

TAOS

Apple IT Overview Version 2



By Samuel Coniglio

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7. Connect to servers
8. Full Screen View
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10. System Integrity Protection

Thanks TAOSers for your great feedback!!!

About Your Speaker: Samuel Coniglio

TAOS

- 10 year Apple Store Creative Trainer/Genius Bar Support
- 12 year Technical Writer
- Freelance Apple Computer Consultant
- NASA, Network startups, dot coms
- Windows/UNIX/MacOS/iOS
- Photographer
- Lots of strange hobbies



- MacOS, iOS, iCloud
- “It just works”
- Tight integration
- Security
- Privacy
- “Walled Garden”



**“The FBI and Apple encryption battle is over,
now the true debate begins”
--Computerworld Mar 28, 2016**



Source: <http://www.computerworld.com/article/3048547/apple-ios/the-fbi-and-apple-encryption-battle-is-over-now-the-true-debate-begins.html>

*“IBM is now deploying 1,900 Macs per week,
and there are currently 130,000 iOS
and Mac devices at use within the company.
All of these devices are supported
by just 24 help desk staff members.”*

--Fletcher Previn, vice president of
Workplace-as-a-Service at IBM.

JAMF Nation User Conference, Oct 15, 2015

“JAMF conference: **IBM** cutting costs w/ largest enterprise Mac deployment, 100,000 by end of year”

<https://9to5mac.com/2016/10/19/jamf-ibm-mac-deployment/>

“How **Facebook** uses IT automation to manage 16,000 MacBooks”

<http://www.cio.com/article/2948759/macbook/how-facebook-uses-it-automation-to-manage-16-000-macbooks.html>

“Managing Macs at **Google** Scale” (43,000 Macs)

<https://www.usenix.org/conference/lisa13/managing-macs-google-scale>

Mac OSX System Initialization



Firmware

Chime, Power On Self Test (POST)



Booter

Kernel load, drivers load (Apple Logo)



Kernel

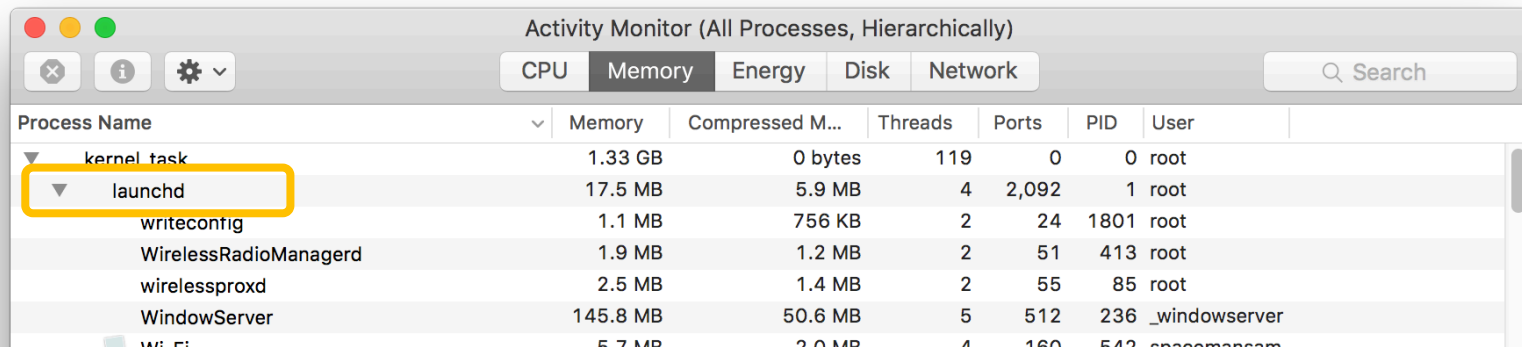
BSD UNIX load (Progress Bar)



System launchd

System processes, LaunchDaemons, LaunchAgents (Login screen)

- Post kernel boot, System initialization
- Launches all other processes
- Located in `/sbin/launchd`
- Manages:
 - System processes– `/System/Library/LaunchDaemons`
 - App processes– `/Library/LaunchDaemons`



The screenshot shows the macOS Activity Monitor window with the 'Memory' tab selected. The 'launchd' process is highlighted with a yellow box. The table below represents the data visible in the screenshot.

Process Name	Memory	Compressed M...	Threads	Ports	PID	User
kernel_task	1.33 GB	0 bytes	119	0	0	root
launchd	17.5 MB	5.9 MB	4	2,092	1	root
writeconfig	1.1 MB	756 KB	2	24	1801	root
WirelessRadioManagerd	1.9 MB	1.2 MB	2	51	413	root
wirelessproxid	2.5 MB	1.4 MB	2	55	85	root
WindowServer	145.8 MB	50.6 MB	5	512	236	_windowserver
Wi-Fi	5.7 MB	2.0 MB	4	160	542	spacemanscom

Alternate Systems:

- **Option**
Startup Manager. (select a volume to boot)
- **Command-Option-D**
Apple Hardware Test.
- **Option-N**
Default NetBoot server.
- **Command-R**
Local Recovery partition. (built in current OSs)
- **Command-Option-R**
Internet Recovery servers.

Modified Startup:

- **SHIFT**
Safe Boot.
- **Command-V**
Verbose mode.
- **Command-S**
Single user (Command Line).

Other Startup Options:

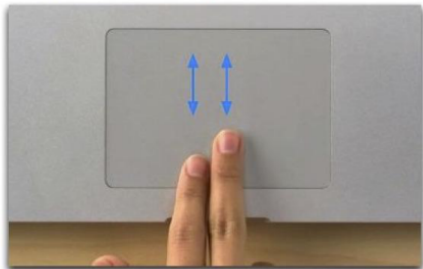
- **T**
Target disk mode. (mount disk without OS boot)
- **Command-Option-P-R**
Reset NVRAM. (fixes many common problems)

Keyboard Symbols

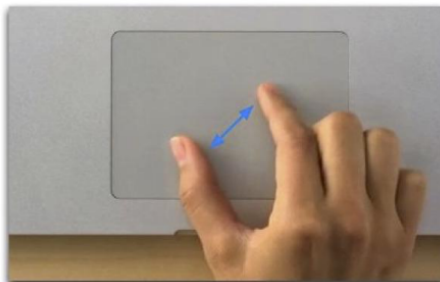
Keyboard Shortcuts

<p>⌘ = Command</p> <p>⌥ = Option</p> <p>⌘ = Control</p>	<p>⌘N (cmd N) = New Window</p> <p>⌘Q (cmd Q) = Quit App</p> <p>⌘P (cmd P) = Print</p>
<p>fn = Function</p> <p>⇧ = Shift</p> <p>⇧ = Tab</p>	<p>⌘⇧ (cmd tab) = App Switching</p> <p>⌘` (cmd acute) = Window Switching</p> <p>⌥⌘→ (opt cmd arrow) = Tab Switching</p>
<p>⌫ = Backspace/Delete</p> <p>⌕ = Caps Lock</p> <p>⌫ = Escape</p>	<p>⌘⇧3 (cmd shift 3) = screen capture</p> <p>⌘⇧4 (cmd shift 4) = partial screen capture</p> <p>fn⌫ (function backspace) = delete forward</p>
<p>←↑→↓ = Arrows</p> <p>↵ = Return/Enter</p> <p>⏏ = Eject</p>	<p>⌘spacebar = Spotlight search</p> <p>fn F11 (function key, F11 key) = reveal desktop</p> <p>⌘⌥⌫ (Cmd Option Escape) = force quit apps</p>

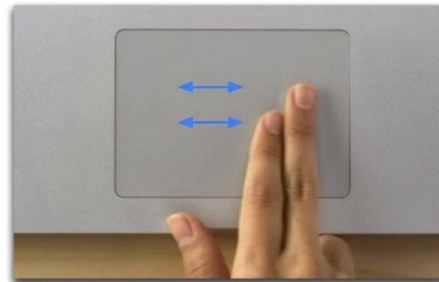
Page Scrolling



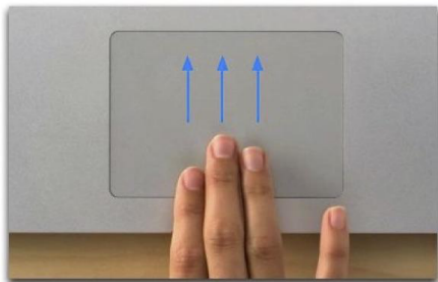
Pinch out to zoom



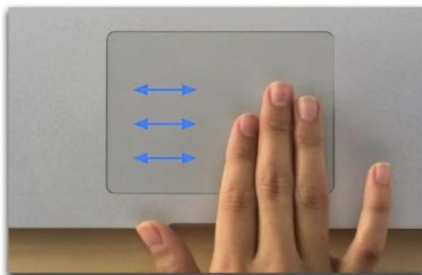
Swipe between pages



Mission Control



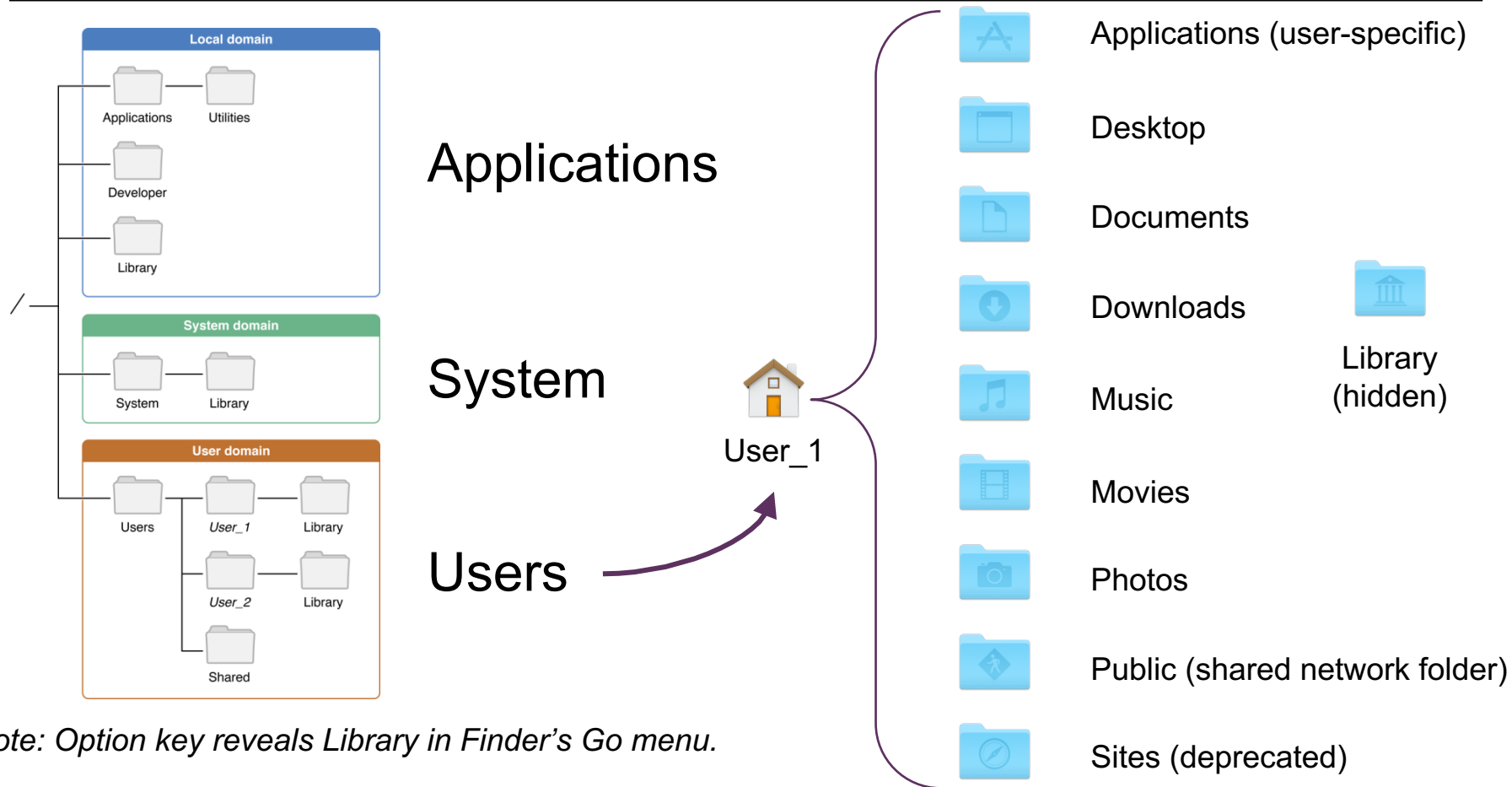
Swipe between full-screen apps



Launchpad



Directory Structure



Note: Option key reveals Library in Finder's Go menu.

- Based on BSD UNIX (Darwin)

- Index of OSX Command Line

<http://ss64.com/osx/>

- Apple Command Line Primer

https://developer.apple.com/library/prerelease/content/documentation/OpenSource/Conceptual/ShellScripting/CommandLinePrimer/CommandLine.html#//apple_ref/doc/uid/TP40004268-CH271-BBCBEAJD





Activity Monitor

`top` (CPU)
`vm_stat` (memory)
`iostat` (disk I/O)



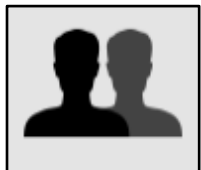
Disk Utility

`diskutil`



Console

`syslog`



System Preferences > Users & Groups

`dscl` (user account management)



Network Utility

`ipconfig` (IP configuration)
`ifconfig` (interface)
`networksetup` (settings)
`netstat` (status)
`route` (routing)
`ping` (testing)
`traceroute`
`nc` (connection)
`tcpdump` (packets)



Automator

(GUI task builder that can work with command line scripts.)

Built-in Utilities 2



Airport Utility

Airport (wi-fi manager)



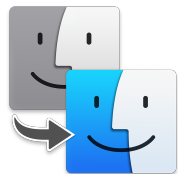
BootCamp Assistant

(Preps Volume for native install of other OSs)



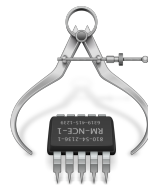
Keychain Access

security(Password manager)



Migration Assistant

(transfer files from PC, Backup Volume, another Mac)



System Information

system_profiler



Terminal

(Self explanatory)



Bluetooth File Exchange

(File transfer via bluetooth)



X11

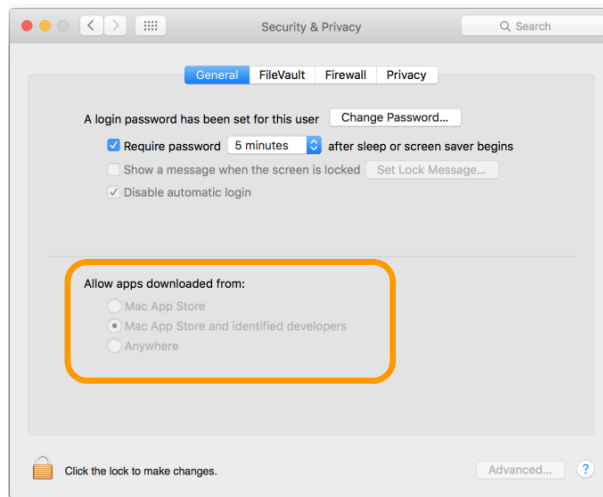
(Enables UNIX X11 apps)



- Apple's own server system
- Small deployments (<50 users)
- Not Enterprise level
- Profile Manager for iOS devices
- Email, Calendar, Contacts servers
- Time Machine Servers
- iTunes Server

Sources: <https://www.apple.com/macos/server/>
<http://www.macworld.com/article/3025092/macs/4-reasons-why-you-should-run-your-own-mac-server-and-4-reasons-why-you-shouldnt.html>

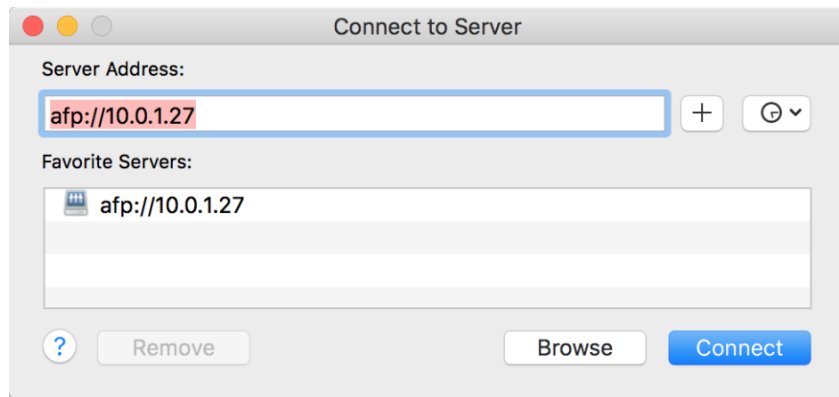
- Protects Users from nefarious apps.
- All App Store developers registered with Apple.
- System Preferences > Security & Privacy > General
- Command Line: `spctl`



Source: <http://osxdaily.com/2015/05/04/disable-gatekeeper-command-line-mac-osx/>

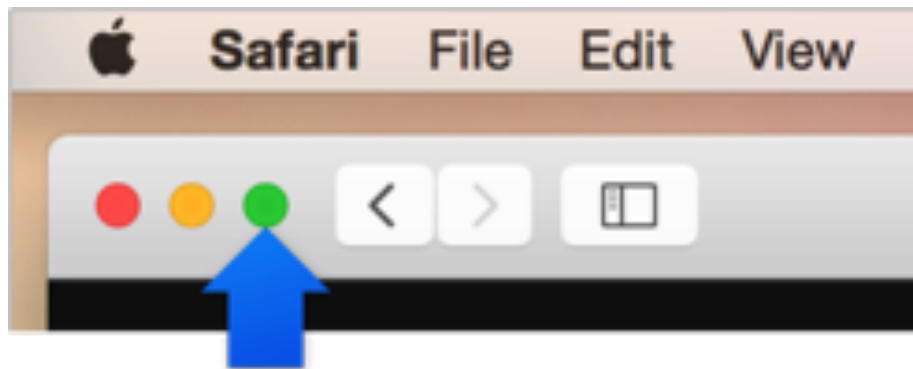
Finder menu > Go > Connect to Server...
Or Cmd-K

- AFP: Apple File Protocol
- SMB: Server Message Block
- NFS: Network File System
- FTP: File Transfer Protocol



Source: <http://news.jpy.com/kbase/support-articles/2015/9/8/afp-versus-smbsamba>

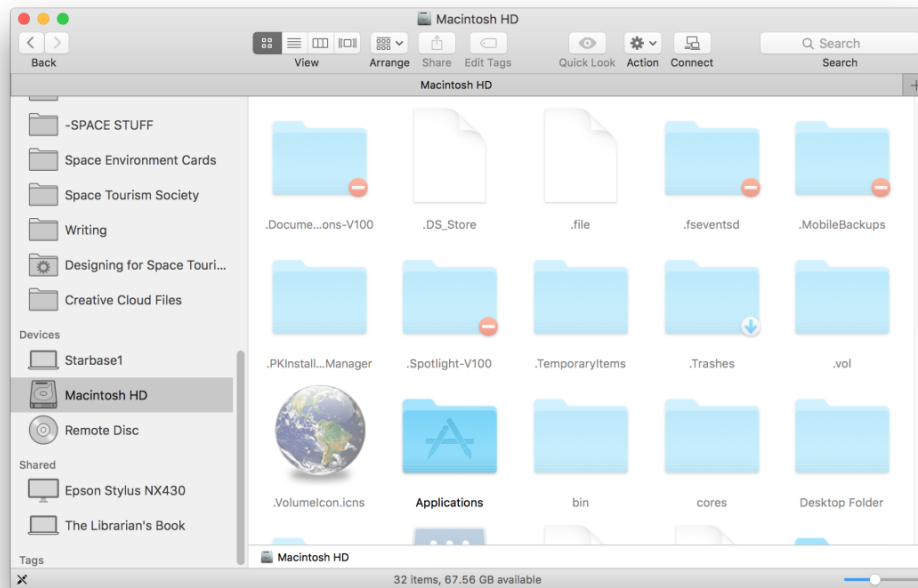
- Creates a “space” dedicated to that window/document
- Hides menu, focus on one thing
- Click Green button, or Ctrl-Cmd-F
- Switch between spaces:
Trackpad– Three finger left/right swipe
Keyboard– Cmd-Tab



Show Hidden files in GUI

Command Line:

```
$defaults write com.apple.finder AppleShowAllFiles YES  
$  
$killall Finder
```





- “Rootless” system security
- Enforced at kernel level
- Developer ID needed
- Apple grants “Entitlement” to use root
- Protects against system file permission changes, code injection, debugging, Dtrace, unsigned kernel extensions
- Disable in Recovery mode. Command Line:
`csrutil disable; reboot`

FileVault Encryption

- Encrypt one or more user account folders.
- Encrypt volumes.
- GUI: System Preferences > Security & Privacy
- Command line: `fdsetup`



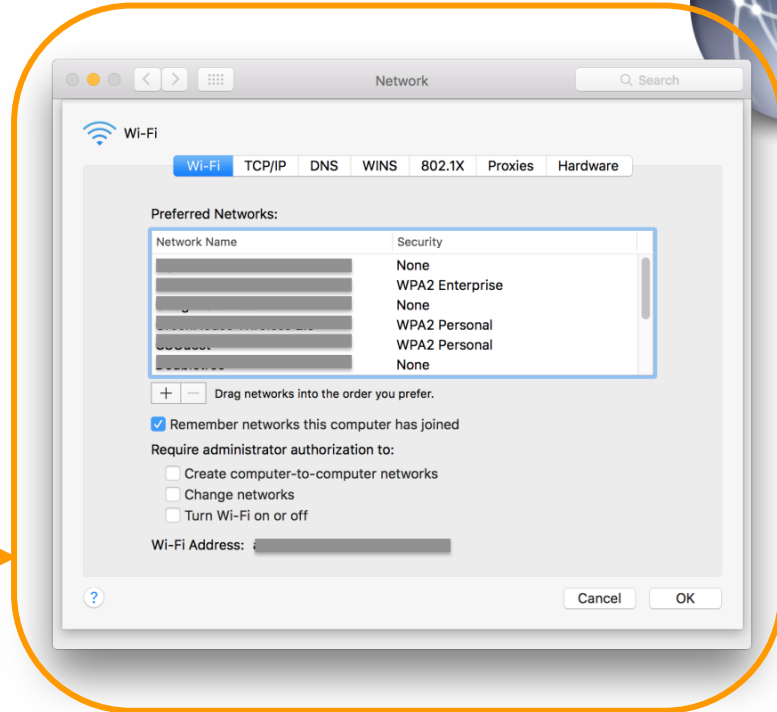
Sources: <https://derflounder.wordpress.com/2015/02/02/managing-yosemites-filevault-2-with-fdsetup/>
<http://www.manpagez.com/man/8/fdsetup/>

Firmware Lock

- Low Level protection
- Hardware becomes a brick without passcode.
- Boot into Recovery Mode to set up.



System Preferences > Network





- Corporate-purchased equipment auto-registered in DEP.
- Also works with Volume Purchase Plan.
- macOS and iOS devices.
- Link to MDM server (Air Watch, Casper).
- Auto-configure device at first startup!

Sources:

<https://www.apple.com/business/dep/>

https://www.apple.com/business/docs/DEP_Guide.pdf

Apple & 3rd Party IT Apps (selected list)

- Apple Remote Desktop
- Apple Configurator 2
- AirWatch
- AutoCasperNBI
- AutoDMG
- CreateUserPkg
- DeployStudio
- GeekTool
- iTerm2, Sublime Text
- JAMF Casper (Pro)
- MacTracker
- MalwareBytes
- Microsoft Remote Desktop
- MUNKI
- NetSpot
- Parallels, VMWARE Fusion
- Prey
- TeamViewer
- VirtualBox
- WinClone

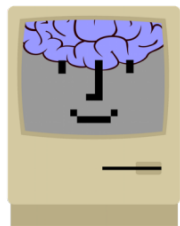
Sources:

<http://www.networkworld.com/article/2851137/software/14-go-to-tools-for-mac-sysadmins.html>

<http://www.itworld.com/article/2827301/operating-systems/top-it-tools-for-mac-os-x.html>

- Apple Certified Support Professional (ACSP)
- Apple Certified Mac Technician (ACMT)
- JAMF: Certified Casper Technician (CCT)
- JAMF: Certified Casper Administrator (CCA)
- JAMF: Certified Casper Expert (CCE)
- JAMF: Certified JSS Administrator (CJA)

- WWDC
- JAMF NATION
- MacBrained
- MacIT
- MacTech
- MacAdmins
- Macsysadmin.se



macbrained.org



MACTECH

MacIT



Demo