Linux Foundation - Kubernetes Administration

Code: LFS458
Length: 4 days
URL: View Online

Prerequisite Courses

Cloud Native - Docker Containerization Essentials
View Details

Linux Foundation - Kubernetes Fundamentals
View Details

This course covers the core concepts typically used to build and administer a Kubernetes cluster in production, using vendor-independent tools. We build a cluster, determine network configuration, grow the cluster, deploy applications and configure the storage, security and other objects necessary for typical use. 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.

Skills Gained

In this course you will learn about installation of a multi-node Kubernetes cluster using kubeadm, and how to grow a cluster, choosing and implementing cluster networking, and various methods of application lifecycle management, including scaling, updates and roll-backs. The course also covers configuring security both for the cluster as well as containers, managing storage available to containers, monitoring, logging and troubleshooting of containers and the cluster, configuring scheduling and affinity of container deployments, using Helm and Charts to automate application deployment, and understanding Federation for fault-tolerance and higher availability.

Who Can Benefit

This course is ideal for those wishing to manage a containerized application infrastructure. This includes existing IT administrators, as well as those looking to start a cloud career.

Course Details

Course Outline
Introduction

- Linux Foundation
- Linux Foundation Training
- Linux Foundation Certifications

- Linux Foundation Digital Badges
- Laboratory Exercises, Solutions and Resources
- E-Learning Course: LFS258
- Distribution Details
- Labs

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
- 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
- Plugins
- Logging
- Troubleshooting Resources
- Labs

Custom Resource Definition

- Overview
- Custom Resource Definitions
- Aggregated APIs
- Labs

Helm

- Overview
- Helm
- Using Helm
- Labs

Security

- Overview
- Accessing the API
- Authentication and Authorization
- Admission Controller
- Pod Policies
- Network Policies
- Labs

High Availability

- Overview
- Stacked Database
- External Database
- Labs

Closing and Evaluation Survey

- Evaluation Survey

Domain Review

- CKA Exam
- Exam Domain Review

Follow-on Courses

Browse the suggested follow-on courses below and continue your training journey. We offer training in various learning formats, from instructor-led to virtual, so you can choose what works best for you. Get started by selecting a course to learn more.

Linux Foundation - Kubernetes Security Fundamentals (LFS460)

View Details

Download Whitepaper: Accelerate Your Modernization Efforts with a Cloud-Native Strategy

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