KOENIG SOLUTIONS · COURSE OUTLINE

Kubernetes for Intermediate

Learn to deploy, manage and monitor containerised applications on Kubernetes, from core architecture to networking and storage.

2 Days	8	27
DURATION	MODULES	TOPICS

COURSE OVERVIEW

This course covers Kubernetes architecture and core concepts, followed by managing pods, labels, replica sets and services. It then addresses application lifecycle management including deployment strategies and blue green deployment, before moving to storage with volumes, persistent volumes and persistent volume claims. Further topics include environment variables with config maps and secrets, logging and monitoring with Prometheus, Grafana and the ELK stack, networking with CNI and ingress rules, and configuring readiness and liveness probes.

WHO THIS COURSE IS FOR

- **Kubernetes Administrators**
- **DevOps Engineers**
- **System Administrators**
- **Cloud Engineers**
- **Application Developers**

LEARNING OBJECTIVES

- Explain Kubernetes architecture and container orchestration concepts
- Manage pods, labels, selectors and replica sets
- Configure services such as ClusterIP, NodePort and LoadBalancer
- Apply deployment strategies including blue green deployment
- Implement volumes, persistent volumes and persistent volume claims
- Configure environment variables using config maps and secrets
- Monitor cluster and application logs with Prometheus and Grafana
- Configure ingress rules and readiness and liveness probes

TRAINING APPROACH

This hands-on class is approximately 80/20 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

COURSE SYLLABUS

8 Modules, 27 Topics

01

Core Concepts

TOPICS

Overview of Container Orchestration · Introduction to Kubernetes · Kubernetes Architecture

02

Managing Resources

TOPICS

- Managing Pods
- Managing Labels & Selector
- Managing Replica Set
- Managing Service - ClusterIP, NodePort, LoadBalancer

03

Application Lifecycle Management

TOPICS

Overview of Deployment · Deployment Strategies · Managing Deployment · Blue Green Deployment

04

Storage

TOPICS

Volumes · Persistent Volumes · Persistent Volume Claim

05

Environment Variable

TOPICS

Plain Key, Config Map and Secret

06

Logging and Monitoring

TOPICS

- Understand how to Monitor all Cluster Components
- Understand how to Monitor Applications
- Manage Cluster Components Logs
- Manage Application Logs
- Prometheus and Grafana Tool
- Logging with ELK Stack

07

Networking in Kubernetes

TOPICS

Kubernetes Networking · Understand CNI · Configure and Manage Ingress Rule · Namespace

08

Readiness and Liveness Probe

TOPICS

Introduction to Readiness and Liveness Probe · Implement Readiness and Liveness in Pod

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

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