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# CERTIFIED KUBERNETES ADMINISTRATOR (CKA)

Course Code: 100869

## Students will gain all of the skills necessary to become a Certified Kubernetes Administrator (CKA)

Kubernetes is a Cloud Orchestration Platform providing reliability, replication, and stability while maximizing resource utilization for applications and services. By the conclusion of this hands-on, vendor agnostic training you will go back to work with the knowledge, skills, and abilities to design, implement, and maintain a production-grade Kubernetes cluster. We prioritize covering all objectives and concepts necessary for passing the Certified Kubernetes Administrator (CKA) exam. You will be provided the components necessary to assemble your own high availability Kubernetes environment and configure, expand, and control it to meet the demands made of cluster administrators. Your week of intensive, hands-on training will conclude with a mock CKA exam that simulates the real exam.

## What You'll Learn

Cluster architecture, installation, and configuration

- Rolling out and rolling back applications in production
- Scaling clusters and applications to best use
- How to create robust, self-healing deployments
- Networking configuration on cluster nodes, services, and CoreDNS
- Persistent and intelligent storage for applications
- Troubleshooting cluster, application, and user errors
- Vendor-agnostic cloud provider-based Kubernetes

## Who Needs to Attend

- Professionals who need to maintain or set up a Kubernetes cluster
- Container Orchestration Engineers
- DevOps Professionals

## Prerequisites

This course is intended for students who have the basic knowledge of the core components of Kubernetes, such as Pods and Deployments.

It is suggested that students take the Kubernetes Bootcamp course prior to taking

the Certified Kubernetes Administrator course. However, instructors will always strive to assure every student gains a very thorough understanding of the material covered, regardless of the students' prior experience.

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| VIRTUAL CLASSROOM LIVE | $2,895 USD | 5 Day |

## Virtual Classroom Live Outline

In this course, students will learn and practice essential Kubernetes concepts and tasks in the following sections:

### 1. Cluster Architecture, Installation & Configuration

Each student will be given an environment that allows them to build a Kubernetes cluster from scratch. After a detailed discussion on key architectural components and primitives, students will install and compare two production grade Kubernetes clusters.

**Hands-on labs:**

1. Use Kubeadm to Install a Basic Cluster
2. Implement Etcd Backup and Restore
3. Augment a Basic Kubeadm Cluster to Achieve High-Availability
4. Perform a Version Upgrade on a Kubernetes Cluster using Kubeadm
5. Deploy Kubernetes Using Ansible

### 2. Review: Kubernetes Fundamentals

After successfully instantiating their own Kubernetes Cluster, students will be guided through foundational concepts of deploying and managing applications in a production environment.

**Hands-on labs:**

1. Isolating Resources with Kubernetes Namespaces
2. Cluster Access with Kubernetes Context

3. Manage Role Based Access Control (RBAC)
4. Listing Resources with kubectl get
5. Examining Resources with kubectl describe
6. Create and Configure Basic Pods

### 3. Workloads & Scheduling

After establishing a solid Kubernetes command line foundation, students will be led through discussion and hands-on labs which focus on effectively creating applications that are easy to configure, simple to manage, quick to scale, and able to heal themselves.

**Hands-on labs:**

1. Understanding How Resource Limits Affect Pod Scheduling
2. Using ConfigMaps and Secrets to Configure Applications
3. Creating Robust, Self-Healing Application Deployments
4. Deployments: Scaling, Rolling Updates & Rollbacks
5. Understanding Taints and Tolerations

### 4. Services & Networking

Thoroughly understanding the underlying physical and network infrastructure of a Kubernetes cluster is an essential skill for a Certified Kubernetes Administrator. After an in-depth discussion of the Kubernetes Networking Model, students explore the networking of their cluster's Control Plane, Workers, Pods, and Services.

**Hands-on labs:**

1. Understanding the Host Networking on Cluster Node
2. Understanding Connectivity Between Pods
3. Services: ClusterIP, Nodeport, LoadBalancer
4. Using Ingress Controllers and Resources to Expose a Service
5. Configuring CoreDNS

### 5. Storage

Certified Kubernetes Administrators are often in charge of designing and implementing the storage architecture for their clusters. After discussing many common cluster storage solutions and how to best use each, students practice incorporating stateful storage into their applications.

**Hands-on labs:**

1. Understanding the Persistent Volume Claims Primitives
2. Automating Storage with Storage Classes

### 6. Troubleshooting

A Certified Kubernetes Administrator is expected to be an effective troubleshooter for their cluster. The lecture covers a variety of ways to evaluate and optimize available log information for efficient troubleshooting, and the labs have students practice diagnosing and resolving several typical issues within their Kubernetes Cluster.

**Hands-on labs:**

1. Evaluating and Optimizing Cluster, Node, and Container Logging
2. Troubleshoot Application Failure
3. Troubleshoot Cluster Component Failure
4. Troubleshoot Networking

### 7. Certified Kubernetes Administrator Practice Exam

Just like the Cloud Native Computing Foundation CKA Exam, the students will be given two hours to complete hands-on tasks in their own Kubernetes environment. Unlike the certification exam, students taking the Alta3 CKA Practice Exam will have scoring and documented answers available immediately after the exam is complete, and will have built-in class time to re-examine topics that they wish to discuss in greater depth.

Dec 8 - 12, 2025 | 10:00 AM - 6:00 PM EST

Jan 12 - 16, 2026 | 10:00 AM - 6:00 PM EST

Apr 6 - 10, 2026 | 10:00 AM - 6:00 PM EST

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| ON-DEMAND | $295 USD |

## On-Demand Outline

In this course, students will learn and practice essential Kubernetes concepts and tasks in the following sections:

### 1. Cluster Architecture, Installation & Configuration

Each student will be given an environment that allows them to build a Kubernetes cluster from scratch. After a detailed discussion on key architectural components and primitives, students will install and compare two production grade Kubernetes clusters.

**Hands-on labs:**

1. Use Kubeadm to Install a Basic Cluster
2. Implement Etcd Backup and Restore
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### 2. Review: Kubernetes Fundamentals

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**Hands-on labs:**

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**Hands-on labs:**

1. Understanding How Resource Limits Affect Pod Scheduling
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| PRIVATE GROUP TRAINING | 5 Day |

Visit us at www.globalknowledge.com or call us at 1-866-716-6688.

Date created: 12/6/2025 12:35:31 AM