Certified Kubernetes Application Developer (CKAD) Exam Curriculum

A Cloud Native Computing Foundation (CNCF) Publication

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This document provides the curriculum outline of the Knowledge, Skills and Abilities that a Certified Kubernetes Application Developer (CKAD) can be expected to demonstrate.

CKAD Curriculum

13% - Core Concepts

- Understand Kubernetes API primitives
- Create and configure basic Pods

18% - Configuration

- Understand ConfigMaps
- Understand SecurityContexts
- Define an application's resource requirements
- Create & consume Secrets
- Understand ServiceAccounts

10% Multi-Container Pods

- Understand Multi-Container Pod design patterns (e .g. ambassador, adapter, sidecar)

18% - Observability

- Understand LivenessProbes and ReadinessProbes
- Understand container logging
- Understand how to monitor applications in Kubernetes
- Understand debugging in Kubernetes

20% - Pod Design

- Understand Deployments and how to perform rolling updates
- Understand Deployments and how to perform rollbacks
- Understand Jobs and CronJobs
- Understand how to use Labels, Selectors, and Annotations

13% - Services & Networking

- Understand Services
- Demonstrate basic understanding of NetworkPolicies

8% - State Persistence

- Understand PersistentVolumeClaims for storage

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Cloud native computing uses an open source software stack to deploy applications as microservices, packaging each part into its own container, and dynamically orchestrating those containers to optimize resource utilization. The Cloud Native Computing Foundation (CNCF) hosts critical components of those software stacks including Kubernetes, Fluentd, Linkerd, Prometheus, OpenTracing and gRPC; brings together the industry's top developers, end users, and vendors; and serves as a neutral home for collaboration. CNCF is part of The Linux Foundation, a nonprofit organization. For more information about CNCF, please visit: https://cncf.io/.