

## Workshop Kubernetes Advanced

- **Formato do curso:** Live training
- **Preço:** 935€
- **Duração:** 14 horas

**This course covers some advanced topics that become relevant when using Kubernetes to orchestrate application at scale, in the data center or in the cloud.**

The course continues the [Kubernetes Fundamentals](#) course with presenting some more advanced Kubernetes resources like: Job, CronJob, Daemonset, ConfigMap and Secrets. It also covers the Ingress Resources alongside with the Ingress Controller. Helm is a widely used package manager for installing, upgrading and managing Kubernetes applications and the students will have the chance to understand the concepts and use it. Next, the course covers the basic concepts of Kubernetes Security and RBAC mechanism.

In the end, the Kubernetes Advanced course covers 2 major topics that should be part of every Kubernetes cluster: Centralized Logging and Monitoring.

The students will be able to see how centralized logging can be achieved by using ELK stack and also monitoring by using Prometheus and Grafana dashboards.

**Esta formação é ministrada em Inglês.**

Em parceria com a entidade acreditada:



## Destinatários

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

## Pré-requisitos

- Basic knowledge of Kubernetes terminology (nodes, pods, resources)
  - Interacting with a Kubernetes cluster via the command line (kubectl)
  - Resource primitives (nodes, pods, replicaset, deployments, etc)
  - Recommended training: [Kubernetes Fundamentals](#)
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## Programa

### **Daemon Sets. CronJobs. Secrets. ConfigMaps**

- CronJobs - running tasks periodically
- ConfigMaps - deploying reusable applications
- Secrets - passing around sensitive information
- DaemonSets - pods on every node

Hands-on Lab: DaemonSets. CronJobs. ConfigMa

### **Ingresses. The Nginx Ingress Controller**

- Ingress Controller
- Ingress Operation
- Deploying the ingress Controller
- Ingress Resource
- Path Manipulation

Hands-on Lab: Ingress

### **The Kubernetes Dashboard. Helm - The Kubernetes Package Manager**

- Installing the Kubernetes Dashboard
- Connecting to the dashboard using Kubectl proxy, NodePort and External auth proxy
- Dashboard User
- Helm Overview
- Helm Components
- Installing Helm
- Helm commands and usage examples

Hands-on Lab: Kubernetes Dashboard. Helm

### **Security. Role-Based Access Control**

- Identity and Access Management
- Service Accounts
- User Management
- RBAC Terminology Explained
- Role Scoping

Hands-on Lab: Security. RBAC

### **Working with Logs. Centralized Logging - Elastic Stack**

- Kubernetes Logging
- Centralized logging with Elastic Stack

Hands-on Lab: Logging

### **Monitoring. Prometheus/Grafana**

- Kubernetes metrics
- Metrics Terminology
- Collecting metrics
- Using Prometheus for monitoring
- Deploying Prometheus
- Using Grafana for time series analytics
- Grafana + Prometheus
- Using Elastic Stack for monitoring

Hands-on Lab: Monitoring

### **Advanced Pod Scheduling**

- nodeName and nodeSelector
- Affinity and Anti-Affinity
- Terms and Expressions
- Node Affinity Operations
- Taints and Tolerations
- Cordon and Drain
- Resource Control
- Requests and Limits

Hands-on Lab: Advanced Pod Scheduling