What is PostgreSQL?

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- PostgreSQL is a free and open-source object-relational database management system (ORDBMS*).
- PostgreSQL supports both SQL (relational) and JSON (non-relational) querying.
- PostgreSQL supports advanced data types and different performance optimization features, which are only available in commercial expensive databases, like Oracle and SQL Server.
- PostgreSQL is used as a primary database for many web applications as well as mobile and analytics applications. PostgreSQL is a highly stable database backed by more than 20 years of development by the open-source community.

A Brief History of Postgres

Postgres is older than you may have first thought, it began back in 1986 as POSTGRES at. The University of California at Berkeley as a research project. The student Michael Stonebraker and his fellow colleagues developed POSTGRES.

The goal of POSTGRES was to support multiple data types with the added the minimal features needed. In 1996, the POSTGRES project was renamed to PostgreSQL to clearly show its support for SQL.

Postgres is also bigger than you may have first expected, some of the companies that use Postgres include, Instagram, Reddit and Twitch.

Features of PostgreSQL

- User-defined types
- Table inheritance
- Sophisticated locking mechanism
- Foreign key referential integrity
- Nested transactions (savepoints)
- Asynchronous replication*
- Point-in-time recovery
- Helps developers to build applications.
- Compatible with various platforms using all major languages and middleware.
- Support for multi-version concurrency control*.
- Mature Server-Side Programming Functionality.
- Compliant with the ANSI SQL standard.
- Full support for client-server network architecture.
- Log-based and trigger-based replication SSL.
- Standby server and high availability.

Advantages of PostgreSQL

These main advantages/benefits of PostgreSQL:
- PostgreSQL can run dynamic websites and web apps as a LAMP stack* option.
- Write-ahead logging makes a highly fault-tolerant database.
- PostgreSQL source code is freely available under an open source license.
- PostgreSQL allows location-based services and geographic information systems because it supports geographic objects.
- Low maintenance and administration for both embedded and enterprise use of PostgreSQL.
- To learn Postgres, you don't need much training as its relatively easy to use.
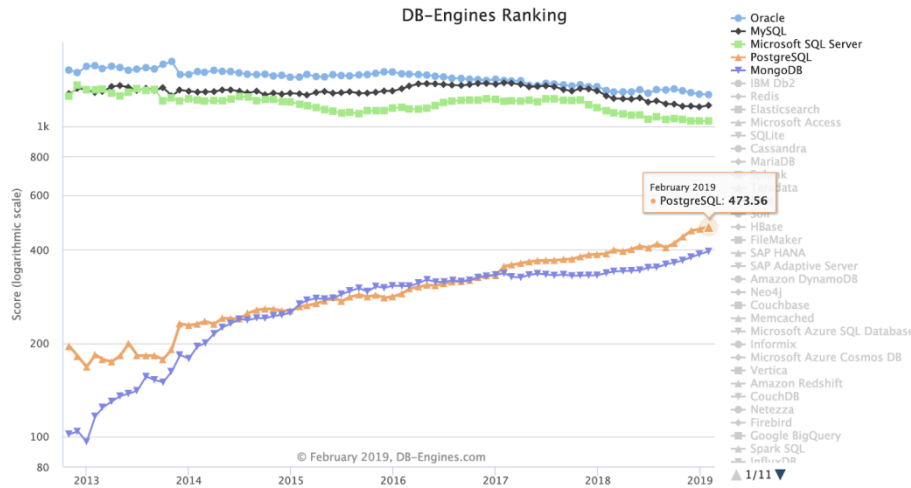
Disadvantages of PostgreSQL

These are some disadvantages/limitations of PostgreSQL:

- It is not much popular than other database management systems.
- It does have a lack of skilled professionals.
- When it comes to speed, it is not worthy as compared to other tools.
- Making replication is more complex.
- Postgres is not owned by one organization. This leads to trouble getting its name out there despite its full range of features and comparable to other systems.
- When Changes made for speed improvement requires more work than focuses on compatibility.
- Many open source apps support MySQL, but may not support PostgreSQL depending.
- On performance metrics, it is slower than MySQL.

Summary

PostgreSQL is a powerful, open source object-relational database system that uses and extends the SQL language combined with many features that safely store and scale the most complicated data workloads. For the second year in a row, PostgreSQL is still the fastest growing DBMS. By comparison, in 2018 MongoDB was the. second fastest growing, while Oracle, MySQL, and SQL Server all shrank in popularity.

Some Postgres's growing popularity is due to the fact that it has lower licensing costs in comparison to its competitors, as seen below.

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