



HPE FAQ for Microsoft OEM licensing— Windows Server

Licensing FAQ for Windows Server OEM products on
HPE servers

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Welcome to Hewlett Packard Enterprise's FAQ document for Microsoft® Windows Server® OEM Operating System (OS) products on HPE servers. This guide answers many of the questions our customers ask about licensing Windows Server products on their HPE server systems. The questions we encounter mostly center on three general categories: products, activation, and support—which we've used as the structure of this document.

We will review basic Windows Server licensing and differences between license types. In addition, these topics are covered:

- Customer questions focused on “I’ve got an OEM license—now I need to know...”
- Activation and Support
- Microsoft Software Assurance, downgrade rights, and virtualization with OEM licensing
- Specific product questions for active Product Families
- Client Access Licenses (CALs) and Remote Desktop Services (RDSs) CALs
- Reseller questions

Licensing

1. What types of Windows Server licenses are available?

In general, Microsoft Windows Server software licenses fall into three categories: Volume Licensing, OEM licensing, and retail licensing. Retail licenses, are generally sold pre-packaged in a box, they may be the most expensive, and customers are usually home users or small businesses. OEM licenses are available from Hewlett Packard Enterprise when buying a new server, they typically offer the best price, and [HPE Support Services](#) are available for your OEM license. Microsoft volume licenses are available from Microsoft licensing resellers in many countries. Volume licenses generally cost more than OEM licenses, but may be purchased separately from hardware and offer additional flexibility for larger companies with more complex IT requirements. The rest of this FAQ will focus on HPE OEM licenses. For additional information about Microsoft retail or Volume Licensing, refer to microsoft.com/licensing.

2. What types of Windows Server licenses are available from HPE?

The following table provides a quick comparison of the Microsoft Windows Server license types available from Hewlett Packard Enterprise.

Microsoft license options	From HPE factory Preinstalled and Not preinstalled (OEM)	From HPE authorized distributors and Resellers (ROK)
Who can buy?	End user or reseller	Reseller only
Terms and restrictions	<p>HPE OEM Preinstalled (FIO), Not preinstalled (FIO Npi) or Reseller Option Kit (ROK) licenses may only be marketed and sold to an end user along with a new HPE server.</p> <p>End users cannot move OEM licenses from the server (unless Microsoft Software Assurance [SA] is added or reassignment rights are specified within the product terms, also known as End User License Agreement [EULA] of the product, e.g., Windows Server Datacenter with reassignment rights). Note that an HPE OEM license is covered by the same HPE warranty or service terms that cover the HPE server which it accompanies.</p>	
Microsoft Software Assurance available?	Available; must be purchased separately from an authorized Microsoft licensing reseller within 90 days of initial license purchase. Important to highlight that only licenses for the latest version of each product family are eligible for Software Assurance.	

3. What Windows Server OEM license products does HPE offer?

Hewlett Packard Enterprise offers OEM licenses for the following Windows Server products:

Operating Systems

- Windows Server 2019 Essentials, Standard, and Datacenter edition “Base Licenses”: hpe.com/servers/ws2019
- “Additional Licenses” for Windows Server 2019 Standard—Standard edition provides rights for up to two Operating System Environments (OSEs) or Hyper-V containers when all physical cores in the server are licensed. For every two additional virtual machines (VMs), all the cores in the server must again be licensed. HPE Additional Licenses for Windows Server 2019 Standard—for license coverage beyond the 16 cores covered by the “base” OS license, or to license additional VMs—are available in increments of two, four, and sixteen cores and can be purchased with your initial hardware purchase or afterwards After Point of Sale (APOS).



- “Additional Licenses” for Windows Server 2019 Datacenter—Datacenter edition permits unlimited virtual OS instances and Hyper-V containers when all physical cores in the server are licensed. For systems with more than 16 cores, Additional Licenses—for license coverage beyond the 16 cores covered by the “base” OS license—are available in increments of two, four, and sixteen cores. Please note that Windows Server 2019 Datacenter Additional Licenses can only be purchased along with your initial hardware purchase, they are not available for purchase afterwards (no APOS for Datacenter).

Client Access Licenses (CALs)

- Remote Desktop Services (RDSs) CALs for Windows Server 2016
- Windows Server 2019 CALs
- Remote Desktop Services (RDSs) CALs for Windows Server 2019

4. Where can I find the part numbers available for HPE OEM Windows Server products?

For an updated list of available part numbers, refer to the [QuickSpecs](#) document for each of the available product families located at the right of the product webpage:

- [Microsoft Windows Server 2019](#)

5. What is the difference between Base Licenses and Additional Licenses and when are those required?

The Base License and Additional License structure was introduced with Windows Server 2012 allowing you to buy just the amount of product you need to license your solution. Each server requires a minimum of a single Base License. This license includes the Certificate of Authenticity (COA), product key, product software, and the Microsoft Software License Terms (previously known as End User License Agreement or EULA). HPE or HPE Resellers will affix the base license COA to the server.

Windows Server 2019 Base Licenses from HPE cover 16 cores, which is the minimum cores required per server. If your server has more than sixteen cores, then HPE will fulfill those with Additional Licenses, as all physical cores on the server need to be licensed. Additional Licenses are also required to license more than 2 VMs for the Standard edition. For more information on licensing VMs please review [question 68](#). For more information on Windows Server 2019 core licensing please review [question 73](#).

The Additional License is delivered as a paper license card with a COA sticker permanently affixed to the license card or packaging. Datacenter Additional Licenses must be purchased at the same time as the Base License and HPE server. However, Standard Additional Licenses can be sold After Point of Sale (APOS) and can be reassigned to another server that already has a Windows Server 2019 Standard Base License.

Starting with the Windows Server 2019 core-licensing model, each Additional License grants the rights for the additional cores listed on the card. HPE offers Additional Licenses for two, four, and sixteen cores for both Standard and Datacenter editions. The Base License and any Additional Licenses must be for the same edition and generation of the product.

OEM licensing structure

Base License	Additional License
Each HPE server requires at a minimum one Base License	Additional Licenses may only be added to a Base License
<ul style="list-style-type: none"> • COA with product key • Product software • Software License Terms (EULA) 	<ul style="list-style-type: none"> • A paper license with self-adhesive COA • No software or product key • Software License Terms (EULA) from Base License apply

6. What are Windows Server Standard Additional Licenses “APOS”?

After Point of Sale (APOS) Standard Additional Licenses are Windows Server licenses with expanded licensing rights:

- Available for purchase to anyone who has already purchased a Windows Server 2019 Standard Base License on an HPE server.
- The new Additional License comes with reassignment rights. This means that Standard Additional Licenses can be reassigned to another physical server that has a Windows Server 2019 Standard Base License. This can be done once every 90 days.

Windows Server Datacenter Additional Licenses on the other hand, must be purchased at the same time as the Base License and HPE server.



7. What is Datacenter edition with reassignment rights?

Datacenter with reassignment rights give customers the option for more licensing flexibility.

- These part numbers must be sold with a new HPE server and allow customers to reassign the Operating System (OS) license to another server for any reason (hardware failure, maintenance, upgrade, etc.).
- The COA for these part numbers is provided on a card, not attached to the server.

8. When does it make sense to get Windows Server Datacenter vs. Standard edition?

Windows Server 2019 Datacenter should always be your first option, as it is the most complete edition with unique product features not available within Standard or Essentials editions, for more detail on Datacenter exclusive features please review [question 72](#).

From virtualization perspective, it depends on your needs, but a rule of thumb is that if you think you might ever need to run 10 or more concurrent Windows Server VMs on a server, then Datacenter, with its unlimited virtualization rights, is the best choice. Datacenter edition may also be your best choice on virtualization cluster nodes where the number of virtual instances running on each node at any time may be hard to predict and could spike with unexpected node outages.

9. How many Client Access Licenses (CALs) are included with each HPE OEM Windows Server license?

None. As of Windows Server 2012 and onwards, OEM licensing has been aligned to Microsoft Volume Licensing, in that CALs are purchased separately. This assures that each customer can purchase only and exactly the number of CALs they need. HPE offers CALs in 1, 5, 10, and 50 packs, for users or devices.

CALs requirements per license edition are as follows:

- Windows Server 2019 Essentials edition licenses support up to 25 users, and do not require Windows Server CALs.
- Windows Server 2019 Standard and Datacenter editions come with zero CALs. CALs are required for every user or device, which connects directly or indirectly to a server. Some additional or advanced functionality will continue to require the purchase of an RDS CAL. RDS CALs are needed in addition to the Windows Server CAL to access functionalities such as Remote Desktop Services.

10. Do all Microsoft licenses come with a Certificate of Authenticity (COA)?

Only OEM and Microsoft retail Full Packaged Product (FPP) license types come with a COA. FPP COAs are not attached to hardware; they're attached to a card or the physical packaging. OEM COAs for the OS must be adhered to the server, except for the products with reassignment rights for which the COA is attached to a card, the same as COAs for OEM CALs.

To locate your OEM OS COA, please look in the following locations: for HPE ProLiant ML (tower) servers, the COA is adhered to the front bezel; for HPE ProLiant BL (BladeSystem) servers, the COA is on the top of the blade (you must pull out the blade to see the COA label.); for HPE ProLiant DL (rack) and SL (scale out) models, the COA label is on the side of the server—and you must pull the server out of the rack to see the COA.

If you received your OEM OS from a reseller, the COA should have been affixed to the new server by the reseller. OEM COAs are tied to the hardware with which they were purchased and cannot be transferred to another system unless you purchase Microsoft Software Assurance for the OEM license within 90 days of buying your server with an OEM server license or when reassignment rights are specified within the product terms (only included in "Windows Server 2019 Datacenter w/ Reassignment Rights" SKU).

11. What exactly comes inside each of these kits for each license type?

Windows Server 2019 Essentials, Standard, or Datacenter editions

- 1 COA (that should be adhered to the server) with one 25-digit (5x5) product key to "activate" the OS installation
- 1 HPE-branded x64 DVD (black and white)

Windows Server 2019 Standard or Datacenter additional license

- 1 Self Adhesive Certificate Of Authenticity (SACOA) that is adhered to a card with 1 keyless tracking ID



12. How does HPE deliver these OEM licenses?

Hewlett Packard Enterprise offers factory-preinstalled configurations from our online stores, via our channel partners, and through our direct sales team.

Non-preinstalled factory OEM licenses (also referred to as “drop-in-box” licenses) are available with new HPE servers for customers choosing do-it-yourself installations. These licenses are offered online and via our channel partners.

ROK licenses are available only to resellers from HPE authorized distributors. Resellers can then offer Windows Server ROK licenses in combination with HPE server systems to end customers including the value of an HPE OEM license along with the additional services and/or products that most HPE channel partners offer to our customers.

13. Where can I see a list of HPE servers that support Windows Server?

For the most updated list of HPE servers certified and supported on the various Windows Server versions and editions, refer to the HPE Windows Server support matrix at hpe.com/servers/wincert.

For further information regarding the Windows® OS Certification provided by Microsoft, visit windowsservercatalog.com.

Differences between license types

14. How can I tell the difference between an HPE OEM license and a Microsoft Channel OEM (COEM) license?

Microsoft sells a COEM, or “System Builder,” license to resellers globally. This product warranty is not supported by Hewlett Packard Enterprise, but rather by Microsoft.

One visible difference between HPE OEM and COEM products is that the COA label is different. Figure 1 shows that the product name will be either “Microsoft” for COEM products or “HPE” for HPE OEM products. HPE OEM products have HPE artwork on the media and the COA label has HPE printed on it.

HPE OEM licenses, including the HPE ROK licenses, offer the very same Windows Server operating system you would get directly from Microsoft. However, through our OEM agreement with Microsoft, Hewlett Packard Enterprise is able to optimize Windows Server specifically for [HPE servers](#) and it is BIOS-locked to ensure it can only be installed on HPE servers.

When you choose the HPE OEM branded version, HPE includes free online or telephone support for initial setup for 90 days from the date of purchase. If the label reads “Microsoft,” Hewlett Packard Enterprise will provide its normal warranty support for the server but would charge for software support.

For more information, check the Microsoft website: microsoft.com/howtotell.

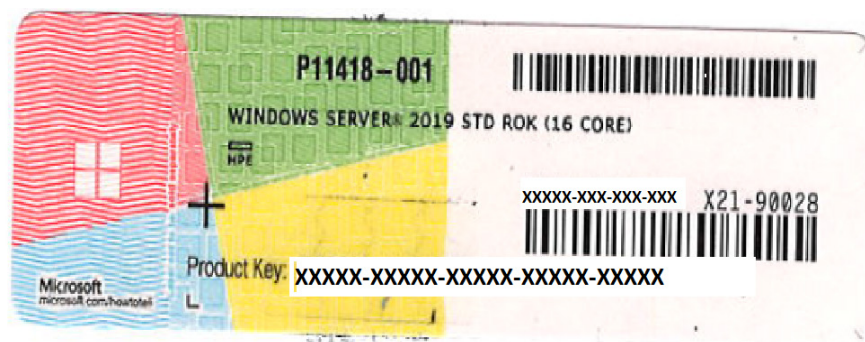


Figure 1. Windows Server 2019 Standard edition—HPE OEM license

Note the “HPE” artwork on the upper left.



I've got an OEM license—now I need to know...

15. Where can I find drivers and firmware for my Windows-based server?

The HPE Windows Server support matrix (hpe.com/servers/wincert) provides direct links to drivers and other downloadable support files. Just click on the server name and you will be provided with links to different options.

In addition, the HPE Information Library (hpe.com/info/windows/documentation) provides documentation, user guides, and technical white papers for Windows Server products.

Drivers specific to your server are available when using intelligent provisioning to install the Microsoft OS from Media.

16. Where can I find OS drivers for HPE servers?

Drivers and firmware are found in two places:

- Drivers and firmware listed by OS version are loaded in the HPE Support Center (HPE SC) at h20565.www2.hpe.com/portal/site/hpsc for each server and option, and are listed as “Drivers and software.”
- The SPP, which is a comprehensive collection of firmware packages for servers, controllers, storage, blades, and enclosures, as well as system software components (drivers, agents, and utilities), is all tested together as a bundled set for an extended cycle. HPE SUM deploys all of these firmware and software components. The SPP contains the features, functionality, and contents of the former HPE Smart Update Firmware DVD and the PSPs, and has an extensive portal containing all the valuable information you will need to make an informed decision.
 - More information can be found at this link for HPE SPP: hpe.com/servers/spp.
 - It is available for download at hpe.com/info/spp/download. (Registration Required)
 - Extensive server support guides exist at its documentation page at hpe.com/info/spp/documentation.

17. My server was dead on arrival (DOA). I purchased an OEM Windows Server license from HPE with the server—what do I do?

If you purchased the server directly from Hewlett Packard Enterprise, contact the HPE Call Center; see [question 46](#) for assistance. Please act during your 90-day warranty period to receive the best assistance with the product issue, and proactively inform the support team the Server included a Windows Server OEM license.

The HPE OEM license is effectively part of your server, so it is covered by the same warranty terms. If, for example, you end up requiring a replacement server under warranty, the replacement server will also come with the same HPE OEM license (and the original HPE OEM license would go back to Hewlett Packard Enterprise when you return the DOA server).

If the server was purchased from a reseller, please contact your reseller for assistance, as they may offer different warranty and support terms.

18. What do I do if I have damaged media DVDs?

Hewlett Packard Enterprise offers replacement media for different Windows Server products purchased from HPE or an HPE authorized reseller. To see the list of available media kits and place a request go to ebiz3.mentormediacorp.com/HPEDGRCR/. A media kit for replacement may only be requested from Hewlett Packard Enterprise for a Windows Server license purchased from HPE or an HPE authorized reseller, proof of purchase is required.

Replacement kits do not include product key for activation. Media replacement kits are shipped from three different locations worldwide, allow 1–2 weeks for delivery (depending on customs requirements and shipping method). Upon order fulfillment, you will receive an email with shipment tracking number and expected delivery details.

19. What do I do if I lose my COA?

Your COA is the most important part of your OEM license. It is the primary “proof of purchase” that the server includes a genuine Microsoft OEM license. It is also the only place you will find your unique 5x5 product key(s), which is used to activate your Windows Server OS license. If you lose your COA, neither Microsoft nor Hewlett Packard Enterprise can replace the COA or its product key(s). Therefore, Hewlett Packard Enterprise strongly recommends that you keep a record of the 5x5 product key from your COA on file, ideally by saving a high-resolution digital picture of the COA.



20. What do I do if I experience a defective, damaged, or missing COA label on its arrival?

If you purchased the server with a defective/damaged/missing COA directly from Hewlett Packard Enterprise, please contact the HPE Call Center; see [question 46](#) for assistance. Please act during your 90-day warranty period to receive the best assistance with your defective product issue. If the product was purchased from a reseller (ROK), please contact your reseller for assistance. Note that your reseller can access the HPE Call Center if needed.

If Hewlett Packard Enterprise is assisting you with the issue, the HPE support analyst will probably ask you to email a high-resolution digital picture of the defective or damaged label for investigation. The picture should have a clear image of the COA serial number and what there is of the product key.

21. The Server has no optical drive to read DVD media. How can I install Windows Server?

- You can create a bootable USB flash drive to use to deploy Windows Server. For more information on this, please refer to technet.microsoft.com/en-us/library/dn293258.aspx.
- You can also use [HPE iLO](#) from another system with a DVD drive and supply the installation bits to the server virtually.

22. Can I convert an evaluation copy of Windows Server to a fully licensed product?

Yes, but it is not recommended as it is not always successful. If you wish to continue at your own risk, you can follow Microsoft instructions at:

- Windows Server 2012: [docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/jj574204\(v=ws.11\)](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/jj574204(v=ws.11))
- Windows Server 2016 and Windows Server 2019: docs.microsoft.com/en-us/windows-server/get-started/supported-upgrade-paths

Important

You should already own a Windows Server OEM license. An OEM license may only be acquired in conjunction with a new server. If you already have the server but not the OEM license, then you may either buy a retail license or purchase a volume license from an authorized licensing reseller.

23. I installed Windows Server Datacenter, but I want Windows Server Standard. Can I convert the current installation to Standard edition?

No, you can't convert from Datacenter to Standard. A fresh installation is required.

24. I installed Windows Server Standard, but wanted Datacenter. Can I convert the installation to Datacenter edition?

Yes, you can convert a Windows Server Standard installation over to Datacenter as long as you have purchased a Datacenter OS license. Detailed instructions can be found at: docs.microsoft.com/en-us/windows-server/get-started/supported-upgrade-paths.

25. What do I do if Windows Server Essentials installation hangs during installation (usually at 17%, 39% or at 89%)?

It is recommended to perform following steps to continue successful installation, when Windows Server Essentials installation hangs during installation.

1. Restart initial configuration of Windows Server Essentials

- a. Open PowerShell console by clicking **Start Page** → **Windows PowerShell** → **Windows PowerShell** (Run as administrator)
- b. Run **Start-WssConfigurationService** cmdlet
- c. Check if installation progresses further in Windows Server Essentials installation wizard. If the issue still persists, perform step 2

2. Uninstall and Re-install network device driver from server manager

- a. Open Server Manager by clicking **Start Page** → **Administrative Tools** → **Server Manager**
- b. On Server Manager wizard, click **Tools** → **Computer Management**
- c. From left pane of **Computer Management** wizard, click **Device Manager**
- d. From right pane of **Computer Management**, click **Network adapters**
- e. Right click each network adapter and then click **uninstall**
- f. Click **OK** to Confirm Device Uninstall
- g. Repeat from step e to f for all available network adapters



- h. From left pane of **Computer Management**, right click “**Network adapters**” and then click “**Scan for hardware changes**”
- i. Now check to see if installation progresses from Windows Server Essentials installation wizard. If the issue still persists, perform step 3

3. Restart Server

- a. **Start** page → **Power button** → **Restart**

After server reboots, Windows Server Essentials installation wizard should start and progress normally. If the issue still persists, perform step 4

4. Connect the server to an isolated network switch

- a. **Start** page → **Power button** → **Shut down**
- b. Connect the server to an isolated network switch
- c. Power on the server
- d. After server reboots, Windows Server Essentials installation wizard should start and progress normally
- e. If the issue still persists, users need to re-install operating system using the HPE OEM Windows Server media kit that was shipped along with the server. It's recommended to follow intelligent provision assisted installation, which provide all required drivers

26. Can I transfer my OEM license to another server?

If you think you will want to be able to transfer your OEM license to another server, then you may acquire that right—plus other benefits—by purchasing Microsoft Software Assurance (SA) from a Microsoft licensing reseller within 90 days of your original purchase of the HPE OEM license. It is important to note that only licenses for the latest version of a product are eligible for SA.

There are also Windows Server OEM offerings from Hewlett Packard Enterprise that include reassignment rights, for instance the Windows Server 2019 Standard Additional License and the Windows Server 2019 Datacenter license with reassignment rights. Both products include the COA adhered to a license card and can be reassigned to another server.

Otherwise, you may not move an OEM license to another server. Microsoft OEM licensing (including COEM, HPE OEM, and other OEM licensing) is part of the server on which it was issued, as explained in the license terms that accompany the license.

Here is what the Windows Server 2019 License Terms state:

Assignment of the required number of licenses to the server—The software license is permanently assigned to the server with which you acquired the software. That server is the licensed server for such license. You may not assign the same license to more than one server. A hardware partition or blade is considered to be a separate server.

27. Can OEM product licenses be transferred to another organization?

Per the license terms accompanying your HPE OEM license, “You may transfer the software only with the licensed server, all certificate of authenticity label(s), any additional licenses included with the server and this agreement, directly to a third party. Before any permitted transfer, the other party must agree that this agreement applies to the transfer and use of the software. You may not retain any instances of the software unless you also retain another license for the software.”

28. If I “retire” a server with an OEM license on it, can I use that software on a new server?

No. To put it simply, an OEM product is “married” to the original server on which it was installed. OEM licenses are not transferable from one machine to another, unless covered by Microsoft Software Assurance (SA) or reassignment rights are specified within the product terms also known as the End User License (EULA) of the product (e.g., Windows Server Datacenter with reassignment rights). The software cannot be moved from server to server, even if the original server it was installed on is no longer in use. This is true for all OEM software—both OSEs and applications. Note that OEM CALs are different: they must be associated with a single user or device, but the license owner may change that assignment if, for example, an employee or device is replaced.

29. What ProLiant Support Packs (PSPs) and HPE SmartStart work with which Windows OS?

PSPs are end of life (EOL) as of June 2012 and HPE SmartStart is also EOL and was delivered only on HPE ProLiant G7 and earlier server generations.

SmartStart has been replaced by [intelligent provisioning](#) starting with HPE ProLiant's Gen8 server generation. Intelligent provisioning (IP) provides a firmware-based server provisioning tool that eliminates media and time-consuming effort as all needed drivers and software tools are pre-loaded onto ProLiant Gen8 servers and newer. HPE IP recognizes if system software is out-of-date and automatically downloads the latest version updates directly from the internet (different fees may apply).



Activation

30. How do I activate Windows Server?

Before proceeding to license activation review the following guidelines:

- Ensure the time, date, and regional settings are set properly. Windows Server 2012 and later requires these to be set properly, otherwise it will not activate.
- Make sure the server can reach the internet. If not, then proceed directly to the phone activation steps, listed on [question 37](#).
- Confirm the product installed matches what is listed on the Windows Server COA label. The key from the COA label will only activate the listed product.
- Check that the installation was performed using the HPE Windows Server OEM media that came with the product purchase.

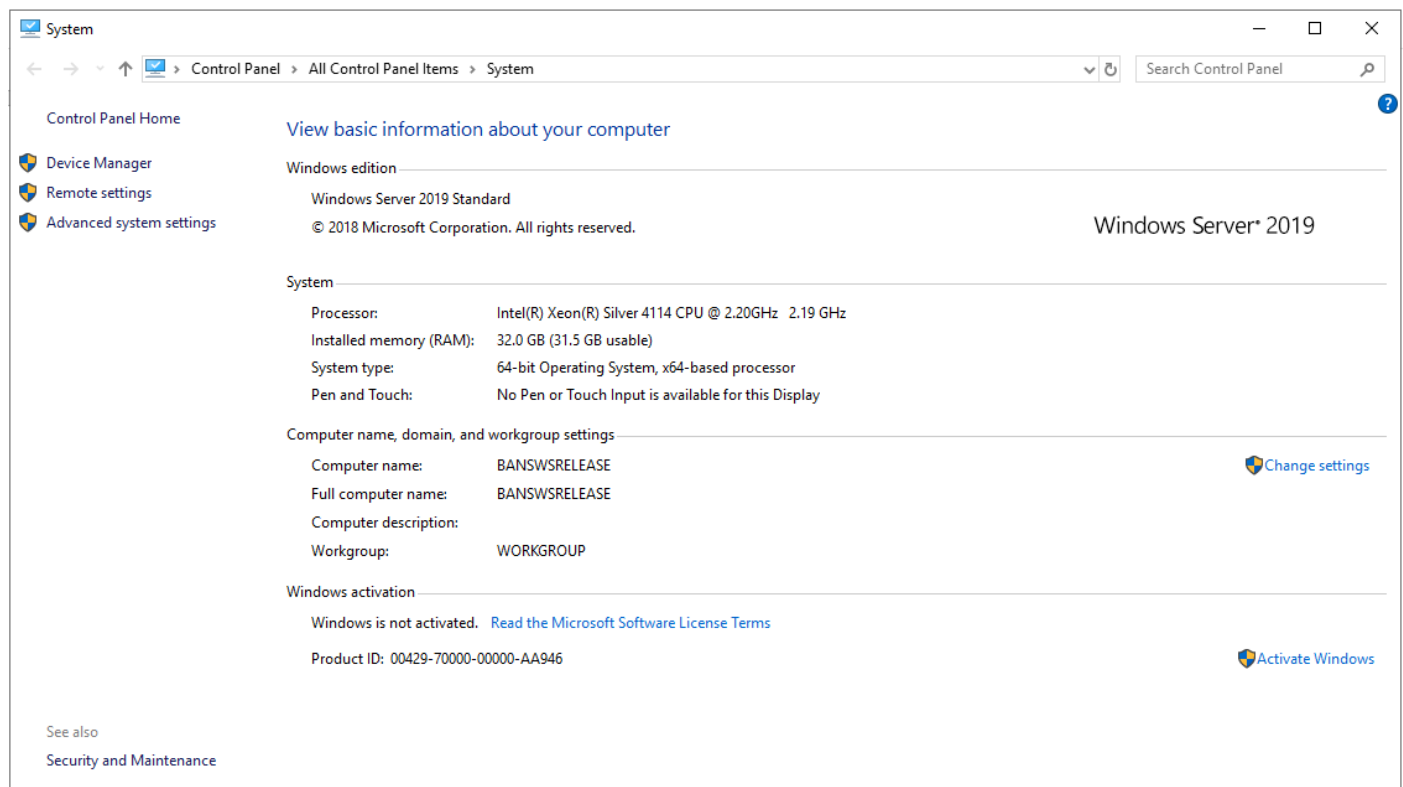
Activation:

To activate the current key installed into the OS:

Right-click **Computer**.

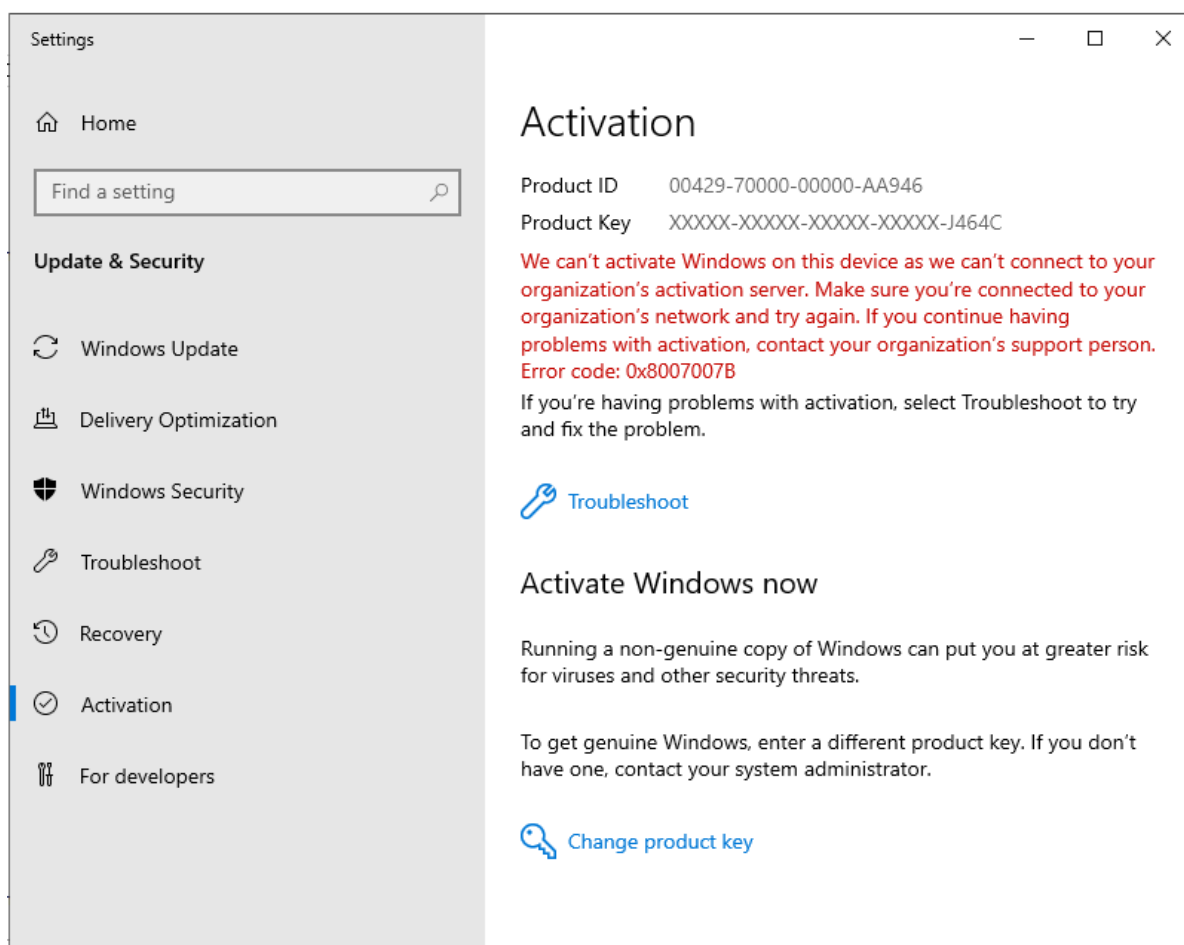
Click **Properties**.

Click **View details in Windows Activation**.



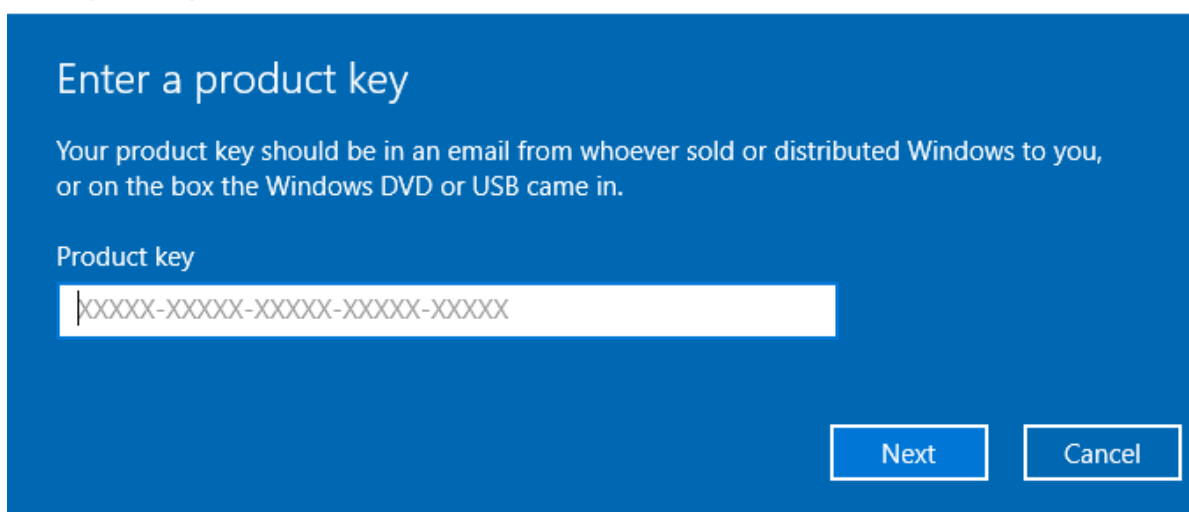
Click **Change product key**.





Enter a product key and click next to continue. Follow the on-screen instruction to complete the Windows Activation.

Enter a product key

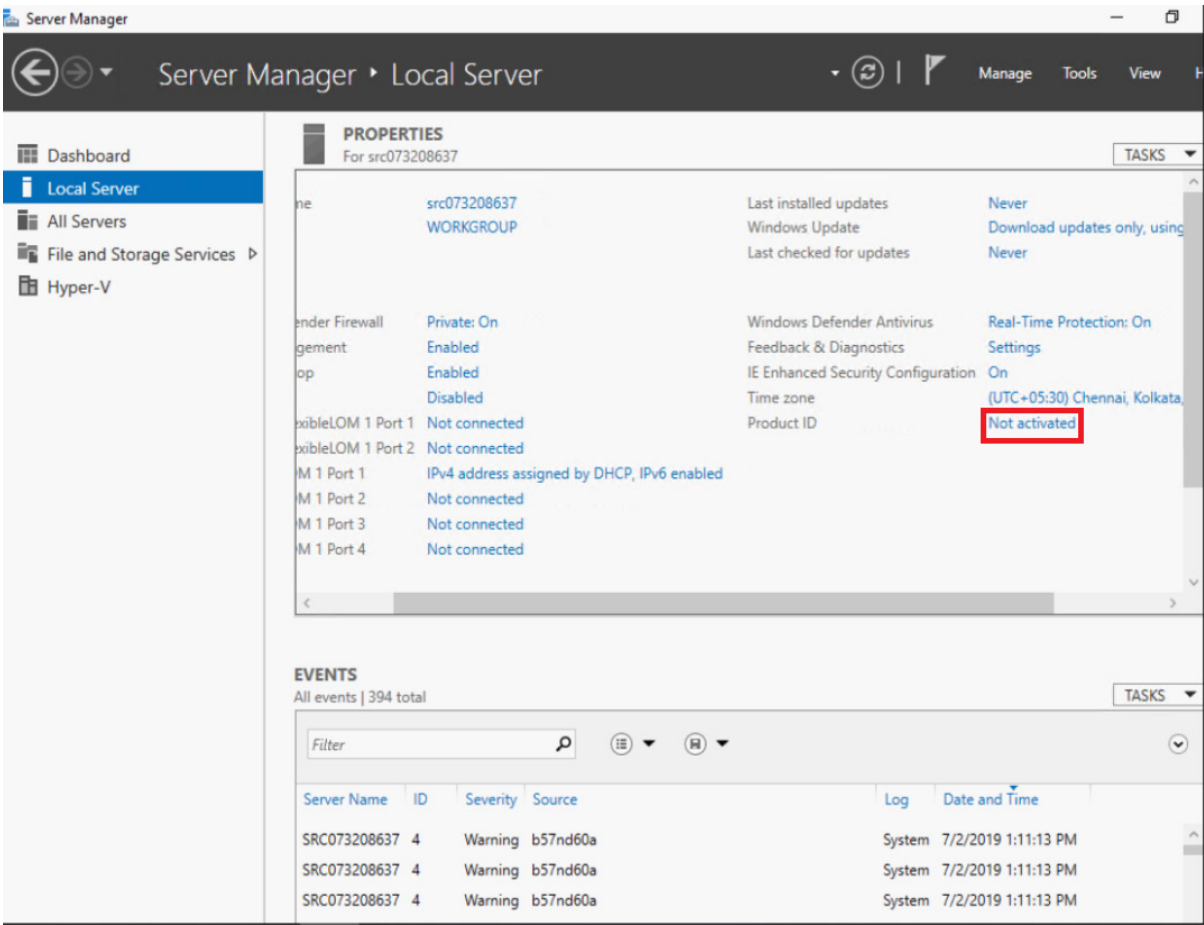


To activate a different key (from COA label):

Click **Windows Server Manager** in the bottom left-hand corner of the screen. On the Server Manager dashboard, click **local server**.



In the right-hand column, click on **Not activated** next to the product ID.



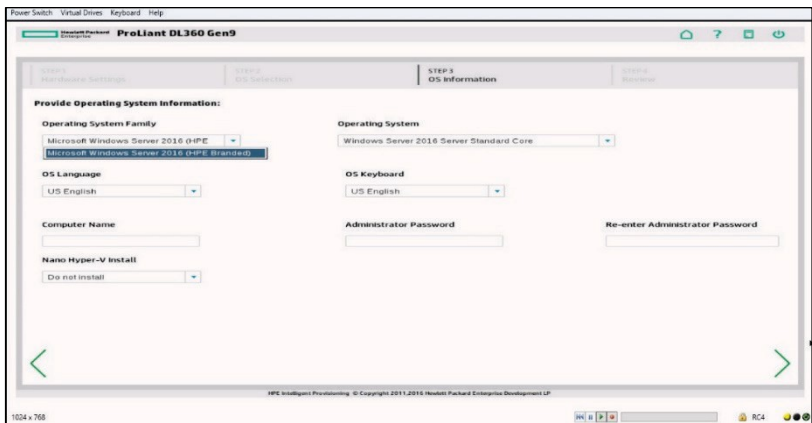
Type in the product key and click **Next**. Follow on-screen instruction to complete the activation.

31. How do I activate my HPE OEM license with intelligent provisioning?

If you are installing HPE-branded media using intelligent provisioning, choose the OS family from the drop-down menu that has “HPE-branded” appended to it. This will allow the OS installation to attempt pre-activation. Pre-activation of the Operating System is only available for Windows Server OEM Preinstalled (FIO) or Not Preinstalled (FIO Npi) factory licenses purchased directly from HPE. Windows Server ROK licenses do not allow pre-activation for licensing reasons.

In case, activation is still needed after the OS installation, such as when installing a Windows Server ROK license, then the key can be provided during the Microsoft activation process. The key for manual activation can be found on the Certificate of Authenticity (COA) sticker attached to the server.

For more information on intelligent provisioning, visit this site: hpe.com/servers/intelligentprovisioning.



32. What is my password set to for Windows Server?

If you have purchased Windows Server 2016 or newer preinstalled, you will be required to provide a password during the initial interview process. If you installed Windows Server 2016 or newer from media, then you are required to provide a password before your first login. Strong passwords are at least eight characters long and include a mix of letters, numbers, and special characters.

33. When do I activate my license?

Generally, Windows Server purchased directly from Hewlett Packard Enterprise in the form of factory preinstalled or non-preinstalled options is pre-activated and pre-populated with the product key and typically does not require manual activation.

Windows Server Reseller Option Kit (ROK) licenses purchased from your reseller may be activated by your reseller during installation using the COA product key. If this has not been done, the ROK Windows Server OS must be activated by providing your 5x5 product key from the HPE OEM COA attached to the Server as described in questions [30](#) to [31](#).

34. Can I use a Windows Server 2019 key to activate Windows Server 2016?

No. Product keys can only activate the product it was purchased with. If you need to run 2016 you can request a downgrade kit that will contain both the media and the product key. You are still bound by the terms of the OS product you purchased with the server. For information regarding how to obtain a downgrade kit from HPE (proof of purchase of original HPE license required) please see [question 55](#).

35. What do I do if my activation grace period is running out and I am having trouble activating my product key?

Windows Server no longer has an activation grace period. During manual installation you will need to provide a valid product key for the Windows Server you are attempting to install during setup/out-of-box-experience, and the OS will automatically try to activate the product key. If the activation attempt fails (no internet connection or invalid product key), the OS will simply continue to prompt the user for activation including the option to provide a different product key.

36. What do I do if I am having trouble activating my OS installation?

Make sure the product you are trying to activate is the same product as what is listed on the COA label. If the product being activated is the same as what is on the COA label, then follow the following steps to manually inject the product key and proceed through the activation process again.

Note

Internet connection is recommended.

1. Either use the run selection from the start programs menu or open a command window.
2. type: `slmgr.vbs /ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX` (the **5x5** product key from the COA label attached to the server or the downgrade product key that came with the downgrade if using a downgraded OS).
3. It will take the OS up to 30 seconds to respond, saying that the product key was successfully inserted.
4. Then go through the activation process again and choose **Activate**. No need to click **Type a different product key**, as it was already manually injected in the previous steps.

37. What do I do if the manual product key injection process does not result in my Windows Server being activated?

1. The manual injection and activation processes are two different steps. First you inject the key and then run the activation process again.
 - a. If the server has internet access and the time and date have been set then you can start by trying to run these steps from an elevated command prompt: (If the server does not have internet access then phone activation will need to be followed)
 - I. type: `slmgr.vbs /ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX` (Product key from the COA label)
 - II. type: `slmgr.vbs /ato` (should start the activation process against Microsoft activation server from a command prompt)
 - III. If activation was unsuccessful then proceed to the phone activation process



b. Phone activation process

A few activations will only occur with phone activation no matter whether there is internet access or not. Here are the steps for the phone activation process:

- I. <Windows key>—on tiled desktop type “slmgr.vbs /ipk xxxxx-xxxxx-xxxxx-xxxxx-xxxxx” (product key from COA label gets injected into the OS) (request this command be run again to make sure the OS has the correct key because without that the key values provided to the MS activation hotline will not match and thus the OS would not activate using the code provided by phone activation process).
 - II. <Windows key>—on tiled desktop type “slui 4” (manually launches the activation process with support contact information).
 - III. Select your country from the drop-down menu.
 - IV. Click Next.
 - V. You will then be provided a Microsoft activation hotline number to call along with the ID information that will be required.
 - VI. Call the number and provide the OS presented ID information.
 - VII. Follow the system prompts and you should receive an activation ID set to enter into the OS.
 - VIII. There is also the option to talk with an operator.
 - IX. Once you have the confirmation ID, click Enter Confirmation ID and a new screen will appear where you can enter the ID.
 - X. Once you entered the ID click **Activate Windows**.
2. If the key was not accepted during the manual injection process then verify the product key matches the product installed. A common issue is trying to use a Datacenter keyset to activate a Standard installation. This will not work.
 3. If further assistance is needed call HPE Support. The following items are needed:
 - a. Picture of the COA label
 - b. Screenshot of the failure
 - c. Output from the diagnostic report
 - I. Hit “Windows” key
 - II. Type CMD
 - III. Click “cmd” tile on desktop
 - IV. Type in command window: “LicensingDiag.exe -report %userprofile%\desktop\myreport.txt -log %userprofile%\desktop\mylog.cab” to generate a report and a diagnostic *.cab archive on the desktop. Alternatively, any existing folder can be used as a target but both -report and -log parameters need to be specified—or the tool will throw just a friendly usage help message.

38. I can't find the phone activation wizard in Windows Server, how do I activate via the phone?

The phone activation wizard can be launched manually by pressing the Windows key on your keyboard, typing “slui 4” and hitting “Enter.” This will bring up the phone activation wizard and provide country specific phone numbers.

39. What is AVMA?

AVMA is Automatic Virtual Machine Activation. It is a feature found in Windows Server 2012 R2 Datacenter and Windows Server 2016 Datacenter that allows VMs to be automatically activated when the host OS has been activated. For the process to work correctly, the host must be Windows Server 2012 R2 Datacenter or Windows Server 2016 Datacenter or Windows Server Datacenter 2019 and the AVMA keys found on the Microsoft TechNet site at technet.microsoft.com/en-us/library/dn303421.aspx must be used for the applicable guest OS installations.

40. How do I activate a Windows Server Additional License?

There is no product key with Additional Licenses. Instead, the customer reuses the product key from the Base License to activate the additional OS Environments. Each Windows Server product key may be used to automatically activate a limited number of OS Environments. If automatic activation fails, the user is prompted to phone a Microsoft Activation Center. When they explain to the Activation Center analyst that they are reusing a Base License product key to activate VMs covered by Additional Licenses, the Activation Center analyst will assist them in activating the VM.



41. How do I activate a Windows Server CAL?

Windows Server OS CALs do not need to be activated. They do not get entered into the OS. They are for tracking purposes/proof of licensing. A common issue is trying to use OS CALs in place of RDS CALs. If trying to activate RDS CAL licenses, then please see the section on [RDS CALs](#).

42. How do I install additional Windows Display Language when OS is running?

HPE branded English media will contain 15 Windows supported language packs in a folder named "LanguagePacks" under root of DVD.

To install additional Windows display language:

1. Ensure that you have mounted HPE Branded English media to your server
2. Open PowerShell console by clicking Start button → All Programs → Accessories → Windows PowerShell folder → Windows PowerShell
3. Enter the following command

Syntax:

```
Dism /online /add-package /packagepath:"<DVD-DriveLetter>:\LanguagePacks\<language culture name>\<LanguagePack-Name.cab>"
```

Example:

```
Dism /online /add-package /packagepath:"<DVD-DriveLetter>:\LanguagePacks\fr-fr\Microsoft-Windows-Server-Language-Pack_x64-fr-fr.cab"
```

4. Press Windows Key + R to open Run command and type gpedit.msc and hit Enter
5. Locate to Local computer Policy\Administrative Templates\Control Panel\Regional and Language Options and select Block Cleanup Of Unused Language Packs policy and right click → Edit → Enable.
6. Click Apply and OK
7. Press Windows Key + R to open Run command and type gpupdate /force and hit Enter
8. Execute the following PowerShell cmdlets to display additional language packs under Windows display language.
 - a. \$DefaultLang = New-WinUserLanguageList en-US
 - b. Note: enter your desired additional language within brackets
\$DefaultLang.Add{"fr-FR"}
 - c. Set-WinUserLanguageList \$DefaultLang
Type "Y" to continue the operation
9. Reboot the server and login
10. To change Windows display language locate to Start button → Settings → Time & Language → Language → Windows display language and then choose the language which was added at step 8.b
11. The change will become effective in the next sign-in.

43. How do I install Windows Server 2019 from USB flash drive on UEFI based server?

Microsoft recommends to format USB flash drive with FAT32 file system and copy the entire setup files onto USB flash drive.

Note: FAT32 file system has 4 GB single file size limitation, hence, split the Windows image files into smaller files and put the smaller files on to the USB drive.

For more information, refer: docs.microsoft.com/en-us/windows-hardware/manufacture/desktop/install-windows-from-a-usb-flash-drive



Support

44. What type of support does HPE provide for HPE OEM Windows Server products?

If the removable media on which Hewlett Packard Enterprise distributes the software proves to be defective in materials or workmanship within 90 days of purchase, customers may place a request for replacement media at ebiz3.mentormediacorp.com/HPEDGRCR/.

Hewlett Packard Enterprise also provides electronic or telephone support for initial setup for 90 days from date of purchase. Initial setup support includes:

- Answering installation questions (how-to, first steps, and prerequisites)
- Setting up and configuring software and options supplied or purchased with HPE hardware products (how-to and first steps). Please note that for the HPE OEM operating system part only the initial installation of the OS is covered, configuration of OS roles and features that are added after the basic OS installation—such as setting up Active Directory as an example—are not part of the HPE OEM OS warranty support and may require purchase of a support contract with HPE
- Interpreting system error messages
- Isolating system problems
- Obtaining support pack information or updates for software purchased or supplied with Hewlett Packard Enterprise hardware products

Initial setup support does not include assistance with:

- Generation or diagnosing user-generated programs or source codes
- Installation of third-party products
- System optimization, customization, and network configuration

HPE ProLiant Global Limited Warranty and Technical Support Terms can be found at hpe.com/servers/warranty.

45. What type of support services does HPE provide beyond warranty support?

Hewlett Packard Enterprise has a full range of support and consulting services for your product that can be purchased locally. However, some support and related products may not be available in all countries. For information on availability and cost of these services, refer to the HPE website at hpe.com/services/foundationcare.

46. How do I contact HPE about support for my Windows Server product?

Locate the HPE Technical support phone number via the worldwide contact numbers list at hpe.com/contact.

In some countries, the Contract and Warranty support numbers are different. If you have an existing support contract use the “Contract” support number, you may need your Service Agreement ID (SAID) number. If you do not have a support contract use the “Warranty and Out of Warranty” support number.

HPE offers free initial OS installation support for 90 days from the date of purchase (for more details on what initial support includes, refer to [question 44](#)). If you need OS installation assistance and are within the 90 day from date of purchase and are asked for a Service Agreement ID (SAID), reinforce you purchased the Windows Server OS OEM (including ROK) license along with the Server from HPE or an HPE Reseller and are requesting OS installation assistance under HPE’s 90 day warranty support.

47. What information do I need to have available when I contact HPE for support?

Be sure to have the following information/documentation available before you call:

- Proof of purchase (to be sent via fax or email)
 - An invoice with software and server SKUs (HPE or distributor SKU)
 - A high-resolution picture of the COA affixed to the server showing the 5x5 product key

Note

If proof of purchase is not readily available, be prepared to provide the type of Windows product being requested—include the edition, plus the HPE server type, model, and serial number.



Microsoft Software Assurance

48. What is the Microsoft Software Assurance program?

Microsoft Software Assurance (SA) helps you get the most from your software investment by combining the latest software with 24x7 phone support, partner services, training, and IT tools. With SA your license is transitioned to a volume license with benefits that may enhance your software investment lifecycle. For more information visit microsoft.com/en-us/Licensing/licensing-programs/software-assurance-default.aspx.

HPE OEM customers can purchase a Microsoft Software Assurance subscription from a Microsoft authorized licensing reseller within 90 days of their OEM license purchase. Software Assurance is only available for the latest version of a product.

49. If my older version of Windows Server is covered under a current Microsoft Software Assurance subscription, do I have to pay to upgrade to the current version of Windows Server?

No. As part of Microsoft Software Assurance benefits, you will receive the rights to upgrade your Windows Server license to a successor version released during the term of your Microsoft Software Assurance license. Microsoft Software Assurance licensees should access the [Microsoft Volume Licensing Service Center](#) (VLSC) for full details of their Microsoft Software Assurance benefits.

50. What happens if I have a license for an older version of Windows Server and want to upgrade to the latest version but have not purchased Microsoft Software Assurance for the license?

You need to purchase a new Windows Server license for each server that you will be upgrading. Unlike service packs and feature packs, each new release of Windows Server is a full OS and requires a new server license. Software Assurance is not available for previous versions of Windows Server. Software Assurance is only available for the latest version of a product.

Downgrade rights

51. What is a Windows Server downgrade and what are my downgrade rights?

Many Microsoft software products include the right to use an earlier version of the software in place of the version you have licensed (e.g., downgrade from Windows Server 2019 to Windows Server 2016). The earlier version kit which includes DVD media and product key for activation is called a downgrade kit.

For information regarding how to obtain a downgrade kit from HPE (proof of purchase of original HPE license required) please see [question 55](#). For information on the downgrade rights for your Microsoft product, refer to the end-user license terms of your Microsoft software license. The ability to downgrade does not change the licensing or support terms for using the product; the purchased product rights still apply.

Note

For the deployed OS to be supported by Microsoft, your HPE server must meet all hardware requirements including processor requirements that are specified and listed for both the licensed product and the downgrade/down-edition (DG/DE) software. More detail on Microsoft processor requirements can be found at go.microsoft.com/fwlink/?linkid=847781. For other Microsoft Hardware requirements visit: [msdn.microsoft.com/library/windows/hardware/dn915086\(v=vs.85\).aspx](https://msdn.microsoft.com/library/windows/hardware/dn915086(v=vs.85).aspx).

For more detail on HPE policy on support for downgrade assistance, please review [question 58](#).

52. What is a Windows Server down-edition?

Windows Server down-edition rights allow users to run an instance of a lower edition (here, “edition” refers to the named version: Essentials, Standard, Datacenter) of the same generation of Windows Server, this is applicable only for certain products, and permitted under the product License Terms.

Note

Windows Server 2019 Datacenter licenses allow the end user to run an instance of Windows Server 2019 Standard edition in place of an instance of the Datacenter edition.

53. Why are downgrade rights important?

Downgrade rights can simplify application migration scenarios for your customers by allowing them to license the newest Microsoft Windows Server product and then run earlier versions and/or down editions of Windows Server—to support legacy business applications that have not yet migrated to the latest technology—until they are ready to migrate to the purchased Windows Server license. This allows customers to maximize their IT investment.



54. What downgrade/down edition options are available from Hewlett Packard Enterprise?

Available downgrade kits from HPE are based mainly on Microsoft offering for OEMs, some downgrade options get discontinued overtime, and some downgrade options are never released through the OEM Downgrade program. Neither Microsoft nor HPE are obligated to supply specific downgrade kits.

Please refer to the following downgrade infographic at h41112.www4.hpe.com/wsdowngrade/DG_INFOGRAPHIC.pdf to learn about options that can be fulfilled by Hewlett Packard Enterprise.

Most common downgrade options are available from Hewlett Packard Enterprise at the time of the server purchase.

Other downgrade options may be available for HPE customers at the HPE fulfillment website for Windows Server Media and Downgrade at ebiz3.mentormediacorp.com/HPEDGRCR/. A picture of the Microsoft COA for the licensed product purchased from HPE is required as proof of purchase. Downgrade media and keys are delivered via mail, allow 3 to 10 business days for delivery (depending on customs requirements and shipping method). HPE can fulfill the same downgrade kit only one time.

55. How do I request a downgrade for my HPE OEM Windows Server OS?

HPE OEM licensed customers who wish to exercise downgrade rights from Windows Server to a downgraded version have the following options:

Option 1 with server purchase—When a customer purchases an HPE OEM Windows Server license on an HPE server they can request the downgrade kit at time of purchase. Most common downgrade options are available from factory. There is a “DO NOT DISCARD” card or a product key card with the downgrade product keys attached, sometimes the product key may also be affixed to the back of the media envelope or package.

Option 2 after server purchase—Customers can also obtain the downgrade kit after the initial HPE OEM Windows Server product purchase by placing a request at ebiz3.mentormediacorp.com/HPEDGRCR/. HPE requires the customer to provide a photo of the Microsoft COA showing the physical 5x5 Windows Server product key for the purchased HPE Windows Server product as proof of purchase. Downgrade media and keys are delivered via mail.

56. How do the downgrade terms affect CALs?

CALs permit access to the corresponding version or earlier versions of server software (including earlier versions used under downgrade rights).

CALs for Windows Server do not require a product key or activation. However, RDS CALs do require activation of the license on the RDS license server.

RDS CAL product keys must match the version of the OS they are installed on and that hosts the Remote Desktop Licensing Server role. Should you need to run the RD Licensing Server role on an older generation of Windows Server than you have purchased RDS CALs for (example: Windows Server 2019 RDS CALs purchased, Windows Server 2019 RD License Server), you can activate RDS CALs on a downgrade version of Windows Server by calling Terminal Services (TS) Clearinghouse and obtaining a downgrade RDS CAL key. For this, follow the procedure listed on [question 98](#).

Note

A Windows Server 2019 RD Licensing Server can hand out RDS License “Tokens” to older generation RDS Host servers, however, an older generation RDS Licensing Server cannot issue tokens to RDS host servers running a more recent Windows Server OS generation.

See docs.microsoft.com/en-us/windows-server/remote/remote-desktop-services/rds-client-access-license for further information.

57. What are the activation requirements for the downgrade scenario?

For Microsoft products that require activation, if you are using a previous version under downgrade rights, you will need to activate it with a valid product key for that downgrade version. As noted in the end-user license terms for your software license, neither Microsoft nor Hewlett Packard Enterprise are obligated to provide you with downgrade media or product keys. In general, when customers are exercising downgrade rights, they reuse the product key from a previously obtained license to activate the downgrade version. If automatic activation fails when doing this, the customer will be prompted to phone a Microsoft Activation Center. When they explain to the Activation Center analyst that they are reusing a key under downgrade rights, the analyst will assist them to activate the downgrade version.

Alternatively, if using an HPE OEM license for Windows Server, Hewlett Packard Enterprise may be able to provide media and a product key for a downgrade version on request from the HPE OEM customer. For available downgrade options from HPE please review [question 54](#).



58. What is HPE's policy on support for downgrade assistance?

While the end-user license terms may allow customers to downgrade their Windows Server OS, the HPE server must be certified to support the older OS. The OS support matrix should be used to determine certification status (hpe.com/servers/wincert).

Customers who choose to downgrade their Windows OEM OS to a certified platform are entitled to 90 days of support warranty under the terms of their platform warranty for installation, configuration, and startup support, just as they would under the original OS warranty, the Downgrade OS version should also be under Microsoft Support period.

The same support rules apply for customers who purchase software support beyond the 90-day warranty period.

59. Can you downgrade Windows Server Foundation or Windows Server Essentials?

The Microsoft Software License Terms for Windows Server Foundation and Windows Server Essentials provide downgrade rights to prior versions. However, the OEM Downgrade program does not offer downgrade keys or media from Microsoft. Since both of these products are "first servers," the anticipated demand is low for downgrades, and therefore Microsoft does not offer these through the OEM Downgrade program deliverables.

Upgrade rights

60. Why does HPE OEM media not support upgrade installation, while Microsoft media does?

Unlike Microsoft media, where the customer may already have a server running on an old version of Windows Server, OEM media can only be sold with new servers, so the assumption is that there is no upgrade. Because of that assumption, Hewlett Packard Enterprise has disabled the upgrade function. If a customer wants to upgrade to a new version of Windows Server, then the new version will need to be reinstalled.

61. I bought Windows Server Standard from HPE with my new HPE server, but I really meant to buy Windows Server Datacenter. Can I do an upgrade?

Unfortunately, there are no OEM "upgrade" licenses that could be purchased after the initial HW purchase for an in-place upgrade between Standard and Datacenter editions of Windows Server. If you noticed your error as soon as you made it, please contact Hewlett Packard Enterprise for a return.

As soon as you get the Datacenter license, you can follow procedure on [question 24](#) to convert the installation from Standard to Datacenter.

Virtualization and OEM licensing

62. Why do I get a "system not supported" message when trying to install HPE Windows Server ROK media on top of Microsoft Hyper-V when it is running on a non-HPE-branded host OS?

The necessary manufacturer strings have not been inserted into the Hyper-V product to allow the installation of HPE-branded media. You will need to run the following command from the command prompt (including spaces):

Run the following command on Windows Server 2016

```
Reg Add "HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Virtualization" /v BiosLockString /t REG_SZ /d "Hewlett-Packard"
```

Note

Ensure there are 17 blank spaces after "Hewlett-Packard" and the quotation mark. If prompted to overwrite the registry string, select Yes.

Run the following command on Windows Server 2019

```
Reg Add "HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Virtualization" /v BiosLockString /t REG_SZ /d "Hewlett Packard Enterprise"
```

Note

Ensure there are 6 blank spaces after "Hewlett Packard Enterprise" and the quotation mark. If prompted to overwrite the registry string, select Yes.



63. Why do I get a “system not supported” message when I try to install HPE Windows Server ROK media on top of VMware®?

To allow the HPE Windows Server ROK media to detect that it's being installed on HPE hardware, you will need to add the following configuration line to the VM configuration file:

```
“SMBIOS.reflecthost=TRUE”
```

64. Can Microsoft Windows Server be installed within a VMware environment?

Yes. See your VMware documentation or refer to the VMware Knowledge Base at kb.vmware.com/.

65. Do OS licensing rules for virtual Windows Server OS instances running on VMware vSphere® or Windows Server Hyper-V cluster nodes differ?

Refer to each product's online documentation and license terms for details. The following answer is specific to licensing for Windows Server in virtualized environments. Note that the licensing terms for Windows Server in virtualization deployments are the same regardless of which hypervisor is used to manage the VMs.

The same licensing rules apply to both Windows Server Hyper-V and VMware ESX® or vSphere cluster nodes. While VMware vMotion or MS Hyper-V Live Migration technologies move running instances of virtual Operating System Environments (OSEs) between physical server nodes, the Windows Server licenses are assigned to each physical server node and remain with the physical server to which they were assigned. When an instance is moved to a new physical server node, that new server must already have appropriate Windows Server licenses assigned that cover the full number of virtual OSEs transferred onto that node. Because Windows Server Datacenter edition permits an unlimited number of instances of the server software to run in virtual OSEs, in multi-node clustered installations using VMware ESX/vSphere or Microsoft Hyper-V as virtualization layers, Windows Server Datacenter licensed on every node offers the greatest flexibility to move instances between server nodes without having to track the number of instances running or needing to worry about being under-licensed.

66. Can you virtualize a SQL Server?

SQL Server is an application that runs on top of the OS. If you are able to virtualize the OS, then the SQL application will run on top of that OS. There are no additional technical requirements to run SQL in a virtual environment. The latest hypervisors can virtualize databases without complication. However, each SQL Server license includes specific rights for use in virtualized environments. Refer to the end-user license terms of your licensed version of SQL Server for details.

In addition, the following Microsoft licensing brief offers a comprehensive overview: download.microsoft.com/download/3/d/4/3d42bdc2-6725-4b29-b75a-a5b04179958b/microsoftservervirtualization_licensemobility_vlbrief.pdf

67. Can you use Citrix® XenServer with an HPE OEM license for Windows Server?

Yes. You can use Citrix XenServer with an HPE OEM license according to the Citrix documentation at support.citrix.com/en/products/xenserver.

Installing a VM from ROK (BIOS-locked) media

To allow installation of ROK (BIOS-locked) OEM versions of Windows onto a VM running on a XenServer host, the BIOS strings of the VM will need to be copied from the host with which the ROK media was supplied. To install the BIOS-locked media that came with your host, you will need to follow the following steps:

Installing a BIOS-locked VM

1. Run the vm-install copy-bios-strings-from command and specify the host-uuid as the host from which the strings should be copied (that is, the host that the media was supplied with):

```
xe vm-install copy-bios-strings-from=<host uuid> \ template=<template name> sr-name-label=<name of sr> \ new-name-label=<name for new VM>
```

This returns the UUID of the newly created VM. For example:

```
xe vm-install copy-bios-strings-from=46dd2d13-5aee-40b8-ae2c-95786ef4 \ template="CentOS 5.3"
sr-name-label=local\ storage \ new-name-label=newcentos
7cd98710-bf56-2045-48b7-e4ae219799db
```



2. If the relevant BIOS strings from the host have been successfully copied into the VM, the command “This vm-is-BIOS-customized” will confirm this:

```
xe vm-is-bios-customized uuid=<VM uuid>
```

For example:

```
xe vm-is-bios-customized \
uuid=7cd98710-bf56-2045-48b7-e4ae219799db This vm-is-BIOS-customized.
```

Note

When you start the VM, it will be started on the physical host from which you copied the BIOS strings.

A VM can be:

- BIOS-generic: The VM has generic XenServer BIOS strings.
- BIOS-customized: The VM has a copy of the BIOS strings of a particular host in the pool.
- Without BIOS strings: Immediately after its creation.

Warning

It is your responsibility to comply with any EULAs governing the use of any BIOS-locked OSes that you install.

Release notes

There are many versions and variations of Windows Server with different levels of support for the features provided by XenServer. This section lists notes and errata for the known differences. support.citrix.com/en/products/xenserver.

68. What is the base licensing for the Windows Server Standard and Datacenter versions?

OS version	Physical OSE	Virtual OSE
Windows Server 2019 Standard	1	2 VMs with the base license with all cores in server licensed; Additional 2 VMs each time you license all physical cores in the server
Windows Server 2019 Datacenter	1	Unlimited when all physical cores in the server are licensed
Windows Server 2016 Standard	1	2 VMs with the base license with all cores in server licensed; Additional 2 VMs each time you license all physical cores in the server
Windows Server 2016 Datacenter	1	Unlimited when all physical cores in the server are licensed
Windows Server 2012 Standard R2	1	2 per license or “additional license”
Windows Server 2012 Datacenter R2	1	Unlimited
Windows Server 2012 Standard	1	2 per license or “additional license”
Windows Server 2012 Datacenter	1	Unlimited
Windows Server 2008 R2 Standard	1	1
Windows Server 2008 R2 Enterprise	1	4
Windows Server 2008 R2 Datacenter	1	Unlimited



Important

In case you are exercising downgrade rights in the running VMs, the end-user license terms for the version of Windows Server you purchased apply to your use of the earlier version of Windows Server to which you are downgrading.

For Windows Server Standard versions 2 Virtual OSEs comes with the base license but can add in increments of 2 VM when all cores are relicensed.

As an example: If a Windows Server 2019 Standard edition license (with 2 virtual OS Environment rights) has been purchased and the customer is exercising downgrade rights to Windows Server 2016 standard edition, then the two (2) virtual instance rights of the originating license (Windows Server 2019 Standard edition in this example) still apply and supersede the license terms of the OS version that the license is being downgraded to (Windows Server 2016 Standard edition with 4 VM rights)—effectively granting two (2) virtual OS Environment/VM rights to the downgraded OS version.

69. Can I buy more than one HPE OEM Windows Server Standard edition license for one physical server, with the intention of running more than two virtual OSEs on this physical server?

Yes. Microsoft licensing (FPP, OEM, and VL) allows this.

With HPE branded Windows Server OEM you would need to buy a Base License of Windows Server 2019 Standard edition (16 cores) and any Additional Core Licenses to cover the number of cores in your server if your server has more than 16 cores in total. This will cover use in 2 VMs. If additional VMs are needed you can purchase Additional Licenses in increments of 2/4/16 core Additional Licenses to cover the total number of cores in the server again. This will provide for 2 additional VMs each time you fully re-license all physical cores in the server.

If you intend to license a large number of VMs (more than 10 virtual OSEs) on any server or clustered server node you may want to consider Datacenter edition with unlimited VMs.

Windows Server 2019**70. What is new with Microsoft Windows Server 2019?**

Windows Server 2019 is the operating system that bridges on-premises and cloud to help customers grow their business locally and extend operations to the cloud from a position of strength. It maximizes customers' existing IT investments and builds on Windows Server security, app innovation, and Hyperconverged Infrastructure (HCI) capabilities to help extend and enrich on-premises investments to include cloud services.

Some new features such as Hyperconverged Infrastructure for Windows Server 2019 Datacenter, help customers quickly and securely run applications and workloads with lower maintenance costs. Windows Server 2019 Datacenter adds advanced software-defined storage capabilities. Storage Replica is now available in Windows Server 2019 Standard (with limitation of 4 terabytes). Both Windows Server 2019 Standard and Windows Server 2019 Datacenter increase security and reduce business risk with multiple layers of protection built into the operating system, and enable developers to create cloud native apps and modernize traditional apps using containers and microservices.

71. What editions are available in Windows Server 2019?

Windows Server 2019 editions have been streamlined to better support today's changing business requirements. Windows Server 2019 is offered in the following editions:

- **Datacenter:** For companies of all sizes that have demanding IT workloads and require advanced storage, virtualization, and application deployment.
- **Standard:** Suitable for on-premises, physical environments or lightly virtualized environments that require a flexible path toward virtualization.
- **Essentials:** Ideal for smaller businesses with up to 25 users or 50 devices; companies that may only have basic IT needs or have limited IT resources. Essentials is a good option for customers currently using the Windows Server Foundation edition, which is not available for Windows Server 2019.

72. What are the differences between Windows Server 2019 Standard and Datacenter editions?

Features exclusive to Windows Server 2019 Datacenter include Hyperconverged Infrastructure (HCI), software-defined networking, Storage Spaces Direct. Windows Server 2019 Standard edition includes the rights to two OSEs (or virtual machines) or Hyper-V containers. Windows Server 2019 Datacenter includes unlimited OSEs and Hyper-V containers. Both Windows Server 2019 Standard and Windows Server 2019 Datacenter provide unlimited Windows Server Containers and Storage Replica feature is also now available in Windows Server 2019 Standard (with limitation of 4 terabytes).



Windows Server 2019 feature differentiation

Feature	Datacenter	Standard
Core Windows Server functionality	•	•
Hybrid integration	•	•
Hyperconverged infrastructure	•	
OSEs/Hyper-V containers	Unlimited	2
Windows Server containers	Unlimited	Unlimited
Host Guardian Service	•	•
Storage Replica	•	•
Shielded Virtual Machines	•	
Software-defined networking	•	
Software-defined storage	•	

73. How is licensing with Windows Server 2019?

The licensing of Datacenter and Standard edition, aligning licensing of private and public cloud environments to a consistent currency and simplifying licensing across multicloud infrastructures. The Standard edition of Windows Server 2019 base or initial license will license up to two VMs or two Hyper-V containers when all of the physical cores on the server are licensed. Additional VMs can be added by procuring Windows 2019 Additional License to cover all the Cores again; this will add 2 additional VMs.

With Windows Server 2019 Datacenter and Standard edition:

- All physical cores in the server must be licensed. Servers are licensed based on the number of processor cores in the physical server.
- A minimum of sixteen core licenses is required for each server.
- A minimum of eight core licenses is required for each physical processor.
- Windows Server Base Licenses from Hewlett Packard Enterprise (HPE) cover sixteen cores, Additional Licenses for both Standard and Datacenter editions are available in packs of two, four, and sixteen cores.

Windows Server 2019 Essentials edition will continue to be licensed per server, for platforms with up to two processors and maximum of 25 users or 50 devices. No Windows Server CALs are required.

Edition	Licensing model	CAL requirement
Windows Server 2019 Datacenter	Core-based	Windows Server CAL
Windows Server 2019 Standard	Core-based	Windows Server CAL
Windows Server 2019 Essentials	Processor-based	No CAL required

74. How do I calculate the number of Windows Server core licenses I need for a server solution?

Aligned to the Windows Server core-licensing requirements listed on [question 73](#), HPE has released a Windows Server core-licensing calculator tool that helps simplify the process of calculating the total licenses required for a particular server, please visit: hpe.com/servers/windows-license-calculator.

75. How are core licenses sold?

Windows Server 2019 Base Licenses are available from HPE for sixteen cores, which is the minimum number of cores required to license one physical server, including single-processor servers. HPE offers Additional Licenses in packs of two, four, and sixteen cores, for both Standard and Datacenter editions.

- Datacenter edition provides rights to unlimited virtual Operating System Environments (OSEs) when all physical cores on a server are licensed.
- Standard edition provides rights for up to two virtual OSEs when all physical cores on a server are licensed. For every two additional VMs, all of the cores in the server must be licensed again.



76. Can I buy a 16-core license and “divide” the license between two servers?

No. Windows Server licenses are tied to one physical server.

77. If cores are disabled from Windows Server 2019 use, do I still need to license the cores?

Physical cores that are disabled for use by an operating system (OS) do not need to be licensed. For example, if eight cores in a server with 32 cores are disabled, and not available for operating system use, only 24 cores would need to be licensed. This exemption does not reduce the minimum number of core licenses required (minimum of 16 cores per server).

78. How should I think about hyper-threading in the core-based licensing?

Windows Server 2019 is licensed by physical cores, not virtual cores. Therefore, customers only need to inventory and license the physical cores on their processors.

79. I read that Windows Server 2019 will support nested virtualization—a VM running inside a VM. How do you license that scenario?

Windows Server 2019 Datacenter licensing allows for unlimited virtualization and therefore would easily cover this scenario. Windows Server 2019 Standard edition licensing is ideal for no to low virtualization scenarios, and supports up to two virtual machines. A virtual machine running inside a virtual machine counts as two virtual machines from a licensing perspective.

Standard edition for Windows Server 2012 and Windows Server 2012 R2**80. Is there any difference in the code between the Standard and Datacenter editions of Windows Server 2012 or Windows Server 2012 R2?**

No. They are identical other than the product name and branding. It's the “unlimited virtualization” licensing that offers significant additional value in Datacenter.

81. What are the differences in licensing for Windows Server 2012 R2 Standard vs. 2012 R2 Datacenter editions?

Datacenter permits unlimited virtualization and the base license supports up to two CPUs. The Standard base license permits only 2 VMs and supports up to 2 CPUs.

Client Access Licenses**82. What is a CAL?**

A Client Access License or CAL is a license granting access to certain Microsoft server software. CALs are used in conjunction with Microsoft Server software licenses to allow users and devices to access and utilize the services of that server software. For instance, a company looking to use Windows Server would acquire a Windows Server license to install and run the Windows Server software on the physical server itself. To provide the rights for users or devices to access the Windows Server software running on the server, Windows Server CALs would need to be acquired for those users or devices.

83. What are the different types of CALs?

There are two types of CALs:

- **Device CALs**—Acquire an access license for every device (used by any user). Device CALs make the most economical and administrative sense for an organization that has multiple users for one device, such as shift workers using a kiosk-style workstation.
- **User CALs**—Acquire an access license for every named user accessing your servers (from any device). User CALs make the most economical and administrative sense for an organization with many roaming employees who need access to the corporate network from unknown devices, and/or employees who access the network via multiple devices—that is, if the number of users is less than the number of devices, then this is the more economical choice.

For RDS CALs, see [question 97](#).

84. Is it possible to buy additional CALs after I got the OS License?

Yes, customers can buy additional CALs from Hewlett Packard Enterprise or an authorized partner at any time and do not require a new HPE server purchase. Hewlett Packard Enterprise currently offers 1, 5, 10, and 50 CAL packs (user or device) and 5 CAL packs for RDS CALs (user or device).

85. Can I use my Windows Server 2012 CALs to access Windows Server 2012 R2?

Yes, since CAL versions are not updated for an “R2” release.



86. If a user or device accesses a server running Windows Server 2019 but is authenticating via a third-party authentication application (non-Microsoft based authentication), does the user or device still require a Windows Server 2019 CAL?

Yes. If the user or device is authenticating by any means to a server running Windows Server 2019 and connecting to its services, a Windows Server 2019 CAL is needed.

87. Can I use a Windows device CAL and a Windows user CAL to access the same server? Also, can I use an RDS device CAL and an RDS user CAL on the same RD Session Host/terminal server?

Yes. Windows device and user CALs, as well as RDS device and user CALs, can be used on the same server.

88. Can I use my Windows Server 2016 CALs to access servers running Windows Server 2019?

No. CALs must be the same version as—or higher than—the server software they are accessing. In other words, users or devices accessing a server running Windows Server 2019 must have Windows Server 2019 CALs.

89. If I move an instance of Windows Server 2016 to run as a virtual instance on a server with Windows Server 2019 running in the physical OS Environment, can I use Windows Server 2016 CALs to access the virtual instance of Windows Server 2016?

No. Because the virtual instance of Windows Server 2016 runs on a Windows Server 2019 license, the user or device accessing the virtual instance of Windows Server 2016 needs a Windows Server 2019 CAL.

90. Can I use a Windows Server 2019 user CAL to access a server running Windows Server 2016?

Yes. A Windows Server CAL permits access to all earlier versions of Windows Server.

91. Do I need to upgrade my Windows Server CALs to access future releases of Windows Server?

All future releases of Windows Server will require Windows Server CALs of the same version for the customer's internal users and devices accessing the Windows software. Customers can either acquire new Windows Server CALs when the new version is released, or maintain Microsoft Software Assurance on their prior-version CALs, which gives rights to the next version.

92. Will I be allowed to switch between Windows Server device CALs and user CALs? What about RDS CALs?

If your Windows Server CALs are covered under Microsoft Software Assurance, you can convert those CALs from device CALs to user CALs, or vice versa, when you renew your Microsoft Software Assurance. If your Windows Server CALs are not covered under Microsoft Software Assurance, you may not switch. Your choice is permanent. This also applies to RDS CALs.

93. What is the difference between a Windows Server Operating System (OS) license and a Windows Server CAL? Why do I need both?

The Windows Server OS license gives the license holder the right to install and use the server software. The Windows Server CAL grants the right for a device or user to access the server software. The two-component license provides a low entry price and a way to pay for capacity used: the more devices or users accessing the server software, the greater the license fees or price. The model therefore offers license affordability to organizations of all sizes.

94. Can I split a CAL pack into user and device CALs?

No, CAL packs cannot be split up between user and device type. In case you need less than five device or user CALs, Hewlett Packard Enterprise also offers single CAL part numbers, for both user and device CALs, to address this concern. With single CALs, you can purchase exactly what you need.

Windows Server 2019 OS licenses do not include CALs by default; CALs need to be purchased separately as needed. Hewlett Packard Enterprise currently offers 5, 10, and 50 CAL packs (user or device), single CALs are also available.

95. Is each CAL “tied” to a specific user or device?

Yes. They are not “floating” licenses so they must be assigned to specific users or devices. If a user leaves the company or a device is retired, then the CAL can be reassigned.

96. What do I do if I lose my CAL?

Windows Server CALs are not “enforced” by software and product keys, so the only value of the CAL pack COA is as the customer's “proof of purchase.” The customer's invoice may serve for the same purpose, so there is no need to replace the CAL pack COA. RDS CAL usage, however, is enforced. The license key found with the RDS CAL pack must be entered into RDS licensing manager within the OS. RDS CALs can't be replaced, so treat them as if they are money. Refer to [question 97](#) for a brief explanation of the differences between Windows Server CALs and RDS CALs.



Remote Desktop Services (RDSs) CALs

97. What is the difference between a Windows Server CAL and RDS CALs?

A Windows Server CAL is required when a user or device is directly or indirectly accessing Windows Server. A Remote Desktop Service (RDS) CAL is also required for users that need to access programs or the full desktop remotely using Remote Desktop Services (RDSs). Both a Windows Server CAL (user or device) and a RDS CAL (user or device) are required for remote desktop access. RDS CALs contain a product key for activation. As an exception to these rules, up to two users or devices may access the server software, only for server administration purposes, without requiring either a RDS CAL or a Windows Server CAL.

98. What do you need to do if you want to downgrade your RDS CAL?

To downgrade RDS CALs to a previous version, call the Microsoft Clearinghouse to request a downgrade key.

- In the U.S., call (888) 571-2048.
- Outside the U.S., click **Start**, point to Programs, click **Administrative Tools**, and then click **Terminal (or Remote Desktop) Services Licensing**.
- In the Terminal Services Licensing console, right-click your license server, and then click **Properties**.
- Click **Connection Method**, and then click **Telephone**.
- Click the appropriate country, and then click **OK**.
- On the Action menu, click **Install Licenses**, and then click **Next**.
- Call the appropriate customer service center using the telephone number that is displayed.
- Click **Cancel** to exit the Terminal Services Licensing console.

99. How do I move a RDS/TS CAL license to a new server?

If you want to move RDS/TS licensing from an existing older RDS/TS license server to a Windows Server 2016 server, follow the general steps documented below:

1. Activate a RD License Server: docs.microsoft.com/en-us/windows-server/remote/remote-desktop-services/rds-activate-license-server
2. Steps to migrate RDS CALs: docs.microsoft.com/en-us/windows-server/remote/remote-desktop-services/migrate-rds-cals
3. Further RDS CAL information: docs.microsoft.com/en-us/windows-server/remote/remote-desktop-services/rds-client-access-license

Reseller information

100. I'm a reseller and I'd like to know the difference between COEM and HPE OEM.

The COEM product is what is often referred to by Microsoft as System Builder or Channel OEM. Microsoft is the point of contact for the purchase of this license type for resellers who want to marry the license to a "white box" non-branded server. The customer may not transfer the license to another server unless they have purchased Microsoft Software Assurance within the first 90 days of purchase of the license. Microsoft Software Assurance is only available for the latest version of each product family.

The HPE OEM products are designed and tested for HPE servers, providing you and your customers with confidence in deploying the ideal combination of OS and HPE server. With the HPE OEM licenses, your customers will also receive 90-day free telephone support for initial setup and configuration from the purchase date of the new server and license.

101. I'm a reseller. How can I learn more about the HPE ROK?

For more information on HPE OEM ROK, go to hpe.com/info/rok.



Frequently asked questions

102. I'm a reseller. I've heard about a training site from HPE and Microsoft called Coffee Coaching—what is it?

HPE Microsoft Coffee Coaching is a community where resellers can learn and interact with Microsoft and HPE subject matter experts to become more knowledgeable on key technologies to help you better serve your customers. Become a follower on the following social media sites:

- Blog: hpe.com/blog/CoffeeCoaching
- Twitter: twitter.com/CoffeeCoaching
- YouTube: youtube.com/CoffeeCoaching
- LinkedIn: linkedin/CoffeeCoaching
- Facebook: facebook.com/CoffeeCoaching

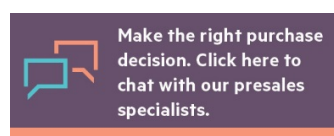
References

Visit the following websites to learn more about the subjects covered in this FAQ:

- [Server Operating Systems and Virtualization Software](#)
- [Microsoft Windows Server 2016](#)
- [Microsoft Windows Server 2019](#)
- [HPE Reseller Option Kit \(ROK\) Licensing for Windows Server](#)
- [Coffee Coaching](#)
- [Hewlett Packard Enterprise Information Library](#)
- [HPE Servers Support & Certification Matrices](#)
- [Software Assurance overview](#)
- [HPE ProLiant Global Limited Warranty and Technical Support Terms](#)
- [HPE Consulting Services for Microsoft platforms](#)
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