

# Introduction to MongoDB

Course code: MONGODB\_INTRO

The course is designed for basic database administration or development who have no prior MongoDB experience or only basic experience. In the introduction, you will learn about the NoSQL database architecture, including the use of MongoDB management tools and the graphical GUI interface for development in MongoDB. The course covers basic installation, data import/export, data querying, data manipulation including Mongo Query Language(MQL) and more advanced data aggregation methods using pipelines.

## For whom the course is intended

- The course is intended for knowledge or database administrators without previous NoSQL or MongoDB experience.

## Required entry skills

- Basic programming concepts such as command line and shell commands, functions, variables and logical operators. Knowledge of SQL databases is an advantage.
- Basic knowledge of Linux is an advantage.

## Teaching methods

- Expert interpretation with practical examples, exercises on computers.

## Studying materials

- Printed presentations of the discussed material.

## Course outline

What is MongoDB?

- Database structure
- NoSQL vs SQL
- BSON vs JSON

MongoShell

- Command line interface
- Date manipulation
- Administrative operations
- Basic database maintenance and management

Mongo GUI

- The official MongoDB Compass tool
- Interactive query input tool
- Data optimization and analysis

Basic data manipulation

- Import and export data
- Querying data
- CRUD operations
- Creation and manipulation of documents

The mongo query language

- Comparison operators
- Logical operators
- Expression
- Cursor methods

Aggregator framework

- Aggregation channel
- Cursor phase
- Performance tuning

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## Basics of DB administration

- User database authentication
- Role-based access control
- Connecting everything together

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