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## Microsoft Azure for SQL Server Database Administrators

### Course Overview

- **This is 100% hands-on course, students will learn about running SQL Server in Azure.**
- **Helps to prepare 70-473 Microsoft exams.**
- We will discuss all the concepts with our on-premises data center and Azure platform.
- The primary focus of this course is SQL Server cloud and hybrid-cloud solutions on both Azure Platform as a Service (PaaS) and Azure Infrastructure as a Service (IaaS).
- This course will cover best practices for deploying SQL Server on Azure Virtual Machines including standalone SQL Servers and hybrid Availability Groups.

### Target Participants

- SQL Server Database Administrators
- IT Professionals

### Learning Formats

- Class Room and Online

### Our Trainer (s)

This course is delivered by SQL Server expert and SME Mr. Kareem Syed. He has hands on working experience on various SQL Server versions and recent cloud platforms. Having 12+years hand on experience he is technical consultant for some of the MNCs. You can visit his blog at [www.sql-talk.com](http://www.sql-talk.com) for more details.

## Course Contents

### 1. Getting started with cloud and Microsoft Azure

- What is cloud computing?
- Cloud computing benefits as compared with on-premises environment.
- Different cloud services
  - IaaS, PaaS, SaaS
- Cloud computing deployment models.
- Introduction to Microsoft Azure
- Benefits and Features
- What is SQL Azure?

### 2. Designing and implementing Azure SQL VMs (Implementing IaaS for SQL Server)

- What is Azure SQL VM?
- Introduction to Storage Service.
- Working with Azure Networks.
- Provisioning SQL Server on Azure VM
  - Configuring FireWalls
  - Creating logins
  - Verifying VM architecture
  - Configuring common SQL instance features
- Migrating on-premises databases to Azure SQL VM.
  - Backup and Restore to URL.
  - Using AzCopy with detach attach approach
  - Convert on-premises physical machine to Hyper-V VHD, upload to Azure Blob storage, and then deploy as new VM using uploaded VHD.
  - Using on-premises AO primary replica with Azure secondary replica.
  - Using transactional replication.
- Common Issues and troubleshooting
- Post migration steps.

### 3. Designing and implementing Azure SQL Databases(PaaS for SQL Server)

- What Azure SQL Database?
- Differences between Azure SQL Database and Azure SQL VM.
- Common features of SQL Database.
- Step by Step process to create Azure SQL Database and virtual server.
- Determining appropriate service tier for SQL databases.
- Common configurations
  - Configuring Instance level firewall rules.
  - Configuring database level firewall rules.
  - Verifying instance and SQL database properties.
  - Creating database users and configuring DNS to application access.
  - Verifying application access connection strings.

- Migrating on-premises databases to Azure SQL Database.
  - Deploy database to Windows SQL Database wizard.
  - Export Data Tier application (.BACPAC)
  - Using Export and Import wizard.
  - Using DMA Tool.
- Post deployment configurations.

#### **4. Configuring and implementing security for Azure SQL Databases**

- Configuring firewalls.
- Creating users and granting permissions.
- Configuring DTE.
- Configure Data Encryption.
- Always encrypted.
- Automatic Threat detection.
- Data masking configuration.

#### **5. Designing and implementing High Availability, Disaster recovery**

- Design and implement high availability solutions.
- Design and implement scalable solutions.
- Implement SQL Database data recovery.
- Implementing geo-replication for high availability.
  - Verifying replication
  - Configuring database level firewalls.
  - Creating users and allowing apps to connect
  - Monitoring using T-SQL commands
  - Monitoring using powershell
  - Performing manual failover.
  - Configuring multiple secondary sites.
  - Configure an active geo-replication failover group.
  - Removing replication.

#### **6. Monitoring and Troubleshooting**

- Manage SQL Server in Azure VMs with PowerShell,
- Manage Azure SQL Database with PowerShell,
- Configure Automation and Runbooks
- Scheduling backups.
- Designing and tuning for scalability and high performance
- Monitoring using
  - Management portal.
  - Microsoft Azure service dashboard.
  - SQL database management portal.
  - Using DMVs and DMFs

## 7. Microsoft Azure SQL Data Sync

- Exporting data from SQL server Azure SQL database.
- Sharing data between multiple locations.
- Scaling out
- Creating sync group.
- Creating sync rules.
- Running manual sync.
- Establishing conflict resolution.
- Creating an automated sync schedule.
- Creating sync agent.

## 8. Interview preparation FAQs and preparing for exam.