

Basic Linux and Docker with Kubernetes

Learn to administer Linux systems, build Docker containers, and deploy and manage applications on a Kubernetes cluster.

5 Days

DURATION

10

MODULES

44

TOPICS

COURSE OVERVIEW

This course covers Linux fundamentals, including file system structure, permissions, user management, and package installation with YUM. It then moves into Docker administration, covering container concepts, image building with Dockerfile, and working with Docker Hub. The remaining modules focus on Kubernetes, from core architecture and cluster creation with kubeadm through managing pods, replica sets, and services, scheduling, deployments, storage, monitoring with Prometheus and Grafana, and networking with Ingress and load balancer services.

WHO THIS COURSE IS FOR

System Administrators

DevOps Engineers

Docker Administrators

Kubernetes Administrators

Cloud Engineers

LEARNING OBJECTIVES

- Explain basic Linux commands and file system structure
- Apply Linux file permissions and manage users
- Build Docker images using a Dockerfile
- Describe Docker container concepts and essential commands
- Explain Kubernetes architecture and container orchestration
- Deploy a Kubernetes cluster using kubeadm with Calico networking
- Manage pods, replica sets, and services in Kubernetes
- Configure storage, monitoring, and Ingress networking in Kubernetes

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.

10 Modules, 44 Topics

01

Linux Fundamentals

TOPICS

- What is Linux
- Basic Linux Commands
- Understanding Linux File System Structure
- Creating Files and Directories
- Copying Files and Directories
- Basics of VIM Editor
- Managing Users
- Understand Linux File System Permissions
- Changing Permissions
- Managing Services
- Installing and Updating Software Packages with YUM

02

Docker Administration

TOPICS

- Introduction to Containers
- Introduction to Docker
- Downloading and Installing Docker
- Docker Essential Commands
- Understanding Docker Images
- Building Docker Images using Dockerfile
- Storing and Retrieving Docker Images from Docker Hub

03

Core Concepts

TOPICS

Overview of Container Orchestration · Introduction to Kubernetes · Kubernetes Architecture

04

Create Kubernetes Cluster

TOPICS

Create Kubernetes Cluster using kubeadm · Implement Network Solution - Calico · Verify Installation

05

Managing Resources

TOPICS

Managing Pods · Managing Labels & Selector · Managing Replica Set · Managing Service

06

Scheduling

TOPICS

Manual Scheduling · Node Selector

07

Application Lifecycle Management

TOPICS

Overview of Deployment · Deployment Strategies · Managing Deployment

08

Storage

TOPICS

Volumes · Persistent Volumes · Persistent Volume Claim

09

Logging and Monitoring

TOPICS

- Understand how to Monitor all Cluster Components
- Understand how to Monitor Applications
- Monitoring with Prometheus and Grafana

10

Networking in Kubernetes

TOPICS

Kubernetes Networking · Introduction to Ingress · Configure and Manage Ingress Rule · Namespace · Load Balancer Service

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.

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✉ info@koenig-solutions.com