



MS SQL Server DBA Training Course



27 October -  
7 November 2024  
Istanbul (Turkey)



# MS SQL Server DBA Training Course

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## Introduction:

Database Administrators DBAs are responsible for the design, implementation, support, and maintenance of computerized databases in today's organizations. The role also includes architecting, building, and scaling databases for future data growth and capacity. They are also responsible for the security, performance, and availability of data to users and customers. All the above tasks are performed with the help of a Database Management System DBMS and the leading and most widely used DBMS across the world today are the Oracle, Microsoft SQL Server, MySQL database, etc.

## Course Objectives:

At the end of this course, the participants will be able to:

- Understand database indexes.
- Check index fragmentation and maintain them.
- Understand and maintain SQL Server Database statistics
- Understand SQL Server Profiler
- To create SQL Server traces.
- To run server-side traces

## Targeted Audience:

- Anyone who wants to start a career in SQL database administration
- Anyone who wants to have complete SQL database training to get a job in IT
- Anyone who wants to advance his/her career
- Anyone who wants to master the SQL command-line skills
- College students
- IT professionals
- Teachers and instructors
- Anyone who wants to get certified in MCSA and MTA certification

## Course Outlines:

### Unit 1: Introduction to database management systems and databases

- What are a database and a database management system DBMS?
- Introduction to Microsoft SQL Server and its overall SQL Server Data Platform
- History and Current trends of DBMS and Database Administration
- Tasks of a Database Administrator

### Unit 2: Microsoft SQL Server 2016 Installation

- What are the editions of Microsoft SQL Server 2016 Data Platform?
- Learn the hardware and software pre-requisite for a successful SQL Server 2016 installation.
- Understanding SQL Server 2016 components.
- Perform a successful initial installation of Microsoft SQL Server 2016 .

- Understanding SQL Server version identifiers, installed directories, and conventions.
- Add features to an existing SQL Server 2016 installation including Analysis Services and Reporting Services.
- Install Microsoft SQL Server 2016 Management Studio

### Unit 3: Microsoft SQL Server 2016 Architecture

- Understanding SQL Server system databases and business non-system databases.
- Understanding the SQL Server database structure. What are SQL Server filegroups and datafiles?
- What are SQL Server Transactional logs and database, recovery models?
- What is the difference between a SQL Server instance and a database?
- Client-Server Communication in SQL Server 2016.

### Unit 4: How to create database objects using SQL Server 2016 Management Studio

- Create two sample databases "AdventureWorks" databases for practice in the training.
- How to create tables and indexes using the SQL Server Management Studio SSMS.
- How to manage indexes using SSMS including rebuilding indexes to reduce fragmentation.
- How to create primary key foreign key relationships between tables using SSMS.
- How to add new filegroups in SQL Server using SSMS.

### Unit 5: Microsoft SQL Server 2016 Security

- What are instance-level principals and database-level principals?
- Understand SQL Server fixed server roles.
- How to create a new database user and map it with an instance login.
- What are SQL Server database schemas and learn about their association with database users?
- Under database role memberships and how to grant permissions to database users.
- What is SQL Server Configuration Manager and how to change the ownership of a SQL Server database instance?
- How to enable login auditing in SQL Server 2016.s

### Unit 6: Microsoft SQL Server 2016 database session administration

- Understand the differences between database connections and sessions.
- Learn about the details of various dynamic management views DMVs for monitoring database activity.
- How to kill terminate an SQL Server session-id using SSMS.
- How to identify and run built-in reports in SSMS.
- Learn about the auto-commit, implicit and explicit transactions in SQL Server

### Unit 7: SQL Server 2016 Backup and Recovery - Part 1

- Introduction to Backup and Recovery strategy for databases.
- How to detach and attach databases in offline mode.
- How to copy databases using the Copy Database Wizard CDW.
- Full Database backups using the Simple Recovery Model.
- Full Database and Transactional log backups with FULL Recovery Model.
- Differential database backups with FULL Recovery Model.
- How to view and maintain database backup history information.
- How to create maintenance plans for automating backups in SQL Server.
- How to create maintenance plans for purging old backups.

- Learn about the SQL Server Agent for scheduling backups.

## Unit 8: SQL Server 2016 Backup and Recovery - Part 2

- How to perform a full database restore and recovery.
- How to recover from SQL Server transactional logs.
- How to recover a database using the time-based recovery option STOP AT.
- How to use the checksum and compression options in backup operations.

## Unit 9: Applying service packs and performing database upgrades

- How to apply SQL Server 2012 Service Pack 3 SP3 to SQL Server 2012 RTM version.
- How to upgrade databases from SQL Server 2012 SP3 to SQL Server 2016 RTM.

## Unit 10: SQL Server 2016 Data Export and Import Data Movement

- Partial Data export and import using the command line tools - BCP command
- Partial Data export and import using GUI tools - Export and Import Wizard

## Unit 11: SQL Server 2016 Backup to URL Microsoft Cloud

- Create an account in Windows Azure.
- Create a storage account and containers within the Windows Azure account.
- Create SQL Server credentials for authenticating to the Windows Azure URL.
- Perform a full database backup to URL.
- Delete the database and restore it from the URL.