Docker and Kubernetes Course Curriculum

Chapter-1: Intro

- ➢ Monolithic architecture
- ➢ Micro Services
- ➢ Monolithic architecture v/s Micro Services Architecture

Chapter-2: Docker

- ➢ Why docker
- ➢ Docker Overview
- ➢ Docker Architecture
- ➢ Pulling images from Docker registry
- ➢ The Docker Hub
- ➢ Docker Engine Installation on Linux Servers (CentOS-or-Ubuntu)
- ➢ Docker commands
- ➢ Images, ps, pull, push, run, create

Chapter-3: Kubernetes

- ➢ Difference between Docker and Kubernetes Orchestration
- ➢ Kubernetes overview
- ➢ Kubernetes Architecture
- ➢ Understanding the underlying concept of Kubernetes Orchestration
- ➢ Designing a Kubernetes cluster (Either in Aws or GCP)

Chapter-4: Pods

- ➢ What is Pod
- ➢ What is Mutli-Container (Demo)
- ➢ Pod Basics

➢ Creating and Managing Pods

Chapter-5: Replicaset

➢ What is Replicasets
➢ Creating ReplicaSets
➢ Scaling Up replicasets

Chapter-6: Deployments

➢ What is Deployments
➢ Difference between Replicaset and deployments
➢ Creating Deployments
   • Deployment Strategy:
   • Recreate
   • Rolling Update

Chapter-7: Probes

➢ What are Health Probes
➢ Readiness Probes
➢ Liveness Probes

Chapter-8: Services

➢ What are Services
➢ NodePort
➢ Clsuter IP

Chapter-9: ConfigMap and Secrets

➢ ConfigMaps
➢ Secrets

Chapter-10: Quota

➤ Resources Quota
➤ Object Quota

Chapter-11: Namespaces

➤ Namespaces
➤ Namesaces Limit

Chapter-12: Affinity And Tolerations

➤ Node Affinity
➤ Taint and Tolerations
➤ Node Name
➤ Node Selector

Chapter-13: Storage
➤ Empty dir
➤ Host path
➤ Pv and Pvc

Chapter-14: Auto Jobs

➤ Daemonsets
➤ CronJobs

Chapter-15: Backup

➤ Etcd Backup

Chapter-16: Monitoring

➤ Grafana
➤ Prometheus
➤ Elk Stack

Chapter-17: Auth

- ➢ Rollback Access Controls

Chapter-18: Helm

- ➢ What is Helm
- ➢ Deploy Helm charts
- ➢ Pull Helm Charts
- ➢ Deploy a Sample app

Chapter-19: Ingress Controller:

- ➢ What is Ingress
- ➢ Ingress Rules
- ➢ Deploy a Sample app using Ingress, Will Route the traffic to each Service

Chapter-20: Project:

- ➢ Spin Eks Clsuter Using Terraform
- ➢ Taking Eks Cluster Backup Using Velero tool Store in S3 bucket
- ➢ Intro About service Mess (Istio)