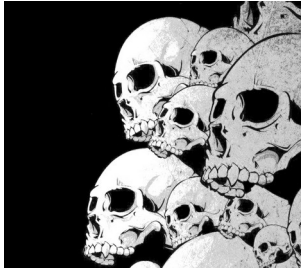


LADSPA



Y. Collette ([ycollette.nospam@free.fr](mailto:ycollette.nospam@free.fr))  
<https://audinux.github.io>





# Les plugins LADSPA

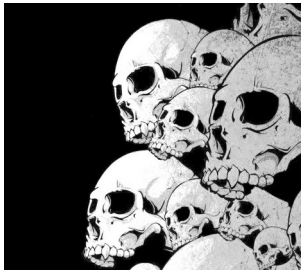
Extrait de <http://linuxmao.org>

C'est la première norme de greffons développée sous GNU/Linux. La première spécification de cette norme a été finalisée le 2 avril 2000.

Le SDK de développement (pour créer de nouveaux greffons) peut être trouvé ici :

<http://www.ladspa.org>

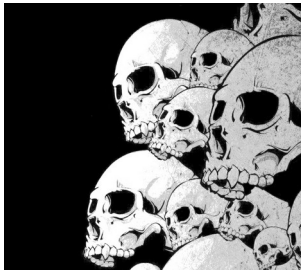
Les greffons LADSPA (Linux Audio Developer's Simple Plugin) permettent d'appliquer un certain nombre d'effets sonores sur un fichier son ou sur une portion de fichier son.



# Les plugins LADSPA

<b>AMB</b>	<a href="http://kokkinizita.net/linuxaudio/index.html">http://kokkinizita.net/linuxaudio/index.html</a>
<b>Blepvco</b>	<a href="http://www.smbolton.com/linux.html">http://www.smbolton.com/linux.html</a>
<b>Blop</b>	<a href="http://blop.sf.net">http://blop.sf.net</a>
<b>CAPS</b>	<a href="http://quitte.de/dsp/caps.html">http://quitte.de/dsp/caps.html</a>
<b>CMT</b>	<a href="http://www.ladspa.org/cmt/">http://www.ladspa.org/cmt/</a>
<b>FIL</b>	<a href="http://kokkinizita.net/linuxaudio/index.html">http://kokkinizita.net/linuxaudio/index.html</a>
<b>FOO</b>	<a href="http://code.google.com/p/foo-plugins/">http://code.google.com/p/foo-plugins/</a>
<b>MCP</b>	<a href="http://kokkinizita.net/linuxaudio/index.html">http://kokkinizita.net/linuxaudio/index.html</a>
<b>NJL</b>	<a href="http://www.ecs.soton.ac.uk/~njl98r/code/ladspa/njl-plugins/">http://www.ecs.soton.ac.uk/~njl98r/code/ladspa/njl-plugins/</a>
<b>Omins</b>	<a href="http://www.nongnu.org/om-synth/omins.html">http://www.nongnu.org/om-synth/omins.html</a>
<b>REV</b>	<a href="http://kokkinizita.net/linuxaudio/index.html">http://kokkinizita.net/linuxaudio/index.html</a>
<b>SWH</b>	<a href="http://plugin.org.uk/">http://plugin.org.uk/</a>
<b>TAP</b>	<a href="http://tap-plugins.sourceforge.net/">http://tap-plugins.sourceforge.net/</a>
<b>VCF</b>	<a href="http://www.suse.de/~mana/ladspa.html">http://www.suse.de/~mana/ladspa.html</a>
<b>VCO</b>	<a href="http://kokkinizita.net/linuxaudio/index.html">http://kokkinizita.net/linuxaudio/index.html</a>

Pour plus d'informations : <http://linuxmao.org>

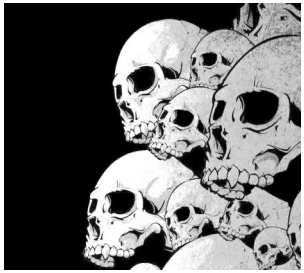


# Les plugins LADSPA

**VLevel** <http://vlevel.sourceforge.net/>  
**Vocoder** [http://www.sirlab.de/linux/download\\_vocoder.html](http://www.sirlab.de/linux/download_vocoder.html)  
**WASP** <http://linux01.gwdg.de/~nlissne/wasp/index.html>  
**Nova** [https://tim.klingt.org/nova/download/nova\\_filters-0.2.tar.bz2](https://tim.klingt.org/nova/download/nova_filters-0.2.tar.bz2)  
**Calf** <http://calf.sourceforge.net/>

**Socal's LEET Plugins** <http://code.google.com/p/leetplugins/>  
**Invada plugins** <http://www.invadarecords.com/Downloads.php?ID=00000263>  
**DSSI-VST 0.7 now with LADSPA Extensions** <http://www.breakfastquay.com/>  
**Holap synthesizer and DSP effects** <http://holap.berlios.de/>

Pour plus d'informations : <http://linuxmao.org>



# Les plugins LV2

Extrait de <http://linuxmao.org>

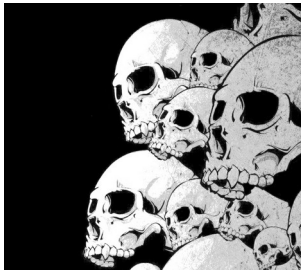
Aux origines de LV2, il y a LADSPA.

LADSPA est une norme de greffons vieillissante, elle a fait son temps. Il ne s'agit pas de mettre en cause la qualité DSP des greffons LADSPA, d'ailleurs la majorité des greffons LV2 ré-utilise cette partie du code des greffons LADSPA, mais simplement, la norme LADSPA est une norme limitée au niveau graphique par exemple.

Le format LV2 est issu du consortium Linux Audio Developer = LAD.

<http://lv2plug.in/>

Pour le moment (octobre 2009), il y a moins de greffons LV2 que de greffons LADSPA, espérons que la tendance s'inverse, car le format LV2 convient beaucoup mieux aux exigences et aux attentes des utilisateurs, notamment, pour l'habillage graphique bien plus avancé que les LADSPA. De plus, il facilite la vie aux développeurs de greffons. On peut dire que LV2 est à LADSPA ce que XML+CSS est à HTML.



# Les plugins LV2

**SWH**  
**ll-plugins**  
**zynadd**  
**Calf**  
**LinuxDSP**

<http://plugin.org.uk/lv2/>  
<http://ll-plugins.nongnu.org/>  
<http://home.gna.org/zyn/>  
<http://calf.sourceforge.net/>  
<http://www.linuxdsp.co.uk>

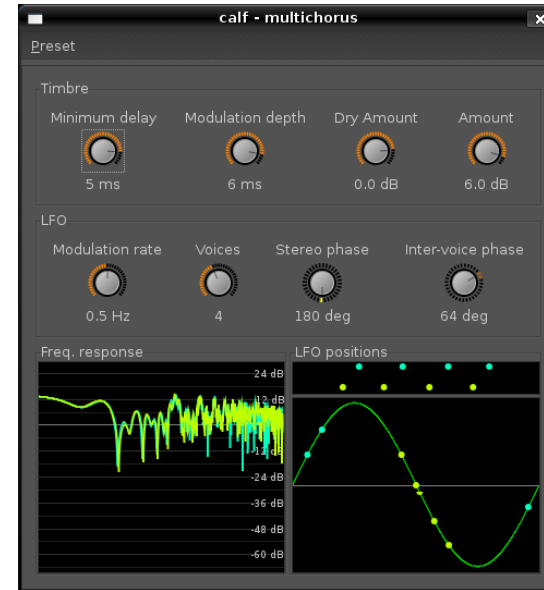
Pour plus d'informations : <http://linuxmao.org>

Pour utiliser un plugin sans utiliser d'application, on peut utiliser jalv :

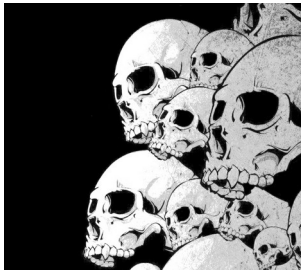
- **jalv** : pour utiliser un plugin avec son interface rdf
- **jalv-qt** : pour utiliser un plugin avec son interface qt (si elle en a une)
- **jalv-gtk** : pour utiliser un plugin avec son interface gtk (si elle en a une)
- **jalv-gtkmm** : pour utiliser un plugin avec son interface gtkmm (si elle en a une)

Exemple :

```
$ jalv.gtk http://nickbailey.co.nr/triceratops
```



On peut utiliser jalv\_select pour simplifier.



# Les plugins DSSI

Extrait de <http://linuxmao.org>

**DSSI** = Disposable Soft Synth Interface?, ce qui veut dire : Interface de Synthétiseurs Logiciels Disponibles. Il convient de le prononcer dizzy. C'est un standard d'interface logicielle (API) pour les instruments logiciels et les effets. Il apporte à GNU/Linux un équivalent au standard VSTI.

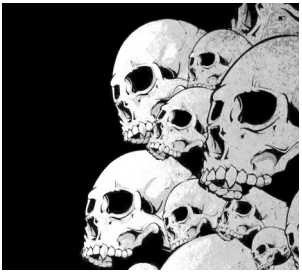
**DSSI** est basé sur l'API Ladspa qui est une autre norme de greffons, les types d'évènement de séquenceur ALSA, et la communication OSC (Open Sound Control) avec des interfaces graphiques adaptées.

La première publication des spécifications **DSSI**, version 0.1, date du 27 avril 2004. La publication actuelle, version 1.0, date du 9 janvier 2009.

Plusieurs greffons **DSSI** existent, aussi bien des synthétiseurs que des effets sonores ou encore des outils.

<http://dssi.sourceforge.net/>

Aujourd'hui, la spec LADSPA V2 (ou LV2) remplace avantageusement DSSI

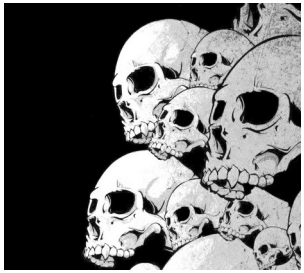


# DSSI

- \* Calf Monosynth
- \* Calf Organ
- \* Hexter
- \* Xsynth-dssi
- \* Fluidsynth-dssi
- \* Sineshaper
- \* Oscilloscope
- \* WhySynth
- \* Nekobee
- \* Wsynth
- \* Holap
- \* Dssi\_convolve
- \* Xy-controller
- \* amSynth







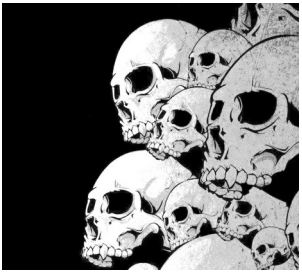
# Carla – un éditeur multi plugins 1/2

<https://github.com/falkTX/Carla>

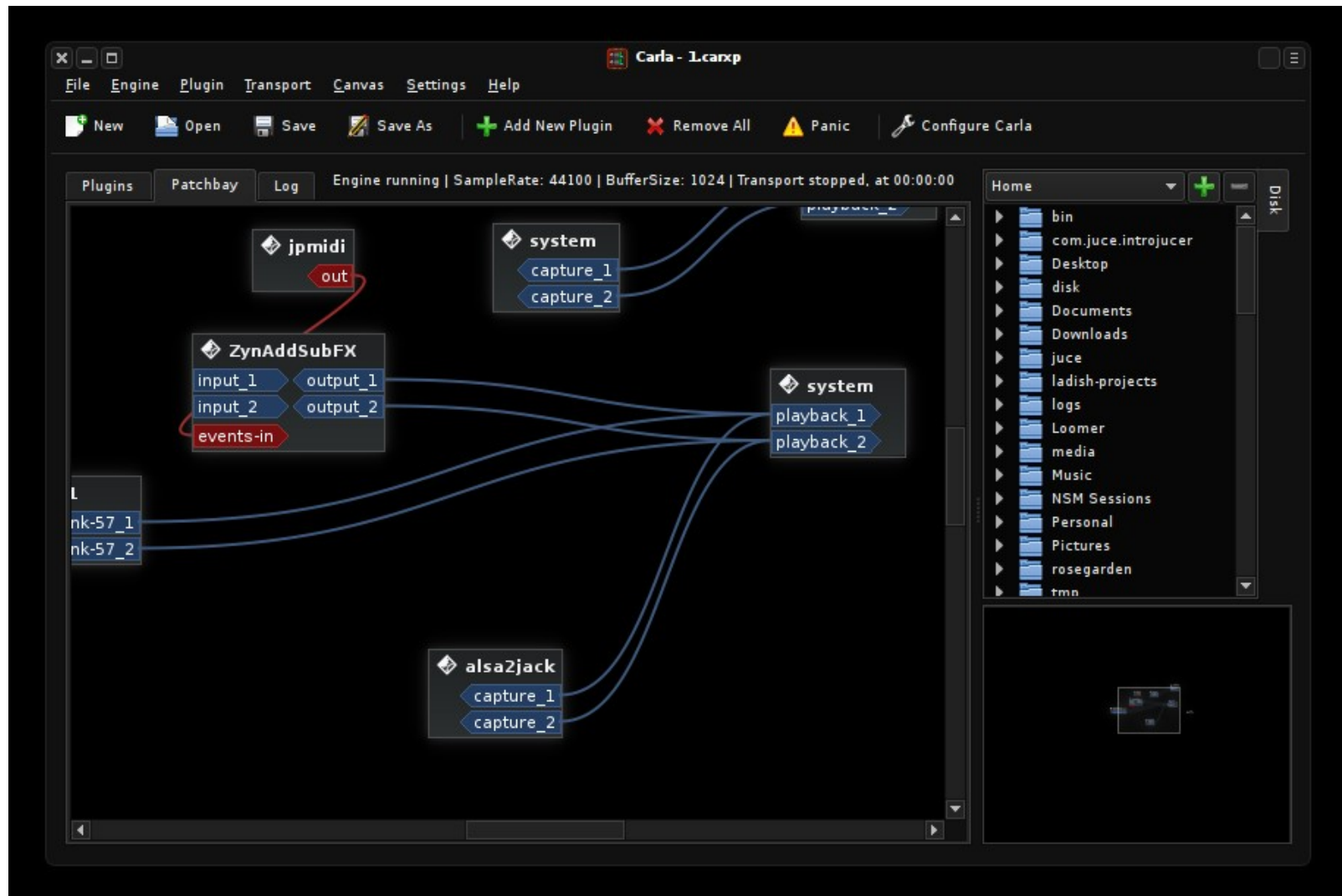
La version Audinux fournit le Windows bridge qui permet de lire des VST Windows

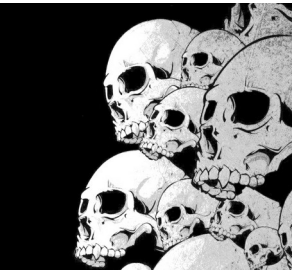
```
$ dnf install carla # Fedora  
$ dnf install Carla-mao # Audinux
```





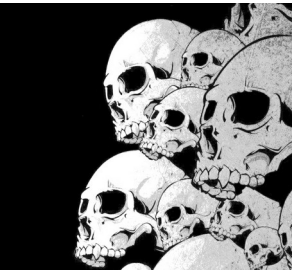
# Carla – un éditeur multi plugins 2/2





# Surge





# Odin2

Save Int\_patch Load Reset **ODIN2** 120 BPM Poly Legato ?

**AnalogOsc** Oct Semi Fine Vol PW Drift Rst

**VectorOsc** X Y Oct Semi Fine Vol Rst Sync A B C D Saw Reed 2 Strings 3 Sine

**WaveDrawOsc** Vol Rst Sync

**Lowpass24** Vel Env Kbd Gain Frequency Resonance Saturation 1 2 3

**Amplifier** Width Gain Pan Distortion Boost Clamp DryWet

**Filter 2** 1 2 3 FI

**Korg35HP** Vel Env Kbd Gain Frequency Resonance Saturation

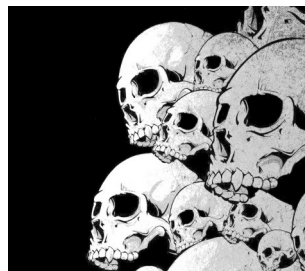
**Delay** **Phaser** **Chorus** **Flanger**

**PingPong** Feedback Time Sync HP Ducking Dry Wet

**LFO 1** **LFO 2** **LFO 3** GlobalLFO

LFO 1	79	Filter1 Frequ...	0	Dest 2	100	ModWheel	X
Filter Envelope	-40	Osc2 Pitch Exp	-40	Osc3 Pitch Exp	0	Scale	X
MIDI note	60	Amp Gain	0	Dest 2	0	Scale	X
Source	0	Dest 1	0	Dest 2	0	Scale	X
Source	0	Dest 1	0	Dest 2	0	Scale	X
Source	0	Dest 1	0	Dest 2	0	Scale	X
Source	0	Dest 1	0	Dest 2	0	Scale	X
Source	0	Dest 1	0	Dest 2	0	Scale	X
Source	0	Dest 1	0	Dest 2	0	Scale	X



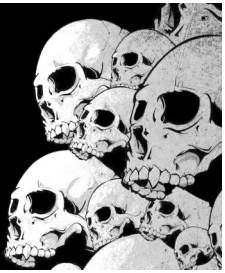


# TuneFish 4

The screenshot displays the TuneFish 4 software interface, which is organized into several functional sections:

- GLOBAL:** Includes a Polyphony control (set to 16), a preset dropdown (EchoBass), and buttons for Save, Restore, Prev, Next, Copy, Paste, and FactoryWriter. It also features a Record button and animation settings (Animations on, Fast animations, Moving waveforms).
- GENERATOR:** Contains controls for Volume (99), Panning (50), Spread (49), Bandwidth (99), Damp (9), Harmonics (99), Drive (49), Scale (2), and Modulation (1). It also has Unisono and Octave buttons, and Noise controls (Noise, Noise Freq, Noise BW).
- FLANGER:** Features LFO (20), Frequency (20), Amplitude (20), and Wet (50) controls.
- REVERB:** Includes Roomsize (26), Damp (99), Wet (20), and Width (99) controls.
- DELAY:** Controls for Left (38), Right (38), and Decay (47).
- EQ:** Three frequency sliders for -880hz, 880hz-5khz, and 5khz.
- MOD MATRIX:** A list of modulation targets (ADSR2, Volume, ADSR1, LP Cutoff, ADSR1, Harmonics, etc.) with a central volume knob (50).
- EFFECTS STACK:** A list of effects (none, Reverb, Delay, none, none, none, none, none, none, none) with up/down arrows for each.
- LOWPASS, HIGHPASS, BANDPASS, NOTCH:** Each has an On/Off toggle and Frequency/Resonance/Q controls.
- LFO1, LFO2:** Rate and Depth controls, with waveforms and a Synchronized button.
- ADSR1, ADSR2:** Envelope generators with sliders for Attack (A), Decay (D), Sustain (S), Release (R), and Slop (Sp).
- FORMANT:** Wet control (99) and vowel selection buttons (A, E, I, O, U).
- DISTORTION:** Amount control (44).
- Keyboard:** A piano roll at the bottom with keys labeled C0 through C8.





# Firefly

Firefly Synth 1.5.0 VST3

Monitor  
Voices 0 Threads 1 Gain 0 CPU 8 High CPU 24 Global FX 2

Master In  
Aux 1 Aux 2 Aux 3 Aux 4 Aux 5 MIDI Smt BPM Smt Mod PB i2  
Global Unison 1 Detune Spread Osc Phs Env Dtn LFO Phs LFO Dtn  
Global FX 1 2 3 4 5 6 7 8 9 10  
Type SV Filter Frequency Resonance  
Mode Low Pass Keytrack Shelf Gain  
Global LFO 1 2 3 4 5 6 7 8 9 10  
Type Repeat Skew X Off Shape Sin Skew Y Off  
Sync 5/1 Seed Steps Smooth  
Oscillator 1 2 3 4 5  
Type DSF Note C5 +0 Partial Distance Decay  
Gain Hard Sync XOver Unison 2 Phase Detune Spread  
Voice In  
Mode Poly Porta Off Sync Osc Oversample iX Note C4 +0  
Voice FX 1 2 3 4 5 6 7 8 9 10  
Type Comb Filter Delay+ Gain+  
Mode Feedback Delay- Gain-  
Voice LFO 1 2 3 4 5 6 7 8 9 10  
Type Repeat Skew X Off Shape Smooth Skew Y Off  
Sync 1/1 Seed Steps Smooth Phase  
Envelope 1 2 3 4 5 6 7 8 9 10  
On Type Sustain Mode Linear Trigger Legato Smooth A Slip D Slip R Slip  
Sync Dly Att Hid Dcy Stn Rls

Master Out  
Gain Bal  
24 kHz  
5.00 Bar  
First Cycle  
24 kHz  
1 Bar  
1.64 Sec

Tweak GCV-CV Op 1  
Value Off  
Load Save Preset  
Init Clear Theme

Osc Mod  
AM Source Target Mix Ring  
Osc 1 Osc 4  
Osc 1 Osc 2  
Osc 1 Osc 2  
Osc 1 Osc 2

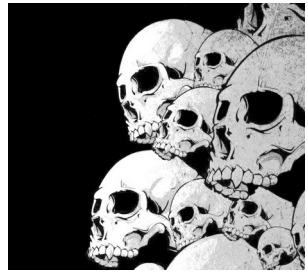
FM Source Target Mode Idx  
Osc 2 Osc 4 BI  
Osc 1 Osc 2 BI  
Osc 1 Osc 2 BI

VAudio Matrix  
On Source Target Gain Bal  
Osc 1 VFX 1  
Osc 3 VFX 1  
VFX 1 VFX 2  
VFX 2 VFX 3  
Osc 2 VFX 4  
Osc 4 VFX 4  
VFX 3 VOut  
VFX 1 VOut

VCV-Audio Matrix VCV-CV Matrix GCV-Audio Matrix GCV-CV Matrix  
Op Source Target Off Scl Min Max  
AB Abs Min PB Vin PB  
Mul Abs Min Aux 1 Osc 1 DSF Dcy  
Add Stk VLFO 3 Osc 1 DSF Dcy  
AB Stk GLFO 1 Osc 1 DSF Dcy  
Mul Abs GLFO 2 Osc 3 Gain  
AB Abs VLFO 4 Osc 4 Cent  
Mul Abs VLFO 5 Osc 5 Gain

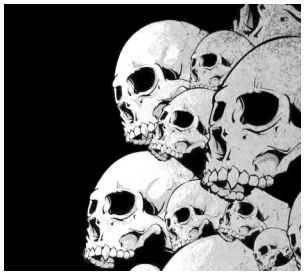
0.1 Sec Vin PB





# Wavetable





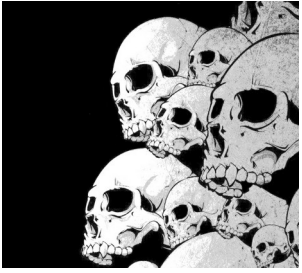
# Dexed

## DX7 Emulation

The image displays the Dexed software interface, which is a DX7 emulator. It features six oscillators arranged in a 2x3 grid, each with its own set of controls. The oscillators are numbered 1 through 6. Each oscillator has a frequency knob (f=1, f=2-7, f=1.02, f=2+7, f=1, f=2), a ratio selector (ratio or fixed), and a fixed knob. Below these are three knobs for detuning (det), coarse tuning, and fine tuning. Each oscillator also has a level knob, an A mod sens knob, a key vel knob, and an EG level knob. The EG level knob is accompanied by a small graph showing the envelope curve. Below the EG level knob are four knobs for EG rate (1, 2, 3, 4). Each oscillator has a break point knob, L depth and R depth knobs, and rate scaling knobs. The rate scaling knobs are accompanied by L curve and R curve knobs. The bottom section of the interface includes a mixer with a cutoff and reso knob, a level knob, a middle C knob, and a mono knob. There are also buttons for INIT, PARM, SEND, CART, LOAD, SAVE, and STORE. A 23-key keyboard layout is shown with keys 1 through 5 highlighted. The algorithm knob is set to 23. The feedback knob is also visible. The bottom right section includes a wave knob, P mod sens knob, speed and delay knobs, LFO key sync and OSC key sync knobs, and P EG level and P EG rate knobs.



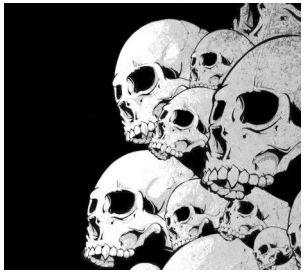




# Les plugins CALF

- Une suite de plugins LV2
- Une applications permettant de connecter ces plugins à Jack : calfjackhost

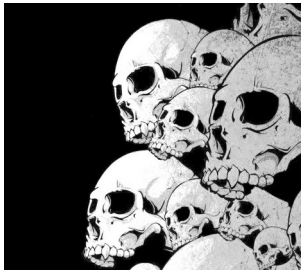




# Calf Jack Host

Calfjackhost est une application rack qui permet de charger et d'associer plusieurs effets Calf via Jack.





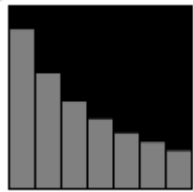
# CALF : les plugins 1/2



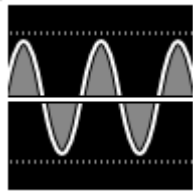
Instruments and tone generators (Organ, Monosynth)



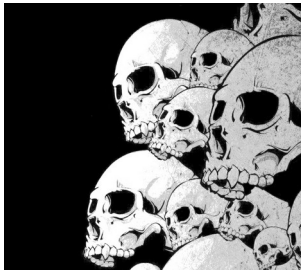
Modulation effects (Multi Chorus, Phaser, Flanger, Rotary, Pulsator)



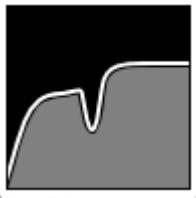
Delay effects (Reverb, Vintage Delay, Compensation Delay Line)



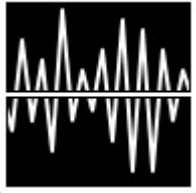
Dynamic processors (Compressor, Sidechain Compressor, Multiband Compressor, Deesser, Gate, Sidechain Gate, Multiband Gate, Limiter, Multiband Limiter, Transient Designer)



# CALF : les plugins 2/2



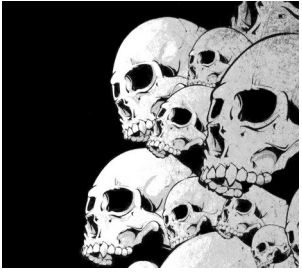
Filters and equalizers (Filter, Filterclavier, Equalizer 5 Band, Equalizer 8 Band, Equalizer 12 Band)



Distortion and enhancement (Saturator, Exciter, Bass Enhancer, Tape Simulator)



Tools (Mono Input, Stereo Tools, Analyzer)

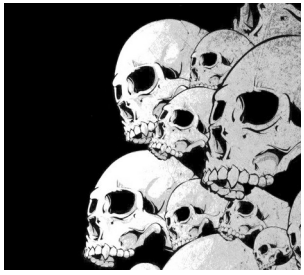


# Instruments : Calf Organ

A versatile organ/pad synthesizer, capable of producing many types of sounds:

- tonewheel organs (up to 9 drawbars)
- solid state organs (9 independent oscillators with many waveforms to choose from, individual panning, phase shift and detune for each oscillator)
- strings-like or choir-like pads (thanks to a set of long looped samples generated using padsynth algorithm invented by Nasca Octavian Paul)
- fat basses and searing leads

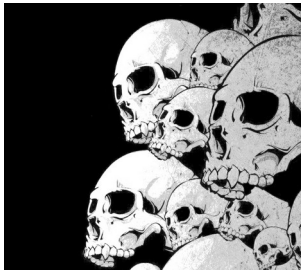
The sound from some or all oscillators can be processed using 2 independent (but connectable) filter sections, controlled by up to 3 ADSR envelopes. A vibrato/chorus/phaser section makes the sound more vivid.



# Instruments : Calf Organ Tone generator - 1/3

Presets selection

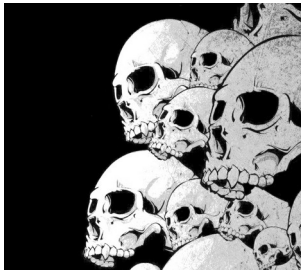
The screenshot shows the Calf Organ software interface. At the top left, there is a 'Preset' button highlighted with a red box and an arrow pointing to the text 'Presets selection'. The interface features a waveform display at the top left, a 'Tone generator' section with nine sliders for level and harmonic content, and various knobs for wave type, detune, phase, and pan. The 'Polyphony' is set to 16 and 'Volume' is at -19.9 dB. The interface is dark-themed with a metallic border.



# Instruments : Calf Organ Sound processor - 2/3

The screenshot shows the 'calf - Organ' software interface. At the top, there are 'Preset' and 'Help' menus. Below them is a waveform display. On the right, there are 'Polyphony' (set to 16) and 'Volume' (set to -19.9 dB) controls. The main interface is divided into several sections:

- Filter 1:** F1 Cutoff (2000 Hz), F1 Res (2), F1 KeyFollow (0%), F1 Env1 (8000 ct), F1 Env2 (0 ct), F1 Env3 (0 ct). Filter 1 Type is set to '12dB/oct LP'.
- Filter 2:** F2 Cutoff (2000 Hz), F2 Res (2), F2 KeyFollow (0%), F2 Env1 (0 ct), F2 Env2 (8000 ct), F2 Env3 (0 ct).
- Amplifier:** EG1 To Amp (None), EG2 To Amp (None), EG3 To Amp (None). A 'Quadratic AmpEnv' button is visible.
- EG 1:** EG1 Attack (1 ms), EG1 Decay (350 ms), EG1 Sustain (50%), EG1 Release (50 ms), EG1 VelMod (0%).
- EG 2:** EG2 Attack (1 ms), EG2 Decay (350 ms), EG2 Sustain (50%), EG2 Release (50 ms), EG2 VelMod (0%).
- EG 3:** EG3 Attack (1 ms), EG3 Decay (350 ms), EG3 Sustain (50%), EG3 Release (50 ms), EG3 VelMod (0%).
- Global EQ:** Bass Freq (80 Hz), Bass Gain (0.0 dB), Treble Freq (12000 Hz), Treble Gain (0.0 dB).

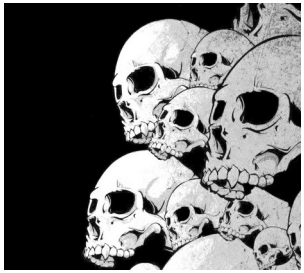


# Instruments : Calf Organ

## Advanced - 3/3





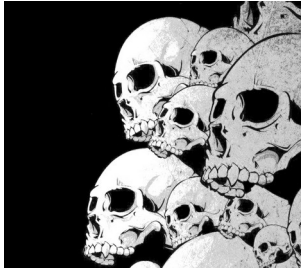


# Modulation effects : Multi Chorus

Multi-tap stereo chorus with adjustable number of voices. Adds warmth and richness, especially if you give it a lot of CPU power. A lot of options make this effect highly flexible in expression.

Presets selection





# Modulation effects

## **Chorus:**

The Chorus adds a "copy" of the original signal with a vibrato with variable depth, remembering the sound of two guitars playing a "chorus" section.

## **Flanger:**

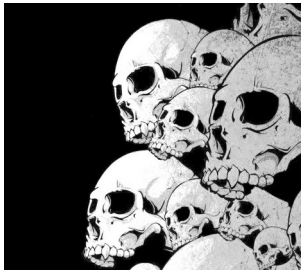
The Flanger mixes the original signal with a "delayed copy" of this. This will sound like the "jet plane" effect that you should know of a lot of famous records.

## **Phaser:**

The Phaser generates an exponential phase-cancellation, creating a "comes in and out" sound similar to the Flanger.

## **Cry Baby (Wah):**

Famous for being used by rock and funky musicians like Jimi Hendrix, Frank Zappa, Geezer Butler, Cliff Burton, Kirk Hammet... The Wah-Wah effect modifies the cut-frequency with the use of a MIDI controller (or expression pedal) in Manual Mode. If we select the Auto Mode, a LFO (Low Frequency Oscillator) will modify the cut-freq by our playing.

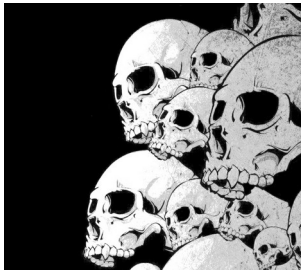


# Delay effects : Reverb

Simple reverb with basic controls and relatively neutral sound. No dreaded metal barrel sound, but at the expense of higher CPU use and less time density. Like most artificial reverberators, it is not suitable for every instrument, but try it on vocals, guitars or Calf synths, and you will like it.

Presets selection



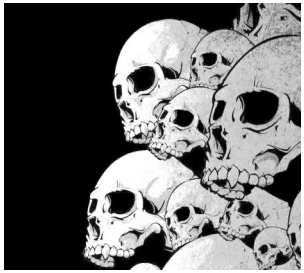


# Delay effects : Vintage Delay

A very simple simulation of tape echo, with a filter in a feedback loop and BPM-based time setting. The number of controls is limited, but all the essential stuff is there. Suitable for synths, guitars and almost anything else.

Presets selection



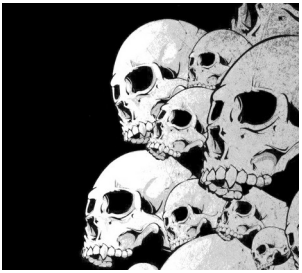


# Dynamics : Compressor

Smooth sounding dynamic compressor with a variety of settings, written by Thor Harald Johansen. RMS/peak modes, A-weighting, metering - feels like real studio gear!

Presets selection



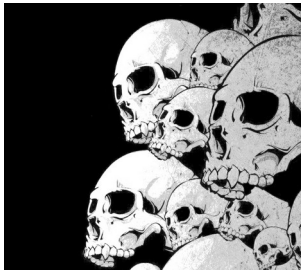


# Distortion effects : Saturator

Universal distortion tool. Saturator can act as a guitar distortion as well as a harmonics generator. Some useful filters before and after the distortion stage and gapless adjustment between 2nd and 3rd harmonics give you a great flexibility in sound. The saturation stage is taken from Tom Szilakyi's TAP-plugin pack.

Presets selection



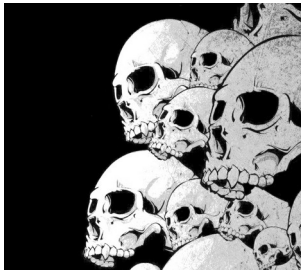


# Tools : Mono Input

Since Calf doesn't provide mono versions of the plugins yet, it is essential to split your signal into stereo signals when used in an audio production environment like Ardour. The Mono Input has some useful functions to deal with the split process like phase inversion and balance.



Presets  
selection



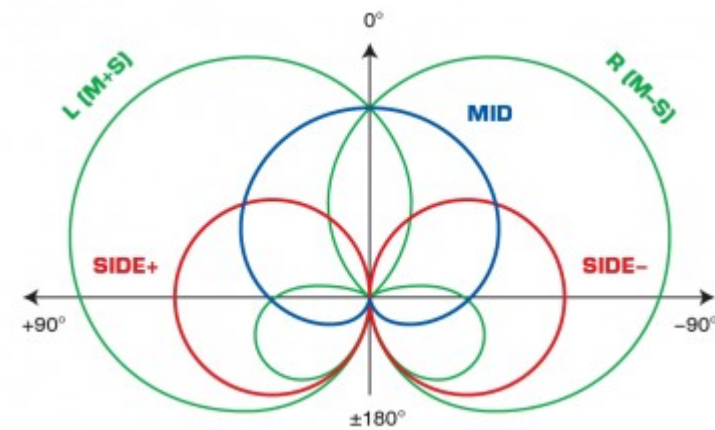
# Tools : Stereo Tools

This device is a toolbox for handling stereo signals. It is able to change M/S microphone signals to L/R and vice versa. Switching the phase, muting a channel, widening the stereo base or delaying one of the channels up to 20ms are some of the features of this input or mastering tool.

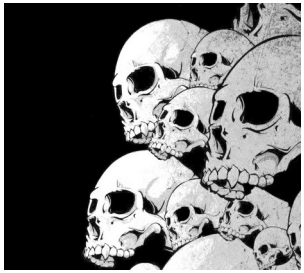


Presets selection

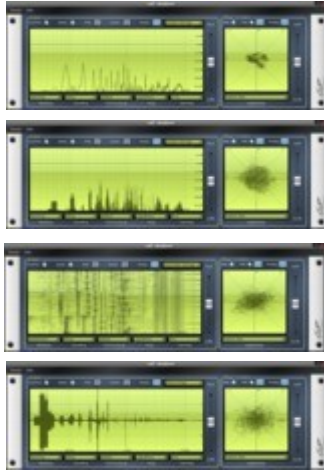
Mid / Side mic setting







# Tools : Analyzer Tools



The FFT-Analyzer of this package has a frequency domain display and a goniometer. The frequency chart displays its information from various input modes like L/R, Average or Stereo; it can draw lines or bars, logarithmic or linear graphing. Various output modes like Stereo Image, Stereo Difference and even a Spectralizer with temporal domain are available. Lots of options provide full control of the way the signal is processed and rendered.

<https://www.youtube.com/watch?v=TWfqcf-EyUE>