Training Course

Programming with Windows Communication Foundation (WCF)

SE202

Objectives

- *Understand how to create basic services*
- *Understand how to call services (consume)*
- *Understand how to create advanced services (reliable, secure, etc.)*
- *Understand how to monitor and debug the services*
- *Understand issues related to testing services*
- *Understand the best practices in .Net service oriented development*

Introduction

This course teaches developers how to build services using the Windows Communication Foundation (WCF) framework. It covers all of the basics of Web services and how to create them as well as call them. Advanced options for specifying the quality attributes like reliability, security and transactional integrity are also covered.

Overview

Microsoft has made Windows Communication Foundation the centerpiece of its next generation computing strategy. WCF is the core library for .Net programmers to implement services to support SOA programs. This course teaches how to use WCF to create services.

Audience

This course is designed for software developers who need to build the actual services.

Class Size and Duration

This two-day course can accommodate up to 12 students.

Prerequisites

Familiarity with .NET, C#, and Visual Studio.

Course Outline

1. Introducing WCF
   - Service: The new unit of work
   - Defining WCF
   - History of WCF
   - Unification of Microsoft's distributed computing technologies
   - The goals of WCF
   - The WCF programming model

2. Programming Services and Operations
   - Overview: What are services and operations?
   - Contract first vs. code first
   - Review: The WSDL
   - Mapping messages to .Net objects
   - Message exchange patterns in WCF
   - Defining message response
   - Best practices for specifying constraints and validations
   - Throwing faults
   - Specifying the binding
   - Advanced topics

3. Programming Clients/Calling Services

- Finding the WSDL
- Generating a proxy via the WSDL
- Mapping objects
- Configuring the client

4. Debugging Client/Service Interactions

- Inspecting SOAP messages
- Walking remote code
- Faking SOAP calls

5. Building Secure Clients and Services

- Defining security policies
- Performing basic authentication
- Overview of WS-security
- Basics of SAML
- The role of a message digest
- Communicating with encryption

6. Creating Asynchronous Clients and Services

- The need for asynchronous communication
- Overview: WS-reliable messaging
- Using MSMQ with WCF
- Dealing with lost messages
- Dealing with duplicate messages

7. Building Service Test Cases

- Designing the tests
- Implementing test cases
- Creating a testing environment

8. Additional Messaging and Runtime Options

- Additional channels
- Throttling
- Transactions
- Activations
- Instant management

9. Activation and Hosting

- Overview of activation and hosting options
- Creating .exe's
- Utilizing NT services
- Utilizing COM+
- Using Windows Activation Service

8. Best Practices

- Message logging
- Designing for debug ability
- Implementing for performance
- Designing for loose coupling
- Planning for reuse and sharing

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About MomentumSI

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