

Introduction to MongoDB for Developers

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



Course Snapshot

- **Course:** Introduction to MongoDB for Developers (TTDB4683)
- **Duration:** 3 days
- **Audience & Skill-Level:** This introductory-level course is for experienced application developers new to MongoDB. Students should have prior programming background, and be comfortable working with Linux.
- **Hands-on Learning:** 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. Student machines are required.
- **Delivery Options:** This course is available for **onsite private classroom presentation**, **live online virtual presentation**, or can be presented in a **blended learning format**. Please also ask about our **Self-Paced / Video / QuickSkills** or **Mini-Camp / Short Course** flexible delivery options.
- **Public Schedule:** This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Overview

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.

Learning 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 & Pre-Requisites

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.

Related MongoDB Courses:

- TTDB4680 Introduction to MongoDB for Developers
- TTDB4683 MongoDB for DBAs
- TTDB4685 NOSQL Database Architecture with Apache Cassandra and MongoDB
- TTDB4688 MEAN Stack Development | Working with MongoDB, Express.JS, Angular, Node.JS & More

Course Topics / 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.

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| <p>Day 1</p> <p>1. Storage Basics</p> <ul style="list-style-type: none"> • What is a Storage Engine? • WiredTiger Storage Engine • In-Memory Storage Engine • Encrypted Storage Engine <p>2. MongoDB Document Model</p> <ul style="list-style-type: none"> • JSON and BSON • MongoDB Data Types <p>3. MongoDB Setup</p> <ul style="list-style-type: none"> • Lab: Atlas Setup / Local MongoDB Setup <p>4. CRUD Basics</p> <ul style="list-style-type: none"> • Insert Command • Find Command • Query Operators • Lab: Finding Documents • Remove Command • Updating Documents • Lab: Updating Documents <p>5. CRUD Advanced</p> <ul style="list-style-type: none"> • Bulk Writes • Retryable Writes • Find and Modify • Transactions <p>6. Performance Basics</p> <ul style="list-style-type: none"> • Indexes • Lab: Creating Indexes • Lab: Using explain() <p>7. Aggregation Basics</p> <ul style="list-style-type: none"> • Aggregation Pipeline Concepts | <ul style="list-style-type: none"> • Aggregation Pipeline Stages • Aggregation Pipeline Expressions • Lab: Writing Aggregation Queries <p>Day 2</p> <p>8. Aggregation Advanced</p> <ul style="list-style-type: none"> • \$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 <p>9. Replication Basics</p> <ul style="list-style-type: none"> • MongoDB Replica Sets • Replica Set Use Cases • Replication Mechanics <p>10. Replication Advanced</p> <ul style="list-style-type: none"> • Using Write Concern to Tune Durability Semantics • Using Read Concern to Tune Read Isolation • Using Read Preference • Replica Set Tag Sets <p>11. Sharding Basics</p> <ul style="list-style-type: none"> • Sharding Concepts • When to Shard | <ul style="list-style-type: none"> • What is a Shard Key? • Zoned Sharding / MongoDB Atlas Global Clusters <p>12. Sharding Advanced</p> <ul style="list-style-type: none"> • Components of a Sharded Cluster • Sharding Mechanics • Choosing a Good Shard Key <p>Day 3</p> <p>13. Schema Design</p> <ul style="list-style-type: none"> • Schema Design Core Concepts • Common Patterns • Lab: Data Model for an E-Commerce Site <p>14. Security Basics</p> <ul style="list-style-type: none"> • Authentication & Authorization • Lab: Creating an Admin User • Lab: Creating a readWrite User • Network Encryption • Encryption at Rest • Auditing <p>15. Application Development and Drivers</p> <ul style="list-style-type: none"> • Application Development with MongoDB Drivers • Lab: Driver Tutorial <p>16. Performance Advanced</p> <ul style="list-style-type: none"> • Designing Compound Indexes • Indexing Arrays • Covered Queries • Using hint() and Index Filters |
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Student Materials & Lab Environment

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

All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses, self-paced learning options, recorded sessions** and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training, Boot Camps, Skills Immersion Programs, Reskilling Programs, Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget.

Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

For more information about our dedicated training services, collaborative coaching services, courseware licensing options, public course schedule, training management services, partner programs, or to see our complete list of course offerings and special offers please visit us at www.triveratech.com, email Info@triveratech.com or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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