Day 1

Intro

About me and them

Their experience

Tour of LMS

Agenda

Prerequisites:  
Linux Foundations and Commands

Containers/Docker

Networking Basics

Web Hosting Concepts or Web Applications

Troubleshooting Skills

Introduction to Kubernetes

CKA and its importance

Program Outline

Course Components

Overview of Kubernetes and CRI

Container Runtime Interface,

Docker vs Containerd

About Containerd

Containerd - crictl commands

Creating and Configuring Kubernetes Cluster

Etcd

Controller

Scheduler

Kubelet

Kube Proxy

Day 2

1. Pods
2. Configuring Pods in Kubernetes Cluster
3. ReplicaSets
4. Deployments
5. Creating and Configuring the Deployment
6. Services, Load Balancing & Networking
7. Containers
8. Understanding Basic Commands of Kubernetes
9. Policies
10. Cluster Architecture Overview
11. Configuring a Cluster
12. Managing and Administering Clusters
13. Managing and administrating a Kubernetes Cluster
14. Understanding the Working of Nodes
15. Launching a Pod and Establishing an Associated Service
16. Control Plane–Node Communication
17. Understanding Controllers
18. Importance of Cloud Controller Manager
19. Working with kubeadm
20. Working with Kubeadm/Kubernetes Dashboard

27. Pods

28. Configuring Pods in Kubernetes Cluster

29. ReplicaSets

30. Deployments

31. Creating and Configuring the Deployment

32. Services, Load Balancing & Networking

33. Containers

34. Understanding Basic Commands of Kubernetes

35. Policies

36. Knowledge checks

38. Cluster Architecture overview

40. Configuring a Cluster

42. Managing and administrating a Kubernetes Cluster

43. Node

44. Understanding the Working of Nodes

45. Launching a Pod and Establishing an Associated Service

46. Control Plane–Node Communication - Kubelet

47. Understanding Controllers

48. Importance of Cloud Controller Manager

49. Working with kubeadm

Day 3

1. Demo of building Docker Images
2. Running Apache webserver using containers
3. Managing a Cluster Using kubelet
4. Overview of Workloads
5. Understanding Pods
6. Namespace in K8S
7. Role-Based Access Controller
   1. RBAC Objects - Role, RoleBinding, Cluster Role, Cluster RoleBinding
   2. Implementing RBAC Using Namespaces
8. Achieving High Availability
9. Mult Containers with lab

Day 4

1. Pod Lifecycle
2. Backup, Restoration of etcd Cluster Data
3. Backing up and Restoring Etcd Cluster Data
   1. Additional Discussion on etcd cluster automation using shell script
4. Metrics server
5. Daemon set
6. Jobs
7. Cronjob
8. Managing Kubernetes Objects
9. Deploying and Verifying Kubernetes Objects
10. Deployment strategy - rollout/rollback, annotations
11. Init containers with lab