Amateur Radio and Linix
(Presentation: at West Placer ARC meeting)

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Ham Radio and Linux Talk

Agenda

• Suggest what Linux Distribution to use for Ham Radio.
• Linux Ham Radio Software Available
• Suggest some hardware interfaces
• Recommend some software to use
What is a Linux Distribution

A linux distribution is a packaged version of Linux with numerous software applications.

http://distrowatch.com/

- Hundreds of Distributions are available
- By far the most popular is Ubuntu Linux
- For this talk I will use Mint 7 Linux which is a variation of Ubuntu.

http://www.linuxmint.com/

- Mint 7 runs on almost any PC and very popular.
• Derived for Ubuntu 9.04.
• Boots up in Live mode, on any PC without a install.
• Install from a simple icon click in live mode
• Allows for the immediate install of about 88 Ham Radio Software Applications

• "Linux Mint's purpose is to produce an elegant, up to date and comfortable GNU/Linux desktop distribution."
• "It is compatible with and uses Ubuntu repositories. This gives Linux Mint users access to a huge collection of packages and software."
• "It comes with a lot of desktop improvements which make it easier for the user to do common things."
K6AEP Main System
Ham Radio XP Emulation

- A simple method of getting started is to use your old Windows HR Applications
- Ham Radio Deluxe is a favorite application package which runs only on Windows XP etc.
- Vmware and Sun's Virtualbox allow XP to be installed on Linux http://www.virtualbox.org/
- You need a fast computer to run Vmware etc. http://www.vmware.com/products/workstation/

- Echolink and Digipan are two ham apps. which run on crossover.
- Echolink in crossover is tricky to set up.
- Trial and error is the best method to see if a windows app. runs on crossover.
Vmware XP Emulation
Running Digital Master 780
Crossover running Windows
Echolink Software on Linux
Ham Radio Hardware Interfaces

- Sound card interfaces very popular
- Low cost
- Uses standard hardware in PC
- Cabling can be messy
- RF can cause problems

- Commerical products much cleaner
- Lots of choices
- Mode used reduces selection choices
- USB interfaces popular for multi mode
- VHF mostly RS-232
My HF Interface
SignalLink - USB

- Very simple to connect to hardware
- Comes with a cable for your rig
- Plugs into any USB port
- Lots of linux software support
- Eliminated a 40 mtr RF problem I had with Sound Card interface

- No external power required, USB provides power
- Small in size
- Order and receive in a week.
SignalLink using Fldigi on 20 Mtr (RTTY Contest)
Fldigi – BPSK-31
20 meters
Gmfsk 20 meters
Kpsk 20 meters
Gpsk31 20 Meters
Linux QSSTV Software
Uses SignalLink USB
Linux Ham Software
Install from Mint 7
### Linux Ham Software

<table>
<thead>
<tr>
<th>Software</th>
<th>Description</th>
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<tr>
<td>Rig Control Software</td>
<td>FT100: No config for the FT100.</td>
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<td>QCCNet: A repeater system similar to EchoLink.</td>
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<td>Satellite</td>
<td>Communications</td>
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<td>PocketRadio: What do you think they're for?</td>
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<td>3D-Scan: Job and pig for Linux.</td>
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<td>Soundcard</td>
<td>AGARS Software</td>
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<td>Soundcard CW Software</td>
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<td>Soundcard Facsimile Software</td>
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<td>Soundcard Face-to-Face Software</td>
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<td>Soundcard PSK-441 Software</td>
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<td>航电接收机</td>
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<td>JT44 software</td>
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<td></td>
<td>qPSK: MRSK 8 and 16. Sensitive and Selective.</td>
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<td></td>
<td>NT63: Aconsole mode NT63 program</td>
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<td>Multimode Software</td>
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<td>P452 Software</td>
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<td>RS232 Software</td>
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<td>SSTV Software</td>
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<td>Linux Hamshack</td>
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<td>KF1GRC Linux Ham Software</td>
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<td>KF1GRC Linux Ham Software</td>
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Donner SoundCard Interface
Icom 718 (13 pin Din)
http://home.att.net/~n8st/DDI-index.html
VHF Digital Ham Radio (Packet and APRS)

- TNC required.
- Two possibilities:
  - Hardware
  - Soundcard
- Soundcard least expensive.
- Hard to set up
- Soundmodem TNC can be installed by Mint Linux

- I decided to use Kantronics KPC-3+ TNC
- Configuration Easy and very widely used
- Interfacing Radio and Computer easy
- Minicom and GTKterm can be installed
I have been using Kantronics KPC since 1980's, my old one recently died.

One of the most popular TNC's for Packet and APRS

Simple to connect to rig and computer.

Uses RS-232 serial interface

Low power demand

All Linux software supports it directly
VHF Ham Setup
Kenwood TM-G707, KPC-3
Minicom Communications Setup

- Minicom feature of Gnome desktop terminal.
- Open a Linux terminal, issue (minicom -c -m on)
- First configure Port and speed (/dev/ttyS0, 9600 8N1)
- Serial port now connected to COM1 port on Linux system.
- To bring up terminal in future issue (minicom -c on) in terminal session.
Packet Radio Connection

- Connected to Berry
- Freq 145.05
- Beryessa Peak, 3000 Ft
- Serving the Sacramento Valley, CA
KPC-3+ APRS
Running Xastr
Internet Display (APRS)
http://aprs.fi/
APRS and PSK 31
Gpredict Satellite Tracking
Klog – logging Program &
IBP – Ham Beacons
Running Mint from Live CD

Xastir and Fdigi installed and running on EEEpc 1000He Laptop. Sound interface was detected all that is need is Rig Audio.
Conclusion

- Linux makes a great OS platform for Ham Radio.
- Linux can run Ham Applications without a hard disk install from a CD in live mode.
- Mint 7 Linux is ideal because it is:
  - User Friendly
  - Very Stable
  - Easy to use and configure
- Give it a try, you will love it!
- Any Questions?