Systems & Network Training

MySQL Performance & Tuning

A 3 day Hands on training course

Save on expenses. This course is also available on your premises.

Description

This MySQL Performance & Tuning course is designed for Database Administrators, Application Developers and Technical Consultants who need to monitor and tune the performance of MySQL servers and databases. The course provides practical experience in monitoring and tuning MySQL servers and databases.

Note:
This MySQL Performance & Tuning course does not cover clustering (other than at overview level), replication or non-standard storage engines such as Falcon and PBXT.

Key outcomes

By the end of the course delegates will be able to:

- ✔ Develop a monitoring and tuning plan.
- ✔ Use server configuration and status variables.
- ✔ Identify and improve problem queries.
- ✔ Make efficient use of indexes.
- ✔ Monitor and size memory caches and locks
- ✔ Tune the MyISAM and InnoDB storage engine.
- ✔ Evaluate the use of partitioning for performance.

Training Approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.

Details

Who will benefit?
Anyone who wishes to monitor and tune MySQL performance.

Prerequisites
Delegates must have a working knowledge of MySQL Database Administration

Duration: 3 days

Customer rating: ★★★★★

Generic Training	Small Class Sizes	Hands On Training	Our Courseware	Customise Your Course
Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".	We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.	The majority of our courses use hands on sessions to reinforce the theory.	We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.	Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.
"*Friendly environment with expert teaching that teaches the why before the how."* G.C. Fasthosts	*"Excellent course. The small class size was a great benefit..."* M.B. IBM	*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."* J.W. Vodafone	*"Comprehensive materials that made the course easy to follow and will be used as a reference point."* V.B. Rockwell Collins	*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."* S.R. Qinetiq

MySQL Performance & Tuning

Course Content

Introduction to performance tuning
Tuning overview, tuning levels, resolving performance issues, recommended approach to tuning, items to evaluate, where to look, planning a monitoring routine, building a new database for performance, tuning an existing database, setting suitable goals.

MySQL performance tuning tools
Administration tools, the information schema, performance-related SHOW commands, benchmarking tools, the MySQL performance schema, MonYog.
Hands on: obtaining performance information.

Schema design
Normalisation, de-normalisation, naming conventions, load generation, stress testing and benchmarking tools, selecting data types, data types, character sets, choosing storage engines.
Hands on: effects of design on performance.

Statement tuning
Overview of statement tuning, identifying problem queries, the optimizer, explain, explain extended.
Exercises: identifying problem queries and using explain.

Indexes
Index overview, index size, types of index, index tuning, indexes and joins.
Hands on: indexes and performance.

Server configuration and monitoring
Server configuration variables, server status variables, table cache, multi-threading, connection issues, query cache.
Hands on: setting and interpreting server variables and caching.

Locking
Types of locking, locking and storage engines, effects of locking on performance.
Hands on: locking and performance.

The InnoDB engine
Transactions, crash recovery, locking, monitoring InnoDB, caches and buffers, configuring data files, configuring the log files.
Hands on: InnoDB configuration and performance.

Other storage engines
MyISAM engine, merge engine, archive engine, memory engine, blackhole engine, CSV engine, the Spider engine, the ColumnStore engine, the MyRocks engine, mixing sorage engines.
Hands on: storage engine performance.

Overview of clustering and performance
Advantages of performance, advantages of clustering, performance issues and clustering, the NDBCluster engine, the Galera cluster, the Percona XtraDB cluster, MySQL InnoDB cluster, the federated engine, the federatedX engine, overview of other high availability techniques.
NOSQL and Mencached overview.

Dumping and loading data
SQL statements versus delimited data, parameters affecting dump performance, parameters affecting load performance.
Hands on: dump and load performance.

Partitioned tables
Partitioned tables concepts, range partitioning, hash partitioning, key partitioning, list partitioning, composite partitioning or subpartitioning, partition pruning.
Hands on: partitioned table performance.