

Core Web Services and SOA for J2EE Developers

Course Summary

Description

SOA and Web Services represent a groundbreaking evolution in distributed computing. The concepts are not altogether new, but the application of them, and the unanimous acceptance of core standards like HTTP, XML, SOAP, WSDL, and the various WS-* policies, has paved the way for XML Web Services and service-oriented architectures. This course explores what separates an ad hoc set of web services (NOT SOA) from a managed, vibrant, reusable catalog of enterprise services (definitely SOA), providing an overview of the entire spectrum from the promise of cloud computing to the grit of XML content. Students will gain critical hands-on experience with implementations of the Java XML and Web Service APIs including JAXP, JAXB, JAX-WS, WSEE, and XWSS. In terms of Java, the focus is on using the JAX-WS and JAXB APIs and implementations as the basic for generating and deploying web services and service clients. An overarching concern related to services is security. Various aspects of security are woven into this course, allowing students to see the entire spectrum of issues as well as solutions. These include encryption, digital signatures, authentication and authorization assertions, and recognized application security issues such as Cross-Site Scripting and Injection attacks.

Objectives

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

- Understand and apply the basic concepts of SOA to the identification and design of web services
- Understand and intelligently discuss Web Services and the core technologies involved
- Understand and apply the basic concepts of SOA to the identification and design of web services
- Appreciate the concept of layered services including orchestration
- Understand and intelligently discuss Web Services and the core technologies involved
- Design, develop, and deploy real-world JEE Web Services
- Expose existing Java components as XML Web Services
- Write Java components that access remote Web Services hosted by a third party
- Read and understand a WSDL document
- Parse, process, and respond to a SOAP message
- Understand the concepts behind REST and implement a REST-based web service
- Implement handlers to inject cross-cutting solutions for security, logging, auditing, and other needs
- Work with WS-Security to protect content, resources, and other asset

Topics

- 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
- Mapping Frameworks to SOA
- Services via the Web
- Web Services Overview
- Web Services, Java, and J2EE
- Web Services Quickstart
- XML, Namespaces, & Schema
- XML in Java - JAXP and JAXB
- SOAP in Detail
- REST
- WSDL
- JAX-WS Overview
- Working with JAX-WS
- Web Services for J2EE (WSEE)
- Handlers
- Discovery Overview
- WS-Security
- Securing Un-trusted Input

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Course Summary (cont'd)

Audience

This is an introductory to intermediate level web services training course, designed for Java developers and architects who need to identify, design, and implement web services. We will explore and apply the terminology, the specification, the processes and technologies specific to web services.

Prerequisites

Students should have 1-2 years of working knowledge with Servlets and JSPs, and should be familiar with XML, Namespaces, and XML Schema.

Duration

Four days