Training: The Linux Foundation
LFS458 Kubernetes Administration

THE LINUX FOUNDATION AUTHORIZED TRAINING PARTNER

TRANING TERMS

2026-12-07 | 4 days | Virtual Classroom
2026-12-08 | 4 days | Virtual Classroom

TRAINING GOALS:

In this four-day course you'll learn how to install and configure a production-grade Kubernetes cluster, from network configuration to upgrades to making deployments available via services. Also handle the ongoing tasks necessary for Kubernetes administration.

During this course you will learn:

- Installation of a multi-node Kubernetes cluster using kubeadm, and how to grow a cluster.
- Choosing and implementing cluster networking.
- Various methods of application lifecycle management, including scaling, updates and roll-backs.
- Configuring security both for the cluster as well as containers.
- Managing storage available to containers.
- Learn monitoring, logging and troubleshooting of containers and the cluster.
- Configure scheduling and affinity of container deployments.
- Use Helm and Charts to automate application deployment.
- Understand Federation for fault-tolerance and higher availability.

This course does not focus on one vendor's tools. Most courses are vendor-locked. We use kubeadm to deploy the cluster and focus on tools that would work on anyone's Kubernetes cluster.

CONSPECT:

- Introduction
  - Linux Foundation
  - Linux Foundation Training
  - Linux Foundation Certifications
  - Laboratory Exercises, Solutions and Resources
  - Distribution Details
  - Labs

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- Basics of Kubernetes
  - Define Kubernetes
  - Cluster Structure
  - Adoption
  - Project Governance and CNCF
  - Labs
- Installation and Configuration
  - Getting Started With Kubernetes
  - Minikube
  - kubeadm
  - More Installation Tools
  - Labs
- Kubernetes Architecture
  - Kubernetes Architecture
  - Networking
  - Other Cluster Systems
  - Labs
- APIs and Access
  - API Access
  - Annotations
  - Working with A Simple Pod
  - kubectl and API
  - Swagger and OpenAPI
  - Labs
- API Objects
  - API Objects
  - The v1 Group
  - API Resources
  - RBAC APIs
  - Labs
- Managing State With Deployments
  - Deployment Overview
  - Managing Deployment States
  - Deployments and Replica Sets
  - DaemonSets
  - Labels

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- Labs
- Services
  - Overview
  - Accessing Services
  - DNS
  - Labs
- Volumes and Data
  - Volumes Overview
  - Volumes
  - Persistent Volumes
  - Passing Data To Pods
  - ConfigMaps
  - Labs
- Ingress
  - Overview
  - Ingress Controller
  - Ingress Rules
  - Labs
- Scheduling
  - Overview
  - Scheduler Settings
  - Policies
  - Affinity Rules
  - Taints and Tolerations
  - Labs
- Logging and Troubleshooting
  - Overview
  - Troubleshooting Flow
  - Basic Start Sequence
  - Monitoring
  - Logging
  - Troubleshooting Resources
  - Labs
- Custom Resource Definition
  - Overview
  - Custom Resource Definitions

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- Aggregated APIs
- Labs

- Kubernetes Federation
  - Overview
  - Federated Resources
  - Labs
- Helm
  - Overview
  - Helm
  - Using Helm
  - Labs
- Security
  - Overview
  - Accessing the API
  - Authentication and Authorization
  - Admission Controller
  - Pod Policies
  - Network Policies
  - Labs

REQUIREMENTS:

Students should have an understanding of Linux administration skills, comfortable using the command line. Must be able to edit files using a command-line text editor.

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by The Linux Foundation.

This course offers exposure to the many skills necessary to administer Kubernetes in a production environment and is excellent preparation for the Certified Kubernetes Administrator (CKA) exam.

TRAINER:

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Certified The Linux Foundation Trainer.

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