Service-Oriented Architecture (SOA): A Comprehensive Hands-On Introduction - 3 Days

Course 424 Overview

You Will Learn How To

- Design modern SOA and apply SOA-specific methodologies, technologies and standards
- Evaluate and analyse your organisation to map it as a "set of services"
- Develop service architectures using the Service-Oriented Modelling Framework (SOMF)
- Convert logical designs into specifications to drive any development environment
- Orchestrate services to create new applications by leveraging your SOA

Who Should Attend

Anyone interested in designing an SOA and its components, including analysts, strategists and software architects. A general understanding of software development is required.

Hands-On Exercises

- Mapping an organisation as a set of services
- Driving service design from business requirements
- Modelling the SOA messages from business use cases
- Orchestrating services in your SOA to create new applications
- Designing composite services by applying the optimal composition style

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Course 424 Outline

Overview of SOA

- Integrating business processes with SOA
- Deriving services from the organisation's purpose
- Merging SOA design and project management processes

Architecting Services

Service-Oriented design process

- Progressing from conceptual to buildable services
- Structuring business requirements into an SOA
- Aligning services with the organisation

Following an architectural road map

- Working forward to deliver applications
- Realising the key SOA patterns

Mapping Services to Your Organisation

Discovering conceptual services

- Defining the service domain
- Drilling down into atomic services
- Consolidating into composite services

Refining the conceptual design

- Identifying the underlying resource for the service
- Leveraging legacy assets for inclusion in the SOA
- Selecting cross-boundary services

Modelling Services

Developing logical services

- Integrating consumers
- Exploiting the five composition styles
- Bus
- Hierarchical
- Star
- Network
- Circular

Achieving effective designs

- Supporting loose coupling
- Establishing relationships
- Handling sequential processing

Addressing the business needs

- Designing for reuse and integration
- Aligning services to improve responsibility

Factoring in brokers

- Identifying "services for services"
- Leveraging the seven categories of brokers

Converting Designs into Specifications

Specifying operations

- Deriving operations from use cases
- Identifying design flaws early to take corrective action
- Focusing on resources rather than actions

Communicating the specification

- Building on the three principles of contract design
- Expressing your design as a specification

Messaging for services

- Evolving messages from the SOA design
- Formatting the operation's messages

Finalising the service design

- Specifying operations and endpoints
- Binding messages to operations

Transitioning from Design to Implementation

Planning for implementation

- Enabling parallel development
- Optimising infrastructure for SOA scenarios
- Dealing with long-running business processes

Building services

- Creating services from the SOA modelling process
- Developing service consumers
- Assembling services to deliver new functionality

Avoiding Common Problems

Applying "Lessons Learned" to improve designs

- Facilitating asynchronous services
- Dealing with change and growth

Ensuring performance

- "Chatty" vs. "Chunky" messages
- Avoiding the failures of applying OO design to services

Managing the SOA Environment

Instituting governance

- Advancing up the Services Integration Maturity Model
- Leveraging Enterprise Services Buses (ESB)