

Workshop	
Name	MySQL Developer Content
Duration	6 Days
Objective	The MySQL for Database Administrators course is for MySQL DBAs and other professionals who want to install and optimize MySQL Server, set up replication and security, perform database backups and performance tuning, and protect MySQL databases.
Participants' Entry Profile	Participants attending this course must have: <ul style="list-style-type: none"> • Concepts of Relational Database Design & Implementation • Working Experience/Knowledge of SQL
Training Methodology	The workshop will follow Synergetics methodology of Concept Visualization , Active Experimentation , and Application Development . The workshop will be 100% Hands-On with each participant having access to system during the session

Setup Requirements	
Hardware and Software Requirements	<p>Hardware Requirement Intel Core 2 Duo, 4 GB RAM,</p> <p>Software Requirement Windows XP, Windows Vista, Windows 7, Windows 8, Windows Server 2003, Windows Server 2008, or Windows Server 2012. Both 32-bit and 64-bit versions are supported</p>
Training Lab Requirements	Whiteboard Recommended size - 6 feet by 4 feet Whiteboard markers – Red, Blue, Green, Black Video Projector (1024 X 768 resolutions)

Course Contents**Day 1**

- **MySQL Architecture**
 - The Client/Server Model
 - Communication Protocols
 - The SQL Layer
 - The Storage Layer
 - How the server supports Storage Engines
 - How MySQL uses Memory and Disk Space
 - The MySQL plug-in interface

 - **MySQL Clients and Tools**
 - MySQL Client / Server Model
 - MySQL Connectors
 - MySQL Server And Client Startup
 - The LAMP Stack
 - Keyboard Editing
 - Session Logging With The Tee File

 - **Database Basics**
 - Basics Of Relational Databases
 - Entities And Relationships
 - Relationship Categories
 - SQL Language And MySQL
 - SQL Data Definition Language
 - SQL Data Manipulation Language

 - **Database Design**
 - Database Modelling
 - Structure And Cardinality Diagram (ERD)
 - Keys
 - Normalization
 - Database Design
 - Viewing And Evaluating A Database

 - **Data Types**
 - Data Types As Part Of Database Design
 - Column Attributes
 - Character Set And Collation Support
 - Choosing An Appropriate Data Type
 - Data Type Overview
 - Numeric Data Type
 - Character Data Type
 - Binary Data Type
 - Spatial Data Type
 - Nulls
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Day 2

➤ Database And Table Creation

- Creating A Database
- Creating A Table
- Colum Options
- Showing How A Is Created
- Table Options
- Table Indexing
- Table Constraints

➤ Manipulating Table Data

- INSERT Statement
- INSERT with ON DUPLICATE KEY UPDATE
- DELETE Statement
- UPDATE Statement
- REPLACE Statement
- TRUNCATE TABLE Statement

➤ Querying Table Data

- The SELECT Statement
- Aggregating Query Results
- Using UNION
- SQL Comparison
- Functions in SQL Expression
- Comments in SQL Expressions
- Import and Export Data

Day 3

➤ Database And Table Maintenance

- Deleting Databases And Tables
- Creating A New Table Using An Existing Table
- Confirming The Creation Of A New Table
- Copying An Existing Table Structure
- Adding, Removing, And Modifying Table Columns
- Adding, Removing, And Modifying Indexes and Constraints
- Creating A Temporary Table

➤ Joins

- What is a Join?
 - Joining Tables in SQL
 - Basic Inner Join
 - Outer Join
 - Other Types of Joins
 - Joins in UPDATE AND DELETE Statements
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- Table Name Aliases
- **Sub-Queries**
 - Types of Sub-queries
 - Table Sub-query Operators
 - Correlated and Non-Correlated Sub-queries
 - Converting Sub-queries to Joins
 - Advantages Of Using A Sub-Query
 - Placement Of Sub-Queries
 - Sub-Query Categories
 - Sub-Query Result Table Types
 - Sub-Query Type / Placement
 - Finding Mismatches
 - Modifying Tables Using Sub-Queries

Day 4

- **Function**
 - Functions In MySQL Expressions
 - Using Functions
 - String Functions
 - Temporal Functions
 - Numeric Functions
 - Control Flow Functions
 - Aggregate Functions
 - Spaces in Function Names
 - **Exporting And Importing Data**
 - Exporting With A Query
 - Exporting With A MySQL Utility
 - Importing From A Data File
 - Importing With A MySQL Utility
 - **Creating And Managing Views**
 - What Are Views?
 - Creating A View
 - Updating A View
 - Managing A View
 - Obtaining View Meta-Data
 - **Prepared Statements**
 - Why Use Prepared Statements?
 - Using Prepared Statements For The MySQL Client
 - Executing A Prepared Statement
 - De-Allocating A Prepared Statement
 - Programming With Prepared Statements
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Day 5

➤ Stored Routines

- What Is A Stored Routine?
- Creating Stored Routine
- Compound Statements
- Assigning Variables
- Parameter Declaration
- Execute Stored Routines
- Characteristics Of Stored Routines
- Examine And Analyze A Stored Routine

➤ Managing Stored Routines

- MySQL Supported Operators And Built-In Functions In Stored Procedures
- Obtaining Information On Stored Routines
- Alteration And Deletion Of Stored Routines
- Backing Up / Recovery Stored Routines
- Binary Logging Of Stored Routines
- SQL In Stored Routines
- Dynamic SQL

➤ Handling Exceptions And Errors

- Error Handling Capabilities And Limitations
- Implementing Error Handlers
- Other Handler Issues
- Error Handling Limitations

Day 6

➤ Creating And Managing Triggers

- What Are Triggers?
- When To Use Triggers?
- How To Obtain Information On Triggers
- What Are the Limitations?
- How To Delete Triggers?

➤ Data Security In MySQL

- Set Permissions
- View Vs Stored Routine?
- Invoker Rights Error
- Preventing Code Injection.

➤ Best Practices

- Fundamental Programming Best Practices
 - Coding Style And Conventions
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- Variable Use And Best Practices
- Flow Control Best Practices
- Dynamic SQL Best Practices