# Microsoft Certified: Azure Developer Associate – 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 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: 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-204: Developing Solutions for Microsoft Azure

### Develop Azure compute solutions (25-30%)

**Implement IaaS solutions**

- provision virtual machines (VMs)
- configure, validate, and deploy ARM templates
- configure container images for solutions
- publish an image to the Azure Container Registry
- run containers by using Azure Container Instance

**Create Azure App Service Web Apps**

- create an Azure App Service Web App
- enable diagnostics logging
- deploy code to a web app
- configure web app settings including SSL, API settings, and connection strings
- implement autoscaling rules including scheduled autoscaling and autoscaling by operational or system metrics

**Implement Azure functions**

- create and deploy Azure Functions apps
- implement input and output bindings for a function
- implement function triggers by using data operations, timers, and webhooks
- implement Azure Durable Functions
- implement custom handlers

# Develop for Azure storage (15-20%)

### Develop solutions that use Cosmos DB storage

- select the appropriate API and SDK for a solution
- implement partitioning schemes and partition keys
- perform operations on data and Cosmos DB containers
- set the appropriate consistency level for operations
- manage change feed notifications

### Develop solutions that use blob storage

- move items in Blob storage between storage accounts or containers
- set and retrieve properties and metadata
- perform operations on data by using the appropriate SDK
- implement storage policies, and data archiving and retention

# Implement Azure security (20-25%)

### Implement user authentication and authorization

- authenticate and authorize users by using the Microsoft Identity platform
- authenticate and authorize users and apps by using Azure Active Directory
- create and implement shared access signatures

### Implement secure cloud solutions

- secure app configuration data by using App Configuration Azure Key Vault
- develop code that uses keys, secrets, and certificates stored in Azure Key Vault
- implement solutions that interact with Microsoft Graph

# Monitor, troubleshoot, and optimize Azure solutions (15-20%)

### Integrate caching and content delivery within solutions

- configure cache and expiration policies
- configure cache and expiration policies for Azure Redis Cache
- implement secure and optimized application cache patterns including data sizing, connections, encryption, and expiration

### Instrument solutions to support monitoring and logging

- configure an app or service to use Application Insights
- analyze and troubleshoot solutions by using Azure Monitor

- implement Application Insights web tests and alerts

# Connect to and consume Azure services and third-party services (15-20%)

### Implement API Management

- create an APIM instance
- configure authentication for APIs
- define policies for APIs

### Develop event-based solutions

- implement solutions that use Azure Event Grid
- implement solutions that use Azure Notification Hubs
- implement solutions that use Azure Event Hub
- import OpenAPI definitions

### Develop message-based solutions

- implement solutions that use Azure Service Bus
- implement solutions that use Azure Queue Storage queues