

MDB: MongoDB for Administration Remote Online Learning

Course Code: MDB

Duration: 4 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

OVERVIEW

MongoDB

SKILLS COVERED

- At the end of the course participants will be able to start working as a Administrator

WHO SHOULD ATTEND?

- Whoever needs to upskill on MongoDB technology

PREREQUISITES

- Basics of DBMS

MODULES

Module 1: Installation and Configuration

- Introduction
- Installing and starting MongoDB on Linux
- Installing and starting MongoDB on macOS
- Binding MongoDB process to a specific network interface and port
- Enabling SSL for MongoDB
- Choosing the right MongoDB storage engine
- Changing storage engine
- Separating directories per database
- Customizing the MongoDB configuration file

- Running MongoDB as a Docker container

Module 2: Understanding and Managing Indexes

- Introduction
- Creating an index
- Managing existing indexes
- How to use compound indexes
- Creating background indexes
- Creating TTL-based indexes
- Creating a sparse index
- Creating a partial index
- Creating a unique index

Module 3: Performance Tuning

- Introduction
- Configuring disks for better I/O
- Measuring disk I/O performance with mongoperf
- Finding slow running queries and operations
- Storage considerations when using Amazon EC2
- Figuring out the size of a working set

Module 4: High Availability with Replication

- Introduction
- Initializing a new replica set
- Adding a node to the replica set
- Removing a node from the replica set
- Working with an arbiter
- Switching between primary and secondary nodes
- Changing replica set configuration
- Changing priority to replica set nodes

Module 5: High Scalability with Sharding

- Understanding sharding and its components
- Components of MongoDB sharding infrastructure

- Config server
- The mongos query router
- The shard server
- Choosing the shard key
- Setting up and configuring a sharded cluster
- Managing chunks
- Moving non-sharded collection data from one shard to another
- Removing a shard from the cluster
- Understanding tag aware sharding – zones

Module 6: Managing MongoDB Backups

- Introduction
- Taking backup using mongo dump tool
- Taking backup of a specific mongodb database or collection
- Taking backup of a small subset of documents in a collection
- Using bsondump tool to view mongo dump output in human readable form
- Creating a point in time backup of replica sets
- Using the mongo export tool
- Creating a backup of a sharded cluster

Module 7: Restoring MongoDB from Backups

- Introduction
- Restoring standalone MongoDB using the mongorestore tool
- Restoring specific database or specific collection
- Restoring data from one collection or database to another
- Creating a new MongoDB replica set node using backups
- Restoring a MongoDB sharded cluster from backup

Module 8: Monitoring MongoDB

- Introduction

- Monitoring MongoDB performance with mongostat
- Checking replication lag of nodes in a replica set
- Monitoring and killing long running operations on MongoDB
- Checking disk I/O usage
- Collecting MongoDB metrics using Diamond and Graphite

Module 9: Authentication and Security in MongoDB

- Introduction
- Setting up authentication in MongoDB and creating a superuser account
- Creating normal users and assigning built-in roles
- Creating and assigning custom roles
- Restoring access if you are locked out
- Using key files to authenticate servers in a replica set

Module 10: Deploying MongoDB in Production

- Introduction
- Configuring MongoDB for a production deployment
- Upgrading production MongoDB to a newer version
- Setting up and configuring TLS (SSL)
- Restricting network access using firewalls

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