

.NET 4 Programming for Existing .NET Developers: Hands-On - 3 Days

Course 2620 Overview

- You Will Learn How To**
- Enhance .NET applications with new features of .NET and Visual Studio 2010
 - Write more expressive, dynamic code using C# and Visual Basic extensions, LINQ and PLINQ
 - Leverage the new parallel computing features of .NET 4
 - Automate access to data with the Entity Framework ORM and LINQ to Entities
 - Improve Web Services using Windows Communication Foundation (WCF), JSON and REST
 - Take advantage of new ASP.NET features, including dynamic data, jQuery and routing

Course Benefits As applications grow more sophisticated, programmers need tools to more easily meet user demands. Visual Studio 2010 and .NET 4 simplify data access, streamline code and improve user experiences. In this course, you build on your existing .NET knowledge with an overview of new .NET 4 features, including ASP.NET 4, Entity Framework and jQuery.

Who Should Attend Experienced .NET developers who would like to enhance applications with new .NET features. Experience with C# or Visual Basic programming at the level of Course 502, "Programming with .NET Introduction," is assumed. Knowledge of ASP.NET web development is helpful.

Hands-On Training In this course, you gain hands-on experience applying .NET 4 new features. Exercises include:

- Enhancing ASP.NET 2 web applications using new features of .NET
- Programming LINQ to Object queries
- Mapping object and relational data using Entity Framework and the Visual Studio ORM designer
- Creating and accessing REST services with WCF
- Incorporating jQuery for responsive web user interfaces
- Building WCF integrated Silverlight applications

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Course 2620 Outline

Introducing .NET 4

.NET 4 architectural overview

- History of the .NET framework
- Tiers and technologies
- Considering application architecture from data to the user interface

Exploring .NET new features

- LINQ
- Entity Framework
- WCF
- WF 4
- Ajax
- jQuery
- Silverlight
- Enhancing productivity with Visual Studio 2010 IDE new features

Programming with New C# and VB Features

Applying C# and VB extensions

- Auto-implemented properties
- Inferred types
- Anonymous functions
- Anonymous types
- Lambda expressions
- Object initializers
- Dynamic types
- Extension and partial methods
- Optional arguments

Extracting and manipulating data with LINQ

- Selecting data with LINQ expressions
- Sorting and filtering objects
- Aggregating data within collections
- Building LINQ queries using lambda expressions
- Employing the new language features with LINQ

Exploiting parallel programming and multitasking

- Running background threads with the Task class
- Applying task parallelism in loops
- Executing code in parallel on multiple CPUs with PLINQ
- Adding dynamic features to applications with DLR

Accessing Data with Entity Framework (EF)

Mapping objects to relational data

- Comparing traditional data access techniques to ORM tools and technologies
- Mapping tables to objects with the EF Designer
- Automatically generating entity classes
- Adding behaviors and properties to entities using partial classes and partial methods

Replacing ADO.NET code with LINQ to Entities

- Querying relational databases
- Inserting, updating and deleting data using the DataContext class
- Reading and writing XML easily using LINQ to XML

Manipulating different programming models

- Model-first
- Code-first
- Database-first
- Leveraging POCOs for better integration in multilayer applications

Creating REST Data Services with WCF

Working with WCF new features

- Integrating EF entities within a distributed application
- Optimizing data transfer with JSON
- Creating WCF Data services without configuration

Accessing REST-based services via HTTP

- Invoking services from ASP.NET and Silverlight applications
- Calling services asynchronously
- Deserializing JSON data at the client

Developing workflow applications with Workflow Foundation 4

- Creating XAML-based workflows with the designer
- Designing long-time running applications with sequential workflows

Enhancing Web User Experiences with ASP.NET New Features

Making web applications more responsive

- Creating highly responsive user interfaces with jQuery
- Incorporating jQuery code into web pages

- Constructing appealing pages with jQuery animation
- Optimizing URLs with routing

Automating data access and deployment

- Calling WCF services with jQuery, Ajax and JSON
- Generating Dynamic Data Entities websites
- Integrating Dynamic Data controls with ASP.NET pages
- Customizing Dynamic Data scaffolding with data annotations

Integrating Silverlight with ASP.NET Creating a Silverlight application with Visual Studio 2010

- Embedding a Silverlight application into a web page
- Deploying Silverlight applications

Extending Silverlight with WCF

- Creating a WCF Service for Silverlight
- Calling a WCF Service from a Silverlight application