


NEARC 2009

ArcGIS Server
“FLEXing Your Internet Muscle”




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Summary

- ◆ The Scenario
- ◆ Options for ArcGIS Server Technology
- ◆ ArcGIS API for FLEX
- ◆ Options for Developing in FLEX
- ◆ Best Practices for Developing in FLEX
- ◆ Demos

The Scenario...

- ◆ You've got ArcGIS Server software... or “kicking the tires”
- ◆ The ESRI Marketing Machine is in High Gear Pushing AGS
- ◆ Numerous ways to program against AGS
- ◆ Users used to Google/Bing
- ◆ What the heck do I do?



ArcGIS Server – The Programming Options

- ◆ Web ADF
- ◆ JavaScript API
- ◆ Flex API
- ◆ Silverlight API



◆ API

API – Application Programming Interface

- ◆ NOT a new concept
- ◆ Set of standardized requests made from one service to another
- ◆ Specifies the proper way for a developer to request services
- ◆ Specific vocabulary and calling convention (syntax)
- ◆ Language dependent or independent
- ◆ Actual Software is an *implementation* of the API

ArcGIS Server – The Programming Options

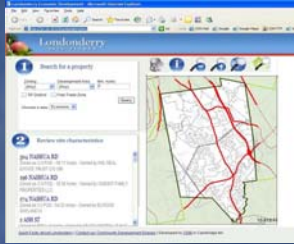
- ◆ .NET ADF
- ◆ JavaScript API
- ◆ Flex API
- ◆ Silverlight API



Heavy-Weight
Access to ArcObjects
Highly Customizable

ArcGIS Server – The Programming Options

- ◆ .NET ADF
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Light-Weight
"Google-Like"
Similar to Flex without the Pizzazz

ArcGIS Server – The Programming Options

- ◆ .NET ADF
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The Hot Commodity
Fluid User Interface
"Easy" to Program***

*** When you use the templates

ArcGIS Server – The Programming Options

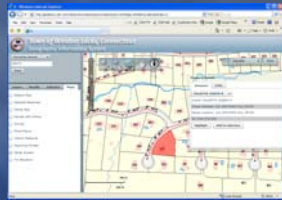
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New... Up-and-Comer
Microsoft's Answer to Adobe's Flex
Requires Client Download
More to Come Next Year

ArcGIS API for FLEX... It's Pretty Cool

- ◆ Great User Experience
- ◆ Fast and Powerful
- ◆ Good Templates
- ◆ Fairly Easy to Get the Templates Working
- ◆ More Involved When Customizing



ArcGIS API for FLEX

- ◆ Maps
 - ◆ Graphics
 - ◆ Tasks
 - ◆ Querying
 - ◆ Locating Addresses
 - ◆ Finding Attributes
 - ◆ Identifying Features
 - ◆ Geo-processing
 - ◆ Non-GIS components
 - ◆ Grids, Trees, Panels, Charts
- Most commonly used features

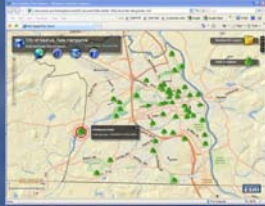
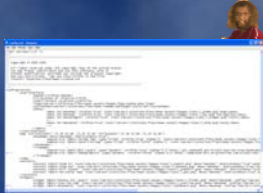
Developing in Flex... So Easy a Caveman Could Do It?

- ◆ ESRI says "Yes"
- ◆ Reality is...
 - ◆ "Yea... when you use the templates"
 - ◆ "No, when you develop from scratch"
 - ◆ Templates will only take you so-far



Developing in Flex – The Options

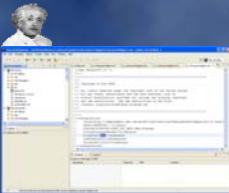
- ◆ Use ESRI Templates
- ◆ Develop From Scratch



Templates are Highly Functional
Configured in Notepad or Flex Builder
Lots of Samples On-Line
Somewhat Simple to Customize

Developing in Flex – The Options

- ◆ Use ESRI Templates
- ◆ Develop From Scratch



Developed in "Adobe Flex Builder"
Requires a Skilled Programmer
Very Powerful

Developing in Flex – Beyond the Simple Stuff : Best Practices

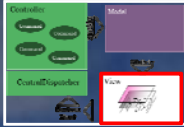
Have a Plan

- ◆ MVC Framework
- ◆ AMF Data Access
- ◆ XML Configuration Schema



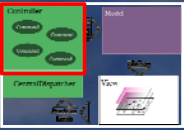
ESRI Holistic Framework - View

- ◆ Is the User Interface of the Flex application
- ◆ Similar to ASP.NET's code behind system
 - ◆ Alternative to using <mx:script> tags
- ◆ Creates event objects to be passed to the controller using the CentralDispatcher
- ◆ The view is updated using binding braces { } to connect to values stored in the model



ESRI Holistic Framework - Controller

- ◆ The controller's job is to update the model
- ◆ Consists of objects that execute certain commands created by the model



ESRI Holistic Framework – Controller Cont....

- ◆ The functions that are used to handle certain events are defined using Holistic's [Listen] attribute
- ◆ For a given event, the CentralDispatcher will try to find a function marked with [Listen] that has the event's name appended with "Handler"
- ◆ Example: For the "initializeMap" event, there will be an object of the type InitializeMapCommand which has a method named "initializeMapHandler"



ESRI Holistic Framework

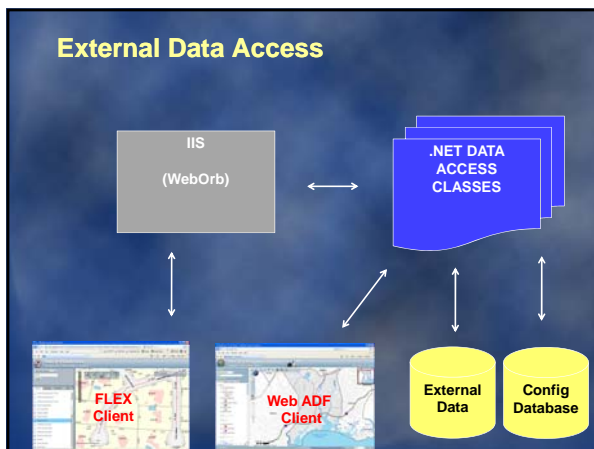
- ◆ The overall purpose of this configuration is to give a clear representation of separation of concerns in the code
- ◆ No Cheating !! by modifying the Model from the View
 - ◆ Maintain code that modifies your data while displaying it, making debugging more difficult



External Data Access AMF – Action Message Format (Flex Remoting)

- ◆ Network communications channel between Flash applications and remote services
- ◆ Uses .NET libraries (same as developed Web ADF apps)
- ◆ Allow Flex applications to take advantage of the previously designed configuration database
- ◆ Can open and process external databases using GIS information
- ◆ We use WebOrb
 - ◆ Connects Flex clients with .NET Objects

External Data Access



XML Configuration Schema

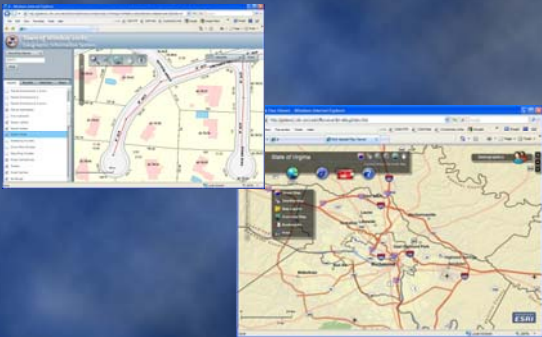
- ◆ Holds basic site information

Base Layers (<baseLayers>)

External layers to be used to provide a basemap for simple data, such as ESRI's street maps.

```
<baseLayers>
  <layer name="Street Map">http://server.arcgisonline.com/ArcGIS/rest/services
  /ESRI_StreetMap_World_2D/MapServer/layer</layer>
  <layer name="Satellite">http://server.arcgisonline.com/ArcGIS/rest/services
  /ESRI_Imagery_World_2D/MapServer/layer</layer>
</baseLayers>
```

What does this look like?



To FLEX or not to FLEX? Comments and Opinions

- ◆ Love It!
- ◆ Flex Templates Great for General GIS Access
- ◆ Look to Customize for Advanced Functions
- ◆ Think Many Applications vs. the "One Size Fits All"
- ◆ Don't Rule out .NET for Hard-Core Applications



Questions



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