



## Tips & Tricks



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August 2008 • Vol.8 Issue 8

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# Warm Up To Penguins

## The Audacity Of It All



Since Linux started to make in-roads into the desktop market, there has been a group of applications on everyone's wish lists, applications that filled significant holes in the Linux desktop experience. One of those has been a powerful audio-editing package, something that could hold its head up to Sound Forge the way that The Gimp does to Photoshop. The history of audio on Linux has been a series of complicated command-line utilities that let you do a lot . . . if you could figure out how to use them. But Audacity is changing all that by offering a multitrack audio suite that has features galore.

Because we're all about the Penguin in this little corner of *CPU*, we'll look at the experience under Linux. Almost any current distribution will let you install Audacity through the native package manager. (For example, "apt-get install audacity" does the trick in Ubuntu.) Under GNOME, you should see it on your

Start menu under the Sound And Video section. When it first starts, you'll see a big blank gray section with controls above it. That blank area is where the audio tracks will load for editing.

### ■ Cue It Up

Before we start editing, we need to set up a few basic settings. If you're only going to be editing material you've already recorded (MP3s or OGG files, for example), you only need to configure your output sound device. Click Edit, then Preferences, and find the settings you need under Audio I/O. You'll want to set Playback Device to whatever you're planning to use to listen, which will depend on your computer and what you have for audio gear. And if you're going to be recording with a mic or from a line-in source, such as an MP3 player, you'll want to configure the recording device, as well.

Once you've configured all your audio devices, you're ready to start playing with Audacity. Let's start by loading in a song in MP3. We used a copy of a Jelly Roll Morton blues song, which is in the public domain and in MP3 format, and loaded it into Audacity to spice it up with a techno remix. (Don't ask. Sometimes things get a little crazy here at *CPU*.) We clicked File and Open and selected the MP3 file.

Of course, if you're following our steps and have installed Audacity via an installer such as yum or apt-get, you'll get the same nasty surprise we did. For legal reasons concerning MP3 patents, Audacity doesn't have built-in MP3 support. Your best bet is to grab an MP3-to-OGG converter, such as soundcoverter, and turn your source material into OGG format, which Audacity can load with ease.

The good news is that you can actually configure Audacity to save as MP3. If you grab the LAME library and tell Audacity where it is, Audacity will be able to save files as MP3. We'll show you how to do that in a bit, but first, let's turn our source file into OGG using the converter of our choosing. We can convert our file using the following command (as a single line of text):

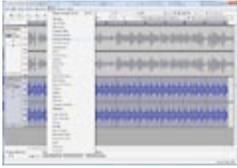
```
mpg321 jellyrollmorton-SmokeHouseBlues.mp3 -w raw && oggenc raw -o jellyrollmorton-SmokeHouseBlues.ogg
```

This command converts the MP3 to a raw audio format, and then from a raw audio format to an OGG file. Now we can open the OGG file in Audacity. If you've ever used a sound-editing tool, this will look very familiar, with a waveform running across the screen representing the audio you've loaded.

## ■ Lay Down The Beat

Our first step toward techno bliss was to grab a sample of the song, which we would speed up and loop. Doing this was as easy as using the Magnify tool (which looks like a magnifying glass) to zoom in until we saw the clean beginning and end of a section. Using the cursor, we drag-selected the section and pressed CTRL-C to copy it.

Next, we created a new track to hold the beat track we wanted to build. We clicked Tracks and Add. In this example, we wanted to add a stereo track. The second track will appear empty directly below the track we imported. We clicked on the blank area under the left/right panner on the track, which selected the track. Then, we pressed CTRL-V to paste the sample we copied.



***The Effect tools can change the speed, pitch, or tempo of the audio, and that's just the start.***

The Effects menu has all sorts of useful tools, including a Tempo tool. The Tempo tool will change the speed of the sample without changing the pitch. We tripled the speed of our sample and then used Copy and Paste to make a bunch of copies on this track, providing a steady beat.

We added another track, grabbed another sample, but instead of speeding it up, we slowed it down using the Speed tool, which also changes the pitch (like playing a record at half-speed). Slowed to 1/10th speed, our sample sounded like a blue whale with indigestion. (But hey, kids will listen to anything these days, right?) We used the Normalize tool to bring the level of the audio to the maximum level without causing distortion.

When we played our creation, we heard all three tracks at once. Sometimes you'll want this, but sometimes you'll want to drop a track from the mix (or just listen to a single track). For example, we really don't want to hear our source track every time we play back the track we're building. To drop that track out of the mix, click the Mute button at the far left of the track. To only listen to a single track, click the Solo button. You can mute as few or as many tracks as you want;

naturally, you can only solo a single track.

We wanted to add a vocal track, too, so it's time to do some recording. On the far right, you'll see a speaker and microphone icon, each with an accompanying drop-down menu. Use these to select the input and playback sources. Hopefully, you already have a playback source that you can hear, or the previous exercise would have been pretty quiet. Next, we picked an input source hooked up to a microphone (in this case, using line-in through a mixer).

If you press the red Record button, Audacity automatically creates a new track, starting on the timeline where the cursor currently is. Let's say that you want to hear the music as you record. To make sure this can happen, click Edit and Preferences. Then, select Audio I/O and make sure Play Other Tracks While Recording New One is checked. One thing that may surprise you is that Audacity creates a new track every time you press the Record button. It doesn't append it to the previous track. You can cut and paste from one track to another to consolidate.

Finally, we were ready to save our file as an MP3. If you remember, we needed to download the LAME library to do this. We clicked Edit and Preferences and selected Audio Files, and Audacity presented us with a nice button that took us to the page to download the library; another button prompted Audacity to locate it once downloaded. With the library in place, we muted any tracks we didn't want on the finished mix.

To save the file as an MP3, we clicked File and Export (not File and Save/Save As). We chose MP3 as the format and were all set. You can use the Options button to change bit rate, and the encoder will automatically ask you for MP3 metadata.

So there you have it, a brief introduction to Audacity. As usual, we've barely scratched the surface of this app. But we're confident that you aspiring open-source audio engineers will be on your way to creating mixed masterpieces in no time. ■

*by James Turner*

## Infinite Loop: The Big Power Hog? Your PS3

If you want to shave a few dollars off your energy bill, don't downsize your refrigerator. Instead, look to your videogame console. A study conducted by Australian consumer organization Choice found that the PS3 consumed five times as much power as a medium-sized fridge. Not to be outdone by its rival, the Xbox 360 won second place "honors," while the "average desktop PC" took Show.

Source: [www.choice.com.au/viewArticle.aspx?id=106346&catId=100245&tid=100008&p=4&title=Computers'+energy+costs](http://www.choice.com.au/viewArticle.aspx?id=106346&catId=100245&tid=100008&p=4&title=Computers'+energy+costs)

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