

SQL SERVER 2019 LICENSING DATASHEET

Product Overview

SQL Server 2019 now comes with Apache Spark and Hadoop Distributed File System (HDFS) for intelligence over all your data. With SQL Server 2019 Enterprise and Standard edition, customers can deploy Big Data Clusters. SQL Server 2019 Big Data Clusters makes it easier to manage a big data environment. It provides key elements of a data lake—Hadoop Distributed File System (HDFS), Spark, and analytics tools—deeply integrated with SQL Server and fully supported by Microsoft. SQL Server 2019 Big Data Clusters can be easily deployed using Linux containers on a Kubernetes-managed cluster.

SQL Server Big Data Clusters: SQL Server 2019 Big Data Clusters makes it easier to manage a big data environment. It provides key elements of a data lake—Hadoop Distributed File System (HDFS), Spark, and analytics tools—deeply integrated with SQL Server and fully supported by Microsoft. A SQL Server 2019 Big Data Cluster consists of two distinct components

- **SQL Server Master Instance** is SQL Server 2019 Enterprise or Standard Edition on Linux with all the typical features.
- **Big Data Nodes** are the worker nodes with HDFS, Spark and SQL Server engine for scale-out storage and compute.

Editions overview

The SQL Server 2019 editions align with how customers are deploying applications and solutions:

- **Enterprise Edition** is ideal for applications requiring mission critical in-memory performance, security and high availability
- **Standard Edition** delivers fully featured database capabilities for mid-tier applications and data marts

SQL Server 2019 is also available in free Developer and Express editions. Web Edition is offered in the Services Provider License Agreement (SPLA) program only.

Additionally, for SQL Server Enterprise and Standard core, customers can purchase **SQL Server Big Data Node cores** for worker nodes of SQL Server 2019 Big Data Clusters.

SQL Server 2019 licensing models

SQL Server 2019 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:

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.

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 2019 CAL.
- Each SQL Server CAL allows access to multiple licensed SQL Servers, including Standard Edition and legacy Business Intelligence and Enterprise Edition Servers.

SQL Server 2019 Editions availability by licensing model:

| SQL Server 2019 Edition | Licensing Options | |
|-------------------------|-------------------|----------|
| | Server + CAL | Per Core |
| Enterprise | | • |
| Standard | • | • |
| Developer | Free edition | |
| Express | Free edition | |

SQL SERVER 2019 LICENSING DATASHEET

Additionally, for SQL Server Enterprise and Standard core, customers can purchase SQL Server Big Data Node cores worker nodes for SQL Server 2019 Big Data Clusters.

| SQL Server 2019 Big Data Node | Licensing Options | |
|---------------------------------|-------------------|----------|
| | Server + CAL | Per Core |
| SQL Server Big Data Node cores* | | • |

*SQL Server Big Data Node cores are only for SQL Server Big data nodes. Master instances should be licensed with Enterprise or Standard Edition.

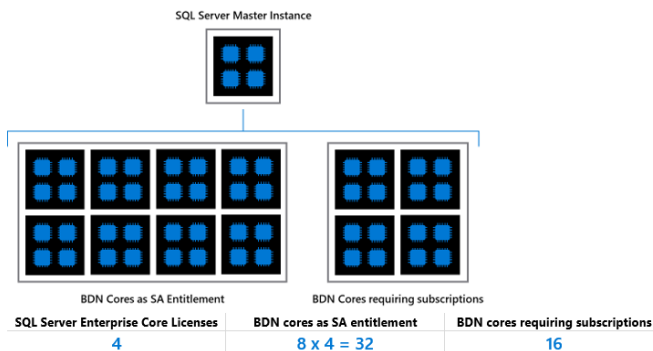
SQL Server 2019 Big Data Cluster licensing

To license SQL Server 2019 Big Data Cluster, both components must be licensed

- **SQL Server Master Instance** - The Server running the SQL Server Master Instance must be assigned an appropriate number of SQL Server 2019 Enterprise or Standard Edition core licenses.
- **SQL Server Big Data Nodes** – Servers used for SQL Server Big data nodes must be licensed using SQL Server Big Data node cores.

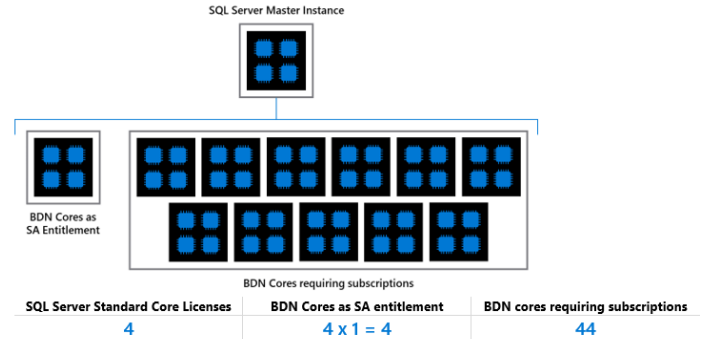
Additionally, SQL Server SA benefit for Big Data Nodes core entitlement will provide a limited number of Big Data node cores at no additional costs. For deployments larger than the SA benefit, servers used for additional Big Data node cores must be licensed with SQL Server Big Data Node Cores.

- SQL Server 2019 Big Data Clusters with Enterprise Edition as Master instance get 8 times the master instance cores as Big Data Nodes core SA entitlement



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- SQL Server 2019 Big Data Clusters Standard Edition as Master instance get the same number of Big Data node cores licenses as the number of licenses for master instance for Big Data Nodes core SA entitlement



Benefits of SQL Server 2019 with SA

Software Assurance coverage helps customers take full advantage of their SQL Server license investment. With SA, SQL Server customers unlock valuable benefits including:

| Software Assurance Benefit | SQL Server 2019 Editions | |
|---|--------------------------|------------|
| | Standard | Enterprise |
| Big Data Nodes core entitlement ^{New} | • | • |
| Fail-Over servers for disaster recovery ^{New} | • | • |
| Fail-Over servers for disaster recovery in Azure ^{New} | • | • |
| Fail-Over servers for high availability | • | • |
| Unlimited virtualization | | • |
| Machine Learning Server for Hadoop | | • |
| Power BI Report Server | | • |

By combining mission critical performance, scale and availability of SQL Server Enterprise Edition with the benefits provided through SA, customers unlock the full power of SQL Server:

- Setup a Big Data Cluster for big data/Hadoop analytics workloads
- Stay current with all SQL Server features

SQL SERVER 2019 LICENSING DATASHEET

- Access an unlimited number of virtual machines
- Modernize to the cloud with existing licenses
- Take advantage of high availability scenarios at no additional licensing cost
- Extend their data estate through advanced analytics on Hadoop
- Generate data visualizations on premises with Power BI Report Server

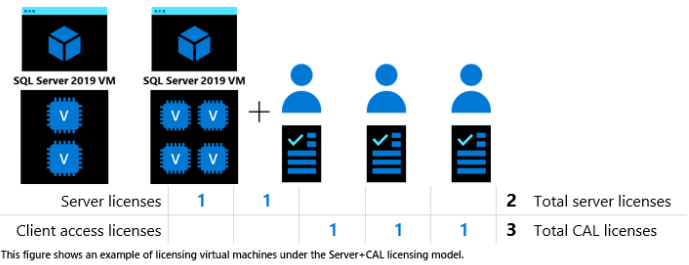
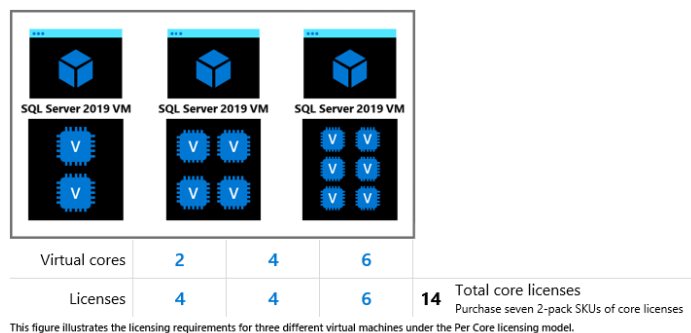
Licensing for virtualization and containers

SQL Server 2019 offers use rights for virtual machines and containers, to provide flexibility for customers' deployments. There are two primary licensing options for virtual machines and containers in SQL Server 2019 – the ability to license individual virtual machines and containers and the ability to license for maximum densities in highly virtualized or high-density container environments.

INDIVIDUAL VIRTUAL MACHINES OR CONTAINERS

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) or containers that use just a fraction of a physical server, savings can be achieved by licensing individual VMs or containers.

Note: For licensing, Containers follow the same rules as licensing SQL Server for virtual machines.

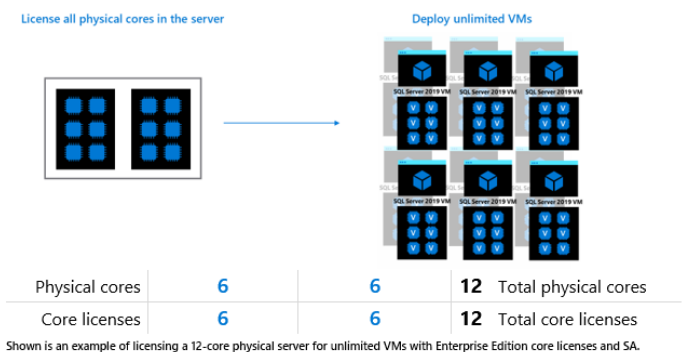


Note: When licensing VMs or containers under the Server + CAL model, the number of virtual or physical cores does not affect the number of server licenses required.

- To license a VM or container with core licenses, purchase a core license for each virtual core (virtual thread) allocated to the VM or the number of cores configured for access by the container (with a minimum of 4 core licenses per VM or container).
- To license a single VM or container with a server license (for Standard Edition only), purchase a server license for each VM or container, and a CAL for each user or device.
- Each licensed VM or container 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.

HIGH-DENSITY VIRTUALIZATION OR CONTAINER DEPLOYMENT

Further savings can be achieved by licensing SQL Server high density VM or container deployments. 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 or container images.



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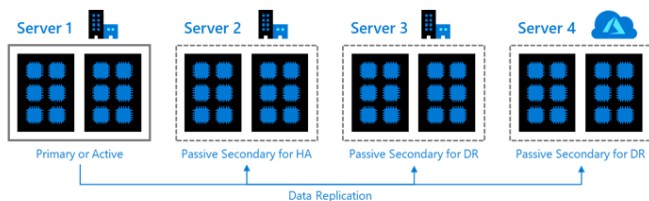
- Customers can deploy an unlimited number of VMs or containers on the server and utilize the full capacity of the licensed hardware, by fully licensing the server (or server farm) with Enterprise Edition core licenses and SA coverage based on the total number of physical cores on the servers.
- SA enables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

Licensing for high availability and Disaster Recovery

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.

For each on-prem server with SQL Server 2019 and covered by active SA, customers can use the following passive replicas in anticipation of a failover event:

- One passive fail-over replica for High Availability in a separate server
- One passive fail-over replica for Disaster Recovery in a separate server
- One passive fail-over replica for Disaster Recovery in a single VM on Azure



| | | | |
|---------------|----|----|---|
| Active cores | 12 | | 48 Total cores |
| Passive cores | | 36 | |
| Core licenses | 12 | 0 | 12 Total core licenses Purchase six 2-pack SKUs of core licenses |

Licensing for non-production use

SQL Server 2019 Developer Edition provides a fully featured version of SQL Server software—including all 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 2019 Developer Edition is a free product, available for download at the SQL Server Application Development site: aka.ms/SQLServerAppDev

Developers can also gain access to SQL Server Developer through the Visual Studio Dev Essentials program, which also provides access to many other valuable developer resources. For more information visit: aka.ms/VisualStudioDev