

Microservices: Docker, Kubernetes & Istio (Open Source)

Learn to design, containerise and secure microservices using Docker, Kubernetes, Istio, Jenkins, GIT and monitoring tools.

10

MODULES

25

TOPICS

COURSE OVERVIEW

To provide complete knowledge and skills on microservices with their technology and languages used, design and decomposition patterns and the environment for microservices application deployment.

WHO THIS COURSE IS FOR

Software Developers

DevOps Engineers

System Administrators

Solution Architects

Site Reliability Engineers

PREREQUISITES

- Basic understandings on software development, containerization and Spring Boot

LEARNING OBJECTIVES

- Explain differences between monolithic and microservices architectures
- Describe integration and decomposition patterns for microservices
- Apply containerisation concepts using Docker Container Runtime Engine
- Describe Kubernetes architecture, cluster formation and objects
- Configure Istio service mesh and add services to the mesh
- Implement mTLS communication and secure inbound traffic in Istio
- Configure Jenkins CI/CD pipelines and troubleshoot errors
- Apply monitoring and alerting using Prometheus and Grafana

10 Modules, 25 Topics

01

Introduction to Microservices

TOPICS

- Understandings of microservices and differences between monolithic to microservices
- Design principles of microservices with developers and admin in mind

02

Microservices Technologies and Languages

TOPICS

- Understandings of microservices architecture
- Overview of familiar Technologies and languages

03

Integration and Decomposition Patterns

TOPICS

- Learn about the integration patterns
- Learn about the decomposition patterns from monolith to microservices

04

Containerization Using Docker and Kubernetes

TOPICS

- Overview about the containerization
- Learn about the Docker Container Runtime Engine
- Learn about the architecture and benefits of Kubernetes Orchestration

05

Kubernetes Cluster and Its Objects

TOPICS

- Learn about the cluster formation of Kubernetes
- Deep dive on the Kubernetes objects

06

Istio Fundamentals

TOPICS

- Introducing service mesh with its architecture and features
- Learn about the installation procedure of Istio for microservices
- Learn how to reviewing the service requirements and adding services to the mesh

07

Securing Communication within Istio and Controlling Traffic

TOPICS

- Learn about the Istio Security
- Review how to enable the mTLS communication between services and secure inbound traffic
- Learn about Canary Testing, resiliency and chaos testing

08

Jenkins

TOPICS

- Introducing the Jenkins and Jenkins CI/CD Pipeline
- Learn how to install, manage and secure the Jenkins
- Learn about diagnosing the errors and troubleshooting

09

GIT

TOPICS

Introducing GIT and how to get started · Learn about the GIT Devops Methodology

10

Monitoring Patterns

TOPICS

- Learn about the monitoring and observability patterns of microservices
- Understand what is Prometheus and Grafana
- Learn how to work with Prometheus and Grafana for monitoring and alerting

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

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Who We Are

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