

# CASCADIA

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# 1. Welcome to Cascadia

Cascadia is a state-of-the-art delay plugin that combines authentic tape delay algorithms with adaptive unmasking.

The unmask processor dynamically carves space for the main signal so mixes remain clear and present, while still adding depth and dimension. This is achieved by running a psychoacoustic analysis to understand the frequencies where the brain will perceive the delay to be masking the dry signal. The delay is separated into spectral bins, which react to the dry signal and duck in real-time.

The interface is designed to be fast and intuitive, but also powerful and flexible. Cascadia's streamlined control set makes it easy to dial-in a useful delay sound and fit it into your mix. The descriptive metering shows your delay, dry signal, and unmask processing so you can connect visually with the audio. Cascadia can easily be applied directly on tracks thanks to its internal bussing system, or applied to a typical bus channel routing workflow.

This document describes all features in detail, starting with the [overview](#).

## Document conventions

In this document the following formatting is used to highlight useful information:

<i>Italics</i>	Indicates paths to locations on your hard disk or other storage devices.
<b>Bold</b>	Highlights important names, concepts, and software interface elements.
[Brackets]	References keys on the computer keyboard.
▶	Denotes a single step instruction.
→	Denotes the expected result when following instructions.

The following three icons denote special types of information:



The **light bulb** icon indicates a useful tip, suggestion, or interesting fact.



The **information** icon highlights essential information in a given context.



The **warning** icon alerts you of potential risks and serious issues.

## 2. Overview

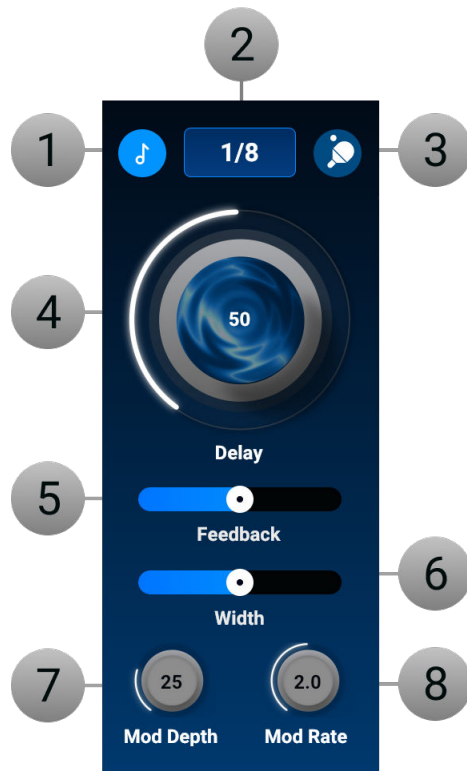
The Cascadia interface consists of the Delay controls on the left side, the Display section in the center, and the Unmask controls on the right side. The header at the top gives you access to presets and global functions.



1. **Header:** Contains global controls including the Preset selector. For more information, refer to [Header](#).
2. **Delay controls:** Lets you set the amount of delay, and fine-tune key parameters. For more information, refer to [Delay controls](#).
3. **Display section:** Visualizes the frequency spectrum for the delay and dry signals along with the unmask processing. Also includes high cut and low cut filters for the delay. For more information, refer to [Display section](#).
4. **Unmask controls:** Lets you adjust the overall amount of Unmask processing, fine-tune key parameters, enable and disable, and monitor the unmask delta signal. For more information, refer to [Unmask controls](#).

### 3. Delay controls

The Delay controls on the left side of the interface let you set the overall amount of delay and fine-tune key delay parameters including time, feedback, width, modulation, and ping pong.



- 1. Tempo Sync:** When enabled, the Delay Time control will be adjusted in increments of musical note values. The duration of the musical note value is based on the tempo of the session.
- 2. Delay Time:** Determines the amount of time between each successive repeat of the incoming signal. This element can be scrolled up and down, or you can double click and manually enter a time value.
- 3. Ping Pong:** When enabled, the Delay will bounce back and forth between the left and right channels.
- 4. Delay Amount:** Controls the amount of delay. It is not a wet/dry knob. Cascadia has an internal bussing system and this knob controls the gain of the delay bus. The result is like if you were to create a delay bus in your DAW, send the full signal to the bus with a 100% wet reverb, and control the gain of that bus channel. 50% of the Reverb knob is like -6 dB gain on a delay bus. 0% is -infinity gain and 100% is 0 dB of gain. The dry signal passes through fully and this knob adds in the delay signal. The intention is to make Cascadia easy to use as an insert effect on channels, rather than having to go through the routing workflow of setting up a delay bus. However, if you prefer the workflow of using a delay bus in your DAW, this can still be achieved by activating the Solo Delay button in the header. This will mute the dry signal from passing through. When Solo Delay is active, the Delay Amount knob simply acts as a gain control for the delay.
- 5. Feedback:** Determines the amount of delayed signal that is fed back into the input of the delay. Effectively this adjusts how long the sound will echo.
- 6. Width:** Adjusts the stereo spread of the Delays.
- 7. Mod Depth:** Controls the depth of modulation.
- 8. Mod Rate:** Controls the rate of modulation.

7. **Mod Depth:** Determines the intensity of LFO modulation of Delay time, i.e. how much the delay time is modified from the baseline Delay time value.
8. **Mod Rate:** Determines the speed of the LFO modulation of Delay time, i.e how often the delay time is modified by the LFO.

## 4. Display section

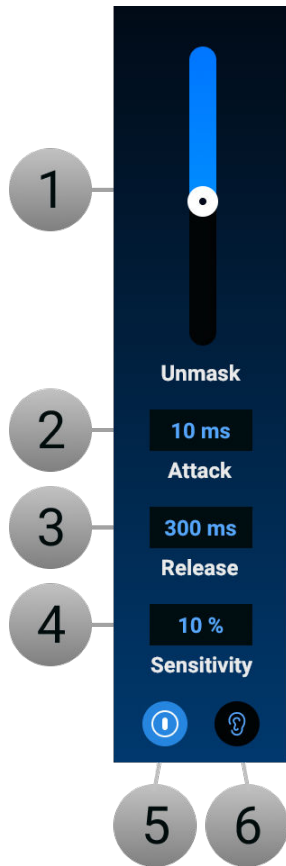
The Display section visualizes the frequency spectrum for the delay and dry signals along with the unmask processing. You can also adjust high cut and low cut filters for the delay.



1. **Unmask Difference Meter:** Visualizes the adaptive spectral unmasking. This ducking is applied only to the delay signal, the dry signal is unaffected. The level of reduction is shown on the magnitude axis on the right.
2. **Dry Spectrum Analyzer:** Visualizes the frequencies of the dry signal.
3. **Delay Spectrum Analyzer:** Visualizes the frequencies of the delay signal.
4. **Low-cut Filter:** Removes low frequencies from the delay signal. This is a 24 dB/oct flat high-pass filter.
5. **High-cut Filter:** Removes high frequencies from the delay signal. This is a 24 dB/oct flat low-pass filter.

## 5. Unmask controls

The Unmask controls on the left side of the interface let you adjust the overall amount of Unmask processing, fine-tune key parameters, enable and disable, and monitor the unmask delta signal.

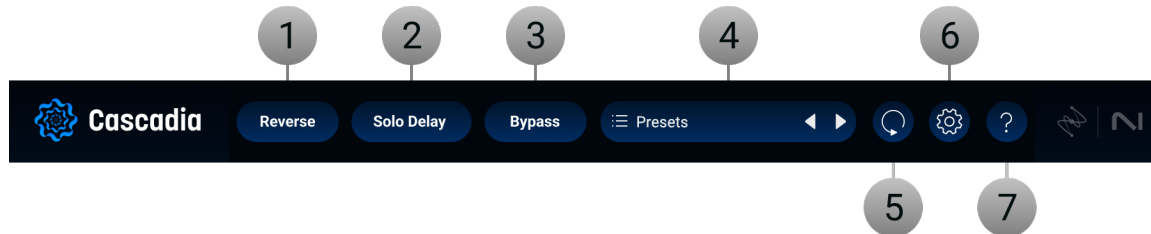


1. **Unmask Amount:** Controls the overall depth of the unmask processing.
2. **Attack:** Adjusts how quickly unmask responds to the incoming signal.
3. **Release:** Adjusts how long it takes unmask ducking to return to baseline of no reduction.
4. **Sensitivity:** Controls the masking threshold in the psychoacoustic model. Increased sensitivity will result in more unmasking and decreased sensitivity will result in less unmask processing being applied. The unmask processor is input-gain dependent. This means that if you are bussing a small amount of signal to Cascadia, you may need to increase the sensitivity for unmask processing to occur.
5. **Power:** Deactivates the unmask processing for a quick before/after comparison of the effect.
6. **Delta:** Monitors the difference from the unmask processing. This delta signal is what is being removed from the delay to make space for the dry signal. Please note that if the unmask Power is disabled, the Delta button will have no signal because the unmask processing is not activated.



## 6. Header

The Header gives you access to presets, global functions, and the Options window.



1. **Reverse:** Makes the delayed signals play backwards.
2. **Solo Delay:** Mutes the dry signal. When using Cascadia on a delay bus as a send effect, it is recommended to enable the Solo Delay option.
3. **Bypass:** Deactivates the processing of the plugin, letting you to hear the unaffected input signal.
4. **Preset selector:** Shows the name of the current preset. Clicking the name opens the drop-down menu that lets you browse and manage presets. By clicking on the left and right arrows you can load the previous or next preset in the list, respectively. For more information, refer to [Presets](#).
5. **Reset:** Returns Cascadia to its default settings.
6. **Options:** Opens the Options window that shows the software version and gives access to options including tooltips and usage data, as well as your license. For more information, refer to [Options](#).
7. **Help (?):** Opens the Cascadia online manual in your web browser.

## Presets

The Preset selector lets you browse and manage presets.

- To open the Preset selector, click the preset name in the Header.

The Preset selector consists of the following elements and controls:



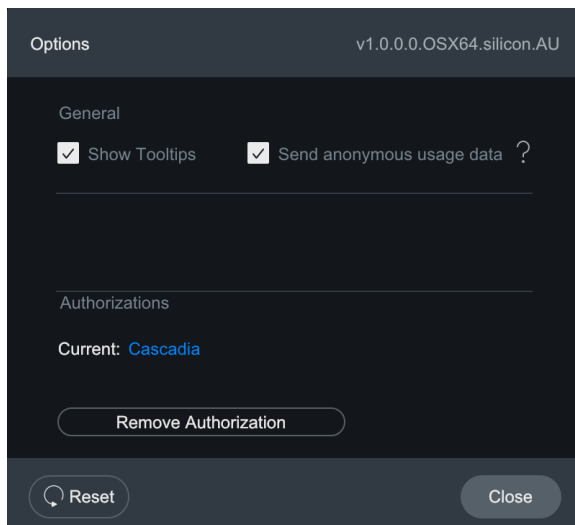
1. **Preset list:** Shows all presets, sorted by category. Clicking a category shows the presets in this category. Clicking a preset loads all of its settings.
2. **User Presets:** Shows all user presets. User presets are saved in the following user preset folders.
  - macOS: `/Users/<user name>/Documents/iZotope/Cascadia/Presets`
  - Windows: `User\<user name>\Documents\iZotope\Cascadia\Presets`
3. **Delete:** Deletes the selected user preset. If a factory preset is selected, this function is not available and grayed out.
4. **Update:** Saves any changes you have made to the selected user preset. If a factory preset is selected, or the preset's settings have not been changed, this function is not available and grayed out.
5. **Rename:** Renames the selected user preset. If a factory preset is selected, this function is not available and grayed out.
6. **New:** Saves a new user preset in the user preset folder.

## Options

The Options window lets you check the plugin's software version and gives you access to options including tooltips and usage data, as well as your license.

► To open the Options window, click the Options button (cog wheel icon) in the Header.

The following options are available:



- **General:**
  - **Show tooltips:** Activates or deactivates the tooltips in the user interface. When activated, hovering over a control shows a brief description of its functionality.
  - **Send anonymous usage data:** Activates or deactivates anonymous usage data tracking. When activated, this information helps us improve the software.
  - **View Manual:** Opens the Cascadia online manual in your web browser.
- **License:**
  - **Current:** Shows the current license status of the plugin.
  - **Remove Authorization:** Removes the current product authorization, letting you authorize the plugin using another serial number.