

Kubernetes Administration Using Docker

Learn to administer containerised applications with Docker and Kubernetes, from core resources and deployments to storage, security and networking.

5 Days

40 HOURS

9

MODULES

24

TOPICS

34

HANDS-ON LABS

COURSE OVERVIEW

The Kubernetes Administration Using Docker course is an in-depth training program designed to equip learners with the skills needed to manage containerized applications with Kubernetes and Docker. This comprehensive program covers everything from the basics of containers and Docker to advanced Kubernetes features, ensuring that participants can effectively deploy, manage, and scale applications in a Kubernetes environment. Throughout the course, learners will explore key concepts such as Docker commands, Image management, container orchestration, Kubernetes architecture, Resource management, application lifecycle, security, storage, networking, and monitoring. By integrating practical examples and hands-on exercises, the course prepares students for real-world scenarios. Participants aiming for a Kubernetes master course can expect to gain a robust understanding of container technologies, making this program an excellent pathway to certification on Docker and Kubernetes. Upon completion, individuals will be well-prepared to manage modern, dynamic environments, enhancing their professional credentials and career prospects in the rapidly evolving field of cloud-native technologies.

WHO THIS COURSE IS FOR

Koenig Solutions' Kubernetes Administration Using Docker course offers in-depth training on container orchestration and management, tailored for IT professionals.

DevOps Engineers

System Administrators

Cloud Professionals

Software Developers

IT Managers

Technical Leads

Infrastructure Architects

Application Developers

Site Reliability Engineers (SREs)

QA Engineers/Testers involved in automation

Network Engineers seeking containerization skills

Security Professionals with an interest in deployment security

Technical Support Engineers looking to upgrade their skills

IT graduates aiming to build a career in cloud and container technologies

PREREQUISITES

Before You Start

- Basic knowledge of Linux

TOOLS AND REQUIREMENTS

- Docker Version: Latest
- Kubernetes Version: Latest
- Lab Requirement: Koenig DC (CentOS 9)

LEARNING OBJECTIVES

- Learn about Docker Administration
- Orchestrate containers
- Automate the deployment, scaling, and management of applications in the software industry

COURSE SYLLABUS

9 Modules, 24 Topics

01

Docker Administration

8 Labs

TOPICS

Introduction to Containers · Introduction to Docker · Docker Engine · Understanding Docker Images · Private Registry · Understand Storage Methods

02

Core Concepts

TOPICS

Overview of Container Orchestration · Introduction to Kubernetes · Kubernetes Architecture

03

Managing Resources

7 Labs

TOPICS

Describe Pods · Describe Labels and Selector · Describe Replica Set · Describe Services · Describe Daemon Sets · Describe Namespaces

04

Application Lifecycle Management

2 Labs

TOPICS

Overview of Deployment · Deployment Strategies

05

Environment Variable

5 Labs

TOPICS

Overview of Environment Variable

06

Storage

3 Labs

TOPICS

Describe Storage

07

5 Labs

Security

TOPICS

Kubernetes Authentication

08

3 Labs

Logging and Monitoring

TOPICS

- Understand how to Monitor all Cluster Components
- Understand how to Monitor Applications

09

Lab

Networking in Kubernetes

TOPICS

Kubernetes Networking · Understand CNI

Practise What You Learn

#	MODULE	ACTIVITY
01	Docker Administration	■ Downloading and Installing Docker ■ Docker Essential Commands ■ Building Docker Images ■ Storing and Retrieving Docker Images from Docker Hub ■ Building Containers from Images ■ Networking Docker Containers ■ Data Persistence with Volumes ■ Linux Capabilities
03	Managing Resources	■ Managing Pods ■ Managing Labels & Selector ■ Managing Replica Set ■ Managing Cluster IP, Node Port ■ Installing Metal LoadBalancer and Using LoadBalancer Service ■ Managing Daemon Sets ■ Managing Namespaces
04	Application Lifecycle Management	■ Managing Deployment ■ Blue-Green Deployment Strategy
05	Environment Variable	■ Plain Key as Variable in Pod ■ Config Map as Variable in Pod ■ Config Map as Volume ■ Secret as Variable in Pod ■ Secret as Volume
06	Storage	■ Volumes ■ Creating Persistent Volume ■ Creating Persistent Volume Claim
07	Security	■ Managing Users in Kubernetes ■ Service Account ■ Managing Roles and Role Binding ■ Managing Cluster Role and Cluster Role Binding ■ Basic Security Context
08	Logging and Monitoring	■ Read Cluster Component Logs ■ Using Elasticsearch and Kibana for Logging ■ Prometheus and Grafana Monitoring Tool
09	Networking in Kubernetes	Configure and Manage Ingress Rule

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

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

Visit koenig-solutions.com

✉ info@koenig-solutions.com