Using Audacity to Create app_rpt Sound Files
Steve Rodgers, WA6ZFT

These instructions explains how to use Audacity 1.3.5 beta to record repeater messages suitable for app_rpt. These instructions were created using Audacity running on an Ubuntu Linux system. Windows systems may look different, but the same approach should be able to be used.

Launch Audacity and click Edit->preferences: Set a sample rate of 8000Hz, and 16 bit audio:
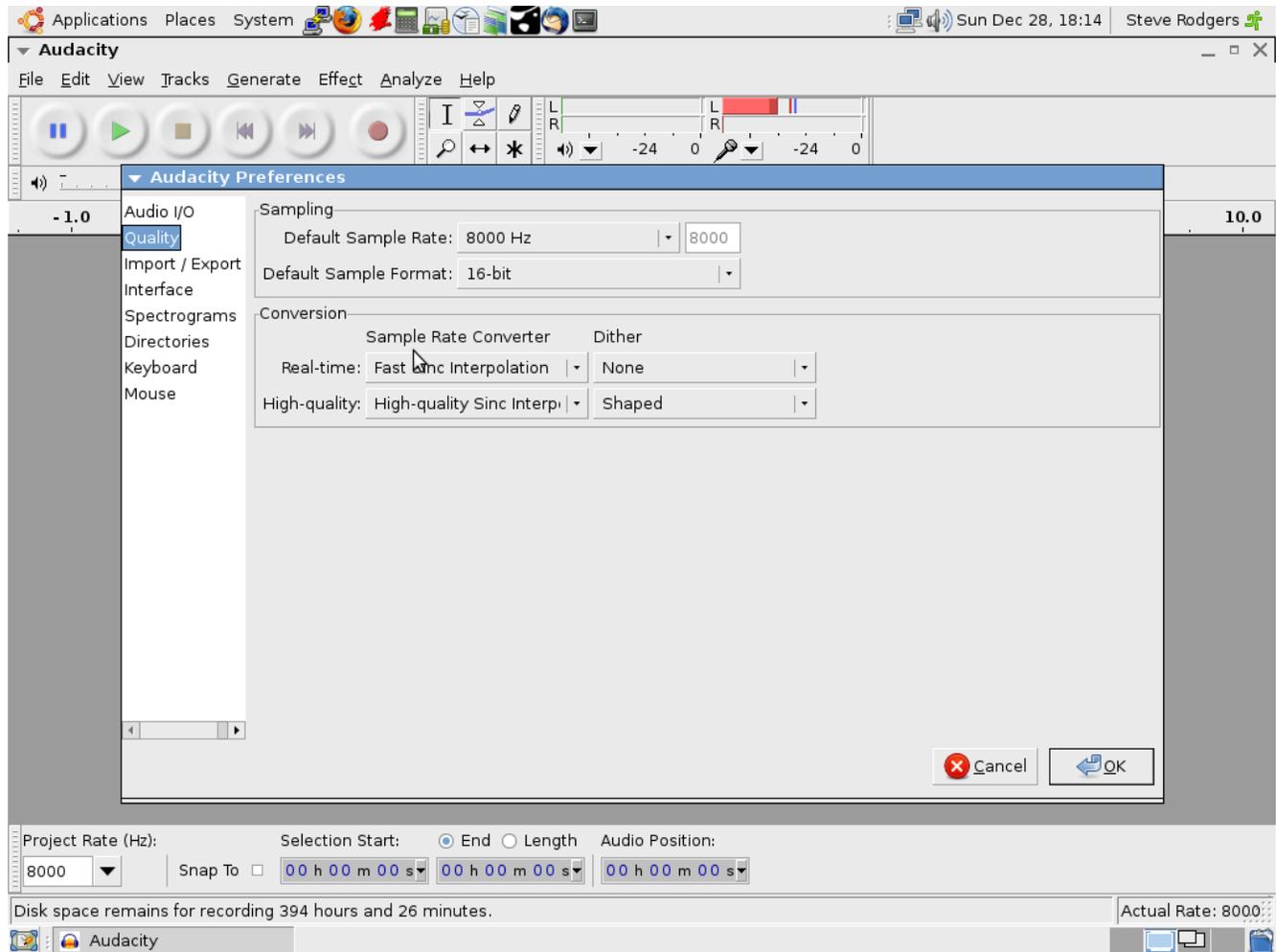
Connect up your microphone and make sure it is working by enabling the meter. The meter can be enabled by clicking on the mic icon just below the meter on the left. Make sure you can get ample audio level from the microphone as too little will just end up sounding noisy after normalization is applied. You should see peaks of -10db or better for best results.

If your audio level is low, install the gnome-alsa mixer and check the 20db boost box. Adjust the mic audio in the mixer so that you see peaks of -10db or better.

Turn down your speaker audio prior to the start of recording to minimize feedback.

Start recording by pressing the red record button (circle) and then pressing the yellow (square) button to stop.

Post capture:
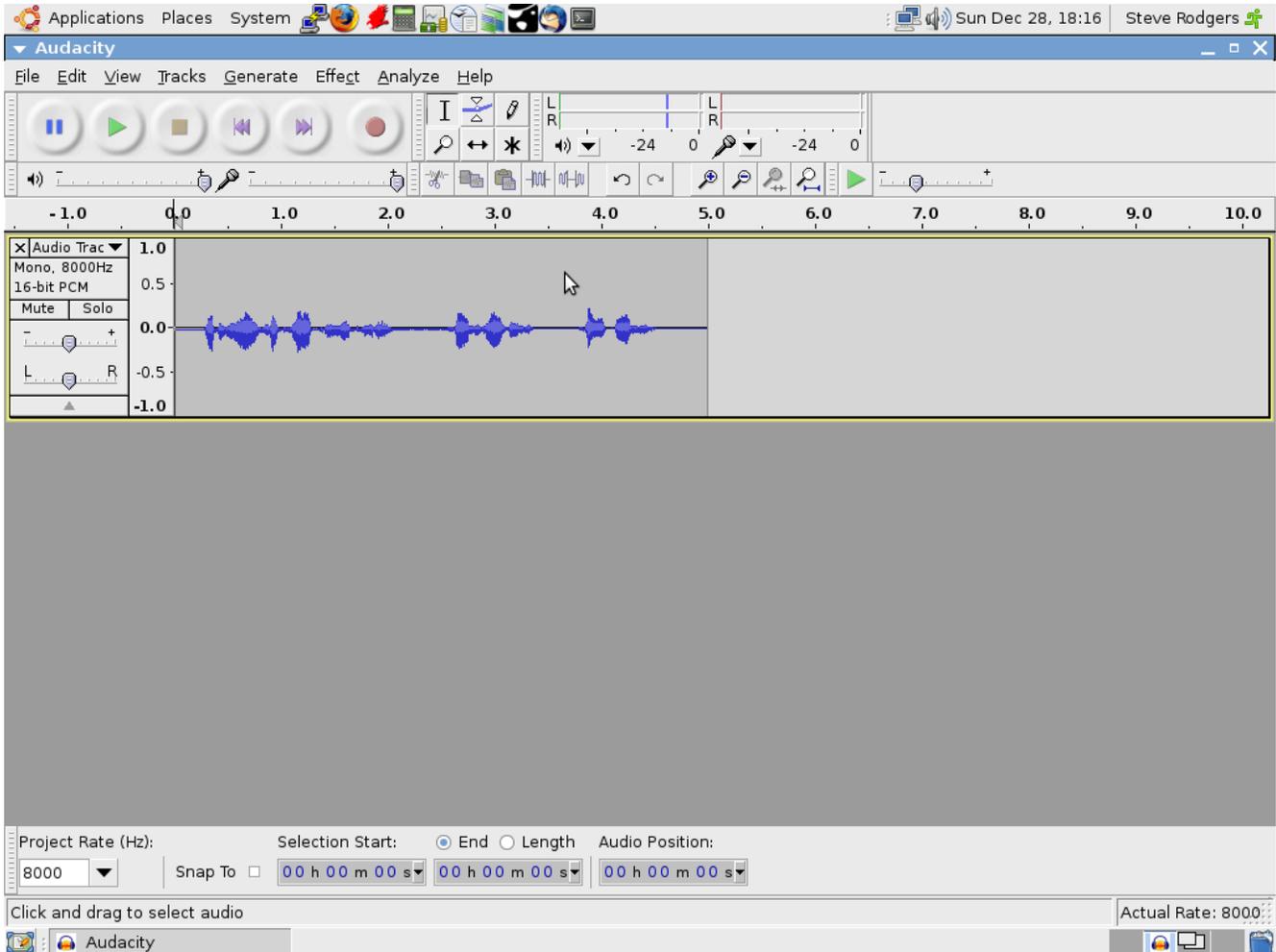
The audio above can be played back be using the play button (green triangle).

To start over, close the waveform window by clicking the X in the upper left corner and then go through the recording process again.

Playback hint: To avoid feedback during playback, turn off the microphone in the sound mixer you are using during playback. Do not physically disconnect the microphone as this may put a DC bias on the mic input and mess up the playback of the captured waveform.

Once you are happy with it, use the Effect->Normalize feature to normalize it to -6dB as follows:
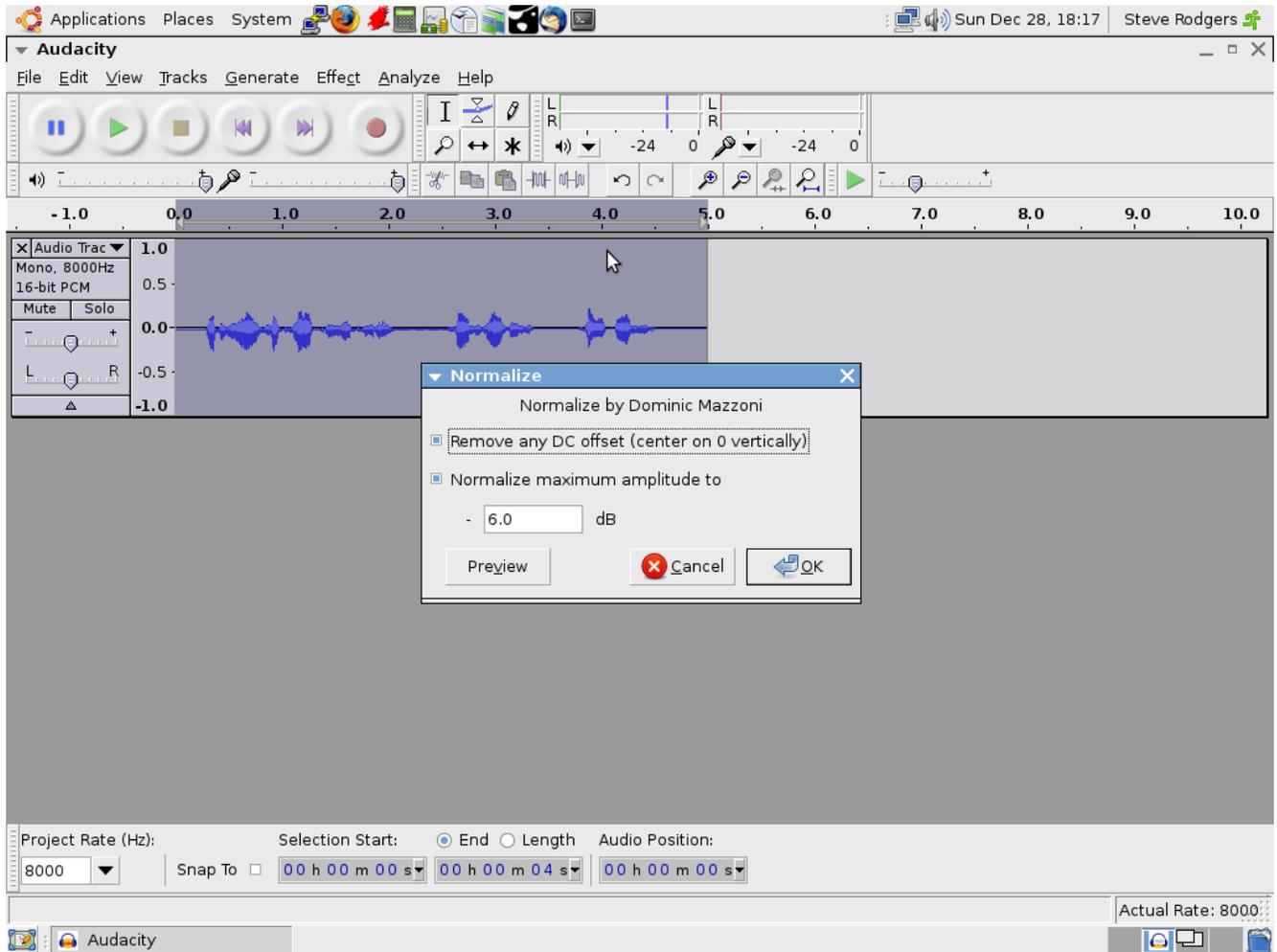
Here is what it should look like after normalization has been applied.
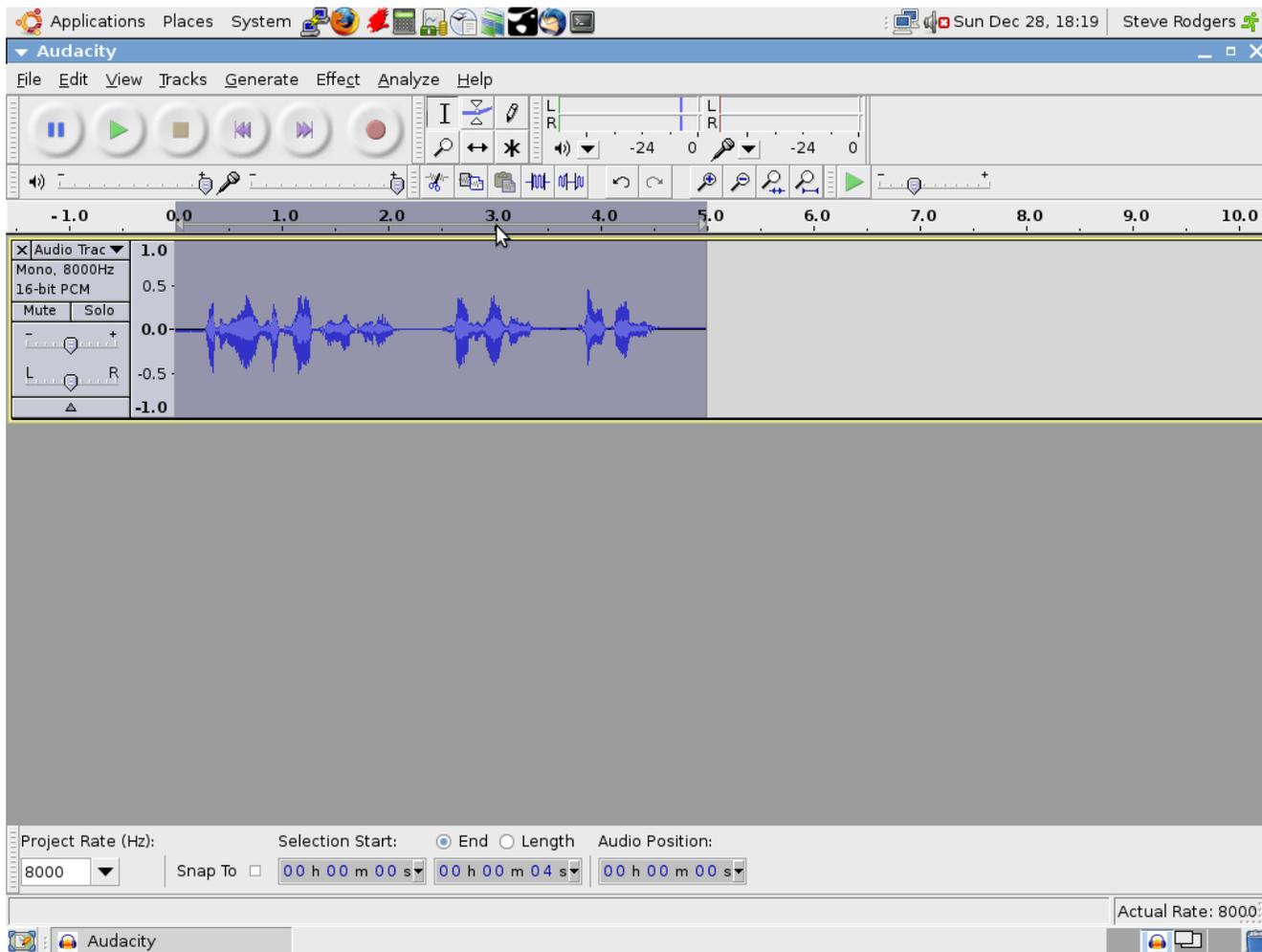
Crop the silence at the beginning and end by using the mouse to highlight the silence areas at the beginning and end, then using Edit->delete to remove them:
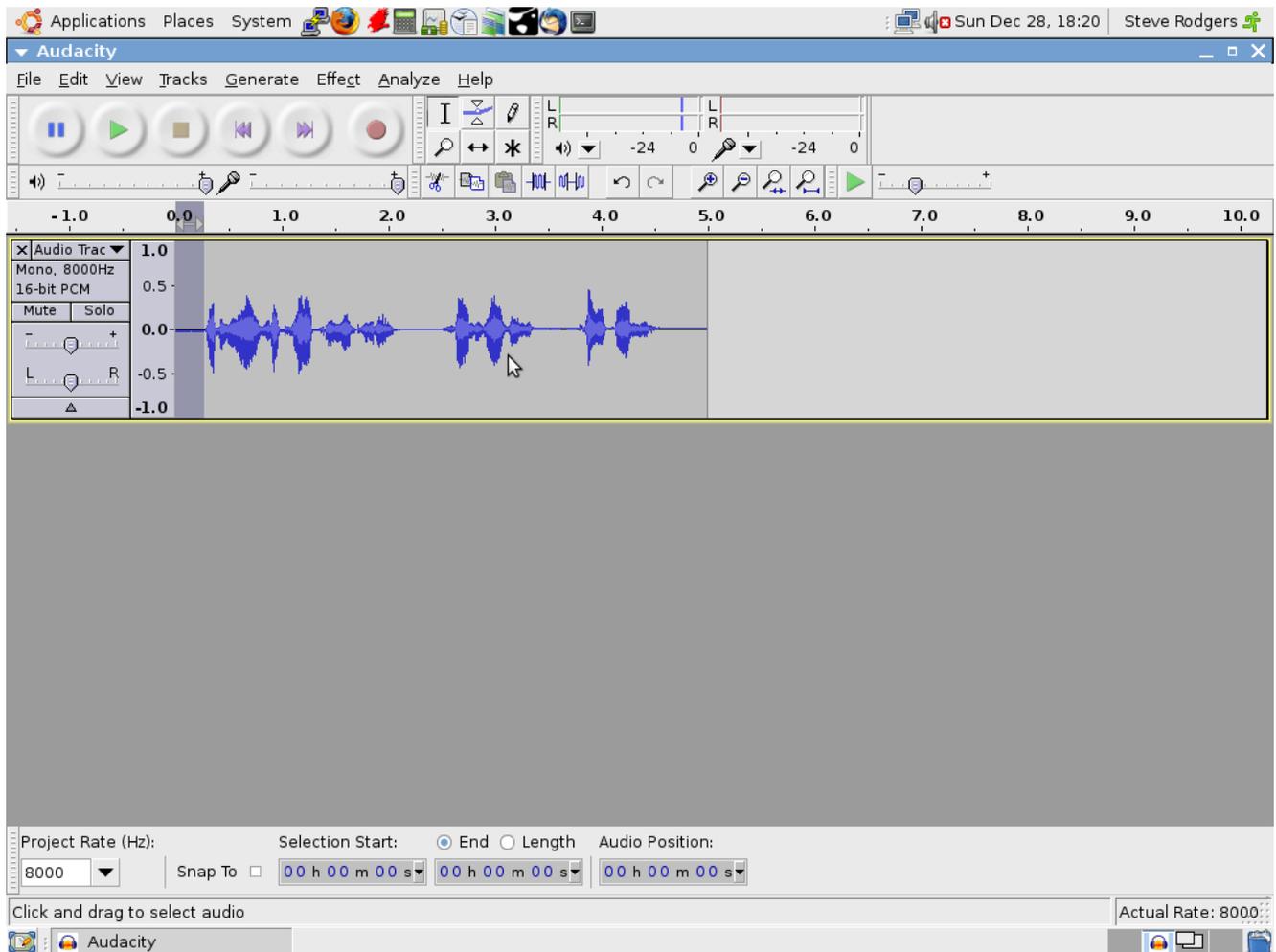
Post cropping:
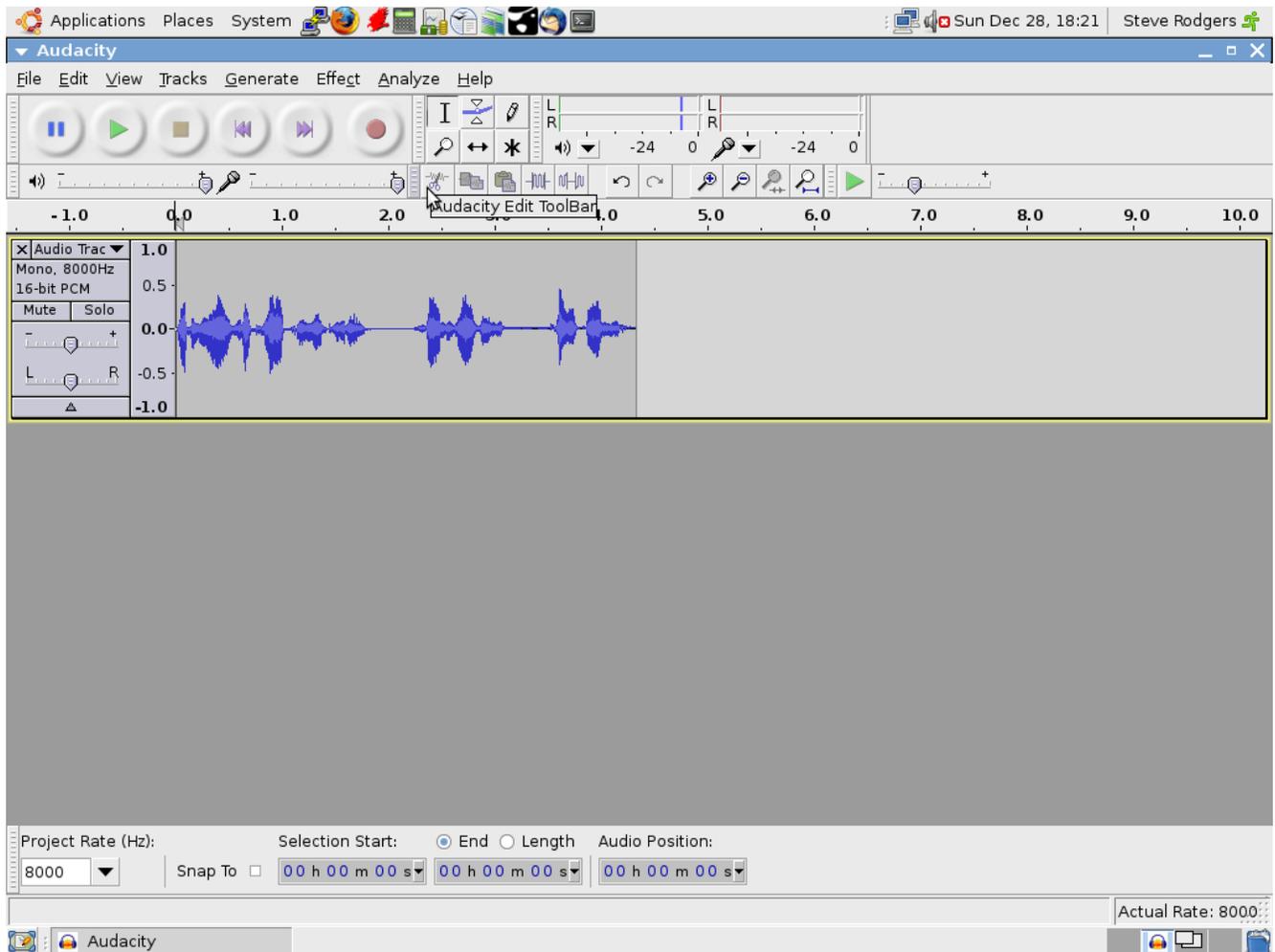
Once the waveform is cropped, play it back a few times to make sure it is what you want. You will need to position the pointer to the beginning of the waveform by clicking the mouse at the beginning before pressing the play button.

Save your project by using File->Save Project:
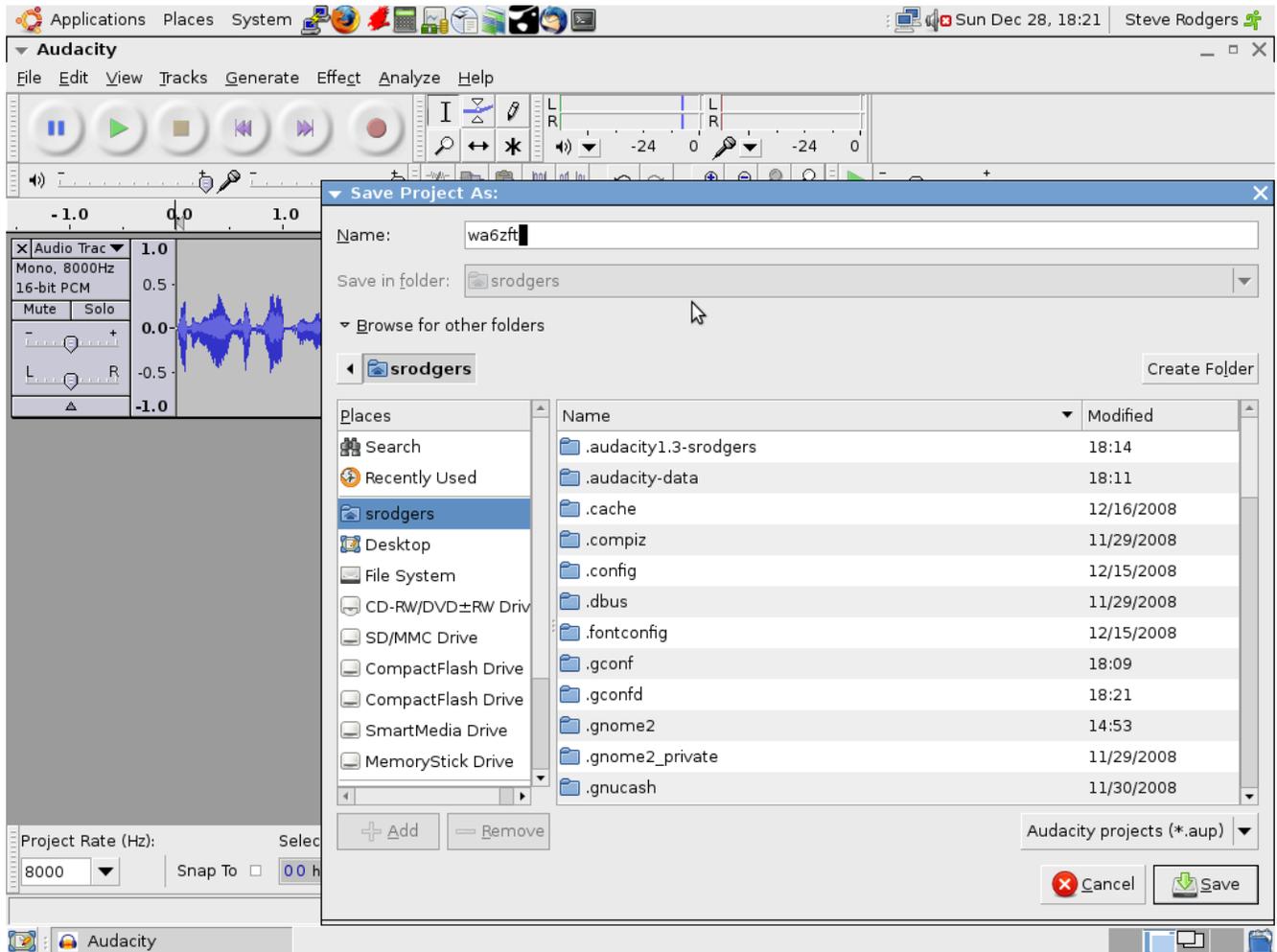
Enter a name for the project and click the save button.

Export the raw ulaw audio file by clicking File->Export, and specifying the options below:
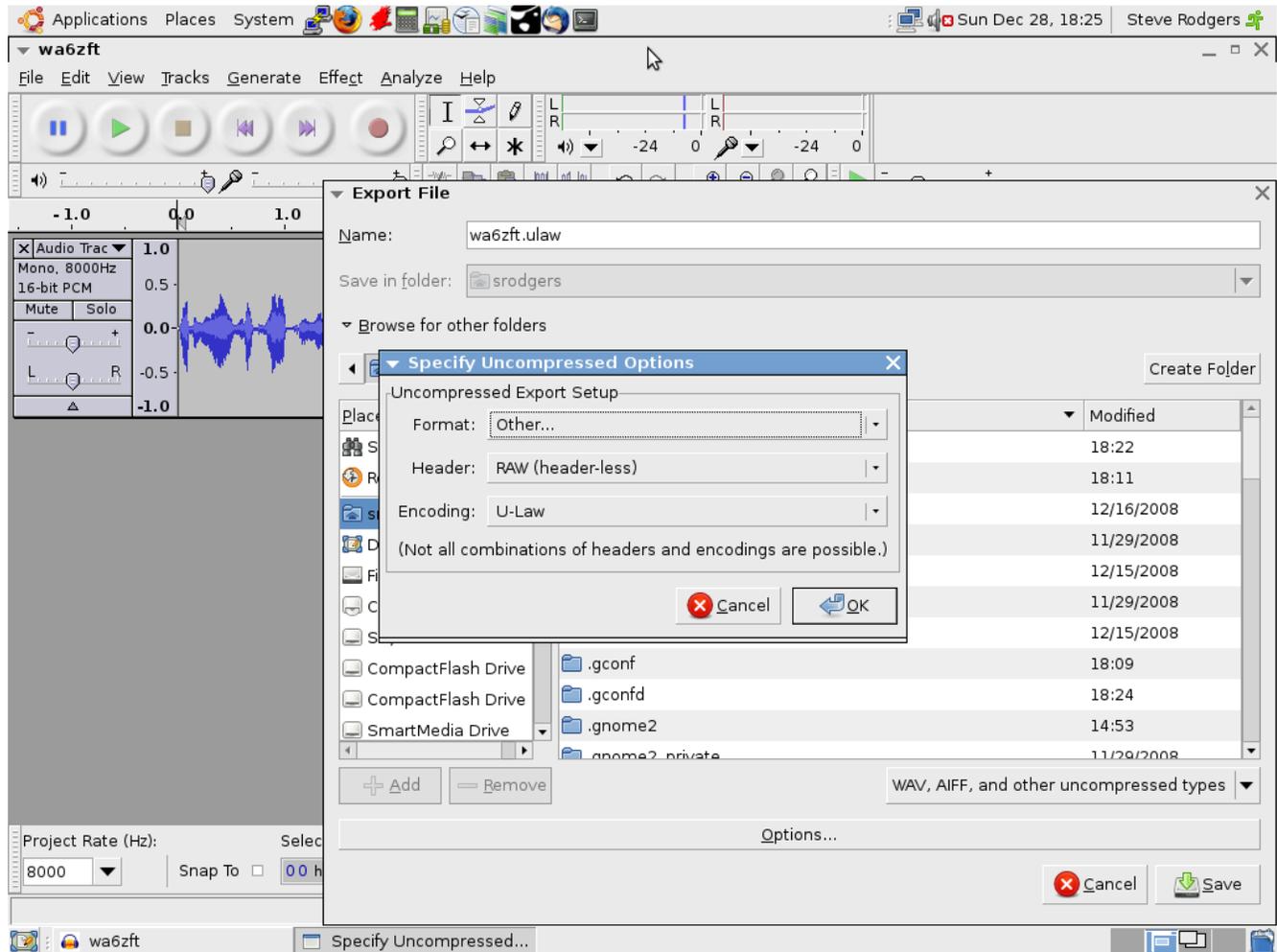
In the Export->File dialog box, enter your file name as xxx.ulaw where xxx is the name of the sound file to be copied to the app_rpt system. Select WAV, AIFF, and other compressed types near the bottom of the file list. Click the options button wait for the Specify Uncompressed Options dialog box and fill it out EXACTLY as shown below:

Format: Other
Header: RAW (Header-less)
Encoding: U-law

Click on OK for all subsequent dialog boxes until the process is complete. There will be a warning on the file extension. Click OK for the waring dialog box, and a Metadata Dialog box which follows.

You are done. Close Audacity, and copy the xxx.pcm file over to your asterisk box. Usually I put repeater identification file in /etc/asterisk, so your idrecording entry in rpt.conf should look like this:

idrecording=/etc/asterisk/xxx

Note: the .ulaw extension needs to be omitted from the abover statement or the file will not play.