

# Licensing Windows desktop operating system for use with virtual machines

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This brief applies to all Microsoft Licensing programs.

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## Summary

This licensing brief is an overview of the Microsoft Commercial Licensing use rights for the Windows 10 operating system when running virtual machines.

The topics covered in this brief apply to the licenses listed below. We will refer to them as Software Assurance for the Windows desktop operating system, Windows Enterprise E3/E5 subscription licenses, and Windows Virtual Desktop Access (VDA) subscription licenses.

- Windows 10 Enterprise E3/E5
- Windows 10 Enterprise per device
- Windows 10 Education E3/E5
- Windows VDA E3/E5
- Windows VDA per device

(Microsoft 365 F3/E3 licenses include Windows 10 Enterprise E3 entitlements. Microsoft 365 E5 licenses include Windows 10 Enterprise E5 entitlements)

For use rights provided with Windows preinstalled by the original equipment manufacturer (OEM) or purchased through other channels, review the license terms that accompany those products.

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## Details

Software Assurance for the Windows desktop operating system, Windows 10 Enterprise E3/E5 subscription licenses, and Windows Virtual Desktop Access (VDA) subscription licenses provides the greatest flexibility for how you use Windows. They include access to unique products and license rights not available through other licensing programs. These offerings enable flexible work styles by providing access to Windows instances in a variety of ways across devices.

You can separate license users or devices that do not have or are not eligible for Windows licenses (such as thin clients) with a Windows VDA subscription to gain access to these benefits.

This brief provides an overview of the Windows virtualization rights available to Microsoft Commercial Licensing customers. The information here applies only to licensing the Windows desktop operating system for virtualization scenarios. It does not address other licenses that may be required for specific scenarios, such as Microsoft Office licenses and Client Access Licenses (CALs).

For Windows desktop operating system software licenses acquired through the OEM channel, the Windows use rights are outlined in the Software License Terms that accompany the software. These license terms provide use rights to run Windows locally on the licensed device in a virtual operating system environment (OSE). However, they do not provide use rights for accessing Windows running remotely in a virtual OSE from the licensed device and are limited in other ways when compared to virtualization use rights provided with Software Assurance for the Windows desktop operating system, Windows 10 Enterprise E3/E5 subscription licenses, and Windows VDA subscription licenses acquired through Microsoft Commercial Licensing. For example, OEM licenses do not permit remote access to a Windows virtual machine running in a data center.

## How to license Windows in a virtual environment

There are three ways to license and access a remote virtual machine running Windows desktop software:

- **Windows Virtualization rights**  
Windows Virtualization Rights allow for a licensed device or user to access virtual Windows desktops either remotely and/or locally, depending on how the device or user is licensed. You can license devices or users for Windows Virtualization rights in the following ways:
  - License devices with Software Assurance for the Windows desktop operating system or Windows VDA subscription on a per device basis via one of the following programs: Open License, Select/Select Plus, Microsoft Products and Services Agreement, Open Value, Enterprise Agreement, or Enrollment for Education Solutions.
  - License users with Windows Enterprise E3/E5 subscription licenses or Windows VDA E3/E5 subscription on a per user basis via one of the following programs: Open License, Select/Select Plus, Microsoft Products and Services Agreement, Open Value, Enterprise Agreement, or Enrollment for Education Solutions.

Customers may choose to use a third party to host their Windows client virtual machines for remote access by their end users. This is often referred to as "Outsourcing Software Management" or using a third party to host Desktop as a Service (DaaS) and requires the third party to be an Authorized Outsourcer. The hosted environment must be on servers dedicated to the customer. An Authorized Outsourcer is restricted from being a Listed Provider and may not use a Listed Provider as a datacenter provider. A list of Listed Providers can be found at <https://aka.ms/ListedProviders>.

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**Note:** The license terms for Outsourcing Software Management were updated October 1, 2019, which the explanations in this brief reflect. The use of a Listed Provider was not restricted prior to the terms being updated. Refer to the [Product Terms](#) for more details.

**Note:** Microsoft 365 licenses that include Windows 10 Enterprise E3/E5 are only eligible if the user is the primary user of a device with a Qualifying Operating System.

- **Windows 10 Multitenant Hosting rights**

Customers also have the option to host their Windows client virtual machines for remote access on Microsoft Azure or a third-party shared server under Windows 10 Multitenant Hosting rights. When using a third-party shared server, the third party hoster must be a Qualified Multitenant Hosting Partner (QMTH). A list of Authorized QMTH Partners can be found at [Qualified Multitenant Hosting Partner](#). The customer may only deploy Windows 10 desktops (Creators Update or later version software) using Azure AD-based activation. Windows 10 Multitenant Hosting rights are not provided with any device-based licenses and are only available with Windows Enterprise E3/E5 subscription licenses and Windows VDA E3/E5 subscription licenses on a per user basis. (Licenses acquired through all programs are eligible)

**Note:** Microsoft 365 licenses that include Windows 10 Enterprise E3/E5 are only eligible if the user is the primary user of a device with a Qualifying Operating System.

- **Windows Virtual Desktop (WVD) in Azure**

WVD is a desktop and app virtualization service running in Azure and provides licensed users access to Windows 7 and Windows 10 virtual machines. In addition to the eligible per user license, you only pay the base compute and storage costs in Azure. You can license users for WVD rights with Windows Enterprise E3/E5 subscription licenses, Windows VDA E3/E5 subscription licenses, or Microsoft 365 suite license on a per user basis. (Licenses acquired through all programs are eligible.)

**Note:** Microsoft 365 licenses are eligible in all cases.

## Licensing users for Windows Enterprise E3/E5 subscription or Windows VDA E3/E5 subscription on a per user basis

You have the choice to license your users—instead of devices—for Windows 10 Enterprise E3/E5 subscription or Windows VDA E3/E5 subscription on a per user basis. If the primary user's primary work device is already covered for Software Assurance for the Windows desktop operating system or Windows VDA subscription on a per device basis, you can acquire a Windows Enterprise E3/E5 per User Add-on or Windows VDA E3/E5 per User Add-on, which gives you all of the benefits of Windows per User or Windows VDA per User license at a price that recognizes your existing investment.

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Here's an overview of the requirements for each per user option:

	Windows 10 Enterprise E3/E5 per User	Windows VDA per User	Windows 10 Enterprise E3/E5 per User Add-on	
			When added to Windows 10 Enterprise per Device	When added to Windows VDA per Device
Licensing requirements	Primary user's primary work device must be licensed for Windows 7/8/8.1/10 Pro, Enterprise, or Education	No device requirements; may be assigned to any user	Primary user's primary work device must already be covered by Windows 10 Enterprise per Device	Primary user's primary work device must already be covered by Windows VDA

For more information about Windows Software Assurance and Windows VDA subscription options, refer to the [Commercial Licensing Reference Guide for Windows](#).

## Comparing Windows Virtualization rights

Some differences exist between the Windows Virtualization Rights granted depending on whether you are licensed for Windows Software Assurance or Windows VDA subscription and whether you are licensed on a per device or per user basis.

The following table provides an overview of the Windows Virtualization Rights by license type.

Access rights to Windows Enterprise:	Per user		Per device	
	Windows 10 Enterprise E3/E5	Windows VDA E3/E5 subscription	Windows 10 Enterprise SA	Windows VDA subscription
Local install	Any device licensed for Windows 7/8/8.1/10 Pro, Enterprise, or Education, and any Windows tablet with a diagonal screen size of 10.1 inches or less		The licensed device only	The licensed device only if licensed for Windows 7/8/8.1/10 Pro, Enterprise, or Education
Remote access via virtual desktop infrastructure (VDI) or Windows To Go	Any device (subject to Primary User requirements)		Any Licensed Device	

# Licensing Windows for use with virtual machines

The following table below provides details of the Windows Virtualization Rights by license type.

Access rights to Windows 10 Enterprise	Windows 10 Enterprise SA/E3/E5		Windows VDA E3/E5	
	Per Device	Per User	Per Device	Per User
Any user of a Licensed Device, or any device used by a Licensed User; may remotely access up to four Instances of the Software Running in Virtual OSEs or one Instance of the Software Running in one Physical OSE on (a) device(s) dedicated to Customer's use. Dedicated <a href="#">Servers</a> that are under the management or control of an entity other than Customer or one of its Affiliates are subject to the Outsourcing Software Management terms.	✔	✔	✔	✔
Any user of a Licensed Device, or any device used by a Licensed User; may remotely access up to four Instances of the Software Running in Virtual OSEs or one Instance of the Software Running in one Physical OSE on (a) device(s) dedicated to Customer's use. Dedicated <a href="#">Servers</a> that are under the management or control of an entity other than Customer or one of its Affiliates are subject to the Outsourcing Software Management terms. However, customer's VDA E3 and E5 Licensed Users may remotely access Windows software under these Remote Virtualization rights on <a href="#">Servers</a> dedicated to Customer's use, including dedicated servers provided by Listed Providers.			✔	✔
Customer may run up to four Instances in Virtual OSEs and one Instance in the Physical OSE locally on the Licensed Device. For Windows VDA (Per Device), this local use right applies only if the Licensed Device is also licensed for Windows 10/8.1 Pro or Enterprise, or Windows 7 Professional or Enterprise. If all of the Instances permitted to run in Virtual OSEs locally are used, Customer may use the Instance in the Physical OSE only to host and manage the Virtual OSEs.	✔		✔	
Customer may run up to four Instances in Virtual OSEs and one Instance in the Physical OSE locally on devices licensed for Windows 10/8.1 Pro or Enterprise, or Windows 7 Professional or Enterprise. If all of the Instances permitted to run in Virtual OSEs locally are used, then Customer may use the Instance in the Physical OSE only to host and manage the Virtual OSEs.		✔		✔

# Licensing Windows for use with virtual machines

Customer may install the Software on Windows devices with integrated screens 10.1" diagonally or less.		☑		☑
Licensed user may install the Windows 10 Creators Update or later version software on a virtual machine running on Microsoft Azure (notwithstanding anything to the contrary in the Outsourcing Software Management terms) or a shared server with a Qualified Multitenant Hosting Partner ("QMTH") identified at <a href="http://www.microsoft.com/Qualified_Multitenant_Hoster_Program">www.microsoft.com/Qualified_Multitenant_Hoster_Program</a> . Rights to install and use the software with a QMTH do not apply if the QMTH is using a <a href="#">Listed Provider</a> as a <a href="#">Data Center Provider</a> . Each <a href="#">Licensed User</a> may access up to four instances of the software. This does not apply to Students receiving access to software through Student Use Benefit.		☑		☑
Licensed user may access Windows Virtual Desktop (WVD) Windows 7 and Windows 10 virtual machines.		☑		☑

## Scenarios

The following business scenarios can help you understand how you can license the Windows desktop operating system in your environments on servers dedicated to you. If the Dedicated [Servers](#) are under the management or control of a third party, they are subject to the Outsourcing Software Management terms. Notwithstanding anything to the contrary in the Outsourcing Software Management terms, Customer's Windows VDA E3 and E5 Licensed Users may remotely access Windows software under these Remote Virtualization rights on any [Listed Provider's Servers](#) dedicated to Customer's use.

**Note:** These examples are focused on scenarios for customers with Windows Software Assurance and/or Windows VDA subscription. They do not necessarily specify all licenses needed for the scenario. For example, Users or Devices also need to license for remotely accessing a VDI/Session desktop or application on Windows Server, if used, with the corresponding access licenses, i.e. Windows Server CALs and RDS CALs. Some scenarios may also require Microsoft Office Professional Plus licenses. For simplicity, those separate licensing requirements are not always included.

# Licensing Windows for use with virtual machines

Scenario	Description	Licensing Solution
Virtual Desktop Infrastructure Desktops	The Windows desktop operating system runs within virtual machines in the data center, on servers dedicated to the customer, on a hypervisor platform (such as Hyper-V technology). These virtual desktops are accessed from either PCs, thin clients, or other devices.	Because they are accessing the Windows desktop operating system running within virtual machines, the devices or users would need active Windows Software Assurance, Windows VDA subscription, or Windows E3/E5 licenses acquired through an eligible program (see above).
Remote Desktop Session Host/Terminal Services Session Virtualization “Desktops”	A Windows Server operating system (such as Windows Server 2019) is shared across multiple users via Remote Desktop Session Host running applications like Microsoft Office Professional Plus 2019. Either PCs, thin clients, or other devices access these sessions.	Because the devices access a Windows Server operating system only, they do not need any additional licensing for the Windows desktop operating system. However, the devices/users need to be licensed for the session technology (such as Windows Server CALs and Remote Desktop Services [RDS] CALs). The devices accessing the sessions also need licenses for Office Professional Plus.
Mixed VDI and Session Desktops	Some users access VDI desktops and some access session-based desktops or applications. In some cases, a particular device may need to access both simultaneously (for example, a user logs into a VDI desktop and then accesses a remote application or desktop through a session).	Users or devices accessing Windows Client and Windows Server sessions will need both an eligible Windows 10 license and Windows Server access licenses (Windows Server CAL and RDS CAL).
Roaming VDI Users	A user’s primary device is a thin client at work that has been licensed for VDI. The user also needs the flexibility to access their VDI desktops from home or while traveling using their personal tablet device.	The user needs a Windows VDA per User license— to allow access to up to four concurrent Windows virtual machines running in a data center from any device.
Bring Your Own Companion Device (BYOCD)	The company provides employees with a primary work device covered by Software Assurance for Windows, or Windows VDA subscription and wants to allow employees to bring their own companion devices (such as tablets) to work and access a corporate VDI from those devices.	Because the primary work device is licensed for Software Assurance for Windows or Windows VDA subscription, the company can acquire a Windows Software Assurance per User Add-on for the user, which allows that user to access a corporate VDI at work from any device.
Bring Your Own Device (BYOD)	The company decides to let users bring their own devices to work and sets up VDI desktops for all users. Devices do not have a qualifying operating system (for example, they may be licensed for Windows 7 Home Premium). These users do not have access to any other devices.	The Windows VDA per User license would allow the user to access the VDI desktops from any device.

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Scenario	Description	Licensing Solution
Contractor PCs	Organization A contracts some work to organization B and allows organization B's employees to access organization A's VDI desktops through organization B's PCs. Devices have a qualifying operating system (such as Windows 10 Pro).	Organization A will need to license devices that organization B's employees use to access organization A's VDI desktops with either Windows Enterprise per device with Software Assurance or Windows VDA per device subscription license; or license the users with Windows Enterprise E3/E5 subscription or Windows VDA E3/E5 subscription on a per user basis.
Local Windows Virtual Machines	An organization has a group of developers who need to test an application across multiple Windows images running in local virtual machines on PCs running Windows 10 Pro.	The PC or the primary user of the PC needs active Windows 10 Enterprise with Software Assurance or Windows 10 Enterprise E3/E5 subscription, which permits running up to four virtual machines concurrently.

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