

## Understanding SOA: A Technical Overview

### Course Summary

#### Description

This course provides coverage of practical issues for enterprise applications relative to SOA. The goal of this course is to empower students with the knowledge and foresight they need to lead and participate in the implementation of realistic SOA-based business application projects. In addition, there is an extensive review of topics such as Enterprise Service Bus (ESB), the Business Process Execution Language (BPEL), SOAP, Web Services Description Language (WSDL), and Web Services.

#### Objectives

At the end of this course, students will be able to:

- Explain the concepts behind a SOA
- Discuss how a common framework is embodied in both a technical infrastructure and an organizational entity in the form of governance
- Understand the history of services-oriented architecture and what design processes led up to SOA
- Discuss the challenges to adopting SOA in the enterprise
- Understand the various standards, conventions, and best practices in implementing and supporting SOA
- Explain how Enterprise Application Integration affects the reuse of existing applications
- List the various roles involved in Service-oriented Analysis and Design (SOAD)
- Understand the importance of business process modeling
- Relate a SOA maturity model and adoptance process to where an organization currently is and where they are trying to go
- Discuss business process analysis and its relation to BPEL
- Understand the difference between OO analysis and design and SOA analysis and design
- Compare SOA best practices
- Understand the responsibilities crucial to governance
- Explain what an Enterprise Service Bus is and its relationship to SOA
- Discuss ESB security and roles
- Understand the relationship between SOA and web services.
- Discuss how the concept of event-driven processing relates to business processes, workflow, and service orchestration

#### Topics

- SOA Overview
- SOA: the Business Proposition
- Service-oriented Architecture
- Modeling Business Processes
- Service-oriented Analysis and Design
- SOA Best Practices
- Common Framework: Governance
- Common Framework: Infrastructure
- Web Services
- Mapping Frameworks to SOA

## **Understanding SOA: A Technical Overview**

### **Course Summary (cont'd)**

#### **Audience**

Students should have a minimum of 2 years working knowledge in the IT industry. A basic understanding of software development and web-based applications is necessary. Actual development working knowledge is helpful but not necessary.

#### **Prerequisites**

This an overview level SOA training course, designed for people who need to understand and manage existing or upcoming SOA projects. Experience with managing and working with enterprise applications will be helpful. We will explore the terminology, the specification, the processes and technologies specific to SOA.

#### **Duration**

One day

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### Course Outline

- I. SOA Overview**
  - A. Service Defined
  - B. SOA Defined
  - C. Organizational Framework
  - D. Technical Framework
  - E. Orchestration
  - F. Reusability
  - G. Services vs. SOA
  - H. SOA in the past
  - I. What is new in SOA
  - J. Business impact/ROI
  - K. Myths/Reality
  - L. Adoption issues
- II. SOA: the Business Proposition**
  - A. Drivers for business-orientation
  - B. Accessible Services and Data
  - C. Leveraging business processes
  - D. Leveraging legacy applications
  - E. Challenges to adoption
  - F. Role of governance
  - G. Role of an ESB
  - H. SOA Maturity Model
  - I. SOA Adoption
- III. Service-oriented Architecture**
  - A. Principles
  - B. Business Process-driven development
  - C. SOA team
  - D. Messaging
  - E. Orchestration
  - F. Business modeling
  - G. Integrating legacy applications
  - H. Extending the lifetime of legacy apps
  - I. Governance
  - J. What needs to be governed and what is already governed?
  - K. Governing IT vs. SOA
  - L. Continuous improvement
  - M. Strategies
- IV. Modeling Business Processes**
  - A. Top-down Process Design
  - B. Bottom-up Process Design
  - C. WSDL as Service Description
  - D. Identifying services
  - E. Identifying messages
- V. Service-oriented Analysis and Design**
  - A. The SOAD Process
  - B. Analysis
  - C. Design
  - D. Implementation
  - E. Process
- VI. SOA Best Practices**
  - A. Planning
  - B. Standardizing
  - C. Designing
  - D. Managing
  - E. Implementing
- VII. Common Framework: Governance**
  - A. Governance Overview
  - B. Importance
  - C. Responsibilities
  - D. Implementation
- VIII. Common Framework: Infrastructure**
  - A. Overview
  - B. Role in SOA
  - C. Security Issues
  - D. Scenarios and Analysis
  - E. ESB Issues
- IX. Web Services**
  - A. XML: the Technical Foundation
  - B. W3C standards
  - C. Binding: SOAP/REST
  - D. Description: WSDL
  - E. Discovery
  - F. Tools
  - G. Implementation technologies
- X. Mapping Frameworks to SOA**
  - A. SOA Concepts and .Net
  - B. SOA Concepts and JEE

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