

# Apex Support Bulletin: What's New in Microsoft AutoUpdate 3.8

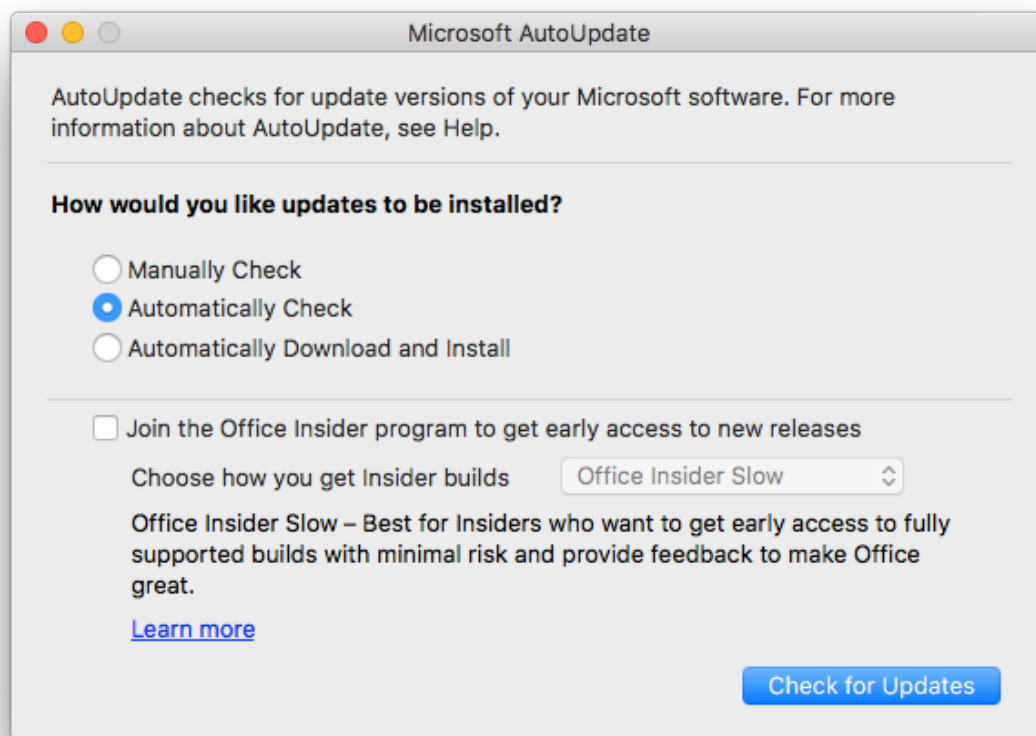
Revision 1.0 [October 11, 2016]

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## Summary

Microsoft AutoUpdate (MAU) is a utility that detects, downloads and applies updates to Microsoft applications installed on macOS. Specifically, MAU supports Office 2016, Office 2011, Skype for Business, and Lync apps. MAU is not used for Microsoft apps that are downloaded from the Mac AppStore.

Each month, we make feature investments in both the functionality of Office 2016 for Mac apps, plus enhance the underlying foundations of how the product can be deployed and managed. MAU 3.6, delivered in August 2016 introduced the ability for users to update apps without needing to enter the local admin password. MAU 3.8 goes one step further by providing users with an option to automatically keep apps up-to-date through silent detection, download and installation of updates.



## Enhancements in MAU 3.8

The following improvements were made in MAU 3.8 (October 2016 release):

1. A new option to automatically and silently detect, download, and apply updates.
2. A log file to aid troubleshooting.
3. The ability to use a local MAU Cache Server.

## How Silent Detection Works

When one of the Office 2016 for Mac apps is started, a background process called 'Microsoft AU Daemon' is launched. By default, the daemon checks for updates every 12 hours. It does this by checking a version number embedded in an XML file (known as a 'manifest') on the Internet and compares that against the version of the locally installed app. If the background daemon notices that the XML file references a newer version than what is installed, MAU considers that an update is available.

The daemon is launched and runs in the security context of the logged-in user. Only one instance of the daemon runs at any one time, so if multiple Office apps are launched, still only one daemon exists. Conversely, when all Office apps are closed, the daemon will stop running. Therefore, updates will only be detected when at least one Office application is running.

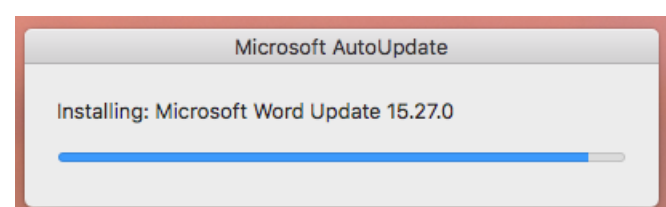
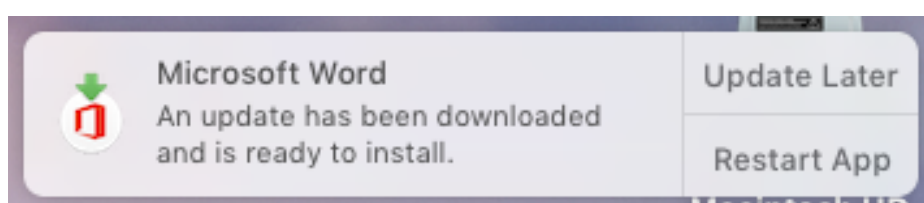
## How Silent Download Works

If the daemon has detected one or more updates, and the user has set their preferences to 'Automatically Download and Install' updates, the daemon will start downloading the update package from Microsoft's CDN, or local MAU Cache Server (if set). The update will be downloaded and stored in a temporary folder (\$TMPDIR/MSau\_<pid>). The daemon has logic to pause and resume downloads during network connectivity outages.

NOTE: If you regularly use a metered Internet connection, such as a cellular hotspot, you may wish to avoid choosing 'Automatically Download and Install' updates.

## How Silent Install Works

Once the update package is downloaded, the daemon will evaluate whether the app is ready to be updated. If the application to be updated is not currently running, the daemon immediately applies the update, so that the next time the user launches the application, it will be up to date. If the application to be updated is running, a system notification is generated and the user is given the option to either 'Update Later' which defers the update for 12 hours, or 'Restart App' which gracefully closes the app (provides the user with an option to save any outstanding documents), applies the update, and relaunches it.



The speed of applying updates is generally between 1 and 3 minutes, depending on how old the existing application is. For example, if the local application was updated in the previous month, the delta update package will be less than 100 MB, and hence the update process will be fast. On the other hand, if the local application is more than 3 months out of date, a full update will be applied, which will be on the order of 900 MB.

The daemon is able to monitor the application lifecycle, so if a user chose 'Update Later' then subsequently exited the app, the daemon will attempt to perform an immediate update. If a user attempts to open an application while it's being updated, they will receive a dialog box informing them that the application is currently updating and will auto-launch once the cycle is complete.

If the user chose 'Update Later' and the app has been running constantly for the last 12 hours, another notification message will appear. Each time the user clicks 'Update Later' another 12 hours will pass before a new notification appears.

### Security and the AutoUpdate HelperTool

The primary role of the helper tool is to provide an elevated permissions space to apply Office updates without requiring the user to enter an admin password. When MAU 3.8 is installed on a computer, the installer requests local admin permissions. As part of the installation process, the following files are placed on disk:

- /Library/LaunchDaemons/com.microsoft.autoupdate.helpertool.plist
- /Library/PrivilegedHelperTools/com.microsoft.autoupdate.helpertool

The plist file registers the HelperTool with the operating system and specifies that programs can invoke the helper through a mach port, which is registered as an XPC service. As the helper runs in the security context of the root user, additional safeguards have been put in place to ensure that the helper cannot be misused by other programs. The helper will only accept connections from the calling program if all of the following is true:

- The initiating program has a bundle identifier pertaining to com.microsoft.autoupdate2 or com.microsoft.autoupdate.fba
- The initiating program has a valid code signature
- The initiating program is signed by Microsoft's distribution certificate

The helper will terminate the connection immediately if any of the above requirements are not met.

A secondary role of the helper is to log update messages to a system-wide location (/Library/Logs/Microsoft/autoupdate.log). The helper self-terminates once it has performed its task of either updating an application or logging a message.

### Logging and Troubleshooting

MAU 3.8 comes with a new ability to log update events to a system-wide location - /Library/Logs/Microsoft/autoupdate.log

By default, only informational messages are logged. As an example, here is what you may see in the log when an update is detected, downloaded and applied:

*Oct 11 15:42:47 Microsoft AutoUpdate <Info>: Checking for updates.*

*Oct 11 15:42:47 Microsoft AutoUpdate <Info>: Found 5 updates.*

*Oct 11 15:43:07 Microsoft AutoUpdate <Info>: Installing update: "Microsoft Excel Update 15.27.0".*

*Oct 11 15:43:14 Microsoft AutoUpdate <Info>: Successfully installed update: "Microsoft Excel Update 15.27.0".*

*Oct 11 15:43:14 Microsoft AutoUpdate <Info>: Running codesign verification for application at path "/Applications/Microsoft Excel.app".*

*Oct 11 15:43:25 Microsoft AutoUpdate <Info>: Codesign was successfully verified for application at path: "/Applications/Microsoft Excel.app"*

For troubleshooting purposes, extended logging can be enabled to provide more verbosity. This is accomplished through the following Terminal command:

```
defaults write com.microsoft.autoupdate2 ExtendedLogging -bool TRUE
```

Appendix B shows an example of a log file where extended logging has been enabled.

### MAU Cache Server

By default, MAU will obtain update packages from Microsoft's Content Delivery Network (CDN) on the Internet. The size of the update package will vary depending upon when the local application was last updated. In the best case scenario, if an application was updated in the previous month, the size of the update will be ~75 MB. In the worst case scenario, where an application is more than three months out of date, the package may be 1 GB in size.

To help reduce the demands on a shared Internet connection for multiple users, a MAU Cache Server can be configured. In this case, the MAU client running on a users machine will first attempt to retrieve an update package from the local caching server. For a full explanation of how to configure this service see [http://macadmins.software/docs/MAU\\_CachingServer.pdf](http://macadmins.software/docs/MAU_CachingServer.pdf) for more information.

Appendix A: List of MAU preferences

Preference	Default Value	Possible Values	Description
ChannelName	<not set> Inferred: Production	Production External InsiderFast Custom	Controls which audience and update channel to use for retrieving product updates. By default, users are placed in the 'production' channel which receives the highest-quality updates around the middle of each month. Through the UI, users can join the Insider Slow (Exeternal) and Insider Fast (InsiderFast) program to receive more frequent updates at slightly lower quality. IT administrators can also set a Custom channel when deploying an internal MAU server.
DisableInsiderCheckbox	<not set> Inferred: FALSE	FALSE TRUE	Controls whether the user can change the Insider option. If the value is set to TRUE, the user interface is disabled for the user.
ExtendedLogging	<not set> Inferred: FALSE	FALSE TRUE	Controls the verbosity of logging messages to /Library/Logs/Microsoft/autoupdate.log
HowToCheck	AutomaticCheck	Manual AutomaticDownload	Controls whether updates are detected automatically (default) or manually, and if update packages should be downloaded and installed automatically.
LastUpdate	<date/time>	<i>Time/date string</i>	Records the last date and time the daemon checked for product updates.
ManifestServer	<not set>	<i>URL string</i>	If the 'ChannelName' has been set to 'Custom', MAU will use the value of this preference to locate an HTTP/S server to retrieve collateral.**
SendAllTelemetryEnabled	TRUE	FALSE TRUE	Controls whether the MAU application sends error telemetry back to Microsoft.
StartDaemonOnAppLaunch	TRUE	FALSE TRUE	Controls whether the 'Microsoft AU Daemon' should be launched when an Office application is launched. If this value is set to 0, updates will not be detected, regardless of the 'HowToCheck' preference, and users will need to use the Help -> Check for Updates menu option to see if updates are available.
UpdateCache	<not set>	<i>URL string</i>	Controls whether MAU should use Microsoft's CDN on the Internet for downloading update packages (default), or if an internal server should be preferred. The IT administrator can set this value to an HTTP/S server that contains a cache of update packages.**

\*\* See [http://macadmins.software/docs/MAU\\_CachingServer.pdf](http://macadmins.software/docs/MAU_CachingServer.pdf) for more information.

## Appendix B: ExtendedLogging Example

Oct 11 15:46:00 Microsoft AutoUpdate <Info>: Checking for updates.  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Download URL: <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409ONMC15.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409ONMC15.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409ONMC15.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409ONMC15.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409MSWD15.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409MSWD15.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409MSWD15.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409MSWD15.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409PPT315.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409PPT315.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409PPT315.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409PPT315.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409OPIM15.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409OPIM15.cat>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloading <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409OPIM15.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Debug>: Downloaded <https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/0409OPIM15.xml>  
Oct 11 15:46:00 Microsoft AutoUpdate <Info>: Found 4 updates.  
Oct 11 15:46:08 Microsoft AutoUpdate <Debug>: server is reachable.  
Oct 11 15:46:08 Microsoft AutoUpdate <Debug>: Downloading [https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/PowerPoint\\_15.26.0\\_160910\\_to\\_15.27.0\\_161010\\_Delta.pkg](https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/PowerPoint_15.26.0_160910_to_15.27.0_161010_Delta.pkg)  
Oct 11 15:46:13 Microsoft AutoUpdate <Debug>: Downloaded [https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/PowerPoint\\_15.26.0\\_160910\\_to\\_15.27.0\\_161010\\_Delta.pkg](https://officecdn.microsoft.com/pr/C1297A47-86C4-4C1F-97FA-950631F94777/OfficeMac/PowerPoint_15.26.0_160910_to_15.27.0_161010_Delta.pkg)  
Oct 11 15:46:14 Microsoft AutoUpdate <Info>: Installing update: "Microsoft PowerPoint Update 15.27.0".  
Oct 11 15:46:15 Microsoft AutoUpdate <Debug>: Progress: installer: Package name is Microsoft PowerPoint for Mac  
installer: choices changes file '/var/folders/sc/38xgssjd3j3gpcnm33r3hgct0000gn/T/MSau\_4456/customChoice.xml' applied  
installer: Installing at base path /  
installer:PHASE:Preparing for installation...  
Oct 11 15:46:15 Microsoft AutoUpdate <Debug>: Progress: installer:PHASE:Preparing the disk...  
Oct 11 15:46:15 Microsoft AutoUpdate <Debug>: Progress: installer:PHASE:Preparing Microsoft PowerPoint for Mac...  
Oct 11 15:46:15 Microsoft AutoUpdate <Debug>: Progress: installer:PHASE:Waiting for other installations to complete...  
Oct 11 15:46:15 Microsoft AutoUpdate <Debug>: Progress: installer:PHASE:Configuring the installation...  
installer:STATUS:  
Oct 11 15:46:15 Microsoft AutoUpdate <Debug>: Progress: installer:%4.177322  
installer:PHASE:Writing files...  
Oct 11 15:46:16 Microsoft AutoUpdate <Debug>: Progress: installer:%12.456662  
installer:PHASE:Writing files...  
Oct 11 15:46:16 Microsoft AutoUpdate <Debug>: Progress: installer:%18.470593  
installer:PHASE:Writing files...  
Oct 11 15:46:17 Microsoft AutoUpdate <Debug>: Progress: installer:%26.489169  
installer:PHASE:Writing files...  
Oct 11 15:46:17 Microsoft AutoUpdate <Debug>: Progress: installer:%34.507745  
installer:PHASE:Writing files...  
Oct 11 15:46:18 Microsoft AutoUpdate <Debug>: Progress: installer:%42.526320  
installer:PHASE:Writing files...  
Oct 11 15:46:18 Microsoft AutoUpdate <Debug>: Progress: installer:%49.542574  
installer:PHASE:Writing files...  
Oct 11 15:46:19 Microsoft AutoUpdate <Debug>: Progress: installer:%59.374096  
installer:PHASE:Moving items into place...  
Oct 11 15:46:19 Microsoft AutoUpdate <Debug>: Progress: installer:%96.794903  
installer:PHASE:Cleaning up...  
Oct 11 15:46:20 Microsoft AutoUpdate <Debug>: Progress: installer:PHASE:Validating packages...  
Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Progress: installer:%97.750000  
Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Progress: installer:STATUS:Running installer actions...  
Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Progress: installer:STATUS:  
installer:PHASE:Finishing the Installation...  
Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Progress: installer:STATUS:  
installer:%100.000000

Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Progress: installer:PHASE:The software was successfully installed.  
Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Progress: installer: The install was successful.  
Oct 11 15:46:21 Microsoft AutoUpdate <Debug>: Reply from helper tool: (null)  
Oct 11 15:46:21 Microsoft AutoUpdate <Info>: Successfully installed update: "Microsoft PowerPoint Update 15.27.0".  
Oct 11 15:46:21 Microsoft AutoUpdate <Info>: Running codesign verification for application at path "/Applications/Microsoft PowerPoint.app".  
Oct 11 15:46:28 Microsoft AutoUpdate <Info>: Codesign was successfully verified for application at path: "/Applications/Microsoft PowerPoint.app"

## Document History

Date/Version	Changes
October 11, 2016 – 1.0	Initial version