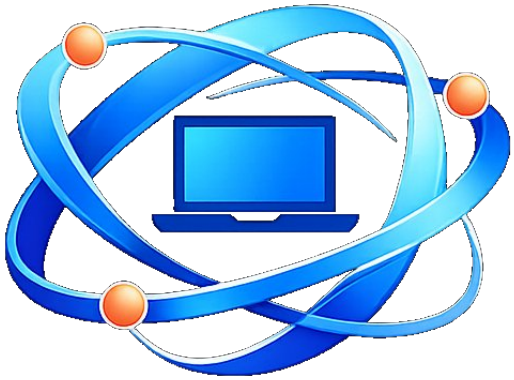

MFE-IT

Reference: 2B/EN/SMK

Spring Microservices and Kubernetes Training Course

Build Modern, Scalable and Cloud-Native Microservices Architectures

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Duration: 5 Days | Hours: 35 h

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

DESCRIPTION

In modern projects, the transition to microservices architecture is a real driver of agility and scalability — but also a major technical challenge. This training course guides you step by step through the implementation of a modular, resilient and controllable distributed system in production, using Spring Boot, Spring Cloud, Docker and Kubernetes.

You will learn how to divide, orchestrate, secure and connect your services while meeting performance, maintenance and continuous integration requirements.

LEARNING OBJECTIVES

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

- Design a modular microservices architecture with Spring Boot
- Implement communication between services (REST, gRPC, message broker)
- Integrate Spring Cloud components: service discovery, gateway, config server, resilience
- Containerise and deploy your services with Docker and Kubernetes
- Manage the lifecycle of applications in production (scalability, rolling updates, monitoring)
- Integrate microservices into a CI/CD pipeline

PREREQUISITES

- Proficiency in Java and Spring Boot
- Basic knowledge of containers (Docker)
- Understanding of CI/CD and application deployment is an asset

> *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

Full-stack developers, DevOps engineers and architects who want to build robust and scalable systems on the JVM.

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 – Microservices architecture: principles and breakdown

- Domain-Driven Design and functional decoupling
- Independent services and bounded contexts
- Principles of resilience

Module 2 – Service development with Spring Boot

- Creating REST APIs with validation and mapping
- Code structuring and project layout
- Unit and integration testing

Module 3 – Cross-service communication and coordination

- REST, Feign clients and Eureka
- RabbitMQ and Kafka for messaging
- API Gateway and circuit breaker pattern with Resilience4j

Module 4 – Centralised configuration and discovery

- Spring Cloud Config
- Eureka Server and service registration
- Internal load balancing strategies

Module 5 – Containerisation and Kubernetes orchestration

- Dockerfile and image building
- Helm charts for templating
- Deployment on Kubernetes (local or cloud), readiness/liveness probes

Module 6 – Monitoring, security and CI/CD

- Spring Actuator with Prometheus and Grafana
- Security with Spring Security and JWT
- Deployment with GitLab CI and ArgoCD

Module 7 – End-to-end case study

- Development, containerisation and deployment
- Scaling a complete mini microservices system
- Operational review and lessons learned

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