KEV'S DEVELOPMENT TOOLBOX

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SEPTEMBER 12, 2015 BY KEVIN

Direwolf soundcard packet on Linux, with ax25 and LinPac

I've been playing around with Direwolf soundcard packet radio decoder on Linux. On Windows I use the packet terminal app that comes with the UZ7 soundcard modem, which you can connect to Direwolf's AGW port over a network. The only comparable app on Linux that I've found seems to be LinPac.

Linpac connects over an ax25 port. To get LinPac to connect to Direwolf there's a few steps to jump through.

Install Direwolf

Download the source from: https://home.comcast.net/~wb2osz/site/?/home/

(or after Oct 8 2015, https://github.com/wb2osz/direwolf)

Install libasound2-dev:

```
sudo apt-get install libasound2-dev
```

Compile Direwolf:

```
make
sudo make install
```

If you get this error when compiling Direwolf then you missed the libasound-dev step:

```
audio.c:80:28: fatal error: alsa/asoundlib.h: No such fi
#include <alsa/asoundlib.h>
```

Copy the supplied direwolf.conf file (from the downloaded source) to your home dir. To find out what input and output sound devices you have, run

```
aplay - l
```

and

```
arecord -l
```

You'll see something like this:

**** List of CAPTURE Hardware Devices ****

card 0: NVidia [HDA NVidia], device 0: ALC1200 Analog [ALC1200 Analog]

 Subdevices: 1/1

 Subdevice #0: subdevice #0

card 0: NVidia [HDA NVidia], device 2: ALC1200 Alt Analog [ALC1200 Alt Analog]

 Subdevices: 1/1

 Subdevice #0: subdevice #0

Get the device numbers for the soundcard you are using and edit direwolf.conf. For device 0 subdevice 0, edit this line and set 0,0:

```
ADEVICE  plughw:0,0
```

Using a Rigblaster Plug and Play on Ubuntu 14.04, it was automatically recognized and showed up per the docs on /dev/ttyUSB0. Direwolf will use this for PTT on your radio. I uncommented this line to enable this:

```
PTT /dev/ttyUSB0 RTS
```

To give my current user access to ttyUSB0 (and avoid running with sudo) I had to add my user to the dialout group (per post here):

```
sudo usermod -a -G dialout $USER
```

Start up alsamixer and make sure the mic inputs and outputs are not muted (M), and the volume levels are around 3/4.

Install the ax25 network suport:

```
sudo apt-get install libax25 ax25-apps ax25-tools
```

To enable an ax25port, edit /etc/ax25/axports, I added a line like this:

```
1 KK6DCT-1 1200 255 2 2m packet
```

The first column is the port name. Start up direwolf with the -p option to enable a KISS port, you'll see something like this (-t 0 t0 suppress the colors):

```
kev@kevs-ubuntu:~$ direwolf -t 0 -p
Dire Wolf version 1.2
Audio device for both receive and transmit: plughw:0,0
Channel 0: 1200 baud, AFSK 1200 & 2200 Hz, E+, 44100 sam
Ready to accept AGW client application 0 on port 8000 ..
Ready to accept KISS client application on port 8001 ...
Virtual KISS TNC is available on /dev/pts/0
WARNING - Dire Wolf will hang eventually if nothing is r
Created symlink /tmp/kisstnc -> /dev/pts/0
```

Note the /dev/pts/X value, and use this with a kissattach command to connect Direwolf to ax25:

```
sudo /usr/sbin/kissattach /dev/pts/0 1 44.56.4.118
```

The 1 value following /dev/pts/0 is the port number from the axports file.

Per the Direwolf PDF doc, if you see this error:

```
kissattach: Error setting line discipline: TIOCSETD: Dev
Are you sure you have enabled MKISS support in the kerne
or, if you made it a module, that the module is loaded?
```

Then try this instead:

```
sudo /usr/sbin/kissattach /dev/pts/ptmx 1 44.56.4.118
```

Install LinPac

Download the LinPac source. Build and install:

```
./configure
make
make install
```

The first time you startup LinPac it creates a LinPac dir in your home folder. Edit macro/init.mac in this folder and change the port value to match the port name from your axports change (1 in the above example):

```
;; Default port
port 1
```

Start LinPac with:

```
linpac -m
```

(I'm not sure what the -m option is for, I found this in a post online, but without it I get errors on startup about ax25 port not found).

Connect to a node with :c nodename

Done!

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3 Replies to "Direwolf soundcard packet on Linux, with ax25 and LinPac"

Lukas Thorwald Hey

APRIL 5, 2017 AT 11:07 AM

Hiho!

The newest direwolf sources cloned via git, need another library: libgps-dev

73,

do4amf

Stephan

JANUARY 11, 2019 AT 2:10 PM

Dear mates, I need your help — I got the tool installed but in the first run the tool wants to get root privileges — because running is done not in sudo mode, this breaks than the first run. Doing differnetly, running as root, on the other hand produces the LinPac folder in the home directory of the normal user.
What is the indented way to achieve a correct installation. Thanks a lot and kind regards,
Stephan

kevin

JANUARY 14, 2019 AT 8:15 AM

I noticed the same too, it shouldn't need to be run as root, but if you don't, it doesn't work. You could try opening a ticket/question with the developer and see what they recommend?

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