

## **AZ-2003: Deploy cloud-native apps using Azure Container Apps**

Course Code: AZ-2003

Duration: 1 day

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

### **OVERVIEW**

#### ***Deploy cloud-native apps using Azure Container Apps***

Develop the skills necessary to configure a secure deployment solution for cloud-native apps. Learn how to build, deploy, scale, and manage containerized cloud-native apps using Azure Container Apps, Azure Container Registry, and Azure Pipelines.

### **SKILLS COVERED**

- Configure a secure connection between an Azure Container Registry and an ACA
- Create and configure a container app in Azure Container Apps
- Configure continuous integration by using Azure Pipelines
- Scale a deployed app in Azure Container Apps
- Manage revisions in Azure Container Apps

### **WHO SHOULD ATTEND?**

- Developer
- DevOps Engineer

### **PREREQUISITES**

- Basic understanding of cloud computing concepts: Familiarity with cloud computing fundamentals, such as virtualization, scalability, and on-demand resource provisioning.

- Knowledge of containers: Understanding the concept of containers, their benefits, and how they differ from traditional apps and virtual machines.
- Familiarity with container orchestration: Basic understanding of container orchestration platforms like Kubernetes and their role in managing containerized applications.
- Experience with Azure: Some familiarity with Microsoft Azure and its core container services, such as Azure Container Registry, Azure Kubernetes Service, and Azure Container Apps.
- Experience with deployments: Some familiarity with Azure DevOps or similar CI/CD tools for application deployment.
- Experience with networks: Some familiarity with networking concepts and Azure Virtual Networks.

### **MODULES**

#### **Module 1: Get started with cloud native apps and containerized deployments**

This module provides an introduction to cloud-native applications, the benefits of containerized deployments, the options for containerized deployments on the Azure platform, and the features of Azure Container Apps.

#### **Learning objectives**

- Examine the concept of cloud-native applications.
- Explore the benefits and challenges of containerized deployments.
- Explore different deployment options and strategies for cloud-native applications.
- Examine best practices for managing and scaling containerized deployments in Azure.

## Prerequisites

- Basic understanding of cloud computing concepts: Familiarity with cloud computing fundamentals, such as virtualization, scalability, and on-demand resource provisioning.
- Knowledge of containers: Understanding the concept of containers, their benefits, and how they differ from traditional apps and virtual machines.
- Familiarity with container orchestration: Basic understanding of container orchestration platforms like Kubernetes and their role in managing containerized applications.
- Experience with Azure: Some familiarity with Microsoft Azure and its core container services, such as Azure Container Registry, Azure Kubernetes Service, and Azure Container Apps.

## Module 2: Configure Azure Container Registry for container app deployments

This module teaching users how to set up and configure an Azure Container Registry for deploying containerized applications to Azure Container Apps.

### Learning objectives

- Examine Azure Container Registry and its role in container app deployments.
- Learn how to create and configure an Azure Container Registry.
- Examine the process of pushing container images to Azure Container Registry.
- Explore different authentication methods and security features for Azure Container Registry.

## Prerequisites

- Basic understanding of cloud computing concepts and Azure services.
- Familiarity with containerization concepts and technologies, such as Docker.
- Knowledge of Azure container services, including Azure Container Registry, would be beneficial.
- Experience with Azure portal or Azure CLI for managing Azure resources.
- Understanding of networking concepts and protocols.

## Module 3: Configure a container app in Azure Container Apps

This module examines the features and capabilities of Azure Container Apps, and then focuses on how to create, configure, scale, and manage container apps using Azure Container Apps.

### Learning objectives

- Examine the features and capabilities of Azure Container Apps.
- Learn how to create and configure an Azure Container App and Container Apps Environment using the Azure portal.
- Examine how to define and manage environment variables for Azure Container Apps.
- Learn how to configure ingress options for Azure Container Apps.
- Explore the process of scaling and managing instances of Azure Container Apps.
- Understand the security considerations and best practices for configuring Azure Container Apps.

### Prerequisites

- Basic understanding of cloud computing concepts and Azure services.
- Familiarity with containerization concepts and technologies, such as Docker.
- Experience with Azure portal or Azure CLI for managing Azure resources.
- Knowledge of Azure container services, including Azure Container Registry and Azure Container Apps, would be beneficial.
- Understanding of networking concepts and protocols.
- Experience with deploying and managing applications in Azure would be beneficial.

### Module 4: Configure continuous deployment for container apps

This module explores deployment options for containerized apps. It reviews the features of Azure DevOps and examines automated deployments to Container Apps using Azure Pipelines.

#### Learning objectives

- Examine deployment options and strategies for containerized applications.
- Examine the features and capabilities of Azure DevOps and Azure Pipelines.
- Learn how to set up automated build and deployment pipelines for container apps using Azure DevOps.
- Examine how to configure agent pools and secret variables for pipelines.

#### Prerequisites

- Basic understanding of cloud computing concepts and Azure services.

- Familiarity with containerization technologies such as Docker and Kubernetes.
- Knowledge of Azure container services, including Azure Container Registry and Azure Container Apps, would be beneficial.
- Understanding of continuous integration and continuous deployment (CI/CD) concepts.
- Experience with Azure DevOps or other CI/CD tools.

### Module 5: Scale and manage deployed container apps

This module reviews the concept of revisions in Azure Container Apps and examines options for application lifecycle management. It also examines options for scaling and traffic splitting using Azure Container Apps.

#### Learning objectives

- Examine the concept of revisions in Azure Container Apps.
- Examine the options for application lifecycle management in Azure Container Apps.
- Learn about the scaling options available for Azure Container Apps.
- Learn about the ingress settings and traffic-splitting for Azure Container Apps.

#### Prerequisites

- Basic understanding of cloud computing concepts and Azure services.
- Experience in deploying and managing containerized applications in Azure.
- Knowledge of Azure container services, including Azure Container Registry and Azure Container Apps, would be beneficial.

- Understanding of networking concepts and Azure Virtual Networks.

### **Module 6: Guided project - Deploy and manage a container app using Azure Container Apps**

This module guides learners through the end-to-end process of building, deploying, and managing containerized applications using Azure Container Apps, Azure Container Registry, Azure Pipelines, and other tools and resources.

#### **Learning objectives**

- Configure Azure Container Registry, Azure Container Apps, and other resources required for an app deployment scenario.
- Configure Azure Pipelines for a continuous integration scenario.
- Configure Azure Container Apps for scaling and revision management.

#### **Prerequisites**

- Experience using the Azure portal and Azure CLI to create and manage Azure resources.
- Experience using Azure container services, including Azure Container Registry and Azure Container Apps.
- Experience using Visual Studio Code and Docker to build and push images to a registry would be beneficial.
- Experience using Azure Virtual Networks would be beneficial.
- Experience using Azure DevOps and Azure Pipelines for application deployment would be beneficial.

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