

MS 6461A - Visual Studio 2008: Windows Communication Foundation

Overview

This three-day instructor-led course provides students with the knowledge and skills to build and configure a Windows Communication Foundation (WCF) solution.

Audience

This course is intended for application developers who know how to build and consume Web services in .NET 2.0 and how to use the common features of the base class library. The application developers do not have to understand concepts such as advanced WS-*, WSE, service lifecycle management, and diagnostics.

At Course Completion

After completing this course, students will be able to:

- Build a simple WCF service and client.
- Create and configure a service as a managed application and select an appropriate hosting option.
- Expose a WCF service over different endpoints and add runtime functionality using behaviors.
- Improve debugging capabilities by examining messages and service activity.
- Define service, operation, and data contracts to meet application requirements.
- Add error handling to a WCF application.
- Address service quality issues such as performance, availability, concurrency, and instance management.
- Implement security in a WCF application.
- Protect data integrity through correct use of transactions.

Prerequisites

Before attending this course, students should have intermediate experience developing applications by using previous versions of Microsoft Visual Studio at level 200.

Course Outline

Module 1: Getting Started with Windows Communication Foundation

This module explains how to build a simple WCF service and client

Lessons

- Designing an Application to be Part of a Service Oriented Architecture (SOA)
- Overview of WCF Architecture
- Using a Language-Level Interface As a Service Contract
- Implementing a Simple WCF Service in Visual Studio 2008
- Consuming a simple WCF service in Visual Studio 2008

Lab: Creating a Simple Service

- Creating a Simple WCF Service
- Calling the Simple WCF Service

Module 2: Configuring and Hosting WCF Services

This module explains how to create and configure a WCF service as a managed application and select an appropriate hosting option

Lessons

- Programmatically Configuring a Managed Application to Host a WCF Service
- Programmatically Configuring a Managed Application to Call a WCF Service
- Defining Client and Service Settings by Using File-Based Configuration
- Selecting a Hosting Option for a WCF Service
- Deploying a WCF Service

Lab: Configure and Host a WCF Service

- Creating a Programmatically Configured Managed Application to Host a Service
- Calling a Service Hosted in a Managed Application by Using Programmatic Configuration
- Defining Service Settings by Using External Configuration
- Employing Different Hosting Options for a Service

Module 3: Endpoints and Behaviors

This module explains how to expose a WCF service over different endpoints and add runtime functionality using behaviors

Lessons

- Exposing WCF Services Over Different Endpoints
- Adding Behaviors to Services and Endpoints
- Interoperating with Non-WCF Web services

Lab: Changing Service Endpoints and Behaviors

- Exposing Services by Using Different Bindings
- Adding Metadata Exchange to a Service
- Creating WCF Clients and Services That Interoperate with Non-WCF Web Services

Module 4: Debugging and Diagnostics

This module explains how to improve debugging capabilities by examining messages and service activity

Lessons

- Logging Messages
- Activity Tracing

Lab: Message Logging and Activity

- Generating Logging Information for a Service
- Enabling End-to-End Tracing for a Service

Module 5: Designing and Defining Contracts

This module explains how to define service, operation, and data contracts to meet application requirements

Lessons

- Designing a Coherent and Cohesive WCF Service Interface
- Defining a Service Contract
- Defining Operations on a Service
- Defining a Data Contract

Lab: Contracts for Services and Data

- Defining and Implementing a One-way Operation Contract
- Passing Complex Data with a Data Contract
- Defining and Implementing a Callback Contract

Module 6: Handling Errors

This module explains how to add error handling to a WCF application

Lessons

- Relating .NET Exceptions to Service-level Faults
- Using Faults in a Service
- Handling Faults and Exceptions on Clients

Lab: Error Handling

- Handling Unexpected Errors in a WCF Service
- Add Fault Handling to a WCF Service and the Service Contract

Module 7: Improving WCF Service Quality

This module explains how to address service quality issues such as performance, availability, concurrency and instance management

Lessons

- Managing WCF Service Instances
- Managing Concurrency Issues
- Improving WCF Service Performance

Lab: Improving WCF Service Quality

- Managing WCF Service Instances
- Managing Concurrency Issues
- Throttling Access to a WCF Service
- Passing Bulk Data Between WCF Client and Service

Module 8: Implementing WCF Security

This module explains how to implement security in a WCF application

Lessons

- Overview of Security in WCF
- Applying Overall Security Requirements to a Binding
- Specifying Required Client and Service Credentials
- Working With Security Information

Lab: Implementing WCF Security

- Applying Security for Internal Network Communication
- Applying Security for Internet Communication

Module 9: Implementing Transactions

This module explains how to protect data integrity through correct use of transactions

Lessons

- Overview of Transactions in a Service-Oriented Application
- Creating Transactional Service Operations
- Enabling the Flow of Transactions from Client to Service

Lab: Implementing Transactions for a Service

- Control the Flow of a Transaction from Client to Service
- Force a Transaction to Start When a Service Operation Is Called

Upcoming Classes

May 22, 2012 - May 24, 2012

Jun 06, 2012 - Jun 08, 2012

Jul 16, 2012 - Jul 18, 2012

Aug 22, 2012 - Aug 24, 2012

Sep 18, 2012 - Sep 20, 2012

Oct 24, 2012 - Oct 26, 2012

Nov 13, 2012 - Nov 15, 2012

Dec 17, 2012 - Dec 19, 2012