

Windows Presentation Foundation

Some questions on WPF answered

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Overview

Commonly asked questions on WPF

1. Why?
2. Is it difficult?
3. XAML?
4. Windows or Web?
5. WPF/e?

Why WPF?

Do I need this anyway?

Quick overview of .NET Framework 3.0

Windows
Workflow
Foundation

Windows
Presentation
Foundation

Windows
Communication
Foundation

Windows
CardSpace

.NET Framework 2.0

Why WPF?

- Requirements for modern UI have changed
 - Grey apps don't always cut it: distinguish yourself
 - Incorporate 2D, 3D graphics, audio, animation, ...
- Use available hardware better
 - Let GPU handle 2D and 3D graphics
 - Resolution independent vector graphics
- Increase productivity
 - For developer, designer and both of them
 - Develop for Windows and Web application in one go

More than just visuals

Document Services

XPS Documents

Packaging Services

User Interface Services

Application Services

Controls

Databinding

Deployment Services

Layout

Media Integration Layer

Imaging

2D

Text

Audio

Effects

3D

Video

Animation

Composition Engine

Base Services

XAML

Accessibility

Input and eventing

Property System

Demo

The potential of WPF

Is it difficult to do WPF?

Getting started building WPF applications

Building WPF applications

- Implementing a WPF application is not that different
- Program .NET 2.0 BCL and .NET 3.0 UI
- Think ASP.NET and Windows Forms combined
- WPF is about markup and code
 - Just like ASP.NET
 - Just like Windows Workflow Foundation

Creating WPF applications (again)

WPF Applications

Controls

Styling and Templates

Layout

Data

Content

Actions

A lot is different or new!

Differences and new features

- Dependency property system
 - Intelligent properties
 - Direct, tunneling and bubbling events
- Databinding
 - Declarative binding
 - Directional exchange of data
- Templated controls
 - Controls are lookless by themselves

More differences and new features

- ## Triggers and animation

- Can change properties
- Start storyboards

- ## Container types for content

- Window
- Page
- Document based content

- ## Structured navigation

- Page-based navigation
- Using hyperlinks or navigation services

XAML?

Did you really say “ksemmul”?

XAML

- eXtensible Application Markup Language

- XML data represents CLR objects

- Object instances → XML elements
- Properties of objects → XML attributes

- Conventions for syntax

- Complex properties: “Property-element” syntax
- Attached properties
- Markup extensions

Demo

Hello World and then some

```
<Page
  xmlns="http://schemas.microsoft.com/
    winfx/2006/xaml/presentation"
  xmlns:x="http://schemas.microsoft.com/
    winfx/2006/xaml">

  <Label>Hello XAML!</Label>

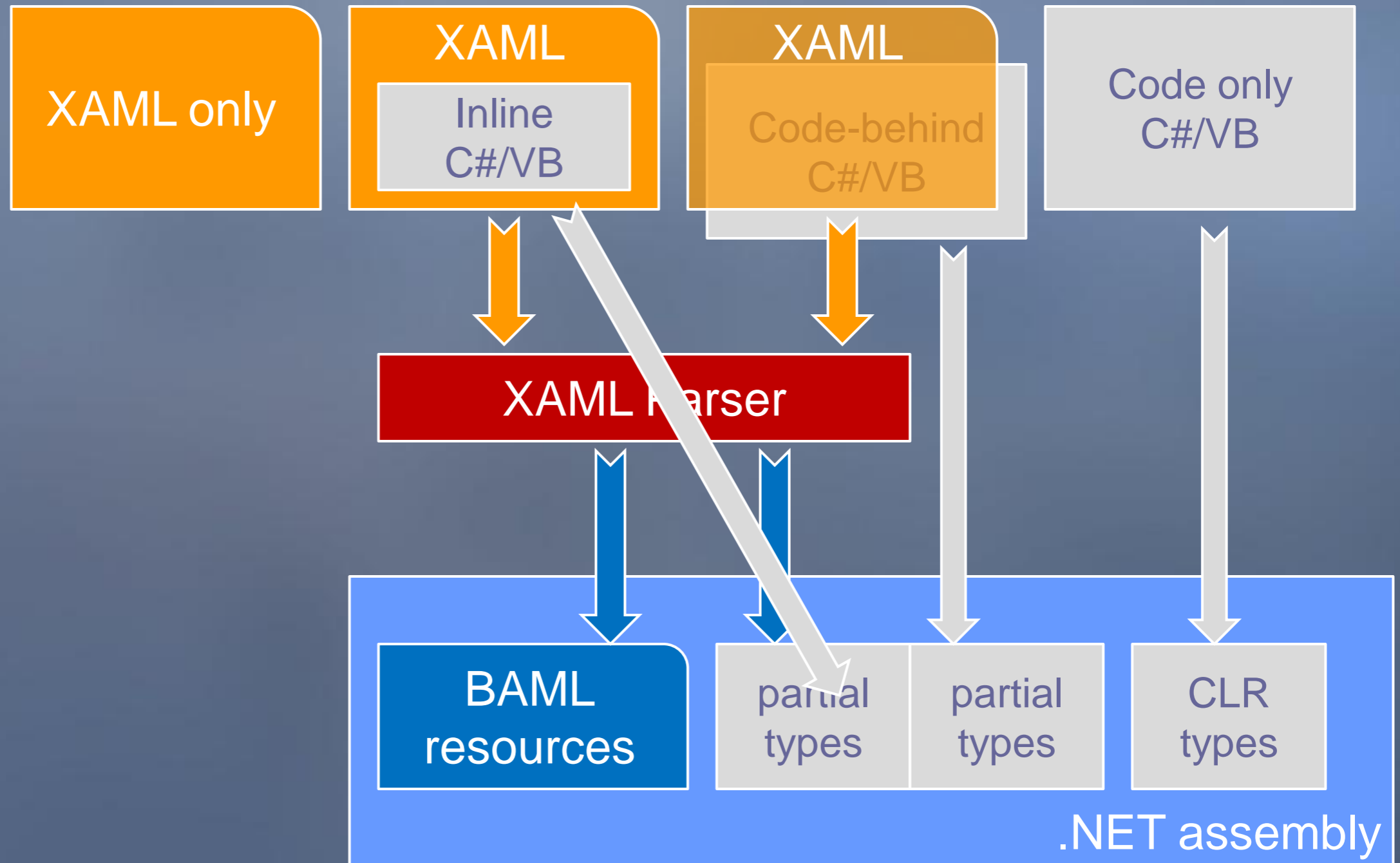
</Page>
```

XAML, XOML, XUML, XAML

- XAML is a XML language
- Workflow specific grammar: XOML
 - O for Orchestration
- Presentation specific grammar: XAML
 - A for User Interface

Spectrum of markup and code

Loose XAML

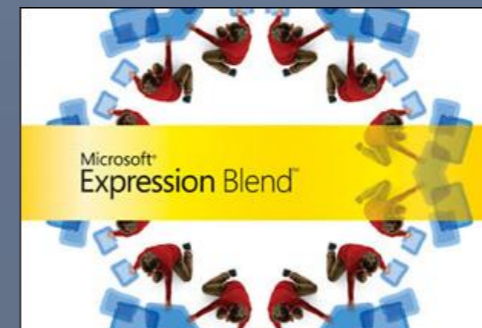


Bridging the gap

- XAML brings world of developer and designer together

- Designers: Expression Studio

- Design, Web, Blend and Media



- Developers: Visual Studio 2005 or "Orcas"

- VS2005 Extensions for WPF available as CTP

Demo

Trying to be a designer and developer

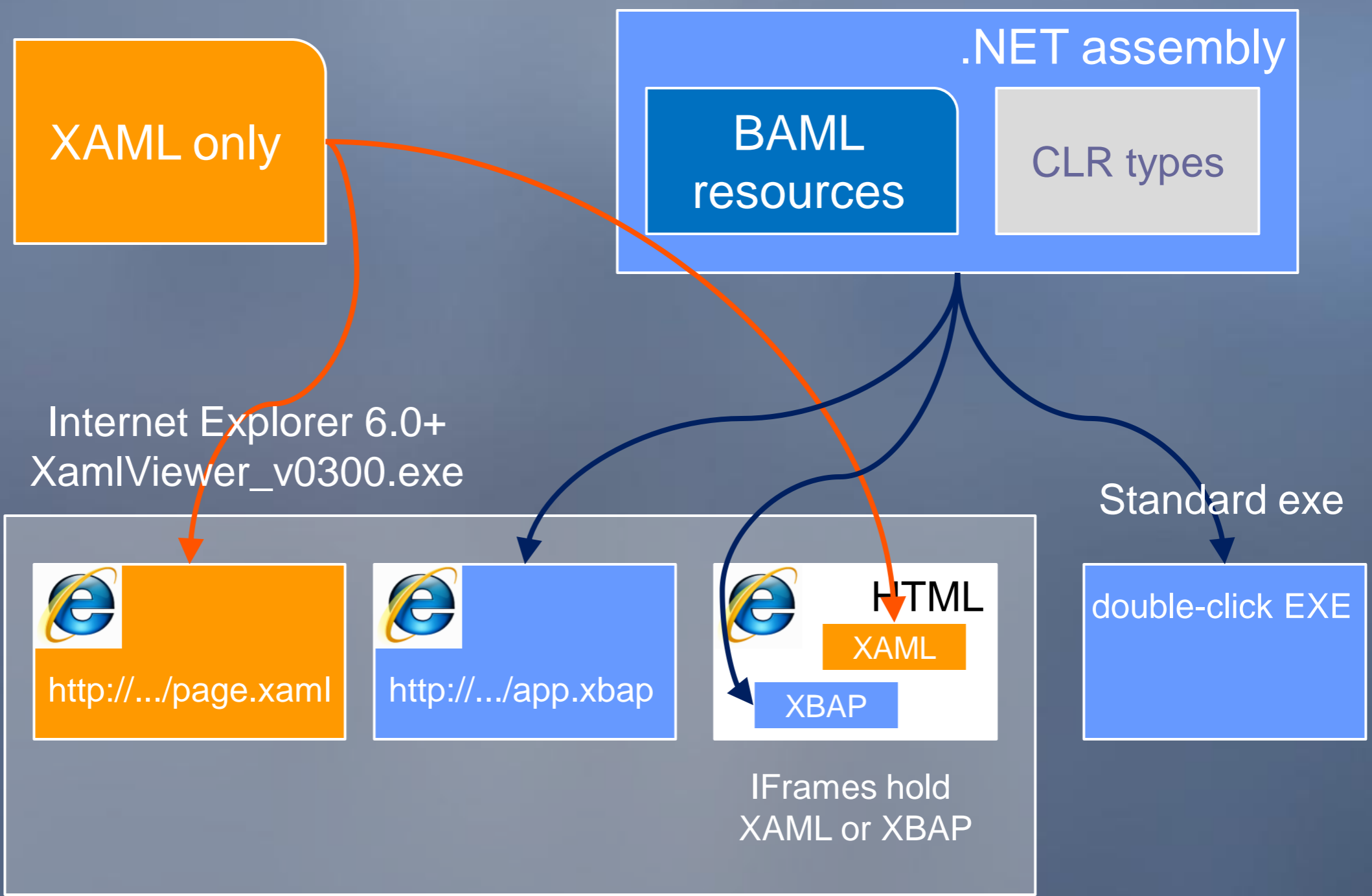
For Windows or Web?

The hosting and deployment options

Differences between Windows and Web

- Application startup
 - Double-click or URL
- Security
 - Sandboxed or not
- Container host
 - Window, Page or any other WPF content element

Startup and hosting



Host requirements

- Client always needs .NET Framework 3.0
 - Windows XP SP2, Windows Vista
 - Windows Server 2003 or "Longhorn" Server
- Client uses Internet Explorer 6 and up
 - Better integration and bootstrapping from IE7
- Distributing server can be anything

Deployment options

MSI Windows Installer

- Full access to system: registry, file system, ...
- Must be administrator to install

ClickOnce

- No administrator rights necessary
- Automatic checks for application updates
- Sandboxed by CAS based on evidence
- Install or online-only option

New deployment options

- XAML browser applications (XBAP)

- Almost like ClickOnce, say ZeroClick
- Runs directly in browser
- No install option, always needs connection

- Loose XAML

- Generate on the fly
- Cannot contain any code

Demo

Deploying the same app over and over again

Comparing deployment options

Deployment type	Full trust	Sandbox	Code	Deployment	Admin
Loose XAML	No	Yes	No	Online	No
XBAP	Yes (difficult)	Yes	Yes	Online	No
ClickOnce	Yes (prompt)	Yes	Yes	Online/Install	No
MSI Installer	Yes	No	Yes	Install	Yes

WPF/Everywhere

Greater reach for WPF

WPF/Everywhere

- Portable subset of WPF functionality
- Focus on interactive content
 - Vector graphics, animation, codecs, media pipeline
 - XML parser and downloader component
 - Not everything is there: for example no 3D support
- Cross-platform and cross-browser
 - Build on light-weight cross-platform CLR
- Fairly easy transition for WPF developers
 - Markup in XAML
 - Code-behind in JavaScript

Client requirements WPF/e

- Far less requirements on client

- No .NET 3.0 installation needed
- Install online runtime (of ~1 MB)

- Operating Systems

- Windows XP and Vista
- Mac OS X 10.4.8 and up (for PowerPC and Intel)

- Browsers

- Internet Explorer 6 and 7
- FireFox 1.5 and 2.0 for Mac and Windows
- Opera 7+, Safari 1+

Demo

Taking XAML across browsers and platforms

Review

- WPF is for UI of future
- WPF applications are about code and markup
- XAML allows declarative markup
- Developing for Windows or Web is nearly same
- WPF/e brings cross-platform and cross-browser reach

Questions ?