

## CKA: Certified Kubernetes Administrator

Course Code: CKA

Duration: 3 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

### OVERVIEW

CKA was created by The Linux Foundation and the Cloud Native Computing Foundation (CNCF) as a part of their ongoing effort to help develop the Kubernetes ecosystem. The exam is an online, proctored, performance-based test that requires solving multiple tasks from a command line running Kubernetes.

### SKILLS COVERED

After taking this course, you should be able to:

#### Storage

- Understand storage classes, persistent volumes
- Understand volume mode, access modes and reclaim policies for volumes
- Understand persistent volume claims primitive
- Know how to configure applications with persistent storage

#### Troubleshooting

- Evaluate cluster and node logging
- Understand how to monitor applications
- Manage container stdout & stderr logs
- Troubleshoot application failure
- Troubleshoot cluster component failure
- Troubleshoot networking

#### Workloads & Scheduling

- Understand deployments and how to perform rolling update and rollbacks

- Use ConfigMaps and Secrets to configure applications
- Know how to scale applications
- Understand the primitives used to create robust, self-healing, application deployments
- Understand how resource limits can affect Pod scheduling
- Awareness of manifest management and common templating tools

#### Cluster Architecture, Installation & Configuration

- Manage role based access control (RBAC)
- Use Kubeadm to install a basic cluster
- Manage a highly-available Kubernetes cluster
- Provision underlying infrastructure to deploy a Kubernetes cluster
- Perform a version upgrade on a Kubernetes cluster using Kubeadm
- Implement etcd backup and restore

#### Services & Networking

- Understand host networking configuration on the cluster nodes
- Understand connectivity between Pods
- Understand ClusterIP, NodePort, LoadBalancer service types and endpoints
- Know how to use Ingress controllers and Ingress resources
- Know how to configure and use CoreDNS
- Choose an appropriate container network interface plugin

#### WHO SHOULD ATTEND?

This certification is for Kubernetes administrators, cloud administrators and other IT professionals who manage Kubernetes instances.

## PREREQUISITES

There are no pre-requisites for this exam.

## MODULES

**Module 1: Course Introduction**

**Module 2: Basics of Kubernetes**

**Module 3: Installation and Configuration**

**Module 4: Kubernetes Architecture**

**Module 5: APIs and Access**

**Module 6: API Objects**

**Module 7: Managing State with Deployments**

**Module 8: Volumes and Data**

**Module 9: Services**

**Module 10: Helm**

**Module 11: Ingress**

**Module 12: Scheduling**

**Module 13: Logging and Troubleshooting**

**Module 14: Custom Resource Definitions**

**Module 15: Security**

**Module 16: High Availability**

**Module 17: Exam Domain Review**

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