

Deployment



(and maybe some iOS)

Michael Lynn

- Desktop administration
- OS X
- Active Directory
- Windows
- Automation (python) junkie
- AFP548.com
- ##osx-server on Freenode
- Father of two, right here in WA



Why You Want It

“What You Haven’t Heard”

Why You Want It

- FASTER! Work (even with variations) in parallel
- Humans aren't perfect - tools don't forget
- Repeatability and uniformity ...
- ... but embracing change
- Less work to support more configurations

Why You Want It

- Flexibility with new OS releases (1 per year!)
- Total effort doesn't increase with more Macs
- Benefit from the research of others (integrate!)
- Save your neck and back - literally

What We'll Cover

- Planning
- Common Deployment Methods
- Deployment Solutions for Any Budget
- Tools We Like
- Packaging - Tools And Gotchas
- Resources
- Q & A

Planning

(Every hour you plan, you'll save twice as many)



Planning

- Gather security and user requirements
- Get sign off! (if you can)
- Think ahead* - plan it before implementing
- Know your budget and resources,
be realistic (Scotty was smart)
- Try to do it right the first time,
keep down the repeat visits

Deployment Styles



Manual / “Non-imaging”

- I know you love that startup music, but ...
- No 2 Macs will be the same (in a bad way)
- Inefficient use of you and your resources
- SLOWWWWWWWWWWW.....
- Ever heard of RSI?



Monolithic / “Golden Master”

- Install everything, then clone clone clone
- This is how many of us USED to do things
- Lots of work, non-stop - every change is a build
- Often multiple separate builds
<http://support.apple.com/kb/HT1159>
- Inconsistency between releases
- Post-configuration necessary

Time out!

(Clarifying the “name war”)



No Imaging (formerly “Thin”)

- Out of the box (sometimes literally!)
- Reduced time to deploy
- Internet restore compatible (10.7+)
- Possible network impact
- BYOD capable
- Compatibility can be limited by age of device

Modular (Thick / Thin / Layered)

- Separate pieces: OS + Recovery, Settings, and Applications
- Consistent experience per machine, per release
- Automation - scripts and agents
- Packages
- Fast to update for new hardware
- BYOD “capable”



Bootstrapping (“Don’t-call-it Imaging”)

- Use’s Apple’s OS X 10.7+ installer mechanism
- Compatible with virtually any (Intel) Mac
- Even FASTER to update for new hardware
- Capture/download → createOSXInstallPkg
- Ideal for agent-based management ...
- ... but can be used as a Modular “OS” stage
- Works with FileVault 2 encryption!

Deployment Tools



Cloning / “Golden Master”



Command-line: asr

- Multiple machines at the same time
- But network has to have multicast support!
- Command-line
- Not the easiest to take full advantage of
- Proton Pack Server GUI (no longer around)
- Recommend instead: Blast Image Config (PSU)

Mac Deployment Solutions

- JAMF Casper Suite
- Munki
- DeployStudio
- Absolute Manage
- FileWave (and FileWave Lightning)
- OS X Server & Apple Remote Desktop

Additional Options

Management

- LANDesk - Very Windows oriented
- Centrify - Directory focused
- Puppet - Configuration control
- CanHazImage - Google (unreleased)

Power Tools (more on these later)

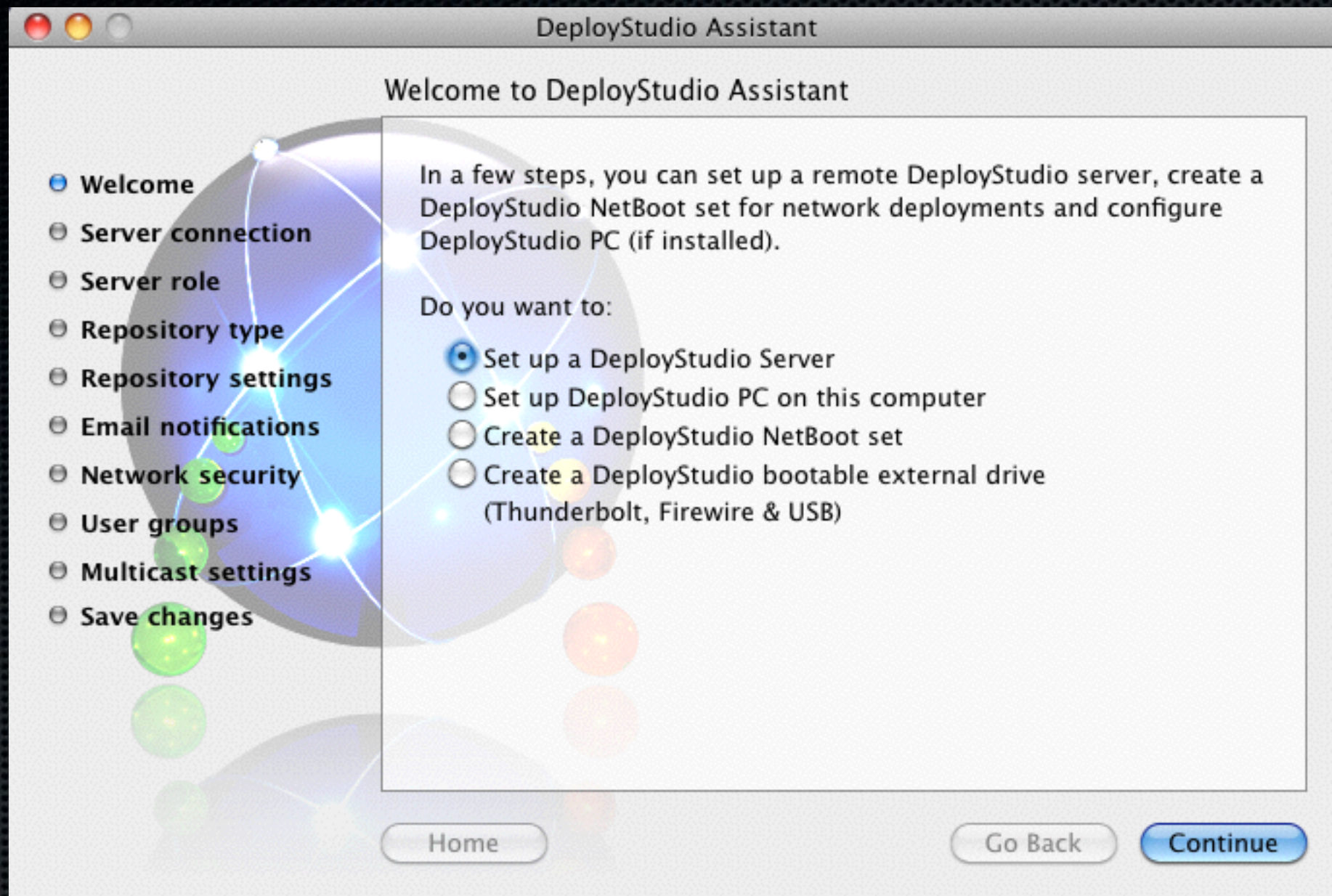
- AutoDMG
- createOSXInstallPkg
- AutoPkg

DeployStudio



DeployStudio

- Many different ways to deploy
- Free! * deploystudio.com
- * = Better with OS X Server (just \$20 now!)
- NetBoot “Easy Mode”
- Multi-step Automator-like workflows
- Directory (AD / OD) binding
- Multi-boot imaging friendly (Bootcamp)



- Control and configure DS Server
- Create your NetBoot sets

DeployStudio Admin connected to mainserver.pretendco.com

Runtime Control Logs

ACTIVITY

COMPUTERS

Lab

WORKFLOWS 5

MASTERS

PACKAGES

SCRIPTS 5

Title	Description	Access group	Identifier
Create a master from a volume	This simple workflow enables you...	-	04062220-1111-8888-2222-000000000000
Create Master Images		-	C883578C-D52B-4622-8138-87011205FB2E
Install a package (pkg)	This simple workflow enables you...	-	04062220-1111-8888-2222-000000000020
Restore a master on a volume	This simple workflow enables you...	-	04062220-1111-8888-2222-000000000010
Triple-OS restoration	This workflow shows the 4 tasks...	-	04062220-1111-8888-2222-000000000030

Restore

Target volume: Enter value... MacOSX

Image: HFS macosx.hfs.dmg

HFS only options:

Rename volume to:

☒ Don't check restoration (faster)
 ☒ Erase target for block copy restoration (faster)

☒ Rename ByHost prefs
 ☒ Cleanup machine dependent files and caches

☒ Restore system recovery partitions

☐ Enable multicast restoration
 ☐ Pause workflow until multicast ends

Stream data rate: 100 MBs Startup trigger: 0 clients

Client disk speed: 125 MBs Timeout: 0 minutes

☐ Add generic BCD (Vista and later)
 ☐ Expand restored NTFS volume

☒ Set as default startup volume

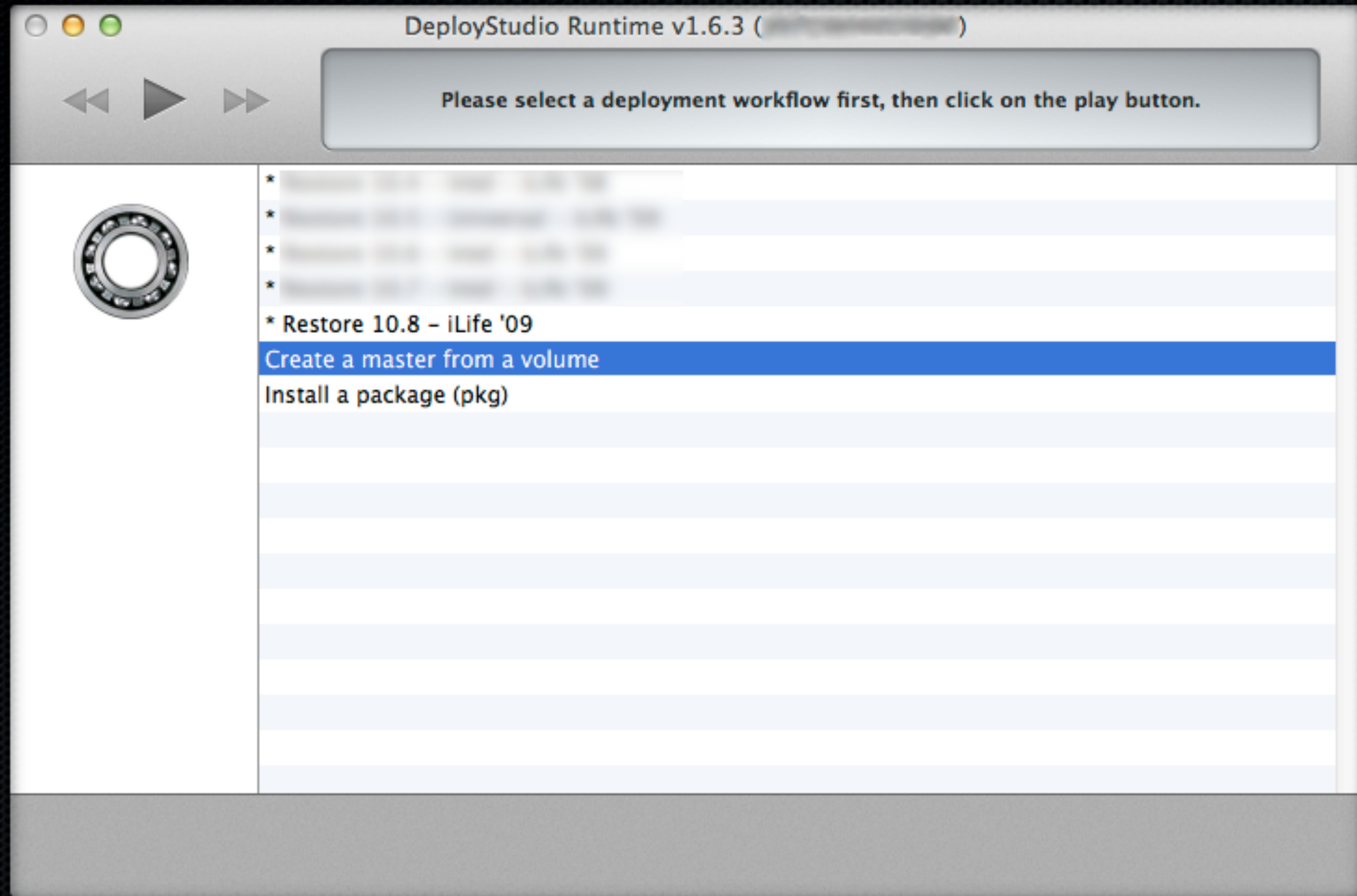
☐ Automate

Revert Save

Drag an icon to the workflow timeline

- Active Directory binding: Binds a computer to an Active Directory server.
- Alert: Pauses the workflow by displaying an alert message.
- Automatic enrollment: Enrolls a computer to a MDM server at first boot.
- Configure: Applies computer's settings defined in the DeployStudio database.
- Disk image: Creates a disk image of a volume or partition.
- File copy: Copies files and folders to a volume.
- Firmware Security: Enables Firmware Security at boot.
- Generic: Runs a script or any executable file.
- Hostname form: Updates computer's name in the DeployStudio database.
- Licenses form: Updates computer's Server & Xsan licenses in the DeployStudio database.
- Localization: Configures the default system language & keyboard layout.
- Network location form: Updates computer's network locations in the DeployStudio database.
- New user form: Updates computer's local users list in the DeployStudio database.
- Open Directory binding: Binds a computer to an Open Directory server.
- Package install: Installs a package to a volume.
- Partition: Creates multiple partitions on a specific disk.
- Periodic NetBoot: Configures the computer to NetBoot periodically.
- Restore: Restores a disk image to a specific partition or disk.
- Shut down: Shuts down the computer at the end of the workflow (NetBoot only).
- Software update: Customizes the Software update client.
- Time: Configures the default network time server & time zone.
- Workflow: Inserts all the tasks of another workflow at runtime.

- Workflow configuration
- Status monitoring

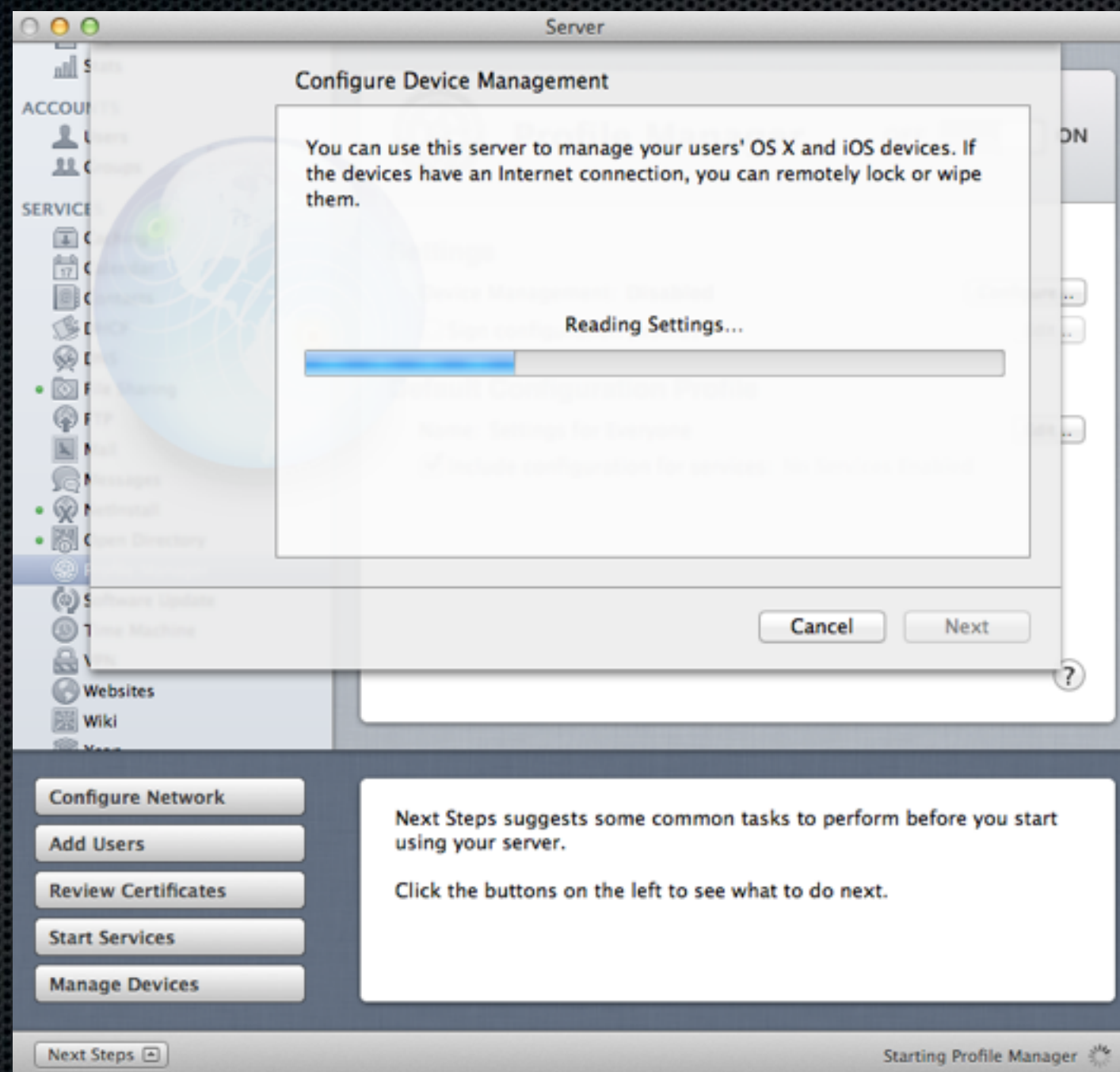


- Does the installing on a computer

OS X Server

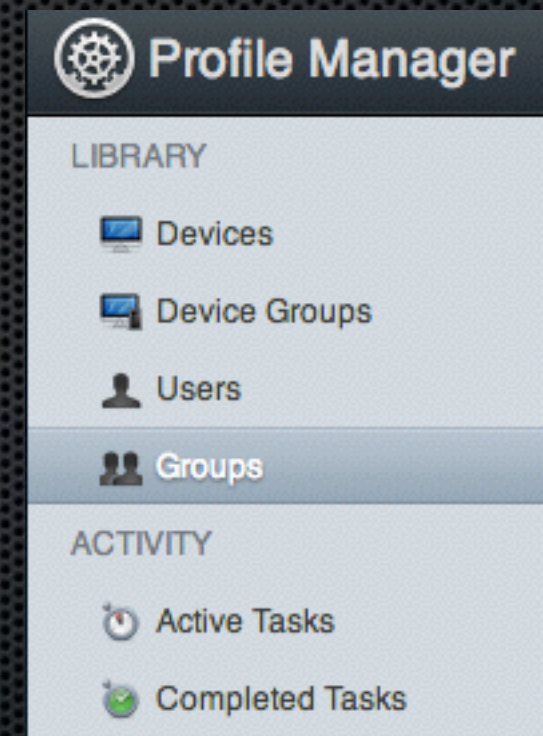


Configuration Profiles



Profile Manager

- Introduced in OS X Lion
- Preference/Configuration Management
- Supported by many third-party MDMs



Caching Server

- Included in Server.app 2.2
- Useful if all clients access Internet from single IP



Apple Remote Desktop

- Remote Support/Screen Control
- Deployment
- Asset Management



JAMF Casper Suite

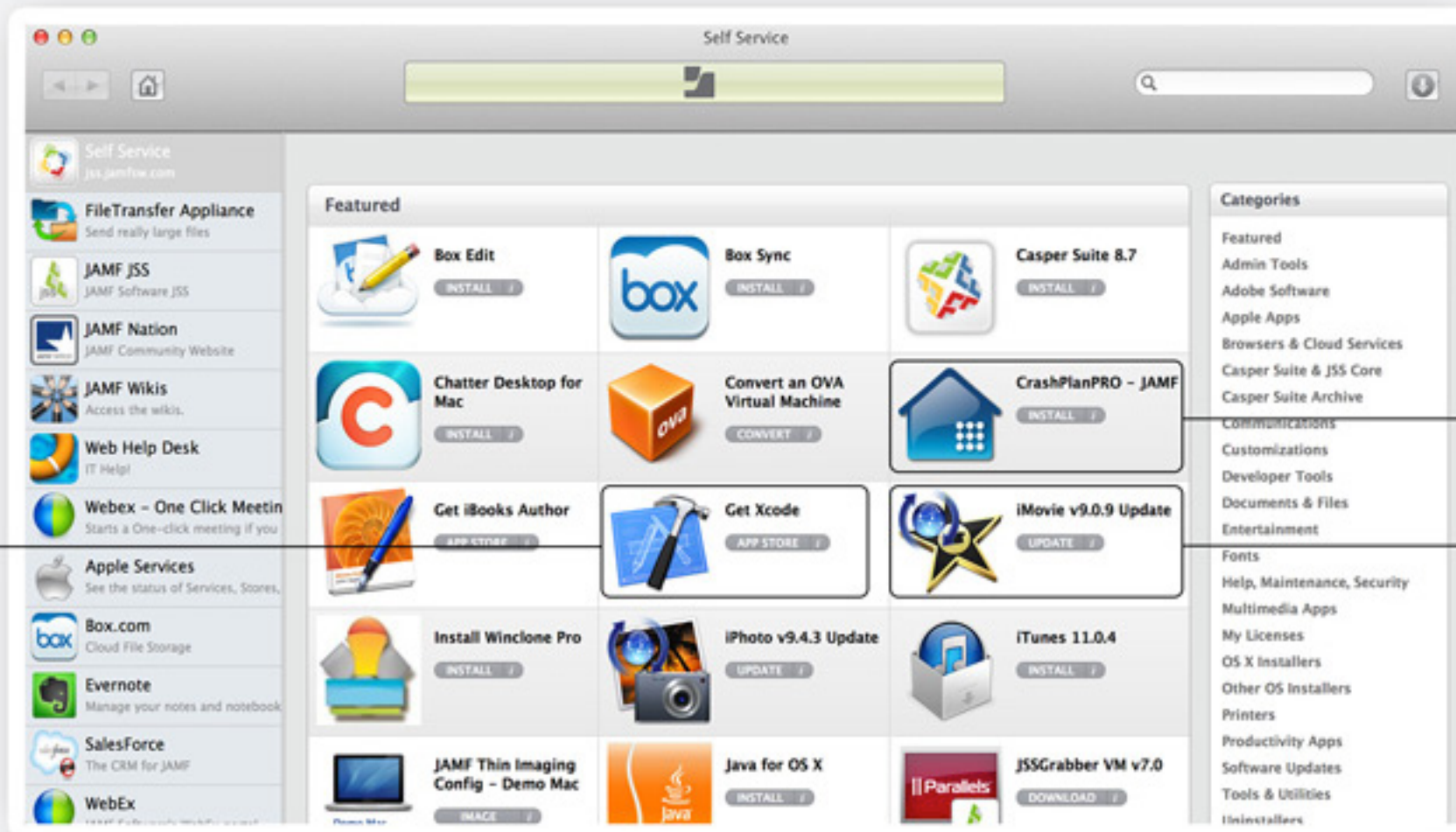


JAMF Casper Suite

- Entire Life Product - start to finish
- OS X and iOS (MDM) focused
- Tight integration with native OS X tech
- Scripter friendly - API & “jamf binary”
- JAMF Nation community
- Documentation and Feature Requests

JAMF Casper Suite

Distribute Apple App Store apps.



Install any application, from any vendor, via Self Service.

Update Apple App Store apps.

Absolute Manage

Absolute[®]Software

Absolute Manage



Absolute Manage

- Great for a mixed Windows / Mac solution
- User data migration
- ImageLive
- iOS (MDM)
- Theft Tracking / Recovery

Working with Packages

- Casper Composer
- Absolute Manage InstallEase
- Apple's PackageMaker (deprecated !)
- Iceberg and Packages:
<http://s.sudre.free.fr/Software.html>
- The Luggage: <https://github.com/unixorn/luggage>
- Third-party packaging "offenders":
 - Adobe Creative products
 - Microsoft Office

Munki

- 100% Open Source and Free
- munkiimport <almost anything>
- Adobe Creative Suite? Microsoft ? No problem.
- Like Chocolate and Peanut Butter with DS
- And ...

Package Power Tools

- CreateOSXInstallPkg
- CreateUserPkg
- AutoDMG
- AutoPKG

Third Party Review



FileWave

- Cross-platform - OS X, Windows, iOS
- Server can run on:
 - OS X
 - Windows
 - or Linux
- Lightning Thunderbolt Imaging (free)
- <http://www.filewave.com>
- Commercial

Puppet

- You specify how you want things configured
- Puppet compares to your specifications
- Makes changes if necessary
- Incredibly useful for server configurations
- <http://www.puppetlabs.com>
- Free & Commercial flavors

DeployStudio

- Setup, create NetBoot images easily
- Snap together installation workflows
- <http://deploystudio.com>
- Free

JAMF Casper Suite

- OS X and iOS centric
- “Entire Lifecycle” management
- <http://jamfsoftware.com/>
- Commercial

Absolute Manage

- Completely cross-platform:
 - OS X & Windows
 - iOS & Android
- Data migration and LiveImage
- <http://www.absolutemanage.com>
- Commercial

Munki

- Automates software installation (including OS)
- Managed Software Update app (Self Service)
- Doesn't require OS X Server
- Google variant - Simian (App Engine)
- <http://code.google.com/p/munki>
- Open Source and Free

Which Tools ?

- Use the one(s) that work for you,
at a price that you can afford
- Don't discount "free" software, but...
- Don't discount the ability to call someone
if you're stuck (and they're paid to listen!)

Apple's Documentation

- <http://www.apple.com/support/osxserver/setupadministration/>
- http://images.apple.com/education/docs/1521219b_osx_deployment_guide_030513.pdf
- <http://www.apple.com/business/vpp/>
- <http://www.apple.com/education/it/vpp/>

Great Sites To Learn From

- <http://www.mactech.com>
- <http://www.afp548.com>
- Charles Edge - <http://krypted.com>
- Greg Neagle - <http://managingosx.wordpress.com/>

Questions?



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