Instructor-led Training for MongoDB Developers

Upskill MongoDB teams to build better, faster.

Ramp up your team's MongoDB skills with a comprehensive training program geared towards developers. Live classes taught by certified instructors ensure your team's learning outcomes are met quickly and reliably, so you can map training to project success.

You can view all available courses at learn.mongodb.com.

Overview

Our graduated, modular curriculum provides courses for a variety of MongoDB skill levels. All classes include labs and workshops in an interactive development environment.

MongoDB Foundational Training for Developers
Our 4 foundational courses are the recommended starting point for all developers, covering fundamental MongoDB skills and features with hands-on experiences.

Developer Skill Specialty Courses
Dive deep into specific MongoDB products or critical development skills with short mastery courses, giving learners an opportunity to learn through targeted workshops.

Get started

We can work with you to develop a customized training plan tailored to your team's skills, project needs, and timelines. You can also enroll learners in an upcoming class on our Public Training schedule.

To see all course logistics and requirements, view the Learner Guide.

Private Training
On-site or remote classrooms for up to 12 learners. Schedule and agenda is flexible to your needs. Minimum 2 consecutive days are required.

Public Training
Remote-only classes published on a recurring schedule. Available with an unlimited access annual pass, or on a per-seat basis.

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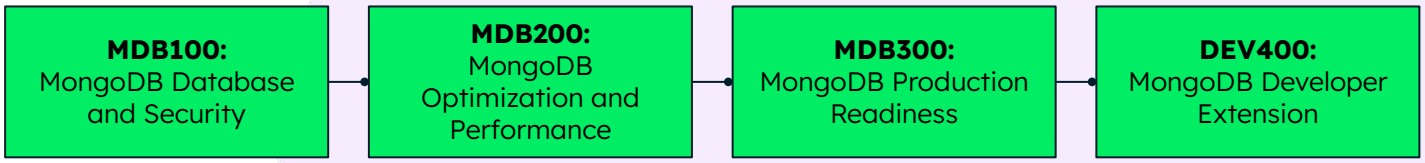
MongoDB Training for Developers

Foundation Training: Overview

Our entry-level developer learning path comprises a series of four classroom days. Each day introduces new concepts and skills and gets students closer to developing high quality, scalable, production applications using MongoDB. Training focuses on what's most important for developer productivity and teaches concepts and skills in a developer-oriented way, with hands-on exercises throughout the course.

Students are provided with a copy of the training slides and comprehensive lecture notes.



Foundation training can be delivered in 1-day individual sessions. Each training day builds on knowledge and skills acquired from the preceding prerequisite days. Students may choose to schedule all four days in a row, or space them out according to their schedule or project timeline.

Each day includes a short, end-of-day student assessment with real-time results provided to students.

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MongoDB Training for Developers

	MDB100: MongoDB Database and Security	MDB200: MongoDB Optimization and Performance	MDB300: MongoDB Production Readiness	DEV400: MongoDB Developer Extension
Audience	Developers, DB Admins / Ops Professionals, & Technical Managers	Developers, DB Admins / Ops Professionals	Developer, DB Admins / Ops Professionals	Developers
Duration	1 day	1 day	1 day	1 day
Prereqs	None	MDB100	MDB100, MDB200	MDB100, MDB200, MDB300
Topics	• Intro to MongoDB and Atlas • Storage and Retrieval • Security	• Indexing • Profiling • Finding Slow Ops • Logs and Metrics • Atlas Search • Vector Search	• Basic Backup Operations • Replication • Sharding	• Storage and retrieval with Arrays • Aggregation • Schema Design • Time Series
Summary	This training day covers in detail what MongoDB is, its strengths and where you should use it, how to get up and running with Atlas, and the breadth of powerful functionality for storing and retrieving data (CRUD). It also reviews the security aspects of the MongoDB database.	This training day covers the fundamentals of indexing in theory and in practice, how to profile database operations to identify bottlenecks and slow operations, the logs and metrics analysis and how to use atlas search and vector search indexes for advanced queries with text and semantic searches .	This training day covers a set of topics which make the difference between an application being fit for production or not and how to perform backup tasks in the database. What does a developer need to do to ensure their application is highly available and protects data, and to ensure it will scale when required in future?	This training day covers a broad set of MongoDB functionality beyond simple storage and retrieval, working with arrays, using the aggregation framework, applying best practices for application development, and design of application code and database schema — the most important part of a well-written MongoDB application.
Outcome	On completion of this training day you will have an understanding of what MongoDB is and how it can be a good fit for your development project. You will understand how to create an Atlas cluster and how to perform CRUD operations in the database. This is an ideal training to take prior to the evaluation of MongoDB for use in your project, in order to validate your planned development effort.	On completion of this training day you will know how to avoid common MongoDB mistakes (failing to correctly index queries or leverage database capabilities for computation of data) and design your data access for optimal performance. You will also understand Atlas search and Vector search indexes. This training is a must for any developer writing code which needs to perform quickly and efficiently.	On completion of this training day you will be able to evaluate and make vital deployment decisions required when building business-critical, highly available applications. Lack of developer awareness in these areas frequently leads to severe production deployment gaps cited by MongoDB consultants, resulting in last-minute rework before go-live. Using this knowledge gets you ahead of the game.	On completion of this training day you will have all the skills needed to build a complete, performant, scalable application. You will understand what database functionality to use and when to use it. You will be aware of the paramount importance of good schema design and know several common design patterns you can use in your applications.

MongoDB Training for Developers

Foundation Training: Agenda

MDB100: MongoDB Database and Security

Introduction to MongoDB and Atlas

- Why a new database?
- What are documents?
- MongoDB
  - Agility
  - Usability
  - Utility
  - Scalability
- When to use MongoDB
- Comparison with RDBMS
- Common mistakes
- Accessing MongoDB Atlas
- Starting a cluster
- Installing a shell
- Using the web shell
- Connecting to your cluster

Storage and Retrieval

- Bulk versus single writes
- Filtering and projection
- Basic query operators
- Basic update operations
- Expressive updates
- Advanced atomicity models
  - Upsert
  - findOneAndUpdate

Security

- Introduction to keys and PKI
- Authentication models
- Authorization
  - Roles
  - LDAP
- Encryption
  - In flight
  - At rest
  - In use
- Auditing
- Additional security measures

End of day test

MDB200: MongoDB Optimization and Performance

Indexes and Optimization

- What are indexes?
- MongoDB misconceptions
- Single field indexes
- Reading explain plans
- Indexes and performance
  - Limits
  - Best practices
  - Compression
- Multikey indexes
- Compound index design
- Covered queries
- Geospatial indexing
  - 2d indexes
  - Spherical indexes
- TTL indexes
- Atlas Search and Vector Search
- Wildcard indexing
- How indexes are chosen
  - Query planner / Query optimizer
  - Hints and tips

Finding Slow Ops

- Database Profiling
- Finding slow operations
  - Slow query log
  - Enabling the profiler
- Causes of slow operations
- Logs and Metrics

Intro to Atlas Search and Vector Search

- Atlas Search
- Set up Atlas Search Index
- Atlas Vector Search
- Set up Atlas Vector Search Index

End of day test

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MongoDB Training for Developers

Foundation Training: Agenda (continued)

MDB300: MongoDB Production Readiness

Replication

- Reasons to replicate data
- Components of a replica set
- Drivers and replica sets
- The concept of majority
- Elections simplified
- Failure modes
- Write Concern
- The Majority Commit Point
- Read Concern
- Read Preference

Sharding

- What is sharding?
- Horizontal versus vertical scaling
- When to shard
- Sharding infrastructure
- Shard keys
- How sharding works
    - Reads / Writes / Chunks
- Sharding in slow motion
- Sharding pitfalls
    - A cautionary tale
- Presplitting

Basic Backup Operations

- mongodump and mongorestore
- Using the oplog
- OS level backups

End of day test

DEV400: MongoDB Developer Extension

Storage and Retrieval with Arrays

- Querying arrays
- Expressive queries
- Using cursors
- Basic update operations
- Array update operations

Using Aggregation

- Aggregation basics
- How to code aggregation
- Using the GUI pipeline builder
- Stages and expressions
    - Grouping
    - Joining / Classifying / Reshaping
- Database internal statistics
- Expression variables
- Optimizing aggregation

Schema Design

- BSON internals
- Choosing container types
- Design fundamentals
- Linking models
- Payload versus process
- Dynamic schema
- Design patterns
- Time Series

End of day test

MongoDB Training for Developers

Skill Specialty Training: Overview

Classroom training, even with exercises, is no substitute for deep practical experimentation and observation. MongoDB advanced training workshops enable a much more in-depth exploration of a topic through a series of technical challenges.

In these workshops students typically investigate and demonstrate the impact made by a change to design or the use of a feature. Students work together with each other and with the instructor – evolving code, answering questions and discussing the observed behaviors. Students can choose any subset of workshops according to the areas in which they would like to deepen their skills. Workshops can be taken in any order, although the order shown below is recommended.

Advanced training workshops are technically demanding and as a prerequisite require students to have successfully completed all four days of foundation training. Workshops are limited to 12 students per class.

DA610:
Advanced Queries and Data Processing

DA620:
Languages, Drivers, Web Services

DA630:
Distributed Systems and Transactions

DA640:
MongoDB Application Optimization

DA650:
Code Evolution, Scale and Workflow

DA660:
AI and Vector Search

DS110:
Atlas Search and Vector Search

DS120:
Atlas Data Federation

DS130:
Client-Side Field Level Encryption (CSFLE) Workshop

DEV500:
Data Modeling and Schema Design

All course descriptions and learning outcomes can be found on learn.mongodb.com.

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MongoDB Data Modeling and Schema Design

MongoDB Training for Developers and Data Architects

Organizing data such that one can optimally retrieve and update subsets of it, while still maintaining relationships and integrity, are crucial when working with any kind of database. MongoDB's document model can not only handle relations like Relational Database Management Systems can, but it offers a way to store data in a use case first process which can then be iterated on as needs arise.

In this course, we focus on schema design techniques for MongoDB, with a provided scenario of modeling an e-commerce application.

Course code: DEV500

Duration: 1 day

Intended Audience

This training is intended for developers and data architects who have completed MongoDB Developer Extension course looking to understand how to model their data and when it might be appropriate to implement design patterns to the schema to optimize performance.

Course Objectives

In this specialty course, you will learn how to:

- Distinguish between Data Modeling & Schema Design
- Understand how a workload drives the schema.
- Understand how to handle relationships between data sets
- Implement design patterns within their data to optimize performance

MongoDB.

MongoDB Atlas Search and Vector Search

MongoDB Training for Developers: Skill Specialty Course

MongoDB Atlas Search makes it easy for developers to build fast, relevant, full-text search on top of data in MongoDB Atlas.
MongoDB Atlas Vector Search allows you to integrate your operational database and vector search in a single fully managed platform that can leverage large language models (LLMs) through popular frameworks.
In this course, students are introduced to Atlas Search and Atlas Vector Search and learn everything they need to know to implement and optimize relevance-based and semantic search functionality for applications built with MongoDB Atlas.

Course code: DS110 | Duration: 1 day

Intended Audience

This training is intended for developers who have completed MongoDB Developer Fundamental courses and can perform basic MongoDB queries already, as well as architects looking to assess the capabilities of Atlas Search and Atlas Vector Search.

This course is taught using both the Atlas GUI and the MongoDB shell to demonstrate the required API calls.

Course Objectives

In this specialty course, you will learn how to:

- Identify appropriate use cases for Atlas Search
- Design and implement Atlas Search indexes
- Query Atlas Search and tune your queries to adjust result ranking
- Augment search results with scores and highlighting
- Implement synonym tables for context-sensitive matching
- Determine what instance size is required for your search capabilities
- Define Atlas Vector Search indexes and how to use the semantic search
- Use dedicated vector search nodes in their Atlas deployment

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MongoDB Atlas Data Federation

MongoDB Training for Developers: Skill Specialty Course

MongoDB Atlas Data Lake allows developers to natively query and combine data across MongoDB Atlas databases and AWS S3 without complex integrations. In this specialty training course, students will learn everything they need to know to successfully implement Atlas Data Lake and to begin working with their data.

Course code: DS120 | Duration: 1 day

Intended Audience

This training is intended for developers who have a solid grounding in the MongoDB Query API attained through completion of MongoDB Developer Fundamental courses, have basic familiarity with MongoDB Atlas, and are looking for an easy way to query, transform and seamlessly combine data across AWS S3 and MongoDB Atlas databases.

Course Objectives

In this specialty course, you will learn how to use Atlas Data Lake successfully by:

- Learning what Atlas Data Lake is and what problems it addresses
- Deploying an Atlas Data Lake and populating it with data
- Querying and manipulating data in your data lake using the MongoDB Query API, including federated queries across AWS S3 and Atlas databases
- Transferring data between Atlas databases and S3 using Atlas Data Lake specific aggregation operators
- Pre-processing data using scheduled triggers
- Using MongoDB Charts to visualize data in Atlas Data Lake
- Administering Atlas Data Lake using GUI and command-line interfaces

MongoDB.

Client-Side Field Level Encryption (CSFLE) Workshop

MongoDB Training for Developers: Skill Specialty Course

MongoDB CSFLE Workshop allows developers to review the features, components and details of the Client side file level encryption security method and learn how to implement explicit encryption and decryption as well as automatic methods applying CSFLE (Client-Side Field Level Encryption) using MongoDB drivers and databases.

Course code: DS130

Duration: 2 days

Intended Audience

This training is intended for developers who have a solid grounding in MongoDB through completion of MongoDB Developer Fundamental courses, have basic familiarity with MongoDB databases and are working with sensitive data requiring additional security.

Course Objectives

In this advanced workshop, you will learn how to use CSFLE (Client-Side Field Level Encryption) successfully by:

- Explaining what CSFLE is and why it should be used
- Reviewing CSFLE features, components and details
- Implementing Explicit and Automatic encryption and decryption
- Using key rotation to address customer requirements
- Applying concepts using Java, Python, Go, and Spring Boot

MongoDB.

Advanced Queries and Data Processing

MongoDB Training for Developers: Skill Specialty Course

The MongoDB Query Language has many capabilities that untrained engineers are either unaware of or unsure how to use best. This lack of knowledge can result in code that underperforms or has edge cases that impact correctness. The aggregation framework enables writing functional expressions that run on the database, close to the data, to perform analysis, updates and computation.

In this workshop, we move through a series of short but challenging exercises using advanced MongoDB Query Language and aggregation features. Mastery of these skills allows for achieving far more with MongoDB than merely using it as a data store.

Course code: DA610

Duration: 1 day

Intended Audience

This training workshop is intended for developers who have completed MDB200 (MongoDB Optimization and Performance) and DEV400 (MongoDB Developer Extension) or who are already comfortable with using the most common MongoDB aggregation operators such as $project, $group and $unwind, and who want to be able to push significant computation and data manipulation closer to their data.

Course Objectives

In this training workshop, you will learn how to:

- Build nested queries
- Create complex queries using expressive syntax
- Adopt best practices for when to project, enrich or redact your data to optimize your queries
- Choose between various options for bucketing and summarizing your data
- Optimize cross-collection data aggregation
- Create non-blocking and highly parallel aggregation operations
- Use list comprehension to implement complex functions
- Optimize database computation using $let

MongoDB.

Languages, Drivers, Web Services

MongoDB Training for Developers: Skill Specialty Course

In this training workshop we create a scalable, stateless web service to perform a real-world business task. Using three different styles of programming language (dynamic, static, and asynchronous), we compare the performance, readability and functionality of these three language styles as well as provide a reusable foundation to create new services. We measure performance and observe which factors influence it. We then look at what bottlenecks exist in our solution and design ways to overcome any limitations before finally learning a new design pattern as we create a consumer replenished resource service.

Course code: DA620

Duration: 1 day

Intended Audience

This training workshop is intended for developers who have completed DEV400 (MongoDB Developer Extension) and who intend to build a multi-user, shared-data application and want to understand how to do so in a way that will scale well and make optimal use of database resources. This is a polyglot programming course but taught in a way that means knowledge of any modern programming language will equip you to complete it.

Course Objectives

In this training workshop, you will learn how to:

- Implement isolation using advanced MongoDB update operators
- Evaluate the implied infrastructure costs of different app language choices
- Understand the impact of network latency between application servers and the database
- Diagnose hidden resource contention and eliminate unnecessary performance loss
- Implement mechanisms to reduce database resource contention for better throughput
- Ensure traceable message delivery to clients

MongoDB.

Distributed Systems and Transactions

MongoDB Training for Developers: Skill Specialty Course

Nearly all MongoDB production systems are highly available and distributed; even if distribution is only over a small distance, data is held in multiple independent places. Students will have learned in foundation training the decisions required to define “durable” and “safe” in a distributed system and how these responsibilities partly fall to the developer to implement correctly. In this workshop we experiment with settings that affect speed, latency, durability and business correctness to learn how and when to use concerns and transactions in MongoDB.

Course code: DA630

Duration: 1 day

Intended Audience

This training workshop is intended for developers who have completed MDB300 (MongoDB Production Readiness) and want to fully understand where a distributed document database necessitates important additional design decisions. This workshop is for those who care about performance and correctness and how to achieve both.

Course Objectives

In this training workshop, you will learn how to:

- Choose the appropriate write concern to ensure correctness of your application without sacrificing performance
- Safely and effectively use retryable writes
- Understand the implications of selecting the wrong read concern and choose the appropriate read concern to ensure correctness of your application without unnecessarily sacrificing performance
- Decide when and when not to use transactions, taking into account contention and performance considerations

MongoDB.

Application Optimization

MongoDB Training for Developers: Skill Specialty Course

In this training, students are presented with a functional but unusable solution to a problem, in this case the storage and retrieval of product review information. We work through an iterative process of application improvement to take a 20 second response time down to 20 milliseconds. We then learn how this can be further optimized by using lower-level APIs in the MongoDB driver. This workshop helps students avoid lengthy refactoring in their next project — by understanding how to do things correctly from the start.

Course code: DA640

Duration: 1 day

Intended Audience

This training is intended for developers who have completed DEV400 (MongoDB Developer Extension) and need to build an application that will work for many users and at significant scale. Optimizing your application to reduce your infrastructure costs can easily make this the most valuable course you attend.

Course Objectives

In this training workshop, you will learn how to dramatically improve the performance of a MongoDB application by:

- Leveraging indexes
- Optimizing aggregations with index covered queries
- Implementing a caching pattern in the schema
- Implementing a computed summary pattern in the schema
- Using raw BSON data types to reduce the overhead of object creation

MongoDB.

Code Evolution, Scale and Workflow

MongoDB Training for Developers: Skill Specialty Course

In this training workshop, students create an application that evolves its schema over time to support new business needs without needing to transform older data. This is a substantial benefit of dynamic schema in MongoDB, but one developers often fail to take full advantage of. We build a social media service with followers, posts and data feeds. We learn how to model high cardinality graphs, handle changes to tricky fields such as username, use various write models for extreme scale, and how to build asynchronous worker tasks to ensure the completion of long-running operations even in the event of application or database failover.

Course code: DA650

Duration: 2 days

Intended Audience

This training workshop is intended for developers who have completed MDB300 (MongoDB Production Readiness) and who are embarking on a project to build a long-lived, highly-scalable application from the ground up. It will get you off to the best possible start to ensure maximum performance and uptime over the lifetime of the application.

Course Objectives

In this training workshop, you will learn how to:

- Create an adaptable data access layer (DAL) to decouple your objects from your schema
- Use schema versioning to avoid having to rewrite older records
- Use schema versioning to support running new and old application versions simultaneously
- Identify bottlenecks which limit scaling and design schemas capable of managing millions of users
- Apply caching design patterns to optimize retrieval time
- Use collection-queues and background workers to complete long running tasks asynchronously

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Artificial Intelligence (AI) and Vector Search

MongoDB Training for Developers: Skill Specialty Course

This fundamental level course introduces vector searching, the relevant basic concepts, and how to use Atlas Vector Search for tasks such as semantic search and image matching.

Understanding these concepts enables you to leverage and contribute to the cutting-edge technologies revolutionizing the way we interact with AI systems. Students will put their knowledge into practice by building a small image search website.

Course code: DA660

Duration: 1 day

Intended Audience

This training workshop is intended for developers who have completed the Developer Foundation courses and are using MongoDB Atlas.

Course Objectives

After this training, you will understand and have practical knowledge of the following:

- Vectors and vector searching
- Approximate Nearest Neighbours (ANN) Search
- Hierarchical Navigable Small Worlds (HNSW) Algorithm
- Text Embeddings and Chunking Techniques
- Atlas Vector Search applications
- MongoDB's applications as a Vector Database
- Atlas Vector Nodes

MongoDB.