DB-ADM

Installing, Administering and Maintaining a Microsoft SQL Server and Database Infrastructure

Description:

The five-day course is designed for all who need the knowledge to effectively deploy, configure, manage, and maintain the latest version of Microsoft SQL Server 2019. The course focuses on deployment, configuring, administration, maintenance, tracing, monitoring, use SQL Server services and tools related to database management. The course is an alternative to the authorized courses M20764 and M20765.

Students will be able to:

- Prepare, install, and configure the database server.
- Create, manage and maintain databases and database files.
- Work with SQL Server security models, roles, logins, users, permissions and contained databases.
- Use SQL Server audit and use data encryption.
- Backup and restore SQL Server databases.
- Import and export data using wizards, bulk copy utilities, SSIS and data-tier applications.
- Use the SQL Server Agent service.
- Monitor and trace SQL Server.
- Perform troubleshooting.

Course requirements:

- Basic knowledge of the Microsoft Windows operating system and its core functionality
- Working knowledge of Transact-SQL and relational databases

This course is intended for:

- SQL Server administrators, database specialists, IT managers, and developers.

Literature:

All participants will get internal OKsystem materials.

Hardware:

Classrooms are equipped with high-performance computers with Internet access and the possibility of wireless connection.

Syllabus:

Module 1: Introduction to SQL Server

- Lesson 1: Introduction to SQL Server

- Lesson 2: Overview of SQL Server architecture, services, tools, editions and licensing
- Lesson 3: Configuring SQL Server

Module 2: Installing and configuring SQL Server

- Lesson 1: Preparing to install SQL Server
- Lesson 2: Installing SQL Server
- Lesson 3: Configuring SQL Server
- Lesson 4: Installation automation
- Lab: Installing and configuring SQL Server

Module 3: Working with databases

- Lesson 1: Introduction to creating and managing databases
- Lesson 2: Managing system databases
- Lesson 3: Managing user databases
- Lesson 4: Move, copy and work with databases
- Lab: Working with databases

Module 4: Database maintenance

- Lesson 1: Database integrity and data repair
- Lesson 2: Maintaining indexes, statistics and tables
- Lesson 3: Automate tasks
- Lab: Database maintenance

Module 5: SQL Server Security

- Lesson 1: Authentication
- Lesson 2: Authorization, logins, users
- Lesson 3: Contained Databases
- Lab: SQL Server security

Module 6: Server and database roles

- Lesson 1: Working with server roles
- Lesson 2: Working with database roles
- Lab: Server and database roles

Module 7: Permissions and Access

- Lesson 1: Object permissions
- Lesson 2: Code permissions
- Lesson 3: Rights and approaches at each level
- Lab: Permissions and Access

Module 8: Data security using data encryption, classification and audit

- Lesson 1: SQL Server audit, data classification
- Lesson 2: Implementing SQL Server audit
- Lesson 3: Encrypt and mask data
- Lab: Audit, encryption and classification of data

Module 9: Data backup

- Lesson 1: Backup data, log, backup strategy and settings
- Lesson 2: Backup management
- Lesson 3: Advanced backup options
- Lab: Data backup

Module 10: Restore data

- Lesson 1: Recovery process
- Lesson 2: Data recovery
- Lesson 3: Advanced Data Recovery and ADR
- Lesson 4: Point-in-time recovery
- Lab: Restore data

Module 11: SQL Server Agent

- Lesson 1: Working with SQL Server Agent
- Lesson 2: Automate tasks
- Lesson 3: Tasks, alerts, notifications, Database Mail
- Lesson 4: Multi-Server Management
- Lab: SQL Server Agent

Module 12: Tracing and monitoring SQL Server

- Lesson 1: Trace tools
- Lesson 2: Extended Events
- Lesson 3: Monitoring tools
- Lab: Tracing and monitoring SQL Server

Module 13: Troubleshooting SQL Server

- Lesson 1: Methodology
- Lesson 2: Service and setup issues
- Lesson 3: Connectivity problems and approaches
- Lesson 4: Permissions and performance issues
- Lab: Troubleshooting SQL Server

Module 14: Import and export of data

- Lesson 1: Data transfers and tools
- Lesson 2: Guides, utilities, transfer services
- Lesson 3: Bcp, BULK INSERT and OPEN functions
- Lesson 4: Data-Tier Applications, Integration Services
- Lab: Import and export of data