Mac OS, Linux

Applications on macOS

- App Store
 - Apple ID required linked with Credit Card



Applications on macOS

- Free apps with in App purchases called Freemium
- Only need to purchase once
- Organisations can use MDM (Mobile Device Management)
- Only install from App Store for security
 - Possible to install from download s/w
 - .app File that contains the application
 - .dmg disk imaging file (similar to ISO or ZIP)
 - .pkg Automated Package Installer

Managing Applications on macOS

- Applications Folder
 - View and Manage
 - Finder App
 - Go -> Applications
 - Shift+Command+A
 - Delete User Installed Apps
 - Select App
 - then File -> Move to Trash
 - Or Command+Delete







Best Practices

- Backups
 - Starting point for any DR
 - Regular Backups vital
 - Scheduled Backups
 - Stored in an alternative location
 - Quick recovery
 - Working copies (Shadow Copies)
 - Most recent
 - Updated frequently
 - Partial or full backup
 - File systems on servers will use journaling
 - JFS Journaled File System
 - Log file contains all changes in a given time period
 - Knows what files have been changed

Best Practices

- Backups
 - Onsite Storage
 - Tapes etc
 - Must be in a Protected environment
 - Fire rated storage (not fire proof)
 - Offsite Storage
 - Can just be taking the media (e.g. tape) offsite
 - Cloud storage (need good upload speed)
 - Budget will drive the solution
 - Do something though!

Best Practices cont.

- Scheduled Disk Maintenance
 - Defragmenting drives (windows)
 - Improves drive response times
 - macOS and Linux not required
 - On-the-fly defragmentation
- System Updates
 - Apply as soon as practical
 - Settings -> General -> Software Update
 - Can affect machines interface though
- Patch Management
 - General rule updates fix a lot of things, patches fix a few things
- Driver/Firmware Updates
 - Make backups (including config files) first
- Antivirus and Antimalware Updates



Best Practices cont.

- Linux Updates
 - Method depends on version
 - APT (Advanced Package Tool)
 - apt-get update

- YUM (The Yellowdog Update, Modified)
 - Used with Redhat Package Manager (RPM)

vivek@nixcraft-asus:~\$ sudo apt-get update
[sudo] password for vivek:
Hit:1 https://deb.nodesource.com/node 10.x bionic InRelease
Get:2 http://security.ubuntu.com/ubuntu bionic-security InRelease [83.2 kB]
Hit:3 http://archive.ubuntu.com/ubuntu bionic InRelease
Hit:4 http://ppa.launchpad.net/ansible/ansible/ubuntu bionic InRelease
Hit:5 http://prerelease.keybase.io/deb stable InRelease
Ign:6 http://dl.google.com/linux/chrome/deb stable InRelease
Get:7 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Hit:8 http://ppa.launchpad.net/gezakovacs/ppa/ubuntu bionic InRelease
Hit:9 http://dl.google.com/linux/chrome/deb stable Release
Hit:10 http://ppa.launchpad.net/openshot.developers/ppa/ubuntu bionic InRelease
Get:12 http://security.ubuntu.com/ubuntu bionic-security/universe i386 Packages [89.2 kB]
Hit:13 http://ppa.launchpad.net/peek-developers/stable/ubuntu bionic InRelease
Hit:14 http://repo.pritunl.com/stable/apt bionic InRelease
Get:15 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [89.2 kB
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [413 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-updates/main i386 Packages [369 kB]
Get:18 http://archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [153 kB]
Fetched 1,286 kB in 3s (377 kB/s)
Reading package listsDone
vivek@nixcraft-asus:~\$

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A A A A A A A A A A A A A A A A A A A	11 10 100
Proot@CentOS-Cloud-Server:~	
[root@CentOS-Cloud-Server ~ # yum update Loaded plugins: fastestmirror	
Repodata is over 2 weeks old. Install yum-cron?	Or run: yum makeca
base	3.6 kB
epel/x86_64/metalink	15 kB
epel	4.3 kB
extras	3.4 kB
updates	3.4 kB
(1/4): epel/x86_64/updateinfo	719 k
(2/4): epel/x86_64/primary_db	4.5 M
(3/4): extras/7/x86_64/primary_db	115 k
(4/4): updates/7/x86_64/pr 90% [====================================] 4.0 MB/s 6.8 M

• Backups / Time Machine



- Restore / Snapshot
 - Archive of key files and settings. Similar to restore points in windows

	Disk Utility	+ Vol	— 🗞 🕲 lume First Aid Partitio	🔒 on Erase F	S ⊜ ③ Restore Unmount Info
 Macintosh HD volumes Macintosh HD Macintosh HD snapshot Data 	Data APFS Data Volume • A macOS 12.0 (21A302a)	APFS			494.38 GB SHARED BY 6 VOLUMES
🖨 Special Projects					
External	Used 168.18 GB	Other Volumes 40.22 GB		Free 285.99 GB	
	Mount Point:	/System/Volumes/Data	Type:		APFS Data Volume
	Capacity:	494.38 GB	Owners:		Enabled
	Available: 292.93	GB (6.94 GB purgeable)	Connection:		Apple Fabric
	Used:	168.18 GB	Device:		disk3s5
	APFS Snapshots				
	Name	Date Created	Tidemark	Size	Kind
	com.apple.Time04-165412.local	Today at 4:54 PM	394.38 GB 🕲	166.3 MB	Time Machine Snapshot
	com.apple.Time04-180222.local	Today at 6:02 PM	378.6 GB	175.1 MB	Time Machine Snapshot
	com.apple.Time04-1806441.local com.apple.Time04-180628.local	Today at 6:06 PM	309.76 GB	206.7 MB	Time Machine Snapshot
		4 sna;	pshots	0	High tidemark is 394.38 GB
Click to dele a snapsho	te Click for n ot. options.	nore		Sna Bro	pshot owser

- Disk Utility
- Repair Storage Device
 - <u>https://support.apple.com/en-gb/guide/disk-utility/dskutl1040/mac</u>



- File Vault
 - System Preferences -> Security & Privacy
 - For full disk encryption



Tools

- Disk Maintenance Utilities
 - For linux, know *du*, *df* and *fsck*
 - du disk usage
 - df disk free
 - fsck checks and repairs disk
- Shell/Terminal
 - Command line interface. On Mac use Applications -> Utilities -> Terminal
- Screen Sharing.
 - Built into Osx. Allows others to see and share your screen.
- Force Quit
 - Allows you to terminate rouge processes. Option+Command_Esc

macOS System Preferences

Launch from Apple Icon

> IIII System Preferences Q Search . . . < **BasicAppleGuy** Apple ID, iCloud, Media & App Store Apple ID Family Sharing . General Desktop & Dock & Mission Siri Spotlight Language Notifications Screen Saver Menu Bar Control & Region & Focus 0 :: Wallet & Internet Passwords Users & Accessibility Screen Time Extensions Security Apple Pay Groups & Privacy Accounts * 4 (10) Software Network Bluetooth Touch ID Sound Keyboard Trackpad Mouse Update 0 17 Displays Printers & Date & Time Sharing Startup Energy Time Machine Disk Scanners Saver

macOS Display Preferences



macOS Network Preferences

••• < > ::::	Network	Q Search			Network	Q Search
Locat	cion: Automatic		🛜 Wi-Fi	Vi-Fi TCP/IP DNS	WINS 802.1X Proxies	Hardware
Wi-Fi Connected	Status: Connected Wi-Fi is connected to Cabb	Turn Wi-Fi Off	Preferr	ed Networks:	la secono	
Not Connected	the IP address 192.168.178	.12.	Networ	rk Name	Security	
MT65xx Preloader 2	Network Name: Cabbageroad	0	Guest To_Ka Kafieri	noni isHotel1	None WPA2 Personal WPA Personal	
MT65xx Preloader Not Configured	✓ Automatically join th	is network	Moonr	rise Kingdom Fown	WPA2 Personal WPA/WPA2 Personal	
ThunderIt Ethernet	✓ Ask to join Personal	Hotspots	TDC		None	
Linksys USB3GIGV1 Not Connected	Ask to join new netw Known networks will be jo no known networks are av	/Orks ined automatically. If railable, you will have	_ +	nember networks this cor	rder you prefer. nputer has joined	
iPhone USB Not Connected	to manually select a netw	ork.	Require	e administrator authoriza reate computer-to-comp	tion to: outer networks	
Thunderbolt Bridge Not Connected 			C T	hange networks urn Wi-Fi on or off		
	🗸 Show Wi-Fi status in menu bar	Advanced ?	Wi-Fi A	Address:		
		Povort Apply	?			Cancel OK
		Revert				

macOS Printers & Scanners Preferences



macOS Security & Privacy Preferences

			<u></u>		
Gen	eral FileVault Firewall Privacy			General FileVault Firewall Privacy	
A login password has be	een set for this user Change Passv	vord	Location Services	Enable Location Services Allow the apps and services below	w to determine your locatio
Require passwor	d immediately 😒 after sleep or scre	een saver begins	Contacts	🖂 🔊 Siri & Dictation	
🗹 Show a message	when the screen is locked Set Loc	k Message	Calendars	System Services	Details 1
🗹 Disable automati	c login		Reminders		, (<u></u>),
			Bhotos		
			Camera	-	
Allow apps downloaded	from:			 Indicates an app that has use last 24 hours. 	d your location within the
O Mac App Store a	ind identified developers		speech Recognition	n	
Anywhere			Accessibility	About Locatio	on Services & Privacy
			Click the lock to make o	changes.	Advanced.

Advanced...

?

CompTIA Osx features

- Multiple Desktops / Mission Control.
 - Allows switching between running applications
- Keychain
 - Password management system
- Spotlight
 - Search feature
- iCloud
 - File Sharing and backup feature
- Gestures



Osx Features cont.

- Finder
 - Same as Windows Explorer but on Mac!
- Remote Disk
 - Allows access to CD or DVD on another OSx
- Dock
 - Icon bar at bottom of screen
- Boot Camp
 - Allows installation of Windows on Mac then choose at boot

Linux

- Many versions (flavours) available
- Command line and GUI
- <u>https://en.wikipedia.org/wiki/Unix_shell</u>
- BASH Bourne-Again Shell (replaced bourne shell) see <u>https://en.wikipedia.org/wiki/Bash (Unix shell)</u>
- csh c shell, ksh korn shell
- Command [option1] [option2] ... [optionN]
- |s –|
- cat
- cd; ls –l; pwd

Essential Linux Commands

- Managing Files and Directories
 - cd change directory
 - chmod change the file permissions
 - chown changes the file owner and group
 - cp copies files
 - Is list the contents of the directory
 - mkdir create a directory
 - mv renames a file and moves from one directory to another
 - rm deletes a file
 - pwd displays the current directory

Essential Linux Commands

- Processing Files
 - dd copies blocks of data from one file to another
 - grep searches for regular expressions in a text file
- Managing Files
 - apt-get Downloads files from a repository site
 - shutdown shuts down the system
 - vi starts the text editor (on all linux systems. Similar to notepad)
- Managing Users
 - passwd changes the password
 - su starts a new shell as a new user
 - sudo runs a command as another user (normally the root user)

Essential Linux Commands

- Networking
 - ifconfig displays configuration information for all NIC
 - iwconfig same as ifconfig but for wireless interfaces
- Quitting
 - q not a command, but q will often be used to quit a utility (e.g. vi)
- Managing Processes
 - ps display a list f running processes
 - kill terminates a process

Linux

- Elevated privileges in Linux Superuser
 - su (will then need to use exit to return to normal user)
 - sudo <command>
- ps ax
 - Use PID (process ID) for kill, e.g. kill 4209
- Directory Navigation
 - cd (change directory)
 - . is current directory
 - .. is parent directory
 - ~ (tilde) is the home directory

Linux Directory listings

- Use the ls command
- @ symbol indicates a file link (like windows short cut)
- Wildcards allowed (* and ?)
- Is -I gives a long listing
 - Left group Read Write Execute permissions of files owner. r,w,x, or –
 - Middle group Read Write Execute permissions of users group
 - Right group Read Write Exectute of other users
- Is -al is same as Is -a -I

Linux Change Permissions

- Use the chmod command
 - For example to give all users read access to all files in the directory: chmod a+x *.
 - To allow all users execute a specific file: chmod a+x <filename>
- <u>https://www.thegeekdiary.com/understanding-basic-file-permissions-</u> and-ownership-in-linux/

Who	Action	Permission
u (user)	+ (add)	r (read)
g (group)	- (remove)	w (write)
o (others)	= (assign)	x (execute)
a (all)	s (set user ID)	

<pre># ls -l file -rw-rr 1 root roo</pre>	t 0 Nov 19 23:49 file
Other (r) Group (r) Owner (rw-)	<pre>r = Readable w = Writeable x = Executable - = Denied</pre>
File type	

Working with files

- cp copy command
- mv move command
- rm remove command
- mkdir make directory
- rmdir remove directory
- pwd present working directory

Networking Utilities

- ifconfig
- iwconfig

Other Linux Commands

- man <command>
- dd copy blocks of data from one file to another
- grep search for regular expressions in a text file
- apt-get download files from an online repository
- ps display current running processes
- shutdown power off the linux system
- nano text editor
 - vi original text editor but not user friendly
- passwd change the password
- su succeed user
- sudo run a command as a super user
- q quit when in screens like man

Command	Description
ls	Displays file listings.
cd	Changes the working directory.
pwd	Displays the name of the working directory.
passwd	Changes the password for the current user.
mv	Moves or renames files.
ср	Copies files and directories.
mkdir	Creates directories.
rm	Removes files.

Command	Description
chmod	Modifies file or directory permissions.
chown	Modifies file or directory ownership.
ifconfig and iwconfig	Configures network interfaces. For wireless networks, use iwconfig.
ps	Displays currently running processes.
q	Exits from various commands.
su and sudo	su changes the ownership of a login session, while sudo runs programs as if the user were the root user.
apt-get	Installs or upgrades packages.
vi	Opens a text editor.

Command	Description
dd	Copies and converts files for transferal to other media.
shutdown	Shuts down or restarts a Linux system.
grep	Enables you to search for specified content in files and directories
man	Displays manual pages.
apropos	Searches for possible commands to run.
date	Displays the current date and time.
whoami	Displays the user name of the currently logged in user.
rpm	Maintains packages.