ArcGIS API for Microsoft Silverlight/WPF—An Introduction
Morten Nielsen
Rex Hansen
Agenda

- Silverlight platform
- API Overview
  - Getting Started
- Building Apps
  - Configurable Viewer
- Road Ahead
ArcGIS 10 — A Complete System

Easier
More Powerful
and Everywhere

- Discover
- Create
- Manage
- Visualize
- Analyze
- Collaborate

Cloud
Enterprise
Local

Web
Mobile
Desktop
Microsoft’s Silverlight Platform

- Premier Web and Mobile platform
- Backed by Microsoft and Esri
- Silverlight 5+
- Support on future systems
ArcGIS API for Silverlight

• Powerful Web Mapping API
• Use **ArcGIS Server/Online**, Bing Maps & other data services
• Integrates with Microsoft development environments
• Common, rich development experience

[Visual Studio Magazine Readers Choice 2010]
Requirements

• Tooling
  - Microsoft Visual Studio 2010
    - Silverlight 4 Tools for Visual Studio 2010 -or- SP1
    - Expression Blend 4

• Platforms
  - Silverlight 4
Libraries

- **ESRI.ArcGIS.Client.dll**
  - Map, ArcGIS Layers, Graphics, Geometry, Symbols
- **ESRI.ArcGIS.Client.WebMap.dll**
- **ESRI.ArcGIS.Client.Bing.dll**
- **ESRI.ArcGIS.Client.Behaviors.dll**
- **ESRI.ArcGIS.Client.Toolkit.dll**
  - Common set of controls for map interaction
- **ESRI.ArcGIS.Client.Toolkit.DataSources.dll**
  - Common set of data sources

* CodePlex URL: [http://esrisilverlight.codeplex.com](http://esrisilverlight.codeplex.com)
API Highlights
WebMap Documents

- Read, process, utilize WebMap documents
  - Created and hosted on ArcGIS Online, ArcGIS Portal
Wrap Around

- Continuous pan East to West
- Works with:
  - Dynamic Maps
  - Features
  - Editing
- Supported in
  - WGS84, Web Mercator
InfoWindow control

- Available in Toolkit
- Similar, but different than MapTip
  - Can be displayed any time
  - Show on map action
  - Can remain visible after interaction
    - Anchored to a position relative to the map
Touch/Gestures

- Support for Touch and Gestures
  - Map Navigation, Draw support

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<tr>
<td>Tap</td>
<td>Double-Tap</td>
<td>Pan/Drag</td>
<td>Touch &amp; Hold</td>
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<tr>
<td>Flick</td>
<td>Stretch</td>
<td>Pinch</td>
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Graphics and Editing

- Edit and draw magnifier
  - Interactive editing experience to support touch devices
- New arrow, circle, ellipse, triangle types
- Rotate, scale, move geometry
Legend Control

- Available in Toolkit library
- Legend is Templatable
  - Controls can be added to layer items
    - Radio buttons, check boxes, etc
- Symbol swatches for Feature Layers and ArcGIS Dynamic Map Service
  Layers can be retrieved and displayed
ScaleLine and Attribution controls

- Attribution automatically shows copyright text from all visible layer services
- Fully style-able
IDE Integration

- Design-time support
  - Expression Blend 4 and Visual Studio 2010
- Application templates
XAML and Code Behind

- UserControl has container class to layout elements
- `xmlns` declarations ≡ `using` statement in C# and `Imports` in VB.NET

```xml
<UserControl x:Class="MyUserControl"
            xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
            xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
    <Grid x:Name="LayoutRoot">
        ...
    </Grid>
</UserControl>
```
Layout containers in XAML

- Container classes or layout controls group and position controls
- Core container classes
  - **Grid**: grid format with rows and columns
  - **StackPanel**: stacked horizontally or vertically
  - **Canvas**: absolute x,y positioning
- Microsoft Silverlight Toolkit container classes
  - **WrapPanel**: fill out available space horizontally and then wrap around
  - **DockPanel**: dock left, right, top, bottom or center
XAML: Creating a Map 101

```xml
<UserControl x:Class="ArcGISSilverlightSDK.Map"
xmns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmns:x="http://schemas.microsoft.com/winfx/2006/xaml"

    <Grid x:Name="LayoutRoot" >
        <esri:Map x:Name="MyMap">
            <esri:ArcGISTiledMapServiceLayer ID="MyLayer"
                Url="http://domain/.../MapServer" />
        </esri:Map>
    </Grid>

</UserControl>
```

**VB.NET:**

```vbnet
Dim layer As ArcGISTiledMapServiceLayer = New ArcGISTiledMapServiceLayer()
layer.ID = "MyLayer"
layer.Url = "http://domain/.../MapServer"
MyMap.Layers.Add(layer)

Dim MyMap As MyMap = New MyMap()
LayoutRoot.Children.Add(MyMap)
```
Getting Started

- Demos
  - A simple application
- Resource Center
  - Interactive SDK
  - Documentation
  - Samples
  - CodePlex
Silverlight Viewer

- Configurable *ready-to-deploy* Web client
  - Built with **ArcGIS API for Silverlight**

- **Easily and quickly** create Web mapping applications
  - Complete set of core GIS tools and functionality

- **No programming required**
  - Ideal for novice Web application creators

- **Extend with Add-Ins**
  - Tools, Behaviors, Layouts, Layers, Controls
Status

• V 2.2 - released June 2011
  - ArcGIS API for Silverlight
  - ArcGIS API for WPF
  - ArcGIS API for Windows Phone

• V 3.0 beta - Q3
  - WPF part of 10.1 ArcGIS Runtime SDK for WPF

• V 2.3 – early Q4
More Silverlight sessions!

- **Advanced Silverlight**
  - Wed 1:30 PM - 2:45 PM  Room 8
  - Thu 3:15 PM - 4:30 PM  Room 32 B

- **Silverlight Viewer - Intro**
  - Tue 3:15 PM - 4:30 PM  Room 5 A/B
  - Thu 1:30 PM - 2:45 PM  Room 5 A/B

- **Silverlight Viewer - Add-Ins**
  - Wed 11:00 AM – 12:30 PM  Exhibit Hall C (Web Demo Theater)
  - Wed 4:00 PM – 4:45 PM  Exhibit Hall C (Web Demo Theater)
More Silverlight sessions!

- **Road Ahead - Silverlight**
  - Wed 3:15 PM – 3:35 PM
    Room 6 A

- **Road Ahead – WPF**
  - Wed 12:00 PM – 1:00 PM
    Exhibit Hall C (Desktop Developer Demo Theater)
Please fill out your session surveys

www.esri.com/sessionevals