

Network Requests in Office for Mac

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Summary

Office for Mac applications provide a native app experience on the macOS platform. Each app is designed to work in a variety of scenarios, including states when no network access is available. When a machine is connected to a network, the applications automatically connect to a series of web-based services to provide enhanced functionality. This paper describes which end-points and URLs the applications attempt to reach, and the services provided. This information is useful when troubleshooting network configuration issues, and setting a policy for network proxy servers. The details in this paper are intended to compliment the Office 365 URL and address range [article](#).

Most of this paper comprises of tables detailing network URLs, type, and description of service or feature provided by that end-point. Each of the Office apps may differ in its service and end-point usage. The following apps are defined in the tables below:

- W: Word
- X: Excel
- P: PowerPoint
- O: Outlook
- N: OneNote
- D: OneDrive
- S: Skype for Business

The URL type is defined as follows:

- ST: Static – the URL is hard-coded into the client application
- SS: Semi-Static – the URL is encoded as part of a web page or redirector
- CS: Config Service – the URL is returned as part of the Office Configuration Service
- DY: Dynamic – the URL is wholly dependent on user input

Default Configuration

This section describes the default behavior of Office for Mac applications.

Installation and Updates

These following network end-points are used to download the Office for Mac installation program from the Microsoft Content Delivery Network (CDN).

Base URL	Type	Description
https://go.microsoft.com/fwlink/	ST	Office 365 Installation Portal forward link service to latest installation packages
https://officecdn-microsoft-com.akamaized.net/	SS	Location of installation packages on the Content Delivery Network
https://officecdn.microsoft.com/	SS	Location of installation packages on the Content Delivery Network
https://officeci-mauservice.azurewebsites.net/	ST	Management Control endpoint for Microsoft AutoUpdate

First App Launch

The following network end-points are contacted on first launch of an Office app. These end-points provide enhanced Office functionality for users, and the URLs are contacted regardless of license type (including Volume License installations).

Base URL	Apps	Type	Description
https://config.edge.skype.com/	WXPON	ST	'Flighting' Configuration – allows for feature light-up and experimentation
https://client-office365-tas.msedge.net/	WXPON	ST	'Flighting' Network Configuration Data
https://officeclient.microsoft.com/	WXPOND	ST	Office Configuration Service – Master list of service endpoints
https://nexusrules.officeapps.live.com/	WXPON	CS	Office Rules Telemetry download – Informs the client about what data and events to upload to the telemetry service
https://nexus.officeapps.live.com/	WXPON	CS	Office Telemetry Upload Reporting
https://mobile.pipe.aria.microsoft.com/	WXPONS	SS	Office Telemetry Service
https://templateservice.office.com/	WXP	CS	Office Online Template Service – Provides users with online document templates
https://omextemplates.content.office.net/	WXP	CS	Office Templates Downloads – Storage of PNG template images
https://store.office.com/	WXP	CS	Store configuration for Office apps
https://odc.officeapps.live.com/	WXPOND	CS	Office Document Integration Services Catalog (list of services and endpoints) and Home Realm Discovery
https://cdn.odc.officeapps.live.com/	WXPON	CS	Resources for Home Realm Discovery v2 (15.40 and later)
https://officecdn.microsoft.com/	WXPON	ST	Microsoft AutoUpdate Manifests – checks to see if there are updates available
https://wikipedia.firstpartyapps.oaspapps.com/	W	SS	Wikipedia app for Office configuration and resources
https://excelbingmap.firstpartyapps.oaspapps.com/	X	SS	Bing Map app for Office configuration and resources
https://peoplegraph.firstpartyapps.oaspapps.com/	X	SS	People Graph app for Office configuration and resources
https://www.onenote.com/	N	ST	What's New content for OneNote
https://site-cdn.onenote.net/	N	SS	What's New images for OneNote
https://acompli.helpshift.com/	O	ST	In-app Support Service
https://prod-global-autodetect.acompli.net/	O	ST	Email Account Detection Service
https://autodiscover-s.outlook.com/	WXPOS	ST	Outlook AutoDiscovery
https://outlook.office365.com/	WXPOS	ST	Outlook endpoint for Office 365 service
https://r1.res.office365.com/	O	ST	Icons for Outlook add-ins
https://fs-edog.microsoft.com/	WXPON	CS	Font Service
<a href="https://*.<your_domain>/">https://*.<your_domain>/	WXPONS	SS	Domain-based file repository

NOTE: It's important to understand that the Office Configuration Service (<http://officeclient.microsoft.com>) acts as an auto-discovery service for all Microsoft Office clients (not just Mac). In particular, the end-points returned in the response are semi-static in that change is very infrequent, but still possible.

Sign-In

The following network end-points are contacted when signing in to cloud-based storage. Depending on your account type, different services may be contacted. For example:

- MSA: Microsoft Account – typically used for consumer and retail scenarios
- OrgID: Organization Account – typically used for commercial scenarios

Base URL	Apps	Type	Description
https://login.windows.net/	WXPONDS	CS	Windows Authorization Service
https://login.microsoftonline.com/	WXPONDS	CS	Office 365 Login Service (OrgID)
https://login.live.com/	WXPONDS	CS	Microsoft Account Login Service (MSA)
https://auth.gfx.ms/	WXPONDS	CS	Microsoft Account Login Service Helper (MSA)
https://secure.aadcdn.microsoftonline-p.com/	WXPONDS	SS	Office 365 Login Branding (OrgID)
https://ocws.officeapps.live.com/	WXPON	CS	Document and Places Storage Locator
https://roaming.officeapps.live.com/	WXPON	CS	Most Recently Used (MRU) document service

NOTE: For subscription-based and retail licenses, signing in both activates the product, and enables access to cloud resources such as OneDrive. For Volume License installations, users are still prompted to sign-in (by default), but that is only required for access to cloud resources, as the product is already activated.

Product Activation

The following network end-points apply to Office 365 Subscription and Retail License activations. Specifically, this does NOT apply to Volume License installations.

Base URL	Apps	Type	Description
https://ols.officeapps.live.com/	WXPON	CS	Office Licensing Service

What's New Content

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://contentstorage.osi.office.net/	WXPO	SS	What's New JSON page content

Researcher

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://entity.osi.office.net/	W	CS	Researcher Web Service
https://cdn.entity.osi.office.net/	W	CS	Researcher Static Content
https://www.bing.com/	W	CS	Researcher Content Provider

Smart Lookup Feature

The following network end-points apply to both Office 365 Subscription and Retail/Volume License activations.

Base URL	Apps	Type	Description
https://uci.officeapps.live.com/	WXPON	CS	Insights Web Service
https://ajax.googleapis.com/	WXPON	CS	JQuery Library
https://cdnjs.cloudflare.com/	WXPON	CS	Supporting JavaScript Library
https://www.bing.com/	WXPON	CS	Insights Content Provider
https://tse1.mm.bing.net/	WXPON	CS	Insights Content Provider

Icons

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://hubblecontent.osi.office.net/	WXP	CS	Icon Web Service

Online Pictures

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://spoprod-a.akamaihd.net/	WXP	SS	Static icons
https://www.bing.com/	WXP	SS	Search web services
https://hubble.officeapps.live.com/	WXP	SS	Picture search web service
https://tse*.mm.bing.net/	WXP	SS	Resource Data Provider
http://*	WXP	DY	Picture images from third-party content provider

Translator

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://ogma.osi.office.net/	WXP	CS	Translation Web Service

Resume Assistant

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://wordsgs.officeapps.live.com/	W	SS	Static resources
https://www.linkedin.com/	W	CS	LinkedIn
https://static.licdn.com/	W	SS	LinkedIn Static Content

Outlook Weather

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://weather.partners.msn.com/	O	CS	Weather XML data
https://blob.weather.microsoft.com/	O	CS	Weather icons

PowerPoint Designer

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://pptsgs.officeapps.live.com/	P	CS	PowerPoint Designer web service

PowerPoint QuickStarter

The following network end-points apply to Office 365 Subscription only.

Base URL	Apps	Type	Description
https://pptcts.officeapps.live.com/	P	CS	PowerPoint QuickStarter web service
https://www.bing.com/	P	CS	PowerPoint QuickStarter data service

Send a Smile/Frown Feature

The following network end-points apply to both Office 365 Subscription and Retail/Volume License activations.

Base URL	Apps	Type	Description
https://sas.office.microsoft.com/	WXPON	CS	Send a Smile Service

OneDrive

The following network end-points apply to Office 365 Subscription activations.

Base URL	Apps	Type	Description
https://g.live.com/	D	ST	OneDrive Flighting Configuration
https://oneclient.sfx.ms/	D	ST	OneDrive Updates
https://gate.hockeyapp.net/	D	ST	OneDrive Flighting
https://mobile.pipe.aria.microsoft.com/	D	ST	OneDrive Telemetry Reporting
https://storage.live.com/	D	CS	OneDrive Storage Locator and Problem Reporting
https://*.blob.core.windows.net/	D	CS	OneDrive Core Storage
https://<your_tenant>-my.sharepoint.com/	D	CS	OneDrive for Business file repository

Skype for Business

The following network end-points apply to Office 365 Subscription activations.

Base URL	Apps	Type	Description
https://mobile.pipe.aria.microsoft.com/	S	ST	Skype for Business Telemetry Reporting
https://gate.hockeyapp.net/	S	ST	Skype for Business Flighting
https://*.online.lync.com/	S	ST	Skype for Business auto-discovery
https://*.infra.lync.com/	S	ST	Skype for Business API endpoint
https://autodiscover-s.outlook.com/	S	SS	Skype for Business integration with Outlook
https://*.<your_domain>/	S	SS	Skype for Business Configuration data

Contact Support

The following network end-points apply to both Office 365 Subscription and Retail/Volume License activations.

Base URL	Apps	Type	Description
https://powerlift-frontdesk.acompli.net/	O	CS	Contact Support Service
https://acompli.helpshift.com/	O	ST	In-app Support Service

Save As PDF

The following network end-points apply to both Office 365 Subscription and Retail/Volume License activations.

Base URL	Apps	Type	Description
https://wordcs.officeapps.live.com/	W	CS	Word document conversion service (PDF)

Office Apps (aka add-ins)

The following network end-points apply to both Office 365 Subscription and Retail/Volume License activations when Office App add-ins are trusted.

Base URL	Apps	Type	Description
https://store.office.com/	WXPO	CS	Office app store configuration
https://wikipedia.firstpartyapps.oaspapps.com/	W	SS	Wikipedia app resources
https://excelbingmap.firstpartyapps.oaspapps.com/	X	SS	Bing Map app resources
https://peoplegraph.firstpartyapps.oaspapps.com/	X	SS	People Graph app resources
https://o15.officeredir.microsoft.com/	WXP	SS	Office Redirection Service
https://appsforoffice.microsoft.com/	WXP	SS	JavaScript Libraries
https://c.microsoft.com/	WXPO	SS	Office JavaScript Libraries
https://c1.microsoft.com/	WXPO	SS	Support resources

https://cs.microsoft.com/	WXPO	SS	Support resources
https://c.bing.com/	WXPO	SS	Support resources
https://static2.sharepointonline.com/	WXP	SS	Static resources such as fonts
https://*.cdn.optimizely.com/	WXPO	SS	JavaScript library
https://errors.client.optimizely.com/	WXP	SS	Error reporting
https://*-contentstorage.osi.office.net/	WXPO	SS	Font resources
https://nexus.ensighten.com/	WXPO	SS	Telemetry Service
https://ajax.aspnetcdn.com/	WXPO	SS	Microsoft Ajax JavaScript Library
https://ajax.microsoft.com/	WXPO	SS	Microsoft Ajax JavaScript Library
https://browser.pipe.aria.microsoft.com/	WXPO	SS	Telemetry Reporting
https://*.vo.msecnd.net/	WXPO	SS	Microsoft Store Asset Library
https://telemetryservice.firstpartyapps.oaspapps.com/	WXPO	SS	Telemetry and Reporting Service for Office apps
https://*.wikipedia.org/	W	SS	Wikipedia page resources
https://upload.wikimedia.org/	W	SS	Wikipedia media resources
https://wikipedia.firstpartyappssandbox.oappseperate.com/	W	SS	Wikipedia sandbox frame
https://*.virtualearth.net/	X	SS	Map templates

Safe Links

The following network end-point applies to Office 365 ProPlus subscribers.

Base URL	Type	Description
https://*.oscs.protection.outlook.com/	CS	Microsoft Safe Link Service

Crash Reporting

The following network end-points apply to all Office applications and license types. When a process unexpectedly crashes, a report is generated and sent to the Watson service.

Base URL	Type	Description
https://watson.microsoft.com/	ST	Microsoft Error Reporting Service
https://officeci.azurewebsites.net/	ST	Office Collaborative Insights Service

Options for Reducing Network Requests and Traffic

The default configuration of Office for Mac provides the best user experience, both in terms of functionality and keeping the machine up-to-date. In some scenarios, IT administrators may wish to prevent applications from contacting network end-points. This section discusses options for doing so.

Disabling Cloud Sign-In and Office Add-Ins

Volume License customers may have strict policies about saving documents to cloud-based storage. The following per-application preference can be set to disable MSA/OrgID Sign in, and access to Office Add-ins.

- `defaults write com.microsoft.Word UseOnlineContent -integer 0`
- `defaults write com.microsoft.Excel UseOnlineContent -integer 0`
- `defaults write com.microsoft.Powerpoint UseOnlineContent -integer 0`

If users attempt to access the Sign-In function, they will see an error that a network connection is not present. Because this preference also blocks online product activation, it should only be used for Volume License installations. Specifically, using this preference will prevent Office applications from accessing the following end-points:

- `https://odc.officeapps.live.com`
- `https://*.firstpartyapps.oaspapps.com`
- All end-points listed in the 'Sign In' section above.
- All end-points listed in the 'Smart Lookup Feature' section above.
- All end-points listed in the 'Product Activation' section above.
- All end-points listed in the 'Office Apps (aka add-ins)' section above.

To re-establish full functionality for the user, either set the preference to '2' or remove it.

NOTE: This preference requires Office 2016 for Mac build 15.25 [160726] or later.

Telemetry

Office for Mac sends telemetry information back to Microsoft at regular intervals. Data is uploaded to the 'Nexus' end-point. The telemetry data helps the engineering team assess the health and any unexpected behaviors of each Office app.

Microsoft takes your privacy very seriously. You can read about Microsoft's data collection policy at <https://privacy.microsoft.com>

To prevent applications from sending usage telemetry, the 'SendAllTelemetryEnabled' preference can be adjusted. The preference is per-application, and can be set via macOS Configuration Profiles, or manually from Terminal:

- `defaults write com.microsoft.Word SendAllTelemetryEnabled -bool FALSE`
- `defaults write com.microsoft.Excel SendAllTelemetryEnabled -bool FALSE`
- `defaults write com.microsoft.Powerpoint SendAllTelemetryEnabled -bool FALSE`
- `defaults write com.microsoft.Outlook SendAllTelemetryEnabled -bool FALSE`
- `defaults write com.microsoft.onenote.mac SendAllTelemetryEnabled -bool FALSE`
- `defaults write com.microsoft.autoupdate2 SendAllTelemetryEnabled -bool FALSE`
- `defaults write com.microsoft.Office365ServiceV2 SendAllTelemetryEnabled -bool FALSE`

Crash Reporting

When a fatal application error occurs, the application will unexpectedly terminate and upload a crash report to the 'Watson' service. The crash report consists of a call-stack, which is the list of steps the application was processing leading up to the crash. These steps help the engineering team identify the exact function that failed and why.

NOTE: If 'SendAllTelemetryEnabled' is set to FALSE, all crash reporting for that process is disabled by default. To enable crash reporting without sending usage telemetry, the following preference can be set:

- defaults write com.microsoft.Word SendCrashReportsEvenWithTelemetryDisabled -bool TRUE
- defaults write com.microsoft.Excel SendCrashReportsEvenWithTelemetryDisabled -bool TRUE
- defaults write com.microsoft.Powerpoint SendCrashReportsEvenWithTelemetryDisabled -bool TRUE
- defaults write com.microsoft.Outlook SendCrashReportsEvenWithTelemetryDisabled -bool TRUE
- defaults write com.microsoft.onenote.mac SendCrashReportsEvenWithTelemetryDisabled -bool TRUE
- defaults write com.microsoft.autoupdate2 SendCrashReportsEvenWithTelemetryDisabled -bool TRUE
- defaults write com.microsoft.Office365ServiceV2 SendCrashReportsEvenWithTelemetryDisabled -bool TRUE

Updates

Microsoft releases Office for Mac updates at regular intervals (typically once a month). We strongly encourage users and IT administrators to keep machines up to date to ensure the latest security fixes are installed. In cases where IT administrators want to closely control and manage machine updates, the following preference can be set to prevent the AutoUpdate process from automatically detecting and offering product updates:

- defaults write com.microsoft.autoupdate2 HowToCheck -string 'Manual'

Blocking Requests with a Firewall/Proxy

If your organization blocks requests to URLs via a firewall or proxy server be sure to configure the URLs listed in this document as either allowed, or block-listed with a 40X response (e.g. 403 or 404). A 40X response will allow the Office applications to gracefully accept the inability to access the resource, and will provide a faster user experience, than simply dropping the connection, which in turn will cause the client to retry.

If your proxy server requires authentication, a 407 response will be returned to the client. For the best experience, ensure that you're using Office 2016 builds 15.27 or later, as they include specific fixes for working with NTLM and Kerberos servers.

Document History

Date/Version	Changes
June 16, 2016 – 1.0	Initial version
July 5, 2016 – 1.1	Added: <ul style="list-style-type: none"> • 'Flighting' configuration URLs (config.edge.skype.com & ocos-office365-s2s-msedge.net) • Template service change (templateservice.office.com) • App-specific URLs for Office apps (Wikipedia, Bing Map, People Graph) • Send a smile URL • Save As PDF OpenDocument URLs • App columns (WXPON)
July 14, 2016 – 1.2	Added: <ul style="list-style-type: none"> • What's New Content
July 26, 2016 – 1.3	Added: <ul style="list-style-type: none"> • UseOnlineContent preference
October 11, 2016 – 1.4	Changed: <ul style="list-style-type: none"> • Microsoft AutoUpdate URL • OneNote ARIA URL • Office App URLs • Smart Lookup URLs • Send-a-smile URL Added: <ul style="list-style-type: none"> • Firewall/Proxy paragraph
November 8, 2016 – 1.5	Updated for 15.28 release Added: <ul style="list-style-type: none"> • Entry for client-office365-tas.msedge.net • Entry for OneNote images • Entry for cdn.optimizely.com Changed: <ul style="list-style-type: none"> • Various URLs that are now CS driven • 404 -> 40X response for blocking
December 12, 2016 – 1.6	Updated for 15.29 release Added: <ul style="list-style-type: none"> • Entry for vo.msecnd.net
February 4, 2017 – 1.7	Updated for 15.31 release Changed: <ul style="list-style-type: none"> • Various URLs for Office add-ins
May 1, 2017 – 1.8	Updated for the 15.34 release Added: <ul style="list-style-type: none"> • Browser ARIA URL for OfficeApps • What's New JSON content provider • Add-in support URLs for Outlook Removed: <ul style="list-style-type: none"> • What's New HTML content provider
June 1, 2017 – 1.9	Updated for the 15.35 release Added: <ul style="list-style-type: none"> • New odcsm home realm discovery endpoint • Acompli endpoints for account detection and helpshift support Changed: <ul style="list-style-type: none"> • CDN location changed to Akamaized.net URL

July 1, 2017 – 2.0	Updated for the 15.36 release Added: <ul style="list-style-type: none"> • Endpoints for Outlook add-ins • Endpoint for PowerPoint Designer • OfficeCI endpoint for crashes • IsMerpEnabled preference
September 26, 2017 – 2.1	Updated for the 15.39 release Added: <ul style="list-style-type: none"> • Endpoints for Researcher
November 7, 2017 – 2.2	Updated for the 15.40 release Modified: <ul style="list-style-type: none"> • CDN endpoints • Accompli endpoint Added: <ul style="list-style-type: none"> • Officeci-mauservice endpoint • Lynk icon • AutoDiscover endpoint • Office 365 endpoint
December 1, 2017 – 3.0	Updated for the 16.8 release <ul style="list-style-type: none"> • All sections refreshed
February 1, 2018 – 3.1	Updated for the 16.10 release Added: <ul style="list-style-type: none"> • PowerPoint QuickStarter endpoint
May 7, 2018 – 3.2	Updated for the 16.13 release Modified: <ul style="list-style-type: none"> • Refreshed URL descriptions • Crash reporting preferences Added: <ul style="list-style-type: none"> • Section on OneDrive • Section on Skype for Business Removed: <ul style="list-style-type: none"> • Reference to https://ocos-office365-s2s.msedge.net/ as it is no longer used • Information about heartbeat as it is no longer sent • Information about MERPs attach files as they are no longer sent
May 11, 2018 – 3.3	Further additions for the 16.13 release Added: <ul style="list-style-type: none"> • URL for Icons feature • URL for Translate feature • URL for Resume Assistant
May 30, 2018 – 3.4	Updated for the 16.14 release Modified: <ul style="list-style-type: none"> • Apps for icons and translator service • Removed '2016' references to make the paper version agnostic Added: <ul style="list-style-type: none"> • Endpoint for font services
June 27, 2018 – 3.5	Updated for the 16.15 release Modified: <ul style="list-style-type: none"> • Refined entries for First App Launch section • OneDrive and Skype for Business sections Added: <ul style="list-style-type: none"> • Section for Outlook Weather • References to <your_tenant> and <your_domain>
September 4, 2018 – 3.6	Updated for the 16.17 release Modified: <ul style="list-style-type: none"> • URLs for Resume Assistant • URLs for Office Add-ins Added: <ul style="list-style-type: none"> • URLs for Online Pictures