Editions and supported features of SQL Server 2022

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Applies to: ✅ SQL Server 2022 (16.x)

This article provides details of features supported by the various editions of SQL Server 2022 (16.x).

For information about other versions, see:

- Editions and supported features of SQL Server 2019
- Editions and supported features of SQL Server 2017
- Editions and supported features of SQL Server 2016

For information about Azure SQL, see Features comparison: Azure SQL Database and Azure SQL Managed Instance.

Installation requirements vary based on your application needs. The different editions of SQL Server accommodate the unique performance, runtime, and price requirements of organizations and individuals. The SQL Server components that you install also depend on your specific requirements. The following sections help you understand how to make the best choice among the editions and components available in SQL Server.

For the latest release notes and what's new information, see the following articles:

- SQL Server 2022 release notes
- What's new in SQL Server 2022

Try SQL Server! Download SQL Server 2022 from the Evaluation Center ⧉ .

> ⓘ **Note**
>
> Microsoft Entra ID was previously known as Azure Active Directory (Azure AD).

SQL Server editions

The following table describes the editions of SQL Server.

⌄⌄ Expand table

Edition	Definition
Enterprise	The premium offering, SQL Server Enterprise edition delivers comprehensive high-end datacenter capabilities with blazing-fast performance, unlimited virtualization [1], and end-to-end business intelligence, enabling high service levels for mission-critical workloads and end-user access to data insights. Enterprise edition is available for evaluation. An evaluation deployment is available for 180 days. For more information, see SQL Server Licensing Resources and Documents ⧉ .
Standard	SQL Server Standard edition delivers basic data management and business intelligence database for departments and small organizations to run their applications and supports common development tools for on-premises and cloud, enabling effective database management with minimal IT resources.
Web	SQL Server Web edition is a low total-cost-of-ownership option for Web hosters (including choosing Web edition on IaaS on Azure) and Web VAPs to provide scalability, affordability, and manageability capabilities for small to large-scale Web properties.
Developer	SQL Server Developer edition lets developers build any kind of application on top of SQL Server. It includes all the functionality of Enterprise edition, but is licensed for use as a development and test system, not as a production server. SQL Server Developer is an ideal choice for people who build and test applications.
Express edition	SQL Server Express edition is the entry-level, free database and is ideal for learning and building desktop and small server data-driven applications. It is the best choice for independent software vendors, developers, and hobbyists building client applications. If you need more advanced database features, SQL Server Express can be seamlessly upgraded to other higher end versions of SQL Server. SQL Server Express LocalDB is a lightweight version of Express edition that has all of its programmability features, runs in user mode and has a fast, zero-configuration installation and a short list of prerequisites.

[1] Unlimited virtualization is available on Enterprise edition for customers with Software Assurance ⧉ . Deployments must comply with the licensing guide. For more information, see SQL Server Licensing Resources and Documents ⧉ .

Choose SQL Server features

Use the **Feature Selection** page of the SQL Server Installation Wizard to select the components to include in an installation of SQL Server. By default, none of the features in the tree are selected.

Use the information in the following tables to determine the set of features that best fits your needs.

Server features

Feature	Description
SQL Server Database Engine	SQL Server Database Engine includes the Database Engine, the core service for storing, processing, and securing data, replication, full-text search, tools for managing relational and XML data, in database analytics integration, and PolyBase integration for access to heterogeneous data sources, and Machine Learning Services to run Python and R scripts with relational data.
Analysis Services	Analysis Services includes the tools for creating and managing online analytical processing (OLAP) and data mining applications.
Reporting Services	Reporting Services includes server and client components for creating, managing, and deploying tabular, matrix, graphical, and free-form reports. Reporting Services is also an extensible platform that you can use to develop report applications.
Integration Services	Integration Services is a set of graphical tools and programmable objects for moving, copying, and transforming data. It also includes the Data Quality Services (DQS) component for Integration Services.
Master Data Services	Master Data Services (MDS) is the SQL Server solution for master data management. MDS can be configured to manage any domain (products, customers, accounts) and includes hierarchies, granular security, transactions, data versioning, and business rules, as well as an Add-in for Excel that can be used to manage data.
Machine Learning Services (In-Database)	Machine Learning Services (In-Database) supports distributed, scalable machine learning solutions using enterprise data sources. In SQL Server 2016, the R language was supported. SQL Server 2022 (16.x) supports R and Python.
Data Virtualization with PolyBase	Query different types of data on different types of data sources from SQL Server.
Azure connected services	SQL Server 2022 (16.x) extends Azure connected services and features including Azure Synapse Link, Microsoft Purview access policies, Azure extension for SQL Server, pay-as-you-go billing, and the link feature for SQL Managed Instance.

Developer and Evaluation editions

For features supported by Developer and Evaluation editions, see features listed for the SQL Server Enterprise edition in the tables below.

The Developer edition continues to support only 1 client for SQL Server Distributed Replay, which is deprecated in SQL Server 2022 (16.x).

Scale limits

⛶ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Maximum compute capacity used by a single instance - SQL Server Database Engine [1]	Operating system maximum	Limited to lesser of 4 sockets or 24 cores	Limited to lesser of 4 sockets or 16 cores	Limited to lesser of 1 socket or 4 cores	Limited to lesser of 1 socket or 4 cores
Maximum compute capacity used by a single instance - Analysis Services or Reporting Services	Operating system maximum	Limited to lesser of 4 sockets or 24 cores	Limited to lesser of 4 sockets or 16 cores	Limited to lesser of 1 socket or 4 cores	Limited to lesser of 1 socket or 4 cores
Maximum memory for buffer pool per instance of SQL Server Database Engine	Operating System Maximum	128 GB	64 GB	1,410 MB	1,410 MB
Maximum memory for Columnstore segment cache per instance of SQL Server Database Engine	Unlimited memory	32 GB	16 GB	352 MB	352 MB
Maximum memory-optimized data size per database in SQL Server Database Engine	Unlimited memory	32 GB	16 GB	352 MB	352 MB
Maximum memory utilized per instance of Analysis Services	Operating System Maximum	16 GB [2] 64 GB [3]	N/A	N/A	N/A
Maximum memory utilized per instance	Operating System	64 GB	64 GB	4 GB	N/A

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
of Reporting Services	Maximum				
Maximum relational database size	524 PB	524 PB	524 PB	10 GB	10 GB

[1] Enterprise edition with Server + Client Access License (CAL) based licensing (not available for new agreements) is limited to a maximum of 20 cores per SQL Server instance. There are no limits under the Core-based Server Licensing model. For more information, see Compute capacity limits by edition of SQL Server.

[2] Tabular

[3] MOLAP

Azure connected services

SQL Server 2022 includes features for connecting to Azure Synapse Analytics, Azure SQL Managed Instance, and Microsoft Purview.

⌐⌐ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Azure extension for SQL Server	Yes	Yes	No	No	No
Azure Synapse Link [1]	Yes	Yes	Yes	No	No
Link feature for SQL Managed Instance [1]	Yes	Yes	No	No	No
Failover servers for disaster recovery in Azure	Yes	Yes	No	No	No
Microsoft Entra integration	Yes	Yes	Yes	Yes	Yes
Microsoft Purview access policies [1]	Yes	Yes	Yes [2]	Yes [2]	Yes [2]
Pay-as-you-go billing	Yes	Yes	No	No	No

[1] These features are governed by their respective Lifecycle Policies.

RDBMS high availability

Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Server core support [1]	Yes	Yes	Yes	Yes	Yes
Log shipping	Yes	Yes	Yes	No	No
Database mirroring [7]	Yes	Yes [2]	Yes [3]	Yes [3]	Yes [3]
Backup compression	Yes	Yes	No	No	No
Database snapshot	Yes	Yes	Yes	Yes	Yes
Always On failover cluster instances [4]	Yes	Yes	No	No	No
Always On availability groups [5]	Yes	No	No	No	No
Basic availability groups [6]	No	Yes	No	No	No
Contained availability groups	Yes	No	No	No	No
Distributed availability groups	Yes	No	No	No	No
Automatic read write connection rerouting	Yes	No	No	No	No
Online page and file restore	Yes	No	No	No	No
Online index create and rebuild	Yes	No	No	No	No
Resumable online index rebuilds	Yes	No	No	No	No
Resumable online ADD CONSTRAINT	Yes	No	No	No	No
Online schema change	Yes	No	No	No	No
Fast recovery	Yes	No	No	No	No
Accelerated database recovery	Yes	Yes	Yes	No	No
Mirrored backups	Yes	No	No	No	No
Hot add memory and CPU	Yes	No	No	No	No

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Database recovery advisor	Yes	Yes	Yes	Yes	Yes
Encrypted backup	Yes	Yes	No	No	No
Backup and restore to S3-compatible object storage over REST API	Yes	Yes	Yes	No	No
Snapshot backup	Yes	Yes	Yes	Yes	Yes
Cluster-less availability group [5,6]	Yes	Yes	No	No	No
Failover servers for disaster recovery	Yes	Yes	No	No	No
Failover servers for high availability	Yes	Yes	No	No	No

[1] For more information on installing SQL Server on Server Core, see Install SQL Server on Server Core.

[2] Full safety only

[3] Witness only

[4] On Enterprise edition, the maximum number of nodes is 16. On Standard edition, there's support for two nodes.

[5] On Enterprise edition, provides support for up to 8 secondary replicas, including 5 synchronous secondary replicas.

[6] Standard edition supports basic availability groups. A basic availability group supports two replicas, with one database. For more information about basic availability groups, see Basic Always On availability groups for a single database.

[7] Database mirroring is a deprecated feature.

RDBMS scalability and performance

⌞⌝ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Columnstore [1, 2]	Yes	Yes	Yes	Yes	Yes
Large object binaries in clustered columnstore indexes	Yes	Yes	Yes	Yes	Yes
Online nonclustered columnstore index rebuild	Yes	No	No	No	No
In-Memory Database: In-Memory OLTP [1, 2]	Yes	Yes	Yes	Yes [3]	Yes
In-Memory Database: hybrid buffer pool	Yes	Yes	No	No	No
In-Memory Database: hybrid buffer pool support for direct write	Yes	No	No	No	No
In-Memory Database: Memory-optimized TempDB metadata	Yes	No	No	No	No
In-Memory Database: persistent memory support	Yes	Yes	Yes	Yes	Yes
Stretch Database [4]	Yes	Yes	Yes	Yes	Yes
Multi-instance support	50	50	50	50	50
Table and index partitioning [2]	Yes	Yes	Yes	Yes	Yes
Data compression [2]	Yes	Yes	Yes	Yes	Yes
Resource governor	Yes	No	No	No	No
Partitioned table parallelism [2]	Yes	Yes	Yes	No	No
Multiple filestream containers [2]	Yes	Yes	Yes	Yes	Yes
NUMA aware and large page memory and buffer array allocation	Yes	No	No	No	No
Buffer pool extension	Yes	Yes	No	No	No
Buffer pool parallel scan	Yes	Yes	No	No	No
I/O resource governance	Yes	No	No	No	No
Read-ahead	Yes	No	No	No	No
Advanced scanning	Yes	No	No	No	No

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Delayed durability	Yes	Yes	Yes	Yes	Yes
Intelligent Database: approximate count distinct	Yes	Yes	Yes	Yes	Yes
Intelligent Database: approximate percentile	Yes	Yes	Yes	Yes	Yes
Intelligent Database: automatic tuning	Yes	No	No	No	No
Intelligent Database: batch mode for row store [1]	Yes	No	No	No	No
Intelligent Database: cardinality estimate feedback	Yes	No	No	No	No
Intelligent Database: degree of parallelism feedback	Yes	No	No	No	No
Intelligent Database: memory grant feedback persistence and percentile	Yes	No	No	No	No
Intelligent Database: optimized plan forcing	Yes	Yes	Yes	Yes	Yes
Intelligent Database: parameter sensitive plan optimization	Yes	Yes	Yes	Yes	Yes
Intelligent Database: row mode memory grant feedback	Yes	No	No	No	No
Intelligent Database: table variable deferred compilation	Yes	Yes	Yes	Yes	Yes
Intelligent Database: scalar UDF inlining	Yes	Yes	Yes	Yes	Yes
Intelligent Database: Batch mode adaptive joins	Yes	No	No	No	No
Intelligent Database: Batch mode memory grant feedback	Yes	No	No	No	No
Intelligent Database: Interleaved execution for multi-statement table valued functions	Yes	Yes	Yes	Yes	Yes
Bulk insert improvements	Yes	Yes	Yes	Yes	Yes

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Advanced Vector Extension (AVX) 512 integration	Yes	No	No	No	No
Integrated acceleration and offloading (hardware)	Yes	No	No	No	No
Integrated acceleration and offloading (software)	Yes	Yes	No	No	No
System page latch concurrency enhancements	Yes	Yes	Yes	Yes	Yes

[1] In-Memory OLTP data size and Columnstore segment cache are limited to the amount of memory specified by edition in the Scale Limits section. The degree of parallelism (DOP) for batch mode operations is limited to 2 for SQL Server Standard edition and 1 for SQL Server Web and Express editions. This refers to columnstore indexes created over disk-based tables and memory-optimized tables.

[2] Aggregate Pushdown, String Predicate Pushdown, and SIMD Optimizations are SQL Server Enterprise edition scalability enhancements. For more detail, see What's new in columnstore indexes.

[3] This feature isn't included in the LocalDB installation option.

[4] Stretch Database is a deprecated feature.

RDBMS security

⌞⌝ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Always Encrypted	Yes	Yes	Yes	Yes	Yes
Always Encrypted with secure enclaves	Yes	Yes	Yes	Yes	Yes
Contained databases	Yes	Yes	Yes	Yes	Yes
Database audit	Yes	Yes	Yes	Yes	Yes

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Data classification and auditing	Yes	Yes	Yes	Yes	Yes
Dynamic data masking	Yes	Yes	Yes	Yes	Yes
Encryption for backups	Yes	Yes	No	No	No
Extensible key management (EKM)	Yes	Yes	No	No	No
Ledger for SQL Server	Yes	Yes	Yes	Yes	Yes
Microsoft Entra authentication [1]	Yes	Yes	Yes	Yes	Yes
Row-level security	Yes	Yes	Yes	Yes	Yes
Server audit	Yes	Yes	Yes	Yes	Yes
Transparent data encryption (TDE)	Yes	Yes	Yes	No	No
User-defined roles	Yes	Yes	Yes	Yes	Yes

[1] Requires SQL Server enabled by Azure Arc.

Replication

Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Heterogeneous subscribers	Yes	Yes	No	No	No
Merge replication	Yes	Yes	Yes [1]	Yes [1]	Yes [1]
Oracle publishing	Yes	No	No	No	No
Peer to peer transactional replication	Yes	No	No	No	No
Peer to peer - last write wins - transactional replication	Yes	No	No	No	No
Snapshot replication	Yes	Yes	Yes [1]	Yes [1]	Yes [1]
SQL Server change tracking	Yes	Yes	Yes	Yes	Yes

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Transactional replication	Yes	Yes	Yes [1]	Yes [1]	Yes [1]
Transactional replication to Azure	Yes	Yes	No	No	No
Transactional replication updatable subscription	Yes	Yes	No	No	No

[1] Subscriber only

Management tools

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
SQL Management Objects (SMO)	Yes	Yes	Yes	Yes	Yes
SQL Assessment API	Yes	Yes	Yes	Yes	Yes
SQL Vulnerability Assessment	Yes	Yes	Yes	Yes	Yes
SQL Configuration Manager	Yes	Yes	Yes	Yes	Yes
SQLCMD (Command Prompt tool)	Yes	Yes	Yes	Yes	Yes
SQL Profiler	Yes	Yes	No [1]	No [1]	No [1]
SQL Server Agent	Yes	Yes	Yes	No	No
Microsoft System Center Operations Manager Management Pack	Yes	Yes	Yes	No	No
Database Tuning Advisor (DTA)	Yes	Yes [2]	Yes [2]	No	No

[1] SQL Server Web, SQL Server Express, SQL Server Express with Tools, and SQL Server Express with Advanced Services can be profiled using SQL Server Standard and SQL Server Enterprise editions.

[2] Tuning enabled only on Standard edition features.

> ⓘ **Note**
>
> Distributed Replay has been deprecated in SQL Server 2022 (16.x).

RDBMS manageability

Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
User instances	No	No	No	Yes	Yes
LocalDB	No	No	No	Yes	No
Dedicated admin connection	Yes	Yes	Yes	Yes [1]	Yes [1]
SysPrep support [2]	Yes	Yes	Yes	Yes	Yes
PowerShell scripting support [3]	Yes	Yes	Yes	Yes	Yes
Support for data-tier application component operations - extract, deploy, upgrade, delete	Yes	Yes	Yes	Yes	Yes
Policy automation (check on schedule and change)	Yes	Yes	Yes	No	No
Performance data collector	Yes	Yes	Yes	No	No
Able to enroll as a managed instance in multi-instance management	Yes	Yes	Yes	No	No
Standard performance reports	Yes	Yes	Yes	No	No
Plan guides and plan freezing for plan guides	Yes	Yes	Yes	No	No
Direct query of indexed views (using NOEXPAND hint)	Yes	Yes	Yes	Yes	Yes
Direct query SQL Server Analysis Services	Yes	Yes	No	No	Yes
Automatic indexed views maintenance	Yes	Yes	Yes	No	No
Distributed partitioned views	Yes	No	No	No	No

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Parallel index operations	Yes	No	No	No	No
Automatic use of indexed view by query optimizer	Yes	No	No	No	No
Parallel consistency check	Yes	No	No	No	No
SQL Server Utility Control Point	Yes	No	No	No	No
Buffer pool extension	Yes	Yes	No	No	No
Master instance for big data cluster	Yes	Yes	No	No	No
Compatibility certification	Yes	Yes	Yes	Yes	Yes

[1] With trace flag

[2] For more information, see Considerations for installing SQL Server using SysPrep.

[3] On Linux, PowerShell scripts are supported, from Windows computers targeting SQL Server on Linux.

Development tools

Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Microsoft Visual Studio integration	Yes	Yes	Yes	Yes	Yes
Intellisense (Transact-SQL and MDX)	Yes	Yes	Yes	Yes	Yes
SQL Server Data Tools (SSDT)	Yes	Yes	Yes	Yes	No
MDX edit, debug, and design tools	Yes	Yes	No	No	No

Programmability

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Basic R integration [1]	Yes	Yes	Yes	Yes	No
Advanced R integration [2]	Yes	No	No	No	No
Basic Python integration	Yes	Yes	Yes	Yes	No
Advanced Python integration	Yes	No	No	No	No
Machine Learning Server (Standalone)	Yes	No	No	No	No
Data Virtualization with PolyBase	Yes	Yes	Yes	Yes	Yes
JSON	Yes	Yes	Yes	Yes	Yes
Query Store	Yes	Yes	Yes	Yes	Yes
Query Store: on by default for new databases	Yes	Yes	Yes	Yes	Yes
Query Store: hint support	Yes	Yes	Yes	Yes	Yes
Query Store: read-replica support	Yes	No	No	No	No
Temporal	Yes	Yes	Yes	Yes	Yes
Common Language Runtime (CLR) Integration	Yes	Yes	Yes	Yes	Yes
Java Language Runtime Integration	Yes	Yes	Yes	Yes	Yes
Native XML support	Yes	Yes	Yes	Yes	Yes
XML indexing	Yes	Yes	Yes	Yes	Yes
XML compression	Yes	Yes	Yes	Yes	Yes
MERGE and UPSERT capabilities	Yes	Yes	Yes	Yes	Yes
FILESTREAM support	Yes	Yes	Yes	Yes	Yes
FileTable	Yes	Yes	Yes	Yes	Yes
Date and Time datatypes	Yes	Yes	Yes	Yes	Yes
Time series support	Yes	Yes	Yes	Yes	Yes

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Internationalization support	Yes	Yes	Yes	Yes	Yes
Full-text and semantic search	Yes	Yes	Yes	Yes	No
Specification of language in query	Yes	Yes	Yes	Yes	No
Service Broker (messaging)	Yes	Yes	No [3]	No [3]	No [3]
Transact-SQL endpoints	Yes	Yes	Yes	No	No
Graph	Yes	Yes	Yes	Yes	Yes
UTF-8 support	Yes	Yes	Yes	Yes	Yes

[1] Basic integration is limited to 2 cores and in-memory data sets.

[2] Advanced integration can use all available cores for parallel processing of data sets at any size subject to hardware limits.

[3] Client only.

Integration Services

For info about SQL Server Integration Services (SSIS) features supported by the editions of SQL Server, see Integration Services features supported by the editions of SQL Server.

Master Data Services

For information about the Master Data Services and Data Quality Services features supported by the editions of SQL Server, see Master Data Services and Data Quality Services Features Support.

Data warehouse

⌗ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Auto-generate staging and data warehouse schema	Yes	Yes	No	No	No
Change data capture	Yes	Yes	No	No	No
Star join query optimizations	Yes	No	No	No	No
Parallel query processing on partitioned tables and indexes	Yes	No	No	No	No
Global batch aggregation	Yes	No	No	No	No

Analysis Services

For information about the Analysis Services features supported by the editions of SQL Server, see Analysis Services Features Supported by the editions of SQL Server.

Reporting Services

For information about the Reporting Services features supported by the editions of SQL Server, see SQL Server Reporting Services features supported by editions.

Business intelligence clients

For information about the Business Intelligence Client features supported by the editions of SQL Server, see Analysis Services Features Supported by the editions of SQL Server or SQL Server Reporting Services features supported by editions.

Spatial and location services

⌞⌝ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Spatial indexes	Yes	Yes	Yes	Yes	Yes

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
Planar and geodetic data types	Yes	Yes	Yes	Yes	Yes
Advanced spatial libraries	Yes	Yes	Yes	Yes	Yes
Import/export of industry-standard spatial data formats	Yes	Yes	Yes	Yes	Yes

Additional database services

⬚ Expand table

Feature	Enterprise	Standard	Web	Express with Advanced Services	Express
SQL Server Migration Assistant	Yes	Yes	Yes	Yes	Yes
Database mail	Yes	Yes	Yes	No	No

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