

Core Distributed Application Development with Microsoft Visual Studio 2005

Workshop 2548: Three days; Instructor-Led

Introduction

This three-day instructor-led workshop provides students with the knowledge and skills to develop distributed applications by using the Microsoft .NET Framework and Microsoft Visual Studio 2005. The workshop focuses on building distributed applications by using Web services, remoting, Microsoft Message Queuing, and serviced components.

Audience

This workshop is intended for corporate and Independent software vendor application developers who have a desire to learn more about specific technology areas in distributed application development.

Objectives

After completing this workshop, students will be able to:

- Build and use a Web service.
- Configure and customize a Web service application.
- Call Web methods asynchronously.
- Build remote client and server applications.
- Create and serialize remoteable types.
- Manage the lifetime of remote objects.
- Call remote methods asynchronously.
- Send and receive messages by using Microsoft Message Queuing.
- Create and use serviced components.

Prerequisites

Before attending this workshop, students must:

- Be able to manage a solution environment using the Visual Studio 2005 Integrated development environment (IDE) and tools
- Understand the Microsoft .NET Framework 2.0 and the Common Language Runtime
- Be able to program an application by using a .NET Framework 2.0-compliant language
- Have a basic understanding of XML including XML declaration, elements, attributes, and namespaces
- Have a basic understanding of application domains
- Have a basic understanding of delegates and events
- Have a basic understanding of threads

Course Outline

Unit 1: Building and Consuming a Simple XML Web Service

This unit describes how you can create a simple Web service and client application by using the .NET Framework. It also explains how you can configure client proxies, and debug and deploy Web services.

Unit 2: Configuring and Customizing a Web Service

This unit introduces a number of important configuration and customization options for Web services. It describes how to control the way in which complex parameters to Web methods are serialized. This unit also shows how to use configuration files to control the way in which a Web service operates.

Unit 3: Calling Web Methods Asynchronously

This unit explains how to call a Web method asynchronously. It describes how to improve the responsiveness of client applications by avoiding the need to wait for Web methods to complete execution before continuing processing. This unit covers the different options available for calling Web methods asynchronously and it describes how to create one-way methods.

Unit 4: Building a Remoting Client and Server

This unit describes key remoting concepts, and shows how to create a remoting server and client. This unit describes how to use remoting to call methods in remote objects, and how to pass data across remoting boundaries. This unit also shows how to configure and deploy remoting applications.

Unit 5: Creating and Serializing Remotable Types

This unit describes how to transfer complex data values across remoting boundaries, and the issues involved in doing so. It compares and contrasts the marshal by value and marshal by reference mechanisms for accessing remote data. This unit also covers version compatibility issues between clients and servers using different versions of a class, and the special requirements for remoting generic classes.

Unit 6: Performing Remoting Operations Asynchronously

This unit describes how to call a method asynchronously in the remoting environment. It covers the different techniques you can use and it explains how to raise events in a remoting server and handle them in a client.

Unit 7: Managing the Lifetime of Remote Objects

This unit describes the lifetime of remote objects and how you can control them. This unit introduces the concepts of remote object leases and sponsors. This unit shows how to initialize a remote object's lease to a specific period, and how to renew an object's lease when it expires by using a sponsor.

Unit 8: Sending and Receiving Messages by Using Message Queuing

This unit describes how to use Microsoft Message Queuing to build distributed applications. It covers the essential aspects of building client and server applications that use message queues, how to create queues, how to send and receive messages, and how to handle replies to messages. This unit also describes how to access message queues across the Internet.

Unit 9: Creating and Consuming Serviced Components

This unit explains how to build and access serviced components in a .NET Framework application. This unit describes the relationship between .NET Framework serviced components and COM+. It shows how to use the .NET Framework to implement a serviced component that you can register as a COM+ application and how you can write applications that use serviced components.