

# Course : MySQL, tuning

Practical course - 3d - 21h00 - Ref. MYT

Price : 2040 CHF E.T.

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This training course will show you how to efficiently optimize your MySQL database servers and applications. You'll learn how to improve performance through server configuration, proper use of indexes, data organization and better SQL query writing.

## Teaching objectives

At the end of the training, the participant will be able to:

-  Understanding MySQL SDBG measurement and diagnostic tools
-  Master application optimization techniques
-  Analyze and optimize server and application performance
-  Optimize relational schema and SQL queries

## Intended audience

System administrators and database administrators.

## Prerequisites

Good knowledge of MySQL administration or knowledge equivalent to that provided by the course "MySQL, administration" (ref. MSA).

## Practical details

### Hands-on work

Theoretical sequences alternate with practical work.

## Course schedule

### PARTICIPANTS

System administrators and database administrators.

### PREREQUISITES

Good knowledge of MySQL administration or knowledge equivalent to that provided by the course "MySQL, administration" (ref. MSA).

### TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

### ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.

Participants also complete a placement test before and after the course to measure the skills they've developed.

## 1 Introduction

- MySQL architecture.
- Choice of storage engine.
- Choice of data types.
- Standardization/denormalization.
- SQL statement processing.
- The INFORMATION\_SCHEMA database.
- Statistics collection.

### Hands-on work

Statistics collection, choice of data types.

## 2 Measurement and diagnostic tools

- Tracing and profiling.
- EXPLAIN command.
- Using the BLACKHOLE motor.
- Using MySQLslap.
- Logging and logging of slow requests.

### Hands-on work

Profiling, use of the EXPLAIN command, MySQLslap tool, slow query log.

## 3 Data organization and indexing

- MyISAM tables. Internal architecture.
- Indexing of MyISAM tables.
- Faster searches with "Fulltext" indexes.
- Maintenance of MyISAM tables, troubleshooting.
- InnoDB transactional tables.
- Internal architecture of InnoDB tables. InnoDB table and index structure. Maintenance.
- Management of tablespace(s).
- Use of MEMORY tables. Partitioning.

### Hands-on work

Use of Fulltext indexes and MEMORY tables. Compressing MyISAM tables.

## 4 Application optimization

- How the MySQL optimizer works.
- EXPLAIN tool and working drawings.
- Use of prepared instructions.
- Locking tables.
- Transactional operation and isolation levels (InnoDB).
- Using views.
- Optimize loading operations.

### Hands-on work

Execution plans. Using prepared queries, optimizing data loading. Transactions and concurrency enhancement.

## TEACHING AIDS AND TECHNICAL RESOURCES

- The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
- At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
- A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

## TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

## ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at [psh-accueil@orsys.fr](mailto:psh-accueil@orsys.fr) to review your request and its feasibility.

## 5 Server optimization

- Observation of server activity.
- Dynamic variables.
- Memory usage in MySQL.
- Query cache. Index cache.
- Optimization of the InnoDB and MyISAM engines.

### Hands-on work

Use of query cache and index cache.

## Dates and locations

### REMOTE CLASS

2026: 18 May, 30 Sep.