# Introduction to SOA Training (1 Day)

This course provides an introduction to the concepts of Service Oriented Architecture. This course discusses some of the key issues facing many organizations, especially dealing with integration among disparate systems. Participants will learn how SOA addresses these issues and its many other benefits.

The course also discusses related technologies such as Enterprise Service Bus and it's relationship with SOA. The participants then look at the various SOA patterns that can be used as a basis for developing SOA applications. Participants also go through case studies to better visualize the role of SOA.

**Topics**
- Case for Change
- SOA Fundamentals
- SOA Case study
- Enterprise Service Bus (ESB) and SOA Patterns
- SOA Benefits and Advantages

**What you will learn**
After completing this course, the student should be able to:

- Describe the fundamentals of SOA
- Understand the business advantages of SOA
- Explain the SOA runtime elements
- Describe the concept of an Enterprise Service Bus
- Understand the role of Business Process Execution Language (BPEL) in SOA
- Identify features of typical SOA Framework Products
- Patterns mapping to SOA

**Audience**
J2EE developers, architects, project leaders and project managers who will like to get an understanding of SOA and it's advantages.

**Prerequisites**
No specialized technical pre-requisites are required for this course; however a basic knowledge in IT systems and distributed computing is expected.

**Outline of Introduction to SOA Training**

**1. SOA Fundamentals**
- Objectives
- Defining Service Oriented Architecture (SOA)
- Putting SOA in Context
- SOA As an Alignment Strategy
- The SOA Umbrella
- What s a Service?
- Service Actors
- Serving Up SOA
- Business Process Management
- BPM & Workflow
- SOA Governance
- SOA Governance Model
- SOA Job Role Impact
- Services Please!
- SOA Re-Organization
- What Makes a Good Design?
- Is This a New Concept?
- Service Orienting the Enterprise
- Service Oriented Thinking
- SOA Is Perfect NOT!
- Service Characteristics
- When Do I Need a Service?
- About Services in SOA
- Contract-Driven Software
- SOA Standards

**2. Layers of Services**
- Objectives
- What Is Layering?
- SOA Layers
- Common Layers
- Auxiliary Layers
- Digesting the Layers
- The Application Service Layer
- The Business Service Layer
- The Orchestration Layer
- Layering Rules of Thumb
- Scope of a Service
- SOA User Interface
- Portal Site's Context Awareness
- Web 2.0 Data Aggregation
- Summary

### 3. SOA Value Proposition
- Objectives
- The SOA Value Proposition
- Reducing Integration Expense
- Integration Costs Illustration
- Ripple effect of changes
- The Value of SOA Layering
- SOA Reduces Integration Costs
- Increasing Asset Reuse
- SOA Economics/ROI
- Asset Reuse Illustration
- Service Reuse v. Object Reuse
- Increasing Business Agility
- Business Agility Illustration
- Traditional EAI Approach
- Problems with Traditional EAI Approach
- Change Flow Using Legacy Approach
- SOA Agility
- Build the Services
- Build the Process
- We Can Easily Change the Process
- Reducing Business Risk
- Risk reduction illustration
- SOA Eases Compliance Risk
- Other Advantages
- Business Advantages
- Hasn t This Been Said Before?
- Hasn t This Been Said Before?
- ROI Quantification Hurdles
- Real World SOA Example 1
- Real World SOA Example 2
- Real World SOA Example 3
- Real World SOA Example 4

### 4. Enterprise Service Bus (ESB)
- Objectives
- SOA and the ESB Pattern
- Loose Coupling
- Service Invocation
- Business Process
- Data Integration
- Enterprise Service Bus (ESB)
- Legacy System Integration
- Unsupported Protocol
- The Role of ESB in SOA
- ESB: Software Artifacts
- Business Process
- Business Process: Example

- Minimum ESB Capabilities: Integration
- Minimum ESB Capabilities: Communication
- Minimum ESB Capabilities: Service Interaction
- Minimum ESB Capabilities: Management
- Security and ESB

## 5. SOA Infrastructure and Tools
- SOA Infrastructure and Tools
- Network Appliances
- Enterprise Service Bus
- Service Container
- Business Rules Engine
- Business Activity Monitoring
- Service & Policy Management
- Business Process Engine
- Service Registry
- Service Repository
- Development Tools
- Tool Combinations
- What is the minimum?

## 6. Governance Fundamentals
- The Strategic Role of IT
- Governing IT
- IT Infrastructure Library (ITIL)
- ITIL: Managing IT Activities
- ICT Infrastructure Management (ICTIM)
- ICTIM Processes
- Control Objectives for Information and related Technology (COBIT)
- Need for SOA Governance
- SOA Governance
- SOA Governance Adoption
- Key Governance Relationships
- SOA Governance Elements
- SOA Governance Procedures
- Recommended Procedures
- More Recommended Procedure
- SOA Governance Policies
- Enterprise Policies
- Business Policies
- Service Policies
- SOA Governance Metrics
- More SOA Governance Metrics
- Some Best Practices
- Relevant Standards Work
- OASIS SOA-RM
- Reference Model in Context
- OASIS SOA-RA

## Appendix A. Glossary
- Glossary

## Appendix B. Introduction to Web Services
- Objectives
- A Conceptual Look at Services
- Defining Services
- Service Communication Analogy
- Three Key Service Questions
- Connecting the Dots
- SOA: Runtime Implementation
- What Is a Web Service?
- Enterprise Assets as Services
- Typical Development Workflow
- Advantages of Web Services
- Web Service Business Models
- Example: Internal System Integration
- Example: Business Process Externalization
- Binding via SOAP
- SOAP in Protocol Stack
- SOAP Structure
- SOAP Message Architecture
- Applying SOAP
- Interface via WSDL
- WSDL Structure
- Applying WSDL
- Locating a Service
- UDDI Overview
- UDDI Terminology
- UDDI Structure
- Applying UDDI
- WS-I Overview
- WS-I Deliverables