Publication date : 05/31/2024

Course : SQL Server diagnostics and troubleshooting

Versions 2022 to 2012

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

Price : 2040 CHF E.T.

4,4 / 5

At the end of this course, you'll understand how SQL Server works and be able to analyze and solve the most common problems. All diagnostic and problem-solving tools will be presented and illustrated, so that you no longer perceive SQL Server as a [[black box]].

Teaching objectives

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

- Monitor SQL Server database operation using diagnostic tools
- Use dynamic management views to analyze internal operations
- Track SQL Server behavior to improve performance
- Analyze query performance and index utilization
- Solve classic SQL Server problems

Intended audience

This course is designed for administrators and developers who need to maintain a SQL Server environment, to ensure optimum performance and system stability.

Prerequisites

Good knowledge of SQL Server administration, knowledge of the T-SQL language.

Course schedule

PARTICIPANTS

This course is designed for administrators and developers who need to maintain a SQL Server environment, to ensure optimum performance and system stability.

PREREQUISITES

Good knowledge of SQL Server administration, knowledge of the T-SQL language.

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 Understanding how the SQL Server engine works

- The different modules of the relational SQL Server engine.
- SQLOS and the use of memory, disk and processors.
- The data file and transaction log.
- Understand query execution.

Hands-on work
Observe SQL Server operation using diagnostic tools.

2 Obtain information using dynamic management views (DMV)

- DMVs for SQLOS: analysis of engine operation.
- DMVs for execution: analysis of requests, sessions and transactions.
- DMVs for indexes.
- Analyze the execution of managed code using DMVs.

Hands-on work
Use VDDs for a wide range of analysis cases.

3 Obtain information using other tools

- Trace with the profiler.
- Tracing using extended events (XEvents).
- Understanding and monitoring tempdb.
- Monitor IO performance and detect restraints.

Hands-on work
Use the profiler and XEvents to track SQL Server behavior.

4 Manage query execution

- Analyze query performance.
- Analyze the use and relevance of indexes.
- Understand and manage plan cache issues.
- Manage waiting and blocking situations.
- Use the Query Store to detect regressions.

Hands-on work
Analysis of the impact of different types of query batches.

5 Classic issues

- Transactional issues: transaction log and Deadlock.
- Memory issues: analyze and correct memory and cache problems.
- Detect and correct IO and Latches problems.
- CPU issues: parallelism, NUMA management.

Hands-on work
Finding the cause and solving various problems.

Dates and locations

REMOTE CLASS
2026 : 9 Mar., 27 May, 14 Oct., 2 Dec.

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.