SQL Server 2016 Licensing Datasheet

Product Overview

SQL Server 2016 delivers mission critical performance across all workloads with in-memory built-in, faster insights from any data with familiar tools, and a platform for hybrid cloud enabling organizations to easily build, deploy, and manage solutions that span on-premises and cloud.

Editions Overview

The SQL Server 2016 editions align with how customers are deploying applications and solutions:

- **Enterprise Edition** for mission critical applications and large scale data warehousing
- **Standard Edition** for basic database, reporting and analytics capabilities

The editions are offered in a straightforward, tiered model that creates greater consistency across the product editions, features and licensing.

Enterprise Edition includes all the capabilities available in SQL Server 2016, while Standard Edition includes features to enable non critical analysis, business intelligence and database capabilities.

SQL Server 2016 is also available in free Developer and Express editions. Web Edition is offered in the Services Provider License Agreement (SPLA) program only.

SQL Server 2016 Licensing Models

SQL Server 2016 offers customers a variety of licensing options aligned with how customers typically purchase specific workloads. There are two main licensing models that apply to SQL Server:

SERVER + CAL: Provides the option to license users and/or devices, with low cost access to incremental SQL Server deployments.

- Each server running SQL Server software requires a server license.
- Each user and/or device accessing a licensed SQL Server requires a SQL Server CAL that is the same version or newer – for example, to access a SQL Server 2012 Standard Edition server, a user would need a SQL Server 2012 or 2016 CAL.
- Each SQL Server CAL allows access to multiple licensed SQL Servers, including Standard Edition and legacy Business Intelligence and Enterprise Edition Servers.

PER CORE: Gives customers a more precise measure of computing power and a more consistent licensing metric, regardless of whether solutions are deployed on physical servers on-premises, or in virtual or cloud environments.

- Core based licensing is appropriate when customers are unable to count users/devices, have Internet/Extranet workloads or systems that integrate with external facing workloads.
- To license a physical server—when running SQL Server in a **physical OSE**—all physical cores on the server must be licensed.
- A minimum of four core licenses are required for each physical processor on the server.

SQL Server 2016 Editions availability by licensing model:

SQL Server 2016 Edition	Licensing Options	
	Server + CAL	Per Core
Enterprise		•
Standard	•	•
Developer	Free edition	
Express	Free edition	

Special Note for Enterprise Edition Users: With the introduction of SQL Server 2012, Enterprise Edition was removed from the Server + CAL model and new server licenses are no longer available. However, customers with active Software Assurance (SA) coverage can continue to renew SA on Enterprise Edition servers and upgrade to SQL Server 2016 software. Note: for customers who upgrade to SQL Server 2016, a 20 core limit applies to the software.

Licensing for Virtualization

SQL Server 2016 offers virtualization rights, options and benefits to provide flexibility for customers deploying in virtual environments. There are two primary virtualization licensing options in SQL Server 2016 – the ability to license individual virtual machines and the ability to license for maximum virtualization in highly virtualized and private cloud environments.

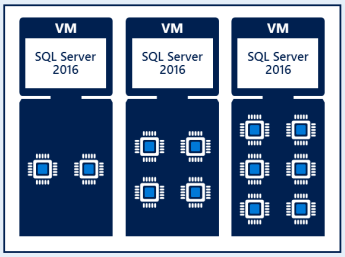
INDIVIDUAL VIRTUAL MACHINES

As hardware capabilities grow, it continues to be more common for each database to use a fraction of its server's computing power. When deploying databases on Virtual Machines (VMs) that use just a fraction of a physical server, savings can be achieved by licensing individual VMs.

- To license a VM with core licenses, purchase a core license for each virtual core (virtual thread) allocated to the VM (with a minimum of 4 core licenses per VM).
- To license a single VM with a server license (for Standard Edition only), purchase a server license and matching SQL Server CALs for each user or device.
- Each licensed VM covered with SA can be moved frequently within a server farm, or to a third-party hoster or cloud services provider, without the need to purchase additional SQL Server licenses.

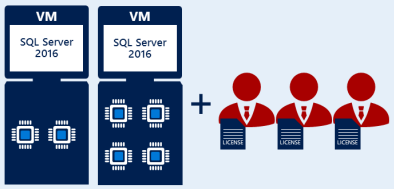
SQL Server 2016 Licensing Datasheet

How to License VMs with Core Licenses
- License the virtual cores in each virtual machine
- There is a minimum of 4 core licenses required for each virtual machine



Virtual cores	2	4	6		
Licenses	4	4	6	14	Total core licenses Purchase seven 2-pack SKUs of core licenses

How to License VMs with Server Licenses + CALs
- License each VM with a server license
- License each user or device with a CAL



Server licenses	1	1				2	Total server licenses
Client access licenses			1	1	1	3	Total CAL licenses

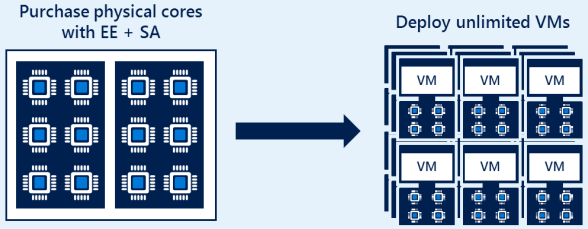
Note: When licensing VMs under the Server + CAL model, the number of virtual cores does not affect the number of server licenses required.

HIGH DENSITY VIRTUALIZATION

Further savings can be achieved by operating a SQL Server private cloud. This is a great option for customers who want to take advantage of the full computing power of their physical servers and have very dynamic provisioning and de-provisioning of virtual resources.

- Customers can deploy an unlimited number of VMs on the server and utilize the full capacity of the licensed hardware, by fully licensing the server (or server farm) with Enterprise Edition core licenses and SA coverage based on the total number of physical cores on the servers.
- SA enables the ability to run an unlimited number of virtual machines to handle dynamic workloads and fully utilize the hardware's computing power.

Licensing SQL Server Private Clouds:
- License all the physical cores on the server with Enterprise Edition core licenses and cover with SA
- Deploy an unlimited number of VMs

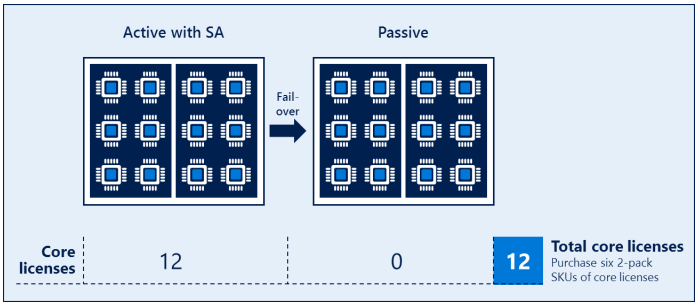


Physical cores	6	6	12	Total physical cores
Core licenses	6	6	12	Total core licenses

Licensing for High Availability

SQL Server software can be configured so that if one server fails, its processing will be picked up, recovered and continued by another server. Each active server licensed with SA coverage allows the installation of a single passive server used for fail-over support.

- The passive secondary server used for failover support does not need to be separately licensed for SQL Server as long as it is truly passive. If it is serving data, such as reports to clients running active SQL Server workloads, or performing any "work" such as additional backups from secondary servers, then it must be licensed for SQL Server.
- The active server license (s) must be covered with SA, and allows for one passive secondary SQL Server, with up to the same amount of compute as the licensed active server, only.



Core licenses	12	0	12	Total core licenses Purchase six 2-pack SKUs of core licenses

Licensing for Non-Production Use

SQL Server 2016 Developer Edition provides a fully featured version of SQL Server software—including all of the features and capabilities of Enterprise Edition—licensed for development, test and demonstration purposes only.

Customers may install and run the SQL Server Developer Edition software on any number of devices. This is significant, because it allows customers to run the software on multiple devices (for testing purposes, for example) without having to license each non-production server system for SQL Server.

A production environment is defined as an environment that is accessed by end-users of an application (such as an Internet website) and that is used for more than gathering feedback or acceptance testing of that application.

SQL Server 2016 Developer Edition is now a free product, available for download from the Visual Studio Dev Essentials program. For more information on free Visual Studio Dev Essentials program, including how to register, visit:

https://www.visualstudio.com/en-us/products/visual-studio-dev-essentials-vs.aspx