

# IMPLEMENT SCALABLE DATABASE SOLUTIONS USING AZURE SQL (DP-300)

Course Code: 100865

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.

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## What You'll Learn

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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

## Who Needs to Attend

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

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

- [AZ-900 Azure Fundamentals](#)
- [DP-900 Azure Data Fundamentals](#)

# IMPLEMENT SCALABLE DATABASE SOLUTIONS USING AZURE SQL (DP-300)

Course Code: 100865

CLASSROOM LIVE

\$2,595 USD

4 Day

## Classroom Live Outline

### **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
- 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

#### **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**

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

### **Classroom Live Labs**

#### **Lab : Provision SQL Server on an Azure Virtual Machine**

- Explore the Azure Portal
- Deploy a SQL Server on an Azure Virtual Machine
- Connect to SQL Server on an Azure Virtual Machine

#### **Lab : Provision an Azure SQL Database**

- Create a Virtual Network
- Deploy an Azure SQL Database
- Connect to an Azure SQL Database using Azure Data Studio
- Query an Azure SQL Database using SQL Notebook

#### **Lab : Configure a server-based firewall rule using the Azure portal**

- Configure Azure SQL Database firewall rules
- Validate access

**Lab : Authorize Access to Azure SQL Database with Azure Active Directory**

- Create users
- Manage access to database objects
- Validate access

**Lab : Enable Microsoft Defender for SQL and Data Classification**

- Enable Microsoft Defender for Azure SQL Database
- Configure Data Classification for Azure SQL Database

**Lab : Isolate performance problems through monitoring**

- Review CPU utilization in Azure portal
- Identify high CPU queries

**Lab : Detect and correct fragmentation issues**

- Investigate index fragmentation
- Rebuild fragmented indexes
- Validate performance improvements

**Lab : Identify database design issues**

- Examine the query and identify the problem
- Identify ways to fix the warning message
- Improve the code

**Lab : Identify and resolve blocking issues**

- Run blocked queries report
- Enable Read Commit Snapshot isolation level
- Evaluate performance improvements

**Lab : Isolate problem areas in poorly performing queries in a SQL Database**

- Generate actual execution plan
- Resolve a suboptimal query plan
- Use Query Store to detect and handle regression
- Examine Top Resource Consuming Queries report
- Force a better execution plan
- Use query hints to impact performance

**Lab : Deploy an automation runbook to automatically rebuild indexes**

- Create an Automation Account
- Connect to an existing Azure SQL Database
- Configure Automation Account assets
- Create a PowerShell runbook
- Create a schedule for a runbook

**Lab : Deploy Azure SQL Database using an Azure Resource Manager template**

- Explore Azure Resource Manager template

**Lab : Create a CPU status alert for a SQL Server**

- Create an alert when a CPU exceeds an average of 80 percent

**Lab : Backup to URL and Restore from URL**

- Create a credential
- Backup to URL
- Validate backup through Azure CLI and Storage Explorer
- Restore from URL

**Lab : Configure geo-replication for Azure SQL Database**

- Enable geo-replication
- Failover to a secondary region

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Apr 13 - 16, 2026 | 9:00 AM - 5:00 PM EDT

Jun 1 - 4, 2026 | 9:00 AM - 5:00 PM EDT

Aug 10 - 13, 2026 | 9:00 AM - 5:00 PM EDT

Oct 19 - 22, 2026 | 9:00 AM - 5:00 PM EDT



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PRIVATE GROUP TRAINING

4 Day

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