

# **Music with Linux**

introduction and field report  
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# What is Linux

- Free open source bla bla bla ....
- “vegetarian style”
- 100000 different distributions
- 100000 different architectures
  
- Some optimized for Audio and  
Multimedia
- PureDyne, 64Studio, UbuntuStudio,  
Planet CCRMA,  
DyneBolic .....

# Sound Architecture

- OSS (old systems)
- ALSA (Sound driver since 2.6 kernel)
- PulseAudio
- Jack
- FFADO (firewire devices)

# Hardware

- Sometimes one have luck and all works

but in most cases one have to choose the hardware directly for audio linux

- ALSA works with nearly all devices
- Only some of firewire cards with FFADO

<http://www.ffado.org/>

# Linux audio tweaks

- build an custom kernel with  
rt\_patch
- or use  

```
setcap cap_ipc_lock,cap_sys_nice=ep  
/usr/bin/jackd
```
- no swap
- renice X
- killall unneeded processes (wifi,  
cups, firefox...)
- !!! serv resources !!!

# Latency War

- sound travels 34 cm in 1 ms  
normal distances in Live music up  
to 6 m or even more ----> 18 ms
- good feeling up to 10 ms
- latency in each connection between  
audio tools
- hardware latency

# Jack audio connection kit

- JACK is a system for handling real-time, low latency audio (and MIDI)
- allows to share audio between different audio tools
- manage the time
- with alsa, oss, ffado ....
- qjackctl .. gui to control the server
- <http://jackaudio.org/applications>

# Simple Tools

- timemaschine  
(<http://plugin.org.uk/timemachine/>)
- jack\_capture  
<http://archive.notam02.no/arkiv/src/>
- mhwaveedit
- MOC
- jamin
-

# Recording

- arbour2  
(<http://ardour.org/>)  
similar to cubase
- 2.8.11 work stable

# Plugins

- LADSPA
- LV2
- with some work VST

# some Pro's & Con's

- open source software
- works with hardware from yesterday
- high modularity with loots of tools
  
- not easy to configure
- not all hardware supported
- no commercial software
- no compact all in one application

# links

- <http://www.linuxaudio.org/>
- <http://www.audio4linux.de/a4l/>
- <http://lv2plug.in/>
- <http://jackaudio.org/>
- <http://www.invadarecords.com/Downloads.php?ID=00000264>
- <http://www.ladspa.org/>
- <http://www.64studio.com/>
- <http://puredyne.org/>
- <http://dynebolic.org/>
- <http://ccrma.stanford.edu/planetccrma/software/>