

## Developing Solutions for Microsoft Azure



### Course Outline:

**EXAM NUMBER: AZ-204**

### Implement containerized solutions

- Create and manage container images for solutions.
- Publish an image to Azure Container Registry.
- Run containers by using Azure Container Instance.
- Create solutions by using Azure Container Apps.

### Implement 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 Transport Layer Security (TLS), API settings, and connection strings.
- Implement autoscaling.

## Implement Azure Functions

- Create and configure an Azure Functions app.
- Implement input and output bindings.
- Implement function triggers by using data operations, timers, and webhook.

## Develop solutions that use Azure Cosmos DB

- Perform operations on containers and items by using the SDK.
- Set the appropriate consistency level for operations.
- Implement change feed notifications.

## Develop solutions that use Azure Blob Storage

- Set and retrieve properties and metadata.
- Perform operations on data by using the appropriate SDK.
- Implement storage policies and data lifecycle management.
- Implement static website hosting.

## Implement user authentication and authorization

- Authenticate and authorize users by using the Microsoft Identity platform.
- Authenticate and authorize users and apps by using Microsoft Entra ID.
- Create and implement shared access signatures.
- Implement solutions that interact with Microsoft Graph.

## Implement secure Azure solutions

- Secure app configuration data by using App Configuration or Azure Key Vault.
- Develop code that uses keys, secrets, and certificates stored in Azure Key Vault.
- Implement Managed Identities for Azure resources.

## Implement caching for solutions

- Configure cache and expiration policies for Azure Cache for Redis.
- Implement secure and optimized application cache patterns including data sizing, connections, encryption, and expiration.
- Implement Azure Content Delivery Network endpoints and profiles.

## Troubleshoot solutions by using Application Insights

- Configure an app or service to use Application Insights.
- Monitor and analyze metrics, logs, and traces.
- Implement Application Insights web tests and alerts.

## Implement API Management

- Create an Azure API Management instance.
- Create and document APIs.
- Configure access to APIs.
- Implement policies for APIs.

## Develop event-based solutions

- Implement solutions that use Azure Event Grid
- Implement solutions that use Azure Event Hub

## Develop message-based solutions

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

## Manage Azure subscriptions and governance

- Implement and manage Azure Policy.
- Configure resource locks.
- Apply and manage tags on resources.
- Manage resource groups.
- Manage subscriptions.
- Manage costs by using alerts, budgets, and Azure Advisor recommendations.
- Configure management groups.

## Configure access to storage

- Configure Azure Storage firewalls and virtual networks.
- Create and use shared access signature (SAS) tokens.
- Configure stored access policies.
- Manage access keys.
- Configure identity-based access for Azure Files.

## **Configure and manage storage accounts**

- Create and configure storage accounts.
- Configure Azure Storage redundancy.
- Configure object replication.
- Configure storage account encryption.
- Manage data by using Azure Storage Explorer and AzCopy.

## **Configure Azure Files and Azure Blob Storage**

- Describe storage tiers.
- Create and configure a file share in Azure Storage.
- Create and configure a container in Blob Storage.
- Configure storage tiers.
- Configure snapshots and soft delete for Azure Files.
- Configure blob lifecycle management.
- Configure blob versioning.

## **Automate deployment of resources by using Azure Resource Manager (ARM) templates or Bicep files**

- Interpret an Azure Resource Manager template or a Bicep file.
- Modify an existing Azure Resource Manager template.
- Modify an existing Bicep file.
- Deploy resources by using an Azure Resource Manager template or a Bicep file.
- Export a deployment as an Azure Resource Manager template or convert an Azure Resource Manager template to a Bicep file.

## Create and configure virtual machines

- Create a virtual machine.
- Configure Azure Disk Encryption.
- Move a virtual machine to another resource group, subscription, or region.
- Manage virtual machine sizes.
- Manage virtual machine disks.
- Deploy virtual machines to availability zones and availability sets.
- Deploy and configure an Azure Virtual Machine Scale Sets.

## Provision and manage containers in the Azure portal

- Create and manage an Azure container registry.
- Provision a container by using Azure Container Instances.
- Provision a container by using Azure Container Apps.
- Manage sizing and scaling for containers, including Azure Container Instances and Azure Container Apps.

## Create and configure Azure App Service

- Provision an App Service plan.
- Configure scaling for an App Service plan.
- Create an App Service.
- Configure certificates and Transport Layer Security (TLS) for an App Service.
- Map an existing custom DNS name to an App Service.
- Configure backup for an App Service.
- Configure networking settings for an App Service.
- Configure deployment slots for an App Service.

## Configure and manage virtual networks in Azure

- Create and configure virtual networks and subnets.
- Create and configure virtual network peering.
- Configure public IP addresses.
- Configure user-defined network routes.
- Troubleshoot network connectivity.

## Configure secure access to virtual networks

- Create and configure network security groups (NSGs) and application security groups.
- Evaluate effective security rules in NSGs.
- Evaluate effective security rules in NSGs.
- Configure service endpoints for Azure platform as a service (PaaS).
- Configure private endpoints for Azure PaaS.

## Configure name resolution and load balancing

- Configure Azure DNS.
- Configure an internal or public load balancer.
- Troubleshoot load balancing.

## Monitor resources in Azure

- Interpret metrics in Azure Monitor.
- Configure log settings in Azure Monitor.
- Query and analyze logs in Azure Monitor.
- Set up alert rules, action groups, and alert processing rules in Azure Monitor.
- Configure and interpret monitoring of virtual machines, storage accounts, and networks by using Azure Monitor Insights.
- Use Azure Network Watcher and Connection Monitor

## Implement backup and recovery

- Create a Recovery Services vault.
- Create an Azure Backup vault.
- Create and configure a backup policy.
- Perform backup and restore operations by using Azure Backup.
- Configure Azure Site Recovery for Azure resources.
- Perform a failover to a secondary region by using Site Recovery.
- Configure and interpret reports and alerts for backups.