

Administering a SQL Database Infrastructure 2022/2025



Training recipients

The primary audience for this course is IT Professionals who want to become skilled on SQL Server product features and technologies for implementing a database.

The secondary audiences for this course are individuals who are developers from other product platforms looking to become skilled in the implementation of a SQL Server database.



Benefits

After completing this course, students will be able to:

- Authenticate and authorize users
- Assign server and database roles
- Authorize users to access resources
- Protect data with encryption and auditing
- Describe recovery models and backup strategies
- Backup SQL Server databases
- Restore SQL Server databases
- Automate database management
- Configure security for the SQL Server agent
- Manage alerts and notifications
- Managing SQL Server using PowerShell
- Trace access to SQL Server
- Monitor a SQL Server infrastructure
- Troubleshoot a SQL Server infrastructure
- Import and export data



Training program

1. SQL Server Security
 - Authenticating Connections to SQL Server
 - Authorizing Logins to Connect to databases
 - Authorization Across Servers
 - Partially Contained Databases
2. Assigning Server and Database Roles
 - Working with server roles
 - Working with Fixed Database Roles
 - Assigning User-Defined Database Roles
3. Authorizing Users to Access Resources
 - Authorizing User Access to Objects
 - Authorizing Users to Execute Code
 - Configuring Permissions at the Schema Level
4. Protecting Data with Encryption and Auditing
 - Options for auditing data access in SQL Server
 - Implementing SQL Server Audit
 - Managing SQL Server Audit
 - Protecting Data with Encryption
5. Recovery Models and Backup Strategies
 - Understanding Backup Strategies
 - SQL Server Transaction Logs
 - Planning Backup Strategies
6. Backing Up SQL Server Databases
 - Backing Up Databases and Transaction Logs
 - Managing Database Backups
 - Advanced Database Options
7. Restoring SQL Server 2016 Databases
 - Understanding the Restore Process
 - Restoring Databases
 - Advanced Restore Scenarios
 - Point-in-Time Recovery
8. Automating SQL Server Management
 - Automating SQL Server management
 - Working with SQL Server Agent
 - Managing SQL Server Agent Jobs
 - Multi-server Management
9. Configuring Security for SQL Server Agent
 - Understanding SQL Server Agent Security

- Configuring Credentials
- Configuring Proxy Accounts
- 10. Monitoring SQL Server with Alerts and Notifications
 - Monitoring SQL Server Errors
 - Configuring Database Mail
 - Operators, Alerts, and Notifications
 - Alerts in Azure SQL Database
- 11. Introduction to Managing SQL Server by using PowerShell
 - Getting Started with Windows PowerShell
 - Configure SQL Server using PowerShell
 - Administer and Maintain SQL Server with PowerShell
 - Managing Azure SQL Databases using PowerShell
- 12. Tracing Access to SQL Server with Extended events
 - Extended Events Core Concepts
 - Working with Extended Events
- 13. Monitoring SQL Server
 - Monitoring activity
 - Capturing and Managing Performance Data
 - Analyzing Collected Performance Data
 - SQL Server Utility
- 14. Troubleshooting SQL Server
 - A Trouble Shooting Methodology for SQL Server
 - Resolving Service Related Issues
 - Resolving Connectivity and Log-in issues
- 15. Importing and Exporting Data
 - Transferring Data to and from SQL Server
 - Importing and Exporting Table Data
 - Using bcp and BULK INSERT to Import Data
 - Deploying and Upgrading Data-Tier Application



Expected preparation of the participant

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of Transact-SQL.
- Working knowledge of relational databases.
- Some experience with database design.



Training Includes

- manual in electronic form available on the platform: <https://www.altkomakademia.pl/>
- access to Altkom Akademia's student portal



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Language

- **Training:** English
- **Materials:** English