Administering Relational Databases on Microsoft Azure

Description

This course provides participants 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.

Classroom Registration Price (CHF)
3200
Virtual Classroom Registration Price (CHF)
3000
Course Content
Module 1: The Role of the Azure Database Administrator

- Lesson 1: Azure Data Platform Roles
- Lesson 2: Azure Database Platforms and Options
- Lesson 3: SQL Server Compatibility Levels
- Lesson 4: Azure Preview Features

Module 2: Plan and Implement Data Platform Resources

- Lesson 1: Deploying SQL Server using IaaS
- Lesson 2: Deploying SQL Server using PaaS
- Lesson 3: Deploying Open Source Database Solutions on Azure

Module 3: Implement a Secure Environment

- Lesson 1: Configure Database Authentication
- Lesson 2: Configure Database Authorization
- Lesson 3: Implement Security for Data at Rest
- Lesson 4: Implement Security for Data in Transit
- Lesson 5: Implement Compliance Controls for Sensitive Data

Module 4: Monitor and Optimize Operational Resources

- Lesson 1: Baselines and Performance Monitoring
- Lesson 2: Major Causes of Performance Issues
- Lesson 3: Configuring Resources for Optimal Performance
- Lesson 4: User Database Configuration
- Lesson 5: Performance-related Maintenance Tasks

Module 5: Optimize Query Performance

- Lesson 1: Understanding SQL Server Query Plans
- Lesson 2: Explore Performance-based Database Design
- Lesson 3: Evaluate Performance Improvements

Module 6: Automation of Tasks

- Lesson 1: Setting up Automatic Deployment
- Lesson 2: Defining Scheduled Tasks
- Lesson 3: Configuring Extended Events
- Lesson 4: Managing Azure PaaS resources Using Automated Methods

Module 7: Plan and Implement a High Availability and Disaster Recovery Environment

- Lesson 1:High Availability and Disaster Recovery Strategies
- Lesson 1:IaaS Platform and Database Tools for HADR
- Lesson 1:PaaS Platform and Database Tools for HADR
- Lesson 1:Database Backup and Recovery

Lab / Exercises
Lab 1: Using the Azure Portal and SQL Server Management Studio

- Provision a SQL Server on an Azure Virtual Machine
- Connect to SQL Server and Restore a Backup

Lab 2: Deploying Azure SQL Database

- Deploy a VM using an ARM template
- Configure resources needed prior to creating a database
- Deploy an Azure SQL Database
- Register the Azure SQL Database instance in Azure Data Studio and validate connectivity
- Deploy PostgreSQL or MySQL using a client tool to validate connectivity

Lab 3: Implement a Secure Environment

- Lesson 1:Configure a server-based firewall rule using the Azure Portal
- Lesson 1:Authorize Access to Azure SQL Database with Azure Active Directory
- Lesson 1:Enable Advanced Data Security and Data Classification
- Lesson 1:Manage access to database objects

Lab 4: Monitor and Optimize Resources

- Isolate CPU Problems
- Use Query Store observe blocking problems
- Detect and correct fragmentation issues

Lab 5: Query Performance Troubleshooting

- Identify issues with database design AdventureWorks2017
- Isolate problem areas in poorly performing queries in AdventureWorks2017
- Use Query Store to detect and handle regression in AdventureWorks2017
- Use query hints to impact performance in AdventureWorks2017

Lab 6: Automating Tasks

- Deploy an Azure template from a Quickstart template on GitHub
- Configure notifications based on performance metrics
- Deploy an Azure Automation Runbook (or elastic job) to rebuild indexes on an Azure SQL Database

Lab 7: Plan and Implement a High Availability and Disaster Recovery Environment

- Create an Always On Availability Group
- Enable Geo-Replication for Azure SQL Database
- Backup to URL and Restore from URL

Documentation

- Digital courseware included

Exam

- This course prepares you to the DP-300: Administering Relational Databases on Microsoft Azure exam. If you wish to take this exam, please contact our secretariat who will let you know the cost of the exam and will take care of all the necessary administrative procedures for you.

Participant profiles

- Data professionals managing data and databases who want to learn about administering the data platform technologies that are available on Microsoft Azure
- Data architects and application developers who need to understand what technologies are available for the data platform with Azure

Prerequisites

- Have working experience with managing datas

Objectives

- Plan, deploy and configure Azure SQL offerings
- Monitor database performance and tune a database and queries for optimum performance
- Plan and configure a High Availability Solution

Niveau
IntermÃ©diaire
Duration (in Days)
4
Reference
DP-300T00