

## Building Web Services with .NET 2.0: Hands-On - 4 Days

### Course 508 Overview

- You Will Learn How To**
- Develop highly scalable distributed applications with XML Web services
  - Build standards-driven SOAP and high-performing REST services
  - Process XML documents with System.Xml library classes
  - Describe and publish Web services using standard protocols (SOAP, WSDL)
  - Leverage Web, Windows and AJAX Web service client technologies
  - Secure XML Web services using encryption and authentication

**Course Benefits** XML Web services connect corporate applications in the same way that the Web connects people to information. The .NET Framework enables organisations to benefit from the service-oriented architecture of XML and Web services. This hands-on course provides the skills needed to build XML Web services and clients with .NET. You learn to rapidly create scalable and secure service-oriented applications as well as practical techniques for processing XML.

**Who Should Attend** Those who are or will be working with or evaluating Web services. Familiarity with the Visual Basic or C# programming languages is assumed.

**Hands-On Training** Exercises, presented in VB and C#, include:

- Creating scalable Web services using ASP NET
- Deploying and configuring Web services
- Consuming Web services from Windows and Web clients
- Rapid application development with data binding
- Tracing SOAP messages
- Updating a database via Web services
- Automatic and custom serialisation of objects
- Securing SOAP messages with authentication and encryption
- Processing XML data using .NET's class libraries

## Building Web Services with .NET 2.0: Hands-On - 4 Days

### Course 508 Outline

#### Introduction to Web Services

##### Web services in enterprise computing

- Architecture of distributed applications
- Interoperation with Java
- Web service facade applications

##### Web service capabilities of .NET

- ASP.NET as a platform for Web services
- Building and deploying a Web service
- Generating client proxies and clients

#### SOAP Essentials

##### Demystifying SOAP messaging

- Deconstructing and writing SOAP
- HTTP Transport
- Handling SoapExceptions
- SOAP Action
- SOAP faults
- Comparing RPC-encoded SOAP with document-literal SOAP

##### Monitoring and tracing Web services

- Invoking SOAP trace utility
- Debugging Web services

##### Marshalling and serialisation

- Automatic and custom serialisation
- Serialising value and reference types
- Marshalling with DataSets

#### XML Programming in .NET

##### Building XML in .NET

- XML essentials
- XML schema
- XML namespaces
- Supported types

##### Processing XML

- Generating XML using XmlTextWriter
- Converting DataSets to generic XML with XmlDataDocument
- Working with RSS feeds and Weblogs

#### Configuring Web Services

##### Programming with Attributes

- XML namespaces in Web services
- Adding documentation to WSDL
- Attributes and the proxy class

##### Configuration settings via web.config

- Customising service help pages
- Locating the service endpoint

##### Service-Oriented Architecture (SOA)

- Orchestrating Web services

- Controlling the WSDL document
- Designing the message contract
- Producing RESTful services with HttpHandler

#### Constructing Scalable Web Services

##### Designing stateless components

- Advantages of a stateless model
- Storing state in a stateless architecture
- Boosting performance using caching
- Caching file-based data in the cache

##### Supporting transactions in Web services

- Starting and participating in transactions
- Transaction flow
- Developer's responsibilities
- Transaction mechanisms for .NET

#### Web Service Client Applications

##### Techniques for .NET clients

- Thin, Web and rich clients
- Data binding
- ClickOnce deployment

##### High-performance rich clients

- Threads and multithreading
- Calling Web services asynchronously
- Calling Web services with AJAX

#### Securing Web Services

##### Authentication options

- Applying IIS basic authentication
- Sending credentials to the service

##### Encryption in .NET

- Symmetric and asymmetric encryption
- Comparing encryption techniques
- Encrypting for best performance

#### Windows Communication Foundation

##### (WCF)

- Implementing WS-Security
- Tracing WS-Secure messages