

Case Study: Thin- Imaging Macs Using IBM Endpoint Manager



Jim Blau

ITS Endpoint Engineering
Yale University
jim.blau@yale.edu

“Imaging” is not the problem: *Deployment* is

Imaging

traditional definition:

Replacing the contents of a client’s boot volume with the contents of a disk image file.

Anthony Reimer’s definition:

“... taking a Mac boot drive/volume from an unknown (or any) state to a known bootable state.”

+

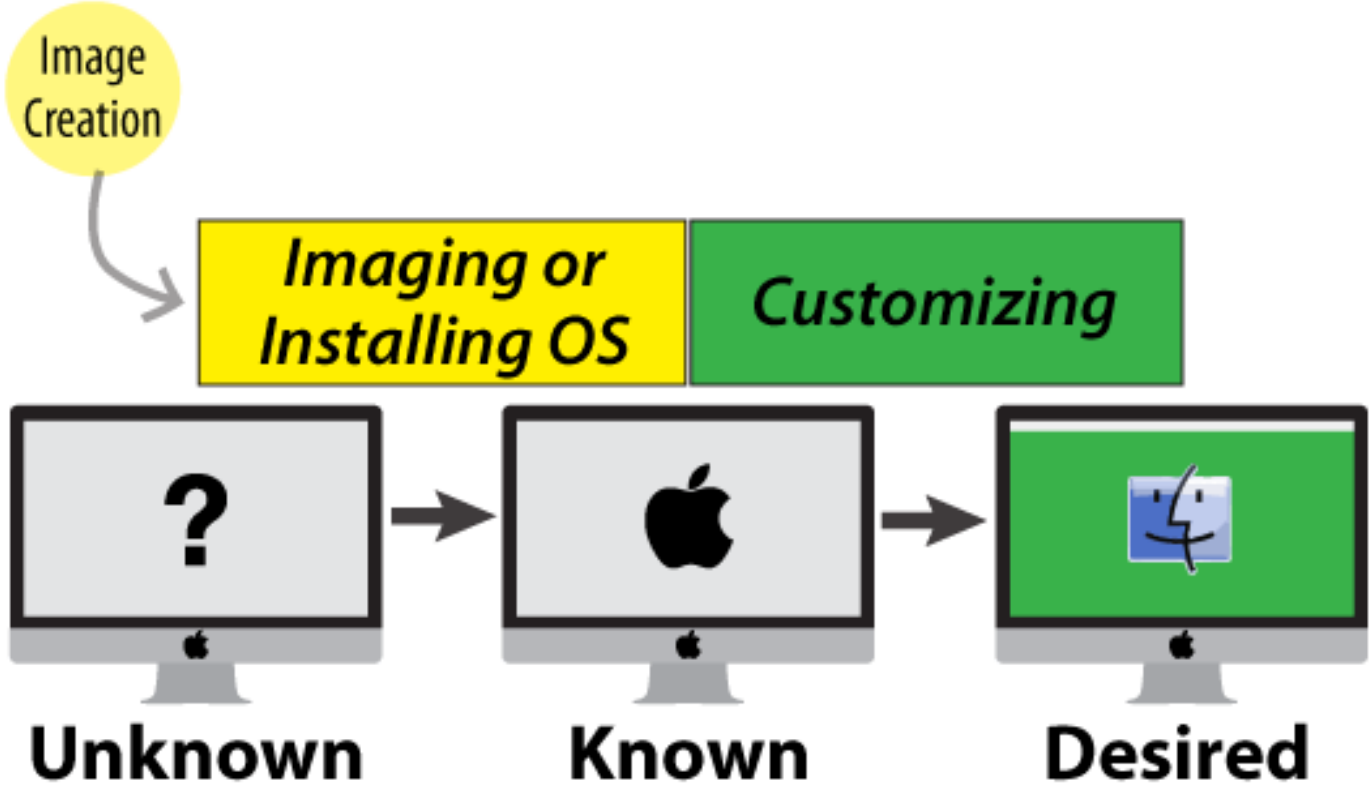
Customizing

“The process of taking a Mac boot volume from a known bootable state to the desired state through the installation of packages and other payloads.”

= Deployment

<http://www.afp548.com/2013/05/21/deployment-a-pedagogical-manifesto/>

Deployment



Credit: Anthony Reimer

<http://www.afp548.com/2013/05/21/deployment-a-pedagogical-manifesto/>

“Deployment” is not the problem: managing Macs in an enterprise is

Admins like me

Software deployment tasks

- 1) Base OS deployment
- 2) Enterprise-wide standard **overlay** items
- 3) Specialized overlays
- 4) Patching/updating
- 5) One-off software/config deployments

My IT colleagues

Other management tasks

- Purchasing
- Deploying hardware
- Training
- Support

A group of customizations designed to meet the needs of a particular group/kind of client.

	Image creation	Image deployment	Remote pkg/etc. deployment
Apple tools: NetInstall/-Boot/-Restore, System Image Utility, ASR	✓	✓	
AutoDMG	✓		
PSU Blast Image Config		✓	
DeployStudio	✓	✓	
FileWave	✓	✓	✓
JAMF Casper Suite		✓	✓
Munki			✓
Puppet			✓
Absolute Manage			✓
IBM Endpoint Manager (“BigFix”)			✓

Our Current Workflow

Back end:

- Use AutoDMG to create asr-scanned dmg with latest OS, updated “Base” overlay elements
- Create specialized-overlay folders with pkg installers

Client-side:

- Use homegrown imaging app to deploy this lowest-common-denominator image
- Field techs must sync imaging app with server to get latest dmg and overlays
- Imaging app must reside on external USB drive, which field techs must maintain with latest OS version

Why Thin Imaging?

- Machine-specific OS builds

Mac OS X versions (builds) for Computers

iMac	Date introduced	Original Mac OS X included (see Tips 1 and 3)	Later Mac OS X included (see Tip 1)	Mac OS X Build(s) (see Tip 2)
iMac (21.5-inch, Late 2013)	Sept 2013	10.8.4	10.9, 10.9.2	12E4022, 13A603, 13C64
iMac (27-inch, Late	Sept 2013	10.8.4	10.9, 10.9.2	12E4022, 13A603,

<http://support.apple.com/kb/ht1159>

- Efficiency gains

Our New Workflow

Client side:

For a new Mac:

- Unbox, boot
- Install Managed Workstation Assistant
- Name & bind
- Install IEM client
- Specify overlay(s)
- Wait

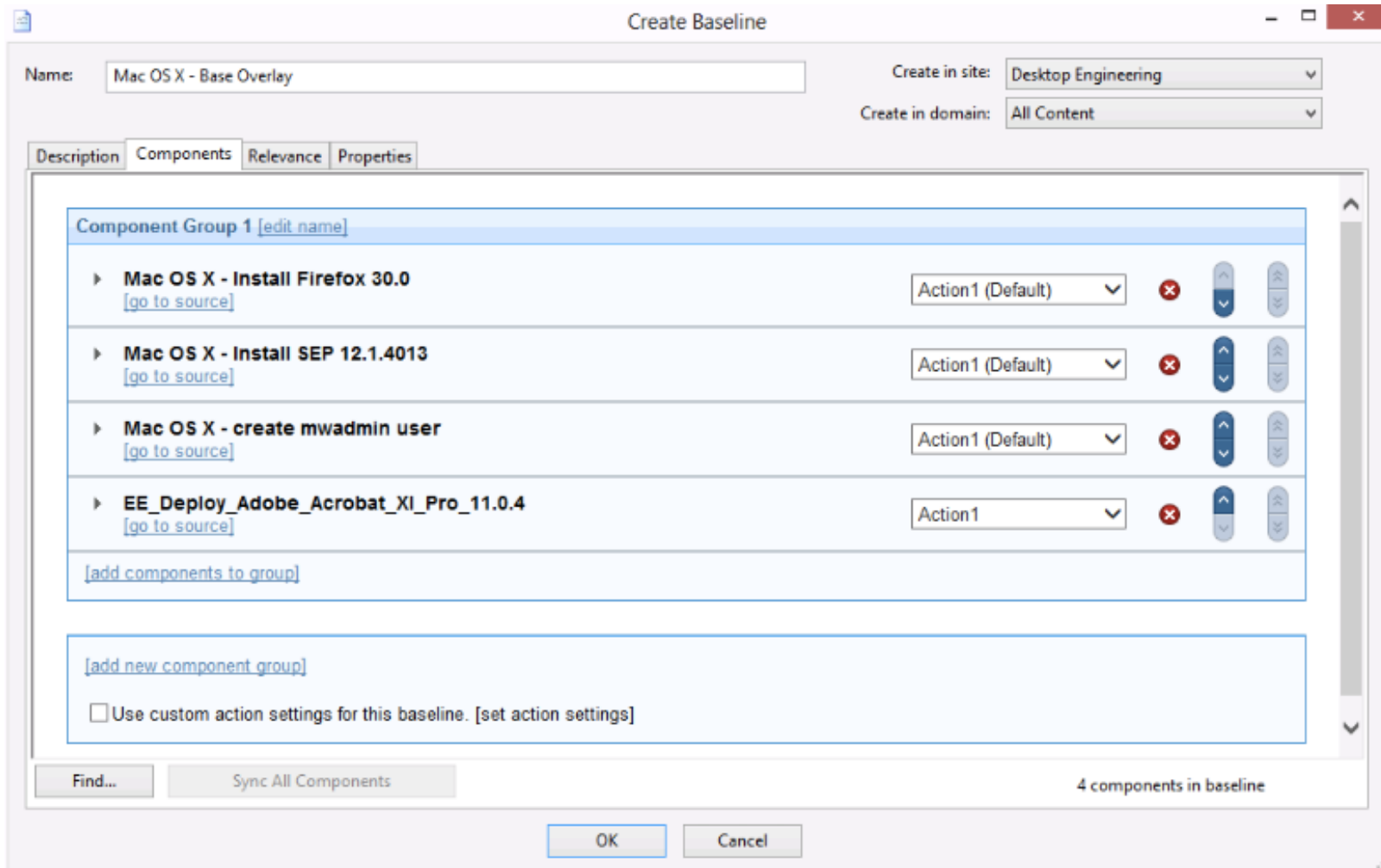
For a used Mac: same except for Step 1

- Boot to Recovery Partition, erase boot drive, re-install OS

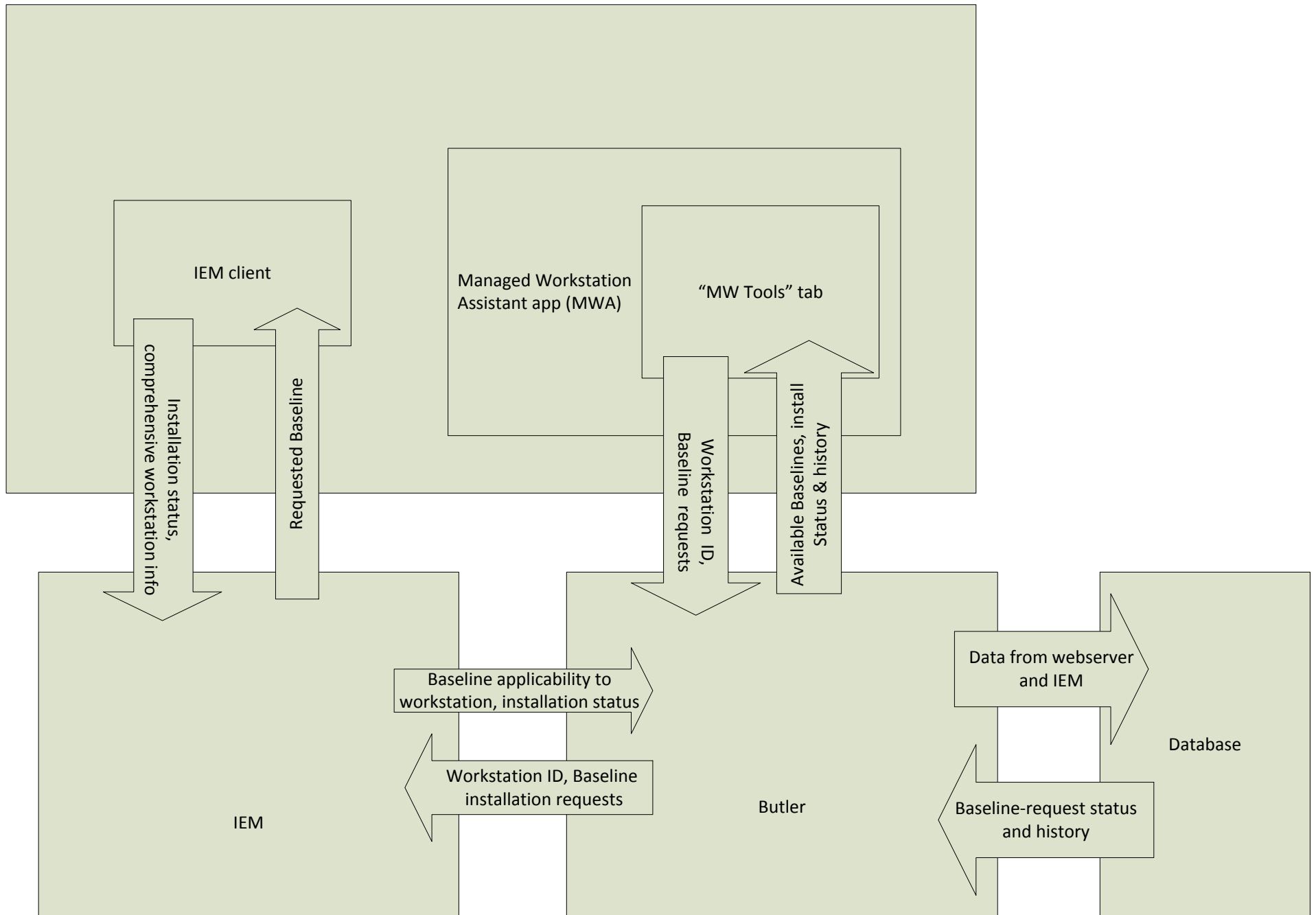
Our New Workflow

Back end:

- Update an IEM Baseline that delivers our campus-wide Base overlay
- Create/update additional Baselines for each additional needed overlay



... but first, we must create a system to link our MWA app with IEM



Immediate Dividends

No more image-building or -distribution

Clients don't need to wait for us to update our campus image when a new OS version and/or hardware is released

Field techs don't need to carry or maintain USB boot drives

IEM can also handle patches and updates – single tool for all software-deployment tasks

Future Dividends

Can be extended to Windows

BYOD-friendly

Butler can be used for other things

Automated local-admin password resets

App Store

Challenges

Drive encryption

Software compatibility

Supporting multiple OS versions

Missing or outdated Recovery Partition

Maintaining Butler and MWA Tool

Thanks for attending!

Feedback:
<http://j.mp/psumac16>