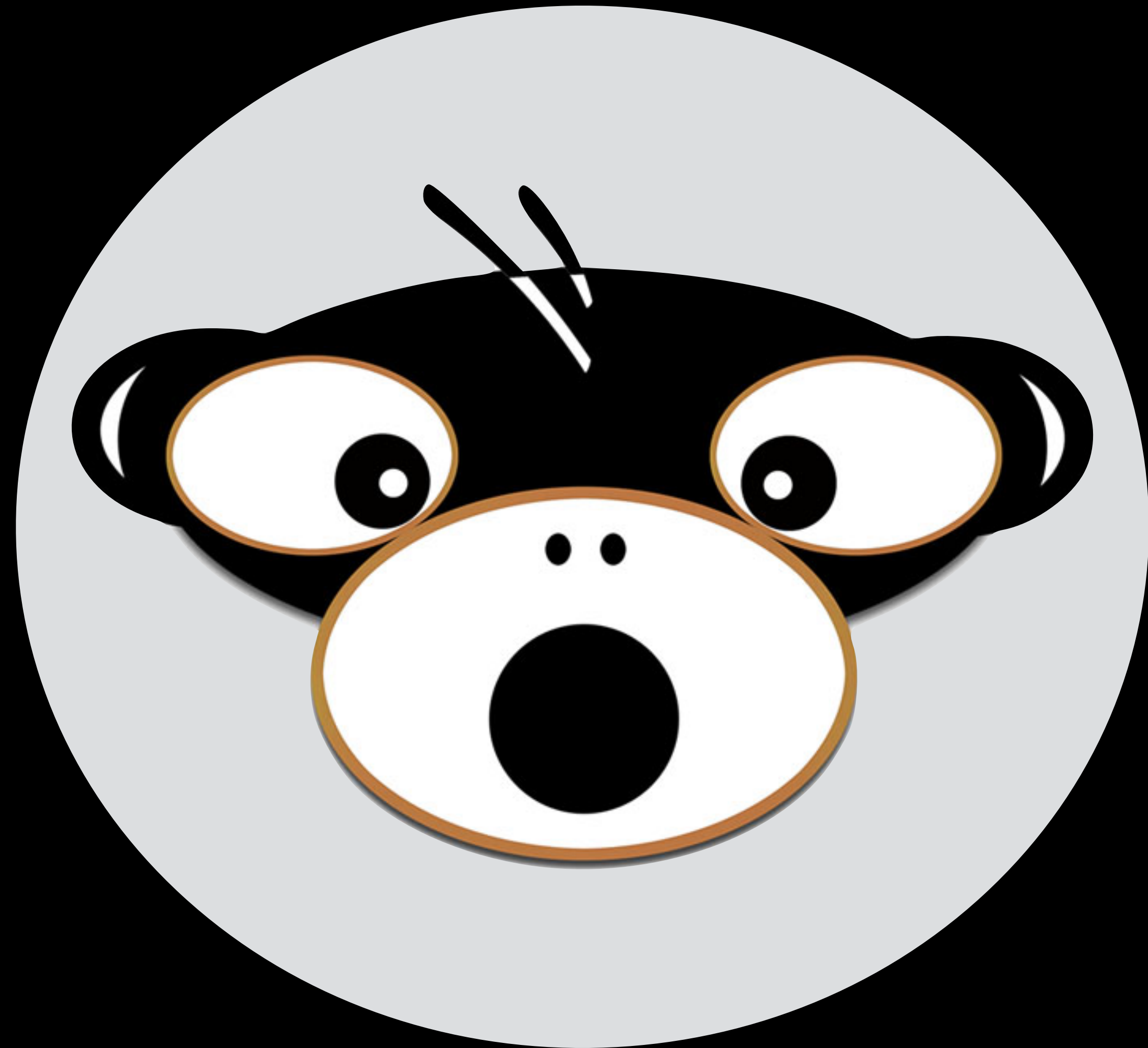


Munki, Ventura, and You

Greg Neagle, Fall 2022





Search



Software



Categories



My Items



Updates



[Help](#) | [Support](#) | [Contact Tech Support](#) | [All Categories](#) | [What's new in macOS Monterey](#) | [Apple](#) | [Disney Animation Web](#) | [Change your passwords](#)

All items



Adobe Acrobat Reader DC
Productivity - Adobe

INSTALL



Amazon WorkSpaces
Remote Access - Amazon

INSTALL



Aspera Connect
Utilities - IBM Corp

INSTALL



Atom
Text Editors - GitHub, Inc.

INSTALL



Autodesk Maya 2018
Production - Autodesk

INSTALL



Autodesk Maya 2019
Production - Autodesk

INSTALL



Autodesk Maya 2022
Production - Autodesk

INSTALL



Autodesk Meshmixer
Production - Autodesk

INSTALL



Autodesk Mudbox 2019
Production - Autodesk

INSTALL



Search



Software



Categories



My Items



Updates



Adobe Acrobat Reader DC

[Adobe](#)

INSTALL

More powerful than other PDF software, Adobe Acrobat Reader DC is the free, trusted standard for viewing, printing, and annotating PDFs. And now, it's connected to Adobe Document Cloud — so it's easier than ever to work with PDFs on computers and mobile devices.

Information

Developer
Adobe

Size
312.3 MB

Category
Productivity


Version
22.001.20112


Status
Not installed



Search

 Software

 Categories

 My Items

 Updates 2

Updates

2 pending updates

UPDATE ALL



Mozilla Firefox
Mozilla
Version 105.0 • 122.8 MB

Mozilla Firefox is a free and open source web browser.



Google Chrome
Google
Version 105.0.5195.125 • 194....


Google's web browser.


CANCEL



Q Search

 Software

 Categories

 My Items

 Updates

Updates

1 pending update

UPDATE

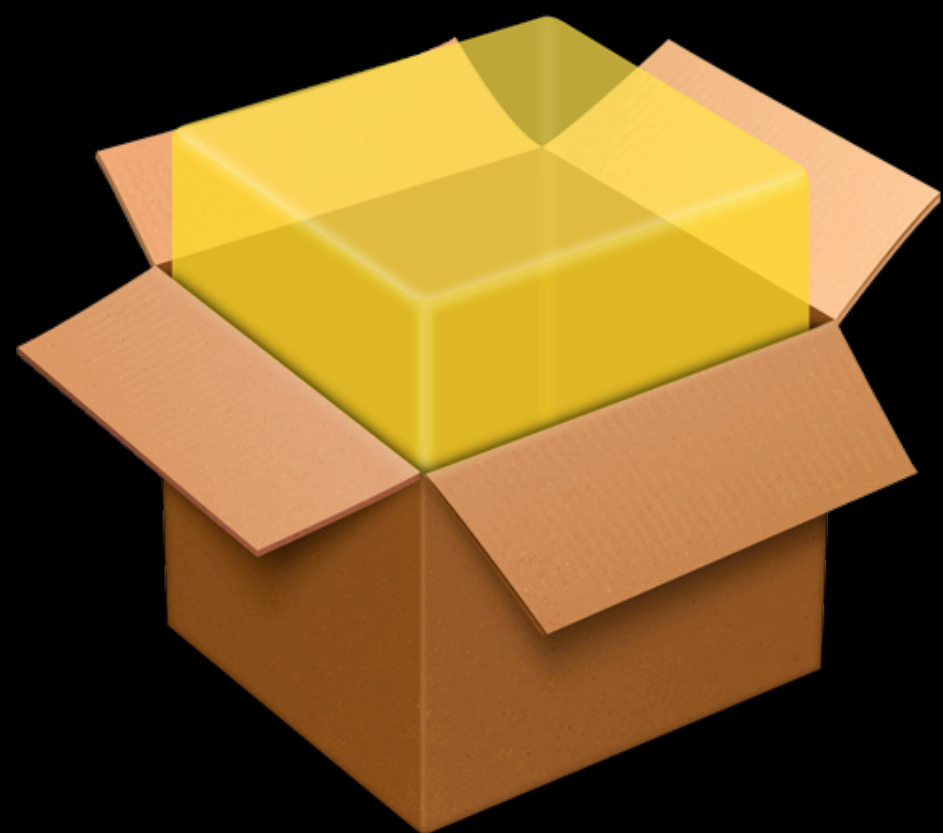


Safari
Apple
Version 16.0 • 402.3 MB

This update has been pending for 7 days.

...

[More](#)



Using Munki to upgrade macOS

2011





July 20, 2011

INSTALL
LION PKG

Sept 8, 2011

createOSXinstallPkg

July 24, 2012

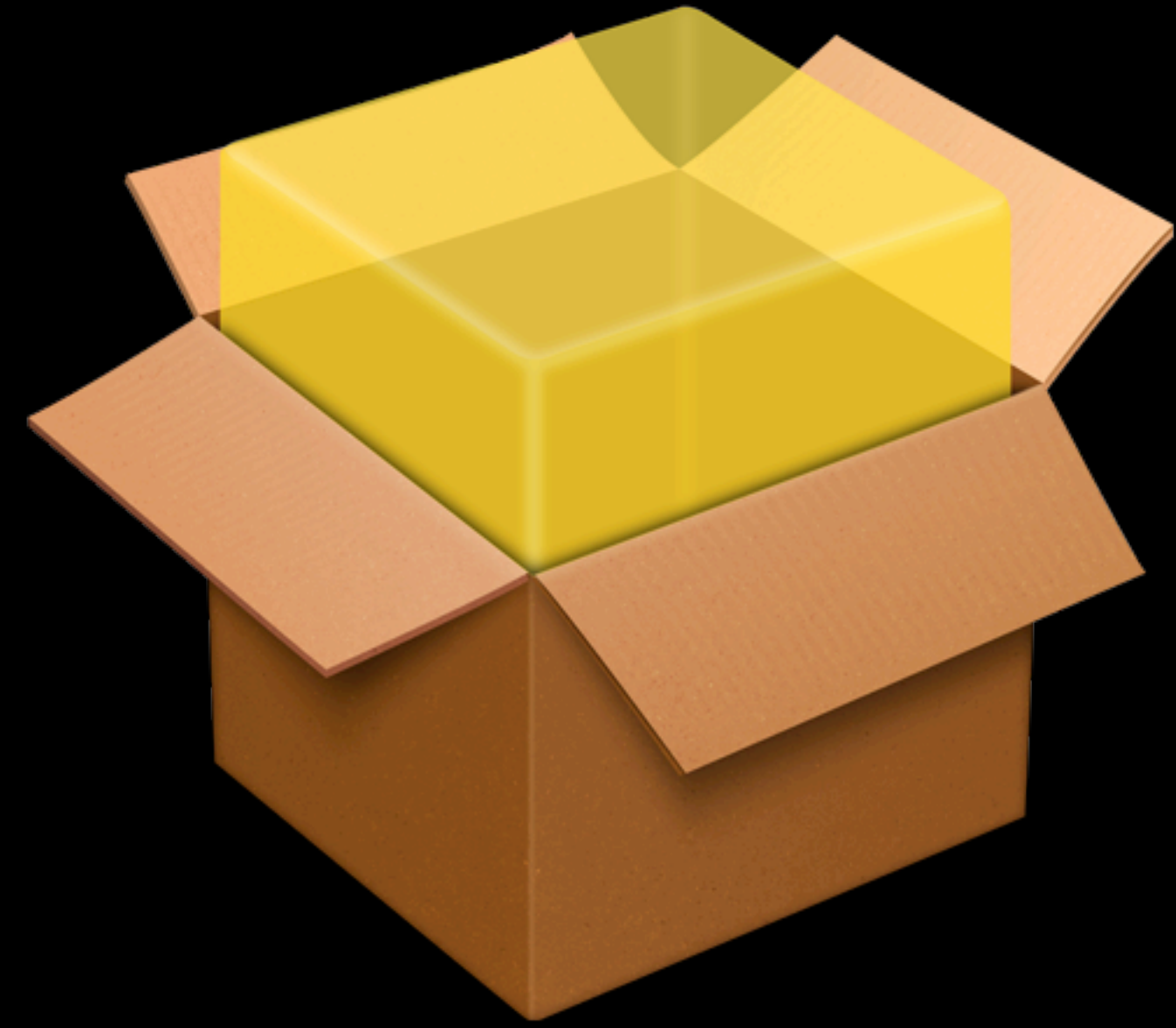


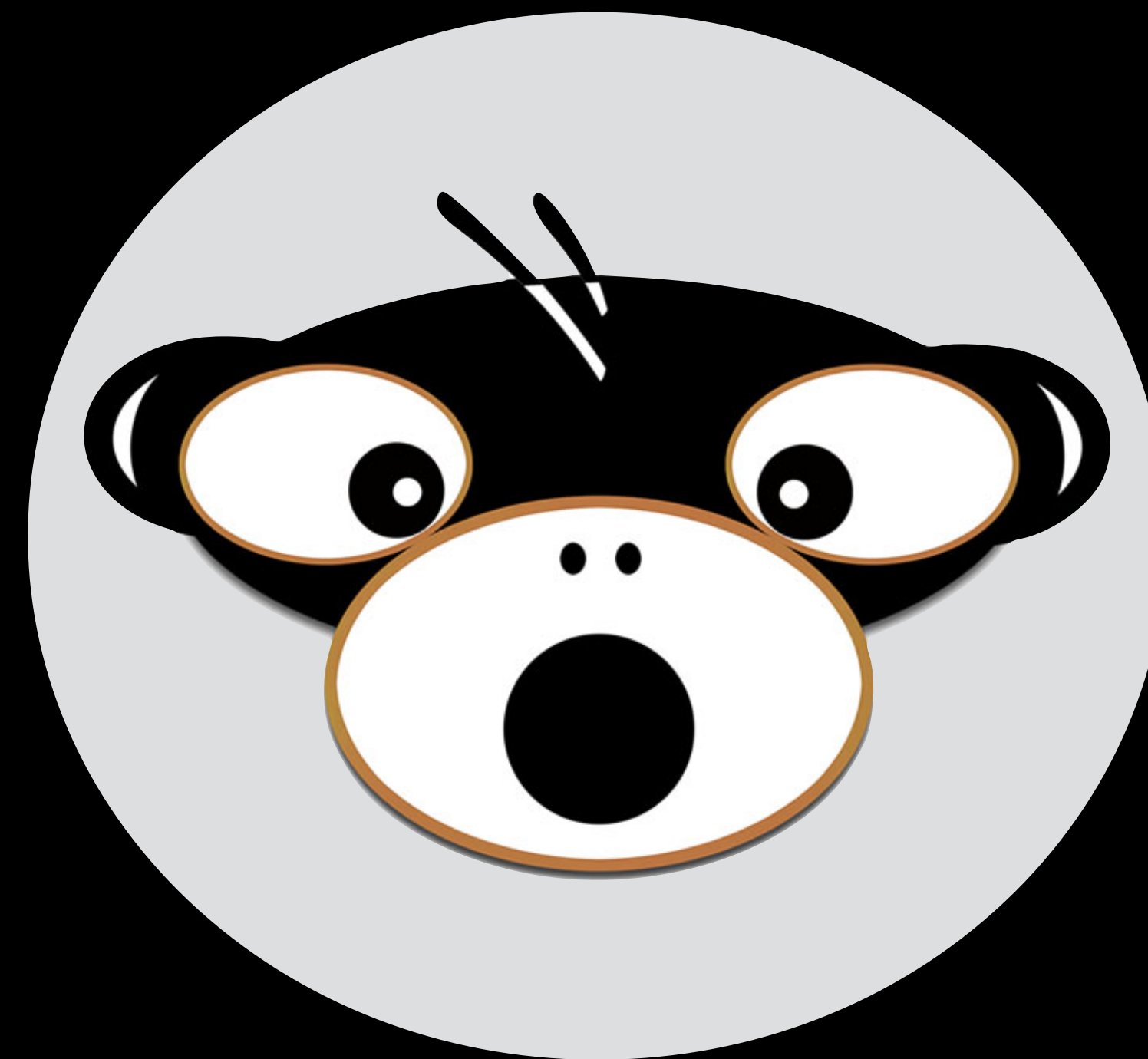
July 25, 2012

createIOSXIPkg

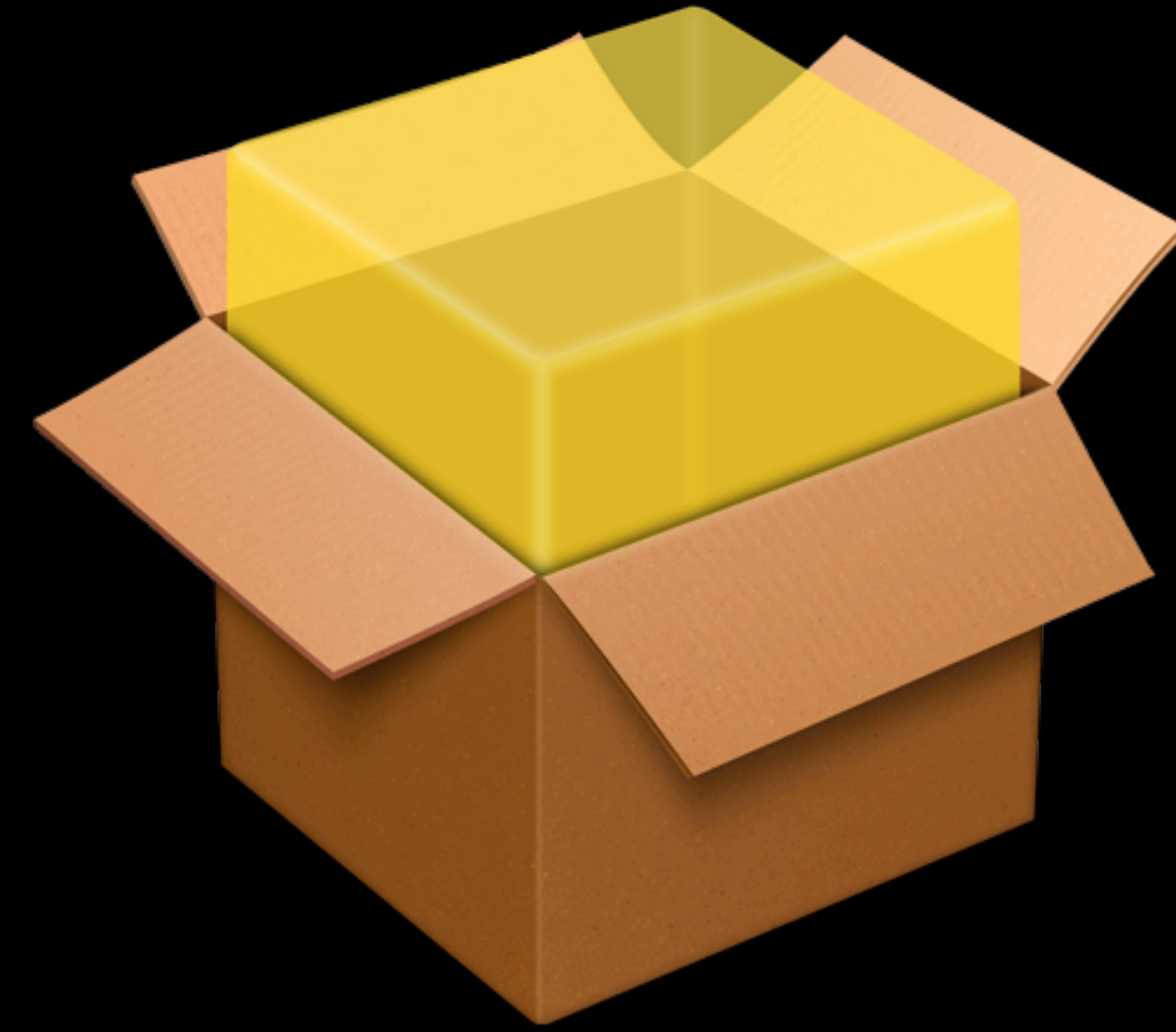
INSTALL

LIONXIPKG





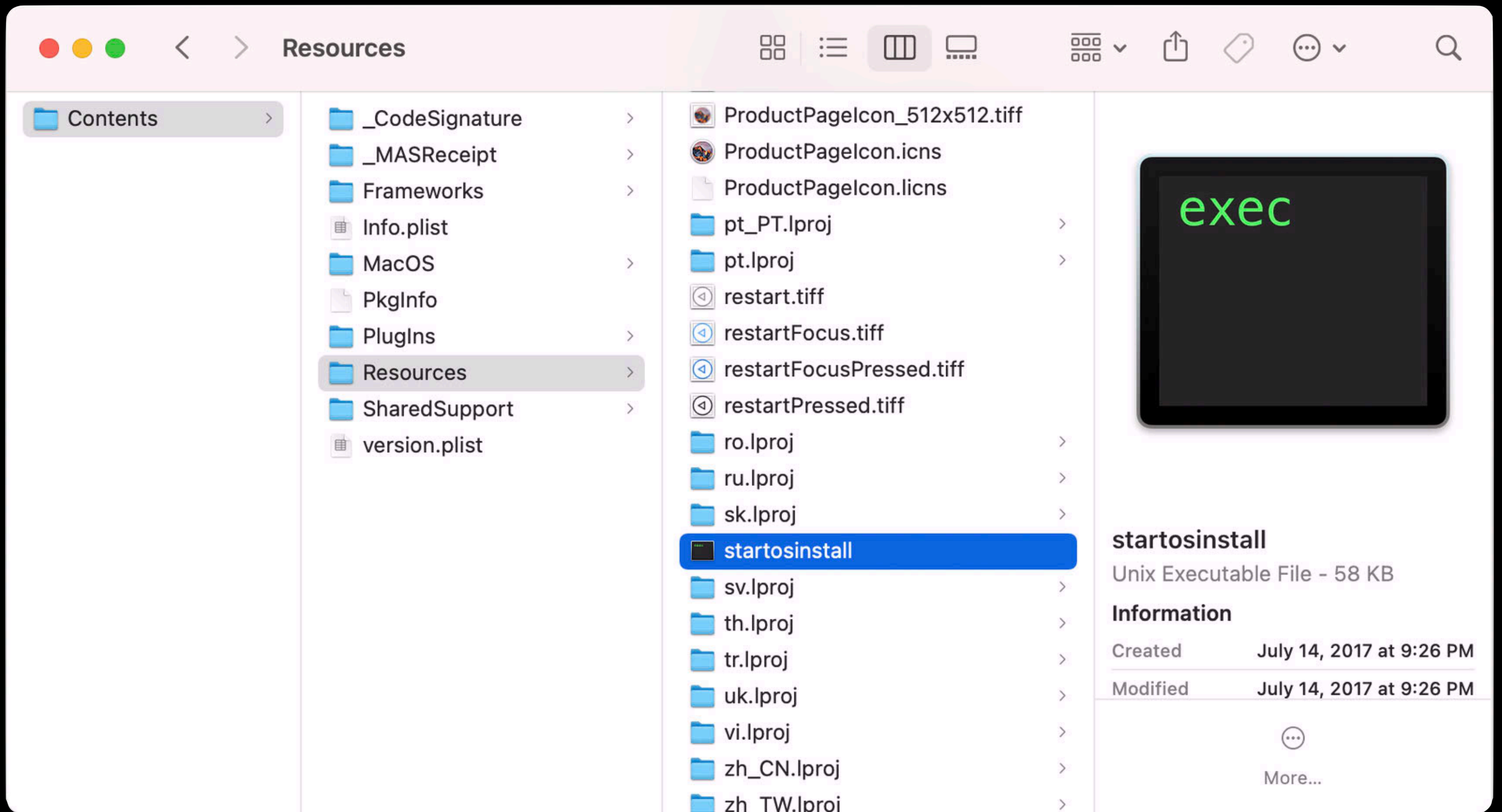
createOSXinstallPkg





10.12.4

startosinstall




```
$ ./Install\ macOS\ Sierra.app/Contents/Resources/startosinstall --usage
```

```
Usage: startosinstall --applicationpath <install macOS.app path>
```

Arguments

--applicationpath, a path to copy of the OS installer application to start the install with.

--license, prints the user license agreement only.

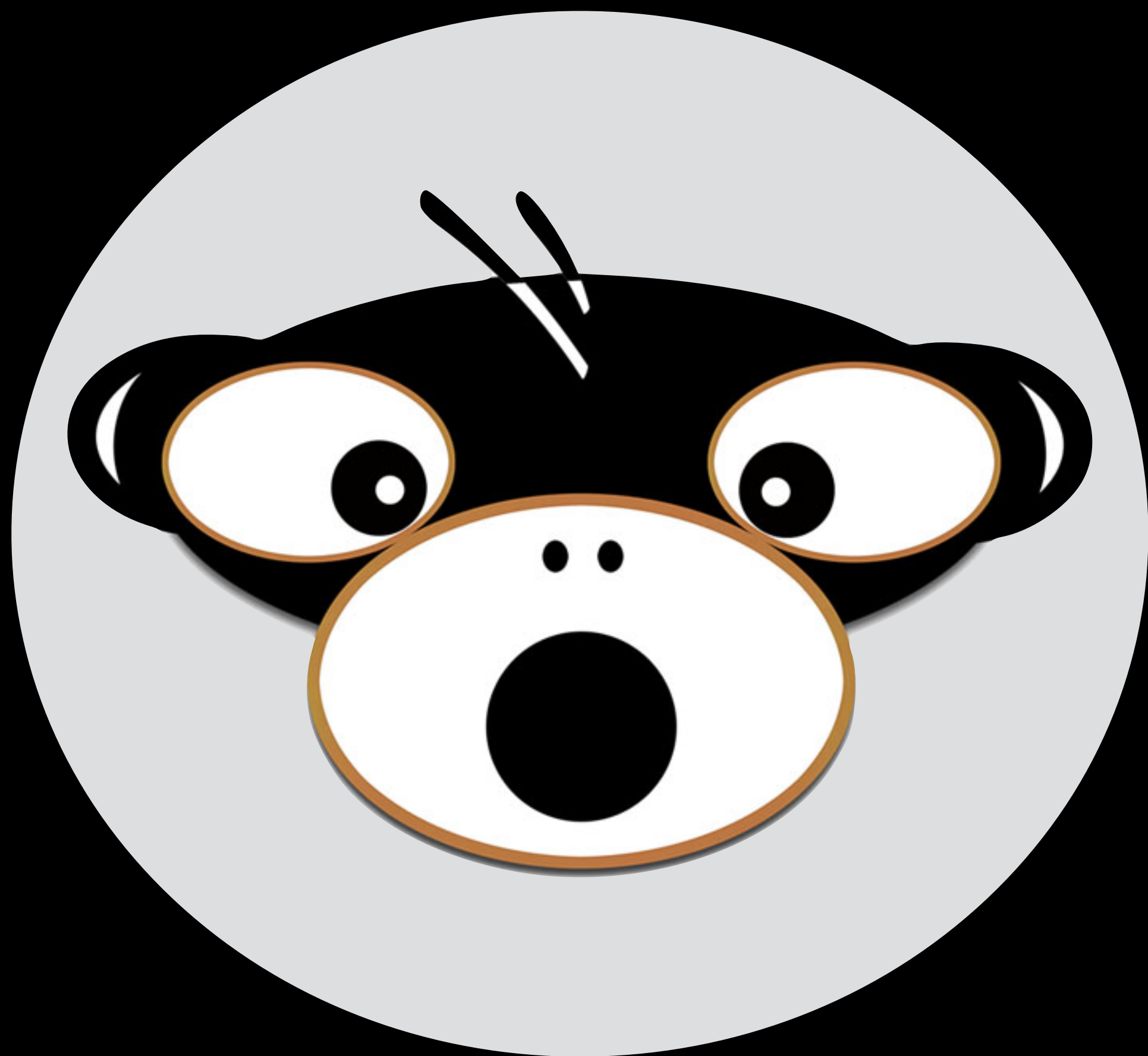
--agreetolicense, agree to license the license you printed with --license.

--rebootdelay, how long to delay the reboot at the end of preparing. This delay is in seconds and has a maximum of 300 (5 minutes).

--pidtsignal, Specify a PID to which to send SIGUSR1 upon completion of the prepare phase. To bypass "rebootdelay" send SIGUSR1 back to startosinstall.

--usage, prints this message.

Example: startosinstall --applicationpath "/Applications/Install macOS.app"



Munki 3

June 2017





startosinstall --usage

Usage: startosinstall

Arguments

--license, prints the user license agreement only.

--agreetolicense, agree to the license you printed with --license.

--rebootdelay, how long to delay the reboot at the end of preparing. This delay is in seconds.

--pidtsignal, Specify a PID to which to send SIGUSR1 upon completion of the prepare phase.

--installpackage, the path of a package (built with productbuild(1)) to install after the prepare phase.

--eraseinstall, (Requires APFS) Erase all volumes and install to a new one. Optionally specify a new volume name.

--newvolumename, the name of the volume to be created with --eraseinstall.

--preservecontainer, preserves other volumes in your APFS container when using --eraseinstall.

--forcequitapps, on restart applications are forcefully quit. This is the default if no user is specified.

--usage, prints this message.

--user, an admin user to authorize installation.

--passprompt, collect a password for authorization with an interactive prompt.

--stdinpass, collect a password from stdin without interaction.

--reducedsecurity, configure target volume's security policy as Reduced Security (will prompt for confirmation).


--cloneuser, Copy account settings for the owner provided with --user when installing to a new volume.

Example: startosinstall



How to move forward?

Ask for c



Managed Software Center wants to unlock the startup disk after restarting to complete all pending updates.

To allow this, enter your login password.

Password:

to install

Pros

Pros

- One approach for both Intel and Apple silicon Macs
- No new things for admins to learn and test
- ``startosinstall`` command is run as root: no problem if GUI user is not an admin

Cons

Cons

- Difficult to ensure credentials are handled with complete security
- Future Apple support for startosinstall unclear
- Requires user interaction to start an upgrade

Approach 2:

Just launch the Install macOS app

Pros

Pros

- Uses the method most tested by Apple and end users
- No need to handle user credentials at all
- Insulates us from changes in the startosinstall tool

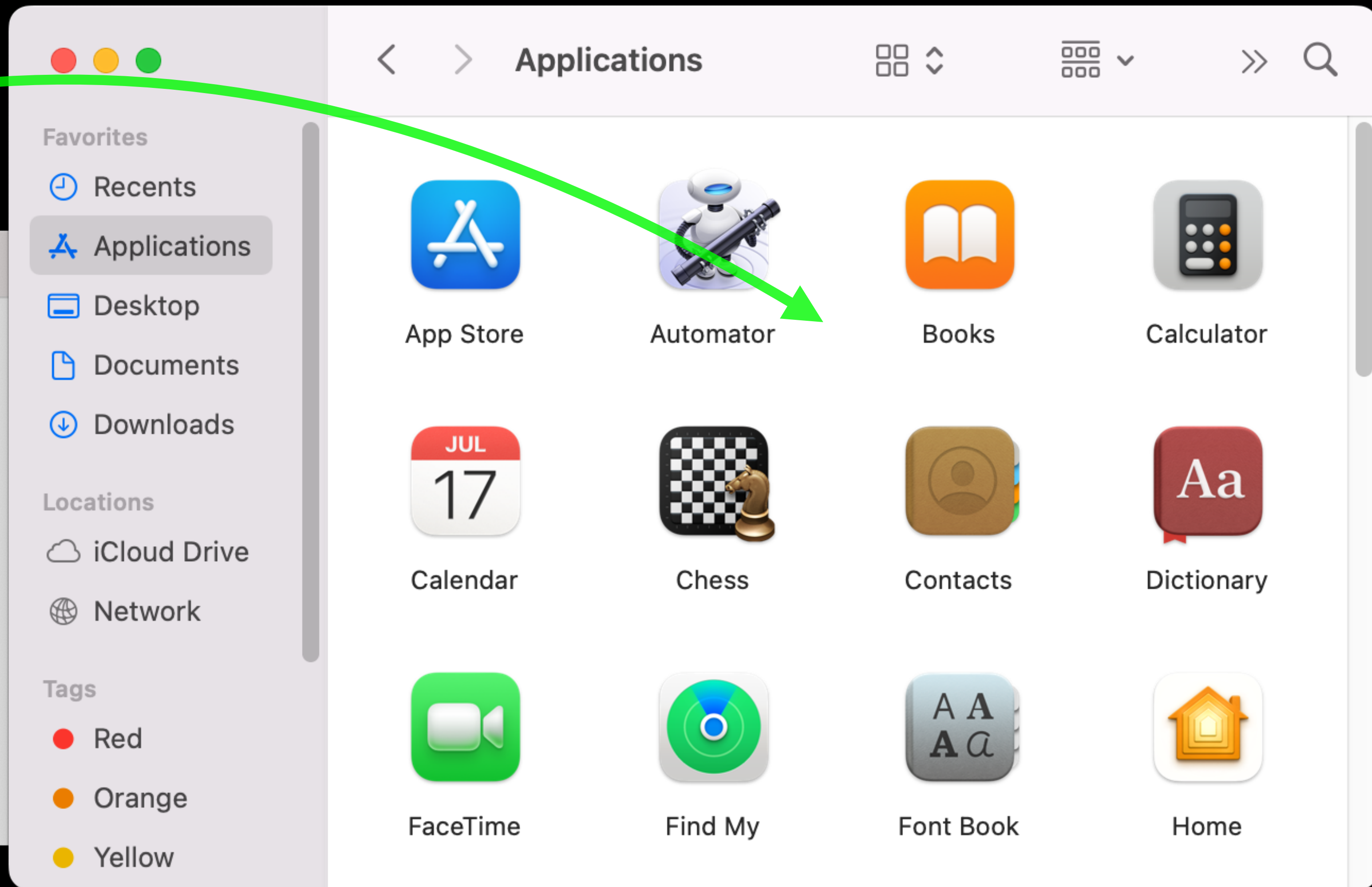
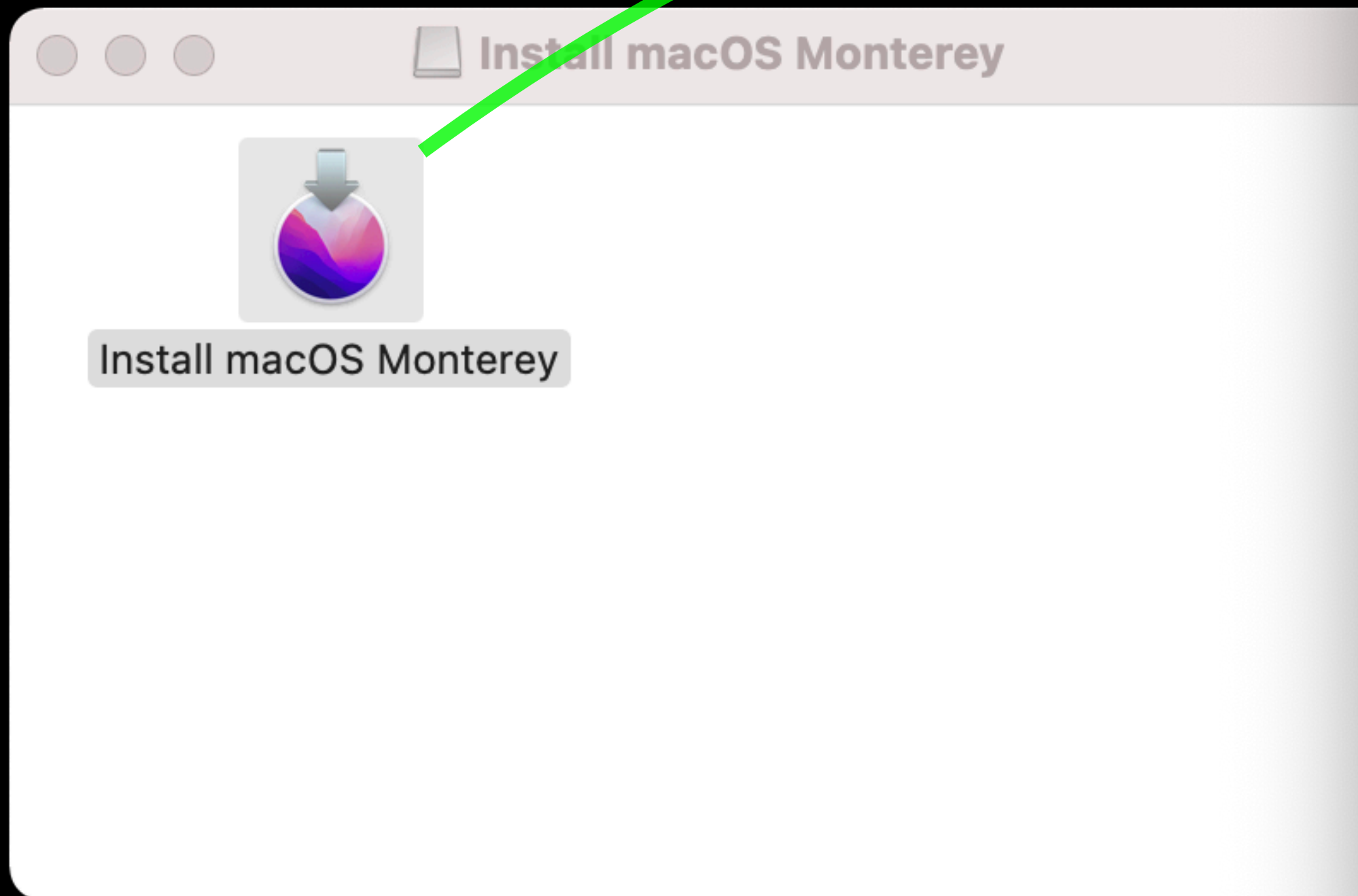
Cons

Cons

- Users who don't have admin rights can't initiate an install via the Install macOS application
- Requires user interaction to start an upgrade
- Users can just quit the Install macOS application once it is launched
- No way to do the upgrade at the login window or any time a user isn't present

A Bad Beginning

A New Hope





macOS Monterey

To set up the installation of macOS Monterey, click Continue.

Continue



Search



Software



Categories



My Items



Updates



macOS Ventura beta Installer

Apple

Downloads installer for macOS Ventura beta build 22A5342f

UPDATE

Information

Developer
Apple

Size
11.2 GB

Category
Operating Systems

Version
13.0

Status
Update available



Q Search



Software



Categories



My Items



Updates

Updates

1 pending update

UPDATE



Install macOS Ventura beta


CANCEL


Apple


Version 13.0 • 14.8 GB


Installs macOS Ventura beta, version 13.0 Build 22A5342f


Q Search

 Software

 Categories

 My Items

 Updates



macOS Ventura beta

To set up the installation of macOS Ventura beta, click Continue.

Continue

UPDATE

Temporary Admin

Temporary Admin

- If user is NOT a member of the admin group:

```
dseditgroup -o edit -a ${CONSOLEUSER} -t user admin  
trap demote_user EXIT SIGINT SIGTERM
```

- `launchctl asuser ${USER_UID} open -W "${APP}"`

- When installer app exits, or script exits or is terminated:

```
function demote_user {  
    dseditgroup -o edit -d ${CONSOLEUSER} -t user admin  
}
```

Temporary Admin

- If user IS a member of the admin group:

```
launchctl asuser ${USER_UID} open -W "${APP}"
```

Temporary Admin?

stage_os_installer

```
munkiimport --installer-type stage_os_installer /path/to/Install_macOS_Foo.dmg
```



```
munkiimport --installer-type startosinstall /path/to/Install_macOS_Foo.dmg
```

```
munkiimport /path/to/Install_macOS_Foo.dmg    (assumes startosinstall install_type)
```

Item name	installer_type	arch
InstallVentura	startosinstall	x86_64
InstallVentura	stage_os_installer	arm64

Let's look at it in action!

Some remaining issues





MDM

```
$ sudo profiles status -type bootstraptoken
```

```
profiles: Bootstrap Token supported on server: YES
```

```
profiles: Bootstrap Token escrowed to server: YES
```

https://github.com/grahampugh/erase-install

github.com/grahampugh/erase-install/wiki

Search or jump to...

Pull requests

Issues

Marketplace

Explore

grahampugh / erase-install

Public

Sponsor

Watch 42

Fork 90

Star 490

<> Code

Issues 6

Pull requests

Discussions

Actions

Projects

Wiki

Security

Insights

Home

Graham Pugh edited this page on Nov 3, 2021 · 9 revisions

erase-install.sh


by Graham Pugh

WARNING. This is a self-destruct script. Do not try it out on your own device!

`erase-install.sh` is a script to reinstall macOS directly from the system volume using `startosinstall`, which is built into macOS installer applications since version 10.12.4. The `eraseinstall` option was added with macOS 10.13.4.

It can be used to download macOS full installers, and to reinstall, upgrade or erase macOS.

Erasing macOS



Pages 10

Find a page...

Home

erase-install.sh

1. Installation

2. Downloading (caching) the latest macOS installer app

3. Downloading (caching) a macOS installer pkg

4. Searching for a specific macOS installer

5. Downloading (caching) a specific version or build of macOS

6. Upgrading or reinstalling macOS

7. Erasing and reinstalling macOS

8. Use in Jamf Pro

FAQs

Clone this wiki locally

Est. 1732
HISTORIC

SAN BUENA

★ VENTURA ★

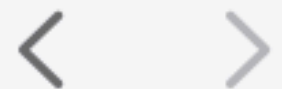
SHOP • SURF •


Eat

STAY ★




Login Items




 Search


Current User

 **Greg Neagle**
Mobile

▼ Other Users

 Guest User
Off

> Groups






 Login Options

+

−

Password Login Items

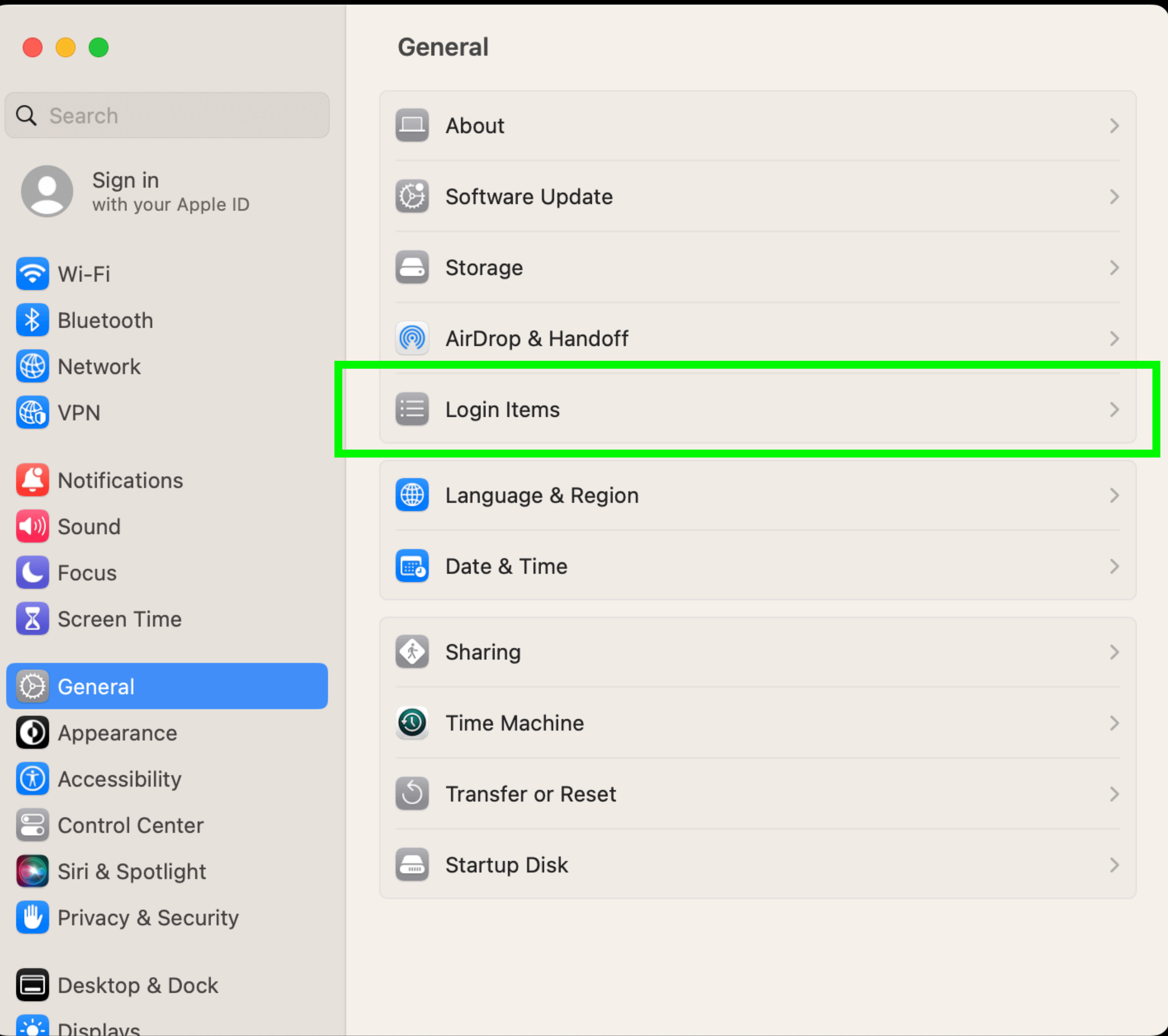
These items will open automatically when you log in:
















Item	Kind	Hide	
 Google Drive File Stream	Unknown	<input type="checkbox"/>	
 Dropbox	Application	<input type="checkbox"/>	
 duet	Unknown	<input type="checkbox"/>	

To hide an application when you log in, select the checkbox in the Hide column next to the application.

+

−



	app_usage_monitor Item from unidentified developer.		
	Apple Inc. - XQuartz 2 items: 1 item affects all users		
	appusaged Item from unidentified developer.		
	authrestartd Item from unidentified developer.		
	Code 42 Software 1 item		
	Code42 1 item: 1 item affects all users		



VPN



Notifications



Sound



Focus



Screen Time



General



Appearance



Accessibility



Control Center



Siri & Spotlight



Privacy & Security



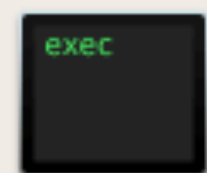
Desktop & Dock



Displays

Allow in the Background

Apps add background items to perform tasks when the app isn't open, such as checking for software updates or syncing data. Turning off a background item may prevent these tasks from being completed.



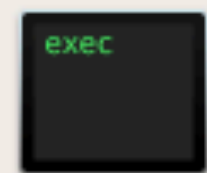
app_usage_monitor

Item from unidentified developer.



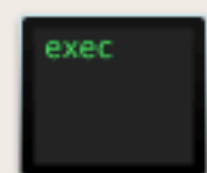
Apple Inc. - XQuartz

2 items: 1 item affects all users



appusaged

Item from unidentified developer.



authrestartd

Item from unidentified developer.



Code 42 Software

1 item



Code42

1 item: 1 item affects all users





Favorites

- AirDrop
- Recents
- Applications
- Desktop
- Documents
- Downloads

Locations

- iCloud Drive
- applesauce
- Macintosh HD
- Network

Tags

- Red

< > munki



app_usage_monit
or



appusaged



authrestartd



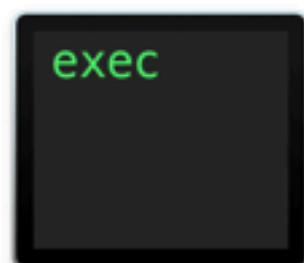
cleanup



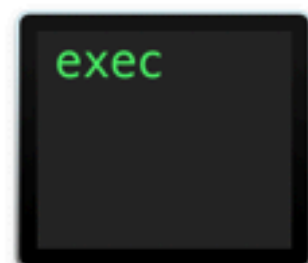
conditions



iconimporter



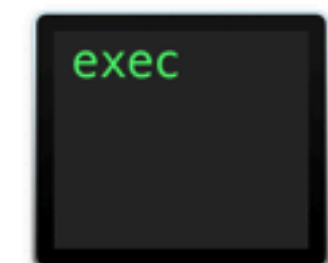
launchapp



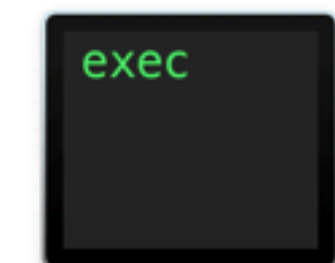
logouthelper



makecatalogs



makepkginfo



managedsoftware
update



manifestutil



munki-python



munkiimport



munkilib



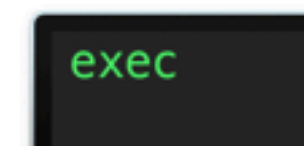
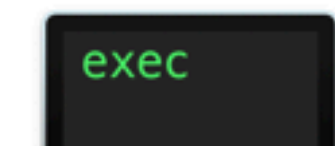
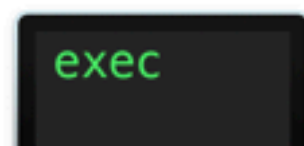
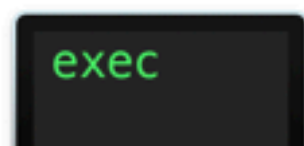
postflight



postflight.d



precache_agent





Favorites

- AirDrop
- Recents
- Applications
- Desktop
- Documents
- Downloads

Locations

- iCloud Drive
- applesauce
- Macintosh HD
- Network

Tags


- Red




munki





launchapp	logouthelper	makecatalogs	makepkginfo	managedsoftware update	manifestutil
munki-python	munkiimport	munkilib	postflight	postflight.d	precache_agent
preflight	preflight.d	ptyexec	Python.framework k	removepackages	repoclean
report_broken_client	supervisor				


 Network

 VPN

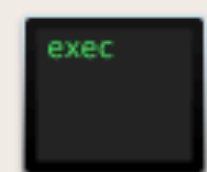
 Notifications

 Sound

 Focus

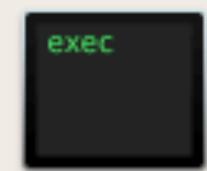
 Screen Time

 General



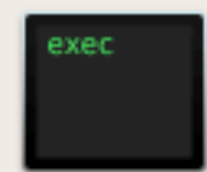
supervisor

Item from unidentified developer.



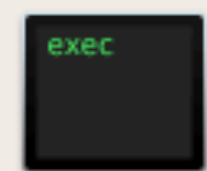
supervisor

Item from unidentified developer.



supervisor


Item from unidentified developer.




supervisor


Item from unidentified developer.





 Network

 VPN

 Notifications

 Sound

 Focus

 Screen Time

 General



Login Items

Login Items wants to make changes.

Enter an administrator's name and password to allow this.


Username

Password


Cancel


OK




 Network


 VPN

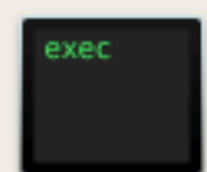
 Notifications

 Sound

 Focus

 Screen Time

 General



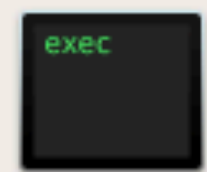
supervisor

Item from unidentified developer.



supervisor

Item from unidentified developer.



supervisor

Item from unidentified developer.



supervisor


Item from unidentified developer.







CONFIG

```
<key>PayloadType</key>
<string>com.apple.servicemanagement</string>
<key>Rules</key>
<array>
  <dict>
    <key>RuleType</key>
    <string>LabelPrefix</string>
    <key>RuleValue</key>
    <string>com.googlecode.munki</string>
    <key>Comment</key>
    <string>Label prefix for Munki's launchd items</string>
  </dict>
</array>
```



 Network

 VPN

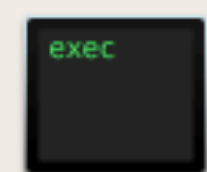
 Notifications

 Sound

 Focus

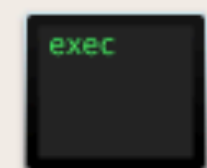
 Screen Time

 General



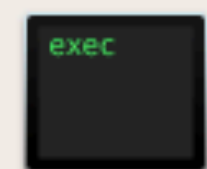
supervisor

This item was installed by a profile and cannot be turned off.



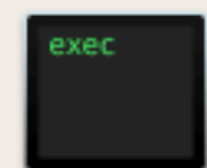
supervisor

This item was installed by a profile and cannot be turned off.



supervisor

This item was installed by a profile and cannot be turned off.



supervisor

This item was installed by a profile and cannot be turned off.



Locked in the ON position ↑

Where's the documentation?

Apple Platform Deployment

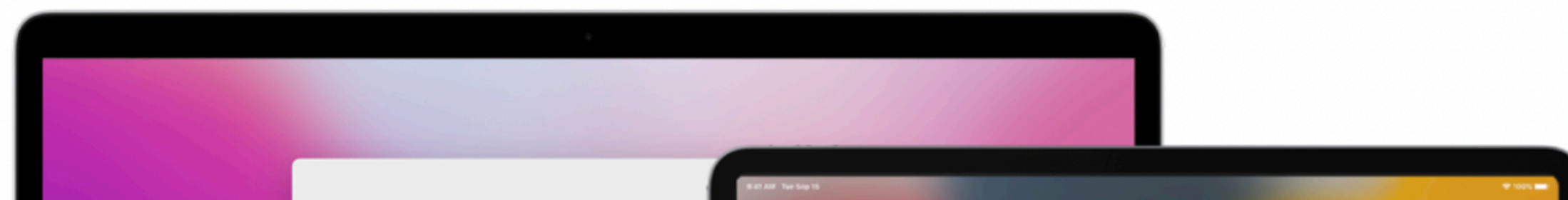
Communities Contact Support

Apple Platform Deployment

~~June 2022~~ Fall 2022?

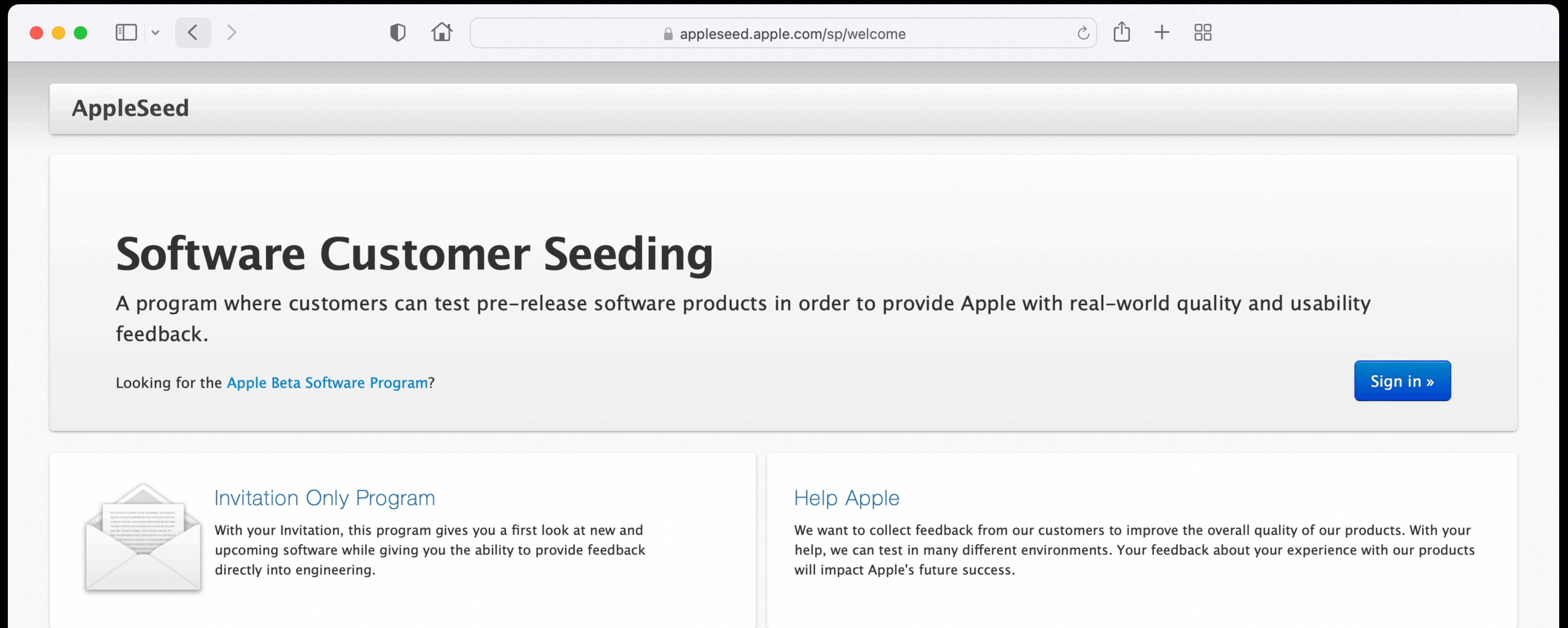
Search this guide

[Table of Contents](#)



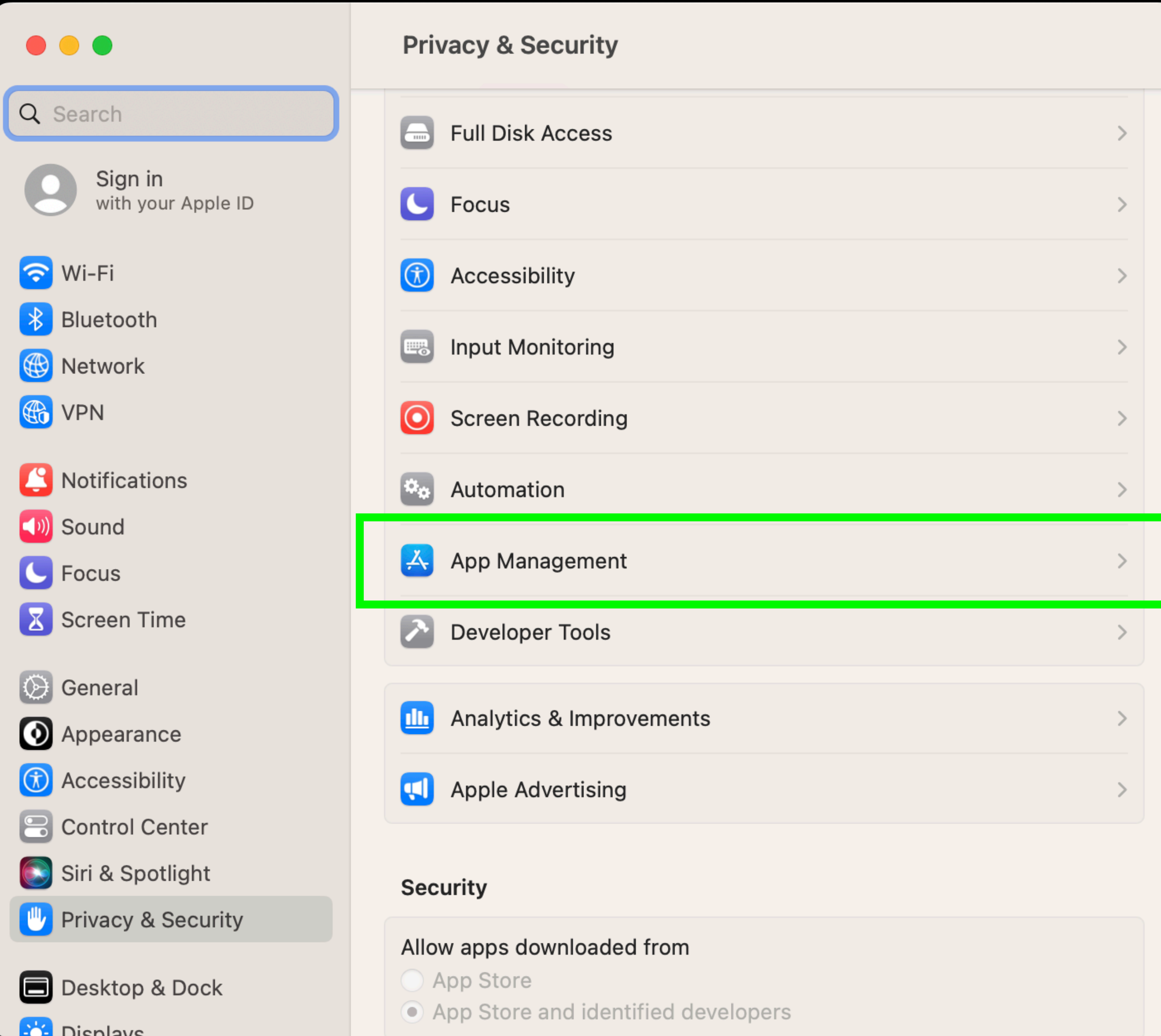
AppleSeed for IT

2022 Login and Background Item Management Test Plan



App Bundle update protection

"App Management"



Search

Sign in
with your Apple ID

Wi-Fi

Bluetooth

Network

VPN

Notifications

Sound

Focus

Screen Time

General

Appearance

Accessibility

Control Center

Siri & Spotlight

Privacy & Security

Desktop & Dock

Displays

App Management

Allow the apps below to update or delete other apps.

No Items

+

−



Search

Screen Time

General

Appearance

Accessibility

Control Center

Siri & Spotlight

Privacy & Security

Desktop & Dock

Displays

Wallpaper

Screen Saver

Battery

Lock Screen

Touch ID & Password

Users & Groups

Passwords

Internet Accounts

Game Center

App Management

Allow the apps below to update or delete other apps.



Managed Software Center



Q Search

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Control Center

Siri & Spotlight

Privacy & Security

Desktop & Dock

Displays

Wallpaper

Screen Saver

Battery

Lock Screen

Touch ID & Password

Users & Groups

Passwords

Internet Accounts

Game Center

< App Management

Allow the apps below to update or delete other apps.

managedsoftwareupdate

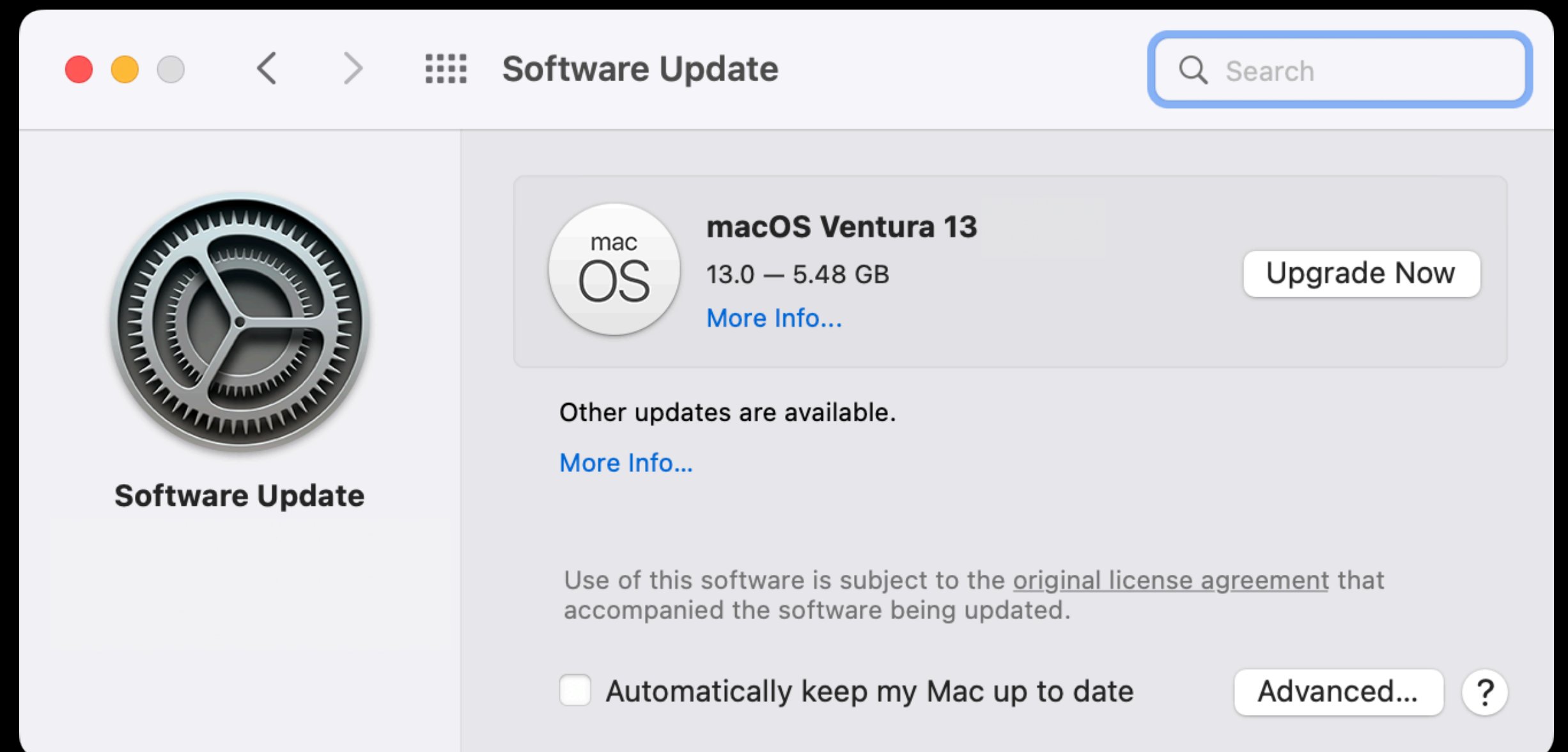
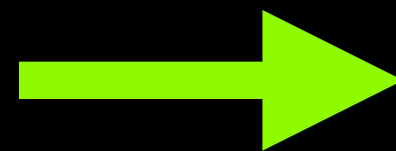
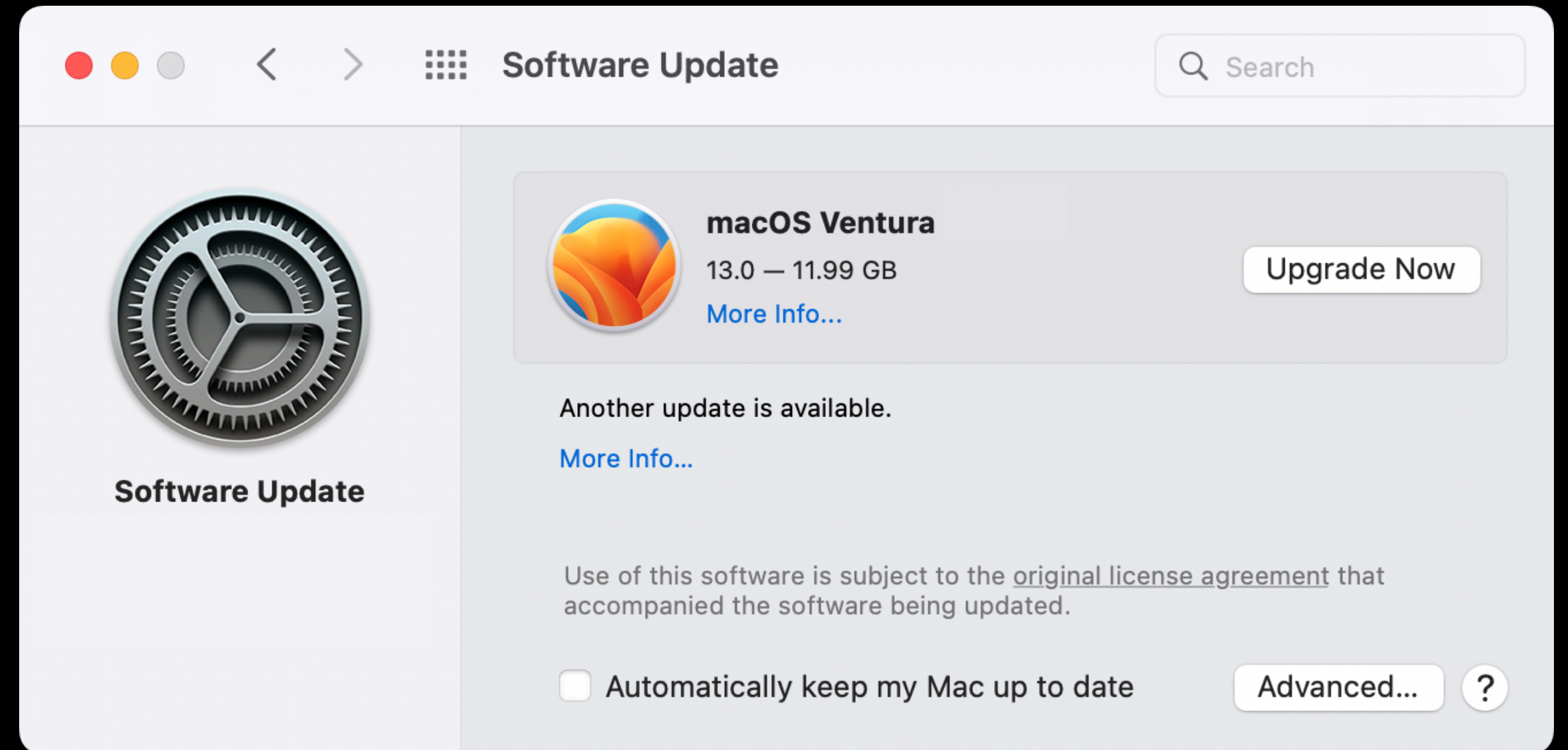
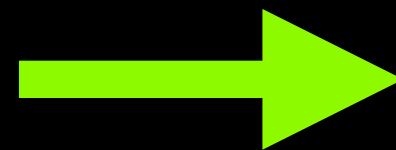
+

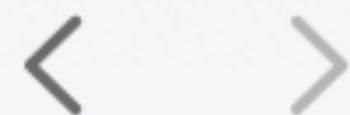
−

Deferring Ventura?



Install macOS Ventura.app





Software Update

Search

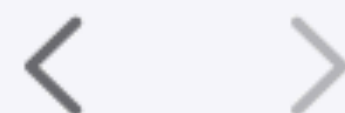
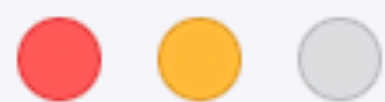


macOS Ventura

13.0 — 11.99 GB

[More Info...](#)

Upgrade Now



Software Update

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Software Update



macOS Ventura 13

13.0 — 5.48 GB

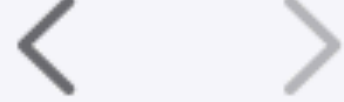
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Upgrade Now

Other updates are available.

[More Info...](#)

Use of this software is subject to the original license agreement that



Software Update

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Software Update



macOS Ventura 13

13.0 — 5.48 GB

[More Info...](#)

Upgrade Now

Other updates are available.

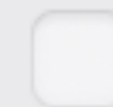
[More Info...](#)

Use
acc



Greg Neagle

Change Password...

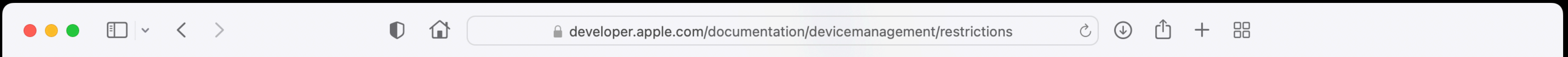


Allow user to administer this computer

Ventura upgrade blocking strategies














- ~~• Block "Install macOS app" from launching~~
- ~~• Users not admin~~
- MDM deferral profiles

<https://developer.apple.com/documentation/devicemanagement/restrictions>



[Documentation](#) / [Device Management](#) / [Profile-Specific Payload Keys](#) / [Restrictions](#)

Language: Swift  API Changes: None

Device Management		
Restrictions		
 object Restrictions		
Security		
 object Passcode		
 object SecurityPreferences		
 object SmartCard		
System Configuration		
>  object EnergySaver		
 object FileProvider		
 object Font		
 object LockScreenMessage		
 object Screensaver		
>  object SystemExtensions		
>  object SystemLogging		
 object TimeServer		
System Policy		
 object SystemPolicyControl		

enforcedSoftwareUpdateMajorOSDeferredInstallDelay integer	This restriction allows the admin to set how many days to delay a major software upgrade on the device. When this restriction is in place the user sees a software upgrade only after the specified delay after the release of the software upgrade. This value controls the delay for forceDelayedMajorSoftwareUpdates. Available in macOS 11.3 and later. Default: 30 Minimum Value: 1 Maximum Value: 90
enforcedSoftwareUpdateMinorOSDeferredInstallDelay integer	This restriction allows the admin to set how many days to delay a minor OS software update on the device. When this restriction is in place the user see a software update only after the specified delay after the release of the software update. This value controls the delay for forceDelayedSoftwareUpdates. Available in macOS 11.3 and later. Default: 30 Minimum Value: 1 Maximum Value: 90
enforcedSoftwareUpdateNonOSDeferredInstallDelay integer	This restriction allows the admin to set how many days to delay an app software update on the device. When this restriction is in place the user sees a non-OS software update only after the specified delay after the release of the software. This value controls the delay for forceDelayed

Deferring Monterey

```
<key>PayloadType</key>
```

```
<string>com.apple.applicationaccess</string>
```

```
<key>forceDelayedMajorSoftwareUpdates</key>
```

```
<true/>
```

```
<key>enforcedSoftwareUpdateMajorOSDeferredInstallDelay</key>
```

```
<integer>90</integer>
```

```
<key>forceDelayedSoftwareUpdates</key>
```

```
<true/>
```

```
<key>enforcedSoftwareUpdateMinorOSDeferredInstallDelay</key>
```

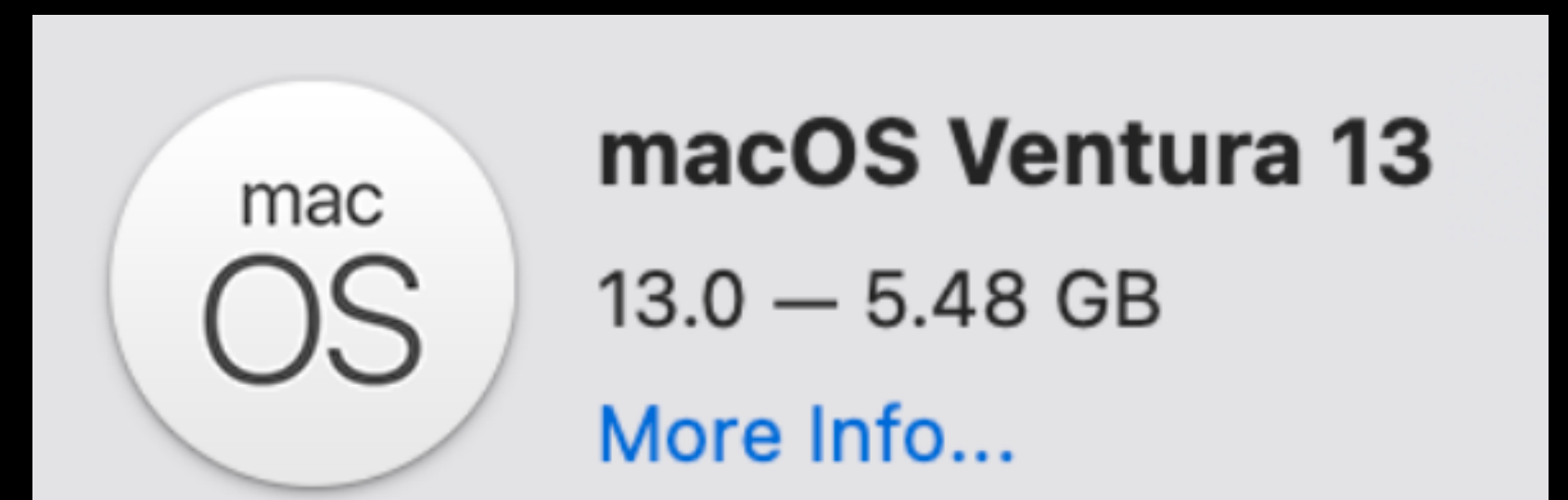
```
<integer>7</integer>
```

Deferring Ventura?

```
<key>PayloadType</key>  
<string>com.apple.applicationaccess</string>
```

```
<key>forceDelayedMajorSoftwareUpdates</key>  
<true/>  
<key>enforcedSoftwareUpdateMajorOSDeferredInstallDelay</key>  
<integer>90</integer>  
<key>forceDelayedSoftwareUpdates</key>  
<true/>  
<key>enforcedSoftwareUpdateMinorOSDeferredInstallDelay</key>  
<integer>7</integer>
```

"minor"




Deferring Ventura?

```
<key>PayloadType</key>
<string>com.apple.applicationaccess</string>

<key>forceDelayedMajorSoftwareUpdates</key>
<true/>
<key>enforcedSoftwareUpdateMajorOSDeferredInstallDelay</key>
<integer>90</integer>
<key>forceDelayedSoftwareUpdates</key>
<true/>
<key>enforcedSoftwareUpdateMinorOSDeferredInstallDelay</key>
<integer>90</integer>
```

Ventura upgrade blocking strategies

- ~~• Block "Install macOS app" from launching~~
- ~~• Users not admin~~
- MDM deferral profiles  (with caveats)

Ventura vs. Admins: Summary

- **New "Login Items"**
 - Users might disable Munki and other launchd items
 - Can be controlled via profile
- **App Management**
 - Might prevent Munki from updating apps in some cases
 - Should be addressable if it turns out to be an issue
- **Upgrade Deferral/Blocking**
 - No 100% perfect solution here

Munki, Ventura, and You


You





https://github.com/munki/munki/releases

github.com/munki/munki/releases






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 gregneagle



v6.0.0b3

d29de15

Compare

Munki 6.0 Beta 3

Pre-release



This is a beta release of Munki 6, a release adding new features to the Munki tools.

New features

- Munki 6 adds a feature to stage a macOS installer application and have Managed Software Center launch it for a user, temporarily giving the user admin rights if needed. This enables Munki to assist with an upgrade of macOS on Apple silicon, but this feature can be used on Intel Macs as well.
- `munkiimport` and `makepkginfo` now support a new `--installer-type` option, which can be used with disk images containing macOS installers to indicate whether you want to build a `startosinstall` item, a `stage_os_installer` item, or even a `copy_from_dmg` item (which would copy the installer to `/Applications`, and do nothing else).

Documentation

Work-in-progress documentation here: <https://github.com/munki/munki/wiki/Munki-6-Information>

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Munki 6 Information

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New page

Greg Neagle edited this page 11 days ago · 4 revisions

Introduction

Munki 6 is a major new release of the Munki tools, and is currently in beta testing. The primary new feature is support for staging an "Install macOS" application, and launching it for the user, temporarily adding admin privileges to the user's account if needed.

Compatibility

Munki 6 is compatible with Intel and Apple silicon. So far, it's been tested largely on Big Sur, Monterey, and the Ventura betas, but it should work on macOS 10.11 through macOS 13.

Staging macOS Installers

More information about staging macOS installers for Munki-assisted macOS upgrades is [here](#).

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Contributing to Munki

Release Notes

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Apple update changes

https://github.com/munki/munki/wiki/Staging-macOS-Installers

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Control Center

Siri & Spotlight

Privacy & Security

Desktop & Dock

Displays

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Login Items

Open at Login

These items will open automatically when you log in.

Item	Kind
+	-

Allow in the Background

Apps add background items to perform tasks when the app isn't open, such as checking for software updates or syncing data. Turning off a background item may prevent these tasks from being completed.

app_usage_monitor

Item from unidentified developer.

i

Apple Inc. - XQuartz

2 items: 1 item affects all users

appusaged

Item from unidentified developer.

i

authrestartd

Item from unidentified developer.

i

Code 42 Software

1 item

Code42

1 item: 1 item affects all users

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Siri & Spotlight

Privacy & Security

Desktop & Dock

Displays

Wallpaper

Screen Saver

Battery

Lock Screen

Touch ID & Password

Users & Groups

Passwords

Internet Accounts

Game Center

< App Management

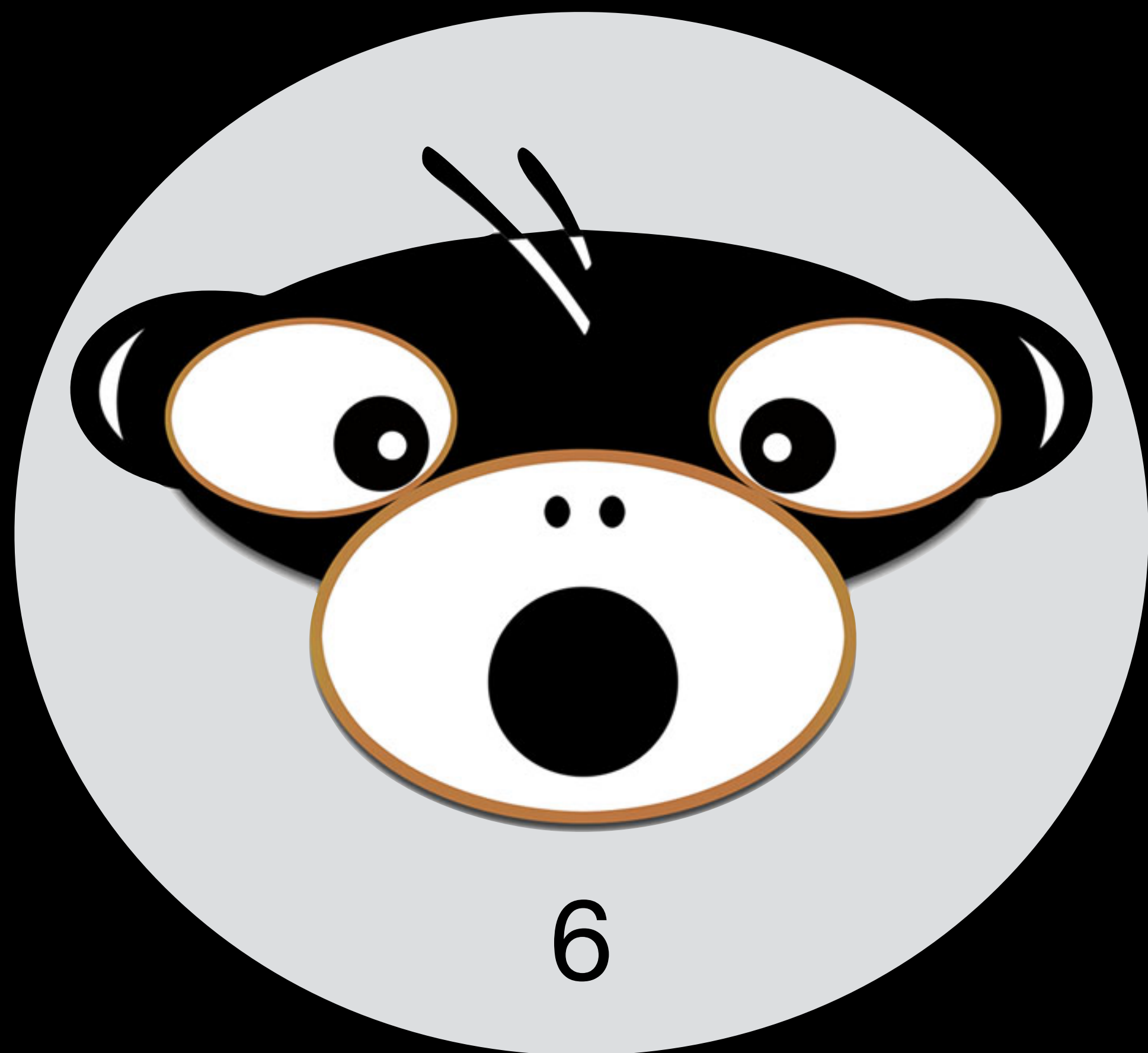
Allow the apps below to update or delete other apps.

managedsoftwareupdate

+

−







Tack!