# Deploy cloud-native apps using Azure Container Apps - Applied Skills Workshop Training

Duration: **1 Day**

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## Overview

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.

## Prerequisites

**Important - This course has MFA Requirements. Please read this link and download the MFA app, prior to attending.**

- 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.

## Outline

**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.

- Introduction
- Examine cloud-native apps
- Examine deployment options for cloud-native apps
- Review an Azure Container Apps solution architecture and resources
- Knowledge check
- Summary

**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.

- Introduction
- Review the Azure Container Registry service
- Create a container registry instance in the Azure portal

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- Examine registry operations for image management
- Examine authentication with managed identity
- Examine Azure Container Registry roles and permissions
- Examine secure communications using virtual networks
- Knowledge check
- Summary

**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.

- Introduction
- Review the Azure Container Apps service
- Examine Azure Container Apps containers and containers registries
- Create a container app and container app environment
- Examine managed identities in Azure Container Apps
- Examine ingress in Azure Container Apps
- Examine the management of secrets in Azure Container Apps
- Examine the storage mounts in Azure Container Apps
- Examine cloud service connections in Azure Container Apps
- Knowledge check
- Summary

**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.

- Introduction
- Review continuous deployment options for container apps
- Examine Azure DevOps and Azure Pipelines
- Examine Azure Pipeline configuration and deployment tasks
- Examine agents and agent pools for pipelines
- Examine environment and secret variables for pipelines
- Knowledge check
- Summary

**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.

- Introduction
- Examine revisions in Azure Container Apps
- Examine application lifecycle management in Azure Container Apps
- Examine scaling options in Azure Container Apps
- Examine ingress settings for traffic-splitting and blue-green deployments
- Knowledge check
- Summary

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

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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.

- Introduction
- Prepare your app deployment tools and resources
- Exercise - Configure Azure Container Registry for a secure connection with Azure Container Apps
- Exercise - Create and configure a container app in Azure Container Apps
- Exercise - Configure continuous integration by using Azure Pipelines
- Exercise - Manage revisions in Azure Container Apps
- Knowledge check
- Summary