

Í FYRSTA SINN Á ÍSLANDI

Það besta frá
convergence
& tech-ed | 2008

Microsoft



TM

Silverlight 2

Smart-Web-Clients with .NET




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What is Silverlight ?

- Browser-Plugin (4,63 MB)
 - Cross-Browser   
 - Cross-Platform
- Embedded in an HTML page
- Local Execution
 - Smart-Client-Development
- Silverlight 2: integrated Mini-.NET

**Rich UI
and
Flexible
deployment**

Developing for Silverlight

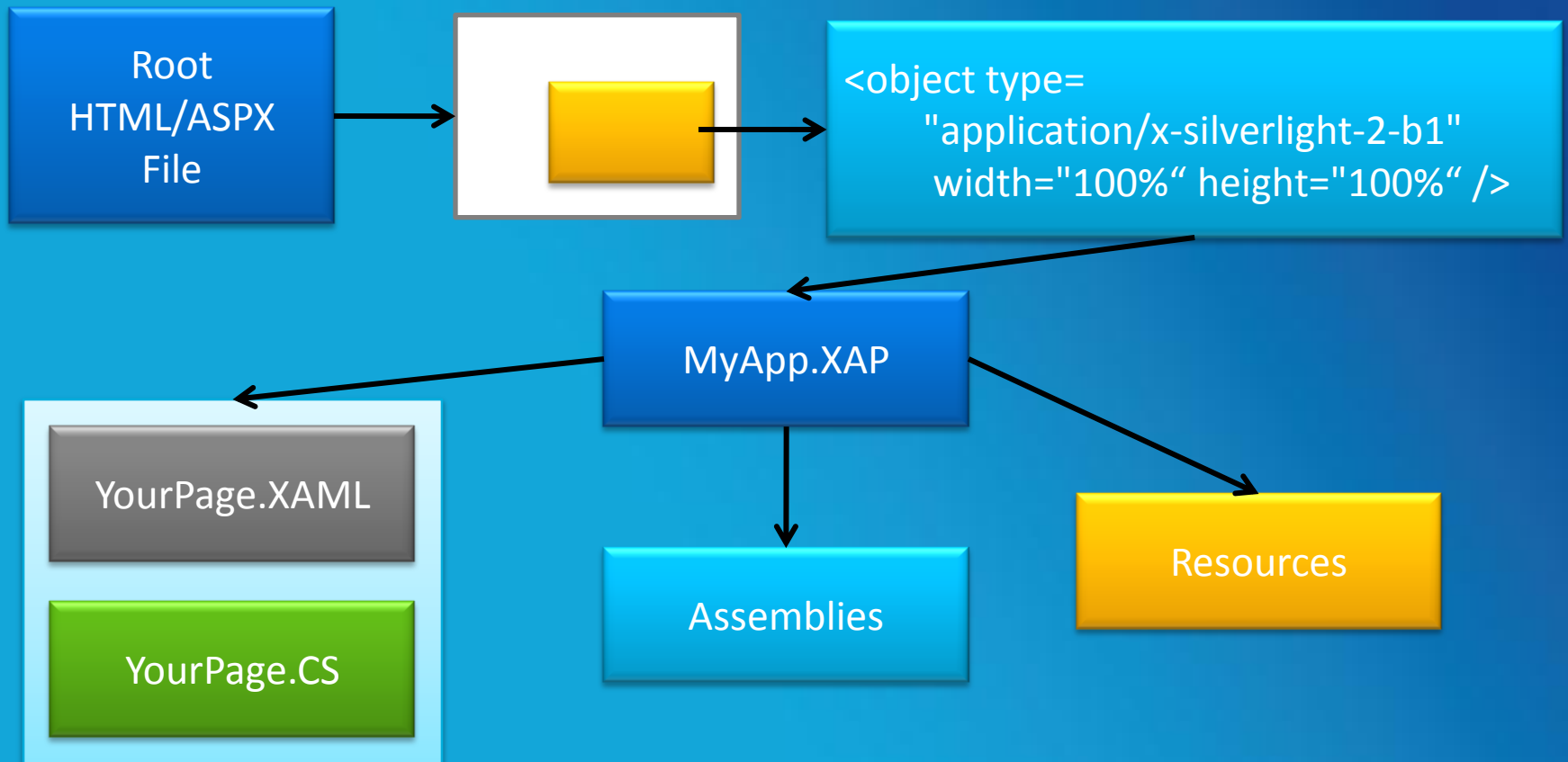
- XAML for UI-design (*Expression Blend*)

```
<UserControl x:Class="SIApp.Page">  
    ...  
</UserControl>
```

- .NET Code behind (*Visual Studio*)

```
public partial class Page : UserControl  
{  
    ...  
}
```

Structure of a Silverlight App



Silverlight 2 - Runtime Features

- 2D, Graphics
- Audio, Video
- Animations
- Text, Text Input
- Controls
- Layout
- Styles/Templates
- Data Binding
- Networking
 - HTTP/S & Sockets
- .NET Support
 - C# und VB.NET
- LINQ
- XML APIs
- HTML Integration
 - JSON Serializer
- Local Storage
- Crypto APIs (AES)
- Threading

Silverlight 2 - SDK Libraries

- Dynamic Languages
 - JScript
 - IronRuby
 - IronPython
- Additional Controls
- LINQ for XML
- XML Serialization
- Syndication APIs (RSS)

Silverlight Futures

- Silverlight for Mobile
 - Based on 2.0: RTW in 2009
 - Windows Mobile, Nokia S40/S60
- Moonlight



Build an Application

- Step 1: Get Data
- Step 2: Convert XML data to .NET objects
- Step 3: Build UI
- Step 4: Save last search locally
- Step 5: Access local data

Build an Application

- Step 1: Get Data
 - Network data from site of origin
 - Network data from cross domain (x-domain)
 - Local data

Silverlight Sandbox

- Silverlight lives in the browser Sandbox
- Developers cannot extend the sandbox
- Silverlight extends in a secure way
 - Local storage (isolated storage)
 - Similar to cookies
 - FileOpen dialog
 - Sockets
 - Cross domain HTTP(S) requests
 - Support Silverlight and Subset of Flash policy files

Build an Application

- Step 1: Get Data
 - Get data from <http://catalog.video.msn.com/>
 - Secured via a Silverlight [policy file](#)

demo

Networking

Build an Application

- Step 1: Get Data
- Step 2: Convert XML data to .NET objects
 - Options:
 - LINQ to XML
 - XMLReader
 - XML Serialization

demo

Convert XML to Objects
(XML -> List<VideoSource>)

Build an Application

- Step 1: Get Data
- Step 2: Convert XML data to .NET objects
- Step 3: Build Main (Master) View

Build an Application

- Step 1: Get Data
- Step 2: Convert XML data to .NET objects
- Step 3: Build UI

Silverlight 2 Controls

- Canvas, Grid, StackPanel
- FileOpenDialog
- Image, MediaElement, MultiScaleImage
- ListBox, ComboBox
- TextBox, PasswordBox
- Button, HyperlinkButton
- CheckBox, RadioButton
- Slider, ProgressBar, ScrollBar
- TextBlock
- ToolTip, Popup

Silverlight SDK

- DataGrid
- DatePicker, Calendar
- TabControl, GridSplitter

Silverlight Toolkit

- WrapPanel, DockPanel
- NumericUpDown
- AutoCompleteBox
- TreeView
- ViewBox, Charts

demo

Build the UI

Build an Application

- Step 1: Get Data
- Step 2: Convert XML data to .NET objects
- Step 3: Build UI
- Step 4: Save last search locally

Local Storage

- „Power-Cookies”
- 10 MB ratio per Application
- More memory on request (user consent)
- Persistence past application runtime
- .NET Isolated Storage APIs

demo

Save last search locally

Build an Application

- Step 1: Get Data
- Step 2: Convert XML data to .NET objects
- Step 3: Build UI
- Step 4: Save last search locally
- Step 5: Access local files

Open File Dialog

- End-Benutzer shares files
- Application gets access via streams (r/o)
- Multi-Selection (!)

- Usage:
 - File Uploads (with WebClient)
 - Display local files (Image, MediaElement)

demo

Play local video

HTML-DOM Integration

- Silverlight is hosted within HTML page
- Interop HTML <--> Silverlight important
 - JavaScript: Call Silverlight methods
 - Silverlight: Access HTML elements and JS

JavaScript --> Silverlight

```
[ScriptableType]
public class SharedClass
{
    [ScriptableMember()]
    public void SlMethod(string arg);
}
```

```
HtmlPage.RegisterScriptableObject("max", sc1);
```

```
document.getElementById("xaml1")
    .content.max.SlMethod("bla");
```

Silverlight --> JavaScript

```
HtmlElement el =  
    HtmlPage.Document.GetElementById("bla");  
  
el.SetAttribute("value", "Hallo");  
el.AttachEvent("onclick", csEvent);
```

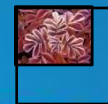
```
HtmlPage.Window.Eval("window.alert('Silverlight!');");
```

Image Deep Zoom

- Displays large images
- Seamless zooming / postloading
- Only necessary parts of image are loaded
- Behaviour like „Virtual Earth”

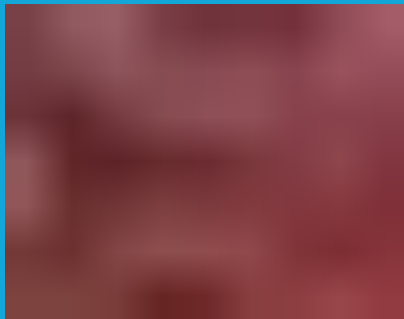
Image Deep Zoom

- Deep Zoom Composer cuts image in 256 x 256 tiles
- Creates different zoom levels



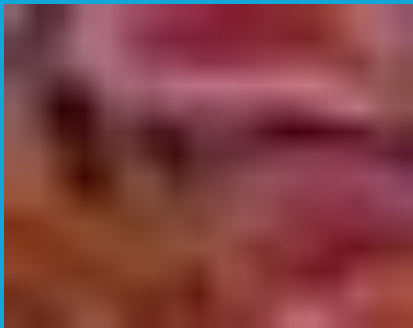
Deep Zoom – How does it work?

- Lowest resolution displayed first
- Background download of higher quality tiles --
> faded in smoothly



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Image Deep Zoom

- MultiScaleImage Object
- Deep Zoom Composer

Silverlight

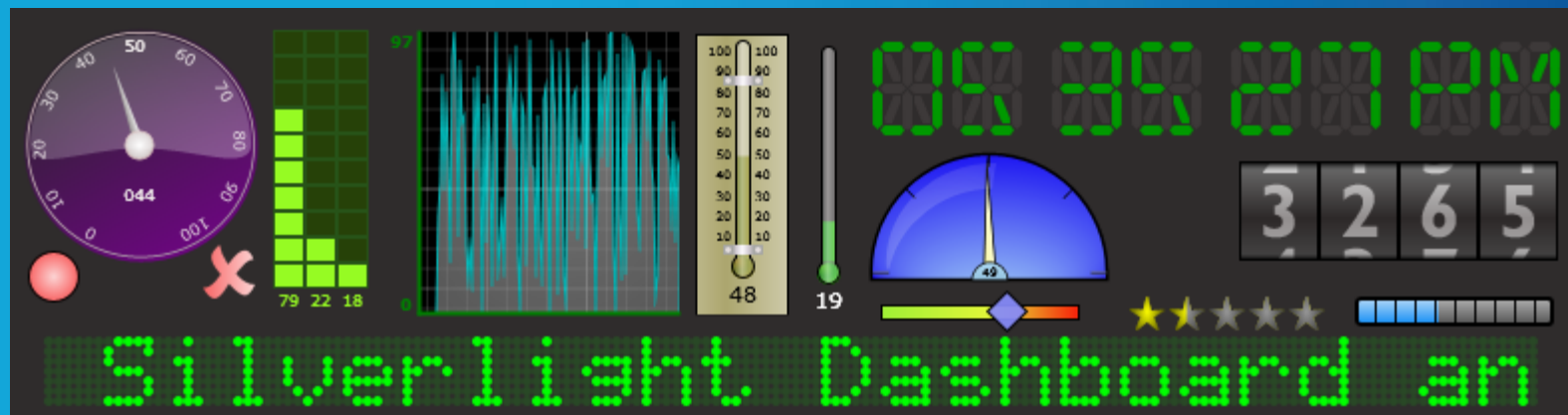
- Local execution:
 - Better UX than HTML / AJAX
 - Smart-Client-Development way
- Flexible Deployment (embedded in websites)
- Mini-.NET Framework
 - Well-Known APIs
 - XAML Subset of WPF
 - 4.5 MB vs. 80 MB

Start developing for Silverlight

- Visual Studio 2008 + SP1
- [Silverlight Developer Package](#)
- Expression Blend 2 + SP1
- [Deep Zoom Composer](#)

Start developing for Silverlight

- [Silverlight Toolkit](#)
- [Silverlight Dashboards & Gauges](#)



- [Silverlight Contrib](#)

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