

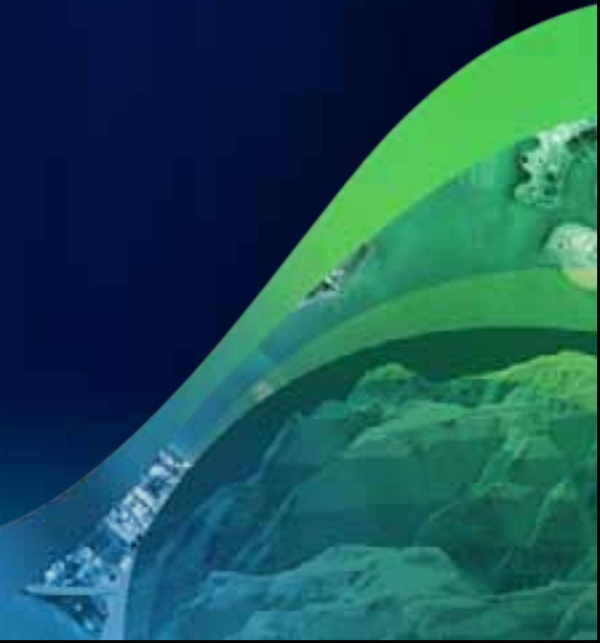


**Esri International User Conference | San Diego, CA**  
**Technical Workshops | July 12, 2011**

# **ArcGIS Viewer for Flex**

## **An Introduction**

Canserina Kurnia and Derek Law



# Agenda

- **Background**
- **Product overview and advantages**
- **Functionality and UI (widgets)**
- **Installation structure**
- **Configuration**
- **Development**
- **Road ahead**

# ArcGIS 10 — A Complete System

Easier  
More Powerful  
and Everywhere



# Review: Data Content in a Web Map

## *Common design pattern*

- **Base Maps**
  - Geographic frame of reference
  - Contain static data
- **Operational layers**
  - Information overlays that end users interact with
  - Contain dynamic data
- Operational layers display on top of Base Maps



# Building Web clients

- **Web Mapping APIs**

- ArcGIS API for JavaScript
- ArcGIS API for Flex
- ArcGIS API for Silverlight



- Provide a comprehensive framework for creating GIS enabled Web mapping applications
- Primarily geared towards developers
- **ArcGIS Server Manager - Application Builder**
  - Depreciated post ArcGIS 10



# Product history

- Before ArcGIS 10, there was the **Sample Flex Viewer**
  - Developer sample built on the Flex API
  - One of the top downloaded samples
  - Hundreds of active sites
- **ArcGIS Viewer for Flex** (released Sept 20, 2010)
  - Formal product release of the Sample Flex Viewer
  - Approx. 17,000 downloads
  - ArcGIS Online group
    - **ArcGIS Viewer for Flex Live Sites**



# ArcGIS Viewer for Flex



- Configurable *ready-to-deploy* Web client
  - Built with the ArcGIS API for Flex
- **Easily and quickly** build GIS Web mapping applications



- **No programming required**, designed with the “non-developer” in mind
- Supported by ESRI Technical Support
- Resource Center
  - <http://links.esri.com/flexviewer>



# ArcGIS Viewer for Flex – User Interface





# ArcGIS Viewer for Flex – User Interface

“Open” widget (from Widget tray)



# Demo 1

Introducing the ArcGIS Viewer for Flex



# Advantages of the ArcGIS Viewer for Flex

- Configurable *ready-to-deploy* ArcGIS Server Web client
  - No programming required
- Extensible functionality via widgets
- Starting template to create custom Web mapping applications
  - No need to re-architect underlying framework
- Viewer application framework can be extended with ArcGIS API for Flex development
  - Source code provided

# ArcGIS Viewer for Flex – Users

*2 main groups who use the Viewer*

- **Configurators**

- Configure and deploy the Viewer without programming
- Leverage existing widgets
- E.g., GIS analysts, Website designers, Managers



- **Developers**

- Extend Viewer functionality
  - Change behavior of existing widgets
  - Create new widgets
  - Extend Viewer application
- E.g., Business partners, Website developers, Flex API developers



# Working with the ArcGIS Viewer for Flex

- Configurable XML files enable changes to:
  - **Appearance**
  - **Functionality** (via widgets)
  - **Data content**
- **Widgets** modular functionality
  - Consist of:
    - XML configuration file
    - Compiled Flash (.swf) file



# ArcGIS Viewer for Flex functionality







*Based on widgets*



- Viewer application functionality defined by widgets
- **20 core widgets included** (increase with future releases)
- Each widget is configurable
  - No programming required
- Use a select group of widgets to create custom Web clients to address specific business workflows
  - **Build focused Web mapping applications**
- “Lego-like” approach to client development



# Core functional widgets

Bookmark	
Data Extract	
Draw	
Edit	
GeoRSS	
Layer list	

Locate	
Print	
Query	
Search	
Time slider	



# Core UI widgets

- Header controller



- Map switcher



- Navigation



- Overview map

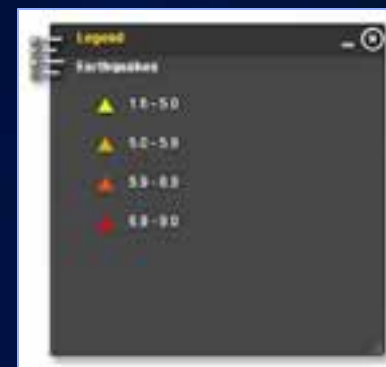


# Core UI widgets

- Coordinates



- Legend



- Pop Up windows



- Splash screen



# ArcGIS Viewer for Flex – Resource Center

<http://links.esri.com/flexviewer>

- Download the application
- Help documentation, widget and configuration samples, and support forum

ArcGIS Resource Center

ArcGIS Viewer for Flex

Home | Downloads | Samples | Forum | ArcGIS.com

**ArcGIS Viewer for Flex**

April 29, 2011 - version 2.3.1 released.

The ArcGIS Viewer for Flex is a ready-to-deploy viewer application. It is configurable, so you can easily add tools and data content without programming. You can also extend its functionality with custom widgets available from the Esri community, or create custom widgets yourself with the ArcGIS API for Flex. The ArcGIS Viewer for Flex is ideal if you want more control over the look and feel of your application. It is also a good solution if you want to host your own Web mapping applications (e.g., for enhanced security).


- Ready to deploy GIS Web client mapping application for ArcGIS Server built with ArcGIS API for Flex version 2.3.
- Easily configurable to meet custom business needs and requirements - no programming skills required to deploy.
- Viewer functionality is defined by [widgets](#) - many core widgets are included.
- New functionality can be created by [developing custom widgets](#) using the ArcGIS API for Flex.

Read about [what's new in version 2.3 and 2.3.1](#): continuous pan around the world, snapping, support for pop-ups configured in ArcGIS.com Web Maps, improved pop-up windows, identify capabilities on dynamic and tiled layers, improved localization, bug fixes and much more.

To download the application, follow the instructions at ["Download Flex Viewer"](#).

**Quick Links**

- [Download Viewer](#)  
- compiled and ready to go.
- [Download source code for Viewer](#)  
- for Flex developers.
- [Videos: Quick Intro](#)  
- 16 minute video.
- [Videos: Flex Viewer Seminar](#)  
- recorded 1 hour training seminar.
- [Videos: Gallery](#)  
- conferences presentations etc.
- [Creating a Custom Widget](#)
- [Blog](#)  
- announcements, special topics, tips and tricks.
- [The API](#)  
- ArcGIS API for Flex



Default configuration      Editing functionality      U.S. Thematic Mapping Viewer

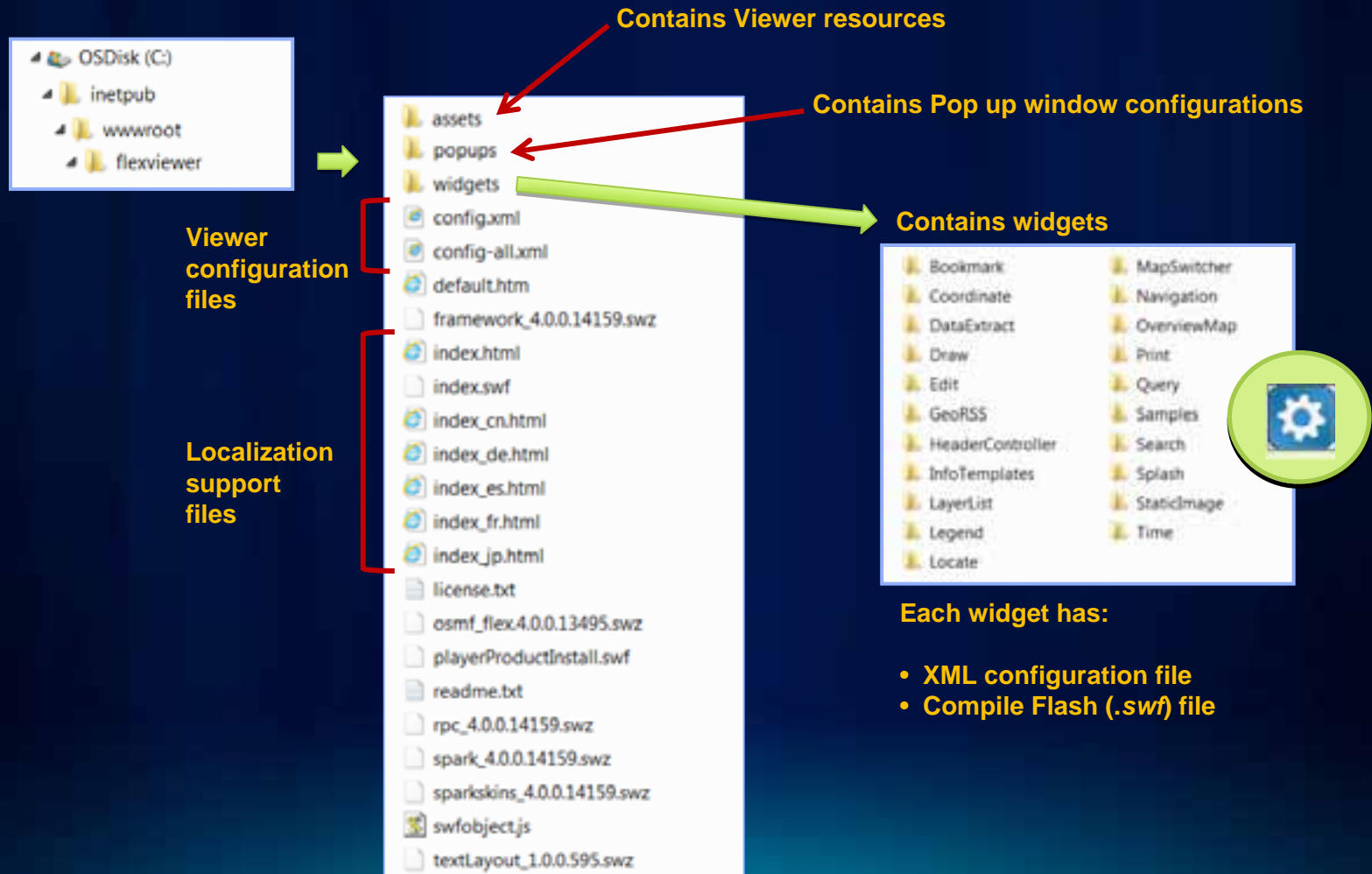
## Demo 2

Explore Viewer functionality  
(tour of different widgets)



# Viewer installation structure

## Download package contents



# Customizing the ArcGIS Viewer for Flex

*Configure for your business requirements*

- ArcGIS Viewer for Flex can be **easily customized**
  - Appearance, functionality, and data content
  - Edit XML configuration files (**no programming**)
- It also has an extensible framework
  - **Source code available**
- Custom development
  - Using the ArcGIS API for Flex

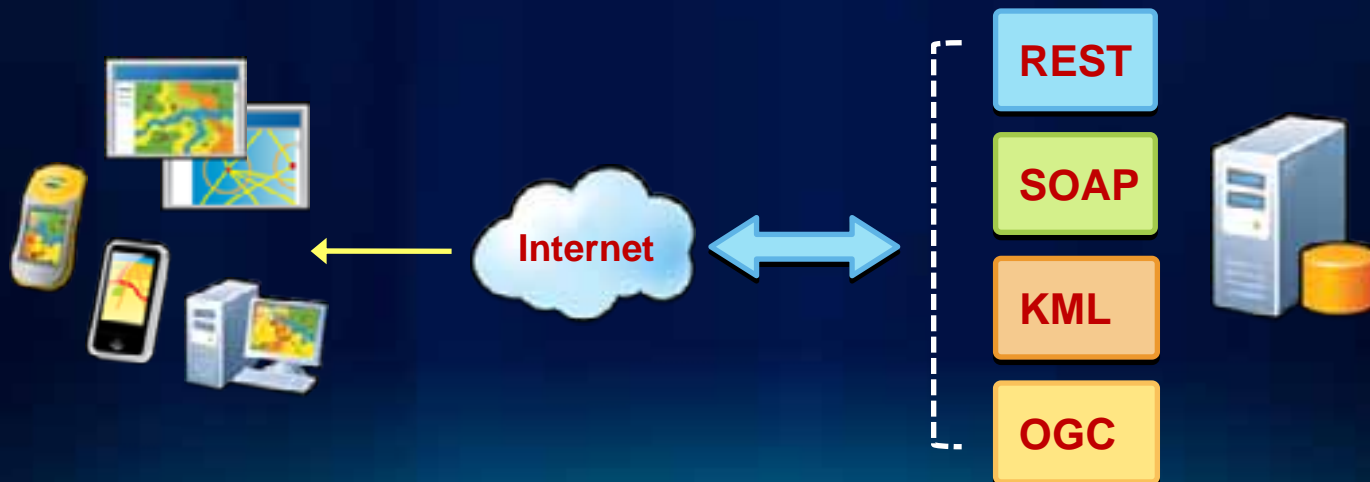


**ArcGIS Online**

# Review: ArcGIS Server – Web protocols

## *Support industry standards*

- Its GIS services can be accessed via
  - Representational State Transfer (**REST**)
  - Simple Object Access Protocol (**SOAP**)
  - Keyhole Markup Language (**KML**)
  - Open Geospatial Consortium (**OGC**)





# Review: ArcGIS Server – Services Directory

## View of ArcGIS Server REST endpoint

- ArcGIS Services Directory exposes REST API
  - <http://localhost/ArcGIS/rest>

The diagram illustrates the process of accessing the ArcGIS Services Directory REST API. On the left, a blue box labeled "REST" with a green arrow pointing right is positioned above a server icon. The main part of the diagram shows a screenshot of the ArcGIS Services Directory web interface. The interface displays a list of services under the "Services:" section. The service "ESRI\_Imagery\_World\_2D (MapServer)" is highlighted with a red circle. A green arrow points from this service to a detailed view of the service, which is shown in a green rounded rectangle. This detailed view includes the service name, description, and other metadata. A small gear icon is located in the bottom right corner of the detailed view.

**REST**

**ArcGIS Services Directory**

Folder: /

Current Versions: 10.01

View Footprints In: Google Earth

Folders:

- Demographics
- Elevation
- Reference
- Specialty

Services:

- CSP\_Imagery\_World (GlobeServer)
- CSP\_Imagery\_World\_10 (MapServer)
- **ESRI\_Imagery\_World\_2D (MapServer)**
- ESRI\_Imagery\_World\_2D (MapServer)
- ESRI\_ShadedRelief\_World\_2D (MapServer)
- ESRI\_StreetMap\_World (GlobeServer)
- ESRI\_StreetMap\_World\_2D (MapServer)
- II\_Imagery\_Front\_World (GlobeServer)
- II\_Imagery\_Front\_World\_2D (MapServer)
- NASA\_CloudCover\_World (GlobeServer)
- SOS\_Thun\_US (GlobeServer)

**ESRI\_Imagery\_World\_2D (MapServer)**

View In: ArcMap, ArcGIS Desktop, ArcGIS Online, ArcGIS for iOS, ArcGIS for Android

View Footprint In: Google Earth

Service Description: This map is in **Esri's ArcGIS Online** and is no longer updated. Esri recommends that you use **World Imagery** instead (available in ArcGIS Online).

Map Name: World

Layers:

- World Imagery (2D)

Thumbnail:

Description: This map presents low-resolution imagery for the world and high-resolution imagery for the United States and other countries. The map includes 2008 Blue Marble Next Generation 300m resolution imagery at small scales, above 1:1,000,000, and 250m resolution imagery at medium-to-large scales (down to 1:75,000) for the world and 2008 10m aerial imagery for the United States. It also includes 250m resolution imagery for the world and 250m resolution imagery for the United States. For more information on this map, visit us online at [http://www.esri.com/arcgisonline/metadata/ESRI\\_Imagery\\_World\\_2D](http://www.esri.com/arcgisonline/metadata/ESRI_Imagery_World_2D).

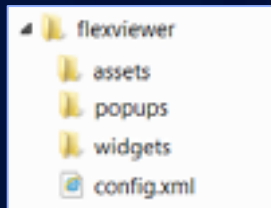
Copyright Text: Copyright © 2009 Esri, Redlands, CA

Spatial Reference: 4326

Single Fused Map Cache: Yes

# Configure the ArcGIS Viewer for Flex

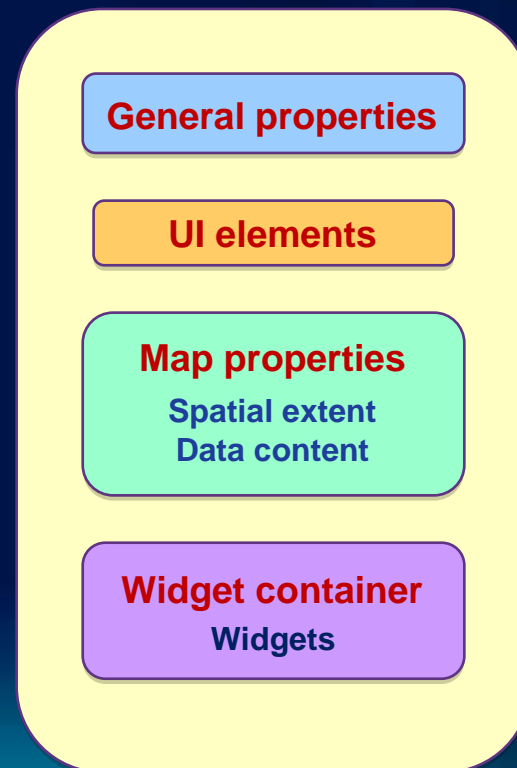
- Customize by editing the application configuration file



Edit **config.xml** file



- Appearance
- Functionality
- Data content



## Enable custom data

- **ArcGIS Services Directory**
  - View of REST endpoint
  - Information about Web services
  - <http://localhost/ArcGIS/rest>
- **Edit Viewer configuration file**
  - **Add as base map or operational layer**
  - **Use <layer> tag**
  - Reference URL address
  - Ensure consistent projection



# Demo 3

## Configure the Viewer



# Demo 3 summary

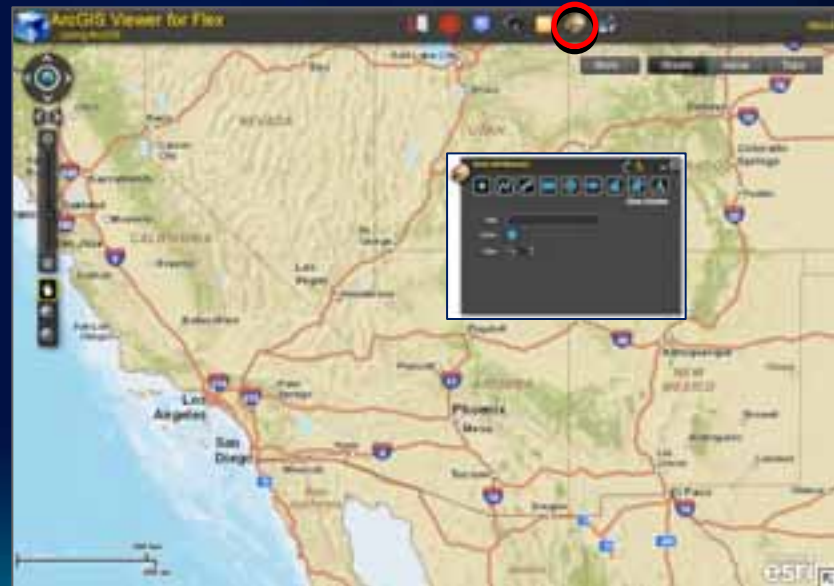
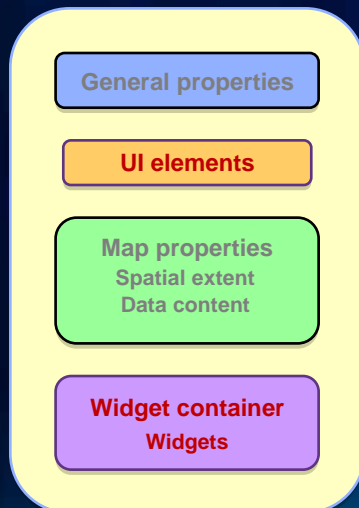
## *Configuring the Viewer*

- Changed title, logo, style colors
- Defined new spatial extent for map display
- Switched basemap
- Added operational layer

# Add new widgets

## *Widgets power the Viewer*

- Widgets are added in 2 different locations in the Viewer configuration file (*config.xml*)
  1. As a stand-alone widget
  2. In a widget container
- Use `<widget>` tag



# Widget code gallery – Resource Center

- Contributed by Esri staff and user community

ArcGIS Resource Center

ArcGIS Viewer for Flex

[Home](#) [Products](#) [Samples](#) [Forum](#) [Code Gallery](#)

Learn what others are doing and share your own work. This Flex Viewer code gallery contains widgets and applications available on [ArcGIS.com](#).

☒ widgets  
☐ applications  
☐ both widgets and apps

**Quick Links**

[Upload your app](#) and tag as "flexviewer" and/or "widget".  
[How to](#) add your own widget or app to the code gallery.

[Download Viewer](#)  
- compiled and ready to go,  
- or download [viewer source code](#)

**Table of Contents and Legend widget**  
Version 2.3.8.6 - Legend Widget For

**Enhanced Draw Widget**  
Version 2.3.1 for FlexViewer 2.3.x

**Enhanced Splash Widget**  
version 2.3.1 for FlexViewer

**Street View and More - Widget**  
for FlexViewer 2.x

**Dynamic Legend Widget**  
For Flex Viewer 2.3.x

**Flickr Photo Viewer Widget**

**Feature Layer Tips (map tips)**  
version 2.3.2 for Flex Viewer

**Attachment Related Info Window**  
Widget version 2.2.2 for

**Identify Widget** version 2.3.1  
for FlexViewer 2.3.x

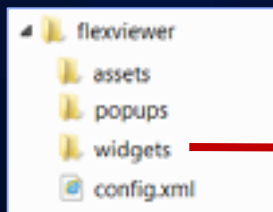
**Google Street View Widget**  
for the Flexviewer

1 2 3 4 5 6 7 8

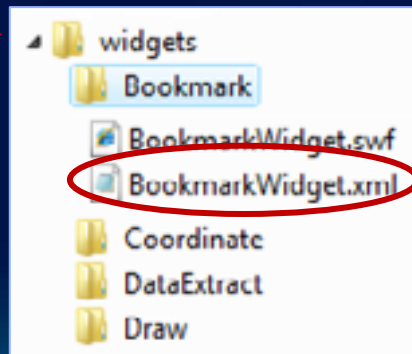


# Configure Viewer application widgets

- Customize each widget by editing its configuration file



Example:

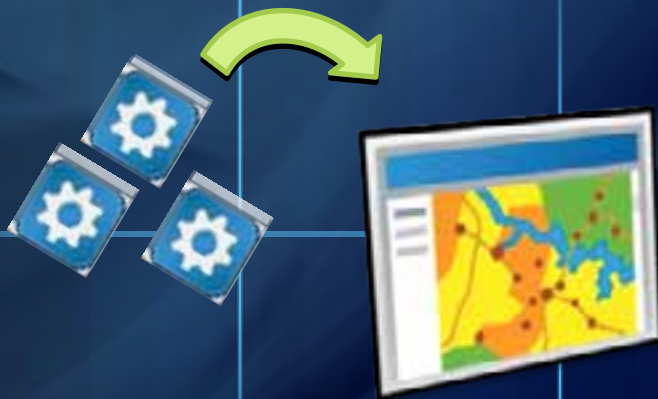


Edit **BookmarkWidget.xml** file  
(Properties of the widget)



# Demo 4

Adding widgets to the Viewer



# Developing with the ArcGIS Viewer for Flex

## *Extending its capabilities*

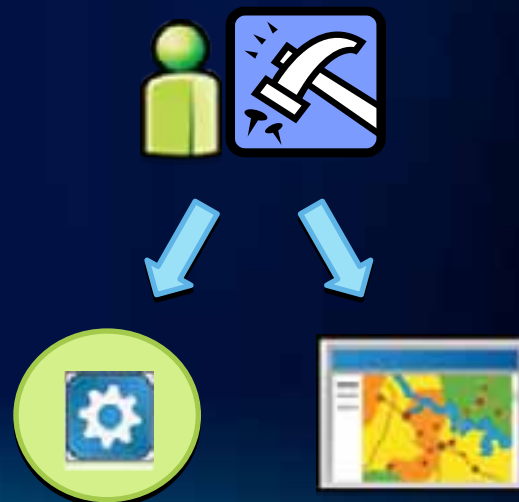
- Requirements
  - Adobe Flex SDK
  - Flash Player
  - IDE (Flash Builder)
  - ArcGIS API for Flex
- Application & widget source code available
- Common patterns
  - Change behavior of existing widgets
  - Create new widgets
  - Extend Viewer application



Flash Player



Flash Builder



# Road Ahead

- **Next ArcGIS Viewer for Flex 2.4**
  - Release: end of July
- **ArcGIS Viewer for Flex - Application Builder**
  - Interactive “point and click” user experience for viewer configuration
  - Supports ArcGIS Online Web Maps
  - Beta: late summer 2011
  - Release: late Q3/early Q4 2011

# ArcGIS Viewer for Flex - Application Builder

*Beta coming soon*



**Custom Web  
mapping application**

# Demo 5

Application Builder Technology Preview



# Summary



- Creation GIS Web clients, **without programming**
- **Configurable Web mapping application**
  - Uses a 'configure and deploy' approach
- Can be extended with ArcGIS API for Flex development
  - **Source code provided**
- Supported by Technical Support
- Online evaluations

[www.esri.com/sessionevals](http://www.esri.com/sessionevals)



## Related UC sessions

- **Adobe Flex Special Interest Group**
  - Tues 12:00 – 1:00 PM Room 5 A/B
- **ArcGIS API for Flex – An Introduction**
  - Wed 10:15 – 11:30 AM Room 8
- **ArcGIS API for Flex – Advanced Topics**
  - Tues 10:15 – 11:30 AM Room 8
  - Thurs 8:30 – 9:45 AM Room 8
- **Road Ahead – Flex**
  - Wed 4:05 – 4:25 PM Room 6A
- **Flex Appeal**
  - Wed 12:00 – 1:00 PM Room 8

## Related Demo Theater presentations

- **Changing the Look and Feel of Your ArcGIS Viewer for Flex Application**
  - Wed 5:00 – 5:45 PM Exhibit Hall C
  - Thurs 12:00 – 12:45 PM Exhibit Hall C
- **Creating Your Own Custom Widget for the ArcGIS Viewer for Flex**
  - Thurs 11:00 – 11:45 AM Exhibit Hall C

