Course 40441A:

Designing and Implementing Cloud Data Platform Solutions

Course Outline

Module 1: Microsoft Cloud Data Platform Overview

This module provides an overview of the Microsoft Data Platform Solutions in Hybrid and Cloud based scenarios. The module provides an overview of offerings and capabilities.

Lessons

- Microsoft Cloud Data Platform

- Microsoft SQL Server

- Common Tools

- Cloud Data Offerings

- Data Visualizations

- Cortana Analytics Suite

Module 2: Implement SQL Server on Azure VM

This module with a hands-on-lab describes the core capabilities of running SQL Server in a virtual machine environment (IAAS) on Azure.

Lessons

- Virtual machine components

- Storage Architecture

- Azure deployment models

- Virtual machine tiers

- Virtual machine deployments

- Deployment scenarios

- Move existing workloads

- Connecting to Azure VMs

- Domain joining VMs

- VM best practices

Lab : SQL Server in Azure VMs

Module 3: Implement SQL Database

This module with a hands-on-lab describes the core capabilities of implementing data platform solutions using SQL Database on Azure. The module provides details in service tiers and offerings.

Lessons

- What is SQL Database

- Data tiers/ Elastic data tiers

- Scalability Options

- Elastic Databases

- Elastic Database Tools

- SQL Database performance

- Service Tier Advisor

Lab : Implementing SQL Database

Module 4: SQL Database High Availability and disaster recovery

This module with a hands-on lab describes high availability and disaster recovery scenarios with SQL Database.

Lessons

- Business Continuity with SQL Database

- SQL Database HA/DR

- SQL Database Backup Solutions

- SQL Database Replication Scenarios

Lab : SQL Database HA/DR

Module 5: Hybrid HA/DR scenarios with SQL Server

This module with a hands-on lab exercise describes the design of high available, scalable data platform solutions on-premises, in the cloud and in hybrid cloud scenarios using SQL Server on premises and with Azure VMs.

Lessons

- HA/DR deployment architectures

- AlwaysOn availability groups

- AlwaysOn Failover Clustering

- Database Mirroring

- Log Shipping

- Backup to Azure

- Managed Backups

- SQL Server data files on Azure

Lab : Implement HA/DR with SQL Server in Azure VMs

Module 6: Design and Implement Security

This module with a hands-on-lab describes the security features and capabilities in SQL Server in Azure VMs and SQL Database including firewalls andauditing.

Lessons

- SQL Database Security Approach

- SQL Database Firewall Security

- SQL Database Active Directory Integration

- Encryption

- Row Level Security

- Dynamic Data Masking

- Auditing and Threat Detection

Lab : Design and Implement SQL Database Security

Module 7: Monitor and manage implementations on Azure

This module with a hands-on-lab focuses on management and deployment, monitoring for performance of SQL Database and SQL Server in Azure VMs.

Lessons

- Azure Automation Capabilities

- SQL Monitoring and Management

- Operational Insights

Lab : Monitoring and manage implementations

Module 8: Design and implement database solutions for SQL Server and SQL Database

This module covers design and architecture scenarios for implementation of database solutions using the Microsoft Cloud Data Platform. This module introduces key scenarios to discuss with classroom attendees in order to build out the right architecture and infrastructure based on architecture and business requirements.

Lessons

- Case Study – SQL Server Hybrid Scenario

- Case Study – Lift and Shift