Updated 12/13/2023

Sign up

K3s training: deploy IoT applications with Kubernetes
2 days (14 hours)

Presentation

Our 2-day K3s training course is aimed at developers wishing to learn how to deploy a highly available Kubernetes application environment optimized for IoT, CI and ARM.

K3s is a lighter, binary version of Kubernetes. Fast and easy to set up, K3s can run a master or worker of less than 100 MB. Due to its size and resource requirements, it is recommended for IoT or ARM architectures. Developed by Rancher, it runs on both Docker and Containerd.

In this training course, you'll learn how to use K3s to deploy simple, multinode clusters. You will also learn how to use the monitoring and automation tools. By the end of the course, you'll be up and running on the day-to-day tasks of your k3s application environment.

This training will be run on the latest version of K3s: 1.23.16.

Objectives

- Configure K3s
- Deploying clusters and multicluster environments
- Monitor your application environment

Target audience

- Developers
- DevOps engineers
- System administrators

Prerequisites

- Familiarity with application containers and orchestration concepts

Our K3s training program

Introduction to k3s

- Differences between Kubernetes and k3s
- Components
- Use Cases
- Installation
- Knowledge test

Create lightweight clusters

- Add a worker node
- Servers and agents
- Deploying an application
- K3s in Docker

Raspberry PI Edge

- Using the tool with K3s
- Vagrant in K3s
- IoT and Kubernetes
- Nginx

Multi-node clusters

- Kubectl
- Token
- Multi-node agent
- Use of resources
- ARM node

Deployment

- Standard Kubernetes approach
- Manifestos
- Replicas
- YAML
- Multi-master

Dashboard

- Kubectl serviceaccount cluster
- Clusterrolebinding
- Secrets Kubectl

Dashboard Rancher

- Server url
- Monitoring
- Kubeconfig
- API
- Grafana

Ingress Controller

- Traefik
- Replicaset
- Pods
- Loadbalancer
- Labels and templates

Kuberenetes edge

- Automation
- Interconnection
- Patterns

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical training: 60% Practical, 40% Theory. Training material distributed in

to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Sanction

A certificate will be issued to each trainee who completes the course.