



CNCF/KUBERNETES TRAINING

Certified Kubernetes Application Developer (CKAD)

Develop, deploy, and configure cloud native applications on Kubernetes. Earn your CKAD to prove your application development expertise.

DURATION

2 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

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- Globally Recognized Certification
 - Expert-Led Hands-On Training
 - Flexible Scheduling

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COURSE OVERVIEW

The Certified Kubernetes Application Developer (CKAD) certification validates a developer's ability to design, build, configure, and expose cloud-native applications for Kubernetes. This comprehensive course by Computer Pride dives deep into the practical skills necessary to develop and deploy applications on Kubernetes efficiently and effectively. You'll gain hands-on experience with core Kubernetes primitives, mastering everything from creating robust Pods and Deployments to managing complex application configurations and ensuring seamless communication through Services. This certification is crucial for developers looking to thrive in a cloud-native ecosystem. Mastering the CKAD curriculum empowers you to architect and implement scalable, resilient, and high-performing applications within a Kubernetes environment. You will learn to leverage Kubernetes features such as self-healing, automatic rollouts, and declarative configuration to accelerate development cycles and reduce operational overhead. The focus is on practical, scenario-based learning, equipping you with the expertise to navigate real-world development challenges on container orchestration platforms. By completing this certification, you not only validate your technical proficiency with Kubernetes but also significantly enhance your value to organizations embracing DevOps and cloud strategies. It demonstrates your capability to build modern, portable applications, making you an indispensable asset in any team focused on microservices architectures and efficient application deployment.

Duration	2 hours
Level	Intermediate
Vendor	CNCF/Kubernetes
Exam Code	CKAD

COURSE CURRICULUM

01 Module 1: Kubernetes Fundamentals & Pods

- Kubernetes Architecture Overview
- Introduction to kubectl and YAML
- Pod Lifecycle and Design
- Creating and Managing Pods via YAML
- Multi-Container Pods (Sidecar Pattern)
- Liveness and Readiness Probes
- Init Containers for Application Initialization

02 Module 2: Deployments, Replicasets & Scaling

- Understanding Deployments and ReplicaSets
- Creating and Updating Deployments
- Rolling Back Deployments
- Managing Application Versions
- Horizontal Pod Autoscaling (HPA)
- Resource Requests and Limits for Pods

03 Module 3: Services and Networking

- Kubernetes Service Types (ClusterIP, NodePort, LoadBalancer)
- Exposing Applications with Services
- Ingress for External Access
- Network Policies for Application Security
- CoreDNS and Service Discovery

04 Module 4: Storage Management

- PersistentVolumes (PV) and PersistentVolumeClaims (PVC)
- Understanding StorageClasses
- Configuring Volume Mounts
- Ephemeral Volumes (emptyDir, hostPath)
- Using PVs with Stateful Applications

05 Module 5: Configuration and Security

- Managing Configuration with ConfigMaps
- Handling Sensitive Data with Secrets
- ServiceAccounts and RBAC Basics
- SecurityContext for Pods and Containers
- Environment Variables and Command-Line Arguments

06 Module 6: Observability & Troubleshooting

- Viewing and Analyzing Pod Logs
- Debugging Applications in Kubernetes
- Using kubectl describe and events for Diagnostics
- Troubleshooting Network Connectivity Issues
- Monitoring Resource Usage

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Cloud-Native Application Developer**
- > **Kubernetes-Focused DevOps Engineer**
- > **Site Reliability Engineer (SRE) specializing in Container Orchestration**

FREQUENTLY ASKED QUESTIONS

Q: How does the CKAD certification directly impact my ability to build and deploy applications in a production Kubernetes environment?

The CKAD certification specifically validates your practical ability to define, deploy, and debug applications in a Kubernetes cluster. This means you'll be adept at writing correct YAML manifests for deployments, services, and persistent storage, troubleshooting application issues within pods, configuring probes for application health, and securely exposing your applications. This hands-on expertise directly translates to faster, more reliable application delivery in production cloud-native environments, minimizing downtime and optimizing resource utilization.

Q: What prior experience or knowledge is recommended before enrolling in the Certified Kubernetes Application Developer (CKAD) course?

To get the most out of this CKAD course, we recommend a foundational understanding of Linux command-line tools, basic concepts of containerization (like Docker), and familiarity with YAML syntax. While not strictly required, some basic programming experience (e.g., Python, Go, Node.js) can be beneficial for understanding application logic, though the focus of CKAD is on the Kubernetes platform itself rather than specific programming languages.

Q: Beyond deploying basic applications, what advanced application development patterns or troubleshooting techniques will I master through this CKAD course?

This CKAD course goes beyond basic deployments to cover essential advanced patterns and troubleshooting techniques. You will master multi-container patterns like the 'sidecar' for log collection or proxying, utilize Init Containers for complex application startup dependencies, and effectively configure liveness and readiness probes for robust application health management. For troubleshooting, you'll become proficient in using advanced `kubectl` commands for digging into application logs, events, and resource metrics, enabling rapid diagnosis and resolution of application issues within Kubernetes.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

Years of Excellence

10,000+

Professionals Trained

50+

Vendor Certifications

READY TO ENROL?

Take the next step in your technology career.

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