

MOC 20765 C: Provisioning SQL Databases

Course Summary

Description

This course is designed to teach students how to provision SQL Server databases both on premise and in SQL Azure.

Objectives

By the end of this course, students will be able to:

- Provision a Database Server
- Upgrade SQL Server
- Configure SQL Server
- Manage Databases and Files (shared)
- Provision, migrate, and manage databases in the cloud

Topics

- SQL Server Components
- Installing SQL Server
- Upgrading SQL Server to SQL Server 2017
- Working with Databases
- Performing Database Maintenance
- Database Storage Options
- Planning to Deploy SQL Server on Microsoft Azure
- Migrating Databases to Azure SQL Database
- Deploying SQL Server on a Microsoft Azure Virtual Machine
- Managing databases in the Cloud

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 audience for this course is individuals who develop applications that deliver content from SQL Server databases.

Prerequisite

Before taking this course, students should have a basic knowledge of the Microsoft Windows operating system and its core functionality. Students should also have a working knowledge of Transact-SQL and relational databases. Some experience with database design would be beneficial.

Duration

Five Days

MOC 20765 C: Provisioning SQL Databases

Course Outline

I. *SQL Server Components*

This module describes the various SQL Server components and versions.

- A. Introduction to the SQL Server Platform
- B. Overview of SQL Server Architecture
- C. SQL Server Services and Configuration Options

II. *Installing SQL Server*

This module describes the process to install SQL Server 2016.

- A. Considerations for SQL Installing Server
- B. TempDB Files
- C. Installing SQL Server
- D. Automating Installation

Lab: Installing SQL Server

- Preparing to install SQL Server
- Install an instance of SQL Server
- Perform post installation checks
- Automating Installation

III. *Upgrading SQL Server to SQL Server 2017*

This module describes the process for upgrading to SQL Server 2017.

- A. Upgrade Requirements
- B. Upgrade SQL Server Services
- C. Side by Side Upgrade: Migrating SQL Server Data and Applications

Lab: Upgrading SQL Server

- Create the Application Logins
- Restore the backups of the TSQL Database
- Orphaned Users and Database Compatibility Level

IV. *Working with Databases*

This module describes the preinstalled system databases, the physical structure of databases and the most common configuration options related to them.

- A. Introduction to Data Storage with SQL Server

- B. Managing Storage for System Databases
- C. Managing Storage for User Databases
- D. Moving and Copying Database Files
- E. Buffer Pool Extension

Lab: Managing Database Storage

- Configuring tempdb Storage
- Creating Databases
- Attaching a Database
- Enable Buffer Pool Extension

V. *Performing Database Maintenance*

- A. This module covers database maintenance plans.
- B. Ensuring Database Integrity
- C. Maintaining Indexes
- D. Automating Routine Database Maintenance

Lab: Performing Database Maintenance

- Use DBCC CHECKDB to Verify Database Integrity
- Rebuild Indexes
- Create a Database Maintenance Plan

VI. *Database Storage Options*

Describe SQL Server storage options.

- A. SQL Server storage Performance
- B. SMB Fileshare
- C. SQL Server Storage in Microsoft Azure
- D. Stretch Databases

Lab: Implementing Stretch Database

- Run Stretch Database Advisor
- Implement Stretch Database

MOC 20765 C: Provisioning SQL Databases

Course Outline (cont.)

VII. *Planning to Deploy SQL Server on Microsoft Azure*

This module describes how to plan to deploy SQL Server on Azure.

- A. SQL Server Virtual Machines in Azure
- B. Azure Storage
- C. Azure SQL Authentication
- D. Deploying an Azure SQL Database

Lab: Plan and Deploy an Azure SQL Database

- Plan an Azure SQL Database, Networking, performance tiers, security
- Provision an Azure SQL Database
- Connect to an Azure SQL Database

VIII. *Migrating Databases to Azure SQL Database*

This module describes how to migrate databases to Azure SQL Database.

- A. Database Migration Testing Tools
- B. Database Migration Compatibility Issues
- C. Migrating a SQL Server Database to Azure SQL Database

Lab: Migrating SQL Server Databases to Azure

- Perform Migration Testing

- Migrate a SQL Server Database to Azure SQL Database
- Test a Migrated Database

IX. *Deploying SQL Server on a Microsoft Azure Virtual Machine*

This module describes how to deploy SQL Server on Microsoft Azure VMs.

- A. Deploying SQL Server on an Azure VM
- B. The Deploy Database to a Microsoft Azure VM Wizard

Lab: Deploying SQL Server on an Azure Virtual Machine

- Provision an Azure VM
- Use the Deploy Database to Azure VM Wizard

X. *Managing databases in the Cloud*

This module describes how to manage SQL Server on Azure.

- A. Managing Azure SQL Database Security
- B. Configure Azure storage
- C. Azure Automation

Lab: Managing Databases in the Cloud

- Add data masking
- Use Azure automation to stop Virtual Machines