

## Workshop Kubernetes Fundamentals

- **Formato do curso:** Live training
- **Preço:** 990€
- **Duração:** 14 horas

This Kubernetes Fundamentals workshop is intended for system administrators and application developers who are interested in deploying and orchestrating container applications at scale and have a basic understanding of containers, mainly docker, and want to understand the basic concepts of Kubernetes and its internal processes.

This training for beginners starts with a small refresher on what containers are and afterwards it goes and presents the Kubernetes architecture and its main components. Next, each student will create their own Kubernetes cluster and also submit workloads under a common cluster across all students simulating a more production-like environment. Kubernetes resources like pod, deployment, services, volumes and many more are presented alongside with their major features and each student will have the chance to create and use them in the hands-on laboratories which are at the end of each chapter.

**Esta formação é ministrada em Inglês.**

Em parceria com a entidade acreditada:



### Destinatários

- DevOps engineers
- Linux system administrators
- Systems design engineers
- Architects

### Pré-requisitos

- Strong grasp of container basics (recommended training: [Docker Fundamentals](#))

## Nice to have:

- Basic familiarity with the Linux command line (commands, arguments, etc.)
  - Familiarity with JSON and/or YAML syntax
- 

## Programa

### Containers and Docker - Quick Review

- Containers vs VMs
- Docker
- OS Components
- Docker Registries
- The need for K8s
- The K8s story

### K8s History and Architecture. Workers and Masters.

- Kubernetes history
- K8s Architecture

### Installing K8s. K8s Terminology. Pods. Namespaces.

- Installing Kubernetes
- K8s Terminology
- Anatomy of a Kubernetes Node
- Getting help

Hands-on Lab: Installing Kubernetes

### Running Workloads Imperatively - kubectl run

- CLI Commands (kubectl run | get | describe | delete)
- Running K8s Workloads
- Pod Lifecycle
- Namespaces

Hands-on Lab: Running Workload Imperatively

### The Declarative Model. YAML and JSON.

- From imperative to declarative model
- JSON and YAML
- Manifest Files
- Creating the YAML
- The Kubernetes API

Hands-on Lab: Declarative model

### **Deployments. ReplicaSets. Scaling and Updating.**

- Labels and Selectors
- ReplicaSets
- Deployment
- Jobs

Hands-on Lab: Deployment. ReplicaSets

### **Persisting Data. Volumes.**

- Volumes
- Types of K8s volumes
- Persistent Volumes
- NFS Persistent Volume

Hands-on Lab: Persisting Data

### **K8s Networking.**

- Docker Networking Model
- K8s Networking Model
- Services
- Kube-proxy
- K8s DNS

Hands-on Lab: Networking

### **Introspection. Monitoring. Logs**

- Kubernetes metrics
- Metrics Terminology
- Monitoring with ES/Kibana
- Monitoring with Prometheus/Grafana
- Introspection
- Debugging pods
- Debugging K8s Clusters
- CI/CD with K8s