

Java Web Services Training

Web Services Fundamentals

- What is a Web service?
- Overview of SOAP
- Conveying SOAP over HTTP
- RPC vs. Document formatting
- SOAP Encoded vs. Literal serialisation
- The State of Play

Creating and Consuming Web Services

- Creating and Consuming a Web service in Java
- Overview of the Java Web Services Stack (Metro)
- Creating a Java Web service
- Generating a Web service Proxy
- Calling a Web service from a client application

WSDL

- Overview of WSDL
- Understanding WSDL services and Ports
- Bindings
- Messages
- Schema

SOAP Payloads

- Overview of JAXB
- Simple marshalling
- Custom marshalling
- Unmarshalling
- Using JAXB in a Web Service

Web Service Operations

- Message exchange Patterns
- Parameter passing modes
- One-way Messaging

Web Services Techniques

- Exception handling
- SOAP faults
- Asynchronous Web methods

SOAP Handling

- Overview of handlers
- Defining logical handlers
- Defining SOAP handlers
- Accessing transport headers

Binary Payloads

- Overview of binary data and SOAP
- Returning base64-encoded Binary Data
- Specifying the MIME type
- Optimising Binary Data

Web Services in Java Enterprise Applications (Java EE)

- Overview of Java Enterprise Edition
- Example Java EE application
- The role of Web Services

RESTful Web Services

- Overview of RESTful Web services
- Overview of the Java API for XML RESTful Web Services (JAX-RS)
- Creating a RESTful Web Service
- URI path templates
- Accessing additional HTTP info
- RESTful Design Patterns

Optional time-permitting modules:

Contract-First Web Services

- Creating a WSDL contract
- Creating interoperable WSDL
- Generating a Web Service from WSDL

Web Service Security Overview

- Transport-level Security
- Message-level Security
- Overview of WSIT Security
- Common Administration tasks
- Transport-level user authentication

Web Service Security Examples

- Username authentication with Symmetric Keys
- Mutual Certificates Security
- Transport Security (SSL)
- SAML Authorization over SSL

Orchestrating Web Services

- Achieving orchestration with BPEL
- BPEL Control Flow and Compensation
- BPEL - State of the Industry

Enterprise Service Buses (ESB)

- What is an ESB?
- Understanding the role of ESBs in Service Oriented Architecture
- ESB case studies