MFE-IT

Reference: 2B/EN/KA

Advanced Kubernetes and CI/CD Training Course

Customised Pipelines, Scalable Architectures and End-to-End Deployments

Duration: 5 Days | Hours: 35 h

Remote · Sessions guaranteed from 1 registrant · 60% hands-on practice

DESCRIPTION

Mastering containerised orchestration is not just about YAML and pods. It is about the ability to design a robust, secure pipeline tailored to your specific business needs — combining Kubernetes operators, GitOps deployment, observability and a clear security posture across multiple clusters and environments.

This advanced Kubernetes training course offers personalised support to help you integrate CI/CD best practices into your ecosystem (GitLab, Jenkins, GitHub Actions, ArgoCD), deploy intelligently on complex clusters and secure your production environment. You will leave with the ability to architect production-grade Kubernetes platforms that hold up to enterprise scrutiny.

LEARNING OBJECTIVES

By the end of this training course, participants will be able to:

- Deepen your understanding of Kubernetes in complex scenarios: multi-namespaces, secrets, advanced ingress
- Create customised CI/CD pipelines tailored to your tools (GitLab, Jenkins, GitHub, ArgoCD)
- Integrate observability, security and validation tools into the delivery cycle
- Implement GitOps-style orchestration
- Deploy dynamically with Helm, Kustomize or other templating tools
- Secure your flows (RBAC, network policies, image scanning)

PREREQUISITES

- Solid experience with Kubernetes in a real-world environment
- Proficiency with YAML files, kubectl, Helm or equivalent
- Good understanding of CI/CD principles and Git pipelines

> *Because each participant is unique, a personalised interview is systematically organised in advance with our expert to design a training programme perfectly aligned with their objectives, level and professional challenges.*

TARGET AUDIENCE

Experienced technical teams. The training is adapted to your environments and challenges: cloud, on-premise or hybrid.

DETAILED PROGRAMME

> The training alternates between theoretical input and hands-on practice (approximately 60% of the time). Modules are built around practical exercises based on real-world business use cases.

Module 1 – Targeted Reminders: Advanced Kubernetes

- Namespaces, network policies, RBAC and secrets
- Custom Resource Definitions (CRDs) and operators
- Probes, autoscaling (HPA, VPA) and resource management

Module 2 – Templating and Dynamic Deployments

- Helm: charts, values and repositories
- Kustomize: overlays and patches
- Application packaging and versioning

Module 3 – GitOps and Advanced CI/CD

- GitLab CI, Jenkins, ArgoCD and GitHub Actions
- GitOps principles: Git as source of truth
- Continuous deployment and drift detection

Module 4 – Security and Observability

- Container security: Trivy, Kyverno, OPA
- Logs, metrics and alerting with Prometheus, Grafana, Loki
- Image scanning and supply chain security

Module 5 – Project Customisation

- Analysis of your pipelines and current architecture
- Adjustment to your specific requirements
- Migration or refactoring of existing practices

Module 6 – Deployment of Complex Services

- Microservices and containerised databases
- API Gateway and ingress patterns
- External authentication: OAuth2, OIDC

TEACHING METHODS

Format and Delivery

The training is delivered remotely via an interactive virtual classroom. It can also be delivered on-site, with content customised to match the needs of your professional project. The theory/practice split is approximately 40%/60%.

MFE-IT Ultra-Personalised Format

Each session accommodates between 1 and 3 participants, ensuring highly individualised support. A preliminary interview allows us to tailor the content to each participant's profile. Inter-company sessions are guaranteed from just 1 registrant (except in cases of force majeure).

Skills Assessment

Throughout the training, the trainer assesses participant progress through multiple-choice questions, role-playing exercises and hands-on work. At the end, a certificate of achievement is issued to each participant.

Post-Training Support

For one month following the training, each participant can contact MFE-IT trainers with questions about implementing acquired knowledge. A response is provided by email or telephone within 48 working hours.

Accessibility

MFE-IT is committed to welcoming people with disabilities. Contact: contact@mfe-it.com.

PRACTICAL INFORMATION

Trainer Resources

- Structured demonstrations aligned with the detailed programme
- Exercise briefs and solutions throughout the training
- A ready-to-use technical environment for practical workshops
- Trainer validation of acquired knowledge at the end of each workshop
- Digital reference documents

Certification and Validation

At the end of the training, a certificate is sent by email specifying the objectives, nature, duration and assessment results. A completion certificate can also be provided on request.

Benefits for Participants

- Train from your workplace or home, with no travel required
- Benefit from an expert trainer-consultant on the subject
- Enjoy an ultra-personalised format (1 to 3 participants)
- Continue training even in the event of unforeseen circumstances

Benefits for the Organisation

- Optimise the training budget by reducing travel and accommodation costs
- Offer quality training to all employees, regardless of location
- Reduce absence time linked to travel
- Support team upskilling in all contexts