

MySQL<sup>®</sup> is the open source community's most popular Relational Database Management System (RDBMS) offering, and is a key part of LAMP – Linux<sup>™</sup>, Apache<sup>™</sup>, MySQL<sup>®</sup>, PHP/Perl/Python<sup>®</sup>. 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.

**Course Objectives:**

- Describe MySQL’s benefits and features.
- Configure the MySQL server.
- Work with the command-line mysql tool.
- Understand the MySQL storage engine types and their applicability.
- Use some of the more common MySQL standalone tools.
- Manage database resources and users.
- Optimize database storage for performance.

**Audience:** System administrators.

**Prerequisites:** Prior experience installing software and programming in any language, such as HTML, is recommended but not required.

**Number of Days:** 2 days

<p><b>1 Course Introduction</b>          Course Objectives          Course Overview          Using the Workbook          Suggested References</p> <p><b>2 Introduction to Database Concepts and MySQL</b>          Features of a Relational Database          Where does SQL Fit in?          Database Access          Why MySQL?          The History of MySQL</p> <p><b>3 Installation, Configuration, and Upgrading</b>          MySQL Software          MySQL Software Features          Preparing to Install MySQL          Available Client Software</p>	<p>After the Download          Configuring the Server          Starting the Server          The Initial User Accounts          Verifying Server Operation          Upgrading          Copying a Database between Architectures          Environment Variables          Translating a Data Model into a Database Design</p> <p><b>4 MySQL Client Software and the mysql Command-Line Tool</b>          Running the mysql Client          Customizing the mysql Prompt          mysql Commands          Using the Help Command          Some Useful mysql Options</p>
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	Working with a Database		User Account Rights Management
	Examining Table Definitions		User Account Privileges
	Other SHOW Options		Managing Access to the Database Environment
<b>5</b>	<b>MySQL Storage Engines</b>	<b>8</b>	<b>Optimization and Performance Tuning</b>
	Storage Engine Overview		Hardware Limitations
	Other Storage Engine Types		Optimizing the MySQL Server's Interaction with the External World
	The Basics of Commonly Used Storage Engines		Adjusting the MySQL Server Configuration
	MyISAM Limits and Features		Optimizing Your Database
	MyISAM Data File Format		Table Partitioning
	InnoDB and Hardware Limitations		Optimizing Queries
	InnoDB Shared Tablespace Configuration		The Use of Indexes to Support Queries
	InnoDB Per-Table Tablespace		Thinking about JOIN Queries
	InnoDB Data Management		Query Sorts, Indexes, and Short-Circuiting
	MEMORY and FEDERATED		INSERT, UPDATE, DELETE, and Table Locks
	MERGE and ARCHIVE		Some General Optimizations
<b>6</b>	<b>Utilities</b>		Optimizations Specific to MyISAM
	Client Overview		Optimizations Specific to InnoDB
	Specifying Options for Command-Line Clients		
	Client Option Files		
	Checking Tables with myisamchk and mysqlchk		
	Using myisamchk and mysqlchk for Repairs		
	mysqlshow and mysqlimport		
	Using mysqldump		
	The MySQL Workbench - General		
	MySQL Workbench - Execution		
	MySQL Administration via the Workbench		
	Data Modeling with the Workbench		
	SQL Development		
	Third Party Tools		
<b>7</b>	<b>Administering a Database and Users</b>		
	The Server-Side Programs		
	Starting the MySQL Server		
	Using SET for Server Options		
	Table Management		
	Server Log Files		
	mysqladmin		
	Backup and Restore		
	Miscellaneous Functions		
	User Account Management		
	Understanding User Privileges		