



AUTOMATING BOOTCAMP INSTALLATION

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Hashtag : #xw15

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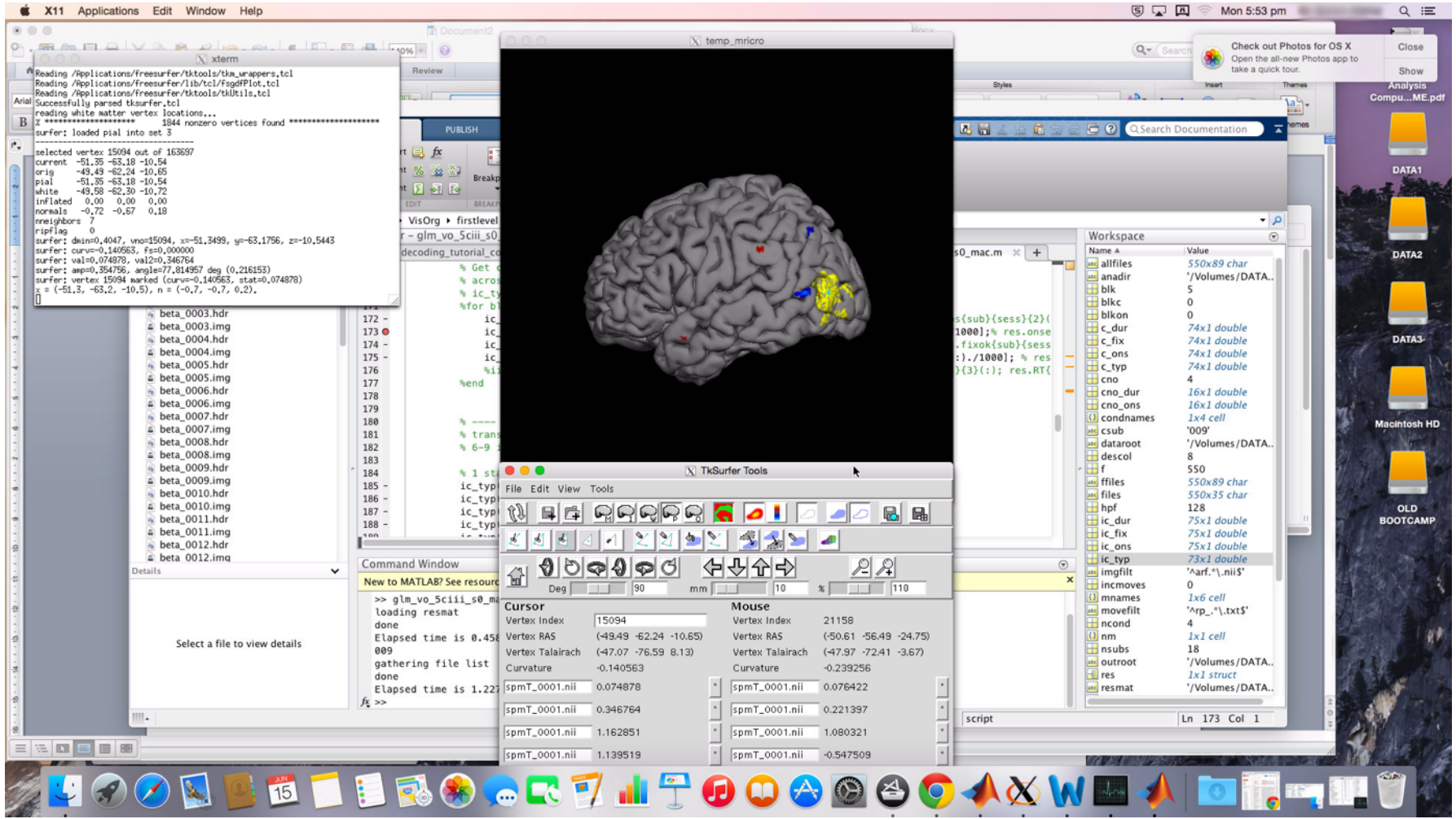
Department of Cognitive Science, Macquarie University



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```
Reading /Applications/freesurfer/tktools/tla_wappers.tcl
Reading /Applications/freesurfer/lib/tcl/fsgdPlot.tcl
Reading /Applications/freesurfer/tktools/tkUt11s.tcl
Successfully parsed tkSurfer.tcl
reading white matter vertex locations...
z: ***** 15094 nonzero vertices found *****
surfer: loaded pial into set 3

selected vertex 15094 out of 163697
current -51.35 -63.18 -10.54
orig -49.49 -62.24 -10.65
pial -51.35 -63.18 -10.54
white -49.58 -62.30 -10.72
inflated 0.00 0.00 0.00
normals -0.72 -0.67 0.18
nneighbors 7
ripFlag 0
surfer: dbrnd,4047, vno=15094, vx=-51.3499, vy=-63.1756, vz=-10.5443
surfer: curv=0.140563, fs=0.000000
surfer: val=0.074878, val2=0.346764
surfer: amp=0.354756, angle=77.814957 deg (0.216153)
surfer: vertex 15094 marked (curv=0.140563, stat=0.074878)
x = (-51.3, -63.2, -10.5), n = (-0.7, -0.7, 0.2).
```

- beta_0003.hdr
- beta_0003.img
- beta_0004.hdr
- beta_0004.img
- beta_0005.hdr
- beta_0005.img
- beta_0006.hdr
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- beta_0009.img
- beta_0010.hdr
- beta_0010.img
- beta_0011.hdr
- beta_0011.img
- beta_0012.hdr
- beta_0012.img

Select a file to view details

```
Command Window
New to MATLAB? See resource
>> glm_vo_sciii_s0_m
loading resmat
done
Elapsed time is 0.458
009
gathering file list
done
Elapsed time is 1.227
f>>
```

| spmT_0001.nii | Value |
|---------------|----------|
| spmT_0001.nii | 0.074878 |
| spmT_0001.nii | 0.346764 |
| spmT_0001.nii | 1.162851 |
| spmT_0001.nii | 1.139519 |

| Vertex Index | Vertex RAS | Vertex Talairach | Curvature | spmT_0001.nii | Value |
|--------------|------------------------|----------------------|-----------|---------------|-----------|
| 15094 | (-49.49 -62.24 -10.65) | (-47.07 -76.59 8.13) | -0.140563 | spmT_0001.nii | 0.076422 |
| | | | | spmT_0001.nii | 0.221397 |
| | | | | spmT_0001.nii | 1.080321 |
| | | | | spmT_0001.nii | -0.547509 |

| Name | Value |
|-----------|----------------|
| allfiles | 550x89 char |
| anadir | 1x4 cell |
| blk | 5 |
| blkc | 0 |
| blkon | 0 |
| c_dur | 74x1 double |
| c_fix | 74x1 double |
| c_ons | 74x1 double |
| c_typ | 74x1 double |
| cno | 4 |
| cno_dur | 16x1 double |
| cno_ons | 16x1 double |
| condnames | 1x4 cell |
| csub | '009' |
| dataroot | 1x4 cell |
| descol | 8 |
| f | 550 |
| ffiles | 550x89 char |
| files | 550x35 char |
| hpf | 128 |
| ic_dur | 75x1 double |
| ic_fix | 75x1 double |
| ic_ons | 75x1 double |
| ic_typ | 73x1 double |
| imgfilt | '\narf.\.nii' |
| incmoves | 0 |
| mnames | 1x6 cell |
| movefilt | '\Arp_\.txtst' |
| ncond | 4 |
| nm | 1x1 cell |
| nsubs | 18 |
| outroot | 1x1 struct |
| res | 1x1 struct |
| resmat | 1x1 struct |

script Ln 173 Col 1

Automating Boot Camp Installation

Why we standardised on Dual Boot Macs?



Pre 2000

Windows **or** Mac OS Desktop

- Unix Servers



2001 - 2006

Windows **and** Mac OS X

- Portable Unix
- Hardware costs rising



2006 - 2010

Intel Macs **with** Windows

- Fusion **or** Parallels **or** Boot Camp
- Support costs rising
- Still many Windows PCs



2010 - Present

Intel Macs with Windows as standard

- Boot Camp only
- Very few Windows PCs

Automating Boot Camp Installation



What is Boot Camp ?

What Boot Camp is

- Running Windows natively on your Mac hardware (Dual Booting)
 - Apple's firmware customisations for booting Windows
 - Apple's Boot Camp Assistant for partitioning and creating install media
 - Apple's packaged set of Windows drivers for Mac hardware
 - Apple's Boot Camp Utility in Windows

What Boot Camp isn't

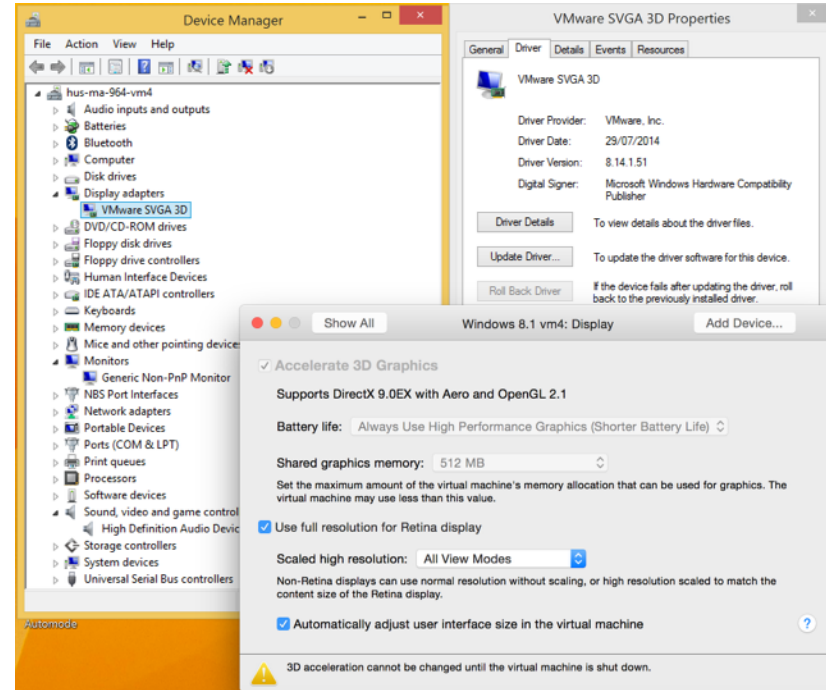
- Running Windows inside a virtual machine alongside OS X
- Other Windows software not related to booting Windows (iTunes, Quicktime etc)
- Magic

Automating Boot Camp Installation

Why not use Virtualisation, its great!

We care about milliseconds

- Virtual machines still emulate hardware.
- We measure reaction times based on presentation of visual and auditory stimuli.
- Must strive for millisecond accuracy.

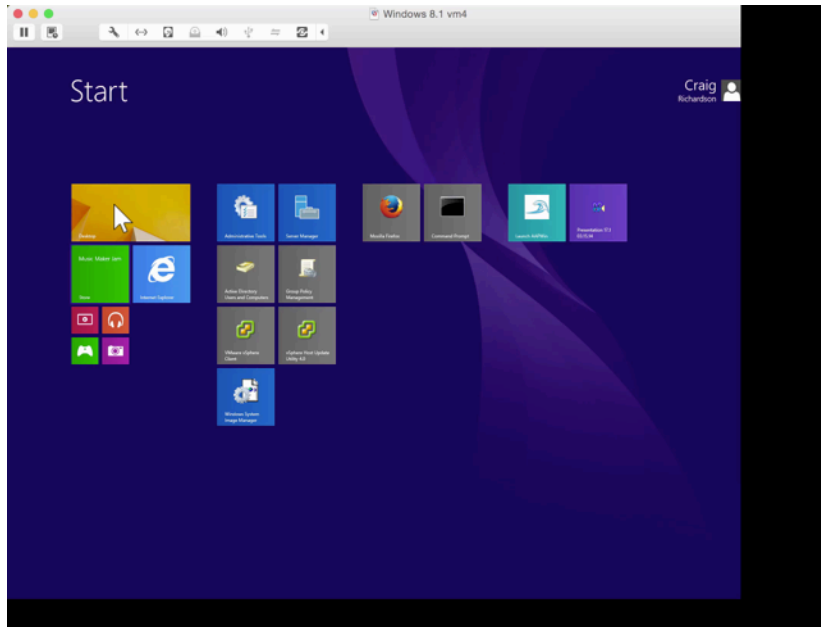


Automating Boot Camp Installation

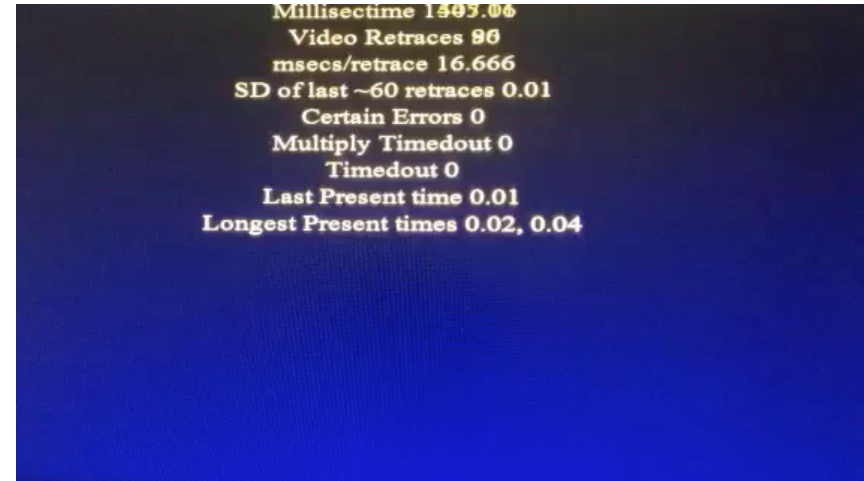
Emulated vs Real Video Hardware



TimeDX - Emulated



TimeDX - Native

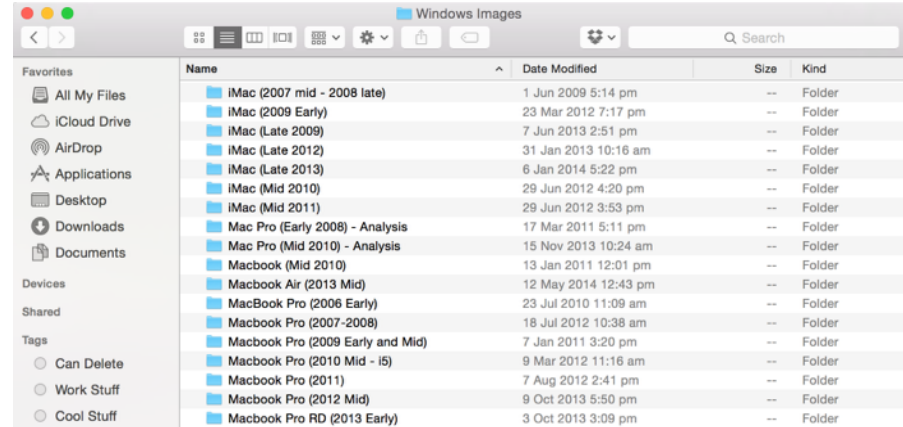


Automating Boot Camp Installation

So Boot Camp is great, but

Too many images

- “Maintaining” far too many images.
- Older images no longer useful years later.
- Images made using different methods and tools.



Need to automate, receiving gripes about Boot Camp

- Requests for “Real” Windows
 - Deploying incorrect images leads to unhappy people.
 - Migration to Active Directory exposed Time Synchronisation issues.

Automating Boot Camp Installation

Goals for deploying Boot Camp



Universal Image

Single system image that can be deployed to any compatible Mac.



Windows 8.1

Stop living in the past



Driverless Image

Windows should download and install driver set during first-boot.



Unattended Setup

Windows setup and configuration should be largely scripted.



Use existing tools for deployment

Ideally create something to be deployed many different ways.

Automating Boot Camp Installation

Inspirations - Brigadier



MACQUARIE
University

Brigadier

- Python
- Tim S
- Down
- for M
- Optio
- instal
- 64-bit windows on
- <https://github.com/t>

```
brigadier-master — bash — 75x29
hus-ma-964-os1:brigadier-master mq98002381$ clear
```

Running as a Sysprep FirstLogonCommand

It's common to perform the Boot Camp drivers during a post-imaging Sysprep phase, so that it's possible to deploy the same image to different models without taking into account the model and required Boot Camp package. Brigadier seems to behave in the context of a SysPrep `FirstLogonCommand`.

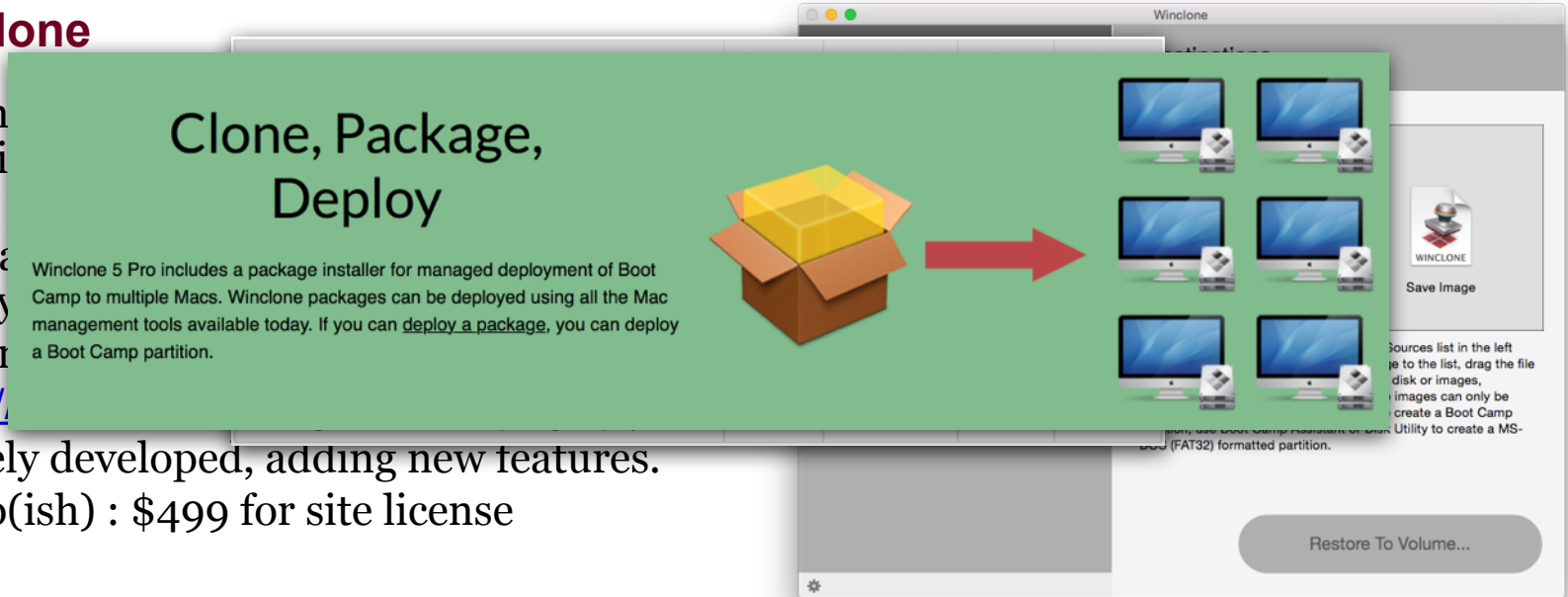
<http://macops.ca/introducing-brigadier-a-tool-for-automated-boot-camp-driver-download-and-installation/>

Automating Boot Camp Installation

Inspirations - Winclone

Winclone

- Origin for using NTFS
- Was seen a few years ago
- Relatively cheap
- <https://www.winclone.com/>
- Actively developed, adding new features.
- Cheap(ish) : \$499 for site license



Clone, Package, Deploy

Winclone 5 Pro includes a package installer for managed deployment of Boot Camp to multiple Macs. Winclone packages can be deployed using all the Mac management tools available today. If you can deploy a package, you can deploy a Boot Camp partition.

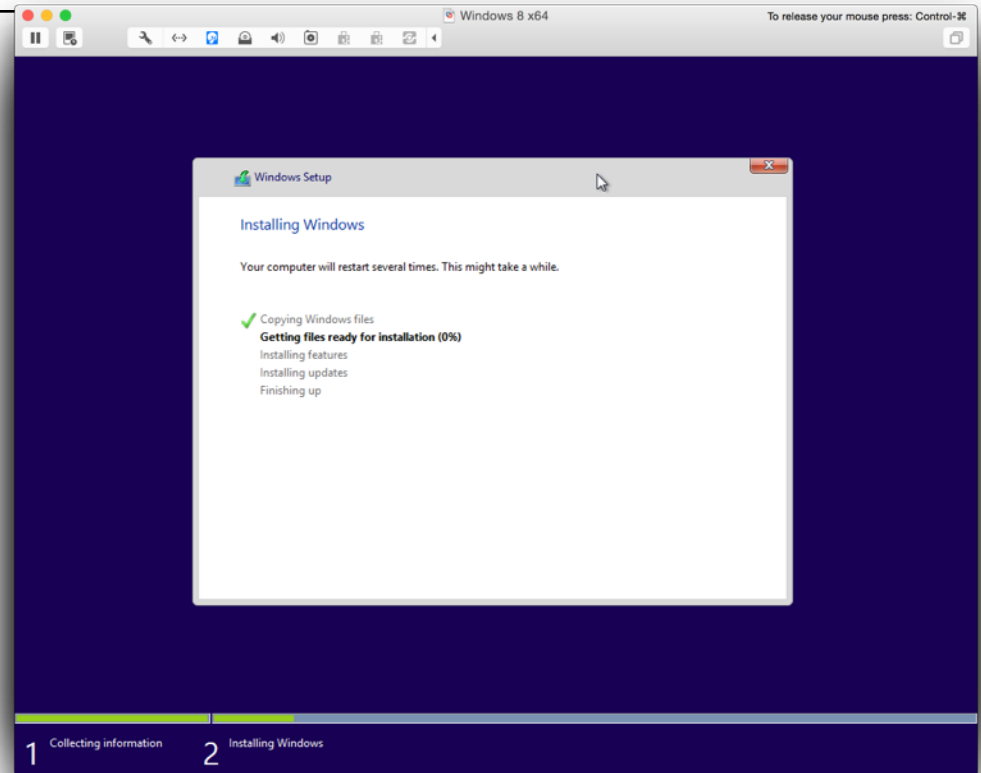
Restore To Volume...

Automating Boot Camp Installation

Building a Reference Computer

Get your newest Mac

- Boot Camp 5 required for Windows 8 drivers
- If possible use a model with Built-in ethernet
- In OSX start Boot Camp Assistant
- Create a USB installation media of Windows 8.1 and install
- Keep USB media, we'll use it later



Automating Boot Camp Installation

Audit Mode Customisations



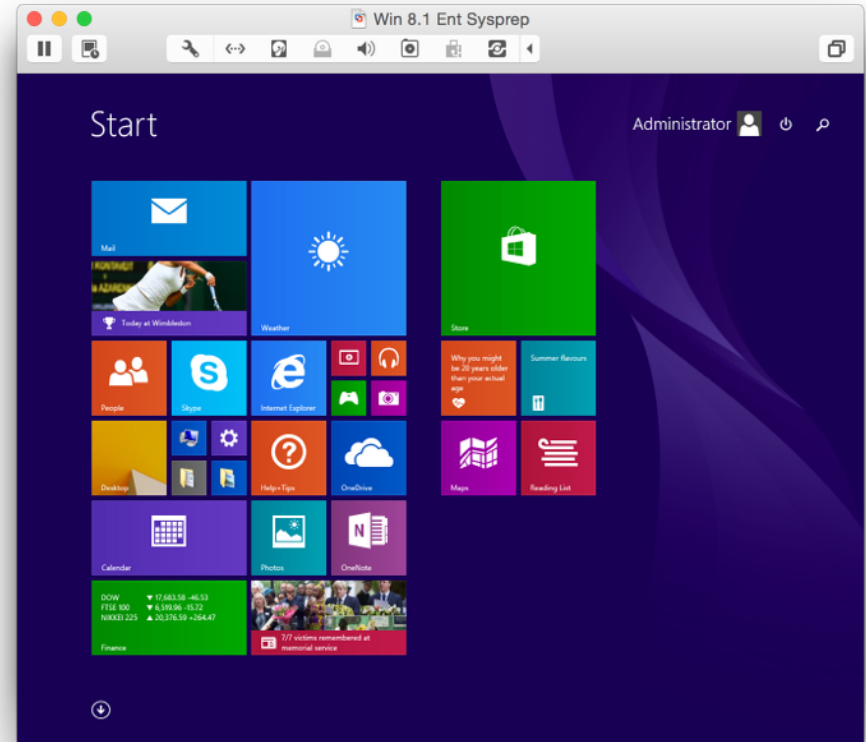
Pre-Imaging Configuration

Stopping OOBE

- After reboot Windows Installer starts the Out-of-Box-Experience (OOBE)
- Press CTRL-SHIFT-F3 to interrupt OOBE and boot to Audit Mode

Audit Mode

- Logs you into the inbuilt account 'Administrator'
- Changes made will be applied to the Default User Template



Automating Boot Camp Installation

Audit Mode Customisations

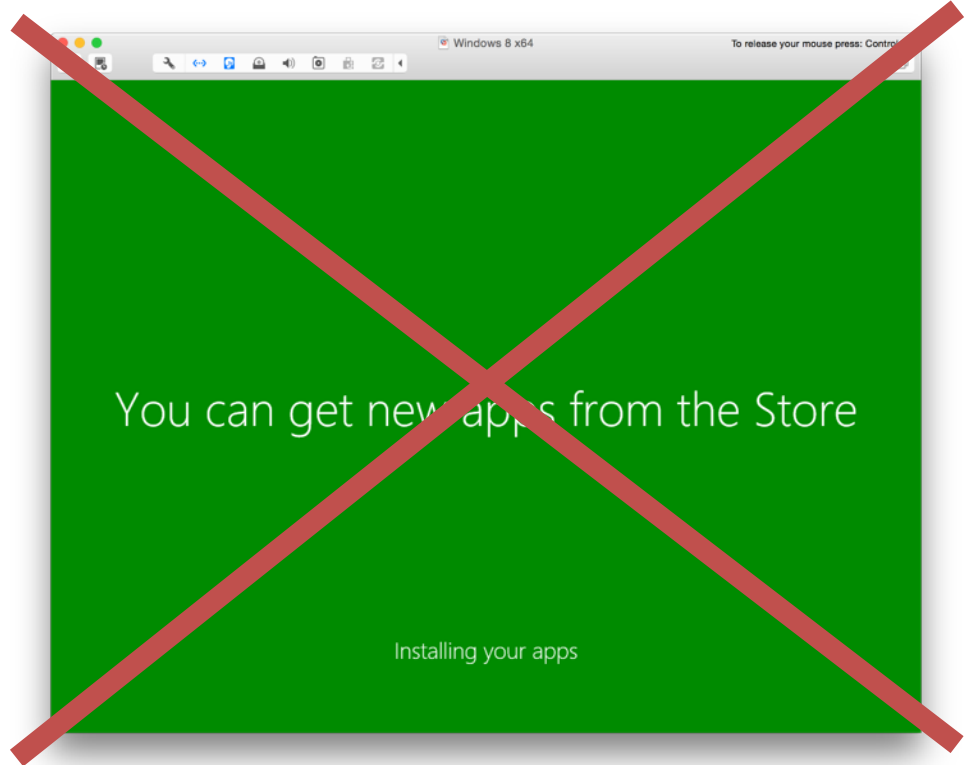


Get Online

- If reference Mac has no ethernet use a USB - Ethernet Dongle.
- Windows Drivers for it are on your USB install media
- Make copy to c:\AsixSetup64.exe

Local Group Policy

- Disable first sign-in animations
- Disable Getting Started Welcome Screen at logon
- Block signing in with Microsoft Account



Automating Boot Camp Installation

Audit Mode Customisations



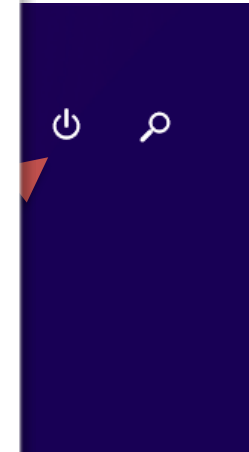
Install “Desk

- Install your
- Configure o
(Adobe, Jav

Install Windo

- Win 8.1 disc
Audit Mode
- Install a Pow
- Only bother
to 8.1 that in

The screenshot shows the TechNet Script Center page for the 'Windows Update PowerShell Module'. The page includes a search bar, navigation tabs (Home, Library, Learn, Downloads, Repository, Community, Forums, Blog), and a breadcrumb trail: 'Script Center > Repository > Windows Update > Windows Update PowerShell Module'. The main content area features a 'Download Windows Server 2012' button, a 'Quick access' section with links for 'My contributions', 'Upload a contribution', and 'Browse script requests', and a profile for 'MichalGajda MVP' with 35,843 points. The module details include a 'Download' button for 'PSWindowsUpdate.zip', a 5-star rating from 187 users, and a last update date of 12/18/2014. The page also lists attachments: 'PSWindowsUpdate_1.3.4.zip', 'PSWindowsUpdate_1.4.3.zip', and 'PSWindowsUpdate_1.4.5.zip'.



<https://gallery.technet.microsoft.com/scriptcenter/2d191bcd-3308-4edd-9de2-88dff796b0bc>

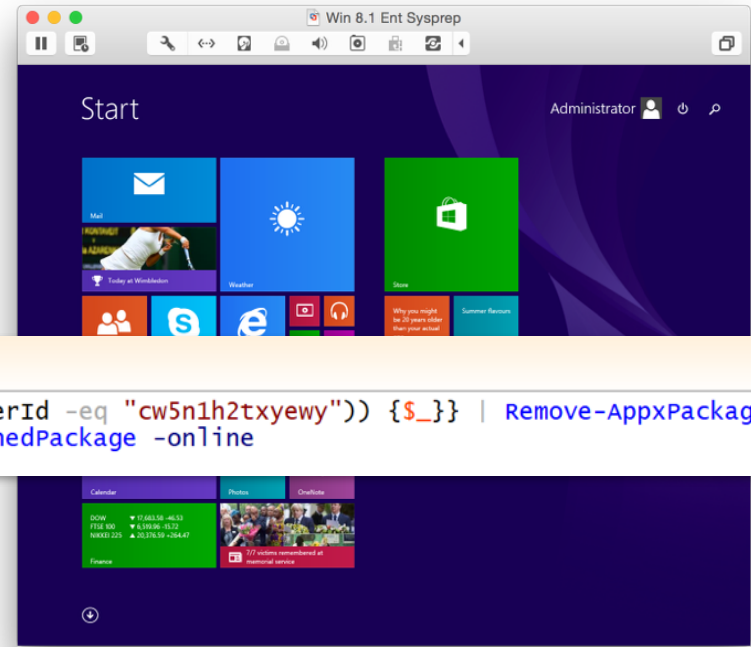
Automating Boot Camp Installation

Audit Mode Customisations



Configure Windows 8 Apps / Tiles

- Microsoft adds Live Tiles with dynamic content you cant predict
- They also hog a lot of screen real-estate that could be used for your own apps
- Delete them with Powershell commands

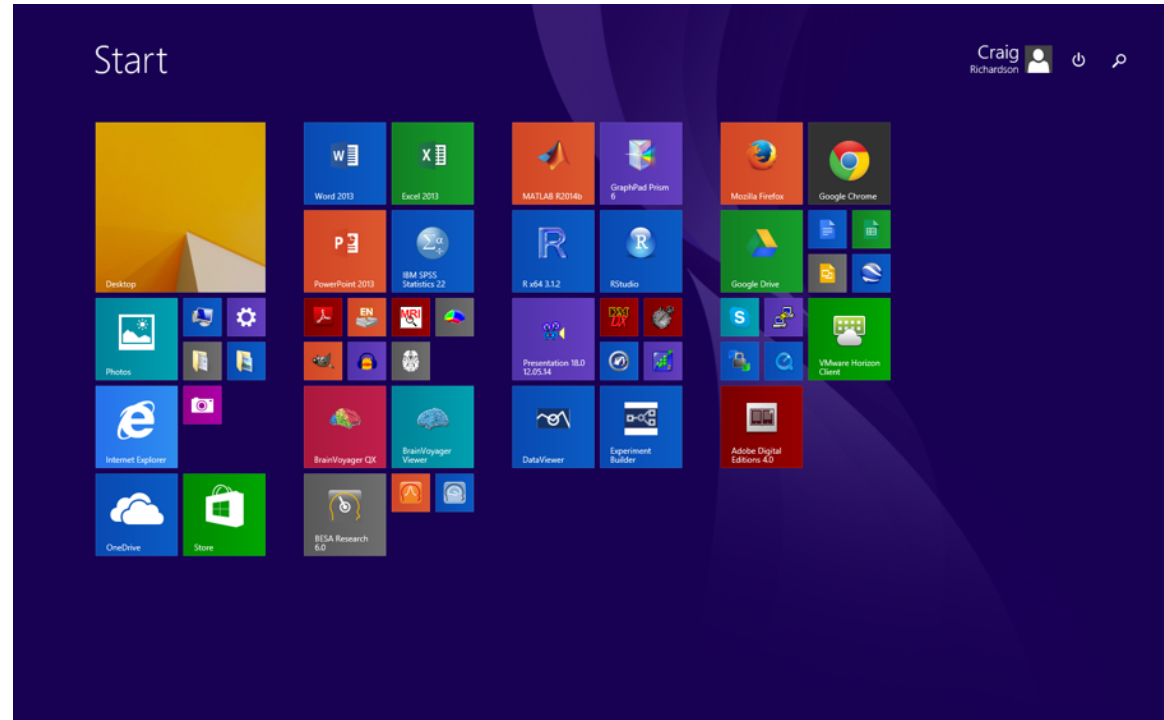


- Avoid installing new Windows 8 apps, will most likely break Sysprep
- <https://support.microsoft.com/en-us/kb/2769827>

Automating Boot Camp Installation

Audit Mode Customisations

- Pin shortcuts to your applications
- Will reduce frustration with new Start Menu
- Make sure you are using Windows 8.1 Enterprise. Not Pro!
- Once finished with Audit Mode shutdown computer



Automating Boot Camp Installation

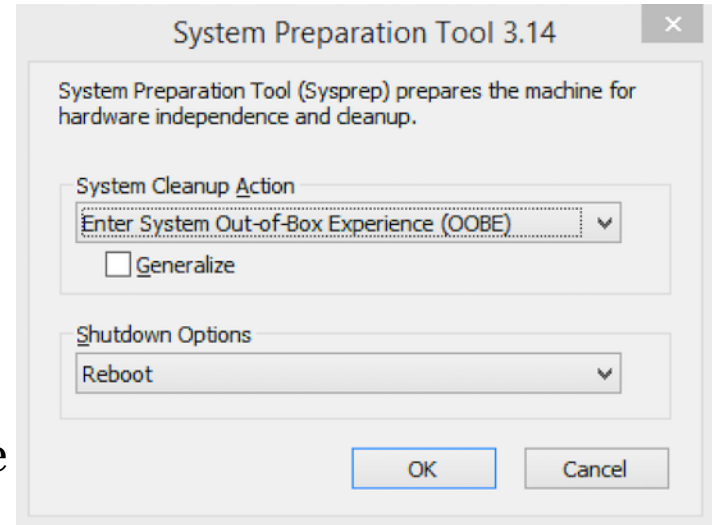
Automating OOBЕ with Sysprep



Post-Imaging Configuration

System Preparation Tool (Sysprep)

- Generalises Windows on your Reference computer so it can be used with different hardware
 - Drivers
 - Security Identifier (SIDs)
 - Computer Name
- `c:\Windows\System32\Sysprep\Sysprep.exe`
- Optionally provide settings for OOBЕ and additional post install steps provided via XML “Answer File”

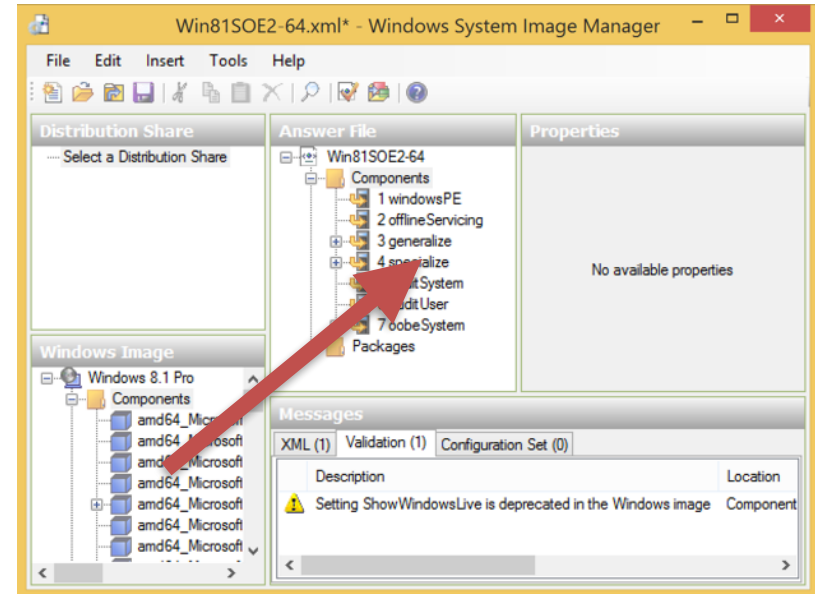


Automating Boot Camp Installation

Automating OOB with Sysprep

Sysprep Answer File Creation

- Download Windows Assessment and Deployment Kit (ADK)
- Install on your own computer, not the reference computer you are preparing
- Run Windows System Image Manager
- Creates a catalog of components (options) from the sources/install.wim file on your USB install media
- Drag components from the image to the Answer File section to configure



Automating Boot Camp Installation

Automating OOB with Sysprep



SkipRearm

- Sysprep is limited to being run three times before Windows will start to reject licensing.
- This setting is supposed to enable unlimited rearms.
- Not reliable, take backup image of your Reference computer before executing Sysprep

The image shows a screenshot of the Windows Deployment Toolkit (WDT) interface. On the left, the 'Answer File' tree is expanded to 'Win81SOE2-64' > 'Components' > '3 generalize' > 'amd64_Microsoft-Windows-Security-SPP_neutral'. On the right, the 'Microsoft-Windows-Security-SPP Properties' window is open, showing the 'Settings' section with 'SkipRearm' set to '1'. A blue oval highlights the 'Settings' section and the 'SkipRearm' value.

| Microsoft-Windows-Security-SPP Properties | |
|--|--------------|
| Properties | |
| AppliedConfigurationPass | 3 generalize |
| Enabled | True |
| Id: amd64_Microsoft-Windows-Security-SPP_neutral_31bf3856ad364e35_nonSxS | |
| Settings | |
| SkipRearm | 1 |

Automating Boot Camp Installation

Automating OOB with Sysprep



Disable Administrator Account

- We'll create a new local administrator account to use instead.

The image shows a screenshot of a deployment tool interface. On the left, a tree view under "Answer File" shows a folder "Win81SOE2-64" containing a sub-folder "Components". Under "Components", there are several tasks: "1 windowsPE", "2 offlineServicing", "3 generalize", "4 specialize", "5 auditSystem", "6 auditUser", and "7 oobeSystem". Under "4 specialize", there is a sub-folder "amd64_Microsoft-Windows-Deployment_neutral" containing a task "RunSynchronous", which in turn contains a task "RunSynchronousCommand[Order='1']". This task is highlighted with a blue selection box.

On the right, the "RunSynchronousCommand[Order='1'] Properties" dialog is open. It has two sections: "Properties" and "Settings". The "Properties" section includes: AppliedConfigurationPass (4 specialize), Component (Microsoft-Windows-Deployment), KeyName (Order), and Path (RunSynchronous/RunSynchronousCommand[Order='1']). The "Settings" section includes: Action (AddList Item), Description, Order (1), Path (net user administrator /active:no), and WillReboot (Never). The "Order" field with the value "1" is circled in blue.

Automating Boot Camp Installation

Automating OOB with Sysprep



Skip Automatic Activation

- We're going to provide a Volume License later on

The screenshot shows a tree view of an Answer File on the left and its properties on the right. The tree view includes components like '1 windowsPE', '2 offlineServicing', '3 generalize', '4 specialize', and several 'amd64_Microsoft-Windows-...' entries. The 'amd64_Microsoft-Windows-Security-SPP-UX_neutral' entry is highlighted. The properties window on the right shows 'SkipAutoActivation' set to 'false', which is circled in blue.

| Microsoft-Windows-Security-SPP-UX Properties | |
|--|--|
| Properties | |
| AppliedConfigurationPass | 4 specialize |
| Enabled | True |
| Id | amd64_Microsoft-Windows-Security-SPP-UX__neutral_31bf3856ad364e35_nonSxS |
| Settings | |
| SkipAutoActivation | false |

Automating Boot Camp Installation

Automating OOB with Sysprep



Copy Profile

- Install Sysprep to Microsoft Audit Mode Admin account the Default User
- [https://technet.microsoft.com/en-us/library/cc749073\(WS.10\).aspx](https://technet.microsoft.com/en-us/library/cc749073(WS.10).aspx)

The image shows a screenshot of the Windows Setup environment. On the left, the 'Answer File' tree is visible, with 'Win81SOE2-64' expanded to show components like '1 windowsPE', '2 offlineServicing', '3 generalize', '4 specialize', '5 auditSystem', '6 auditUser', and '7 oobeSystem'. The '4 specialize' component is expanded to show three sub-components: 'amd64_Microsoft-Windows-Deployment_neutral', 'amd64_Microsoft-Windows-Security-SPP-UX_neutral', and 'amd64_Microsoft-Windows-Shell-Setup_neutral', which is selected. On the right, the 'Microsoft-Windows-Shell-Setup Properties' window is open, displaying a list of settings. Two settings are circled in blue: 'CopyProfile' is set to 'true', and 'TimeZone' is set to 'AUS Eastern Standard Time'. Other visible settings include 'AppliedConfigurationPass' (4 specialize), 'Enabled' (True), 'Id' (amd64_Microsoft-Windows-Shell-Setup__neutral_31bf3856ad364e35_nonSxS), 'BluetoothTaskbarIconEnabled', 'ComputerName', 'DisableAutoDaylightTimeSet', 'DoNotCleanTaskBar', 'OEMName', 'ProductKey', 'RegisteredOrganization', 'RegisteredOwner' (Windows User), and 'ShowWindowsLive' (false).

Automating Boot Camp Installation

Automating OOB with Sysprep



First Login Settings

- Give account details for the account to login as automatically after its first boot.

The screenshot shows a configuration tool interface with two panes. The left pane, titled "Answer File", displays a tree view of components under "Win81SOE2-64", including "Components" (with sub-items 1 windowsPE, 2 offlineServicing, 3 generalize, 4 specialize, 5 auditSystem, 6 auditUser, 7 oobeSystem) and "amd64_Microsoft-Windows-International-Core_neutral", "amd64_Microsoft-Windows-Shell-Setup_neutral", "AutoLogon", and "Password". The right pane, titled "AutoLogon Properties", shows a table of settings. A blue oval highlights the "Settings" section, which includes:

| AutoLogon Properties | |
|--------------------------|-------------------------------|
| Properties | |
| AppliedConfigurationPass | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| Path | AutoLogon |
| Settings | |
| Domain | |
| Enabled | true |
| LogonCount | 1 |
| Username | localadmin |

Automating Boot Camp Installation

Automating OOB with Sysprep



Copy resources to final locations

- Move Brigadier.exe, Anti-Virus Installer and USB Ethernet Driver from c:\ to new Local Administrators Desktop

The screenshot shows the Windows Answer File configuration interface. On the left, a tree view shows the 'Answer File' structure with components like '1 windowsPE', '2 offlineServicing', '3 generalize', '4 specialize', '5 audit System', '6 audit User', and '7 oobeSystem'. Under '7 oobeSystem', there are sub-components for 'amd64_Microsoft-Windows-International-Core_neutral', 'amd64_Microsoft-Windows-Shell-Setup_neutral', 'AutoLogon', and 'First Logon Commands'. The 'First Logon Commands' folder contains three 'SynchronousCommand' entries with Order values of 1, 2, and 3.

The right pane shows the 'SynchronousCommand[Order="3"] Properties' dialog. The 'Settings' section is highlighted with a blue oval. The 'Action' is 'AddList Item', the 'CommandLine' is 'cmd.exe /c move c:\AsixSetup64.exe c:\Users\Localadmin\Desktop\AsixSetup64.exe', the 'Order' is 3, and 'RequiresUserInput' is false.

| Section | Property | Value |
|------------|--------------------------|--|
| Properties | AppliedConfigurationPass | 7 oobeSystem |
| | Component | Microsoft-Windows-Shell-Setup |
| | KeyName | Order |
| | Path | FirstLogonCommands/SynchronousCommand[Order="3"] |
| Settings | Action | AddList Item |
| | CommandLine | cmd.exe /c move c:\AsixSetup64.exe c:\Users\Localadmin\Desktop\AsixSetup64.exe |
| | Description | |
| | Order | 3 |
| | RequiresUserInput | false |

Automating Boot Camp Installation

Automating OOB with Sysprep



Install USB Ethernet Drivers

- In case the Mac we are restoring to has no onboard Ethernet
- Give the drivers 15 seconds to activate and obtain IP address from DHCP

The screenshot shows the Windows Sysprep Answer File configuration. The left pane displays the 'Answer File' tree with the following items:

- 1 windowsPE
- 2 offlineServicing
- 3 generalize
- 4 specialize
- 5 auditSystem
- 6 auditUser
- 7 oobeSystem
 - amd64_Microsoft-Windows-International-Core_neutral
 - amd64_Microsoft-Windows-Shell-Setup_neutral
 - AutoLogon
 - FirstLogonCommands
 - SynchronousCommand[Order="1"]
 - SynchronousCommand[Order="2"]
 - SynchronousCommand[Order="3"]
 - SynchronousCommand[Order="4"]
 - SynchronousCommand[Order="5"]**
 - SynchronousCommand[Order="b"]

The right pane shows the 'SynchronousCommand[Order="5"] Properties' dialog. The 'Settings' section is circled in blue and contains the following information:

| Settings | |
|-------------------|--|
| Action | AddList Item |
| CommandLine | cmd /c timeout /t 15 /NOBREAK |
| Description | Wait 15 seconds for new USB-Ethernet Adaptor to get IP address |
| Order | 5 |
| RequiresUserInput | false |

Automating Boot Camp Installation

Automating OOB with Sysprep



Download and install Drivers with Brigadier

- Download location is to new local administrators desktop
- Pre install 7-Zip during Audit Mode customisations

SynchronousCommand[Order="6"] Properties

Properties

| | |
|--------------------------|--|
| AppliedConfigurationPass | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| KeyName | Order |
| Path | FirstLogonCommands/SynchronousCommand[Order="6"] |

Settings

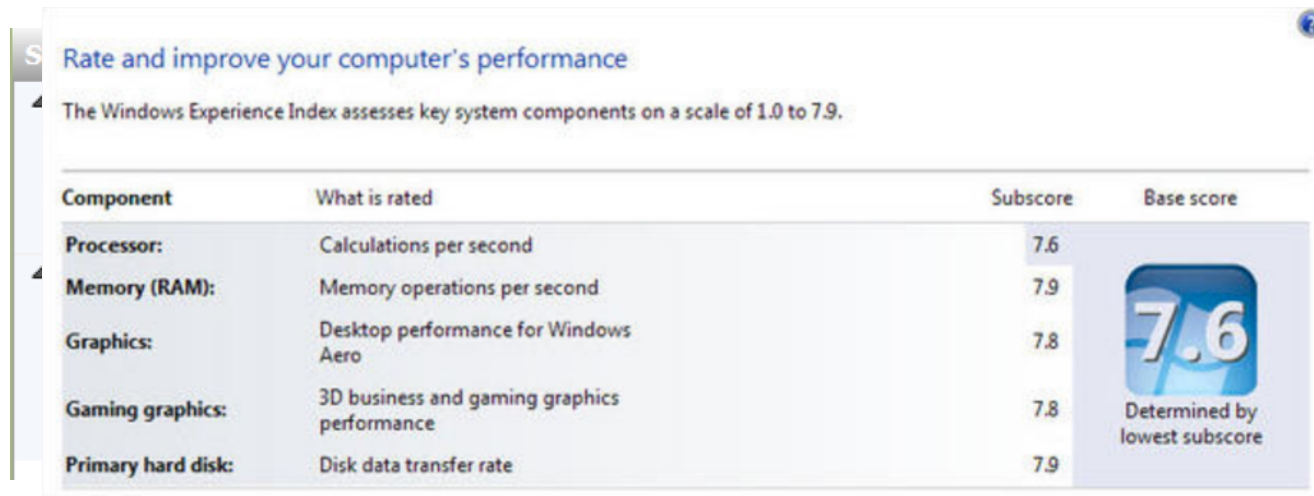
| | |
|-------------------|--|
| Action | AddList Item |
| CommandLine | c:\Users\localadmin\Desktop\brigadier.exe -install -output-dir=c:\Users\localadmin\Desktop -keep-files |
| Description | Download/Install BootCamp Application and Drivers |
| Order | 6 |
| RequiresUserInput | false |

Automating Boot Camp Installation

Automating OOB with Sysprep

Run Windows System Assessment Tool

- WinSAT was never run during install.
- GUI for Windows System Assessment is deprecated in Windows 8.1



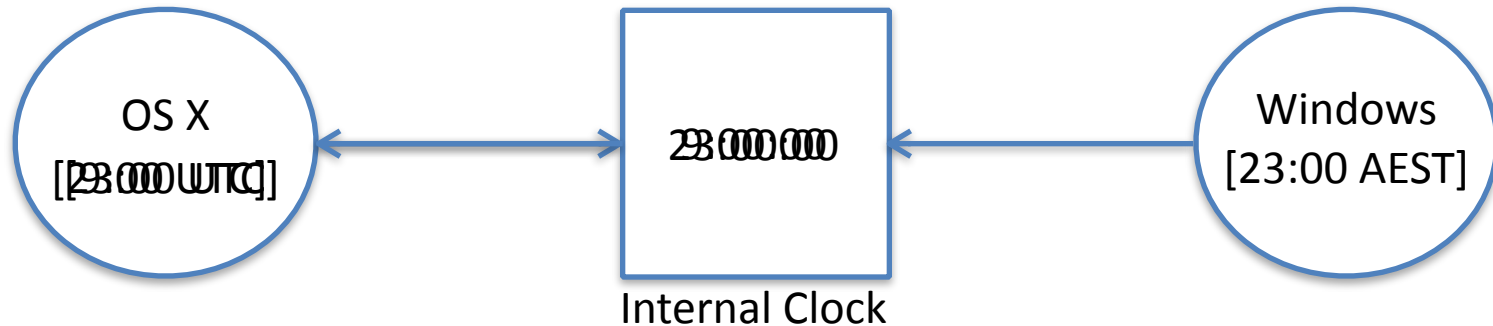
Automating Boot Camp Installation

Automating OOB with Sysprep



Time Synchronisation

- OS X assumes system clock is always in UTC
- Windows writes time to system clock using configured offset (AEST)
- OS X boots up and reads time incorrectly
- Kerberos based SSO is time sensitive and will reject logins from OS X



Automating Boot Camp Installation

Automating OOB with Sysprep



Fixing Time Synchronisation

- Registry modification to always assume internal clock is UTC
- Disable Apple Time Service, it doesn't seem to ever do its job.

The screenshot shows the Windows Deployment Toolkit interface. The main window displays the properties for a SynchronousCommand with Order="11". The Properties section shows:

| | |
|--------------------------|---|
| AppliedConfigurationPath | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| KeyName | Order |
| Path | FirstLogonCommands/SynchronousCommand[Order="11"] |

The Settings section is circled in blue and shows:

| | |
|-------------------|---|
| Action | AddListItem |
| CommandLine | cmd.exe /c sc config AppleTimeSrv start= disabled |
| Description | Disable Boot Camp Time Service |
| Order | 11 |
| RequiresUserInput | false |

On the left, a smaller pane shows the same command's settings, with the Action set to "Add", Order set to "10", and RequiresUserInput set to "false".

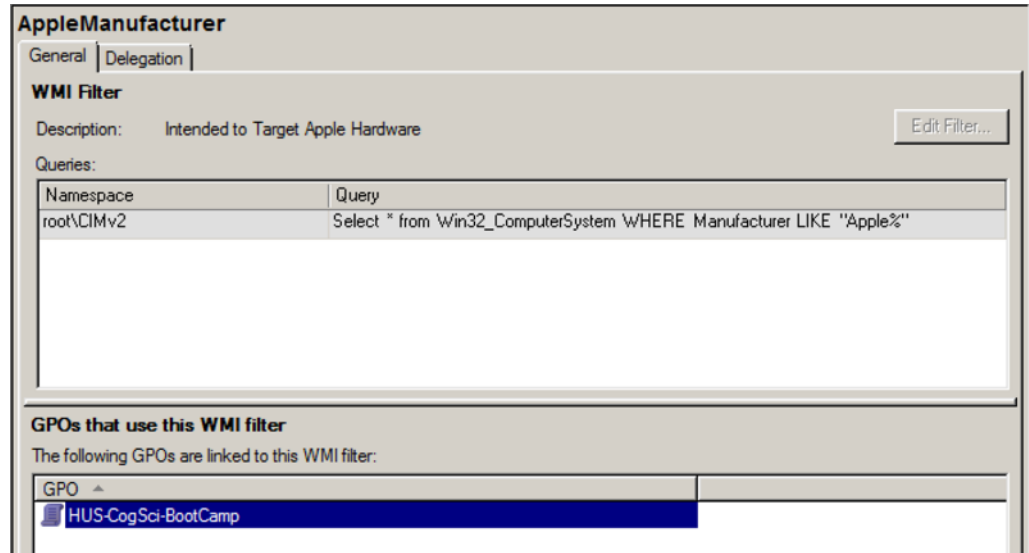
Automating Boot Camp Installation

Automating OOB with Sysprep



Fixing Time Synchronisation (Group Policy Option)

- Can also fix via Group Policy for any Boot Camp computers you have previously deployed.
- Use a WMI filter to stop it applying to Non-Apple Windows PCs



Automating Boot Camp Installation

Automating OOB with Sysprep



Activate Windows

- We're using a Key Distribution Server with Volume License

| SynchronousCommand[Order="12"] Properties | |
|---|---|
| Properties | |
| AppliedConfigurationPas | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| KeyName | Order |
| Path | FirstLogonCommands/SynchronousCommand[Order="12"] |
| Settings | |
| Action | AddListItem |
| CommandLine | <code>cscript //b c:\windows\system32\slmgr.vbs /ato</code> |
| Description | Activate Windows |
| Order | 12 |
| RequiresUserInput | false |

- `cscript //b c:\windows\system32\slmgr.vbs /ipk XXXXX-XXXXX-XXXXX`

Automating Boot Camp Installation

Automating OOB with Sysprep



Join Active Directory Domain

- Run your bind script

| SynchronousCommand[Order="13"] Properties | |
|---|--|
| Properties | |
| AppliedConfigurationPa: | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| KeyName | Order |
| Path | FirstLogonCommands/SynchronousCommand[Order="13"] |
| Settings | |
| Action | AddList Item |
| CommandLine | cmd.exe /c powershell -executionpolicy Unrestricted -file c:\joinDomain.ps1" |
| Description | Join AD Domain |
| Order | 13 |
| RequiresUserInput | false |

- We'll script the deletion of the Powershell script later (it has passwords in it)

Automating Boot Camp Installation

Automating OOB with Sysprep



Install Extra Packages

- Sophos Anti-Virus

| SynchronousCommand[Order="15"] Properties | |
|---|---|
| Properties | |
| AppliedConfigurationPa | 7 oobe.System |
| Component | Microsoft-Windows-Shell-Setup |
| KeyName | Order |
| Path | FirstLogonCommands/SynchronousCommand[Order="15"] |
| Settings | |
| Action | AddList Item |
| CommandLine | c:\Users\localadmin\Desktop\HUS-Default-current.exe |
| Description | Install Sophos (Human Sciences) |
| Order | 15 |
| RequiresUserInput | false |

Automating Boot Camp Installation

Automating OOBЕ with Sysprep



OOBE User Screens

- Hides user input screens in OOBE those that we do not need to configure (eg Wi-Fi)
- Set Network Location to be “Work”
- Windows Updates
 - 1 = Recommended
 - 2 = Windows Updates Only
 - 3 = Disabled

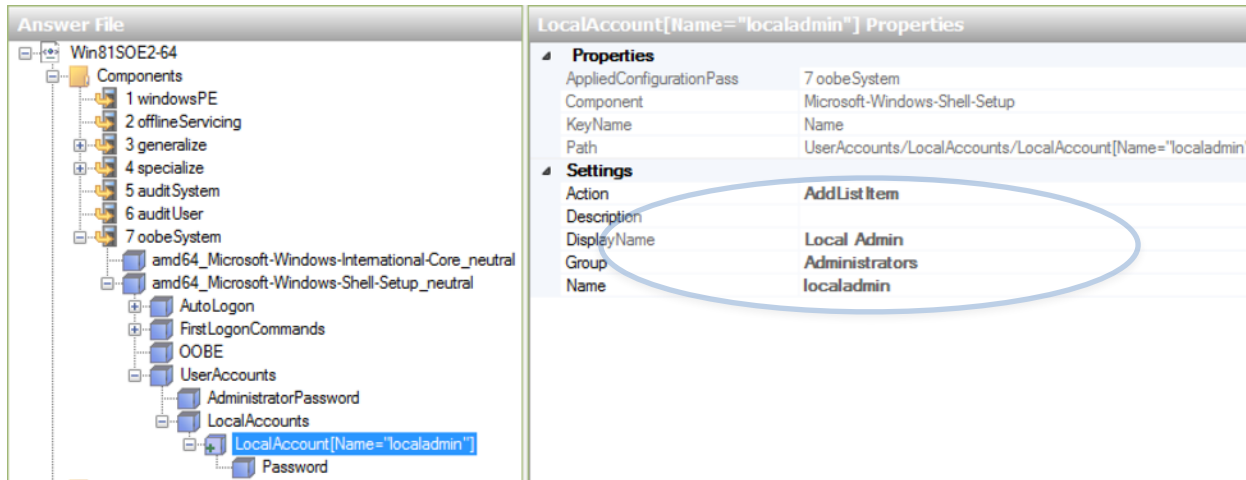
| OOBE Properties | |
|---------------------------|-------------------------------|
| ▲ Properties | |
| AppliedConfigurationPass | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| Path | OOBE |
| ▲ Settings | |
| HideEULAPage | true |
| HideLocalAccountScreen | true |
| HideOEMRegistrationScreen | true |
| HideOnlineAccountScreens | true |
| HideWirelessSetupInOOBE | true |
| NetworkLocation | Work |
| OEMAppId | |
| ProtectYourPC | 1 |
| SkipMachineOOBE | |
| SkipUserOOBE | |

Automating Boot Camp Installation

Automating OOB with Sysprep

Create new local administrator

- Provide a username / password for the local administrator account to create on our deployed PCs.



The screenshot displays the Windows Answer File editor. The left pane shows a tree view of the answer file components, with 'LocalAccount[Name="localadmin"]' selected under the 'UserAccounts' folder. The right pane shows the properties for this account, with the 'Settings' section circled in blue.

| LocalAccount[Name="localadmin"] Properties | |
|--|--|
| Properties | |
| AppliedConfigurationPass | 7 oobeSystem |
| Component | Microsoft-Windows-Shell-Setup |
| KeyName | Name |
| Path | UserAccounts/LocalAccounts/LocalAccount[Name="localadmin"] |
| Settings | |
| Action | AddList Item |
| Description | |
| DisplayName | Local Admin |
| Group | Administrators |
| Name | localadmin |

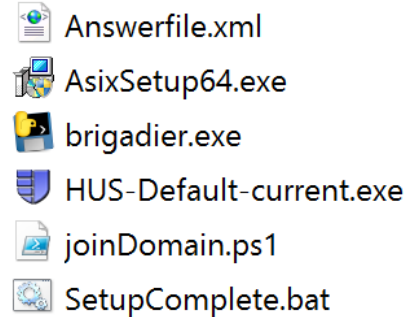
Automating Boot Camp Installation

Automating OOB with Sysprep



Save Answer File

- Move Answer File and other resources to Reference computer.
- Place them in root of the c drive (C:\)



- SetupComplete.bat
- c:\Windows\Setup\Scripts\
• This will be executed after Sysprep has finished performing its configuration.

```
SetupComplete - Notepad
File Edit Format View Help
del /Q /F c:\Answerfile.xml
del /Q /F c:\Windows\Panther\Answerfile.xml
del /Q /F c:\joinDomain.ps1
```

Automating Boot Camp Installation

Automating OOBE with Sysprep



Run Sysprep in preparation for imaging

- With everything in place on the reference computer run Sysprep while still in Audit Mode
- `c:\Windows\System32\Sysprep\`
- `sysprep.exe /generalize /oobe /shutdown /unattend:"c:\Answerfile.xml"`
- The reference computer will shutdown. Restart it in OS X in preparation for creating the disk image of your work.

Automating Boot Camp Installation

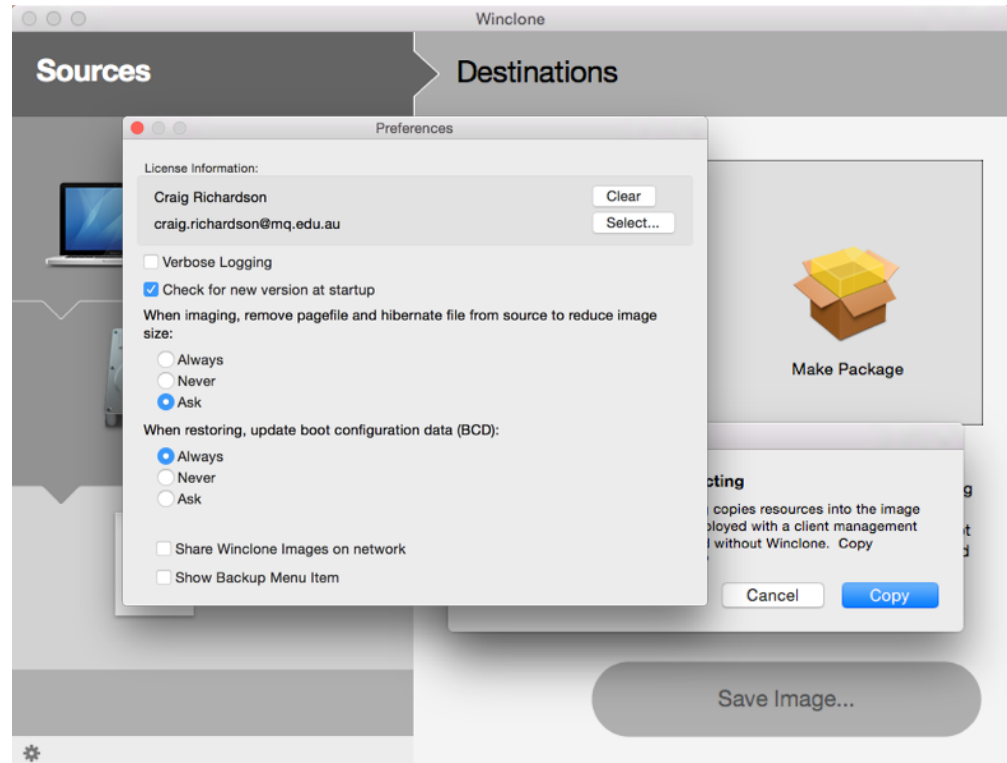
Creating Images with Winclone

Creating Winclone images

- Winclone Image
- Make Self Extracting
- Apple Package Installers

Remove Temporary Files

- Can remove Pagefile and Hibernation files when imaging.
- Configure in Preferences
- Saves disk space in image
- Recreated on first boot

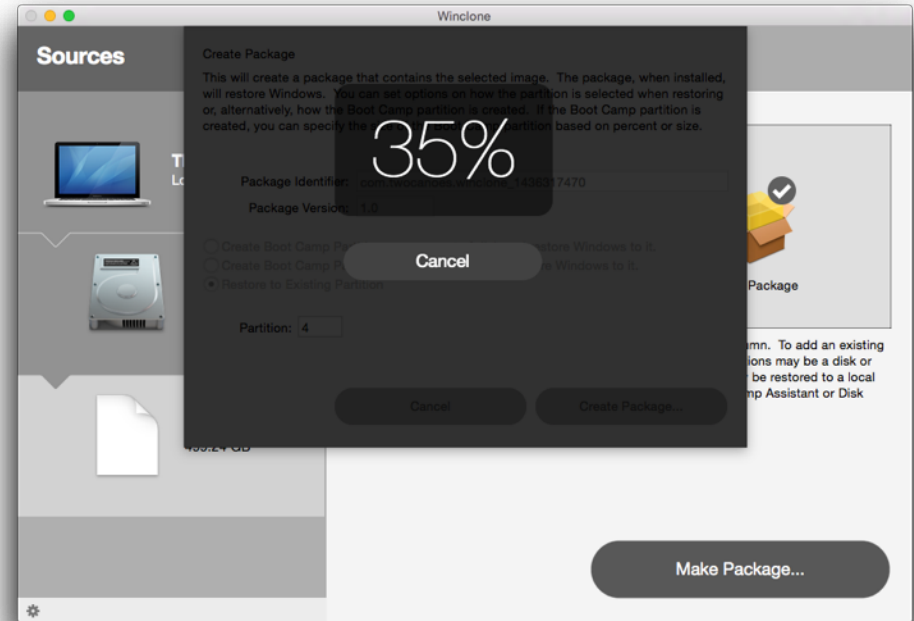


Automating Boot Camp Installation

Creating Images with Winclone

Creating Install Packages

- Wraps your image with scripts in a Package Installer
- Easy to create
- Set package identifier for install receipts
- Package installer will partition disk for you.
- Fast package creation from an existing Winclone image

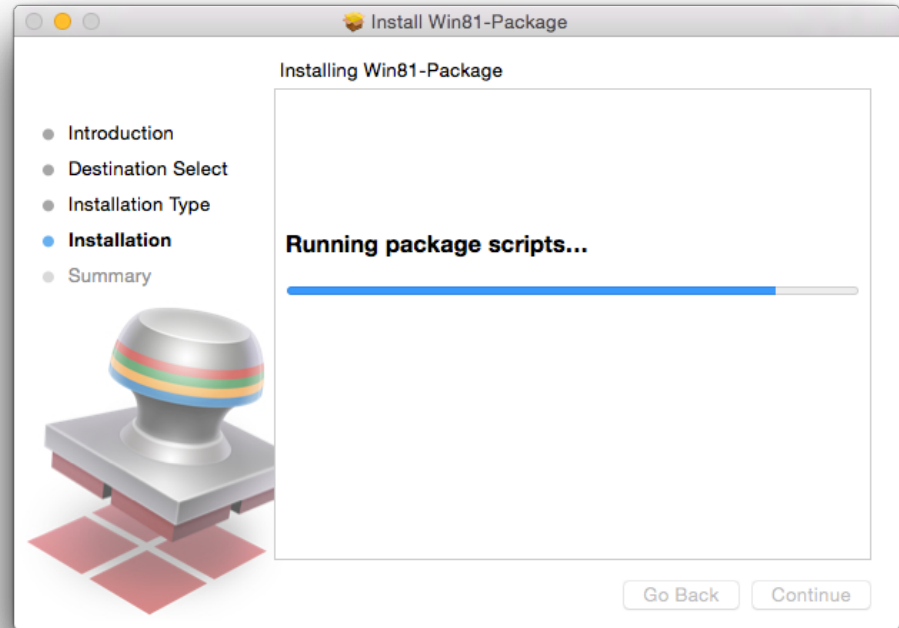


Automating Boot Camp Installation

Restoring Images with Winclone

Restoring Winclone images

- Can install Winclone and move image to target Mac. Select your partition and click Restore.
- Transfer self-extracting package to client and run it.
- Transfer Apple Package Installer to target and run.



Automating Boot Camp Installation

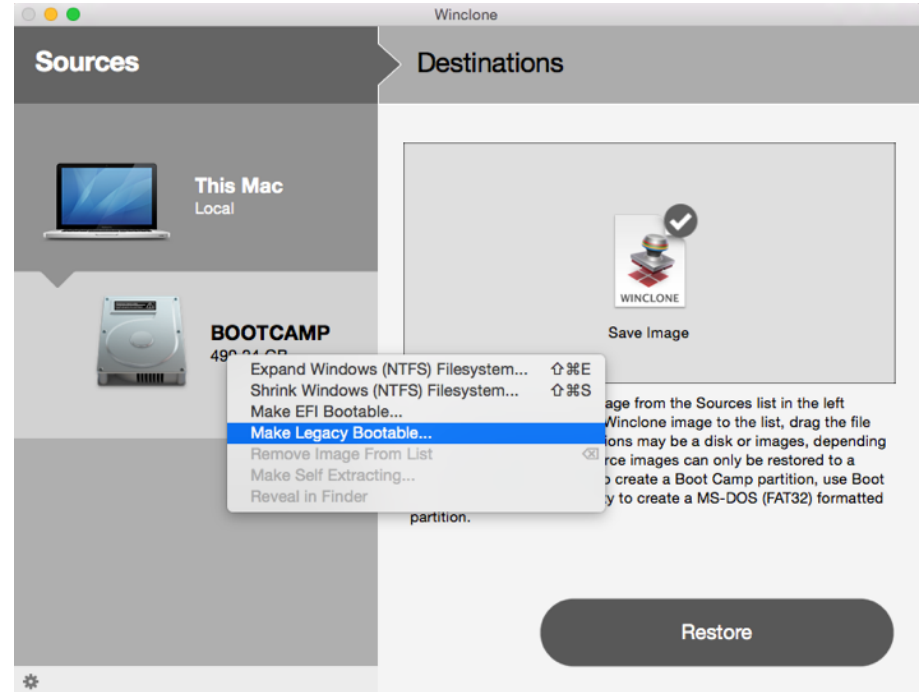
Winclone Disk Operations

Resizing Partitions

- Shrink NTFS partition to smallest possible size
- Expand NTFS partition to fill free space

Configure Boot Loader

- Configure EFI Booting
- Configure MBR/BIOS Booting

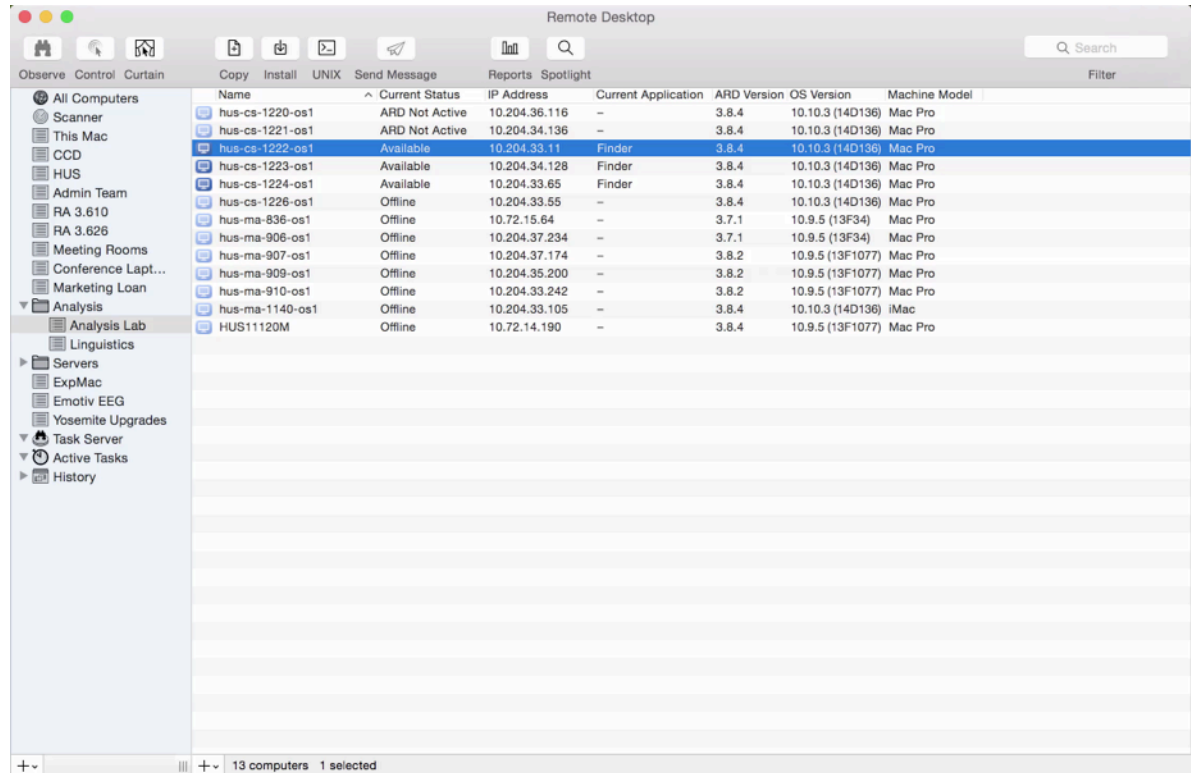


Automating Boot Camp Installation

Deploying Winclone PKG via Apple Remote Desktop



- Should work via any mechanism that can deploy PKG installers
- DeployStudio, Casper, ARD, Munki etc etc etc
- In ARD must select “Use untrusted certificates”



Automating Boot Camp Installation

Creating Images with Winclone



Core Storage

- WinClone 5 lists support for Core Storage Volumes
 - Yosemite started using CoreStorage Volumes by default.
 - Fusion Drive Macs all use Core Storage
 - Our Package Installers created in Winclone 5 do not partition correctly
 - Partition Core Storage Volume manually to restore to Fusion Drive

```
/dev/disk0
#:          TYPE NAME                SIZE      IDENTIFIER
0:          GUID_partition_scheme    *500.3 GB disk0
1:          EFI EFI                  209.7 MB  disk0s1
2:          Apple_CoreStorage         499.4 GB  disk0s2
3:          Apple_Boot Recovery HD    650.0 MB  disk0s3
/dev/disk1
#:          TYPE NAME                SIZE      IDENTIFIER
0:          Apple_HFS Macintosh HD    *499.1 GB disk1
            Logical Volume on disk0s2
            4C5E0438-BD66-4648-AE9E-FFACA42B38E1
            Unencrypted
/dev/disk2
```



Automating Boot Camp Installation

Demonstration of First Boot Post Imaging



MACQUARIE
University

Thankyou for listening!