Course : Kubernetes, container orchestration

Practical course - 2d - 14h00 - Ref. UOC
Price : 1650 € E.T.

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BEST ActionCo

Formation éligible au financement Atlas

À l'issue de la formation, le participant sera capable de mettre en œuvre la plateforme open source Kubernetes pour automatiser le déploiement, la montée en charge et la mise en œuvre de conteneurs d'applications.

Teaching objectives

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

- Understand how Kubernetes works and its various components
- Install, configure and administer Kubernetes
- Automatically place containers on a cluster or in the cloud
- Automate deployment of containerized applications
- Defining best practices for working with Kubernetes

Intended audience

Administrators, project managers, developers.

Prerequisites

Mastery of Linux systems, TCP/IP networks and the concepts of virtualization and containers. General knowledge of containerization (Docker or CoreOS).

Course schedule

1 Introduction to Kubernetes

- Evolving Docker/Kubernetes relationships.
- The CRI/CNI/Kubernetes package.
- Installation solutions (MiniKube, On-Premise, etc.).
- Accessing the Kubernetes cluster: CLI (kubectl), GUI (dashboard) and API.
- Manual deployment and publication.
- Detail and introspection of the deployment.

Hands-on work

Deployment of a test platform.

PARTICIPANTS

Administrators, project managers, developers.

PREREQUISITES

Mastery of Linux systems, TCP/IP networks and the concepts of virtualization and containers. General knowledge of containerization (Docker or CoreOS).

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.

2 Kubernetes architecture

- Master node components: API server, scheduler, controller manager, etc.
- Node architecture: Kubelet, CRI containerd, Kube-proxy.
- Kubernetes objects: volume, service, pod, etc.
- Stateful object, stateless object.
- Deployment solution.

Hands-on work

Use of deployment.

3 Operating Kubernetes

- Manage the REVISION of a deployment object.
- Service types.
- Labels and choosing a node for deployment.
- Affinity and anti-affinity.
- Daemons set, health check, config map and secrets.
- StorageClass & Persistent Volume/Persistent Volume Claim.

Hands-on work

Database and application deployment.

4 Kubernetes in production

- Reverse proxy administrable traefik & Ingress routing.
- RESOURCES/LIMITS/REQUESTS components.
- Autoscaling an application.
- Service Discovery (env, DNS).
- Namespaces and quotas.
- Access management.
- High availability and maintenance mode.

Hands-on work

Deployment of a stateless application, multiple front-end access and scalability management.

5 Deploying a Kubernetes cluster

- Preparing knots.
- Deployment of a minimum cluster in line with best practices.
- Deployment of a network addon.
- Cluster connection.
- Cluster administration.

Hands-on work

Deploying a production cluster.

Times

Courses take place from 09:00 to 12:30 and from 14:00 to 17:30.
Participants may arrive beginning at 08:45. Breaks and lunches are complimentary.
For four- and five-day hands-on courses, sessions end at 16:00 on the last day of the course, regardless of the teaching mode..

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.

Dates and locations

REMOTE CLASS
2026 : 11 May, 11 June, 2 July, 14 Sep., 12 Oct., 2 Nov., 30 Nov.

PARIS LA DÉFENSE
2026 : 11 June, 2 July, 14 Sep., 12 Oct., 2 Nov., 30 Nov.

LYON
2026 : 11 June, 14 Sep., 30 Nov.

AIX-EN-PROVENCE
2026 : 8 June, 14 Sep., 30 Nov.

BORDEAUX
2026 : 8 June, 14 Sep., 30 Nov.

DIJON
2026 : 8 June, 12 Oct.

LILLE
2026 : 8 June, 14 Sep., 30 Nov.

MONTPELLIER
2026 : 8 June, 12 Oct.

NANTES
2026 : 2 July, 12 Oct.

RENNES
2026 : 8 June, 12 Oct.

SOPHIA-ANTIPOLIS
2026 : 8 June, 12 Oct.

STRASBOURG
2026 : 8 June, 14 Sep., 30 Nov.

TOULOUSE
2026 : 8 June, 14 Sep., 30 Nov.

BRUXELLES
2026 : 8 June, 14 Sep., 30 Nov.

LUXEMBOURG
2026 : 14 Sep., 30 Nov.