

Kubernetes with Microservices

Duration: 4 Days

Skill Level: Beginners on container technology

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 of Kubernetes

Understand the Kubernetes Cluster Architecture

Master/Node

Kubectl

Kubelet

Kube-Proxy

Etc

Controllers

Module 2 – Installation of Kubernetes Cluster on Virtual Machines / AWS / Minikube

Design a Kubernetes Cluster

Install Kubernetes masters and nodes, including the use of TLS Bootstrapping

Configure Network Solution

Analyse end-to-end test results

Module 3 – Understand YAML and Managing Pods

Kubectl

Understand YAML

Creating and Managing Pods

Managing Labels

Module 4 – Using Kubernetes Features for Microservices

Managing Services

Managing Replica Set

Managing Deployments

Resource Quota

What are Microservices

Working with Microservices

Deploy ActiveMQ as a Pod and Service

Module 5 – Networking in Kubernetes

Kubernetes Networking

Understand CNI

Understand Pod Networking Concepts

Configure DNS

Configure and Manage Ingress Rule

Namespace

Module 6 – Security in Kubernetes

Managing RBAC
Security Context
Secrets
Work with Image Securely
Configure Network Policies

Module 7 – Lab Practicals

Guestbook
Metal Load Balancer

Module 8 – Troubleshooting

Troubleshoot ETCD Failure
Troubleshoot Kubelet Failure
Troubleshoot Container Runtime Failure
Troubleshoot Scheduler Failure