Linux: Powering the Internet

Computer Tech 2018

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AUDIENCE EXPECTATIONS

What do you expect from this presentation?

OBJECTIVE

My purpose is to give you more details on Linux and how to get it.

I hope the parents and grandparents of children interested in a technical career can benefit from the information and pass that on.

Linux: What is it?

GNU/Linux is a general name for an operating system (*OS*, sometime written as *O/S*) with a Linux kernel plus a suite of GNU (Free Software Foundation) software tools that, together, provide nearly the equivalent of a POSIX-certified OS like UNIX, HPUX, or IRIX.

GNU/Linux OS's come in many complete forms, callled *distributions* (or *distros*). One of the most well-known distros is Ubuntu, which, up until very recently, was used by Google, but they just announced they were moving to *Debian*, my distro of choice for over 10 years.

Note that Microsoft now provides a version of Ubuntu as an add-on to Windows 10.

My distro of choice is *Debian*, and an easier-to-use distro, with a similar desktop, I recommend to new users is *Linux Mint*. It's running on this laptop.

Linux: Why should I care?

Linux drives a significant part of the Internet and the cloud.

Linux has a huge number of FOSS packages available to meet almost ever need.

Pertinent attributes:

- Powerful operating system (O/S or OS) that can be used in place of Windows or Mac
- More usable command-line-interface (CLI) that permits complex pipeline tasks and GUI-less programming
- Especially valuable as a modern slide-rule or calculator for scientists, mathematicians, engineers, and analytical professionals in all fields
- Kitbashing (chaining tools)
- More control over your system
- Case-sensitive file systems
- Tool box atmosphere

Linux: How do I get it?

You can get Ubuntu now with Windows 10 and that is probably the easiest way to get familiar with it, but you'll eventually want a native installation for more general-purpose use.

Testing Linux distros (distributions)

Several methods

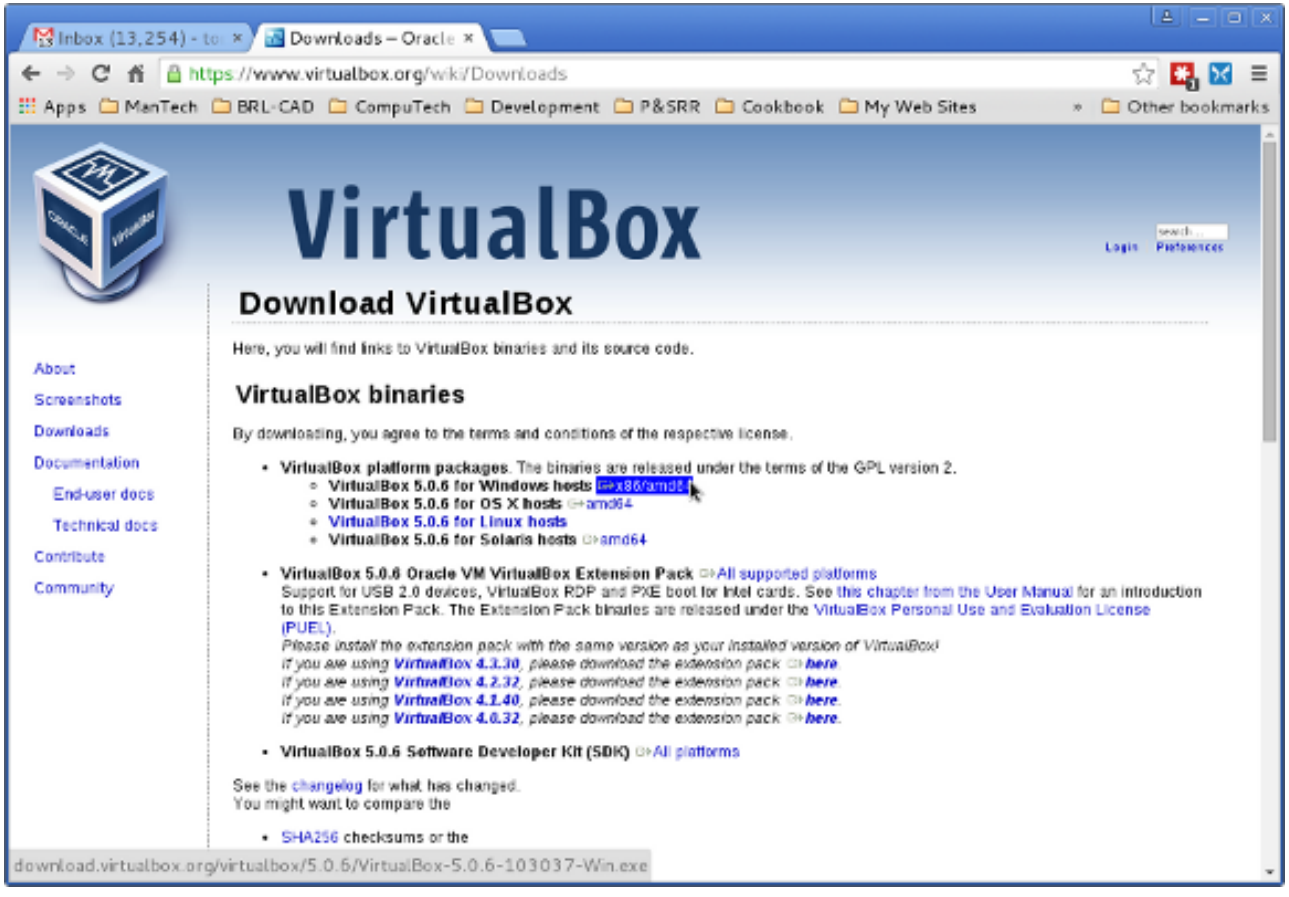
- VirtualBox
- Live CD/DVD
- Bootable USB drive
- Spare computer (native install; dual or single boot)

We'll use VirtualBox for this presentation

The VirtualBox site

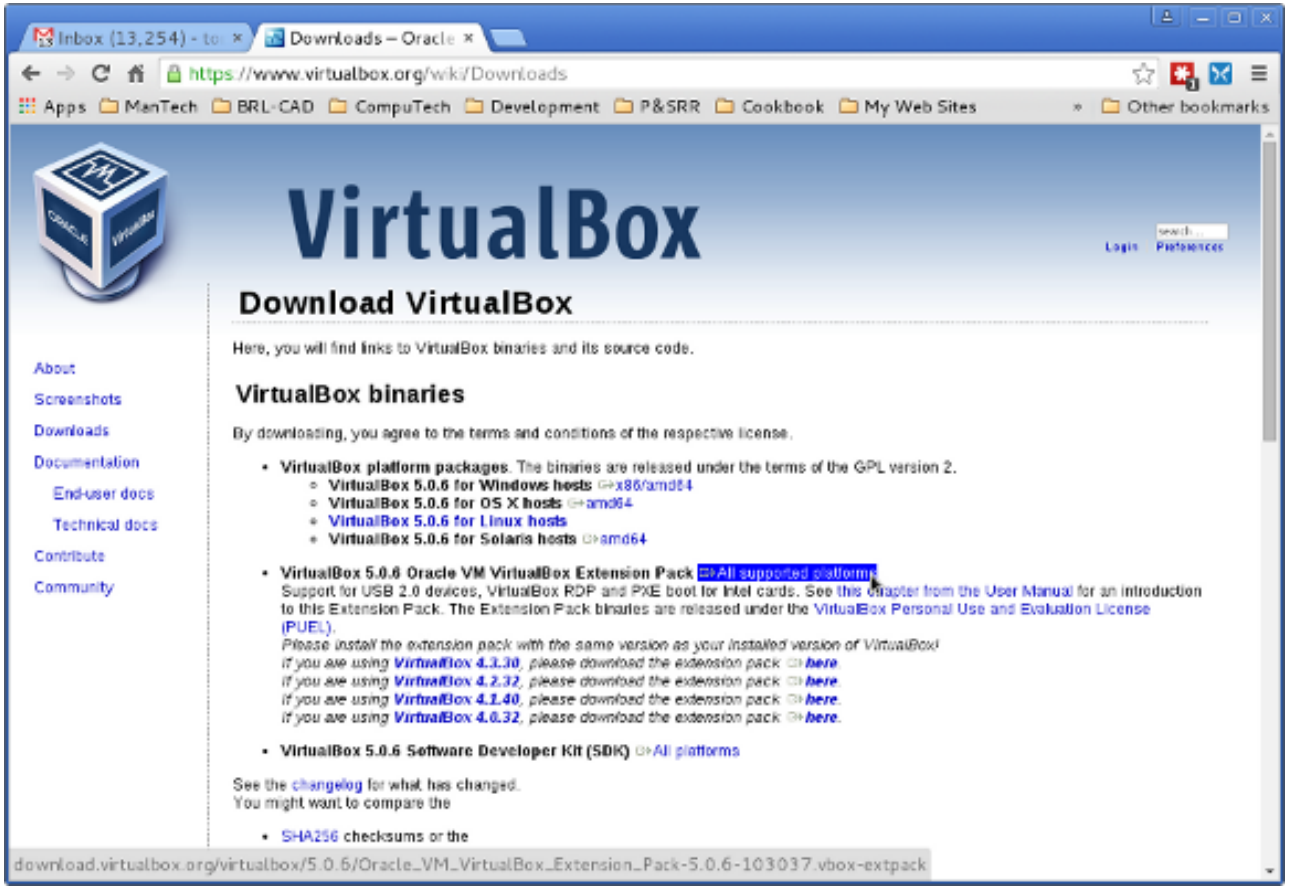
Note at the website the **Downloads** and **End-user docs** links and the **News Flash** section

After selecting "Downloads"



Don't forget the "Extension Pack" (for USB 2/3)

The "Extension Pack" is not distributable



Upgrading or installing

After downloading the main file, double-click on it and install it as usual on Windows (or the equivalent on Mac).

When upgrading or installing, you lose network access temporarily. You may have to uninstall an old version when upgrading.

Selecting the Linux distro

Considerations (* recommended)

- amount of RAM (* 2 GB+)
- 32- or 64-bit (* 64-bit)
- 64-bit guest on 32-bit host? (NOT recommended)
- type network interface (remote access needed?)

Installing the Linux guest. . .

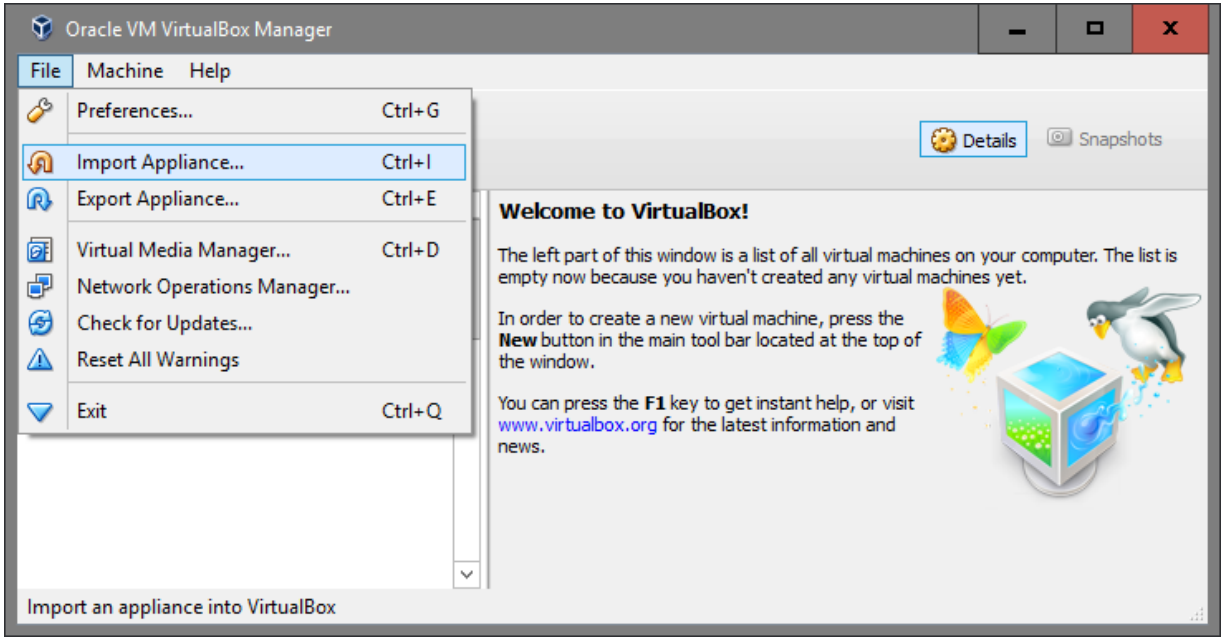
We have a VM already prepared for you here through a link on the Computer Tech NWF home page:

- <https://computertechnwf.org/virtualbox-vm.html>

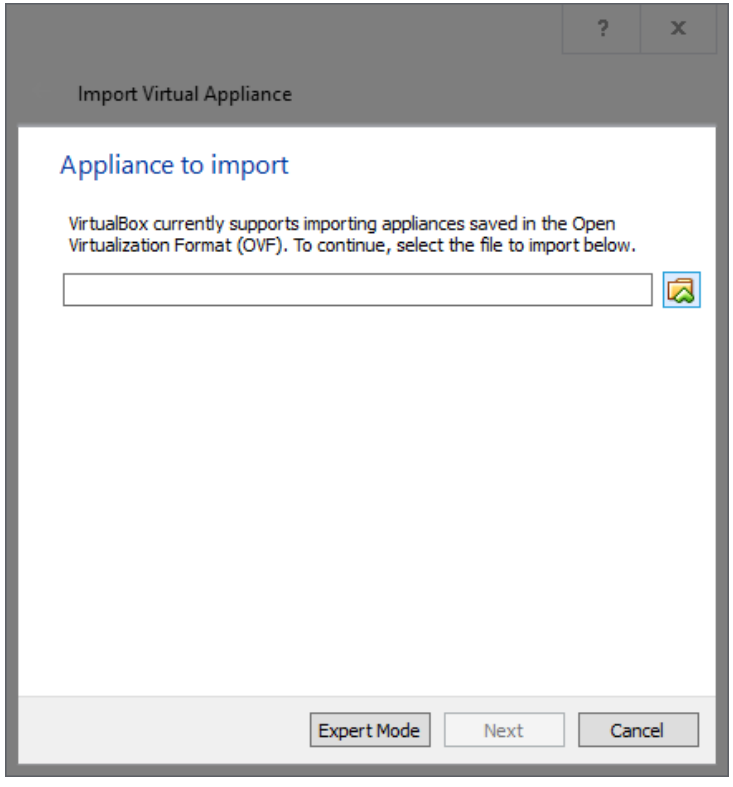
Download and import it

At 4+ Gb it will take a while to download!

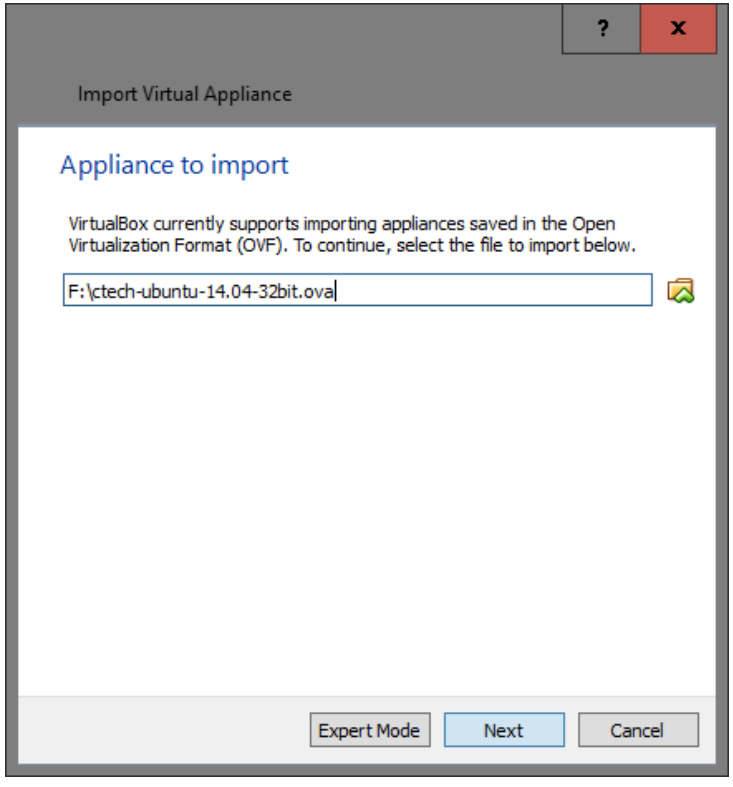
Importing the VM (1)



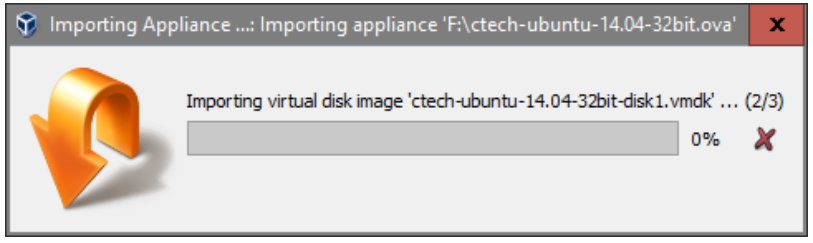
Importing the VM (2)



Importing the VM (3)

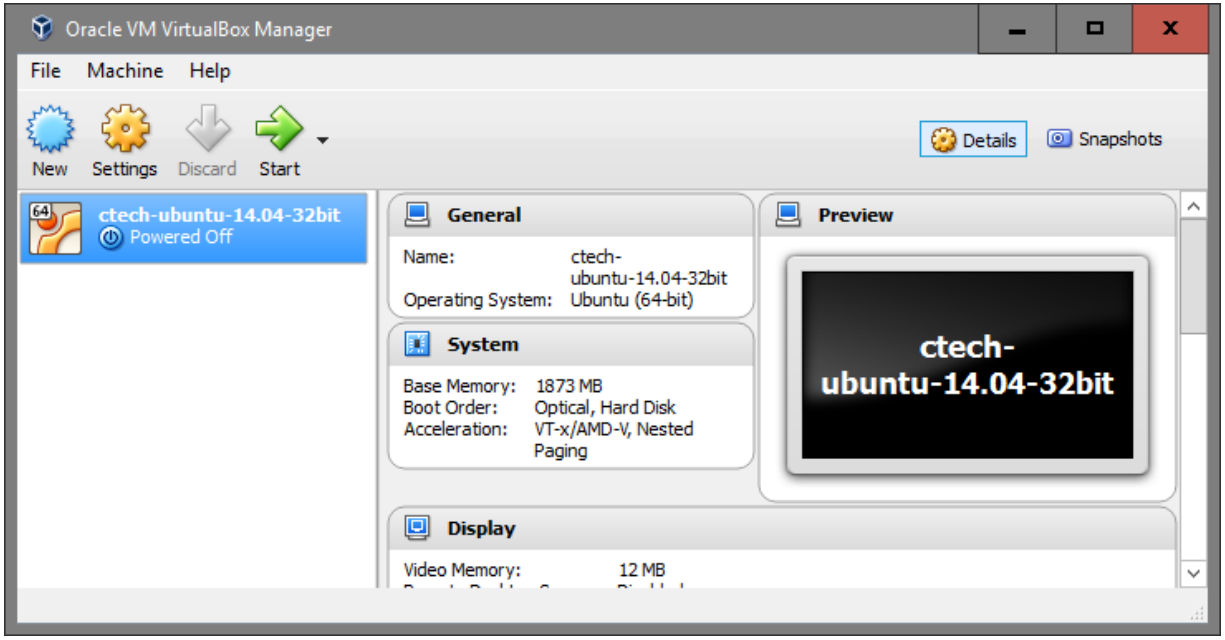


Importing the VM (4)

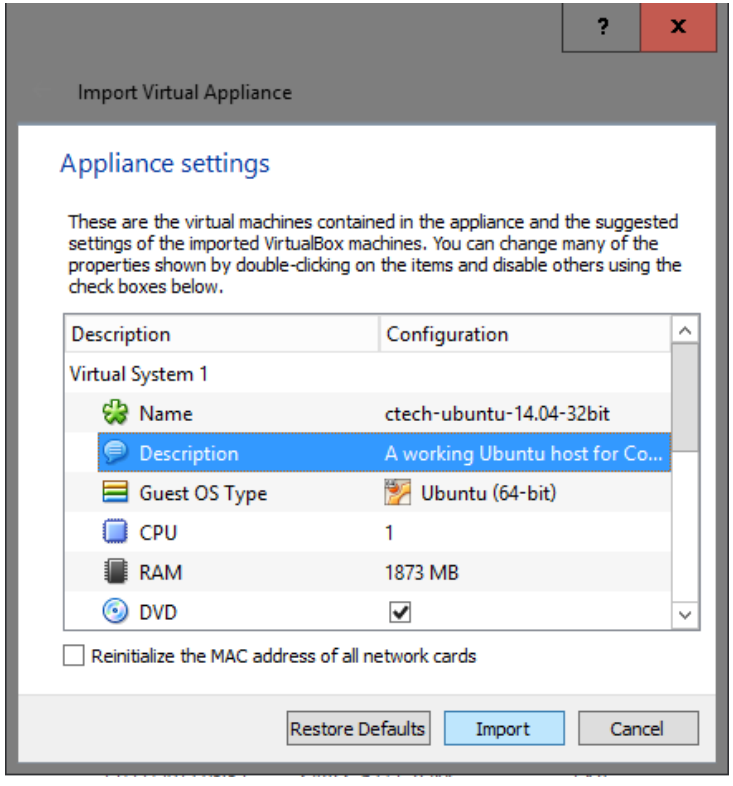


Importing the VM (5)

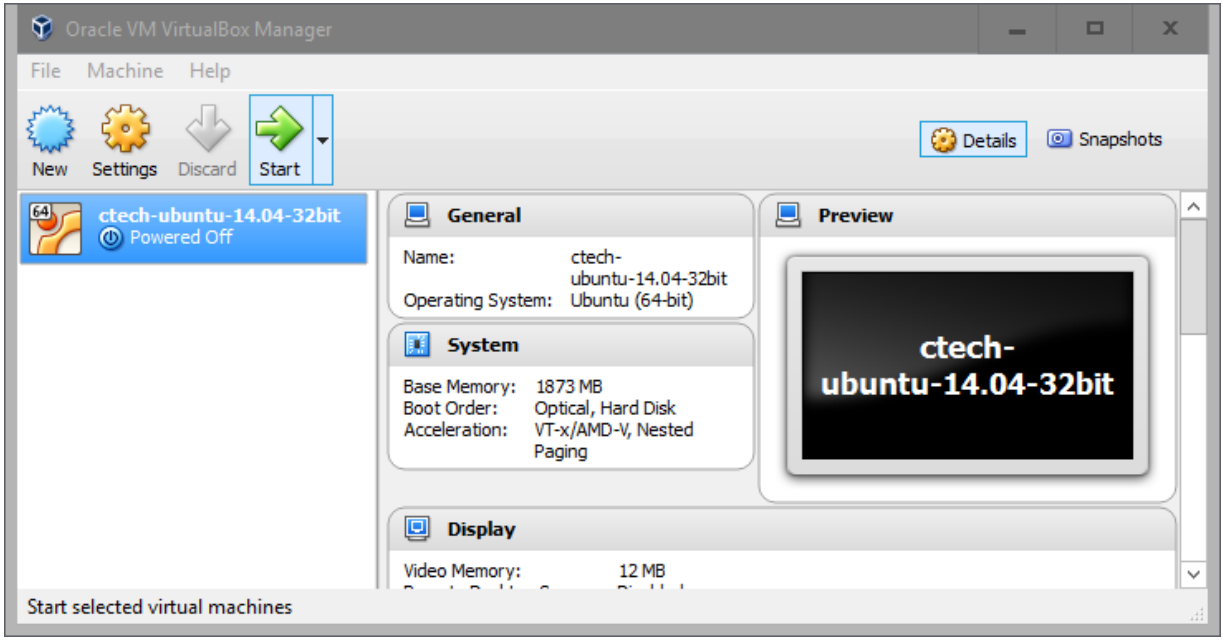
Complete, now check settings



Importing the VM (6)



Now start the VM



VM goodies

The VM has a few things added over the initial installation:

- a simple Emacs customization file (**~/.emacs.d/init.el**)
- Perl 6

A very brief Linux tour (1)

- Using the VM (**demo**)
  - Terminal window
  - Package manager
  - Emacs
  - Perl 6

Linux: How do I learn to use it?

A free online course is offered under the auspices of the Linux Foundation:

<https://www.edx.org/course/introduction-linux-linuxfoundationx-lfs101x-1>

My group, the NWFLUG, can provide assistance with installation and use.

<https://nwflug.org>

SUMMARY

- Today we have taken a look at getting a usable Linux installation for learning.
- If you find Linux useful, consider joining our local Linux user group.
- There is something out there in Linux land for nearly any interest. I encourage you to venture forth, have fun, and expand your knowledge and skills.

Finally

- **Please make sure you're on the attendance roster.**
- **Feel free to contact me at any time regarding this session or any other of my sessions (please mention CTech '18 in the subject):**
  - **Tom Browder**
  - **tom.browder@gmail.com**