

Introduction to MongoDB for Developers -

TTDB4683

Explore MongoDB Query Language: Storage Basics, CRUD, performance, Aggregation, Replication, Sharding, Security & More

Duration: 3 Days

Skill Level: Introductory

Available Format: Instructor-Led Online; Instructor-Led, Onsite In Person ; Blended;
On Public Schedule

Geared for experienced developers, Introduction to MongoDB for Developers is a comprehensive course that provides you with hands-on experience with the MongoDB query language, aggregation framework, data modeling, indexes, drivers, basic performance tuning, high availability and scaling. Throughout the course, you'll explore the MongoDB Atlas database environment in detail, gaining job-ready skills you can put right to work after class.

What You'll Learn

Overview

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Objectives

This course is approximately 50% hands-on lab to lecture ratio, combining engaging expert lessons, demos and group discussions with real-world, skills-focused machine-

based labs and exercises. Working in a hands-on learning environment, guided by our expert team, you'll explore:

- Storage Basics
- MongoDB Document Model
- MongoDB Setup
- CRUD: Basics through Advanced Concepts
- Performance: Basics through Advanced Concepts
- Aggregation: Basics through Advanced Concepts
- Replication: Basics through Advanced Concepts
- Sharding: Basics through Advanced Concepts
- Schema Design
- Security Basics, Authentication & Authorization
- Application Development and Drivers

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer database, full stack, development, security and other related topics that may be blended with this course for a track that best suits your needs.

Audience

This introductory-level course is for experienced application developers new to MongoDB. In order to gain the most from this course, you should have:

- Basic programming experience. Course examples leverage basic Java syntax, so experience with Java or another OO language will be helpful.
- Prior experience working with databases (Such as MySQL, etc.)
- Experience working in Linux and / or be comfortable working from the command line.

Pre-Requisites

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- Basic programming experience. Course examples leverage basic Java syntax, so experience with Java or another OO language will be helpful.
- Prior experience working with databases (Such as MySQL, etc.)

- Experience working in Linux and / or be comfortable working from the command line.

Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation.

Day 1

Storage Basics

- What is a Storage Engine?
- WiredTiger Storage Engine
- In-Memory Storage Engine
- Encrypted Storage Engine

MongoDB Document Model

- JSON and BSON
- MongoDB Data Types

MongoDB Setup

- Lab: Atlas Setup / Local MongoDB Setup

CRUD Basics

- Insert Command
- Find Command
- Query Operators
- Lab: Finding Documents
- Remove Command

- Updating Documents
- Lab: Updating Documents

CRUD Advanced

- Bulk Writes
- Retryable Writes
- Find and Modify
- Transactions

Performance Basics

- Indexes
- Lab: Creating Indexes
- Lab: Using explain()

Aggregation Basics

- Aggregation Pipeline Concepts
- Aggregation Pipeline Stages
- Aggregation Pipeline Expressions
- Lab: Writing Aggregation Queries

Day 2

Aggregation Advanced

- \$lookup stage
- \$graphLookup stage
- Lab: Using \$graphLookup
- \$expr operator
- Lab: Using \$expr
- Faceted Search
- Type Conversions
- Advanced Expression Operators

- Date Expression Operators
- Expression Variables
- Aggregation Pipeline Optimizations
- Aggregation in a Sharded Cluster

Replication Basics

- MongoDB Replica Sets
- Replica Set Use Cases
- Replication Mechanics

Replication Advanced

- Using Write Concern to Tune Durability Semantics
- Using Read Concern to Tune Read Isolation
- Using Read Preference
- Replica Set Tag Sets

Sharding Basics

- Sharding Concepts
- When to Shard
- What is a Shard Key?
- Zoned Sharding / MongoDB Atlas Global Clusters

Sharding Advanced

- Components of a Sharded Cluster
- Sharding Mechanics
- Choosing a Good Shard Key

Day 3

Schema Design

- Schema Design Core Concepts
- Common Patterns
- Lab: Data Model for an E-Commerce Site

Security Basics

- Authentication & Authorization
- Lab: Creating an Admin User
- Lab: Creating a readWrite User
- Network Encryption
- Encryption at Rest
- Auditing

Application Development and Drivers

- Application Development with MongoDB Drivers
- Lab: Driver Tutorial

Performance Advanced

- Designing Compound Indexes
- Indexing Arrays
- Covered Queries
- Using hint() and Index Filters

Related Courses

TTDB4680	Introduction to MongoDB for DBAs
TTDB4683	Introduction to MongoDB for Developers

All course software (limited versions, for course use only), digital courseware files or course notes, labs / data sets and solutions (as applicable) are provided for you in our “easy access / no install required” high-speed remote lab environment. Our tech team works with every student to ensure everyone is set up with working access and ready to go prior to every course start date, ensuring a smooth delivery and great hands-on experience. Please ask for details.

For More Information

Please [contact us](#) or call 844-475-4559 toll free for more information about our training services (instructor-led, self-paced or blended), coaching and mentoring services, public course enrollment or questions, partner programs, courseware licensing options and more.