



MongoDB Administration

Course ID: ITG-BIG-310

# ITG Software Engineering

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MongoDB Administration

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## Course Overview:

This 3 day course will provide administrators with everything they need to successfully install and maintain a MongoDB database. Attendees will also learn how to setup Replica sets, Journaling, simple querying, how to aggregate data, optimize queries, manage users, and perform various administrative tasks.

## Prerequisites:

Basic Linux Knowledge and some knowledge of traditional database systems.

## Who Should Attend this course?

Those interested in maintaining a MongoDB database.

## Topics:

<ul style="list-style-type: none"><li>• Introduction</li></ul>	<ul style="list-style-type: none"><li>• Replica Sets</li></ul>
<ul style="list-style-type: none"><li>• Journaling</li></ul>	<ul style="list-style-type: none"><li>• Simple Queries</li></ul>
<ul style="list-style-type: none"><li>• How to aggregate data</li></ul>	<ul style="list-style-type: none"><li>• Various Administration tasks</li></ul>
<ul style="list-style-type: none"><li>• Optimizing queries</li></ul>	<ul style="list-style-type: none"><li>• Various methods of managing users</li></ul>
<ul style="list-style-type: none"><li>• User Roles</li></ul>	<ul style="list-style-type: none"><li>• Options and Settings</li></ul>
<ul style="list-style-type: none"><li>• Monitoring Queries</li></ul>	<ul style="list-style-type: none"><li>• Query Patterns</li></ul>
<ul style="list-style-type: none"><li>• Using the Console</li></ul>	<ul style="list-style-type: none"><li>• Scaling MongoDB</li></ul>
<ul style="list-style-type: none"><li>• Sharding</li></ul>	<ul style="list-style-type: none"><li>• AutoSharding</li></ul>
<ul style="list-style-type: none"><li>• Normalized data</li></ul>	<ul style="list-style-type: none"><li>• Denormalized data</li></ul>
<ul style="list-style-type: none"><li>• Managing the log file</li></ul>	<ul style="list-style-type: none"><li>• Optimizing your data</li></ul>

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DAY 01 MODULES:

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## *Module 01: Getting started with MongoDB*

- NoSQL architecture & MongoDB
- Comparing MongoDB to other NoSQL systems
- MongoDB to NoSQL
- Why MongoDB?

## *Module 02: HDFS*

- Using the console
- Creating databases, collections, documents, fields
- Simple Querying
- Indexes

## *Module 03:*

- Overview
- Exploring the Architecture
- Replica Sets
- Journaling

## *Module 04:*

- Autosharding
- Who needs to use Autosharding: Tradeoffs
- Scaling MongoDB
- Understanding your app and avoiding overkill

***Module 05: Aggregating Data***

- Aggregating Data Overview
- Aggregation Pipeline
- MapReduce
- Aggregation Commands

***Module 06: Logging Data***

- Logging overview
- Schema Design
- Using the log
- Managing the log file

***Module 07: Modeling Data***

- Modeling Data
- Various Data Types
- Normalized & Denormalized data
- Optimize your data manipulation

***Module 08: Optimizing Queries***

- Overview
- Spotting slower queries
- Checking slower queries
- Query Patterns

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DAY 03 MODULES:

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## *Module 09: Database Administration*

- Starting & Stopping MongoDB
- Backup & Restore
- Using Profiler
- Stats

## *Module 10: Miscellaneous Options*

- Geospatial Indexes
- Capped Collection
- Tailable Cursors
- Transaction Alternatives

## *Module 11: Managing Users*

- Creating & Modifying Users
- Creating & Modifying Roles
- Working with Tailable Cursors
- Changing Access Passwords