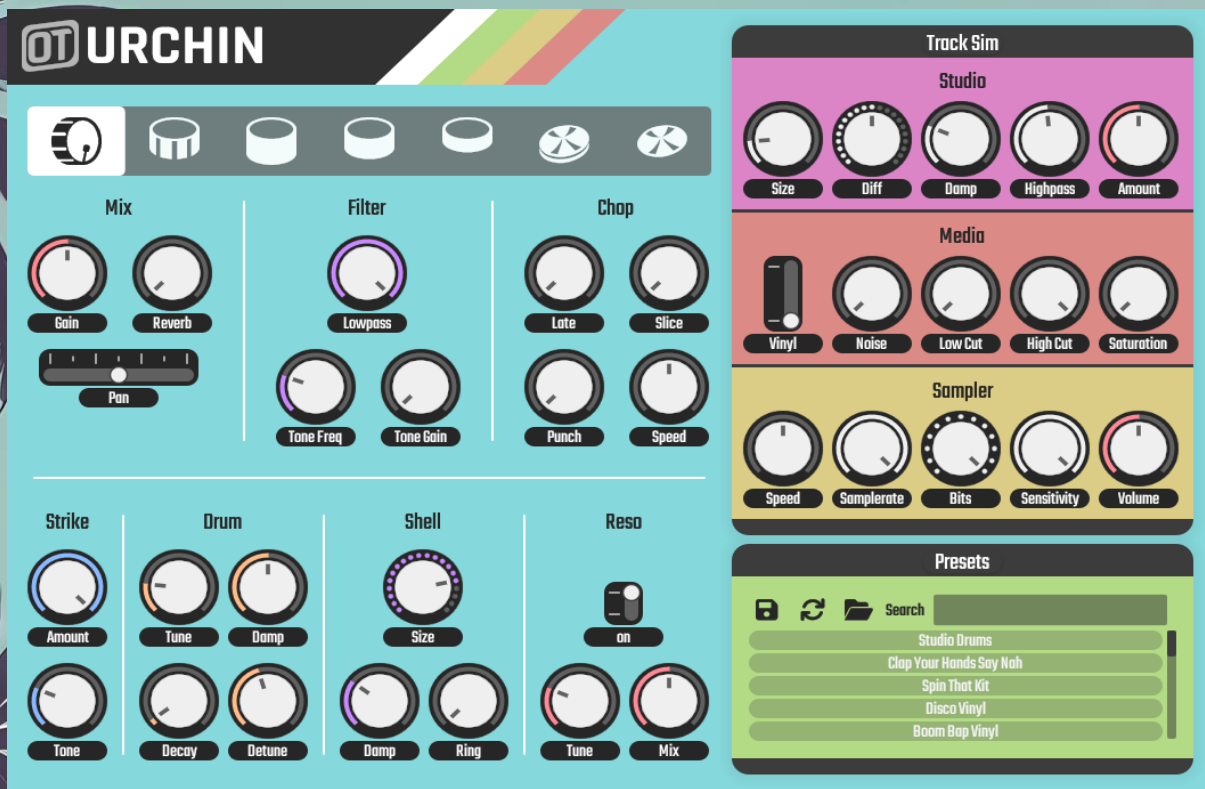


OneTrick URCHIN



User Guide

Version 1.0.2

Created by Punk Labs



Functional
Audio
Stream

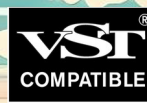


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Introduction

What is OneTrick URCHIN

A hybrid drum synth that models the gritty lo-fi sound of beats from vintage records without sampling. It takes spectral and physically modeled drums, running them through simulated studio reverb, a vinyl or tape player, and finally a digital sampler. The result is a fat and saturated drum machine that creates a vibe of sampling with the control of a synthesizer.

Features

- Preset browser with tags and editing
- 20 factory preset kits
- Multi-out or stereo
- Vinyl or tape noise and saturation
- Realtime “playback speed” of synthesized media
- Studio reverb
- Nondestructive modulation (CLAP only)
- All parameters are automatable
- No telemetry or analytics
- No DRM
- Open source to inspect, learn from, adapt, and improve

Available Plugin Formats

CLAP, VST3, and Audio Unit

Supported Platforms

Linux with glibc 2.31 or later (x86_64), Windows 10 or later (x64), and macOS 10.13 or later (64bit, M1/M2/M3). OpenGL 2.0 or above is required for all platforms.

About Open Source

OneTrick URCHIN’s source code is available under a GPLv3 (or later) license for anyone to inspect, adapt, learn from, and improve. We’ve all had an app we rely on become outdated, incompatible, or move in a direction we don’t like; by releasing the source code, we hope to protect users from these types of situations, and provide a guaranteed availability long after regular development has ceased. We believe that everyone benefits when users have control over their software.

Who is Punk Labs

Punk Labs is run entirely by just two people, Oren Kurtz and Tara Bellafiore. We’ve been designing software, web projects, video games, and writing music professionally since 2005. Our journey has been long, and we’ve managed to remain independent. We sincerely hope you enjoy our creation and find it useful.

Getting Started

Installing

There is an assisted installer available for each platform. After downloading, run and follow the on-screen instructions. By default installation will be in the current user's data folder for the corresponding plugin format. As an alternative, an archive is available for manual installation. Your DAW/Host might need to scan for new/updated plugins once installation is completed. Please consult your DAW/Host's documentation for details. The following directories are used:

		User	System
Linux	CLAP	~/.clap/	/usr/lib/clap/
	VST3	~/.vst3/	/usr/lib/vst3/
	Documentation	~/.local/share/doc/onetrickurchin/	/usr/share/doc/onetrickurchin/
	Presets	~/.local/share/onetrickurchin/Presets/	
	Uninstaller	~/.local/share/onetrickurchin/Install Data/	/opt/onetrickurchin/Install Data/
Windows	CLAP	%LOCALAPPDATA%\Programs\Common\CLAP\	%COMMONPROGRAMFILES%\CLAP\
	VST3	%LOCALAPPDATA%\Programs\Common\VST3\	%COMMONPROGRAMFILES%\VST3\
	Documentation	%USERPROFILE%\Documents\	%PROGRAMFILES%\PunkLabs\OneTrick URCHIN\
	Presets	%LOCALAPPDATA%\PunkLabs\OneTrick URCHIN\data\Presets\	
	Uninstaller	%LOCALAPPDATA%\Programs\PunkLabs\OneTrick URCHIN\Install Data\	%PROGRAMFILES%\PunkLabs\OneTrick URCHIN\Install Data\
macOS	Audio Unit	~/Library/Audio/Plug-ins/Components/	/Library/Audio/Plug-ins/Components/
	CLAP	~/Library/Audio/Plug-ins/CLAP/	/Library/Audio/Plug-ins/CLAP/
	VST3	~/Library/Audio/Plug-ins/VST3/	/Library/Audio/Plug-ins/VST3/
	Documentation	~/Documents/	/Library/Application Support/com.PunkLabs.OneTrick-URCHIN/
	Presets	~/Library/Audio/Presets/Punk Labs/OneTrick URCHIN/	

Tip: On Windows, you can paste a directory listed with the environment variable (ex. %LOCALAPPDATA%) into the File Explorer address bar to be taken to that location. On macOS you can paste the directory listed into "Go to Folder..." located in the Finder, "Go" menu.

Basic Navigation

There are three types of controls: knobs, faders, and switches. Each control can be clicked and dragged to modify its parameter. Holding the Shift key on your keyboard while dragging allows for finer control. Single clicking on a switch will increment its value by one. Parameter values are displayed while hovering your mouse cursor over a control. To reset any control hold the Control key on your keyboard and single click, or alternatively double click.

The interface is also fully keyboard navigable. Tab will focus on the next control, while holding Shift and hitting Tab will focus on the previous control. You can also navigate using Arrows. Enter/Return or Space will activate a preset or buttons. Holding Control while using the Arrows will adjust a parameter's value. Holding Control and Shift while using Arrows will allow for finer adjustments.

Audio Bus Layouts

There are two supported layouts, Stereo and Multi-Out Stereo. Consult your DAW/Host's documentation for selecting the layout.

Stereo:

Provides a main stereo output bus with all processing applied.

Multi-Out Stereo:

Provides a main stereo output bus with all processing applied, as well as stereo auxiliary buses for processing each kit piece separately.

Overview



Tip: You can click on the logo to view the version number and credits.

The plugin is split up into key areas: the **Kit**, the **Track Sim**, and **Preset Browser**. Each area will be broken down and explained.

Kit

Click on one of the drum icons to select that voice for editing. When a voice is triggered, its icon will animate. The drum voices from left to right: Kick, Snare, Low Tom, Mid Tom, High Tom, Hi-hat, and Cymbal.

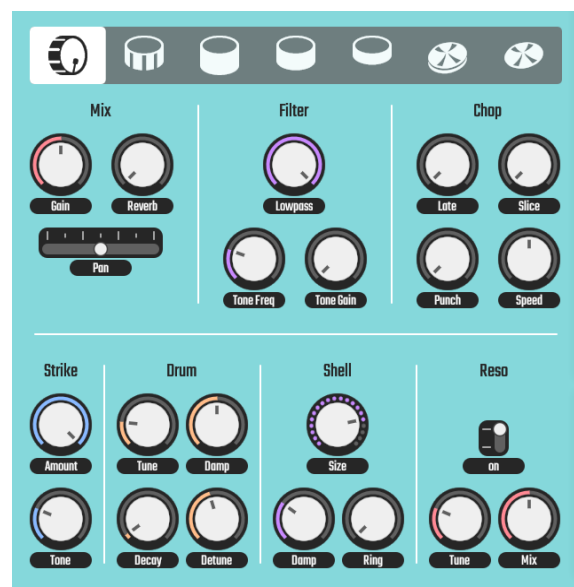
Mix

Controls overall volume, panning, and reverb.

Gain: Adjusts the volume in decibels.

Reverb: Adjusts the amount to send to the Reverb bus as a percentage of the total signal.

Pan: Adjusts the left/right panning.



Filter

Controls a lowpass and peak filter.

Lowpass: Sets the lowpass filter's cutoff in kilohertz.

Tone Freq: Sets the peak filter's frequency in kilohertz.

Tone Gain: Set's the peak filter's gain in decibels.

Chop

Controls simulated playback and sampling parameters.

Late: Adds a slight delay to simulate a poorly chopped sample with some leading silence in milliseconds.

Slice: Limits the duration the voice is played in seconds, simulating a short sample that cuts off abruptly. Turning this down all the way will remove the limit, for an infinite length.

Punch: Blending in a transient shaping envelope to enhance the punchiness of the sound as a percentage.

Speed: Adjusts the virtual "playback speed" of the voice in semitones, simulating it being sampled at a different rate. This will affect pitch, tone, and duration of the synthesis.

Strike

Controls the transient "click" portion of the sound.

Amount: Controls the amount of click to mix into the sound as a percentage.

Tone: Controls the brightness of the "click".

Drum

Controls the primary parts of a drum voice's synthesis.

Tone: Controls the fundamental frequency of the beater head in hertz.

Damp: Controls the amount of dampening applied to the beater head as a percentage.

Decay: Controls the approximate decay duration in seconds.

Detune: Controls the maximum amount of detuning when being struck at full velocity.

Shell

Controls the properties and overall sound of the drum shell resonator.

Size: Controls the size of the drum shell resonator in inches.

Damp: Controls the amount of dampening applied to the drum shell as a percentage.

Ring: Controls the amount of ringing produced by the shell as a percentage.

Reso

Controls the drum's resonant head.

On/Off: Toggles the drum's resonant head on or off. The resonant head is required for snares on the snare drum.

Tone: Controls the tuning of the resonant head, relative to the beater head in semitones.

Mix: Controls the amount of sound produced by the resonant head as a percentage.

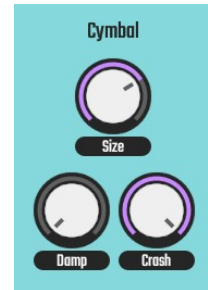
Cymbal

Controls the properties of a cymbal or hi-hat. The hi-hat or cymbal voice must be selected to see this control.

Size: Controls the size of the cymbal in inches.

Damp: Controls the dampening of the cymbal as a percentage.

Crash: Gives the Cymbal a more crash-like filter sweep as a percentage.



Track Sim

Global processing that applies to the Kit as a whole. Note that most of these controls will have no impact on auxiliary buses (multi-out). The exceptions are ***Sampler speed*** and ***sensitivity***.

Studio

This is the reverb module meant to simulate the room the drums were recorded in. Each channel's "Reverb" knob will send a certain amount of signal to this module.

Size: Controls the relative size of the room as a percentage, this sets the overall decay time of the reverb.

Diff: Controls the diffusion of the sound as it bounces. Lower values may sound more like an echo, and higher values will smooth into a wash of sound.

Damp: Controls dampening of the sound as it bounces. Higher values will tend to mute the higher frequencies.

Highpass: Controls the frequency of a highpass filter in hertz to tame any boominess from the reverb.

Amount: Controls the overall amount of reverb to mix into the final output.



Media

Adds noise, saturation, and filtering to the signal to simulate media playback.

Tape/Vinyl: This switch controls the type of synthesized noise added to the signal. This noise is gated along with the drum signal to create the impression that the noise is part of a "sample".

Noise: Controls the amount of noise added to the signal.

Low Cut: Controls the frequency of a highpass filter in hertz to simulate older recordings.

High Cut: Controls the frequency of a lowpass filter in kilohertz to simulate worn recordings.

Saturation: Controls the amount of saturation added by the "media player".

Sampler

Adds a virtual "sampler" into the mix that applies bitcrushing, and controls the overall "playback speed" and velocity sensitivity.

Speed: Adjusts the virtual "playback speed" of the entire kit in semitones, simulating it being sampled at a different rate. This will affect pitch, tone, and duration of voice synthesis.

Samplerate: Controls samplerate of the virtual sampler in kilohertz. This acts like a bitcrusher with additional filtering applied to simulate an old ADC (Analogue-to-Digital Converter).

Bits: Controls the bit-depth of the virtual sampler.

Sensitivity: Controls the amount of velocity sensitivity for the entire kit. This will affect voice synthesis.

Volume: Controls the final volume output in decibels.

Preset Browser

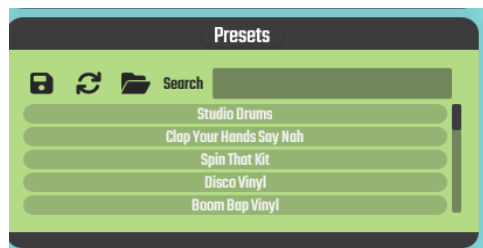
Displays a list of the Factory and User presets. Click on a preset to load it, or cycle through them with the arrow keys. Selecting a preset will bring up an info pane with details. The controls are listed from left to right.

Save: Displays the *save dialog* to save the current settings as a user preset.

Refresh: Refreshes the list of installed presets. Press this if you've added any presets while the plugin was open.

Open: Opens the preset folder with your system file browser.

Search: Filters the list of presets to match your query. You can search for title, description, author, or tags. If you search for tags you must type the full tag, but other fields use a substring search.



Presets are stored as simple plain-text JSON files with a .preset extension. This makes it easy to edit them in a text editor, or manipulate with a language like python. Install new presets by copying them into the presets folder, or delete existing ones. You can find the presets folder by hitting **Open** in the browser, or by referencing the directories table in the *Getting Started, Installing* section.

Save Dialog

Name: A title for your preset, this will show up in the list of presets.

Author: Your name, useful if you decide to distribute your presets. This will show up in the info popup when selecting a preset.

Description: A brief description of your preset. This will show up in the info popup when selecting a preset.

Tags: A space-separated list of tags. These are used when searching. This will show up in the info popup when selecting a preset.

A screenshot of a 'Save Dialog' form. It has a dark background with light green text and input fields. The form contains four rows: 'Name:' with a refresh icon and the text 'Disco Vinyl'; 'Author:' with the text 'Punk Labs'; 'Description:' with the text 'Just add half a clove.'; and 'Tags:' with the text '70s Disco Hiphop Vinyl'. At the bottom, there are two buttons: 'Cancel' and 'Save!'.

Name:	Disco Vinyl
Author:	Punk Labs
Description:	Just add half a clove.
Tags:	70s Disco Hiphop Vinyl
<input type="button" value="Cancel"/> <input <="" td="" type="button" value="Save!"/>	

MIDI Map

Voice	MIDI Note
Kick	C2 / B1
Snare	D2 / E2
Rimshot	C#2
Low Tom	F2 / G2
Mid Tom	A2 / B2
High Tom	C3 / D3
Hi-hat Closed	F#2
Hi-hat Choke	G#2
Hi-hat Open	A#2
Cymbal	C#3
Cymbal Choke	D#3
Effect	Control
Playback Speed / Pitch	Pitch Wheel
High Cut	Mod Wheel (CC 1)

Note: MIDI is accepted on channels 1 and 10.

Multi-Out Channel Map

Bus	Channels
Main Out	0, 1
Kick	2, 3
Snare	4, 5
Low Tom	6, 7
Mid Tom	8, 9
High Tom	10, 11
Hi-hat	12, 13
Cymbal	14, 15

*Note: Main bus has **Track Sim** processing applied, whereas auxiliary buses do not.*

Changelog

1.0.2 (July 8, 2024)

Fixed:

- Crashing on Linux caused by OpenGL/window multithreading.

1.0.1 (June 25, 2024)

Added:

- Plugin now saves last selected tab and preset

Changed:

- Saving presets now displays an error on failure.
- Keyboard navigation now possible with arrows
- Updated NIH-plugin
- Updated Audio Unit Wrapper (vst3sdk 3.7.11)

Fixed:

- Multi-out buses crackling
- Crash when user preset folder doesn't exist.

1.0.0 (November 30, 2023)

- Initial release

Support

Product Home Page: <https://punklabs.com/ot-urchin>

E-mail: contact@punklabs.com

News and Updates: <https://punklabs.com/blog>

Notices

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