

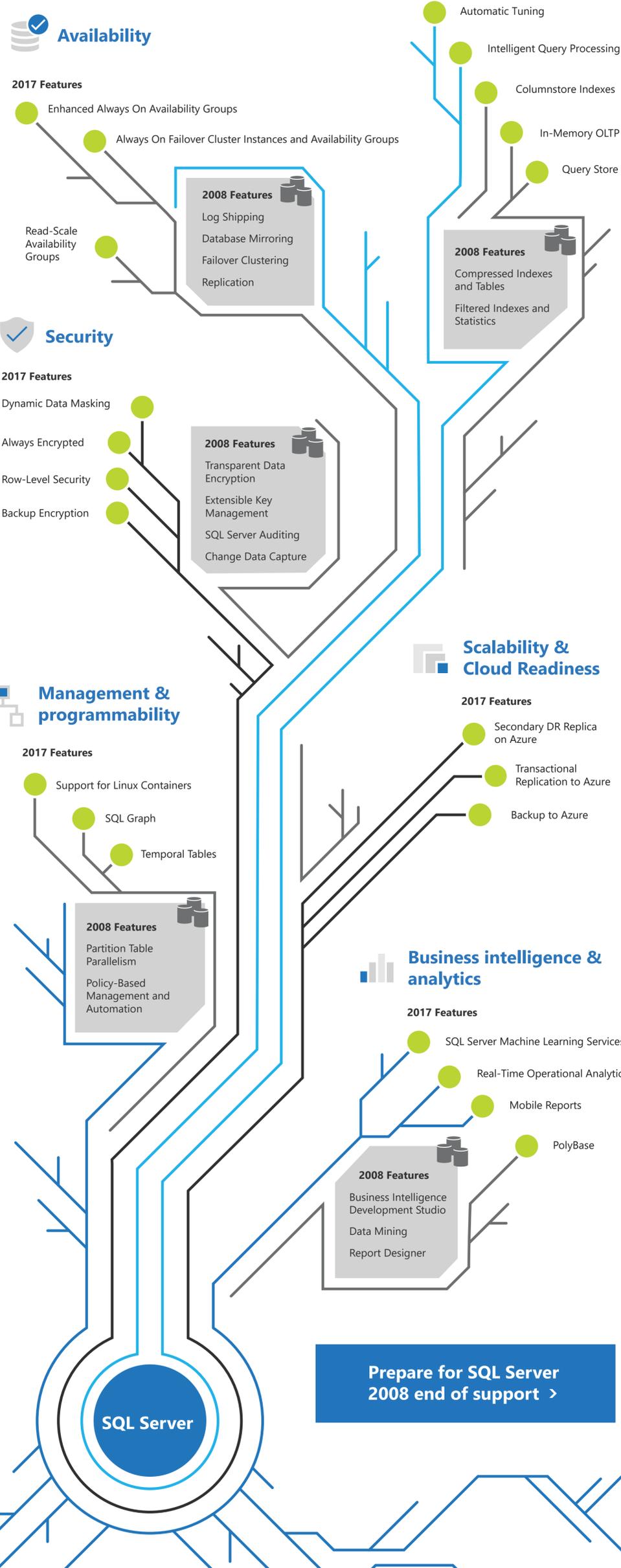
Growing SQL Server

Features from 2008 to 2017

SQL Server 2017: more than just a database

SQL Server 2017 helps business from the ground up, extending your reach further than before. But at Microsoft, we remember our roots – including the features that grew SQL Server to where it stands today.

As you prepare for the end of support for SQL Server 2008, get to know the features and benefits now available to you in SQL Server 2017.



Prepare for SQL Server 2008 end of support >

Performance
Regardless of complexity, today's database engines are expected to return query results extremely quickly. With a shift from index optimisation to in-memory transaction processing, today's SQL Server isn't just faster, its adaptive querying and tuning features make it smarter, too.

SQL Server 2008
Compressed indexes and tables improve query performance in I/O bottleneck scenarios.
Filtered indexes and statistics offer better query performance and optimised storage.

SQL Server 2017
Columnstore indexes accelerate analytics performance by redefining data storage and queries.
With **In-Memory OLTP**, SQL Server interacts solely with data in memory, speeding up OLTP applications.
Intelligent Query Processing shapes optimisation strategies based on your application workload's runtime conditions and characteristics.
Automatic Plan Correction rectifies query execution plans causing performance issues.
Query Store gives you insights on query plan choice and performance.

Availability
The global economy never sleeps and neither does the demand for data. Building on the old standbys of high availability – mirroring and failover, Always On Failover Cluster Instances and Availability Groups – doesn't just ensure access to your database. It ensures the data returned is the right data.

SQL Server 2008
Database mirroring increases the availability of your SQL Server database.
Failover clustering helps maintain high availability for SQL Server instances.
Log shipping supports high availability at the database level.
Replication maintains consistency between databases and synchronising.

SQL Server 2017
Always On Failover Cluster Instances and Availability Groups enable HADR scenarios on both Linux and Windows.
Enhancements in **Always On Availability Groups** provide high availability, disaster recovery and read-scale balancing.
Read-Scale Availability Groups provide additional capabilities for scenarios that can utilise read-only replicas.

Security
As technology advances, so do the potential threats to business continuity and data privacy. Access to and protection of personal information is at the forefront of data security today and SQL Server 2017 now has multiple layers of data security built in, enabling administrative access without exposing sensitive data.

SQL Server 2008
Transparent Data Encryption helps protect data at rest without changes to your application and database.
Extensible Key Management enables third-party vendors to register their devices in SQL Server.
SQL Server Auditing creates customised audits of Database Engine events.
Change Data Capture helps you view table changes in an easily consumable format.

SQL Server 2017
Always Encrypted provides separation between those who own and manage data.
Dynamic Data Masking limits data exposure while simplifying security design and coding.
Row-Level Security controls access to rows in a database table based on user characteristics.
Backup encryption gives you extra security for backup files.

Scalability & cloud readiness
Today's databases in the cloud offer portability and redundancy. Cloud-based computing is the modern server farm. Although SQL Server 2017 can still be used on-premises, economies of scale really add up in the cloud. SQL Server 2017 gives you multiple deployment options that just didn't exist before.

SQL Server 2017
Backup to Azure enables backup and restoration from the Azure Blob service.
Transactional Replication to Azure migrates your on-premises SQL Server databases to Azure with minimal downtime.
Secondary DR Replica on Azure provisions a VM and configures it as a secondary replica in disaster recovery scenarios.
Azure SQL Database Managed Instance helps you move to the cloud with minimal application and database re-engineering.

Management & programmability
Upkeep is essential to software as a service (SaaS), but only certain tasks really require frequent human intervention. SQL Server 2017 offers so much more flexibility than past versions – both around deployment options, with support for Linux and for Docker containers, and data presentation with relationship graphing.

SQL Server 2008
Partition table parallelism provides better performance and resource utilisation.
Policy-based management and automation defines and enforces policies across an enterprise.

SQL Server 2017
Support for Linux Containers empowers you to build DevOps pipelines using SQL Server on Linux.
SQL Graph enables you to map and query relationships in a graph structure.
Temporal tables help you to see data changes in your tables from any point in time.

Business intelligence & analytics
With increases in consumer data collection, data analysis and BI have become essential to strategic decision-making. Machine learning and AI on SQL Server 2017 can transform your data into meaningful insights at speeds that keep up with the torrent of today's data-gathering techniques.

SQL Server 2008
Business Intelligence Development Studio offers solutions such as Analysis Services, Integration Services and Reporting Services projects.
Data mining tools perform powerful analytics without you needing to know data mining concepts.
Report Designer organises data in reports and helps you design reports interactively.

SQL Server 2017
PolyBase joins structured, semi-structured and unstructured data in platforms like Azure Blob Storage or Hadoop.
SQL Server Machine Learning Services bring code and processing to where the data resides, eliminating the need to pull data across the network.
SQL Server Reporting Services allow you to create, deploy and manage mobile and paginated reports.
Real-Time Operational Analytics enables you to run both analytics and OLTP workloads on the same database tables simultaneously.

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