Microsoft

Licensing Brief
October 2022

Licensing Microsoft server products for use in virtual environments

This brief applies to all Microsoft Licensing programs.

Contents

Summary

The purpose of this brief is to give an overview of use rights for Microsoft server products in virtual environments. It can help you understand how to use Microsoft server products with virtualization technologies, such as Microsoft Hyper-V technology, or third-party virtualization solutions provided by VMware and Parallels.

Although much of the information in this paper also applies to licenses purchased from channels other than Microsoft Commercial Licensing, some differences exist. As a result, we recommend that you review the license terms that accompanied your software if you acquired licenses through a means other than a Microsoft Commercial Licensing agreement.

Overview of licensing models and associated virtualization rights

The following summarizes the licensing models and how virtualization affects them. Review of this guidance should not be a substitute for careful review and understanding of your rights and obligations as described in your Microsoft Commercial Licensing agreement and the Product Terms. We have provided links to additional resources for more information where applicable.

We refer to the use of software in virtual machines or VMs in this brief. In our license terms, these are virtual operating system environments or virtual OSEs. The host operating system and applications running on it, are physical operating system environments or physical OSEs.

All Products
The following is applicable to all products in each of the Microsoft server licensing models in the Product Terms, for example: • Windows Server 2022 • Exchange Server 2019 • SQL Server 2019
Licensing
To help you understand how Microsoft's licensing models support use of software we need to introduce you to the some of the terminology we use. For example, use terms for software licenses[1] specify the number of *instances* of software that a customer can *run* on a specific server at a time, rather than the number of *copies* that customer can *install and use* on that server. Getting away from the notion of *installing and using copies* on a physical server allows us to address use rights in the context of virtual machines and workload mobility. We also speak in terms of *creating and storing instances*. Software licenses allow customers to create and store instances of the software on their servers or storage media. Stored instances do not tie up licenses, as customers are not required to allocate licenses until they *run* the software. Before a customer *runs* an instance of server software, it must *assign* (or allocate) one or more licenses to a server. The number of licenses required depends on the license model and the use case. Also, keep in mind that each hardware partition

[1] *Software licenses refer to the license for the software bits. To license a product appropriately, a customer might also need additional licenses (for example, Client Access Licenses, External Connector Licenses, and Management Licenses. Please refer to the Product Terms document for Volume Licensing.)*

or blade is a separate physical hardware system, and, therefore, a separate server for purposes of licensing. The servers to which licenses are assigned are called *licensed servers*.

If a customer has multiple *licensed servers*, it has some flexibility to move its workloads across them, as long as each server is adequately licensed for the workloads it is running. If moving workloads requires moving licenses, customers should remember that in general, they can reassign software licenses for server products, but not on a short-term basis (that is, not within 90 days of the last assignment). (Note: Customers can always reassign licenses sooner if they retire a server due to permanent hardware failure.)

For greater flexibility and more frequent reallocation of licenses, we offer *License Mobility across Server Farms* rights. *License Mobility across Server Farms* rights are provided with Software Assurance, and allow customers to move licenses freely between servers within a *Server Farm*. A *Server Farm* generally can include up to two data centers in time zones that are not more than four hours apart. This supports workload mobility within a customer's own data centers. These rights are documented in the Software Assurance Benefits section of the Product Terms. You must refer to the Software Assurance section of the individual product entries in the Product Terms to determine if *License Mobility across Server Farms* rights are available for a specific product

Similarly, the terms of many server products now permit mobility of licenses within a *Server Farm* for subscription licenses and licenses with Software Assurance when customers license servers by virtual core. This right is documented in License Model terms of the Product Terms,.. When used under subscription licenses or licenses with active Software Assurance, some products' terms also allow deployment in permitted third party data centers. This is discussed below in the individual licensing model sections of this brief.

Products in the Microsoft Per Core/CAL licensing model

The following is applicable to products in the Microsoft Per Core/CAL licensing model of the Product Terms, for example:

- Windows Server 2022

Licensing

Windows Server operating system software under the Per Core/CAL license model is licensed based on *physical core*, or with subscription licenses or licenses with active Software Assurance, by *virtual core*. In this brief, we address how use of Windows Server with virtualization technologies affects licensing. For more general information about Windows Server licensing, refer to the Window Server licensing guide.

Choosing between Datacenter and Standard and licensing based on physical cores or by virtual cores

Customers have the choice of licensing a server for either Windows Server Standard or Windows Server Datacenter. In either case, except when licensing by virtual core, all of the physical cores on the server must be licensed (subject to a minimum of 16 per server and eight per processor). Licensing Windows Server by virtual core requires the number of subscription licenses or licenses with active Software Assurance equal to the number of virtual cores in the VM (subject to a minimum of 8 licenses per VM and 16 licenses per customer).

Windows Server license terms permit customers to run:

(i) Standard on the licensed server (e.g., on the physical server and in one VM or in two VMs) (Windows Server Standard licenses equal to the number of *physical cores* (and subject to minimums) are assigned to the server),

(ii) Datacenter on the licensed server (e.g., on the physical server and in any number of VMs) (Windows Server Datacenter licenses equal to the number of *physical cores* (and subject to minimums) are assigned to the server), or

(iii) the licensed edition in one VM (subscription licenses or licenses with active Software Assurance equal to the number of *Virtual Cores* in the VM (and subject to minimums) for the appropriate edition of Windows Server assigned to the server).

Customers needing more than two VMs on a server licensed for Standard edition have the option of relicensing all of the *physical cores* on the server to permit use of the software in two additional VMs. Or, with subscription licenses or licenses with active Software Assurance, customers can license additional VMs by VM.

When licensing Standard based on *physical cores*, if the Physical OSE is used only to support VM workloads, the same licenses permit use of Windows Server as the host operating system.

Moving workloads or licenses

If customers are moving workloads between Licensed Servers, each of those servers must be fully licensed to support the workloads. License Mobility across Server Farms is not available for Windows Server, so each server must be licensed for peak capacity at all times. As an exception to this, when licensing Windows Server by VM, customers may move subscription licenses or licenses with Software Assurance at any time to another server within the same server Farm.

Using Windows Server in the cloud

As an alternative to running Windows Server in VMs on its own servers, customers have the option of running Windows Server in VMs on Azure under the Azure Hybrid Benefit. Customers with Windows Server subscription licenses or licenses with active Software Assurance are eligible for the Azure Hybrid Benefit. This supports use of up to two VMs per 16 qualifying Windows Server licenses. This means customers can allocate a set of 16 Windows Server core licenses to Azure and run one VM on a single Azure base instance with a number of virtual cores between one and 16. Or they can allocate a set of 16 core licenses and run two separate VMs, each with a number of virtual cores between one and eight. Customers can allocate additional sets of eight core licenses to run larger VMs or additional VMs. In all cases, customers will be required to pay for their Azure base instance, but savings can be substantial. For more information about this option, see Azure Hybrid Benefit. The terms and conditions governing Azure Hybrid Benefit are in the Microsoft Azure Services product entry in the Product Terms site.

As of October 2022, customers with subscription licenses or licenses with active Software Assurance also have the option to use software, including Windows Server, within an Authorized Outsourcer's data center under the Flexible Virtualization Benefit. An Authorized Outsourcer is a third party service provider that is not a Listed Provider and is not using a Listed Provider as a Data Center Provider as part of the outsourcing service. This benefit gives customers more options for deployment, so they have more flexibility for their cloud needs. Under the Flexible Virtualization Benefit, customers will be able to run their software on the servers of any Authorized Outsourcer's servers, regardless of whether they are dedicated or multitenant.

In all cases, customers' licenses, regardless of where they are deployed, support customers' internal use only.

Containers

Customers may also choose to deploy Windows Server Containers with or without Hyper-V isolation. Customers may use any number of OSEs instantiated as Windows Server Containers without Hyper-V isolation. Standard terms permit use in up to two Windows Server Containers with Hyper-V isolation, while Datacenter terms permit use of any number.

Access by users or devices

In addition to server software licenses, customers need access licenses for their users and devices that access their licensed servers under the Per Core/CAL license model. Access Licenses under this model include External Connector licenses and Client Access Licenses (CALs).

Each External Connector license allows any number of external users to access any number of instances of the server software on a particular server, such as the case of a server running virtualized workloads. External Connectors, like server software licenses, must be assigned to a single server, and may not be reassigned on a short-term basis (other than if you retire the server due to permanent hardware failure). However, while there are no *License Mobility across Server Farm* rights for the corresponding Windows Server licenses, these rights do apply to Windows Server External Connector licenses with Software Assurance coverage. This means customer can support workload mobility as it relates to external user access to its on-premises servers.

CALs are available per user and per device. Each CAL allows one user or device to access instances of the corresponding server software running on any of your licensed servers. Given this, virtualization of server workloads running on-premises does not impact how customers assign CALs. Note, however, that use of Windows Server running on Microsoft Azure under Azure Hybrid Benefit is governed by the Microsoft Azure terms and conditions, and accordingly does not require Windows Server base CALs for access. Conversely, use of Windows Server licensed by VM outside of Azure still requires CALs, regardless

of where it is deployed. If users or devices are accessing Windows Server on an Authorized Outsourcer's shared servers under the Flexible Virtualization Benefit, they must have subscription CALs or CALs with active Software Assurance.

Also note, for Windows Server, you do not need a CAL to access an instance of the server software running in the physical operating system environment (OSE) if that instance is being used solely to host virtualization workloads.

In addition to the Windows Server Licensing Guide, you can refer to the Introduction to Per Core Licensing and Basic Definitions Licensing Brief for more information about the Per Core licensing models.

Products in the Per Core licensing model

The following is applicable to products in the Per Core licensing model of the Product Terms, for example:

- SQL Server 2019 Standard and SQL Server 2019 Enterprise Core

Licensing

Choosing between Enterprise and Standard and licensing based on physical cores or by VM

Server application software under the Per Core license model is licensed one of two ways: by virtual machine or based on physical cores. Beginning with SQL Server 2022, the option to license by virtual machine will require subscription licenses or licenses with active Software Assurance. VMs running Standard editions are licensed by VM only. VMs running Enterprise editions are licensed by virtual machine or based on physical cores. In the case of virtual machine licensing, each virtual core allocated to a VM requires a core license, with a minimum of four core licenses per VM. Customers may run any number of instances of the server software in each licensed VM. Alternatively, when all physical cores on the server are licensed for SQL Server Enterprise, customers can run an unlimited number of instances of the software in a number of VMs equal to the number of core licenses assigned to the server. Customer has the option to run SQL Server in the physical OSE in lieu of one of the permitted VMs. For example, a four-processor server with four cores per processor—fully licensed with 16 core licenses—could run SQL Server software in up to 16 VMs, regardless of the number of virtual cores allocated to each VM.

With the addition of Software Assurance coverage for all Enterprise Edition core licenses or when licensed under subscription licenses (when the server is fully licensed based on physical cores), customers' use rights are expanded, allowing them to run any number of instances of the software in any number of VMs as well as in the physical OSE. This enables the handling of dynamic workloads and full utilization of hardware computing capacity.

Note: This benefit ends when Software Assurance coverage or subscription licenses expire.

Moving workloads or licenses

Customers who need to support workload mobility can also use License Mobility across Server Farm rights for Per Core products that grant License Mobility rights. This can be determined by looking at the Software Assurance section of the product entries in the Product Terms.

Using SQL Server in the cloud

Customers with licenses with active Software Assurance have License Mobility through Software Assurance rights. These rights permit customers to run VMs on Microsoft Azure or on shared servers of authorized mobility partners. The license terms for using server software under License Mobility through Software Assurance are found in the Software Assurance Benefits section of the Product Terms. For additional guidance regarding this subject, you can also refer to the License Mobility Overview.

Customers with subscription licenses or licenses with active Software Assurance also have the option of leveraging those to access Microsoft Azure Data Services in Azure under the Azure Hybrid Benefit. When customers allocate eligible SQL Server licenses to Azure, they have access to Microsoft Azure Data Services as detailed in the Azure Hybrid Benefit section of the Product Terms site. In all cases, customers will be required to pay for their Azure base instance, but savings can be substantial.

As of October 2022, customers with subscription licenses or licenses with active Software Assurance also have the option to use software, including SQL Server, within an Authorized Outsourcer's data center under the Flexible Virtualization Benefit. An Authorized Outsourcer is a third party service provider that is not a Listed Provider and is not using a Listed Provider as a Data Center Provider as part of the outsourcing service. This benefit gives customers more options for deployment, so they have

more flexibility for their cloud needs. Under the Flexible Virtualization Benefit, customers will be able to run their software on the servers of any Authorized Outsourcer's servers, regardless of whether they are dedicated or multitenant.

In all cases, customers' licenses, regardless of where they are deployed, support customers' internal use only.

Products in the Server/CAL licensing model

The following is applicable to Products in the Server/CAL licensing model of the Product Terms, for example:

- Exchange Server 2019 and SQL Server 2019

Licensing

Server application software under the Server/CAL license model is licensed by running instance. Customers running multiple VMs on a server need one license for each VM in which they run the software. SQL Server requires one license per VM, but as an exception to the Server/CAL licensing model, customers can run multiple instances of SQL Server within that VM.

Moving workloads or licenses

Customers who need to support workload mobility can use License Mobility across Server Farm rights for Server/CAL products that grant License Mobility rights. This can be determined by looking at the Software Assurance section of the product entries in the Product Terms. Additionally, some Server/CAL products grant License Mobility through Software Assurance rights. These rights permit customers to run their server software on Microsoft Azure or on shared servers of authorized mobility partners. The license terms for using server software under License Mobility through Software Assurance are found in the Software Assurance Appendix to the Product Terms. For additional guidance regarding this subject, you can also refer to the License Mobility Overview.

As of October 2022, customers with subscription licenses or licenses with active Software Assurance have the option under the Flexible Virtualization Benefit to deploy those licenses within an Authorized Outsourcer's data center on either shared or dedicated servers, subject to the same terms that apply in their own data centers. In all cases, customers' licenses, regardless of where they are deployed, support customers' internal use only.

Access by users or devices

As with Per Core/CAL products, in addition to server software licenses, customers need access licenses for their users and devices that access their licensed servers under the Server/CAL license model. Access Licenses under this model include Client Access Licenses (CALs). CALs are available per user and per device. All accessing users and devices require CALs for SQL Server; unlike Windows Server, there is no External Connector option for external users. Unlike SQL Server and Windows Server, external user access rights for productivity servers released since 2013 are included with the server license. For users and devices requiring CALs, each CAL allows one user or device to access instances of the corresponding server software across a customer's licensed servers. Given this, virtualization of server workloads running on-premises does not impact how customers assign CALs. Note, however, customers who move virtualized workloads from their own data centers to the public cloud using License Mobility through Software Assurance or the Flexible Virtualization Right must comply with the terms associated with that offering, including ensuring that they maintain Software Assurance on CALs or use subscription CALs.

Products in the Management Servers licensing model

The following is applicable to Products in the Management Servers licensing model of the Product Terms, for example:

- System Center 2022 Datacenter
- System Center 2022 Standard

Licensing

Choosing between Enterprise and Standard and licensing based on physical cores or by VM

Server management using System Center under the Management Servers license model is licensed based on physical cores, or with subscription licenses or licenses with active Software Assurance, by VM. Customers have the choice of licensing a server for either System Center Standard or System Center Datacenter. In either case, except when licensing by VM, all of the physical cores on the server must be licensed (subject to a minimum of 16 per server and eight per processor). Licensing System Center by VM requires the number of licenses equal to the number of virtual cores in the VM (subject to a minimum of 8 licenses per VM and 16 licenses per customer). This latter minimum means a customer must have at least 16 subscription licenses or licenses with active Software Assurance in order to license by VM.

System Center license terms permit customers to manage:

(i) up to two operating system environments on the licensed server using Standard (e.g., the physical operating system environment and one VM, or two VMs) (System Center Standard licenses equal to the number of physical cores (and subject to minimums) are assigned to the managed server),

(ii) unlimited VMs on the licensed server using Datacenter (System Center Datacenter licenses equal to the number of physical cores (and subject to minimums) are assigned to the managed server), or

(iii) one VM (licenses equal to the virtual cores in the VM (and subject to minimums) for the appropriate edition of System Center that is assigned to the server on which the managed VM is deployed).

Customers needing to manage more than two VMs on a server licensed for Standard edition have the option of relicensing all the physical cores on the server to permit management of two additional VMs. Or, with subscription licenses or licenses with active Software Assurance, customers can license additional managed VMs by VM. When licensing based on physical cores, if the Physical OSE is used only to support VM workloads, the same licenses permit use of System Center to manage two VMs plus the host operating system.

Moving workloads or licenses

If customers are moving workloads between licensed servers each of those servers must be fully licensed to support management of the VMs running those workloads. As an exception to this, when licensing System Center by VM, customers may move subscription licenses or licenses with Software Assurance at any time to another server within the same server farm.

Customers who need to support workload mobility can also use License Mobility across Server Farm rights for Management products that grant License Mobility rights. This can be determined by looking at the Software Assurance section of the product entries in the Product Terms.

Using System Center in the cloud

Some Management products grant *License Mobility through Software Assurance* rights. These rights permit customers to manage VMs running on Microsoft Azure or on shared servers of authorized mobility partners. The license terms for using server software under *License Mobility through Software Assurance* are found in the Software Assurance section of the Product Terms. For additional guidance regarding this subject, you can also refer to the License Mobility Overview.

Customers with subscription licenses or licenses with active Software Assurance also have the option to use System Center to manage servers they use within an *Authorized Outsourcer's* data center under the Flexible Virtualization Benefit. An Authorized Outsourcer is a third party service provider that is not a Listed Provider and is not using a Listed Provider as a Data Center Provider as part of the outsourcing service. This benefit gives customers more options for workload deployment, so they have more flexibility for their cloud needs. Under the Flexible Virtualization Benefit, customers will be able manage workloads on the servers of any Authorized Outsourcer, regardless of whether the servers are dedicated or multitenant.

In all cases, customers' licenses, regardless of where managed workloads are deployed, support customers' internal use only.

Note: Separate licenses are not required to run the management console on the server used to manage customers' licensed servers.

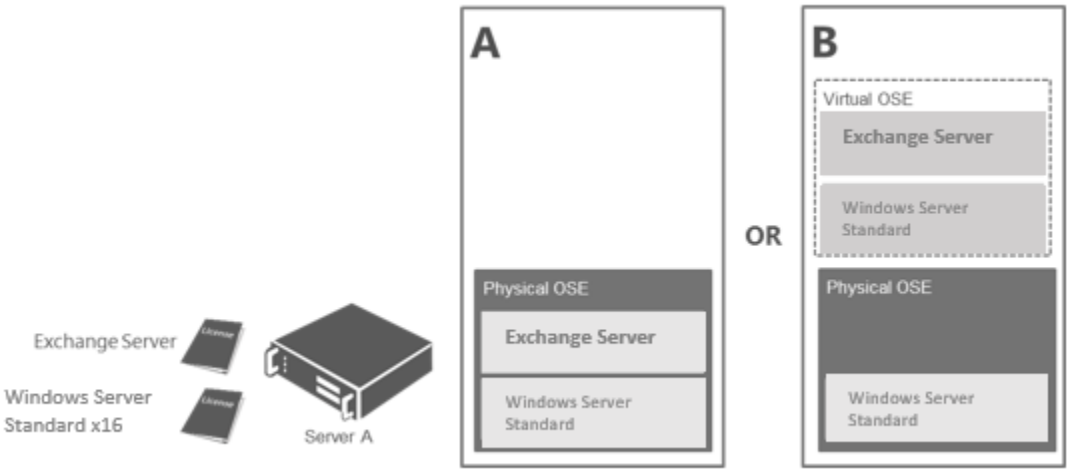
For additional information on server management licensing and System Center 2022, please visit the System Center product licensing page.

Products in the Specialty Server licensing model
The following is applicable to Products in the Specialty Server licensing model of the Product Terms, for example: • Windows Server 2019 Essentials
Licensing
The license terms for products in the Specialty Licensing model vary by product. We specifically address Windows Server Essentials in this brief. Each Essentials license covers a single server. Customers may run the server software in one physical OSE and in one VM. This VM can run only Windows Server Essentials. If customer runs both permitted instances, the instance in the physical OSE can only be used to manage the VM. You should refer to the Product Terms for virtualization rights for other products licensed in the Specialty Server licensing model.

The following sections provide examples for server licensing models and clarify enhancements for specific products.

License by running instance

Each license for Exchange Server grants customers the right to run one instance of Exchange Server on the server it is assigned to. Customers can run that instance in either the physical OSE or a VM. Customers can create and store any number of instances of Exchange Server on any of their servers or storage media[2]. As Figure 1 below illustrates, if a customer assigns an Exchange Server license to Server A, it can run one instance of Exchange Server in the physical OSE or in a VM.



[2] *Customers can create instances of the software only to exercise their right to run instances of the software. They do not have the right, for example, to create instances of the software to make them available for distribution outside their organization.*

Figure 1: Running an instance of Exchange Server in a physical or virtual OSE

In Figure 2 below, the storage area network (SAN) contains six VHD files, each with an instance of Windows Server and an instance of Exchange Server. Two VHD files are deployed from the library onto the server simultaneously, depending on the domain that needs the support of additional instances. This SAN scenario illustrates the deployment flexibility enabled by the licensing model. Instead of 128 licenses (16/server), the customer needs to assign only 16 licenses for Windows Server Standard to Server A because each fully licensed server may run Windows Server in up to two OSEs.

Similarly, instead of eight licenses, the customer needs to assign only two licenses for Exchange Server because only two instances of Exchange Server are running at a time. By assigning those licenses to Server A, the customer can also create any number of non-running instances of Windows Server and Exchange Server on any of its servers or storage media, including a server's hard disk or the SAN.

It is worthwhile to underscore that customers wanting a lightly virtualized environment can fully re-license a server to have the right to run more instances. For example, in the following figure, one Windows Server Standard license has been assigned to the server. That license permits use in two VMs and in the physical OSE (when used only to host and manage the VMs). If the customer fully re-licenses the same server based on physical cores, it can run the software in up to two additional VMs (i.e.,in up to four VMs simultaneously). Customers using Windows Server under subscription licenses or licenses with active Software Assurance have the alternative of licensing additional VMs by VM. If customers want to create a highly virtualized environment, then they should assign Windows Server Datacenter licenses, which allows them to run an unlimited number of instances of Windows Server on the licensed server.

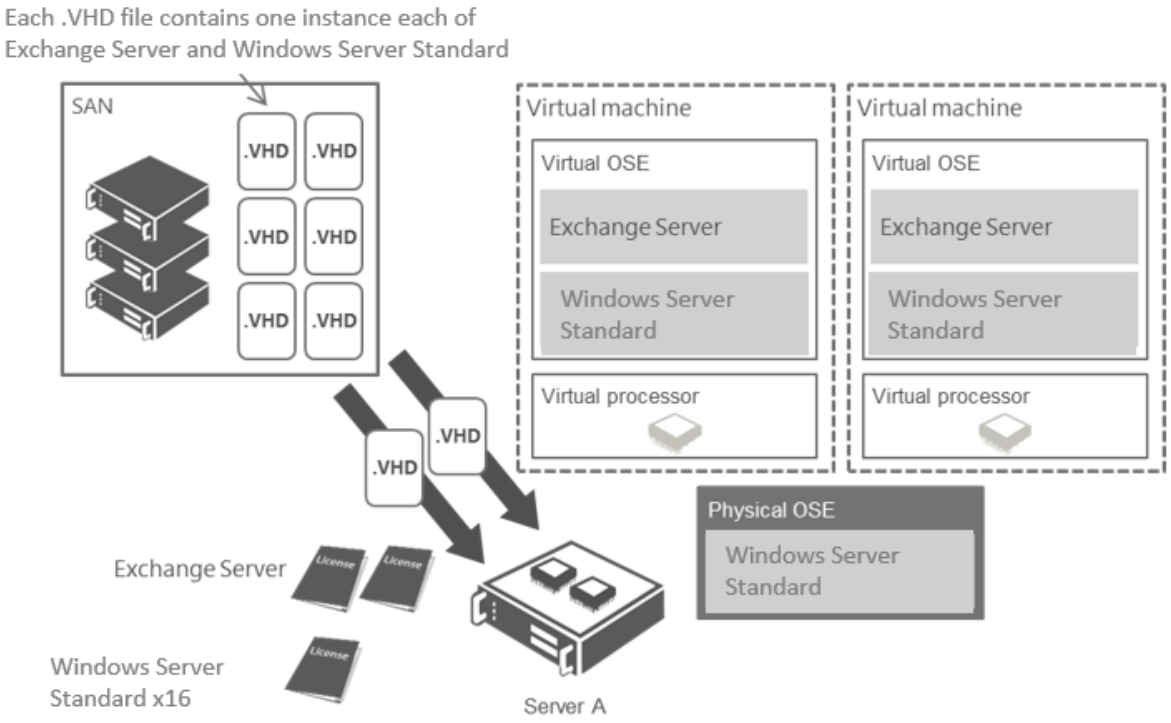


Figure 2: Applying the licensing model to a SAN scenario

Moving instances of software

The ability to move instances of the software is ideal for datacenters, where workloads move from one server to another. Regardless of whether a datacenter uses server blades, rack-mounted servers, or virtualization technology, it is easy to move an instance of software between licensed servers.

For example, in Figure 3, the customer assigned Server A and Server B one set of licenses each for Windows Server Standard and one license each for Exchange Server. Initially, one instance of Exchange Server is running on Server A. If Server A becomes overloaded, the customer can choose to move the running instance of Exchange Server to Server B, because Server B also has an Exchange Server license assigned to it. The customer is allowed to run Windows Server Standard in two VMs and one instance of Exchange Server on Server A at a time. Similarly, the customer can run Windows Server Standard in two VMs and one instance of Exchange Server on Server B at a time.

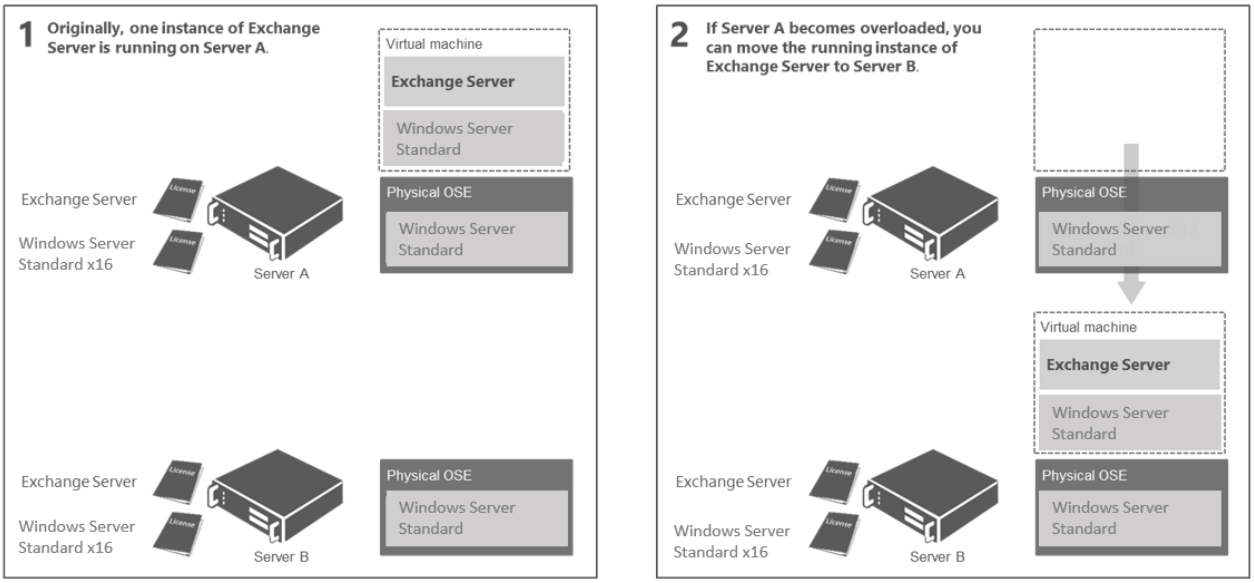


Figure 3: Moving instances of software from one server to another

Reassigning a software license

Software mobility supports workload balancing across virtualized servers, but the full benefit of mobility requires license mobility. Moving an instance of software from one server to another is not the same as reassigning a software license from one server to another. Moving an instance of software means to move the software bits from one licensed server to another. Reassigning a software license means to assign that license to another server so that it becomes the server licensed to run that software. Base license terms prohibit short-term license reassignment. This means licenses can be moved, but not more frequently than 90-day intervals.

For example, in Figure 4, VMs with Windows Server and Exchange Server move from Server A to Server B and the licenses to run the software are reassigned from Server A to Server B. If the licenses are not reassigned, Server B cannot run the software. By reassigning the licenses, however, Server B is now the new server licensed to run the software and Server A is no longer the licensed server. Licenses cannot be moved back to Server A for 90 days.

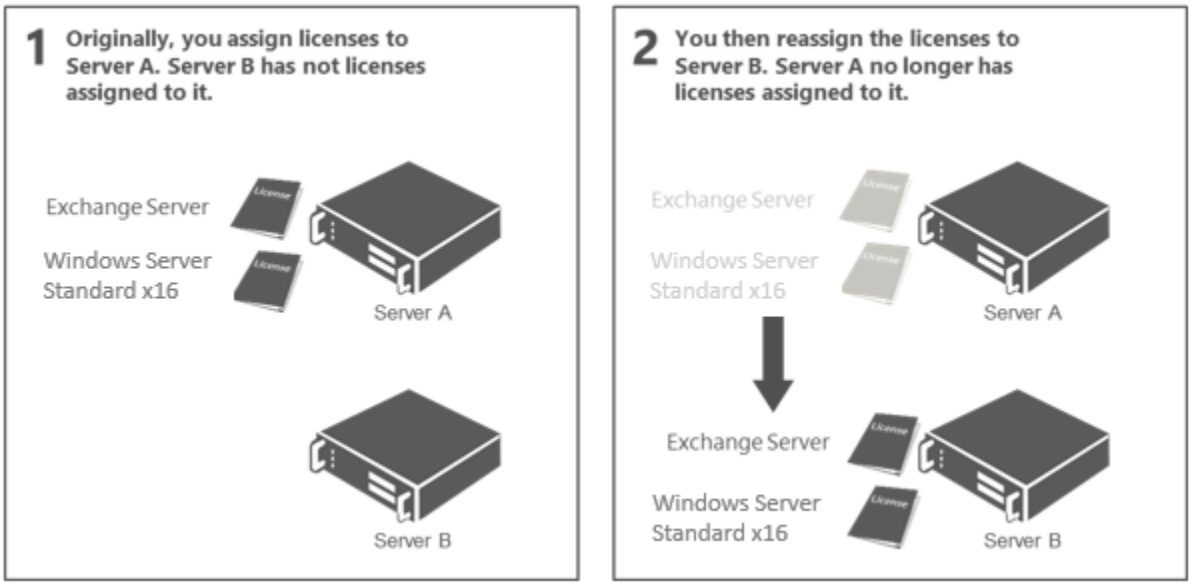


Figure 4: Reassigning a software license from one server to another

For certain server software subscription licenses or licenses with active Software Assurance customers have License Mobility within a server farm. This means licenses can be moved from server to server more often than 90-day intervals. For the server farm definition and more information about the server software license mobility rule, including the list of eligible server and External Connector licenses, please read the License Mobility Overview.

Subscription licenses and licenses with active Software Assurance for certain products that are deployed by VM are also eligible for reassignment to another server in the same server farm at any time.

Licensing client devices with multiple OSEs

You only need one device CAL for each device that accesses the server software, regardless of the number of VMs on the device. As demonstrated in Figure 10 below, even if the desktop PC has multiple VMs[3], and each of those OSEs is separately accessing Windows Server on servers A and B, you need only one CAL for the desktop PC.[4]

[3] *In Figure 5, the desktop PC is running on virtualization technology. For clarity, since this is not the subject demonstrated in this illustration, the licenses necessary to allow for multiple instances of Windows Enterprise are not shown.*

[4] *The multiplexing rule applies to CALs, even with virtualization technology. In Figure 5, if servers A and B are used to pool access for multiple devices or users, each of those end users and devices requires a CAL. Please see "Multiplexing" in the Universal License Terms of the Product Terms.*

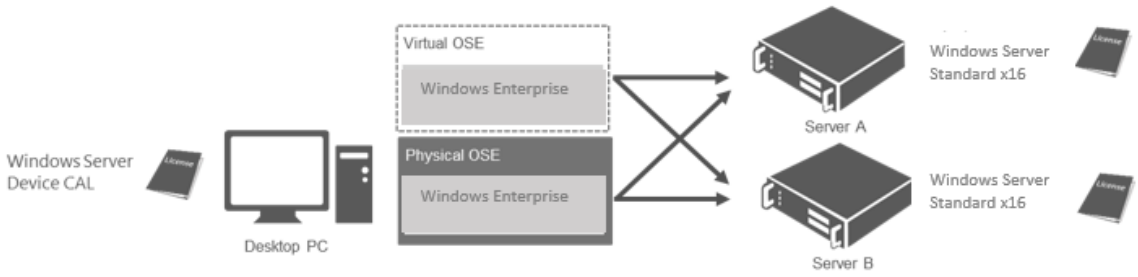


Figure 5: Device CALs are licensed per device, not per OSE on that device.

CALs permit access to your instances of earlier versions, but not later versions, of the server software, unless stated otherwise in the Product Terms. If you are accessing instances of an earlier version run pursuant to downgrade rights, you can use CALs that correspond to the version of the software you are running.

Management licenses licensed per managed OSE or per user

To license your devices for management by Microsoft System Center, which is under the Management Servers licensing model, you must acquire and assign the appropriate Management License (ML) for the OSE or VM or the user of the VM that will be managed. Included with the ML are the rights to run the corresponding management server software and SQL Server technology.

Licenses required for non-servers (clients)

There are two types of client MLs: one for managed operating system environments (or OSEs) and one for users. You can choose either type or a combination of both. For users with virtualized clients or multiple devices, the per user option may be a more economical choice.

OSE client MLs

Each OSE client ML permits customers to use the Management Server Software to manage one OSE. That OSE can be used by any number of users. Provided customers acquire and assign OSE client MLs to a device as described here, they can manage the OSEs on that device (one OSE per license). If the device has multiple VMs, the customer needs MLs for each VM and the host OSE.

User client MLs

Each user client ML permits customers to use the Management Server Software to manage one user's VMs. Those VMs can be used on any number of devices. Provided customers acquire and assign a user client ML to a user as described here, they can manage all of the VMs used by that user. If customers have more than one user using an VM, and are not licensed by OSE, they must assign a user client ML to each of the users.

In some cases, a third type of client ML is available. The Enterprise CAL Suite and Core CAL Suite and their respective CAL Suite Bridges are device client MLs. A device client ML permits customers to use the Management Server Software to manage all of the OSEs (host and all VMs) on a device. Those OSEs can be used by any number of users. This can be a good choice for virtualized environments or shared environments. Provided customers acquire and assign a device client ML to their devices as described here, they can manage all of the VMs plus the

host OSE on those devices. Please refer to the System Center Product Entry in the Product Terms for which suites permit management.

Additional resources

Licensing guides:

- All Licensing guides

Azure Hybrid Benefit FAQ

License Mobility overview

Licensing briefs:

- Licensing Windows Server for use with virtualization technologies
- Introduction to Per Core licensing and basic definitions
- All Licensing briefs