

Visual Studio 2008: Windows Communication Foundation 3

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
- 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

After completing this module, students will be able to:

- 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.

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

After completing this module, students will be able to:

- 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.

Module 3: 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

After completing this module, students will be able to:

- 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.

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

After completing this module, students will be able to:

- Log WCF messages.
- Trace WCF service activity.

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

After completing this module, students will be able to:

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

After completing this module, students will be able to:

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

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 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

After completing this module, students will be able to:

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

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: Protecting a Service

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

After completing this module, students will be able to:

- 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.

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

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

After completing this module, students will be able to:

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