

Course duration

- 3 days

Course Benefits

- Learn the topics of the CKA (Certified Kubernetes Administrator) exam.

Course Outline

1. Core Concepts
 1. CKA Objectives Covered
 2. Kubernetes Architecture
 3. Cluster Communication
 4. Objects
 5. Object Properties
 6. Labels and Selectors
 7. Annotations
 8. Object Management
 9. Object Management (cont.)
 10. Image Fundamentals
 11. Container Fundamentals
 12. Pod Fundamentals
 13. Working with Pods
 14. Lab Tasks
 1. Container and Pod Fundamentals
 2. Single Node Install
 3. Pod Fundamentals
2. Installation
 1. CKA Objectives Covered
 2. Installing HA Control Plane (DEMO)
 3. Lab Tasks
 1. Kubernetes HA Masters Install
 2. Kubernetes Install
 3. Joining Worker Nodes
3. Application Lifecycle Management
 1. CKA Objectives Covered
 2. Pod Lifecycle
 3. Container Lifecycle
 4. Init Containers
 5. Container: command and args
 6. Container: Defining Environment

7. ReplicaSet
8. Deployments
9. Working with Deployments
10. Deployment Rollouts
11. Lab Tasks
 1. Pod Lifecycle
 2. Init Containers
 3. Deployments
4. Networking
 1. CKA Objectives Covered
 2. Network Overview
 3. Service Discovery and CoreDNS
 4. Container Network Interface (CNI)
 5. Services
 6. Ingress Objects
 7. Lab Tasks
 1. Ingress Controller
 2. Port-Forwarding
 3. Services
 4. Ingress
5. Storage
 1. CKA Objectives Covered
 2. Storage
 3. Volume Types
 4. Volume Types
 5. Static Volumes (DEMO)
 6. ConfigMaps
 7. ConfigMaps
 8. Secrets
 9. Lab Tasks
 1. (DEMO) Static Volumes
 2. (DEMO) ConfigMaps and Secrets
 3. Static Volume Provisioning
 4. ConfigMaps and Secrets
6. Scheduling
 1. CKA Objectives Covered
 2. Controlling and Tracking Resources
 3. Scheduler Operation
 4. DaemonSet
 5. Node Affinity and Anti-affinity
 6. Pod Affinity and Anti-affinity
 7. Taints and Tolerations
 8. Lab Tasks
 1. (DEMO) Affinity and Taints
 2. Pod Resources and Scheduling
 3. Static Scheduling and Daemonsets
 4. Pod and Node Affinities

Class Materials

Each student will receive a comprehensive set of materials, including course notes and all the class examples.

Class Prerequisites

Experience in the following *is required* for this DevOps class:

- Proficiency with the Linux CLI.
- A broad understanding of Linux system administration.
- Basic knowledge of Linux containers, e.g., Docker.