

MONGODB

INTRODUCTION



Imagine you have a massive collection of data that you want to store, but it doesn't quite fit into the traditional rows and columns of a typical database. MongoDB is here to solve that problem.

MongoDB is a powerful, flexible, and easy-to-use NoSQL database. Unlike traditional databases that use tables, MongoDB stores data in dynamic, JSON-like documents, which means your data can have varying structures. This makes it perfect for modern applications that handle diverse and rapidly changing data.

With MongoDB, you can scale your database horizontally by distributing data across multiple servers, ensuring high performance and availability. It's designed to handle large volumes of data and provide fast access, making it ideal for big data applications, real-time analytics, and high-traffic web applications.

In short, MongoDB is like a modern, adaptable storage solution that grows with your data and needs, making it a go-to choice for developers looking to build robust and scalable applications.

What is Database?

Structured Data: The information is typically organized in a specific format, often using tables with rows and columns. This makes it easier to search, filter, and analyze the data.

Database Management System (DBMS): This is the software that acts like the filing cabinet manager. It allows you to store, retrieve, update, and manage all the data within the

database.

Data Types: Databases can hold various kinds of information, including text, numbers, images, videos, and more.

SQL VS NO SQL:



SQL (Structured Query Language) Databases:

Structure: SQL databases are table-based. They store data in rows and columns, similar to a spreadsheet.

Schema: They use a fixed schema, meaning you must define the structure of your data (like columns and data types) before you can store anything.

Queries: They use SQL to interact with the database, which is a standardized language for managing and manipulating data.

Examples: Popular SQL databases include MySQL, PostgreSQL, Oracle, and SQL Server.

Best for: They are great for applications that require complex queries and transactions, such as financial systems and enterprise applications.

NoSQL (Not Only SQL) Databases:

Structure: NoSQL databases are more flexible and can store data in various formats like documents, key-value pairs, graphs, or wide-columns.

Schema: They use a dynamic schema, allowing you to store data without defining the structure beforehand. You can change the structure of your data without downtime.

Queries: They use different query languages depending on the database type. For example, MongoDB uses a JSON-like query language.

Examples: Popular NoSQL databases include MongoDB (document-based), Redis (key-value), Neo4j (graph), and Cassandra (wide-column).

Best for: They are ideal for applications that need to handle large volumes of unstructured data, such as big data applications, real-time web apps, and content management systems.

MONGODB INSTALLATION:

STEP 1: visit mongodb community setup

STEP 2: install mongodb compass

STEP 3: install mongodb shell