Jamf Concepts

Jamf Sync

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Introduction

Jamf Sync is an open-source utility that copies files from one Jamf Pro distribution point to another. Jamf Sync includes the JCDS 2 distribution point associated with a Jamf Pro instance and any file share distribution points related to that Jamf Pro instance. You can also synchronize with a local file folder. You can transfer files between any of these three types of distribution points. Synchronization can be started via the GUI or can also be started from terminal or a script by using command line parameters.

App Details

Requirements

- macOS 14.2 or greater

- Jamf Pro Server with at least one distribution point

Agreement

Please see the GitHub LICENSE file.

Copyright Notice

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Bill of Materials

Swift UI macOS app

Component	Version	Repository	License
Haversack: Swift library for keychain access	1.1.0	https://github.com/jamf/Haversack	MIT
Swift Collections: Data structure implementations	1.0.5	https://github.com/apple/swift-collections	Apache 2.0

Privacy & Security

The application does not collect user or usage information and will not contact any remote system other than the Jamf Pro Server and distribution points you configure. Jamf Pro API and Distribution Point access settings may optionally be saved to your macOS user keychain.

App Details

Requires: macOS 14.2 or later

App Sandbox - Not enabled (The app cannot be sandboxed because it mounts file shares.)

Hardening - Enabled - Version 14.2.0

Notarization - Granted — Stapled Ticket

Gatekeeper - Notarized Developer ID

Signed By - JAMF Software (483DWKW443)

Persistence (launchd) - None

Privileged Helper - None

Please do not use copies of the software if you did not receive it from Jamf or if it's not signed by Jamf Software.

Running Jamf Sync for the First Time

When you run Jamf Sync for the first time, you'll be presented with a license notification dialog. After you accept the agreement, you will be brought directly to the Setup view.
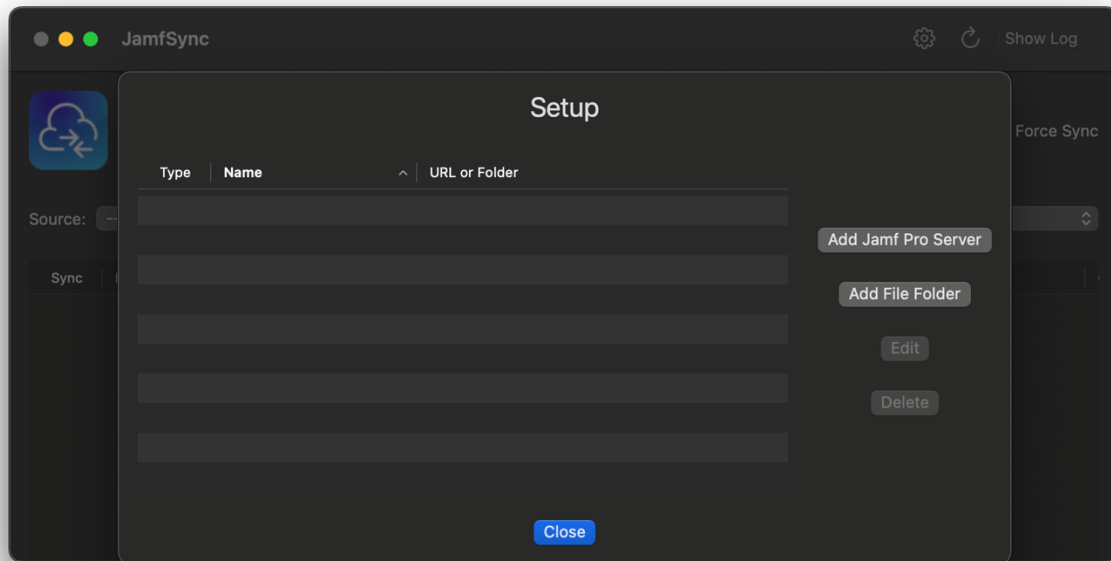
If you need to return to this view in the future, press the settings (⚙) button in the upper-right corner of the main window.

Adding Jamf Pro Servers

Click "Add Jamf Pro Server" to add information about a Jamf Pro server whose distribution points you want to manage.
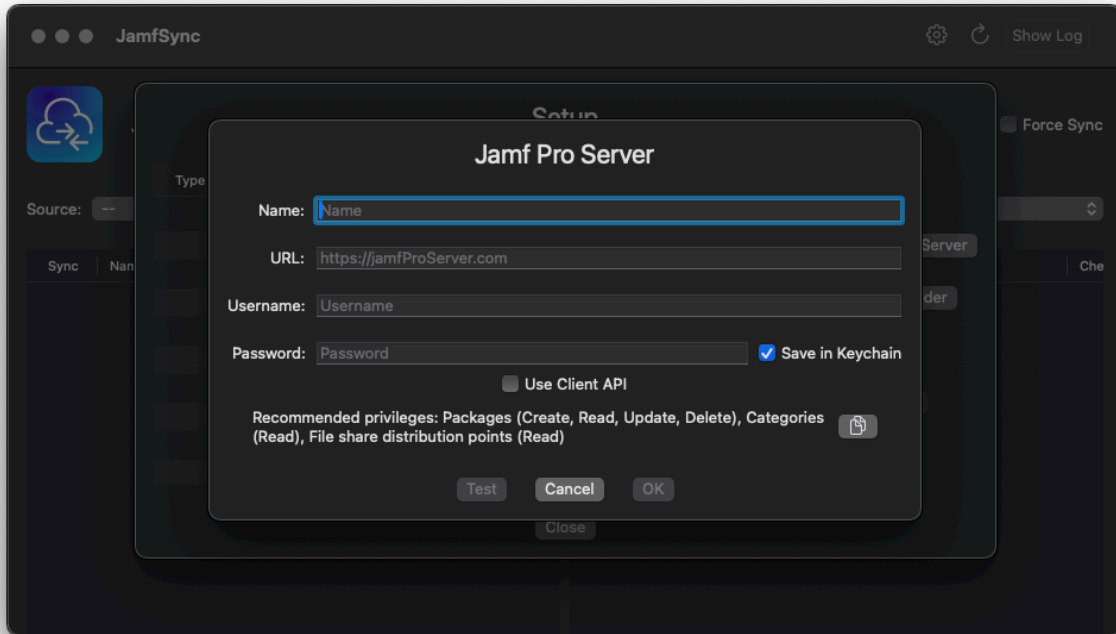
Choose a name that describes the Jamf Pro server. You can add as many Jamf Pro servers as you like. For example, you may want one for production and another for staging.

Regular Credentials

You can use regular user and password credentials or Client API credentials. With regular credentials, you'll need to make sure that the user is set up with at least these permissions: **Packages** (Create, Read, Update, Delete), **Categories** (Read), and **File share distribution points** (Read).
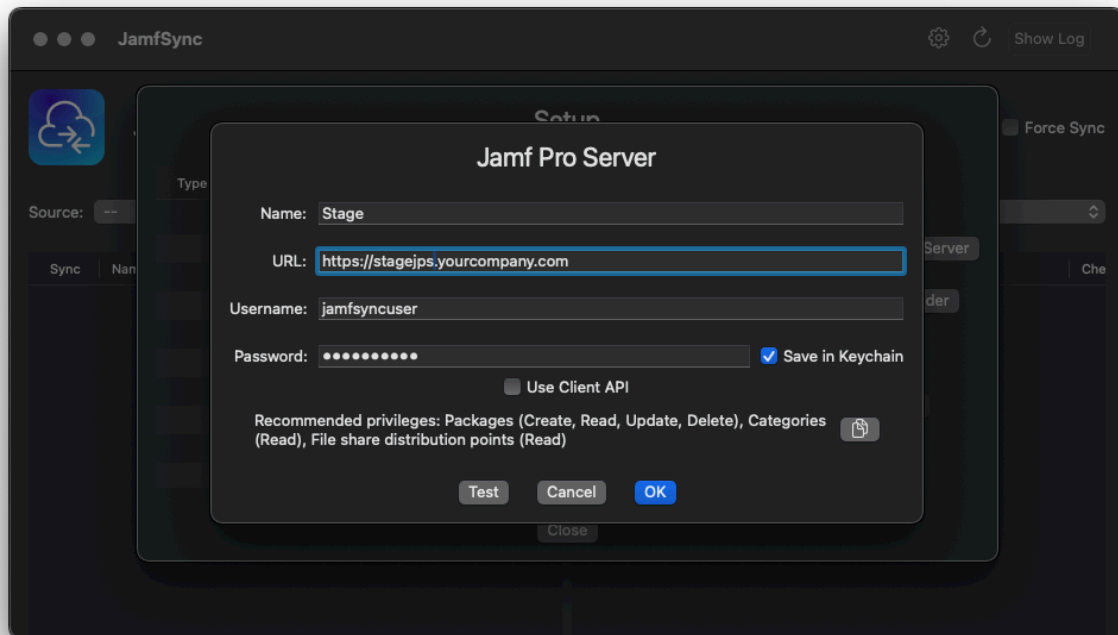

If "Save in Keychain" is unchecked, you will be prompted for the password every time you start up Jamf Sync.

Click "Test" to ensure you can communicate with the Jamf Pro server using the information you provided. This will either display that it succeeded or give a message indicating what kind of problem it ran into. Adjust the settings as necessary and then hit "OK" to save.

Client API Credentials

To set up API credentials in Jamf Pro, go to Settings, System, and API roles and clients. Create a new API role for Jamf Sync and make sure it has these privileges:

- Update Packages
- Jamf Packages Action
- Read Cloud Services Settings
- Read Jamf Content Distribution Server Files
- Create Packages
- Delete Packages

- Read Cloud Distribution Point
- Update Cloud Distribution Point
- Create Jamf Content Distribution Server Files
- Read Distribution Points
- Read Packages
- Delete Jamf Content Distribution Server Files

Then, create an API Client and select the role you just made. Then save it. Then, generate the client's secret. The Client ID and Client Secret will be used with Jamf Sync.
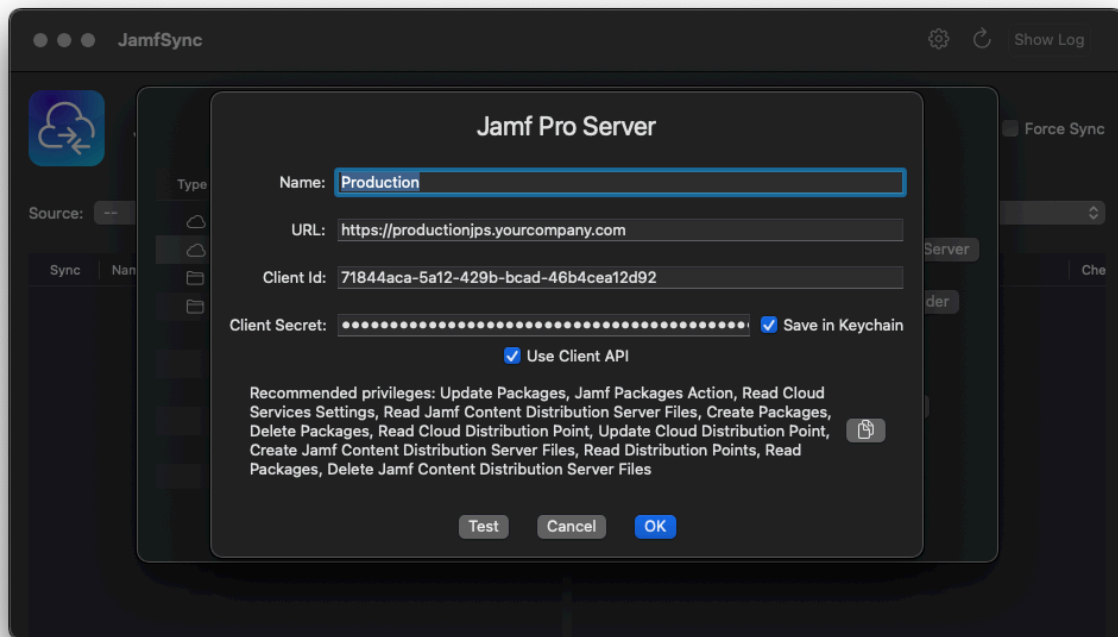
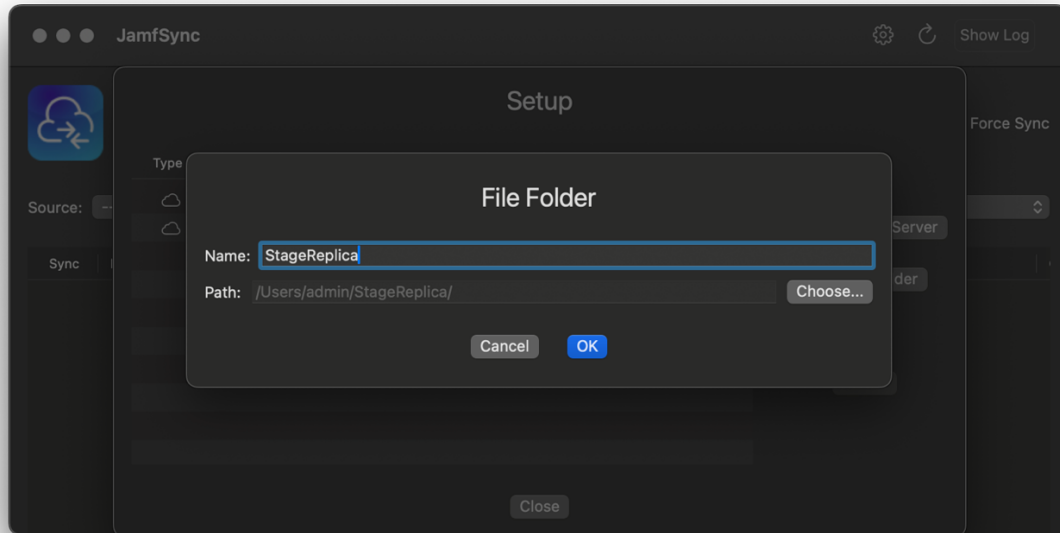Make sure to check "Save in Keychain" checkbox so you don't have to re-enter the client secret every time you use Jamf Sync.

Adding File Folders

On the Setup view, click "Add Folder" to select a folder that you will use to upload files to or download files from other distribution points.

Click "Choose…" to bring up files and navigate to the desired directory. Choose a descriptive name and click OK.
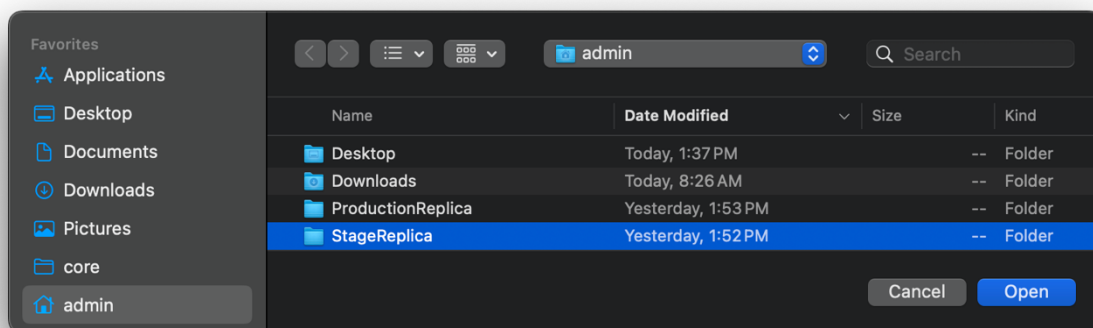
Once you click "Close" on the Setup view, it will load information from the Jamf Pro servers and populate the selection lists with all the distribution points on each Jamf Pro server and the folders you added.
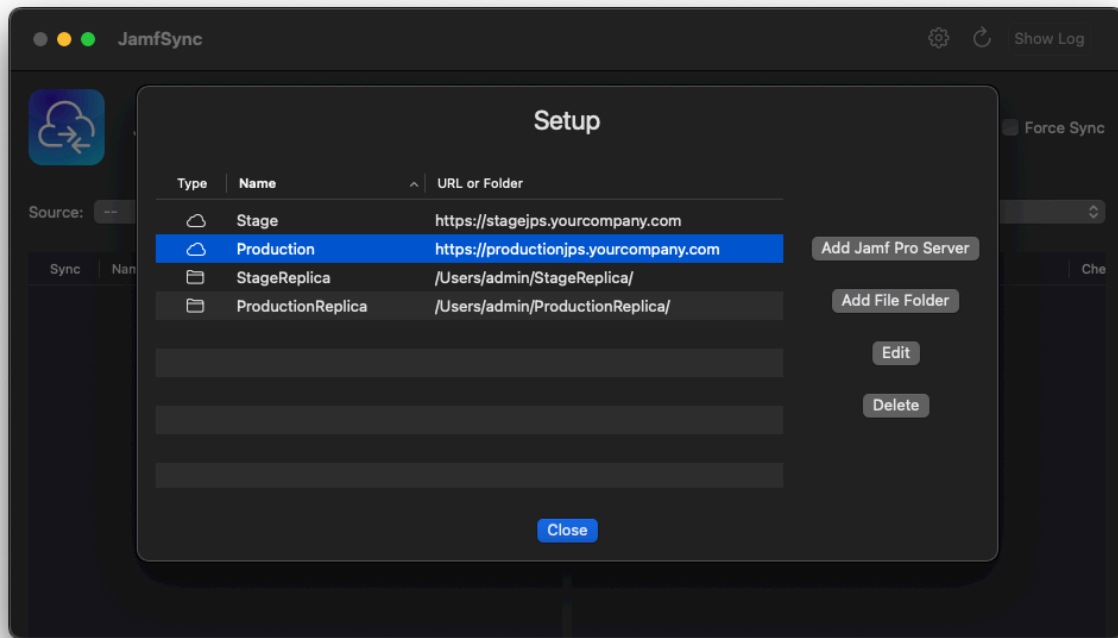
Normal Use

Choosing a source and destination

If the Jamf Pro server is set up to use JCDS 2, it will show up as "JCDS," followed by the server's name in parenthesis. Any file shares defined in Jamf Pro will show up with their name, followed by the Jamf Pro server name in parentheses. Any folders you add will appear with "(local)" afte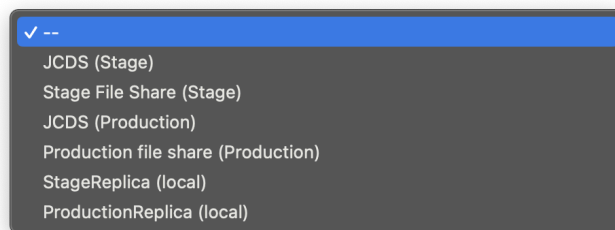r the name. If a cloud distribution point of "Amazon Web Services", "Akamai", or "Rackspace Cloud Files" is set as the principal distribution point and it is on Jamf Pro Version 11.5 or later, "Cloud" followed by the Jamf Pro server name in parentheses will show up only in the destination distribution point list.

Initially, no distribution point will be selected. Choose a source and a destination from the selection lists.

When first selecting a File Share distribution point, it will prompt for credentials for the file share. While Jamf Pro has the credentials, they cannot be securely transmitted to JamfSync, so you will need to enter them once and store them in the keychain. You may choose not to keep them in the keychain; however, you will be prompted for the password each time Jamf Sync is run and that file share is selected as a source or destination.
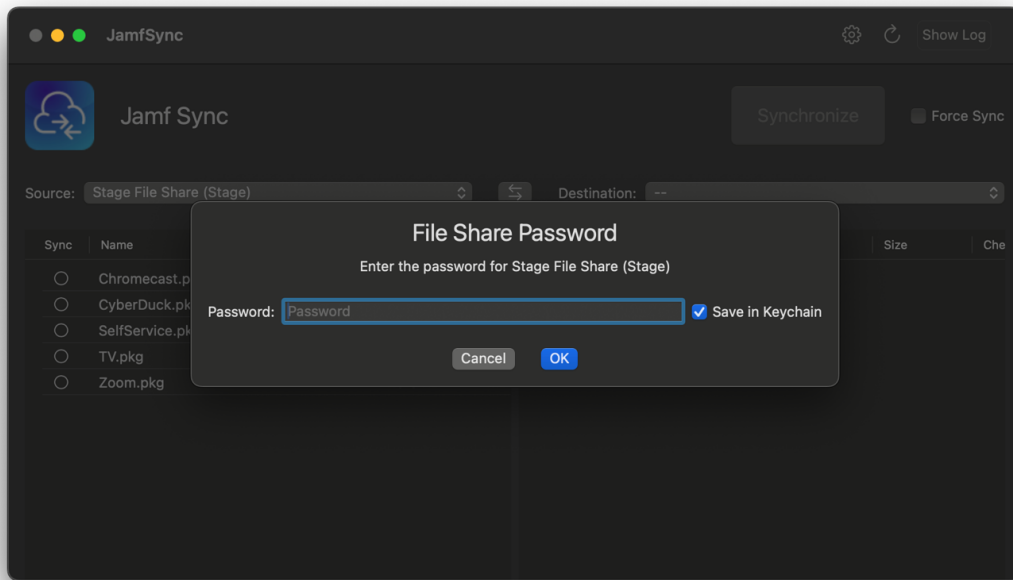
File Lists
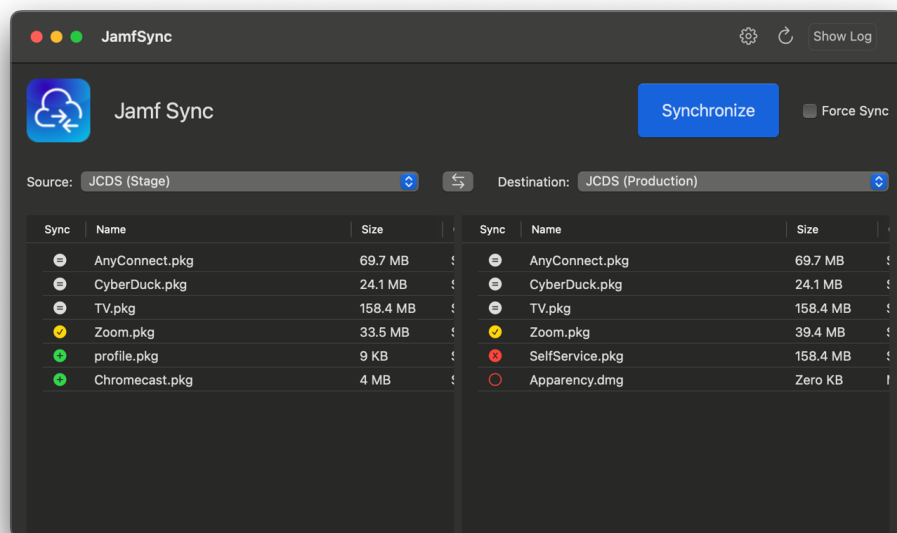
The files for each selected distribution point will show up with an icon in the "Sync" column that indicates what will happen with each file when a synchronization is done. In general, black and white means the files will not participate in a synchronization where ones with color will.

- - The file exists on both the source and the destination and the file checksum or file size match. This indicator will show as green if the "force sync" option is checked.

- - The file only exists on the source and will be added to the destination during a synchronization.

- - Exists on both the source and the destination, but the checksum or size does not match and will be copied during a synchronization.

- - Indicates that the file only exists on the destination. When a synchronization is started, you will be prompted about whether these should be deleted. See the next sections for details about this.

- - The package is in Jamf Pro's package list, but does not exist on the source.

- - The package is in Jamf Pro's package list but the item does not exist on either the source or the destination distribution point. When a synchronization is started, you will be prompted about whether the entry should be deleted from Jamf Pro. See the next sections for details about this.

When you hover the mouse over one of the indicators, a description of the icon will appear. If you hover the mouse over the checksum field, it will show the checksum values available for that file. Checksums are automatically calculated when the distribution point files are retrieved.

Synchronization

When you click the "Synchronize" button, it will try to make the destination the same as the source by copying files that need to be added or updated and deleting files that are not on the source. When the destination is a distribution point on a Jamf Pro server, it will create packages on the server for each file added.

If nothing is deleted from the destination, the synchronization process will start immediately after clicking "Synchronize." However, if files need to be deleted to make the source and the destination the same or if packages on the destination Jamf Pro server are not on the source, it will prompt you first and give you the option not to delete files or packages.
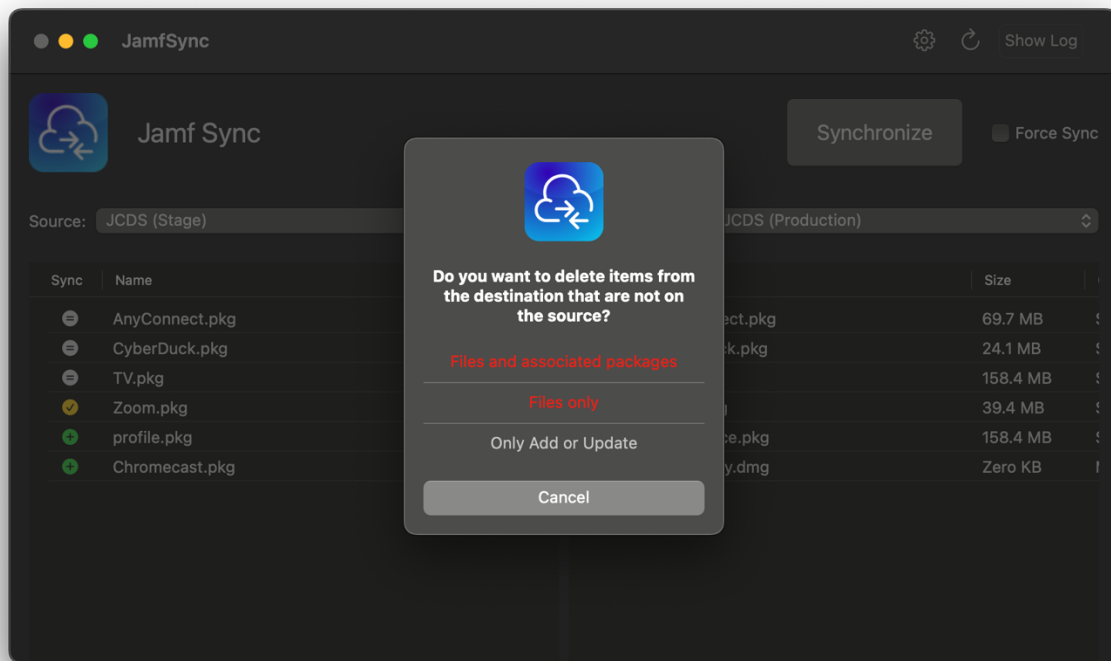
When prompted to delete items that are not on the source, if you click "Files and associated packages," it will remove files from the destination that are not on the source and packages from the Jamf Pro server that are not on the source. You should typically only choose this option if you are sure this file doesn't exist on other distribution points on the same Jamf Pro server.

If you choose "Files Only," it will remove the files on the destination distribution point that are not on the source, but it will not remove the packages on the Jamf Pro server. This is a good option if you want the source and destination distribution points to be the same. Still, you don't want to potentially affect any policies that may reference a package on a different distribution point on the same Jamf Pro server.

If you choose "Only Add or Update", then it will only add, or update files and it won't delete any files.

If you choose "Cancel", it will stop the synchronization process.

When synchronizing to a folder destination, the choices will be more straightforward since there is no Jamf Pro server on the destination. A "Yes" button asks if you want to delete files

from the destination, not on the source.
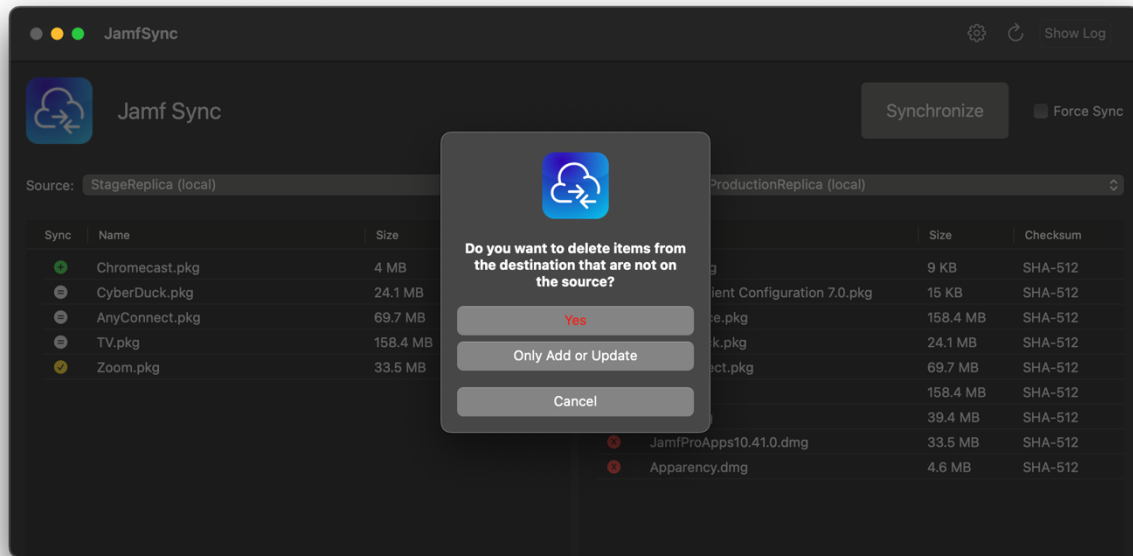
Synchronizing individual files

You can synchronize individual files by selecting them in the source list. You can select multiple items by holding the Command or Shift keys to select a range of items. When selecting items when clicking "Synchronize," only those files will be transferred, no deletion of items will be done, and no confirmation view will appear.

Synchronization Progress

A progress view will appear when synchronization starts and will show the progress of each file as well as the overall progress. The view will disappear after synchronization completes. When you click "Cancel", it will stop synchronizing as soon as it can, and the progress view will disappear.
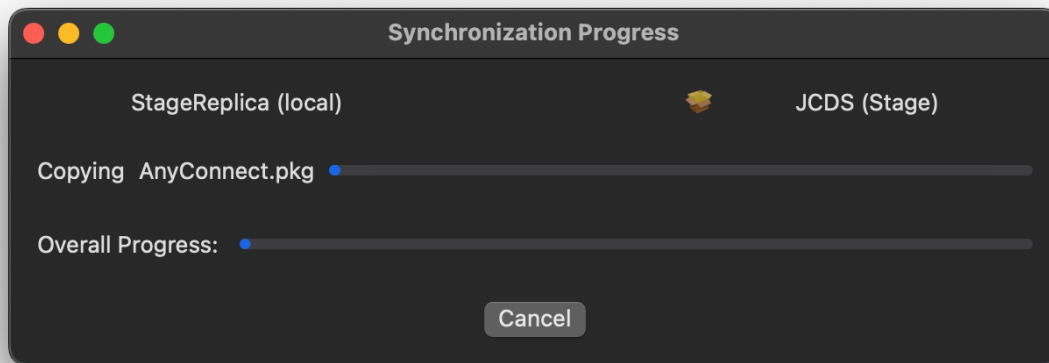
Setup, Refresh and Show Log Buttons

⚙ – Shows the Setup view so you can add, edit or delete Jamf Pro servers or folders.

↻ – Refreshes the file lists for all the distribution points.

"Show Log" – Shows the Activity and Error Log.

Scripting synchronizations

You can use scripts to start synchronizations by using command line arguments that are available in Jamf Sync. You must first run Jamf Sync normally to set up the Jamf Pro instances and folders. You will need to make sure that all passwords are saved in the keychain. You will need to select each file share distribution point at least once so you can enter the credentials and store them in the keychain.

To show what command line arguments are available, use the -h or –help parameters.

```
"/Applications/Jamf Sync.app/Contents/MacOS/JamfSync" –h

Version: 1.0 (113)
NOTE: Run JamfSync with no parameters first to add Jamf Pro servers and/or folders.
      Passwords for Jamf Pro servers and distribution points must be stored in the
      keychain in order to synchronize via command line arguments.

Usage:
 JamfSync [(-s | --srcDp) <name>] [(-d | --dstDp) <name>] [(-f | --forceSync)]
          [(-r | --removeFilesNotOnSource)] [(-rp | --removePackagesNotOnSource)]
          [-p | --progress]
 JamfSync [-h | --help]
 JamfSync [-v | --version]

 -s --srcDp:  The name of the source distribution point or folder.
 -d --dstDp:  The name of the destination distribution point or folder.
 -f --forceSync:  Force synchronization of all files even if they appear to match on both the
                   source and destination.
 -r --removeFilesNotOnSource:  Delete files on the destination that are not on the source. No
                               delete is done if ommitted.
 -rp --removePackagesNotOnSource:  Delete packages on the destination's Jamf Pro instance that
                                   are not on the source. No delete is done if ommitted.
 -p --progress:  Show the progress of files being copied.
 -v --version:  Display the version number and build number.
 -h --help:  Shows this help text.

NOTE: If a distribution point name is the same on multiple Jamf Pro instances, use
"dpName:jamfProName" for the name.

Examples:

"/Applications/Jamf Sync.app/Contents/MacOS/Jamf Sync" –srcDp localSourceName –dstDp \
    destinationSourceName --removeFilesNotOnSource --progress

"/Applications/Jamf Sync.app/Contents/MacOS/Jamf Sync" -s "JCDS:Stage" -d "JCDS:Prod" -r -rp -p

"/Applications/Jamf Sync.app/Contents/MacOS/Jamf Sync" -s localSourceName -d \
    destinationSourceName
```
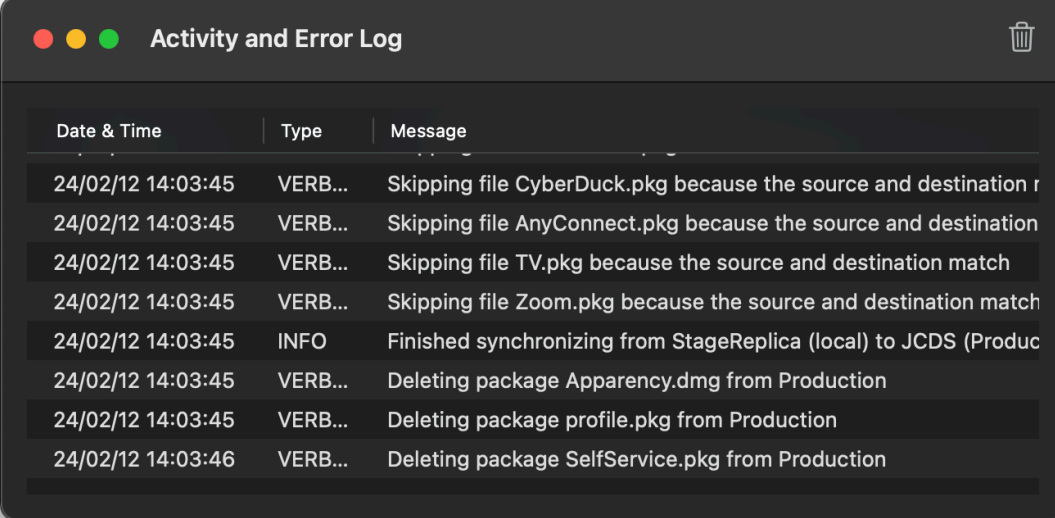
When the synchronization is completed successfully, it will exit with a code of 0. If there are errors, it will exit with a code of 1.

Troubleshooting

Activity and Error Log

Some messages will appear at the bottom of the main view for 5 seconds and then will disappear, however, you can see messages again by clicking "Show Log".

The activity and error log shows log messages that have accumulated since the program started. These can be informative messages or error messages. You can click the 🗑 icon to remove any previous messages from the list so it's clear what messages are new. When the view is closed and reopened, the previous messages will come back.

You can also see messages in terminal using the following command:

```
/usr/bin/log stream --predicate "subsystem == 'com.jamf.jamfsync'"
```

Managing items in the keychain

To manage items stored in the keychain by Jamf Sync, open the "Keychain Access" app. All JamfSync items in the keychain start with "com.jamfsoftware.JamfSync".

Tips

- If something fails, check the log to see if that provides any clues.
- If you're not able to access a Jamf Pro server, check to see if it's accessible from a web browser using the credentials you provided in Jamf Sync.
- Check to make sure the appropriate permissions have been granted for the user.

- If you were able to access a file share distribution point but are no longer able to, in Finder's settings, make sure external disks are selected to show in the sidebar. Then check to see if the file share is already mounted. If so, unmount it and restart JamfSync.
- When selecting a file share distribution point for the first time, it will ask you for permission to access Network Volumes. If you don't give it permission, you will not be able to access file share distribution points until you grant permission. To grant permission, go to Settings, Files and Folders, find JamfSync in the list, click the carrot to expand it and turn on Network Volumes.
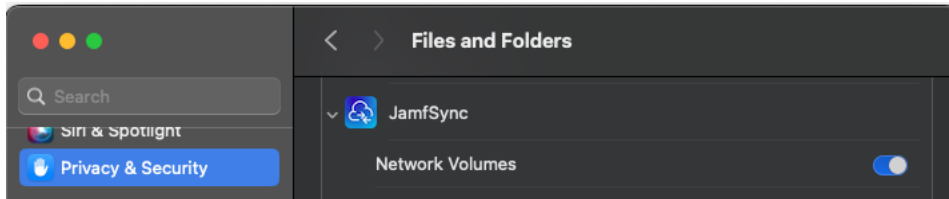
Release Notes

[1.2.0] - 2024-04-17

Features

- Added the ability to use the v1/packages endpoint on Jamf Pro version 11.5 and above, which includes the ability to upload files to any cloud instance that Jamf Pro supports. It shows up as a distribution point called "Cloud", but only for the destination since there isn't a way to download those files at this time.

Enhancements

- Made the column headers resizable.

- Made it so it will show packages ending with ".app.zip" and if a package is non-flat (right click menu has "Show Package Contents"), it will only show up in the list if it doesn't have a corresponding ".app.zip" file. When a non-flat package is transferred, it will create a corresponding ".app.zip" file in the same directory and just transfer that.

- Updated the About view.

Bug fixes

- Fixed an issue where files containing a "+" (and possibly other characters) would fail to upload to JCDS2 distribution points.

[1.1.0] - 2024-03-19

Features

- Made the package, savable item and the log message list columns sortable by clicking on the column headers.

Enhancements

- Update AWS signature/header generation to AWS Signature Version 4 format, which improves JCDS 2 support.

- Replaced CommonCrypto with CrytoKit.

Bug fixes

- Fixed an issue where it could indicate that JCDS2 was available when it was not.

- Fixed an issue where the icons in the source list could be incorrect.

[1.0.0] - 2024-02-09

First public release.