

Course 417:
Introduction to Service Oriented Architecture (SOA)
and XML Web Services
(2 days)

This demonstration course provides in-depth information of what a service oriented architecture (SOA) is and why a SOA can result in more timely, resource-efficient applications that are tied closer to the needs of the business. SOAs can be implemented through many technologies, but most commonly SOAs are implemented using web services. The course describes what a web service is, the protocols involved in creating, defining and registering web services and how a set of web services can be used to refactor existing applications or to tie together disparate systems.

The course provides an overview of the SOA design process, starting from the use case and decomposing the use case into services. These services may be wrappers around legacy code or simplified access points into complex enterprise systems. Services also commonly include cost-effective or business-critical functionality that is available outside the organization.

Who can benefit?

This is an in-depth course, designed for managers and business analysts who wish to incorporate integration architectures using XML web services or some other service oriented architecture. This course steps the attendees through the design of a SOA, but does not provide technical details on the implementation itself. Architects and developers who require more technical detail should consider ROI's 4-day Course 418: Implementing a SOA with XML Web Services in Java

Learning Objectives

Students will leave this course armed with the skills to:

1. Design a Service Oriented Architecture with XML Web Services
2. Understand the essential ingredients (SOAP, WSDL) of a Web Service
3. Design WSDL-first and code-first web services
4. Design synchronous and asynchronous web service clients
5. Interpose custom SOAP handlers on client-side and server-side
6. Understand the need for orchestrating web services
7. Identify the role of WS-Trust, WS-Security, WS-Reliability and MTOM



Course Outline

Chapter 1: Introduction to SOA and Web Services

- What is SOA?
- Why SOA?
- SOA Implementation Options
- SOA in the Real World
- **Demo: The case study**

Chapter 2: Designing a SOA with XML Web Services

- Designing a SOA Integration Architecture
- Implementing a SOA with Web Services
- What SOA does not provide
- Business Process Modeling with SOA
- **Demo: Designing Integration Layer**

Chapter 3: Creating Web Services

- Role of SOAP in Web Services
- Role of WSDL in Web Services
- Deploying a WSDL
- **Demo: Write and deploy WSDL for a web service**
- Importing WSDL and generating a web service endpoint
- **Demo: Create web service from WSDL**
- Code-first web services
- **Demo: Exposing a class as a web service**

Chapter 4: Building Web Service clients

- Generating client code from WSDL
- Customizing the created client code
- Synchronous, polling and asynchronous services
- **Demo: Invoking web service operation**
- Asynchronous clients
- **Demo: Building an asynchronous client**
- Orchestrating web services in Java
- **Demo: Orchestrating web services using Java**
- Orchestrating web services with BPEL

Chapter 5: Security, Reliability and Addressing

- Message optimization (MTOM and XOP)
- Reliability, addressing
- Security (WS-Security, WS-Trust, X509)
- Enabling and providing user authentication

Please contact your ROI representative to discuss course tailoring!