



COURSE CURRICULUM · DEVOPS & CONTAINERS · THE LINUX FOUNDATION (CNCF)

Certified Kubernetes Application Developer (CKAD)

Design, deploy and troubleshoot cloud-native applications on Kubernetes at exam speed.

DURATION

3 days · 24 hours

LEVEL

Intermediate

CURRICULUM

9 modules · 8 labs

DELIVERY

Live online, Onsite,
Corporate

Course overview

Developers increasingly own how their applications run, not just how they are written. The CKAD exam checks that you can package, configure, expose and debug applications on Kubernetes quickly from a terminal. This course is built to make those tasks second nature.

Day one covers application design and build: container images, multi-container pod patterns, Jobs and CronJobs, and persistent volumes for applications. Day two is about deployment and configuration — Deployments, rolling updates, blue-green and canary strategies, Helm and Kustomize, ConfigMaps and Secrets, resource requirements, security contexts and service accounts.

Day three focuses on services and networking and on observability: Services, Ingress, network policies, liveness, readiness and startup probes, logs, and debugging a failing application. It ends with timed mock tasks and a review of exam technique.

You will work in your own cluster throughout and practise the imperative kubectl commands and YAML generation habits that make the difference in a time-limited exam.

This course is aligned to the CKAD exam curriculum published by The Linux Foundation and CNCF. The exam is performance-based and online proctored; please confirm the current curriculum and Kubernetes version before booking.

Highlights

- 24 hours of live, trainer-led sessions
- Your own cluster for every lab
- Deployment strategies, probes and Helm
- Timed task drills in the style of the exam
- kubectl speed techniques for a hands-on exam

What's included

- Dedicated lab cluster per learner
- Multi-container patterns and Jobs
- Canary and blue-green deployments
- Helm and Kustomize in practice
- Probes, logs and debugging drills
- Mock tasks in the style of the exam
- Course completion certificate from Ace Skills Consulting
- Post-training doubt support

Who this course is for

Who should attend

- Software developers deploying to Kubernetes
- DevOps engineers supporting application teams
- Technical leads designing cloud-native services
- Engineers moving from VMs to containers

Prerequisites

- Programming or scripting experience in any language
- Comfort with the Linux command line and a text editor such as vim
- Basic container knowledge

Detailed curriculum — 3 days, 24 hours, 9 modules, 8 hands-on labs

Day 1 Application Design and Build

8 hours

1.1 Kubernetes for developers

- Cluster architecture overview
- Namespaces
- Pods and the pod lifecycle
- kubectl productivity

LAB Create and inspect pods imperatively · 30 min

1.2 Images and pod design

- Building and tagging images
- Sidecar and adapter patterns
- Init containers
- Labels, selectors and annotations

LAB Build an image and run it with an init container and sidecar · 50 min

1.3 Jobs and storage

- Jobs and CronJobs
- Persistent volume claims
- Volumes for applications
- Ephemeral storage

LAB Schedule a CronJob that writes to a persistent volume · 40 min

Day 2 Deployment, Configuration and Security

8 hours

2.1 Deployments

- Rolling updates and rollbacks
- Canary deployments
- Blue-green deployments
- Scaling

LAB Run a canary release and roll it back · 45 min

2.2 Packaging

- Helm charts and releases
- Kustomize overlays

LAB Deploy an app with Helm and a Kustomize overlay · 40 min

2.3 Configuration and security

- ConfigMaps and Secrets
- Security contexts
- Custom resources overview
- Resource requests, limits and quotas
- Service accounts

LAB Configure an app with Secrets and a security context · 40 min

Day 3 Services, Observability and Exam Readiness

8 hours

3.1 Services and networking

- Service types
- Network policies
- Ingress
- Service discovery with DNS

LAB Expose an app with Ingress and restrict traffic · 45 min

3.2 Observability and maintenance

- Liveness, readiness and startup probes
- Monitoring basics
- API deprecations
- Container logs
- Debugging failing pods

LAB Fix five broken deployments against the clock · 60 min

3.3 Exam readiness

- Exam environment and rules
- Mock tasks with review
- Time management

Skills and tools

Skills you will build

Kubernetes for developers

Pod design

Multi-container patterns

Jobs & CronJobs

Deployment strategies

Helm

Kustomize

ConfigMaps & Secrets

Security contexts

Services & Ingress

Network policies

Probes

Debugging

Tools used in class

kubectl

Helm

Kustomize

Docker or Podman

vim

Certification exam

This course is aligned to the exam below and prepares you for it. The exam itself is booked and taken with the vendor.

Exam	Certified Kubernetes Application Developer (CKAD)
Exam code	CKAD
Duration	120 minutes
Format	Performance-based / lab
Delivery	Online proctored
Official page	https://training.linuxfoundation.org/certification/certified-kubernetes-application-developer-ckad/

Exam skill areas covered

- Application design and build
- Application deployment
- Application observability and maintenance
- Application environment, configuration and security
- Services and networking

Exam details are pending verification. Confirm the current exam code, format and fee on the official vendor page before booking.

Frequently asked questions

What is the CKAD exam like?

It is performance-based and online proctored: you complete practical tasks on live clusters from a command line within the time limit.

Do I need to be a strong programmer?

No. You will not write application code in the exam; you need to read YAML and work with containers and kubectl.

How is CKAD different from CKA?

CKAD focuses on deploying and running applications; CKA adds cluster installation, upgrades and infrastructure troubleshooting.

Is a lab environment provided?

Yes. Each learner gets a dedicated cluster for the duration of the course.

Book a batch or talk to an advisor

Course page: aceskillsconsulting.com/course/ckad-certified-kubernetes-application-developer · Email: info@aceskillsconsulting.com

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