

# MacSysAdmin Tools

## Smörgåsbord

Tim Sutton  
Concordia University, Faculty of Fine Arts,  
Montreal

[github.com/timsutton](https://github.com/timsutton)

[macops.ca/smorgasbord](https://macops.ca/smorgasbord)

# Configuration Profiles



mcxToProfile

[github.com/timsutton/mcxToProfile](https://github.com/timsutton/mcxToProfile)



# mcxToProfile

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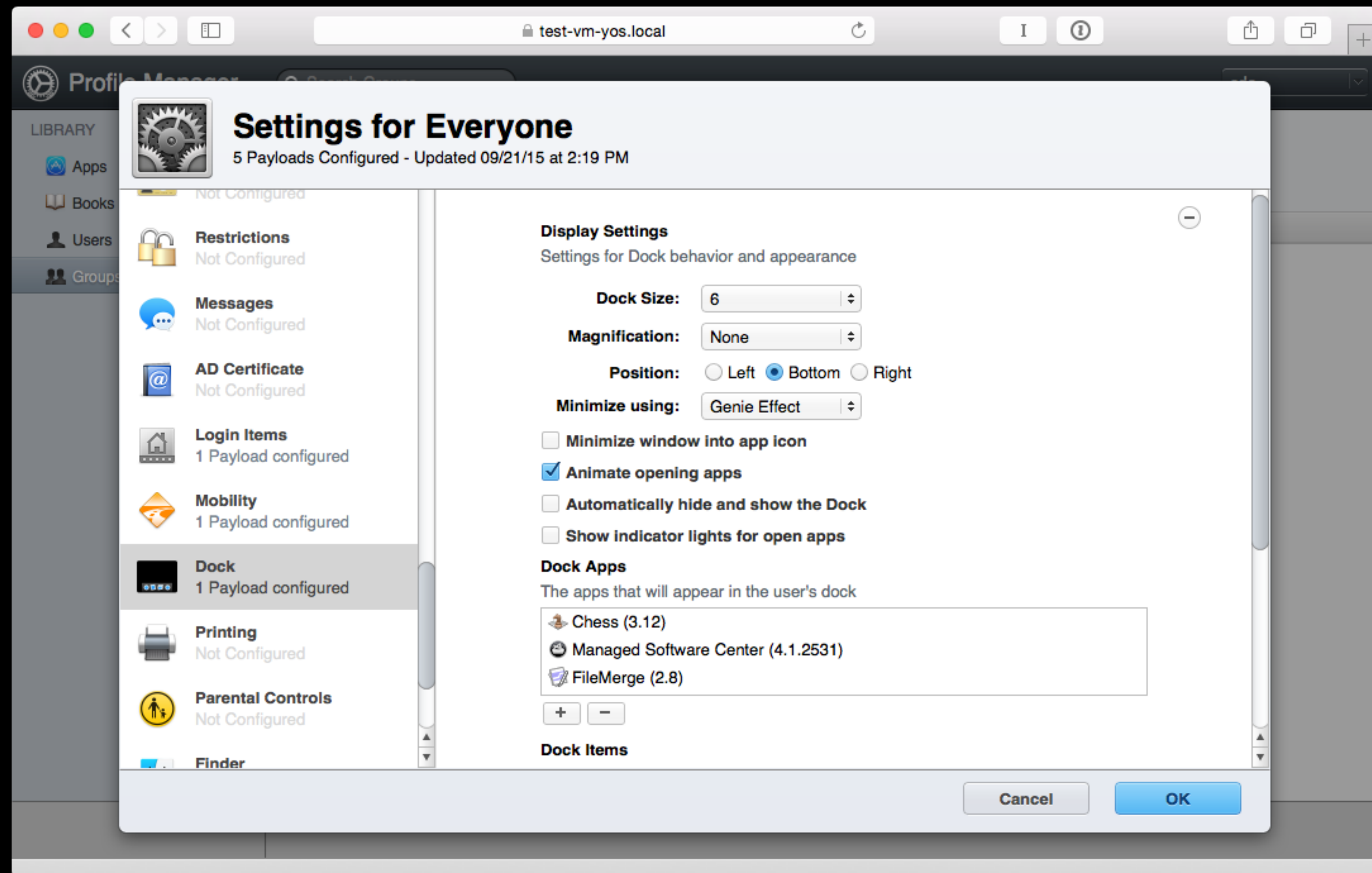
- Outputs OS X Configuration Profiles (.mobileconfig) from several input sources, containing “Custom Settings” payloads

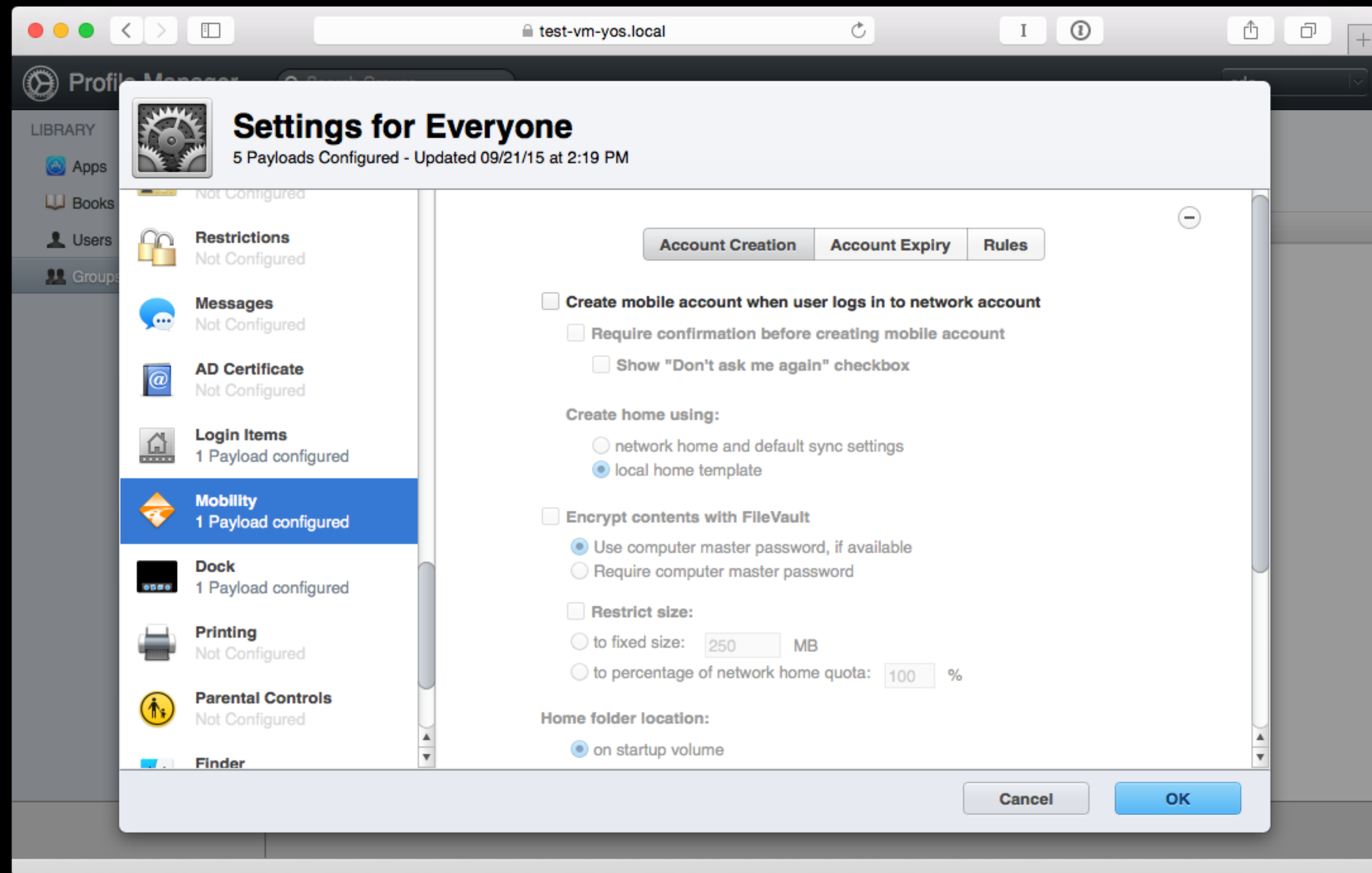
# mcxToProfile

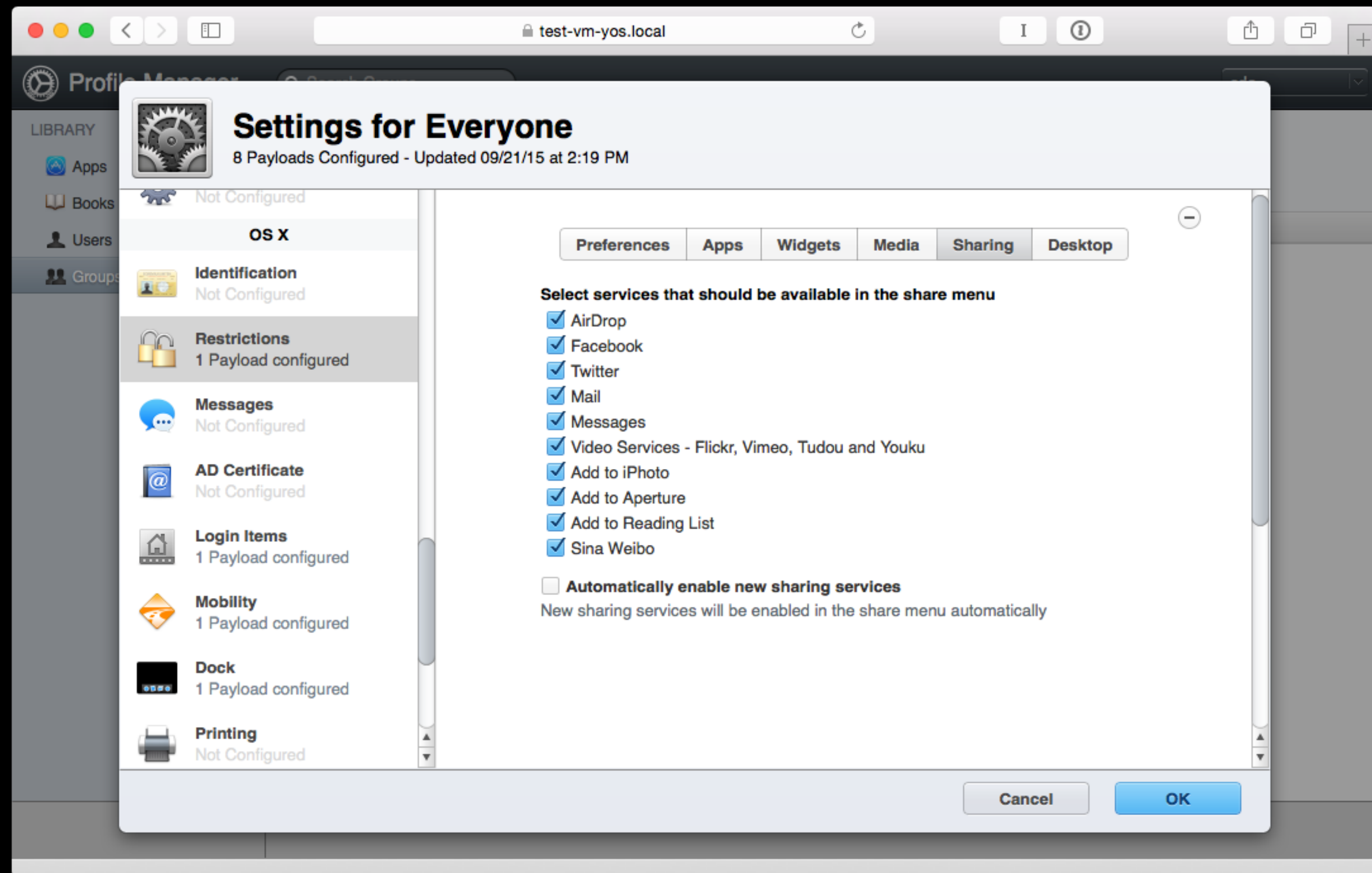
- Outputs OS X Configuration Profiles (.mobileconfig) from several input sources, containing “Custom Settings” payloads
- Single script, no Profile Manager required

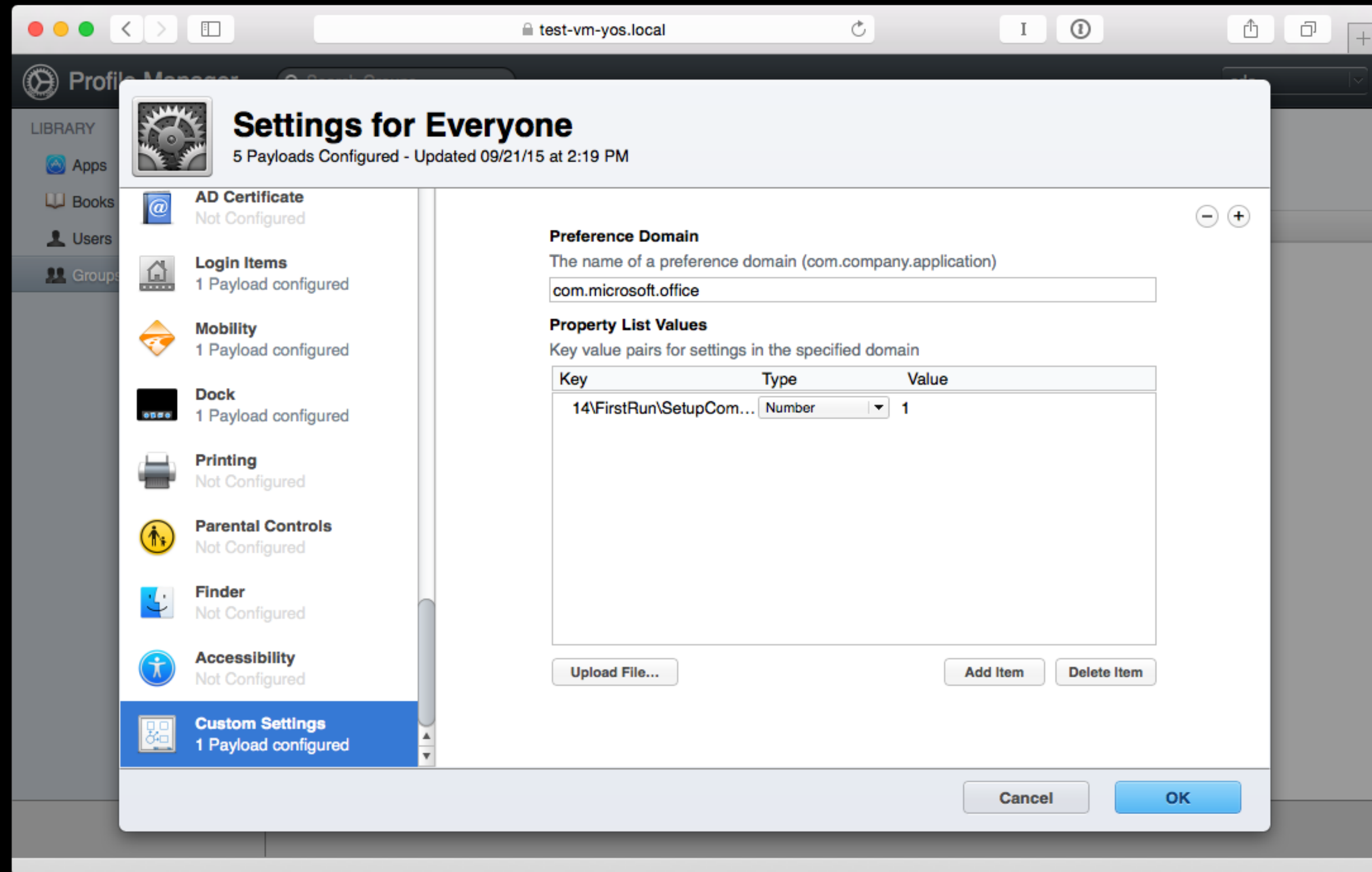
# mcxToProfile

- Outputs OS X Configuration Profiles (.mobileconfig) from several input sources, containing “Custom Settings” payloads
- Single script, no Profile Manager required
- Output profiles able to manage some settings that Profile Manager cannot ('Once', 'Often', and ByHost)

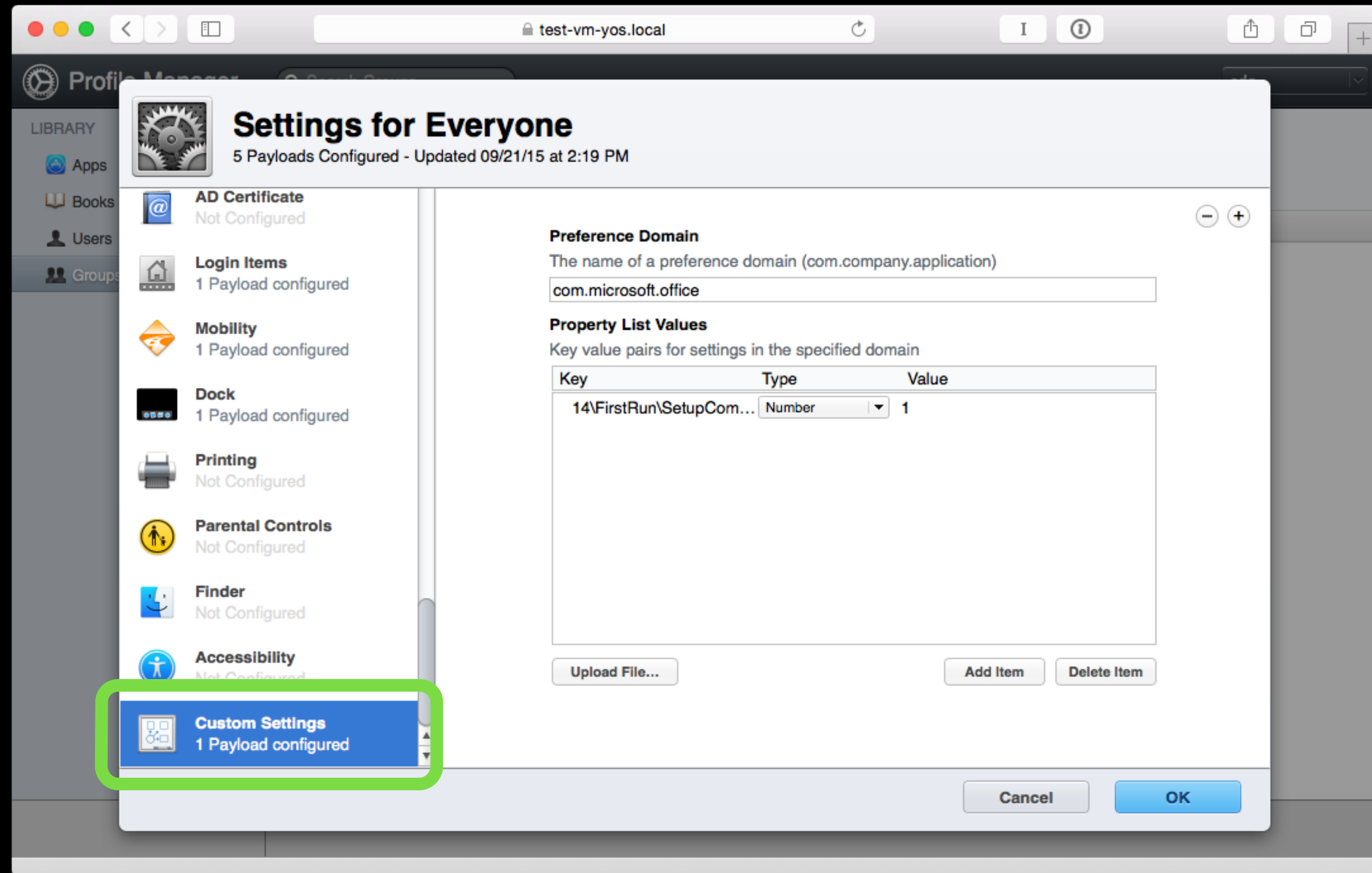




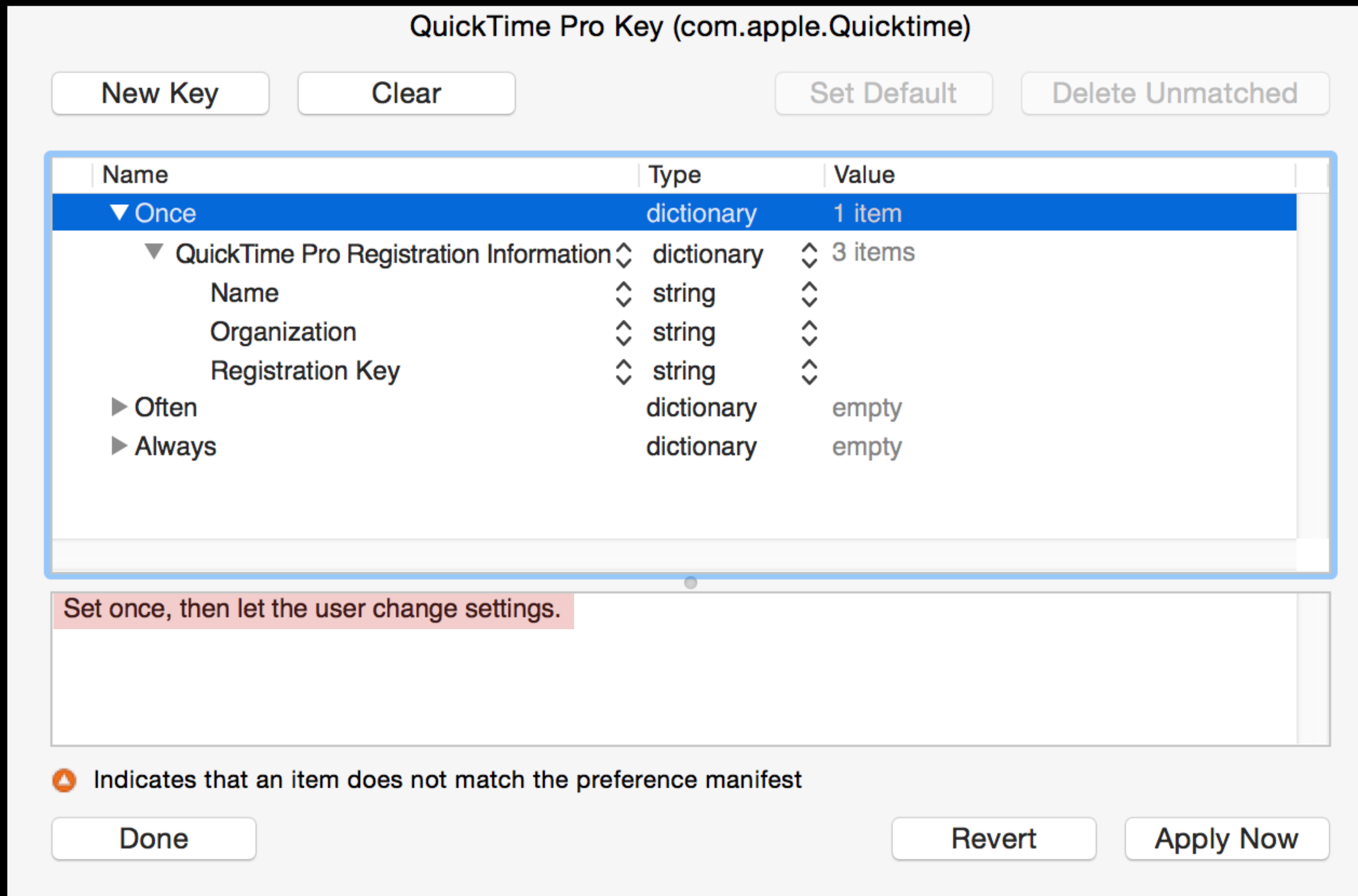








# Workgroup Manager / Managed Preferences (aka MCX)



# Workgroup Manager / Managed Preferences (aka MCX)

QuickTime Pro Key (com.apple.Quicktime)

New Key

Clear

Set Default

Delete Unmatched

Name	Type	Value
▼ Once	dictionary	1 item
▼ QuickTime Pro Registration Information	dictionary	3 items
Name	string	
Organization	string	
Registration Key	string	
► Often	dictionary	empty
► Always	dictionary	empty

Set whenever managed preferences are updated. Users may change settings, but they will be reset (at a minimum) during their next login.

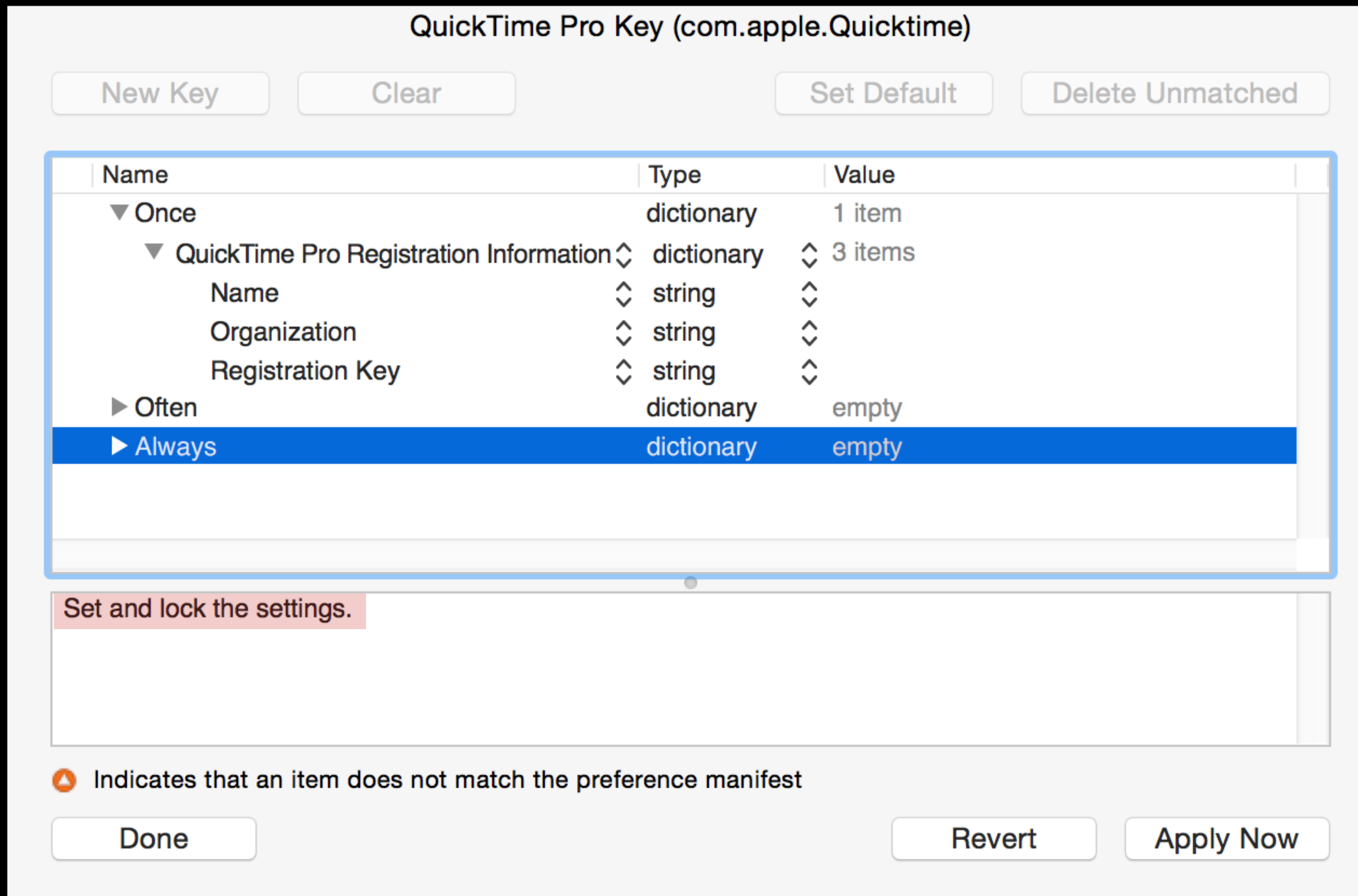
⚠ Indicates that an item does not match the preference manifest

Done

Revert

Apply Now

# Workgroup Manager / Managed Preferences (aka MCX)





# com.apple.SetupAssistant

## Sign in with Your Apple ID

Sign in to use iCloud, iTunes, App Store, iMessage, FaceTime and more. [Learn more...](#)



☒ Sign in with your Apple ID

☐ Don't sign in

[Create new Apple ID...](#)

[Forgot Apple ID or password?](#)

[Use a separate Apple ID for iCloud and iTunes.](#)

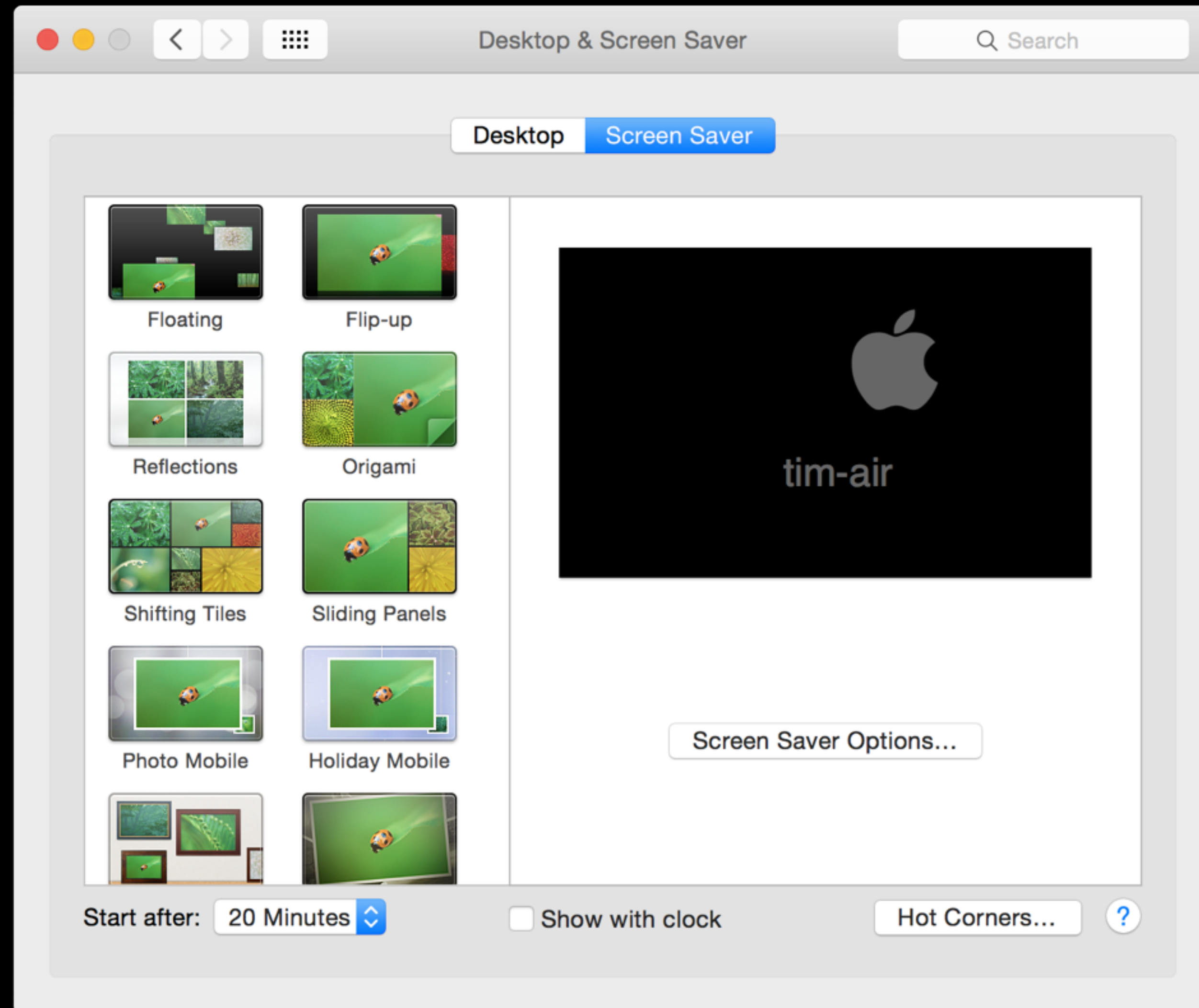


Back

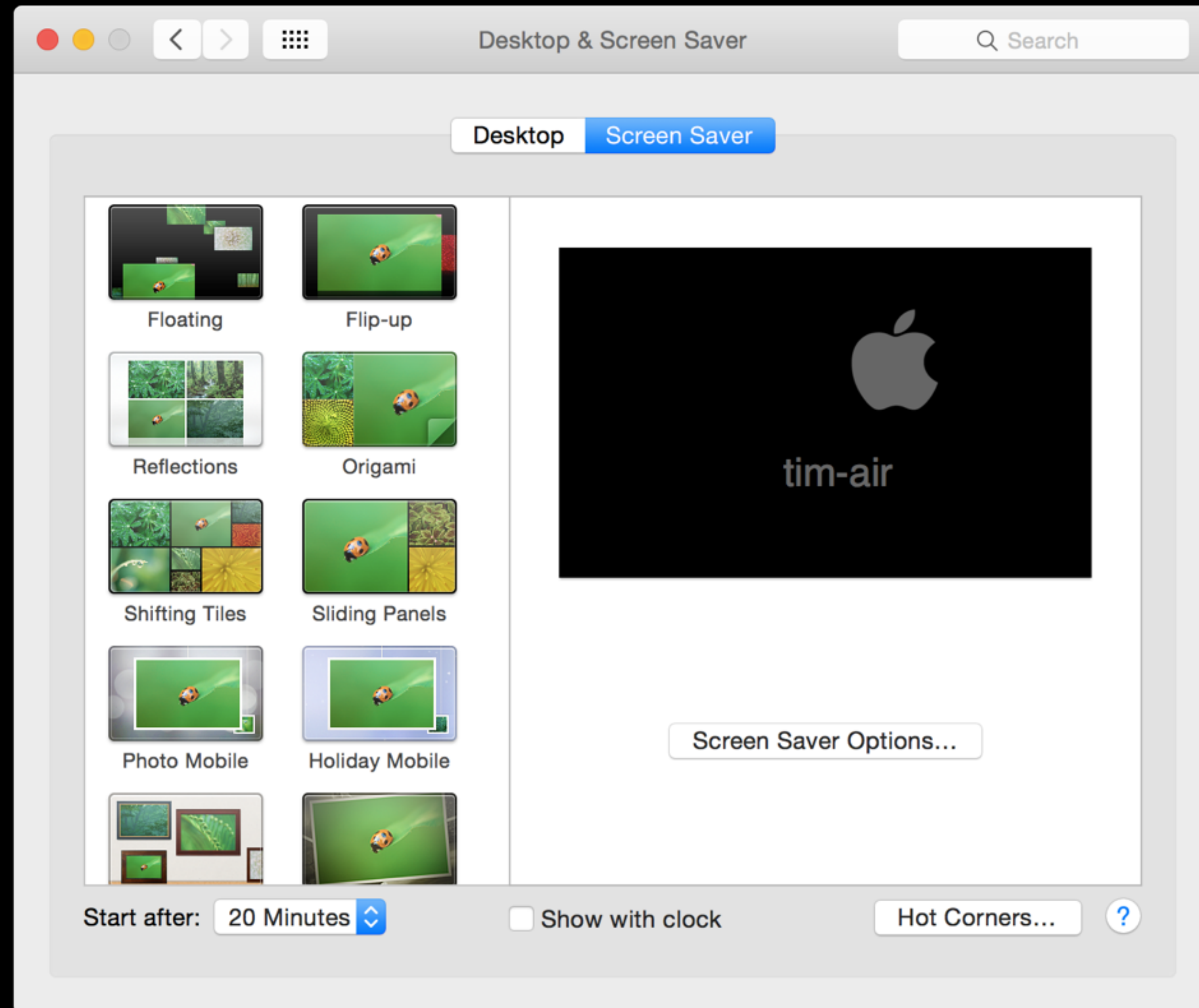


Continue

com.apple.screensaver.ByHost  
(com.apple.screensaver.4757460A-512F-5157-8805-BAA790597AF6.plist)



com.apple.screensaver.ByHost  
(com.apple.screensaver.4757460A-512F-5157-8805-BAA790597AF6.plist)







```
./mcxToProfile.py
```

```
./mcxToProfile.py  
  --defaults com.apple.AppleMultitouchTrackpad
```

```
./mcxToProfile.py  
  --defaults com.apple.AppleMultitouchTrackpad  
  --manage Once
```

```
./mcxToProfile.py  
  --defaults com.apple.AppleMultitouchTrackpad  
  --manage Once  
  --identifier DisableForceTouch
```

# Input sources

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- Settings pre-defined in a plist file

```
--plist /path/to/org.videolan.vlc.plist
```

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  - `--plist /path/to/org.videolan.vlc.plist`
- Pre-existing MCX settings from OD, Local MCX, etc.
  - `--dsobject /LDAPv3/my.od.server/ComputerGroups/CommonSettings`

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  - `--plist /path/to/org.videolan.vlc.plist`
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  - `--dsobject /LDAPv3/my.od.server/ComputerGroups/CommonSettings`
- Live preferences from a bundle id
  - `--defaults com.apple.SetupAssistant`



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- mcxToProfile only outputs the mobileconfig *file* - you're responsible for installing it

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- If there's already a setting in Profile Manager (or your MDM) for a setting, use it:
  - VPN
  - Active Directory configurations, 802.1X certificates
  - Restrictions (Sharing extensions, etc.)

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- If there's already a setting in Profile Manager (or your MDM) for a setting, use it:
  - VPN
  - Active Directory configurations, 802.1X certificates
  - Restrictions (Sharing extensions, etc.)
- “Once/Often” ManagedClient settings not officially supported by Apple!
  - "Often" broken in Yosemite, by Eric Holtam:  
<https://osxbytes.wordpress.com/2015/02/25/profile-behavior-changes-in-yosemite/>

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- It's clear why Apple moved away from supporting "Once" / "Often" - behaviour with "Once" can be unexpected. But still useful!

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- It's clear why Apple moved away from supporting "Once" / "Often" - behaviour with "Once" can be unexpected. But still useful!
- The more I experiment with Config Profiles, the less I feel I understand
- (If you feel similarly, attend Greg's session tomorrow!)

# Thanks

- Greg Neagle (importing from a DS MCX object)
- Armin Briegel (importing from Preferences/defaults)



make-profile-pkg

[github.com/timsutton/make-profile-pkg](https://github.com/timsutton/make-profile-pkg)

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- Given a Configuration Profile as input, output an OS X installer package that will install the profile

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- Given a Configuration Profile as input, output an OS X installer package that will install the profile
- Output package can be installed to both booted and non-booted OS volumes

# Deploying profiles with packages

NetBoot  
Environments



Target Disk Mode



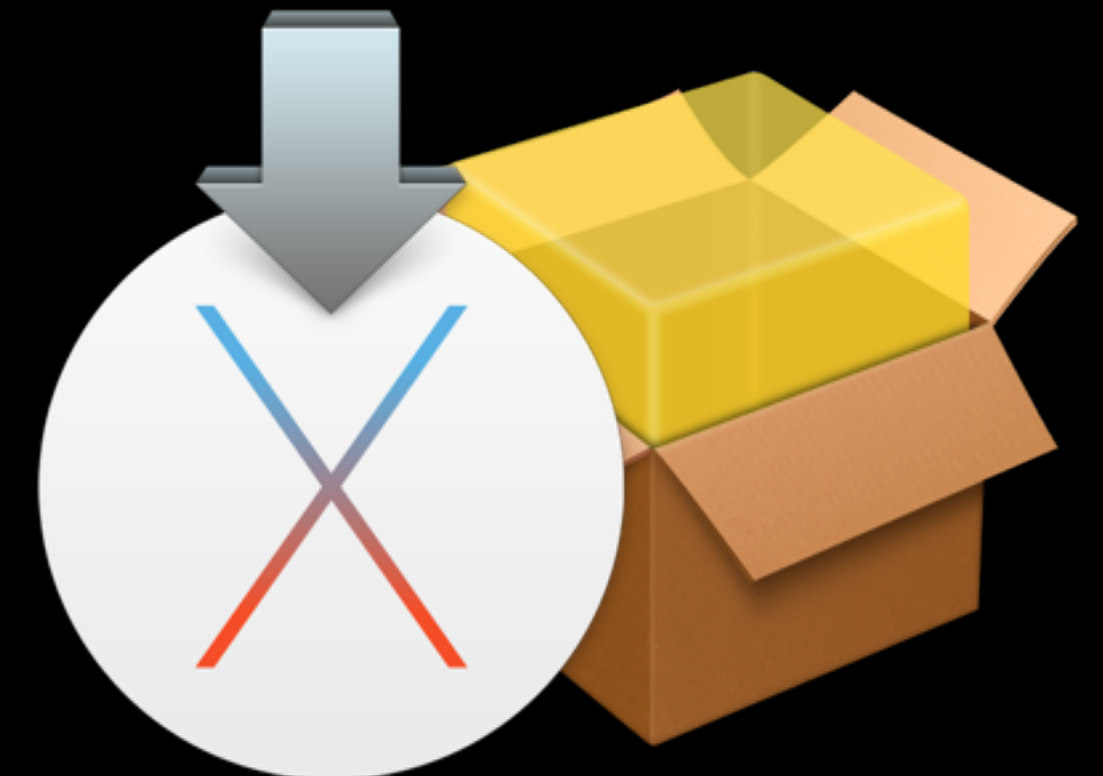
AutoDMG



Remote Desktop



createOSXInstallPkg



# Booted system

```
profiles -I -F the_profile.mobileconfig
```

# Non-booted system

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```
cp MyGreatProfile.mobileconfig /Volumes/<your target>/  
private/var/db/ConfigurationProfiles/Setup
```



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```
cp MyGreatProfile.mobileconfig /Volumes/<your target>/  
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```

```
rm -f /Volumes/<your target>/private/var/db/  
ConfigurationProfiles/Setup/.profileSetupDone
```

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cp MyGreatProfile.mobileconfig /Volumes/<your target>/  
private/var/db/ConfigurationProfiles/Setup
```

```
rm -f /Volumes/<your target>/private/var/db/  
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(Boot Target Mac)

# Usage

```
$ ./make_profile_pkg.py ~/mcxToProfile/VLC_Defaults.mobileconfig
```

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```

```
pkgbuild: Inferring bundle components from contents of /var/folders/jq/  
90hqgnqx4yq9tgxbzv_0qpsh0000gp/T/tmpaZo1KJ
```

```
pkgbuild: Adding top-level postinstall script
```

```
pkgbuild: Wrote package to /Users/tim/git/make-profile-pkg/  
VLC_Defaults-2015.09.22.pkg
```

# Results

# Results



VLC\_Defaults.mobileconfig

# Results

postinstall

```
#!/bin/sh
if [ "$3" = "/" ] ; then
    /usr/bin/profiles -I -F /usr/local/share/VLC_Defaults.mobileconfig
else
    /bin/mkdir -p "$3/private/var/db/ConfigurationProfiles/Setup"
    /bin/cp "$3"/usr/local/share/VLC_Defaults.mobileconfig \
        "$3"/private/var/db/ConfigurationProfiles/Setup/VLC_Defaults.mobi
    /bin/rm -f "$3/private/var/db/ConfigurationProfiles/Setup/.profileSetupDo
fi
```



VLC\_Defaults.mobileconfig

# Results

## postinstall

```
#!/bin/sh
if [ "$3" = "/" ] ; then
    /usr/bin/profiles -I -F /usr/local/share/VLC_Defaults.mobileconfig
else
    /bin/mkdir -p "$3/private/var/db/ConfigurationProfiles/Setup"
    /bin/cp "$3"/usr/local/share/VLC_Defaults.mobileconfig \
        "$3"/private/var/db/ConfigurationProfiles/Setup/VLC_Defaults.mobi
    /bin/rm -f "$3/private/var/db/ConfigurationProfiles/Setup/.profileSetupDo
fi
```

## uninstall

```
#!/bin/sh
/usr/bin/profiles -R -p VLC_Defaults
/bin/rm -f /usr/local/share/VLC_Defaults.mobileconfig
/usr/sbin/pkgutil --forget com.github.makeprofilepkg.VLC_Defaults
```



VLC\_Defaults.mobileconfig



Thanks

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- Nick McSpadden (parsing signed profiles and outputting signed pkgs)

# Adobe



# Adobe



aamporter

[github.com/timsutton/aamporter](https://github.com/timsutton/aamporter)

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- Build OS X installer packages with Adobe Creative Cloud Packager (CCP) or Enterprise Dashboard
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  - (Named installers for this example)

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```
munkiimport /path/to/PhotoshopCC2015/Build/  
PhotoshopCC2015-Install.pkg \  
    --uninstaller-pkg /path/to/PhotoshopCC2015/Build/  
PhotoshopCC2015-Uninstall.pkg \
```

# Import installers into Munki

```
munkiimport /path/to/PhotoshopCC2015/Build/  
PhotoshopCC2015-Install.pkg \  
  --uninstaller-pkg /path/to/PhotoshopCC2015/Build/  
PhotoshopCC2015-Uninstall.pkg \  
  --nointeractive \  
  --subdirectory apps/Adobe/CC/2015 \  
  --developer Adobe \  
  --category Creativity
```

# Import installers into Munki

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```
aamporter/scripts/munkiimport_cc_installers.py
```

```
/path/to/all/your/CCP/packages
```



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- Import these installers into Munki
  - (Named installers for this example) ✓
- Use aamporter to automatically import all applicable updates
- Package and apply a license file

aamporter



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- ...all idempotently

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- ..and 5 suites from the CS5/5.5/6 era
- 20 CC 2015 updates for those 12 apps in 43 days
- Current count of all Adobe Creative updates in Munki: 109

# Why not use provided tools?

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- Remote Update Manager (*RUM*)
  - Ad-hoc command line updater tool, runs on clients
  - Can filter updates, but only if you already know the "channel IDs"
  - No control over how or when.. only "now"

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- Remote Update Manager (*RUM*)
  - Ad-hoc command line updater tool, runs on clients
  - Can filter updates, but only if you already know the "channel IDs"
  - No control over how or when.. only "now"
- Adobe Update Server Setup Tool (*AUSST*)
  - Mirrors Adobe updates to a local update server and outputs client configuration
  - The admin controls updates to client by holding back this "snapshot" of Adobe's updates

Complaints

Tedious to find out about new updates

# Creative Suite 5/5.5/6

<http://www.adobe.com/downloads/updates.html>

Valinnaiset Photoshop CS5 -laajennukset	8.9MB	9/2/2010
Vaigtrie Photoshop CS5-ekstramoduler	8.9MB	9/2/2010
Plug-in facoltativi di Photoshop CS5	8.8MB	9/2/2010
Adobe Photoshop CS5 - プラグイン (オプション) - 日本語	8.8MB	6/18/2010
Version CS5		
Camera Raw 6.7 Update	106.5MB	5/1/2012
Camera Raw 6.6 update	98.8MB	12/12/2011
Camera Raw 6.5 update	93.1MB	9/28/2011
Photoshop CS5/CS5.1 Standard Multipugin Update	4.1MB	8/9/2011
Camera Raw 6.4.1 update	78.8MB	5/24/2011
Adobe Photoshop 12.0.4 update for Adobe Photoshop CS5	19.7MB	5/2/2011
CS5 Optional Automate Plug-Ins Installer	955KB	2/2/2011
Photoshop CS5 Optional Plug-Ins (Mac): Manual Installation	8.8MB	2/2/2011
Camera Raw 6.3 update	75.5MB	12/6/2010
TWAIN Plug-in update	60KB	12/6/2010
Camera Raw 6.2 update	69.8MB	8/30/2010
Adobe Photoshop CS5 - Optionale Zusatzmodule + Opt.ZusatzmoduleBitteLesen.pdf - Deutsch	8.9MB	7/1/2010
Adobe Photoshop CS5 - Modules externes facultatifs + Lisez-moi modules optionnels.pdf - Français	8.9MB	7/1/2010
GPS Data panel for File Info dialog in Photoshop CS5	20KB	6/3/2010
Camera Raw 6.1 update	62.0MB	6/1/2010
Photoshop CS5 Optional Plugins	10.4MB	5/7/2010
Version CS4 - International		
AdobePhotoshopCS4-Дополнит.внешн.модул	46.0MB	2/16/2009
Adobe Photoshop CS4 - Plug-in facoltativi + Leggimi plug-in facoltativi.pdf - Italiano	110MB	2/13/2009
Adobe Photoshop CS4 - Optionele insteekmodules + Lees mij-Optionele plug-ins.pdf - Nederlands	44.1MB	2/13/2009



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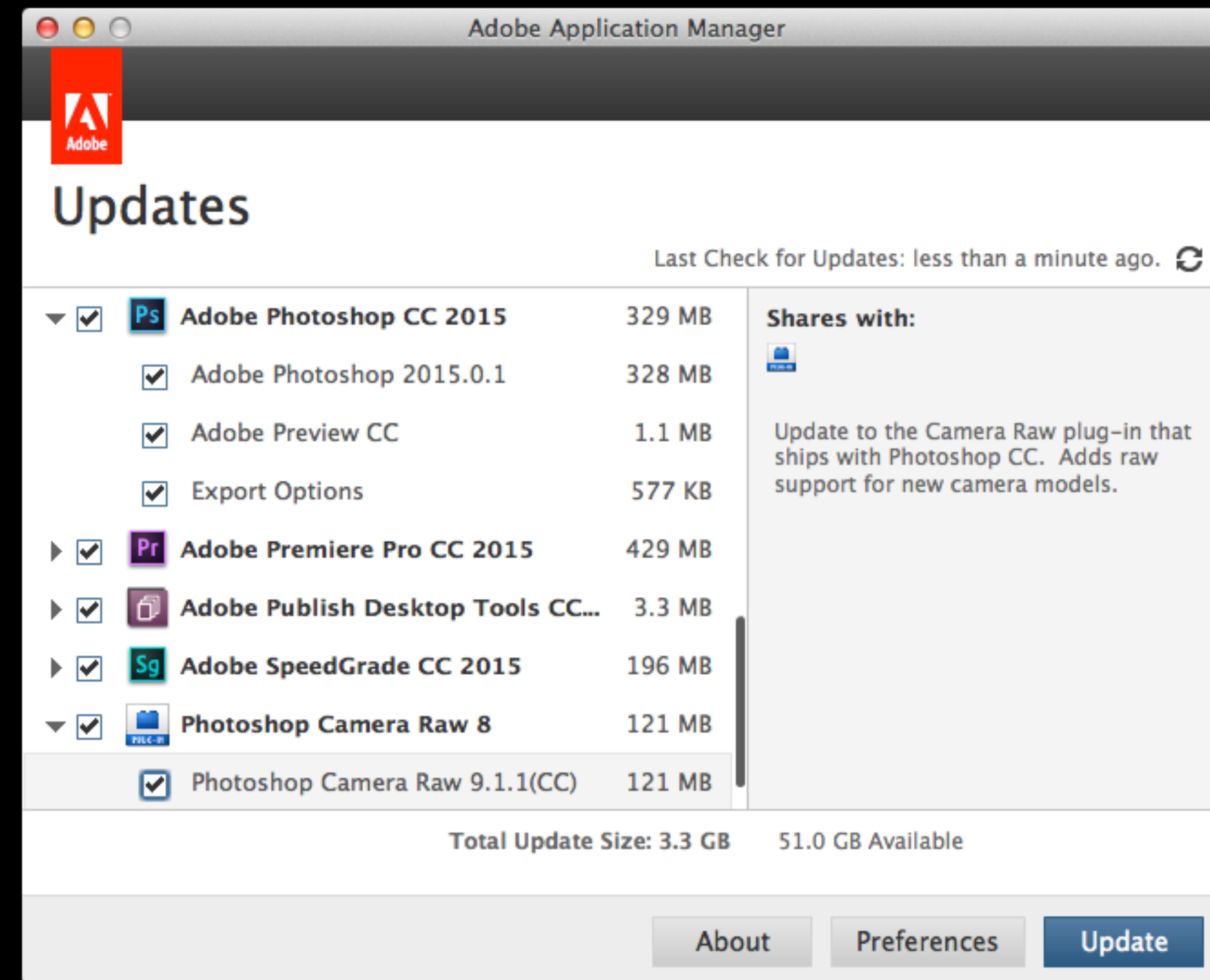
<https://blogs.adobe.com/premierepro>

The screenshot shows a web browser window displaying the Adobe Premiere Pro CS5 (5.0.3) update blog post. The browser's address bar shows "blogs.adobe.com". The page features a large header image of a person in a red shirt and helmet, standing on a rocky outcrop and looking out over a vast, cloudy sky. The text "PremierePro" is prominently displayed in the top left of the header, with "Adobe weblog about Premiere Pro and the success of Premiere Pro customers worldwide" below it. In the top right corner, there are links for "SUBSCRIBE", "RSS", and "EMAIL", along with the name "Jeremy Collins". Below the header, a navigation bar includes "Home", "Product Focus", and "Customer Success". The main content area is dated "DEC 07, 2010" and features the title "Adobe Premiere Pro CS5 (5.0.3) update: performance improvements, bug fixes, and Quadro 5000M and 4000 CUDA support". The author is listed as "By: Todd Kopriva" and there are "0 COMMENTS". The article text begins with "Today, the Adobe Premiere Pro CS5 (5.0.3) update was released." and continues with instructions on how to check for updates and download the update packages. A sidebar on the right contains a "SEARCH BLOG" box, a "Try Premiere Pro CC for FREE" section, a "Creatives all over the world are producing amazing work with Premiere Pro - Tell us your story HERE" link, an "Ask a Video Pro Webinars" section, and a "What's Next for Adobe Pro Video Tools - webcast presented by Jason Levine from NAB Show 2015" section. The bottom of the sidebar shows the date "Thursday, April 16th | 11amPT" and a "Register" link, followed by a "Recent Sessions" section.

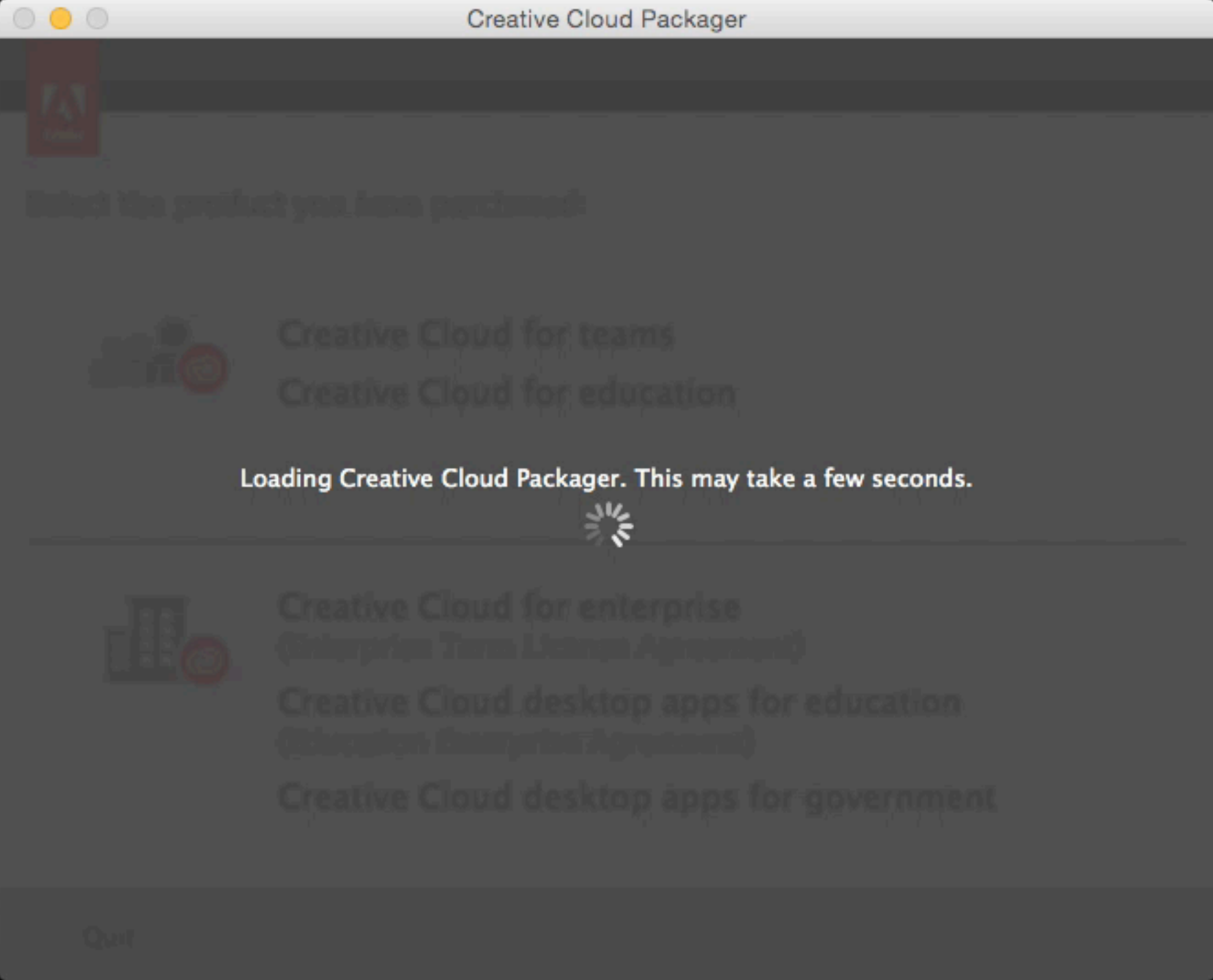


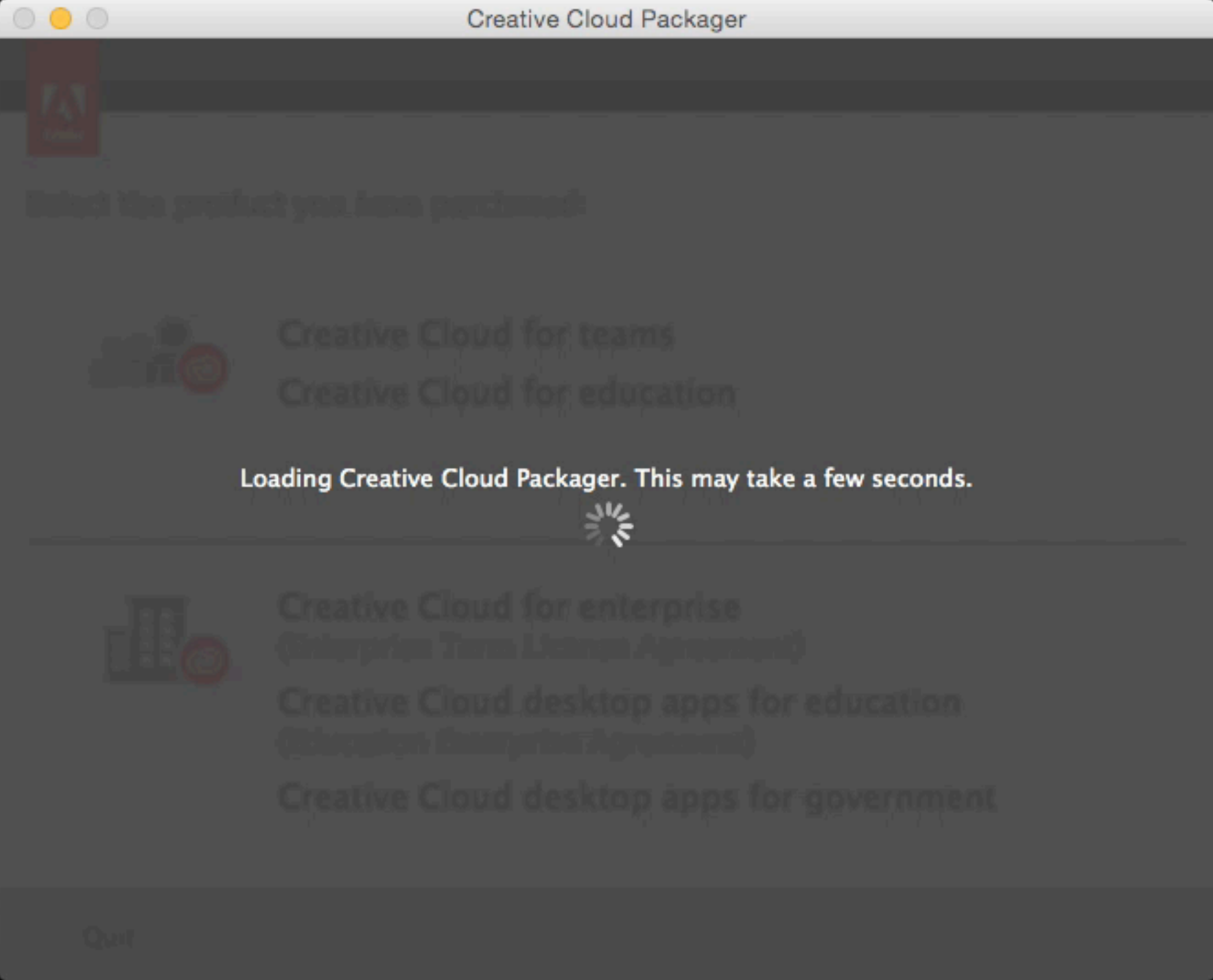
# Creative Cloud

(client with all CC apps installed)

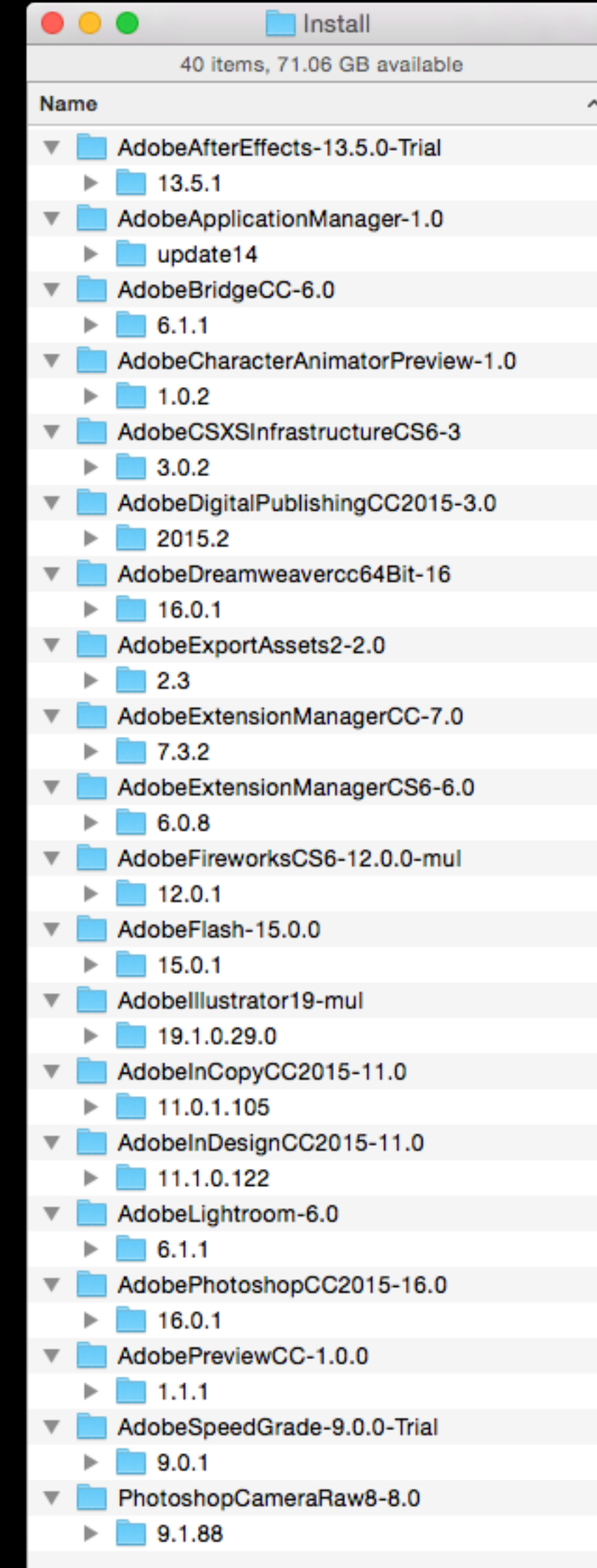
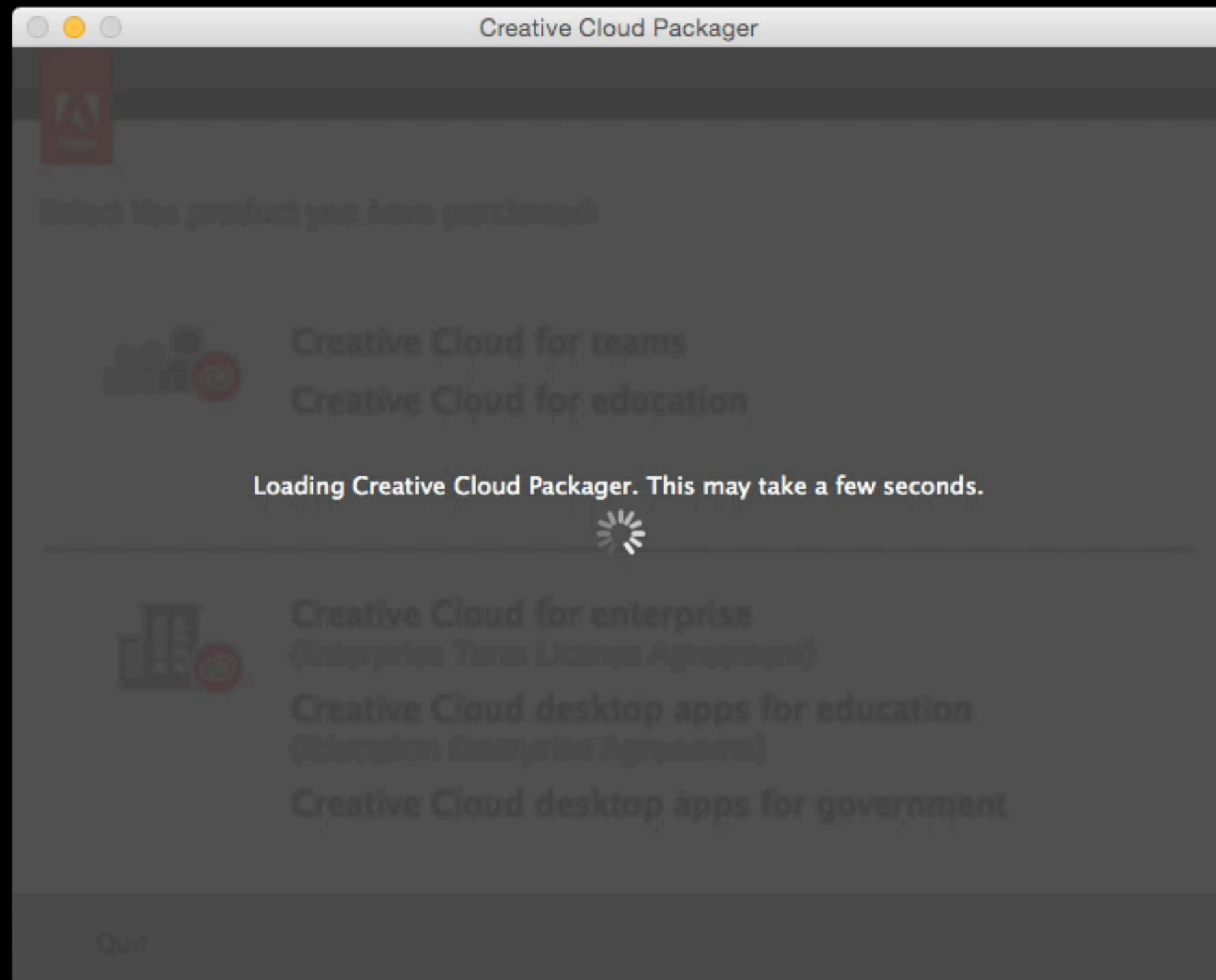


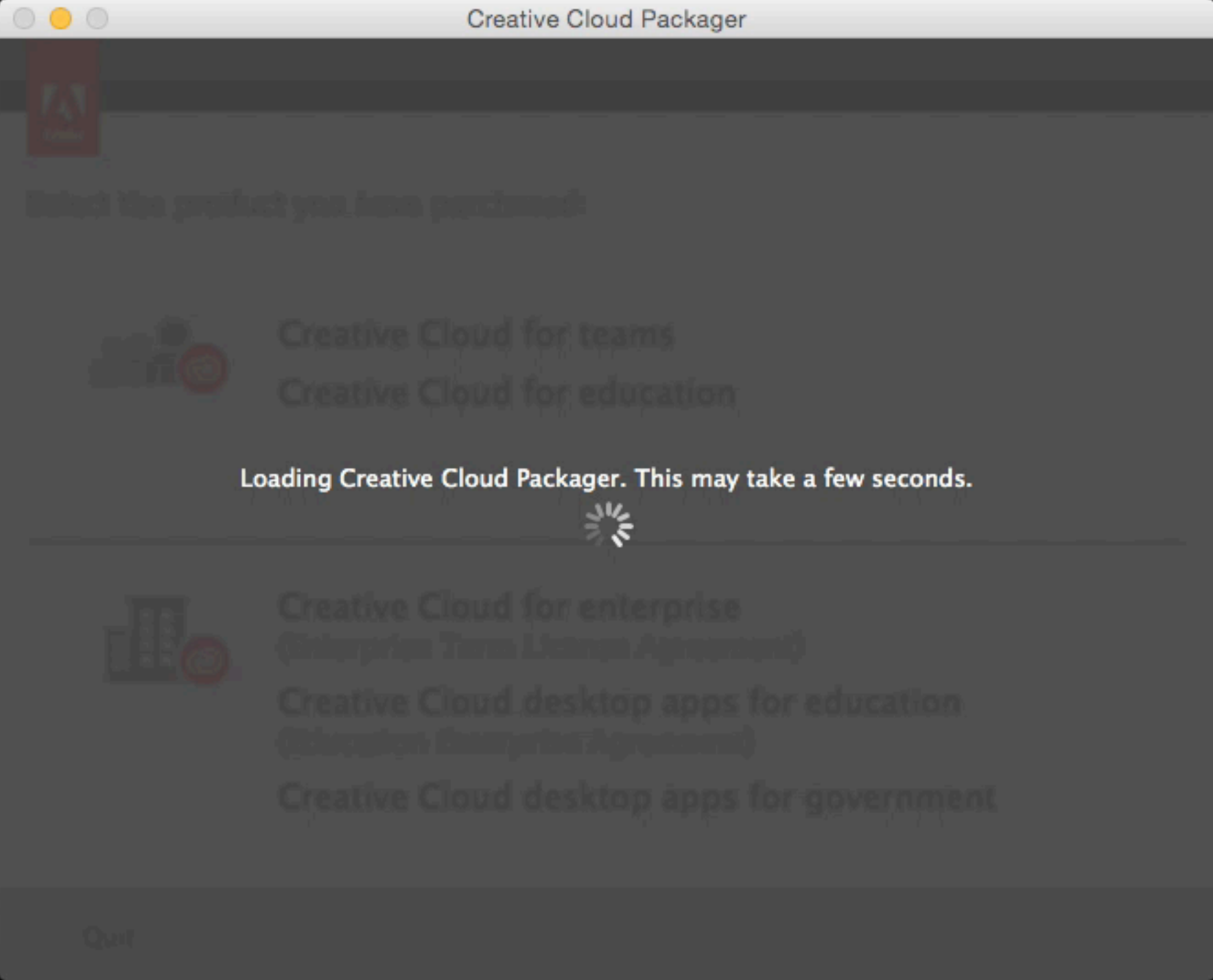
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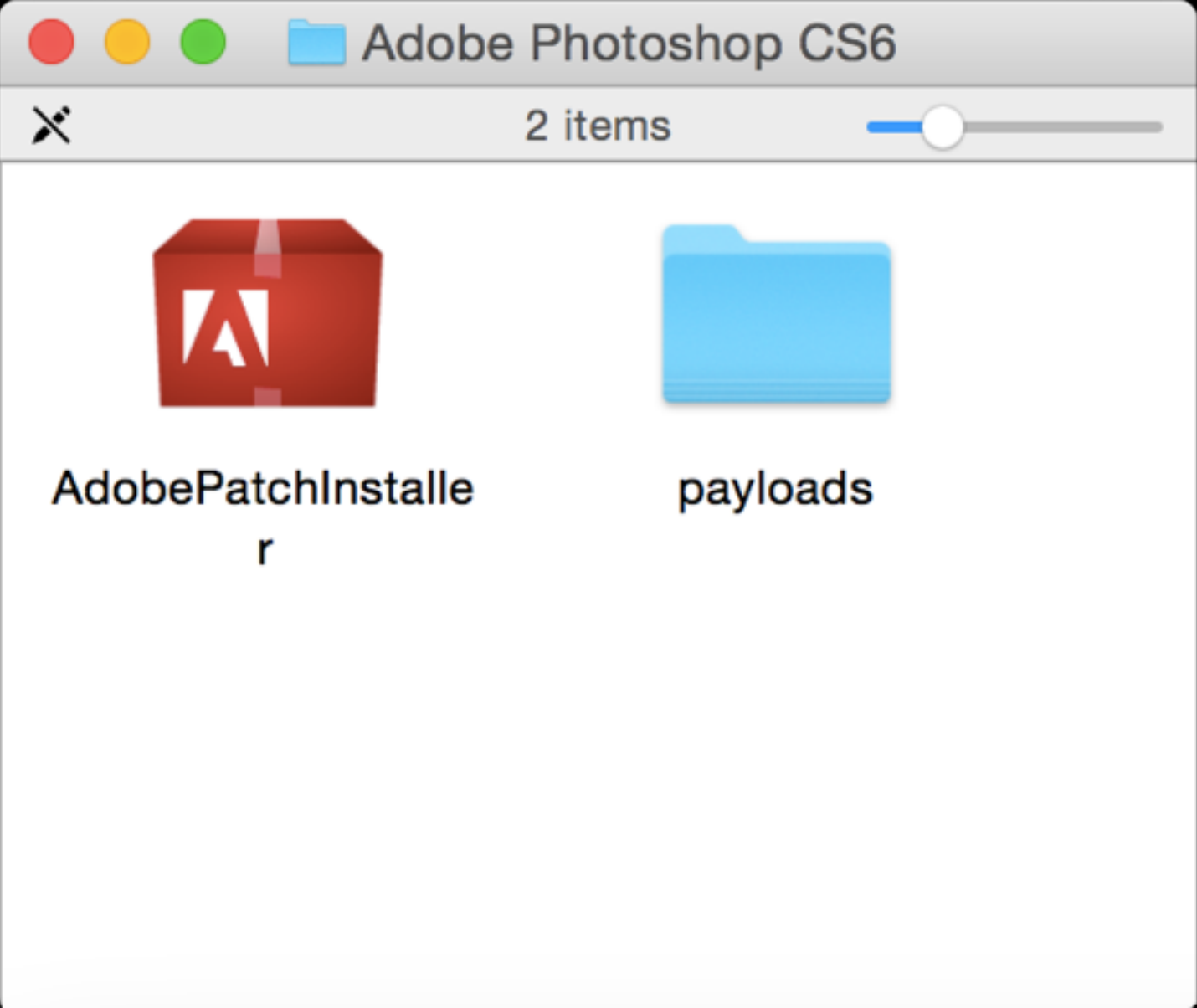
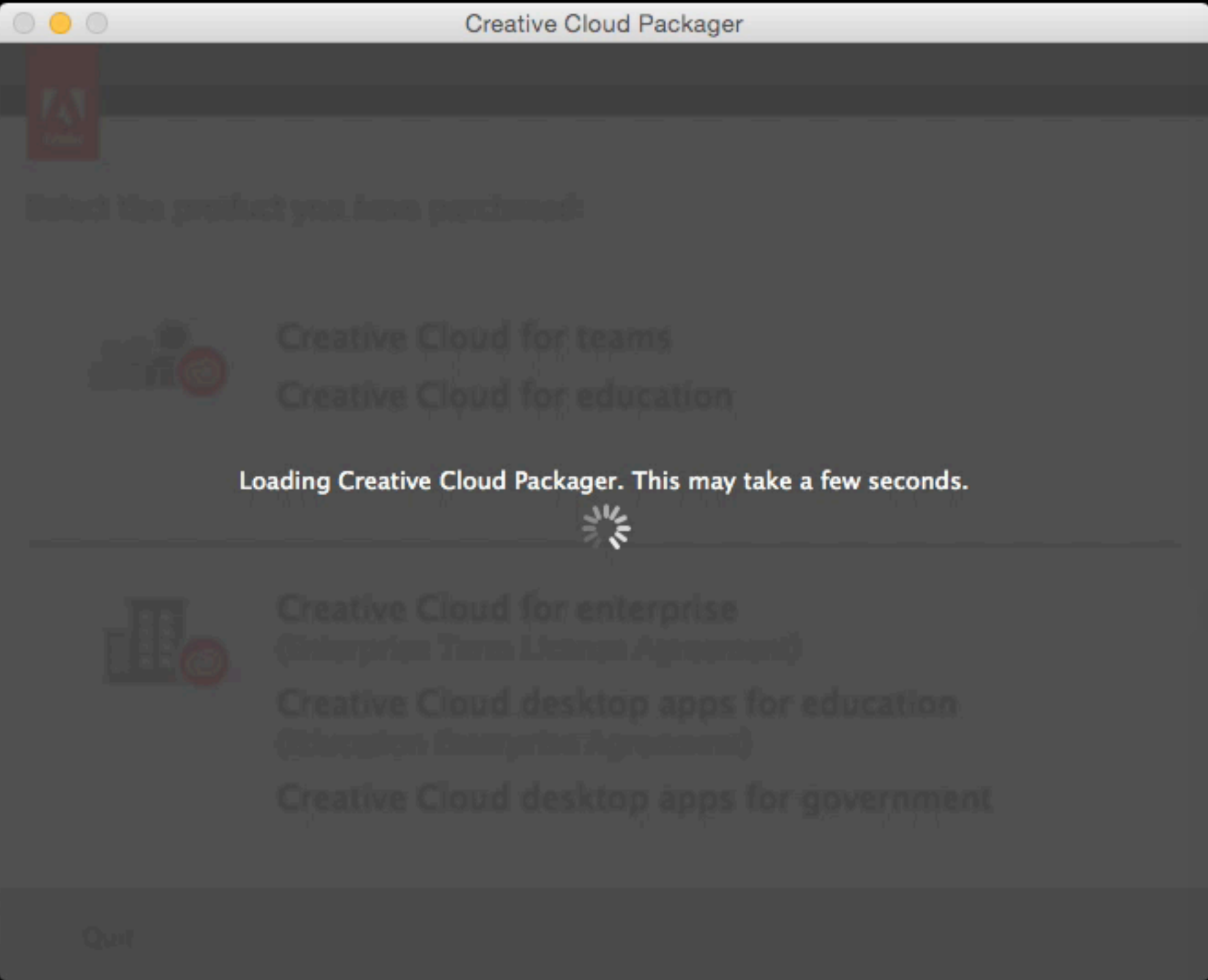




~/Library/Application Support/Adobe/CCP/AdobeCCPCCache

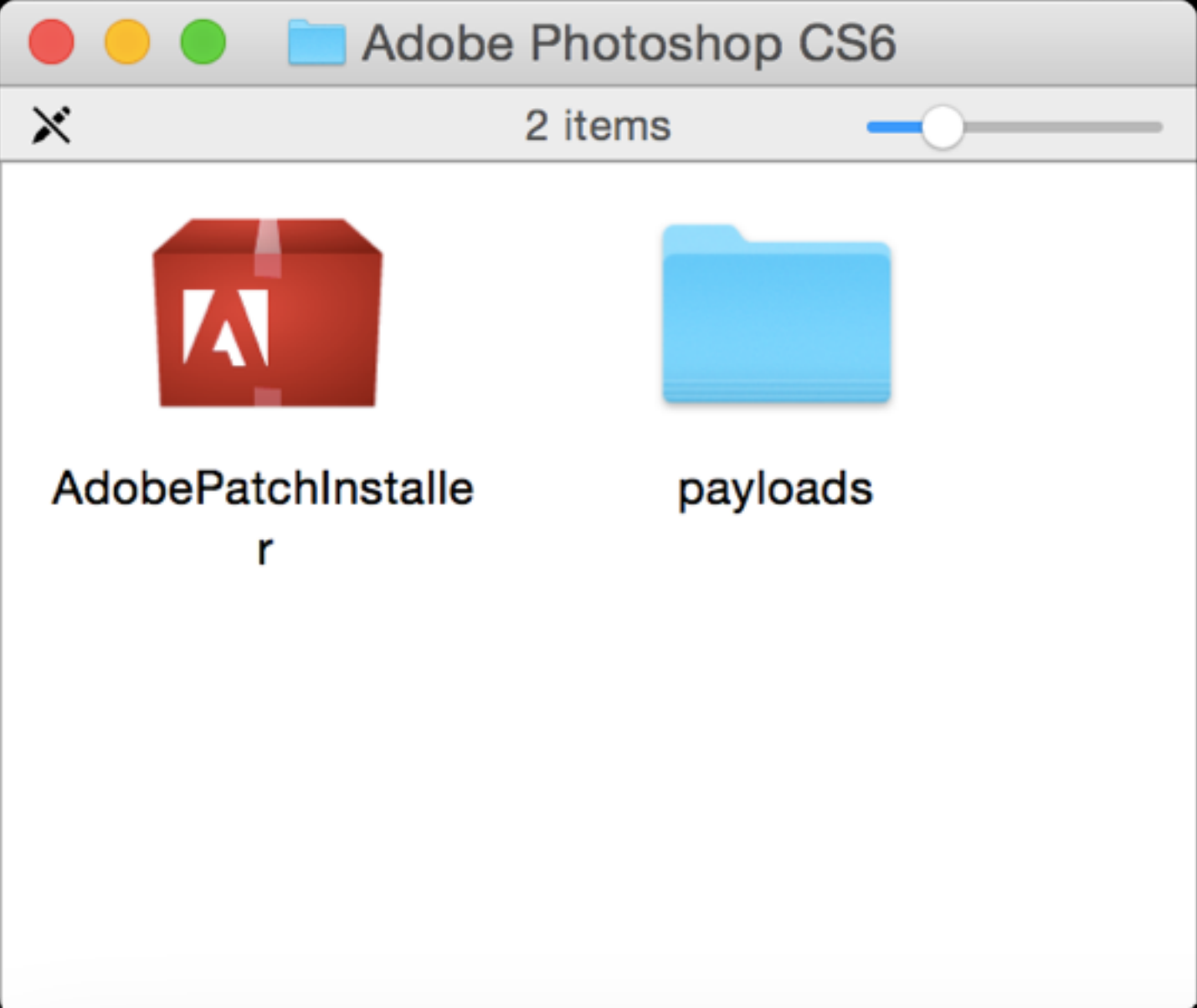
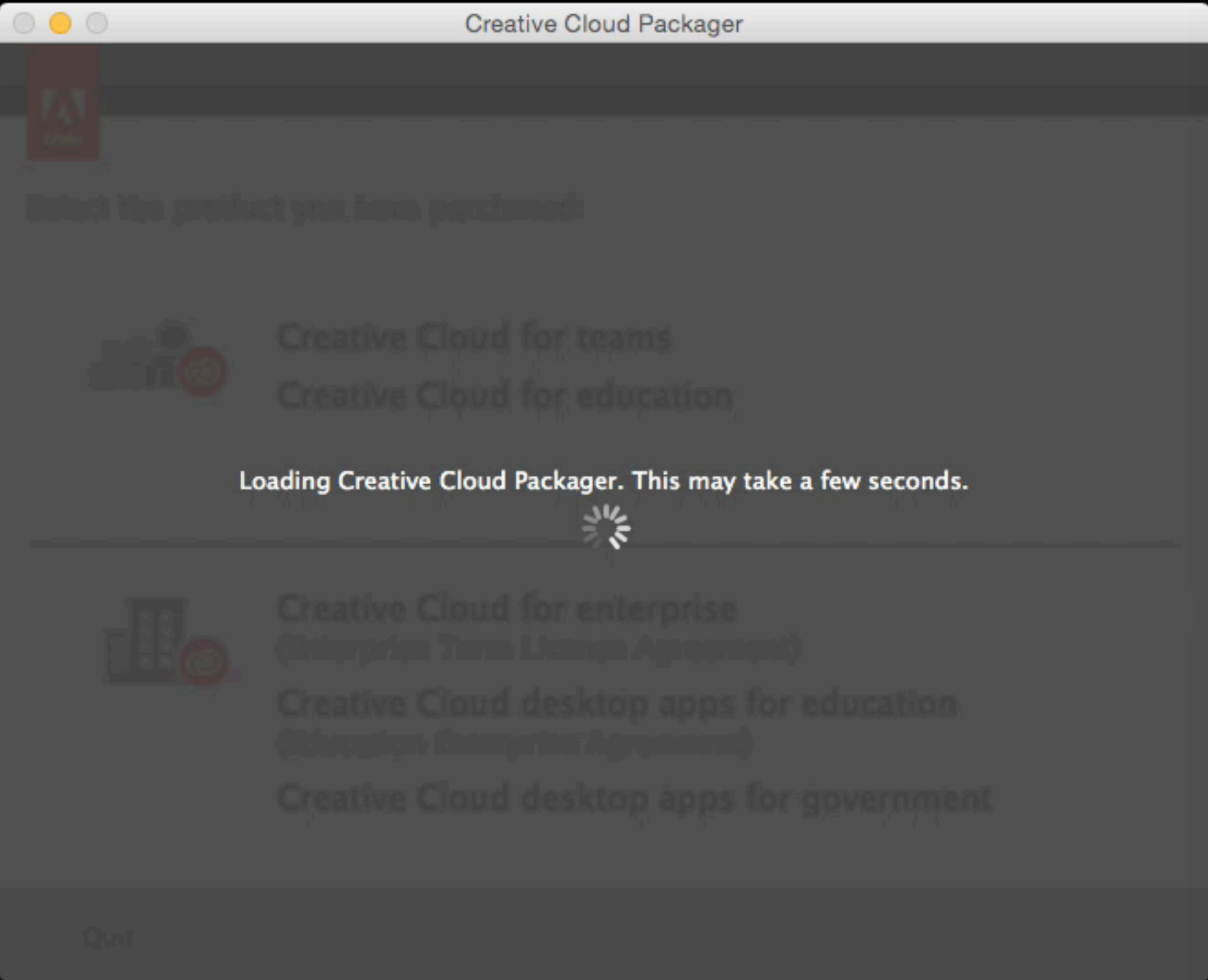






payloads				
1 of 33 selected				
Name	^	Date Modified	Size	Kind
▶ AdobePhotoshop13-Support-291013150329		2013-10-29	--	Folder
▶ AdobePhotoshop13-sv_SE-291013143308		2013-10-29	--	Folder
▶ AdobePhotoshop13-tr_TR-291013144053		2013-10-29	--	Folder
▶ AdobePhotoshop13-uk_UA-291013144357		2013-10-29	--	Folder
▶ AdobePhotoshop13-zh_CN-291013141740		2013-10-29	--	Folder
▶ AdobePhotoshop13-zh_TW-291013141608		2013-10-29	--	Folder
Media_db.db		2013-10-29	864 KB	Document
Media_db.sig		2013-10-29	1 KB	Document
setup.xml		2013-10-29	3 KB	XML text
UpdateManifest.sig		2013-10-29	1 KB	Document
UpdateManifest.xml		2013-10-29	8 KB	XML text

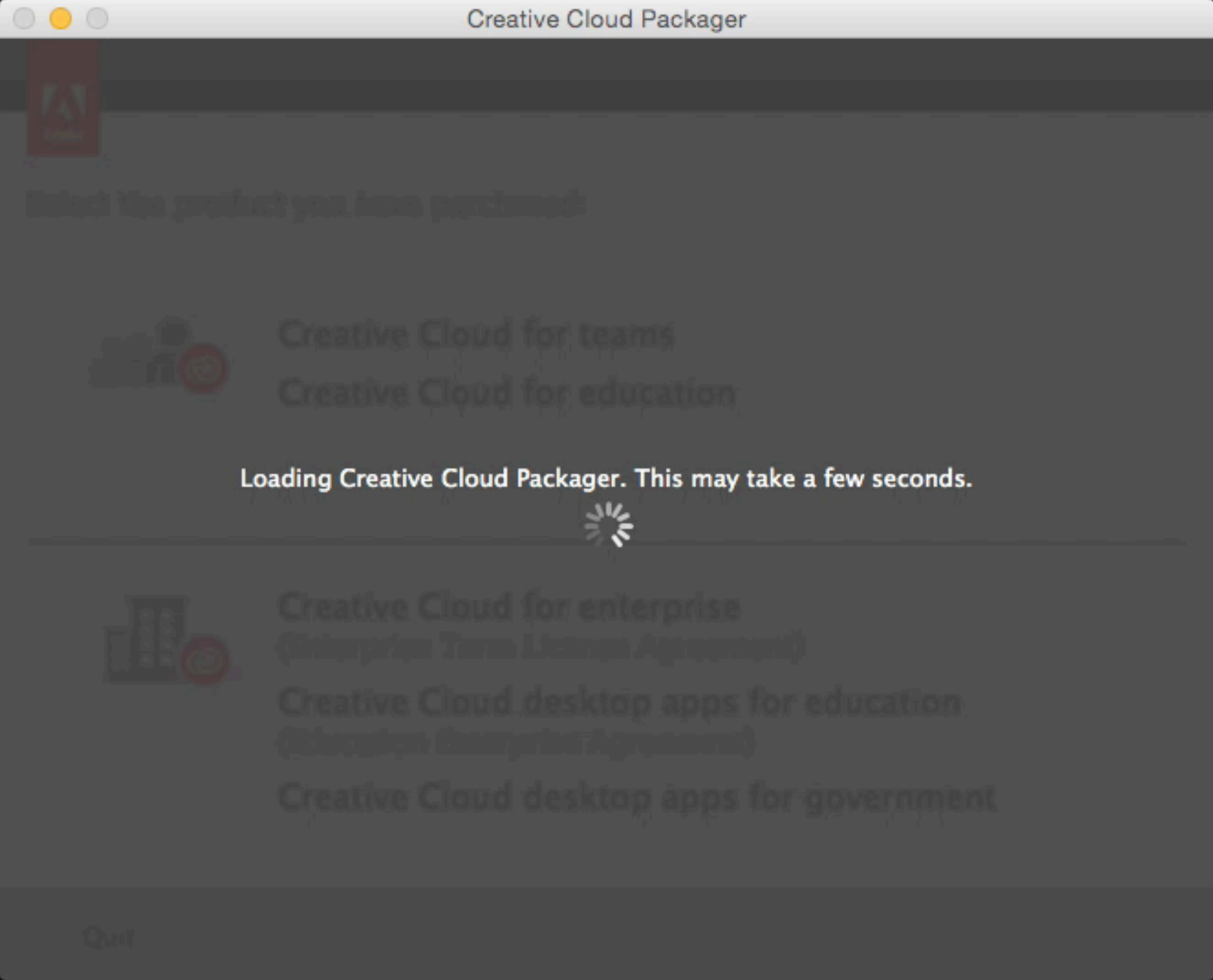




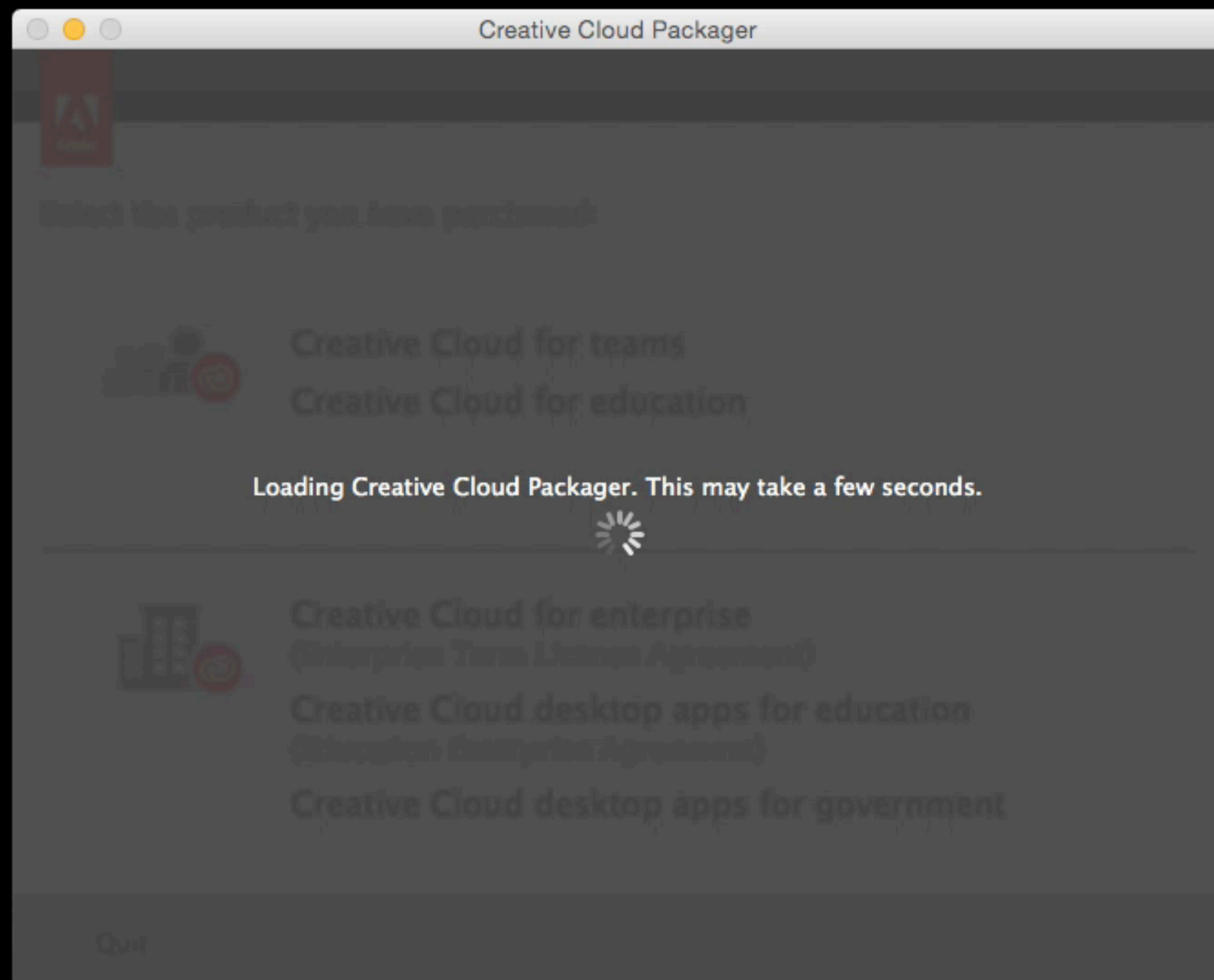
AdobePatchInstaller \  
--mode=silent \  
-skipProcessCheck=1

payloads				
1 of 33 selected				
Name	^	Date Modified	Size	Kind
▶ AdobePhotoshop13-Support-291013150329		2013-10-29	--	Folder
▶ AdobePhotoshop13-sv_SE-291013143308		2013-10-29	--	Folder
▶ AdobePhotoshop13-tr_TR-291013144053		2013-10-29	--	Folder
▶ AdobePhotoshop13-uk_UA-291013144357		2013-10-29	--	Folder
▶ AdobePhotoshop13-zh_CN-291013141740		2013-10-29	--	Folder
▶ AdobePhotoshop13-zh_TW-291013141608		2013-10-29	--	Folder
Media_db.db		2013-10-29	864 KB	Document
Media_db.sig		2013-10-29	1 KB	Document
setup.xml		2013-10-29	3 KB	XML text
UpdateManifest.sig		2013-10-29	1 KB	Document
UpdateManifest.xml		2013-10-29	8 KB	XML text



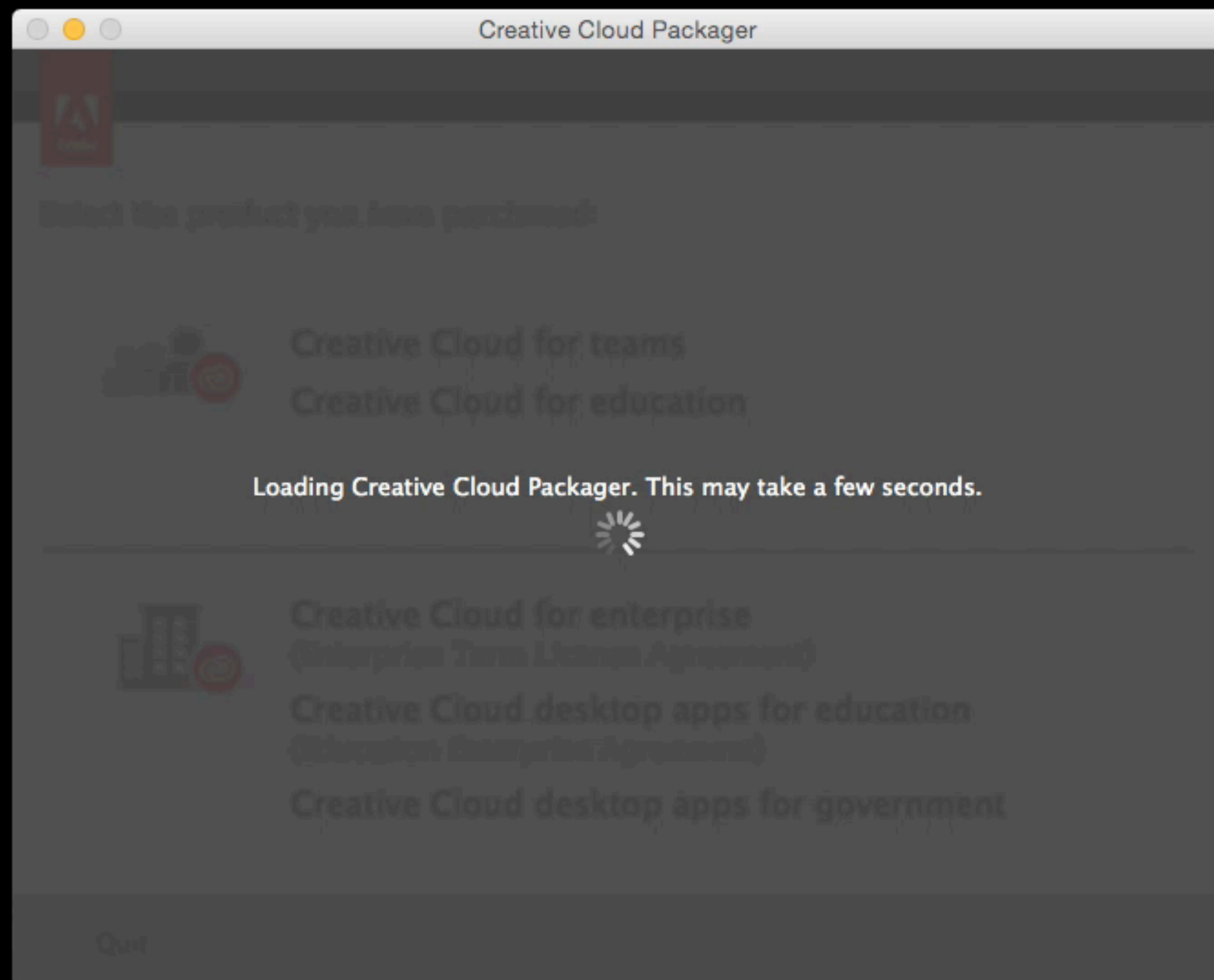


# Dreamweaver CC 2015 16.0.1 update



Filename	Size
AdobeDreamweaverUpdateCC2015_Install.pkg	499.7 MiB
Resources	499.7 MiB
Patches	226.8 MiB
AdobeDreamweavercc64Bit-16_16.0.1	153.1 MiB
AdobeApplicationManager-1.0_update14	73.7 MiB
ASU	202.4 MiB
ASU2	69.5 MiB
AdobeDeploymentManager	889.0 KiB
RemoteUpdateManager	159.3 KiB
preinstall	3.6 KiB
preupgrade	3.6 KiB
optionXML.xml	3.4 KiB
InstallationCheck	1.9 KiB
en.lproj	328 bytes

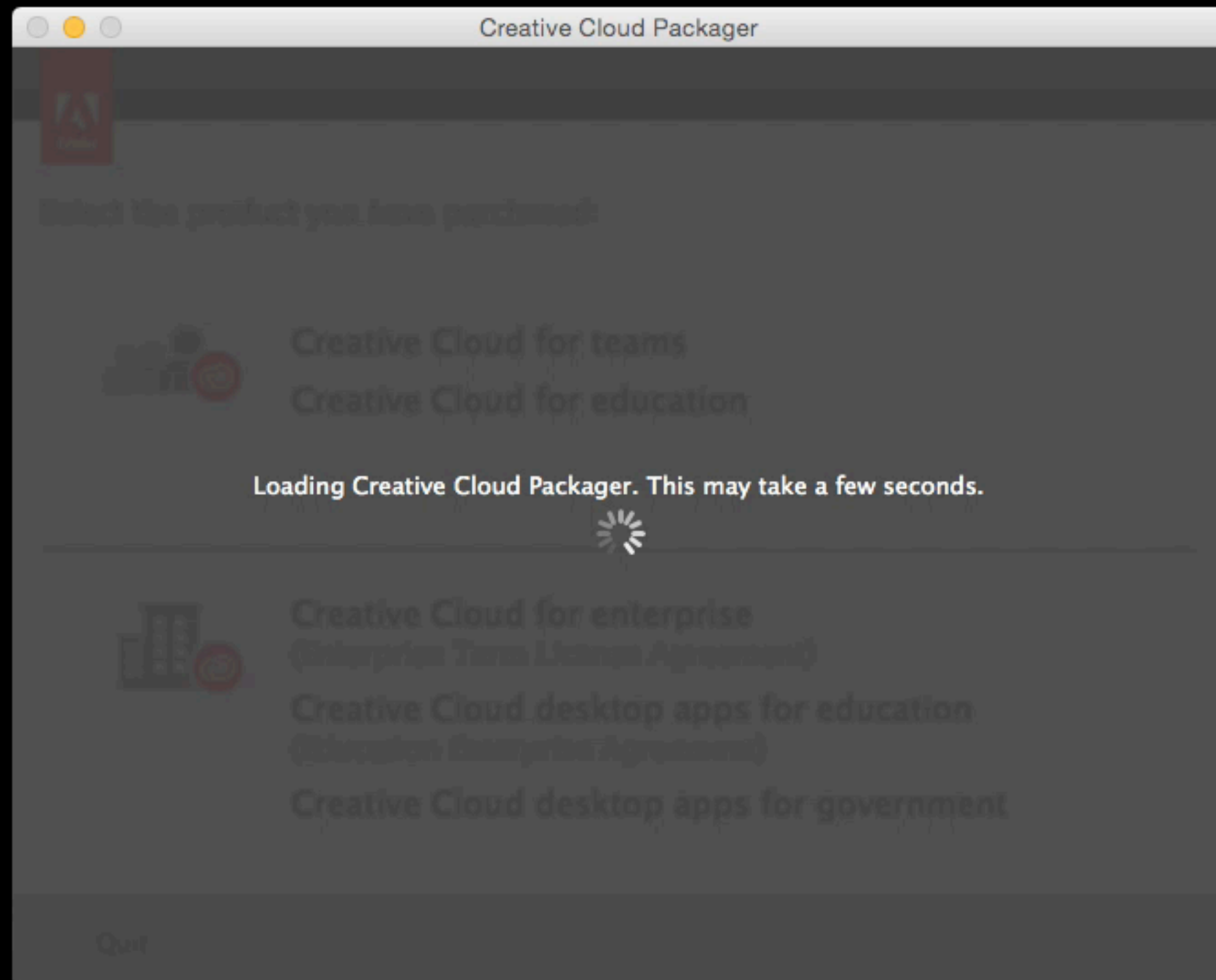
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▼ AdobeDreamweaverUpdateCC2015_Install.pkg	499.7 MiB
▼ Resources	499.7 MiB
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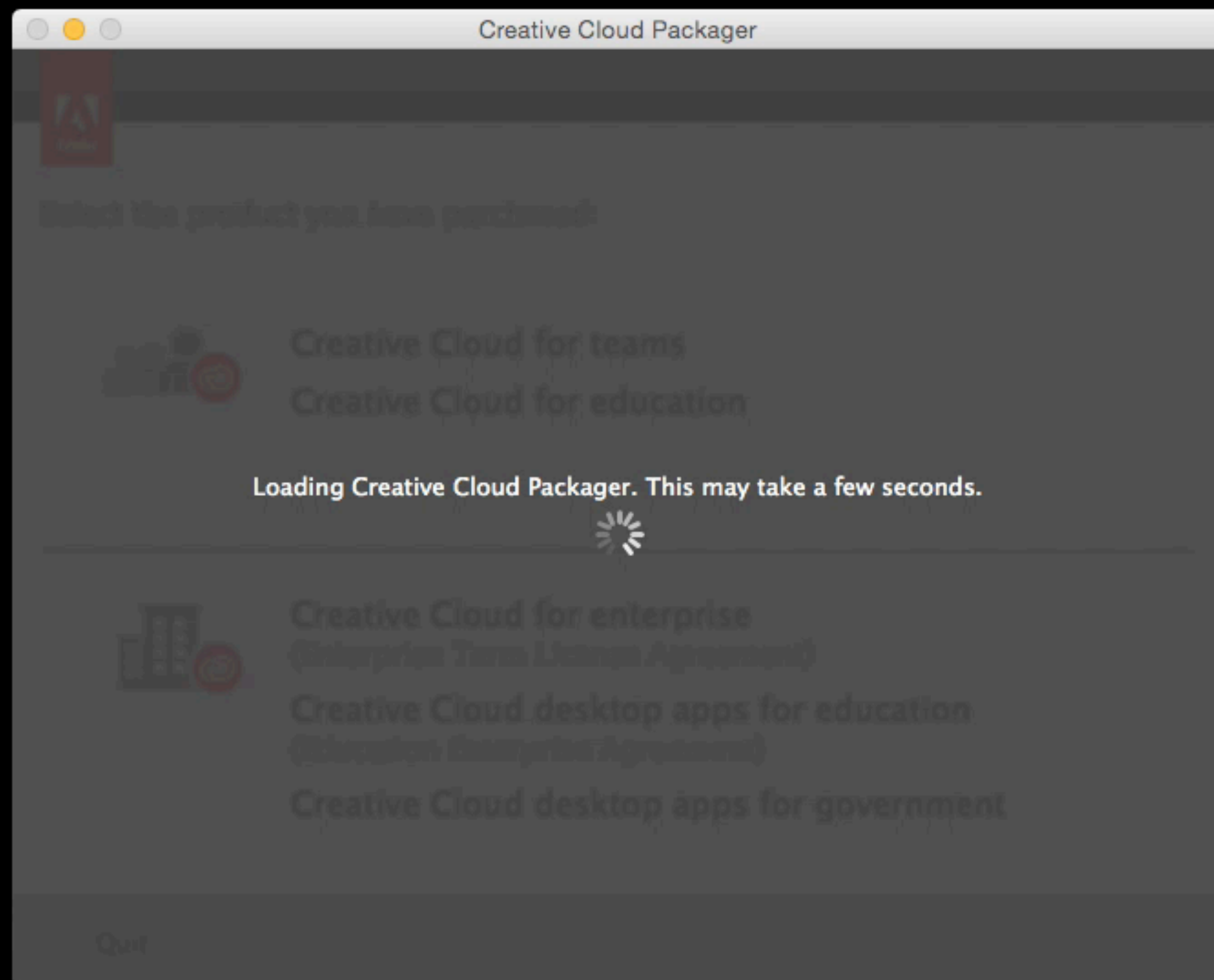
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preupgrade	3.6 KiB
optionXML.xml	3.4 KiB
InstallationCheck	1.9 KiB
▶ en.lproj	328 bytes

500MB package for a  
153MB update!!!

Difficult to configure these update pkgs  
in your management system



This repository

Search

Pull requests

Issues

Gist



munki / **munki**



# Adobe CS5 Update Dependencies

gregneagle edited this page on Sep 23, 2014 · 4 revisions

## Introduction

The purpose of this list is so that when installing Adobe CS5 products using munki, one can determine which updates are needed to bring a fresh install fully up to date. This list is ordered by Product and also by Update. This allows for easier creation of update\_for keys in your pkginfo files.

See <http://blogs.adobe.com/csupdates/> for the latest news on Creative Suite Updates.

## By Product

### Photoshop CS5

- Adobe Player for Embedding 3.1
- Adobe Bridge 4.0.4
- Adobe Device Central 3
- Adobe Extend Script Toolkit 3.5.0
- Adobe Extension Manager 5.0.1
- Adobe Photoshop 12.0.2
- Adobe XMP Panels
- Camera Raw 6.4
- CSXS Infrastructure (CS Live Services Update for CS)

### Dreamweaver CS5

- Adobe Device Central 3
- Adobe Player for Embedding 3.1

## Flash Pro CS5

- Adobe Bridge 4.0.4
- Adobe Player for Embedding 3.1
- Adobe XMP Panels
- Adobe Extend Script Toolkit 3.5.0
- Adobe Device Central 3
- Adobe Extension Manager 5.0.1
- Adobe Pixel Bender Toolkit 2.5 Update (Repackage with AAMEE)
- CSXS Infrastructure (CS Live Services Update for CS)
- Flash Professional CS5 11.0.2
- Adobe Media Encoder CS5 5.0.1
- Camera Raw 6.4

## Illustrator CS5


- Adobe Bridge 4.0.4
- Adobe Player for Embedding 3.1
- Adobe XMP Panels
- Adobe Extend Script Toolkit 3.5.1
- Adobe Device Central 3
- Adobe Extension Manager 5.0.1
- Adobe Illustrator 15.0.2 Update
- CSXS Infrastructure (CS Live Services Update for CS)
- Camera Raw 6.4

## InDesign CS5


- Adobe Bridge 4.0.4
- Adobe Player for Embedding 3.1
- Adobe XMP Panels
- Adobe Extend Script Toolkit 3.5.1
- Adobe Extension Manager 5.0.1
- Adobe InDesign CS5 7.0.4 Update
- CSXS Infrastructure (CS Live Services Update for CS)
- Adobe Extend Script Toolkit 3.5.1
- Adobe Media Encoder CS5 5.0.1
- Camera Raw 6.4









Adobe Application Manager



Updates

Last Check for Updates: less than a minute ago. 

<div><div>▼</div><div><input checked="" type="checkbox"/></div><div> Adobe Photoshop CC 2015</div><div>329 MB</div></div>	<div>Shares with:<div></div><div>Update to the Camera Raw plug-in that ships with Photoshop CC. Adds raw support for new camera models.</div></div>
<div><input checked="" type="checkbox"/></div> <div>Adobe Photoshop 2015.0.1</div> <div>328 MB</div>	
<div><input checked="" type="checkbox"/></div> <div>Adobe Preview CC</div> <div>1.1 MB</div>	
<div><input checked="" type="checkbox"/></div> <div>Export Options</div> <div>577 KB</div>	
<div><div>▶</div><div><input checked="" type="checkbox"/></div><div> Adobe Premiere Pro CC 2015</div><div>429 MB</div></div>	
<div><div>▶</div><div><input checked="" type="checkbox"/></div><div> Adobe Publish Desktop Tools CC...</div><div>3.3 MB</div></div>	
<div><div>▶</div><div><input checked="" type="checkbox"/></div><div> Adobe SpeedGrade CC 2015</div><div>196 MB</div></div>	
<div><div>▼</div><div><input checked="" type="checkbox"/></div><div> Photoshop Camera Raw 8</div><div>121 MB</div></div>	
<div><input checked="" type="checkbox"/></div> <div>Photoshop Camera Raw 9.1.1(CC)</div> <div>121 MB</div>	

Total Update Size: 3.3 GB

51.0 GB Available

About

Preferences

Update

*Demo*

# What I learned

- Trying to understand and support an undocumented update system is... hard
- aamporter was *helpful* with CS5/6 updates and Munki
- aamporter might be *essential* with CC updates and Munki

make-adobe-cc-license-pkg

[github.com/timsutton/make-adobe-cc-license-pkg](https://github.com/timsutton/make-adobe-cc-license-pkg)

# CC Licensing

# CC Licensing

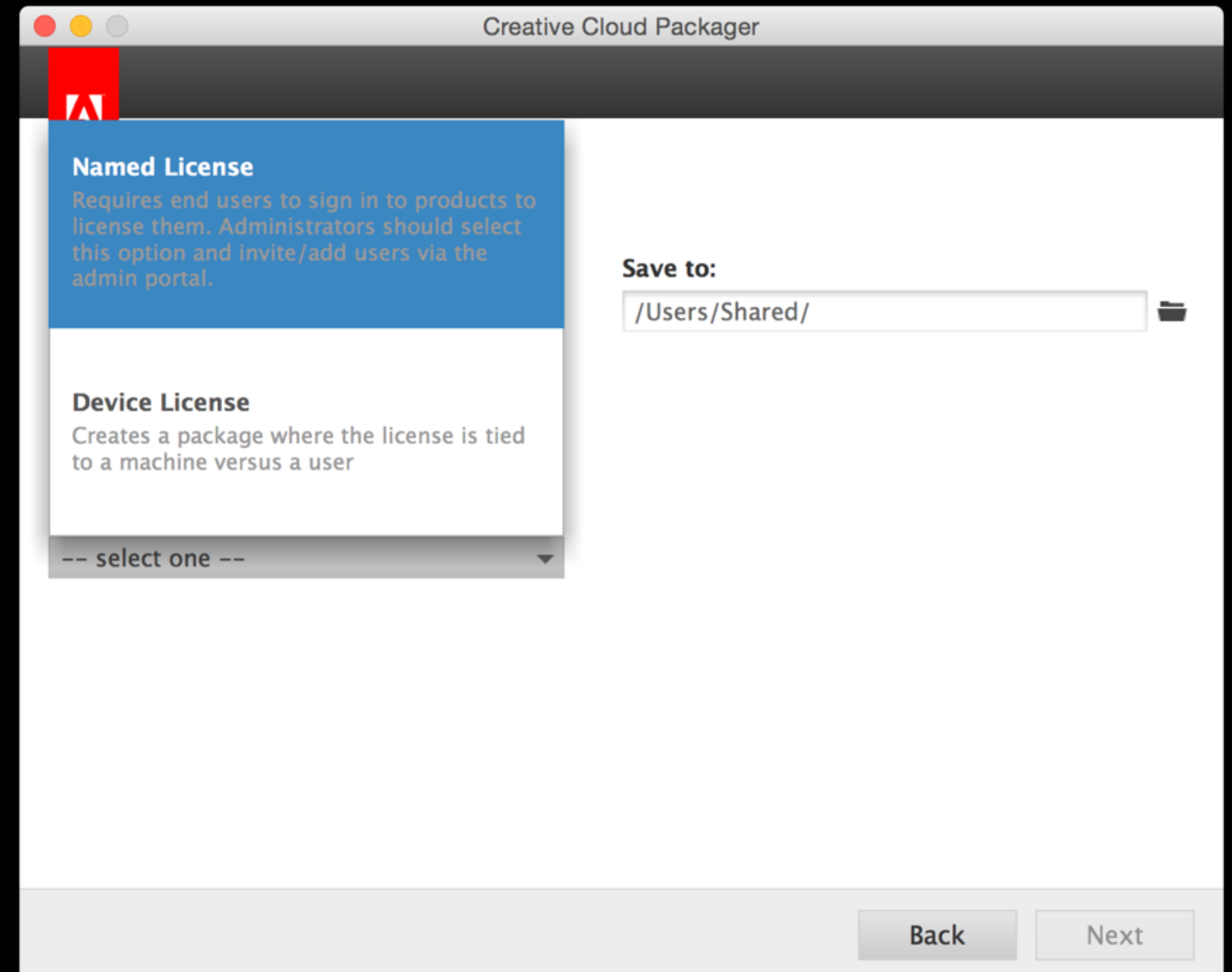
**Teams**

**Enterprise**

**ID-based**

Named

Named



# CC Licensing

**Teams**

**Enterprise**

**ID-based**

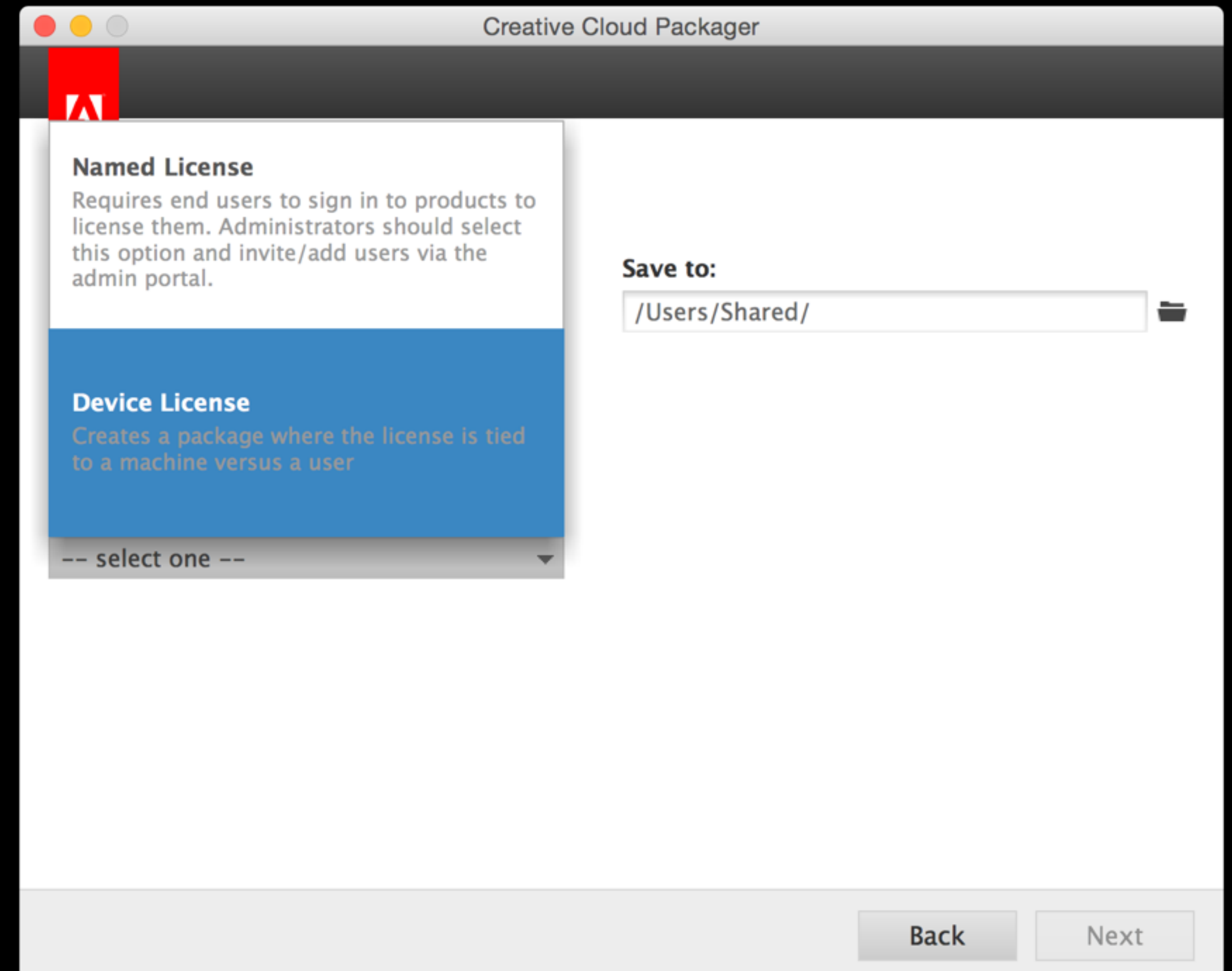
Named

Named

**Machine-  
based**

Device  
"activation"

Serial-based



# Licensed installer packages

Two problems:



# Licensed installer packages

Two problems:

1. Maintaining both Named and Device/Serial-licensed installers

# Licensed installer packages

Two problems:

1. Maintaining both Named and Device/Serial-licensed installers
2. Uninstalling a Device/Serial-licensed package *also uninstalls the license*

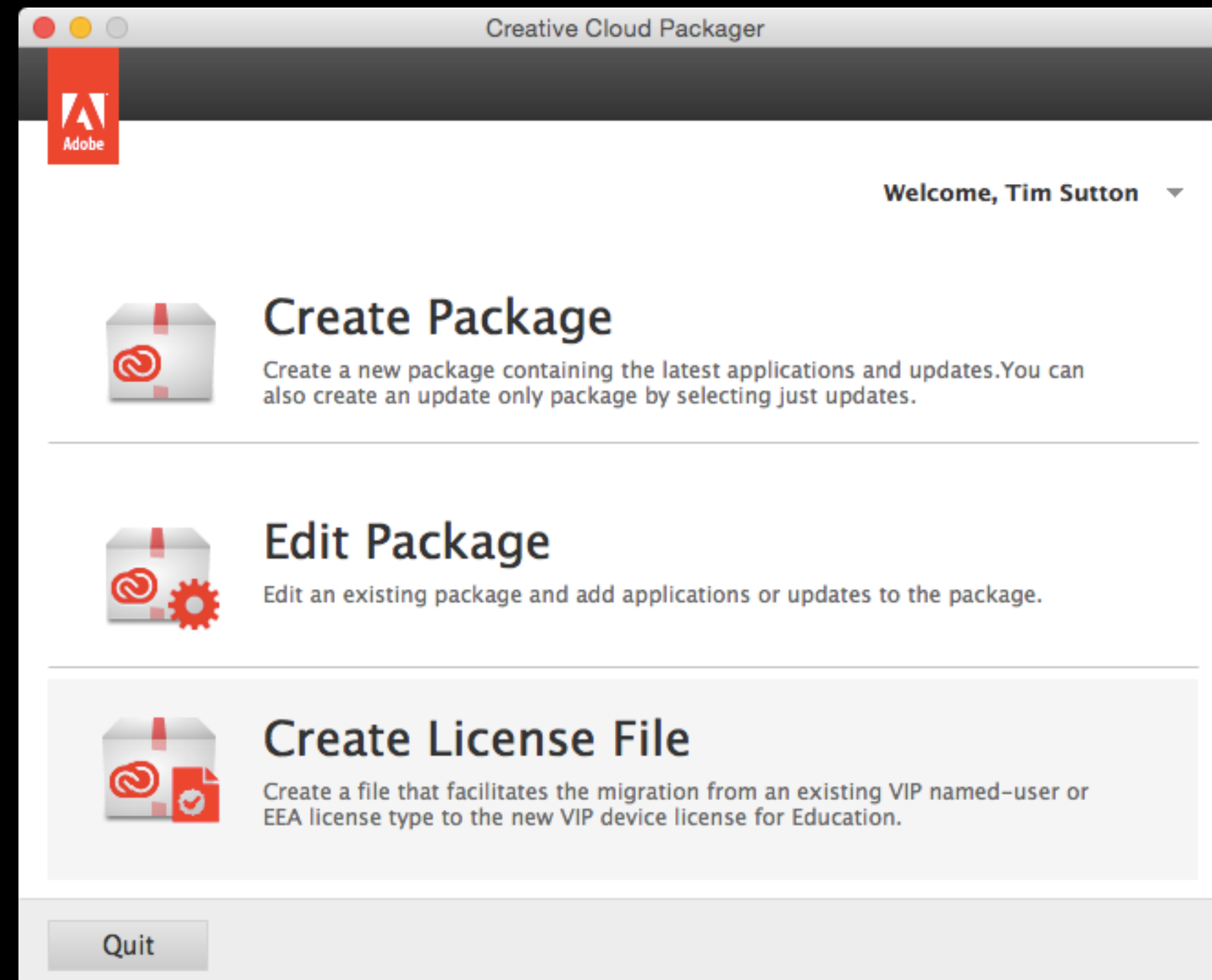
# Licensed installer packages

Two problems:

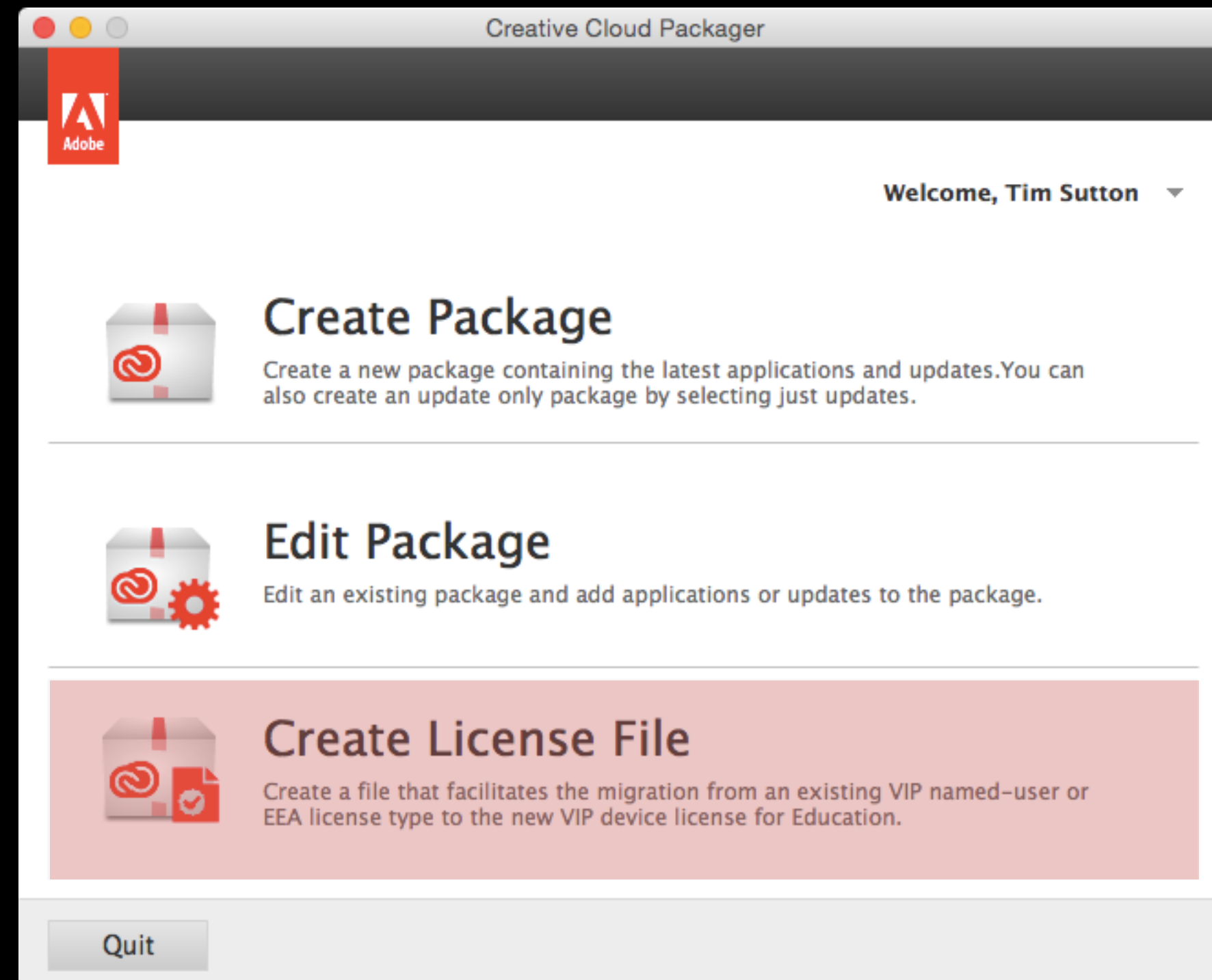
1. Maintaining both Named and Device/Serial-licensed installers
2. Uninstalling a Device/Serial-licensed package *also uninstalls the license*

Nick McSpadden: <https://osxdominion.wordpress.com/2015/04/23/fixing-adobe-ccps-broken-uninstallers/>

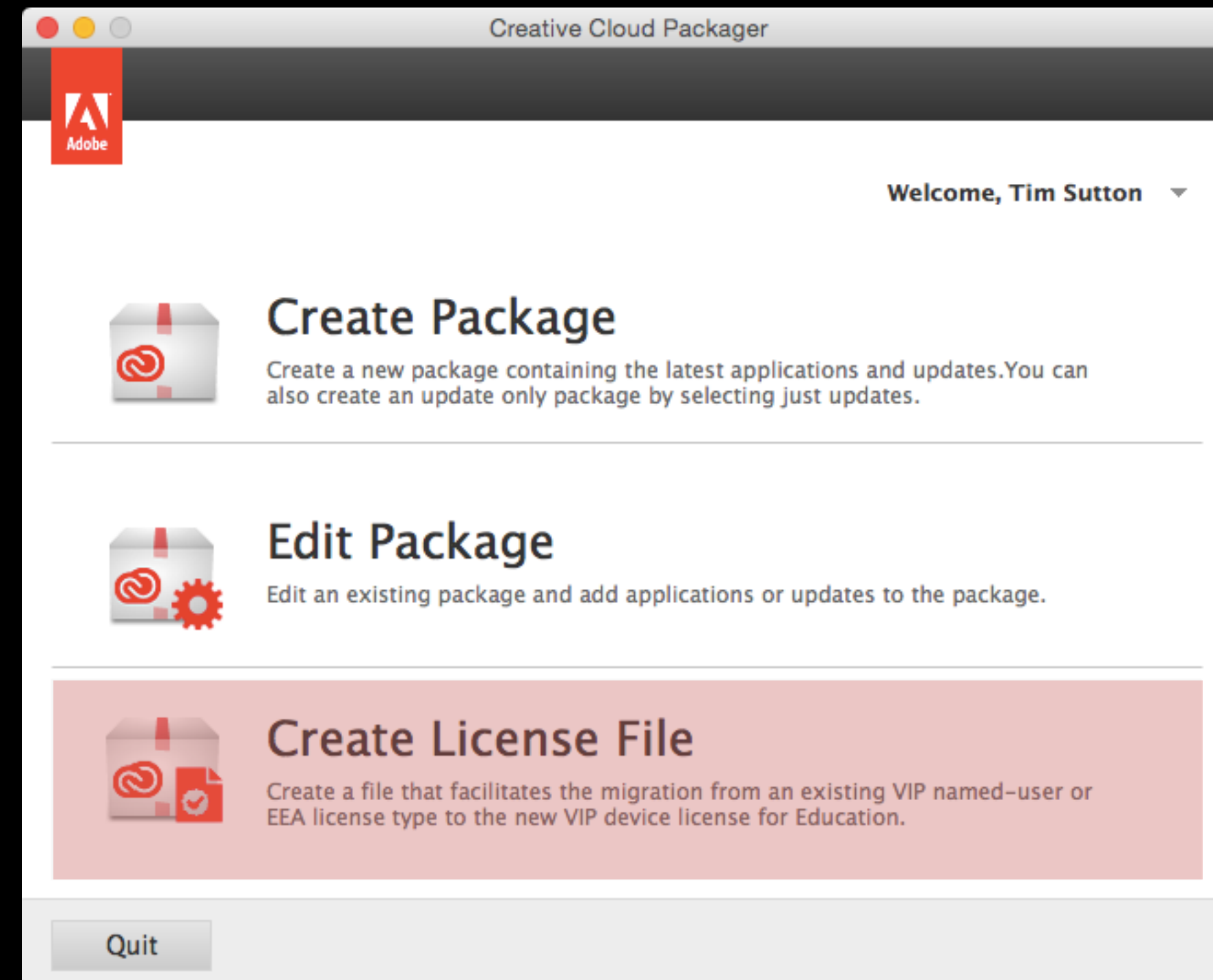
# The License File



# The License File



# The License File



*“Use the License File workflow **to migrate** previously deployed named user or trial packages **to serial number licenses or device licenses.**”*

Run to install



AdobeSerialization



helper.bin

License data



prov.xml



RemoveVolumeSerial



Remove  
enterprise serial

# Managing device license files

Two problems:



# Managing device license files

Two problems:

1. They aren't deployable as-is

# Managing device license files

Two problems:

1. They aren't deployable as-is
2. Uninstallation (deactivation) of the license is only supported for Enterprise (serials), not Teams-based device licenses

Run to install



AdobeSerialization



helper.bin

License data



prov.xml



RemoveVolumeSerial



Remove  
enterprise serial

Run to install



AdobeSerialization



helper.bin



adobe\_prtk  
a.k.a. Adobe  
Provisioning  
Toolkit  
Enterprise  
Edition  
a.k.a. APTEE

License data



prov.xml



RemoveVolumeSerial



Remove  
enterprise serial

We can do better!

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- Convert these files into a deployable package
  - Deploy it with our management system instead of ad-hoc, SSH, etc.
  - Errors activating the license means the pkg fails

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  - Errors activating the license means the pkg fails
- Optionally auto-configure a Munki item with a complete uninstall script
  - Output a companion uninstall script for use with other systems
- ..and error descriptions, not just codes!



*Demo*

# Thanks

- James Stewart, for pointing out that helper.bin file == adobe\_prtk
- Patrick Fergus, for testing this tool with Enterprise licenses

# What I learned

- Managing Adobe Creative Cloud device licenses is painful
- <http://macops.ca/tag/creative-cloud>

# Packaging curiosities



FPM (... Package Management)

[github.com/jordansissel/fpm](https://github.com/jordansissel/fpm)

FPM

# FPM

- One common interface to many packaging formats for operating systems and programming languages

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- Build and transform packages for different platforms without knowing all the gory details, abstract all the common concepts



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- dir, gem, deb, npm, rpm, tar, cpan, pear, puppet, python, osxpkg, solaris, p5p, pkgin, sh, virtualenv, zip

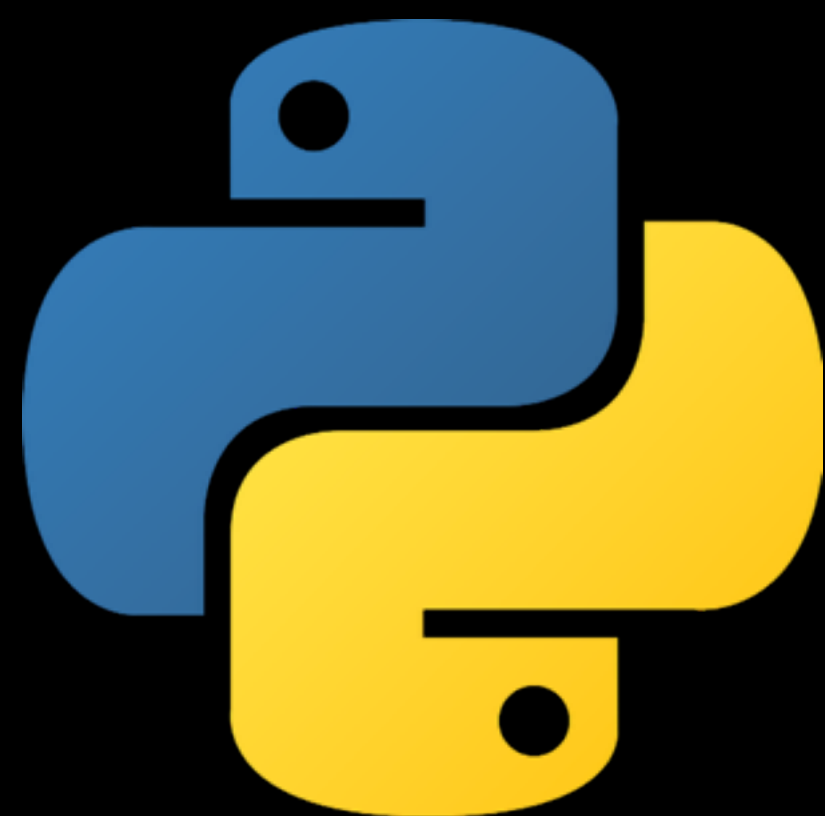
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- dir, gem, deb, npm, rpm, tar, cpan, pear, puppet, python, **osxpkg**, solaris, p5p, pkgin, sh, virtualenv, zip

Why??



Why??



Why??





Why??



[github.com/google/macops](https://github.com/google/macops)

# github.com/google/macops

## Overview build passing

These are some utilities, tools, and scripts for managing and tracking a fleet of Macintoshes in a corporate environment. We expect to use this primarily as a repository for small scripts or tools that don't warrant a standalone project.

### can\_haz\_image

Automation tool for creating images

### crankd

Extras for crankd to log application usage

### deprecation\_notifier

A nagging utility intended to provoke users into doing major OS upgrades.

### facter

A simple fact for tracking application usage

### gmacpyutil

Python modules with useful methods for managing and controlling Macintosh computers

### keychainminder

A SecurityAgentPlugin to keep the login keychain synchronized in enterprise environments.



# github.com/google/macops

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Python modules with useful methods for managing and controlling Macintosh computers

### keychainminder

A SecurityAgentPlugin to keep the login keychain synchronized in enterprise environments.

*Demo*

brew-pkg

[github.com/timsutton/brew-pkg](https://github.com/timsutton/brew-pkg)

# brew-pkg

- Simple tool for building a package from something installed with Homebrew
- Avoids the "weird" permissions of Homebrew's `/usr/local`, uses `root:wheel`
- `brew install osxutils; brew pkg osxutils`
- Can build `--with-deps` (include all dependencies)
- Good for simple packages, but beware of conflicts within `/usr/local`
  - or alternatively...

brewbus

[github.com/timsutton/brewbus](https://github.com/timsutton/brewbus)

# brewbus

- Build an “Omnibus-style” OS X Installer pkg from Homebrew formulae
- Installs itself and all dependencies to an isolated path
  - `/myorg/ffmpeg`
  - (Homebrew supports prefixes other than `/usr/local`, so clone Homebrew to our own prefix rather than the default)
- Get versioned builds besides “current master” by setting a specific Git commit

 [Back to Dashboard](#) [Status](#) [Changes](#) [Workspace](#) [Build with Parameters](#) [Delete Project](#) [Configure](#)[Build History](#)[trend](#) [RSS for all](#)[RSS for failures](#)

## Project Brewbus-Pkg

This build requires parameters:

FORMULA

Formula name to build.

PREFIX

Filesystem prefix for file hierarchy. The root will be \$PREFIX/\$FORMULA/bin, \$PREFIX/\$FORMULA/lib, etc.

REVERSE\_DOMAIN

Reverse-domain-style prefix for package identifier.

BREW\_GIT\_SHA

Optional SHA-1 from the Homebrew repo history to checkout to before building.

OUTPUT\_DIR

Optional output dir

```
+ root=/cda/nyancat
+ '[' -d /cda/nyancat ']'
+ rm -rf /cda/nyancat
+ git clone https://github.com/homebrew/homebrew /cda/nyancat
Cloning into '/cda/nyancat'...
+ cd /cda/nyancat
+ '[' -n '' ']'
+ bin/brew install nyancat
No entry for terminal type "unknown";
using dumb terminal settings.
==> Downloading https://homebrew.bintray.com/bottles/nyancat-
1.4.4.yosemite.bottle.tar.gz
Already downloaded: /Library/Caches/Homebrew/nyancat-
1.4.4.yosemite.bottle.tar.gz
==> Pouring nyancat-1.4.4.yosemite.bottle.tar.gz
🍺 /cda/nyancat/Cellar/nyancat/1.4.4: 5 files, 52K
+ version_path=/cda/nyancat/Cellar/nyancat
++ ls /cda/nyancat/Cellar/nyancat
+ version=1.4.4
+ '[' -z 1.4.4 ']'
+ pkgbuild --version 1.4.4 --identifier cda.concordia.ca.nyancat --
root /cda/nyancat --install-location /cda/nyancat --filter '/.git.*$'
--filter /.yardopts --filter '/.*.md$' --filter '/.*.txt$' --filter
'/Library$' --filter /bin/brew --filter /share/doc/homebrew --filter
/share/man/man1/brew.1 --filter /.travis.yml
/Users/jenkins/slave/workspace/Brewbus-Pkg/nyancat-1.4.4.pkg
pkgbuild: Inferring bundle components from contents of /cda/nyancat
pkgbuild: Wrote package to /Users/jenkins/slave/workspace/Brewbus-
Pkg/nyancat-1.4.4.pkg
Archiving artifacts
Finished: SUCCESS
```



 [Back to Dashboard](#) [Status](#) [Changes](#) [Workspace](#) [Build with Parameters](#) [Delete Project](#) [Configure](#)[Build History](#)[trend +](#)[RSS for all](#)[RSS for failures](#)

# Project Brewbus-Pkg

 [add description](#)[Disable Project](#)[Workspace](#)[Last Successful Artifacts](#)[nyancat-1.4.4.pkg](#)160.73 KB  [view](#)[Recent Changes](#)

## Permalinks

- [Last build \(#13\), 1 min 47 sec ago](#)
- [Last stable build \(#13\), 1 min 47 sec ago](#)
- [Last successful build \(#13\), 1 min 47 sec ago](#)
- [Last failed build \(#12\), 4 min 12 sec ago](#)
- [Last unsuccessful build \(#12\), 4 min 12 sec ago](#)

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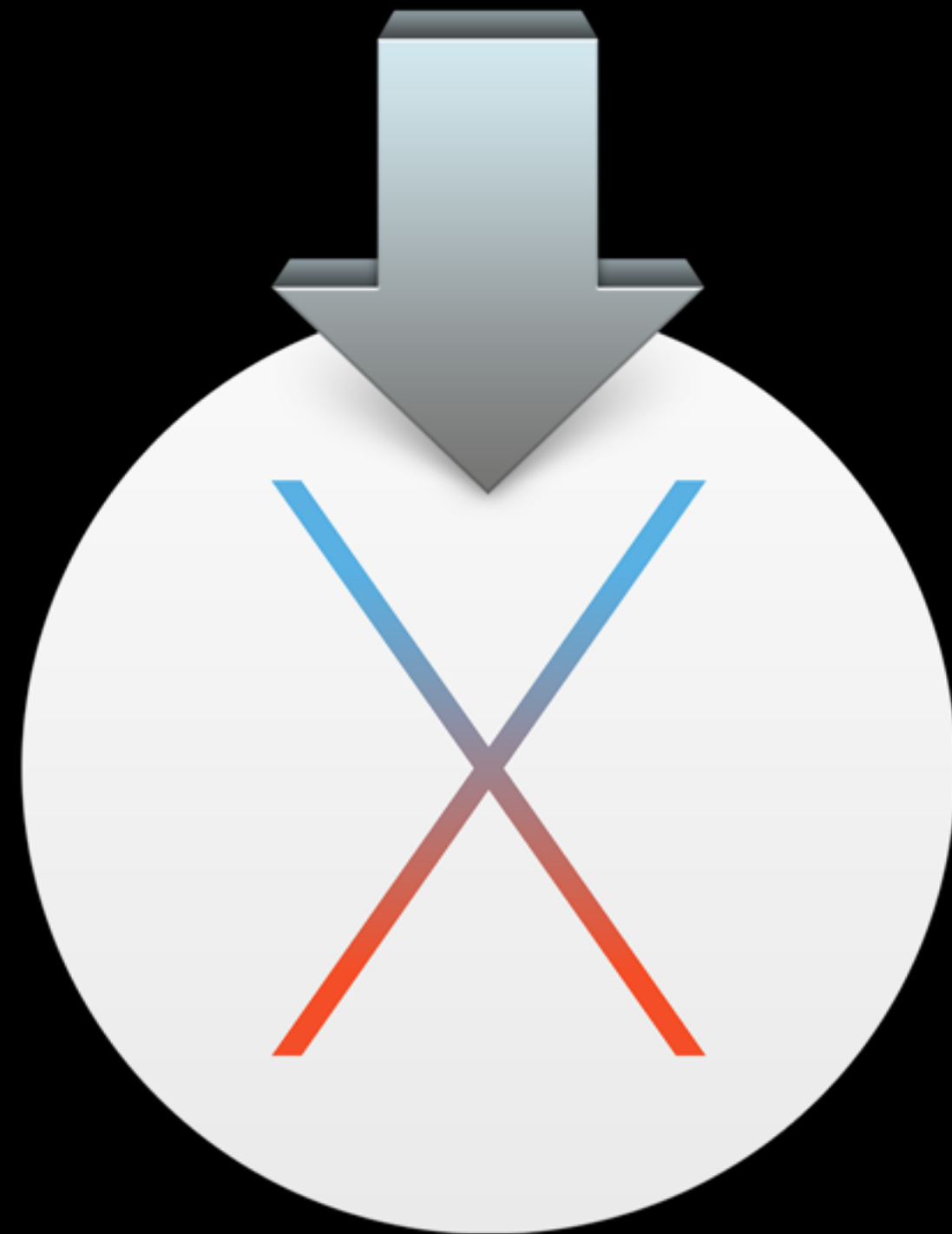
# Project Brewbus-Pkg

 [add description](#)[Disable Project](#)[Workspace](#)[Last Successful Artifacts](#)[nyancat-1.4.4.pkg](#)160.73 KB  [view](#)[Recent Changes](#)

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- [Last successful build \(#13\), 1 min 47 sec ago](#)
- [Last failed build \(#12\), 4 min 12 sec ago](#)
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# OS Install Automation

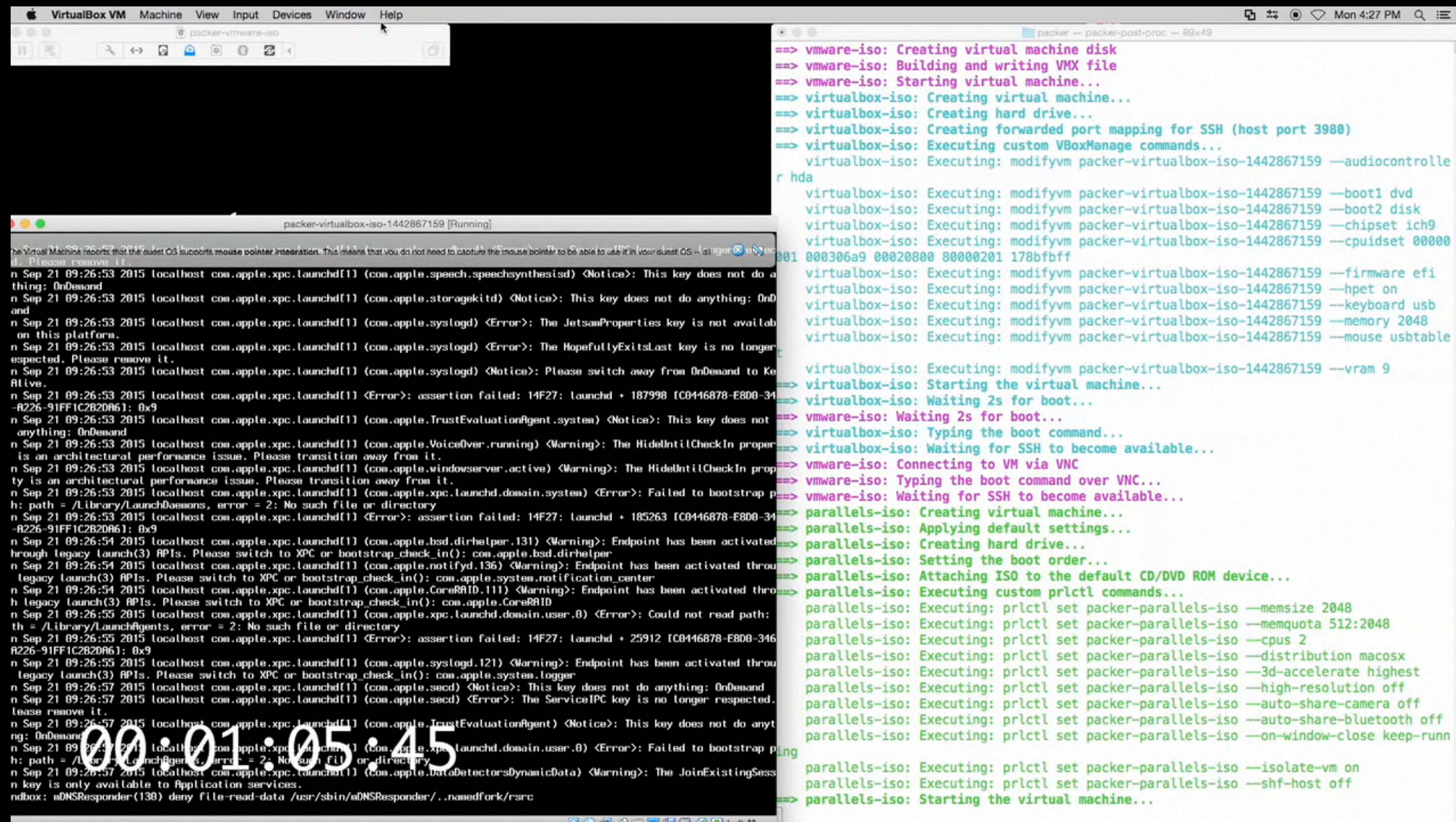


osx-vm-templates

[github.com/timsutton/osx-vm-templates](https://github.com/timsutton/osx-vm-templates)

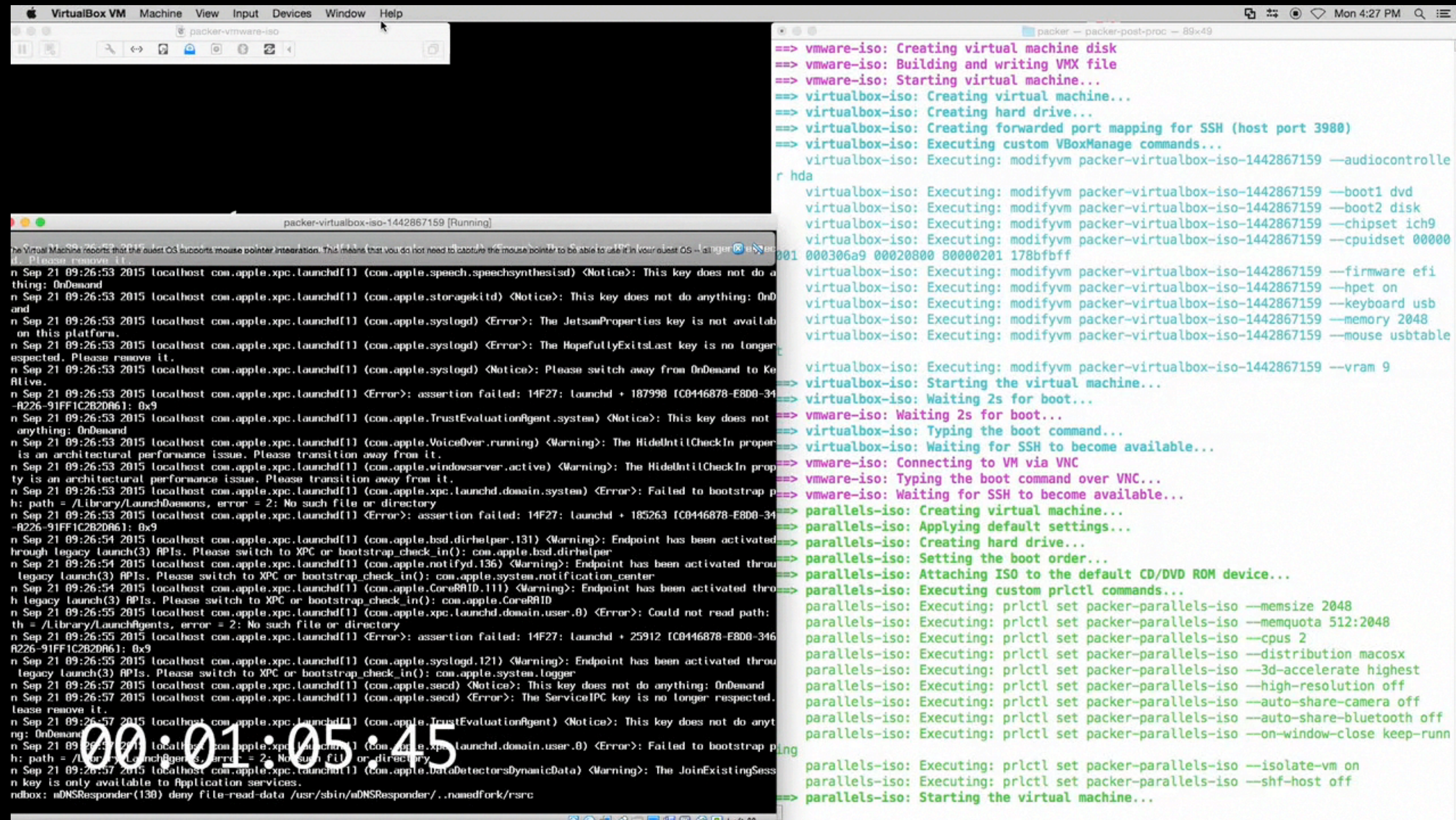


# osx-vm-templates





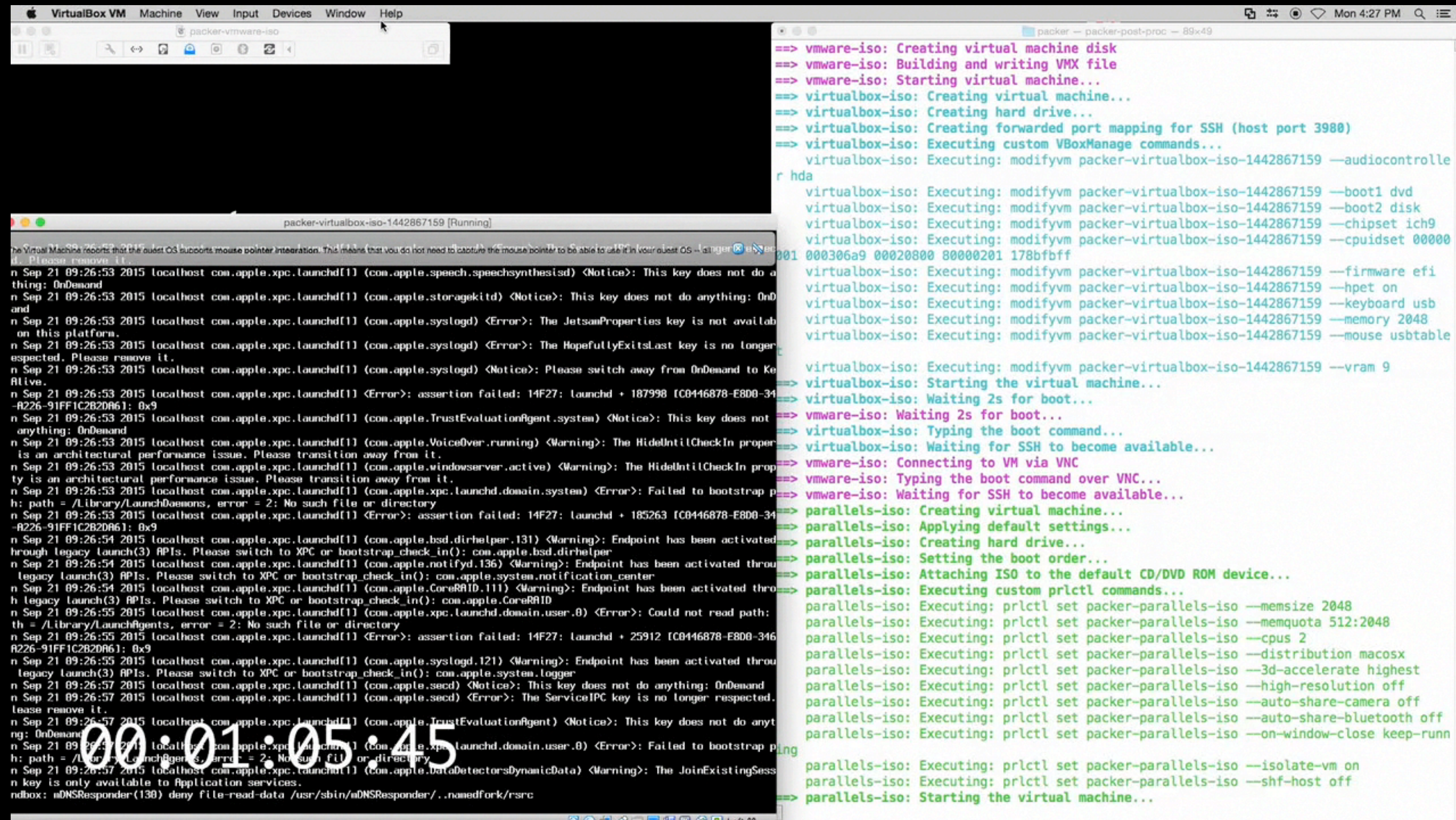
# osx-vm-templates





# osx-vm-templates

Packer templates to  
automatically build OS X  
VMs (hypervisor of choice)



```
VirtualBox VM Machine View Input Devices Window Help
packer-vmware-iso

==> vmware-iso: Creating virtual machine disk
==> vmware-iso: Building and writing VMX file
==> vmware-iso: Starting virtual machine...
==> virtualbox-iso: Creating virtual machine...
==> virtualbox-iso: Creating hard drive...
==> virtualbox-iso: Creating forwarded port mapping for SSH (host port 3980)
==> virtualbox-iso: Executing custom VBoxManage commands...
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --audiocontroller hda
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --boot1 dvd
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --boot2 disk
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --chipset ich9
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --cpuidset 00000
000306a9 00020800 80000201 178bfbff
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --firmware efi
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --hpet on
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --keyboard usb
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --memory 2048
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --mouse usbtable

virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --vram 9
==> virtualbox-iso: Starting the virtual machine...
==> virtualbox-iso: Waiting 2s for boot...
==> vmware-iso: Waiting 2s for boot...
==> virtualbox-iso: Typing the boot command...
==> virtualbox-iso: Waiting for SSH to become available...
==> vmware-iso: Connecting to VM via VNC
==> vmware-iso: Typing the boot command over VNC...
==> vmware-iso: Waiting for SSH to become available...
==> parallels-iso: Creating virtual machine...
==> parallels-iso: Applying default settings...
==> parallels-iso: Creating hard drive...
==> parallels-iso: Setting the boot order...
==> parallels-iso: Attaching ISO to the default CD/DVD ROM device...
==> parallels-iso: Executing custom prctl commands...
parallels-iso: Executing: prctl set packer-parallels-iso --memsize 2048
parallels-iso: Executing: prctl set packer-parallels-iso --memquota 512:2048
parallels-iso: Executing: prctl set packer-parallels-iso --cpus 2
parallels-iso: Executing: prctl set packer-parallels-iso --distribution macosx
parallels-iso: Executing: prctl set packer-parallels-iso --3d-accelerate highest
parallels-iso: Executing: prctl set packer-parallels-iso --high-resolution off
parallels-iso: Executing: prctl set packer-parallels-iso --auto-share-camera off
parallels-iso: Executing: prctl set packer-parallels-iso --auto-share-bluetooth off
parallels-iso: Executing: prctl set packer-parallels-iso --on-window-close keep-run

parallels-iso: Executing: prctl set packer-parallels-iso --isolate-vm on
parallels-iso: Executing: prctl set packer-parallels-iso --shf-host off
==> parallels-iso: Starting the virtual machine...
```



# osx-vm-templates

Packer templates to automatically build OS X VMs (hypervisor of choice)

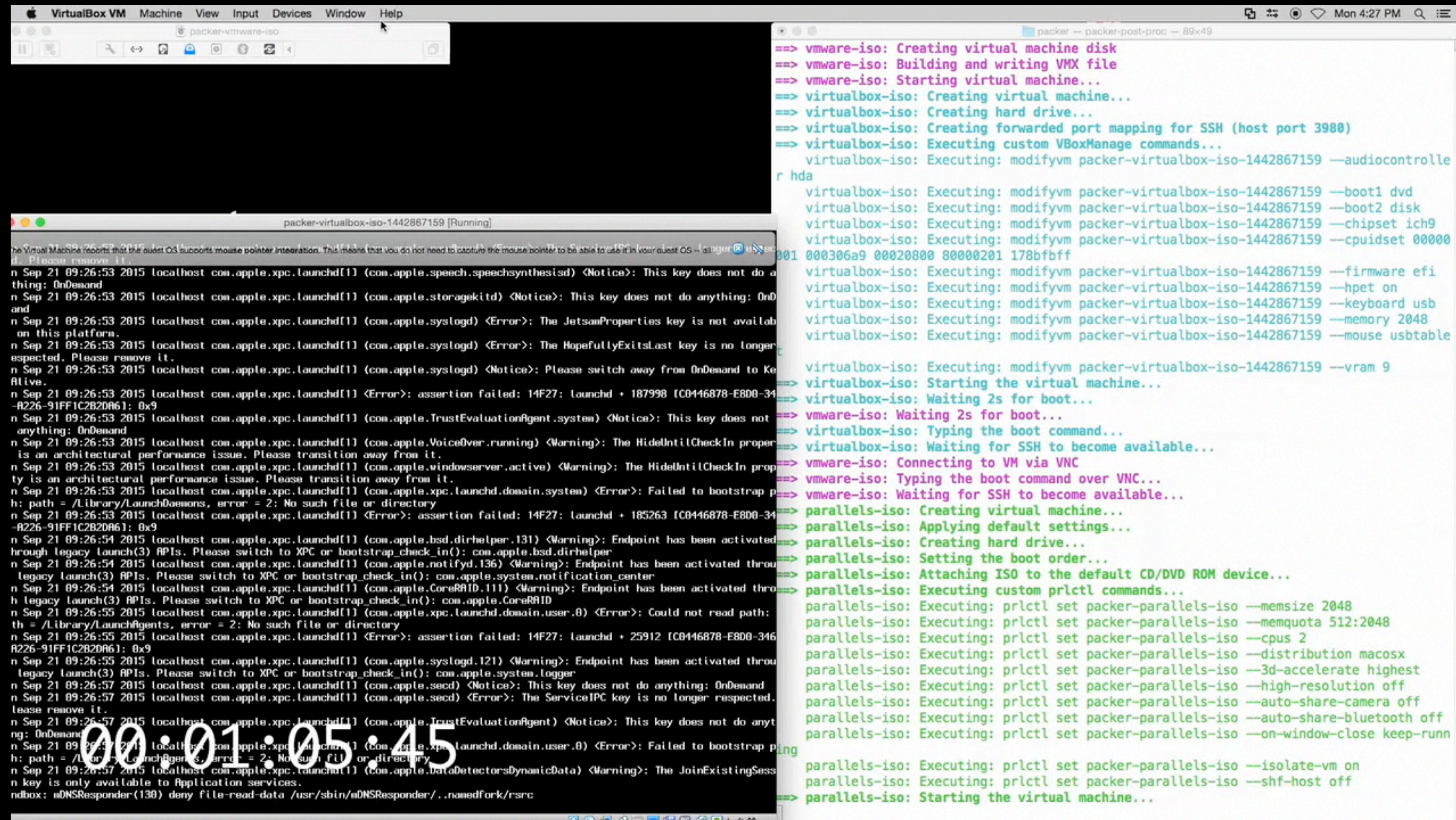
Tool to make OS X installer into a self-installing DMG

```
==> vmware-iso: Creating virtual machine disk
==> vmware-iso: Building and writing VMX file
==> vmware-iso: Starting virtual machine...
==> virtualbox-iso: Creating virtual machine...
==> virtualbox-iso: Creating hard drive...
==> virtualbox-iso: Creating forwarded port mapping for SSH (host port 3980)
==> virtualbox-iso: Executing custom VBoxManage commands...
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --audiocontroller hda
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --boot1 dvd
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --boot2 disk
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --chipset ich9
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --cpuidset 00000001 000306a9 00020800 80000201 178bfbff
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --firmware efi
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --hpet on
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --keyboard usb
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --memory 2048
virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --mouse usbtable

virtualbox-iso: Executing: modifyvm packer-virtualbox-iso-1442867159 --vram 9
==> virtualbox-iso: Starting the virtual machine...
==> virtualbox-iso: Waiting 2s for boot...
==> vmware-iso: Waiting 2s for boot...
==> virtualbox-iso: Typing the boot command...
==> virtualbox-iso: Waiting for SSH to become available...
==> vmware-iso: Connecting to VM via VNC
==> vmware-iso: Typing the boot command over VNC...
==> vmware-iso: Waiting for SSH to become available...
==> parallels-iso: Creating virtual machine...
==> parallels-iso: Applying default settings...
==> parallels-iso: Creating hard drive...
==> parallels-iso: Setting the boot order...
==> parallels-iso: Attaching ISO to the default CD/DVD ROM device...
==> parallels-iso: Executing custom prctl commands...
parallels-iso: Executing: prctl set packer-parallels-iso --memsize 2048
parallels-iso: Executing: prctl set packer-parallels-iso --memquota 512:2048
parallels-iso: Executing: prctl set packer-parallels-iso --cpus 2
parallels-iso: Executing: prctl set packer-parallels-iso --distribution macosx
parallels-iso: Executing: prctl set packer-parallels-iso --3d-accelerate highest
parallels-iso: Executing: prctl set packer-parallels-iso --high-resolution off
parallels-iso: Executing: prctl set packer-parallels-iso --auto-share-camera off
parallels-iso: Executing: prctl set packer-parallels-iso --auto-share-bluetooth off
parallels-iso: Executing: prctl set packer-parallels-iso --on-window-close keep-running
parallels-iso: Executing: prctl set packer-parallels-iso --isolate-vm on
parallels-iso: Executing: prctl set packer-parallels-iso --shf-host off
==> parallels-iso: Starting the virtual machine...
```



# osx-vm-templates



```
VirtualBox VM Machine View Input Devices Window Help
packer-vmware-iso

packer-parallel-iso-1442867159 [Running]
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.speech.speechsynthesisd) <Notice>: This key does not do anything: OnDemand
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.storagekitd) <Notice>: This key does not do anything: OnDemand
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.syslogd) <Error>: The JetsamProperties key is not available on this platform.
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.syslogd) <Error>: The HopefullyExitsLast key is no longer expected. Please remove it.
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.syslogd) <Notice>: Please switch away from OnDemand to KeepAlive.
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] <Error>: assertion failed: 14F27: launchd + 187998 [C0446878-E800-34A226-91FF1C2B2DA61]: 0x9
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.TrustEvaluationAgent.system) <Notice>: This key does not do anything: OnDemand
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.VoiceOver.running) <Warning>: The HideUntilCheckIn property is an architectural performance issue. Please transition away from it.
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.windowserver.active) <Warning>: The HideUntilCheckIn property is an architectural performance issue. Please transition away from it.
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] (com.apple.xpc.launchd.domain.system) <Error>: Failed to bootstrap path: path = /Library/LaunchDaemons, error = 2: No such file or directory
n Sep 21 09:26:53 2015 localhost com.apple.xpc.launchd[1] <Error>: assertion failed: 14F27: launchd + 185263 [C0446878-E800-34A226-91FF1C2B2DA61]: 0x9
n Sep 21 09:26:54 2015 localhost com.apple.xpc.launchd[1] (com.apple.bsd.dirhelper.131) <Warning>: Endpoint has been activated through legacy launch(3) APIs. Please switch to XPC or bootstrap_check_in(): com.apple.bsd.dirhelper
n Sep 21 09:26:54 2015 localhost com.apple.xpc.launchd[1] (com.apple.notifyd.136) <Warning>: Endpoint has been activated through legacy launch(3) APIs. Please switch to XPC or bootstrap_check_in(): com.apple.system.notification_center
n Sep 21 09:26:54 2015 localhost com.apple.xpc.launchd[1] (com.apple.CoreRAID.111) <Warning>: Endpoint has been activated through legacy launch(3) APIs. Please switch to XPC or bootstrap_check_in(): com.apple.CoreRAID
n Sep 21 09:26:55 2015 localhost com.apple.xpc.launchd[1] (com.apple.xpc.launchd.domain.user.0) <Error>: Could not read path: path = /Library/LaunchAgents, error = 2: No such file or directory
n Sep 21 09:26:55 2015 localhost com.apple.xpc.launchd[1] <Error>: assertion failed: 14F27: launchd + 25912 [C0446878-E800-34A226-91FF1C2B2DA61]: 0x9
n Sep 21 09:26:55 2015 localhost com.apple.xpc.launchd[1] (com.apple.syslogd.121) <Warning>: Endpoint has been activated through legacy launch(3) APIs. Please switch to XPC or bootstrap_check_in(): com.apple.system.logger
n Sep 21 09:26:57 2015 localhost com.apple.xpc.launchd[1] (com.apple.secd) <Notice>: This key does not do anything: OnDemand
n Sep 21 09:26:57 2015 localhost com.apple.xpc.launchd[1] (com.apple.secd) <Error>: The ServiceIPC key is no longer respected. Please remove it.
n Sep 21 09:26:57 2015 localhost com.apple.xpc.launchd[1] (com.apple.TrustEvaluationAgent) <Notice>: This key does not do anything: OnDemand
n Sep 21 09:26:57 2015 localhost com.apple.xpc.launchd[1] (com.apple.xpc.launchd.domain.user.0) <Error>: Failed to bootstrap path: path = /Library/LaunchAgents, error = 2: No such file or directory
n Sep 21 09:26:57 2015 localhost com.apple.xpc.launchd[1] (com.apple.dataDetectorsDynamicData) <Warning>: The JoinExistingSession key is only available to Application services.
n Sep 21 09:26:57 2015 localhost com.apple.xpc.launchd[1] (com.apple.mDNSResponder.130) deny file-read-data /usr/sbin/mDNSResponder/.namedfork/rsrvc
```

Packer templates to automatically build OS X VMs (hypervisor of choice)

Tool to make OS X installer into a self-installing DMG

Scripts to setup Xcode CLI tools, config mgmt. tools, VM guest drivers and Vagrant support



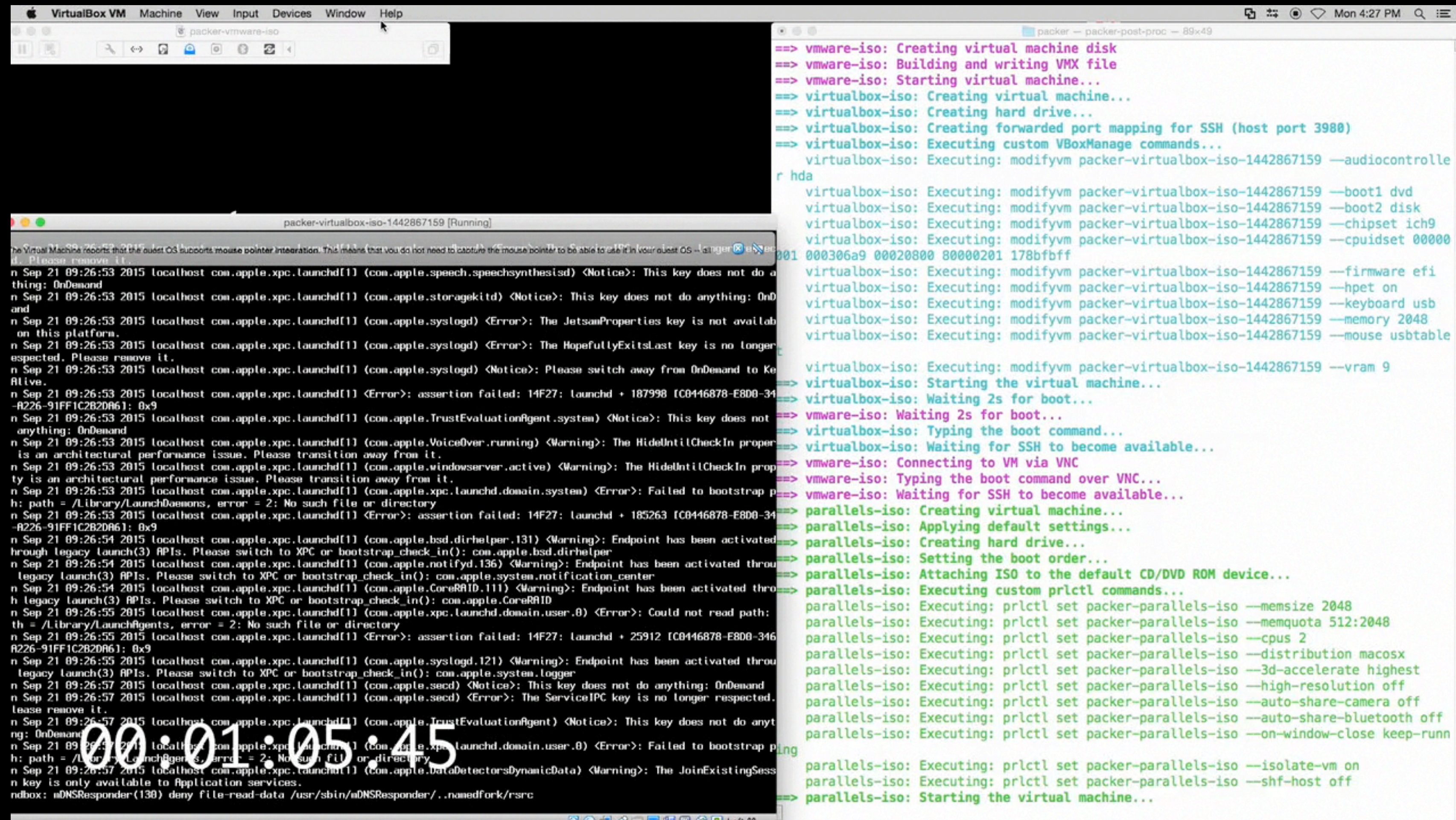
# osx-vm-templates

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# Scripts to setup Xcode CLI tools, config mgmt. tools, VM guest drivers and Vagrant support

## Support for OS X guests added to Vagrant core





# The dream

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- `vagrant up` for OS X development, testing and automation

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  - Testing config mgmt. using Vagrant's support for... everything
  - Testing large software installations across multiple OSes



# The dream

Nope.

# Uses and inspirations

- Rich Trouton
  - [github.com/rtrouton/create\\_os\\_x\\_vm\\_install\\_dmg](https://github.com/rtrouton/create_os_x_vm_install_dmg)
  - Automated OS X VM setup without need for NetBoot, Vagrant, Packer, etc.
  - Can add additional packages to be installed at first boot



# Uses and inspirations

- Joseph Chilcote
  - [github.com/chilcote/vfuse](https://github.com/chilcote/vfuse)
  - Use pre-existing never-booted OS images rather than automating the installation itself
  - Cherry-picked scripts for setting up guest tools, Puppet, Chef, Xcode CLI



# Uses and inspirations

- Chef
  - Bento  
[github.com/chef/bento](https://github.com/chef/bento)
  - Fletcher Nichol: Using Test Kitchen for testing Chef cookbooks on OS X  
<https://gist.github.com/fnichol/8609348>



# Uses and inspirations

Build a Continuous Integration VM  
environment for use with GitLab

[github.com/ayufan/travis-osx-vm-templates](https://github.com/ayufan/travis-osx-vm-templates)

# What I learned

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# What I learned

- Some of the mysteries about special data the OS X installer environment uses to automate installations
  - AutoPartition.app
- Shell scripts get hard to maintain quickly
- I apparently really enjoy this weird stuff, since I continue to maintain it despite not needing it
- Ideas are good to spread! Someone else may take them and run with them.

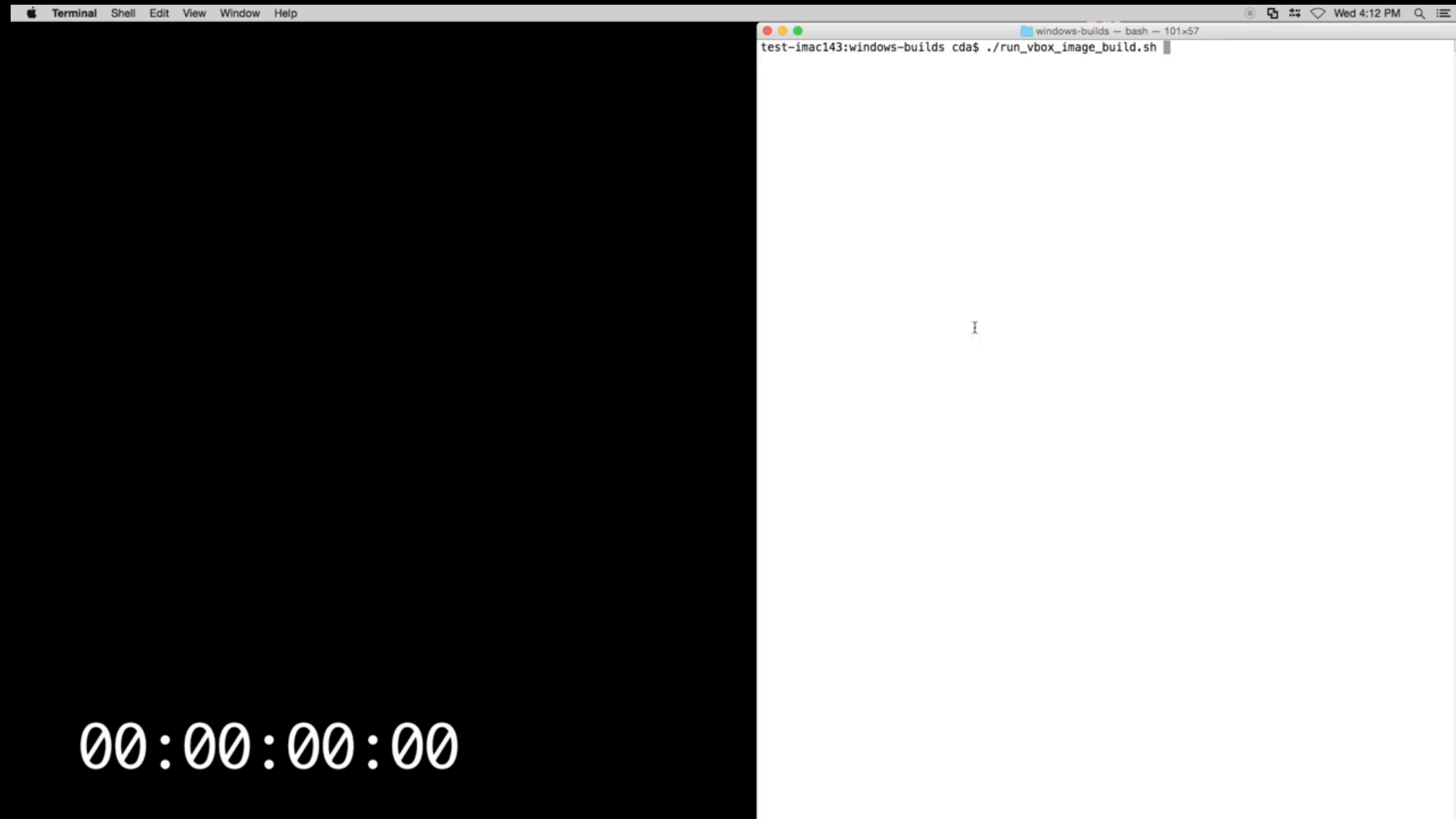
# Thanks

- Matt Behrens (support for VirtualBox Packer builder, required additional patches in both Packer and Vagrant core)
- Tom Taylor (support for Parallels Packer builder)

wincclone-image-builder

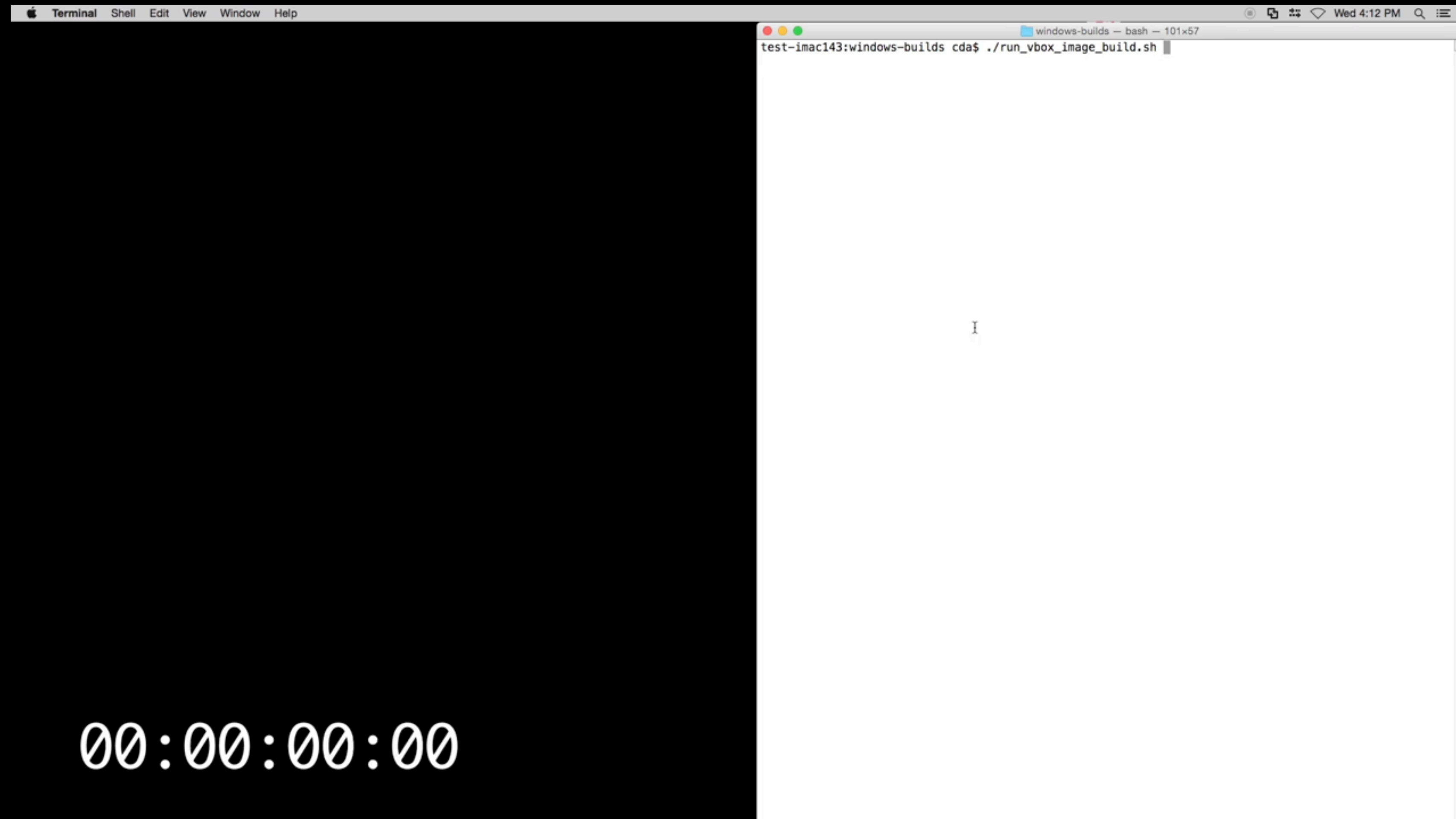
[github.com/timsutton/wincclone-image-builder](https://github.com/timsutton/wincclone-image-builder)

# wincclone-image-builder



00:00:00:00

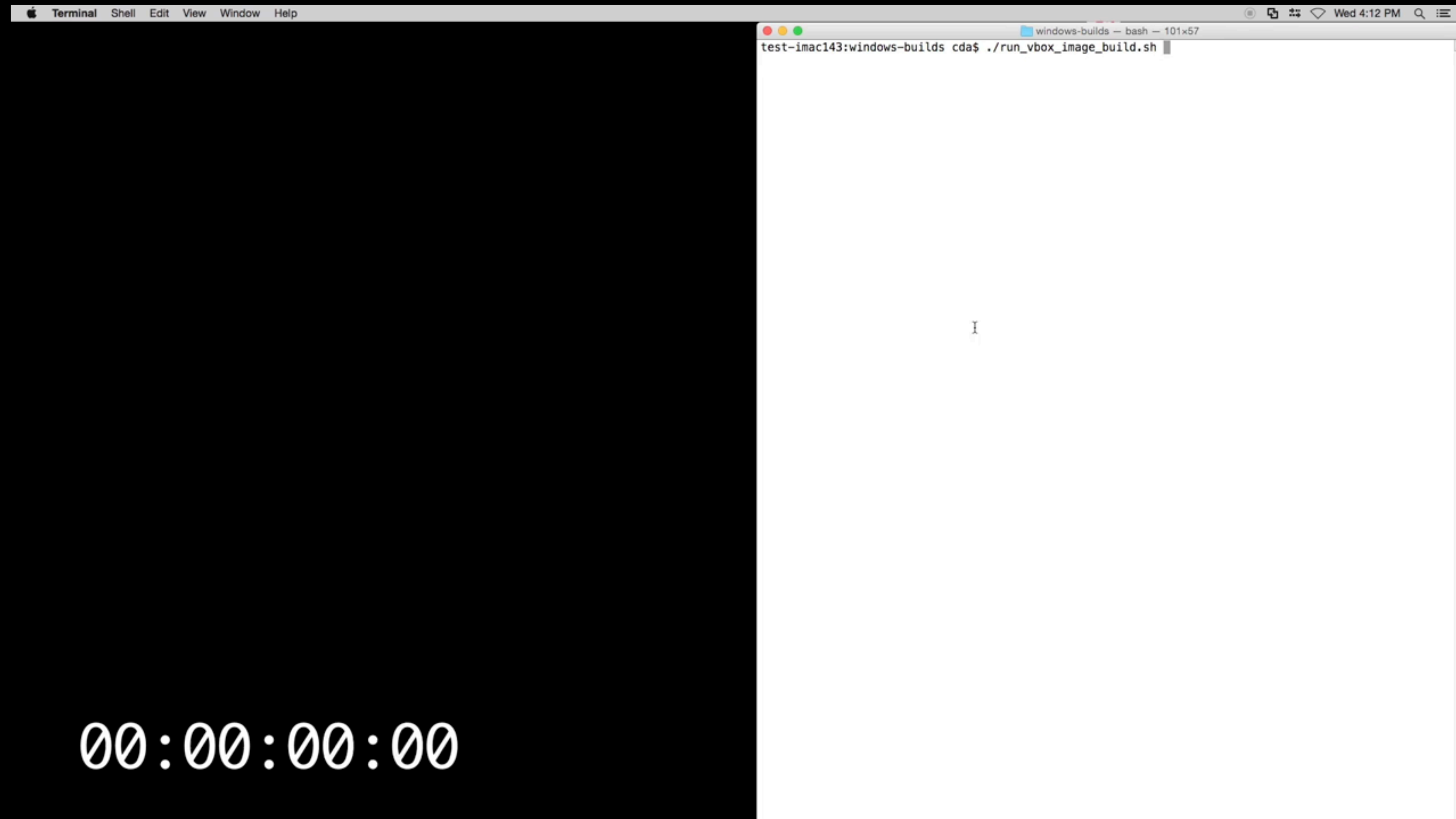
# winclone-image-builder



00:00:00:00



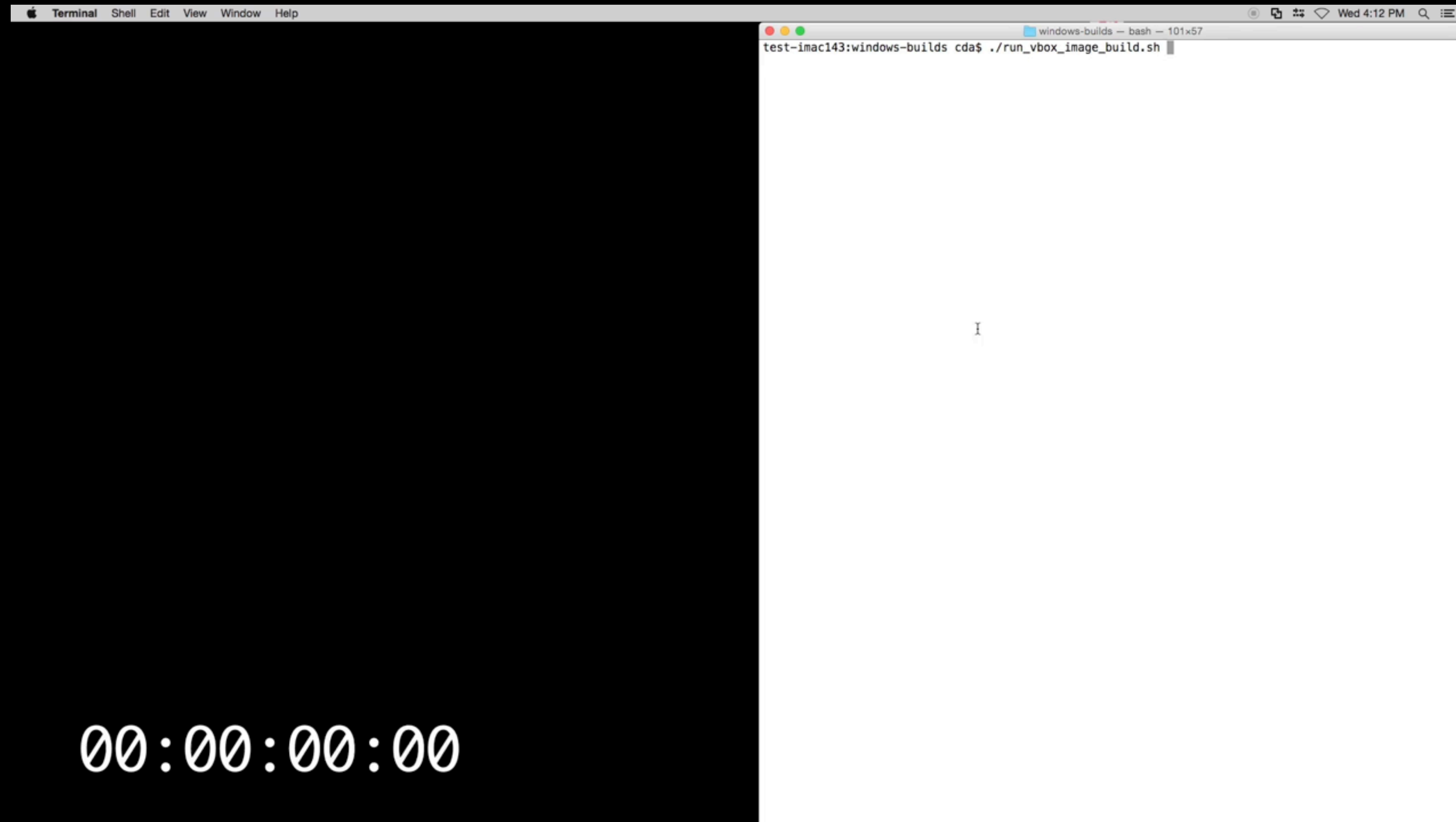
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Packer templates and  
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[joefitzgerald/packer-windows](https://github.com/joefitzgerald/packer-windows)

00:00:00:00

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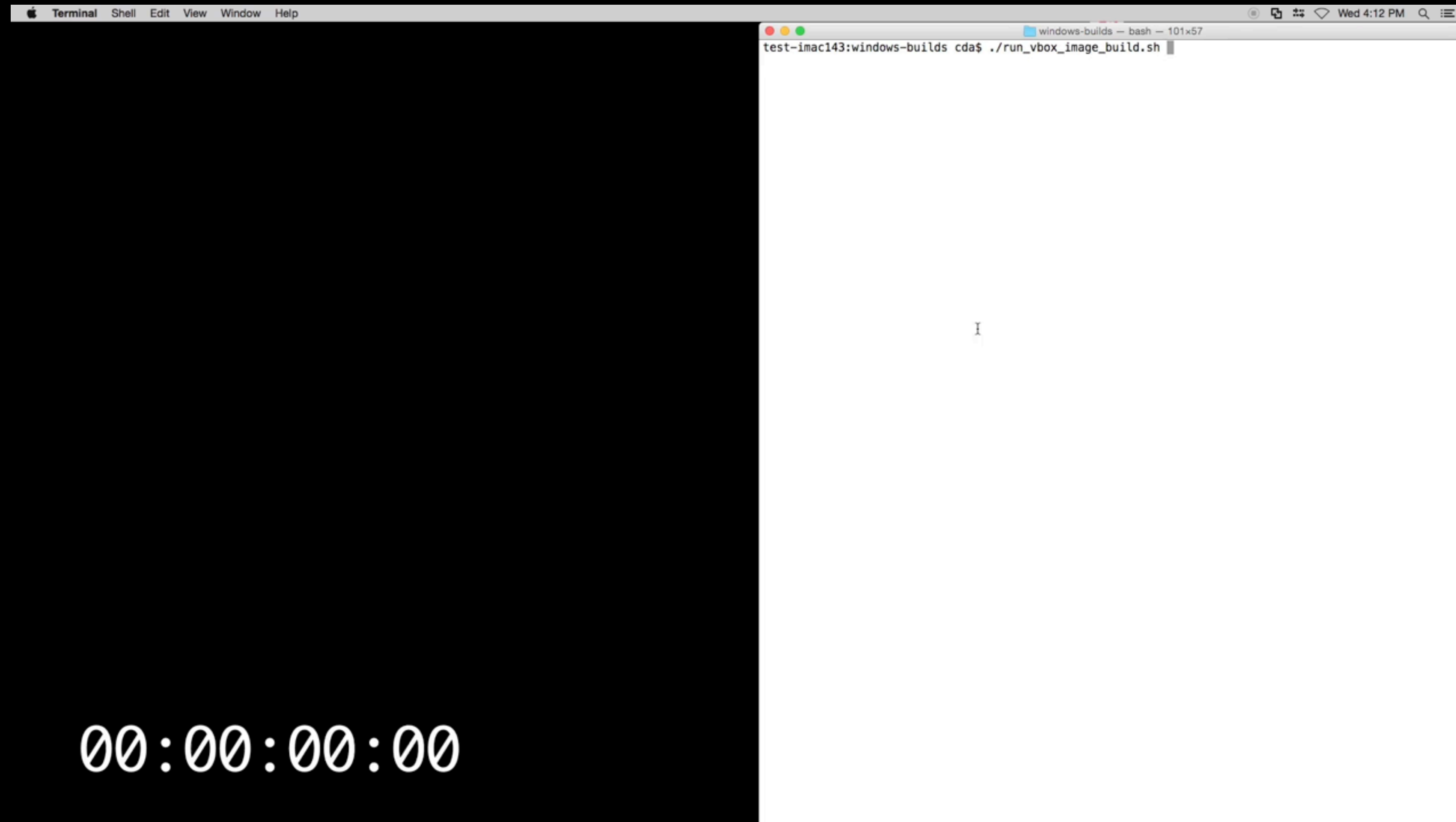


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BootCamp ethernet drivers  
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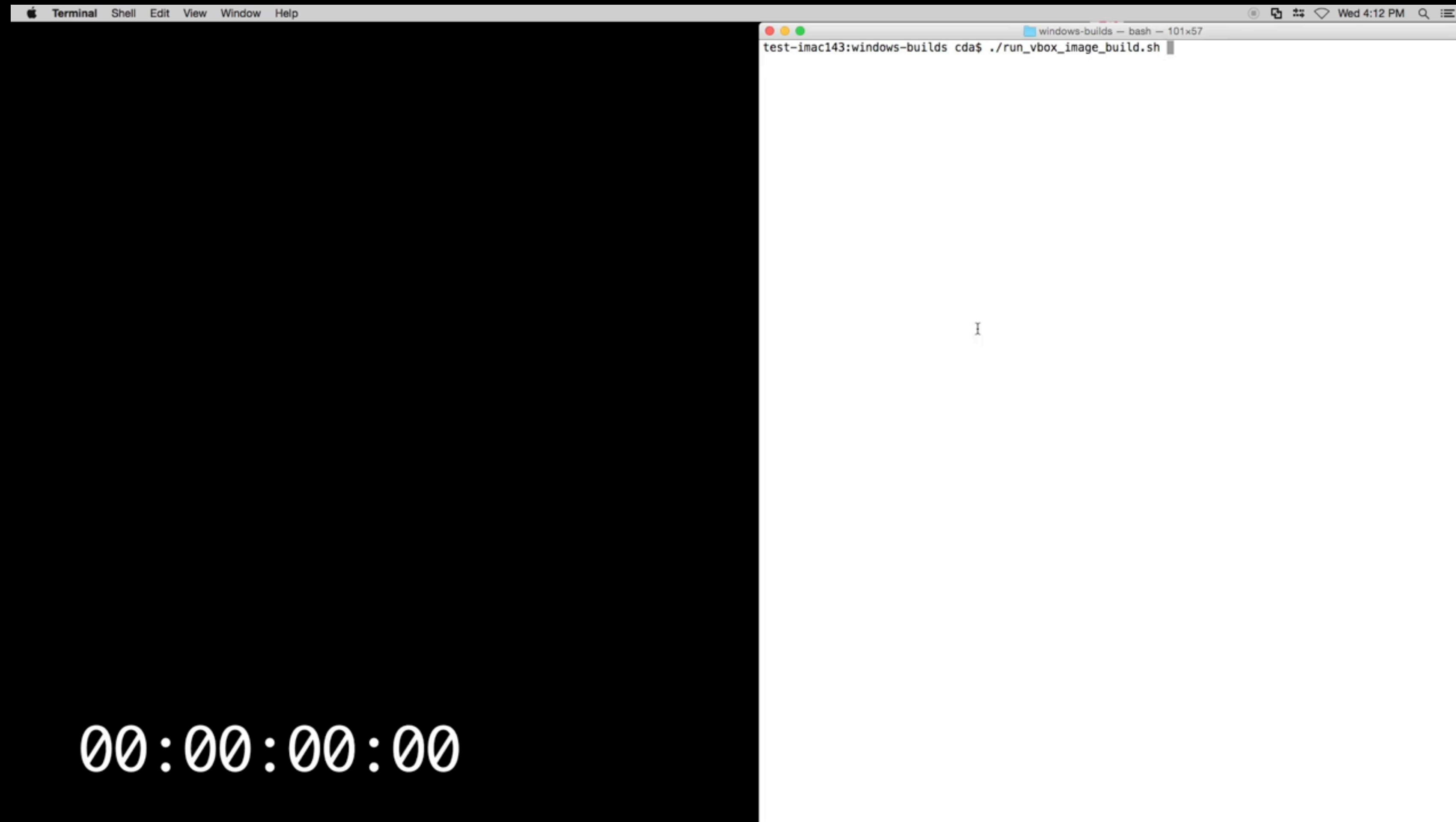
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Final "wrapping" into  
a .wincclone self-extracting  
image bundle

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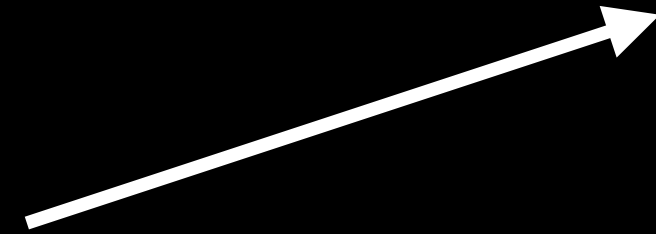


.wincclone  
package

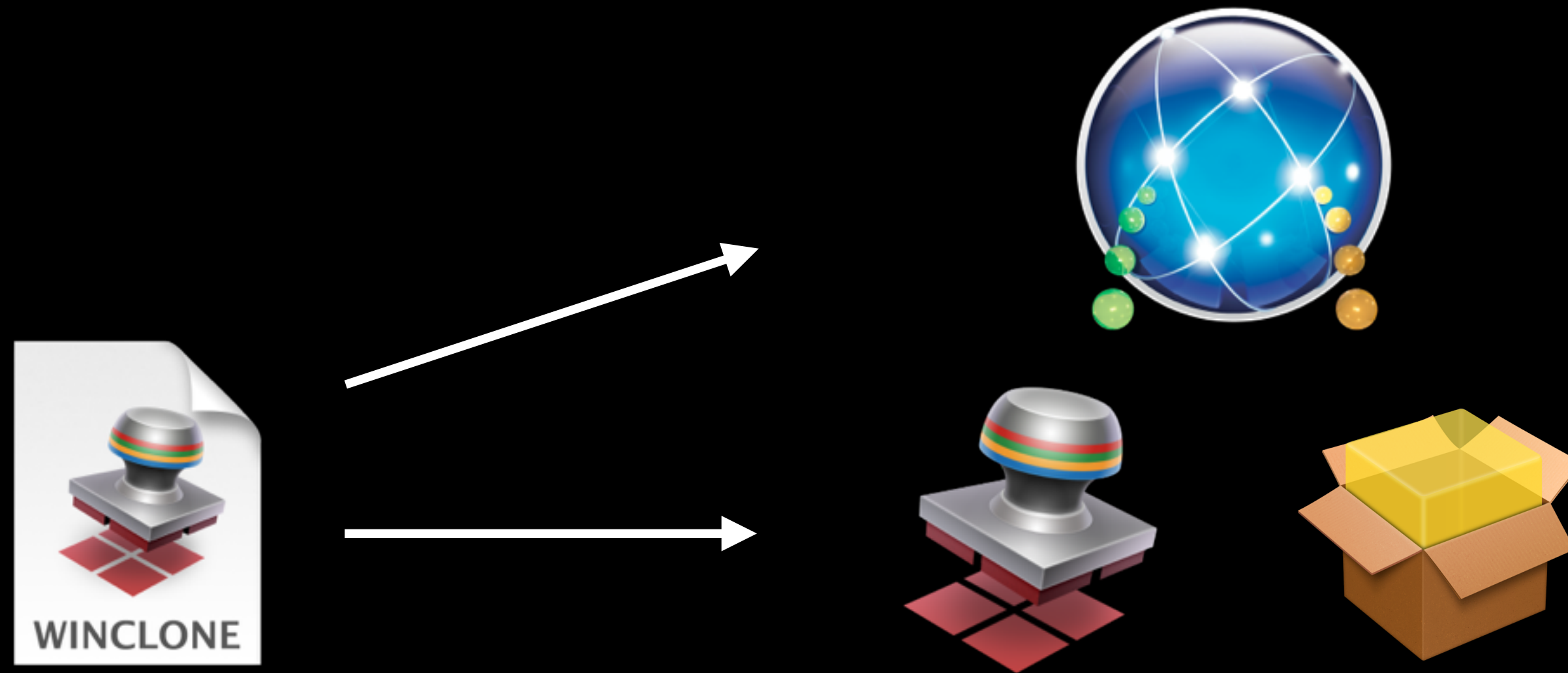
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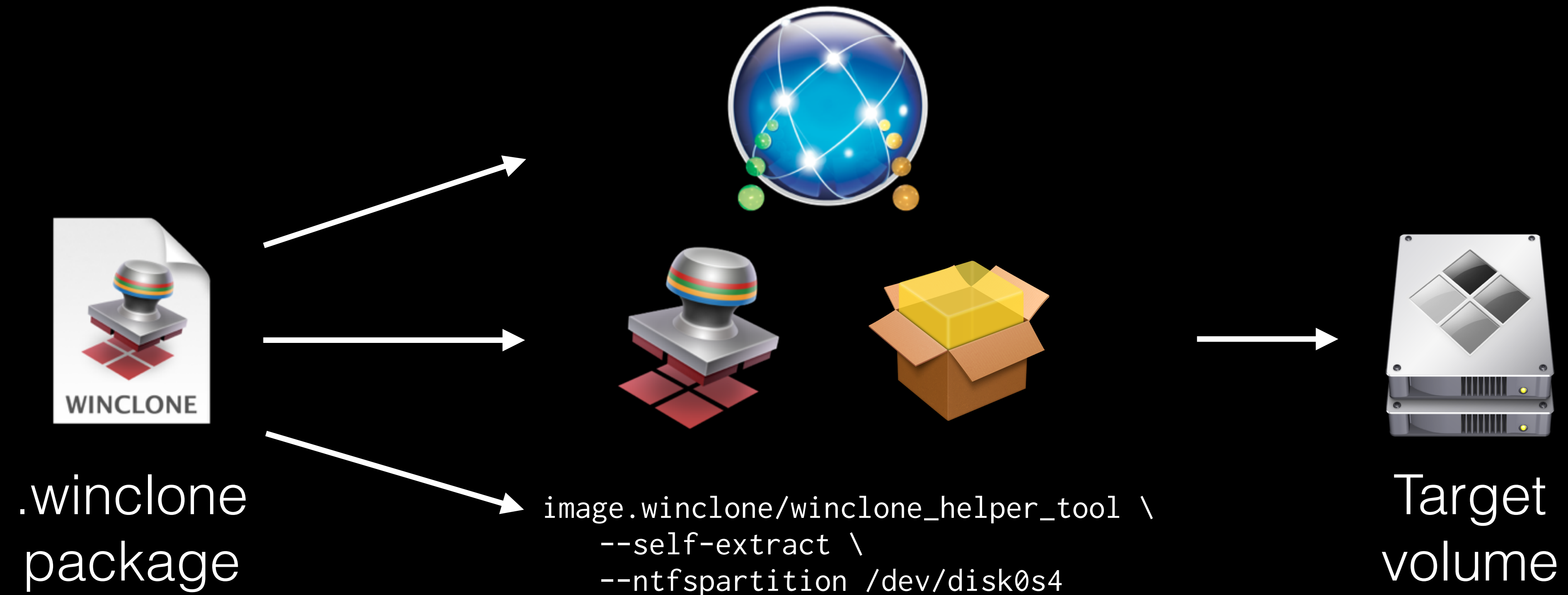
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.wincclone  
package



# wincclone-image-builder



wincclone-image-builder

# wincclone-image-builder

- Currently supports both VMware Fusion and VirtualBox
- Very alpha
- Wincclone not a requirement in theory, but please use Wincclone if you deploy Windows
- Windows 8.1 template only (7 is possible, small bug with 10)

# Brigadier

[github.com/timsutton/brigadier](https://github.com/timsutton/brigadier)

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  - ...has been less reliable as of recent versions of Boot Camp

00:00:07:14

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Perform a silent install of the Boot Camp MSI and clean up

# What I learned

# What I learned

- Windows installer technologies are weird and complex
- It's hard to support a project that requires specific hardware, lengthy to test, and in an area I don't have expertise (Windows installer internals)
- The "silent install of Boot Camp" part is no longer working well. I need help!

python-macadmin-tools

[github.com/timsutton/python-macadmin-tools](https://github.com/timsutton/python-macadmin-tools)

Tack!

[macops.ca/smorgasbord](http://macops.ca/smorgasbord)