

The latest SQL Server comes packed with support for Linux, automatic tuning and other enhancements.
New Additions since: [2016](#) [2014](#) [2012](#) and [2008 R2](#)

OLTP Performance

- Linux and Docker support
- New dynamic management views
- New Availability Groups functionality
- Cross database transactions support for DBs in the same availability group.
- JSON commands fully supported in both check constraints and natively compiled modules
- Enhancements for SSIS, SSAS and MDS.
- Identity cache to avoid discrepancy in values of identity columns
- Graph DB
- New string functions
- New bulk access options for CSV and Azure Blob files.
- Real-time operational analytics with in-memory OLTP or on disk
- In-memory for more applications
- Unparalleled scalability with Windows Server 2016, with 12TB memory and Windows Server 2016 max cores
- Multiple node failover clustering (3 synchronous, up to 8 replicas)
- SQL Server Development Tools in Visual Studio
- Query Store
- Temporal support
- Enhanced AlwaysOn, with 8 secondaries and Replica Wizard
- Buffer Pool Extension to SSDs
- Enhanced query processing and optimization
- IO governance
- SysPrep as cluster level
- Predictable performance with tiering of compute, network and story
- Delayed Durability
- Clustered Shared Volume support, VHDX support
- Manage on-premises and cloud apps
- SQL Server Data Tools
- Local DB runtime (Express)
- Data-tier application component project template
- Data-Tier Application Framework (DAC Fx)
- Interoperability support (ADO.NET, ODBC, JDBC, PDO, ADO APIs and .NET C/C++, Java, Linux and PHP platforms)
- Enhanced support for ANSI SQL standards
- Transact-SQL Static Code Analysis tools and snippets
- Intellisense
- FileTable build on FILESTREAM
- Remote Blob Storage with SharePoint 2010
- Statistical Semantic Search
- Spatial features, include Full Globe and arcs
- Large user-defined data types
- Distributed Replay
- Contained Database Authentication
- System Center Management Pack for SQL Server 2012
- Windows PowerShell 2.0 support
- Multi-server Management with SQL Server Utility Control Point
- Data Tier Application Component

Security

- Database Scoped Credentials introduced
- CLR whitelist
- Enhanced CLR security
- Transparent Data Encryption
- Always Encrypted
- Row Level Security
- Data Masking
- Enhanced separation of duties
- CC certification at High Assurance Level for 2014
- Backup encryption support
- Enhanced separation of duties
- Default schema for groups
- SQL Server Audit
- SQL Server fine-grained auditing

Platform

- Adaptive query processing
- Automatic database tuning
- Performance improvement for DTA with additional options
- Computed columns with support for memory-optimized tables.
- Resumable online index rebuild
- Removed 8 index limitation on memory-optimized tables
- Tempdb file size increased to up to 256 GB
- Full support for JSON and CROSS APPLY operator in natively compiled modules.

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Data Warehousing

- Operational analytics
- In-memory ColumnStore
- Deployment rights for APS
- Enhanced In-memory ColumnStore for DW
- PolyBase for simple T-SQL
- Enhanced database caching
- Up to 15,000 partitions

Business Intelligence

- Python support for SQL Server machine Learning Services
- PREDICT function improvement
- Performance improvement to machine learning
- Mobile BI
- Enterprise-grade Analysis Services
- Advanced tabular models
- JSON support
- Enhanced SSIS, DQS, MDS, and Reporting Services
- Temporal tables
- In-memory analytics
- Advanced data mining
- Access to reports online or offline
- Create mobile reports using the SQL Server Mobile Report Publisher
- Consume with Power BI mobile apps
- Enhanced multidimensional models
- Azure HDInsight Service
- Pin report items to Power BI
- Power Map for Excel
- Pipeline improvements
- Mash up data from different sources, such as Oracle & Hadoop
- HA for StreamInsight, complex event processing
- SQL Server Data Tools support for BI
- Change Data Capture for Oracle
- Import PowerPivot models into Analysis Services
- Enhanced productivity and performance
- Power View
- Configurable reporting alerts
- Reporting as SharePoint Shared Service
- Build organization knowledge base
- Connect to 3rd party data cleansing providers
- Master Data Hub
- Master Data Services Add-in for Excel
- Graphical tools in SSIS
- Extensible object model
- SSIS as a Server
- Broader data integration with more sources: DB vendors, cloud, Hadoop

Advanced Analytics

- Tabular model enhancements
- R built-in to your T-SQL
- RRE APIs with full parallelism and no memory limits for scale/performance
- Built-in In-memory Advanced Analytics
- Advanced tabular model
- Direct query
- Advanced data mining

Hybrid Cloud

- Stretch database
- Partitioning for efficient data loading
- Hybrid scenarios with SSIS
- Enhanced backup to Azure
- Easy migration to the cloud
- Simplified cloud DR with AlwaysOn replicas
- Simplified backup to Azure
- Support for backup of previous versions of SQL Server to Azure
- Cloud back-up encryption support
- Simplified cloud Disaster Recovery with AlwaysOn replicas in Azure VMs
- New Azure Deployment UI for SQL Server
- Larger SQL Server VMs and memory sizes available in Azure
- DAC enhancements: Import/export with Azure SQL Database
- SQL Server Data Tools
- License Monthly (with SA)
- Resource Governor enhancements
- Snapshot backups to Azure via SQL Server Management Studio