

Sloth Manual

Version v0.3.0 (2024-02-04)

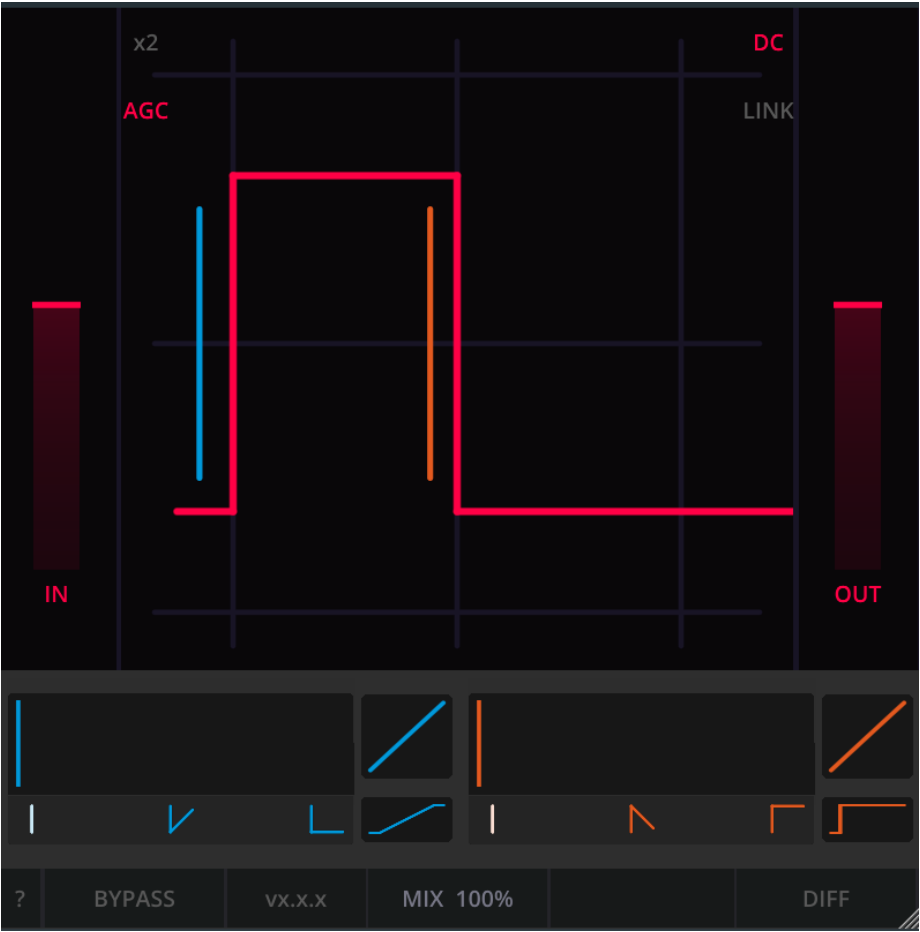


Figure 1: Sloth

Introduction

Sloth is a slew rate limiter plugin. In electronics “slew rate” is the change of voltage over time. When the input signal at an amplifier switches instantly, the output will not immediately change, but “slew” to the new value at a certain rate.

While in modern electronics slew rates are no concern, some valued older designs feature a limited slew rate. This in itself imposes a characteristic sound. Applying slew rate limiting can result in a variety of effects, including in denser signals, subtle darkening of the tone, enhanced texture of sounds up to massively mangled and crushed effects.

Sloth brings the concept of slew rate limiting to the digital domain as a unique tool for artists, mixers and sound designers.

Installation

- Download the zip file for your operating system
- Select the plugin format you want to use and extract it to the respective folder
 - VST3
 - * Win: C:\Program Files\Common Files\VST3\
 - * Linux: ~/.vst3/
 - * macOS: /Library/Audio/Plug-ins/VST3
 - CLAP
 - * WIN: C:\Program Files\Common Files\CLAP\
 - * Linux: ~/.clap/
 - * macOS: /Library/Audio/Plug-ins/CLAP
 - AU
 - * macOS: /Library/Audio/Plug-Ins/Components

MacOS Plugins from non-trusted developers

Apple is rather overprotective of the users, effectively prohibiting the use of downloaded plugins from non-trusted sources. You will need to execute the following command to allow loading the respective plugin

```
sudo xattr -rd com.apple.quarantine <path-to-vst>
```

Controls

- Controls can be changed by clicking (button) and dragging (sliders) with the left mouse button.
- A double click on a slider will reset the slider to the default value
- Hovering over a control for a short amount of time will make a tooltip show up.
- When changing the value of a slider a tooltip will show up which displays the current value
- By engaging the ? in the lower left corner of the plugin, explanations are turned on. When hovering over a control, a longer explanation is displayed directly in the UI.



Figure 2: Slew Controls

Slew Rate

Adjusts the maximum slew rate. This is the core control for adjusting the slew rate limiting. Higher values result in a shallower maximum slew rate. If the slope of the input signal is steeper than the selected Slew Rate, the output is slew-rate-limited to the selected Slew Rate.

This control is available for both rise and fall.

Slew Curve

Controls the curvature of slew-rate-limited slopes. This control allows to transform the shape of slew-rate-limited slopes from “square root” over “linear” to “quadratic”. This only affects slopes that are slew-rate-limited.

- By **default**, a constant slew rate is used, which results in a linear slope.
- For **positive** values, slew rate increases with time, which results in a quadratic slopes.
- For **negative** values slew rate decreases with time, which results in a square root shapes.

This control is available for both rise and fall.

Slew Time

Modifies time factor of the slew curve. Allows to control how fast the square root or quadratic behavior is applied. This is only active for Slew Curve setting not zero. Higher values result in a faster transition through the selected Slew Curve.

This control is available for both rise and fall.

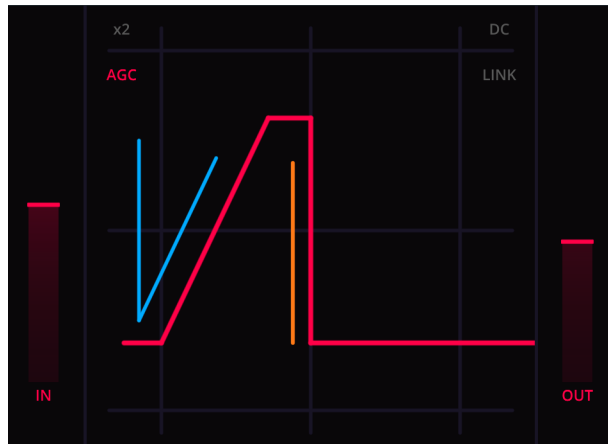


Figure 3: Display Controls

In/Drive

Boosts the input of the plugin. With increased input, slopes become steeper, thus slew rate limiting will apply more aggressively and the effect of slew rate limiting becomes more obvious.

Based on AGC this slider behaves differently:

- When AGC is **on**, this control acts as a **DRIVE** control as the increase in volume is automatically compensated for.
- When AGC is **off**, this control acts as an **IN** control, boosting the input.

Out

Boosts the output volume of the plugin. Some settings of slew rate limiting lead to a loss in volume. This can be compensated for with this slider.

AGC

Toggles **A**utomatic **G**ain **C**ompensation on and off. AGC allows to ompensate for any change in input gain. AGC will not take output gain or any change in volume from the slew rate limiting into account.

Note that when AGC is **on** and In/Drive is increased, this can lead to steeper slopes, resulting in stronger slew-rate-limiting and effectively lower output.

x2

Increases input gain by a factor of 2. The increase in volume will always be compensated, independently of AGC. With increased input, slopes become steeper, thus slew rate limiting will apply more aggressively.

DC

Applies a 10Hz first order high pass filter to the output. This removes any dc offset introduced by slew rate limiting.

Link

Links the slew controls (slew rate, slew curve, slew time) for rising and falling slopes. This allows to easily dial in “symmetric” slew rate limiting, where rising slopes are treated similarly to falling slopes.

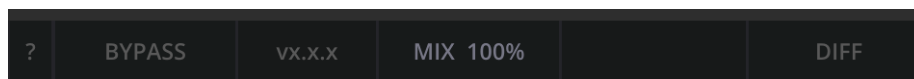


Figure 4: Footer controls

Bypass

Directly routes the input to the output, effectively bypassing the plugin completely.

Mix

Allows to continuously blend between the processed and unprocessed signal. This can be used to dial in slew rate limiting quite hard and then blend the processed signal with the original input.

Diff

Allows listening to the difference between the input and output.

Examples and Tricks

- The audible effect of slew rate limiting can vary drastically between symmetric slew rate limiting (same slew rate for rise and fall) and asymmetric slew rate limiting (different slew rates for rise and fall). Experiment with both.

- Quite nice sounds can be achieved by applying hard slew rate settings and then dialing back the MIX knob until a nice blend between processed and unprocessed signal is achieved.

Plugin configuration

All Darkpalace Studio plugins are highly customizable. This works via two easy to edit **json** files.

- **sloth_ui.json**: customize the look of the plugin. This allows to create a custom theme.
- **sloth_config.json**: customize the parameter ranges of the plugin. **Warning:** This can potentially result in high output levels if used without caution.

The json files are required to be placed in a folder **assets** next to the plugin file. If no json is found or if the json is invalid (e.g. a typo or a missing entry), the plugin will use the default settings.

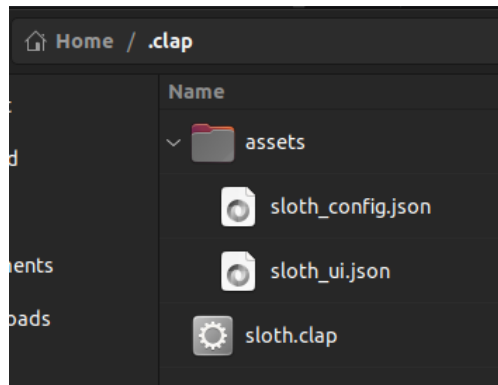


Figure 5: img.png

The **json** files can be found in the zip folder and easily edited with a standard text editor. If you encounter any issues with editing the files, you can visit jsonlint.com for validation.