

KOENIG SOLUTIONS · COURSE OUTLINE

Arcitura Certified Microservices Architect

Learn to design, containerize, secure and deploy microservice architectures, from SOA fundamentals to orchestration and service mesh patterns.

10 Days

DURATION

5

MODULES

68

TOPICS

COURSE OVERVIEW

This course covers the foundations of service-oriented architecture, services and microservices, including strategic drivers, design paradigms and service layers. It then examines core microservice technology concepts such as REST, SOAP, WS-* technologies, JSON and XML, and cloud computing models including IaaS, PaaS and SaaS. Building on this, it addresses fundamental and advanced microservice architecture and containerization, covering design principles, container engines, scaling, DevOps practices, service composition, security, resiliency, orchestration and service mesh architecture. A lab component applies these concepts through case study exercises covering design, containerization, scaling, security, testing and monitoring.

WHO THIS COURSE IS FOR

Microservices Architects

Solution Architects

DevOps Engineers

Cloud Engineers

Software Developers

Systems Integrators

PREREQUISITES

- Working Experience on API and Microservices

LEARNING OBJECTIVES

- Explain the business and technology drivers behind SOA and microservices
- Describe fundamental characteristics of service-oriented architecture
- Compare REST, SOAP and WS-* service technology approaches
- Identify public, private and hybrid cloud deployment models
- Apply microservice design principles to address common design challenges
- Implement containerization using container engines, images and networking
- Analyse microservice security controls and resiliency patterns
- Plan container orchestration and service mesh deployments

5 Modules, 68 Topics

01

Fundamental SOA, Services & Microservices

TOPICS

- Business and Technology Drivers for SOA, Services, and Microservices
- Strategic Goals and Benefits of Service-Oriented Computing
- Introduction to Services and Microservices
- Fundamental Characteristics of a Service-Oriented Architecture
- Service-Orientation as a Design Paradigm
- Introduction to Service Layers, Service Models, and Service Compositions
- Service Inventories, Service Layers, and Service API Governance and Management
- Introduction to Common Service Technologies
- Introduction to Cloud Computing and Cloud Services
- Adoption Impacts and Requirements

02

Microservice Technology Concepts

TOPICS

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|---|--|
| ■ Comparing Service Implementation Mediums | ■ Hypermedia and Late Binding |
| ■ Service Roles and Service Agents | ■ Basic WSDL and SOAP Concepts |
| ■ Message Exchange Patterns and Service Activities | ■ WS-* Technologies |
| ■ Basic XML, XML Schema, JSON, and JSON Schema Concepts | ■ Web Service Contracts, Messaging, and Registries |
| ■ HTTP Methods, Response Codes, and Headers | ■ Cloud Computing Concepts |
| ■ Basic REST Service Concepts | ■ Public, Private, and Hybrid Clouds |
| | ■ IaaS, PaaS, and SaaS |

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Fundamental Microservice Architecture & Containerization

TOPICS

- Introduction to Microservice Architecture
- Common Microservice Design Challenges
- Microservices and Design Granularity
- Microservice Guiding Design Principles
- Introduction to Containerization
- Containerization vs. Virtualization
- Fundamental Container Architecture Elements
- Container Engines, Build Files, Images, and Networking
- Microservice Automation, Logging, and Monitoring
- Microservice Instance Registration
- Scaling Technology, Basic Scalability Types, and Mechanisms
- Technology Drivers for Cloud-based Microservice Deployments
- Micro Task Abstraction and Segregation
- Rich Containers and Logical Pod Containers
- DevOps Practices and Benefits
- DevOps Stages and Toolchains
- Domain-Driven Design and Microservices

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Advanced Microservice Architecture & Containerization

TOPICS

- Microservice Compositions and Compositor Services
- Autonomous Proxy Services
- Shared Isolated Databases
- Microservice Layers and Isolation Levels
- Pre-Defined Data Views
- Microservice Instance Registrations
- Event-Driven Messaging
- Microservice Data Processing
- Microservice State Management and Caching
- Microservice Security Architecture
- Microservice Security Controls and Patterns
- Microservice Testing and Test Automation
- Microservice Resiliency and Reliability
- Dynamic Scalability Models
- Microservice Deployment and Orchestration
- Container Orchestration Platforms
- Service Mesh Architecture
- Microservice Observability and Monitoring

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Microservice Architecture & Containerization Lab

TOPICS

- Case Study Backgrounds (e.g., “Cube Cars” and “XYZ Travel Agency”)
- Lab Exercise Scenario and Requirements
- Microservice Design and Architecture Exercises
- Containerization and Deployment Exercises
- Microservice Scaling Architecture
- Redesigning Microservices
- Performance Optimization
- Security Implementation
- Testing and Automation
- Monitoring and Logging Implementation

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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