



ASWEC Tutorial Program

Architecting & Developing Message-Oriented Web Services

April 18th 2006, 09:00 AM – 12:30 PM

Description

Best practice in Web Services architecture and development has moved on since the days where the technology was used as a platform-agnostic RPC mechanism. This tutorial introduces the message-oriented aspects of common Web Services middleware and shows how to apply its features to building Web Services with interesting transport-neutral message exchange patterns and security requirements. The tutorial will be code-focussed and will take the audience through the design and implementation of a fully-featured Web Services application. The application will be used as a test bed to illustrate various aspects of WS-Security (via WS-Policy) to show how messages exchanges can be made robust against tampering, non-repudiable, and private.

Outline

Introduction: The tutorial will begin with a brief recap on the history of Web Services and how we arrived at today's message-oriented model. We will also introduce a three tiered model for the generic architecture of a Web Service showing how services decouple protocol, messaging, and application layers. We will then introduce the example problem. *Implementation:* We will design and implement the WSDL contracts for the application and then review the messaging features that WCF supports with a particular emphasis on transport-neutral messaging based on WS-Addressing. Using the MessageContract features from the WCF framework we will implement messages that the application will exchange. *Securing the Application:* We will revisit the wire level messages and show how the digital signature aspects of WS-Security works, and how it dovetails with the WS-Policy contracts which complement our WSDL contracts. We will also show how once again WS-Policy can be used to declaratively enforce message-level encryption based on WS-Security.

Target Audience

The target audience for this tutorial consists of programmers, developers, and those in a technically-oriented managerial role. The audience should be familiar with the fundamentals of Web Services (SOAP, WSDL) to the point where they can generally understand the meaning of both. It would be useful for the audience to have a good understanding of a modern enterprise platform (e.g. .Net or Java) but direct experience of building Web Services is not necessary. It would also be advantageous, but not essential, if the audience were aware of some of the other WS-* specifications such as WS-Addressing and WS-Security.

The Speakers

Dr. Jim Webber is the SOA practice lead for ThoughtWorks where he works on dependable service-oriented systems. Jim was formerly a senior researcher with the UK E-Science programme where he developed strategies for aligning Grid computing with Web Services practices and architectural patterns for dependable Service-Oriented computing.

Dr. Savas Parastatidis is a program manager with Microsoft Corporation where he develops advanced middleware for distributed computing systems. Savas was formerly a principal research associate at the School of Computing Science, University of Newcastle upon Tyne, UK, and the chief software architect of the North-East Regional e-Science Centre (NEReSC). He is an expert in Grid Computing and Web Services technologies and standards.

Online Details

http://www.aswec.org/?Tutorials:Tutorial_8

