

# € TRAINING

Microservice Architecture





# Microservice Architecture

## Introduction:

Microservice architecture is a software development approach that allows complex applications to be broken down into smaller, independent services that can be developed, deployed, and scaled independently. This 5-day training course will provide participants with a comprehensive understanding of microservice architecture and its benefits, along with practical examples of how to design, develop, and deploy microservices.

## Course Objectives:

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

- Understand the basics of microservice architecture
- Design and develop microservices using best practices
- Implement inter-service communication in microservices
- Deploy and manage microservices in a production environment
- Use tools and techniques for monitoring and troubleshooting microservices

## Targeted Audience:

This course is designed for software developers, software architects, and IT professionals who want to learn about microservice architecture and its implementation.

## Course Outlines:

### Unit 1: Introduction to Microservice Architecture

- Overview of Microservice Architecture
- Advantages and disadvantages of Microservices
- Microservices vs Monolithic Architecture
- Microservices Principles
- Domain-Driven Design DDD and Microservices

### Unit 2: Microservice Design and Development

- Microservice Design patterns
- Implementing Microservices in practice
- Developing Microservices with Spring Boot
- Building Microservices with Node.js
- Testing and Debugging Microservices

### Unit 3: Inter-Service Communication in Microservices

- Microservices Communication Patterns
- Service Discovery and Registration
- Implementing API Gateway in Microservices
- Event-Driven Architecture EDA



- Asynchronous Messaging and Data Integration in Microservices

#### Unit 4: Microservice Deployment and Management

- Microservices Deployment Strategies
- Deploying Microservices with Docker and Kubernetes
- Microservices Orchestration
- Service Mesh and Microservices
- Microservices Security

#### Unit 5: Monitoring and Troubleshooting Microservices

- Monitoring Microservices with Prometheus and Grafana
- Distributed Tracing with Jaeger and Zipkin
- Microservices Performance Tuning
- Microservices Debugging and Troubleshooting
- Best Practices for Microservices Development and Deployment