



Upgrade to macOS Monterey Using Self Service with Jamf Pro



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This guide was created using the following:

- Jamf Pro 10.36
- Jamf Admin (if your Jamf Pro is on-premise and/or you have a file share distribution point instead of a cloud distribution point)
- macOS Catalina

Requirements:

- Current macOS Monterey installer (12.3 is the version used in this guide) placed in your /Applications folder.
- The MegaPKGr.zsh script. https://gist.github.com/talkingmoose/e9ed319226c6da30dd633725e48a97b0
- The macOSUpgrade.sh script. https://github.com/kc9wwh/macOSUpgrade/blob/master/macOSUpgrade.sh

Overview

The purpose of this document is to supply guidance and best practice solutions to facilitate the successful inplace upgrade of Mac computers to macOS Monterey. This workflow is for organizations that have Jamf Pro and allow users to open Self Service to upgrade with one click. The workflow takes advantage of the "startosinstall" command located in the Install macOS Monterey.app.

What is a silent, in-place upgrade?

A silent, in-place upgrade is a method of upgrading a Mac computer to a newer operating system with minimal user interaction with the installer app. By using the "startosinstall" command we can accomplish this using scripting tools and a solution such as Jamf Pro.

Additional information on the items discussed in this guide:

More information on macOS Monterey: https://www.apple.com/macos/Monterey/

macOS Monterey upgrade requirements: https://support.apple.com/en-us/HT201475

How to install macOS at your organization: https://support.apple.com/en-us/HT208020

More information on the 'startosinstall' option https://www.jamf.com/blog/streamlining-your-macos-upgrade-process/



Flags for the startosinstall command:

Open Terminal and run the command below to see all the flags available for the startosinstall command:

/Applications/Install\ macOS\ Monterey.app/Contents/Resources/startosinstall --usage

The output displays information about the options:

Usage: startosinstall

Arguments (Depending on OS, more or less features)

- --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 and has a maximum of 300 (5 minutes).
- --pidtosignal, Specify a PID to which to send SIGUSR1 upon completion of the prepare phase. To bypass "rebootdelay" send SIGUSR1 back to startosinstall.
- --installpackage, the path of a package (built with productbuild(1)) to install after the OS installation is complete; this option can be specified multiple times.
- --eraseinstall, (Requires APFS) Erase all volumes and install to a new one. Optionally specify the name of the new volume with --newvolumename.
- --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 users are logged in.
- --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.



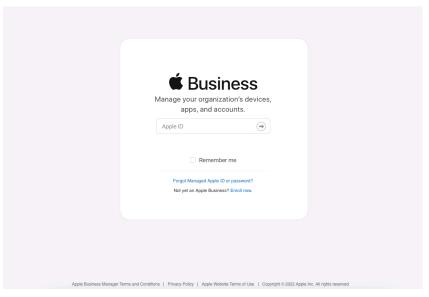
Section 1: Download a version of Install macOS Monterey

This section shows you how to download either the stub installer or the full installer.

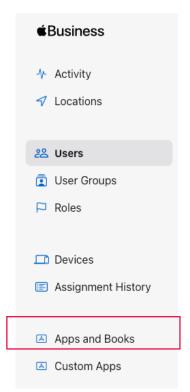
Option A: Download the stub installer.

The Mac you're using to create the package needs to be enrolled with Jamf Pro, so you can use Jamf Pro to install the stub installer on your Mac. Directions to enroll are outside the scope of this guide.

1. Log into in to Apple Business Manager or Apple School Manager.

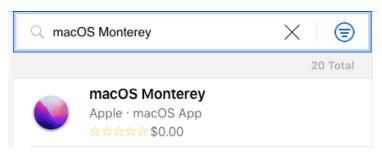


2. In the sidebar, select Apps & Books from the sidebar.

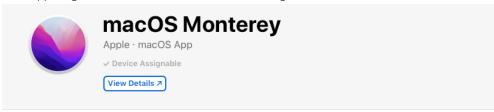




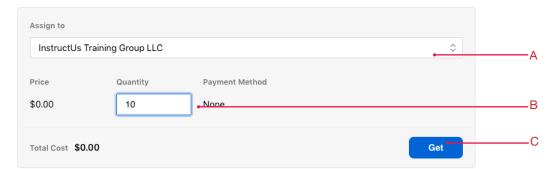
3. In the search field, enter macOS. macOS Monterey will appear. Select it.



- 4. On the right side of the screen do the following:
 - A. Assign to: Select your location.
 - B. Quantity: Enter a quantity. If you're only going to use it on your Mac to download once, you can just enter 1.
 - C. Click Get.
 - D. After you click Get, the Get button changes to display the word "Processing." When the button displays the word Get again, but "Get" is unavailable to click, click your name in the upper-right corner of the browser and choose Sign Out.



Buy Licenses

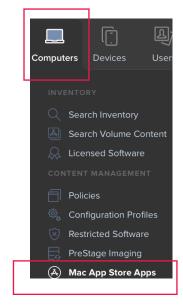




5. If necessary, log in to Jamf Pro.

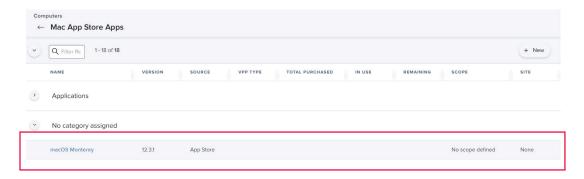


6. Select Computers, then select Mac App Store Apps.



7. Select macOS Monterey.

NOTE: If you just purchased macOS Monterey it make take a few minutes for Jamf Pro to display it.

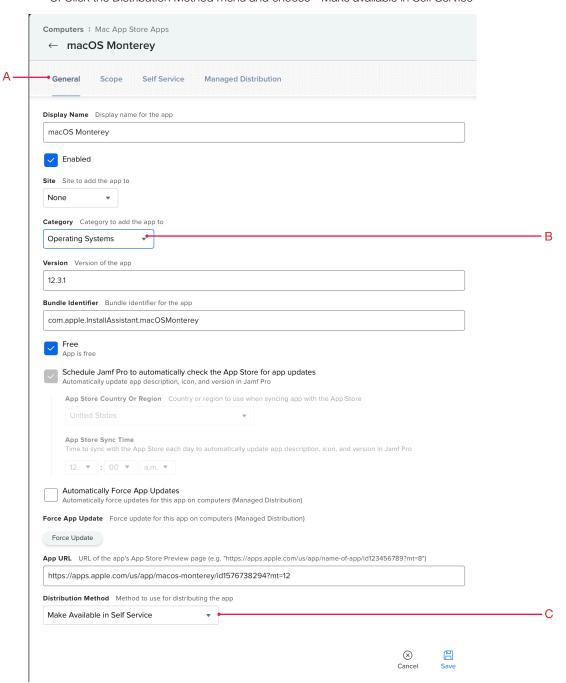




8. On the bottom right-hand, click Edit.

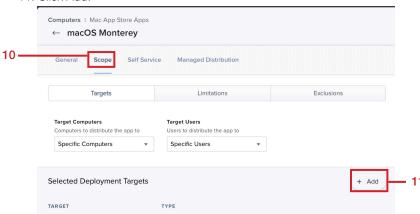


- 9. Do the following:
 - A. Select the General tab.
 - B. Click the Category menu and choose a category.
 - C. Click the Distribution Method menu and choose "Make available in Self Service"





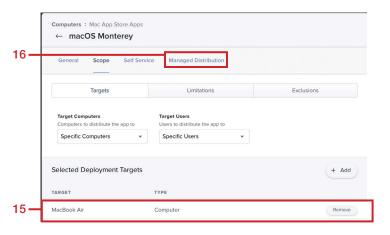
- 10. Select the Scope tab
- 11. Click Add.



- 12. With the Computers tab selected, find the Mac you're working on now. If necessary, enter your Mac computer's name in the Filter Results tab.
- 13. For the Mac you're using, click Add.
- 14. Click Done.



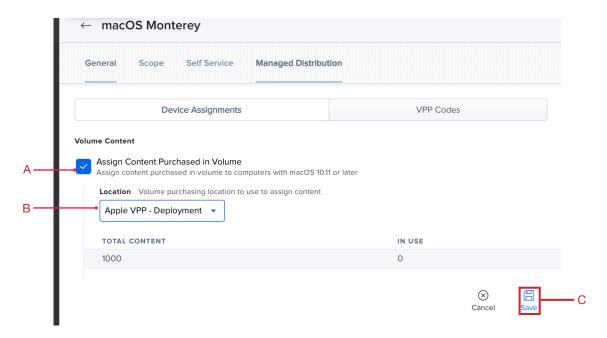
- 15. Confirm that the Selected Deployment Targets section lists your Mac and your Mac only.
- 16. Select the Managed Distribution tab.





17. Do the following:

- A. Select the checkbox for "Assign Content purchased in Volume".
- B. In the Location menu, confirm that the appropriate location for Apps & Books is selected.
- C. Click Save.



18. After the download is complete, Install macOS Monterey automatically opens. Press Command-Q to quit Install macOS Monterey.

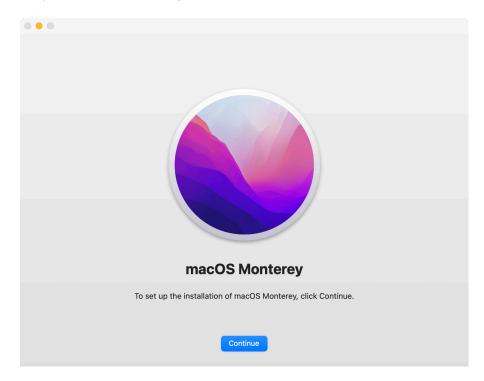


Option B: Download the full installer.

1. Download the Install macOS Monterey.app from the App Store or the direct link below: macappstores://apps.apple.com/app/macos-monterey/id1576738294?mt=12



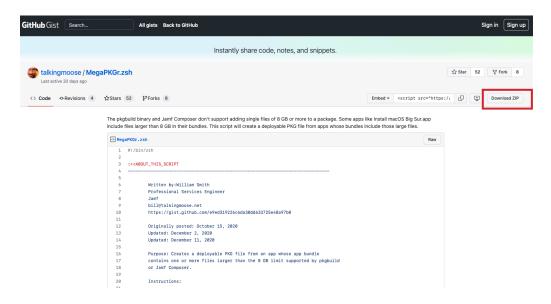
2. After the download is complete, Install macOS Monterey automatically opens. Press Command-Q to quit Install macOS Monterey.





Section 2: Download the MegaPKGr.zsh script and create a package of the macOS Monterey installer

- In your browser, open https://gist.github.com/talkingmoose/e9ed319226c6da30dd633725e48a97b0
- 2. Click Download Zip, then expand the .zip file to reveal the MegaPKGr.zsh script. Place the MegaPKGr.zsh script on your desktop.



- 3. Close the browser window.
- 4. As per the prerequsites of the guide, obtain the full (\sim 12 GB) Install macOS Monterey.app from the App Store.
- 5. Open Terminal
- 6. Execute
 - ~/Desktop/MegaPKGr.zsh /Applications/Install\ macOS\ Monterey.app/

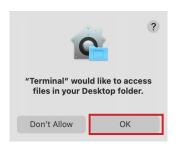
```
ignormal johnfilardo — -bash — 80×24

Last login: Wed May 4 12:39:11 on ttys000

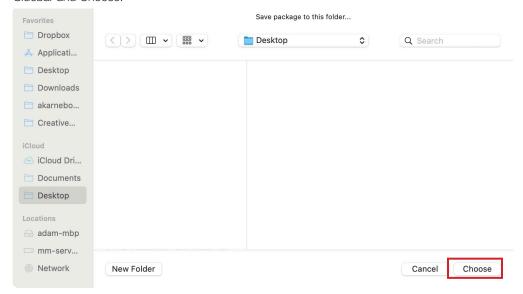
The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit https://support.apple.com/kb/HT208050.
Johns-MBP:~ johnfilardo$ sudo zsh ~/Desktop/MegaPKGr.zsh /Application/Install\ macOS\ Monterey.app
```



7. A dialog box may appear asking you to allow Terminal to access the Desktop Folder, Click OK



8. Another dialog box will appear Asking where to save the package, select the Desktop on the Sidebar and Choose.



9. Wait until it is finished creating the package for you. This can take up to 10-20 minutes depending on hardware to finish.

```
[Johns-MBP:~ johnfilardo$ sudo zsh ~/Desktop/MegaPKGr.zsh /Applications/Install\ ]
macOS\ Monterey.app

Chosen folder is writable.
Disk has enough free space to build "Install macOS Monterey.app.pkg"
Log file is located in /Library/Logs/MegaPKGr.log

Succeeded creating temporary working directory
```



10. Confirm the packaging is finished and you see the package on the Desktop.

```
[Johns-MBP:~ johnfilardo$ sudo zsh ~/Desktop/MegaPKGr.zsh /Applications/Install\ ]
macOS\ Monterey.app
Chosen folder is writable.
Disk has enough free space to build "Install macOS Monterey.app.pkg"
Log file is located in /Library/Logs/MegaPKGr.log
Succeeded creating temporary working directory
Succeeded creating DMG archive of Install macOS Monterey.app.app"...
Succeeded creating pkgbuild ROOT directory
Succeeded creating pkgbuild Scripts directory
Succeeded creating 500 MB file chunks from archive file
Succeeded creating pkgbuild postinstall script
Succeeded creating package "Install macOS Monterey.app.pkg" in /private/var/root
/Desktop/
Succeeded removing temporary items
Packaging time: 14 minutes and 49 seconds
Johns-MBP:~ johnfilardo$ ▮
```



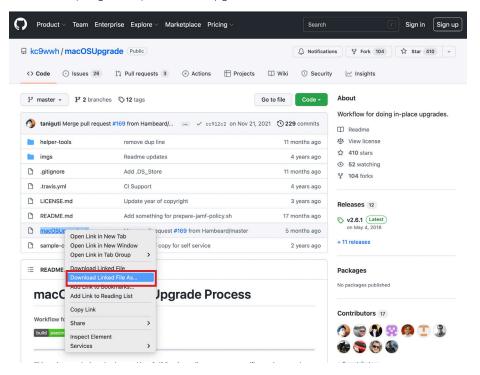


Section 3: Download the macOSUpgrade script

 In your browser open https://github.com/kc9wwh/macOSUpgrade



2. Control-click (or right-click) the macOSUpgrade.sh file then choose Download Linked File As



- 3. In the browser dialog leave the Save As file with its default value of macOSUpgrade.sh.
- 4. Set the location to save to a convenient location. This guide uses the Downloads folder as an example.
- 5. Click Save.



6. You may close the browser window.



Section 4: Upload the macOS Installer package and upgrade script to your Jamf Pro Distribution Point

1. If necessary, Log in to Jamf Pro.



2. Click the Gear icon in the upper-right corner.



3. Click Computer Management



4. Click Packages.

Computer Management





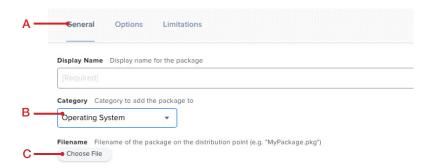


5. Click New.

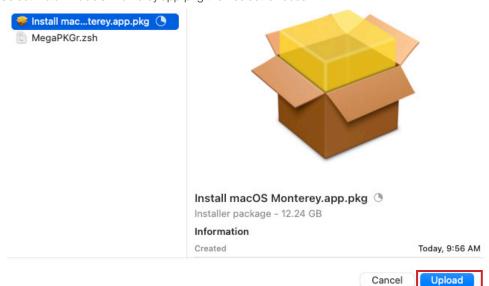


- 6. Do the following:
 - A. Select the General tab.
 - B. Select a Category (This guide will use Operating System)
 - C. Click the Choose File button.

NOTE: Do not provide a Display Name. It will be auto populated once the package is chosen.

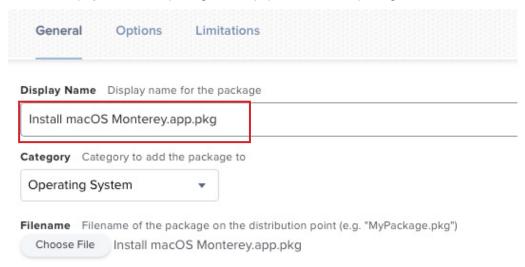


7. Select Install macOS Monterey.app.pkg then select Choose.





8. Notice the Display Name of the package is auto populated once the package was selected.



9. Click Save.



10. The upload process will begin. This can take up to an hour to upload due to it's large size of over 12 Gigabytes. Please be patient.

Uploading 38.1 MB of 12222.6 MB (0%)

11. Click the Back button (arrow next to Install macOS Monterey.app.pkg).





12. Select Scripts.

Computer Management

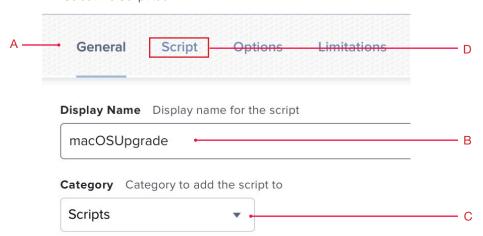




13. Click the New button.



- 14. Do the following:
 - A. Select the General Tab.
 - B. Display Name: macOSUpgrade
 - C. Choose a Category (We will use Scripts for this guide)
 - D. Select the Script tab.



15. Open the macOSUpgrade.sh script that you saved in section 3 of this guide.





16. Press the Command and A key on the keyboard to copy the contents of the script, then press the Command and C key on your keyboard to copy the contents of the script to the clipboard. Close the file when done.



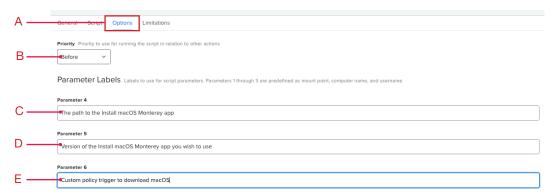


17. Switch back to the Jamf Pro server, Press the Command and V key on your keyboard to paste the contents of the clipboard into the script contents section.

NOTE: Saving the script here, it will store the script in the Jamf Pro database. You can also upload the script which would store it on the Jamf cloud distribution point.



- 18. Do the following:
 - A. Select the Options tab.
 - B. Set the Priority dropdown menu to Before.
 - C. Enter this in Parameter 4: The path to the Install macOS Monterey app
 - D. Enter this in Parameter 5: Version of the Install macOS Monterey app you wish to use
 - E. Enter this in Parameter 6: Custom policy trigger to download macOS
 - F. Click Save.

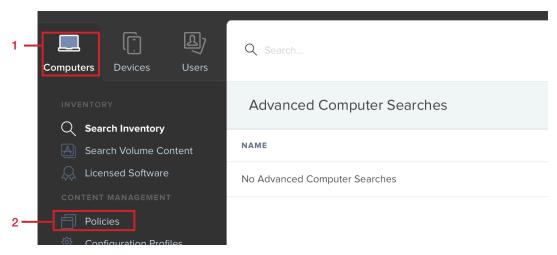






Section 5: Create a Jamf Pro policy to download the macOS installer

- 1. Click the Computers Icon,
- 2. Click Policies in the side bar.

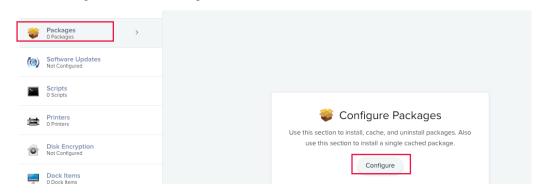


- 3. Do the following:
 - A. Create a new policy.
 - B. In the Display Name field enter a descriptive name such as "Download macOS Monterey".
 - C. In the Trigger section, select the checkbox Custom.
 - D. In the Custom event field, enter a custom trigger name (without any whitespace). This guide uses Download-monterey as an example.
 - E. Click the Execution Frequency pop-up menu and choose Ongoing.





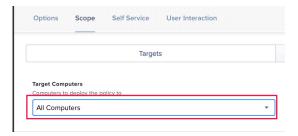
4. Select Packages, then select Configure.



5. Select the Install macOS Monterey.pkg. If necessary, select your desired Distribution point.



6. Select Scope. In general, we recommend that you set the scope to a test group of Mac computers and validate the workflow before you set the scope to All Computers. However, this policy will be run only from a policy that you should initially scope only to a test group (or manually in the command line environment with the Jamf command and -event flag).



7. Click Save.

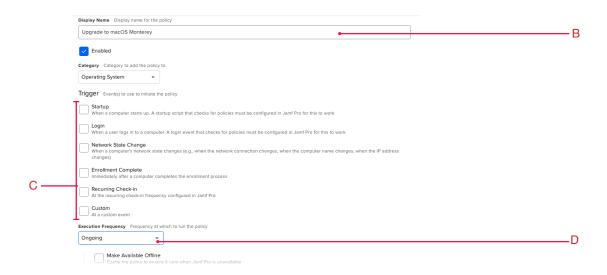


NOTE: When the policy which you will create next runs the installation script, if the macOS Installer is not already in the Applications folder, then the installation script uses the custom trigger to call this policy. In step 3 of the next section, ensure that you specify the exact trigger name from step 2 above, otherwise the installation script will not trigger the policy that downloads the macOS Installer.

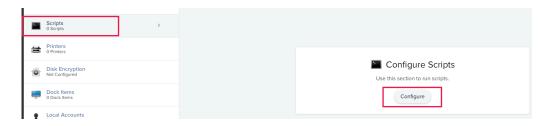


Section 6: Create a Jamf Pro policy to upgrade to macOS Monterey with Self Service

- 1. Do the following:
 - A. Create a new policy.
 - B. In the Display Name field enter a descriptive name such as "Upgrade to macOS Monterey".
 - C. DO NOT select any triggers. This policy will be triggered by Self Service.
 - D. Click the Execution Frequency menu and choose Ongoing.



2. Select Scripts, then select Configure.

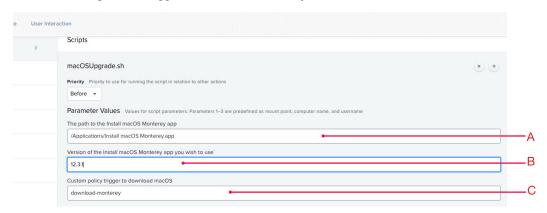




- 3. Select the macOSUpgrade.sh script.
- 4. Do the following:

Complete labeled parameters with the appropriate values:

- A. Install macOS Monterey app path: Enter the path the script should use for the installer application; if you have followed this guide enter
 - /Applications/Install macOS Monterey.app.
- B. macOS version supported: Enter the minimum version of the "Install macOS Monterey" that the script will check for to determine if a download is needed. As an example, this guide uses 12.3.1.
- C. Custom Policy trigger to download macOS: Enter the custom policy trigger that you entered in the policy to download the installer app. The script triggers the custom policy only if the Mac does not already have the Install macOS Monterey app downloaded. If you have followed this guide the trigger is download-monterey.

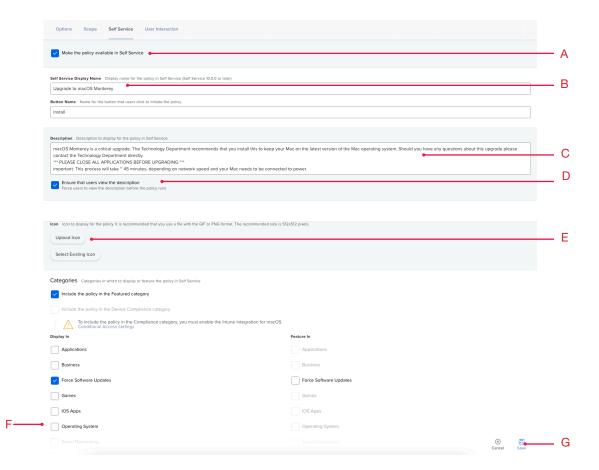


4. Select Scope. We recommend that you set the scope to a test group of Mac computers and validate the workflow before you set the scope to All Computers.





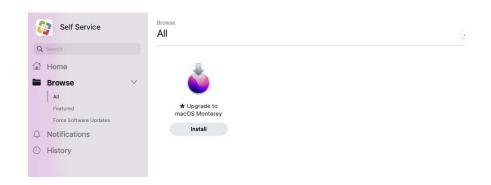
- 5. Select Self Service, then do the following:
 - A. Select "Make the policy available in Self Service."
 - B. In the Self Service Display Name field, enter Upgrade to macOS Monterey.
 - C. In the Description field, enter a relevant description for your organization. An example follows: macOS Monterey is a critical upgrade. The Technology Department recommends that you install this to keep your Mac on the latest version of the Mac operating system. Should you have any questions about this upgrade please contact the Technology Department directly.
 - *** PLEASE CLOSE ALL APPLICATIONS BEFORE UPGRADING *** important: This process will take ~ 45 minutes, depending on network speed and your Mac needs to be connected to power.
 - D. Select the checkbox for " Ensure that users view the description".
 - E. Upload an icon if you have one for macOS Monterey.
 - F. Select a category to display this policy in.
 - G. Click Save.





6. On an enrolled Mac, Open Self Service (you can use Spotlight, or find it in /Applications/Jamf Pro). Select the category that you put the Upgrade to macOS Monterey in. Confirm that it's now available in Self Service for all to use.

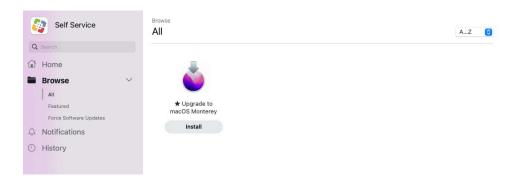
NOTE: Please use a test Mac computer if you want to test things out to make sure all is working in your environment.



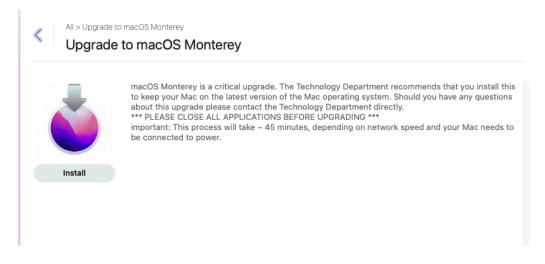


Section 7: Test the workflow

- 1. Open Self Service.
- 2. Select the category that assigned to "Upgrade to macOS Monterey". You will see it's now available in Self Service.



3. Click Install, and confirm that the upgrade works as expected. If the process stops for some reason, fix the issue, then in Self Service click Reinstall.





4. macOS Monterey will start to download from the Jamf Pro server. You will see the message below.



This completes the guide.

If you'd like help implementing the solution in this white paper, we are ready to help; contact us at info@hcsonline.com or (866) 518-9672.

If you have corrections please send them to info@hcsonline.com.