

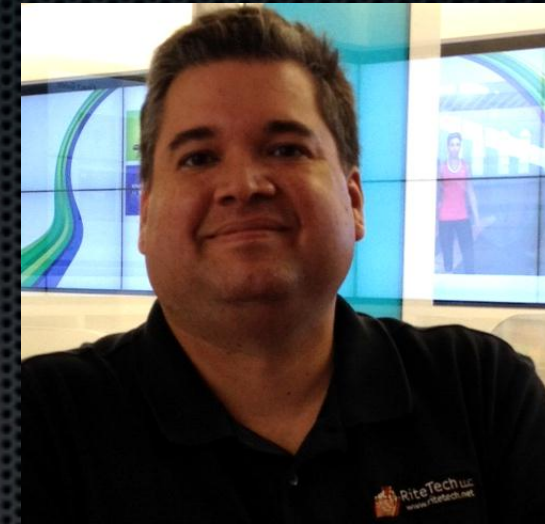
Deployment (iOS & OS X)



MacTech DC – 2014

**** Final/RC **** : Dave Bainum (6/25/14)

Dave Bainum, PMP*



- PMP = PMI Project Mgmt. Professional
- PM'ed many IT deployment and upgrade projects over the years, for organizations of all types and sizes
- Ex-Microsoft Certified Trainer (& ex-HOA Board President)
- ITExpo, SMBNation, MS's "Partners Training Partners"
- RiteTech: Been around since '07; in ACN since late 2012
- Office365, Project Mgmt., Internet, Videos/Cartoons, Web Sites & Databases, Networks, Telecommunications / VoIP, SonicWall Firewalls



What We'll Cover

- Deployment Methods: From “Manual” to Advanced; and, the importance of Planning
- The Importance of Planning; Info you'll need
- Overview of iOS and OS X Deployment Methods & Tools
- Some “Gotcha's/Stories”-->
- Resources
- Group Thoughts / Q & A



Benefits of Imaging/Automation

- Takes some extra effort up front (and possibly expense)... but...
- You can deploy FASTER/more, in parallel
- Repeatability, uniformity, Quality Control ...
- Less work after up-front; PROCESS, Documentation, Quality Control is VERY important

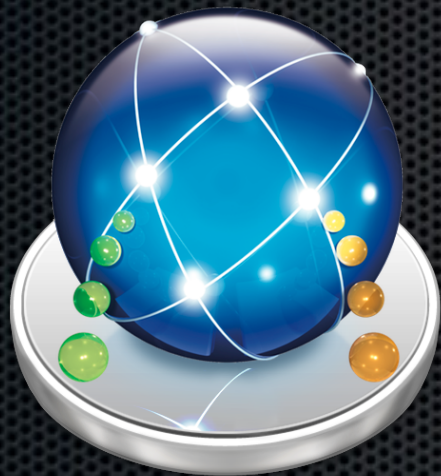


iOS Deployment Solutions

- Apple Configurator
- Maas 360 (by Fiberlink)
- Airwatch
- Casper Suite (JAMF Software)
- Others (??)



Some other Solutions...



Some OS X Approaches

- Monolithic Disk Imaging (Block Level Cloning)
- File System Synchronization (File Level Cloning)
- Package Installation (often on demand, or more ad-hoc)
- Commercial Deployment Solutions

OSX Deployment Solutions

- CCC, SuperDuper
- JAMF Casper Suite
- Munki
- DeployStudio
- Absolute Manage
- FileWave (and FileWave Lightning)
- Others (??)

Important Information Up Front

- “The Devil’s In The Details...”
- What’s the Scope? Goal? Objective?
- Who is the Project Sponsor? The main technical contacts? What’s the Communications Plan? Training Plan? The Support Plan?
- What’s the Optimization Goal? Schedule? Cost? Scope? Longer-term maintainability?
- How do we define (& measure) success?
- Single site vs. Multi-Site considerations; List of devices, users, accounts, locations; and PRIORITIES



Planning Tips

- Inventory, Inventory, Inventory!
- Get device, user, acct. info. – who works/sits where? Seating chart(s)?
- Get security & user requirements; local device info. (e.g. printers? WiFi?)
- Know your budget and resources
- Consider a “pilot project” or “test rollout”
- Learn from the “pilot”; refine and adapt
- Consider a “RASIC” Chart, if it may help



RASIC

- Many different styles
many variants of it...
- Most commonly:
- R = Responsible
- A = Approve
- S = Support
- I = Inform
- C = Consult

SAMPLE SharePoint RACI Chart

SharePoint Go LIVE Documents	Sharepoint Ops/Engineering	Sharepoint Developer(s)	Project Manager	IT Manager	SP Designer (Consultant)	Support Desk Lead/SMEs	SP Architect (Consultant)	HR Director or Biz Rep	Marketing Director or Biz Rep	Other L0g or Department
Business Requirements Document	C	I	A	I	I	I	C	R	R	R
Functional Design Doc	R	C	A	C	I	I	C	I	I	I
Branding Design & Page Layout Plans	I	C	A	I	R	I	C	C	C	I
Communication & Launch Plans	C	I	R,A	R	I		C	C	C	I
Change Management & Control Process	R	C	I	A			C			
Operations & Maintenance Plan	R,A	I	I	C	I	I	C			
Platform Security Doc & Review	R	I	A	I	I		C			
Support Training Material	R		A	I		C	C			
End User Training	C		A	I		R	C	C	C	C
Responsible for completing that step in the process										
Accountable for ensuring that step is completed										
Consulted prior to the completion of that step										
Informed of the results once that step is completed										

RASIC May Help

SAMPLE SharePoint RACI Chart

SharePoint Go LIVE Documents	Sharepoint Ops/Engineering	Sharepoint Developer(s)	Project Manager	IT Manager	SP Designer (Consultant)	Support Desk Lead/SMEs	SP Architect (Consultant)	HR Director or Biz Rep	Marketing Director or Biz Rep	Other LOB or Department
<i>Business Requirements Document</i>	C	I	A	I	I	I	C	R	R	R
<i>Functional Design Doc</i>	R	C	A	C	I	I	C	I	I	I
<i>Branding Design & Page Layout Plans</i>	I	C	A	I	R	I	C	C	C	I
<i>Communication & Launch Plans</i>	C	I	R,A	R	I		C	C	C	I
<i>Change Management & Control Process</i>	R	C	I	A			C			
<i>Operations & Maintenance Plan</i>	R,A	I	I	C	I	I	C			
<i>Platform Security Doc & Review</i>	R	I	A	I	I		C			
<i>Support Training Material</i>	R		A	I		C	C			
<i>End User Training</i>	C		A	I		R	C	C	C	C

Responsible for completing that step in the process

Accountable for ensuring that step is completed

Consulted prior to the completion of that step

Informed of the results once that step is completed

Finding the Right Fit

- Budget
- Supportability / Sustainability
- What platforms are supported?
- Ramp-Up and Training Time; Ease of use
- Updates & Changes (?)
- Supports, updates, who/how to manages all of this longer-term? How?
- With what equipment?



iOS Deployments: Details

- “The Devil’s In The Details...”
 - What are you deploying? To WHERE?
 - What specific app’s or content are you deploying? Are they free, paid, etc.
 - What orientation(s) or screen resolutions are the app’s optimized for? Client ready for VPP??***
 - Where are the devices going? How will they be physically and logically secured?
 - What security or other lockdown features are needed?
- Naming conventions: E.g. WiFi Names, etc.



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- Airwatch
- Casper Suite (JAMF Software)
- Others (??)



War Story: “Physician, Heal...”

- Moderate sized medical practice
- Wanted to deploy moderate number of iPads for patient or guardian use (waiting rooms)
- Mainly games, but also a more “trusted” device for EMR, sign-in, etc.
- What are the potential issues? What could possibly go wrong?

War Story: “Physician, Heal...”

-

-

-

Mainly games, but also a m
for EMR, sign-in, etc.

-

What are the issues? What
wrong? [20]



iOS Deployment Solutions

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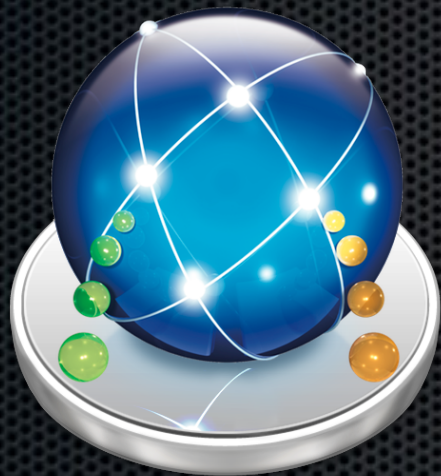
And Now... Mac OS X...



Some OS X Approaches

- Apple Tools vs Free Tools vs Commercial?
- olithic Disk Imaging (Block Level Cloning or Deployment) vs. File System Synchronization (File Level Cloning/Deployment)
- Package Installation or Deployment (often on demand, or more ad-hoc)
- Commercial Deployment Solutions

Some OS X Solutions...



Manual / “Non-imaging”

- Fairly easy to do... and low cost... but...
- Potentially inefficient use of you and your resources
- Might be a bit slow or tedious, **EVEN** you have a team of 100 monkeys...



Monolithic / “Golden Master”

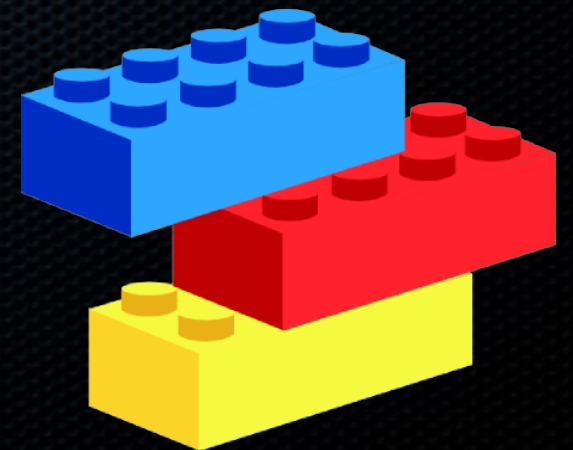
- Install everything, then clone clone clone
- Similar to the “Acronis/Norton Ghost” model
- Every potential change is a new build
- Often multiple separate builds
<http://support.apple.com/kb/HT1159>
- Possible between releases
- Post-configuration may be necessary
- CCC, Super Duper, others...?

“Thin Imaging”

- Deploy light-weight, standard desktop configurations
- Philosophy is to split the core system image from the software and settings
- Use tools like DeployStudio to add settings and bindings
- Use MCX (Managed Client for OSX) or Munki to help handle the software and settings
- Possible network impact
- Possible enhancements with packages like Robot Cloud (may also help w/ inventory, mgmt.)

Modular (Thick / Thin / Layered)

- Separate pieces: OS + Recovery, Settings, and Applications
- Consistent experience per machine, per release
- Automation - scripts and agents
- Packages (running installers)



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!

Additional Options

Management

- LANDesk - Very Windows oriented
- Centrify – Identity Services; Directory focused
- Puppet - Configuration control

Power Tools

- AutoDMG (helps create restore-ready images)
- createOSXInstallPkg (helps bundle multiple packages)
- AutoPkg (helps prep. Software for distribution; similar to Automator workflows) [30]

Command-line: asr

- ASR = Apple Software Restore (what Disk Utility uses for restore “under the hood”)
- Multiple machines at the same time; has to have multicast support!
- Command-line
- Not the easiest to take full advantage of
- Proton Pack Server GUI to create ASR multicast (no longer around)
- Recommend instead: Blast Image Config (PSU)

Apple Remote Desktop

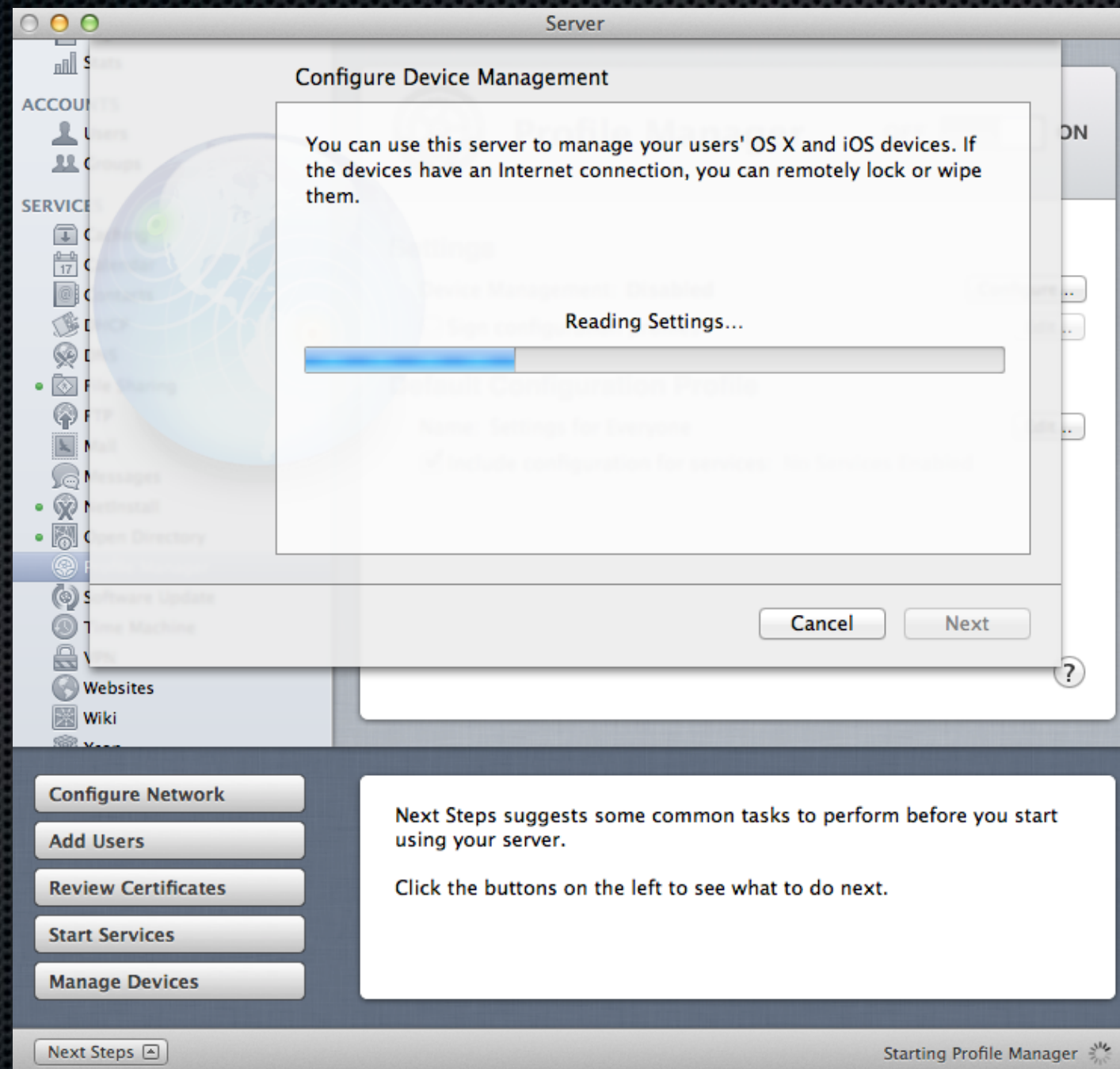
- Remote Support/Screen Control
- Deployment
- (Software Distribution and Updates)
- Asset Management



OS X Server

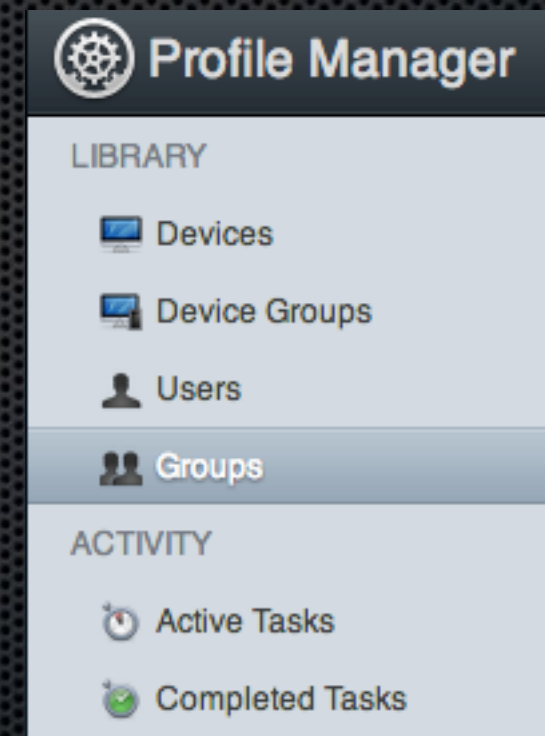


Configuration Profiles



Profile Manager

- Introduced in OS X Lion & higher
- Preference/Configuration Management (XML Files, like Leroy said)
- Helps specify how app's and books
- Probably better for MDM



Third Party Options



Absolute Manage

Absolute[®]Software

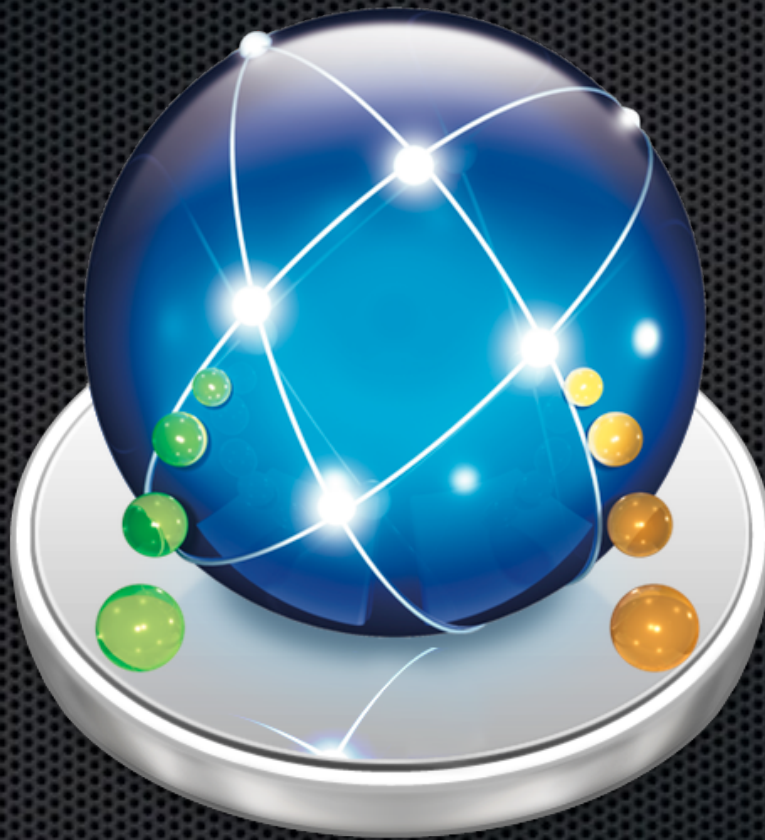
Absolute Manage



Absolute Manage

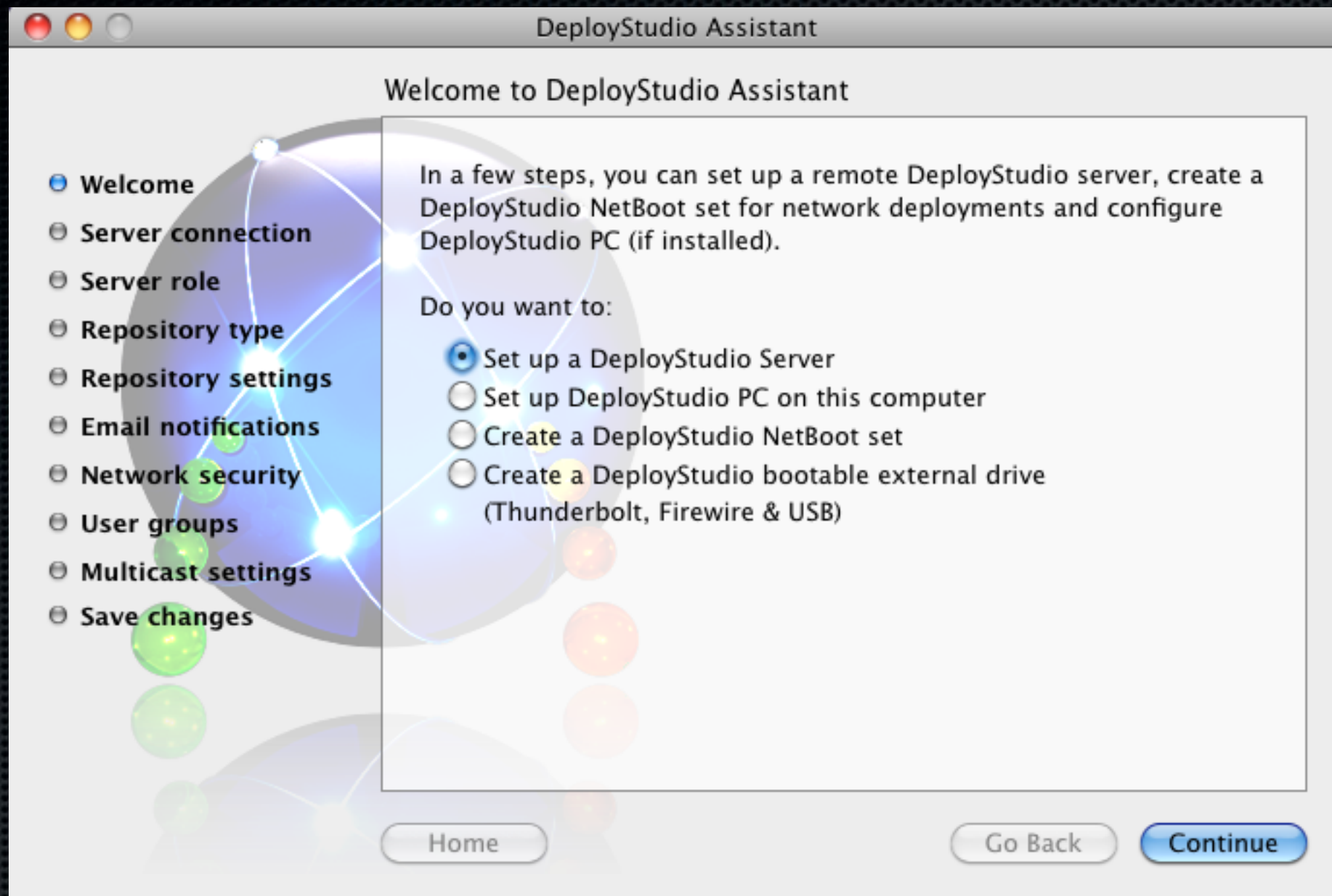
- Their claim: “The only endpoint management solution that can remain installed on computer, tablet, and smartphone regardless of user or location”
- User data migration
- ImageLive
- iOS (MDM)
- Theft Tracking / Recovery* (story time?)

DeployStudio



DeployStudio

- Can be used to Deploy Mac's and PC's
- Many different ways to deploy
- FREE!! * deploystudio.com
- * = Better with OS X Server
- NetBoot “Easy Mode”
- Multi-step Automator-like workflows
- Directory (AD / OD) binding
- Multi-boot imaging friendly (Bootcamp)



- Create your NetBoot sets

DeployStudio Admin

Server

Edit

Window

Help

DeployStudio Admin connected to mainserver.pretendco.com

Runtime

Control

Logs

ACTIVITY

COMPUTERS

Lab

WORKFLOWS

MASTERS

PACKAGES

SCRIPTS

Title	Description	Access group	Identifier
Create a master from a volume	This simple workflow enables you...	-	04062220-1111-8888-2222-000000000000
Create Master Images		-	C8B357BC-D52B-4622-B13B-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

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

Active Directory binding

Automatic enrollment

Disk image

Firmware Security

Hostname form

Localization

New user form

Package install

Periodic NetBoot

Shut down

Time

Alert

Configure

File copy

Generic

Licenses form

Network location form

Open Directory binding

Partition

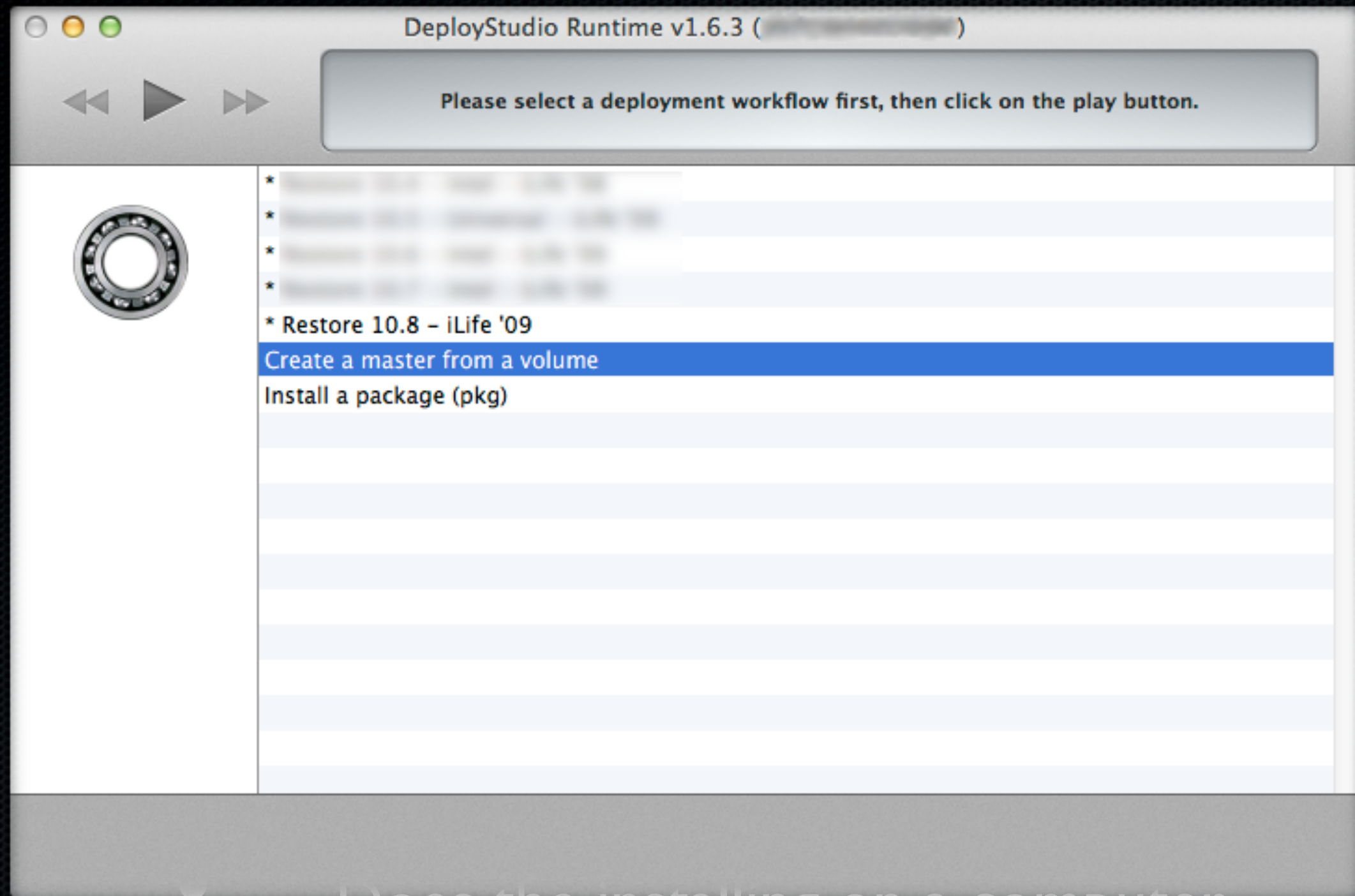
Restore

Software update

Workflow

Drag an icon to the workflow timeline

Status Monitoring



Does the installing on a computer

JAMF Casper Suite

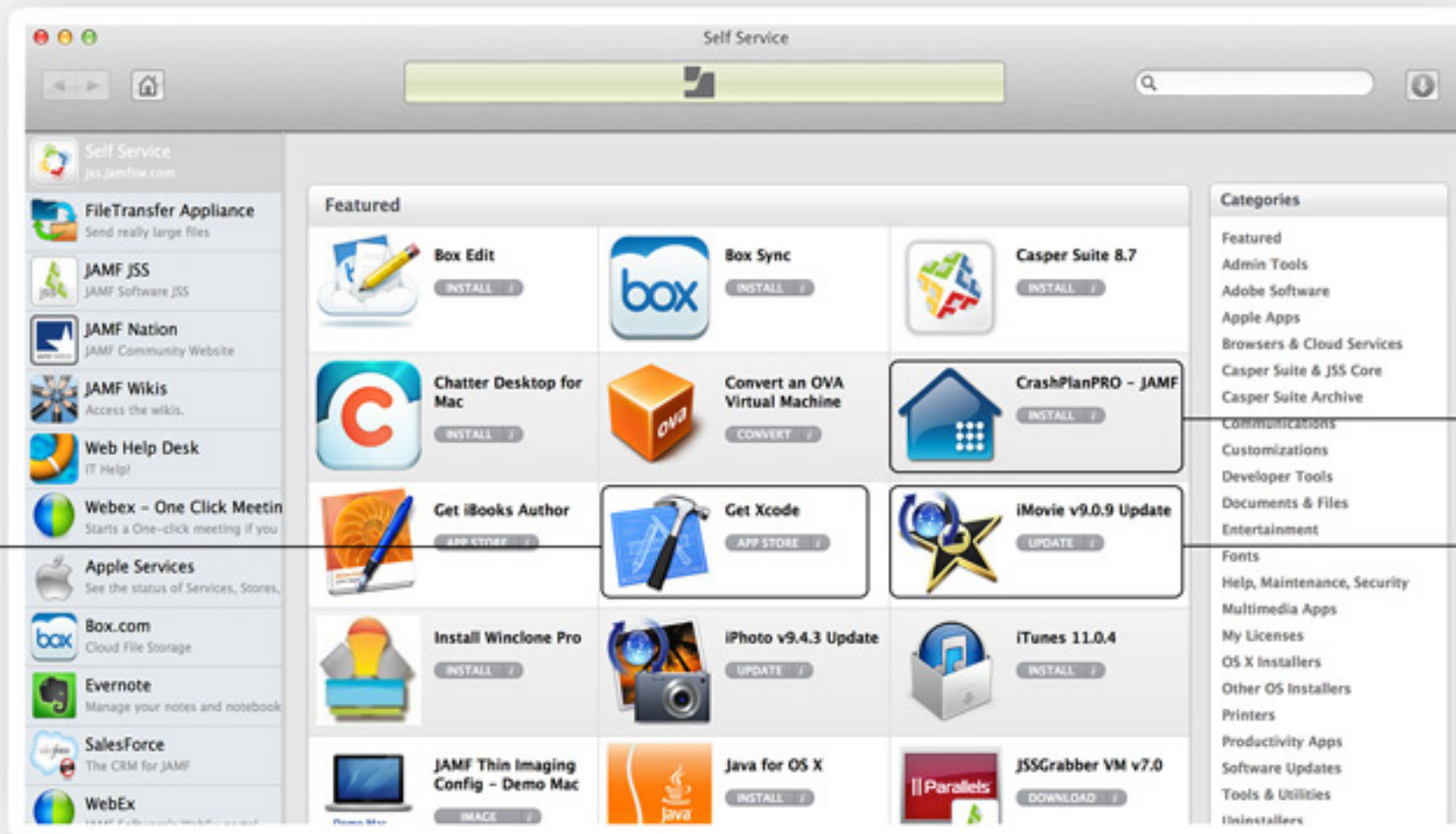


JAMF Casper Suite

- Entire Life Product - start to finish
- OS X and iOS (MDM) focused; but you get it all
- Tight integration with native OS X tech
- Scripter friendly - API & “jamf binary”
- Strong 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.

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 (Puppet Labs)



- 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

Munki



- Client-side code, largely written in Python
- Requires a Web Server
- Focuses on Software Deployment
- Automates software installation
- Doesn't require OS X Server; but requires a web server
- Google variant - Simian (App Engine)
- <http://code.google.com/p/munki>
- Open Source and Free

Resources: Working w/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

Resources: Some Pkg Tools

- CreateOSXInstallPkg
- CreateUserPkg
- AutoDMG
- AutoPKG

Resources: Apple

- <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/>

Resources: Other Web Sites

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

Questions?



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