

Azure Kubernetes Service

Duration: 5 Days

Hands-On Format: This hands-on class is approximately 80/20 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

Module 1 – Core Concepts

Overview of Container Orchestration
Introduction to Kubernetes
Kubernetes Architecture

Module 2 – Create Azure AKS Cluster

Introduction to Azure AKS Cluster
Create AKS Cluster
Explore AKS Cluster using kubectl
Setup Azure CLI on Local Desktop

Module 3 – Managing Resources

Managing Pods
Managing Labels & Selector
Managing Replication Controller & Replica Set
Managing Service

Module 4 – Scheduling

Manual Scheduling
Taint and Tolerations
Node Selector
Node Affinity

Module 5 – Application Lifecycle Management

Overview of Deployment
Deployment Strategies
Managing Deployment

Module 6 – Environment Variable

Plain Key
Config Map
Secret
Mount Variable as Volume

Module 7 – Storage

- Volumes
- Persistent Volumes
- Persistent Volume Claim
- Azure Disks for AKS Storage
- Create Storage Class
- Managing Persistent Volumes
- Managing Persistent Volume Claims
- Use AKS Provisioned Storage Class instead of Custom Storage Class

Module 8 – Security

- Introduction to Active Directory Authentication for AKS admins
- Create AD Group and User and Enable AD for AKS
- Access Azure AKS Cluster Resources using Azure AD User
- Manage Roles and Rolebindings
- Manage ClusterRole and ClusterRoleBindings

Module 9 – Autoscaling

- Introduction to Cluster Autoscaler
- Create AKS Cluster with Autoscaling enabled using Azure AKS
- Introduction to Horizontal Pod Autoscaler
- Create Horizontal Pod Autoscaler

Module 10 – Logging and Monitoring

- Understand how to Monitor all Cluster Components
- Understand how to Monitor Applications
- Manage Cluster Components Logs
- Manage Application Logs

Module 11 – Networking in Kubernetes

- Kubernetes Networking
- Understand CNI
- Understand Pod Networking Concepts
- Configure Manual DNS
- Configure and Manage Ingress Rule
- Namespace
- Load Balancer Service