Course : Transact-SQL, optimization for SQL Server

Versions 2022 to 2012

Practical course - 2d - 14h00 - Ref. TAS

Price : 1600 CHF E.T.

4,5 / 5

Knowing how to write and optimize Transact-SQL to improve query performance is essential when developing. With this knowledge, you'll avoid the pitfalls frequently encountered when programming in T-SQL. We'll give you the skills you need to get up and running quickly.

Teaching objectives

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

- Understanding how the SQL optimizer works
- Choose the right indexes to optimize data access
- Use profiler and extended events to improve performance
- Use statistics and the execution plan to audit query performance
- Improving queries through good writing practices
- Using set queries

Intended audience

Transact-SQL project managers, designers and developers.

Prerequisites

Good knowledge of the basics of the SQL language, or knowledge equivalent to that acquired in the course "SQL Server, SQL programming" (ref PSQ).

Practical details

Hands-on work

Interactive training, closely alternating theory and practice. Learning takes place through experimentation.

Course schedule

PARTICIPANTS

Transact-SQL project managers, designers and developers.

PREREQUISITES

Good knowledge of the basics of the SQL language, or knowledge equivalent to that acquired in the course "SQL Server, SQL programming" (ref PSQ).

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 The relational model and SQL language

- Specific features of relational databases and SQL language.
- Data model standardization.
- Concepts of assembly and declarative writing. Specific features of the Transact-SQL dialect.
- How the SQL optimizer works.

Hands-on work
Experiment with queries on more or less standardized models.

2 Successful indexing

- The basics of indexing. B-Tree structure and different index types.
- How to choose indexes according to queries?
- The notion of query coverage by an index.
- The SARG (Search Argument) concept to encourage index use.
- Use of profiler and extended events (xevents).
- Use the Query Store to detect plan regressions.

Hands-on work
Indexing and tracing problem queries.

3 Writing high-performance queries

- Rules for writing SQL queries.
- Read and use execution statistics and the execution plan.
- Optimize data update code.
- Common errors: user functions, case-insensitive comparisons, cardinality estimation.

Hands-on work
Rewrite poorly performing queries.

4 Replace temporary tables and cursors

- Master subqueries and relational operators.
- Use the MERGE instruction for complex data updates.
- Create number and date tables for relational problem solving.
- Use windowing and statistical functions.
- Write recursive code using table expressions.

Hands-on work
Solve complex problems using set queries.

5 Best practices for code modules

- Rules for writing stored procedures.
- Master compilation and recompilation.
- Minimize the impact of triggers. Understand transactions and locking problems.
- Use transaction isolation levels.

Hands-on work
Writing an optimized stored procedure.

Dates and locations

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 to review your request and its feasibility.

REMOTE CLASS
2026 : 12 Mar., 21 May, 8 Oct., 10 Dec.