March 2023

Azure Database Administrator Learning Pathway

www.aka.ms/pathways

Getting started

Gain 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..

This certification is a good fit if your responsibilities include:

- Database management, availability, and security.
- Performance monitoring and optimization of modern relational database solutions.

Microsoft Learn:

- New to the Cloud or Azure? Start with Azure Fundamentals
- New to data solutions on Azure, choose Data Fundamentals

- Build your Tech resilience
- Cloud storage
- QuickStart – Create SQL Database
- QuickStart – Configure Firewall
- Azure SQL Database Overview (Video)
- What is SQL Database
- Get Started Querying with Transact-SQL

Other

- Migrate SQL workloads to Azure
- Work with relational data in Azure
- Architect a data platform in Azure
- Architect migration, business continuity, and disaster recovery in Azure

Additional Study

Plan and implement resources

- What is Azure SQL?
- Azure SQL deployment options
- Deploy SQL managed instance
- Azure SQL Database
- Elastic Pools
- Deploy SQL Server in a VM
- Deploy SQL database elastic pools
- PowerShell to create a managed instance
- Open-source offerings
- How to deploy PostgreSQL to Azure
- Create Azure Database for MariaDB server
- Features comparison: Azure SQL Database and Azure SQL Managed Instance
- Availability options for VMs in Azure
- Dynamically scale database resources with minimal downtime
- Use PowerShell to monitor and scale a single database in Azure SQL Database
- Perform a SQL Server migration assessment with Data Migration Assistant
- Online vs offline migrations
- Prerequisites for using the Azure DMS
- Migrate SQL Server to Azure SQL Database offline using DMS
- Migrate SQL Server to a single database or pooled database in Azure SQL Database online using DMS

Implement a Secure environment

- Authentication vs. authorization
- Compare Active Directory to Azure Active Directory
- Authentication and Identities
- Permissions (Database Engine)
- What is Azure RBAC?
- Azure Data Encryption at rest
- Transparent data encryption
- What is Azure Key Vault?

Implement a Secure environment

- Dynamic Data Masking
- Auditing for Azure SQL Database
- Security for open-source databases
- Always Encrypted Data Encryption
- Configure Always Encrypted by using Azure Key Vault
- Always Encrypted with secure enclaves
- Encrypt a Column of Data
- Firewalls in Azure SQL Database
- What is Azure Private Endpoint?
- SQL Data Discovery and Classification
- Change Tracking Functions (Transact-SQL)
- Introduction to Azure Defender
- SQL injection
- SQL Vulnerability Assessments

Monitor & Optimise Resources

- Azure Monitor overview | Alerts
- Monitoring and performance tuning
- Azure Intelligent Insights
- Configure streaming export of Azure SQL Database and SQL Managed Instance diagnostic telemetry
- SQL Server Query Store
- Monitoring performance via the Query Store
- Transaction Locking / Row Versioning Guide
- Resolve index fragmentation by reorganizing or rebuilding indexes
- Automate management tasks using database jobs
- Create, configure, and manage elastic jobs
- Automatic tuning | Enablement
- Introduction to Azure managed disks
- SQL Server Resource Governor
- Database scoped configuration
- Intelligent query processing

Optimise Query Performance

- Execution Plans Overview
- Read execution plans
- Execution Plans: Compare | Analyse
- Index Tuning
- Hints (Transact-SQL) - Join
- Choose appropriate data types
- Data Compression

HADR

- High Availability Options
- Disaster Recovery Options
- SQL Server HADR options for Azure VMs
- Azure HADR options for PaaS deployments
- Business continuity and HADR for SQL Server on Azure Virtual Machines
- Windows Server Failover Clustering
- Backup / restore for SQL Server on Azure
- Automated backups - Azure SQL Database & SQL Managed Instance
- Back up and restore a database using Azure SQL Database
- Long Term Retention - Overview
- Manage Azure SQL Database long-term backup retention
- Create an Always On availability group
- Configure active geo-replication and failover in the Azure portal

Admin using T-SQL

- Monitoring with DMVs
- System Health using DBCC CHECKDB
- Display Data and Log Space Information for a Database
- View or Change Server Properties
- Back up a Database
- Restore SQL database backups
- Create Certificates | Create Credentials
- Configure permissions on database objects

Role Based Certification

Azure Database Administrator

DP-300: Administering Microsoft Azure SQL Solutions

Exam Skills Outline | Course Page | Practice Test | Exam Page

Microsoft SQL Documentation

Skills Measured:

- Plan and implement data platform resources
- Implement a secure environment
- Monitor, configure, and optimize database resources
- configure and manage automation of tasks
- Plan and configure a high availability and disaster recovery (HA/DR) environment

Self Guided Learning:

- Introduction to Azure database administration
- Plan and implement data platform resources
- Implement a secure environment for a database service
- Monitor and optimize operational resources in Azure SQL
- Optimize query performance in Azure SQL
- Automate database tasks in Azure SQL
- Plan and implement a high availability and disaster recovery environment

Azure Connected Learning Experience

Microsoft Azure Connected Learning Experience (CLX) is an experiential training program that sets a trajectory for aspiring learners and working professionals to be Azure experts. The CLX program offers a personalized journey that aims to optimize learning experience while maximizing return on time invested.

Click Here

30 Day Challenge – Azure DBA

In about 12 hours, you'll learn how to demonstrate the benefits and processes for moving a SQL Server database to Azure SQL Database, implement tasks for IaaS and PaaS, and plan and implement policy for recovering data.