Provisioning SQL Databases

Course Outline

Module 1: SQL Server Components

This module describes the various SQL Server components and versions.

Lessons

- Introduction to the SQL Server Platform
- Overview of SQL Server Architecture
- SQL Server Services and Configuration Options

After completing this module, you will be able to:

- Describe SQL Server components and versions.
- Describe SQL Server architecture and resource usage.
- Describe SQL Server services and how you manage the configuration of those services.

Module 2: Installing SQL Server

This modules describes the process to install SQL Server 2016.

Lessons

- Considerations for SQL Installing Server
- TempDB Files
- Installing SQL Server
- Automating Installation

Lab : Installing SQL Server

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

After completing this module, you will be able to:

- Describe the considerations when installing SQL Server.
- Describe TempDB files.
- Install SQL Server.
- Automate a SQL Server installation.

Module 3: Upgrading SQL Server to SQL Server 2017

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

Lessons

- Upgrade Requirements
- Upgrade SQL Server Services
- 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

After completing this module, you will be able to:

- Describe the upgrade requirements for SQL Server.
- Upgrade SQL Server.
- Migrate SQL Server data and applications.

Module 4: Working with Databases

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

Lessons

- Introduction to Data Storage with SQL Server
- Managing Storage for System Databases
- Managing Storage for User Databases
- Moving and Copying Database Files
- Buffer Pool Extension

Lab : Managing Database Storage

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

After completing this module, you will be able to:

- Describe Data Storage with SQL Server.
- Manage Storage for System Databases.

- Manage Storage for User Databases.
- Move and Copy Database Files.
- Describe and use Buffer Pool Extensions.

Module 5: Performing Database Maintenance

This module covers database maintenance plans.

Lessons

- Ensuring Database Integrity
- Maintaining Indexes
- Automating Routine Database Maintenance

Lab : Performing Database Maintenance

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

After completing this module, you will be able to:

- Ensure Database Integrity.
- Maintain Indexes.
- Automate Routine Database Maintenance.

Module 6: Database Storage Options

Describe SQL Server storage options.

Lessons

- SQL Server storage Performance
- SMB Fileshare
- SQL Server Storage in Microsoft Azure
- Stretch Databases

Lab : Implementing Stretch Database

- Run Stretch Database Advisor
- Implement Stretch Database

After completing this module, you will be able to:

- Describe SQL Server Storage Performance.
- Describe SMB Fileshare.
- Explain SQL Server Storage in Microsoft Azure.

- Describe Stretch Database.

Module 7: Planning to Deploy SQL Server on Microsoft Azure

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

Lessons

- SQL Server Virtual Machines in Azure
- Azure Storage
- Azure SQL Authentication
- 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

After completing this module, you will be able to:

- Describe SQL Server Virtual Machines in Azure.
- Describe Azure Storage.
- Explain Azure SQL Authentication, auditing and compliance.
- Deploy an Azure SQL Database.

Module 8: Migrating Databases to Azure SQL Database

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

Lessons

- Database Migration Testing Tools
- Database Migration Compatibility Issues
- 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

After completing this module, students will be able to:

- Describe various database migration testing tools.
- Explain database migration compatibility issues.
- Migrate a SQL Server database to Azure SQL database.

Module 9: Deploying SQL Server on a Microsoft Azure Virtual Machine

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

Lessons

- Deploying SQL Server on an Azure VM
- 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

After completing this module, students will be able to:

- Deploy SQL Server on an Azure VM.
- Use The Deploy Database to a Microsoft Azure VM Wizard.
- Configure SQL Server Connections

Module 10: Managing databases in the Cloud

This module describes how to manage SQL Server on Azure.

Lessons

- Managing Azure SQL Database Security
- Configure Azure storage
- Azure Automation

Lab : Managing Databases in the Cloud

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