

# Amateur Radio & Linux

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# Introduction

If you have questions/comments please feel free to ask them anytime. You don't have to hold them until the end of the talk.

There are a lot of Amateur Radio tools, this is just an overview of some of the software available

Slides will be up on my website at <https://grothe.us> in the presentations section tonight or tomorrow

# Overview of Talk

- Benefits of Linux over other operating systems
- Standard Linux Distributions
- Custom Linux distributions for Amateur Radio
- Software Packages
- Where to get a cheap laptop/desktop for Amateur Radio
- Resources
- Summary

# Benefits of Linux

- Free: as in beer and speech
- Can be run on systems from Raspberry PIs to quite beefy boxes
- Great way to reuse an older PC
- Lot of the software used on it is Open source
- Can be run remotely via Secure Shell (SSH) at command line level
- Can be run with remote graphics via SSH or systems such as rdesktop, vnc and others



# Debian GNU/Linux and Amateur Radio

Bruce Perens (K6BP) was a major contributor to the Debian GNU/Linux project

Created the Debian Free Software Guidelines (DFSG)

Bruce Perens was also instrumental in getting the no-code technician class created.

In 1995 the amateur-radio section was added to the Debian software packages

# Amateur Radio Section of Debian

Amateur Radio in the current version of Debian 13 (Trixie)

Has 148 packages currently covering a lot of stuff.

We'll fire up Synaptic and take a look

An easy guide to look at is at

<https://www.debian.org/blends/hamradio/get/metapackages>  
s

It breaks it down to Metapackages

# Fedora Linux

Fedora has a smaller number of packages currently

<https://fedoraproject.org/wiki/AmateurRadio>

Packages included with this spin

<https://fedoraproject.org/wiki/SIGs/AmateurRadio/Packages>

# Ubuntu Linux

Ubuntu was initially created as a more user-friendly version of Debian

It has inherited most of the packages from Debian

The group's information is at

<https://wiki.ubuntu.com/UbuntuHams>

Information about the UbuntuHams packages

<https://wiki.ubuntu.com/UbuntuHamsPackages>



# Arch Linux

Arch Linux is a Linux distribution popular with a lot of the more

Hard core hobbyists

- [https://wiki.archlinux.org/title/Amateur\\_radio](https://wiki.archlinux.org/title/Amateur_radio)

Has a lot of documentation of projects. 90% of the people who use Arch's documentation probably aren't running Arch Linux by my estimate

# Andy's Ham Radio Linux

Andy's Ham Radio Linux -

<https://sourceforge.net/projects/kb1oiq-andysham/>

Was initially a Linux distribution. Today it is a package that installs on top of Debian/Linux Mint/Ubuntu.

It has gigabytes of Ham Radio software.

Recommend trying it on a virtual machine. Installs tons of software. Took 3 days to install on a VM on my laptop

# ArcOS

ArcOS - <https://arcos-linux.com/>

is a different style of a Linux distribution

- It is designed to be run as a Live distribution from a USB thumb drive
- Costs \$49.99 to unlock the VARA Winlink software
- Designed with Digirig

Given the cost and closed source nature of this I don't use this one.

# DragonOS

DragonOS - <https://cemaxecuter.com/>

Is based around making Software Defined Radios (SDR) easier.

It has most of the common tools for SDR, makes a very nice VM to play around with SDRs. If you use one of the inexpensive ones like the RTL 8129/8139s.



# HamPi

HamPi - <https://github.com/dslotter/HamPi>

Is a custom distribution for using on Raspberry PIs and other Arm based machines.

Has a lot of software that is already installed on the image  
<https://github.com/dslotter/HamPi>

Has a very nice wiki -

<https://github.com/dslotter/HamPi/wiki>

# Software Packages

Just a few of the things you can do with Amateur Radio and Linux

Chirp - Program your Radio

Qlog, etc. - many logging options

Qtel - EchoLink client

Hamexam - Study for your Amateur Radio Exam

SSTV - Slow Scan TV and Fax

Cute/CubicSDR/GnuRadio - Software Defined Radio options

# Where to get a Cheap Laptop/Desktop

Some good sources (Laptops/Desktops)

- Windows 10 Laptop/Desktops - Windows 10 support ends October 14th, lot of machines will be hitting ebay/craigslist/amazon, etc.
- Older Macbooks - Retina / Intel based are pretty tempting
- Chromebooks that are out of support - ChromeOS Firmare updater -

<https://www.ifixit.com/Guide/How+to+convert+a+generic+Chromebook+to+Linux+OS/108259>

# Where to get a Cheap Laptop/Desktop

Some good sources (mini-PCs)

- Raspberry PIs start at less than \$30 and can run Raspbian/Debian Linux based
- Android set top boxes, cheaper than some Raspberry Pis, usually include case and power supply
- Slickdeals - mini pc - lots of options here  
[https://slickdeals.net/search?q=mini+pcs&searcharea=deals&searchin=first&isUserSearch=1&sort=relevance&searchtype=normal&filters\[forum\]\[\]=0&filters\[rating\]\[\]=all&filters\[date\]\[\]=1095](https://slickdeals.net/search?q=mini+pcs&searcharea=deals&searchin=first&isUserSearch=1&sort=relevance&searchtype=normal&filters[forum][]=0&filters[rating][]=all&filters[date][]=1095)



# Couple of Options (Make my PC better)

## Windows Subsystem for Linux

- This allows you to install a Linux VM onto a Windows system

## VirtualBox

- Free software that allows you to create a Virtual Machine on your system and install Linux on in it
- Cross platform - Works well on Mac/Windows/Linux, etc.
- Save way to try out systems

# Couple of Options

## Chromebook Linux subsystem

- Linux Development Environment - lets you install Linux onto a chromebook

## UserLand

- Allows you to run Linux on your android phone

# Resources

Hack a Day - <https://www.hackaday.com>

Great site with a lot of hacks/fixes on it. Highly recommend doing a search for it on amateur radio

<https://hackaday.com/blog/?s=amateur+radio+linux>

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# Resources

Quick Tip: doing a google search for "github awesome topic" will usually lead you to some well curated resources

"Github awesome amateur radio linux" search yields some good ones

## Couple of Examples

- DD5HT/awesome-hamradio -  
<https://github.com/DD5HT/awesome-hamradio>
- Quetzal-coalt/Awesome-RF -  
<https://github.com/Quetzal-coalt/Awesome-RF>



# Things I Would Like You to Know

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- Android TV set boxes are a lot cheaper than Raspberry Pis
- Virtualbox makes it easy to try out various Linux distros
- Ventoy is a great tool for putting isos on a usb stick
- HamPi and Andy's Ham Radio linux are great places to start
- Recommend a Debian or Ubuntu base and install Andy's Ham Radio on top of it

# Things I Would Like You to Know

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- Hackaday is an amazing resource, highly recommend it
- Xubuntu, Lubuntu and Bodhi Linux are less resource intensive versions of Ubuntu - compatible with Andy's OS - good for older desktops/laptops
- Netac - makes good cheap USB drives that have a write protect switch on them -  
<https://www.amazon.com/Netac-Physical-Protect-External-Storage/dp/B0872V8P1Q> - 64gb/\$9.99 or 128gb/\$10.00

# Getting Started

To get started recommend the following

1. Grab a USB drive - 16gb or bigger better/USB 3.0 better yet
2. Install Ventoy on it -  
<https://www.ventoy.net/en/index.html>
  - a. Ventoy allows you to format a usb drive and put multiple isos
3. Put Ubuntu Desktop 24.04 (LTS) or 25.10 on it, or a couple of distros on it
4. Boot your PC off the usb stick, usually hit f12 or f11 on most machines
5. This will allow you to figure out how well your hardware will work with linux

# Summary

Linux and Amateur Radio share a lot of things in common

- Both are tinkerer friendly :-)
- Both are designed around the idea of sharing information
- Both are a lot of fun



# Thanks

Thanks for listening

Any Questions?