

# Spring Cloud Training

## COURSE CONTENT

### GET IN TOUCH



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## About Multisoft

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## About Course

Spring Cloud Training by Multisoft Systems is designed to help developers, architects, and software professionals master the modern world of microservices and cloud-native application development. As organizations shift from monolithic systems to distributed architectures, Spring Cloud has become a leading framework for building resilient, scalable, and manageable services.

## Module 1: Introduction to Microservices & Spring Cloud

- ✓ Understanding monolithic vs. microservices architecture
- ✓ Need for microservices in modern applications
- ✓ Overview of Spring Framework and Spring Boot
- ✓ Role of Spring Cloud in distributed systems
- ✓ Cloud-native principles and 12-factor apps

## Module 2: Spring Boot Fundamentals

- ✓ Building microservices with Spring Boot
- ✓ REST controllers, configurations, and packaging
- ✓ Externalized configuration and environment profiles
- ✓ Dependency management with Maven/Gradle

## Module 3: Service Discovery & Registration (Eureka)

- ✓ Introduction to Netflix OSS
- ✓ Setting up Eureka Server and Eureka Client
- ✓ Service registration and lookup
- ✓ Load balancing using Ribbon

## Module 4: Centralized Configuration Management

- ✓ Introduction to Spring Cloud Config Server
- ✓ Storing configurations in Git
- ✓ Managing configuration across environments
- ✓ Refresh Scope & Dynamic configuration updates
- ✓ Handling secure configs and encryption

## Module 5: API Gateway & Intelligent Routing

- ✓ Overview of Spring Cloud Gateway
- ✓ Routing, filters, and predicates

- ✓ Implementing API Gateway for microservices
- ✓ CrossCutting concerns: Logging, validation, security

## Module 6: Client-Side Load Balancing & Resilience

- ✓ Ribbon and LoadBalancerClient
- ✓ Introduction to Hystrix and Circuit Breaker pattern
- ✓ Rate limiting, retry patterns, and timeouts
- ✓ Resilience4j for fault-tolerant microservices

## Module 7: Distributed Tracing & Monitoring

- ✓ Introduction to Spring Cloud Sleuth
- ✓ Trace IDs, span IDs, and request tracking
- ✓ Integrating Zipkin for distributed tracing
- ✓ Real-time monitoring and log correlation

## Module 8: Messaging & Event-Driven Microservices

- ✓ Introduction to messaging patterns
- ✓ Spring Cloud Stream overview
- ✓ Working with Kafka/RabbitMQ
- ✓ Event publishing, processing, and consumption

## Module 9: Security in Microservices

- ✓ OAuth2 fundamentals
- ✓ Securing microservices with Spring Security
- ✓ Token-based authentication and JWT
- ✓ Role-based access control
- ✓ API Gateway security best practices

## Module 10: Containerization & Cloud-Native Deployment

- ✓ Introduction to Docker and containerization
- ✓ Packaging Spring Cloud microservices using Docker
- ✓ Container orchestration with Kubernetes
- ✓ Deploying microservices on cloud platforms (AWS/Azure/GCP)

## Module 11: Real-World Microservices Design Patterns

- ✓ Saga pattern
- ✓ API aggregation
- ✓ Distributed caching
- ✓ Config best practices
- ✓ Observability and performance tuning