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
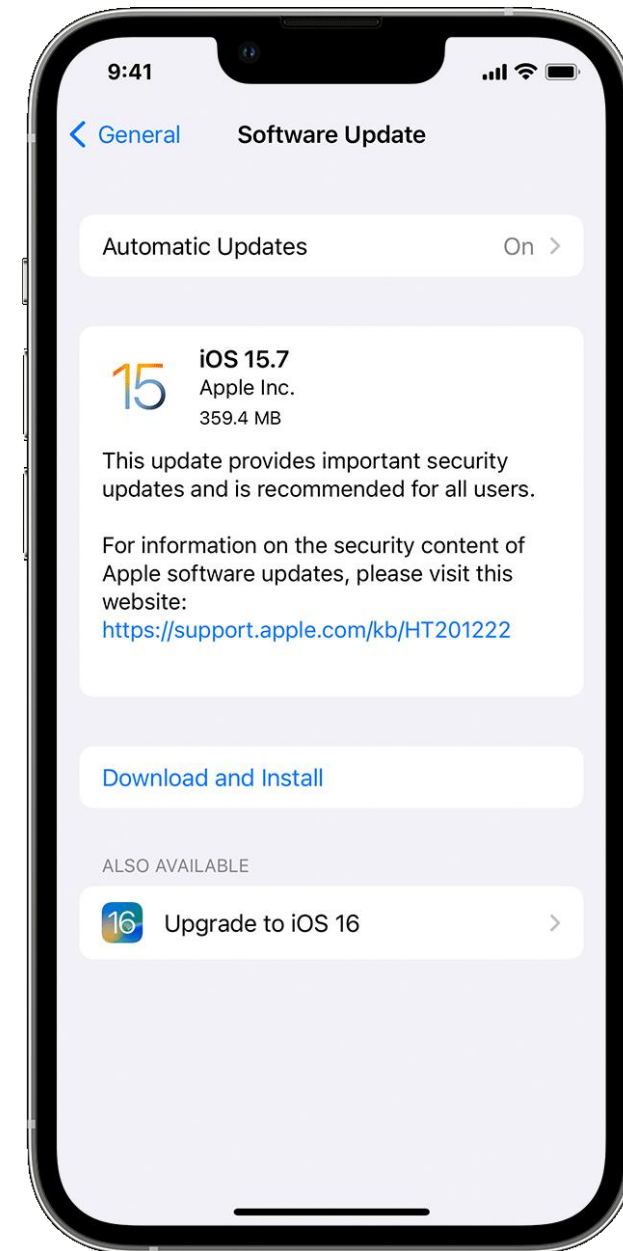
Best Practices cont.

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

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

Tools (macOS)

- Backups / Time Machine
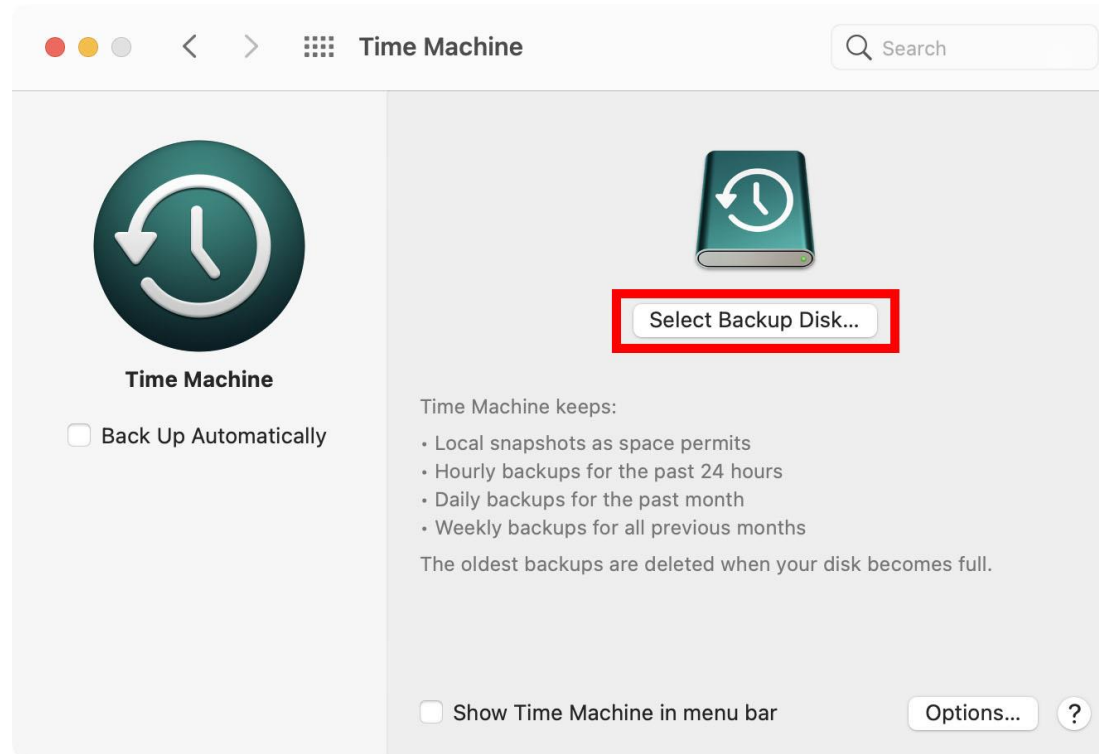
Tools (macOS)

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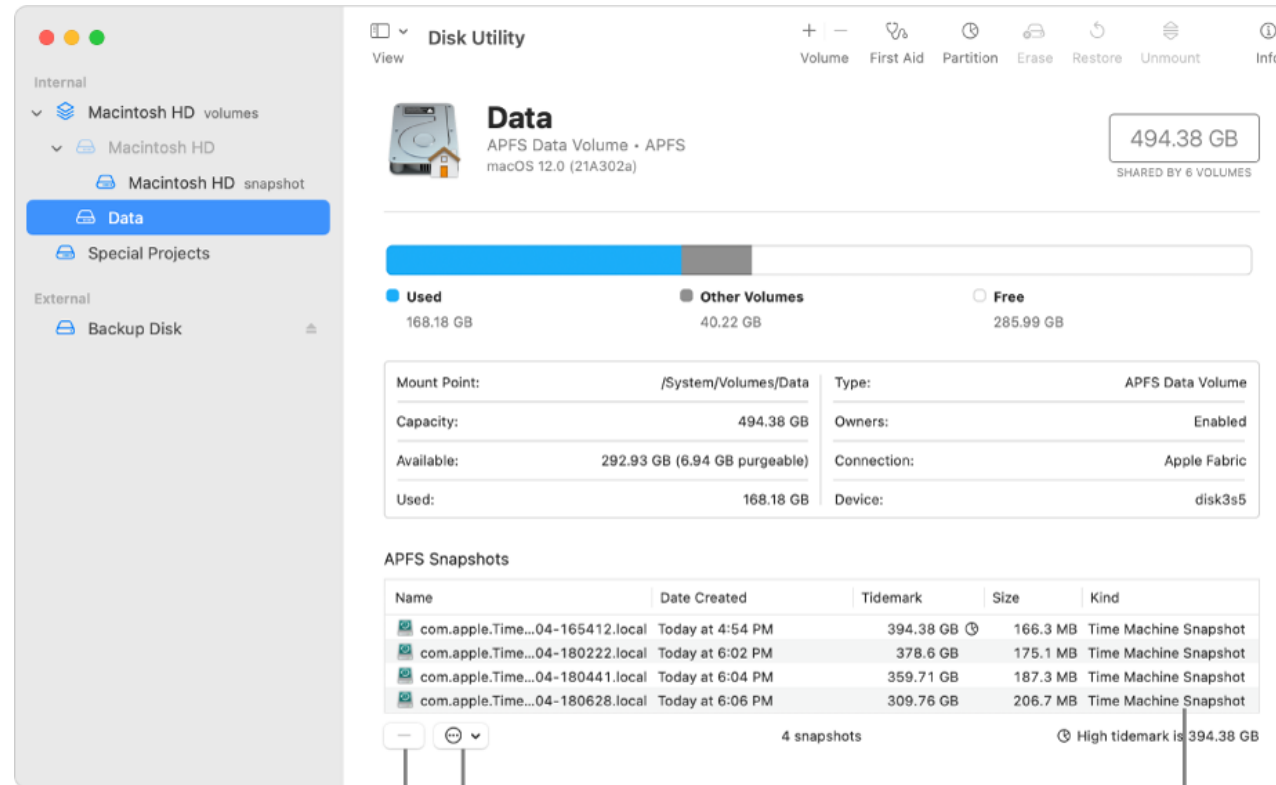
Tools (macOS)

- Disk Utility

- Repair Storage Device
    - https://support.apple.com/en-gb/guide/disk-utility/dskutl1040/mac
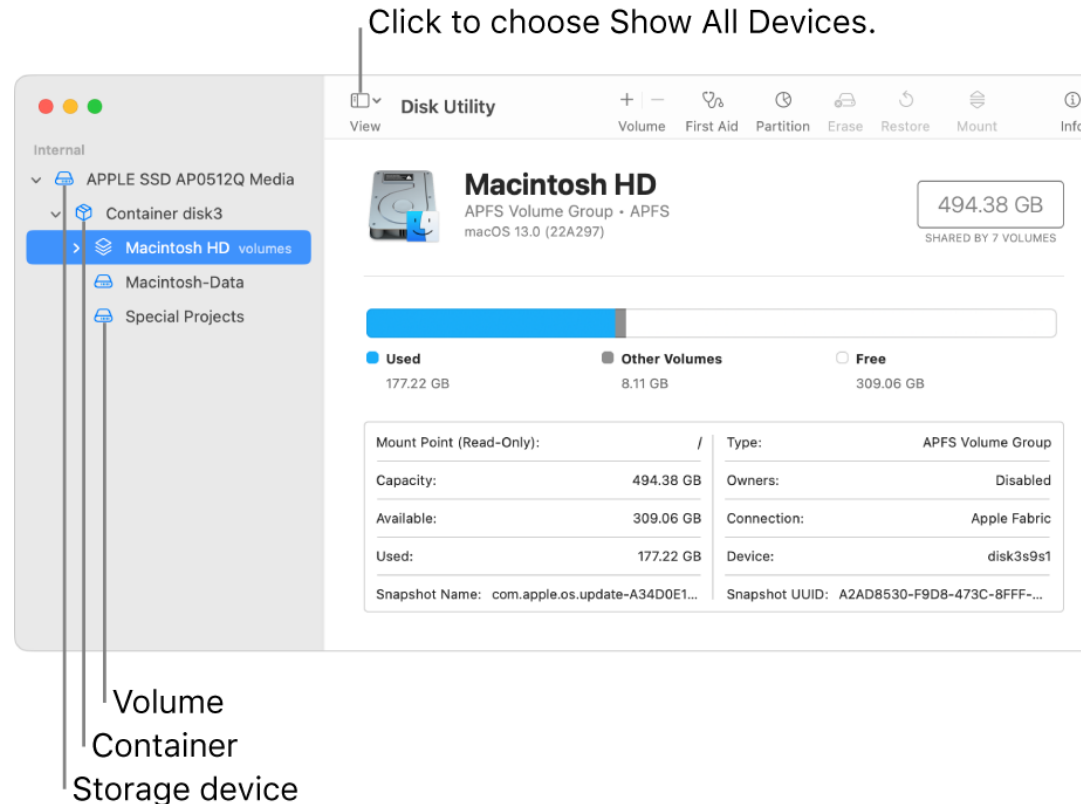
Tools (macOS)

- 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
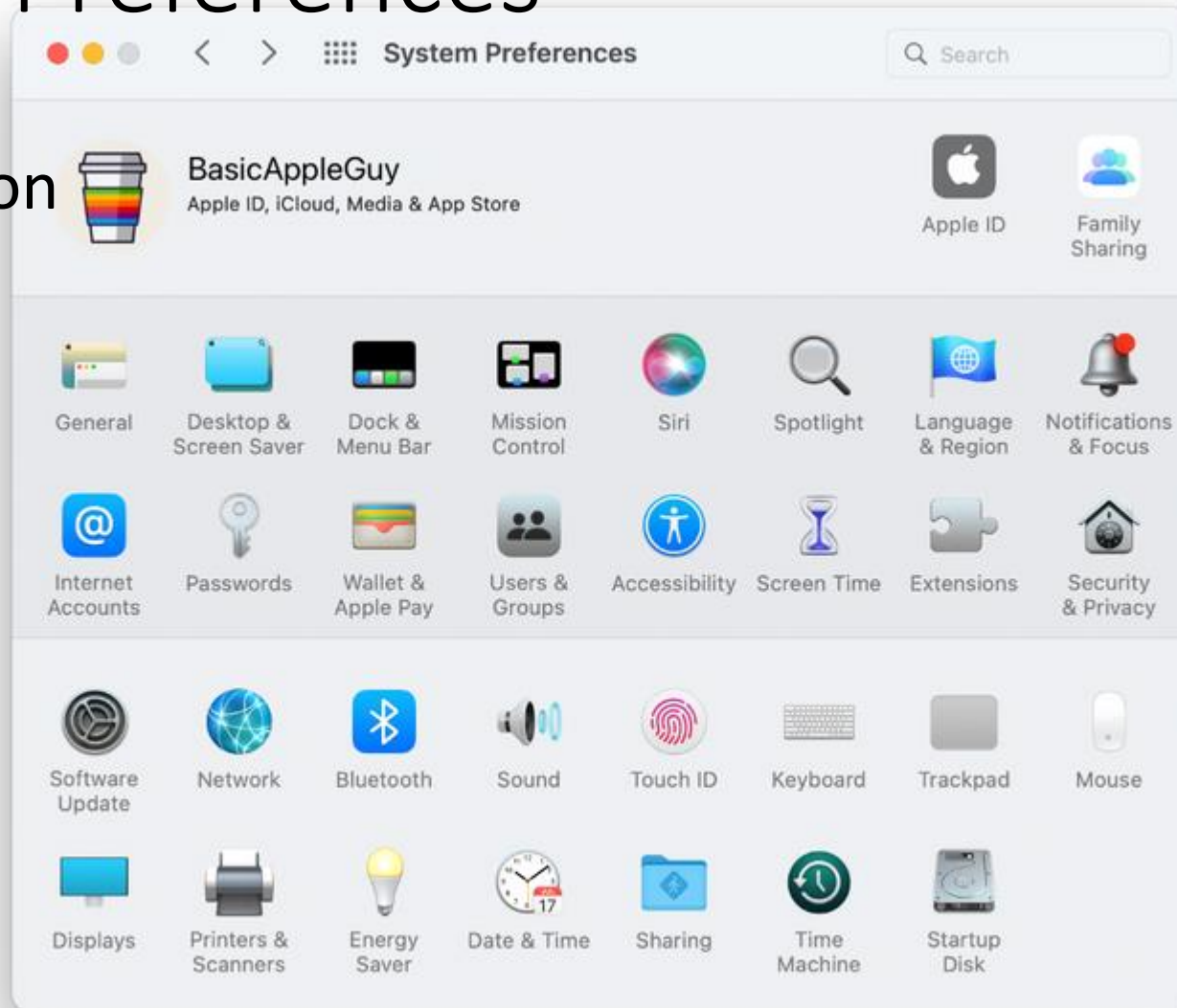
macOS Display Preferences
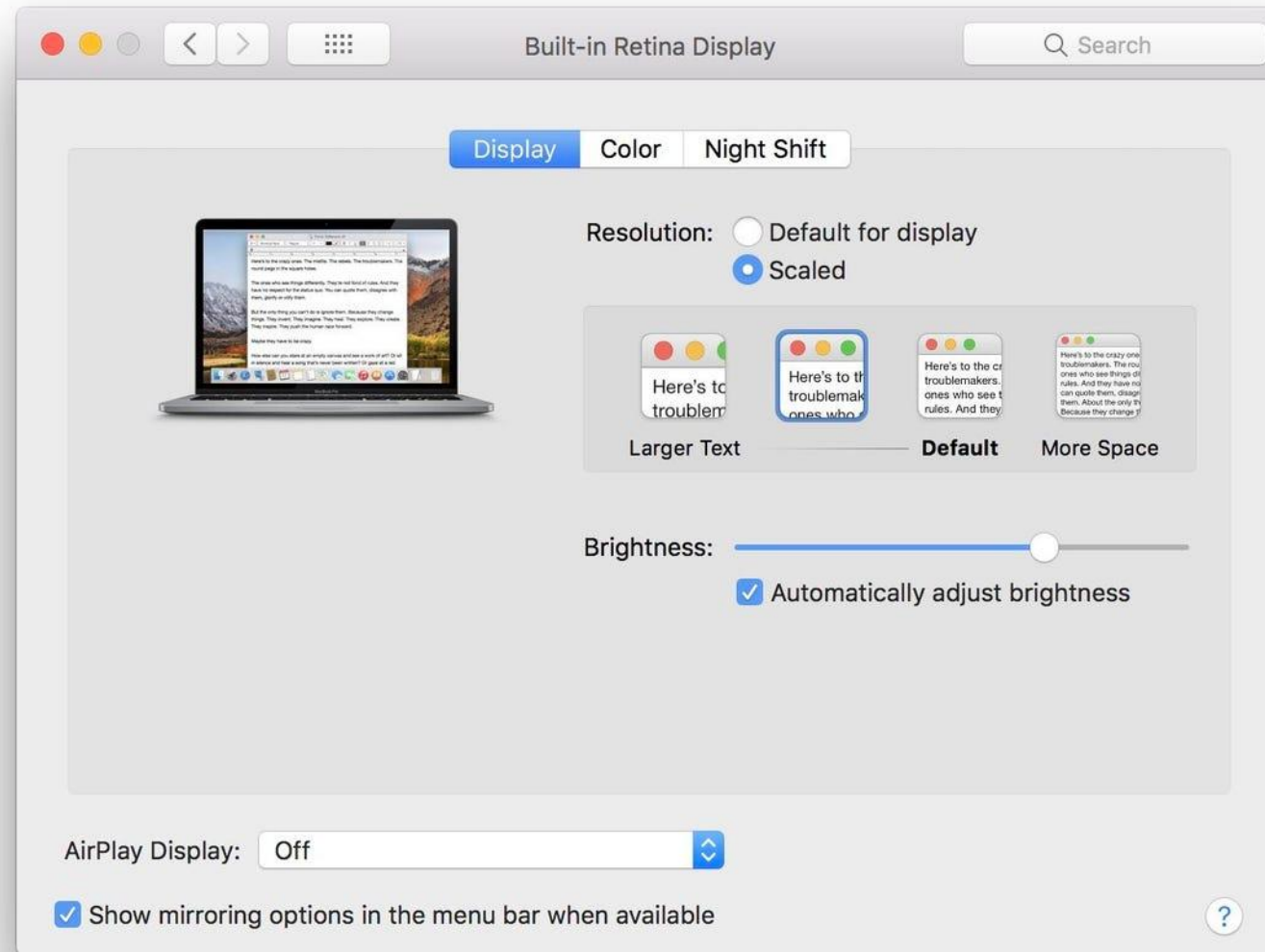
macOS Network Preferences
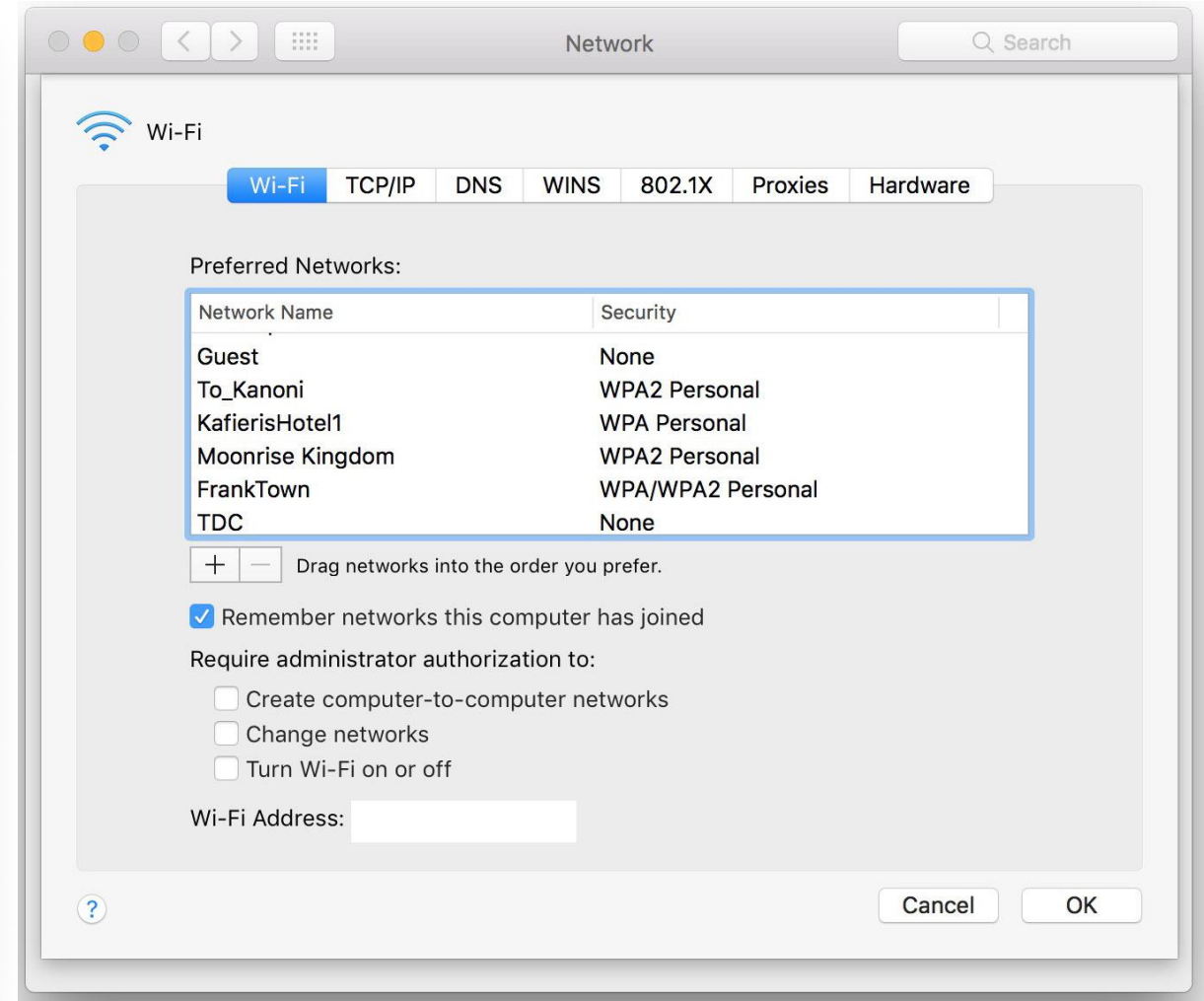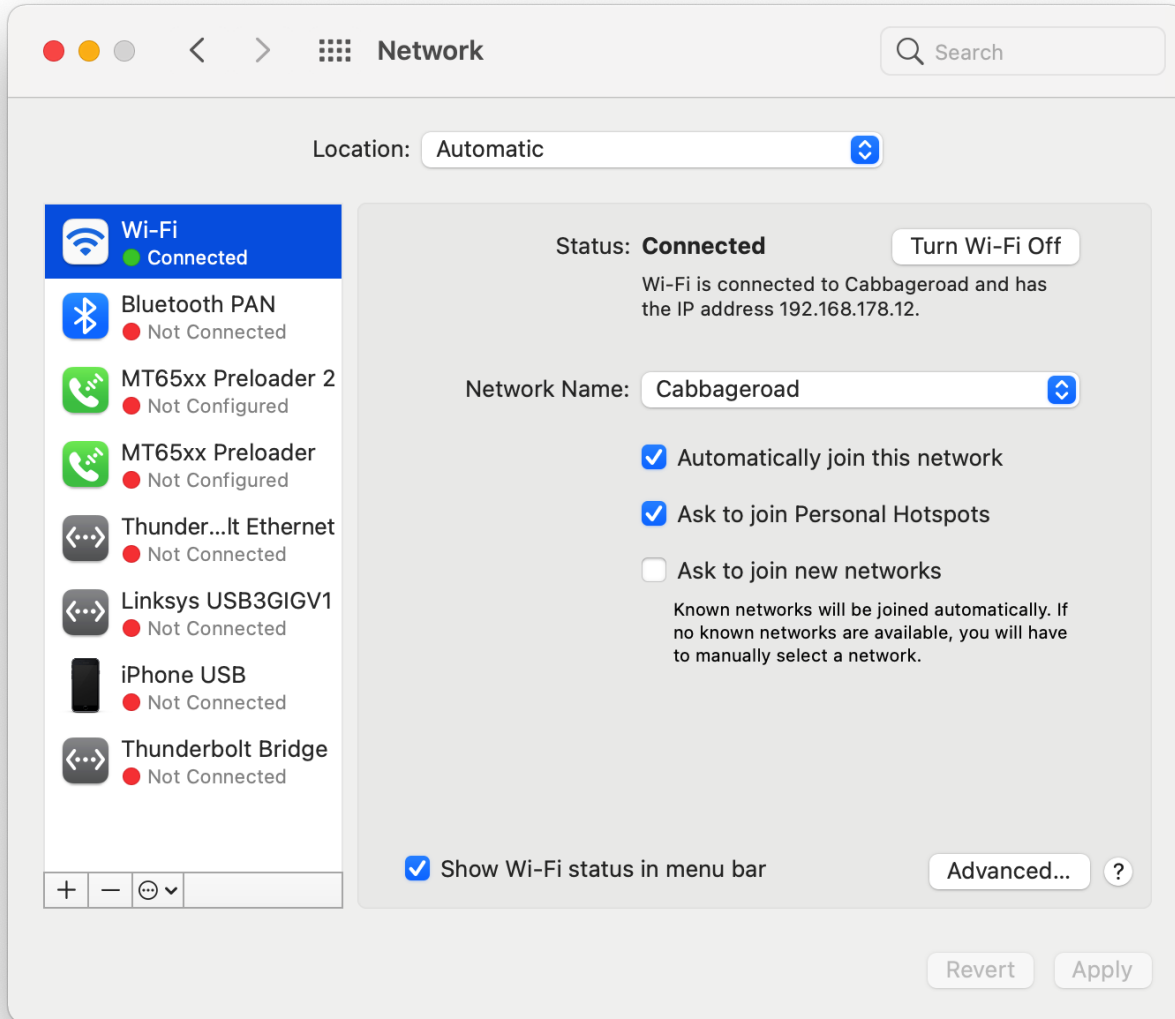
macOS Printers & Scanners Preferences
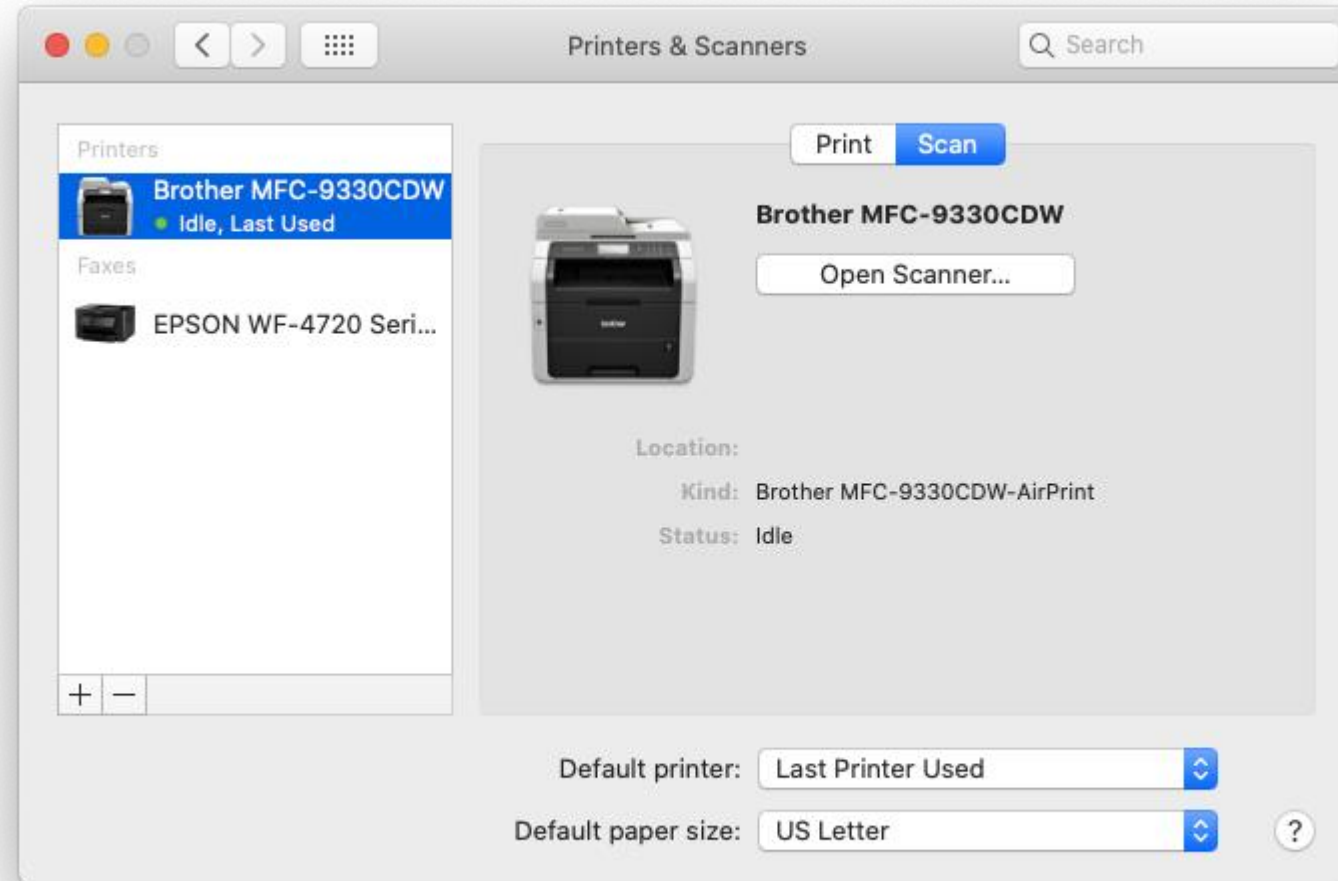
macOS Security & Privacy Preferences
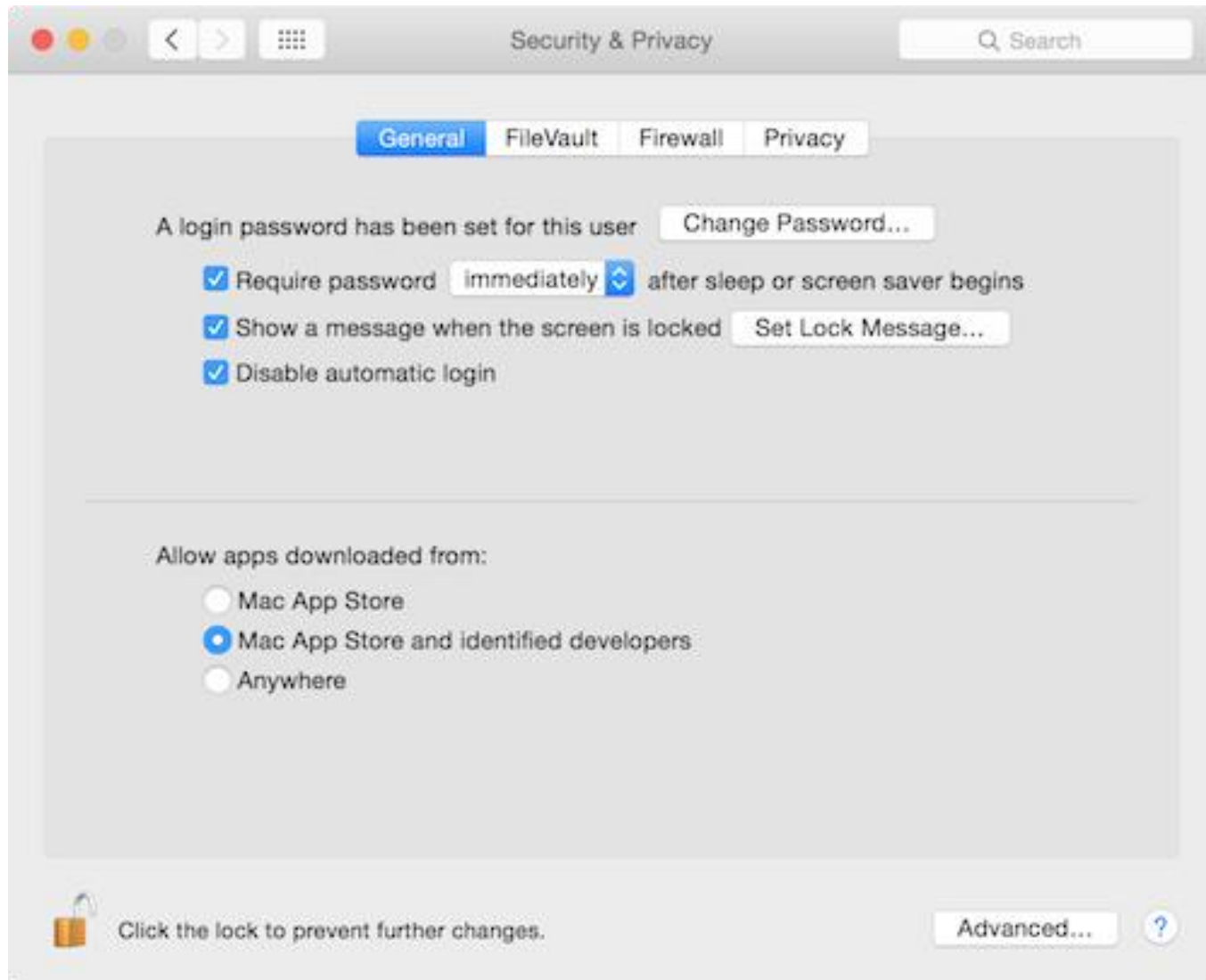
CompTIA Osx features

- 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
- https://en.wikipedia.org/wiki/Unix_shell
- BASH – Bourne-Again Shell (replaced bourne shell)
  see https://en.wikipedia.org/wiki/Bash_(Unix_shell)
- csh – c shell, ksh – korn shell
- Command [option1] [option2] … [optionN]
- ls –l
- 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
  - ls – 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 ?)
- ls -l 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
- ls -al is same as ls -a -l

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>

- https://www.thegeekdiary.com/understanding-basic-file-permissions-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)	

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.
cp	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.