NET400 : Web Services in .NET

Code : NET400 **Duration :** 4 days **Category :** dotnet
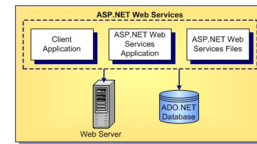

Web Services in .NET

Audience :

This course is intended for developers who want to understand and use .NET Web Services in their applications.
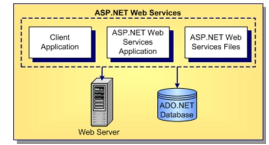
Prerequisites :

To participate in this course knowledge and experience with C# is required and knowledge of ASP.NET is beneficial for a proper understanding.

Realization :

The course has a hands-on nature. The theory is treated on the basis of presentation slides. The theory is interspersed with demos and exercises. The course materials are in English.

Contents :

In the course Web Services in .NET participants learn to develop Web services using ASP.NET and C#. In the course the fundamentals of the Simple Object Access Protocol (SOAP) and the Web Services Description Language (WSDL) essential for creating interoperable Web services, are discussed. The features and function of Web services are detailed. This includes the tracing of a simple Web service, examining HTTP, XML, SOAP and WSDL. The course covers the techniques for creating and debugging ASP.NET Web services using Visual Studio .NET, and creating clients for Web services using the .NET API directly. More advanced topics, such as state management, caching and transactions in Web services are are treated. The key technologies of ASP.NET Web services including XML serialization, SOAP, WSDL and Universal Description, Discovery and Integration (UDDI) are on the course program. The .NET classes for manipulating WSDL files are also examined. Next Web services security and new emerging Web Services specifications are explored. This includes the various security issues and technologies in Web services such as HTTP, HTTPS, SSL 3.0, XML Signature, XML Encryption, XML Key Management Specification (XKMS), Security Assertion Markup Language (SAML) and WS-Security.

Module 1 : Web Services Intro

Introduction to Distributed Computing
Motivation for Web Services
Evolution of Web Services
Web Services Definition
Next Generation of Distributed Computing
ASP.NET Web Services
Reasons to Embrace Web Services
Architecture
Benefits of Web Services
Backbones of Web Services
Web Services Business Models
Alternative to Web Services: .NET Remoting

Module 2 : Web Service Structure

Creating a Web Service Using ASP.NET
Deploying a Web Service Using IIS
Testing a Web Service
HTTP
XML
SOAP
Web Service Clients
SOAP Toolkit Trace Utility
WSDL

Module 3 : ASP.NET Web Services

Developing ASP.NET Web Services
Using VS.NET to Develop ASP.NET Web Services
Web Services Namespaces
Deriving from the Web Service Class
@ Webservice Attribute
Web Service Class
Adding a WebMethod to Web Services
Debugging Web Services

Module 4 : Web Services Clients

Web Service Proxies
Web Services Description Language Tool (Wsdl.exe)
Creating a Proxy with VS.NET
Adding Reference
Returning Complex User-Defined Data Types
Understanding Web Services Clients
Developing Console Client
Developing Web Forms Client
Developing Windows Form Client
Asynchronous Programming in Web Services
Transactions in ASP.NET Web Services
Managing State in ASP.NET Web Services
Caching in ASP.NET Web Services

Module 5 : XML Serialization

XmlSerializer
What is Not Serialized
Writing and Reading XML
Customizing XML Serialization
XML Schema and XSD
Creating Classes from Schemas
XML Serialization and Web Services

Module 6 : Customizing SOAP

SOAP-Based Web Services
An Example of SOAP Message
SOAP Namespaces
The Message Header
The Message Body
SOAP Faults
SOAP Extension Headers
Customizing SOAP with Attributes
Using Soap Headers

Module 7 : WSDL

Web Service Proxies
Web Services Description Language Tool (Wsdl.exe)
Creating a Proxy with VS.NET
Adding Reference
Returning Complex User-Defined Data Types
Understanding Web Services Clients
Developing Console Client
Developing Web Forms Client
Developing Windows Form Client
Asynchronous Programming in Web Services
Transactions in ASP.NET Web Services
Managing State in ASP.NET Web Services
Caching in ASP.NET Web Services

Module 8 : Web Service Security

XmlSerializer
What is Not Serialized
Writing and Reading XML
Customizing XML Serialization
XML Schema and XSD
Creating Classes from Schemas
XML Serialization and Web Services