

# Mesa

v1.0.1



Mesa is a multi-mode clipper for controlling peaks and increasing loudness without pumping.

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## Installing Mesa

To install Mesa on **Mac** or **Windows**, simply run the installer and follow the instructions. Once installed, Mesa will be ready to use the next time you open your DAW.

To install the plugin on **Linux**, simply extract the files and run the install.sh script. In your Terminal app, run the following commands:

```
cd ~/Downloads Change to your Downloads folder
mkdir tempinstaller Create a temporary folder to extract to
tar -C tempinstaller -zxvf PLUGIN.tar.gz Extract the bundle
bash tempinstaller/install.sh Run the installer script
rm -R tempinstaller/ Clean up the temp folder
```

Mesa requires the following system specifications:

### Windows

- Windows 10+
- 64-bit VST/VST3/AAX  
Compatible DAW

### Mac OSX

- MacOS 10.13+
- 64-bit VST/VST3/AAX/AU  
Compatible DAW
- Intel or M1 Processor

### Ubuntu

- Ubuntu 22.04+
- 64-bit VST/VST3  
Compatible DAW

## Registering Mesa

The plugin will run in demo mode until a licence is entered and the software is restarted. In demo mode the plugin will not recall the state from a saved track, it will timeout after 30 minutes, and the saving of presets is unavailable. After you have purchased a licence, you will need to register the plugin, which will unlock the full, unrestricted version of the software. Any tracks you have saved with the demo version will now recall correctly.

Click the padlock icon in the top bar area of the plugin window. A window will display where you can enter your licence from the Venomode website user area. After you have entered your licence, the full version will unlock the next time you open your DAW.

From the Venomode website, you can either copy the licence to your clipboard and paste it in the plugin, or download a keyfile and open in the plugin to register.

# Using Mesa



## 1. Input

The input section lets you choose the operating mode and apply input gain and oversampling to the signal before processing.

The **In Gain** slider adjusts the input level, increasing or decreasing the signal before any processing.

### Oversampling

Non-linear processes such as clipping, especially when pushed hard, can introduce *aliasing* - unwanted distortion caused when new harmonic content exceeds half the sample rate.

Harder clipping increases aliasing, so oversampling is often used to minimize these artefacts. Oversampling runs the internal processing at a higher sample rate, allowing high-frequency content to be filtered out before returning to the original rate.

The **Oversampling** buttons allow the signal to be upsampled up to 16 times. The oversampling algorithm uses high-quality, linear phase filters for clean resampling. Linear phase filters can introduce a small amount of pre-ringing, though it's generally minimal and inaudible. Note that higher oversampling rates increase CPU usage.

When downsampling back to the original sample rate, the signal may result in peaks that exceed the clipper threshold. To prevent this, a hard clipper is applied after downsampling. This is set either to the threshold of the *Post* clipper (if enabled) or to 0 dB.

In most cases, 4x oversampling provides a good balance between reduced aliasing and CPU efficiency.

## 2. Clippers

Although clipping is usually avoided in audio production, it's actually a powerful tool for transparently increasing loudness while adding subtle warmth and density.

Clipping stops any signal from exceeding a set level, but unlike a limiter which does this in a smooth and controlled manner by reducing the level over time, clipping simply cuts off the signal at the threshold.

For example, if your snare drum peaks at 0dB and you set your clipper to -3dB, any signal above -3db will be clipped. You now have peaks that are 3dB lower, giving you more headroom for the other mix elements. Alternatively, you could raise the output by 3dB, with the result being the peak level still being 0dB, but with a 3dB louder signal overall.

Clipping is also useful before limiting - shaving off the highest peaks means the limiter doesn't have to work as hard, often reducing audible pumping.

As clipping is a type of distortion, additional harmonics and aliasing are introduced into the signal. Hard clipping adds more overtones to the signal, producing the familiar *clipped* sound when a signal is driven too hard. Soft clipping however, smooths the distortion curve, resulting in a subtler and often warmer tone.

Full-spectrum sounds such as snare drums or full mixes can mask clipping artefacts, as the generated harmonics blend with existing high-frequency content. Used subtly, clipping can reduce dynamic range and tame peaks in a transparent way.

Mesa features 5 different clipping modes:

- **Hard** - A simple hard clipper that chops everything off above the threshold.
- **Soft I** - A hard clipper with a variable curve near the threshold, allowing a gentler roll-off before fully clipping.
- **Soft II** - A very soft clipper with a wider roll-off than *Soft I*. It affects more of the signal below the threshold and works well on less-transient material.
- **Pressure** - An *enhancer* mode that adds weight and warmth, increasing punch and intensity.
- **Boost** - An *enhancer* mode that adds a subtle boost to material below the threshold, increasing perceived loudness without degrading quality.

The **Enable** button at the top right enables the clipper. When active the graph and controls become active. The 'link' button ties the *Threshold* and *Makeup Gain* together, making it simple to increase loudness by simply adjusting the threshold. For example, a threshold of -2dB automatically applies a makeup gain of 2dB.

The **Threshold** knob sets the maximum level of the clipper. For example, at -3dB, the signal will never exceed -3dB.

The **Boost/Shape/Pressure** knob applies a different effect based on the clipping algorithm. In *Soft I*, it adjusts the roll-off at the threshold. In *Pressure* and *Boost*, it increases the intensity of the enhancer.

Above the controls is a graph displaying the clipper curve and the current input level. The horizontal axis shows the input level in decibels, and the vertical axis shows the output level in decibels. The coloured line shows the relation between input and output. The filled grey section displays the live input level during playback.

Right-click the graph to switch between linear and decibel scales.

### 3. Output

The output section displays the input and output levels of the plugin..

The level meters show input and output peak and RMS levels, along with their maximum values displayed above the meters.

The LUFS meters show the momentary loudness of the signal. LUFS are the perceived loudness of the signal. The difference indicator shows how much louder or quieter the signal sounds, regardless of the peak level.

The Peak meters show the maximum input and output peaks. The difference indicates how much the signal has been clipped or boosted.

Clicking any of these values, or changing any parameter, resets all values, allowing you to view instant changes in levels.

## **4. Waveform Graph**

The waveform graph displays real-time input and output levels.

The blue waveform shows the signal entering the plugin, and the white line shows the output after all clipping and gain stages.

## 5. Top Bar

The top bar is where you can manage the plugin. The middle section shows the currently selected preset, and if you open this list you can choose from all the factory and user presets. Clicking on the left and right arrow icons manually cycles to the previous or next preset. The save icon will open a window where you can save the current state of the plugin as a custom preset. Enter your preset name in this window and click save.

You can view this manual at any time by clicking the question mark button.

The padlock icon will open the registration window. Enter your licence code exactly as shown in your Venomode user area and click "Register". You can simply click the licence in your Venomode account to copy it to your clipboard. See the registering Mesa section for more info.

The cog icon will open a settings window where you can alter the GPU acceleration settings, GUI scale and theme. The update icon is two arrows in a circle. This button will activate when a new version is available for download.

The top right icon with a power button symbol will enable or disable the plugin.

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