

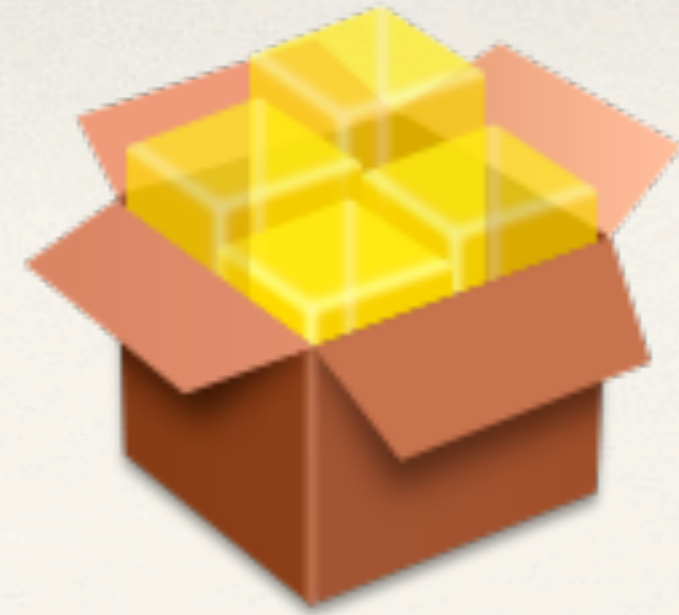
```
Terminal — bash — 55x17
Last login: Wed Feb 18 15:22:37 on console
lab-9:~ tech$ cd /Users/tech/Desktop/InstaDMG_1.4b4
lab-9:InstaDMG_1.4b4 tech$ sudo ./instadm.bash
Password:
15:34:04 #####InstaDMG build initiated#####
15:34:04 #####Mounting Mac OS X installer image#####
Mounting the shadow file (/tmp/9B574DFD-47C6-48
8D-A0C3-B71FB0481CB2.dmg) onto the image.
Mac OS X installer image mounted
Running from cached image (./Caches/BaseImageCa
che/226663A2.dmg)
15:36:43 #####Beginning Installation from #####
Using Cached image, so skipping OS installation
15:36:43 #####Beginning Update Installs from ./Install
erFiles/BaseUpdates#####
Installing MacOSXUpdCombo10.5.6.pkg from ./Inst
allerFiles/BaseUpdates/10
```

Building Master Images using Packages and InstaDMG

Anthony Reimer, Integrated Arts Media Labs

The Topics

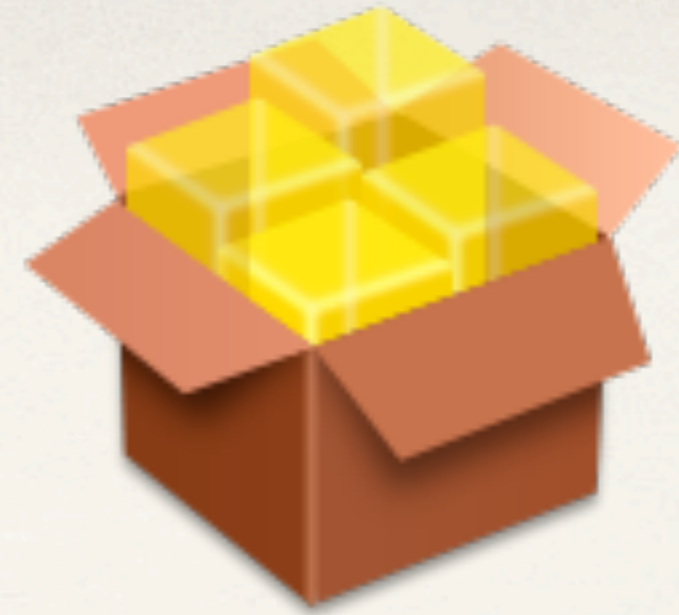
- ❖ Building an image from scratch
- ❖ Updating an image
- ❖ Packaging tools



```
Terminal — bash — 55x17
Last login: Wed Feb 18 15:22:37 on console
lab-9:~ tech$ cd /Users/tech/Desktop/InstaDMG_1.4b4
lab-9:InstaDMG_1.4b4 tech$ sudo ./instadmg.bash
Password:
15:34:04 #####InstaDMG build initiated#####
15:34:04 #####Mounting Mac OS X installer image#####
Mounting the shadow file (/tmp/9B574DFD-47C6-48
8D-A0C3-B71FB0481CB2.dmg) onto the image.
Mac OS X installer image mounted
Running from cached image (./Caches/BaseImageCa
che/226663A2.dmg)
15:36:43 #####Beginning Installation from #####
Using Cached image, so skipping OS installation
```

The Questions

- ❖ What was I doing last year?
- ❖ What am I doing now?
- ❖ What lessons have I learned?



```
Terminal — bash — 55x17
Last login: Wed Feb 18 15:22:37 on console
lab-9:~ tech$ cd /Users/tech/Desktop/InstaDMG_1.4b4
lab-9:InstaDMG_1.4b4 tech$ sudo ./instadmg.bash
Password:
15:34:04 #####InstaDMG build initiated#####
15:34:04 #####Mounting Mac OS X installer image#####
Mounting the shadow file (/tmp/9B574DFD-47C6-48
8D-A0C3-B71FB0481CB2.dmg) onto the image.
Mac OS X installer image mounted
Running from cached image (./Caches/BaseImageCa
che/226663A2.dmg)
15:36:43 #####Beginning Installation from #####
Using Cached image, so skipping OS installation
```



install

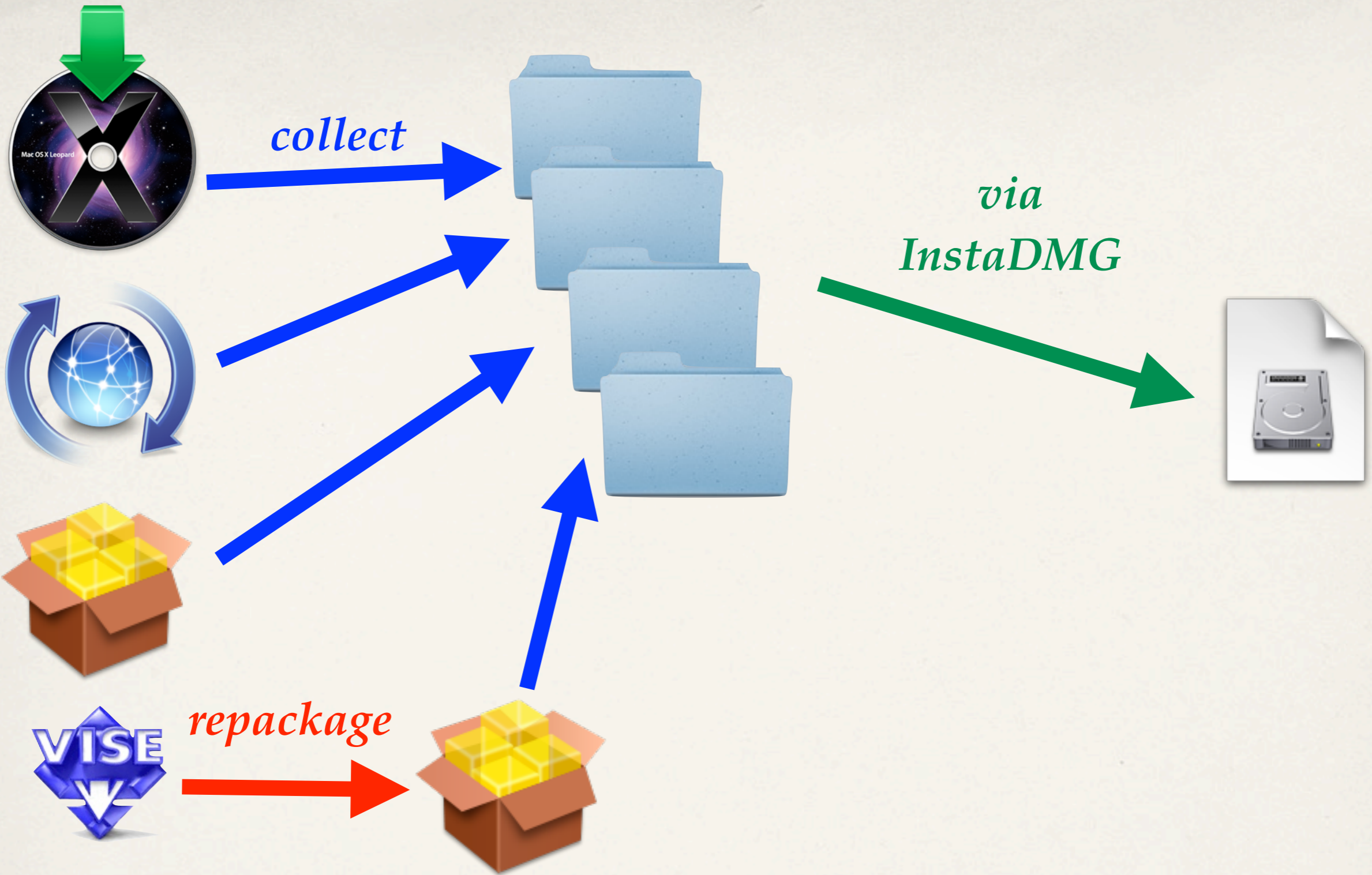


via



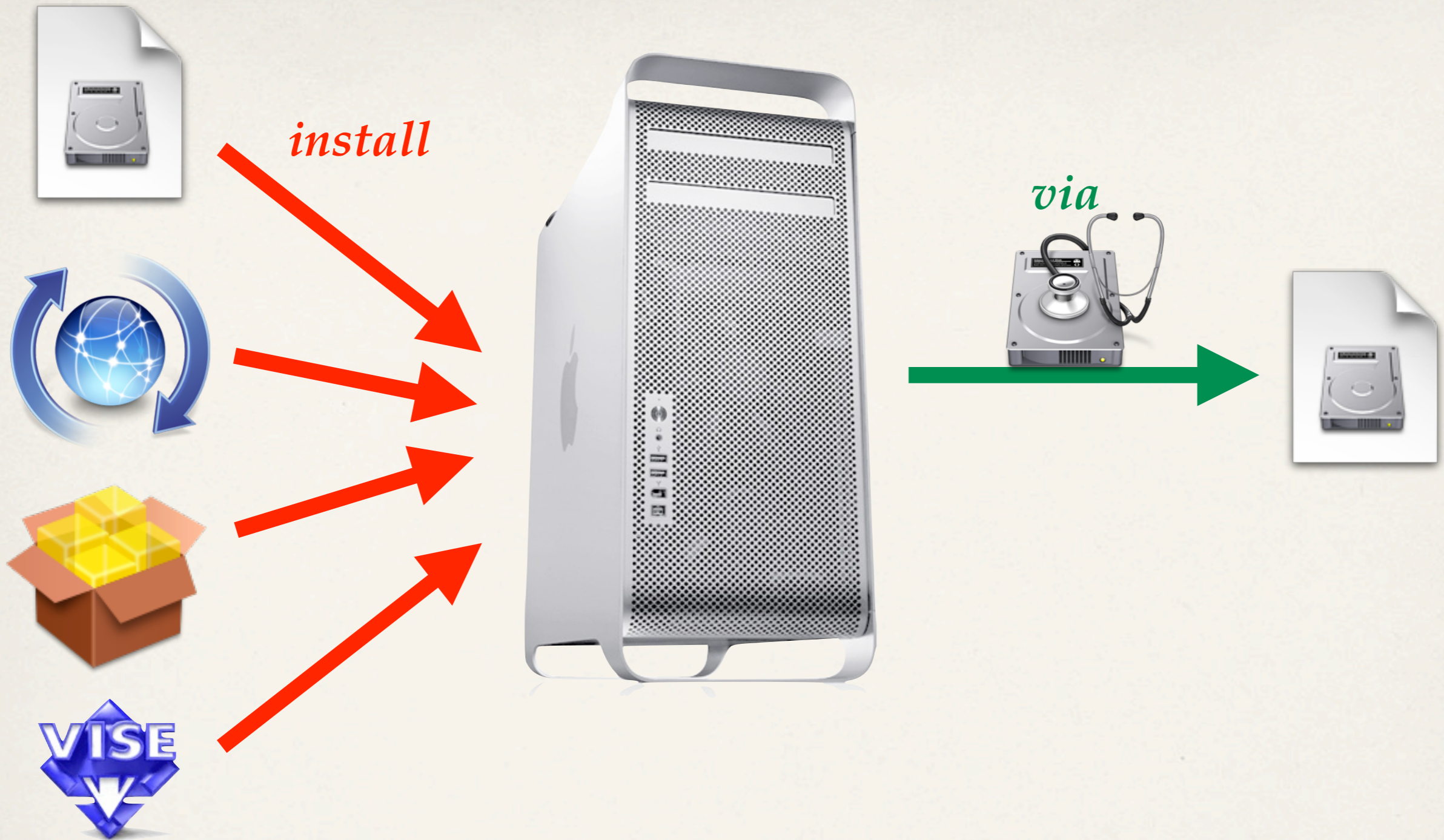
From Scratch — Last Year

Everything is manual



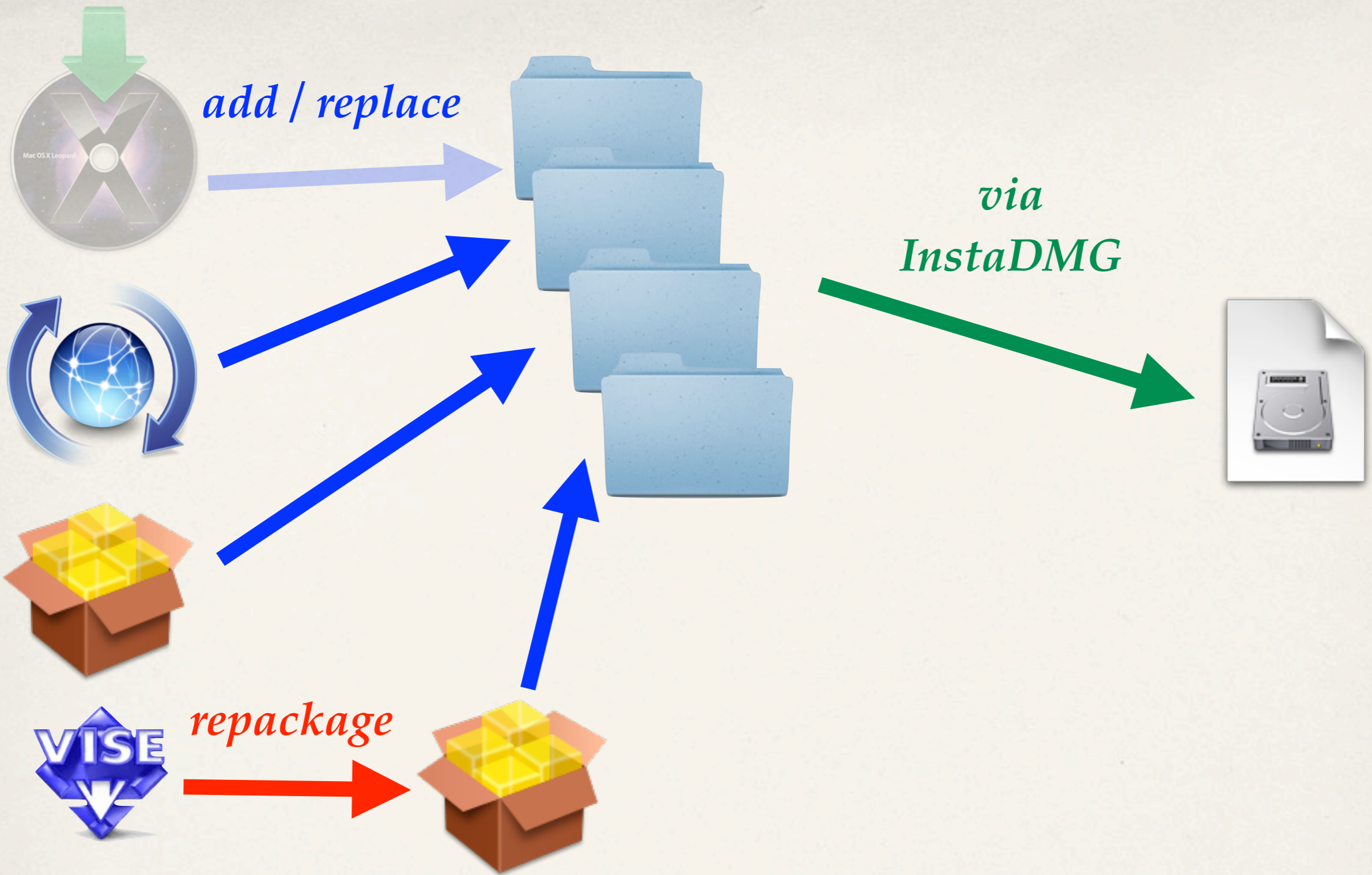
From Scratch — This Year

Everything can be automated



Update Image — Last Year

Same basic process as “from scratch”



Update Image — This Year

Same process — InstaDMG always creates a fresh image

Last Year's Method

- ❖ No learning curve
- ❖ Can use installers as-is
- ❖ Updating an image is a time-consuming, manual process that is only done periodically
- ❖ Cruft creeps into the image over time

This Year's Method

- ❖ Initial learning curve
- ❖ Non-Apple Package Format installers need to be repackaged
- ❖ Updating an image is a simple process that can be done on demand
- ❖ The image built has never been booted
- ❖ Easy to make a variation


```
Terminal — bash — 55x17
Last login: Wed Feb 18 15:22:37 on console
lab-9:~ tech$ cd /Users/tech/Desktop/InstaDMG_1.4b4
lab-9:InstaDMG_1.4b4 tech$ sudo ./instadm.bash
Password:
15:34:04 #####InstaDMG build initiated#####
15:34:04 #####Mounting Mac OS X installer image#####
      Mounting the shadow file (/tmp/9B574DFD-47C6-48
8D-A0C3-B71FB0481CB2.dmg) onto the image.
      Mac OS X installer image mounted
      Running from cached image (./Caches/BaseImageCa
che/226663A2.dmg)
15:36:43 #####Beginning Installation from #####
      Using Cached image, so skipping OS installation
15:36:43 #####Beginning Update Installs from ./Install
erFiles/BaseUpdates#####
      Installing MacOSXUpdCombo10.5.6.pkg from ./Inst
allerFiles/BaseUpdates/10
```

Demo

Reality Check

- ❖ It's not pretty
- ❖ You will probably need to dedicate significant time up-front
- ❖ Some apps don't like to be packaged (*e.g., Creative Suite*)
- ❖ Shell scripting is an extremely useful skill to have / develop
- ❖ You'll need help at some point (*frequent the InstaDMG forum at afp548.com*)
- ❖ A hybrid approach may be necessary (for now): *build your core with InstaDMG, then install your problem apps/customizations*

Other Things I Have Learned About the InstaDMG Workflow

- ❖ Having a dedicated testing machine (esp. one with two internal drives) is an immense help
- ❖ Office 2008 packages require a slight massage to work with InstaDMG (*patcher available on afp548.com*); other apps may also have this issue
- ❖ Some things can't be packaged, but they can be scripted
- ❖ You can use Workgroup Manager to create the security you require (*i.e. MCX settings*), even on a local account (*see Greg Neagle's work*)
- ❖ Apple-specific command line commands are handy (*dscl, defaults*)

Packaging and Re-packaging

- ❖ Beneficial, even if you are not using InstaDMG workflow
 - ❖ *Packages can be pushed out using ARD*
- ❖ Basic premise: run the installer on a test machine and capture the changes to the file system
 - ❖ *Snapshot before and after (most common)*
 - ❖ *Capture changes using fsevents (File System Events)*



PackageMaker (Apple.com) — Free

- *included in Developer Tools on OS X Install Disc (or download)*
- *Great for packaging drag-and-drop apps*
- *Uses fsevents method of differential packaging*



LANrev InstallEase (LANrev.com) — Free

- *Uses snapshot method*
- *Can snapshot a volume other than the booted volume*
- *Also offers full management solution*



Composer (JAMFSoftware.com) — US\$99

- *Uses snapshot method and/or fsevents (new in v.7)*
- *Also offers full management solution (Casper)*

Packaging Tools

www.afp548.com (*InstaDMG downloads, forums*)

www.apple.com/remotedesktop

www.apple.com/downloads, *search for Server Admin Tools*

developer.apple.com/mac (*Developer Tools*)

manuals.info.apple.com/en_US/System_Imaging_and_SW_Update_Admin_v10.5.pdf

www.macenterprise.org

www.ucalgary.ca/iaml (*these slides*)

Deploy Studio

Resources

...and your questions