Publication date : 05/10/2024

Course : SQL Server: Administration

Practical course - 5d - 35h00 - Ref. QSA
Price : 2780 € E.T.

3,9 / 5

BEST

Teaching objectives

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

- Installing and configuring the Microsoft SQL Server DBMS
- Creating a database and organizing the storage of data files
- Setting permissions and access controls for the base and managing certificates
- Automating and scheduling common administration tasks
- Creating data backup and recovery plans
- Setting up continuous monitoring plans to monitor the database's changes and performance
- Installation and configuration

Course schedule

1 The administrator's tasks and the means provided to him or her.

- General architecture of SQL Server.
- Installation, migration.
- Configuration tools. SQL Server Configuration Manager.
- Service and network management tools.
- Overview of client tools.
- System databases and objects.
- Hands-on work
- Installing SQL Server. Use of dynamic consultation tools. Configuration using Policy Based Management (PBM).

Hands-on work

Storage engine and physical storage.

PARTICIPANTS

PREREQUISITES

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.

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.

2 Object allocation.

- Partitioning tables and indexes. Partitioning function. Partitioning scheme.
- Computed columns.
- Managing the size and growth of databases.
- Database snapshots. Snapshot tasks.
- Inserting and importing data. Main BULK INSERT or BCP options.
- Hands-on work
- Creating a database. File management. Creating snapshots.
- Security and encryption.

Hands-on work

Making the connection and sessions secure, internal security model.

3 Authentication modes. Name resolution.

- Roles: Server roles, fixed roles of databases, user-created roles, application roles.
- Assigning privileges (Grant, Revoke, Deny, etc.). Ownership chaining.
- Contained Databases.
- Runtime context.
- Data encryption (symmetrical, asymmetrical). Encryption architecture.
- Database primary key. Backing up and restoring keys. Extensible Key Management.
- SQL Server certificates, example of use.
- Encryption metadata.
- Transparent Data Encryption.
- Database auditing, syntax for creating events to audit.
- Hands-on work
- Working with permissions and access controls. Certificate management.

Hands-on work

Task scheduling by the SQL Server agent.

4 Organizing work: Categories of work, types of steps, rules of precedence and errors, notifications.

- Scheduling work, specific MSDB roles. Execution log, monitor.
- Configuring the SQL agent. Alert and notification configuration. Operator management.
- Sending emails from SQL Server: Configuring the settings of Database Mail, or of the Agent for sendign emails.
- Multiserver work configuration. Event redirection.
- DDL triggers. SQL Server events: Performance, WMI, WQL.
- Verification of physical integrity. Recovering low-level information on the SQL Server engine (DBCC).
- Reminders about index structure and maintaining indexes. Indexed views. Full-text index.
- Recompute statistics.
- Maintenance plan tool. Using SQL Server Data Tools.
- Hands-on work
- Automating and scheduling administrative work.

Hands-on work

Different types of backups (full, differential, log, etc.)

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.

5 Recovery models (full, basic, block, etc.) and how they influence data recovery.

- Setting up a backup strategy.
- Backup security.
- T-SQL backups: Integrity. Multifile, multifamily backups.
- Scheduling backups.
- Restoring databases, repairing damaged environments.
- Restoring logs.
- Restoring to a different database.
- Page recovery.
- System database backups. Restoring the master.
- Hands-on work

Hands-on work
Monitoring and performance

6 The profiler and eXtended Events (XEvents) for tracking usage.

- Extended events.
- DDL triggers for tracking structure modifications.
- Metadata views and dynamic management views. Stored metadata procedure.
- The Windows performance monitor. User counters and events. Database Tuning Advisor.
- Viewing locks and blockages, detecting and handling deadlocks.
- Configuring the server and the databases. Resource governor.

Hands-on work
Setting up monitoring for structural changes. Using dynamic management views. Handling a deadlock.

Dates and locations

REMOTE CLASS
2026 : 20 Apr., 22 June, 22 June, 31 Aug., 31 Aug., 26 Oct., 23 Nov., 23 Nov.

PARIS LA DÉFENSE
2026 : 20 Apr., 22 June, 31 Aug., 26 Oct., 23 Nov.