

## Kubernetes Fundamentals and Cluster Operations (KFCO)

ID KFCO Prix 2 760,- € (Hors Taxe) Durée 4 jours

### A qui s'adresse cette formation

Anyone who is preparing to build and run Kubernetes clusters

### Pré-requis

- Linux concepts and command line proficiency
- General networking proficiency

### Objectifs

By the end of the course, you should be able to meet the following objectives:

- Build, test, and publish Docker container images
- Become familiar with YAML files that define Kubernetes objects
- Understand Kubernetes core user-facing concepts, including pods, services, and deployments
- Use kubectl, the Kubernetes CLI, and become familiar with its commands and options
- Understand the architecture of Kubernetes (Control plane and its components, worker nodes, and kubelet)
- Learn how to troubleshoot issues with deployments on Kubernetes
- Apply resource requests, limits, and probes to deployments
- Manage dynamic application configuration using ConfigMaps and Secrets
- Deploy other workloads, including DaemonSets, Jobs, and CronJobs
- Learn about user-facing security using SecurityContext, RBAC, and NetworkPolicies

### Contenu

#### Course Introduction

- Introductions and objectives

#### Containers

- What and Why containers
- Building images

- Running containers
- Registry and image management

#### Kubernetes Overview

- Kubernetes project
- Plugin interfaces
- Building Kubernetes
- Kubectl CLI

#### Beyond Kubernetes Basics

- Kubernetes objects
- YAML
- Pods, replicas, and deployments
- Services
- Deployment management
- Rolling updates
- Controlling deployments
- Pod and container configurations

#### Kubernetes Networking

- Networking within a pod
- Pod-to-Pod Networking
- Services to Pods
- ClusterIP, NodePort, and LoadBalancer
- Ingress controllers
- Service Discovery via DNS

#### Stateful Applications in Kubernetes

- Stateless versus Stateful
- Volumes
- Persistent volumes claims
- StorageClasses
- StatefulSets

#### Additional Kubernetes Considerations

- Dynamic configuration
- ConfigMaps
- Secrets
- Jobs, CronJobs

#### Security

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- Network policy
- Applying a NetworkPolicy
- SecurityContext
- runAsUser/Group
- Service accounts
- Role-based access control

## Logging and Monitoring

- Logging for various objects
- Sidecar logging
- Node logging
- Audit logging
- Monitoring architecture
- Monitoring solutions
- Octant
- VMware vRealize® Operations Manager™

## Cluster Operations

- Onboarding new applications
- Backups
- Upgrading
- Drain and cordon commands
- Impact of an upgrade to running applications
- Troubleshooting commands
- VMware Tanzu™ portfolio overview

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## Centres de formation dans le monde entier



### Fast Lane Institute for Knowledge Transfer GmbH

Husacherstrasse 3  
CH-8304 Wallisellen  
Tel. +41 44 832 50 80

info@flane.ch, <https://www.flane.ch>