TechyEdz Solutions

Training | Consulting | Developement | Outsourcing

Azure Kubernetes Service

Azure Kubernetes Service (AKS)

➕ Course Overview:

Azure Kubernetes Service Zero to Hero admin guide is an intermediate course which describes:

- Comparison of Managed vs self-managed Kubernetes solutions;
- Pros and Cons of Managed Kubernetes services;
- AKS Capacity Analysis;
- Detailed AKS network architecture;
- How to create an AKS cluster using Azure Portal and Azure CLI;
- Integrate AKS with Active Directory;
- Create Kubernetes users using self-signed certificates;
- How AKS creates and manages Azure storage resources;
- AKS monitoring and log debugging.

What you'll learn

- What is Azure Kubernetes Service (AKS).
- Managed vs self-managed Kubernetes solutions.
- AKS Capacity Analysis.
- Detailed AKS Network architecture.
- How to create an AKS cluster using Azure Portal and Azure CLI.
- AKS authentication and authorization, including integration with Active Directory.
- How AKS manages Azure storage volumes.
- AKS monitoring and log debugging.

➕ Course Outline:

Azure Kubernetes Service (AKS) Overview

- ➤ What is AKS?
- ➤ AKS pricing

Managed vs Self Managed Kubernetes

- ➤ The truth about managed Kubernetes services
- ➤ The good about managed Kubernetes services
- ➤ The bad about managed Kubernetes services
- ➤ Managed vs Self Managed comparison

AKS Capacity Analysis

- ➢ Regions availability
- ➢ Restricted Virtual Machine Sizes
- ➢ Resource Group and Tags
- ➢ Node Operating System
- ➢ Kubernetes version
- ➢ Network
- ➢ Resources reservation
- ➢ Azure subscription limits
- ➢ Resource Group limits

AKS Network - Architecture

- ➢ Kubenet (basic) vs Azure CNI (advanced)
- ➢ Basic Load Balancer vs Standard Load Balancer
- ➢ Recommendations

AKS Network – Egress Traffic

- ➢ Basic External Load Balancer with dynamic outbound IP
- ➢ Basic External Load Balancer with static outbound IP
- ➢ Standard External Load Balancer
- ➢ Standard External Load Balancer Customization
- ➢ Internal network egress

Lab: Basic External Load Balancer with dynamic outbound IP
Lab: Basic External Load Balancer with static outbound IP

AKS Network – Ingress Traffic

- ➢ Ingress traffic from the Internet
- ➢ HTTP Application Routing
- ➢ Ingress traffic from internal network

Lab: External nginx-ingress / cert-manager (letsencrypt) / external-dns
Lab: Internal nginx-ingress **/** cert-manager (letsencrypt) / external-dns

Create AKS Cluster

- ➢ Azure Portal vs Azure CLI
- ➢ Using Azure Portal
- ➢ Using Azure CLI

Lab: Using Azure CLI / ACR / K8S Dashboard

Lab: Using Azure Portal

AKS Access and Identity

➢ AKS Authorization and Authentication
➢ Generate kubeconfig for admins
➢ Generate kubeconfig for users
➢ Admin vs User - Security concerns
   Lab: AKS auth

Integrate AKS with Azure Active Directory

➢ Integration Architecture
➢ Server Application
➢ Client Application
➢ Integrate AKS with Active Directory
➢ Generate kubeconfig for AD users
➢ Kubernetes RBAC for AD users and groups
➢ Recommendations

   Lab: AKS + Azure Active Directory

Kubernates Users

   ➢ Generate self-signed certificates
   ➢ Create kubeconfig files for users
   ➢ RBAC for Kubernetes Users and Groups

Lab: Kubernetes users

AKS Volumes

   ➢ Provisioners
   ➢ Storage Classes
   ➢ Dynamic Volumes
   ➢ Static Volumes
Lab: Dynamic Volumes
Lab: Storage Classes

AKS Monitoring & Logging

   ➢ Enable AKS monitoring add-on
   ➢ Telemetry and Healtchcheck
   ➢ Log debugging
   ➢ Recommendations

Prerequisites:

- Familiarity with Azure Portal and Azure CLI.
- Understanding of Kubernetes objects, such as Namespaces, Pods and RBAC.
- Basic Bash and Linux command line knowledge.
- Understanding of network concepts.

Who Can attend:

- Fearless Kubernetes administrators.

Number of Hours: 35hrs

Key Features:

- ➢ One to One Training
- ➢ Online Training
- ➢ Fastrack & Normal Track
- ➢ Resume Modification
- ➢ Mock Interviews
- ➢ Video Tutorials
- ➢ Materials
- ➢ Real Time Projects
- ➢ Virtual Live Experience
- ➢ Preparing for Certification