COURSE OUTLINE

AZ-304T00:
Microsoft Azure Architect Design

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
4 Day(s)	Intermediate	Azure	In Class	N/A

Course Overview

This course teaches Solutions Architects how to translate business requirements into secure, scalable, and reliable solutions. Lessons include design considerations related to logging, cost analysis, authentication and authorization, governance, security, storage, high availability, and migration. This role requires decisions in multiple areas that affect an overall design solution.

Prerequisites

Successful Azure Solution Architects start this role with experience on operating systems, virtualization, cloud infrastructure, storage structures, and networking.

- Understanding of on-premises virtualization technologies, including: VMs, virtual networking, and virtual hard disks.
- Understanding of network configuration, including TCP/IP, Domain Name System (DNS), virtual private networks (VPNs), firewalls, and encryption technologies.
- Understanding of Active Directory concepts, including domains, forests, domain controllers, replication, Kerberos protocol, and Lightweight Directory Access Protocol (LDAP).
- Understanding of resilience and disaster recovery, including backup and restore operations.

Audience

This course is for IT Professionals with expertise in designing and implementing solutions running on Microsoft Azure. They should have broad knowledge of IT operations, including networking, virtualization, identity, security, business continuity, disaster recovery, data platform, budgeting, and governance. Azure Solution Architects use the Azure Portal and as they become more adept they use

the Command Line Interface. Candidates must have expert-level skills in Azure administration and have experience with Azure development processes and DevOps processes.

At Course Completion

After completing this course, students will be able to:

- Recommend solutions to minimize costs
- Recommend a solution for Conditional Access, including multi-factor authentication
- Recommend a solution for a hybrid identity including Azure AD Connect and Azure AD Connect
- Recommend a solution for using Azure Policy
- Recommend a solution that includes KeyVault
- Recommend a solution that includes Azure AD Managed Identities
- Recommend a storage access solution
- Design and Azure Site Recovery solution
- Recommend a solution for autoscaling
- Recommend a solution for containers
- Recommend a solution for network security
- Recommend a solution for migrating applications and VMs
- Recommend a solution for migration of databases

Topics

Module 1: Design for Cost Optimization

In this module, you will learn how to optimize costs from recommendations, breakdown costs by Azure Service, and download and review usage details. 01-View

Lessons

- Recommend Solutions for Cost Management
- Recommended Viewpoints for Minimizing Costs

Module 2: Design a Solution for Logging and Monitoring

In this module, you will learn about Azure Monitor, Azure Application Insights, and Azure Sentinel. You will be able to monitor Azure Resources with Azure Monitor and collect and analyze resource Logs for Azure.

Lessons

- Azure Monitoring Services
- Azure Monitor

Module 3: Design Authentication

In this module, you will learn to implement Conditional Access and Azure Multi-Factor Authentication and also be able to recommend an Authentication Methodology for Hybrid Identity.

Lessons

- Recommend a Solution for Multi-Factor Authentication
- Recommend a Solution for Single-Sign On (SSO)
- Five Steps for Securing Identity Infrastructure
- Recommend a Solution for a Hybrid Identity
- Recommend a Solution for B2B Integration

Module 4: Design Authorization

In this module, you will learn how to provide Identities to services and understand the hierarchy of Management Groups and Subscriptions.

Lessons

- Infrastructure Protection
- Recommend a Hierarchical Structure for Management Groups, Subscriptions and Resource Groups

Module 5: Design Governance

In this module, you will learn apply an Azure Policy, Identify non-compliant resources, and manage tag governance with Azure Policy.

Lessons

- Recommend a Solution for using Azure Policy
- Recommend a Solution for using Azure Blueprint

Module 6: Design Security for Applications

In this module, you will understand Azure Key Vault availability and redundancy, managed Identities for Azure resources. Also, learn about system-assigned Managed Identity and Azure VMs.

Lessons

- Recommend a Solution using KeyVault
- Recommend a Solution using Azure AD Managed Identities

Module 7: Design a Solution for Databases

In this module, you will be able to recommend the appropriate data store and recommend Azure SQL Database and Azure SQL Managed Instance Service tiers.

Lessons

- Select an Appropriate Data Platform Based on Requirements
- Overview of Azure Data Storage
- Recommend Database Service Tier Sizing
- Dynamically Scale Azure SQL Database and Azure SQL Managed Instances
- Recommend a Solution for Encrypting Data at Rest, Transmission, and In Use

Module 8: Design Data Integration

In this module, you will learn about data flows using Azure Data Factory and Azure Synapse Analytics architecture.

Lessons

- Recommend a Data Flow
- Recommend a Solution for Data Integration

Module 9: Select an Appropriate Storage Account

In this module, you will learn about recommend a design a strategy for using tiered storage and manage tiered Storage using Azure tools.

Lessons

- Understanding Storage Tiers
- Recommend a Storage Access Solution
- Recommend Storage Management Tools

Module 10: Design a Solution for Backup and Recovery

In this module, you will learn about solutions for site recovery capacity and site failover and failback. You will be able to recommend solutions for recovery in different regions.

Lessons

- Recommend a Recovery Solution for Hybrid and On-Premises Workloads
- Design and Azure Site Recovery Solution
- Recommend a Solution for Recovery in Different Regions
- Recommend a Solution for Azure Backup Management
- Design a Solution for Data Archiving and Retention

Module 11: Design for High Availability

In this module, you will learn about solutions for application and workload redundancy, including compute, database, and storage.

Lessons

- Recommend a Solution for Application and Workload Redundancy
- Recommend a Solution for Autoscaling
- Identify Resources that Require High Availability
- Identify Storage Tpes for High Availability
- Recommend a Solution for Geo-Redundancy of Workloads

Module 12: Design a Compute Solution

In this module, you will learn about the appropriate compute technologies, including virtual machines, App Services, Service Fabric, Azure Functions, Windows Virtual Desktop, and containers.

Lessons

- Recommend a Solution for Compute Provisioning
- Determine Appropriate Compute Technologies
- Recommend a Solution for Containers
- Recommend a Solution for Automating Compute Management

Module 13: Design a Network Solution

In this module, you will learn about solutions for network addressing and name resolution, network provisioning, and network security.

Lessons

- Recommend a Solution for Network Addressing and Name Resolution
- Recommend a Solution for Network Provisioning
- Recommend a Solution for Network Security
- Recommend a Solution for iInternete Connectivity and On-Premises Networks,
- Recommend a Solution for Automating Network Management
- Recommend a Solution for Load Balancing and Rraffic Routing

Module 14: Design an Application Architecture

In this module, you will learn about solution for deployment of applications including ARM templates, Logic Apps, or Azure Functions. You will also learn about microservices architecture including Event Grid, Event Hubs, Service Bus, Storage Queues, Logic Apps, Azure Functions, and webhooks.

Lessons

- Recommend a Microservices Architecture
- Recommend an Orchestration Solution for Deployment of Applications
- Recommend a Solution for API Integration

Module 15: Design Migrations

In this module, you will learn about recommend a solution for migrating applications and VMs and a solution for migration of databases.

Lessons

- Assess and On-Premises Servers and Applications for Migration
- Recommend a Solution for Migrating Applications and VMs
- Recommend a Solution for Migration of Databases