

BEST PRACTICES FOR DELIVERING MICROSOFT OFFICE 365 IN VMWARE HORIZON 7

VMware Horizon 7 version 7.1.x

Table of Contents

[Introduction](#)

- [Purpose](#)
- [Intended Audience](#)

[What Is VMware Horizon 7 with Microsoft Office 365?](#)

- [What Is VMware Horizon 7?](#)
- [What Is Microsoft Office 365?](#)

[Configuring Office 365 ProPlus for Horizon 7](#)

[Requirements for Using Nonpersistent VDI and RDS with Office 365 ProPlus](#)

[Using the Office 2016 Deployment Tool](#)

- [Office 365 ProPlus Click-to-Run](#)
- [Using the Office 365 ProPlus Configuration XML Editor](#)

[Enabling Shared Computer Activation on Nonpersistent VDI and RDS](#)

[Understanding How Shared Computer Activation Works](#)

[Installing Office 365 on Horizon 7 Systems](#)

[Considerations for Deploying Office 365 ProPlus to a Horizon 7 Environment](#)

- [Shared Computer Activation](#)
- [OneDrive for Business](#)
- [Microsoft Outlook](#)
- [Tips and Optimizations](#)

[Enhancing the Office 365 ProPlus Deployment](#)

- [VMware Horizon Virtualization Pack for Skype for Business](#)
- [VMware App Volumes](#)
- [VMware User Environment Manager](#)
- [VMware Identity Manager](#)

[Summary and Additional Resources](#)

- [Summary](#)
- [Additional Resources](#)
- [About the Authors](#)

Best Practices for Delivering Microsoft Office 365 in VMware Horizon 7

Introduction

This article explores the use of Microsoft Office 365 in a VMware Horizon® 7 environment, including tips and best practices that can improve performance and application manageability. For information beyond the scope of this document, see [Additional Resources](#).

Purpose

This guide is to help you use VMware Horizon 7 to deliver Microsoft Office 365 ProPlus to your end users.

Intended Audience

This guide is intended for IT administrators who want to expand their use of VMware Horizon 7. Familiarity with VMware vSphere® and VMware vCenter Server® is assumed, as is familiarity with other technologies, including networking and storage in a virtual environment, Active Directory, identity management, and directory services.

What Is VMware Horizon 7 with Microsoft Office 365?

This section briefly describes VMware Horizon 7 and Microsoft Office 365 in preparation for using them together.

What Is VMware Horizon 7?

VMware Horizon 7 is a family of desktop and application virtualization solutions designed to deliver Windows and Linux virtual desktops and published applications. Horizon 7 enables organizations to deliver virtualized or remote desktop services and applications to end users from centralized VMware vSphere servers. The VMware Horizon 7 solution includes a number of components, of which View is the main one.

Horizon 7 allows IT to deliver virtual desktops and applications, including published applications (formerly referred to as *RDS-hosted applications*), packaged applications with VMware ThinApp®, SaaS applications, and even virtualized applications from Citrix. All of this can be accessed from one digital workspace which efficiently provides end users with the resources they need.

What Is Microsoft Office 365?

Microsoft Office 365 is a service that provides secure access to the suite of Office products from the cloud. Instead of buying and installing a new version of the suite whenever you need to upgrade, the products are updated automatically so users always work with the most current versions. User-based licenses can be applied to 15 different devices: 5 mobile phones, 5 tablet-style devices, and 5 PCs or Macs. Even if the Office desktop is not installed on the device, Office 365 provides the suite of applications from the cloud through the browser. The license follows each user across devices, providing a consistent experience offline or online, across all supported devices. In addition to the familiar suite of Office products—Word, Excel, PowerPoint, and Outlook—Office 365 also includes OneDrive, Skype for Business, SharePoint, Yammer, and OneNote.

For more information, see [What is Office 365?](#) and [Microsoft Office 365 Support](#).

Configuring Office 365 ProPlus for Horizon 7

This section explains how to deploy Office 365 ProPlus to a shared computer VMware Horizon 7 environment using *nonpersistent virtual desktop infrastructure* (VDI) or *Remote Desktop Services* (RDS) and *Shared Computer Activation* (SCA).

- **Nonpersistent Virtual Desktop Infrastructure (VDI)** – Nonpersistent VDI are based on stateless desktop images where the remote user is unable to configure a desktop instance as the desktop virtual machine is refreshed at the end of the session. This stateless architecture has many advantages, such as being easier to support and having lower storage costs. Other benefits include a limited need to back up the virtual machines and easier, less expensive disaster recovery and business

continuity options.

- **Remote Desktop Services** – RDS is a Microsoft Windows component that allows users to access remote computers, session-based desktops, virtual desktops, applications in the data center, and virtual machines over a network connection. VMware Horizon 7 supports *Remote Desktop Session Host* (RDSH), a role in RDS. RDSH servers host the Windows applications and desktops that are accessed by remote users over the network connection.
- **Shared Computer Activation** – SCA is an activation mode used to deploy Office 365 ProPlus to multiple users sharing a single computer. A typical example of SCA is the deployment of Office 365 ProPlus using RDS, which enables multiple users to access and run Office 365 ProPlus programs simultaneously on remote computers.

Note: Use SCA for multiple users sharing the same machine, whether physical or virtual. For multiple users assigned individual computers, such as dedicated Horizon 7 desktops, you can use the standard Microsoft install media with a product key to install Office 365 ProPlus, as you would with traditional endpoint desktops.

The main areas of consideration are as follows:

- [Requirements for Using RDS with Office 365 ProPlus](#)
- [Using the Office 2016 Deployment Tool](#)
- [Enabling Shared Computer Activation on RDS](#)
- [Understanding How Shared Computer Activation Works](#)
- [Installing Office 365 on a Horizon 7 RDS Server](#)
- [Considerations for Deploying Office 365 ProPlus to an RDS Environment](#)
- [Enhancing the Office 365 ProPlus Deployment](#)

Requirements for Using Nonpersistent VDI and RDS with Office 365 ProPlus

To use RDS when you deploy Office 365 ProPlus with Horizon 7, you must meet the following basic requirements:

- An [Office 365 plan](#) that includes Office 365 ProPlus
- One of the following versions of the [Office Deployment Tool](#), which is available on the Microsoft Download Center:
 - [Office Deployment Tool \(Office 2013 version\)](#)
 - [Office Deployment Tool \(Office 2016 version\)](#)
- Office 365 ProPlus version 15.0.4631.1002 or later
 - You can download the [Office 365 ProPlus software](#) to your local network using the Office Deployment Tool.
 - Office 365 ProPlus is available in a 32-bit and a 64-bit version, and either version can be used with RDS.
- A supported version of [VMware Horizon 7](#)
- A supported version of VMware Horizon Agent:
 - Windows 10: <https://kb.vmware.com/s/article/2149393>
 - Other Operating Systems: <https://kb.vmware.com/s/article/2150295>
- A reliable network connection between the Horizon 7 systems and the Internet
 - The Office Licensing Service, a component of Office 365 ProPlus, issues temporary activation licenses to shared machines when the user is authenticated. The shared systems contact the Office Licensing Service through the Internet to obtain a license for each Office 365 ProPlus user. The connection requires Internet connectivity to obtain the license, as well as to renew it, which occurs every few days. Other programs, such as Outlook, require connectivity to communicate with Exchange provided by Office 365 services. You also need the Internet to download or update Office 365 ProPlus.

Using the Office 2016 Deployment Tool

It is recommended that you use the [Office 2016 Deployment Tool \(ODT\)](#), a Microsoft management technology for installation and configuration. You can use the ODT to download the install media, configure SCA mode, configure which languages to install, determine which products to install and which to exclude, set up automatic updates, and more. You make these configurations by modifying the XML file that the ODT accesses during setup. The ODT uses Click-to-Run, a Microsoft technology for installing and updating Office products.

- [Office 365 ProPlus Click-to-Run](#)

- [Using the Office 365 ProPlus Configuration XML Editor](#)

Office 365 ProPlus Click-to-Run

Click-to-Run is a Microsoft technology to expedite the processes of installing and updating Office products. Using Click-to-Run technology, installations can be performed on demand, and remotely from the Internet. However, Click-to-Run cannot be used with RDS or pooled, shared machines. Instead, you must first download the install content to a local network share. Next, install Office 365 ProPlus to the shared machines.

As with traditional Office deployments using MSI-based installations, Office 365 Click-to-Run is not available for Microsoft Volume Licensing and can be only downloaded by the ODT.

Using the Office 365 ProPlus Configuration XML Editor

Your configuration choices are stored in the Office 365 ProPlus Configuration XML Editor, which the Office 2016 Deployment Tool uses during installation. The following example was created with the [Office 365 ProPlus Configuration XML Editor](#), and shows downloading and installing the Office media.

The example provides an approach for configuring Office 365 ProPlus in an RDS environment using the [Office 365 ProPlus Configuration XML Editor](#). Using the example configuration file provided below, the Office installation media is downloaded to a local network file share. A source path specifies where the Office 365 ProPlus installation media is located.

Example: Configuration.xml file for downloading and installing the Office bits

```
<Configuration>
  <Add OfficeClientEdition="32" Channel="Monthly"
SourcePath="\\server\share\office365">
    <Product ID="O365ProPlusRetail">
      <Language ID="en-us" />
      <ExcludeApp ID="Publisher" />
      <ExcludeApp ID="OneDrive" />
      <ExcludeApp ID="OneNote" />
      <ExcludeApp ID="Lync" />
      <ExcludeApp ID="Access" />
      <ExcludeApp ID="Groove" />
    </Product>
  </Add>
  <Updates Enabled="FALSE" />
  <Display Level="None" AcceptEULA="TRUE" />
  <Property Name="FORCEAPPSHUTDOWN" Value="FALSE" />
  <Property Name="SharedComputerLicensing" Value="1" />
  <Property Name="PinIconsToTaskbar" Value="FALSE" />
</Configuration>
```

Enabling Shared Computer Activation on Nonpersistent VDI and RDS

The Office 2016 Deployment Tool and the configuration.xml file are used to install Office 365 ProPlus on the shared computer (such as a nonpersistent VDI desktop or RDS server), and to enable shared computer activation for that computer. Add the following lines when you create the configuration.xml file:

```
<Display Level="None" AcceptEULA="True" />
<Property Name="SharedComputerLicensing" Value="1" />
```

Note: You can use Windows Group Policy Objects to override the default settings specified during installation.

For more information, see [Reference: Configuration options for the Office Deployment Tool](#).

Understanding How Shared Computer Activation Works

SCA is the activation mode to use when a virtual machine is shared among multiple users, such as with published resources on RDSH, and with floating desktop pools provisioned with VMware Instant Clone Technology or View Composer. After enabling SCA and installing Office 365 ProPlus on a shared computer, the following sequence of events takes place for each user:

1. The user logs in to the Horizon 7 system with their account for Office 365 ProPlus.
2. The user launches an Office 365 ProPlus application, such as Word.
3. Behind the scenes, Office 365 ProPlus contacts the Office Licensing Service through the Internet to obtain a licensing token for the user.
4. The **Activate Office** window prompts the user for their account information to verify that the user is licensed to use Office 365 ProPlus:

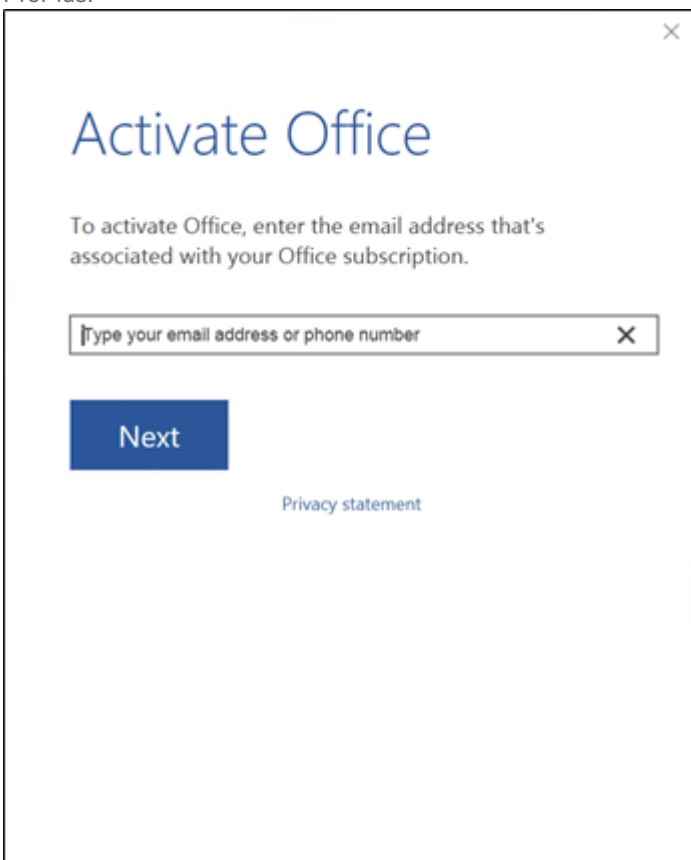


Figure 1: Microsoft Office Activation Window

Note: If the environment is configured to synchronize Office 365 ProPlus and network user accounts automatically, this step is automatic and the user is not prompted.

5. After the user account is verified, a unique licensing token is stored on the Horizon 7 system in the user's profile folder at the following location: `%localappdata%\Microsoft\Office\16.0\Licensing`
6. Office 365 ProPlus is activated for this user, and this user alone can now access the Office 365 ProPlus applications.

Note: Each licensing token is unique to that specific user, for that specific shared computer. This licensing token does not enable this user to access other computers within the Horizon 7 system. Likewise, this licensing token does not enable other users to access Office 365 ProPlus. In both cases, access is obtained by repeating the same sequence of steps.

Federation support allows for automatic activation and is configured by Windows Group Policy Objects using the Office 2016 Administrative Template files. For more information, see the [Office 2016 Administrative Template files \(ADMX/ADML\)](#) and [Office Customization Tool](#).

Installing Office 365 on Horizon 7 Systems

This section provides a high-level overview of the process of installing Office 365 ProPlus in a Horizon 7 VDI and RDS environment:

1. Install and configure Windows desktop OS for VDI or Windows Server for RDS.
2. Install and configure the Remote Desktop Session Host role service for RDS.
3. Install and configure the Horizon Agent.
4. Create the `configuration.xml` files that are used to download and configure Office 365 ProPlus. Make sure the following lines are included:

```
<Display Level="None" AcceptEULA="True" />
<Property Name="SharedComputerLicensing" Value="1" />
```

5. Download Office 365 ProPlus to a file share on your local network using the Office 2016 Deployment Tool and the `configuration.xml` file.

From an elevated command prompt, run `setup.exe` using the ODT. Specify the `/download` parameter and provide a location to the XML file:

```
\\FileServer\OfficeShare\setup.exe /download \\FileServer\OfficeShare\Configuration.xml
```

6. Install Office 365 ProPlus on the VDI desktop or RDS server (install to the master virtual machine if using Instant Clone Technology or View Composer) using the Office 2016 Deployment Tool along with the `configuration.xml` file.

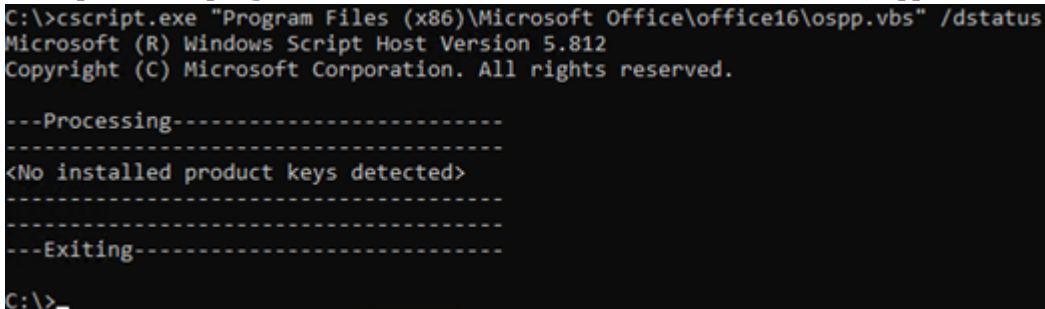
From an elevated command prompt, run `setup.exe` using the ODT. Specify the `/configure` parameter and provide a location to the `configuration.xml` file:

```
\\FileServer\OfficeShare\setup.exe /configure \\FileServer\OfficeShare\Configuration.xml
```

7. Wait until the command completes. Do not start and activate any of the Office programs at this time. The installation process can take several minutes to finish and a progress window is not displayed.

8. Verify that the Office 365 ProPlus temporary product key is not installed in the base image:

```
cscript.exe "%programfiles% (x86)\Microsoft Office\Office16\ospp.vbs" /dstatus
```



```
C:\>cscript.exe "Program Files (x86)\Microsoft Office\Office16\ospp.vbs" /dstatus
Microsoft (R) Windows Script Host Version 5.812
Copyright (C) Microsoft Corporation. All rights reserved.

---Processing-----
<No installed product keys detected>
-----
---Exiting-----
C:\>
```

Figure 2: Example of the Installation Script

Note: When installing Office 365 ProPlus as part of a base image, make sure not to activate Office 365 ProPlus prior to provisioning the shared machines. This prevents temporary product keys from being installed during the image creation process. Users activate Office 365 ProPlus by logging in with their account credentials.

9. Provision a desktop pool or farm of RDS servers using either Instant Clone Technology, View Composer, or manually creating it as a standalone system.

For more information, see [VMware Horizon 7 Documentation](#).

10. For RDS provisioning, publish the Office 365 programs as an application pool to make them available to the user population.

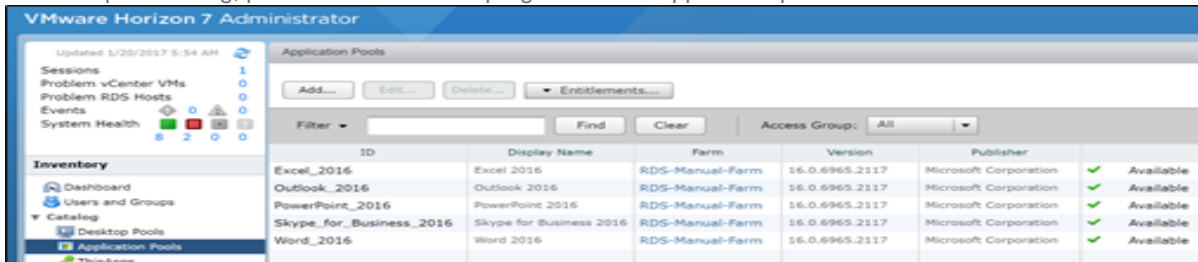


Figure 3: Example of Application Pools in VMware Horizon 7

For more information, see [VMware Horizon 7 Documentation](#).

11. Optionally, configure and optimize the Office applications using [VMware User Environment Manager](#) and/or Windows Group Policy Objects.

For more information, see [VMware Horizon 7 Documentation](#).

Considerations for Deploying Office 365 ProPlus to a Horizon 7 Environment

This section provides best practices, guidelines, tips, and optimizations for your deployment.

- [Shared Computer Activation](#)
- [OneDrive for Business](#)
- [Microsoft Outlook](#)
- [Tips and Optimizations](#)

Shared Computer Activation

This section discusses a number of considerations when you use shared computer activation in your deployment.

- **Internet connectivity** – Because the shared computer must contact the Office Licensing Service on the Internet to obtain or renew a licensing token, reliable connectivity between the shared computer and the Internet is necessary.
- **Licensing token renewal** – The licensing token that is stored on the shared computer is valid for only a few days up to seven days, whether or not the user logs in during that time. As the expiration date for the licensing token reaches 50% expired, Office 365 ProPlus automatically attempts to renew the licensing token while the user is logged in. After seven or more days, the licensing token expires. The next time the user launches an Office 365 ProPlus program, Office 365 ProPlus contacts the Office Licensing Service on the Internet to get a new licensing token.
- **Reduced functionality mode** – If the user is not licensed for Office 365 ProPlus, or if the user closes the Activate Office dialog box, no licensing token is obtained. Office 365 ProPlus is not activated, and is now in reduced functionality mode. This means that the user can view and print Office 365 ProPlus documents, but cannot create or edit documents. Office 365 ProPlus displays notification that most features are turned off.
- **Activation limits** – Normally, you can install and activate Office 365 ProPlus on five computers or fewer. Using Office 365 ProPlus with SCA enabled does not count against the five-computer limit. Microsoft allows a single user to temporarily activate Office 365 ProPlus on what it considers a reasonable number up to 20 of shared computer devices per week within a given time period. The user gets an error message in the unlikely event the limit is exceeded. For more information, see [Troubleshoot issues with shared computer activation for Office 365 ProPlus](#).
- **OneDrive for Business** – OneDrive for Business is not officially supported for RDSH or for nonpersistent VDI deployments. For more information, see the [OneDrive for Business sync app](#). [OneDriveMapper](#) is a PowerShell-based login script for your VDI clients and RDSH servers. It persistently maps a OneDrive for Business or SharePoint Online library to a drive letter. The script automatically maps your Office 365 account if you have ADFS, or prompts for credentials if you do not have ADFS.

OneDrive for Business

OneDrive for Business and full file sync is not officially supported for nonpersistent VDI and RDS deployments. For more information, see the [OneDrive for Business sync app](#). Here are some potential options for integrating OneDrive in a Horizon 7 environment.

- [Office 365 Backstage View](#) is a feature to see all the things you can do to any document you create via Office and stored on OneDrive for Business. You access the Backstage view from the File menu. From there, various commands give you one-click access to more information about your document. This is a fully supported option that requires no configuration to use.
- [Office 365 Portal](#) is an end user online interface for Office 365 referred to as the “Portal”. The Portal interface provides access to Office 365 features and resources such as the Office Web Apps. With a web browser, users can access their data files located on OneDrive for Business and SharePoint. This is a fully supported option that requires no configuration to use.
- [OneDrive Files On-Demand](#) leverages the Windows 10 Fall Creators update (1709) and the OneDrive Sync Client to simplify the user experience with cloud storage accessibility. With Files On-Demand, you can access all your files in the cloud without having to download all of them and use storage space on your system. All your OneDrive online files can be seen in File Explorer and work just like every other file on your system. You will be able to open online-only files from within any desktop or Windows Store apps using the Windows file picker. This feature covers both OneDrive for Business as well as your SharePoint Online team sites. The OneDrive Sync Client is not supported in a VDI nor RDSH environment as per following [Microsoft](#)

[support article](#). VMware has tested the sync client's File On-Demand feature along with Horizon 7 Instant Clone Technology using Windows 10 Fall Creators update. The results were found to be acceptable for use with Windows 10-based VDI pools. The following provides the list of findings.

- o The Files On-Demand feature can be enabled in the OneDrive for Business Sync Client settings configuration or using the OneDrive ADMX group policy template.

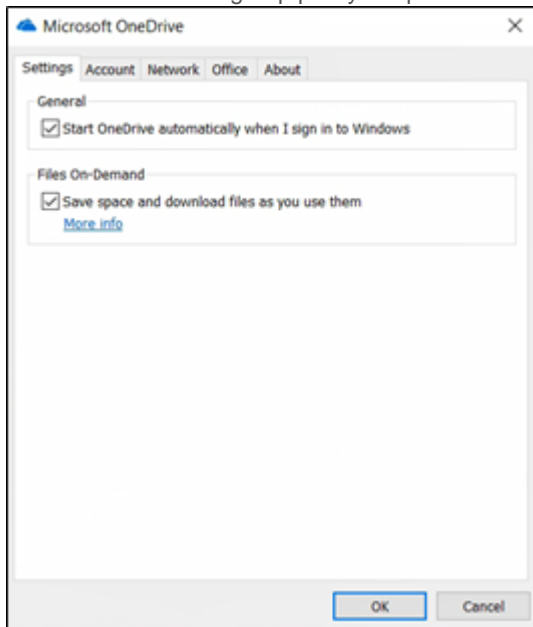


Figure 4: OneDrive Files on Demand Feature

- o The files and subfolders within OneDrive are accessible on-demand and have a blue cloud icon indicating the content state is online.
- o The online files report details such as date modified, type, and size and are searchable behaving much like traditional Windows files, however, the files are zero bytes in size on the local storage.
- o Accessing an online file by double-clicking downloads the data to the local user profile stored on the instant clone desktop using the default location of C:\Users\{Username}\OneDrive.
- o Files that are downloaded are indicated with a green check icon as viewed from OneDrive.
- o Changes made to the downloaded, locally available files, are synced to the online repository on an ongoing basis.
- o When the instant clone desktop is reset, as a result of logging off, all downloaded content is removed and OneDrive reports the state of the files as online the next instant clone session.
- o From the context menu in OneDrive, there is an option to set the files as "Always keep on this device" where the device referenced is the instant clone desktop, however, the state of the files return to online upon resetting the instant clone desktops.

Online Files Files available on-demand from cloud	Locally Available Files Files are downloaded & accessed	Always Available Files Files can be set to always keep on device
<p>Files report details, but are zero bytes on disk</p>	<p>Files are ongoingly synced & returned to online state upon non-persistent desktop reset</p>	<p>Setting is not retained for non-persistent VDI & files are returned to online state upon desktop reset</p>

Figure 5: Summary of the Files On-Demand States

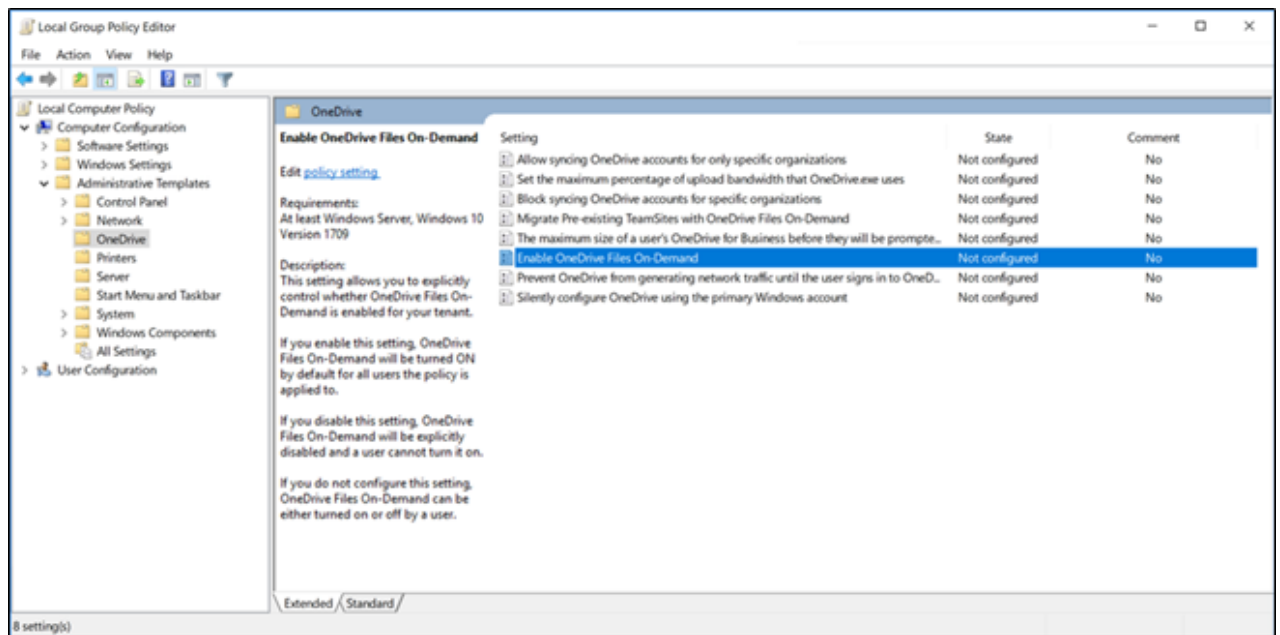


Figure 6: Group policy Settings for OneDrive

- **OneDriveMapper** is a PowerShell-based login script for your VDI clients and RDSH servers. It persistently maps a OneDrive for Business or SharePoint Online library to a drive letter. The script automatically maps your Office 365 account if you have ADFS, or prompts for credentials if you do not have ADFS.

Microsoft Outlook

This section describes areas of consideration when using the Outlook product within Office 365 ProPlus, in a VMware Horizon 7 environment. The main areas of consideration are understanding Outlook Cached Exchange Mode and optimizing Outlook for Office 365 ProPlus and RDS.

Understanding Outlook Cached Exchange Mode

In many cases, Cached Exchange Mode is the recommended option for Office 365 deployments. When using a Microsoft Exchange email account on Internet connections, Cached Exchange Mode can sometimes improve performance. Cached Exchange Mode saves a local copy of your mailbox data on your computer. Outlook accesses this cached copy instead of the cloud, resulting in faster response times. The copy is updated with the same server running the Microsoft Exchange.

If your Outlook on Office 365 is running slowly, enable the Cached Exchange Mode setting to improve performance. If Cached Exchange Mode is not enabled, all of the data for operations is stored and retrieved from the cloud, which can be time-consuming and slow down performance. You can access your downloaded data even if the network connection is broken, and you can continue to work offline until your network connection is restored.

By contrast, when the default Online Mode is enabled, Outlook accesses Office 365 on an ongoing basis and does not cache anything locally.

To optimize Outlook for Office 365 ProPlus on an RDS system:

- Use Outlook 2013 SP1 or later
- Define Exchange Cached Mode in Windows Group Policy Objects
- Define OST and PST paths to a local network share in Windows Group Policy Objects
- Configure Full items or only headers in Windows Group Policy Objects

For an example of Windows Group Policy settings, see [Figure 9](#).

Optimizing Outlook for Office 365 ProPlus and Horizon 7

User Environment Manager 9.3 and later offers support for Microsoft Outlook data files on an App Volumes Writable Volumes.

More and more organizations are adopting a non-persistent virtual desktop infrastructure (VDI) and enjoying benefits such as reduced storage requirements and simplified desktop management.

In non-persistent environments, another challenge remains: How to manage Outlook offline storage table (OST) files. Using Outlook in online mode can impact user performance due to network latency or bandwidth constraints. Using Outlook in cached mode produces the same result. Because the OST file is discarded whenever desktops are refreshed or reset, every time a user logs in to a new desktop, Outlook must recreate the OST file. Depending on the OST file size, this can significantly impact Outlook load times.

This innovative OST feature combines Horizon 7, App Volumes and User Environment Manager to solve this issue with non-persistent VDI. IT can now configure App Volumes settings within User Environment Manager.

Outlook Data File Storage Using App Volumes. This new App Volumes setting allows you to store your offline Outlook Data File (OST) on a writable volume. You might want to use this feature if you want to use App Volumes together with User Environment Manager to create a non-persistent virtual desktop environment. Typically, the Outlook OST file is stored locally on the c: drive of the virtual desktop. The virtual desktop is reset back to the default settings at each logout, removing the OST file. By combining App Volumes and User Environment Manager, the OST file does not need to be recreated for each login. Refer to the following resources for further information:

- VMware User Environment Manager product documentation – Configuring App Volumes Settings
- VMware UEM 9.3: Microsoft Outlook OST on VMware App Volumes User Writable Volume
- Managing Microsoft Office 365 in Non-Persistent VDI

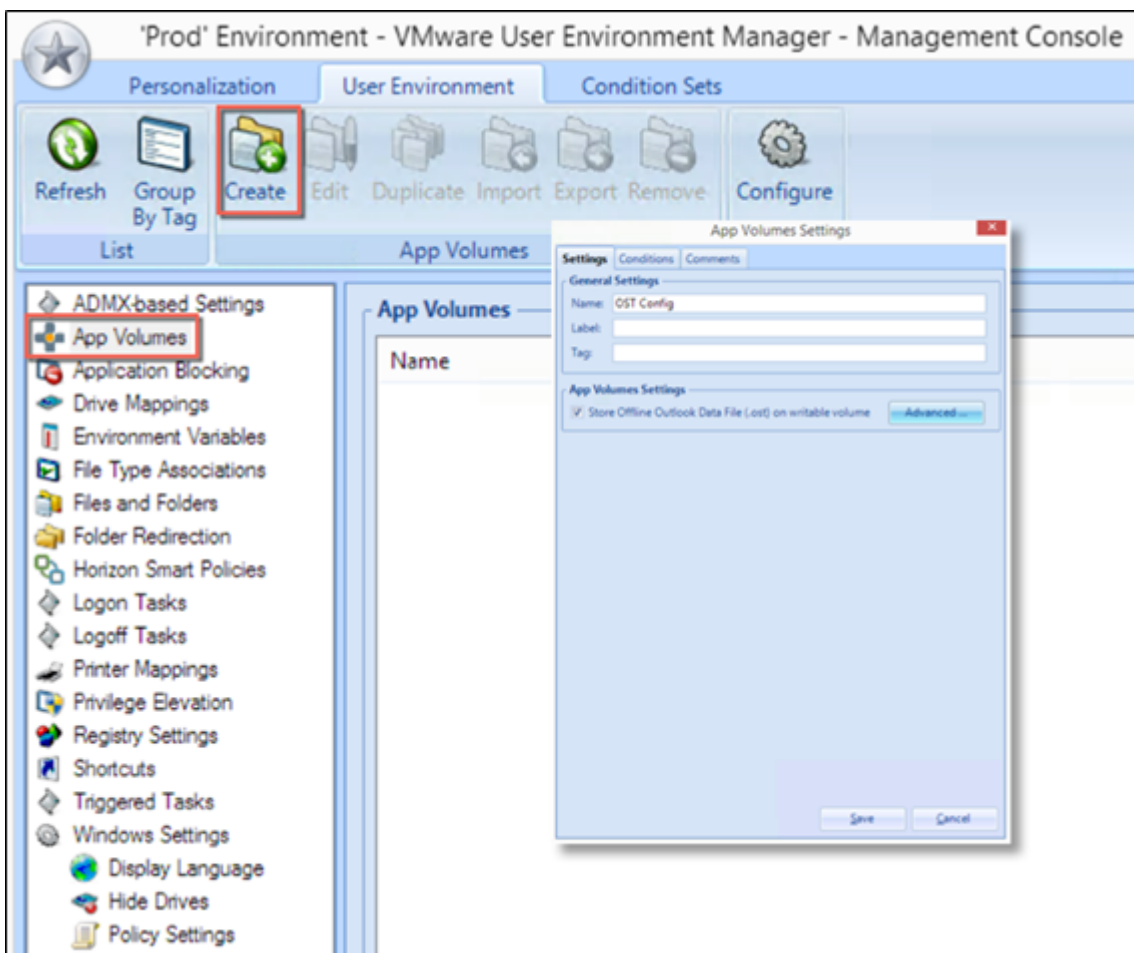


Figure 7: User Environment Manager setting for the OST configuration

Tips and Optimizations

When you use Office 365 ProPlus in a Horizon 7 environment, the following considerations may be helpful.

- Do not enable automatic updates for Office 365 when using Instant Clone Technology or View Composer. Apply updates manually to the base image. The Office updates can be configured using Group Policies and the [Office Administrative Template](#).

Note: Policy templates are frequently updated by Microsoft, be sure to always have the latest version.

- Use the 32-bit version of Office 365 ProPlus unless the larger memory space is required (for example, large Excel spreadsheets). Most Office 365 ProPlus plugins are 32-bit and function best using the corresponding 32-bit version of the Office programs.
- **VMware OS Optimization Tool (OSOT)** – This tool helps optimize Windows systems for use with VMware Horizon 7. The optimization tool includes customizable templates to enable or disable Windows system services and features, per VMware recommendations and best practices, across multiple systems. Since most Windows system services are enabled by default, the optimization tool can be used to easily disable unnecessary services and features to improve performance.

Figure 8 shows an example OSOT template:

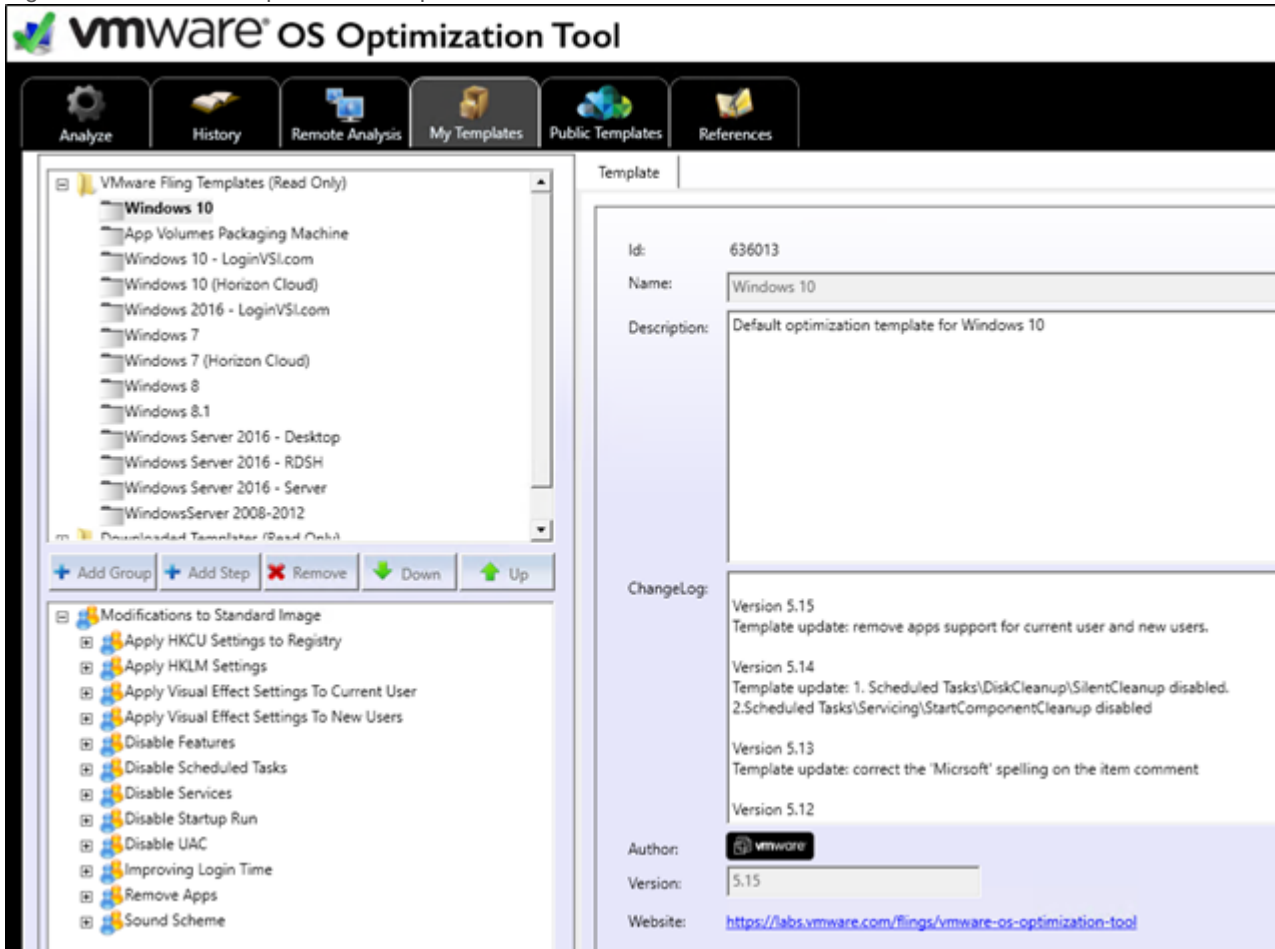


Figure 8: VMware OS Optimization Tool

- **Office 365 Client Performance Analyzer** – You can use this tool to identify issues that affect network performance between your company systems and Office 365 ProPlus. For example, if the connection to **Office 365 ProPlus fails or is slow**, you can use the tool to help troubleshoot the issue.

When testing, the Office 365 Client Performance Analyzer takes the following actions:

- Analyzes network performance from client to **Office 365 ProPlus** data center
- Collects DNS and ISP details
- Makes sure that all required ports are enabled
- Verifies end-user environment information (OS, browser, hardware configurations)
- Traces routes and measures bandwidth available
- Checks download times and ping statistics
- **Microsoft Office Configuration Analyzer Tool** – You can use this tool to analyze specific Microsoft Office programs for configurations known to be problematic.
- **Microsoft Configuration XML Editor** – You can use this online tool to generate and edit the `configuration.xml` file that is

used by the Office 2016 Deployment Tool.

- **Patching Office 365 in nonpersistent systems** – The following list the best practices for updating and maintaining Office 365 ProPlus in nonpersistent VDI or RDS system.
 - Turn off default patching - disable updates
 - Turn off user interaction or point to empty path
 - Integrate Office builds into Windows image monthly
- **Office Group Policy Settings** – Figure 9 shows examples of **Office 365 ProPlus** policies that can be configured using the [Office Administrative Template](#) files.

Office 2016 Policy	
Computer Configuration (Enabled)	
Policies	
Administrative Templates	
Policy definitions (ADMX files) retrieved from the central store.	
Microsoft Office 2016 (Machine)/Licensing Settings	
Policy	Setting
Specify the location to save the licensing token used by shared computer activation	Enabled
Folder location:	
Policy	Setting
Use shared computer activation	Enabled
Microsoft Office 2016 (Machine)/Updates	
Policy	Setting
Enable Automatic Updates	Disabled
Hide option to enable or disable updates	Enabled
Hide Update Notifications	Enabled
User Configuration (Enabled)	
Policies	
Administrative Templates	
Policy definitions (ADMX files) retrieved from the central store.	
Microsoft Office 2016/ First Run	
Policy	Setting
Disable First Run Movie	Enabled
Disable Office First Run on application boot	Enabled
Microsoft Office 2016/ Miscellaneous	
Policy	Setting
Disable Office animations	Enabled
Disable Office Backgrounds	Enabled
Disable the Office Start screen for all Office applications	Enabled
Do not use hardware graphics acceleration	Enabled
Suppress recommended settings dialog	Enabled
Microsoft Office 2016/ Subscription Activation	
Policy	Setting
Automatically activate Office with federated organization credentials	Enabled
Microsoft Outlook 2016/ Account Settings/ Exchange/ Cached Exchange Mode	
Policy	Setting
Cached Exchange Mode (File Cached Exchange Mode)	Enabled
Select Cached Exchange Mode for new profiles	
Automatically activate Office with federated organization credentials	Enabled
Microsoft Outlook 2016/ Account Settings/ Exchange/ Cached Exchange Mode	
Policy	Setting
Cached Exchange Mode (File Cached Exchange Mode)	Enabled
Select Cached Exchange Mode for new profiles	
Policy	Setting
Use Cached Exchange Mode for new and existing Outlook profiles	Enabled
Microsoft Outlook 2016/ Miscellaneous/ PST Settings	
Policy	Setting
Default location for OST files	Enabled
Default location for OST files Environment variables such as %LOCALAPPDATA% can be used. Example: %LOCALAPPDATA%\Microsoft\Outlook	
Policy	Setting
Default location for PST files	Enabled
Default location for PST files Environment variables such as %USERPROFILE% can be used. Example: %USERPROFILE%\Documents\Outlook Files	

Figure 9 : Example of Microsoft Office Group Policy Settings

Enhancing the Office 365 ProPlus Deployment

In addition to the methods described earlier, you can also enhance your Office 365 ProPlus deployment using VMware Horizon Virtualization Pack for Skype for Business, VMware App Volumes™, VMware User Environment Manager™, and VMware Identity Manager™.

- [VMware Horizon Virtualization Pack for Skype for Business](#)
- [VMware App Volumes](#)
- [VMware User Environment Manager](#)
- [VMware Identity Manager](#)

VMware Horizon Virtualization Pack for Skype for Business

VMware Horizon Virtualization Pack for Skype for Business optimally delivers audio and video with Skype for Business inside a virtual desktop without negatively affecting the virtual infrastructure and overloading the network. Audio and video calls can be made either directly between end-points for one-on-one collaboration, or offloaded to a central Multipoint Control Unit (MCU) for multi-party conference calls or meetings.

For more information about the Horizon Virtualization Pack, see [Horizon Virtualization Pack for Skype for Business](#) and [VMware Docs > Configure Skype for Business](#).

VMware App Volumes

VMware App Volumes is a Windows application delivery and application life-cycle-management solution which can be used with Horizon 7 and RDSH virtual environments. App Volumes uses application containers called AppStacks, which are read-only virtual disks that contain all the components—such as executables and registry keys—required to run an application. When an AppStack is deployed, it does not require end-user installation, and it is available for use within seconds. You can use App Volumes to deliver native Windows applications, virtualized Windows applications such as ThinApp packages, and published applications.

App Volumes extends the manageability of Office 365 ProPlus for RDS environments with one-to-many provisioning to simplify the process of deploying, upgrading, and patching the systems.

For more information about App Volumes, see [VMware App Volumes](#) and [VMware App Volumes FAQs](#). For more information about the provisioning recipe, see [VMware App Volumes Provisioning Recipe for Microsoft Office 365](#).

VMware User Environment Manager

VMware User Environment Manager is a profile and policy management solution that supports personalization and dynamic policy configuration across virtual, physical, and cloud-based Windows desktop environments. You can use User Environment Manager to simplify policy management by replacing and unifying problematic, unmaintainable, or complex login scripts and profile logic. You can map environmental settings, such as networks and printers, and dynamically apply end-user security policies and customizations. User Environment Manager ensures that each user's settings and customizations follow that user from one location to the next, regardless of the endpoint used to access the user's resources.

After it is deployed, Office 365 ProPlus is configured and optimized for RDS environments similarly to a traditional Office deployment. Office 365 ProPlus benefits from User Environment Manager like an MSI-based Office installation does, regardless of the deployment method and service-centric model.

For more information, see [VMware User Environment Manager](#) and the [Quick-Start Tutorial for VMware User Environment Manager](#).

VMware Identity Manager

VMware Identity Manager is an Identity-as-a-Service (IDaaS) offering that provides application provisioning, a self-service catalog of applications and virtual desktops, conditional access controls, and single sign-on (SSO) for software-as-a-service (SaaS), web, cloud, and native mobile applications. VMware Identity Manager provides your IT team with a central location for the management of user provisioning and access policy with directory integration, identity federation, and user analytics.

VMware Identity Manager provides SSO support for Office 365 to trust the VMware Identity Manager service for authentication to the

Office 365 applications. In addition, VMware Identity Manager provides federation support with the ability to configure outbound provisioning of users and groups to Azure Active Directory that is used by Office 365.

For more information, see [VMware Identity Manager](#) and [VMware Identity Manager Integration with Office 365 for Single Sign-on and Provisioning](#).

Summary and Additional Resources

Summary

This guide provides tips to help IT administrators use VMware Horizon 7 to deliver Microsoft Office 365 ProPlus applications to end users. The guide discusses the implementation of Microsoft Office 365 ProPlus in a VMware Horizon 7 environment using the shared computer model with RDSH and SCA, and provides tips and best practices that can improve performance and application manageability.

Additional Resources

For more information about VMware Horizon 7, you can explore the following resources:

- [Licensing brief: Licensing Microsoft Office 365 ProPlus subscription service in Volume Licensing](#)
- [Microsoft Click-to-Run](#)
- [Microsoft Configuration XML Editor](#)
- [Microsoft Office 2016 Administrative Template files and Office Customization Tool](#)
- [Microsoft Office 2016 Deployment Tool](#)
- [Microsoft Office 2016 Administrative Template Files](#)
- [Microsoft Office 365 Determine the deployment method to use](#)
- [Microsoft Office 365 Identity and Azure Active Directory](#)
- [Microsoft Office 365 Client Performance Analyzer](#)
- [Microsoft Office 365 Plan Options](#)
- [Microsoft Office 365 ProPlus Configuration XML Editor](#)
- [Microsoft Office 365 Network planning and performance tuning](#)
- [Microsoft Office 365 Network and migration planning](#)
- [Microsoft Office Configuration Analyzer Tool](#)
- [Microsoft Office 365 plan](#)
- [OneDriveMapper](#)
- [OneDrive for Business sync app](#)
- [Reference: Configuration options for the Office Deployment Tool](#)
- [Reference: Download Click-to-Run for Office 365 products by using the Office Deployment Tool](#)
- [Troubleshoot issues with shared computer activation for Office 365 ProPlus](#)
- [VMware App Volumes](#)
- [VMware App Volumes FAQs](#)
- [VMware App Volumes Provisioning Recipe for Microsoft Office 365](#)
- [VMware Horizon 7](#)
- [VMware Horizon 7 Documentation](#)
- [VMware Horizon Support Center](#)
- [VMware Identity Manager](#)
- [VMware Identity Manager Integration with Office 365 for Single Sign-on and Provisioning](#)
- [VMware Knowledge Base](#)
- [VMware OS Optimization Tool](#)
- [VMware User Environment Manager](#)
- [VMware User Environment Manager Deployed in 60 Minutes or Less](#)
- [What is Office 365?](#)
- [What's New with VMware Horizon 7](#)

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VMWARE-HORIZON-7-7-4-MICROSOFT-OFFICE-365-BEST-PRACTICES



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