

# Microsoft Certified: Azure Solutions Architect Expert – Skills Measured

**This document contains the skills measured on the exams associated with this certification. It does not include any upcoming or recent changes that have been made to those skills. For more information about upcoming or recent changes, see the associated exam details page(s).**

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

NOTE: Most questions cover features that are General Availability (GA). The exam may contain questions on Preview features if those features are commonly used.

## Exam AZ-303: Microsoft Azure Architect Technologies

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

#### Implement cloud infrastructure monitoring

- monitor security
- monitor performance
- monitor health and availability
- monitor cost
- configure advanced logging
- initiate automated responses by using Action Groups
- configure and manage advanced alerts

#### Implement storage accounts

- select storage account options based on a use case
- configure Azure Files and Azure 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 VHD template
- deploy from a template
- manage an image 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 fraud alerts
- 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
- configure Azure AD Connect cloud sync
- use Azure AD Connect Health

## **Implement Management and Security Solutions (25-30%)**

### **Manage workloads in Azure**

- migrate workloads using Azure Migrate
- implement Azure Backup for Azure workloads
- implement disaster recovery
- implement Azure Automation\_Update Management

### **Implement load balancing and network security**

- implement Azure Load Balancer
- implement an Azure Application Gateway
- implement Web Application Firewall
- implement Azure Firewall
- implement Azure Firewall Manager
- implement Azure Front Door
- 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 Azure Policy
- implement and configure Azure Blueprints

### **Manage security for applications**

- implement and configure Key Vault
- implement and configure 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 App Service
- configure networking for 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 management by using the Azure Container Registry
- deploy a solution on an Azure Container Instance

## **Implement and Manage Data Platforms (10-15%)**

### **Implement NoSQL databases**

- configure Azure Storage account tables
- select appropriate Cosmos DB APIs
- set up replicas in Cosmos DB

### **Implement Azure SQL databases**

- configure Azure SQL database settings
- implement Azure SQL managed instances
- configure HA for an Azure SQL database
- deploy 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, Azure AD Connect cloud sync and Azure AD Connect Health
- recommend a solution for user self-service
- recommend and implement a solution for B2B integration

### **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, 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 Blueprints
- recommend a solution that leverages Azure Resource Graph

### **Design security for applications**

- recommend a solution that includes Key Vault
- recommend a solution that includes 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 Databricks, 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 solution for recovery in different regions
- recommend a solution for geo-redundancy of workloads
- recommend a solution for Azure Backup management
- design a solution for data archiving and retention

### **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

## **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, Batch, HPC and containers
- recommend a solution for containers
- recommend a solution for automating compute management

### **Design a network solution**

- recommend a network architecture (hub and spoke, Virtual WAN)
- recommend a solution for network addressing and name resolution
- recommend a solution for network provisioning
- recommend a solution for network security including Private Link, firewalls, gateways, network segmentation (perimeter networks/DMZs/NVAs)
- 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, Azure Queue Storage, Logic Apps, Azure Functions, Service Fabric, AKS, Azure App Configuration and webhooks
- recommend an orchestration solution for deployment and maintenance of applications including ARM templates, Azure Automation, Azure Pipelines, Logic Apps, or Azure Functions
- recommend a solution for API integration

### **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
- recommend a solution for migrating data (Storage Migration Service, Azure Data Box, Azure File Sync-based migration to hybrid file server)