

MySQL Administration

Course Summary

Description

MySQL is the open source community's most popular Relational Database Management System (RDBMS) offering, and is a key part of LAMP – Linux, Apache, MySQL, PHP/Perl/Python. Many Fortune 500 companies adopt MySQL to reap the benefits of an open source, platform-independent RDMS, such as simplifying conversion from other platforms and lowering database Total Cost of Ownership by 90%. This class walks the admin through the basics of MySQL administration. Included are an introduction to the available MySQL client software and its use in performing administrative functions, optimization tasks, and general performance tuning. This course covers MySQL 5.5.

Topics

- Course Introduction
- Introduction to Database Concepts and MySQL
- Installation, Configuration, and Upgrading
- MySQL Client Software and the mysql Command-Line Tool
- MySQL Storage Engines
- Utilities
- Administering a Database and Users
- Optimization and Performance Tuning

Audience

This course is designed for system administrators.

Prerequisites

Before taking this course, prior experience installing software and programming in any language, such as HTML, is recommended but not required.

Duration

Two days

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Course Outline

- I. Course Introduction**
 - A. Course Objectives
 - B. Course Overview
 - C. Using the Workbook
 - D. Suggested References
- II. Introduction to Database Concepts and MySQL**
 - A. Features of a Relational Database
 - B. Where does SQL Fit in?
 - C. Database Access
 - D. Why MySQL?
 - E. The History of MySQL
- III. Installation, Configuration, and Upgrading**
 - A. MySQL Software
 - B. MySQL Software Features
 - C. Preparing to Install MySQL
 - D. Available Client Software
 - E. After the Download
 - F. Configuring the Server
 - G. Starting the Server
 - H. The Initial User Accounts
 - I. Verifying Server Operation
 - J. Upgrading
 - K. Copying a Database between Architectures
 - L. Environment Variables
- IV. MySQL Client Software and the mysql Command-Line Tool**
 - A. Running the mysql Client
 - B. Customizing the mysql Prompt
 - C. mysql Commands
 - D. Using the Help Command
 - E. Some Useful mysql Options
 - F. Working with a Database
 - G. Examining Table Definitions
 - H. Other SHOW Options
- V. MySQL Storage Engines**
 - A. Storage Engine Overview
 - B. Other Storage Engine Types
 - C. The Basics of Commonly Used Storage Engines
 - D. MyISAM Limits and Features
 - E. InnoDB and Hardware Limitations
 - F. InnoDB Shared Tablespace Configuration
 - G. InnoDB Per-Table Tablespaces
 - H. InnoDB Data Management
 - I. MEMORY and FEDERATED
 - J. MERGE and ARCHIVE
- VI. Utilities**
 - A. Client Overview
 - B. Specifying Options for Command-Line Clients
 - C. Client Option Files
 - D. MySQL Administration
 - E. Checking Tables with myisamchk and mysqlchk
 - F. Using myisamchk and mysqlchk for Repairs
 - G. mysqlshow and mysqlimport
 - H. Using mysqldump
 - I. The MySQL Workbench – General
 - J. MySQL Workbench - Execution
 - K. MySQL Administration via the Workbench
 - L. Data Modeling with the Workbench
 - M. SQL Development
 - N. Third Party Tools
- VII. Administering a Database and Users**
 - A. The Server-Side Programs
 - B. Starting the MySQL Server
 - C. Using SET for Server Options
 - D. Table Management
 - E. Server Log Files
 - F. mysqladmin
 - G. Backup and Restore
 - H. Miscellaneous Functions
 - I. User Account Management
 - J. Understanding User Privileges
 - K. User Account Rights Management
 - L. User Account Privileges
 - M. Managing Access to the Database Environment
- VIII. Optimization and Performance Tuning**
 - A. Hardware Limitations
 - B. Optimizing the MySQL Server's Interaction with the External World
 - C. Adjusting the MySQL Server Configuration
 - D. Optimizing Your Database
 - E. Optimizations Specific to MyISAM
 - F. Optimizations Specific to InnoDB