

MySQL for Database Administrators Self-Study Course

Duration: 5 Days

What you will learn

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.

- Install and configure MySQL Server and client programs
- Recognize the key components of the MySQL architecture
- Manage user accounts and secure your server
- Troubleshoot server slowdowns and other issues
- Backup and recover MySQL database
- Configure and administer a variety of replication topologies

Audience

- Database Administrators
- Database Designers

Related Training

Required Prerequisites

Attend the MySQL for Beginners course or some experience with Relational Databases and SQL.

Course Objectives

- 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

Course Topics

Introduction

Describing MySQL

Listing MySQL Products and Professional Services

Describing MySQL Enterprise Subscription

Currently Supported Operating Systems

Describing MySQL Certification Program

Listing Available MySQL Courses

Describing Installation of MySQL

Describing Installation of world Database

MySQL Architecture

Client/Server Architecture

MySQL Architecture Overview

How MySQL Uses Disk Space

How MySQL Uses Memory

The MySQL Plug-In Interface

The MySQL Server

Types of MySQL Distributions

Starting and Stopping MySQL on Windows

Starting and Stopping MySQL on Linux

Upgrading MySQL

Managing Multiple Servers

Configuring the MySQL Server

MySQL Configuration

Dynamic Server Variables

Server SQL Modes

Log and Status Files

Binary Logging

MySQL Clients

Overview of Administrative Clients

Invoking MySQL Client Programs

Using the mysql Client

The mysqladmin Client

MySQL Connectors

Third-Party APIs

Overview of Data Types

Data Types

Numeric Data Types

Character String Data Types

Binary String Data Types

Temporal Data Types

NULLs

Column Attributes

Metadata

Metadata Access Methods

The INFORMATION_SCHEMA Database/Schema

Using SHOW and DESCRIBE

The mysqlshow Command

Storage Engines

Storage Engine Overview

MyISAM, InnoDB, and MEMORY Storage Engines

Other Storage Engines

Choosing Appropriate Storage Engines

Using Multiple Storage Engines

Storage Engine Comparison Chart

Partitioning

Overview of Partitioning and reasons for using Partitioning

Creating a Partitioned Table

Obtaining Partition Information

Modifying and Removing Partitions

Partition Modification Performance Effects

Partition Pruning

Storage Engine Partition Information

Partitioning and Locking and Limitations

Transactions and Locking

Transactions

Transaction Control statements

Isolation Levels

Locking

Security and User Management

Security Risks

Security Measures

Privileges

Access Levels, including: 1 - User Accounts, 2 – Databases, 3 – Tables, 4 – Columns, 5 - Stored Routines

User Account Maintenance

Client Access Control

Using Secure Connections

Table Maintenance

Table Maintenance

SQL Statements for maintenance operations

Client and Utility Programs for table maintenance

Table Maintenance per Storage Engine

Exporting and Importing Data

Exporting and Importing Data

Exporting and Importing Data Using SQL

Import Data with the SQL scripts

Programming with MySQL

Defining, Executing and Examining Stored Routines

Stored Routines and Execution Security

Defining, Creating, and Deleting Triggers

Trigger Restrictions and Privileges

Defining Events

Schedule Events

DBA's Use of MySQL Programming

Backup Stored Routines

Views

What is a view?

Creating Views

Updatable Views

Managing Views

Backup and Recovery

Planning for Recovery Backup

Backup Tools Overview

Making Raw Backups

Making Logical (Text) Backups

Backup Log and Status Files

Replication as an Aid to Backup

Backup Method Comparison

Data Recovery

Introduction to Performance Tuning

Using EXPLAIN to Analyze Queries

General Table Optimizations

Setting and Interpreting MySQL Server Variables

Introduction to High Availability

MySQL Replication

Conclusion

Course Overview

Training and Certification Website

Course Evaluation

Thank You!

Q&A Session