

## MOC COURSE: 20764 Administering a SQL Database Infrastructure

### Summary

<i>Duration:</i>	<i>5 days/ 40 hours</i>
<i>Level:</i>	<i>300*</i>
<i>Delivery method:</i>	<i>In class</i>
<i>Language:</i>	<i>Bulgarian</i>
<i>Price:</i>	<i>900 Euro excl VAT</i>

*\* The difficulty level is consistent with the widely accepted scale of technical difficulty of training on Microsoft Corp*

### AUDIENCE:

The primary audience for this course is individuals who administer and maintain SQL Server databases. These individuals perform database administration and maintenance as their primary area of responsibility, or work in environments

where databases play a key role in their primary job. The secondary audiences for this course are individuals who develop applications that deliver content from SQL Server databases. 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.

### AFTER THE TRAINING ATTENDEES 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

### TOPICS:

#### Module 1. AUTHENTICATING AND AUTHORIZING USERS

Authenticating connections to SQL Server; Authorizing logins to access databases; Authorization across servers; Partially contained databases

Lab: Authenticating Users

#### Module 2. ASSIGNING SERVERS & DATABASE ROLES

Working with server roles; Working with Fixed database roles; Creating user-defined database roles

Lab: Assigning server and database roles

#### Module 3. AUTHORIZING USERS TO ACCESS RESOURCES

Authorizing user access to objects; Authorizing users to execute code; Configuring permissions at the schema level

Lab: Authorizing users to access resources

#### Module 4. PROTECTING DATA WITH ENCRYPTION & AUDITING

Options for auditing data access in SQL Server; Implementing SQL Server audit; Managing SQL Server audit; Protecting data with encryption

Lab: Using Auditing and Encryption

#### Module 5. SQL SERVER RECOVERY MODELS

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Backup strategies; Understanding SQL Server transaction log; Planning a SQL Server backup strategy  
Lab: Understanding SQL Server recovery models

#### **Module 6. BACKUP OF SQL SERVER DATABASES**

Backing up databases and transaction logs; Managing database backups; Working with backup options  
Lab: Backing up SQL Server databases

#### **Module 7. RESTORING SQL SERVER DATABASES**

Understanding the restore process; Restoring databases; Working with point-in-time recovery; Restoring system databases and individual files  
Lab: Restoring SQL Server User Databases

#### **Module 8. AUTOMATING SQL SERVER MANAGEMENT**

Automating SQL Server management; Working with SQL Server agent; Managing SQL Server agent jobs  
Multi-server management  
Lab: Automating SQL Server Management

#### **Module 9. CONFIGURING SECURITY FOR SQL SERVER AGENT**

Understanding SQL Server Agent Security; Configuring credentials; Configuring proxy accounts  
Lab: Configuring Security for SQL Server Agent

#### **Module 10. MONITORING SQL SERVER WITH ALERTS & NOTIFICATIONS**

Configuration of database mail; Monitoring SQL Server errors; Configuring operators, alerts, and notifications; Alerts in Azure SQL database  
Lab: Monitoring SQL Server with Alerts and Notifications

#### **Module 11. INTRODUCTION TO MANAGING SQL SERVER BY USING POWERSHELL**

Configure SQL Server using PowerShell; Administer SQL Server using PowerShell; Maintain the SQL Server environment using PowerShell; Managing Azure SQL Server databases using PowerShell  
Lab: Administering SQL Server using PowerShell

#### **Module 12. TRACING ACCESS TO SQL SERVER**

Capturing activity using SQL Server profiler; Improving performance with the database engine tuning advisor; Working with tracing options; Distributed replay; Monitoring locks  
Lab: Tracing Access to SQL Server

#### **Module 13. MONITORING SQL SERVER**

Monitoring activity; Capturing and managing performance data; Analyzing collected performance data  
SQL Server utility  
Lab: Monitoring SQL Server

#### **Module 14. TROUBLESHOOTING SQL SERVER**

SQL Server troubleshooting methodology; Resolving service related issues; Resolving login and connectivity issues; Troubleshooting common issues  
Lab: Troubleshooting Common Issues

#### **Module 15. IMPORTING & EXPORTING DATA**

Transferring data to/from SQL Server; Importing and exporting table data; Using BCP and BULK INSERT to import data; Deploying and upgrading data-tier applications  
Lab: Importing and Exporting Data