# Cheapskate Tech

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Fall 2020 – Session 5 of 6

seniortechadvisor.com

#### What We'll Cover in 6 Weeks

- Overview, plus Shopping tips
- Devices and Apps
- Internet of Things (IoT) and Entertainment
- Chromebooks (Chrome OS)
- Linux
- Home Tour & Black Friday Deals (Nov. 27)

#### Use these



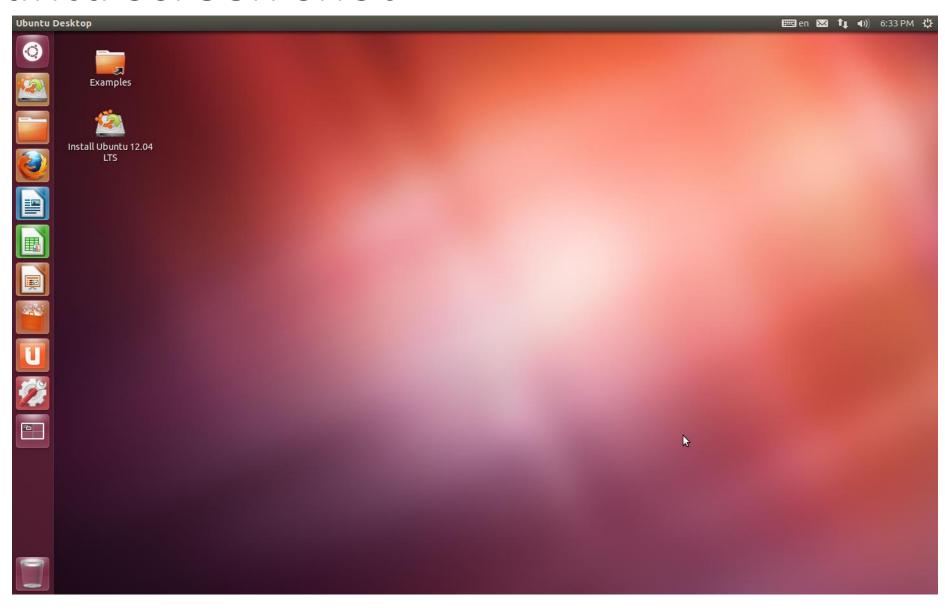
https://blog.simon-frey.eu/how-switching-my-parents-over-to-linux-saved-me-a-lot-of-headache-and-support

FOSS vs FLOSS

## Switching My Parents... key learnings

- Preparation
  - Don't overwhelm step by step progression
  - Adapt to FLOSS software\*
- Switching over
  - Use Ubuntu!\*\*
  - Add 'most used' apps to the app bar
- Ongoing improvements
  - Add apps, updates, backups, etc.
- Conclusion
  - Reset boot order...
  - Decide if this is something you can live with?

### Ubuntu screen shot



### FOSS vs FLOSS – key learnings

- The two political camps in the free software community are the 'free software movement' and 'open source'
  - "FLOSS" meaning 'Free/Libre and Open Source Software'
  - "FOSS" which stands for 'Free and Open Source Software'
    - The free software movement is a campaign for computer users' freedom
    - The open source camp declines to see the issue as a matter of justice to the users, and bases its arguments on <u>practical benefits only</u>
  - We in the 'free' software movement don't use either of term, because we don't want to be neutral on the political question. We stand for <u>freedom</u>, and we show it every time—by saying <u>"free" and "libre"</u>— or "free (libre)".

#### Start here...

- How to setup a new wifi connection (especially if the machine is a laptop)
- How to install new software
- How to setup a new printer/scanner
- How to print/scan
- How to restore deleted files
- How to get data from/to a USB-stick or mobile device
- How to shutdown the machine (not that easy to find on Ubuntu)

#### Notes

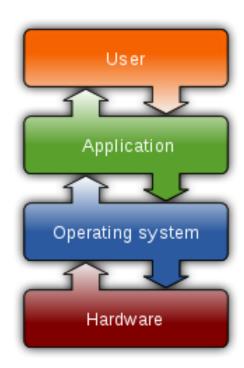
- Linux (book review)
  - General purpose or task-oriented
  - Desktop, Server, Cloud, or mobile
  - Support community or commercial
  - Stability standard or rolling release
  - Hardware
  - Aesthetics KDE, GNOME, Mate, Cinnimon, xfce, etc.
  - Init systemd
  - Package Manager RPM, dpkg, pacman, etc.
  - Security Tails
  - Live CD/USB
  - Distro Families
  - Virtualization

### Things we'll learn

- What's Linux?
- What's a kernel?
- What's a fork?
- What's a distro?
- What's a desktop environment?
- What are some good apps for Linux?
- What's a package manager? And
- Why do we care?

### Operating systems 101

- PC or Laptop
  - Windows
  - MacOS
  - Linux
- Chromebook
  - ChromeOS
  - Android
- Smartphone and Tablet
  - iOS
  - Android



#### An operating system (OS)

is <u>system software</u> that manages <u>computer</u> hardware and <u>software</u> resources and provides common <u>services</u> for <u>computer</u> programs.

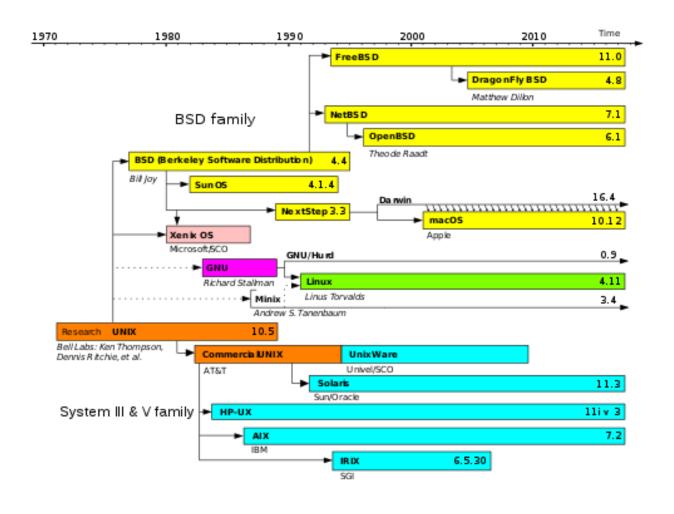
#### Desktop operating systems

- Microsoft Windows 80%
- macOS by Apple Inc. 13%
- ChromeOS 5%
- <u>Linux</u> 2%

Smartphone and tablet OS as of 2017 is 70% for Google's Android

### History of Unix-like operating systems

Linux shares similar architecture and concepts (as part of the POSIX standard) but does not share non-free source code with the original Unix



#### What is Linux?

Linux (<u>listen</u>) is a family of <u>free and open-source</u>

 <u>software operating systems</u> built around the <u>Linux kernel</u>\*.
 Typically, Linux is <u>packaged</u> in a form known as a <u>Linux distribution</u> (or *distro* for short)

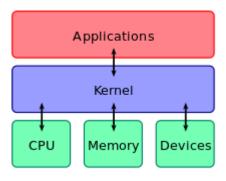
## Why Linux (from the The Ultimate Linux Newbie Guide)?

- Linux is Open Source (and it's free too!)
- It's a reliable platform
- Gives your old hardware a new lease on life
- Some of the greatest software comes from Linux and Open Source
- Games galore
- Drivers that just work
- So how can all this be free?



#### What's a kernel?

The Linux kernel is an open-source monolithic Unix-like computer operating system kernel.
 The Linux family of operating systems is based on this kernel and deployed on both traditional computer systems such as personal computers and servers, usually in the form of Linux distributions



A kernel connects the <u>application</u> software to the hardware of a computer.

#### What's a fork?

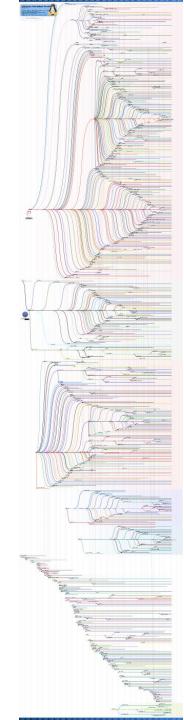
You can create a distro simply by creating your own package repository with customized packages in it. That's all a distro is. It doesn't matter how big or little the changes are.

If you wish to fork a distro, just copy the entire source repository, change whatever packages you want, and the publish the repo as your own (making sure you don't violate any licensing agreements of the distro you're copying from).

Or build your own 'Linux From Scratch'

## Linux Distributions (distros)

• A Linux distribution is an operating system made from a software collection, which is based upon the Linux kernel and, often, a package management system. Linux users usually obtain their operating system by downloading one of the Linux distributions.

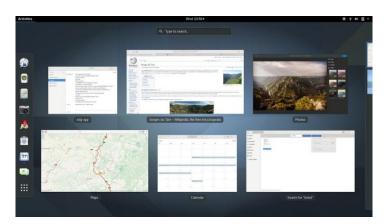


#### Debian vs. Slackware vs. Red Hat vs. Arch...

- Debian (Ubuntu incl. Mate, Netbook, GNOME, Studio, Mint, Elementary, MX Linux, Raspbian, Buscador, Kali)
  - Easiest to install/use Ubuntu and derivatives most popular
  - Ubuntu software center for installing software and updating
- Slackware (OpenSUSE)
  - Different package system
- Red Hat (CentOS, Fedora)
- Arch (Manjaro)

https://www.makeuseof.com/tag/whats-the-differencebetween-linux-distributions-if-theyre-all-linux-makeuseofexplains/

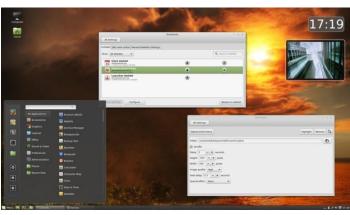
## Desktop environments



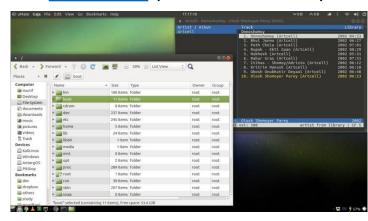
**GNOME** (Ubuntu 18.04 on)



**KDE** Plasma



Cinnamon (a GNOME 3 fork)



The state of the s

**LXDE** (Lbuntu - lightweight)



Xfce (Manjaro - lightweight)

Mate

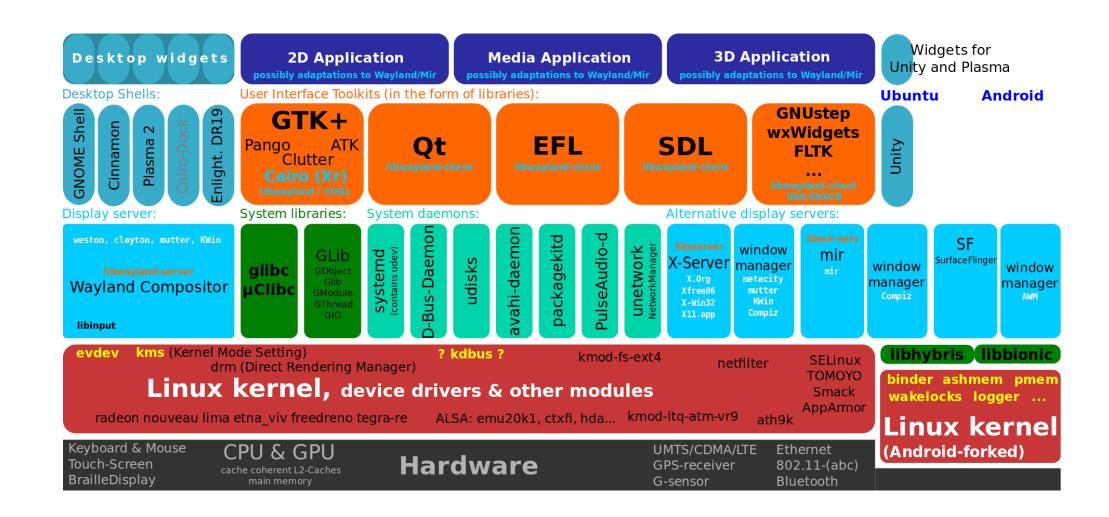
### DistroWatch

Top 12 of the top 100 distros

and my Top 5

	Page Hit Ranking			
	Data span:			
	L	Last 6 months Go		
	Rank	Distribution	HPD*	
	1	MX Linux	3538▼	
2	2	<u>Manjaro</u>	2414▼	
3	3	Mint	2219▼	
	4	Pop!_OS	1578▲	
1	5	<u>Ubuntu</u>	1468▼	
	6	<u>Debian</u>	1291▼	
4	7	<u>elementary</u>	1206▼	
5	8	<u>Fedora</u>	983₹	
	9	<u>Solus</u>	945▼	
	10	KDE neon	885▼	
	11	<u>Zorin</u>	819▼	
	12	EndeavourOS	794▲	

#### Software components of the Linux desktop stack



#### Apps



OpenOffice.org/LibreOffice - A fully featured Office suite including a Word Processor, Spreadsheet, Drawing Package, Database and Presentation suite. Compatible with Microsoft Office. Or WPS Office for Linux.



Mozilla Firefox - The browser that reloaded the web - all thanks to Open Source! Or Google Chrome.





The GIMP (GNU Image Manipulation Project) - An excellent open source image editor, similar to Photoshop by Adobe.



<u>VLC Media Player (VideoLAN)</u> - A great media player, play your DVDs/VCDs/DiVX's on any computer, even stream them to annother computer connected to a network! VLC is one of the most popular media players available today, and it's also available for Mac OS X and Windows users, too!



**Evolution** - Evolution is a full-featured Groupware client which includes E-Mail, Calendar, Tasks, Address Books and the ability to connect to a Microsoft Exchange mail server.



<u>Audacity</u> - Audacity is a free, easy-to-use, <u>multi-track</u> audio editor and recorder for Windows, Mac OS X, GNU/Linux and other operating systems.

### Package Managers

• Installing, updating and removing software in Linux is typically done through the use of package managers such as the <u>Synaptic Package Manager</u>, <u>PackageKit</u>, and <u>Yum Extender</u>. While most major Linux distributions have extensive repositories, often containing tens of thousands of packages, not all the software that can run on Linux is available from the official repositories.

## Why do we care?



- Great security security was kept in mind when developing Linux and it is much less vulnerable to viruses compared to Windows.
- Great stability Linux is very stable and is not prone to crashes
- Easy to maintain users can centrally update the OS and all software installed easily (easier with some distros than others)
- Runs on any (even old) hardware you can give new life to an old and slow Windows system by installing a lightweight Linux system
- It's free and high-quality apps are free too
- Ease of use it has become user-friendly and has a good user interface
- Good community support and online tutorials available

## Things we'll learn

- Choosing a platform
- Choosing a distro
  - What is Live CD?
- Installing, configuring, and updating a distro
- Installing and updating apps
- Using Linux best practices

### Choosing a platform

- Any old system will do (almost) my recommendations
   64-bit platforms
  - MacBook Pro 2012 2016 (needs to have spinning or SSD 2.5" HDD)
  - Lenovo T400 (not the S model) needs spinning or SSD 2.5" HDD
  - Dell Latitude E5400 easy access to 2.5 HDD
  - Raspberry Pi 3 or 3+ Ubuntu MATE and Raspbian work best

#### 32-bit platform tested

ASUS eeePC – running Ubuntu Netbook edition 10.10

#### Platform minimums

- Ubuntu Desktop Edition
- 2 GHz dual core processor
- 2 GiB RAM (system memory)
- 25 GB of hard-drive space (or USB stick, memory card or external drive but see LiveCD for an alternative approach)
- VGA capable of 1024x768 screen resolution
- Either a CD/DVD drive or a USB port for the installer media
- Internet access

#### Choosing a distro

Top distros (based on my experience – starting with the best)

- <u>Ubuntu</u> 18.10 LTS (Cosmic Cuttlefish), plus <u>Ubuntu Studio</u> 18.10
- Mint 19 Tara (Cinnamon edition)
- Elementary OS 5 Juno
- Manjaro 18.0 KDE-stable
- MXLinux 17.1 (Horizon)
- <u>Solus</u> 3.9999 Budgie
- <u>Fedora</u> 29 (GNOME default)
- OpenSUSE 15.0 Leap KDE
- <u>CentOS</u> 7 (Everything)

Extra Credit:

•Buscador 1.2

Kali Linux 2018.4 (and some light reading)

#### What is Live CD?

#### LiveCD sessions are good to:

- give a 'demo' session on a machine before installing or upgrading
- repair or prepare for awkward installations
  - repair/replace/install grub perhaps after (re)installing Windows
  - fix Windows problems
  - anti-virus problems on a Windows system
  - data recovery
  - <u>resizing partitions</u> to give Ubuntu more (or less) room
  - adding a new partition(s) to your hard-drive for other distros
- preparing a machine for installing Ubuntu
- 'showing off' Ubuntu to people
- using on a random computer where access is limited
- running a familiar desktop environment on an unfamiliar machine
- safely using a computer which seems to have poor security or lacks privacy. This is particularly good if you
  have a Usb stick or something to save your data and settings on (see 'persistent image')

### Installing a distro (welcome to Live CD/USB)

#### Create a LiveUSB (on a Windows PC)

- **Download Ubuntu** (or whichever distro you prefer)
- Download Rufus 3.4
- Using a USB stick 4Gb or more (make sure there are no files on the USB stick you care about since this process reformat the drive)
  - Run Rufus, specify the target USB drive and select the Linux .iso file
  - Press START
  - When the status shows 'completed', select close and eject the USB drive

## Installing a distro (continued)

#### **Install Linux**

- Insert the Live CD/USB into the system onto which you want to install Linux
  - Press the appropriate key (option, esc, etc.) during boot to select which drive you wish to boot from (in this case, USB or external storage device)
  - Assuming the system you're installing Linux on has no data you care about losing, start the installation process – Ubuntu example follows
  - When the installation completes, restart the system and remove the USB drive as it's no longer needed

## Updating your distro

- Different Linux update methods
  - Rolling release (Best Rolling Release Distro? Solus vs Manjaro)
  - Fixed release (<u>Ubuntu 18.10 vs Fedora 29</u> a different focus)

## Configuring your distro

Now that your distro is installed, what to do?

### Adding applications

- Package Managers 101 how to use them?
  - Flatpak vs Snap Which Linux package format is Better?

### Using your system – best practices

Now we can get down to business

#### Videos

- Top 5 Reasons Solus Rocks
- Best Rolling Release Distro? Solus vs Manjaro (rolling releases)
- Ubuntu 1
- 8.10 vs Fedora 29 a different focus.
- Best Linux Distros Choosing the Right Linux Version for You
- Ubuntu 18.04: What's New?
- <u>Ubuntu 18.04 Vs Manjaro</u> <u>Which is the Best Linux Distro</u>
- Why Is Manjaro So Popular?
- 5 Reasons Why I Use openSUSE Leap 15 Linux 2018
- <u>Learn how to use Linux Mint easily!</u> \_ Part 1\_ The Desktop
- <u>elementary OS 5.0 Juno Complete Review</u>

#### More Videos

- Fedora 29 Tweaking My Distro Setup Routine
- Five Reasons to use MX Linux
- Peppermint OS 9 Review Lightweight champion?
- Why Is Linux Mint So Popular? the History of Linux Mint
- Ubuntu 18.10 vs Fedora 29 a different focus.
- MX Linux 17.1 Review The dream distro?
- Why Is Ubuntu So Popular? A look back...
- Ubuntu 18.04: What's New?
- Introduction to Linux
- MX Linux review: a delightful Linux distro
- 5 Reasons Why I Use openSUSE Leap 15 Linux 2018

## Even more Videos

- Live CDs a way to choose your distro
- Linux Basics (Crash course) | Learn Linux quickly! (Ubuntu)
- 05 THINGS YOU SHOULD KNOW BEFORE SWITCHING TO LINUX!
- The Complete Linux Course: Beginner to Power User!
- Learn how to use Linux Mint easily! | Part 1: The Desktop
- Best Linux Distros: Choosing the Right Linux Version for You
- elementary OS 5.0 Juno Complete Review
- Why Is Manjaro So Popular?
- <u>Ubuntu 18.04 Vs Manjaro | Which is the Best Linux Distro?</u>
- Why I chose Manjaro Linux and a desktop tour
- The Truth About Linux
- The Top Five Things I Love About Linux

## Bryan Lunduke videos

- The Complete History of Linux (Abridged) Live at Linux Fest NW 2018
- Linux Sucks. Forever. Filmed live at Linux Fest NW April 28, 2018
- Linux Sucks... For the Last Time 2017
- <u>Linux Sucks 2016</u> and <u>Linux is Freaking Weird</u>
- Windows is AWESOME! 2015
- Linux Sucks 2014
- Why Linux Sucks 2013

## Other interesting Lunduke videos:

- They're Watching You
- The Internet of Things is Going to Destroy Us All
- Programmers are Evil

