Hardware and Software Requirements for Installing SQL Server 2016

SQL Server 2016

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Applies To: SQL Server 2016

The topic lists the minimum hardware and software requirements to install and run SQL Server 2016.

Try it out:

- Download SQL Server 2016 from the **Evaluation Center**

- Have an Azure account? Then go **Here** to spin up a Virtual Machine with SQL Server 2016 already installed.

For all editions of SQL Server 2016, the following considerations apply:

- We recommend that you run SQL Server 2016 on computers with the NTFS or ReFS file formats. Installing SQL Server 2016 on a computer with FAT32 file system is supported but not recommended as it is less secure than the NTFS or ReFS file systems.

- SQL Server Setup will block installations on read-only, mapped, or compressed drives.

- The installation of SQL Server 2016 fails if you launch setup through Remote Desktop Connection with the media on a local resource in the RDC client. To install remotely the media must be on a network share or local to the physical or virtual machine. SQL Server installation media may be either on a network share, a mapped drive, a local drive, or presented as an ISO to a virtual machine.

- SQL Server Management Studio installation requires installing .NET 4.6.1 as a pre-requisite. .NET 4.6.1 will be automatically installed by setup when SQL Server Management Studio is selected.

- SQL Server Setup installs the following software components required by the product:

    ◦ SQL Server Native Client

    ◦ SQL Server Setup support files

- For minimum version requirements to install SQL Server on Windows Server 2012 or Windows 8, see Installing SQL Server on Windows Server 2012 or Windows 8 (http://support.microsoft.com/kb/2681562).

This topic contains the following sections:

- Hardware and Software Requirements

Hardware and Software Requirements

The following requirements apply to all SQL Server 2016 installations:

Component	Requirement
.NET Framework	SQL Server 2016 RC1 and later require .NET Framework 4.6 for the Database Engine, Master Data Services, or Replication. SQL Server 2016 setup automatically installs .NET Framework. You can also manually install .NET Framework from Microsoft .NET Framework 4.6 (Web Installer) for Windows. For more information, recommendations, and guidance about .NET Framework 4.6 see .NET Framework Deployment Guide for Developers. Windows 8.1, and Windows Server 2012 R2 require KB2919355 before installing .NET Framework 4.6.
Network Software	Supported operating systems for SQL Server 2016 have built-in network software. Named and default instances of a stand-alone installation support the following network protocols: Shared memory, Named Pipes, TCP/IP and VIA. Note: Shared memory and VIA are not supported on failover clusters. Also note that the VIA protocol is deprecated. This feature will be removed in a future version of Microsoft SQL Server. Avoid using this feature in new development work, and plan to modify applications that currently use this feature. For more information about Network Protocols and Network Libraries, see Network Protocols and Network Libraries.
Hard Disk	SQL Server 2016 requires a minimum of 6 GB of available hard-disk space. Disk space requirements will vary with the SQL Server 2016 components you install. For more information, see Hard Disk Space Requirements later in this topic. For information on supported storage types for data files, see Storage Types for Data Files.
Drive	A DVD drive, as appropriate, is required for installation from disc.

Component	Requirement
Monitor	SQL Server 2016 requires Super-VGA (800x600) or higher resolution monitor.
Internet	Internet functionality requires Internet access (fees may apply).

Note: Running SQL Server 2016 on a virtual machine will be slower than running natively because of the overhead of virtualization.

There are additional hardware and software requirements for the PolyBase feature. For more information, see Get started with PolyBase.

Processor, Memory, and Operating System Requirements

The following memory and processor requirements apply to all editions of SQL Server 2016:

Component	Requirement
Memory*	**Minimum:** Express Editions: 512 MB All other editions: 1 GB **Recommended:** Express Editions: 1 GB All other editions: At least 4 GB and should be increased as database size increases to ensure optimal performance.
Processor Speed	**Minimum:** x64 Processor: 1.4 GHz **Recommended:** 2.0 GHz or faster
Processor Type	x64 Processor: AMD Opteron, AMD Athlon 64, Intel Xeon with Intel EM64T support, Intel Pentium IV with EM64T support

✍ **Note**
Installation of SQL Server 2016 is supported on x64 processors only. It is no longer supported on x86 processors.

*The minimum memory required for installing the Data Quality Server component in Data Quality Services (DQS) is 2 GB of RAM, which is different from the SQL Server 2016 minimum memory requirement. For information about installing DQS, see Install Data Quality Services.

WOW64 Support:

WOW64 (Windows 32-bit on Windows 64-bit) is a feature of 64-bit editions of Windows that enables 32-bit applications to run natively in 32-bit mode. Applications function in 32-bit mode, even though the underlying operating system is a 64-bit operating system. WOW64 is not supported for SQL Server 2016 installations. However, Management Tools are supported in WOW64.

Operating System Support:

The SQL Server 2016 editions are classified into the following:

- Principal Editions of SQL Server 2016

- Breadth Editions of SQL Server 2016

📝 **Note**

Exceptions to the operating system support noted in this section are the following Business Intelligence features, which can be installed on Windows Server 2008 R2 SP1 or later:

- Reporting Services - SharePoint

- Reporting Services Add-in for SharePoint products

Features Supported on 32-bit Client Operating Systems

Windows client operating systems, for example Windows 10 and Windows 8.1 are available as 32-bit or 64-bit architectures. All SQL Server features are supported on 64-bit client operating systems. On supported 32-bit client operating systems Microsoft supports the following features:

- Data Quality Client

- Client Tools Connectivity

- Integration Services

- Client Tools Backwards Compatibility

- Client Tools SDK

- Documentation Components

- Distributed Replay Components

- Distributed Replay Controller

- Distributed Replay Client

- SQL Client Connectivity SDK

Windows Server 2008 R2 and later server operating systems are not available as 32-bit architectures. All supported server operating systems are only available as 64-bit. All features are supported on 64-bit server operating systems.

Principal Editions of SQL Server 2016

The following table shows the operating system requirements for the principal editions of SQL Server 2016:

SQL Server Edition	Supported Operating System
SQL Server Enterprise	Windows Server 2012 R2 Datacenter
	Windows Server 2012 R2 Standard
	Windows Server 2012 R2 Essentials
	Windows Server 2012 R2 Foundation
	Windows Server 2012 Datacenter
	Windows Server 2012 Standard
	Windows Server 2012 Essentials
	Windows Server 2012 Foundation
SQL Server Standard	Windows Server 2012 R2 Datacenter
	Windows Server 2012 R2 Standard
	Windows Server 2012 R2 Essentials
	Windows Server 2012 R2 Foundation
	Windows Server 2012 Datacenter
	Windows Server 2012 Standard
	Windows Server 2012 Essentials
	Windows Server 2012 Foundation
	Windows 10 Home
	Windows 10 Professional
	Windows 10 Enterprise
	Windows 8.1
	Windows 8.1 Pro
	Windows 8.1 Enterprise

SQL Server Edition	Supported Operating System
	Windows 8
	Windows 8 Pro
	Windows 8 Enterprise
SQL Server Web	Windows Server 2012 R2 Datacenter
	Windows Server 2012 R2 Standard
	Windows Server 2012 R2 Essentials
	Windows Server 2012 R2 Foundation
	Windows Server 2012 Datacenter
	Windows Server 2012 Standard
	Windows Server 2012 Essentials
	Windows Server 2012 Foundation

Breadth Editions of SQL Server 2016

The following table shows the operating system requirements for the breadth editions of SQL Server 2016:

SQL Server Edition	Supported Operating System
SQL Server Developer	Windows Server 2012 R2 Datacenter
	Windows Server 2012 R2 Standard
	Windows Server 2012 R2 Essentials
	Windows Server 2012 R2 Foundation
	Windows Server 2012 Datacenter
	Windows Server 2012 Standard
	Windows Server 2012 Essentials
	Windows Server 2012 Foundation
	Windows 10 Home
	Windows 10 Professional
	Windows 10 Enterprise

SQL Server Edition	Supported Operating System
	Windows 8.1
	Windows 8.1 Pro
	Windows 8.1 Enterprise
	Windows 8
	Windows 8 Pro
	Windows 8 Enterprise
SQL Server Express	Windows Server 2012 R2 Datacenter
	Windows Server 2012 R2 Standard
	Windows Server 2012 R2 Essentials
	Windows Server 2012 R2 Foundation
	Windows Server 2012 Datacenter
	Windows Server 2012 Standard
	Windows Server 2012 Essentials
	Windows Server 2012 Foundation
	Windows 10 Home
	Windows 10 Professional
	Windows 10 Enterprise
	Windows 8.1
	Windows 8.1 Pro
	Windows 8.1 Enterprise
	Windows 8
	Windows 8 Pro
	Windows 8 Enterprise

Cross-Language Support

For more information about cross-language support and considerations for installing SQL Server in localized languages, see Local Language Versions in SQL Server.

Hard Disk Space Requirements

During installation of SQL Server 2016, Windows Installer creates temporary files on the system drive. Before you run Setup to install or upgrade SQL Server, verify that you have at least 6.0 GB of available disk space on the system drive for these files. This requirement applies even if you install SQL Server components to a non-default drive.

Actual hard disk space requirements depend on your system configuration and the features that you decide to install. The following table provides disk space requirements for SQL Server 2016 components.

Feature	Disk space requirement
Database Engine and data files, Replication, Full-Text Search, and Data Quality Services	1480 MB
Database Engine (as above) with R Services (In-Database)	2744 MB
Database Engine (as above) with PolyBase Query Service for External Data	4194 MB
Analysis Services and data files	698 MB
Reporting Services	967 MB
Microsoft R Server (Standalone)	280 MB
Reporting Services - SharePoint	1203 MB
Reporting Services Add-in for SharePoint Products	325 MB
Data Quality Client	121 MB
Client Tools Connectivity	328 MB
Integration Services	306 MB
Client Components (other than SQL Server Books Online components and Integration Services tools)	445 MB
Master Data Services	280 MB
SQL Server Books Online Components to view and manage help content*	27 MB
All Features	8030 MB

*The disk space requirement for downloaded Books Online content is 200 MB.

Storage Types for Data Files

The supported storage types for data files are:

- Local Disk

- Shared Storage

- SMB File Share

> ✒ **Note**
>
> SMB storage is not supported for Analysis Services data files for either standalone or clustered installations. Use direct attached storage or a storage area network instead.

> ◆ **Important**
>
> SMB storage can be hosted by a Windows File Server or a third party SMB storage device. If Windows File Server is used, the Windows File Server version should be 2008 or later. For more information about installing SQL Server using SMB file share as a storage option, see Install SQL Server with SMB Fileshare as a Storage Option.

> ⚠ **Warning**
>
> SQL Server failover cluster installation supports Local Disk only for installing the tempdb files. Ensure that the path specified for the tempdb data and log files is valid on all the cluster nodes. During failover, if the tempdb directories are not available on the failover target node, the SQL Server resource will fail to come online.

Installing SQL Server on a Domain Controller

For security reasons, we recommend that you do not install SQL Server 2016 on a domain controller. SQL Server Setup will not block installation on a computer that is a domain controller, but the following limitations apply:

- You cannot run SQL Server services on a domain controller under a local service account.

- After SQL Server is installed on a computer, you cannot change the computer from a domain member to a domain controller. You must uninstall SQL Server before you change the host computer to a domain controller.

- After SQL Server is installed on a computer, you cannot change the computer from a domain controller to a domain member. You must uninstall SQL Server before you change the host computer to a domain member.

- SQL Server failover cluster instances are not supported where cluster nodes are domain controllers.

- SQL Server is not supported on a read-only domain controller. SQL Server Setup cannot create security groups or provision SQL Server service accounts on a read-only domain controller. In this scenario, Setup will fail.

- A SQL Server failover cluster instance is not not supported in an environment where only a read-only domain controller is accessible.

See Also

Planning a SQL Server Installation
Security Considerations for a SQL Server Installation
Product Specifications for SQL Server 2016

Community Additions