

Administering MongoDB On-Premise

Course Description

This 3-day course teaches database administrators and IT professionals how to install, manage, secure, and maintain MongoDB in on-premise setups. It covers core tasks like setup, replication, basic scaling, monitoring, and backups through simple explanations and guided hands-on labs. Ideal for those transitioning from relational databases, with no prior MongoDB experience required.

Duration: 3 days (24 hours)

Pre-requisites:

- Basic Linux/Unix command-line skills
- Familiarity with databases (e.g., SQL basics)
- General IT knowledge (files, networks)

Learning Objectives:

By the end of this course, participants will be able to:

- Install and start MongoDB on a single server
- Set up basic replication for reliability
- Secure MongoDB with users and passwords
- Monitor health and fix simple issues
- Perform backups and restores
- Scale with basic sharding

Content Coverage

Day 1: Getting Started with MongoDB Basics

Module 1: MongoDB Overview

- What is MongoDB? Documents vs. tables
- Key parts: mongod server and mongo shell
- Simple data storage: Collections and JSON-like documents
- Hands-on: Explore sample data

Module 2: Installation and Setup

- Downloading and installing on Linux/Windows
- Basic config file: Ports, data paths, logs
- Starting/stopping MongoDB as a service
- Verifying installation
- Hands-on: Install on a local machine

Module 3: Basic Data Management

- Using mongo shell: Insert, find, update, delete
- Creating/deleting databases and collections
- Simple import/export with mongoimport
- Hands-on: Load and query sample data

Day 2: Reliability and Security

Module 4: Replica Sets for Backup Servers

- What is a replica set? Primary and secondary roles
- Setting up a simple 3-node replica set
- Testing automatic failover
- Reading from secondaries
- Hands-on: Build and test a replica set

Module 5: Introduction to Sharding

- Why shard? Splitting data across servers
- Basic sharded setup: One shard and mongos
- Choosing a shard key
- Checking data balance
- Hands-on: Simple sharded cluster demo

Module 6: Securing Your Deployment

- Enabling authentication
- Creating admin users and roles
- Basic TLS setup for connections
- Common security checks
- Hands-on: Add users and lock down access

Day 3: Monitoring, Maintenance, and Recovery

Module 7: Monitoring Basics

- Tools: mongostat, mongotop, and logs
- Checking server health: CPU, memory, connections

- Finding slow queries
- Simple alerts
- Hands-on: Monitor a running instance

Module 8: Backups and Restores

- Easy backups: mongodump and mongorestore
- File system snapshots
- Restoring to a point in time
- Testing recovery
- Hands-on: Backup and restore lab

Module 9: Daily Admin Tasks and Troubleshooting

- Common fixes: Restarting, checking disk space
- Indexing basics for speed
- Updating MongoDB safely
- Best practices recap
- Hands-on: Troubleshoot scenarios