Course Outline

AZ-305T00: Designing Microsoft Azure Infrastructure Solutions

Course Summary

Description

This course teaches Azure Solution Architects how to design infrastructure solutions. Course topics cover governance, compute, application architecture, storage, data integration, authentication, networks, business continuity, and migrations. The course combines lecture with case studies to demonstrate basic architect design principles.

Objectives

At the end of this course, students will be able to:

- Design a governance solution.
- Design a compute solution.
- Design an application architecture.
- Design storage, non-relational and relational.
- Design data integration solutions.
- Design authentication, authorization, and identity solutions.
- Design network solutions.
- Design high availability solutions.
- Design backup and disaster recovery solutions.
- Design monitoring solutions.
- Design migration solutions.

Topics

- Design governance
- Design an Azure compute solution
- Design a data storage solution for non-relational data
- Design a data storage solution for relational data
- Design data integration
- Design an application architecture
- Design authentication and authorization solutions
- Design a solution to log and monitor Azure resources
- Design network solutions
- Design a solution for backup and disaster recovery
- Design migrations
- Build great solutions with the Microsoft Azure Well-Architected Framework
- Accelerate cloud adoption with the Microsoft Cloud Adoption Framework for Azure

Audience

Successful students have experience and knowledge in IT operations, including networking, virtualization, identity, security, business continuity, disaster recovery, data platforms, and governance. Students also have experience designing and architecting solutions.

Prerequisites

Before attending this course, students must have previous experience deploying or administering Azure resources and conceptual knowledge of:

- Azure Active Directory
- Azure compute technologies such as VMs, containers and serverless solutions
- Azure virtual networking to include load balancers
- Azure Storage technologies (unstructured and databases)
- General application design concepts such as messaging and high availability

Duration

Four days

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I. Design governance
- A. Design for governance.
- B. Design for management groups.
- C. Design for Azure subscriptions.
- D. Design for resource groups.
- E. Design for resource tagging.
- F. Design for Azure policy.
- G. Design for Azure role-based access control.
- H. Design for Azure Blueprints.

II. Design an Azure compute solution
- A. Choose an Azure compute service.
- B. Design for Azure Virtual Machines solutions.
- C. Design for Azure Batch solutions.
- D. Design for Azure App Service solutions.
- E. Design for Azure Container Instances solutions.
- F. Design for Azure Kubernetes Service solutions.
- G. Design for Azure Functions solutions.
- H. Design for Azure Logic Apps solutions.

III. Design a data storage solution for non-relational data
- A. Design for data storage.
- B. Design for Azure storage accounts.
- C. Design for Azure blob storage.
- D. Design for data redundancy.
- E. Design for Azure files.
- F. Design an Azure disk solution.
- G. Design for storage security.

IV. Design a data storage solution for relational data
- A. Design for Azure SQL Database.
- B. Design for Azure SQL Managed Instance.
- C. Design for SQL Server on Azure Virtual Machines.
- D. Recommend a solution for database scalability.
- E. Recommend a solution for database availability.
- F. Design protection for data at rest, data in transmission, and data in use.
- G. Design for Azure SQL Edge.
- H. Design for Azure Cosmos DB.
- I. Design for Azure Table Storage.

V. Design data integration
- A. Design a data integration solution with Azure Data Factory.
- B. Design a data integration solution with Azure Data Lake.
- C. Design a data integration and analytics solution with Azure Databricks.
- D. Design a data integration and analytics solution with Azure Synapse Analytics.
- E. Design strategies for hot, warm, and cold data paths.
- F. Design an Azure Stream Analytics solution for data analysis.

VI. Design an application architecture
- A. Describe message and event scenarios.
- B. Design a messaging solution.
- C. Design an Azure Event Hubs messaging solution.
- D. Design an event-driven solution.
- E. Design an automated app deployment solution.
- F. Design API integration.
- G. Design an application configuration management solution.
- H. Design a caching solution.

VII. Design authentication and authorization solutions
- A. Design for identity and access management.
- B. Design for Azure Active Directory.
- C. Design for Azure Active Directory business-to-business (B2B).
- D. Design for Azure Active Directory B2C (business-to-customer).
- E. Design for conditional access.
- F. Design for identity protection.
- G. Design for access reviews.
- H. Design for managed identities.
- I. Design for service principals for applications.
- J. Design for Azure Key Vault.

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Course Outline (cont'd)

VIII. Design a solution to log and monitor Azure resources

A. Design for Azure Monitor data sources
B. Design for Azure Monitor Logs (Log Analytics) workspaces
C. Design for Azure Workbooks and Azure insights
D. Design for Azure Data Explorer

IX. Design network solutions

A. Recommend a network architecture solution based on workload requirements
B. Design for on-premises connectivity to Azure Virtual Network
C. Design for Azure network connectivity services
D. Design for application delivery services
E. Design for application protection services

X. Design a solution for backup and disaster recovery

A. Design for backup and recovery.
B. Design for Azure Backup.
C. Design for Azure blob backup and recovery.
D. Design for Azure Files backup and recovery.
E. Design for Azure virtual machine backup and recovery.
F. Design for Azure SQL backup and recovery.
G. Design for Azure Site Recovery.

XI. Design migrations

A. Evaluate migration with the Microsoft Cloud Adoption Framework for Azure
B. Describe the Azure Migration and Modernization Program (Azure Migration Framework)
C. Assess your on-premises workloads
D. Select a migration tool
E. Migrate your databases
F. Select an online storage migration tool
G. Migrate offline data

XII. Build great solutions with the Microsoft Azure Well-Architected Framework

A. You want to build great things on Azure, but you're not sure exactly what that means. Using key principles throughout your architecture, regardless of technology choice, can help you design, build, and continuously improve your architecture.

XIII. Accelerate cloud adoption with the Microsoft Cloud Adoption Framework for Azure