



## Guide

# Microsoft Windows Virtual Client Licensing Explained

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April 2017

Desktop virtualization solutions can help organizations to increase security, enhance end user flexibility, streamline endpoint management and reduce desktop TCO. This guide will help you understand how to license Microsoft® Windows® for virtual desktop and session-based desktop scenarios.

## Licensing the endpoints

**There are three types of endpoints from which you can connect to a Windows virtual desktop:**

1. From a traditional, physical desktop or laptop PC already running Windows
2. From a device running a non-Windows operating system (OS). This includes iPads, other tablet devices, smartphones or thin clients running Linux or a proprietary OS.
3. From a thin client running Windows Embedded Standard 7/8 (WES7, WE8S) or Windows 10 IoT Enterprise (WIE10)

In order to handle the different types of endpoints for you to connect to a [persistent](#)/personal or [pooled](#) virtual desktop (VDI desktop, aka RDVH), running Windows 7/8.x/10, Microsoft provides two licensing options.

### Option 1 – Microsoft Software Assurance (SA)

- The easiest way to access virtual desktops from a PC is to have a current Windows Client **Software Assurance (SA)** contract with Microsoft on your Windows device. To achieve this, you need to add SA within 90 days of your purchase of a **traditional Windows PC with a legal OEM copy of a qualifying OS** such as Windows 7/8.x/10 Enterprise/ Professional business editions (not Home/ Home Premium/ Student versions). Alternatively, you would need to purchase Windows Upgrade licenses with SA.
- If you have current SA on your Windows desktop, i.e. Windows Professional or Enterprise, the Product Use Rights entitle you to access up to four virtual desktop environments.
- Licenses are per device or per user, and the retail price for SA is approximately \$50/device/year (price can vary).
- Since October 2016, the SA benefit applies also to **thin clients shipping with Windows 10 IoT Enterprise (WIE10) licenses** – WIE10 is now a qualifying OS under SA. This important change allows you to save \$50/device/year over using thin clients running any other OS, which require a VDA license.

### Option 2 – Microsoft Windows Virtual Desktop Access (VDA)

- Windows VDA is a device-based or user-based **subscription** that has been designed to help organizations license devices that do not qualify for Windows SA above (such as contractor PCs, non-Windows devices, etc.) to be able to access a virtual desktop.
- The VDA license is required for thin clients running WES7, WE8S, Linux or a proprietary OS (such as Wyse ThinOS).
- The retail price for VDA licenses is approximately \$100/device/year (price can vary).

### Important considerations about Microsoft SA and VDA license:

- If you want to connect to a session-based desktop (aka RDSH, shared session, Terminal Services) or run application delivery (instead of VDI desktops), you don't need SA nor VDA licenses for your endpoints.
- If the device you are connecting from is licensed with SA or VDA, you don't need to purchase any additional Windows OS license for the virtual desktop.
- However, SA/VDA does not provide any licensing rights for accessing applications inside a VM. They need to be obtained separately for each device accessing the applications.
- There is no limit to the movement between servers and storage. This allows you to create virtual drives for training, testing or other specific scenarios.
- A SA/VDA license allows concurrent access for up to 4 VMs.
- You may reassign a VDA license to another device after 90 days, or in the case of endpoint failure.
- The primary user of a Windows device covered under SA or VDA has extended **roaming rights**, which means this user can access his VDI desktop from any device outside of the corporate environment, such as a home PC, a tablet, a smartphone or an internet kiosk. The primary device must be company-owned. However, if the user does not have a primary VDA device a work, and needs to access his VDI desktop from a non-corporate device such as a home PC, then that device would need to be covered with a separate Windows VDA license. Roaming rights are only applicable while roaming outside of the corporate domain, hence any device accessing a Windows virtual desktop within the corporate domain needs to be licensed with either Windows Client SA or Windows VDA.



As concrete examples, here are a few scenarios:

Scenario	Licensing Solution
<b>Mixed Desktop Hardware:</b> 200 PCs under SA, 100 WIE10 thin clients, 50 WES7/8 thin clients, 30 Linux-based thin clients, all accessing Windows client VMs	For the 200 PCs covered under SA, no additional licensing is required. The 100 thin clients running WIE10 should be added under SA, so no separate VDA license is needed for them. Each of the other 80 thin clients need a VDA license
<b>Shift Workers:</b> 100 thin client devices (running WES7/8) throughout a manufacturing floor, all accessing Windows 7 virtual desktops shared by 300 workers	100 VDA Licenses required (1 per device)
<b>Home Use:</b> 100 WES7/8 thin client devices in the office connecting to virtual desktops. 50 of the 100 users also occasionally work from home using their personal home PCs and/or tablet	100 VDA Licenses for the 100 thin clients (Roaming rights)
<b>Roaming Users</b> 100 WES7/8 thin clients throughout a hospital and only 20 doctors who roam from station to station	The 100 thin clients must be licensed with Windows VDA. If the devices were Windows PCs covered with SA, or WIE10 thin clients with SA, then no additional licensing would be required
<b>Bring your own companion device</b> A company provides an employee with a primary work device covered under SA or VDA, and allows this employee to bring his privately-owned companion device (e.g. tablet) to access corporate VDI <u>at work</u>	The company can acquire a <b>Windows SA per User Add-on at work</b> from any device
<b>Bring Your Own Device</b> 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 such as Windows Enterprise/Professional	The Windows VDA per User license would allow the user to access the VDI desktops from any device
<b>Cloud-hosted virtual desktop</b> A SMB company wants to subscribe to 50 virtual desktops from a third-party hoster	The SMB company will need to pay Microsoft for 50 Windows VDA license for each device accessing Windows client virtual machines in the datacenter

More scenarios can be found [here](#).

## Licensing the VDI infrastructure

Significant licensing changes have been introduced with Windows Server 2016 (WS 2016), are quite complex and depend on every use case. At a high-level, you will need to take into account the following when Windows Server [Remote Desktop Services \(RDS\)](#) services are used:

- a) With WS 2016, all the physical CPU cores on the server have to be licensed regardless of the hypervisor running on that server. This is not the case with previous versions of Windows Server.
- b) You must have **Windows Server CAL (Client Access License)** for every virtual user/device connecting in, as those are the base CALs.
- c) You must also have **RDS CALs** regardless of accessing VDI desktops or RDSH sessions/apps. This is because you are using one or more of the [RDS roles](#) (Remote Desktop Gateway, Remote App, RD Web Access, Remote Web Access, RD connection broker, RD Session Host, RD Virtualization Host, or RemoteFX).
- d) If accessing VDI desktops (persistent or pooled), you will also need VDA/SA licenses as mentioned in the previous section. RDSH is excluded from VDA/SA licensing because you're technically accessing a server OS.
- e) For VDI desktops, the **Datacenter edition** of WS 2016 is usually a more cost effective way to license the Hyper-V host compared to the **Standard Edition** (unless you only run RDSH sessions).
- f) Because of the new licensing model, it's usually cheaper to deploy VDI on WS 2012/2012 R2.
- g) RDS uses an embedded database. However, if you want to implement High Availability, you will also need additional **Microsoft SQL** standard licenses.
- h) If you scale beyond a few hundred users, we recommend that you also implement **Microsoft SCVMM** (System Center Virtual Machine Manager) in order to simplify the management of your VDI environment. SCVMM is now part of SCCM CML (System Center Configuration Manager Client Management License) with active SA.

Sources:

- [Microsoft VDI and Windows VDA FAQ](#) (April 2012)
- [Licensing Windows desktop operating system for use with virtual machines](#) (August 2015)
- Microsoft [Product Terms](#) (especially sections 2.1 and 4.1)
- Microsoft [Software Assurance](#)

