

**MongoDB for Developers**

**Course Number:** MDB-104  
**Duration:** 2 days

**Overview**

[MongoDB](https://www.mongodb.com/) is a powerful database featuring a flexible document-oriented approach for organizing data rather than the traditional fixed-schema tabular model. With its robust durability and scalability mechanisms, MongoDB became massively popular for workloads of any size.

In this MongoDB for Developers training, attendees go well beyond the basics and learn advanced MongoDB skills important to those charged with running, monitoring, maintaining, and troubleshooting MongoDB clusters.

**Note:** This class is taught using NodeJS, however, it can also be taught using Python, C#, or Java.

**Prerequisites**

* Some experience developing database backed applications.
* 3 years of experience using JavaScript.
* Understanding asynchronous programming

**Materials**

All students receive comprehensive courseware.

**Software Needed on Each Student PC**

* Computer with Internet connectivity
* Ability to install software on the computer
* Recent 64-bit OS, such as Windows 10, macOS, or Linux
* An IDE such as Visual Studio Code to use for writing and debugging code.
* NodeJS installed

**Objectives**

* Store and query documents
* Use the native driver
* Apply performance tuning
* Handle common errors
* Understand durability, read preferences and write concerns
* Stream data and Change Streams
* Use transactions, transaction scope, and the new ACID transactions

**Outline**

* Introduction
* MongoDB Overview
  + What is MongoDB?
  + What is a Document-Oriented database?
  + The differences from relational databases
  + Databases, Collections, and documents
* CRUD basics in the Shell
  + Creating document
  + Finding documents
  + Updating documents
  + Deleting documents
* Driver Basics
  + Connecting to MongoDB
  + Connection Strings
  + The Mongo Client
  + Cursors
  + Simple CRUD
  + Type Fidelity
* Aggregation
  + The Aggregation Pipeline
  + Major pipeline stages
  + Key aggregation operators
* Creating Reports
  + Advanced filtering
  + Grouping and Projections
  + Key aggregation operators
  + Multi-stage pipelines
* Replica Sets
  + Durability
  + Automatic failover
  + Elections and server roles
  + Read and write concerns
  + The Oplog
* Error Handling
  + Common errors
  + Retriable errors
  + Applying write concerns
* Indexing and Query Tuning
  + Index types
  + Index direction
  + Covering index
  + Query planner
* Bulk Data
  + Import and export
  + Bulk
* Conclusion