MySQL Administration

Duration: 4 days **Price: € 2650**

Open Schedule

MySQL Administration

Audience MySQL Administration Course
The course MySQL Database Administration is designed for database Administrators who need to administer, monitor and support MySQL databases and servers.

Prerequisites Course MySQL Administration
To join the course MySQL Administration knowledge of the SQL query language and databases is needed.

Realization Training MySQL Administration
The subject matter is treated on the basis of presentation slides. Demos are used to clarify the theory and exercises are used to bring the theory into practice. The course material is in English. This course fulfills the requirements for the Oracle MySQL Database Administrator certification. The course times are from 9.30 up and to 16.30.

Certification Course MySQL Administration
Participants receive an official certificate MySQL Administration after successful completion of the course.

Content Course MySQL Administration

In the course MySQL Administration participants learn to configure and manage a MySQL database. MySQL is an open source relational database management system (RDBMS) from Oracle. Originally MySQL was mainly used for web applications with PHP, but other programming languages such as Java are also possible. The course uses the latest version of the MySQL database and the MySQL Workbench.

MySQL Intro
The MySQL Administration course starts with a discussion of the mysqld daemon that runs on the server and a series of client programs such as mysql and mysqldump that can interact with the server. Also the SHOW and DESCRIBE commands and MySQL server variables are covered.

Configuring MySQL
Next installing, starting up and shutting down a MySQL server is covered. Configuring MySQL components and the various storage engines is also treated.

MySQL Architecture
Attention is then paid to the internal architecture of the MySQL server, in which Communication Protocols and Storage Engine Tiers are reviewed. And the data types in MySQL are covered.

Storage and Locking
The course MySQL Administration also discusses storage and locking. The difference between table-level locking and row-level locking is explained. InnoDB is the only storage engine that supports row-level locking and thus ACID transactions.

Backup and Recovery
Attention is also paid to the maintenance of MySQL server including backup, recovery and optimization. Export of data with mysqldump and import with mysqlimport state is treated.

Security
Then it is time for the security of a MySQL installation. The assignment and maintenance of GRANTS and PRIVILEGES as well as the management of users and access rights are discussed. Attention is also paid to operating, file system and network security.

Optimization and Scaling
Finally optimization of a MySQL database is on the agenda. This includes explain to analyze Queries, the use of indexes, the Query Cache as well as the use of multiple servers and replication.

Modules Course MySQL Administration

Module 1 : Intro MySQL	Module 2 : Configuring MySQL	Module 3 : MySQL Architecture
Client Program Limitations	Installing on Windows	Communication Protocols
mysql en mysqld	Installing on Linux	Storage Engine Tiers
MySQL Admin	Starting and Stopping	Disk Space and Memory Usage
What is Metadata?	Log and Status Files	Table Properties
mysqlshow Utility	The Default SQL Mode	Obtaining Table Metadata
SHOW Command	Time Zone Tables	Column Attributes
DESCRIBE Command	Some Security Issues	Bit and Numeric Data Types
Information_Schema Database	MySQL Error Messages	Character String Data Types
MySQL Server Options	The SHOW Statement	Binary String Data Types
MySQL Server Variables	SQL Modes	Enum and Set Data Types
MySQL Status Variables	The PERROR Utility	Temporal Data Types
MySQL Distributions	The Log	Auto_Increment
SQL Parser	The Error Log	Missing or Invalid Data Values
Client/Server Overview	The Slow Query Log	Performance Issues Character sets
Module 4 : Storage and Locking	**Module 5 : Table Maintenance**	**Module 6 : Backup and Recovery**
Locking Concepts	Transactions	Backup and Recovery Strategy
Explicit Table Locking	Referential Integrity	Disaster Recovery Plan
Advisory Locking	Physical Characteristics of Innodb Tables	Backup and Recovery Plan
Preventing Locking Problems	Tablespace Configuration	Binary Backups of MYISAM Tables
Innodb Status	Log File and Buffer Configuration	Binary Backups of Innodb Tables
The MYISAM Engine	Table Maintenance Operations	Recovery
Locking with MYISAM Tables	Check, Repair, Analyze, Optimize	Import and Export Operations
The Merge Engine	MySQL Check	Exporting Using SQL
Other Engines: Archive,	MYISAMCHK	Importing Using SQL
Memory, Federated	Repairing Innodb Tables	Exporting using mysqldump
Blackhole, NDBCluster	Enabling MYISAM AutoRepair	Importing using mysqlimport
Module 7 : Security	**Module 8 : Stored Procedures**	**Module 9 : Optimization**
User Accounts	User Variables	Optimization Process
Creating Users	Prepared Statements	Using Explain to Analyze Queries
Changing Passwords	Types of Stored Routines	Indexes for Performance
Dropping Users	Benefits of Stored Routines	Creating and Dropping Indexes
Granting Privileges	Stored Routines Features	Indexing and Joins
Revoking Privileges	Stored Routine Maintenance	Normalisation
Resource Limits	Stored Routine Privileges	General Table Optimizations
Show Grants Command	Stored Routine Execution Security	Measuring Server Load
Operating System Security	DML Triggers	Server Parameters
File System Security	The Create Trigger Statement	Query Optimizer Performance
Network Security	Managing Triggers	The Query Cache
Module 10 : Environment Optimization	**Module 11 : Scaling MYSQL**	**Module 12 : MySQL Workbench**
Choosing the Platform	Partitioned tables Concepts	Installation
Hardware Configurations	Range partitioning	Connecting
Disk Issues on Linux	Hash partitioning	Server Information
Symbolic Links	Key partitioning	Service Control
Optimizing the Operating System	List partitioning	User Administration
Event Scheduler Configuration	Composite Partitioning	Privileges
Creating and Altering Events	Maintenance of partitioned tables	Health
Event scheduler monitoring	Using Multiple Servers	Backup and Restore
Events and privileges	Replication	Catalogs