Does Linux Make Sense for You?

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Computer Deconstruction Lab

Background

- Neil
- CDL board Member
- Programming since 1978
- Unix User/Programmer since 1985
- Linux User/Programmer since 1992
- Author: Linux Home Automation

- Joe
- Former CDL Board Member
- Programing since 1968
- Unix User/Programmer since 1975
- Linux User/Programmer since 1991
- Author: 3 Books on Cell Phone Design

Why Use Linux?

- Advantages
  - Can run on most Intel/AMD computers
  - Excellent to revive an old slow computer
  - Large number of Open Source (free and legal to download) Programs
  - Variety of options (flavors) of desktop to satisfy most users
  - Large number of forums to get help
  - The Raspberry Pi uses a Linux variant for its Operating System
  - Desktop and Server Versions of Many Flavors of Linux
- Disadvantages
  - You have to learn a new User Interface
  - No central 800 number to call for help
  - You become you own helpdesk
  - Some programs do not have Linux versions

Free and Open Source Software
General Applications

- Office
- Web Browser
- Email
- Messaging
- Checkbook
- Photo
- Calendar
- Maps
- Games
- Drawing

Many of these programs can be installed directly from the software library

We will give examples of most popular software and links to more

Free and Open Source Software Specialty Applications

- Printed Circuit Board Design
- Prototyping Board Design
- Programming Languages
- Simulation Software
- Text Editor
- Command Line
- Wine

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What Can Windows do that Linux Can't

- Sell a License/charge for upgrades (donations are optional)
- Tax Software
- Windows Only Games
- Adobe Photoshop
- Outlook
- Edge Web Browser
- Expensive Professional Development tools are often Windows Only

The $64,000 Question?

- Can Linux get a virus?
- Yes!
- But less likely than Windows

History of Unix/Linux

- Unix invented in 1969 at Bell Laboratories in Murray Hill, NJ
  - Ken Thompson and Dennis Ritchie created the first version of UNIX on a PDP-7 minicomputer.
  - University of California developed their own version called Berkeley Software Distribution (BSD)
- Linux invented in 1991 as a free, open source version of Unix for hobbyists.
  - by Finnish student Linus Torvalds
- Early versions of Linux
  - Non-GUI version installed from 45 floppies downloaded from Univ Finland
  - Slackware linux

Modern Versions/Flavors of Linux

- Ubuntu (https://ubuntu.com/download)
- Debian (https://www.debian.org/download)
- Fedora (https://getfedora.org/en/workstation/download/)
- Mint (https://linuxmint.com/download.php)
- Puppy Dog (https://puppylinux-woof-ce.github.io/)
- Linux Subsystem for Windows (https://learn.microsoft.com/en-us/windows/wsl/install)
- There are many others (https://distrowatch.com/)

- Most Linux version distributed under the GNU license
  - **GNU** means **G**NU is **N**ot **U**nix, where **GNU** means **G**NU is **N**ot **U**nix, where ...

Office Software

- Use instead of Word, Excel, Power Point
- Most Microsoft office documents can be read, edited and saved in these free office products.
- In most cases, the edited versions can be read, edited and saved in Microsoft Office
- Math Equations created in Power Point do not import correctly

Free Office Software

- LibreOffice
  (https://www.libreoffice.org/download/download-libreoffice/)
- Open Office
  (https://www.openoffice.org/download/)

- For more software, information and download links see:

- https://www.fossmint.com/best-free-office-suites-for-linux/

Web Browser

- Use to browse the web
- Most of the non-Microsoft browsers also have linux versions

- Google Chrome (https://support.google.com/chrome/a/answer/9025903?hl=en)
- Mozilla Firefox (https://www.mozilla.org/en-US/firefox/linux/)
- Chromium (https://www.chromium.org/getting-involved/download-chromium/)
- Opera (https://www.opera.com/browsers/opera)

- For more software, information and download links see:
- https://cloudinfrastructureservices.co.uk/top-10-best-ubuntu-browsers-linux-list/

email

- Thunderbird (https://support.mozilla.org/en-US/kb/installing-thunderbird-linux)
- Evolution (https://pkgs.org/download/evolution)
- For more software, information and download links see:
- https://itsfoss.com/best-email-clients-linux/

Messaging

- Messaging Apps are specific to users.
- Each user has their favorites
- iMessage is not available for Linux
- Each cell carrier has a method of using web access to send/receive messages

- To see if your specific App is supported see https://www.makeuseof.com/best-instant-messaging-apps-linux/
- or the website for the App

Checkbook

- The most popular textbook program is Quicken
- Some banks give it out for free for customers
- If not you can get a subscription for $5-$10 per month depending on features. There does not appear to be a permanent license anymore
- Quicken has software for Windows and Mac OS, but not Linux

- Linux checkbook programs can import files from Quicken
- Unknown if can go the other way

Free Check book Programs

- GNUcash (https://www.gnucash.org/download.phtml)
- Home Bank (http://homebank.free.fr/en/downloads.php)

- For more software, information and download links see:

- https://www.fosslinux.com/46034/best-accounting-software-linux.htm

Photo and Drawing

- Photo:
  - Gimp (https://www.gimp.org/downloads/)
  - Fotoxx (https://kornelix.net/fotoxx/fotoxx.html)
- Drawing:
  - Krita (https://krita.org/en/download/krita-desktop/)
  - Inkscape (https://inkscape.org/)
- For more software, information and download links see:
- https://www.fosslinux.com/78648/best-image-editors-for-ubuntu.htm

Maps

- Web based
  - Google maps (https://www.google.com/maps)
  - Bing maps (https://www.bing.com/maps)
- Gnome Maps (https://wiki.gnome.org/Design/Apps/Maps)
- FoxtroGPS (https://www.foxtrotgps.org/)
- Pure Maps (https://github.com/rinigus/pure-maps/releases)

- For more software, information and download links see:
- https://linuxhint.com/map-viewers-linux/

Games

- Most Popular games are not supported on Linux
- The are mostly Windows only
- Some will support Mac OS
- A popular Game platform is Steam
  - Steam need top of line computer – see there web site
- That being said, Linux still has many options available thanks to Steam being officially supported on Linux. Also, according to ProtonDB, more than 80% of the top 1000 games on Steam are playable on Linux as of now.

- For more software, information and download links see:
- https://www.gamingonlinux.com/
- https://www.linuxfordevices.com/tutorials/linux/linux-for-gaming

Summary

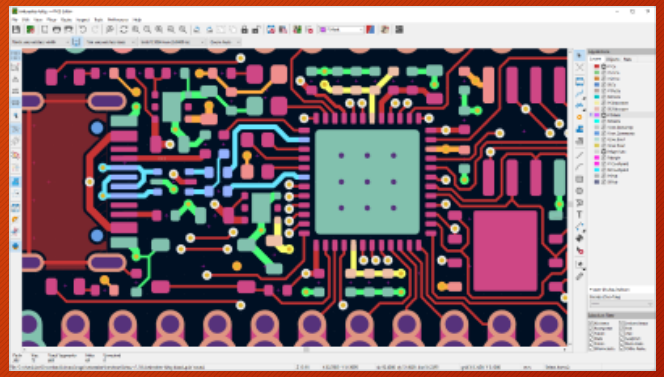
- Linux great to revive old hardware
- Not for everyone
- If there is interest we will do an install workshop

Appendix

Specialty Applications

Printed Circuit Boards

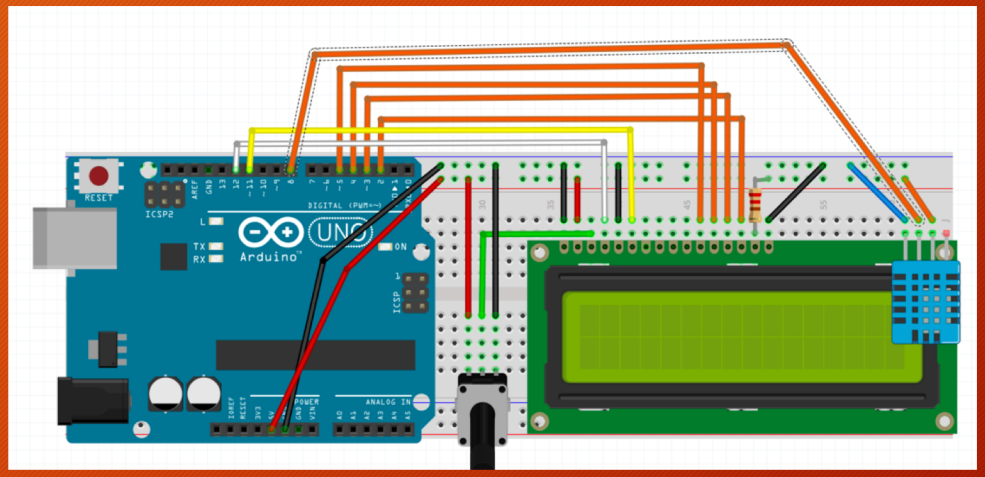
- Kicad
- EasyEDA
- CircuitMaker
- LibrePCB
- DesignSpark



- https://all3dp.com/2/best-pcb-design-software/

Prototyping Boards

- Prototyping boards are used to quickly build up an electronic circuit
- But other than taking a picture, a way to show some else how to build the circuit is needed.
- Fritizing is a popular program. See https://fritzing.org/
- Example



Programming

- All popular programming languages are available on Linux
- Some come with an integrated development environment
- Some require a text editor to write the program

Simulation

- Simulation Languages are used to build models a circuits and natural processes
- They are based on writing and solving equations
- The main ones are:
  - Octave: Open Source version of Matlab (an expensive program) (https://octave.org/)
  - Mathcad $$$$ (https://www.mathcad.com/en)
  - Mathematica: $$$$ - A free version is part of the Raspberry Pi Operating System (Linux based)

Command Line and text editors

- Command Line
  - Use to take direct access of computer
  - Like having a “stick shift” car
- Text Editors – often used to write software
- Get from software library
  - gedit
  - vim
  - emacs