

Developing Web Services using BEA WebLogic Course Summary

Description

This course will integrate a combination of instructor-led discussions and interactive workshops to demonstrate the capabilities of Web Service within ecommerce applications. This seminar will illustrate the building, testing and deployment of Web Services; explore their fundamental capabilities, utilization of SOAP and XML, role of WSDL (Web Services Descriptive Language), use of UDDI registries and the development of JavaBeans and EJBs as Web Services.

Objectives

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

- Understand the architecture of Service Oriented Architecture
- Depict the role of the Web Server and Application Server
- Explain the roles of SOAP and XML
- Demonstrate the conversion of JavaBeans and EJBs to function as Web Services
- Illustrate the use of Web Services Descriptive Language (WSDL)
- Depict the SOAP processing architecture: messages and bindings
- Understand the architecture of JAX-RPC, JAX-WS and JAXM
- Develop Web Service from a JavaBean using WebLogic Workshop
- Depict process of serialization in SOAP and compare to J2EE equivalent
- Demonstrate the development of Web Service client applications
- Test Web Services application using BEA IDE tools
- Depict the UDDI registry model architecture
- Illustrate BEA Web Services Gateway architecture
- Illustrate the deployment of Web Services to the WebLogic Application Server environment

Topics

- Web Services Overview
- Web Services Implementation
- Introduction to SOAP
- Illustrating Apache Axis
- Web Services Development
- Web Services Descriptive Language
- Building Web Services Clients
- J2EE Packaging and Deployment
- Building Web Services Clients
- Overview of UDDI Registries
- Application Server Deployment

Audience

This course is designed for Java developers, web page designers and other professionals that will be developing Web Services using BEA WebLogic.

Prerequisites

Students should have a basic knowledge of JDeveloper and have been exposed to the Java programming language.

Duration

Four days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

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Course Outline

I. Web Services Overview

- A. Service Oriented Architecture
 - 1. UDDI Registries
 - 2. Service Requestor
 - 3. Web Service
- B. B2C vs. B2B
- C. Defining XML
- D. SOAP
 - 1. Architecture
 - 2. Messages
- E. Web Services Descriptive Language
 - 1. Definition
 - 2. Usage

II. Web Services Implementation

- A. Components
 - 1. SOAP
 - 2. XML
 - 3. UDDI
 - 4. WSDL
- B. J2EE Integration
- C. ECommerce usage
 - 1. Hosted
 - 2. Published
 - 3. Discovery
 - 4. Usage
- D. IDE Development

III. Introduction to SOAP

- A. Overview
- B. SOAP Messages
 - 1. Envelope
 - 2. Header
 - 3. Body
- C. SOAP transport protocols
 - 1. HTTP
 - 2. FTP
 - 3. SNMP
- D. Error processing
- E. Attachments
- F. Bindings

IV. Illustrating Apache Axis

- A. Overview of Axis
- B. Axis architecture
 - 1. Handlers and message paths
 - 2. Server message path

- 3. Client message path
- C. Message Flow subsystem
 - 1. Handlers and chains
 - 2. Message Contexts
 - 3. Engine
- D. Message Models
 - 1. SOAP Model
 - 2. Message elements
 - 3. Deserialization
- E. Encoding

V. Web Services Development

- A. IDE Tool support
- B. Web Services wizard
 - 1. Deployment settings
 - 2. Java to XML mappings
 - 3. Binding Proxy generation
 - 4. XML to Java mappings
 - 5. SOAP Binding Mapping configuration
- C. Generated files
 - 1. Client
 - 2. Proxy
- D. Deployment
 - 1. Testing/Debugging
 - 2. Publishing
- E. Tracing SOAP Messages

VI. Web Services Descriptive Language

- A. Illustrate role of WSDL
- B. Components
 - 1. Types
 - 2. Porttypes
 - 3. Binding
 - 4. Service
- C. Attachment support
- D. WSDL and the client
- E. Creation via IDE (Top/Down)

VII. Building Web Services Clients

- A. Depict client requirements
- B. Construct Web Service client using SOAP
- C. Client development
 - 1. Use of WSDL
 - 2. Wizards
 - 3. Source

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Course Outline (cont'd)

D. Depict functions of a Web Service proxy

VIII. J2EE Packaging and Deployment

- A. J2EE Application packaging
- B. Packaging WAR files
- C. Class loading policies
- D. Enterprise application installation
- E. Deployment Descriptors
 - 1. web.xml
 - 2. ejb-jar.xml
 - 3. webservices.xml
- F. Enterprise Application (EAR) deployment
- G. Web Service requirements
 - 1. Runtime files
 - 2. Application Server impact
 - 3. Java client requirements

IX. Building Web Services Clients

- A. Web Service from URL
 - 1. Servlet Overview
 - 2. Create URL Web Service
 - 3. Generated files
 - 4. Testing
- B. Web Service from EJB
 - 1. Session vs Entity EJBs
 - 2. Session EJBs
 - 3. Stateless
- C. Stateful
 - 1. EJB Lifecycles
 - 2. Web Service from EJB
 - 3. Files created

X. Overview of UDDI Registries

- A. Static vs. dynamic Web Services
- B. Web Services discovery
 - 1. Global
 - 2. Private
 - 3. Business Partners
- C. UDDI Versions
- D. UDDI Models
 - 1. White
 - 2. Yellow
 - 3. Green
- E. Use of tModels
- F. UDDI Data Models
- G. WSDL and UDDI
 - 1. Illustration
 - 2. Associate WSDL with Web Service
 - 3. Locate Web Services for WSDL document

XI. Application Server Deployment

- A. Web Services Gateway
 - 1. Service Mapping
 - 2. Transformation
 - 3. UDDI Publication and Lookup
 - 4. Security
- B. Handling inbound requests
- C. Handling outbound requests
- D. Protocol transformation
- E. Non-SOAP services access
- F. Deployment
- G. J2EE Packaging
 - 1. Use of EAR files