Developing Web Services in Java

Duration:	3 days
Type:	advanced

Description

Prior to JSE 1.6 and JEE 5 support for Web Services in Java was fragmented and overly complicated. In the newest evolution of the Java platform Web Services are simplified, standardised and fully integrated. This makes it much easier to write code which interoperates with .NET components written in C# and VB .NET.

This course introduces the latest methods for developing Web Services in both JEE and .NET. Delegates create Web Services on both platforms and learn how a client from one platform can access a service developed using the other. The course can be delivered using either NetBeans 6.1 or Eclipse Ganymede.

Prerequisites

Delegates must have several years Java and XML experience, preferably gained developing JEE Web Applications. Some prior exposure to C# and ASP .NET is helpful but not essential.

List of Modules

Introduction to Web Services
- Limitations of conventional Web Applications
- Advantages of automating web based services
- Web Services verses distributed method calls
- Using Web Services to interoperate with legacy systems
- Web Services and Service Oriented Architectures

Core Web Service Technologies
- Strengths and weaknesses of messaging over HTTP
- Using SOAP to deliver XML messages and handle faults
- Choosing between RPC and Document based encoding
- Creating WSDL documents to advertise services
- The WS-I and advantages of WS-I Basic Profile
- Deciding if you want to make use of UDDI

Web Services Description Language (WSDL) in Depth
- Defining complex data types using XML Schema
- Using types to define messages and operations
- Combining operations to create port types
- Binding operations and defining services

Developing Web Services with JAX-WS 2.0

- Writing a Web Service as a plain Java object (POJO)
- Writing a Web Service as an EJB 3.0 JavaBean
- Mapping operations and parameters into Java
- Mapping SOAP faults into Java exceptions
- Generating a Web Service Client

Mapping Complex Types using JAXB 2.0

- Limitations of JAXB version 1.0
- Support for XML Schema in v2.0
- The *javax.xml.datatypes* package
- Creating bindings via Annotations
- Using Collections within bindings

Developing Web Services with ASP .NET 2.0 (Overview)

- How support for WS is layered onto ASP .NET
- Creating a Web Service Project in VS2005
- Attributes used within Web Services
- Limitations of ASP .NET Web Services
- Generating a Web Service Client

Developing Interoperable Web Services

- Considerations when developing .NET services for Java clients
- Considerations when developing Java services for C# clients
- Exchanging binary data via attachments to SOAP messages
- Authenticating users and establishing levels of trust

Advanced and Emerging Web Service Technologies

- Problems applying existing security strategies to Web Services
- Safeguarding Web Services using XML-Encryption and XML-Signature
- Building a PKI infrastructure for and around Web Services
- Ensuring reliable message delivery and supporting transactions
- Using BPEL to define and direct business processes within a SOA