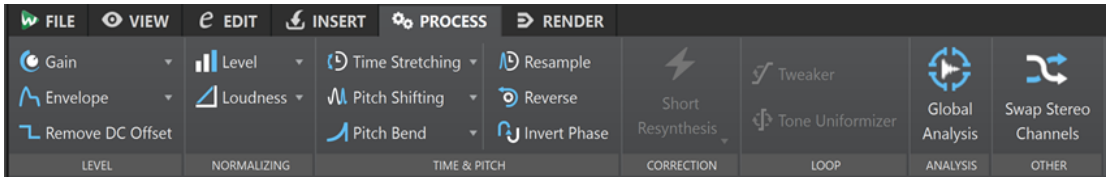
After the processing, the audio file is permanently altered.

RELATED LINKS
Process Tab on page 177
Applying Processing on page 178

Process Tab

The **Process** tab gives you access to the offline processing tools.

- In the **Audio Editor**, click **Process**.



Level

Gain

Opens the **Gain** dialog, where you can apply a gain to change the level of an audio file.

Envelope

Opens the **Envelope** dialog, where you can create a level envelope which can be applied to a selected range or an entire audio file.

This is useful if you want to even out loud and quiet parts or create a sophisticated fade in/fade out, for example.

Remove DC Offset

DC offset in a file affects the loudness. **Remove DC Offset** sets the DC offset to zero.

Normalizing

Level

Opens the **Level Normalizer** dialog, where you can change the peak level of an audio file.

Loudness

Opens the **Loudness Normalizer** dialog, where you can specify the loudness of a file.

Time & Pitch

Time Stretching

Opens the **Time Stretching** dialog, where you can change the duration of an audio selection.

Pitch Shifting

Opens the **Pitch Shifting** dialog, where can change the pitch of your audio.

Pitch Bend

Opens the **Pitch Bend** dialog, where you can gradually change the pitch of your audio using an envelope curve.

Resample

Opens the **Sample Rate** dialog, where you can change the sample rate of your audio.

Reverse

Creates a backwards-tape effect.

Invert Phase

Inverts the phase; that is, turns the audio signal upside down.

Correction

In the **Correction** section, you can choose from the following error correction methods:

- **Short Resynthesis** is best suited for minor errors in your audio. WaveLab Elements analyzes the immediate surroundings of the error to find the most appropriate method of correction.
- **Smooth Pencil Line** is particularly suited for tiny clicks in your audio. This method corresponds to drawing an accurate line with a soft pencil. It replaces the corrupted sample with the pencil line.

Loop

Tweaker

Opens the **Loop Tweaker** dialog, where you can adjust the loop start and end points, and crossfade the loop boundaries.

Tone Uniformizer

Opens the **Loop Tone Uniformizer** dialog, where you can create loops from sounds that are not optimal for looping.

Analysis

Global Analysis

Opens the **Global Analysis** dialog, where you can analyze peaks, loudness, pitch, DC offset, and errors in the audio file.

Other

Swap Stereo Channels

Moves the audio from the left channel to the right channel, and vice versa.

Applying Processing

Processing can be applied to a selection or to a whole file. For some operations processing the entire file is necessary.

NOTE

If **Process Whole File If There Is No Selection** is activated in the **Editing** tab of the **Audio Files Preferences**, the whole file is automatically processed if no selection exists.

PROCEDURE

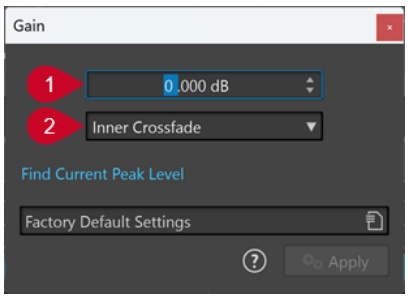
1. In the **Audio Editor** make a selection.
2. Select the **Process** tab.
3. Select the type of processing that you want to apply.
4. If a dialog opens, make the desired adjustments, and click **Apply** to render the effect to the file.

RELATED LINKS
Audio Editor Window on page 115

Gain Dialog

In the **Gain** dialog, you can define a specific gain value to change the level of an audio range, and you can choose from two types of crossfades to ensure a seamless transition from the selection to the surrounding audio material.

- To open the **Gain** dialog, select the **Process** tab in the **Audio Editor**, and click **Gain** in the **Level** section.



1 Gain in dB

Increases or decreases the audio level by the value you enter here.

2 Crossfade Type

Allows you to choose from the following options:

- **No Crossfade** adds the specified gain value to the entire audio range, without generating crossfades at its beginning or end.
- **Inner Crossfade** adds the specified gain value to the entire audio range and generates crossfades at its beginning and end, within the selected range.
- **Outer Crossfade** adds the specified gain value to the entire audio range and generates crossfades at its beginning and end, outside the selected range, As a result, the audio inside the range is affected by the change in gain, but not by crossfading, whereas the audio outside the range remains unaffected by the change in gain, but crossfading takes effect on its boundaries.

  NOTE

  WaveLab automatically recognizes whether the gain adjustment is applied to the start or to the end of an audio file and sets the crossfades accordingly:

  - If you apply a gain change to the start of a file, WaveLab exclusively generates a crossfade at the right boundary.

- If you apply a gain change to the end of a file, WaveLab exclusively generates a crossfade at the left boundary.

Find Current Peak Level generates a report on the peak level of the audio selection, or on the whole file, if there is no selection. This allows you to calculate how much you can increase the overall gain of a file without clipping (exceeding 0 dB), for example.

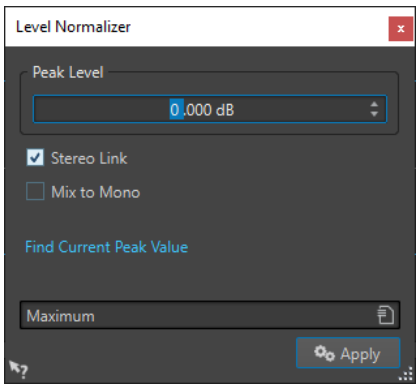
NOTE

The processor also allows you to add clipping on purpose; that is, to increase the volume level to a point where distortion occurs. While this is generally not intended, mild clipping can add punch to your mix, to accentuate the attack of a drum sound, for example.

Level Normalizer Dialog

In this dialog, you can change the peak level of an audio file.

- To open the **Level Normalizer** dialog, select the **Process** tab in the **Audio Editor**, and click **Level** in the **Normalizing** section.



Peak Level

Enter the peak level (in dB) that you want the audio selection to have.

Stereo Link

Applies the gain to both channels.

Mix to Mono

Mixes the left and the right channel. The resulting mono file has the specified peak level. This ensures a mix without clipping.

Find Current Peak Value

Creates a report on the peak level of the current audio selection or the whole audio file if there is no selection.

Loudness Normalizer

You can use the **Loudness Normalizer** to achieve a specific loudness.

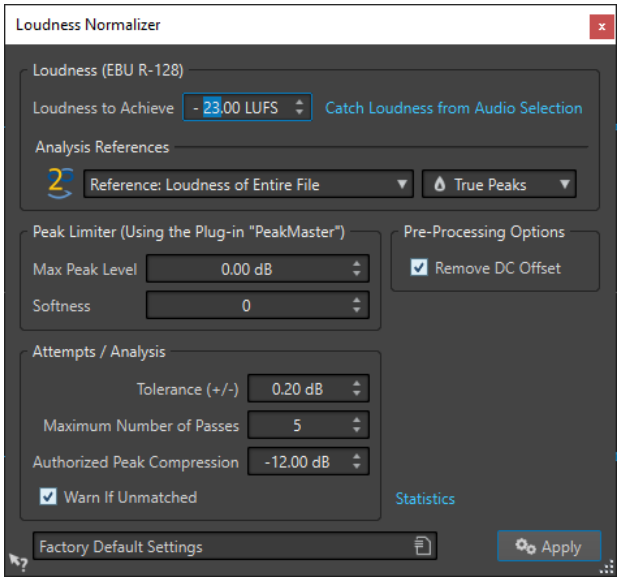
Increasing the loudness to a specific value can provoke clipping. To remedy this, a peak limiter (**Peak Master** plug-in) can be part of the process. The **Loudness Normalizer** raises the loudness and limits peaks in the signal at the same time if needed, to achieve the wanted loudness.

This process happens in several stages, first an analysis and then the final rendering.

RELATED LINKS
Loudness Normalizer Dialog on page 181

Loudness Normalizer Dialog

In this dialog, you can specify the loudness of a file.



Loudness (EBU R-128)

Loudness to Achieve

If the loudness cannot be achieved with a simple positive gain change, a limiter must come into action to prevent clipping.

Here, specify the loudness that you want to achieve. The EBU R-128 recommendation for broadcast is -23 LUFS.

Specifying high values might require a gain outside the normal capabilities of the limiter, which can cause distortion.

It is recommended to use **Statistics** after specifying a loudness. This way, you know how much the gain needs to be raised and if peak limiting needs to be applied. If heavy limiting is necessary, this might degrade the audio quality. In such cases, a warning is shown after applying the process, allowing you to undo it.

Catch Loudness from Audio Selection

Sets **Loudness to Achieve** to the average loudness found in the audio file or audio selection.

Reference

This pop-up menu allows you to select a reference: the loudness of the entire file (EBU R-128 recommendation), the average loudest 3 second audio section (**Top of Loudness Range**), or the loudest 3 second audio section (**Maximum Short-Term Loudness**).

Peaks

In this pop-up menu, select whether WaveLab Elements should limit the sample values (**Digital Peaks**) or the analog reconstructed samples (**True Peaks**).

Peak Limiter

Max Peak Level

Specifies the maximum peak level of the resulting audio. The lower this value, the lower the loudness.

Softness

Affects how the peak master operates. A high setting maximizes the perceived loudness effect, but can result in a slight harshness of the sound.

Adjust this parameter to optimize the balance between sound quality and the effect that you want to achieve.

Pre-Processing Options

Remove DC Offset

DC offset in the file affects the loudness computation. **Remove DC Offset** sets the DC offset to zero. We recommend that you keep this option activated.

Attempts/Analysis

Tolerance (+/-)

If **Loudness to Achieve** requires peak limiting, this also reduces the loudness to some degree. This cannot be computed in advance and cannot be automatically applied to the gain change. Instead, several simulation passes are performed to find the best possible gain. This option allows you to define the precision of the result that you want to achieve.

Maximum Number of Passes

WaveLab Elements performs as many analysis passes as needed to match the precision that you want to achieve. Use this option to specify the maximum number of passes to be performed.

Authorized Peak Compression

As too much compression degrades the audio quality, you can specify a limit for the applied compression. The value can be set between -1 and -20 dB. Consider lowering the **Loudness to Achieve**, as this renders better results.

Warn If Unmatched

If this option is activated, you are warned if the normalizing process does not meet the specified loudness/precision.

Statistics

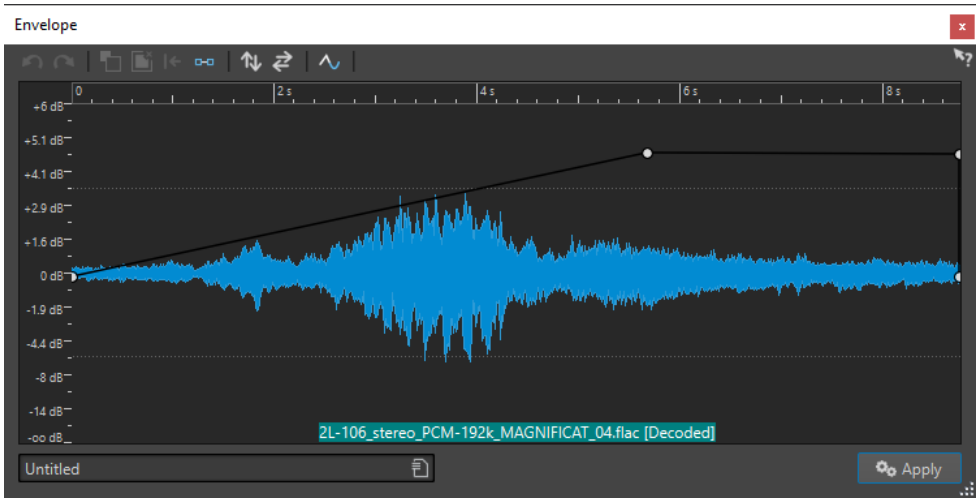
Opens a window that shows you information about the file to be processed. It shows any DC offset, the current loudness, the current peak level, and the required gain to achieve the specified loudness. Furthermore, you are informed if limiting is required.

RELATED LINKS
Loudness Normalizer on page 180
EBU Loudness Standard R-128 on page 44

Envelope Dialog

In this dialog, you can create a level envelope which can be applied to a selected range or a whole audio file. This is useful if you want to even-out loud and quiet parts or create a sophisticated fade in or fade out, for example.

- To open the **Envelope** dialog, select the **Process** tab in the **Audio Editor**, and click **Envelope** in the **Level** section.



The dialog shows a waveform with an envelope curve (initially a straight line). A vertical ruler displays the level in dB, and the horizontal ruler displays the timeline.

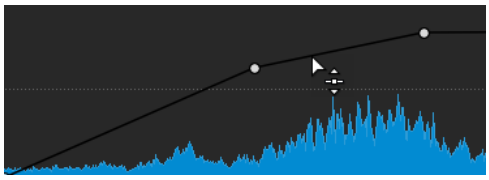
The following options are available:

- **Undo the Last Operation**
- **Redo the Last Undone Operation**
- **Deselect the Envelope Points**
- **Delete the Selected Envelope Points**
- **Reset the Selected Envelope Points**
- **Reset the Whole Envelope**
- **Flip the Envelope Around the Horizontal Axis**
- **Reverse the Envelope Time Sequence**
- **Toggle the Envelope Smoothing**

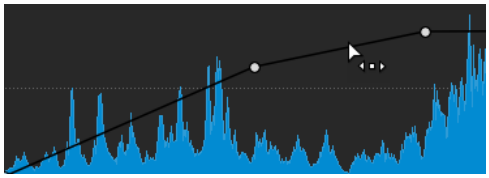
Basic Envelope Operations

By adding points to the envelope curve, you can create an envelope curve that changes the volume of the material over time. When you point the mouse in the display or move a point, the current position and level change is shown in the field above the display.

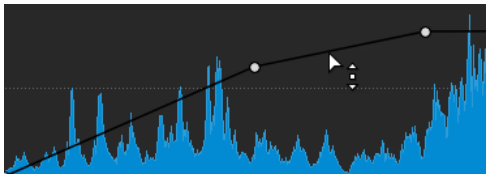
- To add a point, double-click the envelope curve.
- To select a point, click it.
- To select several points, click and drag the selection rectangle or click them while pressing **Ctrl/Cmd**.
- To move a point, click and drag it. If more than one point is selected, all points are moved.
- To move the whole curve up or down, click the envelope curve, and drag up or down.



- To move the curve segments vertically, press **Ctrl/Cmd**, click the curve segment, and drag up or down.
- To move two points horizontally, press **Shift**, click the curve segment between two points, and drag left or right.



- To move two points vertically, press **Ctrl/Cmd**, click the curve segment between two points, and drag up or down.



Fades in Audio Files

A fade in is a gradual increase in level and a fade out is a gradual decrease in level.

You can create fades by selecting an individual fading type for each fade in/fade out.

Creating Fade Ins and Fade Outs

PROCEDURE

1. In the **Audio Editor**, make a selection.
2. Select the **Edit** tab.
3. Depending whether you want to create a fade in or a fade out, select one of the following options in the **Fading** section:
   - To apply the default fade type, click the **Fade In** or **Fade Out** icon.
   - To select another fade type, click **Fade In** or **Fade Out** below the fade icon. From the pop-up menu, select the type of fade that you want to create.

Applying Easy Fades

The **Easy Fade** function allows you to quickly apply a default fade in or fade out to an audio file via shortcut.

The shape of the fade is governed by the **Fade In** and **Fade Out** settings in the **Fading** section of the **Edit** tab.

PROCEDURE

1. In the **Audio Editor**, make one of the following selections:
   - From the start of the audio file to where you want the fade in to end.
   - From the position where you want the fade out to start to the end of the audio file.
2. Click **Ctrl/Cmd** - **D**.

Crossfades

A crossfade is a gradual fade between two sounds, where one is faded in and the other one is faded out, to ensure a smooth transition.

You can either create individual crossfades when pasting an audio segment into another one, or you can opt for WaveLab to automatically generate crossfades whenever you perform particular editing operations.

RELATED LINKS
Activating Automatic Crossfades on page 186
Creating Crossfades on page 185
Edit Tab (Audio Editor) on page 123

Creating Crossfades

You can create an individual crossfade between two audio selections by copying and pasting and choosing a crossfade option from a pop-up menu.

PROCEDURE

1. In the **Audio Editor**, select the **Edit** tab.
2. Make an audio selection at the beginning of the audio file that you want to fade in.
3. On the **Cut Copy Paste** panel, click **Copy**.
4. Make an audio selection at the end of the audio file that you want to fade out.

   NOTE

   The length of this selection determines the duration of the actual crossfade and is shown on the status bar. The section can be within the selected audio file or in another window. However, the selection must not be longer than the selection that you just copied.
5. In the **Paste** section, select **Crossfade Over Selected End**.
6. Choose a crossfade type (**Linear (Equal Gain)**, **Sinus (Equal Power)**, or **Square-Root (Equal Power)** from the pop-up menu.

RESULT

The crossfade is created.

NOTE

Any audio following the selection into which you paste is moved further toward the end.

Any excess audio in the copied selection following the crossfade is set to full level.

NOTE

If both files contain full level sections in the crossfade area; for example, after normalizing both files, there is a risk of clipping and distortion. To remedy this, reduce the amplitude of both files by 3 dB to 6 dB, and repeat the process.

RELATED LINKS
Edit Tab (Audio Editor) on page 123

Activating Automatic Crossfades

You can activate automatic crossfading for operations such as cutting, pasting, inserting, muting, cropping, or deleting segments of your audio.

PROCEDURE

1. In the **Audio Editor**, select the **Edit** tab.
2. On the **Cut Copy Paste** panel, activate **Crossfading**.

RESULT

With this option activated, WaveLab automatically applies crossfades when you initiate one of the following editing operations:

- **Cut**
- **Paste**
- **Crop**
- **Mute**
- **Delete**
- **Prepend**, **Append**, **Overwrite**, or **Multiple Copies** from the **Paste** menu

  In addition to this, the **Crossfading** option automatically generates a crossfade at the designated insertion point when you insert audio by dragging or when you choose an option from the **Audio File** panel of the **Insert** tab.

NOTE

For cuts at the beginning or the end of an audio file, a fade-in or a fade-out, respectively, is generated instead.

RELATED LINKS
Edit Tab (Audio Editor) on page 123

Phase Inverting

Inverting the phase turns the signal upside down. The most common use for this function is to fix a stereo recording if one of the channels has been recorded out of phase with the other.

Inverting the Audio Phase

PROCEDURE

1. Optional: If you only want to invert the phase for a specific time range of an audio file, create a selection range in the **Audio Editor**.
2. Select the **Process** tab.
3. In the **Time & Pitch** section, click **Invert Phase**.

Reversing Audio

You can reverse an audio file or a part of an audio file as if playing a tape backwards.

PROCEDURE

1. Optional: If you only want to reverse a specific time range of the audio file, create a selection range in the **Audio Editor**.
2. In the **Audio Editor**, select the **Process** tab.
3. In the **Time & Pitch** section, click **Reverse**.

DC Offset

DC offset means that there is a too large DC (direct current) component in the signal. This most often occurs due to mismatches between various types of recording equipment.

A DC offset is problematic for the following reasons:

- It affects the zero crossing position.
- Some processing options do not give optimal results when performed on files with a DC offset.

Removing DC Offset

PROCEDURE

1. In the **Audio Editor**, open the audio file that you want to check for DC offset and that you want to fix.
2. Select the **Process** tab.
3. In the **Level** section, click **Remove DC Offset**.

   A dialog opens, stating the amount of DC offset in the audio file. You can also create a selection range in the wave window and select this option to only show the DC offset in the selection range.

NOTE

This function should be applied to whole files, because the problem is normally present throughout the entire recording.

4. Click **OK** to remove the DC offset.

Time Stretching

Time stretching is an operation that allows you to change the length of a recording without affecting its pitch.

With time stretching, you can make audio material longer or shorter. This function is most often used to match the duration of an audio section with other material. You select the material to be stretched and use the options in the **Time Stretching** dialog to find a stretch factor. You can specify the length or the tempo, according to what the situation requires.

NOTE

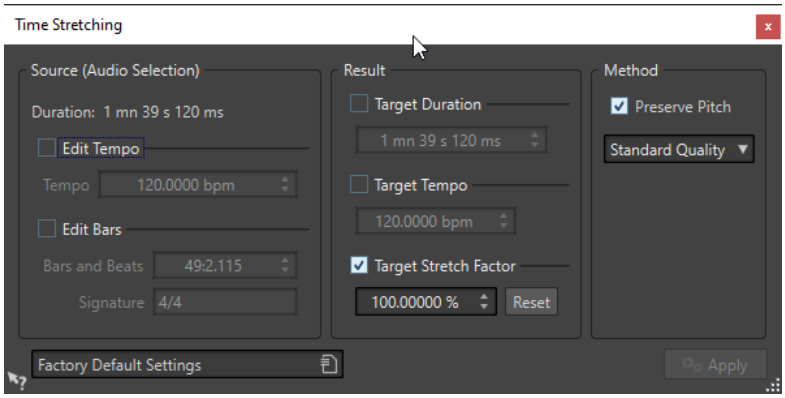
WaveLab Elements uses the ZPlane technology for high-quality time stretching.

RELATED LINKS
Time Stretching Dialog on page 188
Time Stretching Limitations on page 189

Time Stretching Dialog

In this dialog, you can change the duration of an audio selection, usually without changing its pitch. You can stretch a selection to a specified duration (in minutes, seconds, and milliseconds), tempo (in bpm), or stretch factor (as percentage).

- To open the **Time Stretching** dialog, select the **Process** tab in the **Audio Editor** and click **Time Stretching** in the **Time & Pitch** section.



Source (Audio Selection)

Duration

If **Edit Tempo** is activated, you can change the tempo of the audio source. The number of bars and beats and the stretch factor is updated automatically.

If **Edit Bars** is activated, you can set the number of bars and beats and the signature for the audio source. The source tempo and the stretch factor is updated automatically.

Result

Target Duration

If this option is activated, the audio source changes its duration.

Target Tempo

If this option is activated, the audio source changes its tempo. For this to work, you must specify the original tempo or the number of bars and beats.

Target Stretch Factor

Indicates how much the audio duration changes. This parameter is automatically updated when you edit the other parameters, but you can also activate this option to edit it manually.

Reset

Resets the stretch factor to 100%, that is, no stretch.

Method

Preserve Pitch

If this option is activated, the pitch of the audio material is not affected when you apply time stretch. If this option is deactivated, the pitch changes proportionally with the time stretch ratio.

Accuracy pop-up menu

Allows you to select whether to favor duration accuracy or pitch accuracy when time stretching.

- **Favor Duration Accuracy** preserves the length of the original audio.
- **Favor Pitch Accuracy** can result in a slightly different audio length after pitch shifting.

RELATED LINKS
Time Stretching on page 188

Time Stretching Limitations

Time stretch is a complicated Digital Signal Processing (DSP) operation that always affects the sound quality to some extent.

- For speech, stretch factors within a ±30% range provide good results.
- For composite music, try to limit the range to ±10%.
- For sensitive material, like solo piano, try to limit the range to ±3%.

RELATED LINKS
Time Stretching on page 188

Pitch Shift

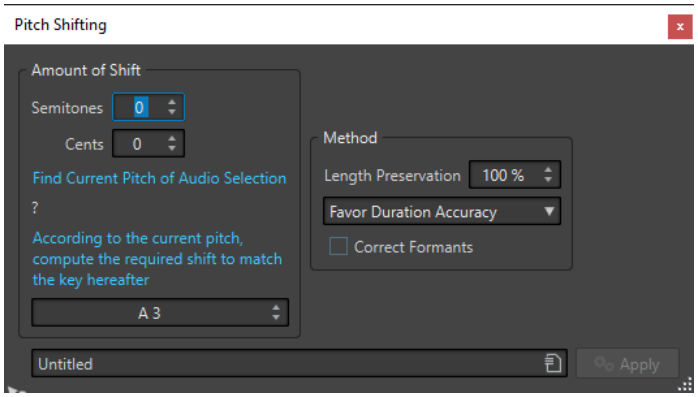
Pitch shift allows you to detect and to change the pitch of a sound, with or without affecting its length. This is useful for fixing an off-key vocal note in a live recording, or for tuning the pitch of a kick drum sample to fit a particular song, for example.

RELATED LINKS
Pitch Shifting Dialog on page 190

Pitch Shifting Dialog

In this dialog, you can change the pitch of a sound.

- To open the **Pitch Shifting** dialog, select the **Process** tab in the **Audio Editor**, and click **Pitch Shifting** in the **Time & Pitch** section.



Pitch Shifting dialog for audio files

Amount of Shift

Semitones

Allows you to specify the amount of pitch change in semitones.

Cents

Allows you to specify the amount of pitch change in cents.

Find Current Pitch of Audio Selection

Analyzes the pitch of the selected audio and displays it below this button. This option is only available for audio files.

According to the current pitch, compute the required shift to match the key hereafter

Click to adjust **Amount of Shift** parameters automatically, based on the detected pitch and the pitch specified in the value field below this button. This option is only available for audio files.

Pitch field

Specifies the resulting pitch.

Method

Length Preservation

Specifies how the length of the selection is affected by the operation:

- A setting of 100 % means that the length of the audio remains unchanged.
- A setting of 0 % means that the program behaves like a tape recorder, when the speed of its tape is changed. For example, if you raise the pitch by one octave, the audio is half as long.

For large transposition values, the lower this setting, the better the quality of the effect.

Accuracy pop-up menu

Allows you whether to favor duration accuracy or pitch accuracy when pitch shifting.

- If **Favor Duration Accuracy** is selected and the **Length Preservation** is set to 100 %, the resulting audio after pitch shifting is the same length as the source audio.
- If **Favor Pitch Accuracy** is selected, the resulting audio after pitch shifting might have a slightly different length than the source audio.

Correct Formants

If this option is activated, changing the pitch of vocal material gives a more realistic result. When processing non-vocal material, leave this option deactivated, because it uses a slightly slower processing algorithm.

NOTE

This algorithm might cause a noticeable increase in signal level.

RELATED LINKS
Pitch Shift on page 189

Pitch Bend

Pitch bend allows you to change the pitch of a sound over time.

This function can be used for creating the classic tape stop effect, or for blending the tempo/pitch of one track into another, for example.

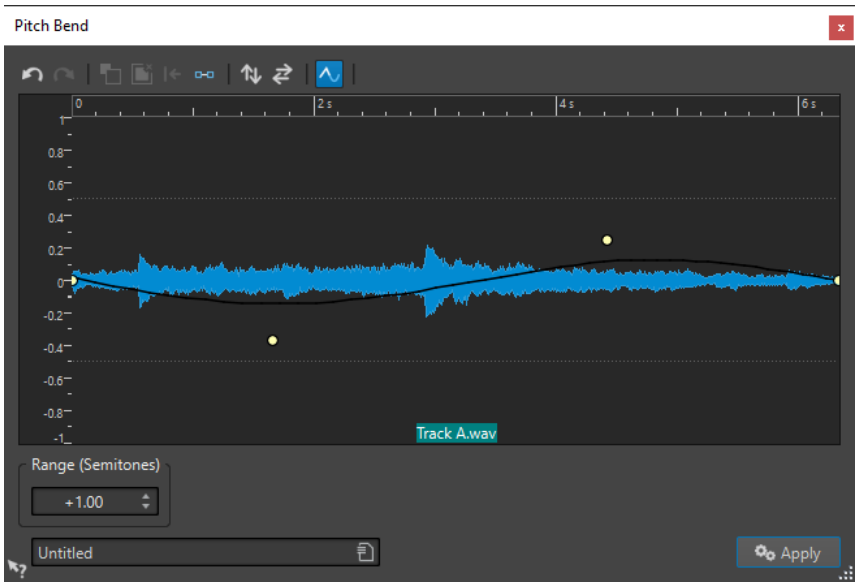
In the **Pitch Bend** dialog, you can draw the envelope curve that you want the pitch to follow. The pitch offset is displayed on the vertical ruler of the envelope and the range of the envelope effects can be adjusted. Positive pitch values produce sounds with a higher pitch and a shorter length, negative values produce sounds with a lower pitch and a longer length.

RELATED LINKS
Pitch Bend Dialog on page 191

Pitch Bend Dialog

In this dialog, you can gradually change the pitch of a sound using an envelope curve.

- To open the **Pitch Bend** dialog, select the **Process** tab in the **Audio Editor**, and click **Pitch Bend** in the **Time & Pitch** section.



Pitch bend envelope

Allows you to edit the envelope curve to change the pitch of a sound. To add an envelope point, double-click the envelope curve. You can then drag the envelope points to customize the pitch bend envelope.

The following options to edit envelopes are available above the pitch bend envelope display:

- **Undo the Last Operation**
- **Redo the Last Undone Operation**
- **Deselect the Envelope Points**
- **Delete the Selected Envelope Points**
- **Reset the Selected Envelope Points**
- **Reset the Whole Envelope**
- **Flip the Envelope Around the Horizontal Axis**
- **Reverse the Envelope Time Sequence**
- **Toggle the Envelope Smoothing**

Range (Semitones)

Specifies the maximum range in semitones for the pitch change. When you change this value, this is indicated in the vertical ruler.

RELATED LINKS
Pitch Bend on page 191

Resampling

You can change the sample rate of a recording. This is useful if the file that you want to use in an audio system was recorded at a sample rate that this system does not support.

NOTE

- Sample rate conversion from a low frequency upwards does not improve the sound quality. The high frequencies that were lost cannot be restored by a conversion.

- If you resample to a lower frequency, high frequency material is lost. Therefore, converting down and then up again leads to a degradation in sound quality.

NOTE

Using the **Resampler** plug-in in the quality mode **High** changes the sample rate results in the same quality as when using the **Resample** option in the **Audio Editor**. However, that is only the case if the sample rate in the **Sample Rate** dialog exists in the values of the **Resampler Sample Rate** pop-up menu. If you choose a custom sample rate, another algorithm is used, which results in a lower quality of what the **Resampler** can achieve.

RELATED LINKS
Converting a Sample Rate on page 193

Converting a Sample Rate

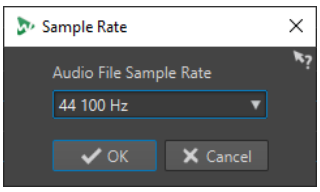
Resampling allows you to convert the sample rate of an audio file to another sample rate.

NOTE

Sample rate conversion is always applied to the entire file.

PROCEDURE

1. In the **Audio Editor**, select the **Process** tab.
2. In the **Time & Pitch** section, click **Resample**.
3. In the **Sample Rate** dialog, select a sample rate from the pop-up menu.



4. Click **OK**.

RELATED LINKS
Resampling on page 192

Audio Montage

An audio montage is a multitrack non-destructive editing environment.

You can import audio files into audio montages. As soon as they are part of the audio montage, audio files are referred to as "clips". As clips are just referenced representations of the original audio files, in the audio montage, you can edit and alter them as you like, without affecting the original audio files.

The non-destructive editing functions include both track- and clip-based effects, volume and pan automation, as well as a variety of features for fading and crossfading.

Audio montages are particularly suited for album/audio CD creation, mastering, multimedia work, radio spot production, etc.

NOTE

Audio montages can contain up to three stereo or mono audio tracks and a video track. You can use them to structure your work graphically.

The number of clips that you can place on a track is unlimited.

In addition to the reference to a source audio file on your hard disk, clips contain information about the start and end positions in the file, which means that clips can play back sections of the source audio files. Any number of clips can reference the same source file.

RELATED LINKS
Audio Montage File Structure on page 194
Audio Montage Window on page 196
Creating Custom Audio Montages from Scratch on page 211
Assembling an Audio Montage on page 218
Clip Editing on page 233

Audio Montage File Structure

WaveLab generates a designated folder for each audio montage that you create. The essential file of an audio montage, the one with the .mon extension, is automatically saved in this folder, which can contain further files or sub-folders related to the audio montage.

Audio Montage Folder

The audio montage folder allows you to save all files and sub-folders that are associated with the audio montage in one location. We recommend doing so, as it helps you to keep an overview of the scope of your audio montage, and it makes it easy for you to transfer your work to different computers or to share it with other users.

NOTE

- You are free to choose any name for the audio montage folder. However, we recommend using the same name as for the .mon file, so that their relation is clear.
- While it is good practice to save the audio files associated with the audio montage in the designated folder, they can be located elsewhere.

Audio Montage (.mon) File

The .mon file, which is saved in the audio montage folder, is at the heart of your work with an audio montage and constitutes what is referred to as the audio montage in the narrower sense. This central file is opened in the **Audio Montage** window, where you can access all features related to importing, editing, analyzing, and rendering. The .mon file acts as a database, in that it links to other files, which are referenced by the audio montage as clips and can be edited in a non-destructive way, without affecting the original source files. Any settings you apply in the **Audio Montage** window are saved in the .mon file.

NOTE

You can save multiple .mon files in a single audio montage folder, which can be useful if you want to keep alternative versions of an audio montage, for example.

RELATED LINKS
Audio Montage on page 194

Loudness Overlay

You can overlay the **Waveform** or the **Rainbow** view of the **Audio Montage** window with an **RMS Loudness** view and adjust the transparency of the overlay.

The **RMS Loudness** overlay allows you to keep a constant eye on both peaks and loudness, so that you can easily identify audio sections with varying dynamics.

To overlay the **Waveform** or the **Rainbow** view with the **RMS Loudness** view, use the scroll wheel (**1**). The farther you turn the scroll wheel to the right, the higher the opacity of the **RMS Loudness** overlay (**2**); that is, the more prominent it becomes. The farther you turn the scroll wheel to the left, the more transparent the **RMS Loudness** overlay. Turning the scroll wheel all the way to the left sets the transparency to 100%, so that the **RMS Loudness** overlay is not visible.

To activate/deactivate the **RMS Loudness** overlay display (**2**), double-click on the scroll wheel (**1**).

NOTE

This feature is also available in the **Waveform** and the **Rainbow** view of the **Audio Editor**.

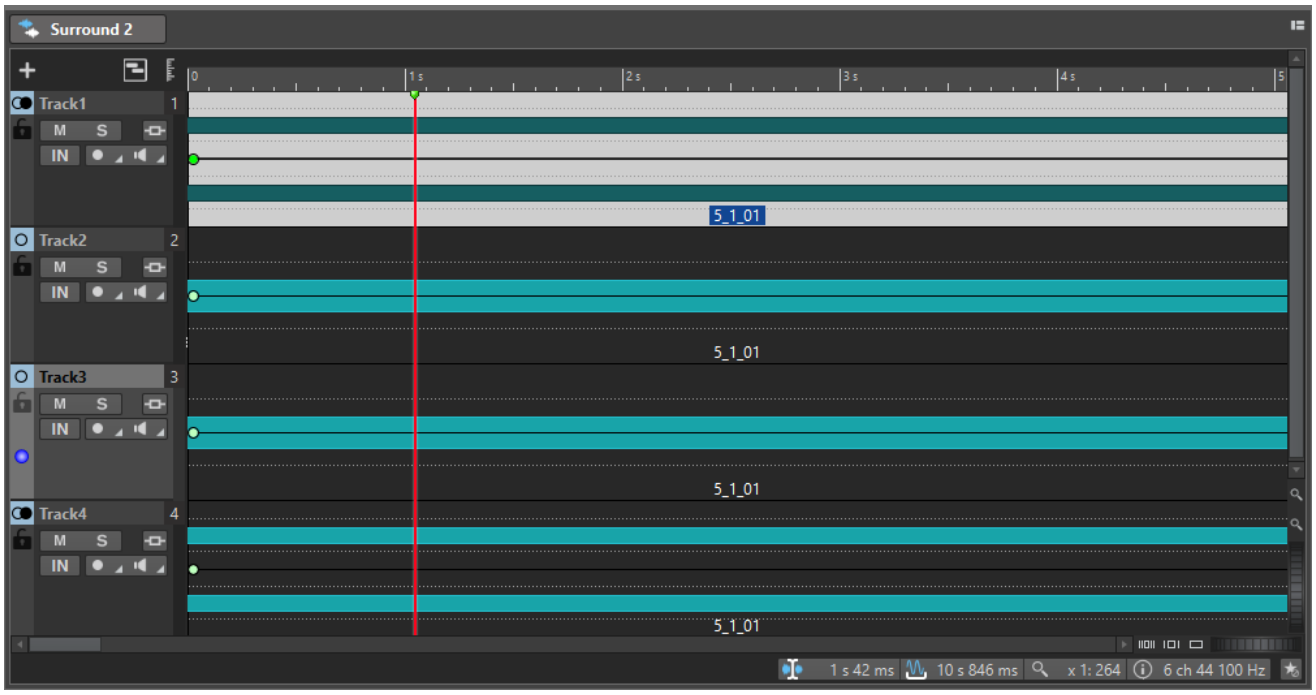
NOTE

- The transparency settings for the **Waveform** and the **Rainbow** view are independent of each other, because of their different graphics rendering.
- The transparency settings for the **Audio Editor** and the **Audio Montage** window are independent of each other as well.

Audio Montage Window

The **Audio Montage** window is where you assemble, view, play back, and edit audio montages.

The **Audio Montage** window provides you with an overview of tracks and clips.

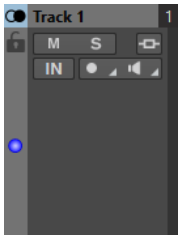


RELATED LINKS
Audio Montage Tabs on page 201
Track Control Area on page 196

Track Control Area

The track control area offers several track settings and options, for example, rearranging, muting, soloing, and routing tracks. Each track type has dedicated controls.

You can scroll through the tracks and resize them.



The track control area for mono and stereo tracks

The following options are available at the top of the track control area:

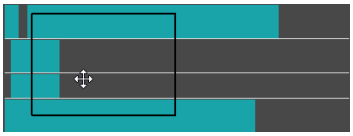
Add Track

Allows you to add a track to the audio montage.

Navigator

Opens a panel that displays an overview of the entire audio montage and allows you to quickly navigate in it.

To change the size of the **Navigator** panel, right-click the panel and select **Small Navigator**, **Medium Navigator**, or **Large Navigator**.



RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 197
Track Control Area for Video Tracks on page 200
Audio Montage Window on page 196

Track Control Area for Stereo and Mono Tracks

The track control area for stereo and mono tracks allows you to mute and solo tracks, add track effects, specify routing options, monitor the input signal, and record-enable tracks, for example.

Options

Track control area for mono and stereo tracks

Track Control Area Options

Track Name

Allows you to change the track name. Double-click the track name to open the **Track Name** dialog, where you can enter a name for the track.

Lock

Disables all editing on the track.

Mute

Mutes the track.

Solo

Solos the track.

Effects

Opens the **Effects** pop-up menu, which allows you to:

- Add effects to the track by clicking **Add Effects**. Once you have done so, the**Effects** button turns green.

NOTE

If the **Effects** button is highlighted in green, this indicates that effects are applied to the track.

Input Bus/Channel Output Routing

Allows you to select the **Input Bus**, the **Channel Output Routing**, and the **Track Routing** dialog. When you hover over the button, a tooltip displays the selected routing options.

Audio Input

Allows you to select the audio input for recording.

Record

To be able to record, you must record-enable the corresponding tracks.

Clicking the arrow to the right of the **Record** button gives you access to the following options:

File Properties for Recording opens a dialog that allows you to specify the name, location, and bit resolution of the audio file that you want to record.

If **Stop When Record Position Reaches Last Marker** is activated, recording stops when the record position reaches the last visible marker in the audio montage. Hidden markers are not taken into account. You can create and move the last marker while recording. This option is globally applied to all audio montages.

If **Stop When Record Position Reaches Next Marker** is activated, recording stops when the record position reaches the next visible marker in the audio montage. Hidden markers are not taken into account. This option is globally applied to all audio montages.

Ducker On/Off

Allows you to activate or deactivate ducking. You can then select the voice modulator track and make adjustments.

Source

Opens the **Modulator Tracks** menu, which allows you to select the track that you want to use for ducking.

Ducker Settings

Opens the **Ducker** plug-in, which allows you to edit ducking settings to fine-tune the ducking effect.

Change Track Height of All Tracks

The lower left area of the track control area allows you to change the track height of all tracks simultaneously. Click and drag to change the track height.

Change Track Height of Active Track

The lower middle area of the track control area allows you to change the track height of the active track. Click and drag to change the track height.

Change Track Height of Active Track and Track Below

The lower right area of the track control area allows you to change the track height of the active track and the track below. Click and drag to change the track height.

Track peak meter

The track peak meter shows the volume level for audio tracks. It is located on the right side of the track control area.

Track Pop-up Menu

This pop-up menu contains all track-related options.

- To open the **Track** pop-up menu, right-click in the track control area.

Add Track

Adds a track below the active track.

Split into Left/Right Mono Tracks

Converts the stereo track into two mono tracks that represent the left and right channels of a stereo track. This does not alter the audio material.

Remove Track

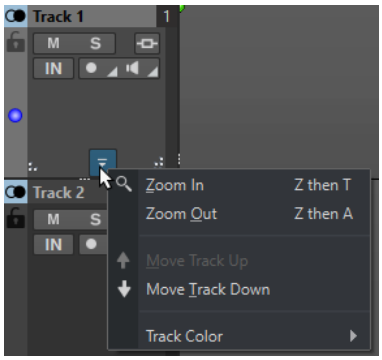
Removes the active track.

Show Ducking Controls

Activates the ducking controls in the track control area.

Track Settings Menu

- To open the **Track Settings** menu, click the down arrow in the lower middle area of the track control area.



Zoom In

Shows the active track in the full available height.

Zoom Out

Shows as many tracks as possible.

Move Track Up/Move Track Down

Moves the active track up or down.

Track Color

Opens a submenu, where you can select a color for the active track.

RELATED LINKS
Additional Ways of Adding Effects on page 268
Ducking on page 253
Track Peak Meter on page 201
Track Control Area on page 196
Track Routing Dialog on page 231

Track Control Area for Video Tracks

The track control area for video tracks allows you, for example, to activate/deactivate thumbnails and show/hide the frame numbers of the video. Below the video track, the corresponding audio track has the same options as mono and stereo tracks.

Options

Track Name

Allows you to change the track name. Double-click the track name to open the **Track Name** dialog, where you can enter a name for the track.

Lock

Disables all editing on the track.

Show Thumbnails

Allows you to activate/deactivate the thumbnails of the video track.

Show Frame Numbers

Allows you to show each thumbnail with the corresponding video frame number.

Change Track Height of All Tracks

The lower left area of the track control area allows you to change the track height of all tracks simultaneously. Click and drag to change the track height.

Change Track Height of Active Track

The lower middle area of the track control area allows you to change the track height of the active track. Click and drag to change the track height.

Change Track Height of Active Track and Track Below

The lower right area of the track control area allows you to change the track height of the active track and the track below. Click and drag to change the track height.

Track Pop-up Menu

This pop-up menu contains all track-related options.

- To open the **Track** pop-up menu, right-click in the track control area.

Add Track

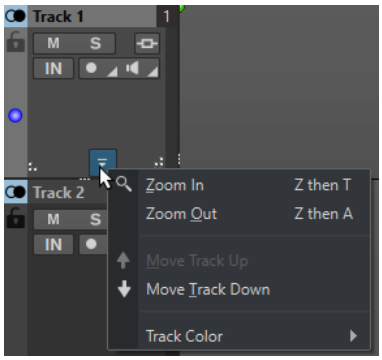
Allows you to add a track below the active track.

Remove Track

Deletes the active track.

Track Settings Menu

- To open the **Track Settings** menu, click the down arrow in the lower middle area of the track control area.



Zoom In

Shows the active track in the full available height.

Zoom Out

Shows as many tracks as possible.

Move Track Up/Move Track Down

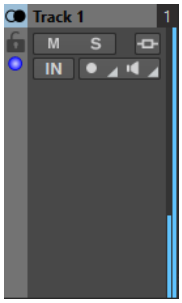
Moves the active track up or down.

RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 197
Track Control Area on page 196

Track Peak Meter

The track peak meter shows the volume level for the left channel and the right channel of stereo tracks. It is located on the right side of the track control area in the **Audio Montage** window.

The track peak meter provides an overview of which tracks are playing back audio at what approximate level. The left bar shows the volume level of the left stereo channel and the right bar shows the volume level of the right stereo channel.



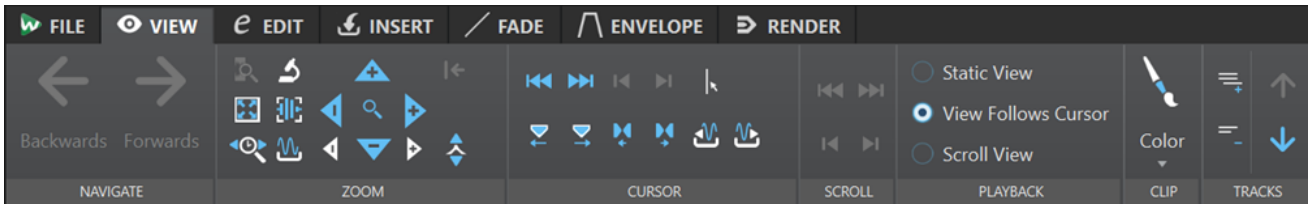
RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 197

Audio Montage Tabs

The tabs in the **Audio Montage** window give you access to the tools and options you need for editing audio montages. For example, you can edit the envelope curves and fades in clips, adjust the settings for zooming, analyze the audio, and render the audio montage.

View Tab (Audio Montage)

- In the **Audio Montage**, click **View**.



Navigate

Backwards/Forwards

Navigates to the previous/next cursor position, zoom factor, and selection range.

Zoom

Zoom

Activates the **Zoom** tool, which allows you to define a time range that is zoomed in.

Time

Opens a pop-up menu that allows you to adjust the zoom to display the selected time range. **Zoom in 1:1** zooms in so that one pixel on the screen represents one sample.

You can edit the zoom factor by clicking **Edit Zoom Factor**. This opens the **Zoom Factor** dialog, where you can choose from the following options:

- **Set Time Range** allows you to define the time range to be displayed.
- **Samples per Screen Point** allows you to specify the number of audio samples encompassed by each screen point.
- **Screen Points per Sample** allows you to specify the number of screen points that represent a single audio sample.

Zoom Selection

Zooms the window so that the current selection occupies the entire montage window.

Microscope

Zooms in as far as possible.

View All

Zooms out as far as possible.

Display Whole Clip

Adjusts the view to display the active clip.

Zoom in Audio (10x)/Zoom out Audio (10x)

Zooms in/out in big steps.

Zoom in Audio/Zoom out Audio

Zooms in/out in small steps.

Zoom in Vertically/Zoom out Vertically

Zooms in/out to show waveforms at a lower/higher level.

Level

Adjusts the zoom to only display samples below the selected dB value.

Reset Zoom to 0 dB

Adjusts the zoom to display audio levels up to 0 dB.

Cursor

Move Cursor to Start of File/Move Cursor to End of File

Moves the cursor to the start/end of the file.

Previous Marker/Next Marker

Moves the cursor to the previous/next marker.

Start of Selection/End of Selection

Moves the cursor to the start/end of the selected time range.

Previous Region Edge/Next Region Edge

Moves the cursor to the previous/next region edge.

Edit Cursor Position

Opens the **Cursor Position** dialog, where you can edit the cursor position.

Previous Clip Edge/Next Clip Edge

Moves the cursor to the previous/next clip edge.

Scroll

Start/End

Displays the start/end of the audio without moving the cursor.

Start of Selection/End of Selection

Displays the start/end of the audio selection without moving the cursor.

Playback

Static View

Deactivates scrolling.

View Follows Cursor

Automatically scrolls the view to keep the playback cursor visible.

Scroll View

Automatically scrolls the view to keep the playback cursor centered.

Clip

Color

Allows you to assign a color to the active clip, to apply random colors to selected clips, or to reset the default clip colors.

Tracks

Display More Tracks/Display Fewer Tracks

Allows you to change the number of tracks that are displayed in the montage window.

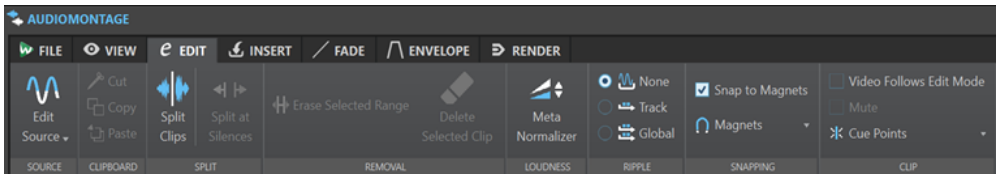
Focus on Previous Track/Focus on Next Track

Sets the focus on the previous/next track.

RELATED LINKS
Audio Montage Tabs on page 201

Edit Tab (Audio Montage)

- In the **Audio Montage** window, click **Edit**.



Source

Edit Source

Opens the source audio file of the clip in the **Audio Editor**.

Edit Cubase Project

Opens the Cubase project relating to the clip.

Clipboard

Cut

Cuts the selected audio range and saves it to the clipboard.

Copy

Copies the active clip or the selected audio range to the clipboard.

Paste

Pastes the clipboard content.

Split

Split at Silences

Splits the files so that each non-silent section becomes a separate region. You can specify the minimum region duration, the minimum duration of a silent section, and the signal level to be considered as silence.

Removal

Delete Selected Clip/Delete Selected Range

Deletes the part of the clip inside the selection range on the active track and moves the right section of the clip to the left, to fill the gap.

If there is no selection range, the selected clips are deleted.

Ripple

None

Deactivates the auto-shift function.

Track

If this option is activated and you move a clip horizontally, all clips on the active track that are located to the right of the edited clip are moved as well. This option also applies when moving or resizing clips, and when inserting or pasting more than one clip at a time.

Global

If this option is activated and you move a clip horizontally, all clips on all tracks that are located to the right of the edited clip are also moved. This option is taken into account

when moving or resizing clips, and when inserting or pasting more than one clip at a time.

Snapping

Snap to Magnets

If this option is activated, any elements that you have activated in the **Magnets** pop-up menu, such as clip starts, time selection edges, or markers, snap to magnets.

Magnets

Allows you to set the behavior of particular elements to magnetic.

Clip

Video Follows Edit Mode

If this option is activated, the video in the **Video** window automatically follows each edit that you make. This allows you to instantly see where in the video your edit is being applied.

Mute

Mutes the active clip.

Cue Points

This pop-up menu allows you to make adjustments for front and back cue points.

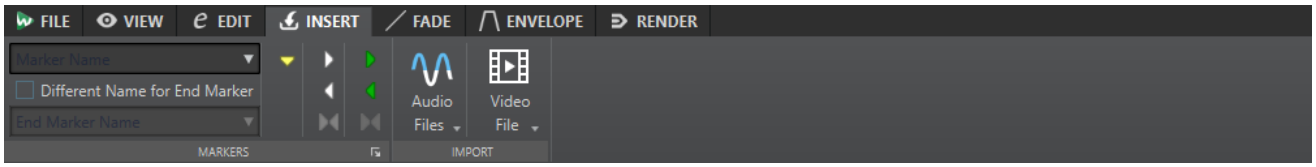
- **Front Cue Point**
  - **Show** displays an existing front cue point.
  - **Set at Cursor** sets the front cue point to a fixed position from the start of the clip.
  - **Set at Default Gap Position** places the front cue point two seconds before the start of the clip.
  - **Follows Fade In End Point** sets the front cue point to the fade-in end point.
  - **Follows Fade Out Start Point** sets the front cue point to the fade-out start point.
- **Back Cue Point**
  - **Show** displays an existing back cue point.
  - **Custom Cue End** allows you to set the back cue point at a custom position from the end of the clip, enabling you to edit the gap for each clip individually.

    If this option is deactivated, a two-second default gap is used.
  - **End Offset** opens the **Back Cue Point Offset** dialog, which allows you to set the back cue point to a custom position from the end of the clip.

RELATED LINKS
Editing Source Files of Clips on page 245
Clips and Cue Points on page 244

Insert Tab (Audio Montage)

- In the **Audio Montage**, click **Insert**.



Markers

Marker Name

Allows you to enter the name of the start marker. Otherwise, a generic name is used.

To edit the default names, open the **Markers** window, and select **Functions** > **Default Marker Names**.

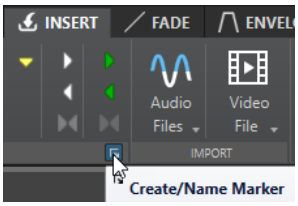
Different Name for End Marker

Allows you to enter a different name for the end marker in the **End Marker Name** field.

If this option is deactivated, the name of the start marker is also used for the end marker.

Create/Name Marker

The **Create/Name Marker** button in the lower right corner of the **Markers** section opens the **Create Marker** dialog, which allows you to create markers and marker pairs at the edit cursor position.



Import

Audio Files

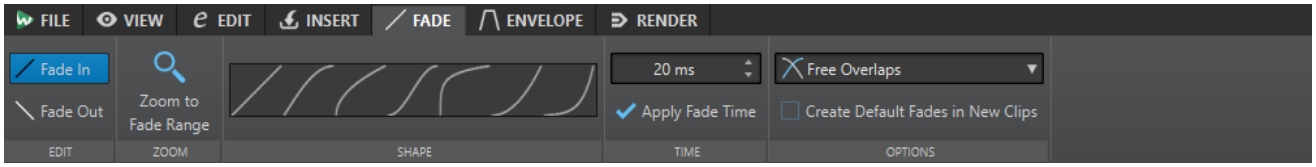
Allows you to select one or more audio files to insert at the edit cursor position on the active track.

Video File

Allows you to select a video file to insert at the edit cursor position on the video track. If the audio montage has no video track, a video track is created.

Fade Tab (Audio Montage)

- In the **Audio Montage**, click **Fade**.



Edit

Fade In/Fade Out

Allows you to switch between the fade in and the fade out settings.

Zoom

Zoom to Fade Range

Adjusts the view to display the fade in/fade out part of the active clip.

Shape

Curve

Allows you to select preset fade curves.

- **Linear** changes the level linearly.
- **Sinus (*)** changes the level according to a sine curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Square-Root (*)** changes the level according to a square-root curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.
- **Sinusoid** changes the level according to a sine curve.
- **Logarithmic** changes the level according to a logarithmic curve.
- **Exponential** changes the level according to an exponential curve.
- **Exponential+** changes the level according to a more pronounced exponential curve.

Time

Fade Time

Allows you to specify a fade in/fade out time for the clip.

Apply Fade Time

Applies the specified clip fade in/fade out time.

Options

Overlaps

This pop-up menu allows you to set parameters for automatic crossfading.

- If **No Automatic Crossfading** is activated, no automatic crossfading is performed for any overlapping clips.
- If **Free Overlaps** is activated, automatic crossfades are created when a clip overlaps with another clip on the same track. The length of the overlap determines the duration of the crossfade.

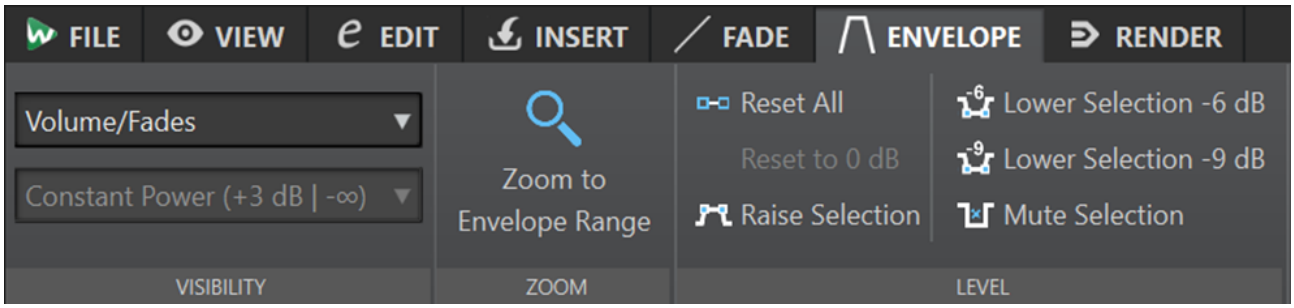
Create Default Fades in New Clips

If this option is activated, all new clips assume the default fade-in and fade-out shape and length. For clips that are created by splitting a clip, only the default fade time is used.

RELATED LINKS
Audio Montage Tabs on page 201

Envelope Tab (Audio Montage)

- In the **Audio Montage** window, click **Envelope**.



Visibility

Envelope Type

Sets the type of the envelope. Depending on the selected type, you can choose from different options. The following options are available:

- **Hide All** hides all envelopes.
- **Volume/Fades** only displays the volume/fades envelope.
- **Pan** only display the pan envelope. You can select a pan law from the menu below.

Pan Law

Allows you to select a pan law. This option is only available if the **Pan** envelope type is selected. The following pan laws are available:

- **Channel Damp (0 dB/Mute)**
- **Constant Power (+3 dB/Mute)**
- **Channel Boost (+4.5 dB/Mute)**
- **Channel Boost (+6 dB/Mute)**

Zoom

Zoom to Envelope Range

Adjusts the view to display the active envelope of the active clip.

Level

Reset All

Resets the envelope to its neutral form.

Reset to 0 dB

Replaces the segments between the fade-in and fade-out points with a single neutral segment.

Ducking

Opens the **Ducking Settings** dialog. This dialog allows you to create ducking effects between clips on two adjacent tracks, where the level or send effect of one clip is modified whenever clips are present on the other track.

Raise Selection

Adds level envelope points and draws a curve to raise the audio level of the selection with 20 ms fall and rise times. You can drag the segment up and down to adjust the level.

Lower Selection -6 dB

Draws a level envelope curve to reduce the audio level of your selection by -6 dB, with 20 ms fall and rise times. You can drag the segment up and down to adjust the level.

Lower Selection -9 dB

Draws a level envelope curve to reduce the audio level of your selection by -9 dB, with 20 ms fall and rise times. You can drag the segment up and down to adjust the level.

Mute Selection

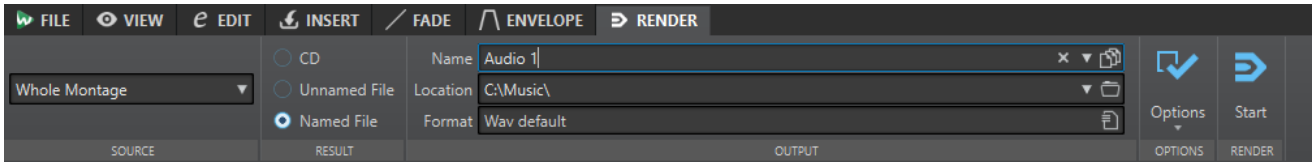
Adds level envelope points and draws a curve to mute the selection by lowering the level to zero with default 20 ms fall and rise times.

RELATED LINKS
Envelopes for Clips on page 245
Audio Montage Tabs on page 201
Pan Laws on page 253

Render Tab (Audio Montage)

The **Render** tab allows you to mix down audio montages to audio files.

- In the **Audio Montage**, click **Render**.



Source

Source pop-up menu

The **Source** pop-up menu allows you to select which part of the audio montage you want to process. The following options are available:

Whole Montage

Processes and renders the entire audio material.

Active Track

Processes and renders the active track from the start of the first clip to the end of the last clip. Muted clips are not rendered.

Specific Marked Region

Processes and renders a specific audio range to an independent file.

You can specify the region to process via the pop-up menu.

Result

CD

Allows you to write a CD from the audio montage.

Unnamed File

Renders a temporary untitled file.

Named File

Allows you to specify a name for the rendered file.

Output

Name

Allows you to enter a name for the rendered file. Clicking the arrow icon opens a pop-up menu that offers you several naming options.

Location

Allows you to select a destination folder for the rendered files.

NOTE

To maintain independent render paths for individual audio montages and to ensure that, when switching audio montages, the render path changes accordingly, you can activate **Keep Independent Folder for Each Source File**.

Format

Opens a pop-up menu, where you can select a file format.

Options

Depending on the selected source, different options are available.

Bypass Master Section

Bypasses the plug-ins and the gain of the **Master Section** when rendering.

Add Reverb Tail

Includes the audio tail that is produced by effects such as reverb in the rendered file.

Some plug-ins do not transfer information on the tail duration to WaveLab Elements. In this case, this option has no effect. For such plug-ins, you can add the **Silence** plug-in to add extra samples to the end of the file.

Copy Markers

Copies the markers that are included in the range to process to the rendered file.

Open Resulting Audio File

Opens every rendered file in a new window.

Reveal in File Explorer

Opens the File Explorer/macOS Finder to locate the selected file.

Bypass Master Section on Resulting Audio File

Causes playback of the resulting audio file to bypass the entire **Master Section**. You can turn this setting on and off by clicking the button at the bottom right of the **Audio Editor** or the **Audio Montage** window.

NOTE

We recommend that you activate this option, as this prevents monitoring new files through effects that have already been applied to them.

Render

Start

Starts the rendering process.

RELATED LINKS
Audio Montage Tabs on page 201

Render Tab for the Master Section on page 312

Signal Path in the Audio Montage

The audio signal follows a specific path when passing through the various areas of WaveLab Elements.

1. The audio samples are read.
2. Clip envelope
3. Clip effects
4. Clip pan
5. Individual clip gain (**Album** window)
6. Clips are mixed into the track slot (for example, overlapping clips).
7. Track effects
8. Track level settings
9. Each track is mixed into a stereo bus.
10. The stereo channel is processed through the plug-ins of the montage output.
11. The stereo bus is sent to the **Master Section** input.

Signal Path in the Master Section

1. Channels/Sample rate can change at each plug-in slot.
2. **Master Section** meters
3. **Final Effect/Dithering** pane in the **Master Section**
4. Independent meters
5. Playback or file format rendering

Creating Audio Montages

To create an audio montage, you can either take a “top-down” approach and start with the general setup or a “bottom-up” approach; that is, use individual files as the basis.

There are two basic methods to create audio montages in WaveLab:

Top-Down Approach: Starting with the General Setup

Choosing the **Custom** option allows you to configure your audio montage by defining its general properties, such as the number of channels and the sample rate.

Bottom-Up Approach: Using Audio Files as the Basis

You can use audio files as the foundation for your audio montage and build it up from this basis.

Creating Custom Audio Montages from Scratch

You can create new, empty audio montages from scratch and customize them.

PROCEDURE

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

2. Select **Audio Montage** > **Custom**.
3. Specify the channel configuration and the sample rate of the audio montage.
4. In the **Audio Montage Location** dialog, enter a name for your audio montage, and select the location where you want to save the audio montage folder.
5. Click **Create**.

RESULT

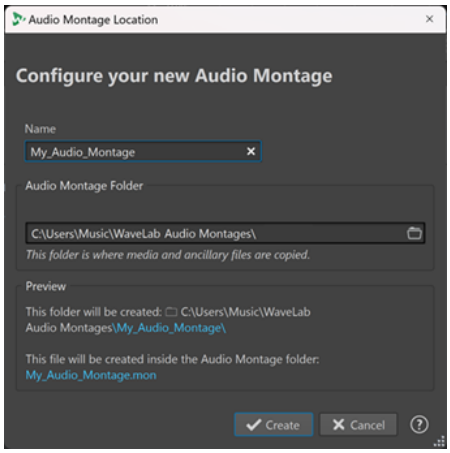
A new audio montage folder is created, which contains a .mon file of the same name.

RELATED LINKS

Audio Montage File Structure on page 194
Audio Montage Properties on page 215
Creating Audio Montages from an Audio File on page 213

Audio Montage Location Dialog

The **Audio Montage Location** dialog allows you to enter a name for your audio montage and to select the location where you want to save the audio montage folder.



Name

Allows you to enter a name for your audio montage. If you have chosen a template to create your audio montage, WaveLab suggests the name of the template as the name, but you can overwrite it.

Audio Montage Folder

In the entry field below, you can specify the path to the new audio montage folder.

Preview

Displays a preview of the path to the new audio montage folder and of the new audio montage (.mon) file.

Create

Initiates the creation of the new audio montage folder and the audio montage file.

Cancel

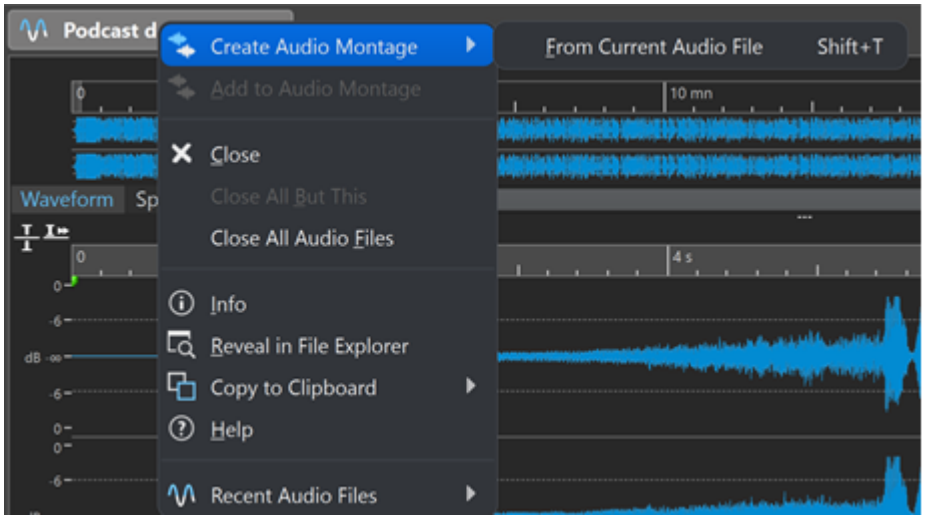
Cancels the operation.

Creating Audio Montages from an Audio File

You can create an audio montage from an audio file or from a time selection in an audio file.

PROCEDURE

1. In the **Audio Editor**, open the audio file from which you want to create a new audio montage.
2. Optional: If you want to open a specific section of the audio file in a new audio montage, make a time selection in the audio file.
3. Right-click the file tab of the audio file.
4. Select **Create Audio Montage** > **From Current Audio File**.



5. In the **Create Audio Montage from Audio File** dialog, do one of the following:
   - To open the audio file in a new audio montage, select **Whole File**.
   - To open the time selection that you have made in the audio file in a new audio montage, select **Current Time Selection**.
6. Optional: Do one of the following:
   - To import the markers of the audio file into the new audio montage, activate **Import Markers**.
   - To split the audio file at the generic region markers, activate **Split at Generic Region Markers**.
7. Click **OK**.

RESULT

The audio file opens in a new audio montage.

RELATED LINKS

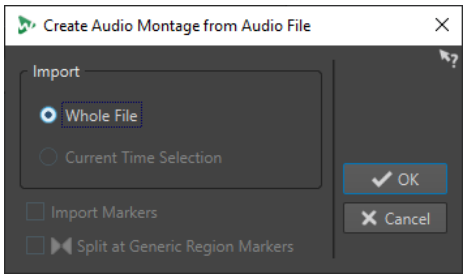
Create Audio Montage from Audio File Dialog on page 213

Create Audio Montage from Audio File Dialog

In this dialog, you can specify whether you want to open the audio file or a time selection inside an audio file as a new audio montage. You can also specify whether you want to import markers into the new audio montage and split at certain markers.

To open the **Create Audio Montage from Audio File** dialog, do one of the following:

- Right-click the file tab of an audio file, and select **Create Audio Montage** > **From Current Audio File**.
- Open an audio file in the **Audio Editor**, select **File** > **New** > **From Current File**, select **From Current Audio File**, and click **Create**.



Whole File

If this option is activated, the audio file opens in a new audio montage.

Current Time Selection

If this option is activated, the time selection that you have made in the audio file opens in a new audio montage.

Import Markers

If this option is activated, the markers inside the audio file are imported into the new audio montage.

Split at Generic Region Markers

If this option is activated and the audio file contains generic region markers, the audio file is split at the marker positions when it is imported into a new audio montage. Audio outside the marker boundaries is removed.

RELATED LINKS
Creating Audio Montages from an Audio File on page 213

Alternative Ways of Creating New Audio Montages

There are several ways to create a new audio montage.

- Import titles to an audio montage
- Convert wave files to an audio montage
- Duplicate audio montages
- Press **Ctrl**/**Opt**, and drag a montage tab on the tab bar

RELATED LINKS
Audio Montage Duplicates on page 214

Audio Montage Duplicates

You can duplicate audio montages in various ways. This allows you to quickly create new audio montages using the same properties and audio files as for previously created audio montages.

The following variants of audio montage duplicates are available:

Empty (With Same Properties)

Creates a new audio montage with the channel settings and sample rate of the original audio montage, without any clips.

Exact Duplicate (Using the Same Audio Files)

Creates an exact duplicate of the original audio montage and lets the new clips reference to the original audio files. The duplicated audio montage uses the channel settings and sample rate of the original audio montage.

This is useful if you want to create several versions of the audio montage, for example, to experiment with variations. However, any processing or editing that you apply to the actual audio files are reflected in all audio montages.

You can also press **Ctrl/Cmd**, drag a tab, and drop it on the tab bar to create an exact duplicate of an audio montage.

RELATED LINKS
Duplicating Audio Montages on page 215

Duplicating Audio Montages

PROCEDURE

1. Open the audio montage that you want to duplicate.
2. In the **Audio Montage** window, select the **File** tab.
3. Select **New** > **Audio Montage** > **From Current File**.
4. In the **From Current Audio Montage** section, select one of the following:
   - **Empty (With Same Properties)**
   - **Exact Duplicate (Using the Same Audio Files)**
5. Click **Create**.

RESULT

A duplicate of the audio montage opens in a new tab.

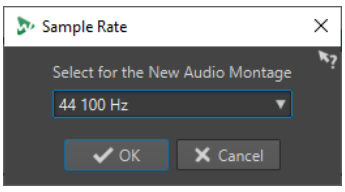
RELATED LINKS
Audio Montage Duplicates on page 214

Audio Montage Properties

In the **Audio Montage Properties**, you can define the channel configuration (mono, stereo, surround, Ambisonics) and the sample rate of the audio montage.

To open the sample rate settings for the selected audio montage, do one of the following:

- Select the **File** tab, and click **Info**.
- Click the **Audio Montage Properties** button at the bottom right of the montage window. This opens the **Audio Montage Properties** dialog.
- Click the **Audio Montage Properties** button at the bottom right of the montage window. This opens the **Sample Rate** dialog.



In the **Audio Montage Properties**, you can specify the following settings for the selected audio montage:

Mode

Allows you to select the following channel modes for the audio montage.

- **Mono**
- **Stereo**
- **Surround**
- **Ambisonics**

Channels

Allows you to define the number of audio channels and their configuration at the output of the audio montage. This is only available in **Surround** and **Ambisonics** mode.

Sample Rate

Allows you to select the sample rate for the audio montage.

Changing the Sample Rate of Audio Montages

You can change the channel configuration of audio montages in the **Sample Rate** dialog.

PROCEDURE

1. At the bottom right of the montage window, click the **Audio Montage Properties** button.
2. In the **Sample Rate** dialog, select a new sample rate.
3. Click **OK**.

RELATED LINKS
Audio Montage Properties on page 215

Import Options for Audio Montages

You can import audio files, video files, and titles of an album into your audio montage.

The following import options are available via the **Import** section on the **Insert** tab of the **Audio Montage** window:

- To import audio files, click **Audio Files** and select the audio files that you want to import at the edit cursor position on the active track.

  If you import a single audio file, the **Paste** pop-up menu opens. Here, you can specify how the clip should be inserted, whether existing clips should be affected, etc.

  If you import multiple audio files, the **Insert Audio Files** dialog opens. Here, you can specify where to insert the files.
- To import video files, click **Video Files** and select the video file that you want to import at the edit cursor position on the video track. If no video track is available, a video track is created.

To access the following import options, select **File** > **Import**.

- To import audio files, click **Audio File to Montage**, select the audio files that you want to import, and click **Import**.

- To open audio files that have an unknown format, click **Unknown Audio**. Via the **Special File Format** dialog, you can specify how to interpret the format of the audio file that you want to open.
- To import titles from an audio CD, click **Audio CD**. Via the **Import Audio CD** dialog, browse for the titles to extract.

RELATED LINKS
Resolving Sample Rate Mismatches between Audio Montages and Audio Files on page 227
Special File Format Dialog on page 150

Broken Audio File References

An audio montage consists of references to one or multiple audio files. These references can be broken if you move audio files to another location on your hard disk, for example. WaveLab Elements detects broken references and allows you to specify new file locations or replace the missing audio file with another audio file.

RELATED LINKS
Fixing Broken Audio File References on page 217
Missing Files Dialog on page 218

Fixing Broken Audio File References

When you open an audio montage that contains broken audio file references, the **Missing Files** dialog opens automatically.

PROCEDURE

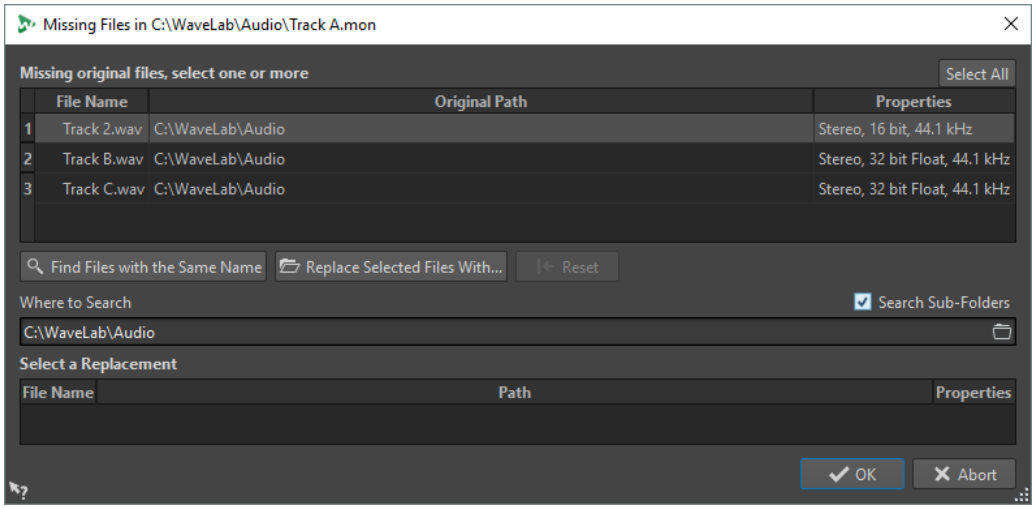
1. In the **Missing Files** dialog, select the missing audio file references that you want to fix.
2. In the **Where to Search** field, specify the file location of the new audio file reference.
3. Optional: Activate **Search Sub-Folders** to include subfolders in your search.
4. Do one of the following:
   - To let WaveLab Elements automatically search for audio files with the same name as the missing files, click **Find Files with the Same Name**.

     In the **Select a Replacement** field, select the new audio file references and click **OK**.
   - To select audio files to replace the missing files, click **Replace Selected Files With**, select the new files, and click **Open**.

RELATED LINKS
Missing Files Dialog on page 218

Missing Files Dialog

This dialog opens when you open an audio montage, and some audio files that the audio montage refers to cannot be found. You can then search for the files or select a replacement.



Missing Original Files

Lists the files that cannot be found. Each file can be replaced by an existing file. To search replacements for multiple files, select the files, and specify a new path in the **Where to Search** field.

A file with a green checkmark is associated with a valid replacement. A file with a red checkmark is not yet associated with a valid replacement, but there are possible replacement candidates available at the bottom of this dialog.

Find Files with the Same Name

Instructs WaveLab Elements to find all files with the same name in the folder specified in the **Where to Search** field.

Replace Selected Files With

Replaces the missing files with a single specific file.

Reset

Removes all possible replacements for the selected missing files.

Where to Search

Lets you specify a location for searching files. Click **Find Files with the Same Name** to start the search.

Replacement List

Lists the files that can be used as a replacement. You can also drag a file into the list from the File Explorer/macOS Finder.

Assembling an Audio Montage

You assemble your audio montage by adding tracks and clips.

RELATED LINKS
Tracks on page 219
Clips on page 221

Tracks

Tracks provide the structure for organizing clips. You can add mono tracks, stereo tracks, and video tracks.

- **Mono** tracks and **Stereo** tracks allow you to add clips to an audio montage.
- **Video** tracks allow you to add videos to an audio montage.

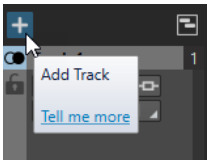
RELATED LINKS
Video Track on page 371
Adding Tracks on page 219

Adding Tracks

You can add stereo tracks, mono tracks, and video tracks.

PROCEDURE

1. Do one of the following:
   - In the **Audio Montage** window, click **+** at the top of the track control area.

   - Right-click the track control area to open the **Track** pop-up menu, and select **Add Track**.
2. Select the track type that you want to add to your audio montage.

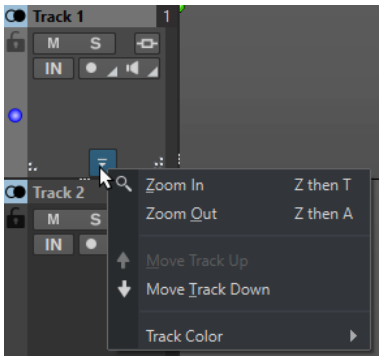
RELATED LINKS
Tracks on page 219
Track Control Area on page 196

Moving Tracks in the Track List

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

CHOICES

- In the **Audio Montage** window, select a track, and drag it up or down in the track list.
- At the bottom of the track control area, click the down arrow, and select **Move Track Up** or **Move Track Down**.

RELATED LINKS
Tracks on page 219
Track Control Area on page 196

Resizing Tracks

You can freely resize the track height and width.

There are different ways of resizing the track height and width, depending on where in the track control area of each track you click and drag.

CHOICES

- To change the track height of all tracks simultaneously, click and drag the lower left area of a track control area.
- To change the track height of the active track, click and drag the lower middle area of a track control area.
- To change the track height of the active track and the track below proportionally, click and drag the lower right area of a track control area.

RELATED LINKS
Tracks on page 219
Track Control Area on page 196

Removing Tracks

Removing a track with clips also removes the clips. However, the audio files to which the clips refer are not affected.

PROCEDURE

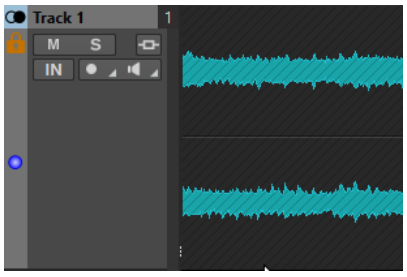
- In the track control area, right-click the track control area of the track that you want to remove and click **Remove Track**.

RELATED LINKS
Tracks on page 219
Track Control Area on page 196

Locking and Unlocking Tracks

You can lock tracks to prevent them from being accidentally moved, edited, or deleted.

- To lock a track, click the **Lock** button of the track in the track control area.



- To unlock a track, click the **Lock** button in the track control area again.

RELATED LINKS
Tracks on page 219

Track Control Area on page 196

Splitting Stereo Tracks into Mono Tracks

You can split stereo tracks into left/right or mid/side mono tracks. This is a virtual split which does not affect or create audio files.

PROCEDURE

- In the **Audio Montage** window, right-click the track control area of the track that you want to split and select **Split into Left/Right Mono Tracks**.

RESULT

The track is split. If there are clips on the track, the two stereo sides are now separate clips, allowing you to move and edit independently.

The mono tracks are automatically grouped and can only be moved and resized together.

RELATED LINKS

Track Control Area on page 196

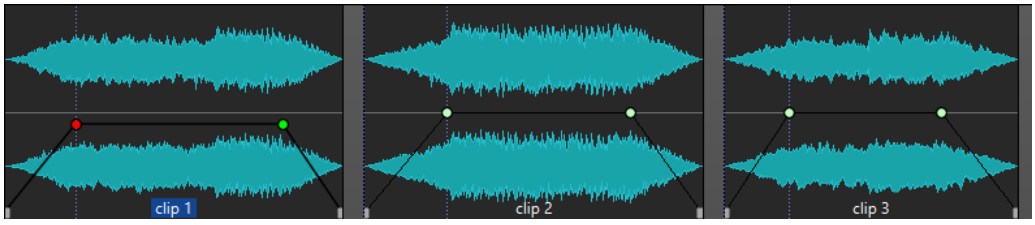
Clips

The audio files that you insert to audio montages are represented as clips. A clip contains a reference to a source audio file on your hard disk as well as start and end positions in the file, volume and pan curves, fades, etc. This allows clips to play back smaller sections of their source audio files.

Any number of clips can reference the same source file. Because a clip only references to the original source file, it contains no audio data. Any number of clips can reference the same source file.

You can also use envelopes and effects on clips.

You can see the clips of the active audio montage in the **CD** window.



3 clips on a track

RELATED LINKS

Clip Editing on page 233

Inserting Audio Files into Audio Montages

When you insert audio files into audio montages, the audio files are represented as clips. There are several ways to insert audio files into audio montages.

RELATED LINKS

Clips on page 221
Inserting Audio Files into Audio Montages Using Drag and Drop on page 222
Inserting Audio Files into Audio Montages Using the Context Menu on page 222

Inserting Audio Files into Audio Montages Using Copy and Paste on page 223
Inserting Audio Files into Audio Montages Using the File Explorer/macOS Finder on page 223
Inserting Audio Files into Audio Montages Using the File Browser Window on page 223
Inserting Audio File Regions into Audio Montages Using Drag and Drop on page 224
Inserting Audio Files into Audio Montages by Copying From Other Audio Montages on page 224
Inserting Stereo Audio Files into Mono Tracks or Vice Versa on page 226
Audio Montage Creation via the Startup Assistant on page 17

Inserting Audio Files into Audio Montages Using Drag and Drop

You can drag an audio file or a section of an audio file from the **Audio Editor** to the **Audio Montage** window to insert it into the audio montage.

PROCEDURE

1. In the **Audio Editor**, do one of the following:
   - To add the whole audio file into the audio montage, drag the audio file tab to an audio montage tab and drop it on a track.
   - To add a part of the audio file into the audio montage, select the audio part that you want to add to the audio montage, drag it to the audio montage tab, and drop it on a track.
2. Make adjustments in the **Import Files** dialog, and click **OK**.

RESULT

A clip is created, named after the original file.

RELATED LINKS

Import Files Dialog on page 225
Audio Editor Window on page 115
Audio Montage Window on page 196

Inserting Audio Files into Audio Montages Using the Context Menu

The context menu of the **Audio Montage** window allows you to insert audio files into audio montages.

PROCEDURE

1. In the **Audio Montage** window, right-click an empty area of a track.
2. Select **Insert Audio Files** from the **Insert** pop-up menu, and choose the audio file that you want to position on the track.
3. Make adjustments in the **Import Files** dialog, and click **OK**.

RESULT

A clip is created, named after the original file.

RELATED LINKS

Import Files Dialog on page 225

Inserting Audio Files into Audio Montages Using Copy and Paste

You can copy and paste an audio file or a section of an audio file from the wave window to the montage window to insert it into the audio montage.

PROCEDURE

1. In the **Audio Editor**, select the audio section to which you want the clip to refer to.
2. Select the **Edit** tab and click **Copy**, or press **Ctrl/Cmd** - **C**.
3. In the **Audio Montage** window, select the track where you want to insert the clip.
   The clip insert position is indicated by the edit cursor.
4. Select the **Edit** tab and click **Paste**, or press **Ctrl/Cmd** - **V**.

RESULT

A clip is created, named after the original file.

Inserting Audio Files into Audio Montages Using the File Explorer/macOS Finder

You can copy and paste an audio file from the File Explorer/macOS Finder to the montage window to insert it into the audio montage.

PROCEDURE

1. In the File Explorer/macOS Finder, select an audio file and press **Ctrl/Cmd** - **C**.
2. In the montage window, set the edit cursor at the position where you want to insert the clip.
3. Select the **Edit** tab and click **Paste**, or press **Ctrl/Cmd** - **V**.

RESULT

A clip is created, named after the original file.

Inserting Audio Files into Audio Montages Using the File Browser Window

You can drag an audio file from the **File Browser** window to the montage window to insert it into the audio montage.

NOTE

The following can also be done from the File Explorer/macOS Finder.

PROCEDURE

1. Select **Tool Windows** > **File Browser**.
2. In the **File Browser** window, select the audio files to which you want the clip to refer, and drag them on a track.
3. Make adjustments in the **Import Files** dialog.

RESULT

A clip is created, named after the original file.

RELATED LINKS

File Browser Window on page 69
Import Files Dialog on page 225

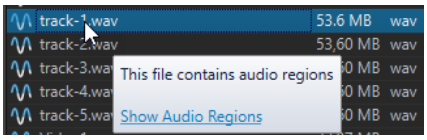
Inserting Audio File Regions into Audio Montages Using Drag and Drop

If you have defined marker regions in an audio file, you can drag these regions from the **File Browser** window onto a track.

PROCEDURE

1. Select **Tool Windows** > **File Browser**.
2. In the **File Browser** window, select the audio file from which you want to insert marker regions into your audio montage.

   On the right side of the **File Browser** window, the audio regions section shows the marker regions of the selected file. This section is hidden by default. To show the audio regions section, select an audio file that contains markers, and click **Show Audio Regions**.

3. Drag any region to the track.

RESULT

A clip is created, named after the original file.

RELATED LINKS

File Browser Window on page 69

Inserting Audio Files into Audio Montages by Copying From Other Audio Montages

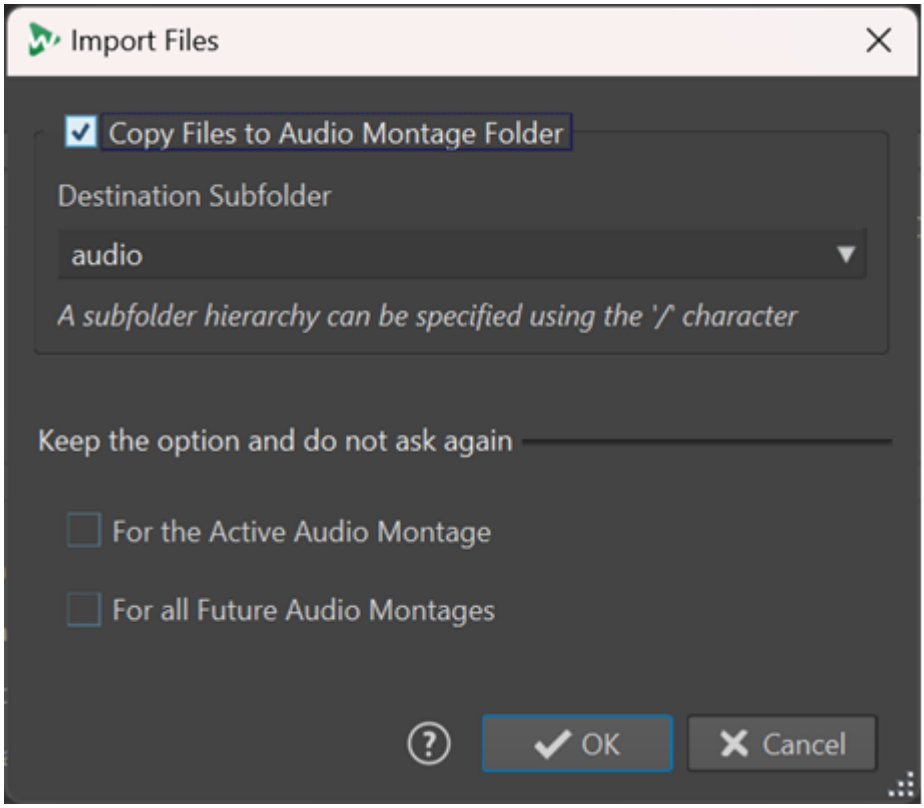
If you have opened more than one audio montage, you can copy clips from one audio montage to another, either by using drag and drop or by using copy and paste.

PROCEDURE

1. In an audio montage, select the clips that you want to insert into another audio montage.
2. Do one of the following:
   - Drag the clip to the tab of another audio montage and drop it on a track.
   - Click **Ctrl/Cmd** - **C**. Open another audio montage and place the edit cursor at the position where you want to insert the clip. Click **Ctrl/Cmd** - **V**.

Import Files Dialog

On importing audio files into audio montages, the **Import Files** dialog allows you to choose to create a copy of the original audio file in the audio montage folder or one of its subfolders, and whether or not to save this choice for future imports.



Copy Files to the Audio Montage Folder

Creates a duplicate of the audio files and saves them in the audio montage folder. Activated by default, the option ensures that the source files remain unchanged in the audio montage; that is, they are unaffected by any editing in the **Audio Editor**.

Optionally, the **Destination Subfolder** menu allows you to choose a subfolder of the audio montage folder as the location for the duplicate of the audio file. You can use "/" to specify the folder hierarchy.

NOTE

- If you deactivate **Copy Files to the Audio Montage Folder**, you can still add the source file or a copy of it to the audio montage folder or one of its subfolders at a later point in time, using the **Audio Montage Consolidation** feature.
- If you add a previously imported audio file to the same audio montage again, the **Import Files** dialog does not appear.

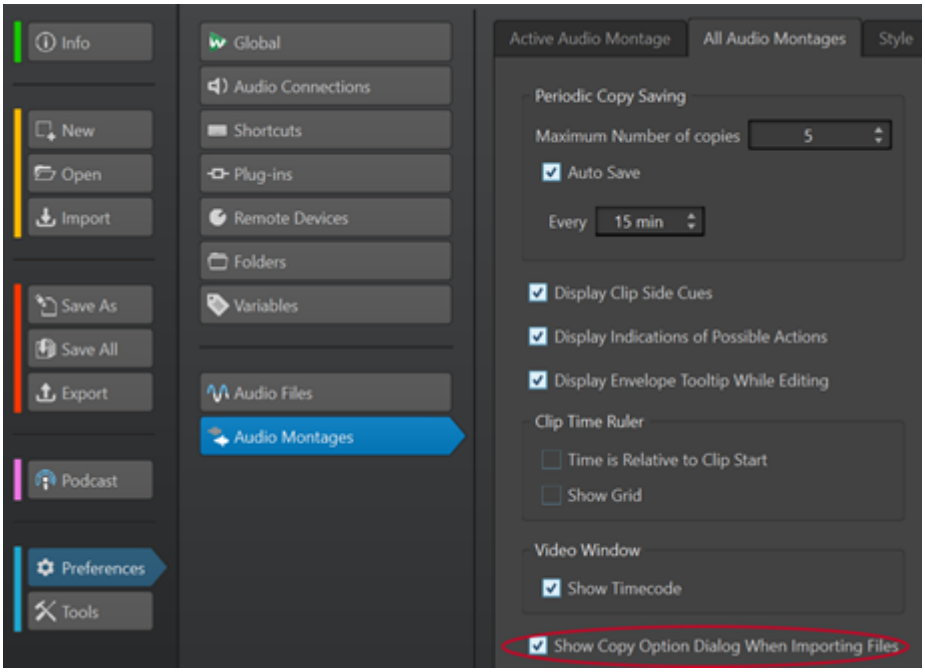
Keep the Option and Do Not Ask Again

To save your current **Copy File to the Audio Montage Folder** setting for further import operations, activate **For the Active Audio Montage** or **For All Future Audio Montages**.

As a result, the dialog does not open again, when importing further audio files into the active audio montage or when importing audio files into any future audio montage, respectively.

NOTE

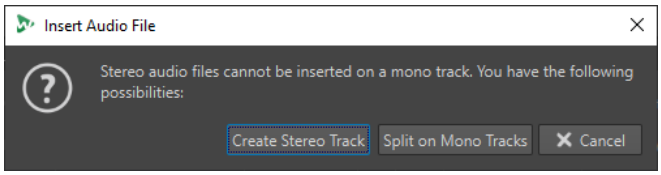
To reset this option, activate **Show Copy Option Dialog When Importing Files** on the **All Audio Montages** panel or the **Active Audio Montage** panel the of the **Preferences** for audio montages.



Inserting Stereo Audio Files into Mono Tracks or Vice Versa

When you insert a stereo audio file into a mono track, you can decide whether to automatically create a stereo track or split the stereo file on two mono tracks.

Insert Stereo Audio Files on Mono Tracks



When you insert a stereo audio file into a mono track, the following options are available in the **Insert Audio File** dialog:

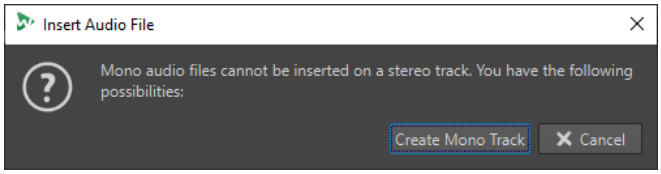
Create Stereo Track

Creates a stereo track and inserts the stereo audio file.

Split on Mono Tracks

Splits the stereo audio file on two mono tracks. If the track below the first track is already a mono track, this track is used for the second mono file. If there is no second mono track, a mono track is created automatically.

Insert Mono Audio Files on Stereo Tracks



When you insert a mono audio file into a stereo track, you can select **Create Mono Track** to automatically create a mono track below the stereo track and insert the mono audio file here.

RELATED LINKS
Inserting Audio Files into Audio Montages on page 221

Resolving Sample Rate Mismatches between Audio Montages and Audio Files

If the sample rate of your audio montage differs from the sample rates of the audio files that you want to insert into it, WaveLab Elements allows you to adjust either the sample rate of the audio montage itself or the sample rates of copies of the audio files, so that they match.

PREREQUISITE
On inserting audio files into your audio montage, the **Mismatched Sample Rates** dialog appears and warns you of a sample rate mismatch.

In the **Mismatched Sample Rates** dialog, do one of the following:

- To set the audio montage to the sample rate of the audio files, click **Change Audio Montage**.

  NOTE

  This option is only available if the sample rate is identical for all audio files and the audio montage does not yet contain any audio clips. The latter is the case when using a template, for example.

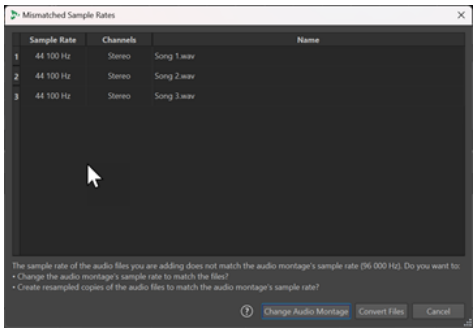
- To create copies of the audio files and set them to the sample rate of the audio montage, click **Convert Files**.

  As a result, resampled audio file versions are created in the `Data` subfolder of the audio montage folder. The process results in a 32-bit float file, without any dithering applied. The name of the file corresponds to the name of the original file, with the new sample rate added as a suffix. If there is an existing file of this name, it is not recreated.

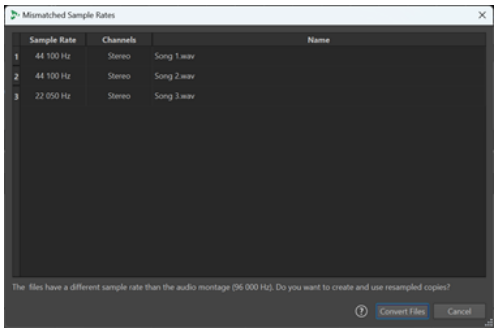
RELATED LINKS
Mismatched Sample Rates Dialog on page 228

Mismatched Sample Rates Dialog

When you insert audio files into an audio montage and their sample rates differ, the **Mismatched Sample Rates** dialog helps you to resolve the issue.



Mismatched Sample Rates Dialog for an empty audio montage, with an identical sample rate set for all audio files to be inserted



Mismatched Sample Rates Dialog for audio montages with existing clips and/or different sample rates set for the audio files to be inserted

Change Audio Montage

Sets the audio montage to the sample rate of the audio files.

NOTE

This option is only available if the sample rate is identical for all audio files and the audio montage does not yet contain any audio clips.

Convert Files

Creates copies of the audio files and sets them to the sample rate of the audio montage.

RELATED LINKS
Resolving Sample Rate Mismatches between Audio Montages and Audio Files on page 227

Multichannel Operations in the Audio Montage

You can open multichannel audio files in audio montages. Each track of the multichannel audio file is organized in channel clusters. A channel cluster is a logical group of channels. It is always one channel or a channel pair.

You can add plug-ins to individual channel clusters.

The channel layout of the audio montage must be compatible with the channels of the multichannel file. For example, you can open a 5.1 audio file or a stereo file in a 5.1 or 7.1 audio montage channel layout. But you cannot open a 5.1 audio file in a stereo audio montage channel layout.

To be able to use WaveLab Elements for multichannel audio files, you need an audio card/interface with multiple inputs and outputs. You must also set up an ASIO driver in the **Audio Connections** tab and specify how the internal input/output channels are connected to your audio card.

RELATED LINKS
Audio Connections Tab on page 23

Multichannel Configuration

You can configure the number of channels to use for each audio montage.

Which configuration you should select depends on a number of factors:

- The number of outputs that are available on your audio card. If you only have 4 outputs on your card, you can only use surround formats with 4 or less channels.
- Whether or not you intend to mix the audio montage to a surround format. If not, select the **Multi Mono** mode when working with Ambisonics files, for example.
- The intended use of the final surround mix. For example, if you want your mix to be compatible with the 5.1 surround set-up, select the **Surround** mode **5.1 (L R C LFE Ls Rs)**.

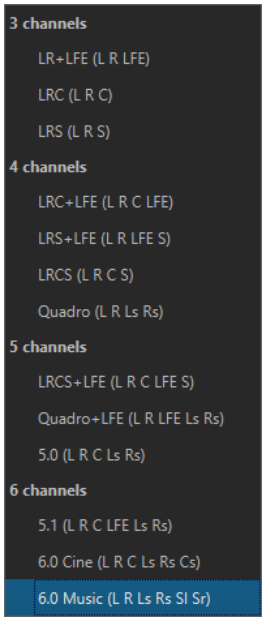
All multichannel configurations are internally assigned to surround channels in WaveLab Elements. This means that the channels go through the **Master Section** and then to the audio card or they are rendered to a multichannel file or a set of mono/stereo files.

RELATED LINKS
Surround Mode in Audio Montages on page 229

Surround Mode in Audio Montages

If you are using **Surround** mode for an audio montage, you can choose from various multichannel configurations.

On the **Info** tab of the audio montage, select **Surround**. On the **Layout** pop-up menu, the following multichannel layouts are available:



RELATED LINKS
Info Dialog on page 51

Assigning Track Channels to Output Channels

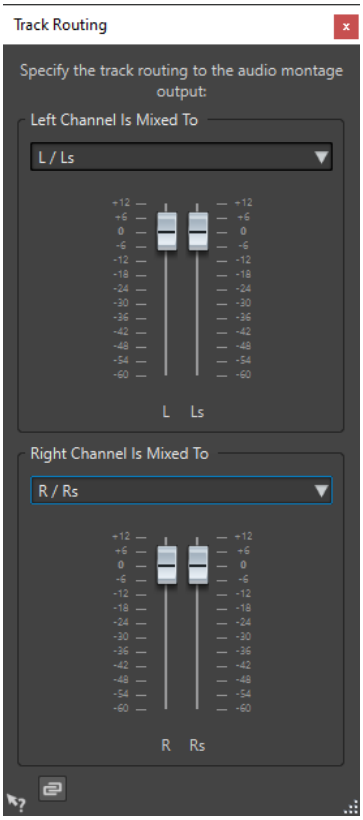
When you select a multichannel configuration, you must create and assign track channels to surround output channels manually.

PROCEDURE

1. In the **Audio Montage** window, click **Channel Output Routing** in the track control area for an audio track and select **Track Routing**.

   Each track has its own **Track Routing** dialog. You can have multiple **Track Routing** dialogs open at the same time.

2. In the **Track Routing** dialog, route each channel of the track to an output channel by activating the corresponding channels.



   Which channels are available depends on the selected channel configuration.

3. Click **OK**.

RESULT

If you have selected a surround format, you can route a track channel to several or all surround output channels.

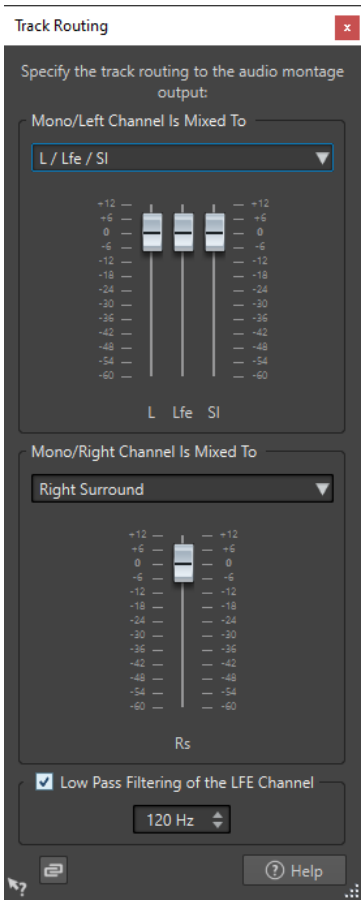
RELATED LINKS

Track Routing Dialog on page 231
Track Control Area on page 196

Track Routing Dialog

In this dialog, you set up to which montage output channels the track channels in your audio montage are sent. The available channels depend on the selected channel configuration.

- To open the **Track Routing** dialog, in the **Audio Montage** window, click **Channel Output Routing** in the track control area for an audio track and select **Track Routing**.



Top Audio Channel Is Sent To

Lets you select to which audio montage audio outputs the left channel of the track is sent.

Bottom Audio Channel Is Sent To

Lets you select to which audio montage audio outputs the right channel of the track is sent.

Gain

Each channel has a gain slider. This allows you to set make individual gain settings for each channel.

Low Pass Filtering of the LFE Channel

If an LFE output is selected, a low pass filter (12 dB/octave) can be applied to the track signal so that only the low frequency content can pass. The cutoff frequency for the filter can be adjusted.

Unlink Faders

Determines whether you can adjust the faders individually or together.

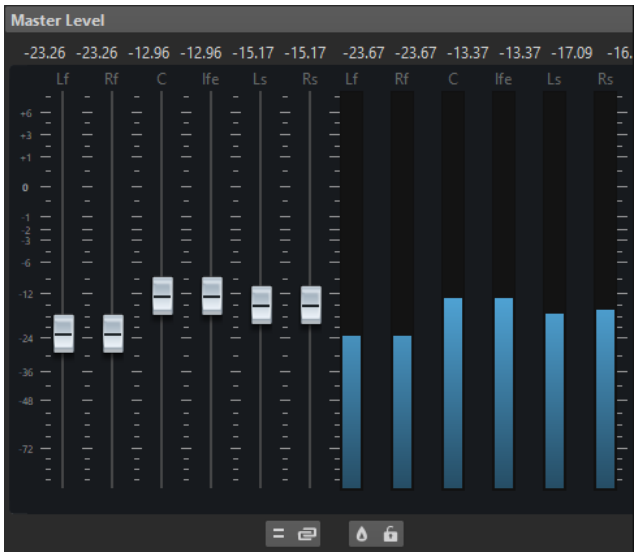
If **Unlink Faders** is deactivated, moving one fader also moves the other by the same amount. Activating **Unlink Faders** allows you to adjust the gain of the channels individually.

RELATED LINKS
Track Control Area on page 196
Assigning Track Channels to Output Channels on page 230

Multichannel Configurations in the Master Section

The **Master Section** automatically rearranges itself when starting playback of a multichannel audio montage. You can rearrange the **Master Section** without starting playback by clicking **Rearrange** in the **Settings** menu at the top of the **Master Section**.

The output channels for the selected channel configuration are displayed in the **Master Section**, with one level fader and clip indicator for each output channel.



RELATED LINKS
Master Section on page 296

Monitoring a Stereo Mixdown of Multichannel Configurations

In the **Master Section**, you can monitor a stereo mixdown of a multichannel configuration. This allows you to preview a stereo mixdown setting for a surround project, for example.

PROCEDURE

1. In the **Master Section**, open the **Master Level** pane.
2. Below the master meter, click **Audio Channel Processing**.
3. Select **Mix to Stereo**.

Master Effects and Multichannel Audio Montages

Handling effects for a multichannel audio montage is similar to handling effects when working in stereo mode. However, not all plug-ins support multichannel operations. In this case, a warning is displayed when you try to insert them.

Clip Editing

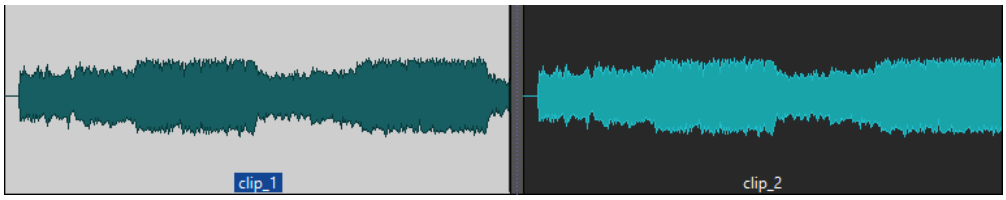
All clips are displayed in the **CD** window. In this window, you can edit and rearrange clips and drag them into the audio montage.

The active clip is highlighted in the clips list.

RELATED LINKS
Clips on page 221
Album Window on page 276

Active Clips and Non-Active Clips

An active clip is the most recently selected, clicked, or edited clip. Only one clip can be active at a time. The name of the active clip is highlighted by a blue background. Some editing tasks can only be performed on active clips.



Active clip (left) and non-active clip (right)

- To open the **Active Clip** menu, right-click a clip.

RELATED LINKS
Selecting Clips on page 233

Selecting Clips

For most editing operations on clips, you need to select clips. You can select multiple clips at a time.

Choose from the following options:

- To select a clip, click it.
- To select multiple clips, **Ctrl/Cmd**-click the clips.
- To make an audio range selection within a clip, position the edit cursor where you want the selection to start. **Shift**-click to indicate the end of the selection.
- To make an audio range selection encompassing several adjacent clips, double-click the upper part of a clip. After the second click, drag to select the audio range.

Selection Ranges in Audio Montages

A selection range is a selected area on a track. The selection range can be entirely or partially within a clip or an empty section of the track. You can make selection ranges on one or multiple tracks.

- To make a selection range, click the upper area of a track and drag to the left or right on one or multiple tracks.

Selection ranges are useful for the following:

- To edit clips by cutting or erasing the selection, or trimming the clip to the selection.
- To create a new clip by dragging the selection range to another track.
- To open a montage window with the selection range from the source audio file by dragging the selection range to the **Audio Editor**.
- To play back only the selection range, either the whole audio montage or only the clip with the intersecting clip part.
- To loop the playback within the selection by activating the loop and selecting the **Loop** mode on the transport bar.

Creating and Editing Selection Ranges in Audio Montages

You can resize, create, move, and remove selection ranges.

- To create a selection range in an empty area on a track, click and drag with the mouse. The start and end position and the length of the range are displayed on the info line.
- To create a selection range within a clip, click and drag with the mouse in the upper clip area. The start and end position and the length of the range are displayed on the info line.
- To create a selection range of the area between two markers, double-click between the markers.
- To create a selection range from a region marker pair, press **Shift**, and double-click the start or end marker. In the **Markers** window, you can also double-click the **Length** field of a region marker.
- To create a selection range from a title of an album, open the **Album** window, and double-click the number to the left of the corresponding title.
- To resize a selection range, **Shift**-click and drag to the left or to the right, or click and drag the edges of the selection range.
- To move a selection range, press **Ctrl/Cmd** and **Shift**, and drag the selection range to the left or right.
- To deselect a selection range, click elsewhere in the audio montage, or press **Esc**.

RELATED LINKS
Markers Window on page 320
Album Window on page 276

Rearranging Clips

You can freely arrange clips in the montage window.

Reordering Clips in Audio Montages By Dragging

In the **Album** window, you can re-order clips by dragging them to another position in the list.

PROCEDURE

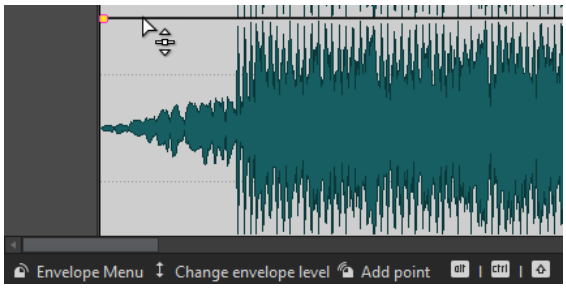
1. Open the **Album** window.
2. In the clip list, drag a clip to another position in the list.

   You can move more than one clip at the same time, by selecting multiple clips and dragging them. If more than one clip is selected, all clips between the leftmost selected clip and the rightmost selected clips are moved.

RELATED LINKS
Album Window on page 276

Info Line

The info line at the bottom of the **Audio Montage** window shows what happens when you click the mouse button with or without modifier keys, depending on the cursor position.



The following symbols are used on the info line:

Single-click

Indicates what happens when you click.

Double-click

Indicates what happens when you double-click.

Right-click

Indicates that you can right-click to display a menu. The name of the menu is displayed to the right of the symbol.

Ctrl/Cmd-click

Indicates that you can **Ctrl/Cmd**-click for an additional function.

Alt-click

Indicates that you can **Alt**-click for an additional function.

Shift-click

Indicates that you can **Shift**-click for an additional function.

Drag up/down

Indicates what happens when you click and drag up or down.

Drag left/right

Indicates what happens when you click and drag left or right.

Drag in any direction

Indicates what happens when you click and drag an item in any direction within the audio montage.

Drag out of the audio montage

Indicates what happens when you click and drag an item out of the audio montage.

Moving/Resizing clips or changing envelope values

This indicates that you are moving or resizing clips, or changing envelope values, for example.

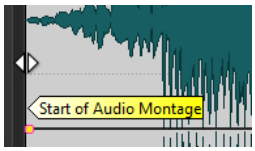
Combined modifier keys

Indicates that you can use combined modifier keys.

Magnetic Bounds in Audio Montages

Some positions, such as markers or the start and end of a clip, can be defined as magnetic. Dragged elements can snap to these positions. This makes it easier to position items accurately.

For example, when you move or resize a clip, and its edges or its front cue point get close to one of the magnetic bounds, the clip snaps to this position. A label is displayed, indicating the snap position.



To place the cursor at a magnetic position, click the time line and hold the mouse button pressed. When you now move the cursor vertically, the cursor jumps to the next magnetic bound.

Activating Snapping to Magnets

To make use of the magnetic bounds function, **Snap to Magnets** must be activated.

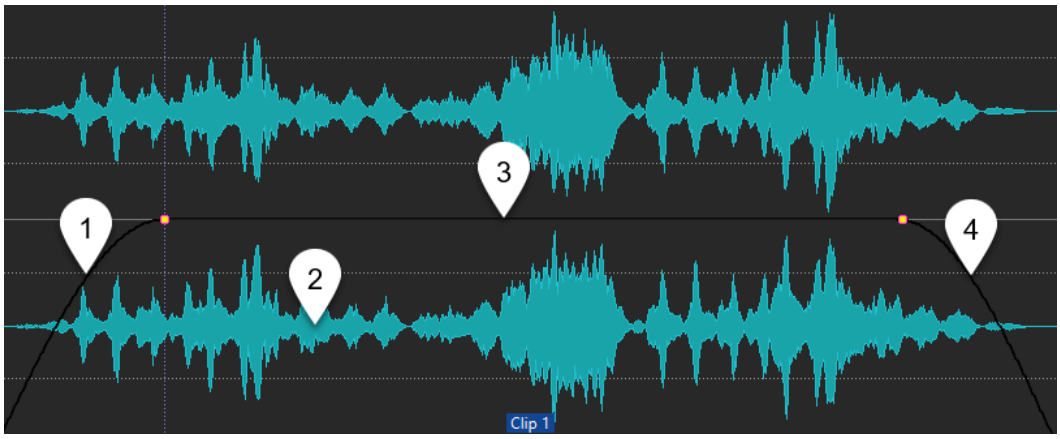
PROCEDURE

1. In the **Audio Montage** window, select the **Edit** tab.
2. In the **Snapping** section, activate **Snap to Magnets**.

RELATED LINKS
Magnetic Bounds in Audio Montages on page 236
Edit Tab (Audio Montage) on page 204

Clip Context Menus

Many editing functions for clips can be accessed via the clip context menus. Depending on where you right-click the clip, different context menus are available.



1 **Fade in section**

Opens the **Fade In** pop-up menu, where you can edit the fade in.

2 **Any area of a clip**

Opens the **Active Clip** pop-up menu, where you can edit the active clip.

3 **Sustain section**

Opens the **Envelope** pop-up menu, where you can edit the envelope.

4 **Fade out section**

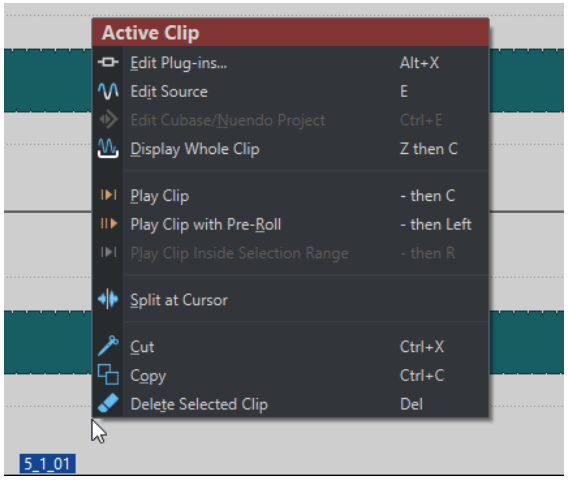
Opens the **Fade Out** pop-up menu, where you can edit the fade out.

RELATED LINKS
Active Clip Menu on page 237

Active Clip Menu

The **Active Clip** pop-up menu allows you to edit and play back the active clip with or without pre-roll.

- To open the **Active Clip** pop-up menu, right-click a clip.



Edit Plug-ins

Opens the plug-in window of the plug-ins that are applied to the active clip. You can also right-click the clip name and select a plug-in to open the corresponding plug-in window.

Edit Source

Opens the source audio file of the clip in the **Audio Editor**.

Edit Cubase/Nuendo Project

Opens the project of the audio file in Cubase/Nuendo.

This allows you to correct issues that you have identified during mixing and correct these issues in the audio file in Cubase/Nuendo.

Display Whole Clip

Adjusts the view to display the active clip.

Play Clip

Plays back the active clip.

Play Clip with Pre-Roll

Plays back the active clip with pre-roll.

Play Clip Inside Selection Range

Plays back the selected audio range. Overlapping clips or clips on other tracks are muted.

Split at Cursor

Splits the active clip at the edit cursor position. You can also split at the edit cursor position by double-clicking the edit cursor or pressing **S**.

Cut

Cuts the active clip to the clipboard. You can then paste it to another position on an audio montage track.

Copy

Copies the active clip to the clipboard.

Delete

Deletes the active clip.

RELATED LINKS

Editing Source Files of Clips on page 245

Cubase/Nuendo as an External Editor for WaveLab Elements on page 381
Clip Context Menus on page 237

Moving and Crossfading Clips

You can make clips overlap with other clips, move them, and create crossfades between clips.

RELATED LINKS
Moving Clips on page 239

Moving Clips

You can drag one clip or all selected clips to another position.

NOTE

The channel configuration of the clip must match the destination track.

PROCEDURE

1. In the montage window, select the clips that you want to move.
2. Click the clip area, and drag the clips in any direction.
   While dragging, the info line displays the current start position of the clip.

RELATED LINKS
Moving and Crossfading Clips on page 239

Options for Moving and Crossfading Clips

WaveLab offers helpful options for moving and crossfading clips.

Ripple

When you move a clip, ripple determines whether the clips to its right are moved along with it. The ripple options are available via the **Edit** tab of the **Audio Montage** window.

Track

If this option is activated and you move a clip horizontally, all clips on the active track that are located to the right of the edited clip are moved as well. This option also applies when moving or resizing clips, and when inserting or pasting more than one clip at a time.

Global

If this option is activated and you move a clip horizontally, all clips on all tracks that are located to the right of the edited clip are also moved. This option is taken into account when moving or resizing clips, and when inserting or pasting more than one clip at a time.

None

Deactivates the **Ripple** feature. As a result, only the selected clip is moved.

NOTE

By default, when you move clips on standard tracks, **Ripple** is not applied to clips on reference tracks. However, you can include clips on reference tracks in **Ripple** processes by activating

Global Ripple Affects Reference Tracks via **Additional Options** at the bottom of the **Ripple** panel.

Crossfading

The following crossfading options are available via the **Fade** tab of the **Audio Montage** window, in the **Options** section.

Overlaps

This pop-up menu allows you to set the automatic crossfading behavior.

- If **No Automatic Crossfading** is activated, no automatic crossfading is performed for any overlapping clips.
- If **Free Overlaps** is activated, automatic crossfades are created when a clip overlaps with another clip on the same track. The length of the overlap determines the duration of the crossfade.

Options

- If **Create Default Fades in New Clips** is activated, all new clips assume the default fade-in and fade-out shape and length. For clips that are created by splitting a clip, only the default fade time is used.

RELATED LINKS
Edit Tab (Audio Montage) on page 204
Fade Tab (Audio Montage) on page 206

Overlapping Clips

You can move clips so that they overlap each other.

Note the following:

- The tracks in the audio montage are polyphonic, which means that each track can play back several overlapping clips at the same time. Overlapping clips are transparent, allowing you to see the underlying clips and their waveforms.
- There are crossfading options that automatically adjust the level envelope curves when you overlap clips.

Duplicating Clips

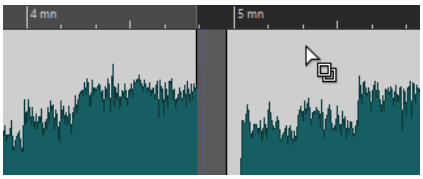
You can quickly duplicate one or several clips via drag and drop. It is possible to drag duplicated clips to another position on the same track, another track, or another audio montage.

NOTE

Make sure that the channel configuration of the clip matches the channel configuration of the destination track.

PROCEDURE

1. In the **Audio Montage** window, select one or more clips.
2. Click the upper clip area and drag the clips to another position on the same track, another track, or another audio montage tab.



The cursor changes to indicate that you are located in the upper clip area.

While you are dragging, a dotted line indicates where the first of the copied clips will be placed. The position is also indicated on the info line.

The **Ripple** settings that you can edit via the **Edit** tab of the **Audio Montage** window are taken into account.

RELATED LINKS
Edit Tab (Audio Montage) on page 204

Coloring Clips

To make it easier to identify individual clips, you can assign colors to clips in an audio montage or prompt WaveLab to automatically assign a unique random color to each of your selected clips.

PROCEDURE

1. In the **Audio Montage** window, select the **View** tab.
2. In the **Clip** section, click **Color**.
3. Do one of the following:
   - To assign a color to the active clip or to assign a color to multiple selected clips, choose a color from the color palette.
   - To reset the active clip to the default color, select **Reset Default Color**.
   - To automatically assign a random color to each of your selected clips, select **Apply Random Colors**.

     NOTE

     - The color palette encompasses 20 different shades. With up to 20 clips selected, WaveLab assigns a different color to each of them, without repeating a color. Any clip that you select beyond this number is randomly assigned one of the colors of the palette again.
     - As the colors are assigned in a random manner, applying this feature to the same set of clips repeatedly generates a different outcome for each iteration.

NOTE

Alternatively, you can access the clip coloring features via the **Clip Color** option on the **Clip** tab of the **Inspector** window. However, in this case, coloring only takes effect on the currently displayed clip in the **Inspector** window.

RELATED LINKS
Inspector Window on page 260

Resizing Clips

With regard to clips, resizing means adjusting their start and end points, to reveal more or less of the original audio file.

PROCEDURE

1. Hover over the left or right edge of a clip.
2. When the **Trim** icon appears, click and drag to the left or to the right, and release the mouse button as soon as the audio is resized to your liking.

NOTE

- You cannot drag the edge of a clip past the start or end point of the audio file to which it refers.

TIP

- To resize multiple selected clips by the same value, press **Alt** when dragging.

NOTE

After resizing clips, the audio to the left or to the right of their edges has not been erased but is still available. Instead, it is temporarily inactive; that is, excluded from view, editing, and processing. This is indicated by small red arrows, so-called **Clip Side Cues** (**1**), at the right/left edge of the clip. You can hover over a clip side cue to display information about the length of the currently inactive audio in the clip. The time unit is based on the time ruler settings.

AFTER COMPLETING THIS TASK

Optional: To reveal audio information that is currently excluded from view, editing, and processing again, hover over the left or right border of the clip. When the **Trim** icon appears, click and drag to the left or to the right, and release the mouse button as soon as the audio is resized to your liking.

Splitting Clips

You can split clips to turn one clip into two independent clips. The two clips have the same name and settings. Envelopes and fades are converted so that the two clips play back as if they were still one clip.

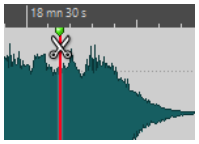
PREREQUISITE

Decide whether you want to automatically create crossfades between the left and right clip. To activate/deactivate this option, select the **Fade** tab, and activate/deactivate **Create Default Fades in New Clips** in the **Options** section.

PROCEDURE

1. In the montage window, click the position where you want to split the clip.
2. Position the mouse cursor on the edit cursor position in the top clip area.

   The cursor becomes a pair of scissors.

3. Double-click.

RESULT

The clip is split in two.

RELATED LINKS

Split Clip at Silences Dialog on page 243

Split Clip at Silences Dialog

You can remove silent clip parts and create a new clip at the cut position.

- To open the **Split Clip at Silences** dialog, select the **Edit** tab in the **Audio Montage** window, and click **Split at Silences** in the **Split** section.

Minimum Clip Length

Sets the minimum length of the resulting regions after splitting. Non-silent sections shorter than this length are not split.

Minimum Silence between Regions

Sets the minimum length of a silent region. Silent regions shorter than this length will not create split regions.

Silence Is Defined as a Signal Below (RMS)

Allows you to set the threshold level for silence detection. Levels below this value are considered silent.

Automatic Level Detection (Two-Stage Analysis, Slower)

If this option is activated, the file is analyzed and automatically split where WaveLab Elements detects silence. The file is read twice.

Separate Resulting Clips by a Fixed Gap

If this option is activated, the resulting clips are separated from each other by 2 seconds. If this option is deactivated, the gaps between the resulting clips are determined by the length of the removed silence.

Deleting Clips

Deleting clips does not delete the audio file that is referenced by the clips.

PROCEDURE

- Do one of the following:
  - Right-click a clip and select **Delete**.
  - Select a clip and press **Delete**.
    To ensure that there is no selection range, press **Esc**.

Deleting Parts of Clips Inside Selection Ranges

Deleting the part of a clip inside a selection range removes the selected range and moves the right section of the clip to the left to fill the gap.

PROCEDURE

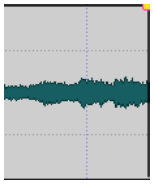
1. In the montage window, select a range in a clip.
2. Select the **Edit** tab.
3. In the **Removal** section, click **Delete Selected Range**.

RESULT

The selected range is deleted and the right section of the clip is moved to the left to fill the gap.

Clips and Cue Points

A cue point is a defined position marker that belongs to a clip. It may be positioned inside or outside the clip. Cue points are displayed as dotted vertical lines.



When you move a clip, its cue point is magnetic to any edges, markers, or positions. There are several uses for this:

- Set the cue point at a relevant position in the audio to align the clip with other clips, etc.
- Set the cue point before the start of a clip to position clips in a row with pre-defined spaces.
- Set the cue point at the fade in or fade out point of a clip to maintain defined fade lengths when crossfading.

NOTE

Each clip can only have one cue point. If you select another cue point insert option, the cue point is moved to a new position.

RELATED LINKS

Adding Cue Points on page 245

Adding Cue Points

You can add one cue point for each clip.

PROCEDURE

1. In the audio montage, click the clip position where you want to set a cue point.
2. Select the **Edit** tab.
3. In the **Clip** section, select **Cue Points**.
4. From the pop-up menu, select one of the following options:
   - **Set at Cursor**
   - **Set at Default Gap Position**
   - **Follows Fade In End Point**
   - **Follows Fade Out Start Point**
5. Optional: Select **Custom Cue End**, and specify a custom cue end point.

RELATED LINKS
Clips and Cue Points on page 244
Edit Tab (Audio Montage) on page 204

Source File Management

You can edit files that are used in the active audio montage in the **Audio Editor**.

RELATED LINKS
Editing Source Files of Clips on page 245

Editing Source Files of Clips

Editing the audio montage may require that you process or edit the actual audio files that are referenced by the clips.

Use one of the following methods to edit the source file of a clip:

- Right-click the clip that you want to edit and select **Edit Source**. The source file of the clip opens in the **Audio Editor**. Edit the clip, save it, and return to the audio montage.
- Double-click the clip and drag the clip to the tab list or in the **Audio Editor**.

Note the following:

- Any editing that you perform this way affects the source audio file and thereby all clips that use the audio file, including clips in other audio montages.
- You can undo/redo all changes in audio files, even after saving the file. These changes are reflected immediately in all open audio montages.
- If you use **File** > **Save As** to save the source audio file with a different name, all open audio montages that refer to the file now refer to the new file.

Envelopes for Clips

For clips in the audio montage, you can create envelopes for volume and fades, and for panning.

You can create an independent level envelope curve to automate the level, to create fades and crossfades, and to mute clip sections.

You can also draw pan envelopes to automate pan settings for clips. For mono clips, pan governs the left/right position in the stereo field. For stereo clips, pan sets the left/right balance.

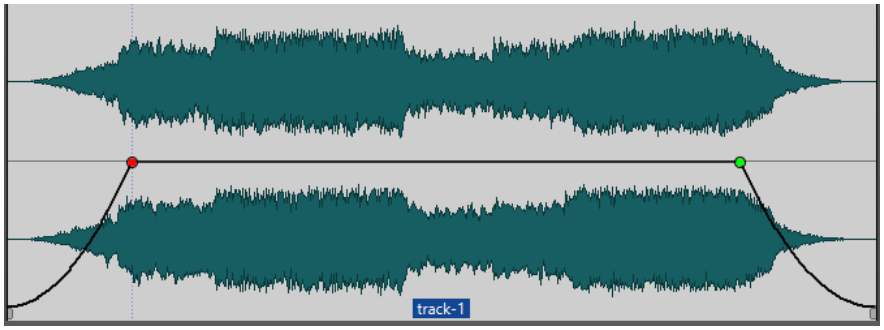
You can edit the envelope settings on the **Envelope** tab, or by right-clicking an envelope curve. The settings menu contains different options depending on whether you click the fade in part, the fade out part, or the sustain part.

RELATED LINKS
Envelope Tab (Audio Montage) on page 207

Level Envelopes

By default, all clips display a level envelope curve. The envelope consists of three parts: the fade in part, the sustain part, and the fade out part.

The points on the left and right side of the curve are the fade in and fade out junction points that separate the fade parts from the sustain part. The gray points at the start of a fade-in and at the end of a fade-out allow you to see small fades even when you have fully zoomed out.



The envelope curve indicates if points, fade ins, or fade outs have been defined. In addition to the curve, changes in the level envelope are also reflected in the waveform.

RELATED LINKS
Envelopes for Clips on page 245

Selecting Envelopes

You can select volume/fade envelopes and pan envelopes.

PROCEDURE

1. In the **Audio Montage** window, select a clip.
2. Select the **Envelope** tab.
3. In the **Visibility** section, open the **Envelope Type** pop-up menu, and choose the **Volume/Fades** envelope or the **Pan** envelope for editing.

RELATED LINKS
Envelopes for Clips on page 245
Envelope Tab (Audio Montage) on page 207

Hiding Envelope Curves

All clips display envelopes by default. You can hide these envelopes. However, hidden envelopes are still active.

PROCEDURE

1. In the **Audio Montage** window, select a clip.
2. Select the **Envelope** tab.
3. In the **Visibility** section, open the **Envelope Type** pop-up menu, and select **Hide All**.

RELATED LINKS
Envelopes for Clips on page 245
Envelope Tab (Audio Montage) on page 207

Adding Envelope Curve Points

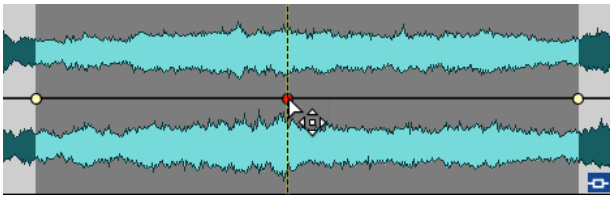
Curve points allow you to create volume curves, pan curves, and fade curves for a clip. You can edit the envelope curve by adding and moving curve points. You can add one or multiple envelope curve points.

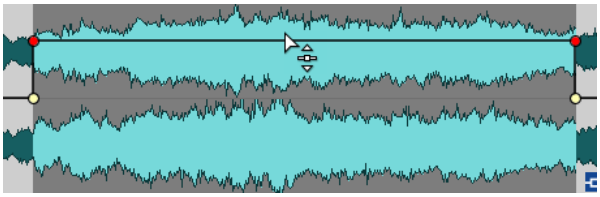
CHOICES

- To add a curve point, double-click the envelope curve.

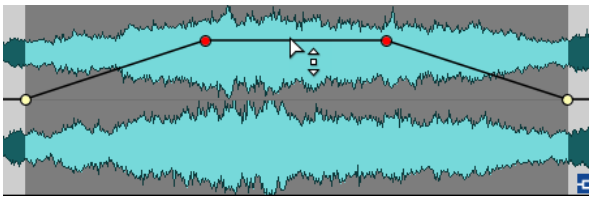
  If you keep the mouse button pressed after double-clicking the envelope curve, you can move the curve point to another position.
- To add multiple curve points within a selection range, do one of the following:
  - To add three curve points, make a selection range, and double-click the envelope curve within the selection range.

    This creates a curve point at the start and the end of the selection, and a curve point at the position that you have clicked. If the selection range already contains a curve point and you double-click the envelope curve, two curve points are created.

    
  - To add four curve points with two curve points at the beginning of the selection and two curve points at the end of the selection, make a selection range, and click and drag the envelope curve up or down.

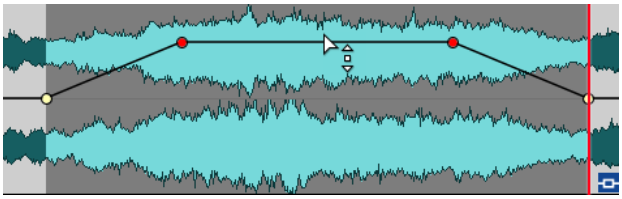
    

    This only works if the selection range does not contain any curve points. The distance between the first and the second, and between the third and the last curve point is 20 ms by default.
  - To add four curve points that have an equal distance to each other, make a selection range, press **Ctrl/Cmd**, and click and drag the envelope curve up or down.



This only works if the selection range does not contain any curve points.

- To add four curve points where the two curve points in the middle have a greater distance to each other that to the first and last curve points, make a selection range, press **Ctrl/Cmd**-**Alt**, and click and drag the envelope curve up or down.



This only works if the selection range does not contain any curve points.

RELATED LINKS
Envelopes for Clips on page 245
Editing Envelope Curves on page 248

Editing Envelope Curves

Many of the editing operations that are commonly used in the context of your computer operating system can be applied when editing envelope curves. On top of these, a number of specific procedures apply.

CHOICES

- To delete a curve point, double-click the curve point. The curve point between the sustain and fade parts of the envelope cannot be deleted.
- To select multiple curve points, hold down **Ctrl/Cmd** and click the curve points that you want to select.
- To select a range of points, **Alt**-click and drag to create a selection rectangle.
- To delete multiple curve points, select the curve points that you want to delete, right-click one of the points, and select **Delete Selected Points**.
- To move all selected points, click one of the selected points and drag.
- To raise or lower the value of two consecutive curve points, **Ctrl/Cmd**-click the segment between the points and drag up or down.
- To change the time position of two consecutive curve points, **Shift**-click the segment between the points and drag left or right.
- To raise or lower the entire envelope curve, make sure that no curve point is selected, click the envelope curve, and drag up or down. Do not drag a segment that is limited by selected points.
- To adjust the envelopes in all selected clips, hold down **Alt**, and drag any envelope curve up or down. This is a quick way to adjust the level or pan of multiple clips at the same time and also to adjust both sides of a stereo envelope simultaneously.
- To move a fade in/fade out point vertically, **Ctrl/Cmd**-click and drag the fade point.
- To change the level or the fade in/out time of multiple envelopes at the same time, select the clips that you want to edit, press **Alt**, and edit the envelope with the mouse.

RELATED LINKS
Envelopes for Clips on page 245
Adding Envelope Curve Points on page 247

Resetting Envelope Curves

You can reset curve points to the default level 0 dB.

CHOICES

- To reset a single point to 0 dB, select the point, right-click it, and select **Reset Selected Points**.
- To reset the whole envelope curve to default, right-click the envelope curve, and select **Reset Level to 0 dB**.

RELATED LINKS
Envelopes for Clips on page 245

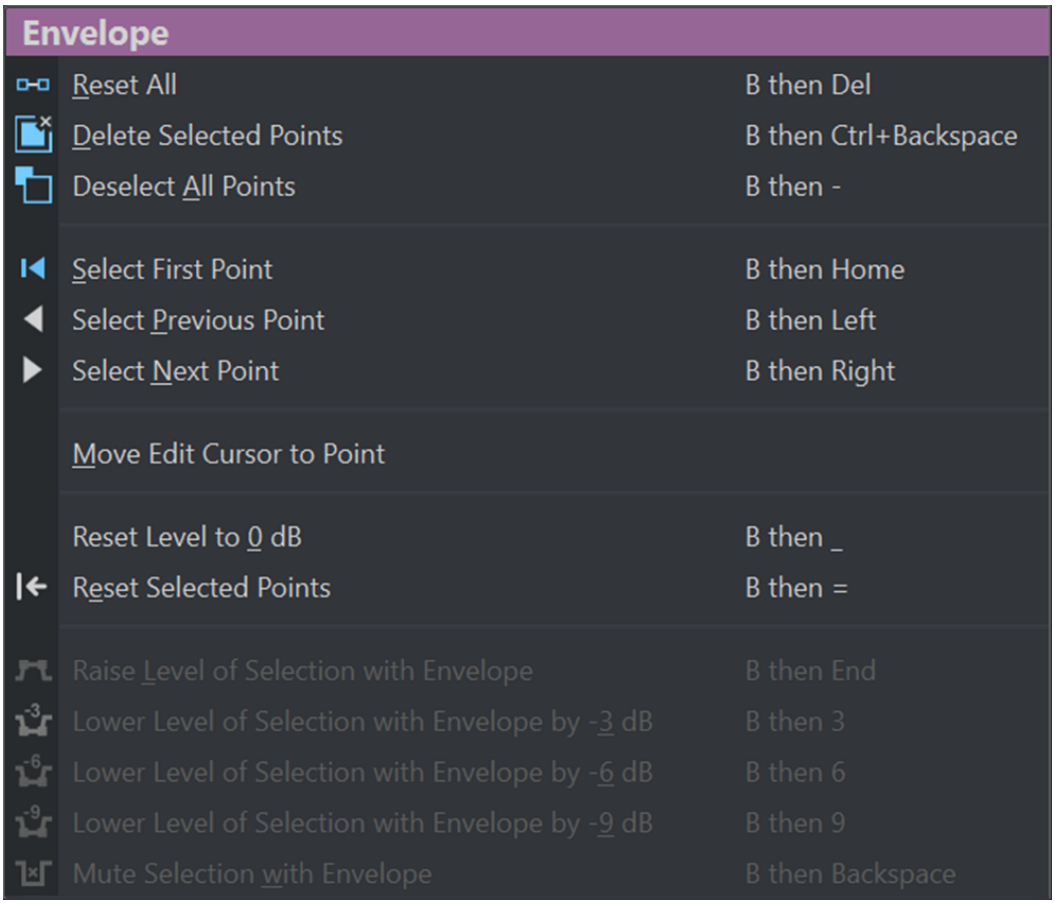
Moving the Edit Cursor to an Envelope Point

The **Envelope** context menu allows you to move the edit cursor to the exact position of an envelope point.

Moving the edit cursor to an envelope point is useful to insert a marker at the envelope point, for example. It also allows you to snap to the envelope point when you edit an envelope from another track.

PROCEDURE

1. Right-click an envelope point.
2. From the **Envelope** context menu, select **Move Edit Cursor to Point**.



Snapping Envelope Points to Anchors

When you edit envelope points with the mouse, you can set them to snap to active anchors.

PROCEDURE

1. In the **Audio Editor** or in the **Audio Montage** window, select the **Edit** tab.
2. In the **Snapping** section, activate **Snap to Magnets**.
3. Use the mouse to move an envelope point.

RESULT

As you move envelope points with the mouse, they snap to the following anchors:

- Main Ticks of the Time Ruler
- Markers
- Edit Cursor
- Time Selection Edges

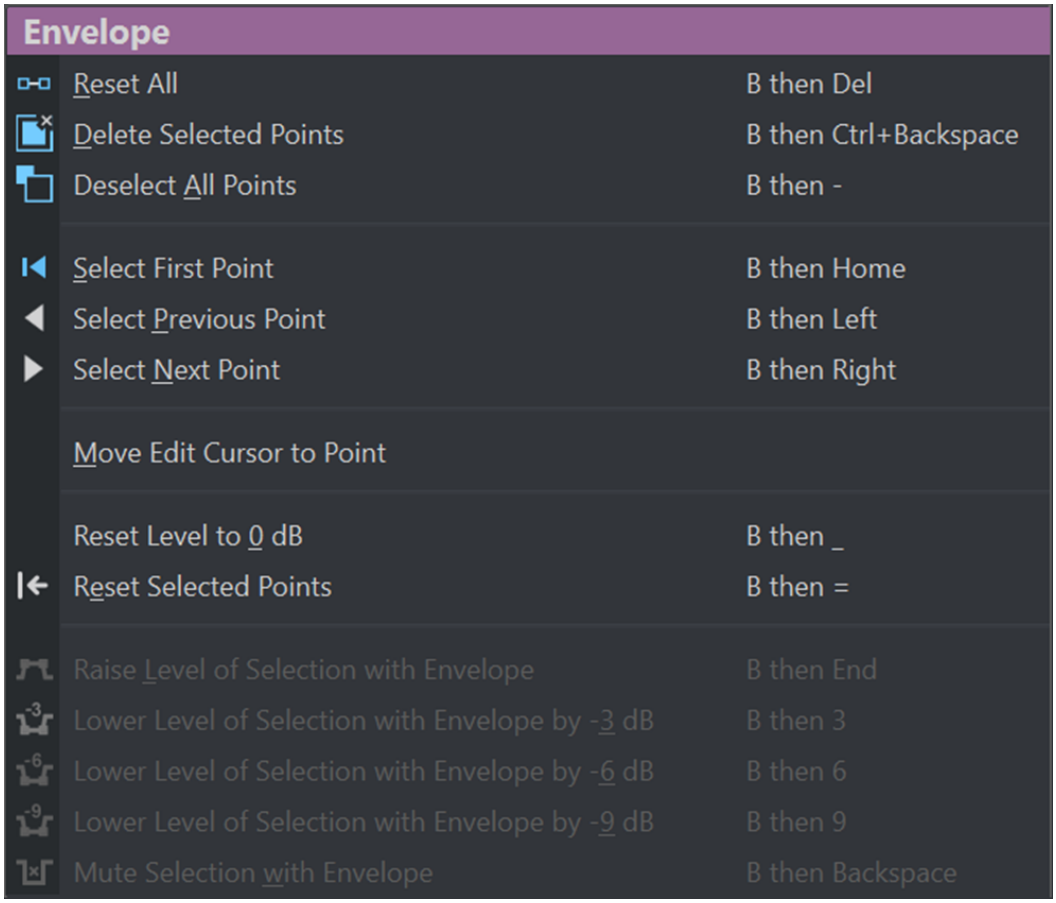
Navigating across Envelope Points

In the **Audio Montage** window, you can quickly navigate to specific envelope points and select them.

Navigating across – and to specific – envelope points via the **Envelope** context menu saves you the time and effort of manually selecting envelope points one by one and allows for quick final reviews of envelope points and levels, for example.

PROCEDURE

- Right-click on an envelope curve. From the **Envelope** context menu, choose **Select First Point**, **Select Previous Point**, or **Select Next Point** to navigate to the desired envelope point on the envelope curve.



Raising Selection Levels

You can raise the audio level with specific fall and rise times (by default 20 ms) and then adjust the level.

PROCEDURE

1. In the montage window, in a clip, select the range for the section that you want to raise in level.
2. Right-click the envelope curve, and select **Raise Level of Selection with Envelope**.
   The level of the selection range is raised.

3. Click the envelope of the selection range and drag up or down to adjust the level.

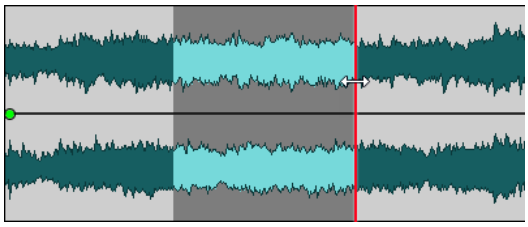
Muting Selected Ranges of Clips

You can mute a selected range by lowering the volume to -144 dB.

Muted sections are not affected when you drag the envelope curve up or down.

PROCEDURE

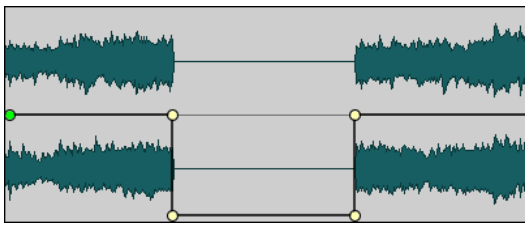
1. In the montage window, in a clip, make a selection range for the section that you want to mute.



2. Right-click the envelope curve, and select **Mute Selection with Envelope**.

RESULT

The section is muted. A fade in and fade out of 20 ms is applied to the muted section.



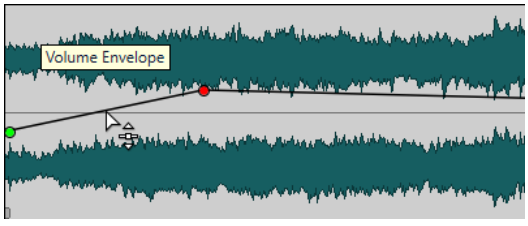
Changing the Overall Level Envelopes of Clips

The default envelope curve contains no level envelope points, but you can use it to change the overall level for a clip.

PROCEDURE

1. In the montage window, place the mouse cursor on the envelope curve.

   The mouse cursor takes the shape of a circle with two arrows that point up and down.



2. Click and drag the curve up or down to change the clip envelope level.

Pan Laws

The power of the sum of the channels drops by about 3 dB if a signal is panned hard left or right, compared to the same signal being panned center. This can be compensated with pan laws.

Experiment with the laws to hear which fits best. The pan laws can be set for tracks, clips, and the montage output.

- To set the pan laws for clips, use the **Pan Law** pop-up menu in the **Envelope** tab in the **Montage** window, or use the **Pan Law** pop-up menu and knob in the **Inspector** window.
- To set the pan laws for tracks and the montage output, use the **Pan Law** pop-up menu and knob in the **Inspector** window.

The following pan laws are available:

Channel Damp (0 dB/Mute)

This law does not compensate for power loss. If a signal is panned hard left or right, the power of the sum of the channels drops by 3 dB.

Constant Power (+3 dB/Mute)

This is the default law. Regardless of the pan position, the power of the sum of the channels remains constant.

Channel Boost (+4.5 dB/Mute)

If this law is selected and a signal is panned hard left or right, the power of the sum of the channels is higher than with a signal-panned center.

Channel Boost (+6 dB/Mute)

If this law is selected and a signal is panned hard left or right, the power of the sum of the channels is higher than with a signal-panned center. This is the same as the previous option, but with even greater power boost.

RELATED LINKS
Envelope Tab (Audio Montage) on page 207
Inspector Window on page 260

Ducking

Ducking allows you to attenuate the level of an audio track so that the audio on another track is more prominent when both tracks are played back simultaneously.

A very common use case for ducking is the creation of two separate tracks, one for music and one for a voice-over, with the goal of the spoken content being accompanied by music on playback. With ducking applied, when the voice-over starts, the level of the music track is lowered by automatically created level envelope curves, so that the spoken content is perceived as in the foreground and the music in the background by the audience.

In this context, the track containing the music is called the carrier track. The track containing the voice recording is called the modulator track.

You can select multiple voice tracks as modulator tracks for a carrier track. You can also apply ducking to modulator tracks; for example, to give one voice track priority over another.

RELATED LINKS
Creating Voice-Over Ducking Effects for Tracks on page 254
Ducker Settings for Track Ducking on page 254

Creating Voice-Over Ducking Effects for Tracks

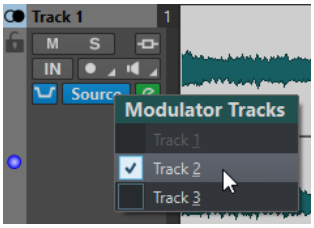
The ducking feature enables you to combine spoken content with music in such as way that, on playback, while the voice is more prominent and perceived by the listeners as being in the foreground, the music is playing at a lower level (in the background).

PREREQUISITE

You have two audio tracks, a music track and a voice-over track. You want to attenuate the level of one of the tracks (the music) whenever a signal is present on the other track (the voice recording).

PROCEDURE

1. Select the carrier track, that is, the track containing the music.
2. Right-click the track control area of the carrier track, and click **Show Ducking Controls**.
3. In the track control area of the carrier track, activate **Ducker On/Off**.
4. Click **Source** to open the **Modulator Tracks** menu, and select one or multiple modulator tracks, that is, the tracks containing the voice recording.



5. Play back the audio montage.

   The volume of the music track is lowered every time the voice track emits a signal.
6. Optional: Click **Ducker Settings** to open the **Ducker** plug-in, and adjust the settings to fine-tune the ducking effect.
7. Optional: If you are using multiple modulator tracks, you can also apply ducking to modulator tracks.

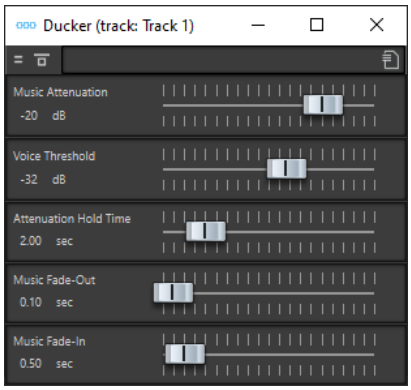
RELATED LINKS

Adding Tracks on page 219
Track Control Area for Stereo and Mono Tracks on page 197
Ducker Settings for Track Ducking on page 254

Ducker Settings for Track Ducking

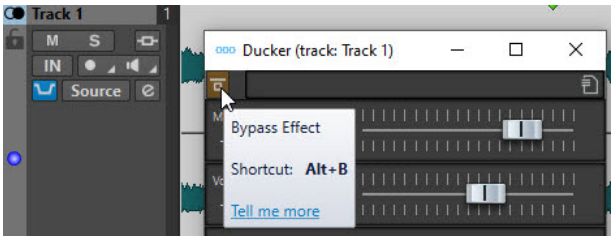
The **Ducker** settings allow you to specify how to apply the ducking effect to tracks.

- To open the **Ducker** settings, activate **Ducker On/Off** in the track control area, and click **Ducker Settings**.



Bypass Effect

If this option is activated, the **Ducker** is bypassed during playback.



Presets

Allows you to save and load ducking presets.

Music Attenuation

Allows you to specify the level reduction that is applied to the music track (carrier).

Voice Threshold

Allows you to set the level threshold of the voice track (modulator) that triggers ducking. If the level of the voice track exceeds the threshold, the level of the music track (carrier) is lowered.

Attenuation Hold Time

When the level of the voice track falls below the set voice threshold, the **Attenuation Hold Time** determines how long the level of the carrier track stays reduced before it starts rising to its original level again.

Music Fade-Out

Determines the time it takes for the music level to change from 0 dB to the set **Music Attenuation** level.

Music Fade-In

Determines the time after which the level rises to the original level, when the level of the voice track (modulator) falls below the set **Voice Threshold** and after the specified **Attenuation Hold Time**.

RELATED LINKS
Ducking on page 253
Track Control Area for Stereo and Mono Tracks on page 197

Fades and Crossfades in Audio Montages

A fade in is a gradual increase in level and a fade out is a gradual decrease in level. A crossfade is a gradual fade between two sounds, where one is faded in and the other faded out.

RELATED LINKS
Creating Fades in Clips on page 256

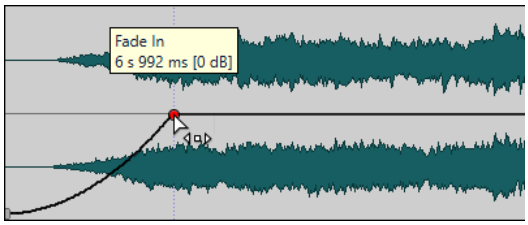
Creating Fades in Clips

By default, all clips display fade in and fade out junction points. These can be dragged horizontally to create a fade in or fade out for a clip.

You can add envelope points to a fade just as with level envelopes.

- To create a fade in, click the fade in point at the start of a clip, and drag it to the right.
- To create a fade out, click the fade out point at the end of a clip, and drag it to the left.
- To create a fade in or fade out at a specific time position, use set **Apply Fade Time** option in the **Fade** tab. Enter the time value in the time field and click **Apply Fade Time**.
- To move a fade in/fade out point vertically, press **Ctrl/Cmd** while dragging.
- To adjust the fade in/fade out points in all selected clips simultaneously, hold down **Alt**, and drag a fade in/fade out point up or down. This is a quick way to adjust the fades of multiple clips at the same time.
- To create a crossfade, move a clip on another. A crossfade is automatically created at the junction point.

The resulting fade in/fade out curve is displayed in the clip, and the fade is also reflected in the waveform. If you position the mouse over the fade in point, the fade in time is displayed in seconds and milliseconds and the volume in dB.



RELATED LINKS
Fades and Crossfades in Audio Montages on page 256
Fade Tab (Audio Montage) on page 206

Fade In and Fade Out Menus

In this menu, you can select various preset fade curves and other fade-related options.

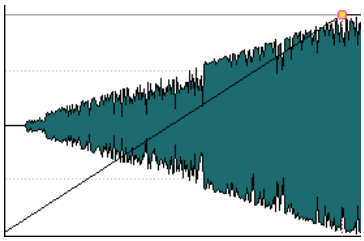
- To open the **Fade In** or **Fade Out** pop-up menu, right-click the fade in or fade out points.

Zoom to Fade In Range/Zoom to Fade Out Range

Adjusts the view to mainly display the fade in/fade out part of the active clip.

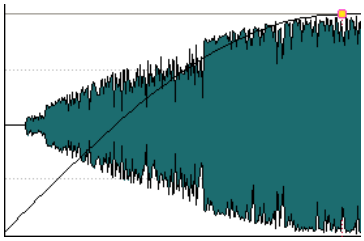
Linear

Changes the level linearly.



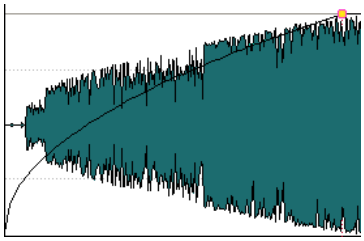
Sinus (*)

Changes the level according to the first quarter period of the sine curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.



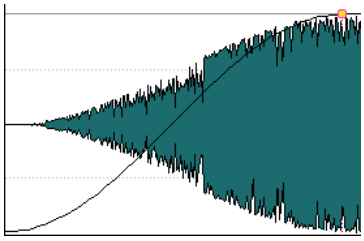
Square-root (*)

Changes the level according to the square-root curve. When used in a crossfade, the loudness (RMS) remains constant during the transition.



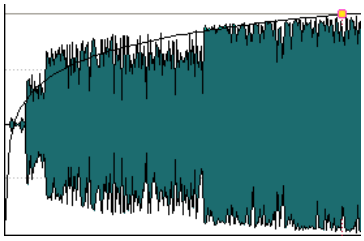
Sinusoid

Changes the level according to a half period part of the sine curve.



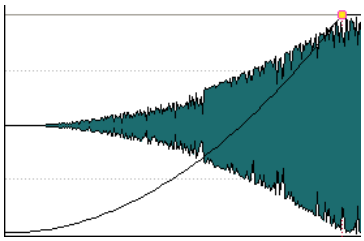
Logarithmic

Changes the level logarithmically.



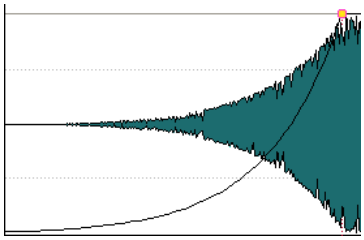
Exponential

Changes the level exponentially.



Exponential+

Changes the level strongly exponential.



RELATED LINKS

Fades and Crossfades in Audio Montages on page 256

Applying Default Fades to New Clips

All new clips that are imported or recorded in the audio montage get the default fade in and fade out shape and length if **Create Default Fades in New Clips** is active. In this case, the default crossfade shapes are used. This also applies to clips that are created by splitting clips.

PROCEDURE

1. Open an audio montage and select the **Fade** tab.
2. In the **Options** section, open the **Options** pop-up menu.
3. Activate **Create Default Fades in New Clips**.

RELATED LINKS

Fades and Crossfades in Audio Montages on page 256
Fade Tab (Audio Montage) on page 206

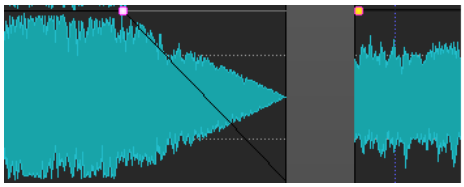
Crossfade Editing

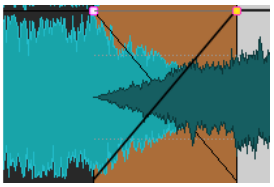
You can create crossfades with independent shapes and lengths for the fade in and fade out curves.

The default automatic crossfade is linear. It uses the same shape and fade lengths for fade in and fade out. The following rules apply:

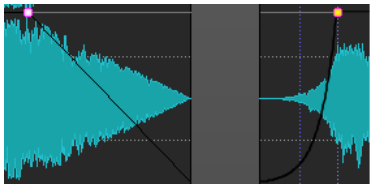
- A crossfade includes fade in and fade out.
- You can edit the fade in and fade out curves in crossfades in the same way as fades.
- To resize the crossfade time symmetrically, press **Shift**, click the crossfade area, and drag left and right.
- To move the crossfade region while keeping its length, press **Ctrl/Cmd**, click the crossfade area, and drag left and right.

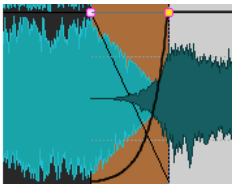
- When you move a clip so that it overlaps another clip to create a crossfade, and neither clip has a defined fade in the overlap, a default crossfade is created.
- When moving a clip with a defined fade curve so that it overlaps another clip without a defined fade, the unmoved clip automatically gets the same fade shape as the moved clip, with amplitude compensation. This only applies if the fade out length of the unmoved clip is set to zero.





- If both clips have different defined fade curves, an asymmetrical crossfade is created.





RELATED LINKS
Options for Moving and Crossfading Clips on page 239

Effects for Tracks, Clips, and the Montage Output

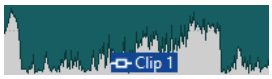
You can add VST effect plug-ins to individual clips, tracks, or the output of an audio montage. Clip effects affect individual clips only, track effects affect all clips on a track, and the montage output affects the whole audio montage.

VST 2 and VST 3 plug-ins can be used in the audio montage. Each clip, track, and the montage output can be independently processed by up to 8 VST effect plug-ins.

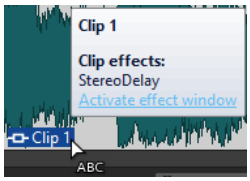
Effects are configured as follows:

- As inserts, where the entire audio is processed by the effects.
- As send effects (split mode), where the balance between the unprocessed sound and the effect send level can be controlled by effect envelope curves (clip effects and specific VST 2 plug-ins only).

An icon in front of a clip name indicates that effects are applied to a clip.



Hovering over a clip name shows the effects that are used for the clip.



NOTE

- Only clip effects for clips that are active at the current playback position consume CPU power. Track and montage output effects are always active.

- The first time that you play an audio montage after is has been opened or copied, the program has to load all effects into memory. If you have many effects, this can result in a short silence before the playback starts.
- Effects that are used for tracks must support stereo audio, even if the audio track is mono.

RELATED LINKS
Adding Effects to Tracks, Clips, or to the Montage Output on page 267
Montage Output Effects on page 260
Inspector Window on page 260

Montage Output Effects

You can add montage output effects to an audio montage. While the **Master Section** is shared among all audio montages, the montage output effects are local to each montage. This allows you to have a fully embedded project, without needing to use the **Master Section**.

The montage output effects are located at the output of the audio montage.

NOTE

If you want to use a dithering plug-in, place it in the montage output.

RELATED LINKS
Adding Effects to Tracks, Clips, or to the Montage Output on page 267
Inspector Window on page 260

Inspector Window

This window allows you to add effect plug-ins to tracks, clips, and the audio montage output, and to edit pan and gain settings.

- To open the **Inspector** window, open an audio montage, and select **Tool Windows** > **Inspector**.

Clip/Track/Output

At the top of the **Inspector**, you can select if you want to display and edit the plug-ins for clips, tracks, or the montage output in the **Inspector** window.

Clip Color/Track Color

Allows you to specify a color for the waveform of the selected clip or track.

Select Clip/Select Track

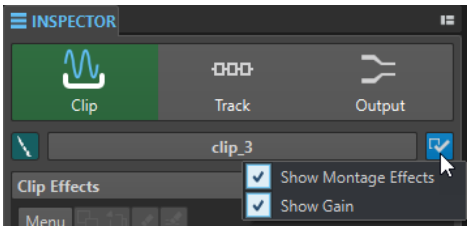
Allows you to select a clip or track.

Edit Clip Name/Edit Track Name

Allows you to specify a name for the selected clip or track.

Pane Visibility

Allows you to show or hide panes in the **Inspector** window.



The following options are available:

- If you have selected **Clip**, you can **Show Montage Effects**, and **Show Gain**.
- If you have selected **Track**, you can **Show Clean**, **Show Enhance**, **Show Montage Effects**, and **Show Gain**.
- If you have selected **Output**, you can **Show Montage Effects** and **Show Gain**.

Clean (Only for Tracks)

The **Clean** pane contains a **DeHummer**, **DeNoiser**, and **DeEsser** to remove unwanted sounds and noises from your audio in real-time.

Fold/Unfold Clean Pane

Folds or unfolds the **Clean** pane.

Bypass All Effects Displayed Here

Bypasses any effect processing during playback and rendering.

DeHummer

DeHummer allows you to decrease power hum interference that is caused by a bad grounding or unreliable recording equipment. This is done by removing the corresponding frequencies from the audio.

The following parameters are available:

- **Reduction** allows you to specify the amount of the hum reduction.
- **Listen** allows you to listen to the signal that was removed from the audio material. This allows you to verify that you did remove the correct portions of the audio.
- **50 Hz** and **60 Hz** allow you to remove harmonic noise with a fundamental frequency at 50 or 60 Hz. These disturbing frequencies can be caused by electric noise due to badly shielded recording equipment, for example.

DeNoiser

DeNoiser allows you to remove noise from the audio material, for example, ambience sound.

The following parameters are available:

- **Reduction** allows you to specify the amount of the noise reduction.
- **Listen** allows you to listen to the signal that was removed from the original audio material. This allows you to verify that you did remove the correct portions of the audio.

DeEsser

DeEsser is a compressor that reduces excessive sibilance, primarily for vocal recordings.

For example, you can use it when close proximity microphone placement and equalizing lead to situations where the overall sound is just right, but where unwanted sibilants occur.

When recording a voice, the position of **DeEsser** in the signal chain is usually after the microphone pre-amp and before a compressor/limiter. This keeps the compressor/limiter from unnecessarily limiting the overall signal dynamics.

The following parameters are available:

- **Reduction** allows you to specify the amount of the sibilance reduction.
- **Listen** allows you to listen to the signal that was removed from the original audio material. This allows you to verify that you did remove the correct portions of the audio.
- **Character** allows you to specify the frequency on which the **DeEsser** is applied. A low **Character** setting is generally used for low male voices, for example. Higher **Character** settings generally apply to higher voices of females or children, for example.
- The **Reduction** meter shows how much the **DeEsser** is working.

Enhance (Only for Tracks)

The **Enhance** pane contains the **Voice Exciter**, **Reverb**, **EQ**, and **Maximizer** that allow you to increase the clarity, expression, and deepness of your audio in real-time.

Fold/Unfold Enhance Pane

Folds or unfolds the **Enhance** pane.

Bypass All Effects Displayed Here

Bypasses any effect processing during playback and rendering.

Voice Exciter

Voice Exciter allows you to add upper harmonics and increase clarity and intelligibility of your voice recordings.

The following parameters are available:

- **Amount** allows you to specify the amount of the effect.
- **Clarity** allows you to increase the clarity and intelligibility of your voice recording.

Reverb

Reverb allows you to add more room and space to recordings that sound a bit lifeless.

The following parameters are available:

- **Size** allows you to specify the room size.
- **Mix** allows you to set the level balance between the dry signal and the wet signal.

EQ

The three band **EQ** allows you to tame or boost the **Low**, **Mid** and **High** frequency ranges. An additional **Low Cut** filter allows you to cut the low end below 30 Hz for even more clarity.

The EQ bands have the following specifications:

- **Low**: low-shelf, frequency 250 Hz, 12 dB/octave
- **Mid**: peak, frequency 1500 Hz, Q 1, 12 dB/octave
- **Hi**: high-shelf, frequency 5000 Hz, 12 dB/octave

Maximizer

Maximizer allows you to add loudness and punch to your recording while making sure that the signal does not exceed -1 dB. The **Optimize** dial lets you specify how much compression is applied.

Montage Effects

The **Montage Effects** pane allows you to add and manage effect plug-ins.

Fold/Unfold Effects Pane

Folds/Unfolds the **Effects** pane.

The following options are available on the **Menu** pop-up menu:

Remove Selected Plug-ins From Active Clip/Track/Track Group/the Output

Removes the selected plug-in from the **Montage Effects** list.

Remove All Plug-ins From Active Clip/Track/Track Group/the Output

Removes all plug-ins from the **Montage Effects** list.

Copy

Copies the selected plug-in and its settings to the clipboard.

Copy All

Copies all plug-ins and their settings to the clipboard.

Paste (Insert)

Inserts the plug-in that was copied to the clipboard before the first selected slot. If no slot is selected, the plug-in is inserted at the end of the plug-in list.

Paste (Replace)

Replaces the selected plug-in with the plug-in that was copied to the clipboard. If no slot has been added, a new slot is created.

Close All Windows

Closes all plug-in windows related to this audio montage.

Plug-in Map

Opens the **Plug-in Map** dialog that displays all plug-ins that are used in the audio montage and the clips and tracks that are using them.

Add Effect

Allows you to add an effect.

The following options are available on the toolbar of the **Montage Effects** pane:

Copy

Copies the selected plug-in and its settings to the clipboard.

Paste

Inserts the plug-in that was copied to the clipboard before the first selected slot. If no slot is selected, the plug-in is inserted at the end of the plug-in list.

Remove Selected Plug-ins

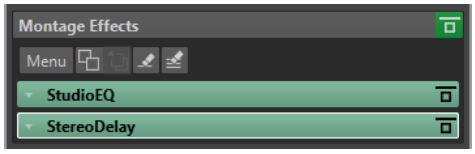
Removes the selected plug-ins from the **Montage Effects** list. You can **Ctrl/Cmd**-click the plug-ins to select the plug-ins that you want to remove.

Remove All Plug-ins

Removes all plug-ins from the **Montage Effects** list.

Effects List

The effects list displays the effect plug-ins of the selected clip, track, or montage output. In the list, you can replace effect plug-ins, change the effect order, and edit the **Tail** of effects.



Tail

If you click the arrow to the left of the plug-in name, you can specify the tail value for the plug-in.

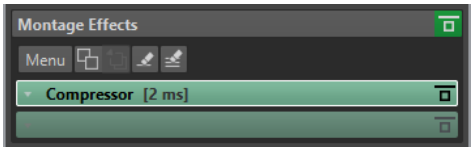
Some effects, such as reverb and delay, produce audio tails. This means that the effect sound continues after the clip sound ends. For example, if you add echo to a clip without specifying a tail value, the echo effect is muted as soon as the clip ends. Set the tail length so that the effect is allowed to decay naturally. If you add another plug-in to the clip that also produces a tail, there is no need to set a separate tail value for this plug-in, unless you want the decay to sum up. The overall tail length for the clip is the sum of the tail of each plug-in. The maximum tail setting is 30 seconds.

Effect Name

Click the effect name to open the corresponding effects window. Right-clicking an effect name opens the **Plug-ins** menu where you can select a new effect.

Latency

If a plug-in has latency, the latency value is displayed next to the plug-in name.



Presets

Allows you to save and restore plug-in presets.

Effect Options

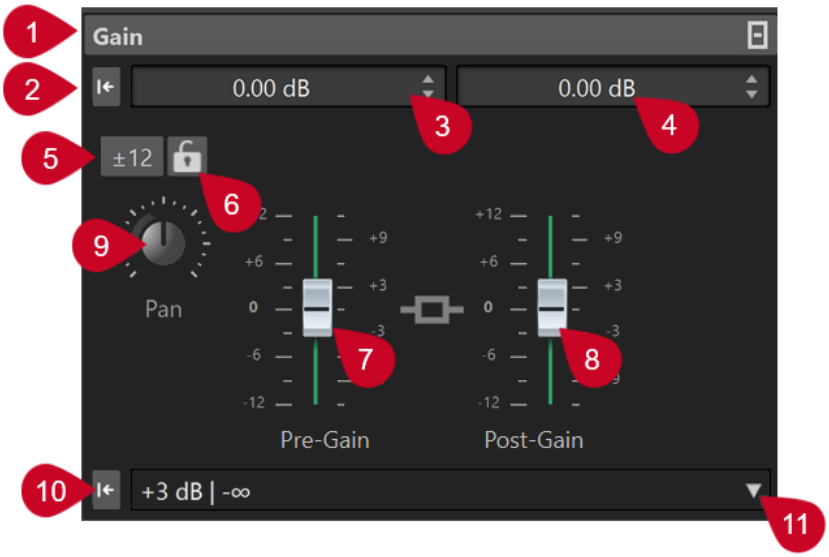
Opens the **Plug-ins** menu where you can select a new plug-in and remove the plug-in.

Bypass Effect

Bypasses the plug-in during playback and optionally during rendering. The signal is still processed by the plug-in, but is not injected in the audible stream.

Gain

In this section, you can edit the **Pre-Gain**, **Post-Gain**, and **Pan** settings for clips and tracks. You can set the global gain for the audio montage via the **Output** tab.



1 **Fold/Unfold Gain Pane**

Folds or unfolds the **Gain** pane.

2 **Reset Gain of Both Faders to 0 dB**

Resets the **Pre-Gain** and the **Post-Gain** to 0 dB.

3 **Pre-Gain**

Allows you to enter the **Pre-Gain** as a numerical value.

4 **Post-Gain**

Allows you to enter the **Post-Gain** as a numerical value.

5 **Gain Range**

Allows you to increase the slider precision by setting a gain range that any subsequent slider adjustments are limited to.

6 **Lock Fader**

With this option activated, it is not possible to adjust the sliders with the mouse.

7 **Pre-Gain**

Allows you to specify the **Pre-Gain** value by adjusting the left slider in the lower part of the **Gain** pane.

8 **Post-Gain**

Allows you to specify the **Post-Gain** value by adjusting the right slider in the lower part of the **Gain** pane.

NOTE

9 **Pan Dial (Clip and Track only)**

Allows you to set the pan for the clip effects and the track effects.

10 **Reset Pan to Center (Clip and Track only)**

Resets the pan for the clip effects and the track effects to the center position.

11 **Pan Mode (Clip and Track only)**

Allows you to select a pan mode different than 0 dB or mute, to compensate for a drop in dB when the signal is panned hard left or right.

Additional options that are exclusively available via the **Output** tab:

Toggle Loudness Matching

When activated, this option adjusts the loudness of the output so that it matches the loudness of a reference track.

Update the Loudness Correction Gains

When activated, this option updates the loudness correction gains.

Output Filters

The five buttons allow you to apply monitoring filters for frequency ranges that you set for the audio montage output and the reference tracks.

You can set and customize the filters by clicking the **Filter Settings** button at the bottom left of the window or by selecting **File** > **Preferences** > **Audio Montages** and clicking the **All Audio Montages** tab.

1. **Solo LPF (Low-pass Filter)** allows you to set a frequency above which frequencies are attenuated, to isolate the low frequencies as an individual frequency range for monitoring.
2. **Solo BPF (Band-pass Filter #1)** allows you to set an individual frequency range, to isolate it for monitoring.
3. **Solo BPF (Band-pass Filter #2)** allows you to set an individual frequency range, to isolate it for monitoring.
4. **Solo BPF (Band-pass Filter #3)** allows you to set an individual frequency range, to isolate it for monitoring.
5. **Solo HPF (High-pass Filter)** allows you to set a frequency below which frequencies are attenuated, to isolate the high frequencies as an individual frequency range for monitoring.

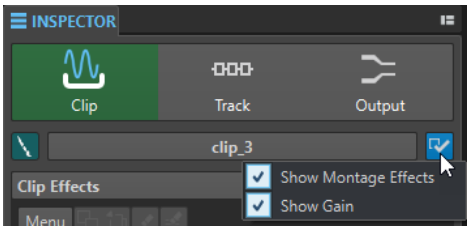
RELATED LINKS
Pan Laws on page 253
Presets on page 85
Showing/Hiding Panes in the Inspector Window on page 266
Envelopes for Clips on page 245

Showing/Hiding Panes in the Inspector Window

You can show or hide panes in the **Inspector** window to focus on the panes that you need.

PROCEDURE

1. In the **Inspector** window, select whether you want to edit **Clip** or **Track** visibility settings.
2. Click **Pane Visibility**.



3. Select the panes that you want to show. The following options are available:
   - **Show Montage Effects** allows you to show/hide the **Effects** pane.
   - **Show Gain** allows you to show/hide the **Gain** pane.

RELATED LINKS
Inspector Window on page 260

Adding Effects to Tracks, Clips, or to the Montage Output

You can add effect plug-ins to every track and clip of the audio montage, and to the output of the audio montage.

RELATED LINKS
Adding Effects via the Inspector Window on page 267
Additional Ways of Adding Effects on page 268
Removing Effects from Tracks, Clips, or the Montage Output on page 269

Adding Effects via the Inspector Window

PROCEDURE

1. Open an audio montage.
2. In the **Inspector** window, click **Clip**, **Track**, or **Output**.
3. On the **Effects** pane, click an effect slot, and select a plug-in.

   TIP

   You can search for a particular plug-in by typing part of its name into the **Search** field. The **Down Arrow** and **Up Arrow** keys allow you to navigate in the list that shows the matches. To select a plug-in, press **Return**. With the focus on the plug-in list, press **Tab** to set the focus back to the **Search** field.

RESULT

The selected plug-in opens in a window.

NOTE

You can add plug-ins during playback. However, if you add a plug-in with a latency larger than zero, we recommend that you stop and restart playback to avoid timing discrepancies. In addition, a small number of VST plug-ins may change their latency, depending on the parameter settings. If that is the case, stop and restart playback after the latency change.

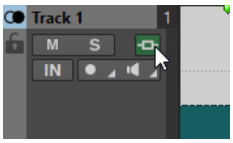
RELATED LINKS
Inspector Window on page 260

Effects for Tracks, Clips, and the Montage Output on page 259

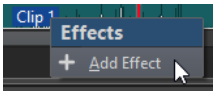
Additional Ways of Adding Effects

You can add effects not only in the **Inspector** window but also via the track control area and via the wave window.

- To add an effect to a track, click **Add Effects** in the track control area for stereo and mono track and select an effect from the menu.



- To add an effect to a clip in the montage window, right-click the clip name, select **Add Effect**, and select an effect from the menu.



RELATED LINKS
Track Control Area for Stereo and Mono Tracks on page 197
Inspector Window on page 260
Effects for Tracks, Clips, and the Montage Output on page 259

Color Codes for Effect Plug-ins

Color codes help you to identify and distinguish the effect plug-ins.

You can use the following color codes for the captions bars of the plug-in windows by activating **Use Context-colored Caption Bars** on the **General** tab of the **Preferences** for **Plug-ins**:

Color Codes for Plug-in Caption Bars

Type of Plug-in	Color
Clip	Green
Track	Orange
Montage Output	Red

NOTE

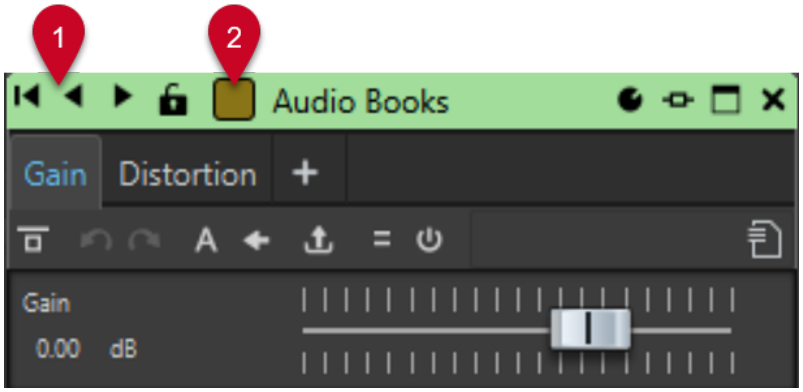
Active windows are highlighted by displaying their caption bar with a higher color intensity.

In addition to this, you can choose to display a colored box on the caption bar of effect plug-in windows by activating **Show Color Section Color in Caption Bar** on the **General** tab of the **Preferences** for **Plug-ins**:

Color Box on the Caption Bar

Type of Plug-in	Color
Clip	The currently assigned clip color. TIP If the same plug-in is applied to multiple clips, this color code helps you to identify all clips that are associated with this particular plug-in and to prevent unintended modifications to individual plug-in instances.
Track	The currently assigned track color. If no color is assigned to the track, the box is empty.
Montage Output	There is no color box.

Example:



Clip plug-in, as indicated by the green caption bar (**1**), applied to a clip to which you assigned a brownish shade, as indicated by the color of the box on the caption bar (**2**).

RELATED LINKS
Plug-ins Tab (Preferences) on page 399
Inspector Window on page 260

Removing Effects from Tracks, Clips, or the Montage Output

PROCEDURE

1. Open an audio montage.
2. In the **Inspector** window, specify where you want to remove the effects by selecting **Clip**, **Track**, or **Output**.
3. In the **Montage Effects** pane, do one of the following:
   - To remove an effect, right-click the effect and select **Remove Plug-in**.
   - To remove all effects, click **Menu** and select **Remove All Plug-ins**.

RESULT
The effect is removed from the effect slot.

RELATED LINKS
Adding Effects to Tracks, Clips, or to the Montage Output on page 267
Inspector Window on page 260

Rearranging the Order of Effects

The order of the effects in the list determines the processing order.

PROCEDURE

1. Open an audio montage.
2. In the **Inspector** window, in the effects list, drag the effect that you want to rearrange to another position.

Copying Effect Settings to Tracks, Clips, or the Montage Output

You can copy the effect and its settings of a track, a clip, or the montage output to other tracks, clips, or the montage output of the same or another audio montage.

PROCEDURE

1. Open an audio montage.
2. In the **Inspector** window, do one of the following:
   - Select the effect from which you want to copy the settings and select **Menu** > **Copy**.
   - Right-click the effect from which you want to copy the settings and select **Copy**.
   - To copy all effects and its settings, click **Menu** > **Copy All**.
3. Do one of the following:
   - To paste the effect settings to a new slot, select **Menu** > **Paste (Insert)**.
   - To replace an existing effect, select the effect, and select **Menu** > **Paste (Replace)**.

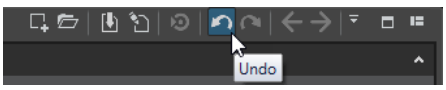
RELATED LINKS
Effects for Tracks, Clips, and the Montage Output on page 259
Inspector Window on page 260

Undoing Effect Changes

You can undo/redo changes to the effect settings. However, WaveLab Elements only registers the changes when you close the plug-in window or select another tab in the plug-in window.

PROCEDURE

1. In the plug-in window, click another window to lose focus of the plug-in in which you want to undo the settings.
2. Go back to the plug-in in which you want to undo the settings.
3. On the command bar of the **Audio Montage** window, click **Undo** or **Redo**.



Gain Settings

You can set **Pre-Gain** and **Post-Gain** values; that is, apply volume adjustments to the audio signal before and after effect processing, in the **Inspector** window.

To access the **Pre-Gain** and **Post-Gain** controls, unfold the **Gain** pane in the **Inspector** window.

- The **Pre-Gain** value adjusts the volume of an audio signal before it is submitted to effect processing.

  NOTE

  Pre-Gain adjustments can have a profound impact on effect processing, as effects such as overdrive, distortion, and compression are highly sensitive to the input level.

- The **Post-Gain** value adjusts the volume of an audio signal after it is submitted to effect processing. **Post-Gain** adjustments primarily change the overall volume of the sound, without altering the characteristics of the effects themselves.

NOTE

With the **Clips** tool window open, whenever you change the **Pre-Gain** and **Post-Gain** settings for a clip on the **Gain** pane of the **Inspector** window, the values in the **Pre-Gain** and **Post-Gain** columns of the **Clips** tool window are automatically updated simultaneously.

Setting Pan and Gain for Effects

You can set the **Pre-Gain**, the **Post-Gain**, and the **Pan** of the effects for individual clips and tracks.

PROCEDURE

1. Open an audio montage.
2. In the **Inspector** window, click **Clip** or **Track**.
3. Adjust the **Pre-Gain** and the **Post-Gain**, as well as the **Pan** of the effects.

RELATED LINKS
Inspector Window on page 260
Effects for Tracks, Clips, and the Montage Output on page 259
Setting the Global Gain for Effects on page 272

Setting the Global Gain for Effects

You can set a global gain for the output effects of your audio montage via the **Output** tab in the **Inspector** window.

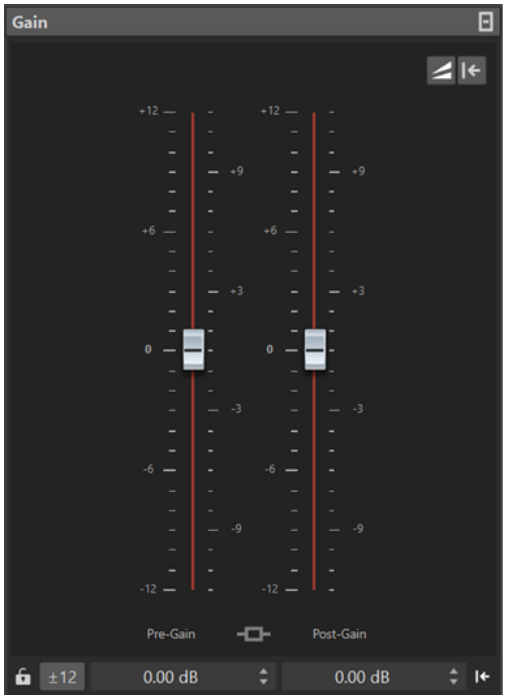
PROCEDURE

1. Open an audio montage.
2. In the **Inspector** window, click **Output**.
3. On the **Gain** pane, make adjustments for the global **Pre-Gain** and **Post-Gain**.

RELATED LINKS
Inspector Window on page 260
Output Gain Pane in the Inspector Window on page 272
Effects for Tracks, Clips, and the Montage Output on page 259

Output Gain Pane in the Inspector Window

The **Output** section in the **Inspector** window offers additional controls.



Controls that are exclusively available on the **Gain** pane of the **Output** section in the **Inspector** window:

Toggle Loudness Matching

When this option is activated, the audio montage output serves as the loudness reference, whose loudness is not changed, whereas the loudness of the reference track is adjusted, so that it matches the loudness of the audio montage output.

Update the Loudness Correction Gains

When this option is activated, the loudness correction gains are updated.

NOTE

Updating the loudness correction gains takes effect on all reference tracks and/or the audio montage output concerned by adjustments to match the loudness reference.

RELATED LINKS
Setting the Global Gain for Effects on page 272
Gain Settings on page 271
Inspector Window on page 260

Plug-in Windows for Audio Montages

In plug-in windows for audio montages, you can display the effect plug-ins that are used for a track, clip, or the montage output.

Single plug-in window

When you add a new effect plug-in to a track, a clip, or the montage output, the plug-in window opens automatically. In the plug-in window, the effects are displayed in a plug-in chain by default. To change the processing order of the effects, you can drag each effect to a new position in the chain.

Plug-in Chain

If **Use Plug-in Chain Window** is activated on the **Settings** pop-up menu of the **Master Section**, the effects of the active audio file are displayed in a plug-in chain at the top of the plug-in window.

You can right-click a plug-in tab or an empty tab to select a new plug-in for the slot.

Bypass Effect

If this option is activated, the plug-in is bypassed during playback and rendering. However, bypassing effects still consumes CPU power during playback.

Switch Effect On/Off

If you deactivate a plug-in, it is excluded from both playback and rendering.

Presets

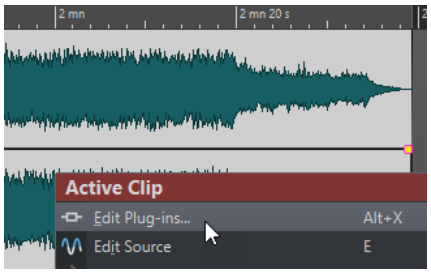
Opens a menu to save/load presets for this plug-in.

RELATED LINKS
Opening the Plug-in Window on page 274
Plug-in Windows for the Master Section on page 301
Bypassing Effects vs. Switching Off Effects on page 303

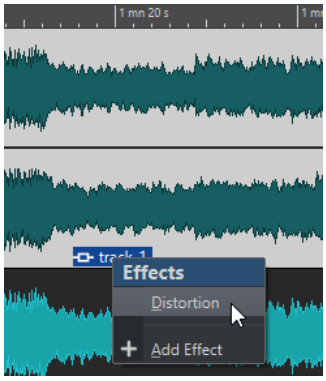
Opening the Plug-in Window

You can open the plug-in window from different locations.

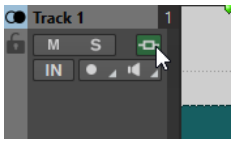
- To open the plug-in window from the **Inspector** window, click the plug-in in the **Effects** list.
- To open the plug-in window from the **Master Section** window, click the plug-in in the **Effects** list.
- To open the plug-in window for a clip from the montage window, right-click a clip, and select **Edit Plug-ins**.



You can also right-click the clip name and select a plug-in.



- To open the plug-in window for a track, click the **Track Effects** button in the track control area and select a plug-in.



RELATED LINKS
Plug-in Windows for Audio Montages on page 273
Inspector Window on page 260
Master Section Window on page 296
Active Clip Menu on page 237
Track Control Area on page 196

Adding Effects From Within the Plug-in Window

Effects that are added to a clip, track, or the montage output in the **Inspector** window are automatically displayed in the plug-in window. However, you can also add effects to a track or a clip from within the plug-in window.

PROCEDURE

1. Open the plug-in window for the clip, track, or montage output to which you want to add an effect.
2. In the plug-in window, click **Add Plug-in**.

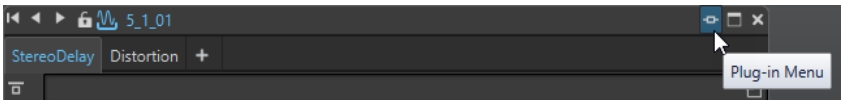
3. Select an effect from the menu.

   The effect is added at the end of the plug-in chain.
4. Optional: If you want to move the added effect in the plug-in chain, drag it to another position.

Changing Effects From Within the Plug-in Window

PROCEDURE

1. Open the plug-in window for the clip, track, or montage output for which you want to change an effect.
2. Click the plug-in menu icon, and select a new effect from the menu.



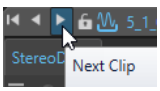
3. Optional: If you want to move the changed effect in a plug-in chain window, drag it to another position.

RELATED LINKS
Plug-in Windows for Audio Montages on page 273
Adding Effects From Within the Plug-in Window on page 275

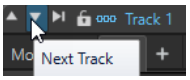
Switching Between Track, Clip, and Montage Output Effects in Plug-in Windows

In the plug-in window, you can switch between the effect chains of clips, tracks, and the montage output.

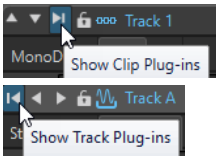
- To select an effect in the plug-in window, click its name.
- To skip through the clips of the active audio montage and display their effects, use the left and right arrow icons.



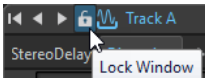
- To skip through the tracks of the active audio montage and display their effects, use the up and down arrow icons.



- When using one plug-in window for both clips and tracks of an audio montage, you can switch between the plug-ins of the active clip or the track that contains the active clip by clicking the **Show Clip Plug-ins** or **Show Track Plug-ins** icons.



- To lock a plug-in window, activate **Lock Window**. If this option is activated, and you select another track or clip, another plug-in window opens. If this option is deactivated, and you select another track or clip, the effects are displayed in the same plug-in window.



RELATED LINKS
Plug-in Windows for Audio Montages on page 273

Closing All Plug-in Windows

PROCEDURE

1. Open an audio montage.
2. Select **Tool Windows** > **Inspector**.
3. In the **Inspector** window, select **Menu** > **Close All Windows**.

RELATED LINKS
Inspector Window on page 260

Album Window

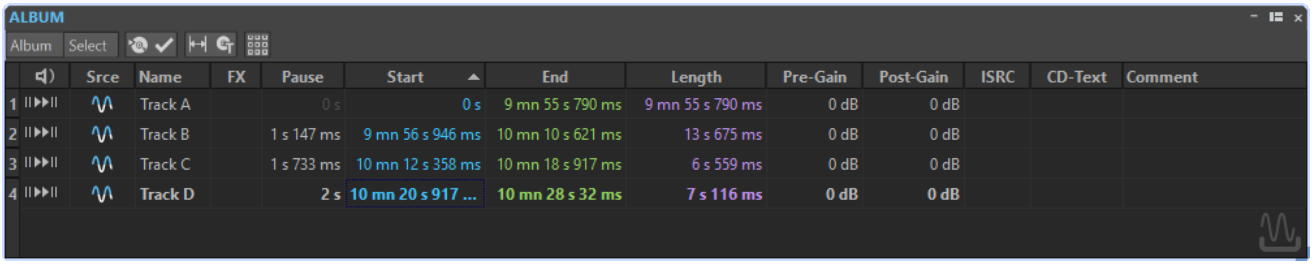
The **Album** window displays the clips of the active audio montage and allows you to write the audio montage to an audio CD.

NOTE

Each clip in the audio montage corresponds to a title in the **Album** window.

You can also adjust pauses between clips, check the conformity to the Red Book standards, add and edit CD-Text, and add UPC/EAN and ISRC codes. When selecting a clip in the montage window, the corresponding clip is highlighted in the **Album** window.

- To open the **Album** window, open an audio montage, and select **Tool Windows** > **Album**.



Title List

Play Pre-Roll

Plays back the corresponding title from the start with a pre-roll.

You can also press **Alt** and click **Play Pre-Roll** to play back the corresponding title from the start with a short pre-roll.

Play

Plays back the corresponding title from the start.

You can also hold **Ctrl/Cmd** and double-click a title start marker triangle to start playback from the marker position.

Name

Shows the title name. To change the name, double-click in the corresponding cell, and enter new text.

FX

Displays whether the corresponding clip uses effects or not.

Pause

Shows the pause between two titles.

Start

Shows the start position of the title.

End

Shows the end position of the title.

Length

Shows the time value from the title start position to the corresponding end or splice marker.

Pre-Gain

Allows you to set the pre-effect gain for the clip.

Post-Gain

Allows you to set the post-effect gain for the clip.

ISRC

Allows you to enter an ISRC code. To change the code, double-click the corresponding cell, and enter a new value.

CD-Text

Allows you to specify the CD-Text. To change the CD-Text, double-click the corresponding cell, and enter a new value.

Comment

Allows you to enter a comment by double-clicking a cell.

Album Menu

Write Audio CD

Opens the **Write Audio CD** dialog, which allows you to write a CD.

Check CD Conformity

Verifies that the settings for the audio montage are in accordance with the Red Book standard.

Adjust Pauses between Clips

Opens a dialog, where you can adjust the pauses between clips. The following options are available:

- **Set Specific Pause Time**
- **Round Existing Pauses to Closest Second**

Edit CD-Text

Opens the **CD-Text Editor** dialog, which allows you to enter descriptive text for the titles that are written on CD.

NOTE

This option is only available with the mode set to **Stereo** via the **Audio Montage Properties** dialog.

Assign UPC/EAN Code

Opens the **UPC/EAN Code** dialog, where you can assign a UPC/EAN code to a clip.

Follow Playback

If this option is activated and you play back an audio montage, a green bar next to the title name indicates the title that is played back.

Select Menu

This menu allows you to select clips. The following options are available:

- **Select All Clips**
- **Select Clips Located Before the Cursor (on Selected Track)**
- **Select Clips Located After the Cursor (on Selected Track)**
- **Deselect All Clips**

RELATED LINKS
CD-Text Editor Dialog on page 346

Creating Titles From Clips

You can use the **Check CD Conformity** option to check whether the audio montage is ready for writing to audio CD.

PREREQUISITE

Make sure that the audio montage contains the material that you want on the audio CD. Titles must have a length of at least four seconds.

PROCEDURE

1. Audition the titles in the **Album** window, and make corrections if necessary.
2. Optional: In the **Album** window, select **Check CD Conformity**.
   - If a warning message appears, make corrections and check the CD conformity again.
   - If no warning message appears, the audio montage is ready to be written to an audio CD.

RELATED LINKS
Album Window on page 276

Mixing Down – The Render Function

The **Render** function allows you to mix down the whole audio montage or a region of it to a single audio file.

A mixdown is necessary to produce an audio file from the audio montage.

RELATED LINKS
Rendering in the Master Section on page 310

Rendering Audio Montages to Audio Files

You can render regions of an audio montage or whole audio montages to a single audio file.

PREREQUISITE

Set up your audio montage.

PROCEDURE

1. In the **Audio Montage** window, select the **Render** tab.
2. In the **Source** section, specify which part of the audio file you want to render.
3. In the **Result** section, activate **Named File**.
4. In the **Output** section, click the **Format** field and click **Edit**.
5. Make the desired adjustments in the **Audio File Format** dialog.
6. Click **OK**.
7. Optional: Make additional adjustments on the **Render** tab.
8. In the **Render** section, click **Start Rendering**.

RESULT

The audio montage is rendered.

RELATED LINKS
Mixing Down – The Render Function on page 279
Audio File Format Dialog on page 138

Loudness Meta Normalizer

The **Meta Normalizer** is an essential mastering tool for managing the loudness and peak levels in audio montages. It allows you to adjust the peaks of the clips or their loudness levels before you start mastering, and to fine-tune the output loudness and maximum peaks at the end of the mastering process.

The **Meta Normalizer** allows you to modify clip levels, audio montage output levels, and/or **Master Section** output levels, as required. Each of the three areas can be customized.

The **Meta Normalizer** operates by modifying gain values, and it does not apply any audio compression, thus ensuring that the original sound quality is not compromised.

NOTE

Increasing the loudness of all clips in your audio montage to achieve a consistent loudness level can lead to clipping. For the **Meta Normalizer**, preventing clipping takes precedence over achieving a consistently high loudness level, which is why, whenever the risk of clipping arises, the **Meta Normalizer** reduces the loudness of all clips proportionally. You can keep the **Meta Normalizer** from doing so by selecting **Do not Restrict Peaks** from the **Maximum Peak Level** pop-up menu in the **Loudness Meta Normalizer** dialog.

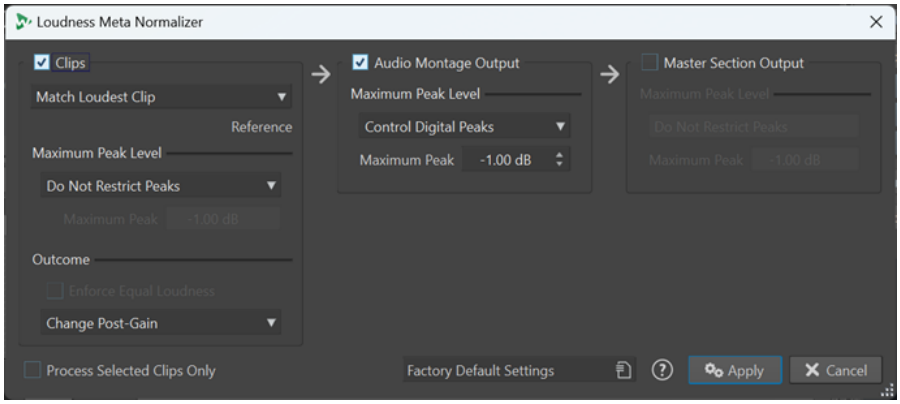
TIP

To prevent clipping when applying the **Meta Normalizer** in the **Master Section**, you can limit the mixdown output of your audio montage before sending it to the **Master Section**.

Loudness Meta Normalizer Dialog

The **Loudness Meta Normalizer** dialog allows you to adjust the loudness of all clips in your audio montage, so that they are all set to a consistent loudness level. You can also adjust the loudness of the entire audio montage output.

- To open the **Loudness Meta Normalizer** dialog, select the **Edit** tab in the **Audio Montage** window, and click **Meta Normalizer** in the **Loudness** section.



Clips, Audio Montage Output, and Master Section Output

- With **Clips** activated, the gain settings of all clips in your audio montage are adjusted individually.
- With **Audio Montage Output** activated, the post-gain setting of the audio montage is modified, so that the audio montage mixdown matches the specified peak level.

- With **Master Section Output** activated, the **Master Section** gain fader is adjusted, so that the audio montage mixdown is matched to the specified peak level before applying the **Final Effects/Dithering** plug-ins. The audio montage itself is not modified by this operation.

Match Loudness menu

This menu is exclusively available for clips. It allows you to select the loudness to match. The following options are available:

- Clips only:

  Do Not Change Loudness

  Limits the peaks as specified, without performing a loudness analysis.
- Clips only:

  Match Loudest Clip

  Automatically identifies the loudest clip and sets all other clips to its loudness level.
- Clips only:

  Match Loudness of Active Clip

  Sets all clips to the loudness level of the active clip.
- Clips only:

  Equalize Peak Levels

  Automatically identifies the clip with the highest peak level and sets all other clips to the same peak level.

  NOTE

  This option disregards loudness values and only considers peak values.

NOTE

By default, preventing clipping is the highest priority for the **Meta Normalizer**, which takes precedence over any other settings in this section. As a result, if the need arises, the loudness levels of the clips are automatically reduced proportionally, so that the loudness of the individual clips may still vary after choosing options from the **Match Loudness** menu.

Maximum Peak Level

You can choose from the following options:

- **Do Not Restrict Peaks**

  Keeps the **Meta Normalizer** from preventing clipping by limiting peaks.

  NOTE

  Activating **Do Not Restrict Peaks** can result in audio levels exceeding 0 dB.

  However, you can remedy problems arising from this by adjusting the peaks via level reduction techniques later on in the signal path. Generally, clipping occurs at the final stage of the audio stream, on playback or when saving to file.
- **Control Digital Peaks**

  Limits the sample values, with the peak measured in the digital domain as the reference.
- **Maximum Peak**

  Determines the maximum peak value not to be exceeded.

Outcome

This section is exclusively available for clips. You can choose from the following options:

Enforce Equal Loudness

NOTE

This option is only available in conjunction with one of the following items selected from the **Match Loudness** menu:

- **Match Loudest Clip**
- **Match Loudness of Active Clip**
- **Set Specific Loudness**

Reduces the target loudness in the event that, with **Control True Peaks** or **Control Digital Peaks** selected, a clip cannot reach the required gain to match the reference loudness. As a result, all clips are set to the same loudness, and clipping is prevented.

For example, if the target loudness is set to -8 LUFS but there is a clip in the audio montage that can only reach -9 LUFS, all clips are set to -9 LUFS.

Change Pre-Gain (Exclude Effects)

Adjusts the **Pre-Gain** level of the clips, without taking any clip effects into account.

NOTE

The current **Pre-Gain** values are displayed in the **CD** window.

Change Post-Gain

Adjusts the **Post-Gain** level of the clips, which means that clip effects are taken into account.

The current **Post-Gain** values are displayed in the **CD** window.

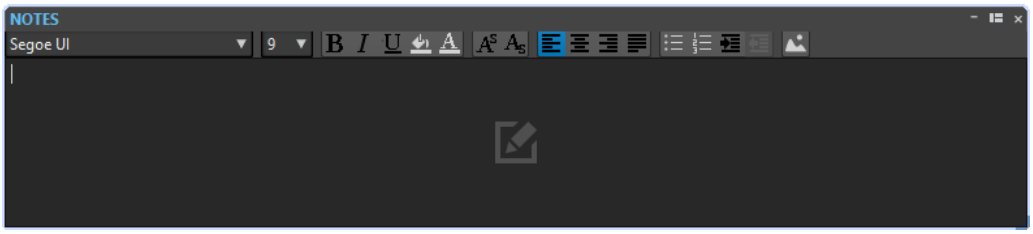
Process Selected Clips Only

Applies the settings made in the **Loudness Meta Normalizer** dialog exclusively to selected clips and ignores all other clips. As a consequence, the unselected clips do not contribute to the mixdown of the audio montage that is used to analyze the output loudness.

Notes Window

This window allows you to enter notes about the current audio montage session.

- To open the **Notes** window, open an audio montage and select **Tool Windows** > **Notes**.



You can enter the text directly in this window and use the standard HTML text editor controls to format the text, and to add images and lists. The notes are saved with the audio montage.

Importing Audio CDs

You can import audio CD files. The imported audio CD opens as an audio montage.

PROCEDURE

1. Select **File** > **Import**.
2. Click **Audio CD**.
3. In the File Explorer/macOS Finder, select the Basic Audio CD file that you want to import and click **Import**.

RESULT

The imported audio CD opens as a new, untitled audio montage that contains all the audio tracks that are saved in the audio CD file.

Recording

You can record audio in the **Audio Editor** and in the **Audio Montage** window.

You can use the following recording methods:

- In the **Audio Editor**, you can record files with multiple options via the **Recording** dialog.
- In the **Audio Montage** window, you can record multiple audio montage tracks simultaneously.
- You can record while hearing the effects when monitoring the input signal.

RELATED LINKS
Recording in the Audio Editor on page 284
Recording Dialog on page 284

Recording in the Audio Editor

PROCEDURE

1. In the **Audio Editor**, click the **Record** ● button, or press ***** on the numeric key pad.

   The **Recording** dialog opens.
2. Choose from the options in the **Recording** dialog.
3. Click **Record** ● to start recording.

   If you have selected one of the Auto-start options, the recording is set to **Pause** mode until the specified Auto-start criteria are met.

   The background of the **Recording** dialog changes color (turns red) to indicate that you are recording.
4. Optional: To pause recording, click the **Pause** ⏸ button.
5. Click **Stop** ■ to finish recording.
6. Optional: To record another take, click **Record** ● again.

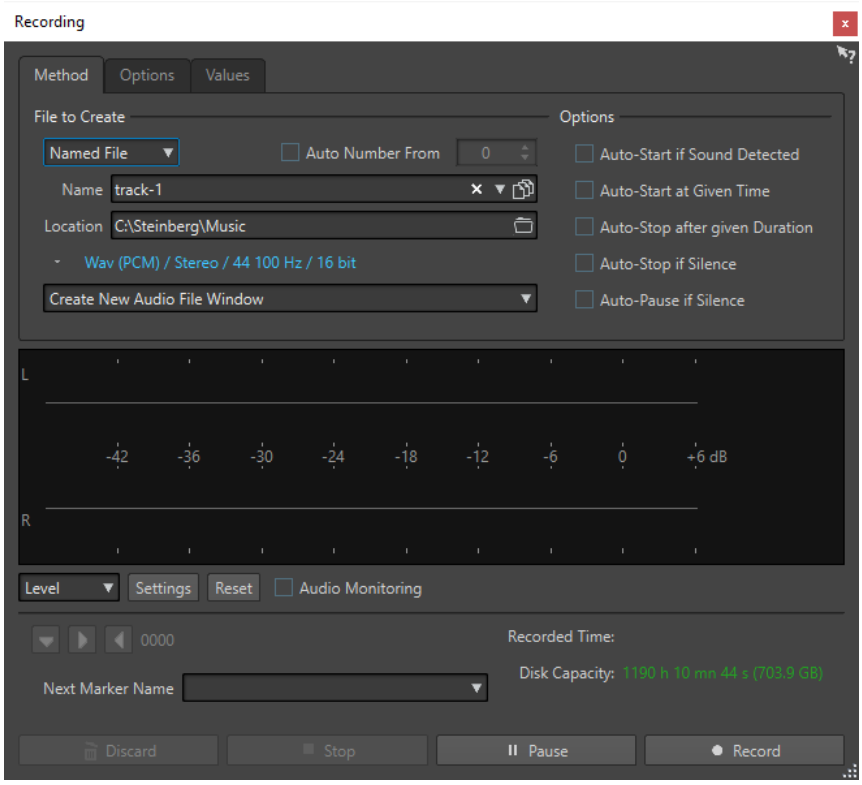
RELATED LINKS
Recording Dialog on page 284

Recording Dialog

In the **Recording** dialog, you can set parameters for recording and start recording an audio file.

To open the **Recording** dialog, do one of the following:

- Open the **Audio Editor**, and click **Record** on the transport bar.
- In other workspaces, **Alt/Opt**-click **Record** on the transport bar.
- In the **Audio Montage** window, press **Alt/Opt**-**R**.



Main Buttons

Discard

Stops recording and deletes anything recorded so far.

Stop

Stops recording.

Pause

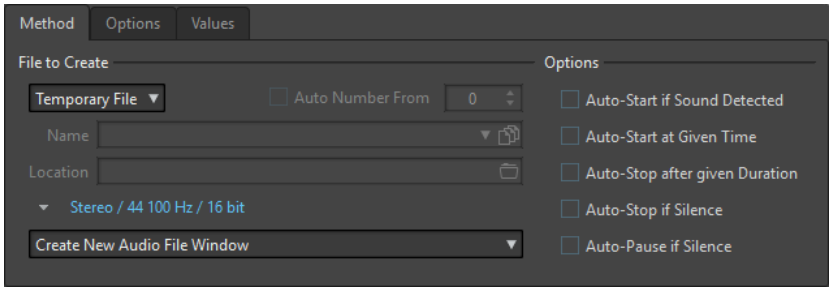
Pauses recording.

Record

Starts recording. Depending on the recording options, **Pause** mode is activated.

Method Tab

On this tab, you can define options for starting, stopping, and pausing the recording automatically. You can select an input device and choose to start a recording at a specific time or stop if after a specific duration.



File to Create

Specify whether you want to record a temporary file to be saved later, or record to a file with a specific name and location.

Auto Number From

If this option is activated and you record multiple files, increasing numbers are added to the file names of the files.

Name

The name of the file to be written, without the path. When typing, all files in the selected folder that start with the same letters are displayed. To display all files in the selected folder, click the list icon.

Location

Specifies the folder where you want to save the recording.

Audio File Format

Opens the **Audio File Format** dialog, where you can specify the file format.

Location of the Recording

Allows you to specify where the audio is recorded:

- If **Create New Audio File Window** is selected, the audio is recorded in a new audio file window.
- If **Add to Active Audio File** is selected, the audio is recorded in the active audio file window at the edit cursor position. If no audio file exists, a new one is created.
- If **Add to Active Track of Montage** is selected, the audio is recorded in an existing audio montage at the edit cursor position. If no audio montage exists, a new one is created.

Auto-Start if Sound Detected

If this option is activated, recording starts when the audio input level exceeds the threshold level specified on the **Values** tab.

Auto-Start at Given Time

If this option is activated, recording starts at a specified time. Specify the time on the **Values** tab.

Auto-Stop after Given Duration

If this option is activated, recording stops automatically after the duration specified on the **Values** tab.

Auto-Stop if Silence

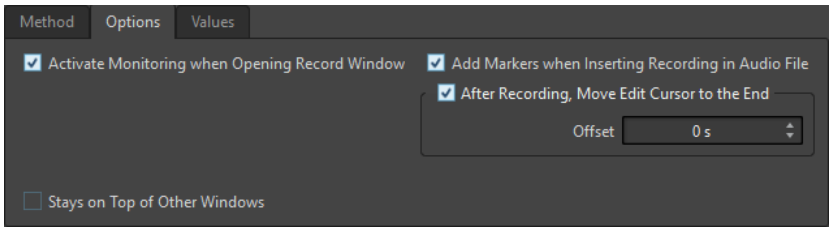
If this option is activated, recording automatically stops when the audio input level drops below a specified threshold level and stays there for a specific amount of time. Specify the level and the duration on the **Values** tab.

Auto-Pause if Silence

If this option is activated, recording automatically pauses when the audio input level drops below a specified threshold level and stays there for a specific amount of time. Specify the level and the duration on the **Values** tab.

Options Tab

On this tab, you can set additional parameters for the recording process.



Activate Monitoring When Opening Record Window

If this option is activated, monitoring is active when the **Recording** dialog opens. If this option is deactivated, the meters and the audio thru are displayed when pressing **Record** or activating **Monitor**.

Add Markers when Inserting Recording in Audio File

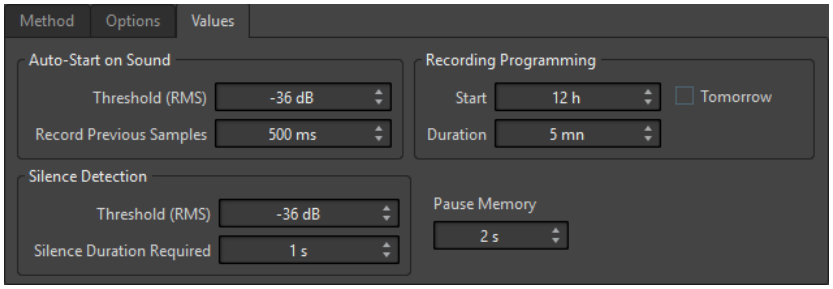
If this option is activated and a recording is inserted into an audio file, markers are added encompassing the new samples.

After Recording, Move Edit Cursor at the End

If this option is activated, the edit cursor is moved to the end of the recording.

Values Tab

On this tab, you can define values for the various recording options.



Auto-Start on Sound – Threshold (RMS)

Allows you to specify the sound level that triggers recording.

Auto-Start on Sound – Record Previous Samples

Allows you to include a short section of audio before the start point, to capture attacks, for example. It is only relevant if **Auto-Start if Sound Detected** is activated.

Silence Detection – Threshold (RMS)/Silence Duration Required

The threshold value used for the options **Auto-Stop if Silence** and **Auto-Create Markers at Silence Points**. It is used in conjunction with the **Silence Duration Required** setting, so that recording is stopped or a marker is added if the input level stays below the threshold value for the specified duration.

Recording Programming – Start

Determines the time at which recording starts if **Auto-Start at given Time** is activated.

Recording Programming – Duration

Determines the length of the recording if **Auto-Stop after given Duration** is activated.

Recording Programming – Tomorrow

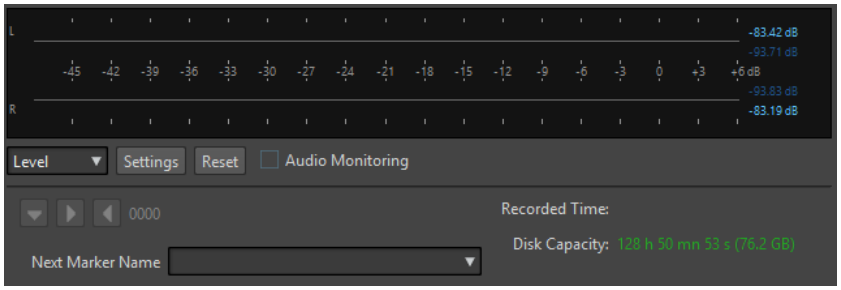
If this option is activated, you can specify a time on the next day (starting midnight).

Pause Memory

This is a safety buffer when you are using the **Pause** button. When you resume recording, this buffer is used to restore the last short section of audio before you

deactivated the **Pause** button. This way, you can resume recording even if you deactivated the **Pause** button a bit too late.

Meter Display



Level/Spectrum

Specifies whether to display the **Level Meter** or the **Spectrometer**.

Settings

If the **Level** display is selected, this button opens the **Level Meter Settings** dialog, where you can customize the meter settings.

If the **Spectrum** display is selected, a pop-up menu opens, where you can select the audio levels that the meter should display. The following settings are available for the **Spectrum** display:

- **Restrict to High Audio Levels**
- **Include Medium Audio Levels**
- **Include Low Audio Levels**

Reset

Resets the peak values.

Audio Monitoring

If this option is activated, the audio input is also sent to the output ports.

Marker buttons

Allow you to set markers during the recording.

Next Marker Name

Edit the name of the next marker to insert.

RELATED LINKS
Audio File Format Dialog on page 138
Level Meter and Spectrometer for Recordings on page 288
Level Meter Settings Dialog on page 334

Level Meter and Spectrometer for Recordings

In the lower part of the **Recording** dialog, you find a meter display. This is useful for checking the input level and the frequency spectrum of the input signal.

You can activate the meters by activating the **Audio Monitoring** checkbox. This is done automatically if **Activate Monitoring when Opening Record Window** is activated on the **Options** tab in the **Recording** dialog.

To reset the meters, click the **Reset** button.

Level Meter

In the **Level Meter**, horizontal bars show the peak level (outer bars) and average loudness (VU, inner bars) of each channel. Values are also shown numerically. When you click the **Settings** button, the **Level/Pan Meter Settings** dialog opens.

Spectrometer

The **Spectrometer** shows a bar diagram, providing a continuous graphical representation of the frequency spectrum. From the **Settings** pop-up menu, you can choose whether to restrict to high audio levels, or to include medium or low audio levels.

RELATED LINKS
Recording Dialog on page 284

Disk Capacity Indicator

This indicator at the bottom of the **Recording** dialog indicates the approximate amount of available disk space on the hard disk specified in the **File to Create** section, or the hard disk that you have selected for temporary files.

NOTE

When there is less than 30 seconds of available hard disk space left, the disk capacity indication is displayed in red.

RELATED LINKS
Recording Dialog on page 284

Recording in the Audio Montage Window

Depending on your connected ASIO device, WaveLab Elements automatically detects the available input buses and creates the stereo and mono input buses in the **Audio Connections**.

RELATED LINKS
Audio Connections Tab on page 23
Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 289
Assigning Input Buses for Recording Manually on page 290
Recording with Automatic File Properties on page 291
Recording with Custom File Properties on page 291
Recording on Multiple Tracks on page 292

Automatically Assigning Input Buses for Recording (only for ASIO Devices)

Before you can start recording, you must assign input buses. If you are using an ASIO device, for example, a Steinberg UR interface, the input ports are automatically created.

NOTE

If you are not using an ASIO device, you must assign input buses manually.

PROCEDURE

1. Connect your device to your computer and start WaveLab Elements.
2. Select **File** > **Preferences** > **Audio Connections**.
3. Click **Recording**.
4. Make sure that your ASIO device is selected on the **Audio Device** menu.
   The input buses are assigned automatically.
5. Create an audio montage.
6. Create a mono or stereo track.
7. In the track control area, click **IN** and select the input bus for each track.

RESULT

WaveLab Elements is ready for recording.

RELATED LINKS

Assigning Input Buses for Recording Manually on page 290
Recording with Automatic File Properties on page 291
Recording with Custom File Properties on page 291
Recording on Multiple Tracks on page 292
Audio Connections Tab on page 23
Track Control Area on page 196

Assigning Input Buses for Recording Manually

Before you can start recording, you must assign input buses.

NOTE

If you are using an ASIO device, for example, a Steinberg UR interface, the input buses are created automatically.

PROCEDURE

1. Connect your device to your computer and start WaveLab Elements.
2. Select **File** > **Preferences** > **Audio Connections**.
3. Click **Recording**.
4. In the **Buses** list, select the bus that you want to use for recording.
5. Optional: To add more buses, click **Add Bus** and assign more input buses.
6. In the **Device Port** column, assign the input ports.

RESULT

WaveLab Elements is ready for recording.

RELATED LINKS

Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 289
Audio Connections Tab on page 23
Recording with Automatic File Properties on page 291
Recording with Custom File Properties on page 291
Recording on Multiple Tracks on page 292

Recording with Automatic File Properties

Recording with automatic file properties is the quickest way to start recording in the **Audio Montage** window.

The file name of the file that you want to record is generated automatically. The recorded file is saved in the data folder of the active audio montage. The bit resolution of the recorded file is the same as the bit resolution that is defined for temporary files.

PROCEDURE

1. In the montage window, select a track and click at the position where you want the recording to start.
2. On the transport bar, click **Record**.
3. To start recording, select an input bus in the **Audio Input** menu.
4. Do one of the following:
   - To stop recording, click **Stop** on the transport bar.
   - To stop and discard the recording, **Ctrl/Cmd**-click **Stop** on the transport bar. This deletes the recorded file.

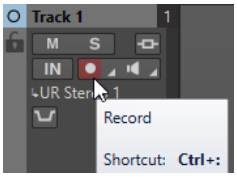
RELATED LINKS
Assigning Input Buses for Recording Manually on page 290
Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 289
Track Control Area on page 196
File Properties for Recording Dialog on page 293

Recording with Custom File Properties

When recording in the **Audio Montage** window, you can specify the name, location, and bit resolution of the file that you want to record.

PROCEDURE

1. In the **Audio Montage** window, select a track, and click at the position where you want the recording to start.
2. In the track control area, click **Audio Input** and select an input bus.
3. Right-click **Record**, and click **File Properties for Recording**.



4. In the **File Properties for Recording** dialog, make the desired adjustments, and click **Record Enable Track**.

   The track is now ready for recording.
5. On the transport bar, click **Record**.
6. Do one of the following:
   - To stop recording, click **Stop** on the transport bar.

- To stop and discard the recording, **Ctrl/Cmd**-click **Stop** on the transport bar. This deletes the recorded file.

RELATED LINKS
Assigning Input Buses for Recording Manually on page 290
Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 289
Track Control Area on page 196
File Properties for Recording Dialog on page 293

Recording on Multiple Tracks

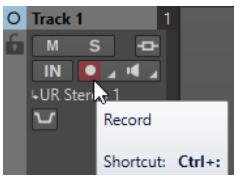
You can record on multiple audio montage tracks simultaneously.

PREREQUISITE

You have assigned input buses for recording.

PROCEDURE

1. In the **Audio Montage** window, click at the position where you want the recording to start.
2. Optional: Click **Monitor** to monitor your input signal and adjust its level.
3. Do one of the following:
   - If you want to record audio files with automatic file properties, click **Record** in the track control area, and select an input bus.

   - If you want to specify the file name, location, and bit resolution of the audio files that you want to record, right-click **Record**, and click **File Properties for Recording**. In the **File Properties for Recording** dialog, make the desired adjustments, and click **Record Enable Track**.

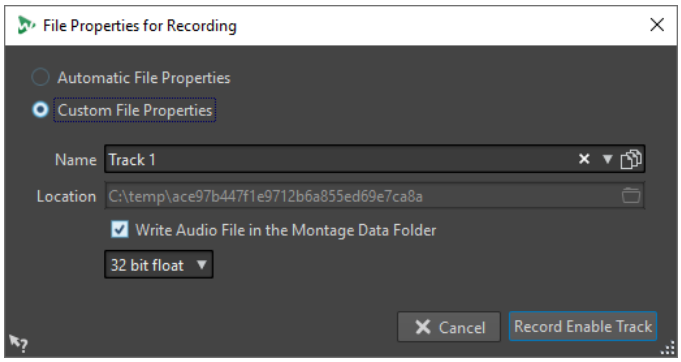
   The track is now ready for recording.
4. Optional: Repeat step 3 for all tracks that you want to record on.
5. On the transport bar, click **Record** to start recording.
6. Do one of the following:
   - To stop recording, click **Stop** on the transport bar.
   - To stop recording of a single track while recording several tracks at the same time, click **Record** in the track control area of the track.
   - To stop and discard the recording, **Ctrl/Cmd**-click **Stop** on the transport bar. This deletes the recorded file.

RELATED LINKS
Assigning Input Buses for Recording Manually on page 290
Automatically Assigning Input Buses for Recording (only for ASIO Devices) on page 289
Track Control Area on page 196
File Properties for Recording Dialog on page 293

File Properties for Recording Dialog

This dialog allows you to specify the file name, location, and bit resolution of the track that you want to record.

- To open the **File Properties for Recording** dialog, in the track control area, right-click **Record** and click **File Properties for Recording**.



Automatic File Properties

If this option is activated, the file name of the file that you want to record is generated automatically. The recorded file is saved in the data folder of the active audio montage. The bit resolution of the recorded file is the same as the bit resolution that is defined for temporary files.

Custom File Properties

If this option is activated, you can specify the file name and location for the audio file that you want to record.

Write Audio File in the Montage Data Folder

If this option is activated, the recorded audio file is saved in the data folder of the audio montage. To specify a custom folder, deactivate this option.

Bit Resolution

Allows you to specify the bit resolution of the audio file that you want to record.

RELATED LINKS
Recording in the Audio Montage Window on page 289

Input Monitoring

Input monitoring means listening to the input signal after it travels through the effects while preparing to record or while recording. This allows you to listen to the effects that your WaveLab Elements setup has on your input signal.

Depending on your effect chain, audio hardware, and drivers, the monitored signal can have latency.

You can choose to monitor the signal going through the audio montage and its effects, or you can use **Direct Monitoring**, which means listening directly to the input signal before it is sent through WaveLab Elements and its effects. **Direct Monitoring** has a lower latency than monitoring the input signal. **Direct Monitoring** is activated by default.

RELATED LINKS
Monitoring the Input Signal on page 294
Direct Monitoring on page 294

Monitoring the Input Signal

Monitoring the input signal allows you to monitor the signal going through the audio montage and its effects.

PREREQUISITE

You have set up your audio input buses.

PROCEDURE

1. Open an audio montage and set up your effects.
2. In the track control area for the track that you want to monitor, click **Select Audio Input** and select an audio input.
3. Click **Monitor**.

RESULT

You can monitor the input signal.

NOTE

The monitored signal is delayed according to the latency value which depends on your effect chain, audio hardware, and drivers.

RELATED LINKS

Track Control Area on page 196
Recording in the Audio Montage Window on page 289

Direct Monitoring

PREREQUISITE

You have set up your audio input buses.

PROCEDURE

1. Open an audio montage.
2. In the track control area for the track that you want to monitor, click **Select Audio Input** and select an audio input.
3. Right-click **Monitor** and activate **Direct Monitoring**.

RESULT

You can monitor the input levels of audio tracks.

RELATED LINKS

Recording in the Audio Montage Window on page 289

Dropping Markers While Recording

When you are recording, you can click the marker buttons to add markers to the recorded file.

PROCEDURE

1. Open the **Recording** dialog.
2. Optional: To name the markers that you drop rather than using generic markers, enter the marker name in the **Next Marker Name** field.
3. Make the desired adjustments, and start recording.
4. Select the type of marker that you want to drop.
   - To drop a numbered generic marker, click the yellow marker button, or press **Ctrl/Cmd** - **M**.
   - To drop numbered generic region start and end markers, click the white buttons, or press **Ctrl/Cmd** - **L** / **Ctrl/Cmd** - **R**.

RESULT

A marker is dropped each time that you click the marker button.

NOTE

If you insert two or more region start markers in a row with no region end markers in between, only the last of these start markers is kept. The same applies for region end markers.

RELATED LINKS

Recording Dialog on page 284

Master Section

The **Master Section** is the final block in the signal path before the audio is sent to the audio hardware, to an audio file, or to the audio meters. This is where you adjust the master levels, add effects, resample, and apply dithering.

The settings and effects in the **Master Section** are taken into account in the following cases:

- When playing back an audio file in the wave window.
- When playing back an audio montage.

  Note that the **Master Section** effects are global for all clips and tracks in an audio montage.
- When using the **Render** function.
- When writing a CD from an audio montage.

RELATED LINKS
Master Section Window on page 296
Rendering in the Master Section on page 310

Master Section Window

In this window, you can apply effect plug-ins, adjust the master level, apply dithering, and render the audio file or audio montage.

- To open the **Master Section** window, select **Tool Windows** > **Master Section**.

The **Master Section** consists of the following panes:

- **Effects**
- **Resampling**
- **Master Level**
- **Final Effect/Dithering**

RELATED LINKS
Effects Pane on page 299
Resampling Pane on page 304
Master Level Pane on page 305
Final Effect/Dithering Pane on page 307

Signal Path

The panes in the **Master Section** window correspond to the processing blocks of the **Master Section**.

The signal passes through these blocks from top to bottom:

1. Audio from WaveLab Elements
2. Effects

   Reordering the effect slots affects the signal path.
3. Resampling
4. Master Level
5. Final Effect/Dithering

   The meters in the Meter windows monitor the signal between the **Final Effect/Dithering** pane and the audio hardware or file on disk.
6. Audio hardware or file on disk

In the **Master Section**, the signal passes all plug-ins, even if some plug-ins are soloed. However, the sound is not affected by this because the muted plug-ins are bypassed from the playback process stream.

RELATED LINKS
Master Section Window on page 296

Master Section Tools

The tools and options at the top of the **Master Section** window allow you to set various parameters for rendering.

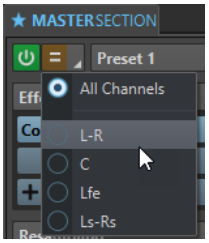
Bypass Master Section

If this option is activated, the **Master Section** is ignored during playback. However, rendering to file still takes into account all plug-ins.

Channel Selector

You can select a single channel cluster or all channel clusters of a multichannel audio file. If you select a single channel cluster, you can render it with the **Render in Place** option at the bottom of the **Master Section** or play back the channel cluster via the

front left/right audio ports or the mono audio port. You can set up the audio ports in the **Audio Connections** dialog.



Presets

Allows you to save and recall **Master Section** presets. The **Presets** pop-up menu offers additional options to save and load default banks and effects.

Reset Master Section

Removes all active effects from the slots and sets the master output to 0 dB.

Settings

Opens the **Settings** pop-up menu, where you can make adjustments for the **Master Section**.

Settings Pop-up Menu

Hide Plug-in Windows when Master Section is not Visible

If this option is activated, plug-in windows are hidden when the **Master Section** is not visible.

Show Plug-in Controls in the Plug-in Window

If this option is activated, the plug-in controls are displayed in plug-in windows.

Use Plug-in Chain Window

Shows all open plug-ins in the plug-in window as tabs, which allows you to quickly switch between the plug-ins.

Plug-in Windows Move with Master Section

If this option is activated, the plug-in windows are also moved when you move the floating **Master Section**.

Restore Last Configuration at Next Start-Up

With this option activated, the next time you start WaveLab Elements again, the plug-in configuration and fader positions in the **Master Section** are restored.

Section Visibility

Allows you to show or hide the **Master Section** sections.

Rearrange

Rearranges the **Master Section** according to the sample rate and channel configuration of the active audio file. The internal bus of the **Master Section** and any active plug-ins are configured accordingly.

This operation is performed automatically before playback or rendering. It is sometimes helpful to manually rearrange the **Master Section**, because some plug-ins do not accept a mono or stereo signal as input, or a given sample rate. In that case, clicking the button informs you about any problems, before playback or rendering.

This operation has no effect if playback is already in progress or if there is no active audio file.

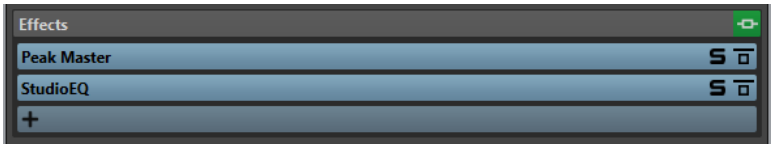
RELATED LINKS
Final Effect/Dithering Pane on page 307
Master Section Window on page 296
Saving Master Section Presets on page 314
Audio Connections Tab on page 23

Effects Pane

This pane in the **Master Section** allows you to add up to 8 effect plug-ins in series, and manage them.

You can fold/unfold or completely show/hide the **Effects** pane.

- To fold/unfold the **Effects** pane, click it.
- To show/hide the **Effects** pane, right-click a pane header, and activate/deactivate **Show Effects**.



Fold/Unfold Pane

Expands or collapses the pane.

Bypass All Effects

Bypasses any effect processing during playback and when rendering.

Add Effect

Allows you to add an effect to an empty effect slot.

Effect plug-in name

Once you have added a plug-in to a slot, you can click the plug-in name to open and close the corresponding plug-in window.

Presets pop-up menu

Allows you to you save and recall preset settings. The **Presets** pop-up menu offers additional options to save and load default banks and effects.

Effect Options context menu

Allows you to load another effect to the effect slot. Furthermore, the following options are available:

- **Remove Plug-in** removes the effect from the slot.
- With **Insert Mode** activated, all plug-ins below the selected slot are automatically moved one step down when you add a new plug-in either by copying and pasting or by selecting it from the menu.

  NOTE

  With this option deactivated, when you add a plug-in, it is added to the selected slot without causing any other plug-ins to shift; that is, the new plug-in replaces any existing plug-ins in this slot.

- **Shift All Plug-ins Down**/**Shift All Plug-ins Up** allows you to move the effects to another position.
- If **Active** is activated, the effect is active. If **Active** is deactivated, the effect is excluded from playback and rendering.

Solo (Bypass)

Soloes the plug-in.

Bypass Effect

Bypasses the plug-in during playback and optionally during rendering. The signal is still processed by the plug-in, but is not injected in the audible stream.

RELATED LINKS

Master Section Window on page 296

Supported Effect Plug-in Formats

WaveLab Elements supports WaveLab Elements-specific plug-ins, VST 2 plug-ins, and VST 3 plug-ins.

WaveLab Elements-specific Plug-ins

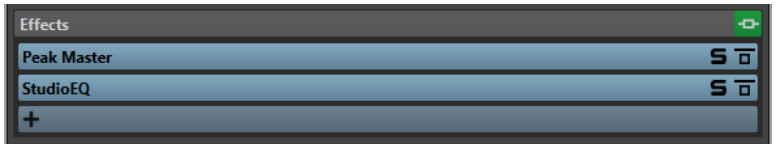
Some specific plug-ins are included in WaveLab Elements, for example, the **Resampler** plug-in.

VST Plug-ins

Steinberg's VST plug-in format is supported by a lot of programs and plug-in manufacturers. You find a number of VST plug-ins included with WaveLab Elements. Other plug-ins can be purchased separately from Steinberg or other manufacturers.

Setting Up Effects

You can select and apply the effect plug-ins that you have installed via the **Effects** pane of the **Master Section**. provided that their formats are supported by WaveLab Elements.



- To insert an effect plug-in into a slot in the **Effects** pane, click the slot, and select an effect from the pop-up menu. Once you have selected an effect, it is automatically activated, and its control panel opens.

  TIP

  You can search for a particular plug-in by typing part of its name into the **Search** field. The **Down Arrow** and **Up Arrow** keys allow you to navigate in the list that shows the matches. To select a plug-in, press **Return**. With the focus on the plug-in list, press **Tab** to set the focus back to the **Search** field.

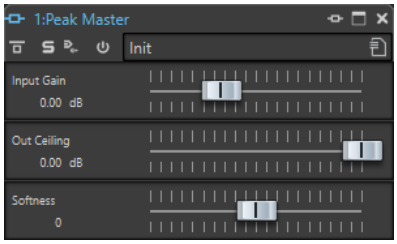
- To deactivate an effect, right-click the slot, and deselect **Active** in the menu. To activate the effect, select **Active** again.
- To remove an effect plug-in, right-click the slot, and select **Remove Plug-in** in the menu.
- To show/hide a plug-in window, click the effect slot.
- To solo an effect, click its **Solo (Bypass)** button. This allows you to exclusively check the sound of this particular effect. You can also bypass effects via their control panels.
- To change the order of the slots, that is, the order in which the signal passes through the effects, click a slot, and drag it to a new position.

RELATED LINKS
Effects Pane on page 299
Master Section Window on page 296

Plug-in Windows for the Master Section

In the plug-in windows of the **Master Section**, you can make adjustments for the effect plug-ins in the **Master Section**.

- To show a plug-in window, click the effect slot in the **Effects** pane of the **Master Section** window.



Plug-in Chain

If **Use Plug-in Chain Window** is activated on the **Settings** pop-up menu of the **Master Section**, the effects of the active audio file are displayed in a plug-in chain at the top of the plug-in window.

You can right-click a plug-in tab or an empty tab to select a new plug-in for the slot.

Bypass Effect

If this option is activated, the plug-in is bypassed during playback and rendering. However, bypassing effects still consumes CPU power during playback. See also: Bypassing Effects vs. Switching Off Effects

Solo (Bypass)

Soloes the plug-in.

Render in Place

Processes the audio in place. Bypassed plug-ins are excluded and the rendered audio is crossfaded at boundaries.

Switch Effect On/Off

If you deactivate a plug-in, it is excluded from both playback and rendering. See also: Bypassing Effects vs. Switching Off Effects

Presets

Opens a menu to save/load presets for this plug-in.

RELATED LINKS
Master Section Window on page 296
Effects Pane on page 299
Effect Plug-in Presets on page 303
Plug-in Windows for Audio Montages on page 273
Bypassing Effects vs. Switching Off Effects on page 303

Color Codes for Master Section Effect Plug-ins

You can use color codes for **Master Section** plug-ins.

To do so, activate **Use Context-colored Caption Bars** on the **General** tab of the **Preferences** for **Plug-ins**:

As a result, **Master Section** plug-ins can be identified by the dark blue background color of their caption bar.

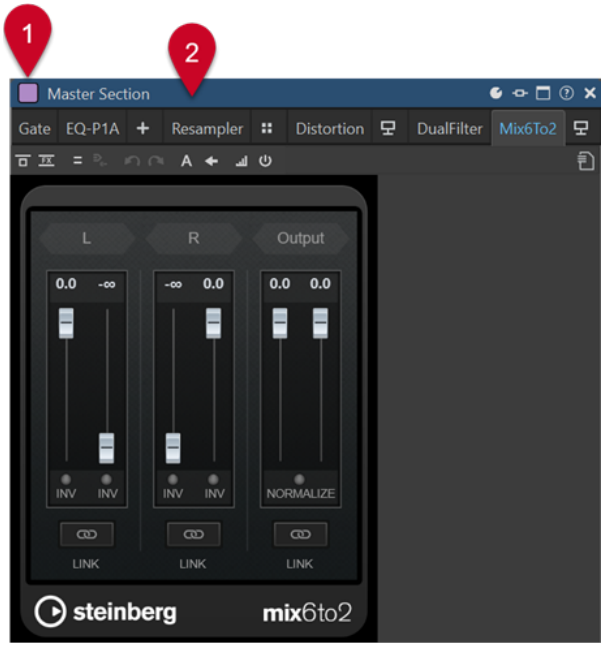
In addition to this, to indicate where particular **Master Section** effect plug-ins are applied, you can choose to display a colored box on the caption bar by activating **Show Color Section Color in Caption Bar** on the **General** tab of the **Preferences** for **Plug-ins**.

The following colors are automatically assigned for the different sections:

Box on the Caption Bar

Section	Color
Effects	Dark Blue
Resampling	Cyan
Final Effects/Dithering	Dark Red
Playback Processing	Purple

Example:



Master Section plug-in, as indicated by the dark blue caption bar (**2**), which is applied in the **Playback Processing** section, as indicated by the purple box (**1**).

RELATED LINKS
Plug-ins Tab (Preferences) on page 399

Bypassing Effects vs. Switching Off Effects

In order to deactivate effects, you can bypass them or switch them off. However, there is a difference between bypassing effects and switching effects off when it comes to real-time processing, rendering, and playback behavior.

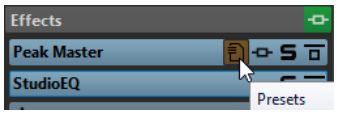
	Bypassing Effects	**Switching Effects Off**
What happens to real-time processing when you bypass an effect vs. when you switch an effect off?	You cannot hear the effect, but processing continues in the background and consumes CPU power.	The effect is not loaded and does not consume CPU power.
What happens to the rendering process when you bypass an effect vs. when you switch an effect off?	The effect is not loaded and does not consume CPU power.	The effect is not loaded and does not consume CPU power.
What happens when you switch bypass on/off vs. when you switch effects on/off during playback?	Playback continues without glitches or interruptions.	Small interruptions can occur.

RELATED LINKS
Plug-in Windows for the Master Section on page 301
Plug-in Windows for Audio Montages on page 273

Effect Plug-in Presets

WaveLab Elements comes with a number of factory presets for the included effect plug-ins. You can use them as they are or as a starting point for your own settings.

Third-party plug-ins can provide their own factory presets. To access the presets for an effect, click the **Presets** button in its control panel window or the **Presets** button for its effect slot. The available functions depend on the type of plug-in.



RELATED LINKS
Presets on page 85
Presets for VST 2 Plug-ins on page 303

Presets for VST 2 Plug-ins

VST 2 plug-ins have their own preset handling.

When you click the **Presets** button for this type of effect, a pop-up menu with the following options opens:

Load Bank/Save Bank

Loads and saves complete sets of presets. The file format is compatible with Cubase.

Load Default Bank/Save Default Bank

Loads the default set of presets or saves the current set of presets as the default bank.

Load Effect/Save Effect

Loads or saves a preset. This is also compatible with Cubase.

Edit Name of Current Program

Allows you to define a name for the preset.

Preset List

Allows you to select one of the loaded presets.

RELATED LINKS
Effect Plug-in Presets on page 303

Resampling Pane

This pane in the **Master Section** allows you to resample the signal. With the **Resampling** plug-in, you can check the peaks before the master gain and meters, and before limiting and dithering.

You can fold/unfold or completely show/hide the **Resampling** pane.

- To fold/unfold the **Resampling** pane, click it.
- To show/hide the **Resampling** pane, right-click a pane header, and activate/deactivate **Show Resampling**.

Fold/Unfold Pane

Expands or collapses the pane.

On/Off

Activates/Deactivates the resampling effect.

Use Preferred Sample Rate

If this option is activated, resampling matches the sample rate that is specified as the preferred sample rate on the **Audio Connections** tab.

NOTE

The sample rate is used for playback only. This allows you to play back sample rates that your audio device does not support.

Sample Rate menu

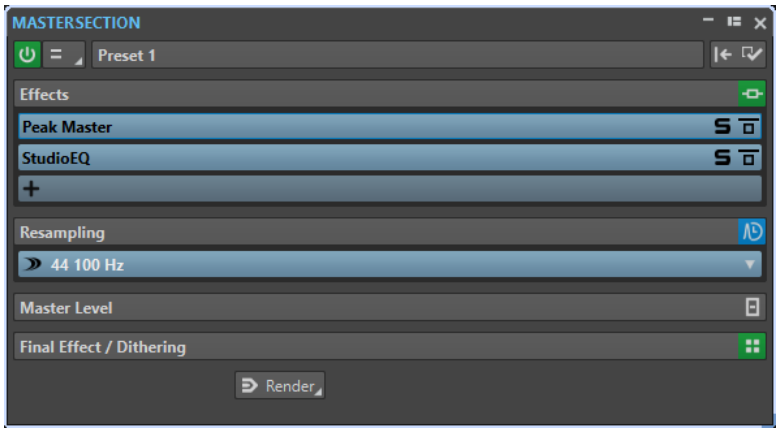
Allows you to select a sample rate.

RELATED LINKS
Audio Connections Tab on page 23
Master Section Window on page 296

Audio Driver Sample Rate

The sample rate of the audio driver is displayed at the bottom right of the **Master Section** window. The sample rate is displayed once you start playback or recording.

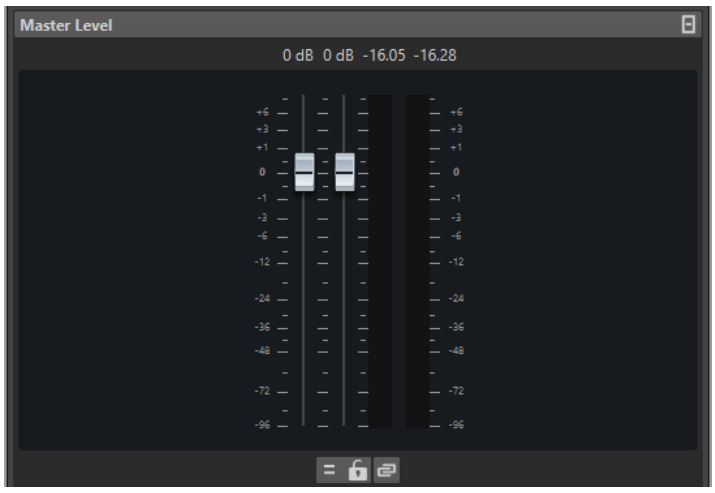
The value is either the sample rate of the audio file or audio montage that is played back or the sample rate that is set in the **Resampling** pane in the **Master Section**.



RELATED LINKS
Resampling Pane on page 304
Master Section Window on page 296

Master Level Pane

This pane in the **Master Section** allows you to control the master level of the active audio file.



Faders

The faders in the **Master Level** pane govern the final output level. Use the faders to optimize the level of the signal that is sent to the audio hardware.

NOTE

It is important to avoid clipping, especially when mastering. Clipping is indicated by the clip indicators of the **Master Section**.

Meters

The **Master Section** meters show the signal level of the signal before dithering or any other plug-in that you have applied post-master fader.

Use these meters to get an overview of the signal levels. The numeric fields above the faders show the peak levels for each channel. The peak indicators turn red whenever the signal clips. If this happens, you should do the following:

- Lower the faders.
- Right-click the clip indicators and select **Reset Peaks** to reset the clip indicators.
- Play back the section again until no clipping occurs.

Settings

Audio Channel Processing

Allows you to mix or filter audio channels. The following options are available:

- If **Default Channels** is selected, the audio stream is not modified.
- **Mix to Mono** mixes the stereo channels into mono channels.

Unlink Faders

Determines whether you can adjust the faders individually or together.

If **Unlink Faders** is deactivated, moving one fader also moves the other by the same amount. Activating **Unlink Faders** allows you to correct improper stereo balancing by adjusting the level of the channels individually.

If you offset the faders with **Unlink Faders** activated and then deactivate **Unlink Faders**, you can adjust the overall level without changing the level offset between the channels.

Fader offsets are not preserved at the end of the range of movement or once the mouse button is released.

Lock Faders

Locks the faders. Locked faders cannot be changed with the mouse. Other editing methods, for example via remote control or shortcut, are still possible.

RELATED LINKS

Master Section Window on page 296

Mixing Stereo Channels into Mono Channels

In the **Master Section**, you mix the left and right channels of a stereo track into two mono channels. The **Mix to Mono** option is useful for checking the mono compatibility of stereo mixes, etc. In this case, the output level is automatically reduced by -6 dB to avoid clipping.

PROCEDURE

1. In the **Master Level** pane of the **Master Section**, click **Audio Channel Processing**.
2. Select **Mix to Mono**.

NOTE

If **Mix to Mono** is activated, the indicator for the **Master Level** pane is lit, even if the master level is not adjusted. This helps you avoid accidentally leaving **Mix to Mono** activated.

3. To apply the setting, render the file.

RELATED LINKS
Master Level Pane on page 305

Mixing Multichannel into Stereo or Mono

In the **Master Section**, you mix surround channels to stereo channels or mono channels. This is useful for checking the mono or stereo compatibility of surround mixes. In this case, the output level is automatically reduced by -6 dB to avoid clipping.

PROCEDURE

1. In the **Master Level** pane of the **Master Section**, click **Audio Channel Processing**.
2. Select **Mix to Stereo** or **Mix to Mono**.

   NOTE

   If **Mix to Stereo** or **Mix to Mono** is activated, the indicator for the **Master Level** pane is lit, even if the master level is not adjusted. This helps you avoid accidentally leaving **Mix to Mono** activated.

3. To apply the setting, render the file.

RELATED LINKS
Master Level Pane on page 305

Final Effect/Dithering Pane

This pane in the **Master Section** allows you to add a final effect and dithering to the signal before it is sent to the audio hardware or saved as a file on disk.

You can fold/unfold or completely show/hide the **Final Effects / Dithering** pane.

- To fold/unfold the **Final Effects / Dithering** pane, click it.
- To show/hide the **Final Effects / Dithering** pane, right-click a pane header, and activate/deactivate **Show Final Effects / Dithering**.

Fold/Unfold Pane

Expands or collapses the pane.

Bypass All Effects

Bypasses the effects in the **Final Effect/Dithering** pane.

Presets pop-up menu

Allows you to you save and recall preset settings. The **Presets** pop-up menu offers additional options to save and load default banks and effects.

Effect Options context menu

Allows you to load another effect to the effect slot. Furthermore, the following options are available:

- **Remove Plug-in** removes the effect from the slot.

- With **Insert Mode** activated, all plug-ins below the selected slot are automatically moved one step down when you add a new plug-in either by copying and pasting or by selecting it from the menu.

  NOTE

  With this option deactivated, **Replace Mode** is active, which means that when you add a plug-in, it is added to the selected slot without causing any other plug-ins to shift, thereby replacing any existing plug-in in this slot.

- **Internal Dithering** allows you to add internal dithering to the effect slot.
- If **Active** is activated, the effect is active. If **Active** is deactivated, the effect is excluded from playback and rendering.

Bypass Effect

Bypasses the plug-in during playback and optionally during rendering. The signal is still processed by the plug-in, but is not injected in the audible stream.

RELATED LINKS
Master Section Window on page 296

Dithering

Dithering is the technique of adding small quantities of noise to a signal to reduce the audibility of low level distortion in a digital recording. A small amount of random noise is added to the analog signal before the sampling stage, reducing the effect of quantization errors.

By adding a special kind of noise at an extremely low level, the quantization errors are minimized. The added noise can be perceived as a very low-level quiescent hiss added to the recording. However, this is hardly noticeable and preferred to the distortion that occurs otherwise. The **Noise Shaping** options of the **Internal Dithering** plug-ins allow you to filter this noise to a frequency area less sensitive to the human ear.

In WaveLab Elements, dithering is applied when reducing the number of bits in a recording, for example, when moving from 24 to 16 bits, and when applying processing. You can choose between WaveLab Elements's internal dithering algorithm, the Lin Dither One algorithm, or any external dithering plug-in.

NOTE

Dithering should always be applied after the output bus fader stage and after any kind of audio process.

RELATED LINKS
Dithering Plug-ins on page 308

Dithering Plug-ins

WaveLab Elements comes with an internal dithering plug-in and the **Lin Dither One** plug-in. However, you can also add other dithering plug-ins.

- To select and activate a dithering plug-in in the **Master Section**, click the plug-in slot in the **Final Effect/Dithering** pane, and select one of the options from the pop-up menu.
- To deactivate the dithering plug-in, open the **Final Effect/Dithering** pop-up menu, and select **Remove Plug-in**.

Adding Other Plug-ins to the Final Effect/Dithering Pane

If you want to use another dithering plug-in than the internal dithering, you can add it to the **Final Effect/Dithering** pane.

NOTE

The meters in the **Master Section** monitor the signal before the **Final Effect/Dithering** pane. To avoid clipping, check the level/pan meter and adjust the output level of the plug-in, if available.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.
2. Select the **Organize** tab.
3. Locate the plug-in that you want to add to the **Final Effect/Dithering** pane in the list, and activate the checkbox in the **Final** column for the plug-in.

RESULT

The plug-in is available via the pop-up menu in the **Final Effect/Dithering** pane, and can be inserted after the **Master Level** faders. The plug-in is still available for selection as a regular pre-master effect if the corresponding entry in the **Effect** column in the **Plug-ins Preferences** is activated.

When to Apply Dithering

The basic rule is that you should apply dithering when converting an audio file to a lower precision. For example, preparing a 24-bit file for mastering to CD, that uses 16-bit format.

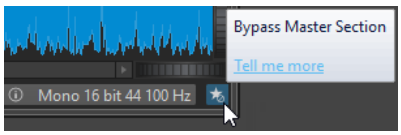
However, even if you are playing back or rendering a 16-bit or 24-bit file to the same precision, you need to apply dithering if you are using any real-time processing in WaveLab Elements. The reason for this is that WaveLab Elements works with an internal precision of 64 bit (floating point) for supreme audio quality. This means that as soon as you perform any kind of processing, the audio data is treated at this high precision instead of the original 16 bit or 24 bit, thus making dithering necessary.

Examples of real-time processing include level adjustments, effects, mixing of two or more clips in an audio montage, etc. The only time when a 16-bit file is played back at 16-bit precision is if you play it without any fades or effects, and with the **Master Level** faders set to 0.00 (no level adjustment – master level indicator turned off).

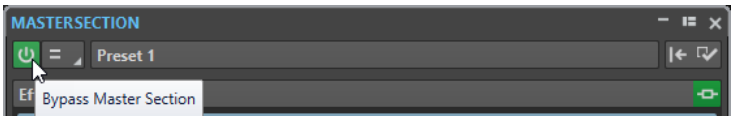
Bypassing the Master Section

By default, the **Master Section** is active. You can bypass it for each file individually or globally.

- To bypass the **Master Section** for individual audio files or audio montages, activate the **Bypass Master Section** button at the bottom of the wave/montage window.



- To bypass the **Master Section** globally, activate the **Bypass Master Section** button at the top left of the **Master Section**.



RELATED LINKS
Master Section Window on page 296

Rendering in the Master Section

By rendering the effects using the **Render** function in the **Master Section**, they become a permanent part of a file. So instead of performing all processing in real time during playback, you can save the audio output to a file on disk.

Writing the output of the **Master Section** to a file on disk allows you to apply **Master Section** processing to an audio file, or mix down an audio montage to an audio file.

There are several uses for rendering:

- Mix down a complete audio montage to an audio file.
- Process a file and save a file to a new audio file, including **Master Section** effects, dithering, and other settings. You can choose the format of the new audio file, which allows you to create an MP3 file and add effects at the same time, for example.
- Process one or more regions of an audio file in place or to new files.

RELATED LINKS
Master Section Window on page 296

Rendering Files

PREREQUISITE

You have set up your audio file or audio montage.

PROCEDURE

1. In the **Master Section**, make the required adjustments.
2. On the bottom of the **Master Section**, click **Render**.
3. Set the desired parameters for rendering.
4. In the **Result** section, activate **Named File**.
5. Click the **Format** field, and select **Edit Format**.
6. Make the desired adjustments in the **Audio File Format** dialog, and click **OK**.
7. When you have set up the rendering process, click **Start**.

RESULT

The file is rendered.

NOTE

Several rendering operations can be performed at the same time when using different files.

RELATED LINKS
Audio File Format Dialog on page 138

Creating Audio File Format Presets on page 141

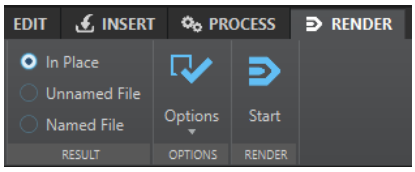
In-Place Rendering

In the **Audio Editor**, you can either process particular sections of an audio file or the entire audio file, to exclusively apply plug-ins to specific audio ranges or test the effect of different plug-ins on the entire audio file, for example.

You can access the **Render in Place** function:

- via the **Render** tab of the **Audio Editor**.

  To start in-place rendering, click **Start**.



- via the **Master Section**.

  Right-click **Render**, and select **Render in Place**

- via the command bar of a plug-in window

Selecting **Render in Place** via the **Render** tab allows you to make additional adjustments in the **Options** pop-up menu. If you select **Render in Place** in the **Master Section** or a plug-in window, the following render settings are activated by default:

- Fade in/out at boundaries
- Exclude bypassed plug-ins

NOTE

Once an audio section has been processed, there is no automatic bypass of plug-ins or the **Master Section**.

EXAMPLE

Common use case:

You intend to use a De-Clicker plug-in on an audio file, but you are not sure which of the three De-Clicker plug-ins that are available to you is most suited to obtain the desired results.

1. Load the three plug-ins in the **Master Section**.
2. Select an audio range, solo plug-in #1, and play back the audio range.
3. Solo plug-in #2, and play back the audio range.
4. Solo plug-in #3, and play back the audio range.
5. Solo the plug-in that you like best, and click **Render in Place**, or press **Alt** - **A**.

RELATED LINKS

Render Tab for the Master Section on page 312
Rendering Audio Selections “In Place“ on page 312

Rendering Audio Selections “In Place“

You can render particular audio ranges or entire audio files, with plug-ins applied to them.

PREREQUISITE

In the **Audio Editor**, you have opened the audio file that you want to render, and the **Master Section**.

PROCEDURE

1. Optional: To use only particular plug-ins of the **Master Section**, solo the plug-ins.
2. In the **Audio Editor**, select the audio range that you want to process.
3. Select the **Render** tab.
4. In the **Source** section, open the **Source** pop-up menu, and select **Selected Audio Range**.
5. In the **Result** section, activate **In Place**.
6. In the **Options** section, open the pop-up menu, and make adjustments as required.
7. In the **Render** section, click **Start**.

RESULT

The audio range or audio file is processed.

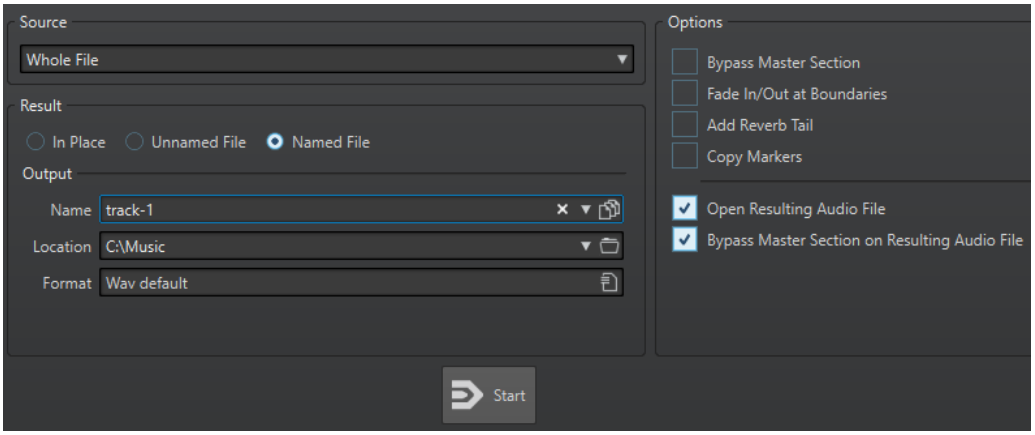
RELATED LINKS

In-Place Rendering on page 311

Render Tab for the Master Section

This tab allows you to select which parts of an audio file to render, and into which format.

- To open the **Render** tab, click **Render** at the bottom of the **Master Section**.



The following options are available for rendering audio files and audio montages:

Source

- **Selected Audio Range** processes and renders the selected audio range.
- **Specific Region** processes and renders an audio range that is specified using region markers. In the pop-up menu next to this option, select the region that you want to render.

In Place

If this option is activated, the rendered audio range replaces the source audio range. This option is only available for audio files.

Unnamed File

If this option is activated, the file is named `untitled`.

Named File

If this option is activated, you can specify a name for the rendered file.

Name

Enter a name for the rendered file. Clicking the arrow icon opens a menu that offers you several automatic naming options.

Location

Select a folder for the rendered file.

Format

Opens a menu, where you can select the file format.

Bypass Master Section

If this option is activated, the plug-ins and gain of the **Master Section** are bypassed when rendering.

Fade In/Out at Boundaries

If this option is activated, a fade is performed at the audio range boundaries when a new file is created, or a crossfade with the adjacent audio is created if the audio range is processed in place.

Add Reverb Tail

If this option is activated, the audio tail that is produced by effects such as reverb is included in the rendered file.

Some plug-ins do not provide a tail duration to WaveLab Elements. In this case, this option has no effect. For such plug-ins, you could add the **Silence** plug-in to add extra samples at the end of the file.

Copy Markers

If this option is activated, markers that are included in the range to process are copied to the rendered file.

Skip Exclusion Regions

If this option is activated, audio ranges that are marked as muted are skipped and not included in the result.

Open Resulting Audio File

If this option is activated, each rendered file is opened in a new window.

Bypass Master Section on Resulting Audio File

If this option is activated, playback of the resulting audio file bypasses the entire **Master Section** after rendering. This setting can be toggled by clicking on the button at the bottom right of the wave window or montage window.

NOTE

It is recommended to activate this option, because you do not need to monitor this new file through the effects again when the effects have been applied to a file.

Render Tab for Audio Files

The following options on the **Render** tab are exclusive to rendering audio files.

Source

Whole File processes and renders the whole file.

In Place

If this option is activated, the rendered audio range replaces the source audio range.

Render Tab for Audio Montages

The following option on the **Render** tab is exclusive to rendering audio montages.

Source

Whole Montage processes and renders the whole audio montage.

Master Section Presets

You can save any settings that you apply in the **Master Section** as a preset, which can be loaded again at a later point in time.

RELATED LINKS
Saving Master Section Presets on page 314
Loading Master Section Presets on page 315

Saving Master Section Presets

You can save all settings that you apply in the **Master Section** as a preset. This includes the processors to be used, their individual settings, and the dithering options.

PROCEDURE

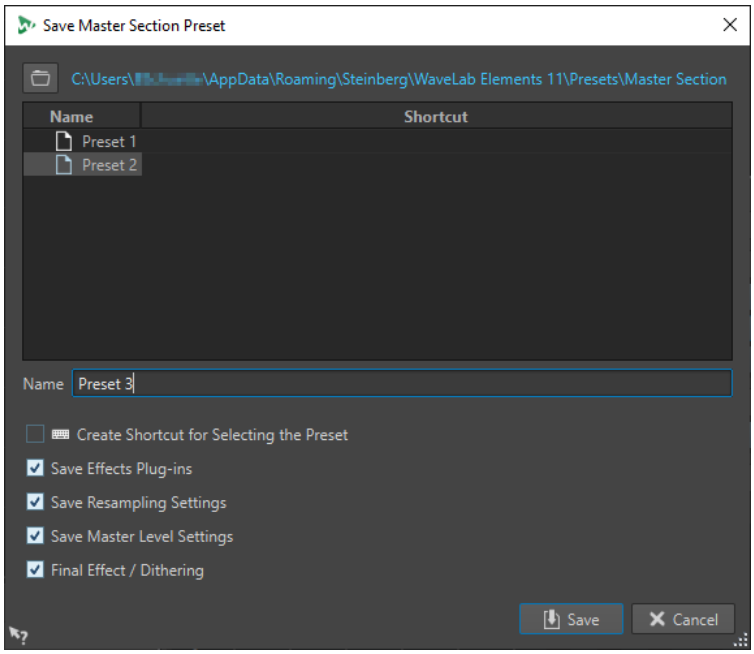
1. Open the **Master Section**.
2. Click **Presets** at the top of the **Master Section**, and select **Save As**.
3. Optional: In the **Save Master Section Preset** dialog, click the path name, enter a name, and click **OK** to create a new subfolder in the **Master Section** preset folder.
4. Enter a name for the preset in the **Name** field.
5. Select the options that you want to save in the preset.
6. Click **Save**.

RELATED LINKS
Save Master Section Preset Dialog on page 314
Loading Master Section Presets on page 315

Save Master Section Preset Dialog

In this dialog, you can save a **Master Section** setup as preset and define which parts of the current **Master Section** you want to include in the preset.

- To open the **Save Master Section Preset** dialog, click **Presets** at the top of the **Master Section**, and select **Save As**.



Location

Opens the root folder of the preset in the File Explorer/macOS Finder. Here, you can create subfolders in which presets can be saved.

Presets list

Lists all existing presets.

Name

Allows you to specify the name of the preset to save.

Save Effects Plug-ins

If this option is activated, the effect plug-ins are saved with the preset.

Save Resampling Settings

If this option is activated, the resampling settings are saved with the preset.

Save Master Level Settings

If this option is activated, the master level settings are saved with the preset.

Save Final Effect/Dithering Plug-in

If this option is activated, the final effect/dithering plug-in is saved with the preset.

RELATED LINKS

Saving Master Section Presets on page 314

Loading Master Section Presets

You can load a previously saved **Master Section** preset and a temporarily saved **Master Section** preset.

Open the **Presets** pop-up menu at the top of the **Master Section** window.

- To load a preset that has been previously saved in the `Presets\Master Section` folder, select a preset from the **Presets** pop-up menu.
- To load a preset from any location, select **Load Preset**, select a preset, and click **Open**.
- To load a temporarily saved preset, open the **Restore** submenu, and select a preset.

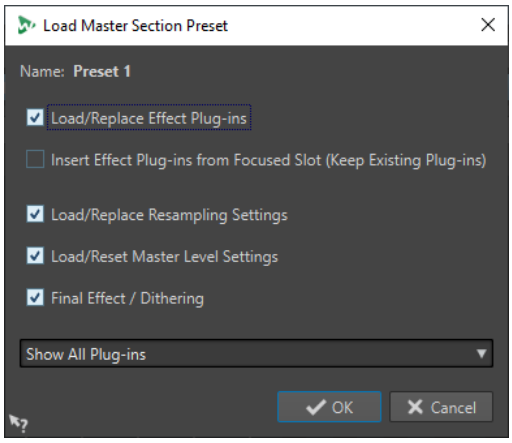
RELATED LINKS
Load Master Section Preset Dialog on page 316

Load Master Section Preset Dialog

In this dialog, you can specify which parts of a saved **Master Section** preset to load when opening it.

- To open the **Load Master Section Preset** dialog, click **Presets** at the top of the **Master Section**, and select **Load Preset**.

This dialog only opens if it is activated on the **Presets** pop-up menu of the **Master Section**. Open the **Presets** pop-up menu at the top of the **Master Section**, and activate **Open Options Dialog when Selecting Preset**.



Now, when restoring a temporarily saved preset or opening a saved preset a dialog with the following options opens:

Name

Displays the name of the preset.

Load/Replace Effect Plug-ins

If this option is activated, the active effect plug-ins are removed, and any new plug-ins are inserted from the top slot.

Insert Effect Plug-ins from Focused Slot (Keep Existing Plug-ins)

If this option is activated, the current effect plug-ins are kept, and any new plug-ins are inserted from the top slot.

Load/Replace Resampling Settings

If this option is activated, the current resampling settings are reset, and any new settings are loaded.

Load/Reset Master Level Settings

If this option is activated, the current **Master Level** settings are reset, and any new settings are loaded.

Load/Replace Final Effect/Dithering Plug-in

If this option is activated, the current final effect/dithering plug-in is removed, and the new plug-in is loaded.

Plug-in Visibility Options

Allows you to select whether you want to show all plug-ins, hide all plug-ins, or only restore the plug-ins that were visible when you saved the preset. The following options are available:

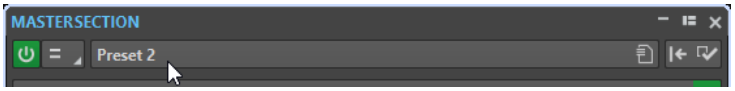
- **Show All Plug-ins**
- **Hide All Plug-ins**
- **Restore Saved Plug-in Visibility**

RELATED LINKS
Loading Master Section Presets on page 315

Master Section Presets Pop-up Menu

This pop-up menu offers several options for saving, managing, and restoring **Master Section** presets.

- To open the **Presets** pop-up menu, click the presets pane at the top of the **Master Section**.



Save

Saves the changes you have made to an existing preset.

Save As

Opens a dialog where you can specify a name and a location for the preset.

Organize Presets

Opens the **Master Section** folder in the File Explorer/macOS Finder, where you can rename or delete presets.

Load Preset

Allows you to load a **Master Section** preset via the File Explorer/macOS Finder. For example, this is useful if you want to load a preset that is provided by another source and not located in your default root folder.

Open Options Dialog when Selecting Preset

If this option is activated, when you select a preset, a dialog opens that allows you to choose how to load the preset you select.

Store Temporarily

Lets you select one of the slots to temporarily save a preset.

Restore

Lets you restore a previously saved preset.

List of saved presets

Lists the presets that are saved in the **Presets** folder of the **Master Section**.

RELATED LINKS
Master Section Presets on page 314

Monitoring Background Tasks

When rendering, you can monitor the process, and you can pause or cancel tasks.

A status bar below the **Audio Editor** window and the **Audio Montage** window shows the progress of the current rendering process. You can cancel or pause the rendering process with the corresponding buttons.

RELATED LINKS
Global Preferences on page 405

Canceling Background Tasks

You can cancel rendering processes that run in the background.

PROCEDURE

- Do one of the following:
  - On the status bar, click **Cancel**.

  - Press **Alt/Opt** - **.** on your keyboard.

RELATED LINKS
Monitoring Background Tasks on page 317

Dropouts

A dropout most likely occurs when your computer does not have the processing power to handle all used effect processors.

To avoid dropouts, try the following:

- Use fewer effects.
- Consider rendering the processing rather than running it in real time. Then master from the processed file without applying effects. Dropouts never occur when rendering to a file.
- Do not process any files in the background.

If neither of the above helps, check the audio card preference settings. You might need to adjust the audio buffer settings. If a dropout occurs during a real-time mastering process we recommend that you re-master. Stop playback, click the dropout indicator to reset it, and try again.

Markers

Markers allow you to save and name specific positions in a file. Markers are useful for editing and playback.

For example, markers can be used for the following:

- Indicate cue points or absolute time locations.
- Highlight problem sections.
- Visually separate tracks.
- Set the wave cursor to a specific position.
- Select all audio between two positions.
- Loop sections in an audio file.

There is no limit to the amount of markers that you can have in a file.

NOTE

The functions in the **Markers** window are the same for audio files and audio montages. However, the **Markers** window for audio montages offers additional options regarding clips.

RELATED LINKS
Marker Types on page 319
Markers Window on page 320
Creating Markers on page 322

Marker Types

You can use different marker types to locate certain positions quickly.

The following marker types are available:

Generic markers

Allow you to locate positions and select all the audio between two points, for example. Generic markers can be created during recording.

Region start and end markers

Define start and end points for generic regions. Region start and end markers can be created during recording and are used in pairs.

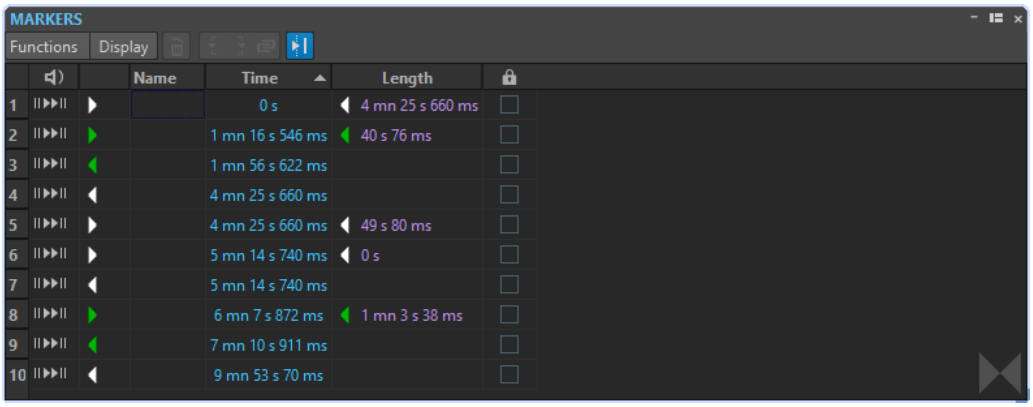
Loop start and end markers

Are used to define loop points and are required to access loop editing functions on the **Process** tab of the **Audio Editor**. Loop start and end markers are connected to the **Loop** mode when playing back audio. These markers are useful for editing and creating loops before transferring a sound to a sampler. Loop markers are used in pairs.

Markers Window

In the **Markers** window, you can create, edit, and use markers while working on an audio file or an audio montage.

- To open the **Markers** window, open an audio file or an audio montage. Select **Tool Windows** > **Markers**.



Markers window for audio montages

Markers List

The **Markers** window contains a list of all markers of the active file, along with their details and controls. You can create and edit indicators in the markers list.

Marker numbers

Clicking the number of a marker scrolls the waveform to reveal the corresponding marker.

Perform Pre-Roll

Plays back the audio from the marker position with a pre-roll.

You can also press **Alt** and click **Play Pre-Roll** to play back from the marker position with a short pre-roll.

Play

Plays back the audio from the marker position.

Marker type

Shows the marker type. To change the marker type, click the marker icon, and select another marker type from the pop-up list.

NOTE

In the **Markers** window for audio montages, title markers (start, splice, end, index) that are quantized at CD boundaries are displayed with a green font color, which allows you to see at a glance whether they are quantized or not.

Name

Shows the marker name. To change the name, double-click in the corresponding cell, and enter a new name.

Time

Shows the marker position on the time ruler. To change the position, double-click in the corresponding cell, and enter a new value.

Channels

Shows the channels on which the markers are located. You can click the channel to specify another channel for the marker or select **Set for All Channels** to set the marker for all channels.

Length

Shows the time between the marker start position and the corresponding end marker.

- To zoom in on the region between a start and an end marker, click the corresponding cell in the **Length** column.
- To select the region between a start and end marker, double-click the corresponding cell in the **Length** column. This function is only available for markers in the **Audio Editor**.

Lock

Allows you to lock markers. Locking markers prevents them from being accidentally dragged to a new position in the wave window or the montage window. To lock a marker, activate the corresponding checkbox.

Clip Reference (only available for markers in the Audio Montage window)

A marker can be attached to the left or right edge of a clip, and to its waveform. When you move a clip, the corresponding marker moves along. The clip reference column shows the name of the clip.

Offset (only available for markers in the Audio Montage window)

Shows the distance between the marker and the reference point.

Functions Menu

Depending on whether the **Audio Editor** or the **Audio Montage** window is open, different options are available. The following options are available both for audio files and audio montages:

Select All

Selects all markers in the markers list.

Invert Selection States

Inverts the selection status of all markers.

Deselect All

Deselects all markers.

Delete Selected Markers

Deletes all markers that are selected.

Default Marker Names

Opens the **Default Marker Names** dialog, where you can select default marker names for each marker type.

Generate Chapters

Allows you to generate a text file that lists the chapters in your audio material, based on the markers you set, for use on YouTube or Spotify.

Customize Command Bar

Opens a dialog where you can customize marker-related menus and shortcuts.

The following options of the **Functions** menu are only available for audio files:

Select in Time Range

Selects the markers located in the selection range in the wave window.

The following options of the **Functions** menu are only available for audio montages:

Bind Selected Markers to Start of Active Clip

Makes the marker position relative to the start of the active clip. When the start of this clip moves, the marker moves, too.

Bind Selected Markers to End of Active Clip

Makes the marker position relative to the end of the active clip. When the end of this clip moves, the marker moves, too.

Detach Selected Markers from Their Associated Clip

Makes the marker position relative to the start of the audio montage.

Follow Playback

If this option is activated and you play back audio, a green bar next to the marker name indicates the marker that was last played back.

Lock Selected Marker

Locks the selected marker. If this option is activated, the marker cannot be moved or deleted.

Full Clip Attachment

Attaches markers to a clip so that they are copied or deleted when the clip is copied or deleted.

Customize Command Bar

Opens the **Customize Commands** dialog, which contains options for hiding or showing specific command bar buttons.

Display Menu

The **Display** menu allows you to specify which types of markers to display in the markers list and on the timeline.

Creating Markers

You can create markers in the wave window and montage window in stop mode or during playback. You can create specific markers if you already know what you want to mark, or create generic markers.

PROCEDURE

1. Do one of the following:
   - Start playback.
   - In the wave window or the montage window, set the cursor to the position where you want to insert the marker.
2. Do one of the following:
   - In the **Audio Editor** or **Audio Montage** window, select the **Insert** tab, and click a marker icon in the **Markers** section.
   - In the **Audio Editor** or **Audio Montage** window, select the **Insert** tab, and click **Create/Name Marker** in the lower right corner of the **Markers** section. This opens the **Create**

Marker dialog, which allows you to create different types of markers and marker pairs at the edit cursor position or at the selection range.

- Right-click the upper part of the time ruler, and select a marker from the context menu.
- Press **Insert**. This creates a generic marker.

  To see the key commands for other marker types, right-click above the timeline of the wave window or montage window.

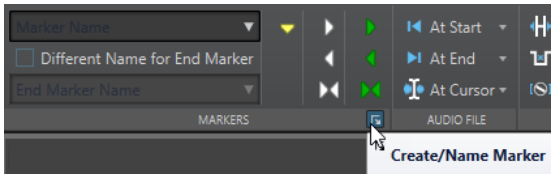
3. Optional: To set a marker for an individual channel, click the channel name in the **Channel** column of the **Markers** window, and select the channel for which you want to set the marker.

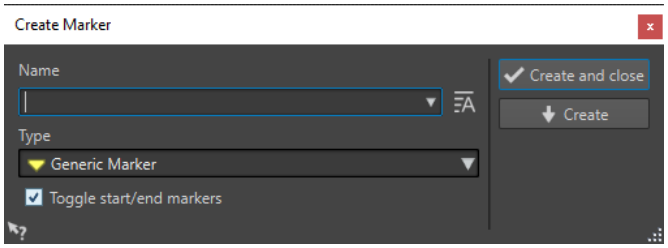
RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196
Markers Window on page 320
Insert Tab (Audio Montage) on page 205
Insert Tab (Audio Editor) on page 127
Deleting Markers on page 324
Create Marker Dialog on page 323

Create Marker Dialog

This dialog allows you to create different types of markers and marker pairs at the edit cursor position or at the selection range.

- To open the **Create Marker** dialog, click **Create/Name Marker** in the lower right corner of the **Markers** section of the **Insert** tab in the **Audio Editor** or **Audio Montage** window.





Name

Allows you to enter the name of the marker. If you leave this field empty, a generic name is created.

Default Name

If this option to the right of the **Name** field is activated, WaveLab Elements suggests a generic name.

Type

Specifies the type of marker to be generated.

Toggle Start/End Markers

If this option is activated and you create a start marker, the corresponding end marker is selected, and vice versa.

Create and Close

Creates the marker and closes the **Create Marker** dialog.

Create

Creates the marker without closing the **Create Marker** dialog.

RELATED LINKS
Creating Markers on page 322
Insert Tab (Audio Editor) on page 127

Creating Markers at Selection Start and End

You can mark a selection for looping or review, for example.

PROCEDURE

1. In the wave window or the montage window, create a selection range.
2. Do one of the following:
   - In the **Audio Editor** or the **Audio Montage** window, select the **Insert** tab and select a marker pair in the **Markers** section.
   - In the wave window, create a selection range, right-click it, and select the marker pair.
   - In the wave window or the montage window, create a selection range, right-click above the time ruler, and select the marker pair.

RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196
Insert Tab (Audio Montage) on page 205
Insert Tab (Audio Editor) on page 127

Duplicating Markers

Duplicating markers is a quick way to create a marker from an existing marker.

PROCEDURE

- In the **Audio Editor** or in the **Audio Montage** window, hold down **Shift**, click a marker, and drag.

RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196

Deleting Markers

Markers can be deleted in the wave window or the montage window, and in the **Markers** window.

RELATED LINKS
Deleting Markers in the Audio Editor or in the Audio Montage Window on page 325
Deleting Markers in the Markers Window on page 325

Deleting Markers in the Audio Editor or in the Audio Montage Window

PROCEDURE

- To delete markers in the **Audio Editor** or in the **Audio Montage** window, do one of the following:
  - In the **Audio Editor** or in the **Audio Montage** window, right-click a marker, and select **Delete**.
  - Drag and drop a marker icon upwards, outside the time ruler.

RELATED LINKS
Deleting Markers on page 324
Audio Editor Window on page 115
Audio Montage Window on page 196

Deleting Markers in the Markers Window

This is useful if your project has many markers or if the marker that you want to delete is not visible in the **Audio Editor** or in the **Audio Montage** window.

PROCEDURE

1. In the **Markers** window, select one or several markers.

   You can also select **Functions** > **Select All**.
2. Click **Delete Selected Markers** or select **Functions** > **Delete Selected Markers**.

RELATED LINKS
Markers Window on page 320
Deleting Markers on page 324

Moving Markers

You can adjust marker positions in the **Audio Editor** or in the **Audio Montage** window.

PROCEDURE

- In the **Audio Editor** or in the **Audio Montage**window, drag a marker to a new position on the time ruler.

  If **Snap to Magnets** is activated, the marker snaps to the cursor position or the beginning/end of a selection or waveform.

RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196
Time Ruler and Level Ruler on page 55

Navigating to Markers

You can jump to the previous or next marker using the corresponding marker buttons.

- To jump to the previous/next marker, select the **View** tab, and in the **Cursor** section, click **Move Cursor to Previous Marker**/**Move Cursor to Next Marker**.
- To set the wave cursor to a marker position, in the wave window or the montage window, double-click a marker triangle.

RELATED LINKS
Markers on page 319

Hiding Markers of a Specific Type

For a better overview, you can hide marker types.

PROCEDURE

1. In the **Markers** window, select **Display**.
2. Deactivate the marker types that you want to hide.
   You can make the markers visible again by activating the corresponding marker type.

RELATED LINKS
Markers Window on page 320

Converting the Type of a Single Marker

You can convert markers of a specific type to another type.

PROCEDURE

1. In the **Markers** window, click the marker icon that you want to convert.
2. Select a new marker type from the list.

RELATED LINKS
Markers Window on page 320

Renaming Markers

You can change the names of markers.

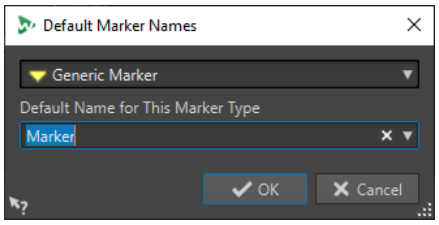
- To rename a marker in the wave window or the montage window, right-click a marker, select **Rename**, and enter a new name.
- To rename a marker in the **Markers** window, double-click a marker name in the **Name** column, and enter a new name.
- To edit the default names, in the **Markers** window, select **Functions** > **Default Marker Names**.

RELATED LINKS
Markers Window on page 320
Default Marker Names Dialog on page 327

Default Marker Names Dialog

In this dialog, you can specify the default marker names.

- To open the **Default Marker Names** dialog, open the **Markers** window, and select **Functions** > **Default Marker Names**.



Marker type

Allows you to select the type of marker for which you want to specify a default name.

Default Name for This Marker Type

Allows you to specify the default name for the selected marker type.

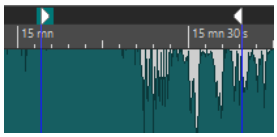
RELATED LINKS
Markers Window on page 320
Renaming Markers on page 326

Selecting Markers

There are several ways to select markers.

- In the wave window or the montage window, click a marker.
- In the **Markers** window, click in a cell. The corresponding marker is selected.
- Use **Ctrl/Cmd** or **Shift** to select multiple markers.

The marker icon changes its background to indicate the selection.



RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196
Markers Window on page 320

Selecting the Audio Between Markers

You can select the audio between two adjacent markers or between any two markers. This allows you to select a section that has been marked.

- To select the audio between two adjacent markers, double-click between two adjacent markers in the **Audio Editor** or in the **Audio Montage** window.
- To select several regions between two adjacent markers, double-click between two adjacent markers, and after the second click, drag to select the adjacent regions.

- To select the audio between a region marker pair, hold down **Shift**, and double-click a region marker.
- To extend the selection until the end of a marker region, in the **Audio Editor** or in the **Audio Montage** window, hold down **Shift**, and double-click in the marker region that you want to select.
- To open the **Markers** window and display further information about a specific marker, hold down **Alt**, and double-click a marker.

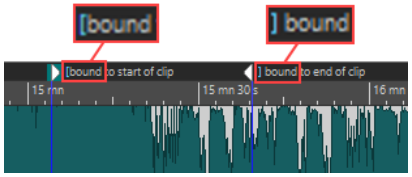
RELATED LINKS
Audio Editor Window on page 115
Audio Montage Window on page 196
Markers Window on page 320

Binding Markers to Clips in the Audio Montage

In the **Audio Montage** window, you can bind markers to clips. By doing this, the marker remains in the same position, relative to the clip start/end, even if the clip is moved or resized in the audio montage.

You can find the options regarding binding clips and markers on the **Functions** menu of the **Markers** window, and when right-clicking a marker in the **Audio Montage** window.

When a marker is bound to a clip element, its name is preceded by a blue character.



RELATED LINKS
Markers Window on page 320

How Marker Information is Saved

WaveLab Elements can optionally use MRK files as a way to save marker information that is independent of the file format.

However, to make marker information exchangeable between applications, WaveLab Elements also saves some information in the Wave headers.

NOTE

By default, no MRK files are created, and information is saved in the Wave headers.

RELATED LINKS
Markers on page 319
File Tab (Audio Files Preferences) on page 413

Generating Chapters for YouTube and Spotify via Markers

If you intend to upload your audio material to YouTube or Spotify, you can divide it into chapters so that your audience can select and play particular parts of the content.

Based on marker pairs, WaveLab can generate a text file that is compatible with YouTube and Spotify and that indicates the chapters in your audio material.

PROCEDURE

1. To define the chapters, set and name a minimum of three marker pairs in your active audio file or audio montage.

   NOTE

   - The minimum length for a chapter is ten seconds.
   - A marker is required at the very beginning of your audio material. If no marker is available, WaveLab automatically creates a chapter called “Introduction”.

2. Open the **Markers** window by selecting **Tool Windows** > **Markers**. From the **Functions** menu, choose **Generate Chapters** .

   The **Chapter Generator** dialog opens.

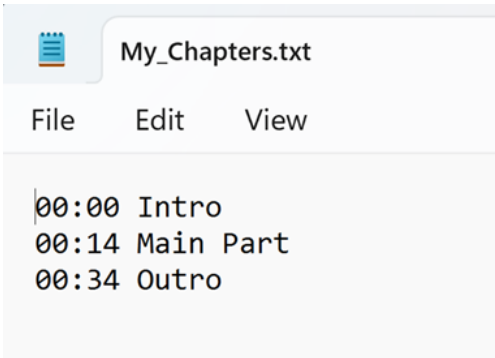
3. Make the desired adjustments in the **Chapter Generator** dialog, and click **OK**.

RESULT

A text file is created, which lists the chapters of your audio material.

EXAMPLE

Text file listing the chapters:



IMPORTANT

- If the text file does not list your chapters as intended, verify the following:
  - You have assigned a name to each marker pair that defines a chapter.

    WaveLab ignores unnamed marker pairs and does not include them in the text file.
  - The name of every marker pair starts with a letter.

    WaveLab ignores marker pairs whose names start with a digit and does not include them in the text file.
  - You have not used any region end markers to define the chapters.

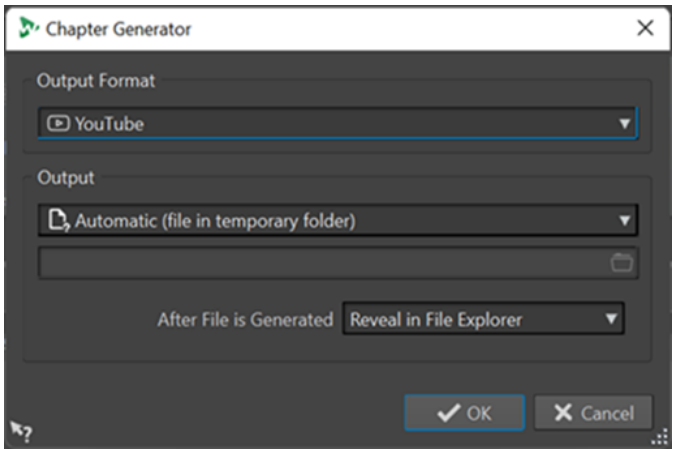
WaveLab does not recognize region end markers as chapter identifiers and does not include them in the text file.

RELATED LINKS
Chapter Generator Dialog on page 330
Markers Window on page 320

Chapter Generator Dialog

The **Chapter Generator** dialog allows you to define the chapters in your audio material, for use on YouTube or Spotify.

- To open the **Chapter Generator** dialog, open the **Markers** window, and select **Functions** > **Generate Chapters** .



Output Format

Allows you to select **YouTube** or **Spotify** as the output format.

Output

Allows you to specify the destination of the text file. You can choose from the following options:

- **Automatic (file in temporary folder)**: Saves the text file in a temporary folder.
- **Specific file**: Allows you to navigate to and select a particular file by clicking the folder symbol in the line below.
- **Printer**: Allows you to send the text file to a printer.
- **Clipboard**: Sends the text file to the clipboard.

After File is generated

Allows you to specify what you want WaveLab to do after creating the text file listing the chapters. You can choose from the following options:

- **Reveal in File Explorer**: Displays the text file in the File Explorer/macOS Finder. Opening it from there allows you to verify that the chapters are listed correctly.
- **Do Nothing**: Creates the text file without opening it.
- **Launch Associated Application**: Launches the application you have specified for opening `.txt` files, if any. This allows you to verify that the chapters are listed correctly.

RELATED LINKS
Generating Chapters for YouTube and Spotify via Markers on page 329
Markers Window on page 320

Metering

WaveLab Elements contains a variety of audio meters that you can use for monitoring and analyzing audio. Meters can be used to monitor audio during playback, rendering, and recording. Furthermore, you can use them to analyze audio sections when playback is stopped.

RELATED LINKS
Meter Windows on page 332
Meter Settings on page 332

Meter Windows

WaveLab Elements contains a variety of audio meters that you can use for monitoring and analyzing audio. Meters can be used to monitor audio during playback, rendering, and recording. Furthermore, you can use them to analyze audio sections when playback is stopped.

The meter windows can be accessed via the **Meters** menu. There can only be one instance of each audio meter.

The axis of most audio meters can be rotated, to view the graphics horizontally or vertically. For some meters, you can also style and customize parameters via a settings dialog.

RELATED LINKS
Metering on page 332
Docking and Undocking Tool Windows and Meter Windows on page 47

Opening and Closing Meter Windows

You can close all meter windows you do not need for your project.

- To open a meter window, select **Meters** and select a meter window.
- To close a docked meter window, right-click the meter window tab and select **Hide**.
- To close an undocked meter window, click its **X** button.

RELATED LINKS
Meter Windows on page 332

Meter Settings

You can set up most meters in the corresponding settings dialogs. For example, you can adjust the behavior, scale, and color of the meters.

- To open the settings dialog for a meter, select **Functions** > **Settings**.
- To check the results after changing the settings without closing the settings dialog, click **Apply**.
- To close the settings dialog and discard any changes that you have made, even if you have clicked the **Apply** button before, click **Cancel**.

RELATED LINKS
Meter Windows on page 332

Resetting the Meters

You can reset the display of some meters, for example, the **Level Meter**.

PROCEDURE

- In the meter window, click **Reset**, or select **Functions** > **Reset**.

RESULT

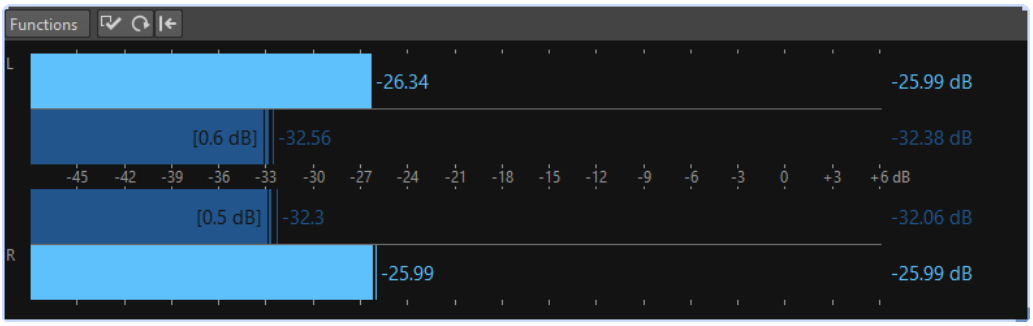
All values and numerical indicators of the meter are reset.

RELATED LINKS
Meter Windows on page 332

Level Meter

The **Level Meter** displays the peak and average loudness/decibel levels of your audio file.

- To open the **Level Meter**, select **Meters** > **Level Meter**.



Level Meters

The **Level Meter** shows the peak level and the average loudness in the following way:

- The peak level meters display the peak levels of each channel, graphically and numerically.
- The VU meters measure the average loudness (RMS) of each channel. These meters have a built-in inertia, evening out loudness variations over a user-defined time span. If you are monitoring playback or the audio input, you can see two vertical lines following each VU meter bar. These lines indicate the average of the most recent minimum RMS values (left line) and the average of the most recent maximum RMS values (right line). To the left, the difference between the minimum and maximum average values is displayed. This gives you an overview of the dynamic range of the audio material.
- The maximum peak and loudness values are displayed to the right of the meter bars. The numbers in brackets to the right of the maximum peak values indicate the number of times that clipping occurs (0 dB signal peaks). Values between 1 and 2 are acceptable, but if you get a larger number, you should lower the master level to avoid digital distortion.
- Recording levels should be set so that they only rarely clip. If the master level is set too high, the sound quality and frequency response are compromised at high recording levels, with unwanted clipping effects. If the level is set too low, noise levels can be high relative to the main sound being recorded.

RELATED LINKS
Level Meter Settings Dialog on page 334

Level Meter Settings Dialog

In the **Level Meter Settings** dialog, you can adjust the behavior, scale, and color of the meters.

- To open the **Level Meter Settings** dialog, open the **Level Meter** window, and select **Functions** > **Settings**.

Peak Meter Section

Ballistics – Release Rate

Determines how fast the peak level meter falls after a peak.

Ballistics – Peak Hold Time

Determines how long a peak value is displayed. The peak can be displayed as a line or a number. If the meter is too short, only the line is displayed.

Top Zone/Middle Zone/Low Zone

The color buttons allow you to select colors for the low, middle, and top zones of the level meter. You can define the range for the top and middle zones by changing the corresponding values.

VU Meter (Loudness) Section

VU Meter (Loudness)

Activates/Deactivates the VU meter.

Ballistics – Resolution

Sets the time that is used to determine the loudness. The smaller this value, the more the VU meter behaves like the peak meter.

Ballistics – Range Inertia

Sets the time that is used to determine the recent minimum and maximum value lines, and therefore determines how quickly these respond to changes in loudness.

Global Colors Section

In this section, you select colors for the meter background, marks (scale units), and grid lines.

Global Range (Peak and VU Meter) Section

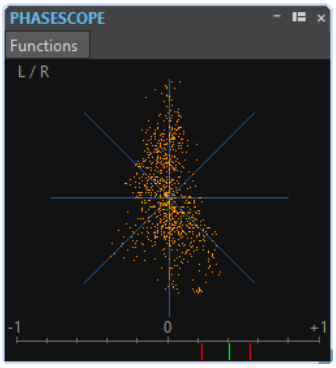
In this section, you specify the minimum and maximum values of the displayed level range.

RELATED LINKS
Level Meter on page 333

Phasescope

The **Phasescope** indicates the phase and amplitude relationship between two stereo channels.

- To open the **Phasescope**, select **Meters** > **Phasescope**.



Reading the Phasescope

The **Phasescope** works as follows:

- A vertical line indicates a perfect mono signal (the left and right channels are the same).
- A horizontal line indicates that the left channel is the same as the right, but with an inverse phase.
- A fairly round shape indicates a well-balanced stereo signal. If the shape leans to one side, there is more energy in the corresponding channel.
- A perfect circle indicates a sine wave on one channel, and the same sine wave shifted by 45° on the other.
- Generally, the more you can see a thread, the more bass is in the signal, and the more spray-like the display, the more high frequencies are in the signal.

Phase Correlation Meter

The phase correlation meter at the bottom of the display works as follows:

- The green line shows the current phase correlation, and the two red lines show the recent minimum and maximum values.
- With a mono signal, the meter shows +1, indicating that both channels are perfectly in phase.
- If the meter shows –1, the two channels are the same, but one is inverted.
- Generally, for a good mix, the meter should show a value between 0 and +1.

Phasescope Settings

In the **Phasescope Settings** dialog, you can adjust the behavior, scale, and color of the meters.

- To open the **Phasescope Settings** dialog, open the **Phasescope** window, and select **Functions** > **Settings**.

Background
Click this to change the background color.

2D Display
Allows you to adjust the color for the grid and the signal of the 2D display.

Auto-Size (Maximize)
If this option is activated, the display is optimized to fit in the window.

Correlation Display

This is where you select colors for the elements in the phase correlation meter display, and adjust the peak hold time for the maximum and the minimum indicator.

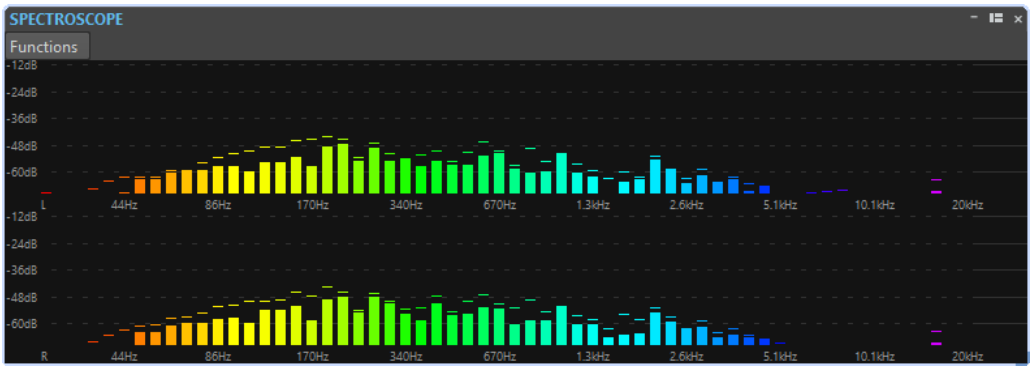
Number of Samples to Display

This setting affects the length of the phase coil and the density of the display. For audio with high sample rates, you might want to raise this value.

Spectroscope

The **Spectroscope** shows a graphical representation of the frequency spectrum, analyzed into 60 separate frequency bands, represented as vertical bars.

- To open the **Spectroscope**, select **Meters** > **Spectroscope**.



Peak levels are shown as horizontal lines above the corresponding bands, indicating recent peak/maximum values. The **Spectroscope** offers a quick spectrum overview. For a more detailed analysis of the audio spectrum, use the **Spectrometer**.

On the **Functions** menu, you can specify whether only high audio levels are displayed, or whether medium and low levels are also shown.

The following settings are available:

- **Restrict to High Audio Levels**
- **Include Medium Audio Levels**
- **Include Low Audio Levels**

Spectrometer

The **Spectrometer** uses FFT (Fast Fourier Transform) techniques to display a frequency graph, providing a precise and detailed real-time frequency analysis.

- To open the **Spectrometer**, select **Meters** > **Spectrometer**.

The current frequency spectrum is shown as a linear graph. Spectrum peaks are shown as short horizontal lines.

Zooming in the Spectrometer Window

In the **Spectrometer** window, you can zoom in on a frequency area.

- To zoom in on a frequency area, click and drag a rectangle in the spectrum. The display is zoomed in so that the selected frequency range fills the window.
- To return to full-scale display, select **Functions** > **Zoom out Fully**, or double-click in the spectrum.

Spectrometer Snapshots

You can take snapshots of the current spectrum, to check the effects of adding EQ, for example.

The snapshots are displayed on the spectrum graph. Up to five snapshots can be displayed. The sixth snapshot replaces the earliest snapshot.

- To take a snapshot, select **Functions** > **Add Snapshot**.
- To erase the last snapshot, select **Functions** > **Erase Last Snapshot**.

Exporting FFT Data as ASCII Text

FFT (Fast Fourier Transform) analysis is a method to convert a waveform from the time domain to the frequency domain. You can export the displayed FFT data as a text file.

PROCEDURE

1. In the **Audio Editor**, select the **Analysis** tab.
2. In the **Monitoring** section, activate **Edit Cursor** or **Audio Selection**.
3. In the **Spectrometer** window, select **Functions** > **Export FFT Data as ASCII**.
4. Specify a file name and location.

5. Click **Save**.

RESULT

The resulting text file can be imported into Microsoft Excel, or other applications that allow graph plotting from text files.

Creating Spectrometer Settings Presets

You can save up to five **Spectrometer Settings** as presets and assign them to the **Presets** buttons. This allows you to quickly compare different **Spectrometer** settings.

PROCEDURE

1. In the **Spectrometer** window, select **Functions** > **Settings**.
2. In the **Spectrometer Settings** dialog, make adjustments as required.
3. Click the **Presets** menu, and select **Assign to Preset Button**.
4. Select the button to which you want to apply the preset.
5. Click **OK** to close the **Spectrometer Settings** dialog.
6. Start playback, and click the **Apply Preset** buttons to switch between the presets.

RELATED LINKS

Spectrometer Settings on page 338

Spectrometer Settings

In the **Spectrometer Settings** dialog, you can adjust the behavior and display of the meters, and assign up to five sets of spectrometer settings to the preset buttons.

- To open the **Spectrometer Settings** dialog, open the **Spectrometer** window, and select **Functions** > **Settings**.

Process Tab

Analysis Block Size

The higher this value, the higher the accuracy in the frequency domain, that is, the spectrum is divided into more bands. At the same time, the time localization is reduced. This means that the higher the value, the less easy to know where a given frequency starts and ends in time.

NOTE

Raising the block size value also requires more CPU power and introduces a higher latency. Therefore, high values should only be used for offline monitoring.

Analysis Overlapping

To get more accurate results, the program can analyze overlapping blocks. This setting determines the amount of overlap between these blocks – the higher the value, the more accurate the results.

NOTE

Raising this value is very CPU-intensive. A setting of 50% requires twice the amount of CPU power, a setting of 75% requires four times the CPU power, etc.

Smoothing Window

Allows you to choose which method to use for pre-processing the samples in order to optimize the **Spectrogram**.

Display Tab

Frequency Ruler

Determines the frequency range to be shown, at full-scale display. The lowest frequency to be shown depends on the **Analysis Block Size** setting and the highest actual frequency depends on the sample rate.

Logarithmic Scale

When this option is activated, each octave occupies the same horizontal space in the display. If you need more resolution in the high frequency range, you may want to turn this off.

Level Ruler

Determines the range of the vertical level ruler in dB.

Normalize Display to 0 dB

If this option is activated, the level display is offset, so that the highest point on the curve is displayed as 0 dB. This is only possible in non-real-time mode.

Optimize Scale

Optimizes the level scale so that only the relevant level range is shown. This is only possible in non-real-time mode.

Display Type

Allows you to toggle the display between curve and bar graph.

Peak Hold Time

Determines for how long the peak level graph remains displayed when the levels drop.

Colors

This is where you select colors for the curves, grid, background, etc.

Presets

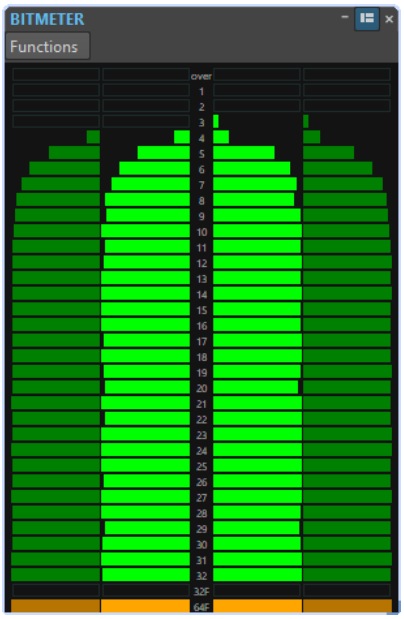
You can save up to 5 **Spectrometer Settings** as presets. This allows you to quickly switch between different **Spectrometer** settings during playback.

RELATED LINKS
Creating Spectrometer Settings Presets on page 338

Bit Meter

The **Bit Meter** shows how many bits are used.

- To open the **Bit Meter**, select **Meters** > **Bit Meter**.



While you may expect the maximum number of bits to be the same as the precision of the audio file, this is not necessarily the case.

As soon as you perform any kind of real-time processing on an audio file, the audio data is treated at a much higher precision (64-bit floating point) to allow for pristine audio quality. The only time when a 16-bit file is played back at 16-bit precision is, for example, if you play it without any fades or effects, and with the master faders set to 0.00.

How to Read the Bit Meter

- The inner meters show how many bits are used.
- The outer meters show how many bits were recently in use.
- The **Over** segment indicates clipping.
- The **32F** segment indicates samples with 32-bit float precision.
- The **64F** segment indicates samples with 64-bit float precision.

When to Use the Bit Meter

The **Bit Meter** is useful in the following situations:

- To check whether dithering is necessary. If you are playing back or mixing down to 16 bits, and the **Bit Meter** shows that more than 16 bits are used, you should apply dithering.
- To see the actual precision of an audio file. For example, even though a file is in 24-bit format, only 16 bits may be used, or a 32-bit file may only use 24 bits.
- To see the bit depth output of a plug-in.
- To see whether samples are 32-bit float, 64-bit float, or any PCM precision between 8 bit and 32 bit at the monitoring point.

RELATED LINKS
Bit Meter Settings on page 341

Bit Meter Settings

In the **Bit Meter Settings** dialog, you can adjust the behavior and display of the **Bit Meter**.

- To open the **Bit Meter Settings** dialog, open the **Bit Meter** window, and select **Functions** > **Settings**.

Colors

You can adjust the colors of the meter segments, grids, background, etc. by clicking the corresponding color buttons.

Bit Hold Time

Determines for how long peak values are held by the outer meters.

Bit Display

Determines how the bits are displayed. In **Intuitive Mode (Proportional to Signal Level)**, the absolute value of the signal is shown. The bar graph goes higher with higher signal levels, similar to a common level meter.

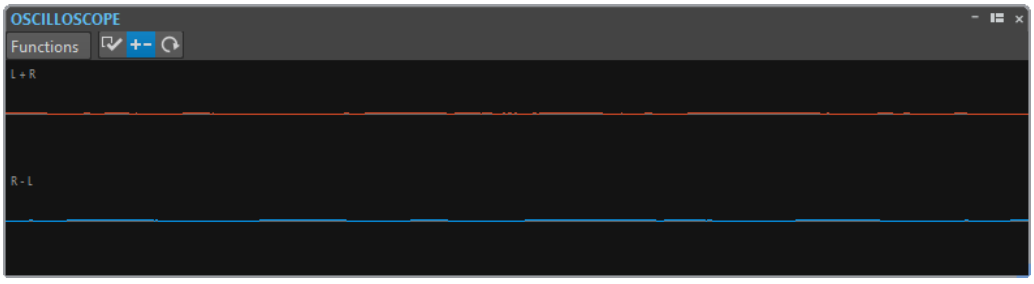
In **True Mode (Signed Samples)**, the meter shows the direct mapping of the bits. However, because the actual values may be negative, there is no intuitive relationship with the level. This mode is useful if you want to check the full range, because all bits are displayed, regardless of the audio signal level.

RELATED LINKS
Bit Meter on page 340

Oscilloscope

The **Oscilloscope** offers a highly magnified view of the waveform around the playback cursor position.

- To open the **Oscilloscope**, select **Meters** > **Oscilloscope**.



If you are analyzing stereo audio, the **Oscilloscope** normally shows the separate levels of the two channels. However, if you activate **Show Sum and Subtraction** on the **Functions** menu, the upper half of the **Oscilloscope** shows the mix of the two channels and the lower half shows the subtraction.

Oscilloscope Settings

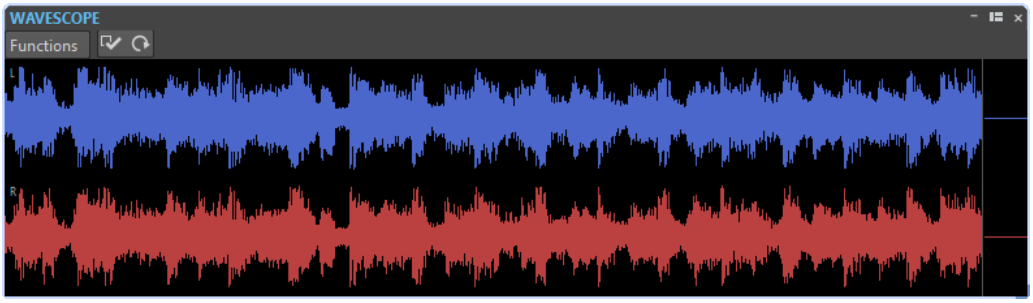
In the **Oscilloscope Settings** dialog, you can adjust the display colors, and activate/deactivate **Auto-Zoom**. When **Auto-Zoom** is activated, the display is optimized so that the highest level reaches the top of the display at all times and even small signals are visible.

- To open the **Oscilloscope Settings** dialog, open the **Oscilloscope** window, and select **Functions** > **Settings**.

Wavescope

The **Wavescope** meter displays a real-time waveform drawing of the audio signal being monitored. It can be useful when recording or rendering a file if **File Rendering** metering monitoring mode is active.

- To open the **Wavescope**, select **Meters** > **Wavescope**.



RELATED LINKS
Wavescope Settings on page 342

Wavescope Settings

In the **Wavescope Settings** dialog, you can edit various color settings for the background, grid, and waveform display, and set the waveform rendering speed and vertical zoom.

- To open the **Wavescope Settings** dialog, open the **Wavescope** window, and select **Functions** > **Settings**.

Colors

Lets you select colors for the waveform graphics.

Waveform Rendering Speed

Determines how much the waveform display is compressed.

If **Same As Live Spectrogram** is activated, the rendering speed of the **Wavescope** display has the same speed as the **Live Spectrogram** display.

Level Zoom

Determines the level zoom. Set a high value if the waveform has a low amplitude.

Clear Waveform when Reaching Right of Pane

If this option is activated, the waveform display is cleared each time the cursor reaches the right end of the display. If this option is deactivated, the new waveform overwrites the previous waveform.

RELATED LINKS
Wavescope on page 342

Writing Operations

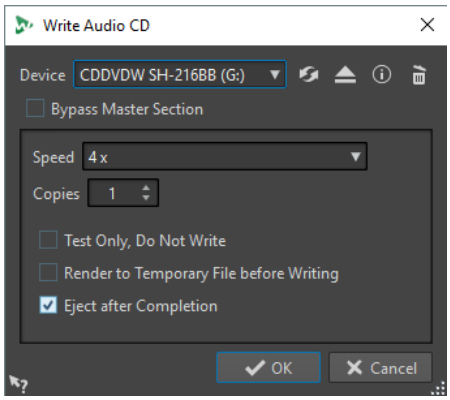
To start the CD writing process, you must have completed all CD writing preparations.

RELATED LINKS
Album Window on page 276
Write Audio Montages on page 345
Write Audio CD Dialog on page 343

Write Audio CD Dialog

In this dialog, you can write your audio montage to an audio CD.

- When you want to write audio montages to an audio CD, open the **CD** window, and select **Functions** > **Write Audio CD**.



Device

Allows you to select the disc writer that you want to use.

NOTE

On the Mac, insert a disc in the drive after opening WaveLab Elements. Otherwise, the drive is under the control of the operating system and is not available for WaveLab Elements.

Refresh

Scans the system for connected optical devices. This is done automatically when this dialog opens. Click the update icon after you insert a new blank disc to update the **Speed** menu.

NOTE

On the Mac, insert a disc in the drive after opening WaveLab Elements. Otherwise, the drive is under the control of the operating system and is not available for WaveLab Elements.

Eject Optical Medium

Ejects the optical medium present in the selected drive.

Device Information

Opens the **Device Information** dialog that shows information about the selected device.

Erase Optical Disc

Erases the optical disc present in the selected drive, provided it is a rewritable disc.

Bypass Master Section

If this option is activated, the audio signal is not processed through the **Master Section** before being written to the disc.

Speed

Allows you to select the writing speed. The highest speed depends on the capabilities of your writing device and the disc present in the device.

Copies

Allows you to enter the number of copies that you want to write.

Test Only, Do Not Write

If this option is activated, clicking **OK** initiates a simulation of writing the CD. If this test is passed, the real write operation will succeed. If the test fails, try again at a lower writing speed.

Render to Temporary File before Writing

If this option is activated, a disk image is created before writing, which eliminates the risk of buffer underruns. This is useful if your project uses many audio plug-ins while writing. It is activated automatically when writing multiple copies. While this option makes the writing operation longer, it allows you to select an higher writing speed.

Eject after Completion

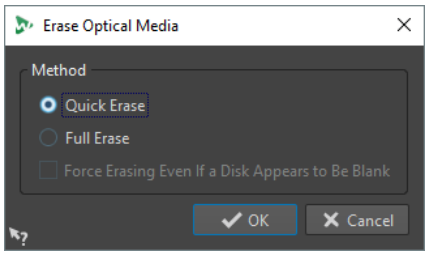
If this option is activated, the disc is ejected after the writing operation.

RELATED LINKS
Writing Operations on page 343
Album Window on page 276

Erase Optical Media Dialog

In this dialog, you can quickly or fully erase an optical disc before writing.

- To open the **Erase Optical Media** dialog, open the **Write Audio CD** dialog, and click the garbage icon.



Quick Erase

Erases the table of contents of the disc.

Full Erase

Erases all parts of the disc.

Force Erasing Even If a Disk Appears to Be Blank

If this option is activated, the disc is erased, even if it is declared as blank. Use this option to make sure that discs that were partially or minimally erased are fully erased.

RELATED LINKS
Write Audio CD Dialog on page 343

Write Audio Montages

You can write audio montages to an audio CD.

RELATED LINKS
Writing an Audio Montage to an Audio CD on page 345

Writing an Audio Montage to an Audio CD

PREREQUISITE

Set up your audio montage, and make the desired adjustments in the **Global Preferences**.

NOTE

On macOS, insert a disc in the drive after opening WaveLab Elements. Otherwise, the drive is controlled by the operating system and is not available for WaveLab Elements.

PROCEDURE

1. Optional: In the **Album** window, select **Functions** > **Check CD Conformity** to check that all settings conform to the Red Book standard.
2. Insert an empty CD into your drive.
3. In the **Album** window, select **Functions** > **Write Audio CD**.
4. From the **Device** pop-up menu, select the writing device that you want to use.
5. If you want to bypass the **Master Section**, activate **Bypass Master Section**.
6. Select the writing speed from the **Speed** pop-up menu.
7. Select the number of copies that you want to write.

   When you want to write more than one copy, it is recommended to activate **Render to Temporary File before Writing**.
8. Optional: Activate one or several of the following options:
   - Activate **Test Only, Do Not Write** if you want to test if the writing operation would be successful.
   - Activate **Render to Temporary File before Writing** if your audio montage uses many plug-ins. This way, the audio data is sent to the CD writer fast enough.
   - Activate **Eject after Completion** if you want the disc to be automatically ejected after the writing operation.
9. Click **OK**.

RESULT

The writing operation starts.

RELATED LINKS
Album Window on page 276
Write Audio CD Dialog on page 343

CD-Text

CD-Text is an extension of the Red Book Compact Disc standard and allows you to save text information such as the name of the album and the titles, the songwriter, the composer, and the disc ID on an audio CD.

The text data is then displayed by CD players that support the CD-Text format. The CD-Text can also be included in the audio CD report.

NOTE

The CD-Text functionality is only available if you have selected the mode **Stereo** in the **Audio Montage Properties**.

RELATED LINKS
Audio Montage Properties on page 215
CD-Text Editor Dialog on page 346

CD-Text Editor Dialog

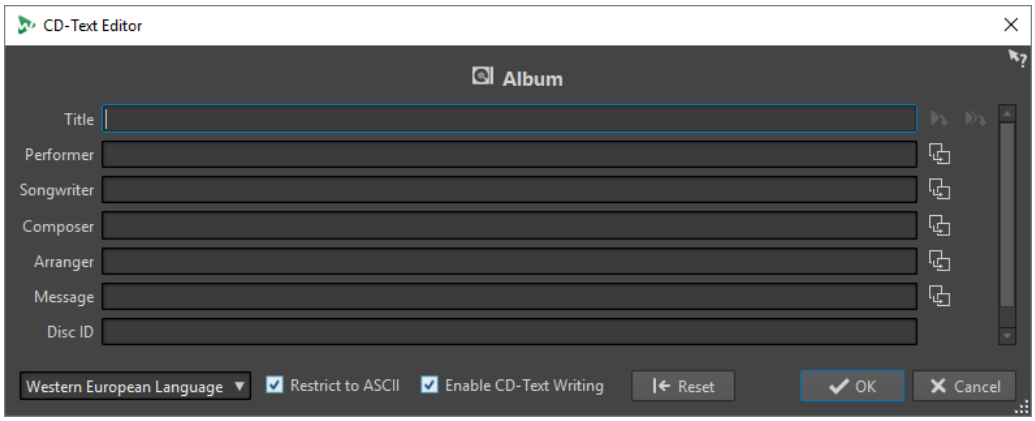
In this dialog, you can specify information such as the name of a CD and its titles, the performer and the songwriter, to be included on the CD as CD-Text.

You can add information about the disc itself and each individual track. This information is entered in the text fields that scroll horizontally. There is one pane of fields for the disc itself and a pane for each track.

NOTE

The CD-Text functionality is only available if you have selected the mode **Stereo** in the **Audio Montage Properties**.

- To open the **CD-Text Editor** dialog, in the **Album** window, select the title for which you want to edit the CD-Text, and select **Functions** > **Edit CD-Text**.



Copy Title Marker Name

Copies the name of the title marker to this field.

Copy Title Start Marker Name to All Titles

Copies the name of each title start marker to the title field of each title.

Copy Text to All Following Titles

Copies the text to all titles that are located after the current one.

Scrollbar

Allows you to navigate across all CD-Texts. The first position corresponds to the whole album, other positions to individual titles.

Language

Allows you to select how characters should be encoded on the CD.

NOTE

If a character is not CD-Text compatible, it is displayed as a **?** character.

Restrict to ASCII

To ensure maximum compatibility with CD players, it is recommended to restrict the characters to ASCII when using the **Western European** option. If this option is activated, and you type a non-compatible character, a **?** character is displayed.

Enable CD-Text Writing

If this option is activated, the CD-Text is written onto the CD.

Reset

Resets the settings to their default value.

RELATED LINKS
CD-Text on page 346
Album Window on page 276
Audio Montage Properties on page 215

Audio CD Formats

Knowing background information on the CD format helps you better understand how to create your own CDs.

RELATED LINKS
Basic CD Formats on page 347

Basic CD Formats

There are a number of different formats for the contents of a CD disc. For example, audio CDs, CD-ROMS, and CD-I. These are all slightly different.

The audio CD specification is called Red Book. It is this standard to which WaveLab Elements conforms.

NOTE

Red Book CD is not a real file format. All the audio on the CD is saved in one big file. This is different from hard disks, for example, where each file is saved separately. Keep in mind that all the audio is in fact one long stream of digital data.

RELATED LINKS
Audio CD Formats on page 347

Types of Events on an Audio CD

There are three types of events that can be used to specify various sections of audio on the CD.

Title start

There can be up to 99 titles on one CD. Each is identified by its start point only.

Title sub-index

On advanced CD players, a title can be divided into sub-indexes (sometimes called only indexes). These are used to identify important positions within a title. There can be 98 sub-indexes in each title. However, because it is difficult and time-consuming to search for and locate to a sub-index, many CD players ignore this information.

Pause

A pause is added before each title. Pauses can be of variable lengths. Some CD players indicate the pauses between titles on their displays.

RELATED LINKS
Audio CD Formats on page 347

Frames, Positions, Small Frames, and Bits

The data on an audio CD is divided into frames.

A frame consists of 588 stereo samples. 75 frames make up one second of audio. This is because 75 x 588 = 44100, and because the sampling frequency of the CD format is 44100 Hz (samples per second), this equals one second of audio. When you specify positions on the CD, in WaveLab Elements, you do it in the format mm:ss:ff (minutes:seconds:frames). The frame values go from 0 to 74, because there are 75 frames to a second.

Technically, there is no way to specify something smaller than a frame on a CD. One effect of this is that if the sample length of a track on the CD does not equal a perfect number of frames, some blank audio must be added at the end. Another effect of this is that when you play the CD, you can never locate to anything closer than a frame. If you need some data in the middle of a frame, you still have to read the whole frame. Again, this is unlike a hard disk, where you can retrieve any byte on the disk, without reading the surrounding data.

But frames are not the smallest block of data on a CD. There is also something called “small frames”. A small frame is a container of 588 bits. 98 small frames together make up one regular frame. In each small frame, there is only room for six stereo samples, which means that a lot of space is left for data other than the actual audio. There is information for encoding, laser synchronization, error correction, and the PQ data to identify the track boundaries. This PQ data is of major importance to anyone who wants to create their own CD, and handled effortless in WaveLab Elements.

RELATED LINKS
Audio CD Formats on page 347

ISRC Codes

International Standard Recording Code (ISRC) is an identification that is only used on CDs intended for commercial distribution. WaveLab Elements allows you to specify an ISRC code for each audio track. These codes are provided by your publisher or clients.

The ISRC code is structured as follows:

- Country Code (2 ASCII characters)
- Owner Code (3 ASCII characters or digits)
- Recording Year (2 digits or ASCII characters)
- Serial Number (5 digits or ASCII characters)

The groups of characters are often presented with hyphens to make them easier to read, but hyphens are not part of the code.

RELATED LINKS
Audio CD Formats on page 347

UPC/EAN Codes

UPC/EAN code – the Universal Product Code/European Article Number, is a catalog number for an item (such as a CD) intended for commercial distribution. On a CD, the code is also called the Media Catalog Number and there is one such code per disc. These codes are provided by your publisher or clients.

UPC is a 12-digit barcode widely used in the USA and Canada. EAN-13 is a 13-digit barcoding standard (12 + a checksum digit) defined by the GS1 standards organization. EAN is now renamed as International Article Number, but the abbreviation has been retained.

RELATED LINKS
Audio CD Formats on page 347

Pre-Emphasis

CD pre-emphasis refers to process designed to increase, within a band of frequencies, the magnitude of some (usually higher) frequencies compared to the magnitude of other (usually lower) frequencies in order to improve the overall signal-to-noise ratio by lowering the frequencies during reproduction.

Pre-emphasis is commonly used in telecommunications, digital audio recording, record cutting and in FM broadcasting transmissions. The presence of pre-emphasis on a track is sometimes indicated by a checkmark in the **Pre-Emphasis** column on the **Import Audio CD** dialog.

RELATED LINKS
Audio CD Formats on page 347
Import Audio CD Dialog on page 365

Disc-At-Once – Writing CD-Rs for Duplication Into Real CDs

WaveLab Elements only writes audio CDs in Disc-at-Once mode.

- If you want to create a CD-R to use as a master for a real CD production, you must write the CD-R in Disc-At-Once mode. In this mode, the entire disc is written in one pass. There are other ways of writing a CD, namely Track-At-Once and Multi-Session. If you use these writing formats, the link blocks created to link the various recording passes together will be recognized as uncorrectable errors when you try to master from the CD-R. These links can also result in clicks when playing back the CD.
- Disc-At-Once mode provides more flexibility when specifying pause lengths between tracks.
- Disc-At-Once is the only mode that supports sub-indexes.

RELATED LINKS
Audio CD Formats on page 347

Writing On The Fly vs. CD Images

WaveLab Elements writes a CD on the fly, that is, it does not create a CD image before writing. This method makes writing CDs/DVDs faster and requires less disc space. However, you can also create an image prior to writing a CD/DVD.

Loops

Looping a sound allows you to repeat a section of the sample indefinitely in order to create a sustain of unlimited length. Instrumental sounds in samplers rely on looping organ sounds, for example.

In WaveLab Elements, loops are defined by loop markers or the audio selection. Loop markers are added, moved, and edited just as any other type of marker.

To ensure that you find a good loop point, note the following:

- A long loop usually sounds the most natural. However, if the sound does not have a stable section in the middle (an even sustain part), it might be hard to find a good long loop.

  For example, a piano note which decays continuously is hard to loop because the start point of the loop is louder than the end point. A flute is much simpler, because the sound in the sustain section is very stable.
- A loop should start shortly after the attack, that is, when the sound has stabilized to a sustaining note.
- If you set up a long loop, it should end as late as possible but before the sound starts decaying to silence.
- Short loops are difficult to position within the sound. Try to position them near the end.

NOTE

More information about looping in general, and the exact capabilities of your sampler in particular can be found in the manual of the sampler.

RELATED LINKS

Creating Loops on page 351
Loop Refinement on page 352

Creating Loops

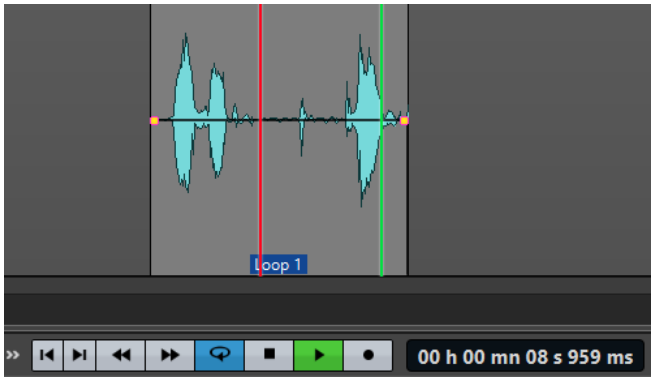
You can loop the audio selection or use loop markers and tweak the loop during playback.

PROCEDURE

1. In the **Audio Editor**, select the audio section that you want to loop.
2. Right-click the audio selection and select **Create Loop from Selection**.
3. On the transport bar, activate **Loop**.
4. Right-click **Play Audio Range** and activate **Region Between Marker Pairs**.
5. Right-click **Loop** and select how often you want the audio to loop in the **Loop Mode** menu. The following options are available:
   - **Play Continuously**
   - **Play Twice**
   - **Play 3 Times**
   - **Play 4 Times**

- **Play 5 Times**

6. Play back the loop.



The audio selection is looped.

7. Optional: Adjust the position of the markers or the left and right selection edges to tweak the loop.
8. Optional: Adjust the left and right selection edges to tweak the loop.

AFTER COMPLETING THIS TASK

Creating a loop this way does not necessarily lead to good loops, because clicks or abrupt changes in timbre at the turning point can occur.

We suggest that you use this method for setting up the basic length of the loop and then use the **Loop Tweaker** and **Loop Tone Uniformizer** for optimizing.

RELATED LINKS

Looping Audio Which Is Not Very Well Suited for Looping on page 360
Loop Refinement on page 352
Loop Tweaker Dialog on page 353
Loop Tone Uniformizer Dialog on page 360

Loop Refinement

A basic loop can contain clicks or abrupt changes in timbre at the turning point. To create a seamless loop, you can refine the loop. Use the **Loop Tweaker** dialog to tweak an existing loop selection so that it loops perfectly or use it to create a loop from material which is not perfectly suited to create a loop.

You can automatically detect loop points by scanning the area between two loop markers. You can specify parameters that determine how accurate the program should be when suggesting loop points.

If the automatic search for loop points is not successful, you can process the waveform to allow for smoother loops by crossfading areas of the waveform close to the loop start and end points.

RELATED LINKS

Loop Tweaker Dialog on page 353
Refining Loops on page 357

Loop Tweaker Dialog

This dialog allows you to adjust loop start and end points, and to crossfade loop boundaries. The loop start and end points are specified via loop start and end markers.

If more than one loop marker pair is available in the audio file, click in the area between a loop marker pair to tweak the corresponding start and end points.

- To open the **Loop Tweaker** dialog, open the **Audio Editor**. Select the **Process** tab. In the **Loop** section, select **Tweaker**.

Loop Points Adjustment Tab

This tab allows you to manually refine a loop selection by dragging the waveform to the left/right or by using the automatic search buttons to find the nearest suitable loop point. The aim is to align the waveforms so that they meet at a zero-crossing point, where the waveforms match as closely as possible.

NOTE

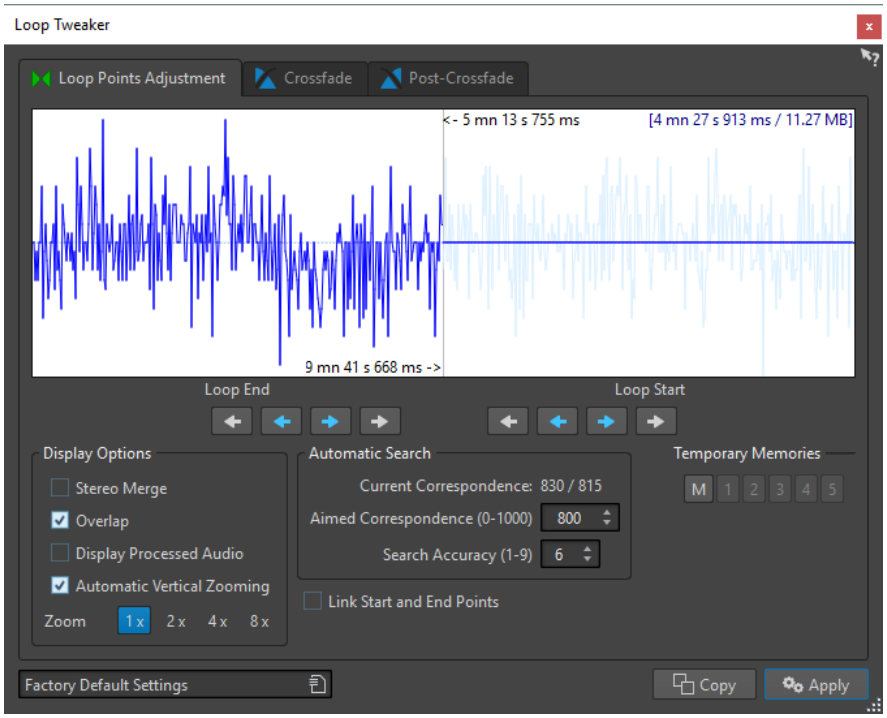
When you adjust your loop start and end points in the dialog, the start and end loop markers in the main waveform window adjust accordingly. This movement may not be visible, depending on how much you move the markers and on the zoom factor that you have selected.

TIP

- To hear the difference when you adjust the loop markers, activate **Loop** on the transport bar during playback.
- If you are not using a crossfade or post-crossfade, you do not have to click **Apply** when tweaking loop points.
- You can leave the **Loop Tweaker** dialog open and manually adjust the position of the markers in the main waveform windows.

NOTE

If you use the **Loop Tweaker** feature on surround audio files, only the L/R channels are displayed and used to match the waveforms, but all channels are processed.



The top of this dialog shows the beginning and the end of the waveform between the loop markers. The bottom of this dialog offers the following options:

Loop End – Inner Arrows

Moves the loop end points to the left/right.

Loop End – Outer Arrows

Invokes an automatic search for the nearest suitable loop point to the left/right of the loop end point and moves the end point to that position.

Loop Start – Inner Arrows

Moves the loop start points to the left/right.

Loop Start – Outer Arrows

Invokes an automatic search for the nearest suitable loop point to the left/right of the loop start point, and moves the start point to that position.

Stereo Merge

If this option is activated for a stereo file, the two waveforms are overlaid. Otherwise, they are shown in two separate sections.

Overlap

If this option is activated, the waveforms of both halves are continued in the other half. This shows how the waveform looks like right before and after the loop.

Display Processed Audio

This option only makes sense after you have applied a crossfade. If this option is activated, a preview of the waveform after crossfading is displayed. If this option is deactivated, you see what the waveform looks like without crossfading.

Automatic Vertical Zooming

If this option is activated, the vertical magnification is adjusted so that the waveform always fills the entire display vertically.

Zoom

Sets the zoom factor.

Current Correspondence

Indicates how well the waveforms near the loop points match one another. The left value estimates the similarity across several wave cycles, while the right value estimates the similarity of the samples near the loop points. The higher the values, the better the match.

Aimed Correspondence (0-1000)

Sets up the automatic search for suitable loop points. This defines how well the found section must resemble the section to which it is compared, in order to be considered a match. The higher the value, the more precise the resemblance must be. A value of 1000 requires a 100% match.

Search Accuracy (1-9)

Determines how many samples are to be taken into account by the auto-find analysis. Higher values result in greater accuracy, but also in longer processing times.

Link Start and End Points

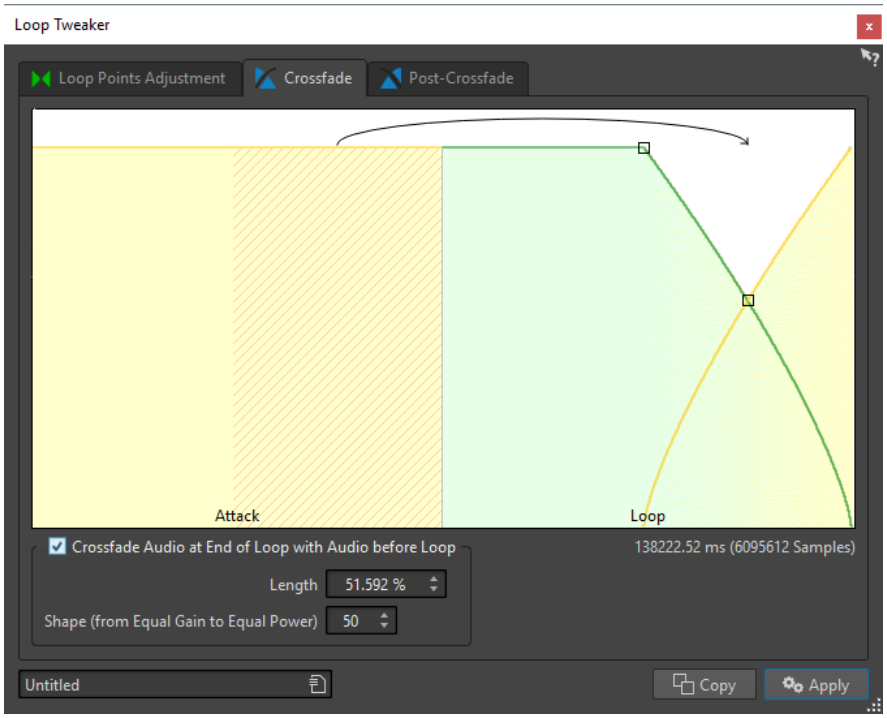
If this option is activated, both the start and end points move simultaneously when you manually adjust the loop points. As a result, the loop length stays exactly the same, and the entire loop moves.

Temporary Memories

Allows you to save up to five different sets of loop points which you can later recall. This allows you to try out different loop settings. To save a set, click the **M** button, then one of the buttons 1-5.

Crossfade Tab

This tab allows you to apply a crossfade between the audio at the end of a loop and the audio at the beginning of the loop. This can be useful to smooth the transition between the end of a loop and its beginning, especially when you use material that is not perfectly suited to create a loop. Use the envelope drag points or value sliders to adjust the crossfade envelope. Click **Apply** to create the crossfade.



Crossfade Audio at End of Loop with Audio before Loop

To enable crossfading, activate this checkbox. The crossfade is applied when you click **Apply**.

Length

Determines the length of the crossfade. Generally, you want the crossfade to be as short as possible, with an acceptable result.

NOTE

- Using a long crossfade smoothens the loop. However, more of the waveform is processed, which changes its character.
- A shorter crossfade affects the sound less, but the loop is not as smooth.

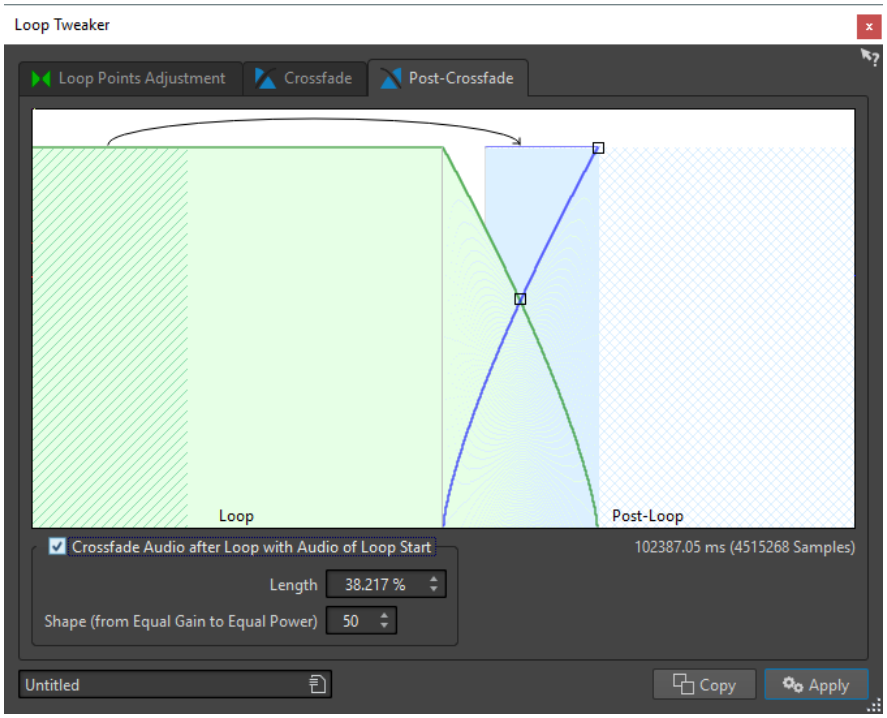
Shape (from Equal Gain to Equal Power)

Determines the shape of the crossfade. Use low values for simple sounds and high values for complex sounds.

Post-Crossfade Tab

Post-crossfading means crossfading the loop back into the audio after the end of the loop so that there is no glitch when playback continues after the loop. This is done by mixing a copy of the loop back into the audio.

This tab allows you to apply a crossfade at the end of the loop by mixing a copy of the loop back into the audio. Use the envelope drag points or value sliders to adjust the crossfade envelope. Click **Apply** to create the post crossfade.



Crossfade Audio after Loop with Audio of Loop Start

To enable crossfading, activate this checkbox. The crossfade is applied when you click **Apply**.

Length

Determines the length of the crossfade. Generally, you want the post-crossfade to be as short as possible, with an acceptable result.

NOTE

- Using a long post-crossfade smoothens the loop. However, more of the waveform is processed, which changes its character.
- A shorter post-crossfade affects the sound to a lesser degree, but the loop is not as smooth.

Shape (from Equal Gain to Equal Power)

Determines the shape of the post-crossfade. Use low values for simple sounds and high values for complex sounds.

Refining Loops

You can refine loops using the **Loop Tweaker** dialog.

PROCEDURE

1. In the **Audio Editor**, create a basic loop using a pair of loop markers.
2. Click between the loop start and loop end marker of the loop that you want to refine.
3. Select the **Process** tab.
4. In the **Loop** section, click **Tweaker**.
5. In the **Loop Tweaker** dialog, refine your loop.
6. Click **Apply**.

RELATED LINKS
Creating Loops on page 351
Loop Tweaker Dialog on page 353

Moving Loop Points Manually

If your loop still has glitches or bumps at the transition points, you can use the **Loop Tweaker** dialog to move the points in small steps to remove the glitch.

This is similar to moving the loop points in the wave display, but with a visual feedback to facilitate finding good loop points.

There are two ways of moving the loop points manually on the **Loop Points Adjustment** tab in the **Loop Tweaker** dialog:

- Drag the waveform to the left and right.
- Use the blue arrows below the waveform to nudge the audio to the left and right. Each click moves the loop point by a single sample.

The following applies when moving the loop points manually:

- To move the end point to a later or earlier position, move the left part of the display.
- To move the start point to a later or earlier position, move the right part of the display.
- To move the start and end points simultaneously, activate **Link Start and End Points**. This way, when adjusting a loop point, the length of the loop stays the same, but the entire loop is moved.
- You can also adjust the loop markers in the wave window.

Automatically Detecting Good Loop Points

The **Loop Tweaker** dialog can automatically search for good loop points.

PROCEDURE

1. In the **Audio Editor**, select the loop that you want to refine by clicking between its loop start and loop end marker.
2. Select the **Process** tab.
3. In the **Loop** section, click **Tweaker**.
4. In the **Loop Tweaker** dialog, on the **Loop Points Adjustment** tab, make sure that **Link Start and End Points** is deactivated.
5. In the **Automatic Search** section, specify the **Aimed Correspondence** and the **Search Accuracy**.
6. Click the white arrow buttons to start the automatic search for a good loop point.

   WaveLab Elements scans from the current point forwards or backwards, until it finds a point that matches. You can stop at any time by clicking the right mouse button. The program then jumps back to the best found match.
7. Check the loop by playing it back.
8. Optional: If you think there might be a better loop point, continue with the search.

Temporarily Saving Loop Points

Temporarily saving and restoring loop points allows you to compare different loop settings.

PREREQUISITE

Set up a basic loop and open the **Loop Tweaker** dialog.

NOTE

- There are five slots for temporarily saving loop points for each wave window and montage window. If you have several sets of loops in your file, you must be careful to not recall the wrong set.
- Only loop positions are temporarily saved.

PROCEDURE

1. On the **Loop Points Adjustment** tab, in the **Temporary Memories** section, click **M**.
2. Select one of the five memory slots.

Crossfades in Loops

Crossfading is useful to create smooth transitions between the end of a loop and its beginning, especially when using material that is not perfectly suited to create a loop.

Sometimes it is impossible to find a loop that does not cause any glitches. This is especially true for stereo material, where you might be able to find a perfect candidate for only one channel.

In this case crossfading smears the material around the end loop point so that it loops perfectly. This is achieved by mixing material from before the loop start with material that is located before the loop end.

NOTE

This technique alters the waveform and therefore changes the sound.

Creating a Crossfade

PROCEDURE

1. In the **Audio Editor**, create as good a loop as you can.
2. Select the **Process** tab.
3. In the **Loop** section, click **Tweaker**.
4. In the **Loop Tweaker** dialog, decide if you want to create a crossfade or a post-crossfade:
   - If you want to create a crossfade, click the **Crossfade** tab.
   - If you want to create a post-crossfade, click the **Post-Crossfade** tab.
5. Make sure that **Crossfade Audio at End of Loop with Audio before Loop** (**Crossfade** tab) or **Crossfade Audio after Loop with Audio of Loop Start** (**Post-Crossfade** tab) is activated.
6. Specify the length for the crossfade either by dragging the length handle or by adjusting the **Length** value below the graph.
7. Specify the crossfade shape by dragging the shape handle or by adjusting the **Shape (from Equal Gain to Equal Power)** value.

8. Click **Apply**.

   The sound is processed.

   NOTE

   Do not move the loop points after you have performed a crossfade. The waveform has been processed specifically for the current loop settings.

AFTER COMPLETING THIS TASK

- You can check the crossfade visually by opening the **Loop Points Adjustment** tab and activating **Display Processed Audio**. If this is activated, the display shows a preview of the crossfaded waveform. If this option is deactivated, the display shows the original waveform. Switching back and forth allows you to compare the two.

Post-Crossfades

Post-crossfading means crossfading the loop back into the audio after the end of the loop so that there is not glitch when playback continues after the loop. This is done by mixing a copy of the loop back into the audio.

The post-crossfade can be set up on the **Post-Crossfade** tab of the **Loop Tweaker** dialog.

The post-crossfade analyzes the part of the waveform that occurs just after the loop start and processes a specific area that begins at the end of the loop. The length parameter adjusts the size of this area. Everything else is identical with regular crossfading.

Looping Audio Which Is Not Very Well Suited for Looping

Sounds that constantly decay in level or continuously change in timbre are difficult to loop. The **Loop Tone Uniformizer** dialog allows you to create loops from these kinds of sounds.

The **Loop Tone Uniformizer** applies processing to the sound that evens out changes in level and timbral characteristics in order for a sound to loop properly. For example, this is useful for creating looped samples for a softsynth or hardware sampler.

The **Loop Tone Uniformizer** includes a crossfade option allowing you to fade in the original sound into the processed sections when playback approaches the loop start.

To use the **Loop Tone Uniformizer**, you must have created a loop by setting a pair of loop markers. The original length of the loop is not changed.

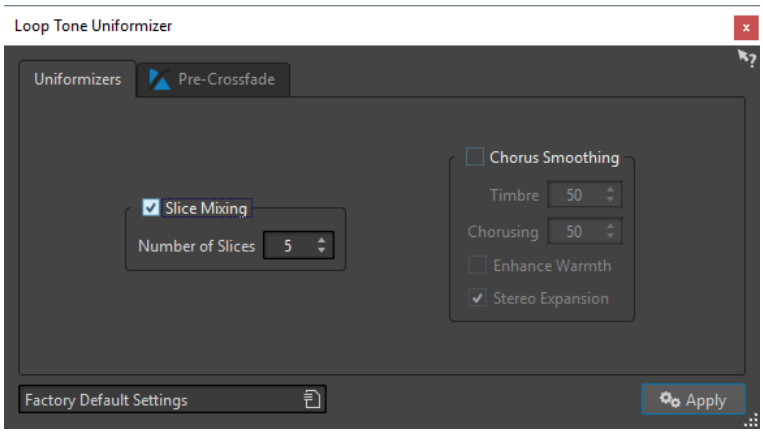
Loop Tone Uniformizer Dialog

This dialog allows you to create sounds that loop from audio which is not very well suited for looping. These are normally sounds that constantly decay in level or continuously change in timbre.

- To open the **Loop Tone Uniformizer** dialog, open the **Audio Editor**, select the **Process** tab, and in the **Loop** section, select **Tone Uniformizer**.

Uniformizers Tab

This tab allows you to specify the methods that are used to even out the sound that you want to loop.



Slice Mixing

Splits the loop in slices, which are then mixed together to uniformize the sound.

For slice mixing, you need to determine the number of slices. Only experimentation can tell how many slices are needed, but generally, the more slices you have, the more natural the sound. However, the program puts a restriction on the number of slices, so that each one is never shorter than 20 ms.

For example, if you specify eight slices, the loop is split into eight sections of equal length. These sections are then overlapped and mixed together as one sound which is repeated eight times. This new piece of audio replaces all audio inside the loop so that no harmonic cancellation due to phase offsets occurs.

Slice Mixing – Number of Slices

The more slices you use, the more the sound changes.

Chorus Smoothing

This processor uses a phase vocoding method to filter the harmonics. This method is recommended for looping ensemble and choir sounds and can drastically change the timbre.

Chorus Smoothing – Timbre

Governs the amount by which the timbral characteristics of the sample should be evened out. The higher the value, the more pronounced the effect.

Chorus Smoothing – Chorusing

Determines the depth of the chorus effect.

Chorus Smoothing – Enhance Warmth

Creates a smoother, warmer sounding effect.

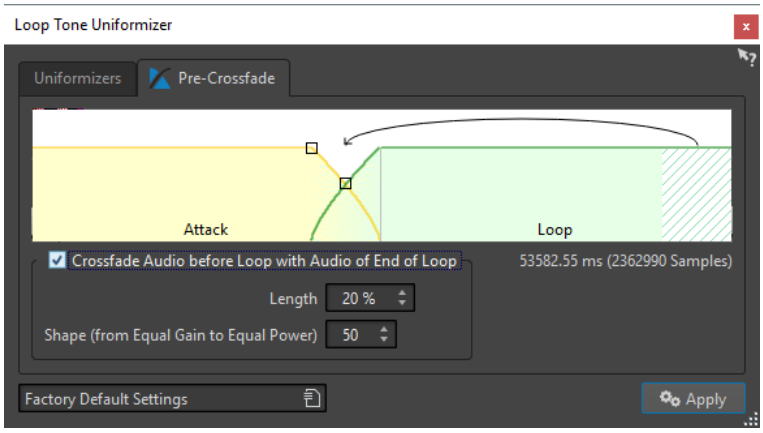
Chorus Smoothing – Stereo Expansion

Increases the width of the sample in the stereo sound image.

Pre-Crossfade Tab

This tab allows you to crossfade the end of the loop with the start of the newly processed section so that the transition into the looped section is smoother during playback. Use the envelope drag points or value sliders to adjust the crossfade.

You need to use this feature because the **Loop Tone Uniformizer** changes the timbre only inside the loop. This means that the transition into the loop is not as smooth as expected unless you apply crossfading.



Crossfade Audio before Loop with Audio of End of Loop

Enables crossfading, which is applied when you click **Apply**.

Length

Determines the length of the crossfade. Generally, you want the post-crossfade to be as short as possible, with an acceptable result.

- A long crossfade produces a smoother loop. However, more of the waveform is processed, which changes its character.
- A shorter crossfade affects the sound less, but the loop is not as smooth.

Shape (from Equal Gain to Equal Power)

Determines the shape of the crossfade. Use low values for simple sounds and high values for complex sounds.

Looping Seemingly Unloopable Audio

PROCEDURE

1. In the **Audio Editor**, create a basic loop using a pair of loop markers.
2. Click between the loop start and loop end marker of the loop that you want to refine.
3. Select the **Process** tab.
4. In the **Loop** section, click **Tone Uniformizer**.
5. In the **Loop Tone Uniformizer** dialog, make sure that either **Slice Mixing** and/or **Chorus Smoothing** is activated, and make adjustments as required.
6. Optional: Select the **Pre-Crossfade** tab, and set up a crossfade.
7. Click **Apply**.

   The sound is processed. Each time that you click **Apply**, a new loop is defined. This allows you to try out different settings quickly.

   NOTE

   Do not move the loop points after you have performed a crossfade. The waveform has been processed specifically for the current loop settings.

AFTER COMPLETING THIS TASK

After using the **Loop Tone Uniformizer** dialog, the transition between the end of the loop and the end of the file might not sound very natural. This can be fixed by creating a post-crossfade using the **Loop Tweaker** dialog.

RELATED LINKS
Loop Tone Uniformizer Dialog on page 360
Loop Tweaker Dialog on page 353

Sample Attributes

Sample attributes allow you to define settings for an audio sample before loading it into a hardware or software sampler.

Sample attributes do not process the sample, they just provide the file properties that the receiving sampler can use. This includes information about the pitch of the sample, which can be detected automatically, the key range that the sample should span, and the velocity range to occupy. For WAV and AIFF files, this information is saved in the header of the file. By default, there are no sample attributes in an audio file.

Editing Sample Attributes

PROCEDURE

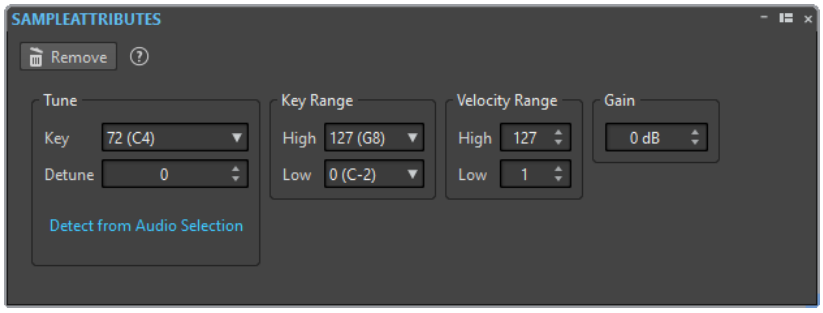
1. Open the **Audio Editor**.
2. Select **Tool Windows** > **Sample Attributes**.
3. In the **Sample Attributes** window, click **Create**.
4. Optional: If you want to automatically detect the pitch of an audio selection, select an audio range, and select **Detect from Audio Selection**.
5. Specify the sample attributes.
6. Save the audio file to save the sample attributes settings in the audio file.

   The sample attribute is only saved in WAV and AIFF files.

Sample Attributes Window

In this window, you can create sample attributes for an audio sample.

- To open the **Sample Attributes** window, open the **Audio Editor** and select **Tool Windows** > **Sample Attributes**.



Create/Remove

Creates/Removes sample attributes for the active audio file.

Tune – Key

Specifies which key plays back the sound at its basic pitch.

Tune – Detune

Specifies whether the sample should be played back at a slightly different pitch. The range is ±50% of a semitone, which translates into a quarter tone in each direction.

Detect from Audio Selection

Detects the pitch from an audio selection. Make sure that the audio selection contains a clearly defined pitch.

Key Range – High/Low

Specifies the key range for the sample if the sample is part of a multi-sample key map.

Velocity Range – High/Low

Specifies the velocity range for the sample if the sample is part of a multi-sample key map with velocity-switchable samples.

Gain

For WAV and AIFF files, you can specify the sample attribute gain. This option does not affect the playback volume.

Audio CD Import

You can read titles from regular CDs and save them as a digital copy in any audio format on your hard disk.

Although WaveLab Elements supports a large number of CD drives, there are some restrictions you need to be aware of:

- There are a number of different protocols for retrieving audio from a CD-ROM/CD-R drive. WaveLab Elements supports as many of these methods as possible, but there are no guarantees that it works with any particular drive. This applies to CD-Text and ISRC.
- Observe and respect any copyright notices on the CDs from which you are importing audio.

When importing titles, they are named “Title XX” by default, where XX is a number starting at 01. The numbering scheme can be changed.

NOTE

Importing titles from an audio CD is technically more complicated than reading files from a CD-ROM or hard disk, because audio sectors can be hard to detect. Some CDs which do not conform completely to the CD standard may cause problems, especially when they are copy protected.

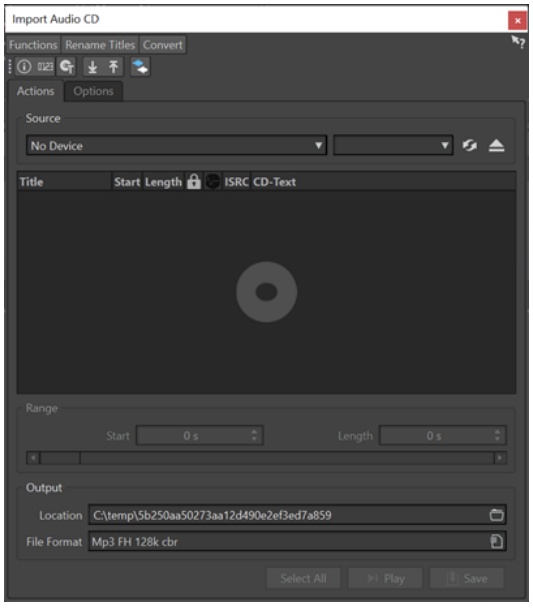
RELATED LINKS

Importing Audio from an Audio CD on page 368

Import Audio CD Dialog

In this dialog, you can import one or multiple titles from an audio CD.

- To open the **Import Audio CD** dialog, select **File** > **Import**, and click **Audio CD**.



Functions Menu

CD Info

Displays the CD length and the UPC/EAN code, if available.

Extract ISRC Codes

Reads the ISRC codes and displays them in the list of titles. Depending on your CD drive, this can take a while.

Examine CD-Text

Opens the **CD-Text** dialog where you can view the CD-Text. Not all CD drives support CD-Text.

Extract CD-Text

Extracts the CD-Text and displays a summary in the list of titles.

Rename Titles Menu

Name

Renames the titles according to the selected renaming scheme.

Search Track Names on the Internet (gnudb)

Searches title names from an Internet database. If the album is found, the list of titles is updated.

Submit Track Names to the Internet (gnudb)

Submits the information about the album to the gnudb database of CD information.

Convert Menu

Convert All CD Tracks to Audio Montage

Extracts all titles and uses them to create an audio montage.

Convert Selected CD Tracks to Audio Montage

Extracts the selected titles and uses them to create an audio montage.

Actions Tab

Source

Select the CD drive from which you want to import audio.

Speed

Allows you to set the writing speed. The highest speed depends on your writing device and on the disc present in the device.

Refresh

If you insert a CD while the **Import Audio CD** dialog is open, you need to click this button to show the contents of that CD in the list.

Eject Optical Medium

Ejects the medium from the selected drive.

Title List

Shows the titles on the CD.

Range – Start/Length

If you want to import only a section of a title, use the **Start** and **Length** fields to define a start point and length.

Output – Location

Allows you to set the output location.

Output – File Format

Allows you to set the output file format.

Select All

Selects all titles in the list of titles.

Play

Plays back the selected title.

Options Tab

Trim Silence

If this option is activated, silence between imported titles is removed. Only digital silence is removed, that is, samples with a zero level.

Automatically Refresh on CD Change

If this option is activated, WaveLab Elements checks for the presence of a new CD in the drive several times a second. If a new CD is found, the title list display is refreshed.

Automatically Extract ISRC Codes

If this option is activated, ISRC codes are automatically extracted when a CD is inserted.

Automatically Extract CD-Text

If this option is activated, CD-Text is automatically extracted when a CD is inserted.

Automatically Search Track Names on the Internet

If this option is activated, title names are automatically searched on the Internet when a CD is inserted.

Grab Pause before First Track (If Available)

If this option is activated, when a section of audio is located before the first title, it is extracted together with the first title. This way, you can import hidden bonus titles.

Use a Japanese CD-Text Decoder

If this option is activated, CD-Text is interpreted as Japanese the next time it is extracted.

Create Peak File

If this option is activated, a peak file is created together with the rendered files.

Show Times with CD Frame Units

If this option is activated, times are shown in CD frame units. There are 75 CD frames per second.

Play through Master Section

If this button is activated, the **Master Section** is ignored. If the button is deactivated, the audio is played through the **Master Section**.

Convert Titles and CD-Text to Metadata

If this option is activated when importing titles into an audio format supporting metadata (for example, MP3 and WMA), the names of the titles and the CD-Text are automatically added to the file header.

Ultra-Safe Mode (Slow)

If this option is activated, each title is read several times until the same result is found (checksums are used). Specify the number of times that a title must be read with the same result before it is saved to disk.

Read Audio Before and After Titles

You can ensure that titles are imported in their entirety by defining how much audio should be read before and after each title.

RELATED LINKS
Audio CD Import on page 365

Importing Audio from an Audio CD

You can import audio from audio CDs into WaveLab Elements projects.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.
2. Select **File** > **Import**.
3. Click **Audio CD**.
4. In the **Import Audio CD** dialog, in the **Source** section, select the drive from which you want to read, and specify the read speed.
5. Optional: Rename the files and adjust the numbering scheme.

   The titles must have unique names if you want to import them all.
6. Optional: On the **Options** tab, in the **Read Audio Before and After Titles** section, define how much audio should be read before and after each title.
7. In the title list, select the titles that you want to import.
8. Optional: If you have only selected one file, in the **Range** section, you can define a **Start** and **Length**, to import just a part of the title.
9. In the **Output** section, click the folder icon, and select an output location.

   You can also drag one or more titles onto an audio montage track.
10. In the **Output** section, click the file format field, and select a file format for the imported audio files.
11. Click **Save**.

RESULT

The titles are imported to the specified location.

RELATED LINKS
Import Audio CD Dialog on page 365

Searching Title Names on the Internet

You can search for information about your CDs using the gnudb database of CD information.

PREREQUISITE

You must be connected to the Internet to use the gnudb function.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.
2. Select **File** > **Import**.
3. Click **Audio CD**.
4. In the **Import Audio CD** dialog, select **Rename Titles** > **Search Title Names on the Internet (gnudb)**.

RELATED LINKS
Import Audio CD Dialog on page 365

Submitting Title Names to the Internet

You can submit information about an audio CD to the gnudb database of CD information.

PREREQUISITE

You must be connected to the Internet to use the gnudb function.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.
2. Select **File** > **Import**.
3. Click **Audio CD**.
4. In the **Import Audio CD** dialog, rename each title.
5. Select **Rename Titles** > **Submit Title Names to the Internet (gnudb)**.
6. In the **Submit CD Information** dialog, fill out the text fields and enter an email address.

   NOTE

   You require an email address to report submission errors. It will not be saved.

   The gnudb database does not offer the possibility to enter different artists or genres for individual titles. If the artists differ from title to title, you can write the name of the title in the following way: **Title/Artist**.
7. Click **OK**.

RELATED LINKS
Import Audio CD Dialog on page 365

Ultra-Safe Mode

Sometimes, a small bit of a title is not properly retrieved, which results in unpleasant clicks and pops in the audio. This depends on the quality of your CD drive. To solve this issue, you can activate the **Ultra-Safe Mode** in the **Import Audio CD** dialog options.

If this option is activated, you can specify how many times each title must be read with the same result, before it is saved to disk.

RELATED LINKS
Import Audio CD Dialog on page 365

Converting Titles of an Audio CD to an Audio Montage

You can convert titles of an audio CD to an audio montage.

PROCEDURE

1. Insert a CD into the CD-ROM/CD-R device.
2. Select **File** > **Import**.
3. Click **Audio CD**.
4. Optional: In the **Import Audio CD** dialog, on the **Options** tab, select which information you want to extract from the Audio CD when converting.
5. Decide whether to convert only selected titles or all titles.
   - To convert only selected titles, select **Convert** > **Convert Selected CD Tracks to Audio Montage**.
   - To convert all titles, select **Convert** > **Convert All CD Tracks to Audio Montage**.

RESULT

When the conversion is finished, the imported files open in the **Audio Montage** window.

RELATED LINKS
Import Audio CD Dialog on page 365

Video

WaveLab Elements allows you to add video files to your audio montage. You can play back video files in various formats from within WaveLab Elements, extract the audio from a video file, and edit your audio alongside the video.

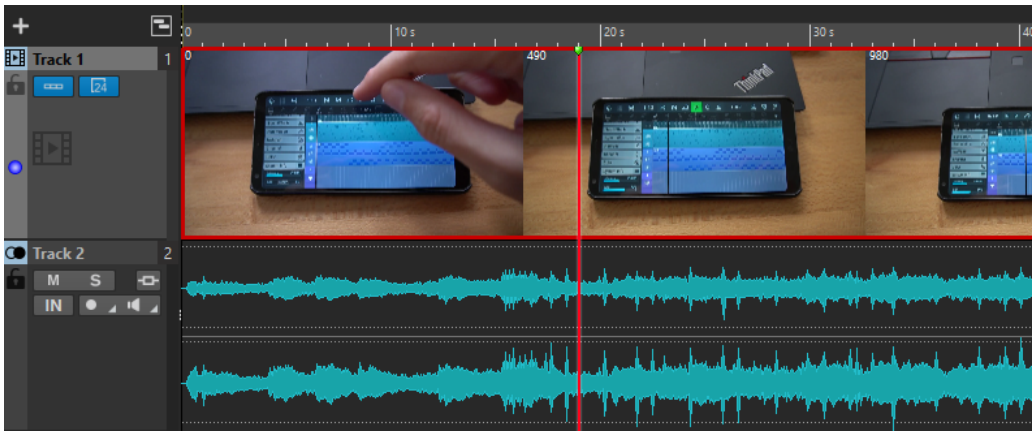
RELATED LINKS
Video File Compatibility on page 376
Video Track on page 371
Video Window on page 375

Video Track

The video track in the audio montage allows you to add video files to your audio montage.

The imported video file is displayed as a clip on the video track. Thumbnails represent the frames in the film. The audio file that contains the audio for the video is positioned on a new audio montage track below the video track.

You can import multiple video files of different formats on the same video track. There can only be one video track per audio montage.



RELATED LINKS
Edit Audio Extracted from Video on page 373
Adding Video Tracks on page 371
Inserting Video Files into Existing Audio Montages on page 372
Importing Video Files into a New Audio Montage on page 372
Tracks on page 219

Adding Video Tracks

You can add one video track per audio montage.

PROCEDURE

- In the **Audio Montage** window, do one of the following:
  - Click **+** at the top of the track control area and select **Video Track**.

- Right-click the track control area to open the **Track** pop-up menu and select **Add Track** > **Video Track**.

RESULT

By default, the new track is added below the active track. If you want to place it above the active track, press **Ctrl/Cmd** when adding the new track.

RELATED LINKS

Track Control Area on page 196

Inserting Video Files into Existing Audio Montages

You can insert video files to your audio montage.

CHOICES

- In the **Audio Montage** window, select the **Insert** tab and click **Video File** in the **Import** section. Select the video file that you want to insert and click **Open**.

  The video track is automatically created.
- Drag the video file that you want to insert from the **File** window onto the video track.
- Drag the video file that you want to insert from the File Explorer/macOS Finder onto the video track.

RESULT

The video file is inserted into the audio montage.

NOTE

If the sample rate of the included audio does not match the sample rate of your audio montage, the **Mismatched Sample Rates** dialog opens. This dialog allows you to create a resampled copy of the audio.

RELATED LINKS

Adding Video Tracks on page 371
Importing Video Files into a New Audio Montage on page 372
Mismatched Sample Rates Dialog on page 228

Importing Video Files into a New Audio Montage

You can import video files as video clips into a new audio montage.

PROCEDURE

1. Select **File** > **Import** > **Video**.
2. Select the video file that you want to import and click **Import**.

RESULT

The imported video file is displayed as a clip on the video track. Thumbnails represent the frames in the film. The audio file that contains the audio for the video is placed on a new audio montage track below the video track.

Edit Audio Extracted from Video

You can edit the audio track of a video track. When you import a video file, its audio is extracted and placed on a new audio montage track below the video track.

After editing the audio from the video, you can render the audio montage to replace the original audio with the edited audio.

To find out which embedded audio formats are supported, refer to the Steinberg Support on the Steinberg web site.

RELATED LINKS
Replacing Audio in Video on page 373

Replacing Audio in Video

You can replace the audio track of a video with another audio file or an edited version of the original audio. You can replace the whole audio track or parts of it.

PREREQUISITE

You have added the video file that contains the audio to be replaced to your audio montage.

PROCEDURE

1. Do one of the following:
   - If you want to replace the audio of the video with an edited version of the original audio, edit the original audio file.
   - If you want to replace the original audio of the video with other audio, delete the audio on the original audio track and add the new audio.

   When you have finished editing the audio, you can render the audio montage to create a video with the new audio.
2. Select the video track.
3. Select the **Render** tab.
4. On the **Source** menu, select **Range of Active Video Clip**.
5. In the **Output** section, specify a **Name** and a **Location** for the rendered video file.

   NOTE

   The rendered video file keeps the file format of the original video. The video is not re-rendered, which means that there is no quality loss in this process.
6. In the **Options** section, click **Options** and do one of the following:
   - To create a copy of the original video with the edited audio, activate **Create Video with the Resulting Audio**.
   - To open the rendered video in a new audio montage, activate **Reimport Video in New Audio Montage**.
   - To open the rendered audio file of the video file in the **Audio Editor**, activate **Open Rendered Audio File**.
7. In the **Render** section, click **Start Rendering**.

RELATED LINKS
Inserting Video Files into Existing Audio Montages on page 372
Importing Video Files into a New Audio Montage on page 372

Video Clip Editing

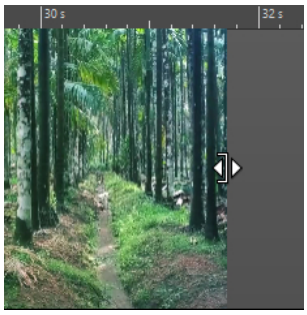
A video clip is created automatically when you import a video file to an audio montage.

NOTE

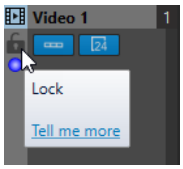
Before starting to edit and refine the audio of your video file, you should have finished editing your video with a dedicated video editor.

When working with video clips, you can make the following edits:

- To copy a video clip, click the upper area of a video clip and drag it to the new location.
- To trim the end of your video clip, click the end and drag to the left.



- To disable all editing for video clips, click **Lock** in the track control area for the video track.



- To edit the audio clip of your video clip, use the audio editing tools of WaveLab Elements.

RELATED LINKS
Video Track on page 371
Track Control Area for Video Tracks on page 200
Inserting Video Files into Existing Audio Montages on page 372
Importing Video Files into a New Audio Montage on page 372

Video Follows Edit Mode

The **Video Follows Edit Mode** allows you to edit audio while getting continuous visual feedback in the **Video** window.

- To activate **Video Follows Edit Mode**, select the **Edit** tab, and activate **Video Follows Edit Mode** in the **Clip** section.

If you activate **Video Follows Edit Mode**, the video in the **Video** window automatically follows each edit that you make. This allows you to instantly see where in the video your edit is taking place.

In **Video Follows Edit Mode**, the **Video** window gives you visual feedback. That is, the picture matches the edit cursor position. You get visual feedback during the following actions:

- Selecting ranges and adjusting range borders
- Moving audio clips
- Nudging audio clips
- Resizing audio clips or range selections
- Adjusting audio clip fade handles

RELATED LINKS
Video Window on page 375
Edit Tab (Audio Montage) on page 204

Video Window

If you import a video to your audio montage and start playback, the video plays back in the **Video** window. You can resize the **Video** window and undock it to place it on another screen, for example.

- To open the **Video** window, select **Tool Windows** > **Video**.

NOTE

For the best performance, undock the **Video** window and use it in an independent window.

RELATED LINKS
Video Track on page 371
Activating/Deactivating the Video Track Timecode on page 375

Activating/Deactivating the Video Track Timecode

The timecode in the **Video** window represents time using hours, minutes, seconds, and frames to provide a location for each device. Each frame represents a visual film or video frame.

PROCEDURE

1. Select **File** > **Preferences** > **Audio Montages**.
2. Click **All Audio Montages**.

3. In the **Video Window** section, activate/deactivate **Show Timecode**.

Video File Compatibility

When working with video files in WaveLab Elements, you must make sure that the video file type is supported.

NOTE

If you are not able to play back a specific video file, use an external application to convert the file into a compatible format.

To find out what video files are supported, refer to the Help Center on the Steinberg web site.

RELATED LINKS
Video Container Formats on page 376
Video Codecs on page 376
Video Frame Rates on page 377

Video Container Formats

Video and other multimedia files come in a container format.

This container holds various streams of information including video and audio, but also metadata such as synchronization information required to play back audio and video together. Data regarding creation dates, authors, chapter markings, and more can also be held within the container format.

The following container formats are supported by WaveLab Elements:

MOV

This is a QuickTime movie.

MPEG-4

This format can contain various metadata for streaming, editing, local playback, and interchange of content. Its file extension is .mp4.

AVI

This is a multimedia container format introduced by Microsoft.

RELATED LINKS
Video File Compatibility on page 376
Video Codecs on page 376

Video Codecs

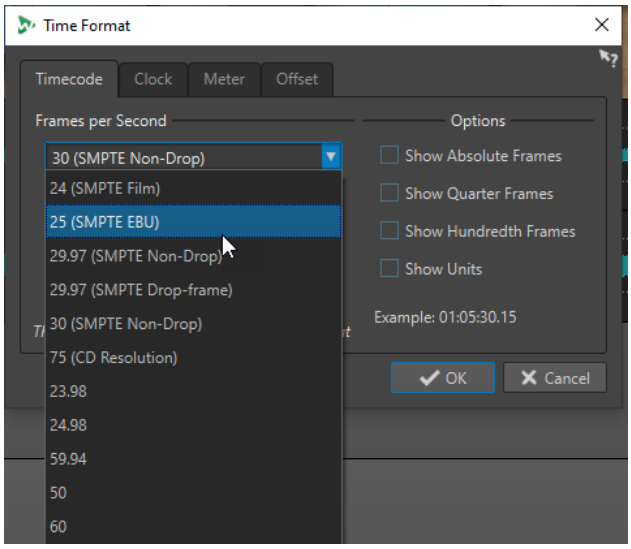
Codecs are methods of data compression used to make video and audio files smaller and more manageable for computers. For further details, refer to the Help Center on the Steinberg web site.

RELATED LINKS
Video File Compatibility on page 376
Video Container Formats on page 376

Video Frame Rates

WaveLab Elements supports different video and film frame rates. The video frame rate must match the audio montage frame rate.

WaveLab Elements automatically adopts to the frame rate of the imported video. You can also manually adjust the frame rate via the **Time Format** dialog.



The following frame rates are supported:

Frames Per Second

Regardless of the frame counting system, the actual speed at which frames of video go by in real time is the true frame rate.

WaveLab Elements supports the following frame rates:

23.98 fps

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

24 fps

This is the true speed of standard film cameras.

24.98 fps

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

25 fps

This is the frame rate of PAL video.

29.97 fps/29.97 dfps

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

30 fps/30 dfps

This frame rate is not a video standard anymore but has been commonly used in music recording. It used to be the black and white NTSC broadcast standard. It is equal to NTSC video being pulled up to film speed after a 2-3 telecine transfer. The count can be either non-drop or drop-frame.

50 fps

This rate is also referred to as 50 p.

59.94 fps

This video frame rate is supported by high definition cameras and is compatible with NTSC.

60 fps

This video frame rate is supported by many high-definition cameras. However, the NTSC compatible 59.94 fps frame rate is much more common.

IMPORTANT

Video formats with a variable frame rate (VFR) are not supported.

RELATED LINKS

Time Format Dialog on page 59

WaveLab and External Applications

There are several ways of combining WaveLab Elements with external applications, such as DAWs.

WaveLab Elements offers the following features to optimize cross-application workflows involving WaveLab Elements and other audio applications:

- **WaveLab Exchange**, which allows you to use WaveLab Elements as an external editor for Cubase Pro, Cubase Artist, and Nuendo, and vice versa.
- The easy-to-use cross-application copying operations, which allow you to insert any audio range from WaveLab into any other audio application by performing simple copy & paste and drag & drop operations.

RELATED LINKS

WaveLab Exchange on page 380
Cross-Application Copying Operations on page 382

WaveLab Exchange

You can use WaveLab Elements as an external editor for Cubase Pro, Cubase Artist, and Nuendo, and vice versa.

IMPORTANT

- WaveLab Exchange is only available for Cubase Pro 8.5.10 or higher, Cubase Artist 8.5.10 or higher, and Nuendo 7.1.20 or higher.
- WaveLab Exchange supports the file format Wave.

WaveLab Elements as an External Editor for Cubase/Nuendo

You can open Cubase/Nuendo events in WaveLab Elements. This allows you to use the editing capabilities of WaveLab Elements and apply them to Cubase/Nuendo events.

For example, the following advanced editing options are available in WaveLab Elements:

- Audio error correction
- Independent channel editing and processing
- Analysis meters, global analysis (EBU R-128 recommendation), and 3D frequency analysis
- RestoreRig
- MasterRig

Editing Cubase/Nuendo Audio Events in WaveLab Elements

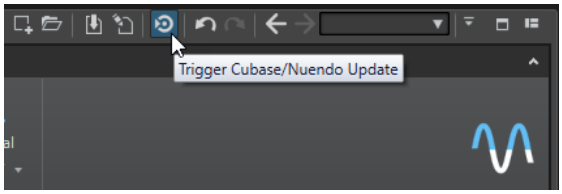
PREREQUISITE

Open your Cubase/Nuendo project in Cubase/Nuendo.

PROCEDURE

1. In the Cubase/Nuendo **Project** window, select the audio event that you want to edit in WaveLab Elements.

   You can also select only a part of the audio event with the **Object Selection** tool.
2. Select **Audio** > **Edit in WaveLab**.
3. In WaveLab Elements, edit the audio event.
4. When you have finished the editing, click **Trigger Cubase/Nuendo Update** on the command bar.



RESULT

The changes to the audio event are applied to the Cubase/Nuendo project.

Cubase/Nuendo as an External Editor for WaveLab Elements

When you are working on an audio file or clip in WaveLab Elements, you can open the project of the audio file in Cubase/Nuendo. This allows you to correct issues that you have identified during mixing and correct these issues in the audio file in Cubase/Nuendo.

When you then export the audio file in Cubase/Nuendo, and you use the same file name, the audio file or clip is automatically updated in WaveLab Elements.

Preparing Cubase/Nuendo Projects for WaveLab Exchange

PROCEDURE

1. In Cubase/Nuendo, open the project that you want to prepare for WaveLab Exchange.
2. Select **File** > **Export** > **Audio Mixdown**.
3. In the **Export Audio Mixdown** dialog, specify a file name and path.
4. In the **File Format** pop-up menu, select **Wave File** or **Wave 64 File**.
5. Activate **Insert iXML Chunk**.
6. Click **Export**.

Editing Audio Files in Cubase/Nuendo

PREREQUISITE

The Cubase/Nuendo project is prepared for WaveLab Exchange.

PROCEDURE

1. In WaveLab Elements, open the audio file in the **Audio Editor**.
   A yellow line above the file tab indicates that the file has been rendered in Cubase/Nuendo.
2. Select the **Edit** tab.
3. In the **Source** section, click **Edit Project**.
   The Cubase/Nuendo project that contains the audio file opens.
4. In Cubase/Nuendo, edit the audio file.
5. Select **File** > **Export** > **Audio Mixdown**.
6. In the **Export Audio Mixdown** dialog, activate **Insert iXML Chunk**.

   IMPORTANT

   Do not change the file name and path.
7. Click **Export**.

RELATED LINKS

Preparing Cubase/Nuendo Projects for WaveLab Exchange on page 381
Tab Change Indicators on page 66

Cross-Application Copying Operations

To optimize cross-application workflows, you can easily insert any audio range from WaveLab into any other audio application by performing simple copy & paste and drag & drop operations.

Source Editors in WaveLab

This feature works both for audio selections in the **Audio Editor** and in the **Audio Montage** window.

The following conditions apply:

Audio Editor

- If you select a single mono channel, even if it is part of a stereo or multi-channel file, only this channel is copied.
- If you select a stereo channel cluster from a stereo file or a surround file, the channel pair is copied.
- If you select three or more channels in a surround file, all channels of the file are copied; for example, six channels for a 5.1 file.

Audio Montage

- Selections can cover multiple tracks or lanes.
- If the selected audio range consists exclusively of mono channels, a mono mixdown is created; for example, for all lanes of a mono track.
- For any other audio selection, a stereo mixdown is copied to the clipboard.

Target Applications

- The target application can be any audio application, including WaveLab itself.

  NOTE

  Choosing WaveLab as the target application consumes more storage and memory resources, compared to the standard copying operation.

- In addition to this, you can also choose the File Explorer/macOS Finder as the target.

Background Information

What distinguishes the process from conventional copy & paste and drag & drop operations is that it encompasses two stages:

1. Firstly, you need to generate a copy of the selected audio range via a dedicated command.
2. Secondly, you have to transfer the copy to the target application by dragging or by pasting it there from the clipboard.

NOTE

Saving the source file in WaveLab Elements is not required for the feature to work.

To transfer the selected audio samples to the target, WaveLab creates a temporary audio file in the Cache folder. You can specify the location of the Cache folder and the sample resolution of the audio to be generated by selecting **File** > **Preferences** > **Global** and editing the corresponding settings on the **Audio** tab.

The temporary file path is copied to the clipboard of your operating system, both as text and as a file that you can transfer to another location by pasting or by dragging. This means that you can alternatively use the file browser of the target application to access the audio material.

NOTE

If the target application (Cubase, for example) permits, we recommend importing a copy of the temporary file into the target application, rather than a reference to it.

RELATED LINKS
Audio Tab (Global Preferences) on page 408
Copying Audio Ranges to Other Audio Applications on page 383

Copying Audio Ranges to Other Audio Applications

WaveLab offers a special copy-and-paste feature that allows you to transfer your audio material to other applications and to continue working on it without interrupting your workflow.

PROCEDURE

1. Select an audio range in the **Audio Editor** or in the **Audio Montage** window.
   In addition to a time range, the audio range can cover multiple channels or tracks/lanes.
2. Do one of the following to access the special copy function:
   - Select the **Edit** tab. Right-click the **Copy** button, or click the down arrow to its right to access the menu.

     NOTE

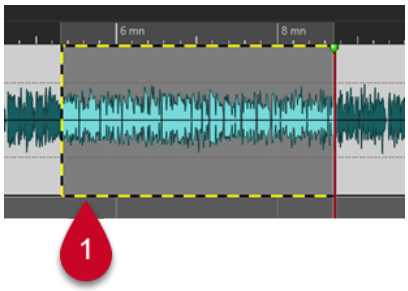
     In the **Audio Editor**, you can find the **Copy** button in the **Cut Copy Paste** section. In the **Audio Montage** window, the **Copy** button is available in the **Clipboard** section
   - In the **Audio Editor**, right-click in the selected audio range to open the context menu.
3. Do one of the following:
   - To generate a rendered copy of the selected audio range with all effects applied, choose **Copy to System Clipboard (With Effects)**.
   - To generate a copy of the selected audio range without applying any effects, choose **Copy to System Clipboard (No Effect)**.

   The selected audio range is highlighted by an animated dashed rectangular outline (**1**).

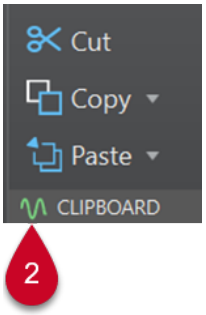
   With the **Edit** tab selected, a green icon (**2**) indicates that an audio range is available for cross-application transfer on the clipboard.

   NOTE

   In the **Audio Editor**, you can find the icon on the left side of the **Cut Copy Paste** caption bar. In the **Audio Montage** window, the icon appears on the **Clipboard** caption bar.



Highlighted Audio Range



Icon in the Audio Montage Window

NOTE

As soon as you perform further editing operations on the selected audio range, the outline is not visible any more. However, pasting it to another application, as described in the next step, is still possible, as long as the data is still available on the clipboard.

4. To make the selected audio range immediately available to you for further editing in the target application, simply drag the audio range itself or the green icon (**2**) to the desired location in the target application, or use **Ctrl/Cmd** - **V** to paste it there.

NOTE

The **Ctrl/Cmd** - **V** key command may not work for all audio applications, but it is available for Cubase, Nuendo, and for the File Explorer/macOS Finder, for example.

RELATED LINKS
Cross-Application Copying Operations on page 382

Batch Conversion

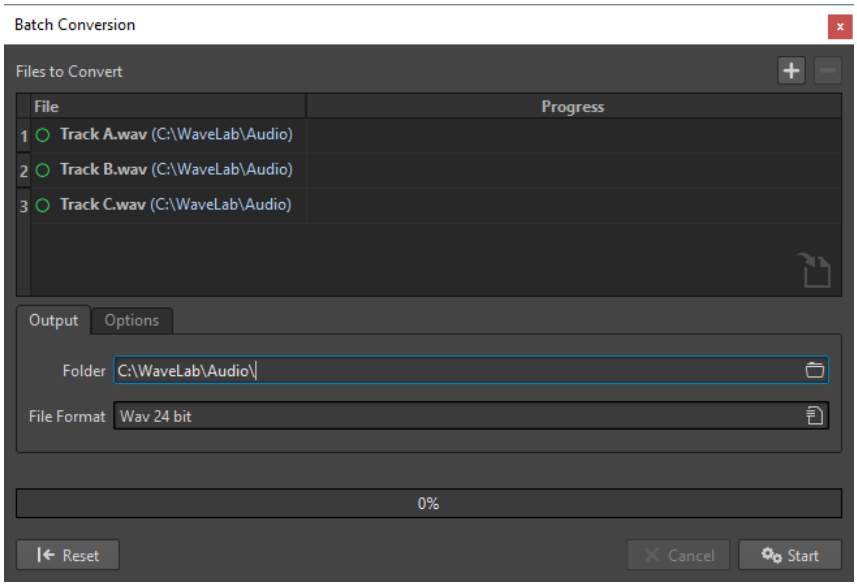
You can convert multiple audio files simultaneously to another format. If no processing is needed, this can be done using the **Batch Conversion** dialog.

RELATED LINKS
Batch Conversion Dialog on page 385
Batch Converting Files on page 386

Batch Conversion Dialog

This dialog allows you to convert the file format of a group of audio files.

- To open the **Batch Conversion** dialog, select **File** > **Tools** > **Batch Conversion**.



Add File

Opens a dialog, where you can select files to add to the list.

Remove Selected Files

Removes the selected item from the list.

Files to Convert

Shows the list of files to convert.

Output Tab

Folder

Allows you to specify the folder in which the converted files are saved.

File Format

Allows you to open the **Audio File Format** dialog, where you can set the file format.

Options Tab

Auto Start When Dropping Files

If this option is activated, the conversion starts automatically when you drag a file into the list.

Auto Remove Converted Files

If this option is activated, a file is removed from the list once it is successfully converted. Otherwise, it remains in the list with a green mark indicating its status.

Stop on Error

If this option is activated, the global process stops if an error is encountered. If this option is deactivated, the file associated with the error is marked in red, and the next file is processed.

RELATED LINKS
Batch Converting Files on page 386

Batch Converting Files

You can convert multiple audio files to another format in a single batch operation.

PROCEDURE

1. Select **File** > **Tools** > **Batch Conversion**.
2. Click the plus icon to add files, or drag the files into the **Files to Convert** list.
3. On the **Output** tab, select a file location and a file format.
4. Click **Start** to begin converting the files.

RELATED LINKS
Batch Conversion Dialog on page 385

Podcast Creation

A Podcast is an episodic series that consists of audio files. Users can stream or download Podcasts to their device and listen to it. WaveLab Elements with its audio editing tools and effects allows you to create Podcast episodes and upload these episodes to various host services.

You can use the **Audio Editor** and the **Audio Montage** window to create a Podcast episode. Each audio file or audio montage in WaveLab Elements can be uploaded as a Podcast episode.

RELATED LINKS
Podcast Host Services on page 387
Uploading a Podcast Episode on page 388

Podcast Host Services

Podcast host services allow you to host and distribute Podcasts. WaveLab Elements allows you to directly upload your Podcast to various host services.

Supported Host Services

WaveLab Elements supports direct upload to the following host services:

- Spreaker
- Podbean
- SoundCloud
- Buzzsprout
- Castos
- Blubrry
- Captivate

Host Service Authorization

To connect WaveLab Elements with a host service, you must authorize the connection between WaveLab Elements and the host service.

The authorization process depends on the selected host service.

RELATED LINKS
Uploading a Podcast Episode on page 388

File Encoding before Uploading to Host Services

If the audio file or audio montage that you want to upload to a host service is a non-encoded audio file, you can encode the audio file. Some host services only accept encoded audio files. Encoded audio file formats are MP3, MP4, M4A, or MP2, for example.

The **Master Section** plug-ins and settings are taken into account when you render an audio file or audio montage.

Depending on the selected audio file or audio montage, the following applies:

- If the active audio file that you want to upload uses an encoded format, the **Encode Audio File** option is deactivated. Encoding already encoded audio files can lead to quality loss.
- If the active audio files uses a non-encoded format, the **Encode Audio File** option is available but not mandatory. However, depending on the host service it can be necessary to encode the audio file.
- Audio montages must be rendered before you can upload them to a host service. If the active file is an audio montage, you must use the **Encode Audio File** option to render the audio montage.

If the active audio file or audio montage has been saved, the encoded file is saved in the same directory, with the same name, and its proper file extension.

If the active audio file or audio montage has not been saved, a dialog opens and allows you to select a directory and a file name for the rendered file.

RELATED LINKS
Uploading a Podcast Episode on page 388

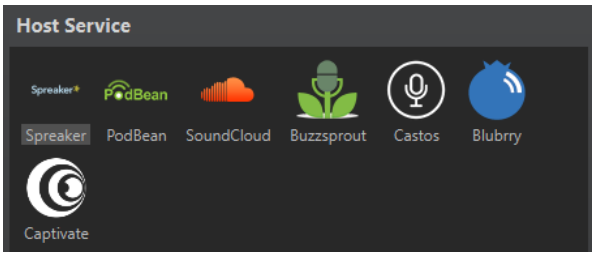
Uploading a Podcast Episode

You can upload the audio that you have created in the **Audio Editor** or in the **Audio Montage** window as a Podcast episode.

PREREQUISITE

You have created an audio file or an audio montage.

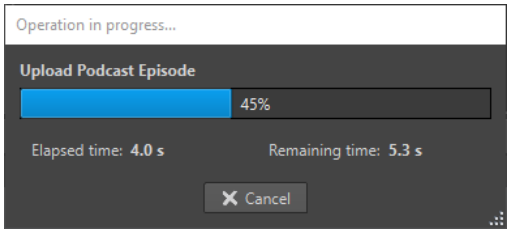
PROCEDURE

1. In the **Audio Editor** or **Audio Montage** window, select the **Edit** tab.
2. In the **Podcast** section, click **Upload Episode**.
   The **Publish** tab opens.
3. In the **Host Service** section, select the host service to which you want to upload the episode.
   

4. Click **Authorize** to allow WaveLab Elements to access the selected host service.
   Your default Internet browser opens the authorization website of the selected host service.
5. Follow the instructions in your browser to complete the authorization.
6. In WaveLab Elements, select the **Podcast** to which you want to add the Podcast episode.
7. Specify a **Title** for the Podcast episode.
8. Depending on the selected host service, it can be necessary to encode the audio file or audio montage. If you want to encode the audio file, activate **Encode Audio File** and select a new encoder.
9. Click **Upload**.

RESULT

The audio file or audio montage is rendered and uploaded to the selected host service.



RELATED LINKS

Publish Tab on page 389
File Encoding before Uploading to Host Services on page 387

Publish Tab

The **Publish** tab allows you to select the host service to which you want to upload your Podcast episode. You can select different host services and select the encoder for the audio file that you want to upload.

- To open the **Publish** tab, select the **File** tab and select **Podcast** > **Publish**.

Host Service

Allows you to select the host service to which you want to upload your Podcast episode.

Authorize

Allows you to allow WaveLab Elements to access the selected host service.

If you click **Authorize**, your default Internet browser opens the authorization website of the selected host service.

Episode

- **Encode Audio File** allows you to encode the audio file to another audio file format.

  NOTE

  If you have selected an MP3 file for upload, the **Encode Audio File** option is deactivated. However, if you add effects to the MP3 file via the **Master Section**, the **Encode Audio File** option is available.

- **Podcast** allows you to select the Podcast to which you want to add the Podcast episode.
- **Refresh Available Podcasts** allows you to refresh the Podcast list that is retrieved from your Spreaker account.
- **Title** allows you to enter a title for the Podcast episode.

Upload

Allows you to upload the audio file to the selected host service.

RELATED LINKS

Podcast Creation on page 387
Uploading a Podcast Episode on page 388

Customizing

Customizing means making adjustments to ensure that WaveLab Elements behaves and looks the way that you want it to.

RELATED LINKS
Customizing the Audio Editor and the Audio Montage Window on page 390
Customizing Shortcuts on page 392
Customizing Command Bars on page 396
Plug-in Organization on page 396
Touch Bar (macOS only) on page 404

Customizing the Audio Editor and the Audio Montage Window

You can set up the **Audio Editor** and the **Audio Montage** window by adjusting colors of waveforms, backgrounds, cursor lines, etc., and changing the look of the ruler and other details.

Customizing can be done in the following ways:

- By changing the default style.
- By assigning different styles, according to specific conditions. For example, a specific file type or a specific file name.

RELATED LINKS
Assigning Custom Colors to the Audio Editor or the Audio Montage Window on page 390
Assigning Custom Colors According to Conditions on page 391

Assigning Custom Colors to the Audio Editor or the Audio Montage Window

PROCEDURE

1. Depending on whether you want to customize the colors of the **Audio Editor** or the **Audio Montage**window, do one of the following:
   - For the **Audio Editor**, select **File** > **Preferences** > **Audio Files**, and select the **Style** tab.
   - For the **Audio Montage**window, select **File** > **Preferences** > **Audio Montages**, and select the **Style** tab.
2. Select the part that you want to color from the **Parts** list.
3. Specify a color using the color picker or the RGB fields.

RELATED LINKS
Customizing the Audio Editor and the Audio Montage Window on page 390
Style Tab (Audio Files Preferences) on page 414
Style Tab on page 417
Copying Color Settings on page 391

Assigning Custom Colors According to Conditions

You can apply different color schemes automatically to different clips, according to their names or the properties of their audio files.

IMPORTANT

If you redefine colors, be careful not to choose colors that cause other elements to disappear.

PROCEDURE

1. Depending on whether you want to customize the colors of the **Audio Editor** or the **Audio Montage** window, do one of the following:
   - For the **Audio Editor**, select **File** > **Preferences** > **Audio Files**, and select the **Style** tab.
   - For the **Audio Montage** window, select **File** > **Preferences** > **Audio Montages**, and select the **Style** tab.
2. Do one of the following:
   - In the **Audio Files Preferences**, select one of the **Conditional** options from the pop-up menu at the top of the dialog.
   - In the **Audio Montages Preferences**, in the **Parts** list, select one of the **Custom** entries.
3. Specify a color using the color picker or the RGB fields.
4. In the **This Style Is Used If These Conditions Apply** section, specify the conditions.
5. Click **OK**.

RELATED LINKS
Customizing the Audio Editor and the Audio Montage Window on page 390
Style Tab (Audio Files Preferences) on page 414
Style Tab on page 417
Copying Color Settings on page 391

Copying Color Settings

When you apply color settings in the **Audio Editor** or the **Audio Montage** window, you can copy the color settings of one part or all parts of a custom color scheme.

PREREQUISITE

You can assign custom colors to the **Audio Editor** and the **Audio Montage** window in the **Style** tab of the **Audio Files Preferences** and the **Audio Montages Preferences**.

CHOICES

- To copy a color setting, select the part from which you want to copy the color, and select **Copy Color**. Then select the part to which you want to copy the color, and select **Paste**.
- To copy all color settings of a custom color setting, drag the name of a custom color setting onto another custom color name, and click **OK**.

RELATED LINKS
Customizing the Audio Editor and the Audio Montage Window on page 390
Style Tab (Audio Files Preferences) on page 414
Style Tab on page 417

Customizing Shortcuts

In WaveLab Elements, you can control many functions via shortcuts to speed up your workflow. You can edit existing shortcuts and create new shortcuts.

Most shortcuts are restricted to a specific editor, which means that you can reuse the same shortcut combination in different editors. The exception is the **Master Section** where all shortcuts are global to the application.

The shortcuts in the **Navigation (Numeric Pad)** and **View and Navigation** sections on the **Shortcuts** tab are dedicated to navigating through WaveLab Elements.

Shortcuts that cannot be edited are grayed out. The shortcuts that you created are displayed in blue in the editor.

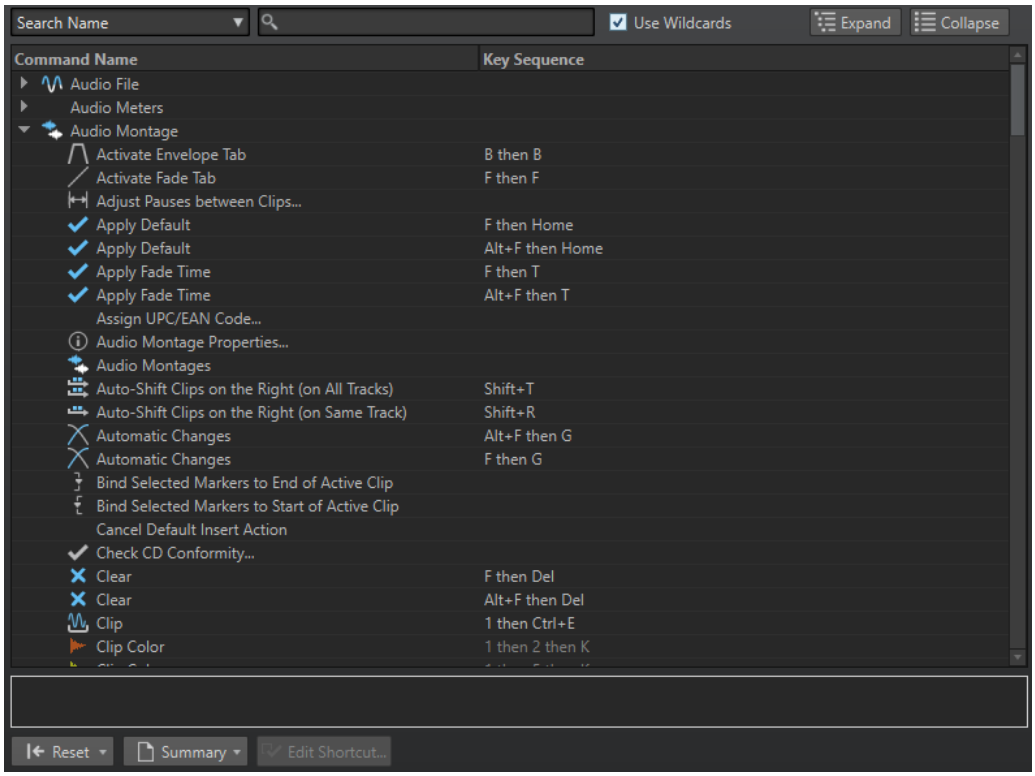
You can create a new shortcut by specifying a key sequence of up to four keys that must be pressed in a specific order to invoke the operation.

RELATED LINKS
Shortcuts Tab (Preferences) on page 392

Shortcuts Tab (Preferences)

This tab allows you to customize your own shortcuts for WaveLab Elements. It shows a list of the assigned shortcuts for WaveLab Elements commands and menu options.

- To open the **Shortcuts** tab, select **File** > **Preferences** > **Shortcuts**.



Search pop-up menu

Allows you to select the part of the commands list in which the search is performed.

Search field

Allows you to search for a command.

Use Wildcards

If this option is activated, the wildcard characters “*” and “?” can be used.

“*” substitutes zero or more characters, and “?” substitutes a single character.

For example, if **Search Keyboard Shortcut** is selected, type “*” to display all commands that are already associated with a shortcut.

Expand/Collapse

Expands/Collapses the folder tree.

Commands list

Shows all commands and their shortcuts. The section below the commands list shows additional information for the selected command.

Reset

Resets the commands to the factory settings.

Summary

Opens a menu from which you can generate a list of all commands and their shortcuts, either in HTML or as a printout.

Edit Shortcut

Opens the **Shortcut Definitions** dialog where you can edit the shortcuts for the selected command.

RELATED LINKS
Customizing Shortcuts on page 392
Editing Shortcuts on page 393

Editing Shortcuts

You can see the list of all shortcuts in the **Shortcuts** tab, and edit and define shortcuts on the **Shortcut Definitions** dialog.

The **Shortcuts** tab provides a different command set for each menu or dialog.

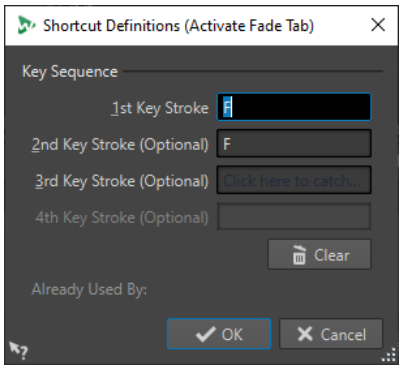
- To open the **Shortcut Definitions** dialog, select **File** > **Preferences** > **Shortcuts**, select a command, and click **Edit Shortcut**. This opens the **Shortcut Definitions** dialog.
- You can define one key shortcut per command. Each shortcut can be a sequence of up to four keystrokes.
- To reset some or all types of shortcuts to their factory default use the **Reset** button.

RELATED LINKS
Shortcuts Tab (Preferences) on page 392
Shortcut Definitions Dialog on page 393

Shortcut Definitions Dialog

This dialog allows you to define your own customized shortcuts for a particular function.

- To open the **Shortcut Definitions** dialog, select **File** > **Preferences** > **Shortcuts**, select a command, and click **Edit Shortcut**.



Key Sequence

1st Key Stroke

Lets you select the first key of a sequence that can consist of up to four keys. Set the focus to the key stroke field, then press the key combination. If nothing is displayed, a key is not allowed in this context.

2nd/3rd/4th Key Stroke (optional)

Lets you select additional keys that must be used to execute the command. The command is only executed if this key event happens after the first/second/third one.

Clear

Erases all key event fields.

RELATED LINKS
Editing Shortcuts on page 393
Shortcuts Tab (Preferences) on page 392

Defining Key Sequences

You can define key sequences for a keyboard.

On a Mac, commands for the main menus must consist of a single key command.

When using multiple key stroke commands, make sure that the key commands do not interfere with each other. For example, when you have one shortcut **Shift** - **L**, **M** and define another to be **Shift** - **L**, this second shortcut has no effect.

PROCEDURE

1. Select **File** > **Preferences** > **Shortcuts**.
2. In the commands list, select the command for which you want to define a key sequence, and click **Edit Shortcut**, or double-click the **Key Sequence** column of the corresponding command.
3. In the **Shortcut Definitions** dialog, click in the **Key Stroke** fields and press the buttons that you want to use as the key sequence.
4. Click **OK**.

RESULT

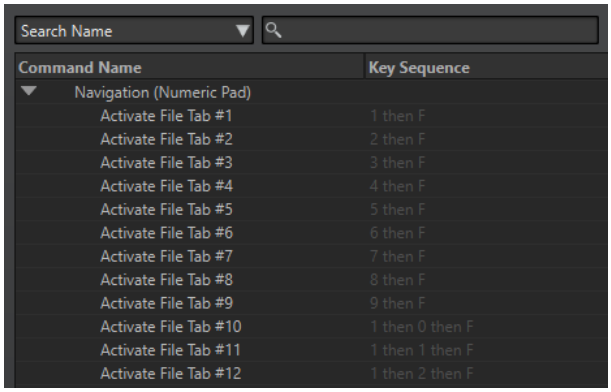
When you now press the keys/buttons specified in the dialog, the corresponding operation is performed. The key strokes must be executed one after the other.

RELATED LINKS
Remote Devices Tab on page 27
Shortcuts Tab (Preferences) on page 392
Shortcut Definitions Dialog on page 393

Indexed Key Commands

Indexed key commands allow you to quickly jump to specific locations in your project, for example, to a specific marker or **Master Section** slot.

The available indexed key commands are listed on the **Shortcuts** tab, in the **Navigation (Numeric Pad)** section.



- To trigger an index key command, type the number of the item that you want to jump to and press the corresponding key on your keyboard.

EXAMPLE

If you want to jump to the 5th marker in your file window, press **5** on the numeric pad of your keyboard and then press **M**.

If you want to jump to the 10th file tab, press **1** then **0** on the numeric pad of your keyboard and then press **F**.

RELATED LINKS
Shortcuts Tab (Preferences) on page 392

Generating a List of All Shortcuts

You can generate an HTML file or print a list that contains all shortcuts.

PROCEDURE

1. Select **File** > **Preferences** > **Shortcuts**.
2. Click **Summary**, and select one of the following options:
   - To open the **Print Preview** dialog, from which you can print out the list of all shortcuts, select **Print Preview**. For **Print Preview** to be available, a printer must be connected.
   - To open the list of all shortcuts in the HTML file format in the standard browser, select **HTML Report**.

RELATED LINKS
Shortcuts Tab (Preferences) on page 392

Customizing Command Bars

You can hide or show individual command bar buttons. This way you can customize command bars by removing unwanted commands.

PROCEDURE

1. In a tool window, open the menu and select **Customize Command Bar**.
2. To show a specific command on the command bar, activate the checkbox in the **Bar** column for the corresponding command.
3. Click **OK**.

Plug-in Organization

WaveLab Elements comes with various plug-ins, and additional plug-ins can be added. To retain an overview over the plug-ins that are relevant to your project, you can organize your plug-ins in groups.

On the **Organize** tab of the **Plug-ins Preferences**, you can specify how your plug-ins appear on menus in the program. In the plug-ins list, you find subfolders representing groups of plug-ins.

Initially, plug-ins are categorized by vendor, category, favorite plug-ins, and recently used plug-ins.

If the 32-bit and 64-bit versions of WaveLab Elements are used on the same system, their settings are shared. An exception to this rule are the following options in the **Plug-ins Preferences**:

- **Additional VST Plug-in Folders**
- **Ignore Plug-ins Located in the following Subfolders**

This is because 32-bit plug-ins cannot be used in WaveLab Elements 64 bit and vice versa.

RELATED LINKS
Plug-ins Tab (Preferences) on page 399
Adding Additional VST Plug-ins on page 398
Preventing Plug-ins from Being Opened on page 398

Excluding Plug-ins from Certain Plug-in Menus

You can exclude plug-ins from appearing in the plug-in menus in certain areas of WaveLab Elements.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.
2. Select the **Organize** tab.
3. In the plug-ins list, navigate to the plug-in that you want to exclude.
4. Deactivate the checkbox in for the plug-in. When selecting multiple plug-ins, you can deactivate all of them with a single click.
   - To exclude the plug-in from the plug-in selection menus, deactivate the checkbox in the **Effect** column.

- To exclude the plug-in from the **Final Effect/Dithering** pane of the **Master Section**, deactivate the checkbox in the **Final** column.

RELATED LINKS
Plug-ins Tab (Preferences) on page 399

Adding Plug-ins to the Favorites Menu

You can add plug-ins that you are using regularly to the **Favorites** menu of the plug-in selection menu.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.
2. Select the **Organize** tab.
3. In the plug-ins list, navigate to the plug-in that you want to add to the favorites.
4. Activate the checkbox for the corresponding plug-in in the **Favorites** column.

NOTE

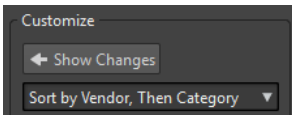
If the **Favorites** menu is empty, it does not appear in plug-in selection menus.

RELATED LINKS
Plug-ins Tab (Preferences) on page 399

Customizing Plug-in Groups

You can customize the appearance and sorting of plug-ins on the **Organize** tab of the **Plug-ins Preferences**.

- To update the tree, click **Show Changes**.



- The category labels that are used to create the hierarchy are supplied by the plug-in manufacturers. To change the category name, navigate to the **Category Renaming** table, click in the **Original** column, and select the category that you want to rename. Then click in the **Modified** column, and enter a new name.
- To change the sorting of plug-in groups, select whether to sort by category or by vendor in the sorting menu of the **Customize** section. If a plug-in does not publish a vendor name or category, the name of the enclosing plug-in folder on disc is used as vendor name or category if it is not the VST plug-in root folder.
- To group all plug-ins that start with the same prefix in one submenu, activate **Create Submenus Based on Prefixes**, and specify the number of plug-ins that must start with the same prefix. Only if this number is reached, a submenu is created.
- To group plug-ins in a single submenu if their number is below a specified value, activate **Compress Hierarchy**, and specify the threshold. A tree is flattened to a single submenu if the number is below the threshold. This prevents too small submenus.

- To activate the **Recently Used** category, activate **Submenu with Recently Used Plug-ins**, and specify the maximum number of recently used plug-ins that should be displayed in this category.
- You can make the **Recently Used** category global to all places or individual for each context, for example, for the **Master Section**, audio montage track, or audio montage clip. To make the **Recently Used** category individual for each context, activate **Independent Recently Used Plug-ins Menus**.

RELATED LINKS
Plug-ins Tab (Preferences) on page 399

Adding Additional VST Plug-ins

You can specify folders where additional VST plug-ins can be found. This is useful if you are using third-party VST plug-ins that you do not want to save in the standard VST folder.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.
2. Select the **General** tab.
3. In the **Additional VST Plug-in Folder (**WaveLab Elements **Specific)** section, click the folder icon, and navigate to the folder that contains the VST plug-ins that you want to add.

RELATED LINKS
Plug-ins Tab (Preferences) on page 399

Preventing Plug-ins from Being Opened

You can prevent WaveLab Elements from opening individual plug-ins, entire plug-in folders, or VST 2 plug-ins.

PROCEDURE

1. Select **File** > **Preferences** > **Plug-ins**.
2. Select the **General** tab.
3. Choose from the following options:
   - To prevent WaveLab Elements from opening VST 2 plug-ins, activate **Ignore VST 2 Plug-ins**.
   - To prevent WaveLab Elements from opening plug-ins in specific folders, indicate the folder names in the **Ignore Plug-ins Located in the following Subfolders (Separate Folder Names with a Semicolon)** section.
   - To exclude individual plug-ins, type the name of the plug- in into the **Do Not Load the Following Plug-ins** section:

     Enter the exact file name, without path and file extension.

     Enter one name per line.

     If you put “*” in front of the name, any plug-in that contains the name is ignored.

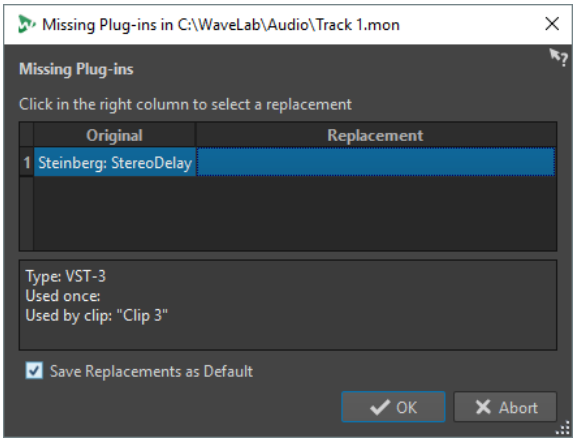
RELATED LINKS
Plug-ins Tab (Preferences) on page 399

Replacing Missing Plug-ins

When you open an audio montage and some plug-ins for tracks or clips are missing, you can select plug-ins to replace the missing plug-ins.

PROCEDURE

1. In the **Missing Plug-ins** dialog, click the **Replacement** column, and select a replacement for the plug-in displayed in the **Original** column.



2. If you want to use the new plug-in from now on, activate **Save Replacements as Default**.
3. Click **OK**.

Plug-ins Tab (Preferences)

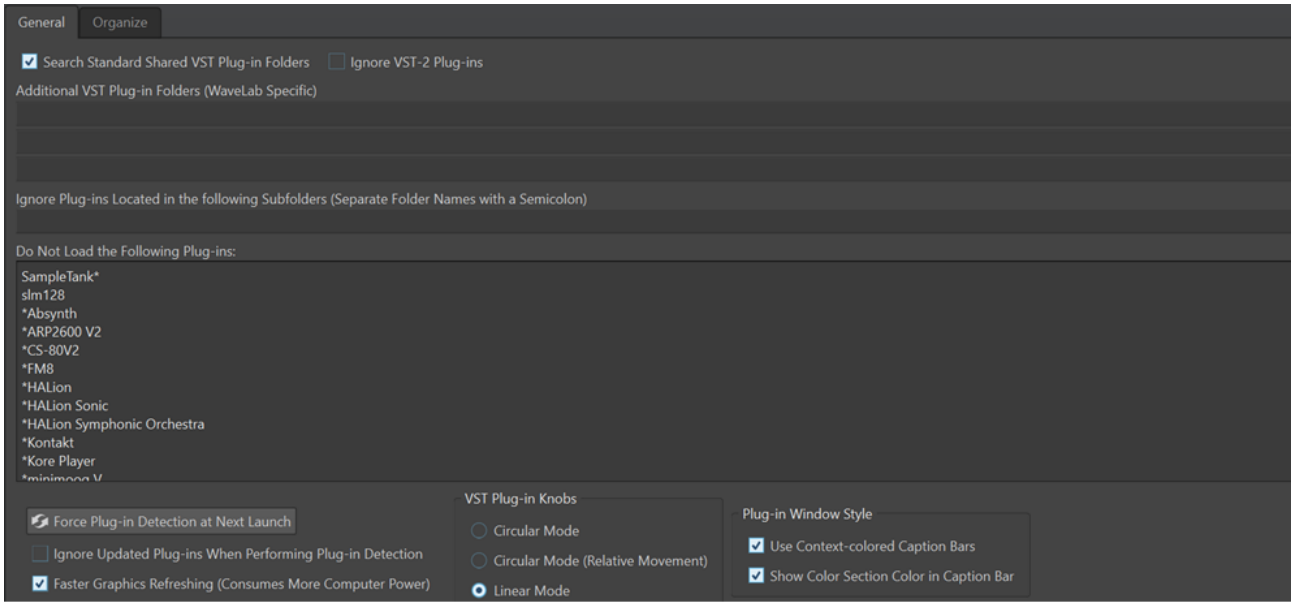
On this tab, you can access a number of options for managing your VST plug-ins.

You can specify where WaveLab Elements should search for your VST plug-ins and which ones it should ignore. It also allows you to choose how your VST plug-in controls respond to mouse actions and how frequently graphics are updated.

If you use your own file structure to organize and save VST plug-ins, this dialog allows you to gain full control over which plug-ins are loaded and which are ignored. This is useful if you want to deactivate a particular plug-in or if you want to ignore plug-ins that you never want to use with WaveLab Elements.

- To open the **Plug-ins Preferences**, select **File** > **Preferences** > **Plug-ins**.

General Tab



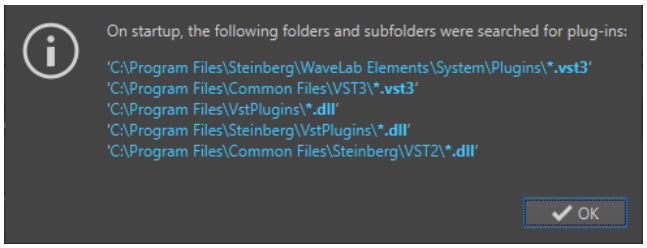
Search Standard Shared VST Plug-in Folders

Prompts WaveLab Elements to search for VST plug-ins in the default VST plug-in folders.

NOTE

For information on the folders that WaveLab Elements searches for plug-ins on launching the application, you can click the info icon in the upper right corner of the window.

If you cannot find a plug-in in WaveLab Elements, this helps you to determine whether you have specified the correct folder, for example.



Ignore VST 2 Plug-ins

Prevents WaveLab Elements from searching for and displaying plug-ins using the old VST 2 standard.

NOTE

We recommend restarting WaveLab Elements for the option to take full effect.

Additional VST Plug-in Folders (WaveLab Elements Specific)

Allows you to specify additional folders where VST plug-ins can be found.

Ignore Plug-ins Located in the following Subfolders (Separate Folder Names with a Semicolon)

Allows you to specify folder names that WaveLab Elements skips when searching for VST plug-ins.

Do Not Load the Following Plug-ins

Allows you to specify plug-ins that you do not want WaveLab Elements to open by indicating the file names, without path and without file extension, with each plug-in entered on a new line.

If you put the character * in front of the name, any plug-in that contains the name is ignored.

Force Plug-in Detection at Next Launch

Analyzes the plug-ins when launching WaveLab Elements the next time. To reduce the start time of WaveLab Elements, the plug-ins are not analyzed every time WaveLab Elements is started. However, WaveLab Elements keeps a list of plug-ins and updates it automatically when a date or size change is detected.

Ignore Updated Plug-ins When Performing Plug-in Detection

PreventsWaveLab Elements from checking if the properties of updated plug-ins have changed. If you have plug-ins that are updated very frequently, this option speeds up the WaveLab Elements startup.

However, some manufacturers combine multiple plug-ins within a single file. If you know that some plug-ins were added by the manufacturer but do not appear in WaveLab Elements, deactivate this option and restart WaveLab Elements. Afterwards, you can activate this option again.

Faster Graphics Refreshing (Consumes More Computer Power)

Refreshes the graphics of VST plug-ins more quickly.

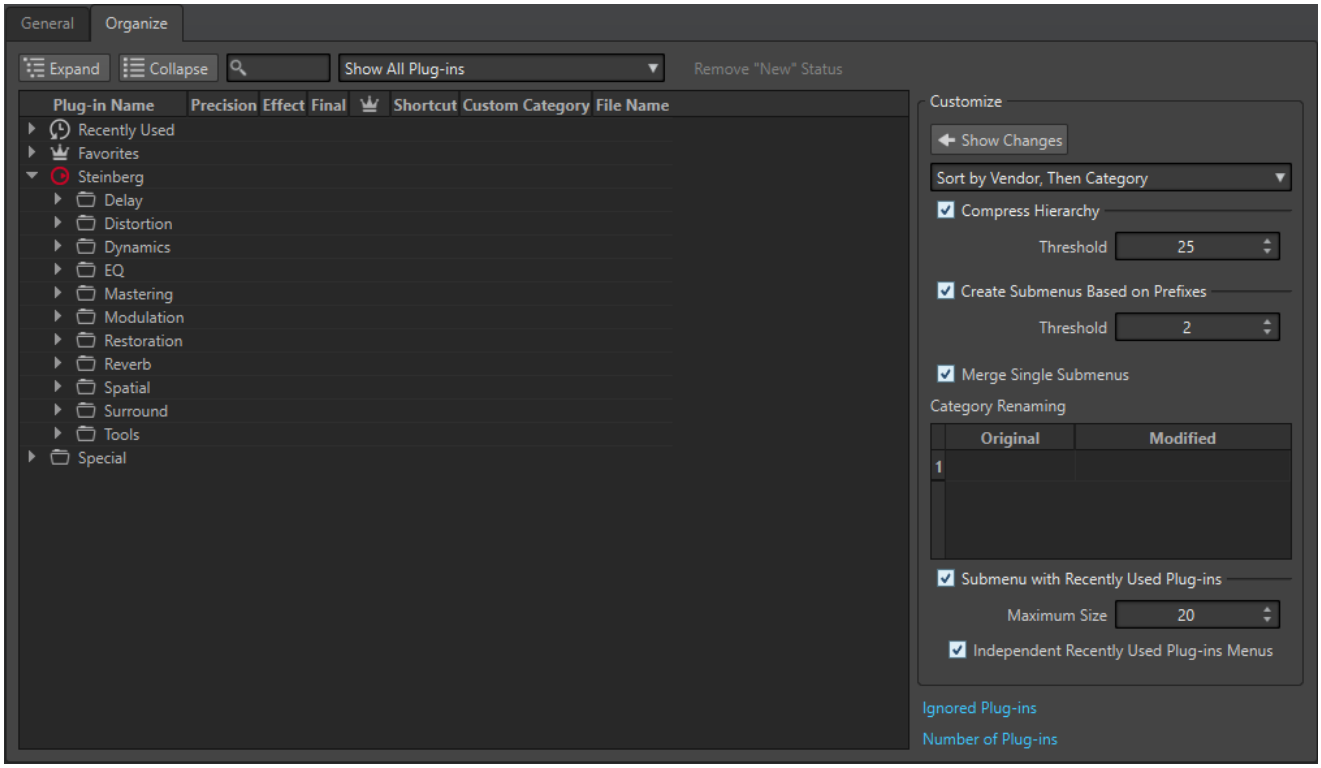
VST Plug-in Knobs

Allows you to set the mode for using knobs in plug-ins. The available options are **Circular Mode**, **Circular Mode (Relative Movement)**, and **Linear Mode**.

Plug-in Window Style

- **Use Context-colored Caption Bars** helps you to identify and distinguish effect plug-in types by displaying color codes for the captions bars of the plug-in windows.
- You can activate **Show Color Section Color in Caption Bar** to display a colored box on the caption bar of effect plug-in windows, whose color depends on the element that the plug-in is applied to.

Organize Tab



Plug-ins list

Displays the hierarchy of the plug-ins in WaveLab Elements. In the **Final** column, you can specify whether a plug-in is available on the plug-in selection menus and/or the **Final Effect/Dithering** pane of the **Master Section**.

You can add plug-ins to the **Favorites** list, create shortcuts for plug-ins, specify custom categories, and decide whether to use the generic user interface or the plug-in specific user interface.

The **Precision** column displays the processing precision of each plug-in. 64-bit float plug-ins are capable of double precision processing. In other effects menus, throughout WaveLab Elements, plug-ins that are capable of double precision processing are marked with “64 F” for 64-bit float.

NOTE

Processing in 64-bit float results in double precision but a slightly longer processing time than in 32-bit float.

Expand/Collapse

Expands/Collapses the folder tree.

Search field

Allows you to filter the plug-ins list for names.

- Click in the search field, and enter the text that you want to search for.
- To switch the focus from the search field to the plug-ins list, press **Down Arrow**.

- To switch the focus from the plug-ins list to the search field, press **Ctrl/Cmd** - **F**.

Filter menu

Allows you to only display plug-ins that have particular properties.

- **Show All Plug-ins** displays all plug-ins.
- **Show New Plug-ins** only displays recently detected plug-ins.
- **Show 32-bit float Plug-ins** only displays plug-ins that are capable of 32-bit float processing.
- **Show 64-bit float Plug-ins** only displays plug-ins that are capable of 64-bit float processing.
- **Show Plug-ins with a Custom Category** only displays plug-ins that have a custom category.
- **Show Plug-ins without a Custom Category** only displays plug-ins that do not have a custom category.

Remove “New” Status

Resets the “new” status of the recently detected plug-ins.

Show Changes

Refreshes the plug-in tree according to the current settings.

Sorting

Determines how the plug-ins are sorted. All other parameters act on that hierarchy.

Compress Hierarchy

Merges all items into a single submenu if a submenu and all its submenus contain less than a specific number of plug-ins (**Threshold**).

The **Threshold** value determines the minimum number of items that are needed to compress the hierarchy.

Create Submenus Based on Prefixes

Creates a submenu that is labeled as the prefix if several items in a submenu start with the same prefix.

The **Threshold** value determines the minimum number of items that must start with the same prefix and that are needed to create submenus that are labeled as the prefix.

Merge Single Submenus

Merges submenus that contain another submenu with only a single item in it.

Category Renaming

The category labels used to create the hierarchy are supplied by the plug-in manufacturers. In this section, you can change the category name. This can also be useful to merge two categories into one, by renaming these two categories with the same name.

Submenu with Recently Used Plug-ins

If this option is activated, the **Recently Used** submenu is shown.

The **Maximum Size** value determines the maximum number of plug-ins on the **Recently Used** submenu.

The **Independent Recently Used Plug-ins Menus** option determines whether the **Recently Used** submenu is global to all places where plug-ins can be selected, or if it is local to each context.

Ignored Plug-ins

Opens the **Ignored Plug-ins** dialog, where you can see plug-ins that were not loaded. This dialog allows you to prompt WaveLab Elements to rescan these plug-ins after restarting the application. This is faster than a full rescan.

Number of Plug-ins

Shows the number of plug-ins that are available in WaveLab Elements.

RELATED LINKS

Effects for Tracks, Clips, and the Montage Output on page 259

Touch Bar (macOS only)

The Touch Bar at the top of your keyboard gives you shortcuts to the WaveLab Elements functions. The Touch Bar changes automatically based on where you are in WaveLab Elements and offers a subset of the available options. You can customize the Touch Bar according to your needs.

NOTE

The Touch Bar is only available on certain Apple products.

RELATED LINKS

Customizing the Touch Bar (macOS only) on page 404

Customizing the Touch Bar (macOS only)

You can customize the Touch Bar in the Touch Bar customization window.

CHOICES

- To open the Touch Bar customization window, select **WaveLab Elements 11** > **Customize Touch Bar**.
- To add an option to the Touch Bar, use your cursor to drag your favorite options from the customization window down into the Touch Bar.

  When you are done, tap **Done** in the Touch Bar or click **Done** on the screen.
- To rearrange options within the Touch Bar, drag them to the left or right.
- To remove options from the Touch Bar, drag them up and out of the Touch Bar.

RELATED LINKS

Touch Bar (macOS only) on page 404

Configuring WaveLab Elements

You can configure WaveLab Elements according to your needs.

NOTE

The parameters that you set in the preferences are applied when you switch to another WaveLab Elements window.

Global Preferences

Global Preferences are preferences that apply throughout WaveLab Elements. Before you start working with WaveLab Elements, it is recommended to edit these preferences according to your needs.

- To open the **Global Preferences**, select **File** > **Preferences** > **Global**.

RELATED LINKS
General Tab (Global Preferences) on page 405
Display Tab (Global Preferences) on page 407
Audio Tab (Global Preferences) on page 408
Formats Tab (Global Preferences) on page 409
CD Writing Tab (Global Preferences) on page 410
Options Tab (Global Preferences) on page 410
External Applications Tab (Global Preferences) on page 411

General Tab (Global Preferences)

This tab allows you to change the location of settings files and the user interface language. You must restart the application for changes to take effect.

- To open the **General** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **General**.

General

Language

Allows you to select the user interface language.

Setting Location

Common for All Users

Shares the preferences settings with all users on this computer.

Independent for Each User

Allows all users on this computer to set their own individual preferences.

Application Folder (Portable Installation)

Saves settings in the application directory. Use this option to install the application on a portable device.

Specific Folder

Allows you to save the settings in a specified folder.

Open Setting Folder

Opens the folder that is used to save settings. This way you know where the settings are saved and you can back up the settings.

Synchronization Settings

Master Folder

Allows you to specify where the preference settings are saved.

Synchronize at Every Launch

If this option is activated, the settings are synchronized whenever WaveLab Elements is launched.

Synchronize at Next Launch

If this option is activated, the settings are synchronized the next time that WaveLab Elements is launched.

Preferences Handling

Determines how to synchronize the preferences, that is, all settings except the presets. You can either ignore or mirror the preferences.

Preset Handling

Determines how to synchronize the presets that are saved in the master folder. The following options are available:

- If **Ignore Presets** is activated, the presets are not synchronized.
- If **Mirror Presets** is activated, the presets are restored from the master folder, regardless of their time stamp. Any additional local presets are deleted.
- If **Import New Presets** is activated, the presets in the master folder that are unavailable on the computer are imported.
- If **Update Old Presets** is activated, existing presets are overwritten if a newer version is found in the master folder.

Ignore the following Preset Folders (Separate Them with a Semicolon)

Allows you to specify which preset folders you want to ignore when synchronizing the settings. For example, to ignore the Audio Connections settings, add **Audio Connections** to the field.

Update Master

If you click this button, the settings that were used when launching WaveLab Elements are used to update the master folder.

NOTE

This procedure should only be run by the system administrator if multiple WaveLab Elements workstations are used.

RELATED LINKS

Global Preferences on page 405

Display Tab (Global Preferences)

The **Display** tab allows you to make changes to the user interface, which affect the entire application.

- To open the **Display** tab of the **Global Preferences**, select **File** > **Preferences** > **Global**, and click **Display**.

Theme

Allows you to choose a color scheme for the user interface:

- **Dark** sets the user interface to a dark color scheme.
- **Light** sets the user interface to a light color scheme.

History

Maximum Number of Items in Recent File Menus

Sets the maximum number of files that are listed in recent file menus.

Miscellaneous Options

Show Application in High DPI (Windows only)

If this option is activated and your display supports high resolution, WaveLab Elements is displayed in high resolution. Otherwise, this option is ignored.

NOTE

Plug-in windows are not displayed in high resolution. If plug-in windows appear too small, deactivate **Show Application in High DPI**.

Restrict Scaling to Multiples of 100

If this option is activated, only scaling factors that are multiples of 100 are supported. For example, if you use a scaling factor of 150%, in WaveLab Elements, the scaling that is applied is 200%.

If this option is deactivated, intermediate ratios such as 150% are possible.

Use the System File Selector to Open Files

If this option is activated, the standard file selector is opened when you select **Save As**.

Open Quick File Selector When Saving Files

If this option is activated and you save a file via the save shortcut, a dialog is opened instead of the **File** tab.

Hide Unused Ribbon Tabs

If this option is activated, unused ribbon tabs are hidden.

Show WaveLab Elements Logo on Startup

Determines whether the WaveLab Elements logo is displayed during initialization.

Hide Top Level Windows When the Application Is Not Active (Windows only)

If this option is activated, all floating windows are automatically hidden when another application becomes active. If this option is deactivated, floating windows remain on top of other application windows.

Tooltip Delay

Allows you to select the delay after which tooltips appear when you move the mouse over user interface controls.

You can choose from the following options: **300 milliseconds**, **500 milliseconds**, **700 milliseconds**, **1 sec**, and **2 sec**. If you prefer not to see any tooltips at all, you can select **Never Show**.

Playback Cursor

Color

Allows you to customize the color of the playback cursor.

Dim for Muted Channels

With this option activated, any parts of the playback cursor that intersect with muted audio channels are set to semi-transparent.

Width

Allows you to customize the width of the playback cursor.

You can set it to **Thin**, **Medium**, or **Thick**.

Show Trail

With this option activated, a transparent shadow is applied to the left of the playback cursor, which follows its motion.

- **Width** allows you to set the width of the trail.

  You can set it to **Tiny**, **Small**, **Medium**, or **Wide**.
- **Color** allows you to set the trail to the same color as the playback cursor, to white, or to a shade of gray.
- **Intensity** allows you to define the degree of visibility of the trail.

  You can set it to **Subtle**, **Mild**, **Soft**, **Moderate**, or **Pronounced**.

NOTE

The settings related to displaying the playback cursor can be set independently for the **Dark** and the **Light** user interface themes.

RELATED LINKS
Global Preferences on page 405
Starting WaveLab by Opening Files on page 64

Audio Tab (Global Preferences)

This tab allows you to change audio preferences, such as the processing precision.

- To open the **Audio** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Audio**.

Processing Precision

Plug-in Processing allows you to select the processing precision for plug-ins.

- If you select **64 bit float** and a plug-in is capable of processing 64-bit samples, processing takes place in lossless 64 bit.

  If a plug-in is only capable of handling 32-bit samples, WaveLab Elements converts all 64-bit float samples to 32-bit float before sending them to the plug-in. After

the plug-in processing is completed, WaveLab Elements converts the 32-bit float samples back to 64-bit float without loss.

- If you select **32 bit float**, WaveLab Elements converts all 64-bit float samples to 32-bit float before sending them to the plug-in. After the plug-in processing is completed, WaveLab Elements converts the 32-bit float samples back to 64-bit float without loss.

In the plug-in menus, the “32F” and “64F” indicators next to the plug-in name show whether a plug-in is capable of 32-bit float or 64-bit float.

NOTE

Processing in 64-bit float means double precision but slightly longer process time than 32-bit float.

Temporary Files allows you to select the precision of temporary files that WaveLab Elements creates when processing audio.

By default, WaveLab Elements creates temporary files in 32-bit float. Use **64 bit float** if you want to create 64-bit float audio files or 32-bit PCM files.

NOTE

Temporary files in 64-bit float have double precision but take longer to read and write than 32-bit float and their file size is twice as big.

System Clipboard allows you to select the resolution of audio files created during system clipboard transfers.

It is set to 32-bit float by default. However, if WaveLab Elements detects that a file can maintain its quality at a lower resolution, the value is automatically reduced.

RELATED LINKS
Temporary Files on page 73
Global Preferences on page 405

Formats Tab (Global Preferences)

This tab allows you to adjust settings for some of the audio formats and units that WaveLab Elements uses.

- To open the **Formats** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Formats**.

Formats

Use AES17 Standard for RMS Values

Determines how RMS values are reported.

- If this option is activated, the displayed level for a full scale sine audio file is 0 dB. This follows the AES17 standard.
- If this option is deactivated, the displayed level for a full scale sine audio file is -3 dB.

Pitch of A3 (Used in Frequency To Note Conversions)

Sets the reference pitch in WaveLab Elements. The frequency-to-note conversions take this pitch into account.

Create Windows-Compatible File Names (macOS only)

Some characters in file names, for example, | and \, are not supported by Windows. If this option is activated and you save a file, WaveLab Elements converts unsupported characters to characters that are supported by Windows.

MIDI Note Display

The options in this section allow you to choose whether to display the different key values in WaveLab Elements with the pitch or the MIDI note number of the key. In musical notation, keys are denoted according to their pitch. For example, C3 means the note C in the third octave.

Each key corresponds to a MIDI note number from 0 to 127. For example, key C3 corresponds to the MIDI note number 48. MIDI note numbers make it possible for samplers to automatically map samples to the correct keys.

Numeric Style

Determines the format for MIDI notes that are displayed as numbers.

Middle C (Note #60)

Determines the key convention for the MIDI note range (0-127).

Display

Determines how MIDI notes are displayed throughout the application.

RELATED LINKS
Global Preferences on page 405

CD Writing Tab (Global Preferences)

This tab allows you to set a number of parameters for CD writing.

- To open the **CD Writing** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **CD Writing**.

CD Writing

Use Burnproof

Fixes possible buffer underrun errors automatically, provided that the CD writer supports this technology.

Allow Disc Overflow

Allows WaveLab Elements to attempt writing more data (maximum 2 minutes) than the official capacity of the disc.

Maximum Audio CD Size

Allows you to specify the maximum length for a CD. A warning message will appear if the project exceeds this length. The standard maximum length is 74 minutes.

RELATED LINKS
Global Preferences on page 405

Options Tab (Global Preferences)

This tab allows you to reset the default message boxes.

- To open the **Options** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **Options**.

Reset Default Answers

Resets all message box options to their default settings. For example, all **Do not show again** options are deactivated.

RELATED LINKS
Global Preferences on page 405

External Applications Tab (Global Preferences)

This tab allows you to specify an alternative external file browser.

- To open the **External Applications** tab of the **Global Preferences**, select **File** > **Preferences** > **Global** and click **External Applications**.

Alternative External File Browser

Allows you to specify an alternative external file browser that opens when you use the **Reveal Folder in File Explorer/macOS Finder** or **Reveal Files in File Explorer/macOS Finder** options in WaveLab Elements.

If the application needs a special command line formatting, you can specify it in the **Command Line** field. Use **%1** as a placeholder for the file or folder to which you want to browse.

RELATED LINKS
Global Preferences on page 405
Alternative External File Browser on page 421

Audio Files Preferences

This dialog allows you to define settings for editing in the **Audio Editor**. However, these settings also affect other parts of WaveLab Elements. You can choose defaults for editing and playback, adjust the visual appearance of the waveform displays, and determine how WaveLab Elements works with audio and peak files.

- To open the **Audio Files Preferences** tab, select **File** > **Preferences** > **Audio Files**.

RELATED LINKS
Editing Tab (Audio Files Preferences) on page 411
File Tab (Audio Files Preferences) on page 413
Style Tab (Audio Files Preferences) on page 414

Editing Tab (Audio Files Preferences)

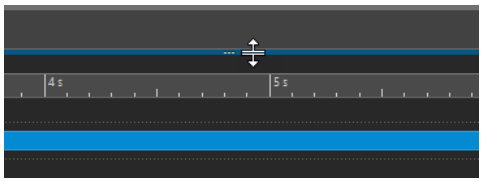
Display

Show Overview When Opening New Audio Files

If this option is activated and you open an audio file, the overview is also displayed. If this option is deactivated, only the main view is displayed.

Show Overview for Mono and Stereo Files Only

If this option is activated, the overview window is displayed when opening mono and stereo files, and hidden when opening multichannel audio files. To show the overview for multichannel audio files, click at the top of the main window and drag down.



Overview: Passive Range Indicator Also Covers the Waveform

If this option is activated, the range indicator that is displayed in the time ruler of the overview also covers the waveform area. Unlike the time ruler indicator, the range indicator is passive and cannot be modified.

Analog Waveform Emulation at Sample Level Zooming

If this option is activated and a waveform is zoomed at the sample level in the timeline, an analog emulation of the waveform is displayed.

Auto-Zoom for Overviews

If this option is activated and you open an audio file, the zoom of the overview is set to display the whole file.

Display File Extension on Tabs

If this option is activated, tabs display file names with their extension. For example, “piano.mp3” instead of “piano”.

Number of Seconds to Display on Opening

Allows you to specify the time range to display when opening an audio file for the first time. WaveLab Elements converts this time range to the appropriate zoom factor.

Whole Audio File

If this option is activated, the horizontal zoom is set to display the whole file.

Process Whole File If There is No Selection

If this option is activated and a process is to be applied to an audio file, the whole file is processed if no audio is selected. In the same situation, if the option is deactivated, a warning appears.

Allow Undoing Edits after Saving File

If this option is activated, you can undo edits after you have saved the file. You can deactivate this option if you want to use less disk space or if you want to remove all temporary files when saving the file.

Playback Scrubbing

Restrict to Play Tool

If this option is activated, this function only works if the **Play Tool** is used.

Sensitivity

Allows you to set the micro audio loop duration that is performed when you move the mouse cursor over the time ruler.

Snap Selection to Zero-Crossing

Do Not Snap at High Zoom Factors

If this option is activated, snapping does not occur if the waveform is displayed at a high zoom factor.

Scan Range

Allows you to define how far WaveLab Elements searches a zero-crossing point in the left and right direction.

Upward Crossing Point/Any Crossing Point

Allows you to choose whether you want WaveLab Elements to detect any zero crossing point in the audio (**Any Crossing Point**), or to limit the search to zero crossing points that mark an upward slope (**Upward Crossing Point**).

NOTE

We recommend choosing **Upward Crossing Point** for loop selections. Note that, as only positive slopes are taken into account, selecting this option generates fewer results, with a greater distance between the individual zero crossing points, than **Any Crossing Point**.

Loudness Waveform Overlay

AES-17 Scaling

With this option activated, the **RMS Loudness** of a sine wave matches its peak value.

TIP

To clearly distinguish between the **RMS Loudness** and the peak values of an audio signal, we recommend deactivating this option, as this slightly reduces the height of the loudness display.

Resolution

Allows you to set the duration of audio slices for **RMS Loudness** processing. The lower the value, the more closely the display matches the peaks; the higher the value, the less responsive it is to peaks.

TIP

To highlight highly dynamic sections, with a significant difference between peaks and loudness, we recommend setting a higher value.

NOTE

Changing the resolution results in rebuilding the display for all audio images.

RELATED LINKS
Audio Files Preferences on page 411
Playback Scrubbing on page 110
Loudness Overlay on page 117

File Tab (Audio Files Preferences)

Support RF64 File Format

If this option is activated, WaveLab Elements creates WAV files that can be larger than 2 GB.

NOTE

This file format is not supported by all applications.

Default Sample Rate for Files without Header

Allows you to specify the sample rate of audio files that do not have a header describing this property.

Location of Associated Files

Allows you to choose where to save associated files (a.k.a. ancillary files):

- **Audio Montage or Project Folder** saves ancillary files in a sub-folder of the audio montage or project folder, labeling the sub-folder as `cache.mon` or `cache.prj`, respectively; provided that the corresponding audio files are also saved in the audio montage or project folder.
- **Specific Folder** saves ancillary files in a folder that you can specify.

  TIP

  We recommend choosing this option in case you see the need to free up memory space later on, as you can periodically delete the content of the folder without risking to lose any important data.

- **Side to Side with Audio File** saves ancillary files in the same directory as the corresponding audio files.

RELATED LINKS
Audio Files Preferences on page 411

Style Tab (Audio Files Preferences)

This tab allows you to specify custom colors for parts of the **Audio Editor**.

Theme

Allows you to select the default style and conditional styles.

Parts

Shows parts that can be colorized. Click a part to edit the color.

Hide (for specific parts only)

Hides the selected part.

Dotted Line (for specific parts only)

Changes the line to a dotted line.

Transparency (for specific parts only)

Allows you to edit the degree of transparency of the selected element.

Element Size (for specific parts only)

Allows you to edit the size of the selected element.

Change Both Channels If Applicable

Allows you to apply separate color settings to the left and the right sides of a stereo file. If this option is activated, settings for the left side of a file are automatically mirrored on the right side, and vice versa.

Change Both Main View and Overview

Allows you to apply separate color settings to the main view and the overview. If this option is activated, settings for the main view are automatically mirrored on the overview, and vice versa.

Color Picker

Allows you to select the color for the selected part. Click the surrounding circle to select the hue. Click in the triangle to adjust the saturation and lightness.

Red/Green/Blue

Allows you to specify the red, green, and blue components of the RGB color spectrum.

Copy Color

Copies the current color to the clipboard.

Paste

Pastes the color from the clipboard.

This Style Is Used If These Conditions Apply

These options allow you to define conditions under which a specific color style is applied.

File Extension Is Any Of

If this option is activated, the color style is applied to files with the specified extension. Separate extensions with a ";" character.

Name Contains Any of These Keywords

If this option is activated, the color style is applied to files with specific keywords in their name. Separate keywords with a ";" character.

Sample Rate Is in the Range

If this option is activated, the color style is applied to files that have a sample rate within the specified range.

Bit Depth Is in the Range

If this option is activated, the color style is applied to files that have a bit depth within the specified range.

Number of Channels Is

If this option is activated, the color style is applied to files that have the specified number of channels.

RELATED LINKS
Audio Files Preferences on page 411
Color Elements in the Audio Editor on page 415

Color Elements in the Audio Editor

You can assign custom colors to various elements of the **Audio Editor**. For some elements, further styling options are available.

Left Channel/Right Channel

Waveform

The waveform color.

Waveform (Selected)

The waveform color of the selected part of the waveform.

Waveform Outline

The outline color of the waveform.

Waveform Outline (Selected)
The outline color of the selected part of the waveform.

Background Top
The color of the background top.

Background Top (Selected)
The color of the selected part of the background top.

Background Bottom
The color of the background bottom.

Background Bottom (Selected)
The color of the selected part of the background bottom.

Waveform Main Axis
The color of the waveform main axis and its style.

Waveform 50% Axis
The color of the waveform 50% axis and its style.

Waveform Elements

Channel Separator
The color of the channel separator line.

Pre-/Post-Roll Indication
The color of the pre-/post-roll indication.

Marker Line
The color of the marker lines and an optional transparency.

Edit Indicator Line
The color of the edit indicator line.

Edit Indicator Head
The color of the edit indicator head.

End of File Indicator
The color of the end of the file indicator.

Time Ruler Style
The color of the time ruler and its style.

Time Ruler Font
The color of the font on the time ruler and the font size.

Level Ruler Style
The color of the level ruler, its style, and transparency.

Level Ruler Font
The color of the font on the level ruler and the font size.

RELATED LINKS
Audio Files Preferences on page 411
Style Tab (Audio Files Preferences) on page 414

Audio Montages Preferences

This dialog allows you to set up general parameters for all audio montages or for the active audio montage only.

- To open the **Audio Montages Preferences** tab, select **File** > **Preferences** > **Audio Montages**.

RELATED LINKS
Style Tab on page 417

Style Tab

This tab allows you to specify custom colors to clips and parts of a clip in the **Audio Montage** window.

Theme

Allows you to switch between the WaveLab Elements color schemes.

Parts

Shows parts that can be colorized. Click a part to edit the color.

Checkbox

Allows you to select multiple parts to colorize multiple parts at the same time.

Undo

Undoes the last change. This action is also possible after saving the file.

Redo

Allows you to redo changes that were undone. This action is also possible after saving the file.

Hide

Hides the selected part.

Change Both Channels If Applicable

It is possible to specify different colors for the left and the right side of stereo clips. If this option is activated, settings for the left side of a clip are automatically mirrored on the right side, and vice versa.

Color Picker

Allows you to select the color for the selected part. Click the surrounding circle to select the hue. Click in the triangle to adjust the saturation and brightness.

Red/Green/Blue

Allows you to specify the red, green, and blue components of the RGB color spectrum.

Copy Color

Copies the current color to the clipboard.

Paste

Pastes the color from the clipboard.

This Style Is Used If These Conditions Apply

These options allow you to define conditions under which a specific color style is applied.

File Extension Is Any Of

If this option is activated, the color style is applied to clips referencing a file with the specified extension. Separate extensions with a ";" character.

Name Contains Any of These Keywords

If this option is activated, the color style is applied to clips with specific keywords in their name. Separate keywords with a ";" character.

Sample Rate Is in the Range

If this option is activated, the color style is applied to clips referencing a file that has a sample rate within the specified range.

Bit Depth Is in the Range

If this option is activated, the color style is applied to clips referencing a file that has a bit depth within the specified range.

Number of Channels Is

If this option is activated, the color style is applied to clips that have the specified number of channels.

RELATED LINKS
Audio Montages Preferences on page 417
Color Elements in the Audio Montage on page 418

Color Elements in the Audio Montage

You can assign custom colors to various elements of the audio montage window.

Clip Colors

The following clip types are available:

Crossfade Region

Allows you to set the background color for overlapping clip sections.

Default

The default colors, used for clips for which you have not selected any specific color.

Locked

The colors used for fully locked clips.

Muted

The colors used for muted clips.

Custom

These options correspond to the items in the color submenus. You can set up conditions in the **This Style Is Used If These Conditions Apply** section for when these should be automatically applied.

The following color elements are available:

Background Top/Bottom

The background colors of the clip. The resulting display backgrounds are gradient fades from the top colors to the bottom colors.

Waveform (Normal/Selected)

The waveform color for selected and unselected clips.

Waveform Outline (Normal/Selected)

The color of the waveform outline for selected and unselected clips.

Edge

The left and right edge of the clip.

Edge (Selected)

The left and right edge of a selected clip.

Axis (Level Zero)

The color of the horizontal dotted line in the middle of a clip, indicating the zero level.

Axis (Half Level)

The color of the horizontal dotted lines halfway up and down from the middle of a clip, indicating 50% level.

Channel Separator (Stereo Clip)

The line dividing the two sides in a stereo clip.

Clip Name

The name label of the clip.

Active Clip Name

The name label of the active clip.

Active Clip Name Background

The name label background of the active clip.

Miscellaneous

Background Top/Bottom

The background colors of the track view for areas without a clip.

Background (Selected Range) Top/Bottom

The background colors in selected ranges.

Marker Line

The color of the marker lines in the audio montage.

Cue Point Line/End Cue Point Line

The color of the vertical dotted cue point lines and end cue point lines.

Time Grid Lines

The color of the time grid if activated on the menu of the time ruler.

RELATED LINKS
Audio Montages Preferences on page 417
Style Tab on page 417

Synchronizing WaveLab Elements Settings on Several Computers

You can make some reference settings available to other WaveLab Elements installations. These settings can then be used by other WaveLab Elements workstations to keep the settings synchronized on several computers.

PROCEDURE

1. Select **File** > **Preferences** > **Global**.
2. Select the **General** tab.
3. In the **Setting Location** section, specify where to save the settings.

Multi-User Settings

If you use multiple WaveLab Elements stations in your studio or in your school, for administration, etc., you can set up one WaveLab Elements station to be the master station. The shared preferences and presets of this station can then be used by other slave stations.

These settings can be saved on the local network, for example.

If the administrator updates these settings, the different WaveLab Elements stations can synchronize with the master settings. You can also use this feature for individual computers to back up a reference setting and revert to this if necessary.

The settings in the **General** tab of the **Global Preferences** dialog are not synchronized. These are saved for each user in the `startup.ini` (Windows) or `startup.plist` (Mac).

IMPORTANT

Settings cannot be synchronized between PC and Mac.

Setting Up a Multi-User Setup

You can use the settings that you have applied on a master WaveLab Elements station for other slave WaveLab Elements stations.

PROCEDURE

1. Set up a WaveLab Elements station with all settings and presets that you want to use on other WaveLab Elements stations.
2. Assign read-only access to the settings folder of the master WaveLab Elements station.
3. Open WaveLab Elements on another station for which you want to use the master settings.
4. Select **File** > **Preferences** > **Global**.
5. Select the **General** tab.
6. In the **Synchronization Settings** section, set up the **Master Folder**, specify when the settings should be synchronized, and specify whether to include the preferences and/or presets.
7. Close WaveLab Elements.
8. Copy the `startup.ini` (Windows) or `startup.plist` (Mac) of the slave WaveLab Elements station to the settings folder of the other slave WaveLab Elements stations.

RESULT

All slave WaveLab Elements stations use the settings of the master WaveLab Elements station.

Alternative External File Browser

By default, WaveLab Elements uses the file browser of your operating system when you browse for audio files, for example. However, you can specify an alternative external file browser in the **Preferences**.

RELATED LINKS

Setting up Alternative External File Browsers on page 421

Setting up Alternative External File Browsers

PROCEDURE

1. Select **File** > **Preferences** > **Global**.
2. Select **External Applications**.
3. Activate **Alternative External File Browser**.
4. Click the text field to open the file browser.
5. Specify the file location of the alternative external file browser.
6. Click **OK**.

RELATED LINKS

Alternative External File Browser on page 421
External Applications Tab (Global Preferences) on page 411

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