Microsoft Certified: Azure Solutions Architect Expert – Skills Measured

Exam AZ-303: Microsoft Azure Architect Technologies

NOTE: The bullets that appear below each of the skills measured are intended to illustrate how we are assessing that skill. This list is not definitive or exhaustive.

NOTE: In most cases, exams do NOT cover preview features, and some features will only be added to an exam when they are GA (General Availability).

Implement and Monitor an Azure Infrastructure (50-55%)

Implement cloud infrastructure monitoring

- monitor security
- monitor performance
    - configure diagnostic settings on resources
    - create a performance baseline for resources
    - monitor for unused resources
    - monitor performance capacity
    - visualize diagnostics data using Azure Monitor
- monitor health and availability
    - monitor networking
    - monitor service health
- monitor cost
    - monitor spend
    - report on spend
- configure advanced logging
    - implement and configure Azure Monitor insights, including App Insights, Networks, Containers
    - configure a Log Analytics workspace
- configure logging for workloads
- initiate automated responses by using Action Groups
- configure and manage advanced alerts
    - collect alerts and metrics across multiple subscriptions
    - view Alerts in Azure Monitor logs
    - NOT: create Log Analytics query

Implement storage accounts

- select storage account options based on a use case
- configure Azure Files and blob storage
- configure network access to the storage account
- implement Shared Access Signatures and access policies
- implement Azure AD authentication for storage
- manage access keys
- implement Azure storage replication
- implement Azure storage account failover

Implement VMs for Windows and Linux

- configure High Availability
- configure storage for VMs
- select virtual machine size
- implement Azure Dedicated Hosts
- deploy and configure scale sets
- configure Azure Disk Encryption

Automate deployment and configuration of resources

- save a deployment as an Azure Resource Manager template
- modify Azure Resource Manager template
- evaluate location of new resources
- configure a virtual disk template
- deploy from a template
- manage a template library
- create and execute an automation runbook

Implement virtual networking

- implement VNet to VNet connections
- implement VNet peering

Implement Azure Active Directory

- add custom domains
- configure Azure AD Identity Protection
- implement self-service password reset
- implement Conditional Access including MFA
- configure user accounts for MFA
- configure fraud alerts
- configure bypass options
- configure Trusted IPs

- configure verification methods
- implement and manage guest accounts
- manage multiple directories

Implement and manage hybrid identities

- install and configure Azure AD Connect
- identity synchronization options
- configure and manage password sync and password writeback
- configure single sign-on
- use Azure AD Connect Health

Implement Management and Security Solutions (25-30%)

Manage workloads in Azure

- migrate workloads using Azure Migrate
    - assess infrastructure
    - select a migration method
    - prepare the on-premises for migration
    - recommend target infrastructure
- implement Azure Backup for VMs
- implement disaster recovery
- implement Azure Update Management

Implement load balancing and network security

- implement Azure Load Balancer
- implement an application gateway
- implement a Web Application Firewall
- implement Azure Firewall
- implement the Azure Front Door Service
- implement Azure Traffic Manager
- implement Network Security Groups and Application Security Groups
- implement Bastion

Implement and manage Azure governance solutions

- create and manage hierarchical structure that contains management groups, subscriptions and resource groups
- assign RBAC roles
- create a custom RBAC role
- configure access to Azure resources by assigning roles

- configure management access to Azure
- interpret effective permissions
- set up and perform an access review
- implement and configure an Azure Policy
- implement and configure an Azure Blueprint

Manage security for applications

- implement and configure KeyVault
- implement and configure Azure AD Managed Identities
- register and manage applications in Azure AD

Implement Solutions for Apps (10-15%)

Implement an application infrastructure

- create and configure Azure App Service
- create an App Service Web App for Containers
- create and configure an App Service plan
- configure an App Service
- configure networking for an App Service
- create and manage deployment slots
- implement Logic Apps
- implement Azure Functions

Implement container-based applications

- create a container image
- configure Azure Kubernetes Service
- publish and automate image deployment to the Azure Container Registry
- publish a solution on an Azure Container Instance
    - NOT: Service Fabric

Implement and Manage Data Platforms (10-15%)

Implement NoSQL databases

- configure storage account tables
- select appropriate CosmosDB APIs
- set up replicas in CosmosDB

Implement Azure SQL databases

- configure Azure SQL database settings

- implement Azure SQL Database managed instances
- configure HA for an Azure SQL database
- publish an Azure SQL database

Exam AZ-304: Microsoft Azure Architect Design

Design Monitoring (10-15%)

Design for cost optimization

- recommend a solution for cost management and cost reporting
- recommend solutions to minimize costs

Design a solution for logging and monitoring

- determine levels and storage locations for logs
- plan for integration with monitoring tools including Azure Monitor and Azure Sentinel
- recommend appropriate monitoring tool(s) for a solution
- choose a mechanism for event routing and escalation
- recommend a logging solution for compliance requirements

Design Identity and Security (25-30%)

Design authentication

- recommend a solution for single-sign on
- recommend a solution for authentication
- recommend a solution for Conditional Access, including multi-factor authentication
- recommend a solution for network access authentication
- recommend a solution for a hybrid identity including Azure AD Connect and Azure AD Connect Health
- recommend a solution for user self-service
- recommend and implement a solution for B2B integration
- NOT: federation with ADFS

Design authorization

- choose an authorization approach
- recommend a hierarchical structure that includes management groups, subscriptions and resource groups
- recommend an access management solution including RBAC policies, access reviews, role assignments, physical access, Privileged Identity Management (PIM), Azure AD Identity Protection, Just In Time (JIT) access

Design governance

- recommend a strategy for tagging
- recommend a solution for using Azure Policy
- recommend a solution for using Azure Blueprint

Design security for applications

- recommend a solution that includes KeyVault
    - What can be stored in KeyVault
    - KeyVault operations
    - KeyVault regions
- recommend a solution that includes Azure AD Managed Identities
- recommend a solution for integrating applications into Azure AD

Design Data Storage (15-20%)

Design a solution for databases

- select an appropriate data platform based on requirements
- recommend database service tier sizing
- recommend a solution for database scalability
- recommend a solution for encrypting data at rest, data in transmission, and data in use

Design data integration

- recommend a data flow to meet business requirements
- recommend a solution for data integration, including Azure Data Factory, Azure Data Bricks, Azure Data Lake, Azure Synapse Analytics

Select an appropriate storage account

- choose between storage tiers
- recommend a storage access solution
- recommend storage management tools

Design Business Continuity (10-15%)

Design a solution for backup and recovery

- recommend a recovery solution for Azure hybrid and on-premises workloads that meets recovery objectives (RTO, RLO, RPO)
- design and Azure Site Recovery solution
    - recommend a site recovery replication policy

    - recommend a solution for site recovery capacity
    - recommend a solution for site failover and failback (planned/unplanned)
    - recommend a solution for the site recovery network
- recommend a solution for recovery in different regions
- recommend a solution for Azure Backup management
- design a solution for data archiving and retention
    - recommend storage types and methodology for data archiving
    - identify business compliance requirements for data archiving
    - identify requirements for data archiving
    - identify SLA(s) for data archiving
    - recommend a data retention policy

Design for high availability

- recommend a solution for application and workload redundancy, including compute, database, and storage
- recommend a solution for autoscaling
- identify resources that require high availability
- identify storage types for high availability
- recommend a solution for geo-redundancy of workloads

Design Infrastructure (25-30%)

Design a compute solution

- recommend a solution for compute provisioning
- determine appropriate compute technologies, including virtual machines, App Services, Service Fabric, Azure Functions, Windows Virtual Desktop, and containers
- recommend a solution for containers
    - AKS versus ACI and the configuration of each one
- recommend a solution for automating compute management

Design a network solution

- recommend a solution for network addressing and name resolution
- recommend a solution for network provisioning
- recommend a solution for network security
    - private endpoints
    - Firewalls
    - Gateways
    - etc.
- recommend a solution for network connectivity to the Internet, on-premises networks, and other Azure virtual networks

- recommend a solution for automating network management
- recommend a solution for load balancing and traffic routing

Design an application architecture

- recommend a microservices architecture including Event Grid, Event Hubs, Service Bus, Storage Queues, Logic Apps, Azure Functions, and webhooks
- recommend an orchestration solution for deployment of applications including ARM templates, Logic Apps, or Azure Functions
    - select an automation method
    - choose which resources or lifecycle steps will be automated
    - design integration with other sources such as an ITSM solution
    - recommend a solution for monitoring automation
- recommend a solution for API integration
    - design an API gateway strategy
    - determine policies for internal and external consumption of APIs
    - recommend a hosting structure for API management
    - recommend when and how to use API Keys

Design migrations

- assess and interpret on-premises servers, data, and applications for migration
- recommend a solution for migrating applications and VMs
- recommend a solution for migration of databases
    - determine migration scope, including redundant, related, trivial, and outdated data