

dataJAR
Beyond Device Management





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Updating macOS

A Nudge in the right direction

A person is sitting at a wooden desk, typing on a silver laptop. The person's hands are visible, wearing a black watch on the left wrist and a ring on the right hand. A black smartphone is lying on the desk in front of the laptop. To the right of the laptop is a black mug. The background is a plain wall. The entire image has a dark blue overlay.

The way things are...



Tools of the trade

~~softwareupdate binary~~

MDM Profile to enable macOS's native behaviour

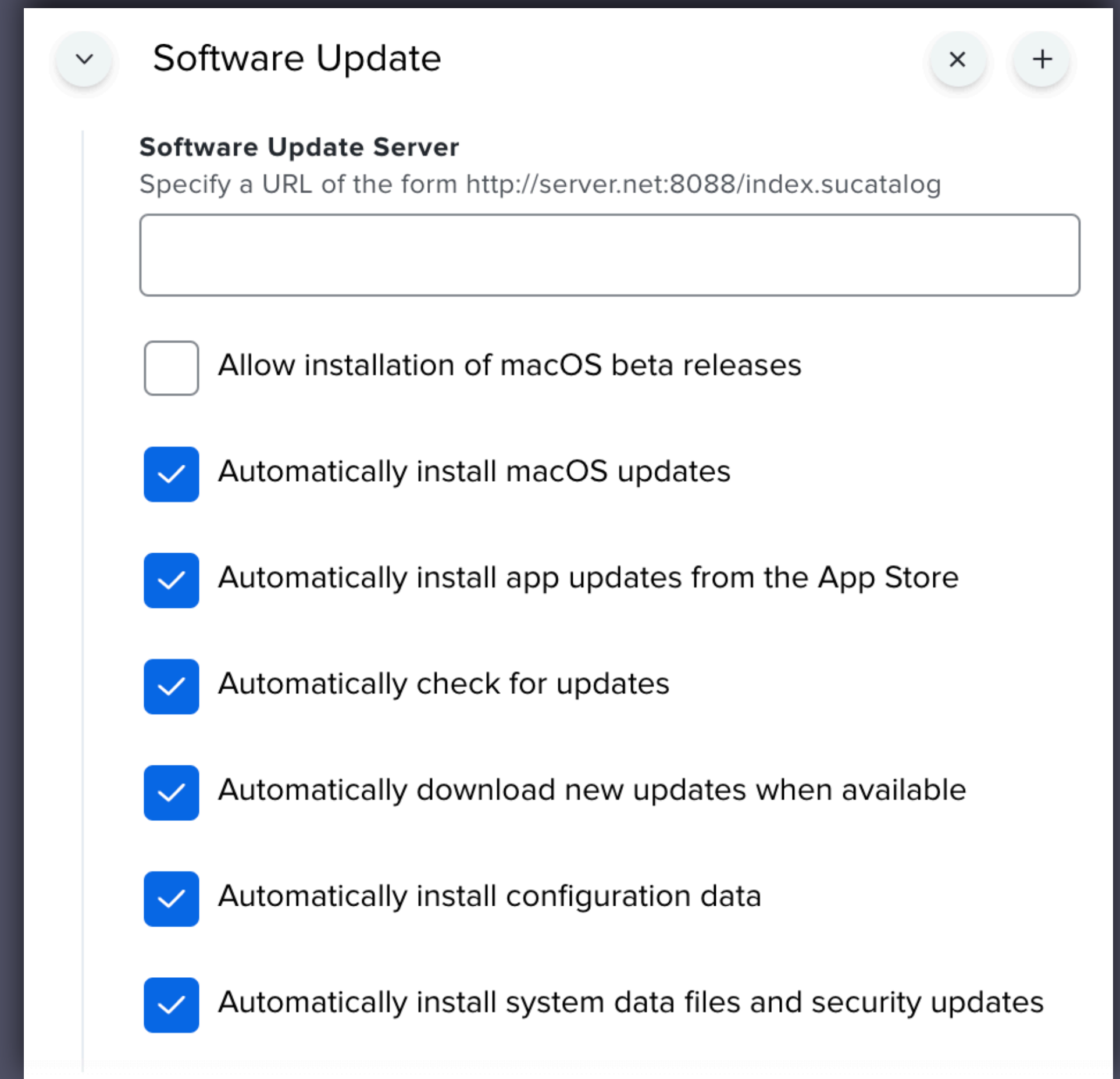
MDM commands to install updates automatically

Deferrals

Updating with MDM Profiles

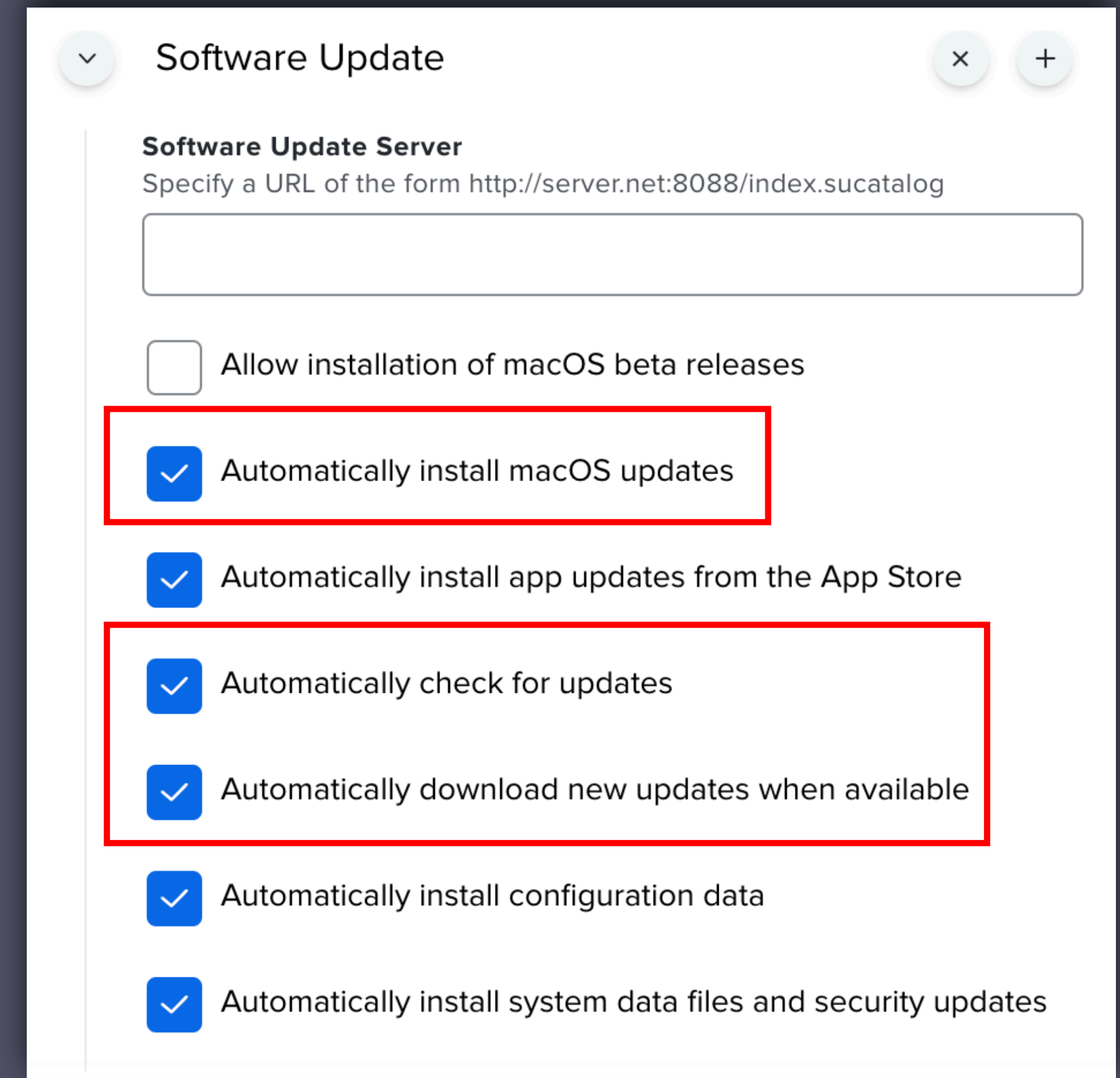
com.apple.softwareupdate

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
  <key>AllowPreReleaseInstallation</key>
  <false/>
  <key>AutomaticCheckEnabled</key>
  <true/>
  <key>AutomaticDownload</key>
  <true/>
  <key>AutomaticallyInstallAppUpdates</key>
  <true/>
  <key>AutomaticallyInstallMacOSUpdates</key>
  <true/>
  <key>ConfigDataInstall</key>
  <true/>
  <key>CriticalUpdateInstall</key>
  <true/>
</dict>
</plist>
```



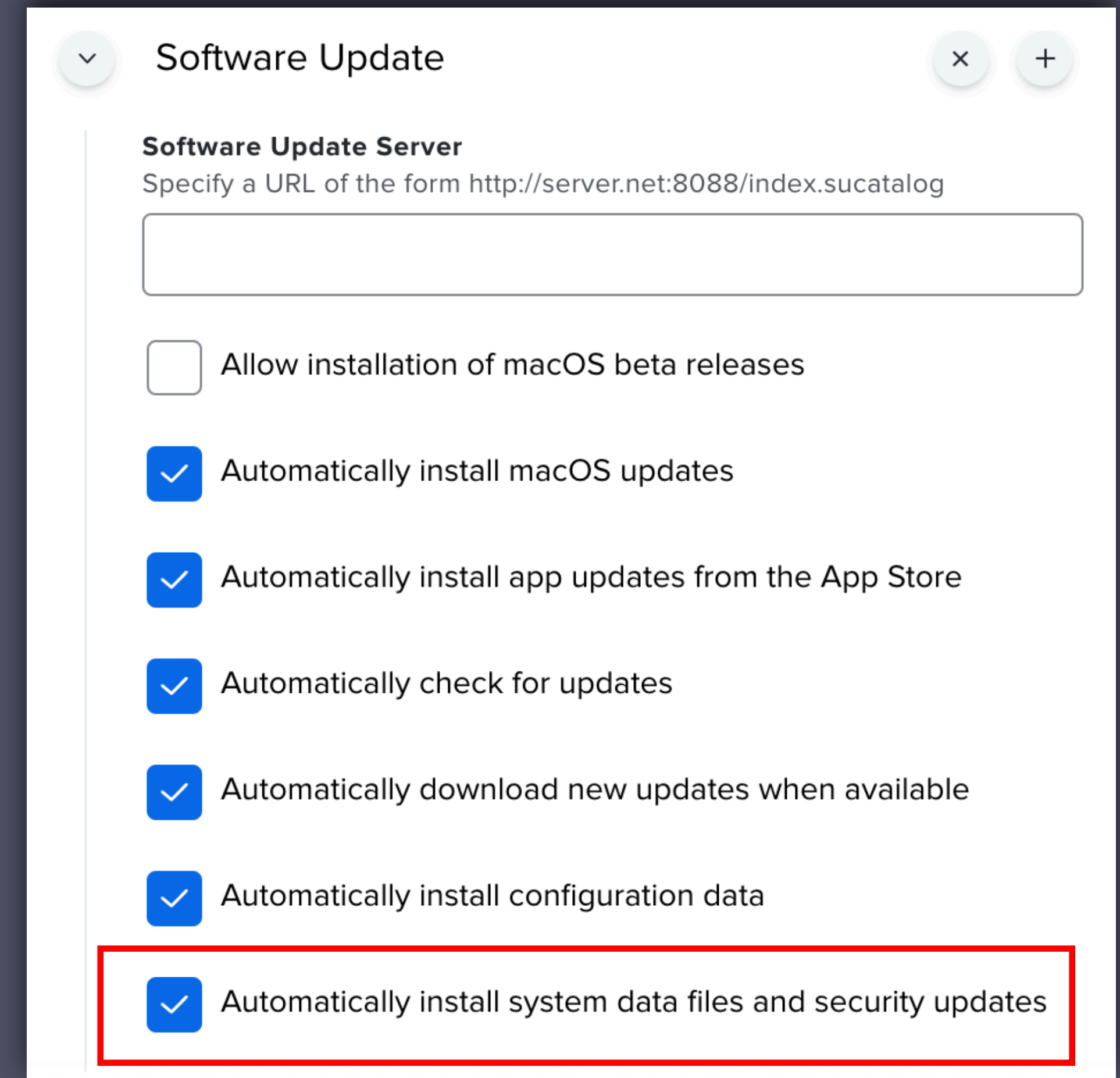
Updating with MDM Profiles

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<?xml version="1.0" encoding="UTF-8"?>
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<plist version="1.0">
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  <true/>
  <key>AutomaticDownload</key>
  <true/>
  <key>AutomaticallyInstallAppUpdates</key>
  <true/>
  <key>AutomaticallyInstallMacOSUpdates</key>
  <true/>
  <key>ConfigDataInstall</key>
  <true/>
  <key>CriticalUpdateInstall</key>
  <true/>
</dict>
</plist>
```



Updating with MDM Profiles

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<?xml version="1.0" encoding="UTF-8"?>
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  <true/>
  <key>AutomaticallyInstallAppUpdates</key>
  <true/>
  <key>AutomaticallyInstallMacOSUpdates</key>
  <true/>
  <key>ConfigDataInstall</key>
  <true/>
  <key>CriticalUpdateInstall</key>
  <true/>
</dict>
</plist>
```



Updating with MDM Commands

ScheduleOSUpdateScan

“Check for updates!”



AvailableOSUpdates

“Tell me what you found.”



ScheduleOSUpdate

“Install the things!”

Computers

Take Action on all Computers (4)

● Choose Action

● **Send Remote Command**

● Complete

Remote Commands Remote commands to send to computers

- Lock Device ⓘ
- Update OS version and built-in apps (macOS 10.11 or later, enrolled via a PreStage enrollment)
- Set Bluetooth (macOS 10.13.4 or later)
- Set Remote Desktop (macOS 10.14.4 or later)
- Set Activation Lock
- Renew MDM Profile

Update Action Action to take on computers to update to the latest version of the OS and built-in apps on the device

- Download the update for users to install
- Download and install the update, and restart computers after installation

Cancel Previous **Next**

Updating with MDM Commands

ScheduleOSUpdate -> InstallAction	
Default	Download or install the update, depending on the current state.
DownloadOnly	Download the software update without installing it.
InstallASAP	Download the software update and trigger the restart countdown notification.
NotifyOnly	Download the software update and notify the user
InstallLater	Download the software update and install it at a later time.
InstallForceRestart	Perform the Default action, and then force a restart if the update requires it. Warning: InstallForceRestart may result in data loss.

Updating with MDM Commands



Other considerations

Supervised or ADE only.

Updates won't install at the Login Window (reportedly fixed in macOS 11.3)

Apple Silicon: Users have to authenticate, unless you have a bootstrap token AND Startup Security is configured correctly.

Deferrals

```
<key>ManagedDeferredInstallDelay</key>  
<integer>30</integer>  
<key>forceDelayedAppSoftwareUpdates</key>  
<true/>  
<key>forceDelayedSoftwareUpdates</key>  
<true/>
```



In Practice...

<https://www.alansiu.net/2021/04/28/why-dont-mac-admins-use-mdm-for-apple-software-updates/>



Nudge



Nudge - Components

Application

LaunchAgent

Logger (optional) - `/var/log/Nudge.log`

Preferences (Configuration Profile or JSON)



Getting ready to Nudge

[https://github.com/macadmins/nudge/blob/main/Example%20Assets/
com.github.macadmins.Nudge.mobileconfig](https://github.com/macadmins/nudge/blob/main/Example%20Assets/com.github.macadmins.Nudge.mobileconfig)



Demo time!



Using Nudge

Nudge's Stages

Inactive

Initial

Approaching

Imminent

Elapsed





Inactive

OS is up to date (matches or exceeds **requiredMinimumOSVersion**)

OS not defined in **targetedOSVersions**

Window not displayed

Initial

OS not up to date and targeted (below **requiredMinimumOSVersion** and in **targetedOSVersions**)



approachingWindowTime hours greater than time remaining until **requiredInstallationDate** (default 72 hours)

Window refresh/deferral rate based on number of seconds set in **initialRefreshCycle** (default 18000 seconds)

Window is displayed with primary quit button

Approaching

OS not up to date and targeted (below **requiredMinimumOSVersion** and in **targetedOSVersions**)



approachingWindowTime hours less than time remaining until **requiredInstallationDate** (default 72 hours)

Window refresh/deferral rate based on number of seconds set in **approachingRefreshCycle** (default 6000 seconds)

Window is displayed with primary and secondary quit buttons



Imminent

OS not up to date and targeted (below **requiredMinimumOSVersion** and in **targetedOSVersions**)

imminentWindowTime hours less than time remaining until **requiredInstallationDate** (default 24 hours)

Window refresh/deferral rate based on number of seconds set in **imminentRefreshCycle** (default 600 seconds)

Window is displayed with primary and secondary quit buttons



Elapsed

OS not up to date and targeted (below **requiredMinimumOSVersion** and in **targetedOSVersions**)

requiredInstallationDate passed

Window refresh/deferral rate based on number of seconds set in **elapsedRefreshCycle** (default 600 seconds)

Window is displayed with no quit buttons

A person is sitting at a wooden desk, typing on a silver laptop. The person's left hand is on the keyboard, and their right hand is on the trackpad. They are wearing a black watch on their left wrist and a black watch on their right wrist. A black smartphone is lying on the desk in front of the laptop. To the right of the laptop is a black cup. The background is a plain wall.

Deferrals



Deferral Levels

`allowedDeferralsUntilForcedSecondaryQuitButton`

`allowedDeferrals`



But we didn't have time for...

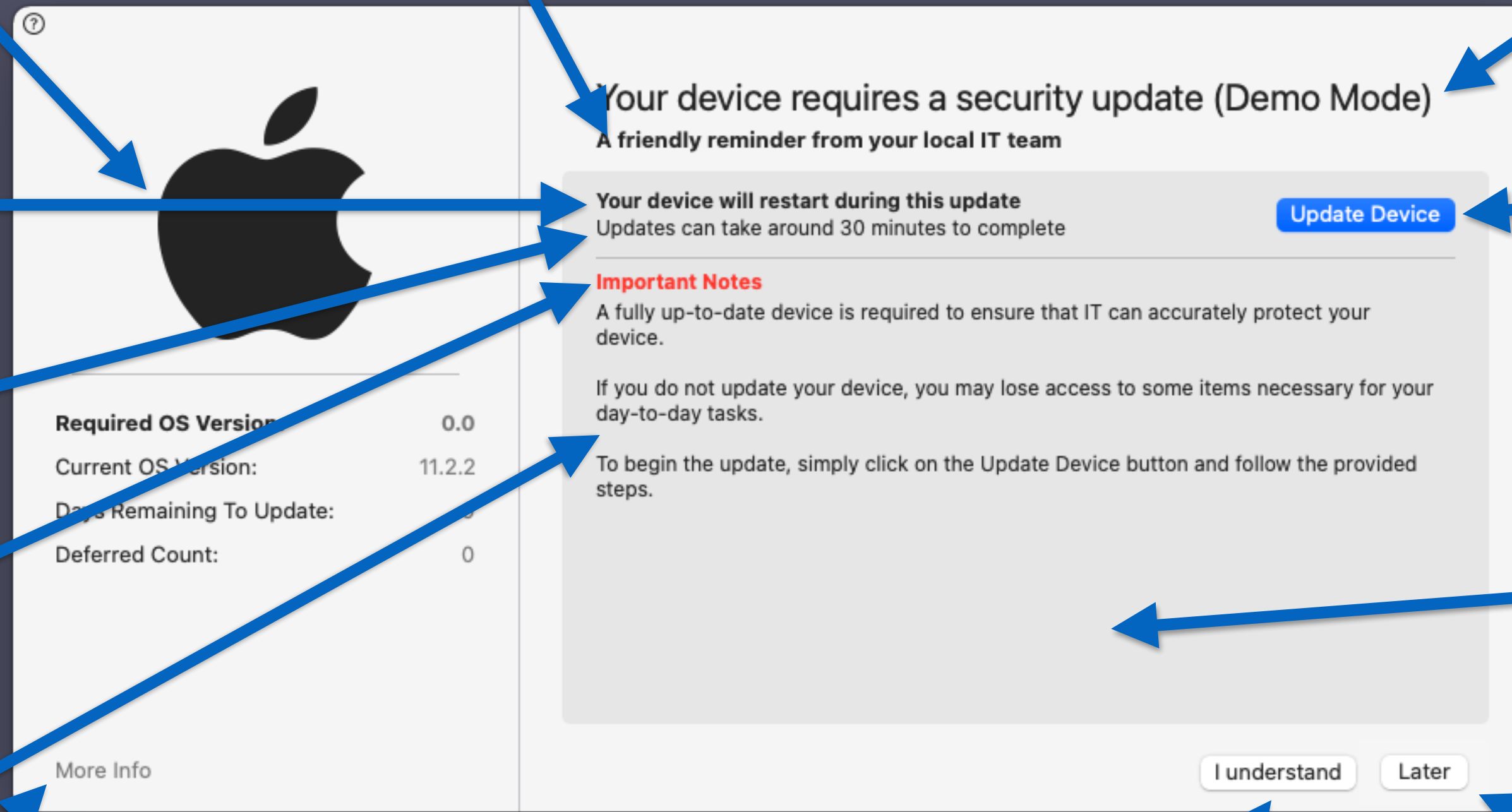
Customising the UI

iconDarkPath
iconLightPath
(String)

subHeader
(String)

mainHeader
(String)

mainContentHeader
(String)



actionButtonText
(String)

mainContentSubHeader
(String)

screenShotDarkPath
screenShotLightPath
(String)

mainContentNote
(String)

mainContentText
(String)

informationButtonText
(String)

secondaryQuitButtonText
(String)

primaryQuitButtonText
(String)

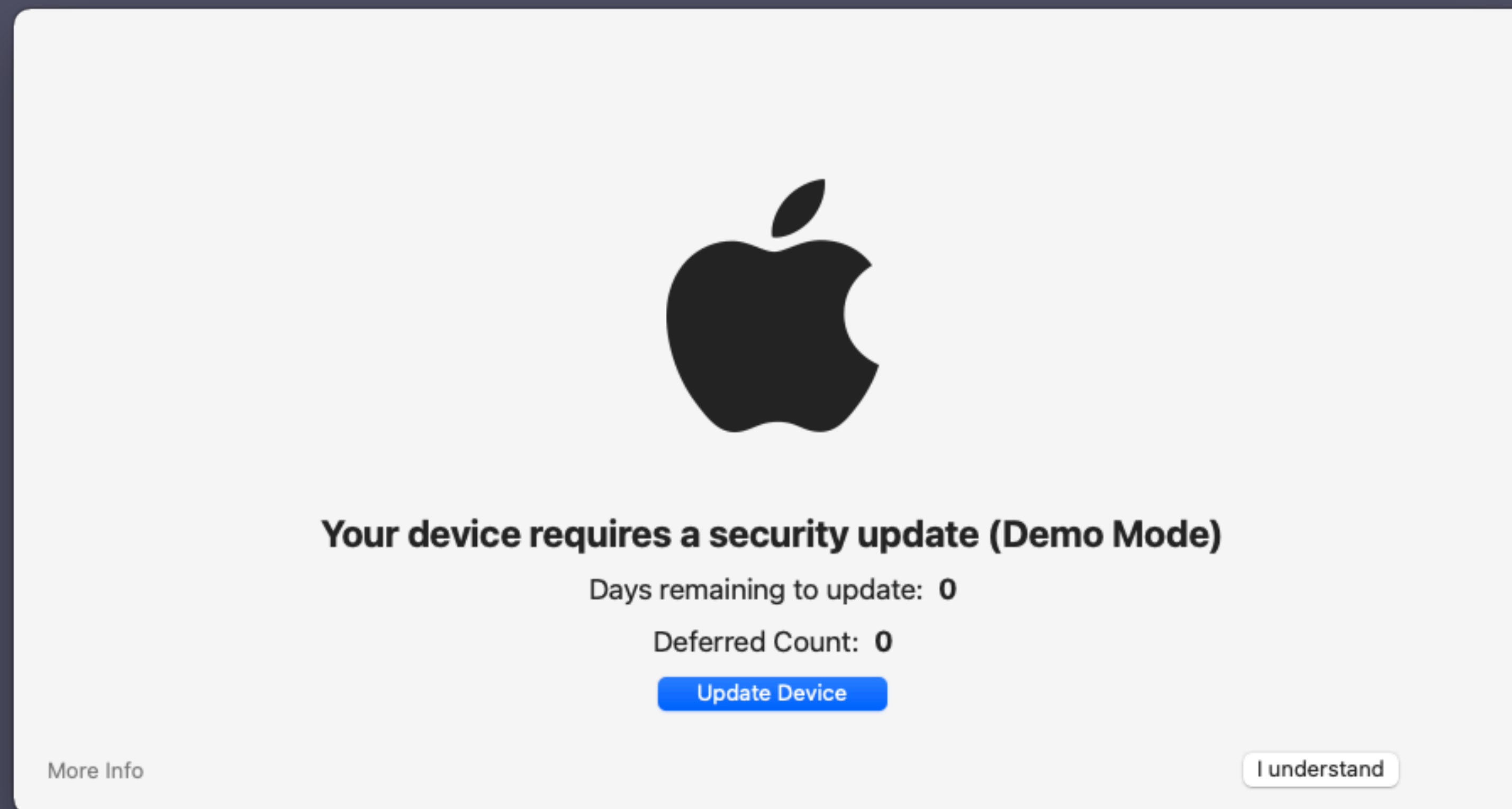


Localisation

<https://github.com/macadmins/nudge/wiki/updateElements>

Simple Mode

```
/Applications/Utilities/Nudge.app/Contents/MacOS/Nudge \  
-simple-mode
```



<https://github.com/macadmins/nudge/wiki/userInterface#simplemode---type-boolean-default-value-false>



Major macOS Upgrades (soon!)

<https://github.com/macadmins/nudge/wiki/optionalFeatures#attempttofetchmajorupgrade---type-boolean-default-value-true>

<https://github.com/macadmins/nudge/wiki/osVersionRequirements#majorupgradeapppath---type-string-default-value--required-no>

Resources

- **GitHub Repo** - <https://github.com/macadmins/nudge>
- **Wiki** - <https://github.com/macadmins/nudge/wiki>
- **Releases** - <https://github.com/macadmins/nudge/releases>
- **#nudge** on the MacAdmins Slack
- **Erik's Texas Apple Admins Talk** - <https://blog.eriknicolasgomez.com/2021/03/30/Nudge-Swift-Texas-macadmins-presentation/>
- **Nudging Erik Gomez (MacAdmins Podcast)** - <https://podcast.macadmins.org/2021/05/10/episode-215-nudging-erik-gomez/>

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