MySQL for Database Administrators Training

COURSE CONTENT

GET IN TOUCH

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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

The MySQL for Database Administrators Training by Multisoft Systems is a comprehensive course designed to equip aspiring and experienced DBAs with the knowledge and skills needed to manage MySQL database environments effectively. This hands-on training covers essential administrative tasks such as installation, configuration, user and privilege management, backup and recovery, replication, performance tuning, and security implementation.

Module 1: Course Introduction

- ✓ Administration and Course Materials
- ✓ Course Structure and Agenda
- ✓ Delegate and Trainer Introductions

Module 2: The Server, Clients and Tools

- ✓ Introduction to MySQL
- ✓ The versions of MySQL
- ✓ MySQL Database Server Releases
- ✓ MySQL Database Versions
- ✓ The MySQL Server
- ✓ MySQL Client Connections
- ✓ MySQL Client Programs
- ✓ MySQL Client Libraries
- ✓ The MySQL Command Line Tool
- ✓ The MySQLadmin Program

Module 3: MYSQL Workbench

- ✓ Installation of MySQL Workbench
- ✓ Connecting to MySQL Workbench
- ✓ MySQL Workbench Screens

Module 4: Obtain Metadata

- ✓ What is Metadata?
- ✓ The MySQLshow Client Program
- ✓ The SHOW and DESCRIBE Commands
- ✓ Obtaining data from the INFORMATION_SCHEMA
- ✓ MySQL 8 INFORMATION_SCHEMA Changes
- ✓ Generate Statements using the INFORMATION_SCHEMA

Module 5: Configure the server

- ✓ Start and stop the MySQL Server
- ✓ Status Files
- ✓ An Overview of MySQL Storage Engines
- ✓ MySQL Server Options and Variables
- ✓ MySQL Status Variables
- ✓ Configure the MySQL Enterprise Edition Auditing Plugin

Module 6: SQL Modes, Log Files and Binary Logging

- ✓ SQL Modes
- ✓ The General Log
- ✓ The Error Log
- ✓ The Slow Query Log
- ✓ The Binary Logs

Module 7: MYSQL Architecture

- ✓ Communication Protocols used to connect a Client to the Server
- ✓ The SQL Parser and Storage Engine Tiers
- ✓ Installing and Uninstalling Plugins
- ✓ How MySQL Uses Disk Space
- ✓ How MYSQL Uses Memory

Module 8: The InnoDB Storage Engine

- ✓ Features of the InnoDB Engine
- ✓ The System Tablespace
- ✓ Transactions and Referential Integrity
- ✓ Physical Characteristics of InnoDB Tables
- ✓ System Tablespace Configuration
- ✓ File per Table Tablespace

- ✓ Log File and Buffer Configuration
- ✓ Undo Logs and Undo Tablespaces
- ✓ General Tablespaces
- ✓ Buffer and Lof File Configuration
- ✓ Temporary Table Tablespaces
- ✓ InnoDB Status
- ✓ InnoDB Shutdown Options

Module 9: Other Storage Engines

- ✓ Check Engine Usage
- ✓ The MYISAM Engine
- ✓ The Merge Engine
- ✓ Other Engines: Archive, Memory, Blackhole, CSV, Spider, MyRocks
- ✓ Mixing Storage Engines

Module 10: Table Maintenance

- ✓ Table Maintenance Operations
- ✓ Check Table
- ✓ Repair Table
- ✓ Analyse Table
- ✓ Optimize Table
- ✓ MySQL Check
- ✓ Repair InnoDB Tables
- ✓ MyISAM Table Maintenance and Repair Utilities

Module 11: Backup and Recovery

- ✓ The Advantages and Disadvantages of Different Backup Methods
- ✓ Backup Tool Overview
- ✓ What Should be Backed up?
- ✓ Binary Backups of MYISAM Tables

- ✓ Binary Backups of InnoDB Tables
- ✓ Performing Hot Backups
- ✓ Performing Recovery
- ✓ Import and Export Operations
- ✓ Export and Import using SQL
- ✓ Export from the Command Line using MySQL dump
- ✓ Import from the Command Line using MySQL import
- ✓ Additional Backup Tools

Module 12: User Management

- ✓ Introduction
- ✓ User Accounts
- ✓ Creating Users
- ✓ Renaming Users
- ✓ Change a User Password
- ✓ Dropping Users
- ✓ Granting Privileges
- ✓ The User Table
- ✓ Connection Validation
- ✓ Password Validation Plugins

Module 13: Privileges

- ✓ Types of Privileges
- ✓ Granting and Revoking Privileges
- ✓ Setting Resource Limits
- ✓ Resource Management
- ✓ Role Management
- ✓ The MySQL Database
- ✓ The Show Grants Command

Module 14: Transactions and Locking

- ✓ Locking Concepts
- ✓ Levels of Locking
- ✓ Implicit Table Locking with MyISAM and InnoDB
- ✓ Explicit Table Locking
- ✓ Advisory Locking
- ✓ Monitoring Locks
- ✓ Turning Autocommit on and off
- ✓ Using Transaction Blocks
- ✓ Possible Causes of Lock Contention
- ✓ Handling Concurrency Problems and Deadlocks

Module 15: Tuning the Server

- ✓ Status Configuration Variables
- ✓ Status Variables
- ✓ System Variables
- ✓ Per Client Variables
- ✓ Performance Schema Overview

Module 16: The Event Scheduler

- ✓ Event scheduler concepts
- ✓ Event scheduler configuration
- ✓ Creating, altering and dropping events
- ✓ Event scheduler monitoring
- ✓ Events and privileges

Module 17: Overview of High Availability

- ✓ High Availability Goals
- ✓ High Availability Concepts

✓ Design for High Availability

✓ Definition of Availability

✓ High Availability Terminology

Module 18: Configure Master Slave Replication

✓ Replication Overview

✓ When to Use Replication

✓ Disadvantages of Replication

✓ Replication Factors

✓ Replication Architecture

✓ Complex Replication Topologies

✓ Replicating from InnoDB to MyISAM Tables

✓ Testing Replication

✓ Monitoring Replication Threads

✓ Excluding Databases or Tables from Replication

✓ Example: Setting Up a Master Slave Replication

✓ Replication Using GTIDs

✓ Run Replication from a Remote Host

✓ Controlled Switchover

Module 19: Administer a Replication Topology

✓ MySQL Replication and Failover Utilities

✓ Replication Files and Threads

✓ Configure a Lagging Slave

✓ Monitoring Replication

✓ Troubleshooting Replication

✓ Semi-synchronous Replication

✓ Configure MySQL Failover

Module 20: MYSQL Server Installation, Upgrade Deployment Security

- ✓ MySQL Distributions
- ✓ Installing MySQL on Linux and UNIX
- ✓ The Installation Directories
- ✓ Set a Password for the MySQL root user
- ✓ Upgrade the MySQL Server
- ✓ Deployment Security