Windows Communication Foundation

mcpguru

Visual Studio 2008

Course No. 6461A

Duration: 3 Days

About this Course

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

Audience Profile

This course is intended for application developers who know how to build and consume Web services in Microsoft .NET Framework 2.0 and how to use the common features of the base class library. The application developers do not have to understand concepts such advanced WS-*, Web Services Enhancements (WSE), service life cycle 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 run-time functionality by using behaviours.
- 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.

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What you will learn in this course (Course Outline)

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
- 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 Achievements:

- Explain how to design an application as part of a Service Oriented Architecture (SOA).
- Describe the main parts of the WCF architecture.
- Create a simple service contract for a WCF service.
- Implement a simple WCF service in Visual Studio 2008.
- Consume a simple WCF service in Visual Studio 2008.

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 Achievements:

- Create a programmatically-configured managed application that hosts a WCF service.
- Call a WCF service hosted in a managed application by using programmatic configuration.
- Define WCF service settings by using external configuration.
- Select the best hosting option for a WCF service.
- Deploy a WCF service onto a remote host.

Endpoints and Behaviors

This module explains how to expose a WCF service over different endpoints and add run-time functionality by 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 Achievements:

- Expose WCF services by using different bindings.
- Add behaviors to services and endpoints.
- Create WCF clients and services that interoperate with different types of Web services.

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 Achievements:

- Log WCF messages.
- Trace WCF service activity.

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

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Specifics

Cost: £699 plus VAT

Platform:

Windows

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
- Design a coherent and cohesive service contract.
- Define a service contract.
- Define operations on a service.
- Define a data contract.

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 Achievements:

- Explain how .NET exceptions relate to service-level faults.
- Define fault information in a service contract.
- Handle service exceptions on clients.

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 Quality

Lab : Improving WCF Service Quality

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

Module Achievements:

- Manage WCF service instances.
- Manage concurrency issues.
- Improve WCF service performance.

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 : Protecting a Service

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

Module Achievements:

- Explain the process for implementing security in WCF.
- Apply overall security requirements to a binding.
- Specify required client and service credentials.
- Work with security information.

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

- Controlling the Flow of a Transaction from Client to Service
- Forcing a Transaction to Start When a Service Operation Is Called

Module Achievements:

- Explain how transactions work in a service-oriented application.
- Create transactional service operations.
- Control transaction flow from client to service.

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