

Developing Applications in OKD

Duration: 5 days (8hrs/day)

Course Objective: This course guides developers in developing, deploying, and managing applications on an OKD Cluster. It covers cluster setup, development workflows, deployment strategies, networking, storage, and security. The course also includes detailed instructions on using Helm. Through hands-on labs and real-world examples, participants will learn to leverage OKD for scalable application development.

Lab: Koenig-DC **OKD Version:** OKD4

Introduction to OKD

Overview of OKD

Key Features and Benefits

Prerequisites for Developing on OKD

Accessing your OKD Cluster

Overview of OKD CLI Tools

Managing Users and Permissions

Resource Quotas and Limits

Monitoring and Logging

Application Development Workflow

Development Environment Setup

Required Tools and Software

Setting Up Local Development Environment

Creating and Managing Projects

Project Structure

Best Practices for Organizing Your Code

Source-to-Image (S2I) Basics

Introduction to S2I

Creating S2I Builders

Deploying Applications on OKD

Containerizing Your Application

Writing Dockerfiles

Building and Pushing Images to a Registry

Deploying from Source Code

Deploying Pre-Built Images

Managing Deployments

Creating Deployment Configurations

Scaling Applications

Multi Container Applications

Performing Rolling Updates and Rollbacks

Networking in OKD

Understanding OKD Networking Concepts

Configuring Routes and Services

Implementing Ingress Controllers

Configuring Network Policies

Storage Management

Overview of OKD Storage Options

Configuring Persistent Volumes and Claims

Using Dynamic Provisioning

Managing Storage Classes

Security and Compliance

Security Best Practices

Managing Secrets and ConfigMaps

Implementing Role-Based Access Control (RBAC)

Compliance and Auditing

Using Operators in OKD

Understanding Operators in OKD

Implementing Custom Resource Definitions (CRDs)

Managing Stateful Applications

Monitor Application Health

Helm for OKD

Introduction to Helm

Benefits of Using Helm

Installing Helm

Prerequisites and Setup

Configuring Helm with OKD

Creating Helm Charts

Helm Chart Structure

Writing Your First Helm Chart

Managing Helm Releases

Installing and Upgrading Applications

Managing Dependencies

Using Helm Repositories

Adding and Updating Repositories