

# **MySQL 8.0 for Database Administrators**

**Duration: 5 Days** 

### **Course Description:**

The MySQL for Database Administrators enables DBAs and other database professionals to maximize their organization's investment in MySQL. Learn to configure the MySQL Server, set up replication and security, perform database backups and recoveries, optimize query performance, and configure for high availability.

# **Course Objectives:**

Upon completion of this course, the student should be able to:

- Install the MySQL server and client programs
- Upgrade MySQL on a running server
- Describe MySQL architecture
- Explain how MySQL processes, stores, and transmits data
- Configure MySQL server and client programs
- Use server logs and other tools to monitor database activity
- Create and manage users and roles
- Protect your data from common security risks
- Troubleshoot server slowdowns and other common problems
- Identify and optimize poorly performing queries
- Define and implement a backup strategy
- Perform physical and logical backups of your data
- Describe MySQL replication and its role in high availability and scalability
- Configure simple and complex replication topologies
- Administer a replication topology
- · Configure and administer InnoDB Cluster

#### **Target Audience:**

- Administrator
- Architect
- Database Administrator
- Developer
- Systems Administrator

# **Course Outlines:**

# Introduction to MySQL

- Introduction to MySQL
- MySQL Powers the Web

## Installing and Upgrading MySQL

- > Installing and Upgrading MySQL
- Linux MySQL Server Installation Directories
- Starting and Stopping MySQL

# Understanding MySQL Architecture

- Understanding MySQL Architecture
- Storage Layer
- What is a Data Dictionary?
- Redo Logs

# Configuring MySQL

- Configuring MySQL
- Server System Variables

#### Monitoring MySQL

- Monitoring MySQL
- Status Variable
- MySQL Enterprise Audit
- MySQL Enterprise Monitor

# Managing MySQL Users

- Managing MySQL Users
- Setting the Account Password
- Authorization
- Using Role Privileges

#### Securing MySQL

- Securing MySQL
- Preventing MySQL Password Security Risks
- Keyring
- MySQL Enterprise Firewall

# Maintaining a Stable System

- Maintaining a Stable System
- Capacity Planning
- > Identifying the Causes of Server Slowdowns

# Optimizing Query Performance

- Optimizing Query Performance
- Index Statistics

# Choosing a Backup Strategy

- Choosing a Backup Strategy
- Backup Techniques

# Performing Backups

- Performing Backups
- Mysqldump and mysqlpump
- Physical InnoDB Backups: Overview

#### Configuring a Replication Topology

- Configuring a Replication Topology
- Replication Use Cases
- Binary Log Formats
- Asynchronous Replication

# Administering a Replication Topology

- Administering a Replication Topology
- Monitoring Replication
- Troubleshooting MySQL Replication

# Achieving High Availability with MySQL InnoDB Cluster

- Achieving High Availability with MySQL InnoDB Cluster
- MySQL Shell (mysqlsh)
- Managing Sandbox Instances

### Conclusion

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