

Administering Microsoft Azure SQL Solutions



Online Course



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Administering Microsoft Azure SQL Solutions

Course Modules

1. Plan and implement data platform resources



Plan and deploy Azure SQL solutions

- Deploy database offerings on selected platforms
- Understand automated deployment
- Apply patches and updates for hybrid and infrastructure
- Deploy hybrid SQL Server solutions
- Appropriate database offering based on specific requirements
- Security aspects of the possible database offering
- Recommend a table partitioning solution
- Recommend a database sharding solution

Configure resources for scale and performance

- Configure Azure SQL Database for scale and performance
- Azure SQL Managed Instance for scale and performance
- SQL Server on Azure Virtual Machines
- Configure table partitioning
- Configure data compression

Plan and implement a migration strategy

- Evaluate requirements for the migration
- Evaluate offline or online migration strategies
- Implement an online migration strategy
- Implement an offline migration strategy
- Perform post migration validations
- Troubleshoot a migration
- Set up SQL Data Sync for Azure



2. Implement a secure environment

Configure database authentication and authorization

- Authentication by using Active Directory & MS Entra ID
- Create users from Microsoft Entra ID identities
- Configure security principals
- Database and object-level permissions using graphical tools
- Apply the principle of least privilege for all securables
- Troubleshoot authentication and authorization issues
- Manage authentication and authorization by using T-SQL

Implement security for data at rest and data in transit

- Implement transparent data encryption (TDE)
- Implement object-level encryption
- Configure server- and database-level firewall rules
- Implement Always Encrypted
- Configure secure access
- Configure Transport Layer Security (TLS)

Implement compliance controls for sensitive data

- Apply a data classification strategy
- Configure server and database audits
- Implement data change tracking
- Implement dynamic data masking
- Manage database resources by using Azure Purview
- Implement database ledger in Azure SQL
- Implement row-level security
- Configure Microsoft Defender for SQL



3. Monitor, configure, and optimize database resources

Monitor resource activity and performance

- Prepare an operational performance baseline
- Determine sources for performance metrics
- Interpret performance metrics
- Configure and monitor activity and performance
- Monitor by using SQL Insights
- Monitor by using Extended Events

Monitor and optimize query performance

- Configure Query Store
- Monitor by using Query Store
- Identify sessions that cause blocking
- Performance issues using dynamic management views (DMVs)
- Identify and implement index changes for queries
- Recommend query construct modifications
- Assess the use of query hints for query performance
- Review execution plans



Configure database solutions for optimal performance

- Implement index maintenance tasks
- Implement statistics maintenance tasks
- Implement database integrity checks
- Configure database automatic tuning
- Configure server settings for performance
- Configure Resource Governor for performance
- Implement database-scoped configuration
- Configure compute and storage resources for scaling

4. Configure and manage automation of tasks

Create and manage SQL Server Agent jobs

- Manage schedules for regular maintenance jobs
- Configure job alerts and notifications
- Troubleshoot SQL Server Agent jobs

Automate deployment of database resources

- Automate deployment by using ARM templates and Bicep
- Automate deployment by using PowerShell
- Automate deployment by using Azure CLI
- Monitor and troubleshoot deployments



Create and manage database tasks in Azure

- Create and configure elastic jobs
- Create and configure database tasks by using automation
- Configure alerts and notifications on database tasks
- Troubleshoot automated database tasks

5. Plan and configure a HA/DR environment

Recommend an HA/DR strategy for database solutions

- Recommend HA/DR strategy based on RPO/RTO requirements
- Evaluate HA/DR for hybrid deployments
- Evaluate Azure-specific HA/DR solutions
- Recommend a testing procedure for an HA/DR solution

4. Configure and manage automation of tasks

Create and manage SQL Server Agent jobs

- Manage schedules for regular maintenance jobs
- Configure job alerts and notifications
- Troubleshoot SQL Server Agent jobs

Automate deployment of database resources

- Automate deployment by using ARM templates and Bicep
- Automate deployment by using PowerShell
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Create and manage database tasks in Azure

- Create and configure elastic jobs
- Create and configure database tasks by using automation
- Configure alerts and notifications on database tasks
- Troubleshoot automated database tasks

5. Plan and configure a HA/DR environment

Recommend an HA/DR strategy for database solutions

- Recommend HA/DR strategy based on RPO/RTO requirements
- Evaluate HA/DR for hybrid deployments
- Evaluate Azure-specific HA/DR solutions
- Recommend a testing procedure for an HA/DR solution

Plan and perform backup and restore of a database

- Recommend a database backup and restore strategy
- Perform a database backup by using database tools
- Perform a database restore by using database tools
- Perform a database restore to a point in time
- Configure long-term backup retention
- Backup and restore a database by using T-SQL
- Backup and restore to and from cloud storage

Configure HA/DR for database solutions

- Configure active geo-replication
- Configure an Always On availability group
- Configure auto-failover groups
- Quorum options for a Windows Server Failover Cluster
- Always On Failover Cluster Instance on Azure virtual machines
- Configure log shipping
- Monitor an HA/DR solution
- Troubleshoot an HA/DR solution



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