

AZ-1001: Deploy and Manage Containers using Azure Kubernetes Service

Course Duration: 8 Hours (1 Day)

Overview

The AZ-1001 certification, which seems to be a fictional or not officially recognized designation as of my last update, would hypothetically cover expertise in deploying and managing containers using Azure Kubernetes Service (AKS). AKS is Microsoft's managed container orchestration service that simplifies the Deployment, management, and scaling of containerized applications using Docker and Kubernetes. Professionals with such a certification would demonstrate their ability to streamline and automate application development and deployment processes. Industries would use this expertise to leverage the benefits of AKS, including seamless integration with Azure's ecosystem, High availability, and Security features to efficiently run their Cloud-native applications at scale.

Audience Profile

- IT professionals seeking to manage containerized applications on Azure
- DevOps engineers focused on orchestration with Kubernetes on the Azure platform
- System administrators aiming to scale deployments in the cloud
- Cloud architects planning to design high-availability cluster environments using AKS

Course Syllabus

Learning Path: Deploy and Manage Containers with Azure Kubernetes Service

Module 1: Plan an Azure Kubernetes Service deployment

- Introduction
- Azure Kubernetes Service
- Azure Kubernetes cluster architecture
- Azure Kubernetes Service pods
- Nodes and node pools for Azure Kubernetes Service
- Namespaces for Azure Kubernetes Service
- Access to Azure Kubernetes Service
- Monitoring and logging for Azure Kubernetes Service
- Knowledge check

- Summary

Module 2: Deploy and use Azure Container Registry

- Introduction
- Azure Kubernetes Service
- Azure Kubernetes cluster architecture
- Azure Kubernetes Service pods
- Nodes and node pools for Azure Kubernetes Service
- Namespaces for Azure Kubernetes Service
- Access to Azure Kubernetes Service
- Knowledge check
- Summary

Module 3: Deploy an Azure Kubernetes Service cluster

- Introduction
- Azure Kubernetes Service cluster architecture
- Network topology
- Plan the IP addresses
- Configure compute for the base cluster
- Integrate Azure Active Directory for the cluster
- Secure the network flow
- Node and pod scalability
- Try-This exercise - Create an Azure Kubernetes Service cluster Knowledge
- check
- Summary

Module 4: Configure an Azure Kubernetes Service cluster

- Introduction
- Understand Azure Policy for Kubernetes clusters
- Try-This exercise - Enable Azure Policy add on for Azure Kubernetes Service
- Try-This exercise - Assign a policy definition to an Azure Kubernetes cluster
- Host-based encryption on Azure Kubernetes Service
- Create a custom namespace for Azure Kubernetes clusters
- Knowledge check
- Summary

Module 5: Deploy applications to Azure Kubernetes Service

- Introduction
- Configure Azure Kubernetes pods using Azure Policy
- Try-This exercise - Apply Azure Kubernetes Service pod settings using Azure Policy
- Configure storage for applications running on Azure Kubernetes Service
- Deploy an application to an Azure Kubernetes Service cluster
- Try-This exercise - Configure storage for applications that run on Azure Kubernetes Service
- Try-This exercise - Deploy an application to Azure Kubernetes Service cluster
- Knowledge check
- Summary

Module 6: Configure scaling in Azure Kubernetes Service

- Introduction
- Scaling options in Azure Kubernetes Services
- Cluster autoscaler
- Burst to Azure Container Instances
- When to use cluster autoscaler
- Try-This exercise - Scale the node count in an Azure Kubernetes Service cluster
- Automatically scale a cluster on Azure Kubernetes Service
- Knowledge check
- Summary

Module 7: Guided Exercise - Deploy applications to Azure Kubernetes Service

- Introduction
- Exercise 1 - Provision Azure Container Registry and Azure Kubernetes Service
- Exercise 2 - Build Linux and Windows container images to store in the registry
- Exercise 3 - Deploy container images to Azure Container Registry
- Exercise 4 - Review the deployment and remove resources
- Knowledge check
- Summary