Course : SQL Server: Administration

Practical course - 5d - 35h00 - Ref. QSA
Price : 3270 CHF E.T.

★★★☆ 3,8 / 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.

(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.)

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.