

Creating/Producing a song with GNU/Linux

Jeremy JONGEPIER

ICTE department Faculty of Humanities
University of Amsterdam
Spuistraat 134
1012 VB Amsterdam
The Netherlands
jeremy@autostatic.com

Abstract

The GNU/Linux audio environment is very much based on modularity as opposed to the monolithic approach on other platforms. As a result the GNU/Linux audio environment is very flexible and can be considered more an extension of an analogue set up with its intrinsic pros and cons. This is a totally different paradigm than used on other platforms so musicians coming from those other platforms can have a hard time adapting to the GNU/Linux modular approach. The aim of this workshop is to show by the use of a musician's workflow how you can benefit from the countless possibilities such a modular environment has to offer.

Keywords

JACK, musician, workflow, modular.

1 Introduction

There is this tune buzzing in your head but how do you go about recording or laying this down on your GNU/Linux system? Which tools are available and which ones fit best in your workflow? How do I connect all those tools together and get them to sync with one another?

2 The Basis

Most Linux audio environments are built around the Jack Audio Connection Kit, a real-time low latency sound daemon. Since JACK is created for a modular environment it focuses on connections and ports and you could consider it a digital version of an analogue studio set up, including all cabling, plugs, inputs and outputs. So instead of having one DAW that takes care of all the internal

routing you have infinite possibilities to route anything anywhere, provided that the applications you would like to connect to one another are JACK aware. And most audio applications are indeed JACK aware or use some kind of bridging library to expose the audio inputs and outputs to JACK (like PortAudio), or can be made JACK aware (“jackified”) in a relatively easy way (applications that use Gstreamer or PulseAudio for instance).

2.1 JACK Explained

How to set up JACK. The different parameters explained. QjackCtl.

3 Recording, Composing, Creating

As a musician using GNU/Linux you can choose from a myriad of applications to suit your needs.

3.1 Choosing Your DAW

If you're a lot into recording live instruments, vocals or other devices that make noise than carefully choosing and getting to know your DAW (Digital Audio Workstation) should be high on your priority list. There are several good DAWS available for GNU/Linux, I will highlight the two most widely used ones, Ardour and Qtractor.

3.2 Sequencers and Trackers

Another way of composing songs as an alternative to using scores is sequencing. A sequencer plays back musical notation, either short patterns that can easily get looped (step sequencer) or longer patterns, often as part of a larger multi-track project that may also includes audio files

(digital audio work station). Most sequencers use MIDI for the music notation except for trackers, a special class of sequencers, that use numeric and hexadecimal values for notes, parameter changes and effects. Also trackers mostly have a vertical timeline (because of the values you have to enter) while sequencers use a horizontal timeline and are more centered around samples on which they work their magic, while sequencers are mainly outputting no sound themselves except MIDI notes. Some well-known sequencers for GNU/Linux are Qtractor, Rosegarden, MusE and seq24. When it comes to trackers, good examples are MilkyTracker, SchismTracker and the class within a class of trackers also known as Buzz clones like Neil, Aldrin and Buzztard.

3.3 Softsynths

PHASEX, ZynAddSubFX, Yoshimi, amSynth, Alsa Modular Synth, minicomputer, WhySynth, Xsynth, Hexter.

3.4 Samplers, Loopers and Audio Slicers

Hydrogen, Specimen, FreeWheeling, SooperLooper, Smasher.

4 Plug-in Platforms

LV2, LADSPA, DSSI, LinuxVST, VST.

4.1 Plug-ins Explained

What kind of plug-ins are available. Synth plug-ins, audio effect plug-ins (reverb, compression, eq etc.).

5 MeMoMIDI

How to use MIDI controllers with your GNU/Linux software.

6 Topping It Off

Mixing and mastering your song. Mastering with JAMin or with audio effect plug-ins.

7 Conclusion

Concluding text about how wonderful making music with GNU/Linux is.

8 Acknowledgements

My thanks go out to Rui Nuno Capela for his amazing Qtractor and the QjackCtl JACK control GUI.