Linux Foundation Kubernetes for Developers (CKAD)

Course Duration: 5 Days
Exam Reference: CKAD

Course Overview

This course is designed for developers who want to learn how to build, deploy, and manage containerized applications using Kubernetes. It emphasizes Kubernetes primitives and development-focused tasks to help participants master the skills required to design and run applications on Kubernetes clusters. The course serves as comprehensive preparation for the CKAD certification.

Prerequisites

- Proficiency with the Linux command line
- Understanding of containers and Docker
- Basic YAML syntax knowledge
- Experience with at least one programming language (e.g., Python, Go, Java)

Course Objectives

- Understand Kubernetes architecture and its components
- Design and deploy stateless and stateful applications in Kubernetes
- Configure applications using ConfigMaps and Secrets
- Monitor, troubleshoot, and manage applications using Kubernetes tools
- Prepare thoroughly for the Certified Kubernetes Application Developer (CKAD) exam

Course Outline

Module 1: Kubernetes Fundamentals

APPLIED TECHNOLOGY ACADEMY

Contact Us

800.674.3550

2151 W. Hillsboro Blvd., Ste 210
Deerfield Beach, FL 33442

Connect With Us

Linux Foundation Kubernetes for Developers (CKAD)

- Kubernetes architecture and components
- Kubernetes objects: Pods, ReplicaSets, Deployments
- Using kubectl for interaction and management

Module 2: Working with Pods and Containers

- Multi-container Pods
- Init containers and sidecar patterns
- Resource limits and scheduling basics

Module 3: Configuration Management

- ConfigMaps: managing environment-specific settings
- Secrets: securing sensitive data
- Mounting configuration into containers

Module 4: Application Lifecycle Management

- Rolling updates and rollbacks
- Liveness and readiness probes
- Graceful shutdown and cleanup

Module 5: Networking and Services

- Kubernetes Services: ClusterIP, NodePort, LoadBalancer
- DNS and service discovery
- Ingress controllers and rules

Module 6: Storage and Volumes

- Volume types and Persistent Volumes (PV/PVC)
- Storage classes and dynamic provisioning
- Managing stateful applications

Module 7: Jobs and Scheduled Tasks

- Running batch processes with Jobs
- Automating periodic tasks using CronJobs

Module 8: Security and RBAC Basics

- Service accounts and RBAC roles
- Security context for pods and containers
- Network policies overview

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Module 9: Observability and Troubleshooting

- Logs and container output
- Monitoring application performance
- Debugging Pods and common error patterns

Module 10: CKAD Exam Preparation

- Exam environment and tips
- Hands-on practice scenarios
- Time-saving kubectl techniques and aliases