

MongoDB for Administrators

Duration: 4 Days

Description

MongoDB is a document-based, fast, scalable and open source NoSQL (Not only SQL) database application. The fact that MongoDB is flexible and easy to use has strengthened its worldwide popularity in a short time and made it a database system preferred by many institutions. One of the most important advantages of MongoDB is that it is scalable and stores data as a document, multiple copies can be stored on it, and all data can be accessed quickly and easily by creating an index on the data.

This 4-days training for MongoDB for Administrators (MongoDB for database administrators) is suitable for any system administrator who wants to install and manage the database service.

What You'll Learn

- General features and MongoDB structure
- Introduction to NoSQL
- MongoDB command line client
- MongoDB system logs
- CRUD operations
- Architecture, Schematic Designs and Modeling
- Indexes of any collection in MongoDB
- Restricting access to the MongoDB service
- Backup MongoDB service and recover from backup when necessary
- Which metrics to review and how to get those metrics to monitor the MongoDB service
- MongoDB replication cluster
- Sharded MongoDB cluster

Outline

Module 1: Introduction to NoSQL

- What Is NoSQL?
- Why NoSQL databases are required?
- Types of NoSQL Database

- NoSQL vs SQL Comparison
- ACID & BASE Property
- CAP Theorem
- Benefits of NoSQL databases
- Installation
- Start and Stop the mongodb process

Module 2: Architecture

- Document, Collection, Databases
- JSON and BSON
- Storage Engines
- WiredTiger Storage Engine
- Snapshots and Checkpoints
- Journal
- Compression
- In-Memory Storage Engine
- Read and Write Concerns
- GridFS

Module 3: CRUD Operations

- Mongodb Data Types (BSON Types)
- CRUD Operations
- Create Operations
- Read Operations
- Update Operations
- Delete Operations
- Bulk Write Operations

Module 4: Schema Design and Data modeling

- Dynamic Schema
- Document Structures
- Schema Validation
- What is Data modeling?
- Embedding Document
- Reference Document
- Factors effect Data Model Selection

Module 5: Indexes

- Indexing concepts in MongoDB

- Types of Indexes
- Index Properties
- Managing Indexes
- Index Strategies

Module 6: Database Administration

- Changing Run-time Configuration
- Database Server Status
- Current Operations
- Managing mongod Processes
- Terminating Running Operations
- Rotating Log Files
- Enabling Access Control
- Users and Roles
- Copy and Clone database
- DB and Collection Stats
- Explain Plan
- Database Profiler
- Diagnostic Commands

Module 7: Backup and Security

- Concept of Backups
- mongoexport/mongoimport
- mongodump/mongorestore
- Oplog backups
- LVM Backups
- Backups using Ops Manager

Module 8: Replication

- Concept of Replication
- Replica Set Member Roles
- Replication Process
- Read Reference
- Replica Set Primary & Secondary Members
- Role of Oplog in Replication
- Deployment Architectures
- Voting and Electing Primary
- Rollbacks During Replica Set Failover
- Write Concern and Read Preference

Module 9: Scalability

- Concept of Scalability
- Sharding Concept
- Shard Keys and Chunks
- Advantages of Sharding
- Sharded and Non-sharded Collection
- Sharding Strategies
- Sharded Cluster Components
- Production and Development Deployments
- Zones

Module 10: Monitoring and Other Tools

- Monitoring
- MongoDB Tools
- MongoDB Developer Tools
- MongoDB Ops Manager
- MongoDB Atlas

Prerequisites

Basic Linux Knowledge