Azure Kubernetes Service

Duration: 6 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 – Linux Fundamentals

What is Linux
Basic Linux Commands
Understanding Linux File System
Structure Creating Files and
Directories
Copying Files and
Directories Basics of VIM
Editor Managing Users
Understand Linux File System
Permissions Changing Permissions
Managing Services
Installing and Updating Software Packages with YUM

Module 2 – Docker Administration

Introduction to Containers
Introduction to Docker
Downloading and Installing
Docker Docker Essential
Commands Understanding
Docker Images Building Docker
Images
Storing and Retrieving Docker Images from
Docker Hub Building Containers from Images
Understand Storage
Methods Data Persistence
with Volumes

Module 3 – Core Concepts

Overview of Container
Orchestration Introduction to
Kubernetes Kubernetes
Architecture

Module 4 – Create Azure AKS Cluster

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

Module 5 – Managing Resources

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

Module 6 – Scheduling

Manual Scheduling
Taint and
Tolerations Node
Selector
Node Affinity

Module 7 – Application Lifecycle Management

Overview of
Deployment
Deployment Strategies
Managing Deployment

Module 8 – Environment Variable

Plain Key
Config
Map
Secret
Mount Variable as Volume

Module 9 – 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 10 – 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 11 – Autoscaling

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

Module 12 – Logging and Monitoring

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

Module 13 – Networking in Kubernetes

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