Implement scalable database solutions using Azure SQL (DP-300)

Duration: 4 Days **Course Code: M-DP300** **Delivery Method: Closed Events**

Overview:

This course provides students with the knowledge and skills to administer a SQL Server database infrastructure.
This course provides students with the knowledge and skills to administer a SQL Server database infrastructure for cloud, on-premises and hybrid relational databases and who work with the Microsoft PaaS relational database offerings. Additionally, it will be of use to individuals who develop applications that deliver content from SQL-based relational databases.

Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

Target Audience:

The audience for this course is data professionals managing data and databases who want to learn about administering the data platform technologies that are available on Microsoft Azure. This course is also valuable for data architects and application developers who need to understand what technologies are available for the data platform with Azure and how to work with those technologies through applications.

Objectives:

- Students will learn to,
- Prepare to maintain SQL databases on Azure
- Deploy IaaS solutions with Azure SQL
- Deploy PaaS solutions with Azure SQL
- Evaluate strategies for migrating to Azure SQL
- Migrate SQL Server workloads to Azure SQL Database
- Migrate SQL workloads to Azure Managed Instances
- Configure database authentication and authorization
- Protect data in-transit and at rest
- Implement compliance controls for sensitive data
- Describe performance monitoring
- Configure SQL Server resources for optimal performance
- Configure databases for optimal performance
- Explore query performance optimization
- Evaluate performance improvements
- Explore performance-based design
- Automate deployment of database resources
- Create and manage SQL Agent jobs
- Manage Azure PaaS tasks using automation
- Describe high availability and disaster recovery strategies
- Explore IaaS and PaaS solutions for high availability and disaster recovery
- Back up and restore databases

Prerequisites:

Successful Azure Database Administrators start this role with professional experience in database management and technical knowledge of cloud technologies.

Specifically:

- Working with, maintaining, and developing with SQL Server
- Experience with Azure, such as deploying and managing

Testing and Certification

Exam DP-300: Implement scalable database solutions using Azure SQL

- Microsoft Certified: Azure Database Administrator Associate

resources

At a minimum, you should know the information in the following online training before attending the course:

- M-AZ900 - Introduction to Microsoft Azure (AZ-900)
- M-DP900 - Introduction to Microsoft Azure Data (DP-900)

Content:

Module 1 : Plan and implement data platform resources

- Prepare to maintain SQL Server-based databases on Azure
- Deploy IaaS solutions with Azure SQLDeploy PaaS solutions with Azure SQLMigrate SQL Server workloads to Azure SQL Database
- Migrate SQL Server workloads to Azure SQL Managed Instance

Module 2 : Implement a secure environment for a database service

- Explore the basics of SQL Server in an Infrastructure as a Service (IaaS) offering
- Learn the available options for provisioning and deployment
- Deploy SQL Server into an Azure Virtual Machine

Module 3 : Monitor and optimize operational resources in Azure SQL

Module 4 : Optimize query performance in Azure SQL

Module 5 : Automate database tasks for Azure SQL

Module 6 : Plan and implement a high availability and disaster recovery environment

Module 7 : Configure database authentication and authorization

- Learn about authentication options for Azure SQL Database
- Create various security principals
- Configure permissions within a SQL database
- Identify authentication and authorization failures

Module 8 : Protect data in-transit and at rest

- Understand the data encryption options available in the various platforms
- Implement object level encryption
- Understand the difference between database and server firewall rules for Azure SQL Database
- Explore Always Encrypted with secure enclaves

Module 9 : Implement compliance controls for sensitive data

- Plan and implement data classification in Azure SQL Database
- Understand and configure row-level security and dynamic data masking
- Understand the usage of Microsoft Defender for SQL
- Explore how Azure SQL Database Ledger works

Module 10 : Describe performance monitoring

- Review potential performance issues.
- Identify critical Azure metrics.
- Learn how to collect metrics for an established baseline.
- Use extended events for performance analysis.
- Understand Azure SQL Database Intelligent Insights.

Module 11 : Configure SQL Server resources for optimal performance

- Understand your options for configuration of Azure storage
- Learn how to configure TempDB data files in SQL Server
- Learn how to choose the right type of VM for SQL Server workloads
- Understand the use cases and configuration of Resource Governor in SQL Server

Module 12 : Configure databases for optimal performance

- Understand database scoped configuration options
- Understand maintenance tasks related to indexing and statistics
- Understand the features of Intelligent Query Processing (IQP)
- Explore the automatic tuning feature in Azure

Module 13 : Explore query performance optimization

- Generate and save execution plans

Module 15 : Explore performance-based design

- Explore normal forms and how they affect database design
- Choose appropriate datatypes for your data
- Evaluate appropriate index types

Module 16 : Automate deployment of database resources

- Describe the deployment models available on Azure
- Deploy database resources using PowerShell and Azure CLI
- Deploy an Azure Resource Manager template and Bicep
- Understand the difference between multiple command-line options

Module 17 : Create and manage SQL Agent jobs

- Schedule necessary maintenance activities for your databases.
- Configure notifications and alerts on SQL Server Agent jobs, and SQL Server.
- Configure alerts based on performance monitor values.

Module 18 : Manage Azure PaaS tasks using automation

- Understand the benefits of Azure policy
- Explore the capabilities of Azure Automation
- Configure elastic jobs
- Use Logic Apps for database workflow

Module 19 : Describe high availability and disaster recovery strategies

- Define recovery time objective and recovery point objective
- Explore the available high availability and disaster recovery options for both IaaS and PaaS
- Devise an appropriate high availability and disaster recovery strategy

Module 20 : Explore IaaS and PaaS solutions for high availability and disaster recovery

- Explore options for deploying a WSFC in Azure
- Explore options for deploying an AG in Azure
- Implement Temporal Tables
- Plan active geo-replication and auto-failover groups

Module 21 : Back up and restore databases

- Compare the different types of execution plans
- Understand how and why query plans are generated
- Explain the purpose and benefits of the Query Store
- Investigate the available reports and data in the Query Store

Module 14 : Evaluate performance improvements

- Determine when changing indexes or defining new ones can affect performance
- Evaluate wait statistics as an aid in finding areas for performance improvement
- Understand how query hints work, and when to use them

- Explore backup and restore options for IaaS
- Implement backup and restore for PaaS

Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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