# Perforator

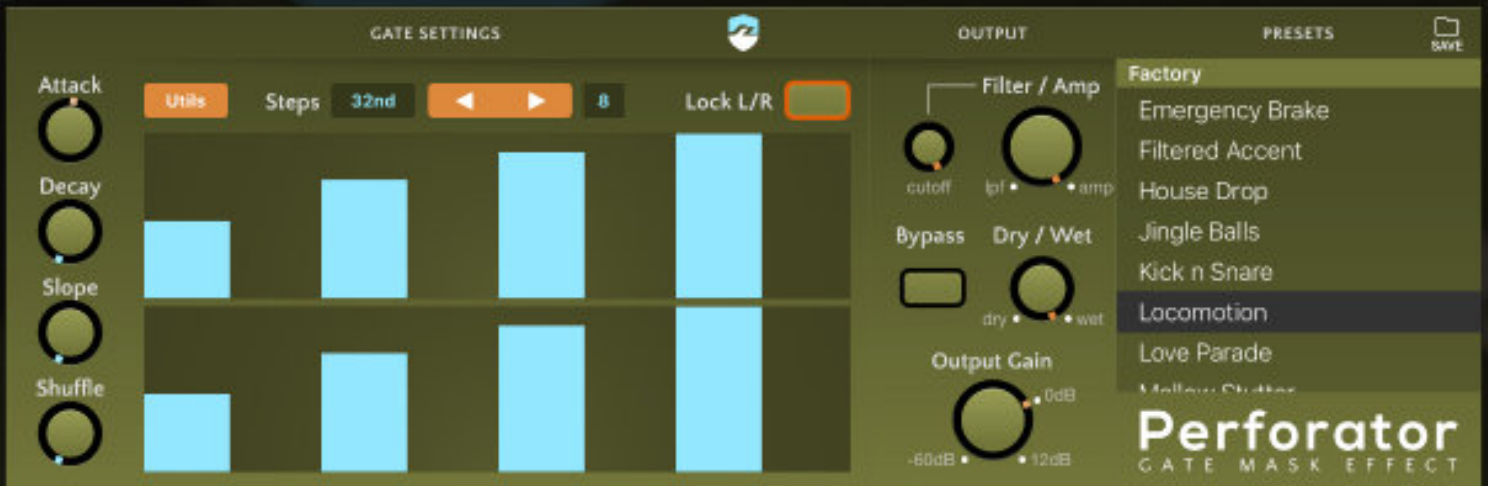## Bram Bos



## version 1.0

# Version history

1.0     May  16, 2018    Initial publication

# See you later, 'Gater

Perforator is gate effect. It will gap, snip and cut away bits of all audio sent through it. By doing this rhythmically it will turn sustained sounds, such as pads, strings, drones into rhythmic patterns. Perforator gets its tempo directly from the plugin host, so synchronization will happen automatically, without the need for Link, MIDI Clock or other external sync protocols.

The plugin comes in Audio Unit (AUv3) format, so it will require a host app compatible with AU effect plugins to run. The included standalone effect mode is for demonstration purposes only and does not provide a means for tempo synchronization.

Perforator is compatible with any iOS device running iOS 10 or higher. The additional AU MIDI output feature requires iOS 11 or higher and an AU MIDI compatible host.

# Default Settings

Perforator's default settings are set to 'neutral': no effect. So you'll have to adjust settings before you can hear the effect in action. This is the same as the *'- Init -'* preset in the Factory preset list. Choose this preset if you want to reset the plugin to its neutral state.

**Note:** double-tapping any knob will reset it to its default (neutral or center) state.
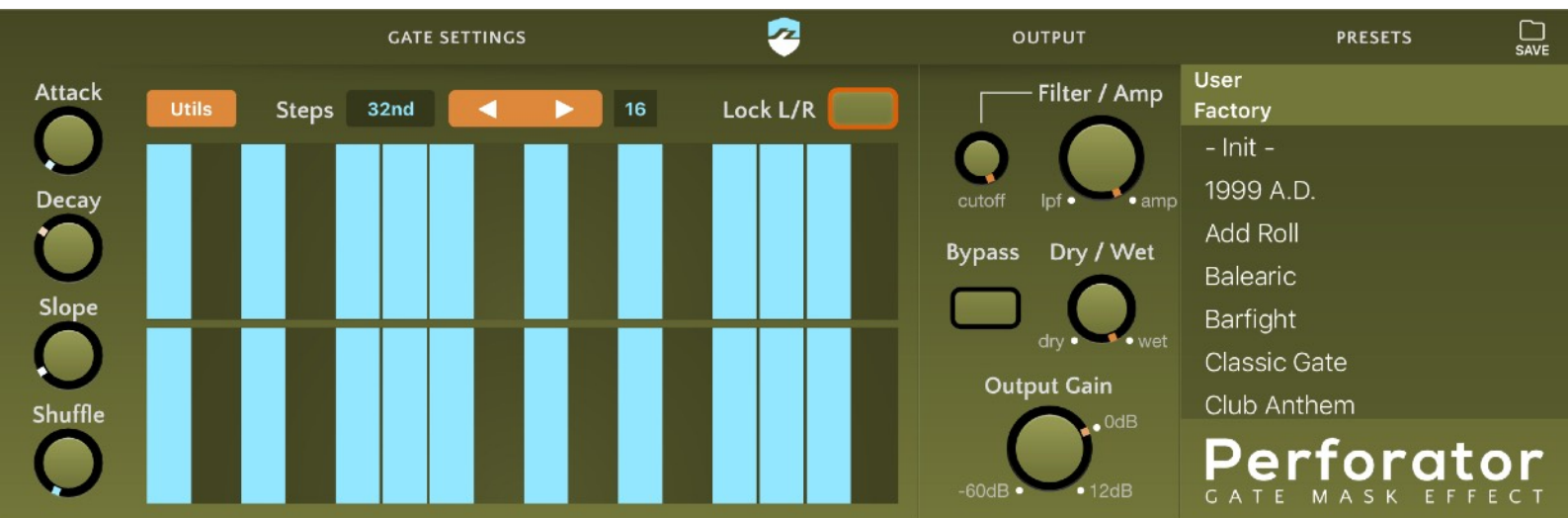
## Cutout Patterns

**Using the Pattern Editors**
There are two pattern editors. The top editor is for the Left channel, the bottom editor is for the Right channel. By default both editors are linked; this means that both editors are identical and will be always be modified simultaneously. If you want to edit the channels independently, e.g. for creating interesting stereo gate effects, you can tap the "Lock L/R" button until it is in its dark/unlit state.

Tap a slice in the editor to toggle it on and off. If you want to set an intermediate value (not full on, full off) you can slide your finger inside the slice as if it were a slider. There are subtle snap-indices at 75%, 50% and 25%.

**Steps**
Using the steps widget you can set the time-resolution of the slices, and adjust the number of slices in the current pattern. Tap the "resolution button" to bring up the selection panel:
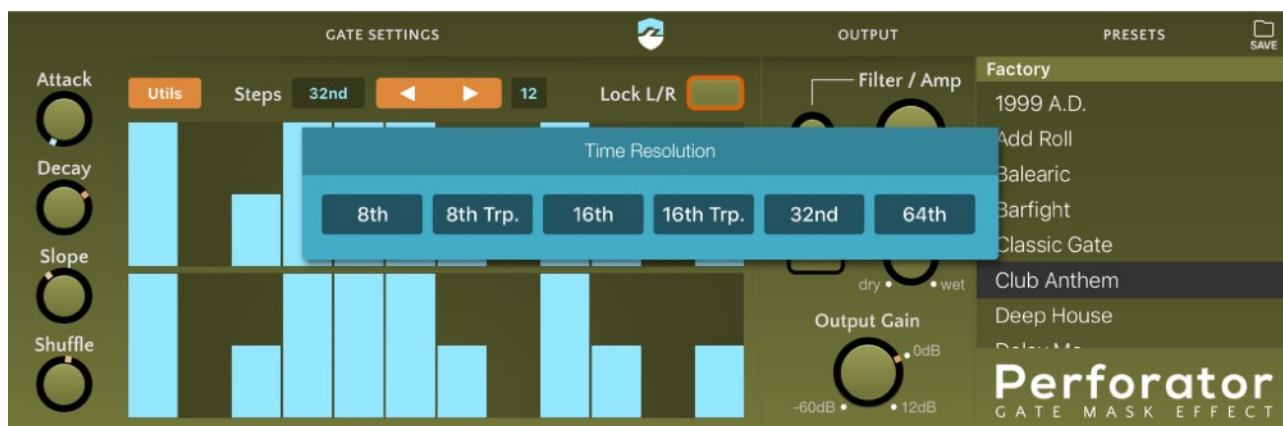


You can use the stepper to change the number of slices in the pattern. The possible range of slices is 2-32.

**Note:** the pattern will keep looping indefinitely. If you create a pattern which shorter than a full measure it will automatically calculate its correct beat position without retriggering.

# Envelope

Perforator provides an envelope which will be applied to the slices in the gate pattern. This envelope allows you to transform the gate effect from a very staccato 'open/close' effect to the sloppy pumping sound of a sidechained compressor - and anything in between.

**Attack**    Determines the time it takes to go from silence to full sound output. If the attack time is longer than the duration of the slice, it may not reach full output.

**Decay**    Sets the time it takes for the envelope to go from full sound output to silence. Decay will always start at the current envelope level, which may be lower than full output.

**Slope**    Dials in the steepness of the envelope slope. Lower values are generally 'snappier' and high values tend to sound more 'gradual' - but the actual effect is highly dependent on the current attack and decay values.

> **Note:** using the minimum Decay value in combination with the filter effect may introduce minor artifacts in the audio. It is recommended to dial in a tiny bit of Decay when using full filter strength.

**Shuffle**    This shifts the timing of the slices in such a way that it creates a 'groove' or swing effect.
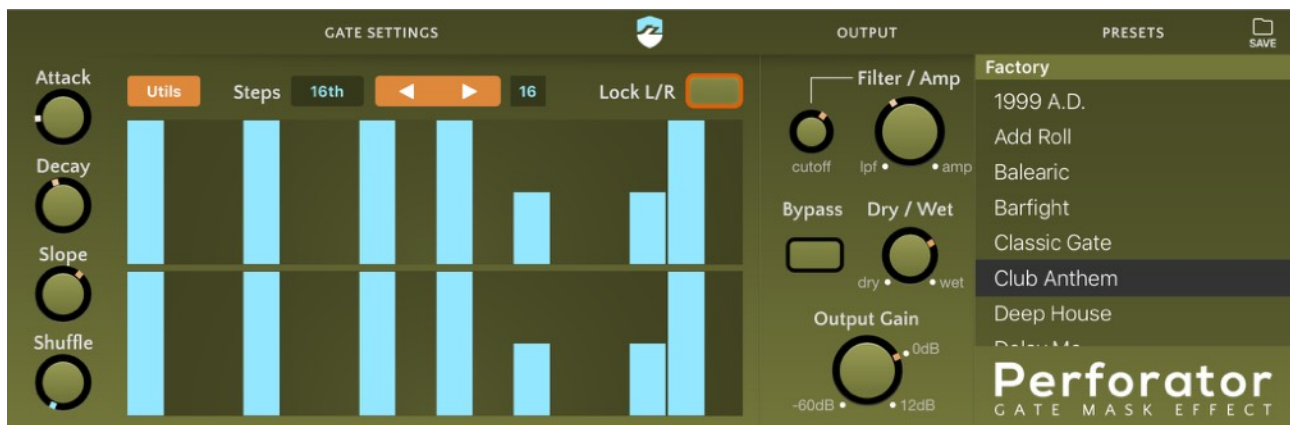


# Output settings

This section lets you fine-tune the strength and 'sound' of the gate effect. There are two built-in mechanisms for gating the sound: an AMP EG and a lowpass filter. Both can also be used together.

**Filter/Amp**    Sets the balance between the filter effect and the amp effect. When set to full filter, the lowpass filter (lpf) is used to quickly cut away frequencies from the audio until it is almost silent. When set to full amp no filter effect will be audible and only the audio amplitude will be modulated by the envelope (i.e. ranging from full sound output to silence).

**Cutoff**    Determines the peak cutoff frequency for the filter (when fully open).

**Bypass**          When enabled, the gate effect is bypassed, but output gain boost/cut is still applied.

> **Note: t**he bypass toggle can be automated as an AU Parameter to enable/disable gating inside a music project - if the AU host supports parameter automation.

**Dry/Wet**         Sets the balance between dry (uneffected) and wet (gated) sound output. This can be used to apply the gate effect as a subtle accent without fully cutting out the incoming signal.

**Output Gain**     Boosts or attenuates the outgoing signal.
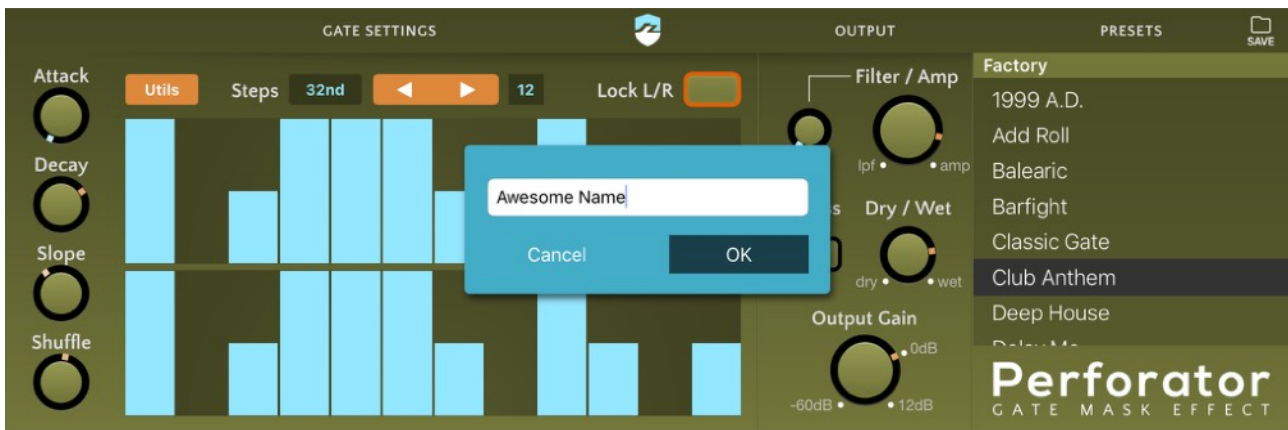


## Preset Management

### Saving a user preset
To add the current settings to the list of user presets, hit the "SAVE" button in the top-right corner of the plugin window. You can then choose a new name for your preset

### Deleting a user preset
If you want to delete a previously saved user-preset, simply look it up in the preset list and swipe it to the left (like in most other iOS apps that present lists of documents).

# Utils Button
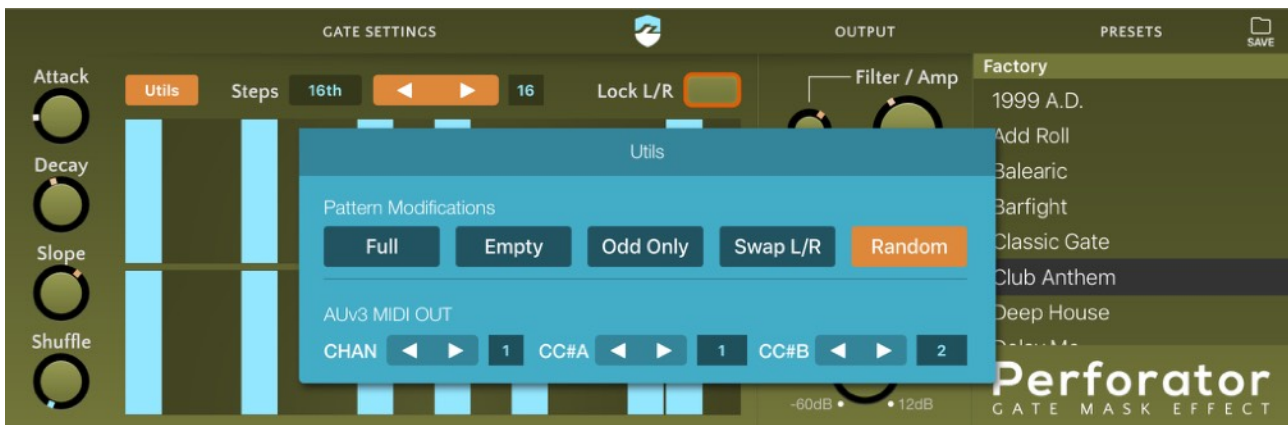


Tapping the Utils button will bring up a dialog with additional features of the plugin. The Pattern modifications will quickly alter the pattern editors:

**Full**         Sets all slices in both editors to full
**Empty**        Empties both editors (all slices will be set to 0-level)
**Odd Only**     Creates a basic pattern in which only the odd slices are enabled
**Swap L/R**     Flips the contents of both editors
**Random**       Generates a pseudo-random pattern. Some 'soft rules' are set internally to increase the
                 chances of coming up with a usable pattern.


# AUv3 MIDI OUT (Bonus Feature)

As a little nice-to-have additional feature you can use the two patterns in Perforator to output their envelope values as MIDI CC streams. This feature requires iOS11 or higher and an AU host which supports AU MIDI effect output (and routing of the MIDI output).

The method for setting this up is different in all hosts - and more hosts which support this feature are added frequently.

The MIDI messages which are sent out are standard MIDI CC messages. You can use the "Chan" stepper to select which MIDI channel will be used for the messages. CC#A and CC#B let you select the MIDI CC code to be used. A is the top pattern, B is the bottom pattern.

By default CC#1 is sent from the top pattern and CC#2 is sent from the bottom, both on channel 1.

**Note:** some smoothing is applied to the outgoing envelope values, to account for the lower resolution of MIDI output (compared to audio sample rate).