

# MongoDB Database Administration

## Duration:

5 Days

## What is the course about?

Learn everything you need to know to administer a MongoDB installation in production. This course begins by assuming you have no experience with MongoDB, taking you through the basics of installation. Then you will learn about JSON and Mongo's extensive query capabilities through the Mongo shell. We will cover importing, and exporting data into Mongo. After that, we cover replication and fault tolerance. Then it is on to scaling out with MongoDB, including indexing, performance tuning, monitoring, and sharding. Finally, we cover backups and recovery. No prior experience with MongoDB is assumed for this course but knowledge of administration of another database will be helpful.

## Duration

The course is run 5 days full time.

## Technical Skill

Basic system administration skills. A working knowledge of relational database concepts is helpful but not required. Javascript is the shell language for MongoDB and rudimentary knowledge of that is also helpful, but not required.

## Private Training

This course is only offered privately. The course can be scheduled to run onsite or on our premises. A minimum of 4 delegates is required to schedule the course. The course price is R9 500 onsite and R12 599 on premises. There is no fixed date to run the course, we will work with you to find a suitable date for your team.

## Course Topics

### MongoDB Basics

- Basic concepts of databases
- What is NoSQL?
- Where is it used?
- Types of NoSQL
- Advantages of NoSQL over RDBMS
- Its benefits
- Overview of MongoDB
- Introduction to JSON/BSON
- JSON data types
- MongoDB installation

### CRUD Operations

- MongoDB Development Architecture
- MongoDB Production Architecture
- MongoDB CRUD Introduction
- MongoDB CRUD Concepts

Read and Write Operations  
Write Operation Concern Levels

## **Data Modeling**

Data Modeling in MongoDB  
RDBMS vs. Data models  
Data Modeling tools  
Data modeling example & patterns  
Model TREE structure  
Operational strategies

## **Administration**

Backup strategies  
Monitoring  
Monitoring Commands  
Monitoring of performance issues  
Run time configuration  
Export & import of data  
Relationship between Document  
Model Specific Application Contexts  
Data Model Reference  
Hands on with MongoDB Data Modeling  
Data Management

## **Scaling and High Availability**

Introduction to replica  
Election of new primary  
Replica set  
Type of Replica  
Hidden Replica  
Arbiter Replica  
Sharding  
Concepts around Replication  
Setting up Replicated Cluster  
Setting up Sharded Cluster  
Sharding Database, Collections

## **Indexing and Aggregation Framework**

Index Introduction  
Index Concepts  
Index Types  
Index Properties  
Index Creation  
Index Tutorial  
Indexing Reference  
Aggregation to Introduction  
Approach to Aggregation  
Type of Aggregation (Pipeline, MapReduce & Single Purpose)  
Performance Tuning

## **MongoDB Security**

Basic concepts of databases

Security Risks to Databases

MongoDB Security Approach

MongoDB Security Concept

Access Control

Integration with MongoDB with Robomongo

Integration with MongoDB with Java