Kubernetes Administration (LFS458)
Official course, CKA exam preparation

Hands-on course of 4 days - 28h
Ref.: MKU - Price 2026: CHF3 600 (excl. taxes)

With this training, you'll discover how to set up a multi-node Kubernetes cluster using kubeadm, how to develop a cluster, choose and implement cluster networking, and various application lifecycle management methods. You'll also cover configuring security, managing storage, monitoring, logging and troubleshooting, configuring container deployment scheduling and affinity, using Helm and Charts to automate application deployment, and more.

EDUCATIONAL OBJECTIVES

At the end of the training, the trainee will be able to:

Installing a multi-node Kubernetes cluster using kubeadm

Understanding federation for fault tolerance and increased availability

Understanding cluster growth

Choosing and setting up a cluster network

Manage application lifecycles, including scaling, updates and restores

Configuring security for both cluster and containers

Manage available storage for containers

Monitor, log and troubleshoot containers and clusters

Configure planning and affinity for container deployments

Use Helm and Charts to automate application deployment

CERTIFICATION

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

PARTICIPANTS

Consultants, developers, DevOps architects, project managers.

PREREQUISITES

Have an understanding of Linux administration skills and be comfortable with the command line. Be able to edit files using a command-line text editor.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@ORSYS.fr to review your request and its feasibility.

THE PROGRAMME

last updated: 11/2025

1) Introduction

- Linux Foundation.
- Linux Foundation training.
- Linux Foundation certifications.
- Digital badges from the Linux Foundation.
- Distribution details.

Hands-on work : Application.

2) Kubernetes basics

- Definition of Kubernetes.
- Cluster structure.
- Adoption.
- Project governance and the Cloud Native Computing Foundation (CNCF).

3) Installation and configuration
- Getting started with Kubernetes.
- Discover Minikube.
- Discover kubeadm.
- Discover more installation tools.

Hands-on work : Application.

4) Kubernetes architecture
- Kubernetes architecture.
- Networking.
- Other cluster systems.

Hands-on work : Application.

5) API and access
- API access.
- Annotations.
- Working with a simple pod.
- Kubectl and API.
- Swagger and OpenAPI.

Hands-on work : Application.

6) API objects
- API objects.
- The v1 group.
- API resources.
- RBAC APIs.

Hands-on work : Application.

7) State management with deployments
- Deployment overview.
- Deployment status management.
- Deployments and replica games.
- DaemonSets.
- Labels.

Hands-on work : Application.

8) Service provision
- Overview.
- Access to services.
- DNS.

Hands-on work : Application.

9) Volumes and data
- Overview of volumes.
- Volumes.
- Persistent volumes.
- Data transmission to pods.
- ConfigMaps.

Hands-on work : Application.

10) Ingress
- Overview.
- Input controller.
- Entry rules.

Hands-on work : Application.

11) Planning
- Overview.
- Scheduler parameters.
- Policies.
- Affinity rules.
- Soiling and tolerances.

Hands-on work : Application.

12) Logging and troubleshooting
- Overview.
- Troubleshooting workflow.
- Basic starting sequence.
- Monitoring.
- Recording.
- Troubleshooting resources.

Hands-on work : Application.

13) Defining customized resources
- Overview.
- Custom resource definitions.
- Aggregate APIs.

Hands-on work : Application.

14) Helm
- Overview.
- Helm.
- Using Helm.

Hands-on work : Application.

15) Security
- Overview.
- Access the API.
- Authentication and authorization.
- Inlet controller.
- Pod policies.
- Network strategies.

Hands-on work : Application.

16) High availability
- Overview.
- Stacked database.
- External database.

Hands-on work : Application.

DATES

Contact us