COURSE OVERVIEW

Course Name:
(DP-300) Administering Microsoft Azure SQL Solutions

COURSE DURATION: 4 Days

Gauteng:
3rd Floor, 34 Whitely Road
Melrose Arch
Johannesburg
2196

Gauteng:
192 on Bram
192 Bram Fischer Drive
Ferndale, Randburg
Johannesburg
2160

Cape Town:
3rd Floor, Thomas Pattullo Building
19 Jan Smuts St
Cape Town
8000

Durban:
9 Mountview Close
Broadlands
Mount Edgecombe
Durban
4302

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INTRODUCTION

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.

DELIVERY METHOD

Our courses have flexible delivery options:
- In-person classroom training at the Impactful training facilities
  - Johannesburg, Durban, Cape Town
- Virtual instructor-led training
- Nationally: on-site at the client

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INTENDED 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.

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 resources

COURSE CONTENT

Prepare to maintain SQL databases on Azure

Explore the role of a database administrator on Azure. Describe SQL Server-based offerings on Azure.

Deploy IaaS solutions with Azure SQL

Configure virtual machine sizing, storage, and networking options to ensure adequate performance for your database workloads. Choose and configure appropriate high availability options.

Deploy PaaS solutions with Azure SQL

Provision and deploy Azure SQL Database and Azure SQL managed instance. Select the appropriate options when performing a migration to the SQL PaaS platform.

Evaluate strategies for migrating to Azure SQL

Describe database migration options and tools on Azure. Understand how compatibility level affects database behaviour. Describe Azure private and public preview options.

Migrate SQL workloads to Azure SQL Databases

In this module, you will learn to demonstrate the benefits and processes for moving a SQL Server database to Azure SQL Database.

Migrate SQL workloads to Azure Managed Instances

Learners will be able to demonstrate the benefits and processes for moving a SQL Server database to an Azure SQL Database Managed Instance.

Configure database authentication and authorization

Contrast authentication using Azure Active Directory, Windows Active Directory, and SQL Server authentication. Implement various security principals and configure permissions.

Protect data in-transit and at rest

Explore encryption options available within Azure SQL, including firewall rules, Always Encrypted, and Transport Layer Security. Understand how SQL Injection works.

Implement compliance controls for sensitive data

Explore data classification capabilities and degrees of confidentiality. Implement security options to maintain private data safe, including Azure SQL auditing, Microsoft Defender for SQL, row-level security, Dynamic Data Masking and Azure SQL Database Ledger.

Describe performance monitoring

Compare Azure, and on-premises tools for monitoring and measuring performance. Determine critical metrics. Understand the purpose of a baseline for comparative analysis. Configure extended event sessions for tracing activities.

Configure SQL Server resources for optimal performance

Choose the appropriate size and storage options for your Azure SQL databases. Configure server resources such as tempdb. Understand the usage of Resource Governor.

Configure databases for optimal performance

Implement tasks for both IaaS and PaaS to maintain indexes, and statistics. Explore the automatic tuning features of Azure SQL Database. Control database-level configuration options. Explore Intelligent Query Processing.

Explore query performance optimization

Read and understand various forms of execution plans. Compare estimated vs actual plans. Learn how and why plans are generated. Understand the purpose and benefits of the Query Store.

Evaluate performance improvements

changes to indexes. Determine the impact of changes to queries and indexes. Explore Query Store hints.

Explore performance-based design

Explore normalization for relational databases. Investigate the impact of proper datatype usage. Compare types of indexes.

Automate deployment of database resources

Explore multiple deployment models available on Azure. Use Azure Resource Manager (ARM) templates and Bicep files for deploying Azure SQL resources. Understand how to use PowerShell and Azure CLI for automation purposes.

Create and manage SQL Agent jobs

Explore SQL automation for scheduled tasks, and automatic alerts for SQL Server and Azure SQL Managed Instance.

Manage Azure PaaS tasks using automation

Explore automation for Azure SQL platform. Configure elastic jobs, explore Azure Automation, and evaluate different strategies for monitoring automation tasks.

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Describe high availability and disaster recovery strategies

Plan an appropriate high availability and disaster recovery strategy based on recovery time objective and recovery point objective. Choose the best solution for IaaS or PaaS deployments or hybrid workloads.

Explore IaaS and PaaS solutions for high availability and disaster recovery

Deploy Windows Server Failover Cluster and availability groups in Azure and hybrid environments. Configure temporal tables, geo-replication, and auto-failover groups.

Back up and restore databases

Plan and implement policy for recovering data if user errors occur or the technology fails. Explore various options for how and where to back up and restore databases.