Audio recording with ecawave

Parting the Waves

The small and inconspicuous ecawave tool may just be a spinoff of the more comprehensive ecasound multi-recorder, but it does provide powerful features that help close some gaps in the audio recording software world.

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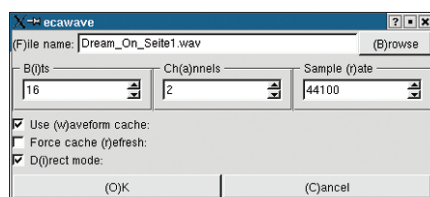
I n this age of CDs, we hardly spare a thought for our LP or MC collections, abandoning them as ugly dust catchers. Before you can dispose of them completely, you might need to copy some rare tracks to your PC. Linux has a few classic tools for this job.

First and foremost, *gramofile*, which we looked at in [1]. *gramofile* is an easy-to-use tool that allows even newbies to do without howtos. At the press of a few keys, *gramofile* helps you write an LP or MC to a *wav* file on your computer. The *gramofile* program also has a few special features that are useful for processing **samples**, such as various anti-tick filters that reduce the background noise on scratchy old vinyl disks. There is also a track separation function, which allows you to sample an album to a single file, and then automagically separates the tracks.

Before you become over-enthusiastic, I must say that automatic track separation has not served me too well. LPs with classical music tend to get broken up into far too many fragments, whereas older disks with multiple tracks are often confused with a single never-ending piece.

Overview

One of the problems with processing files of this kind is their sheer size. They simply won't fit into memory (a one minute recording takes about 10MBytes of memory.) It is also quite annoying to have to listen to an hour-long recording, just to spot the gaps between the tracks. Enter *ecawave* [2], an Open Source program based on libraries from the *ecasound* sound tool. *ecawave* is

Figure 1: You can use direct mode for wav files.

designed to store temporary results in files, and can thus do without enormous amounts of memory.

The advantage is that you can allow *ecawave* to process sound files while you are going about your normal work, without the danger of impacting your machine's performance too severely. In the case of *wav* files, *ecawave* can optionally process the input files directly without creating temporary files. Just select *D(i)rect Mode* when opening the file to allow this to happen (see Figure 1).

ecawave's really big advantage is the fact that it provides a graphical display of the sample levels. Instead of having to listen through a whole album, and make a note of the starting and stopping times, you can simply refer to the gaps in the level to find out where a track stops. Figure 2 shows four tracks.

Of course, this does not prevent you from listening to critical sections. Just left click the section you are interested in, select *Start* to listen in, and *Stop* when have heard enough.

The Final Cut

The next step is to separate the individual tracks. Start by selecting a track with
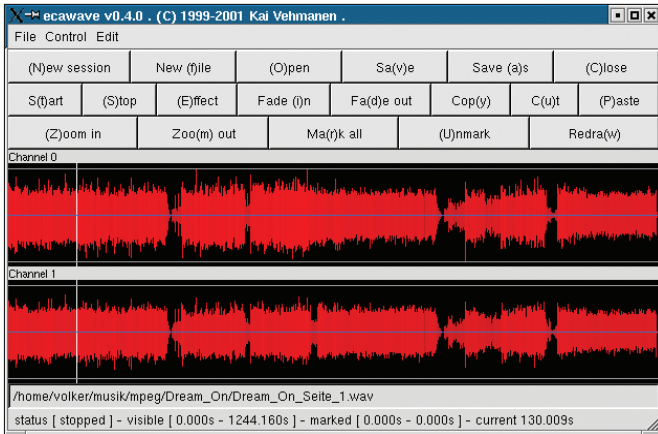
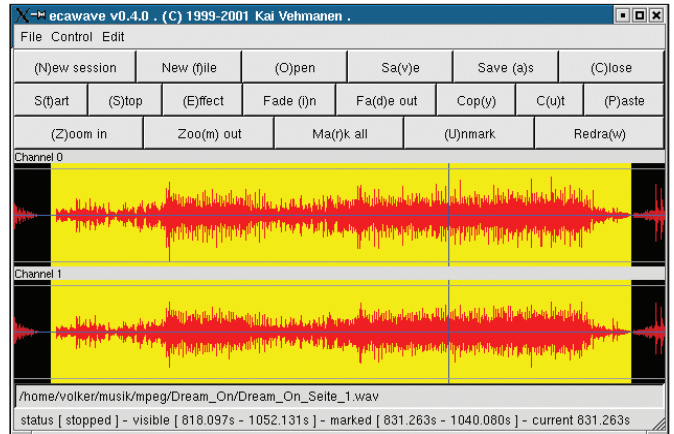Figure 2: A quick visual check shows the gaps between tracks.

Figure 3: Copying a track is now easy.

your mouse, and clicking on the *Cut* button. I would recommend selecting a slightly larger area, adding a slight delay, and then using the zoom feature to inspect the track more closely. This allows a more granular selection (as shown in Figure 3). You can insert the section that you *Cut* at another position. Use the *New Session* (do not click *New File*; doing so tells *ecawave* to discard whatever you have done so far), *Paste*, and *Save as* buttons to store the individual tracks.

If time is an issue, you can click *Copy*, instead of *Cut*, to copy the whole section to a temporary directory (*/tmp/ecawave-userID*) as *clipboard.wav*. You can select a different directory location by modifying the *clipboard-location* entry in *~/.ecawaverc*. Copy this file to avoid the *Paste* and *Save* steps.

Talking Books

gramofile allows you to record talking books from cassettes or LPs without having to be around to turn the cassette or LP over at half time. Simply leave the recording running until it is convenient for you to stop it. You can then drag the mouse and click *Cut* to cut out the extra recording that is blank and not needed at the end of the track in *ecawave*.

Hey, Mr. DJ!

If you feel the need to post-process your tracks, again *ecawave* can be a big help. You can apply effect filters to selected areas – and *ecawave* certainly has an impressive selection. One of the most useful filters is *Channel amplify*, which you can use to change the volume of the sample. Older LPs are particularly prone to issues such as different volumes on different channels, but instead of having to tweak your pre-amp, you can simply apply the filter.

ecawave also has bass, treble, and bandpass filters, that allow you to amplify specific frequency ranges. You can also add reverb to your recording, and speed up, or slow down, a sample. A similar filter even allows you to change the pitch. Altogether, there are no less than 30 effects, not counting filters for fading in and out.

Beyond wav

Once you acquire a taste for *ecawave*, you may want to use the tool for other tasks. The good news is that *ecawave* supports more audio formats. Besides *raw* files, the tool can also handle *cdr*, *mp3*, *aiff*, and other formats – 20 all told.

Conclusion

When all is said and done, *ecawave* impresses due to its easy-to-understand **WYSIWYCD** user interface. *ecawave* is stable, and lends itself to intuitive use. What's more, the fact that it is easy on memory makes *ecawave* the right choice for users with older machines. ■

GLOSSARY

Sample: *In this context, sample refers to the raw recording in the pre-processing stage.*

WYSIWYCD: *What you see is what you can do*

INFO

[1] Gramofile article, Linux Magazine, Issue 8, May 2001, *http://www.linux-magazine. com/issue/08/104-00tb.pdf*

[2] Ecawave: *http://www.wakkanet.fi/~kaiv/ecawave/*