

KUBERNETES FOR APP DEVELOPER(LFD459)

Introduction

- Objectives
- Who You Are
- The Linux Foundation
- Linux Foundation Training
- Preparing Your System
- Course Registration
- Labs

Kubernetes Architecture

- What Is Kubernetes?
- Components of Kubernetes
- Challenges
- The Borg Heritage
- Kubernetes Architecture
- Terminology
- Master Node
- Minion (Worker) Nodes
- Pods
- Services
- Controllers
- Single IP per Pod
- Networking Setup
- CNI Network Configuration File
- Pod-to-Pod Communication
- Cloud Native Computing Foundation
- Resource Recommendations
- Labs

Build

- Container Options
- Containerizing an Application
- Hosting a Local Repository
- Creating a Deployment
- Running Commands in a Container
- Multi-Container Pod
- readinessProbe
- livenessProbe
- Testing
- Labs

Design

- Traditional Applications: Considerations
- Decoupled Resources
- Transience
- Flexible Framework
- Managing Resource Usage
- Multi-Container Pods
- Sidecar Container
- Adapter Container
- Ambassador
- Points to Ponder
- Labs

Deployment Configuration

- Volumes Overview
- Introducing Volumes
- Volume Spec
- Volume Types
- Shared Volume Example
- Persistent Volumes and Claims
- Persistent Volume
- Persistent Volume Claim
- Dynamic Provisioning
- Secrets
- Using Secrets via Environment Variables
- Mounting Secrets as Volumes
- Portable Data with ConfigMaps
- Using ConfigMaps
- Deployment Configuration Status
- Scaling and Rolling Updates
- Deployment Rollbacks
- Jobs
- Labs

Security

- Security Overview
- Accessing the API
- Authentication
- Authorization
- ABAC
- RBAC
- RBAC Process Overview
- Admission Controller
- Security Contexts
- Pod Security Policies
- Network Security Policies
- Network Security Policy Example
- Default Policy Example
- Labs

Exposing Applications

- Service Types
- Services Diagram
- Service Update Pattern
- Accessing an Application with a Service
- Service without a Selector
- ClusterIP
- NodePort
- LoadBalancer
- ExternalName
- Ingress Resource
- Ingress Controller
- Labs

Troubleshooting

- Troubleshooting Overview
- Basic Troubleshooting Steps
- Ongoing (Constant) Change
- Basic Troubleshooting Flow: Pods
- Basic Troubleshooting Flow: Node and Security
- Basic Troubleshooting Flow: Agents
- Monitoring
- Logging Tools
- Monitoring Applications
- System and Agent Logs
- Conformance Testing
- More Resource
- Labs