
Windows Presentation Foundation (WPF) for ASP.NET Developers


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About Brian



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- n Microsoft Regional Director, MVP (Visual Developer – Solution Architect)
- n Writing
 - ┆ Developing Applications with Windows Workflow Foundation, LiveLesson training DVD, June 2007
 - ┆ Smart Client Deployment with ClickOnce, Addison Wesley, January 2007
 - ┆ Data Binding with Windows Forms 2.0, Addison Wesley, January 2006
 - ┆ MSDN Magazine, MSDN Online, CoDe Magazine, The Server Side .NET, asp.netPRO, Visual Studio Magazine
- n Speaking
 - ┆ Microsoft TechEd US, Europe, Malaysia, Visual Studio Connections, DevTeach, INETA Speakers Bureau, MSDN Webcasts
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Agenda

- n Overview of WPF
- n Overview of Silverlight
- n Overview of XAML
- n Basic WPF Application Structure
- n Designing WPF Applications
- n Designing Silverlight Applications

WPF Overview

What is it?



- n New Windows UI Framework
 - | Alternative to Windows Forms / ASP.NET?
- n Runtime capabilities part of .NET 3.0
- n Design tools part of Visual Studio 2008 ("Orcas")
 - | Code named Cider
 - | RTM in late 2007
- n Expression Studio
 - | New design tools suite for professional designers
 - | Expression Blend WPF design tool
 - | Included in MSDN subscription

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WPF Features

Why do you need it?



- n State of the art graphics
 - | DirectX under the covers
 - | Controls, 2D, 3D graphics
 - | Rich Media Integration (images, audio, video)
 - | Animation
 - | Visual Styling

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WPF Features

What is different about it?



- n Not tied to the hardware
 - ┆ Logical pixels
 - ┆ Blurred line between Windows and graphics
 - ┆ Takes advantage of high end graphics cards
- n Raised abstraction level
 - ┆ Elemental composition
 - ┆ Data contexts
 - ┆ Resources

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WPF Features

What is different about it?



- n Declarative programming model – XAML
- n Documents and content first class citizens
 - ┆ Word/PDF/etc.
 - ┆ Video/Audio
- n Interop with Windows Forms
 - ┆ Host Windows Forms controls in WPF apps
 - ┆ Host WPF controls in Windows Forms apps

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WPF Features

What's the same?



- n .NET Framework 2.0
 - ┆ WPF is just class libraries
 - ┆ WPF elements are objects
 - ┆ The rest of the framework is there for the logic in your app
 - ┆ Partial classes – combine compiled markup and code into a single class
- n Markup – code separation
 - ┆ Similar to ASP.NET

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WPF Application Types



- n Windows Application
 - ┆ Runs on the client desktop as a normal Windows Application
 - ┆ Equivalent to a Windows Forms Windows Application
- n XAML Browser Application
 - ┆ Runs in IE
 - ┆ Transparent browser experience for the user
 - ┆ Dynamically deployed application via ClickOnce (behind the covers)
 - ┆ Limited security context – Can only really do better graphics in the browser or call back to site the app was launched from
- n XAML in the browser
 - ┆ Not really an app, just static rendering
- n All require .NET 3.0 installed on the client

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What is Silverlight?



- n Their words:
 - ı "Cross browser, cross platform plug in for delivering the next generation of .NET based media experiences and rich interactive applications for the Web"
 - ı "flexible programming model that supports AJAX, VB, C#, Python, and Ruby, and integrates with existing Web applications"
 - ı "supports fast, cost-effective delivery of high-quality video to all major browsers running on the Mac OS or Windows"
- n My words
 - ı A really cool new way to build multi-platform browser-based applications with managed code



How does it relate to WPF?

- n Separate product
- n Shares object model with WPF – subset
- n Code UI in XAML
- n Does not require .NET 3.0 on the client
- n Use same design tools
 - ┆ Expressions
 - ┆ Visual Studio Orcas



What do I need?

- n The version maze:
 - ┆ WPF/E Feb CTP – now obsolete
 - ┆ Silverlight 1.0 Beta
 - ┆ Silverlight 1.1 Alpha
- n The pieces
 - ┆ Silverlight runtime (the plug in)
 - ┆ Silverlight SDK (samples, docs, utils)
 - ┆ VS Tools
 - ┆ VS 2005 – Silverlight 1.0 tools
 - ┆ VS Orcas Beta 1 – Silverlight 1.1 alpha tools only
 - ┆ Expressions Blend 2
 - ┆ Adds Silverlight project type

1.0 Features



- n UI Core (Vector, Animation, Text, Images)
- n Media (WMV, WMA, MP3, VC1)
- n Inputs (Keyboard, mouse, ink)
- n Networking (POX, JSON)
- n Browser Host (DOM integration, installation, network stack)
- n Scripting (MS AJAX Library, JavaScript engine)
- n Auto-updating client component

1.1 Features



- n .NET code behind
- n Controls
- n BCL (Generics, Collections, etc.)
- n Data (LINQ/XLINQ)
- n Networking (REST/RSS)
- n Dynamic Languages (Python, Ruby, JavaScript, Dynamic VB)
- n DRM

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XAML Basics



- n eXtensible Application Markup Language
- n Declarative object definition and instantiation
- n Primary way of defining WPF UI
- n Not limited to WPF / Silverlight
 - ┆ Also used by WF
- n Elements define object instances or set properties
- n Attributes set properties or hook up event handlers
- n XML namespaces scope objects defined in markup

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Structural Overview



- n Compositional Model
 - | Application
 - | Framework Elements
 - └ Windows, controls
 - | Geometries
- n Event Driven
 - | Routed Events
 - └ Bubbling, Tunneling, Direct
 - | Routed Commands
 - └ Not associated with a single object
 - └ Raise their own events
- n Content
 - | Documents
 - | Styles
 - | Navigation

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Designing WPF Applications



- n Create Visual Studio project or Expression Blend project
- n Add elements to Windows / Page (Blend or VS)
- n Add code behind event handlers and dynamic code (VS)

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Designing Silverlight Applications



- n Create Blend project
- n Define Canvas elements
- n Add code behind in C# or VB (Silverlight 1.1)



Resources

- n Windows Presentation Foundation Unleashed, Adam Nathan, Sams Publishing
- n Essential Windows Presentation Foundation, Chris Anderson, Addison-Wesley
- n Programming WPF, Chris Sells and Ian Griffiths, Addison-Wesley
- n Getting Started with Silverlight, Shawn Wildermuth, O'Reilly Shortcuts
- n www.silverlight.net
- n <http://msdn.microsoft.com/silverlight>

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