MariaDB Database Administration

Duration: 5 Days   Course Code: MARDBA   Delivery Method: Virtual Learning

Overview:

MariaDB Database Administration Course Overview

This MariaDB Database Administration course is designed for MariaDB 10 Database Administrators who have a basic understanding of a MariaDB database and a good working knowledge of SQL commands.

The course provides an understanding of MariaDB Architecture and practical experience in setting up,configuring and maintaining a MariaDB server,and backing up and recovering data. This MariaDB Database Administration course also covers MySQL replication and its role in high availability and scalability.

Similarly,the course is targeted to closely follow the official MariaDB curriculum for certification.

Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

Versions supported 10.n

Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

Target Audience:

Who will the Course Benefit?

Database Administrators,Database Developers and Technical Consultants who need to setup,administer,monitor and support MariaDB databases and servers.

Objectives:

- Course Objectives

- At the end of the MariaDB Database Administration course,delegates will have the knowledge to use all the features available to administer,monitor and support MariaDB databases and servers.

Prerequisites:

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A working knowledge of MariaDB is required. Delegates should have knowledge of relational database concepts; have knowledge of MySQL data types; be able to run Queries using SQL; join tables and run basic DDL and DML statements. This can be gained by attendance on the Introduction to MariaDB course.

This course is run on a Linux operating system,a basic knowledge of Linux/UNIX is essential. This knowledge can be gained by attendance on the Linux Introduction course.

Follow-on-Courses:

Further Learning

- ■ MariaDB Performance & Tuning
- ■ Apache Web Server

Content:

MariaDB Database Administration Training Course Course Contents - DAY 1

Course Introduction

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

Session 1: THE SERVER,CLIENTS AND TOOLS

- Introduction
- The versions of MariaDB
- An Overview of MariaDB Architecture
- MySQL Server
- MySQL Client Connections
- MySQL Client Programs
- Mysql Command Line
- Mysqladmin

Session 2: OBTAINING METADATA

- What is Metadata?
- The mysqlshow Client Program
- The SHOW and DESCRIBE Commands
- The Information_Schema
- Show Command and Information_Schema Differences
- Exercises: Obtaining Information about MariaDB

Session 3: CONFIGURE THE SERVER

- Start and Stop the Server
- Status Files
- Time Zone Tables
- An Overview of MySQL Storage Engines
- MariaDB Server Options and Variables
- MariaDB Status Variables
- Configuring MariaDB Enterprise Audit

Session 4: SQL MODES,LOG FILES AND BINARY LOGGING

- Error Messages
- The SHOW Errors Statement
- The SHOW Warnings Statement
- SQL Modes
- Note Messages
- The perror Utility
- The General Log
- The Error Log
- The Slow Query Log
- The Binary Logs MariaDB Database Administration Training Course Course Contents - DAY 2

Session 5: MARIADB ARCHITECTURE

- Communication Protocols used to connect a Client to the Server

Session 6: THE INNODB STORAGE ENGINE

- Features of Innodb
- Transactions and Referential Integrity
- Physical Characteristics of Innodb Tables
- The System Tablespace Configuration
- File per Table Tablespace
- Log File and Buffer Configuration
- Undo Logs and Undo Tablespaces
- Temporary Table Tablespaces
- InnoDB Shutdown Options
- InnoDB Status

Session 7: OTHER STORAGE ENGINES

- Check Engine Usage
- The MYISAM Engine
- The Merge Engine
- Other Engines: Archive,Aria,Memory,Blackhole,CSV
- Mixing Storage Engines
- Overview of the ColumnStore,MyRocks and Spider Engines

Session 8: TABLE MAINTENANCE

- Table Maintenance Operations
- Check Table
- Repair Table
- Analyze Table
- Optimize Table
- MySQL Check
- MyISAM Table Maintenance and Repair Utilities MariaDB Database Administration Training Course Course Contents - DAY 3

Session 9: BACKUP AND RECOVERY

- The Advantages and Disadvantages of Different Backup Methods
- Overview of Backup Tools
- Binary Backups of MYISAM Tables
- Binary Backups of Innodb Tables
- Performing Hot Backups
- Performing Recovery
- Import and Export Operations
- Exporting and Importing using SQL
- Exporting from the Command Line using mysqldump
- Importing from the Command Line using mysqlimport
- Additional Backup Tools

Session 10: USER MANAGEMENT

- Introduction
- User Accounts
- Creating Users
- Renaming Users
- Change a User Password
- Dropping Users
- Granting Privileges

Session 13: TUNING AND TABLES

- General Table Optimizations
- Myisam Specific Optimizations
- Innodb Specific Optimizations
- Other Engine Specific Optimizations

Session 14: TUNING THE SERVER

- Status Variables
- Server Variables
- System Variables
- Per Client Variables
- Performance Schema Overview
- The Query Cache

Session 15: THE EVENT SCHEDULER

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

Session 16: MARIADB SERVER INSTALLATION AND UPGRADE

- Installing MariaDB on Linux and UNIX
- Upgrade the MariaDB Server
- Deployment Security
- Database Server Access   MariaDB Database Administration Training Course Course Contents - DAY 5

Session 17: OVERVIEW OF HIGH AVAILABILITY

- High Availability Goals
- High Availability Concepts
- Design for High Availability
- Definition of Availability
- High Availability Terminology

Session 18: CONFIGURE MASTER SLAVE REPLICATION

- Replication Overview
- When to Use Replication
- Disadvantages of Replication
- Replication Architecture
- Complex Replication Topologies
- Testing Replication
- Excluding Databases or Tables from Replication
- Example: Setting Up a Master Slave Replication
- Replication Using GTIDs
- Controlled Switchover

Session 19: ADMINISTER A REPLICATION TOPOLOGY

- Replication Files and Threads

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- The SQL Parser and Storage Engine Tiers
- Installing and Uninstalling Plugins
- How MariaDB Uses Disk Space
- How MariaDB Uses Memory
- Exercises: Examining the Architecture

- The User Table
- Connection Validation
- Password Validation Plugins

Session 11: PRIVILEGES

- Types of Privileges
- Granting Privileges
- Revoking Privileges
- Resource Limits
- Resource Management
- Role Management
- The mysql Database
- The Show Grants Command
- Role management   MariaDB Database Administration Training Course Course Contents - DAY 4

Session 12: 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
- Handling Concurrency Problems and Deadlocks

- Lagging Slave
- Monitoring Replication
- Troubleshooting Replication
- Semi-synchronous Replication
- Failover
- Replication and Failover Utilities

Further Information:

For More information, or to book your course, please call us on 0800/84.009

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