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[DBMS](#) > Microsoft SQL Server vs. MySQL vs. PostgreSQL

System Properties Comparison Microsoft SQL Server vs. MySQL vs. PostgreSQL

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Editorial information provided by DB-Engines			
Name	Microsoft SQL Server X	MySQL X	PostgreSQL X
Description	Microsofts flagship relational DBMS	Widely used open source RDBMS	Widely used open source RDBMS
Primary database model	Relational DBMS	Relational DBMS ⓘ	Relational DBMS ⓘ
Secondary database models	Document store Graph DBMS Spatial DBMS	Document store Spatial DBMS	Document store Spatial DBMS
DB-Engines Ranking ⓘ Trend Chart	Score 933.78 Rank #3 Overall #3 Relational DBMS	Score 1198.23 Rank #2 Overall #2 Relational DBMS	Score 616.93 Rank #4 Overall #4 Relational DBMS
Website	www.microsoft.com/en-us/sql-server	www.mysql.com	www.postgresql.org
Technical documentation	docs.microsoft.com/en-US/sql/-sql-server	dev.mysql.com/doc	www.postgresql.org/docs
Developer	Microsoft	Oracle ⓘ	PostgreSQL Global Development Group ⓘ
Initial release	1989	1995	1989 ⓘ
Current release	SQL Server 2019, November 2019	8.0.28, January 2022	14.2, February 2022
License ⓘ	commercial ⓘ	Open Source ⓘ	Open Source ⓘ
Cloud-based only ⓘ	no	no	no
DBaaS offerings (sponsored links) ⓘ		ScaleGrid for MySQL : Fully managed MySQL hosting on AWS, Azure and DigitalOcean with high availability and SSH access on the #1 multi-cloud DBaaS.	ScaleGrid for PostgreSQL : Fully managed PostgreSQL hosting on AWS, Azure and DigitalOcean with high availability and SSH access on the #1 multi-cloud DBaaS.
Implementation language	C++	C and C++	C
Server operating systems	Linux Windows	FreeBSD Linux OS X Solaris Windows	FreeBSD HP-UX Linux NetBSD OpenBSD OS X Solaris Unix Windows

Data scheme	yes	yes	yes
Typing 	yes	yes	yes
XML support 	yes	yes	yes 
Secondary indexes	yes	yes	yes
SQL 	yes	yes 	yes 
APIs and other access methods	ADO.NET JDBC ODBC OLE DB Tabular Data Stream (TDS)	ADO.NET JDBC ODBC Proprietary native API	ADO.NET JDBC native C library ODBC streaming API for large objects
Supported programming languages	C# C++ Delphi Go Java JavaScript (Node.js) PHP Python R Ruby Visual Basic	Ada C C# C++ D Delphi Eiffel Erlang Haskell Java JavaScript (Node.js) Objective-C OCaml Perl PHP Python Ruby Scheme Tcl	.Net C C++ Delphi Java  JavaScript (Node.js) Perl PHP Python Tcl
Server-side scripts 	Transact SQL, .NET languages, R, Python and (with SQL Server 2019) Java	yes 	user defined functions 
Triggers	yes	yes	yes
Partitioning methods 	tables can be distributed across several files (horizontal partitioning); sharding through federation	horizontal partitioning, sharding with MySQL Cluster or MySQL Fabric	partitioning by range, list and (since PostgreSQL 11) by hash
Replication methods 	yes, but depending on the SQL-Server Edition	Multi-source replication Source-replica replication	Source-replica replication 
MapReduce 	no	no	no
Consistency concepts 	Immediate Consistency	Immediate Consistency	Immediate Consistency
Foreign keys 	yes	yes 	yes
Transaction concepts 	ACID	ACID 	ACID
Concurrency 	yes	yes 	yes
Durability 	yes	yes	yes
In-memory capabilities 	yes	yes	no
User concepts 	fine grained access rights according to SQL-standard	Users with fine-grained authorization concept 	fine grained access rights according to SQL-standard

More information provided by the system vendor

We invite representatives of system vendors to [contact us](#) for updating and extending the system information, and for displaying vendor-provided information such as key customers, competitive advantages and market metrics.

Related products and services

3rd parties	<p>Navicat for SQL Server gives you a fully graphical approach to database management and development. » more</p> <p>SQLFlow: Provides a visual representation of the overall flow of data. Automated SQL data lineage analysis across Databases, ETL, Business Intelligence, Cloud and Hadoop environments by parsing SQL Script and stored procedure. » more</p> <p>Navicat Monitor is a safe, simple and agentless remote server monitoring tool for SQL Server and many other database management systems. » more</p> <p>Fivetran: Quickly and easily centralize your on-premise and cloud databases. » more</p>	<p>CData: Connect to Big Data & NoSQL through standard Drivers. » more</p> <p>Arctype: A fast, beautiful database GUI for developers and teams. Download it for free today. » more</p> <p>Navicat for MySQL is the ideal solution for MySQL/MariaDB administration and development. » more</p> <p>Fivetran: Quickly and easily centralize your on-premise and cloud databases. » more</p> <p>SQLFlow: Provides a visual representation of the overall flow of data. Automated SQL data lineage analysis across Databases, ETL, Business Intelligence, Cloud and Hadoop environments by parsing SQL Script and stored procedure. » more</p>	<p>Navicat for PostgreSQL is an easy-to-use graphical tool for PostgreSQL database development. » more</p> <p>CYBERTEC is your professional partner for PostgreSQL services and Data Science since 2000. With offices in Austria, Uruguay, Estonia, Poland, South Africa and Switzerland, CYBERTEC operates worldwide and is here for you 24/7! » more</p> <p>Instaclustr: Fully Hosted & Managed PostgreSQL » more</p> <p>pgDash: In-Depth PostgreSQL Monitoring. » more</p> <p>SQLFlow: Provides a visual representation of the overall flow of data. Automated SQL data lineage analysis across Databases, ETL, Business Intelligence, Cloud and Hadoop environments by parsing SQL Script and stored procedure. » more</p> <p>EDB: BigAnimal is fully-managed PostgreSQL in the cloud from the database fanatics at EDB. » more</p> <p>Fivetran: Quickly and easily centralize your on-premise and cloud databases. » more</p>
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More resources

	Microsoft SQL Server	MySQL	PostgreSQL
DB-Engines blog posts	<p>MySQL is the DBMS of the Year 2019 3 January 2020, Matthias Gelbmann, Paul Andlinger</p> <p>The struggle for the hegemony in Oracle's database empire 2 May 2017, Paul Andlinger</p> <p>Microsoft SQL Server is the DBMS of the Year</p>	<p>MySQL is the DBMS of the Year 2019 3 January 2020, Matthias Gelbmann, Paul Andlinger</p> <p>MariaDB strengthens its position in the open source RDBMS market 5 April 2018, Matthias Gelbmann</p> <p>The struggle for the hegemony in</p>	<p>Snowflake is the DBMS of the Year 2021 3 January 2022, Paul Andlinger, Matthias Gelbmann</p> <p>Driving the Future of PostgreSQL Adoption 15 November 2021, Umair Shahid, Percona (sponsor)</p> <p>The Inexorable Rise of</p>

	4 January 2017, Matthias Gelbmann, Paul Andlinger show all	Oracle's database empire 2 May 2017, Paul Andlinger show all	PostgreSQL 24 September 2021, Matt Yonkovit, Percona (sponsor) show all
Recent citations in the news	Microsoft Ending Support of SQL Server 2019 Big Data Clusters 10 March 2022, Redmondmag.com How to manage disaster recovery in SQL Server 25 February 2022, TechTarget Tracking Performance Impacts of SQL Server Changes 23 February 2022, Redmondmag.com Cyber Security Today, Feb. 23, 2022 - Warning to SQL Server admins, logistics company hit by cyber attack and more 23 February 2022, IT World Canada SQL Server MDF to NDF Distribution 25 February 2022, DevOps.com provided by Google News	Introducing MySQL: A Beginner's Guide 11 February 2022, SitePoint 9 Advanced MySQL Security Tips - MUO 2 March 2022, MakeUseOf Meet New Versions of dotConnect for MySQL 8.21, dotConnect for PostgreSQL 7.24 and dotConnect for Oracle 9.16 with Significant Improvements 16 February 2022, openPR The best SQL courses of 2022 11 March 2022, IT PRO Oracle Announces Fiscal 2022 Third Quarter Financial Results news-journal.com 10 March 2022, Longview News-Journal provided by Google News	What Is PostgreSQL and How Can It Improve Your Programming Projects? - MUO 16 February 2022, MakeUseOf Meet New Versions of dotConnect for MySQL 8.21, dotConnect for PostgreSQL 7.24 and dotConnect for Oracle 9.16 with Significant Improvements 16 February 2022, openPR PostgreSQL vs MySQL Compare Database Management Systems 20 December 2021, Server Watch PostgreSQL 14 improves open source database performance 30 September 2021, TechTarget Verifone Chooses Percona for Multi-Database Management and Support 2 March 2022, businesswire.com provided by Google News
Job opportunities	SQL Server DBA Viviente Software, Floresville, TX SQL Server Database Administrator General Motors, Austin, TX SQL Server Database Admin + Cloud Ford Motor Company, Dearborn, MI SQL Server Larsen & Toubro Infotech Limited, Hartford, CT Database Developer (SQL Server) Database Developer, Remote	QA - Plugin Tester Incsb, Remote Loss Prevention Specialist Amazon.com Services LLC, Little Rock, AR MySQL Key Accounts Business Development Consultant Oracle, United States PHP/MySQL Developers Webmasters.com, Tampa, FL PHP & MySQL & HTML/CSS & JS Developers Retail Ecommerce Ventures, Remote	Software Engineer - Entry Level PathAI, Boston, MA Open Source PostgreSQL Contributor - Database Timescale, Seattle, WA PostgreSQL-PostGIS Developer Brillio, Tampa, FL MySQL Database Administrator Wolfram, Remote Software Engineer (Multiple Levels) T. Rowe Price, New York, NY jobs by indeed

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