

Esri Southeast Regional User Group Conference

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Creating Web Mapping Applications

Nikki Golding

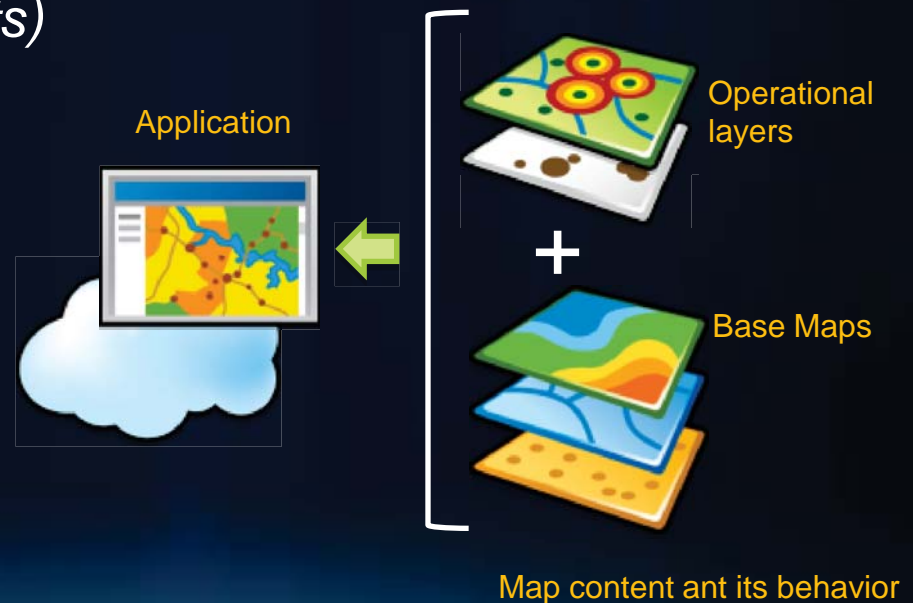


Agenda

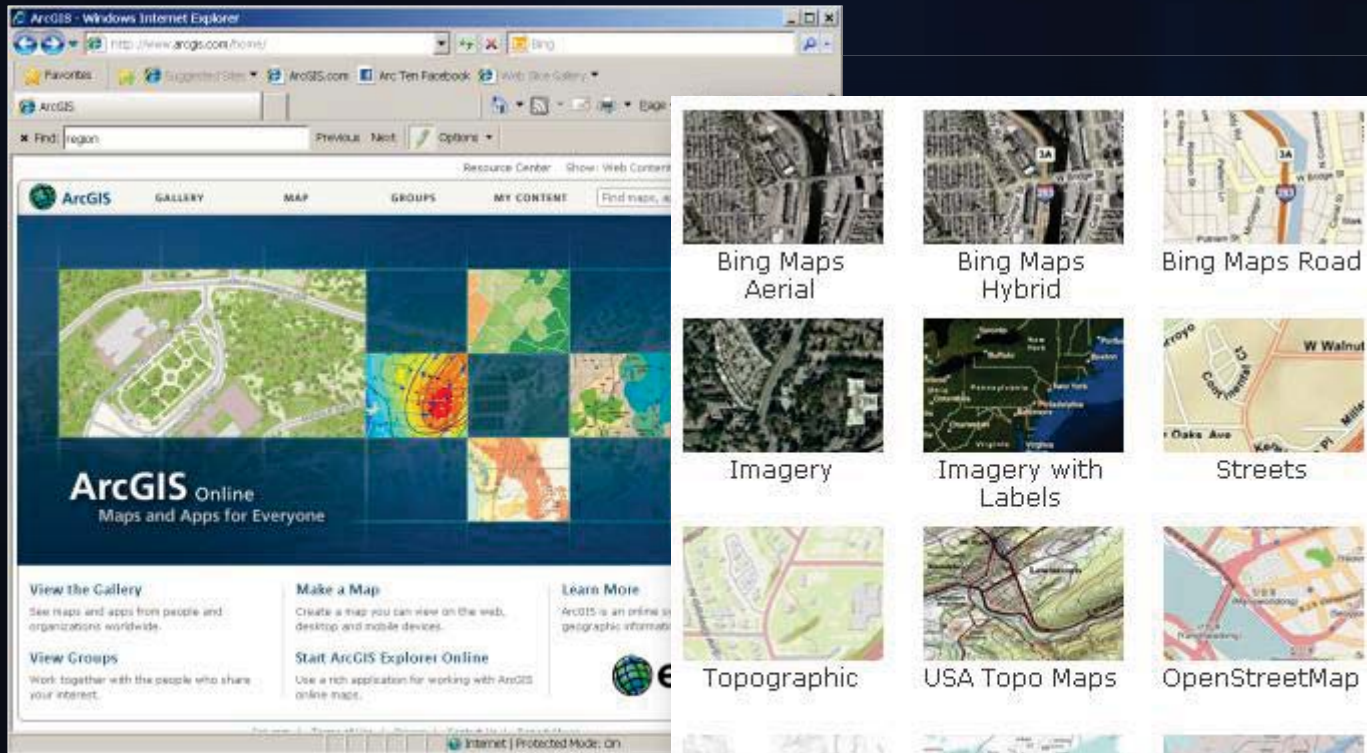
- **Web Mapping and Map Services Fundamentals**
- **ArcGIS Web Mapping Applications**
 - ArcGIS.com Viewer
 - ArcGIS Explorer Online
 - ArcGIS Viewer for Flex
 - ArcGIS Application Builder for Silverlight (beta)
 - ArcGIS Mapping for Sharepoint
 - ArcGIS Application Builder for Flex (alpha)
- **Q&A**

Web Mapping Applications use GIS Services

- Web Mapping apps are made of:
 - *Map content:*
 - *Base Maps*
 - *Operational layers*
 - *Functionality (tasks-widgets)*
 - *Use other GIS services*



ArcGIS includes ready to use online content



The image shows a screenshot of the ArcGIS Online website in a Windows Internet Explorer browser. The browser's address bar shows the URL <http://www.arcgis.com/home/>. The website's navigation menu includes "ArcGIS", "GALLERY", "MAP", "GROUPS", and "MY CONTENT". The main content area features a large grid of map thumbnails with the text "ArcGIS Online Maps and Apps for Everyone". Below the grid, there are three columns of text: "View the Gallery", "Make a Map", and "Learn More".

Overlaid on the right side of the browser window is a grid of nine map style thumbnails, each with a caption below it:

- Bing Maps Aerial
- Bing Maps Hybrid
- Bing Maps Road
- Imagery
- Imagery with Labels
- Streets
- Topographic
- USA Topo Maps
- OpenStreetMap
- Terrain
- Terrain with Labels
- Shaded Relief

- From Esri
- *From the GIS community*

ArcGIS includes ready to use configurable Web Apps

Hosted in
ArcGIS.com



ArcGIS.com Viewer



ArcGIS Explorer Online

Hosted
by you



ArcGIS Viewer for Flex



ArcGIS Viewer for
Silverlight



ArcGIS Mapping
for Sharepoint

<http://resources.arcgis.com/content/web/web-apps>

ArcGIS.com and its configurable web apps

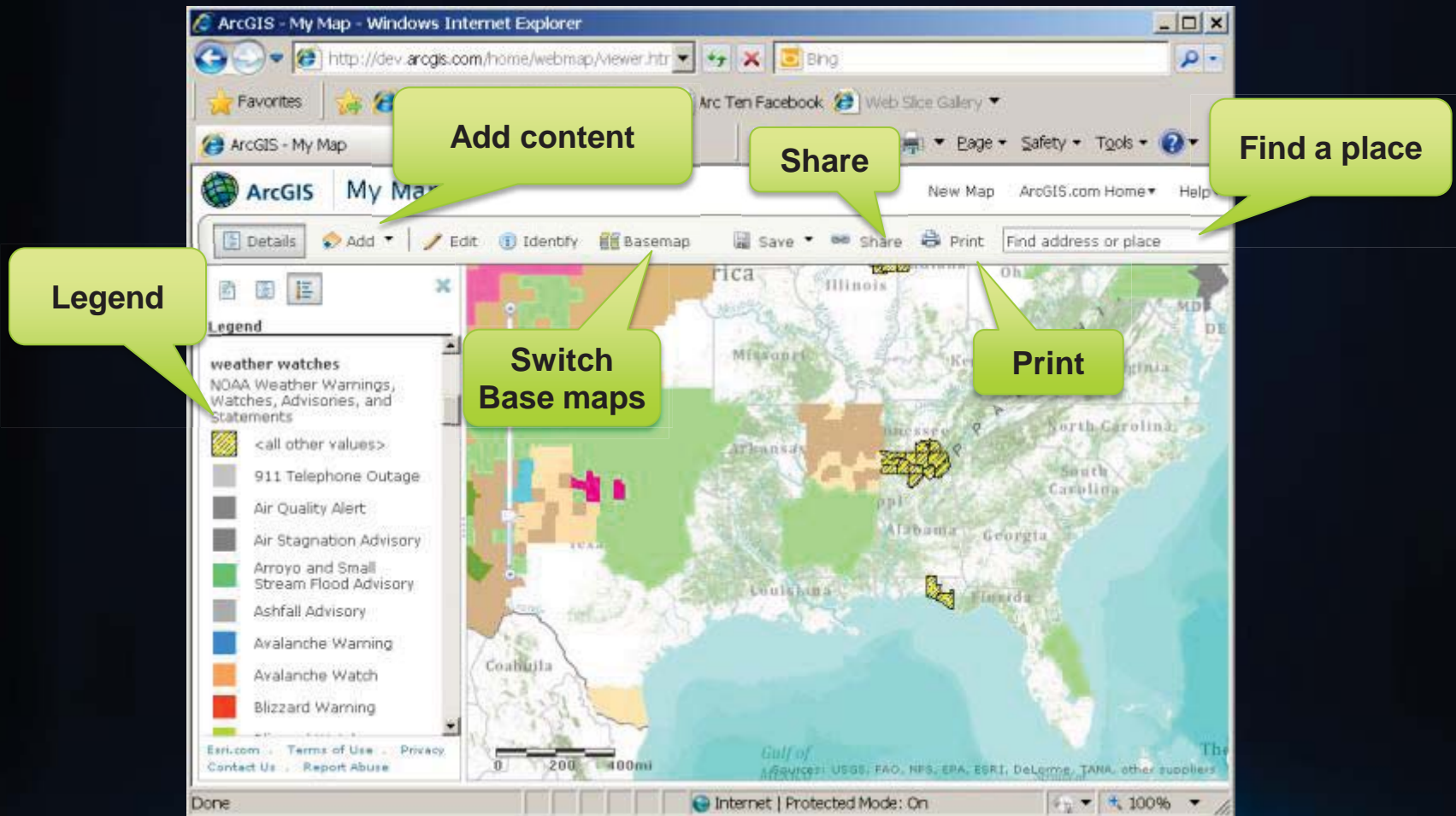
A new look at creating and sharing geographic information

- A public site, hosted by ESRI
 - On-premises version also available
- Find, create and share geographic information
 - Empowering the non-GIS expert!
- Public and Private Groups
- Two ready to use applications:
 - ArcGIS.com Viewer
 - ArcGIS Explorer Online



ArcGIS.com Viewer. The Basics

<http://www.arcgis.com/home/webmap/viewer.html>



ArcGIS.com Viewer. Adding your content tip

How to set a layer as a 'base map'

The screenshot shows the ArcGIS.com Viewer interface in a Mozilla Firefox browser window. The browser title is "ArcGIS - Petroleum - Mozilla Firefox". The address bar shows the URL: <http://www.arcgis.com/home/webmap/viewer.html?useExisting=:>. The page title is "ArcGIS Petroleum". The interface includes a search bar with the text "Find address or place" and a search button. Below the search bar, there are several icons: "Details", "Add", "Identify", "Basemap", "Save", "Share", and "Print".

A green callout bubble on the left side of the interface says "Search layer to add". This bubble points to the "Add" button and the search results panel. The search results panel is titled "Search for layers to add" and contains a search input field with the text "(e.g., parcels, fire...", a "Go" button, and a dropdown menu for "In:" set to "A GIS server". The URL field contains "http://ismaelserver/arcgis". Below the search input, it says "What kind of layers can I add?" and "2 results found". The results list includes "Artic_Ice" and "Petroleum_10".

A second green callout bubble on the right side of the interface says "Then set new layer as base map". This bubble points to the "Use as Base map" link in the details for the "Artic_Ice" layer. The details for "Artic_Ice" include a thumbnail image of the Arctic region, the text "Add to map", "Service Details", and "Use as Base map". Below the details, it says "Author: Ismael Chivite" and "Summary:". The "Done" button is visible at the bottom of the search results panel.

The main map area shows a map of the Arctic region with a yellow background and red and green lines representing data layers. The bottom status bar shows "Transferring data from ismaelserver..." and the "S3Fox" logo.

ArcGIS.com Viewer. Sharing your Web Map

The screenshot shows the ArcGIS.com interface in a Windows Internet Explorer browser. The browser's address bar displays the URL <http://www.arcgis.com/home/webmap/viewer.html>. The page title is "ArcGIS Petroleum". A "Share" dialog box is open, prompting the user to "Select one of the methods below to share your map." A note indicates that the map is currently private, which limits sharing options. The "Share with everyone (public)" checkbox is checked. The dialog is divided into two main sections: "Link to this map" and "Embed this map".

Link to this map

- Post to: Facebook, Twitter
- Copy and paste link into email or IM: <http://bit.ly/dMIDEj>

Embed this map

- Embed in Personal Site
- Make a Web Application

Other visible elements include a search bar, a "Details" tab, and a "Close" button for the dialog. The background shows a map of the Gulf of Mexico with labels for "Louisiana Cruz Island" and "esri".

In Social sites

As tiny url

Embedded

As a downloadable app

ArcGIS.com Viewer. Embedding web maps

<http://www.arcgis.com/home/webmap/viewer.html>

The screenshot shows the NOAA website in a Mozilla Firefox browser. The main content area features a map of the Gulf of Mexico with red and green lines indicating restoration efforts. A green callout bubble points to the map with the text "Embedded live map". To the right of the map, there are sections for "EXPLORE NOAA", "NOAA NEWS", and "NOAA WATCH". A "Share" button is visible in the top right corner of the map area. Below the map, there is a "Share" dialog box with the "Embed in Personal Website" tab selected. The dialog box contains a text area with HTML code for embedding the map and radio buttons for selecting the map size (Small, Medium, Large, Custom). A green callout bubble points to the HTML code with the text "Paste HTML code in your site".

Embedded live map

Embed this map

Embed in Personal Site

Embed in Personal Website

Copy and paste HTML to embed in website

```
<iframe width="500" height="400" frameborder="0" scrolling="no" marginwidth="0" marginheight="0" src="http://www.arcgis.com/home/webmap/viewer.html?webmap=f32bd244ee4244e891b17534a03678d08&map=arcgis.com/home/webmap/viewer.html?webmap=f32bd244ee4244e891b17534a03678d08" style="border: 1px solid black; width: 500px; height: 400px;"></iframe>
```

Small
300 x 250

Medium
500 x 400

Large
940 x 600

Custom
Width 500
Height 400

Show zoom control.

Show scale bar.

< Back

Paste HTML code in your site

1

2

3

ArcGIS.com Demo

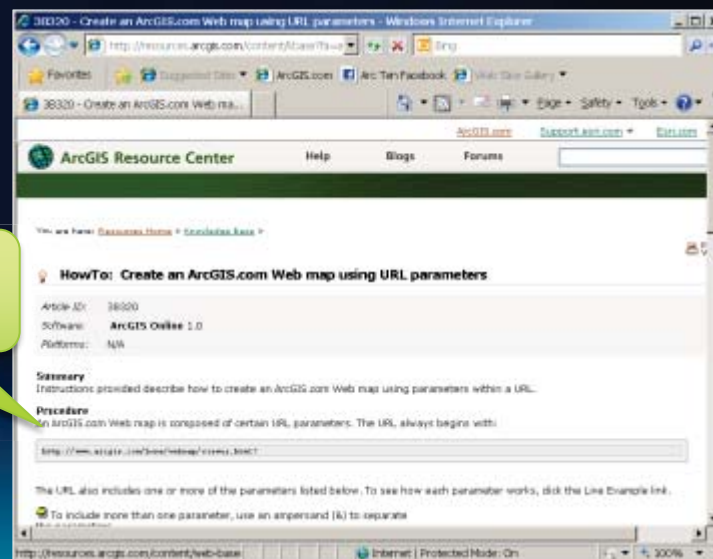
ArcGIS.com Viewer. Advanced tips on urls

ArcGIS.com Viewer accepts parameters in the url:

<http://www.arcgis.com/home/webmap/viewer.html?>

- Load a particular Web Map:
 - **&webmap= f32bd244ee4244e891b17534a03678d0**
- Load a particular map or feature service
 - **&url= http://ismaelserver/ArcGIS/rest/services/Petroleum/MapServer**
- Center at a location:
 - **¢er=-117,33**
- Zoom to a cache level:
 - **&level=3**

Details in this
KB article



ArcGIS.com Viewer. Downloading Template apps

<http://www.arcgis.com/home/webmap/viewer.html>

- Download HTML apps that use your Web Maps
- Steps:
 - Create a Web Map
 - Select a Template Web Application
 - Save and host on your own
 - Optionally change the source code



ArcGIS.com JavaScript

Template Demo

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ArcGIS.com Viewer



ArcGIS Explorer Online

Hosted
by you



ArcGIS Viewer for Flex



ArcGIS Viewer for
Silverlight



ArcGIS Mapping
for Sharepoint

<http://resources.arcgis.com/content/web/web-apps>

ArGIS Explorer Online

<http://explorer.arcgis.com/>

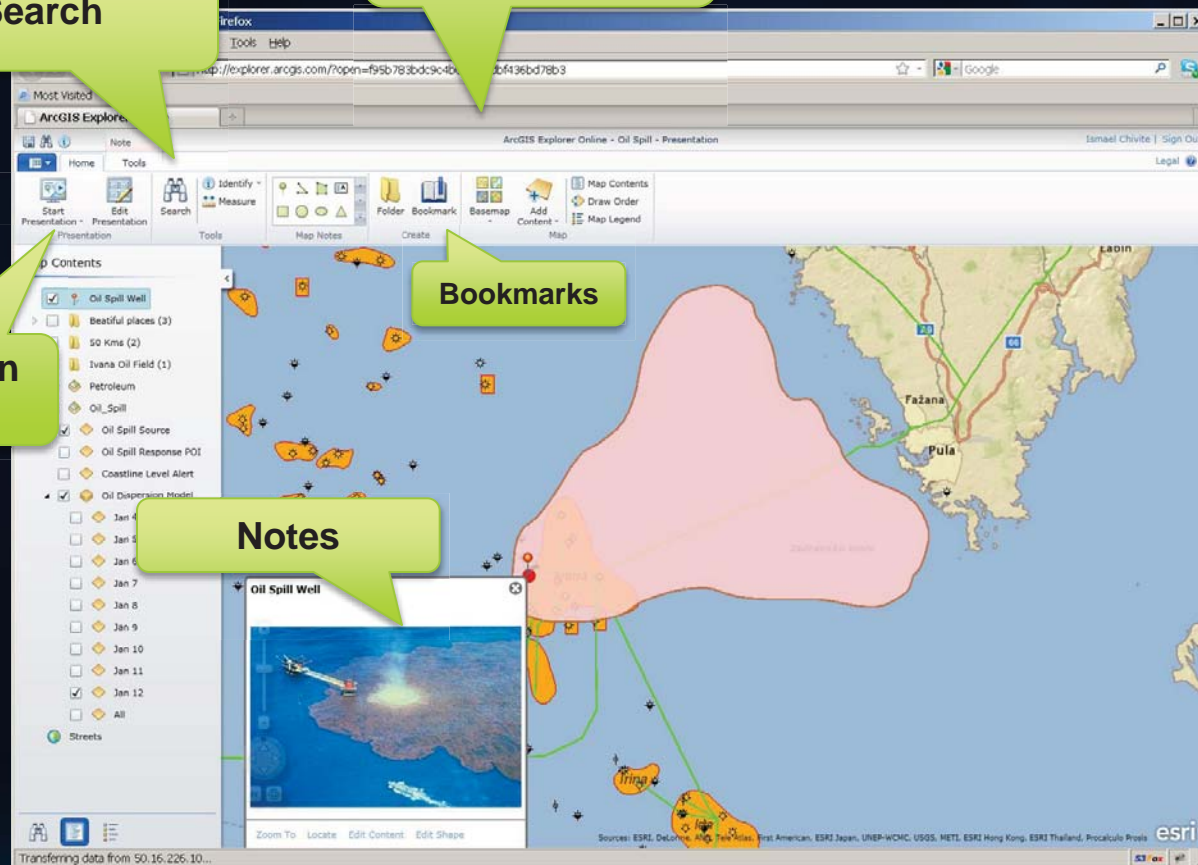
Search

Add Layers
Switch base maps

Presentation
mode

Bookmarks

Notes



Summary ArcGIS.com Apps

- **Ready to use map viewer apps**

- Configurable but not customizable
- Map viewers with very limited functionality

- **Hosted by Esri**

- They do not work unless you are connected to the internet
- Not for sensitive data
- Available for your secure network soon

- **ArcGIS.com Viewer**

- Based on HTML (no plugin)
- Simple mashups
- Embeddable web maps

- **ArcGIS Explorer Online**

- Silverlight (needs plugin)
- Great for presentations
- Some more advanced features (notes and configurable search)

ArcGIS includes ready to use configurable Web Apps

Hosted in
ArcGIS.com



ArcGIS.com Viewer



ArcGIS Explorer Online

Hosted
by you



ArcGIS Viewer for Flex



ArcGIS Viewer for
Silverlight



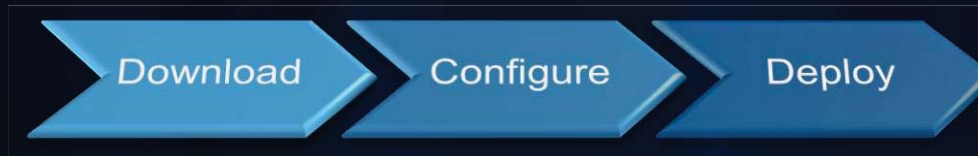
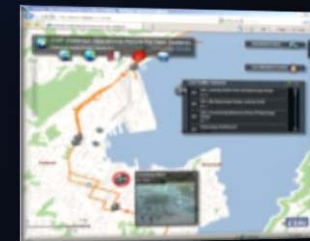
ArcGIS Mapping
for Sharepoint

<http://resources.arcgis.com/content/web/web-apps>

ArcGIS Viewer for Flex

A configurable out of the box application

- Configurable app
 - Look and feel
 - Capabilities
 - Map content
- Ideal for the creation of focused GIS apps on the web
- Extensible/Customizable
- You host it, you control it



esri.com/flexviewer

Formerly known as the 'Sample Flex Viewer', now fully supported

The app

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



Title and Logo

Shortcuts to widgets

Base maps

Map Navigation

Widget

Overview

How to download it

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

ArcGIS Viewer for Flex - Mozilla Firefox

http://help.arcgis.com/ery/webapps/flexviewer/

ArcGIS Resource Center

ArcGIS Viewer for Flex

Home | Concepts | Samples | Forum | Code Gallery

December 2010 - ArcGIS Viewer for Flex 2.2

The ArcGIS Viewer for Flex is a released 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 2.2.
- 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 2.2](#): Legend Widget, support for ArcGIS.com Web Maps, WMS, undo capabilities when editing, complete localization in six languages, 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 Flex Viewer](#)
- for Flex developers.
- [Video: Quick Intro](#)
- 16 minute video.
- [Video: Flex Viewer Seminar](#)
- recorded 1 hour training seminar.
- [Video Gallery](#)
- conferences presentations
- [Blog](#)
- announcements, specifications and tricks.
- [The API](#)
- ArcGIS API for Flex

Download here

[Default configuration](#)

[Editing functionality](#)

[U.S. Thematic Mapping Viewer](#)

Done

Requires an Esri Global Account

Hosting on your own

Works on any http web server: IIS, Apache etc

Copy into your web server

Open app from a browser

IIS 7
internet information services

Apache

Configuring it

Through simple text files

- Config.xml
 - Title, logo and Look&Feel
 - Map Content, popups
 - Widgets (tools)

```
<configuration>
  <title>My Petroleum Map</title>
  <subtitle>a configurable web mapping application</subtitle>
  <logo>assets/images/logo.png</logo>

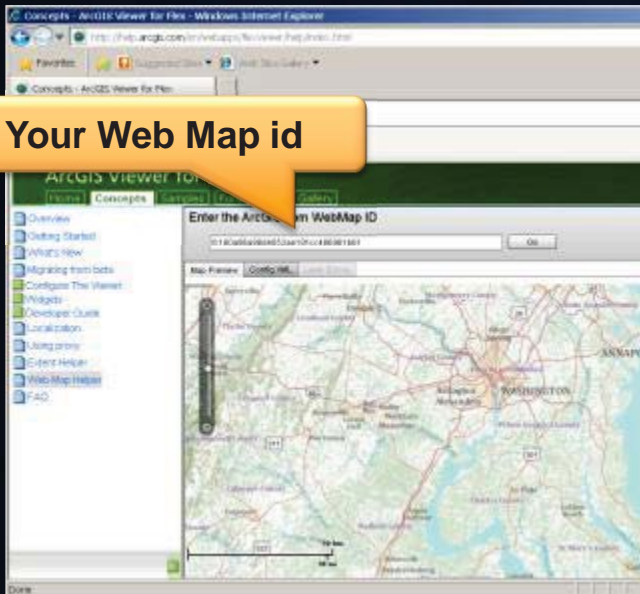
  <!-- UI elements -->
  <widget left="10" top="50" config="widgets/Navigation/NavigationWidget.xml" url="widgets/Navigation/NavigationW
  <widget right="-2" bottom="-2" config="widgets/OverviewMap/OverviewMapWidget.xml" url="widgets/OverviewMap/OverviewM
  <widget right="20" top="55" config="widgets/MapSwitcher/MapSwitcherWidget.xml" url="widgets/MapSwitcher/MapSwitch
  <widget left="0" top="0" config="widgets/HeaderController/HeaderControllerWidget.xml" url="widgets/HeaderCont

  <map initialextent="-13304916.671561137 4042277.829957714 -13269405.75399808 4067391.0519000264" top="40">
    <basemaps>
      <layer label="Streets" type="tiled" visible="false" alpha="1"
        url="http://server.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer"/>
      <layer label="Aerial" type="tiled" visible="false" alpha="1"
        url="http://server.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer"/>
      <layer label="World_Topo_Map" type="tiled" visible="true" alpha="1" url="http://services.arcgisonline.com/Ar
    </basemaps>
    <operationallayers>
      <layer label="Petroleum" type="dynamic" visible="true" alpha="0.8" url="http://50.16.226.10/ArcGIS/rest/serv
      <layer label="SaveTheBay - Area" type="feature" visible="true" alpha="1" mode="onDemand" url="http://50.16.2
      <layer label="SaveTheBay - Birds" type="feature" visible="true" alpha="1" mode="onDemand" url="http://50.16
      <layer label="SaveTheBay - Marine" type="feature" visible="true" alpha="1" mode="onDemand" url="http://50.16
    </operationallayers>
  </map>
```

Configuration tip (jumpstart from a web map)

- New Web Map helper utility in [Resource Center](#)
 - Included under 'Concepts'
 - Creates a configuration file from a web map

Your Web Map id



Auto-generated config

```
<?xml version="1.0" ?>
<configuration>

  <title>Active Wildfires in USA</title>

  <widget left="10" top="50" config="widgets/Navigation/NavigationWidget.xml" url="widgets
  <widget right="20" top="55" config="widgets/MapSwitcher/MapSwitcherWidget.xml" url="w
  <widget left="0" top="0" config="widgets/HeaderController/HeaderControllerWidget.xml" u

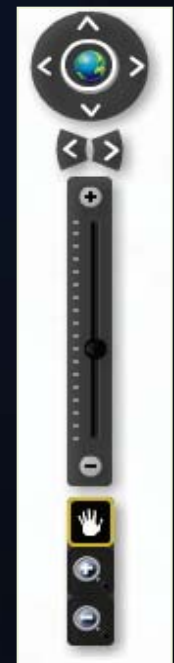
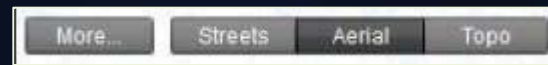
  <map initialExtent="-15580921.58447317 1090912.6405188371 -5503468.645583255 8
    <basemaps>
      <layer label="World_Topo_Map" type="tiled" visible="true" alpha="1" url="http://service
    </basemaps>
    <operationallayers>
      <layer label="Natural Hazards Support System" type="dynamic" visible="true" alpha=
    </operationallayers>
  </map>

  <!-- Add widgets here -->

</configuration>
```


UI Widgets

- Header Controller
- Map Switcher
- Navigation
- Overview Map
- Splash screen
- Info Popup
- Coordinates



Functional Widgets

- **Bookmark**



- **Data Extract**



- **Draw**



- **Edit**



- **GeoRSS**



- **Layer List**



- **Locate**



- **Print**



- **Query**



- **Search**



- **Time Slider**



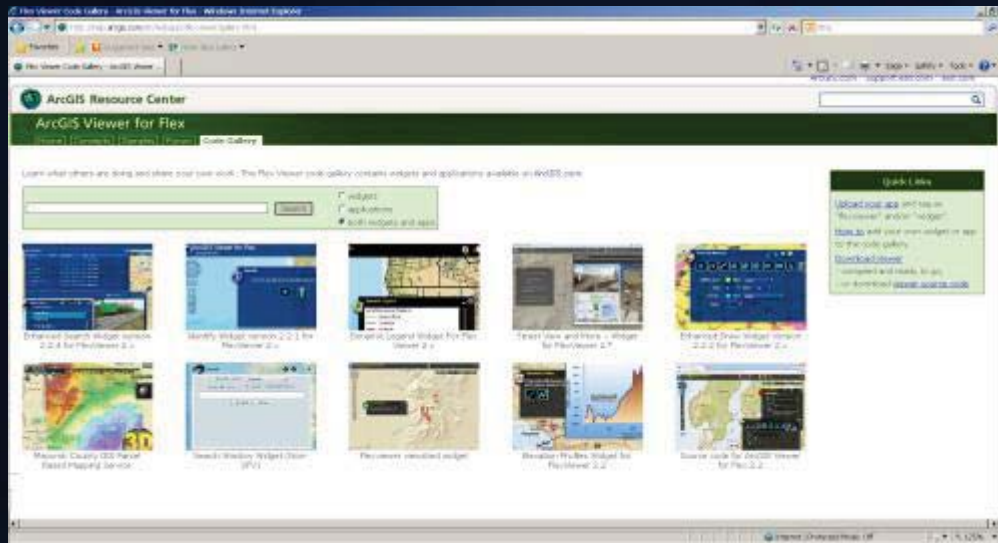
- **Legend**

- Use them as needed for your applications.

Additional Widgets from the community

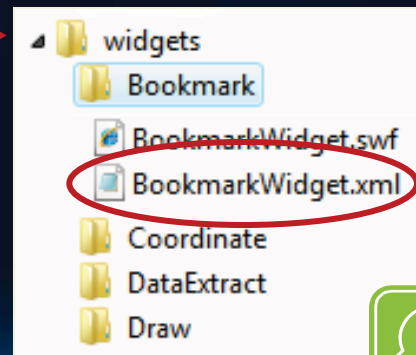
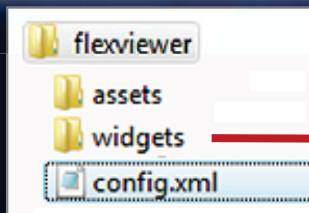
<http://help.arcgis.com/en/webapps/flexviewer/gallery.html>

- Downloadable widgets written by ArcGIS developers
- Supported via user forums



Configuring Widgets

- Customize each widget by editing its configuration file



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



Summary ArcGIS Viewer for Flex

- Configurable app
 - Through text files
- Customizable
 - Source code provided
 - Extensible widget framework
- Downloadable
 - Does not require connection to external servers
- Classic web-GIS app
 - *The 80% viewer* (navigation, search, editing, print etc)
- Requires Flash plugin

ArcGIS includes ready to use configurable Web Apps

Hosted in
ArcGIS.com



ArcGIS.com Viewer



ArcGIS Explorer Online

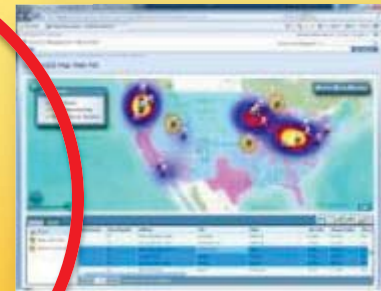
Hosted
by you



ArcGIS Viewer for Flex



ArcGIS Viewer for
Silverlight



ArcGIS Mapping
for Sharepoint

<http://resources.arcgis.com/content/web/web-apps>

ArcGIS Viewer for Microsoft Silverlight



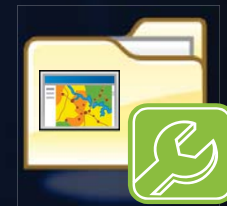
- Configurable *ready-to-deploy* Web client
 - Built with ArcGIS API for Silverlight 2.2
- **Easily and quickly** create and implement GIS Web mapping applications



- Complete set of core GIS tools and functionality
- **No programming or editing configuration files**
 - Ideal for novice Web application creators

Viewer overview

- Web browser-based application
- Consists of 3 components:
 1. **Configurable Viewer**
 2. **Application Builder**
 3. **Extensibility Kits**
- Leverages ArcGIS Server 10 functionality
- Supports ArcGIS.com Web Maps
- Application hosted on-premise



Configurable Viewer

- Ready-to-deploy Web mapping application



Application Builder

- Interactively create Web apps → **WYSIWYG** experience
 - Map content
 - Tools
 - Look and feel



- Deploy configured Viewer applications

Application Builder workflow



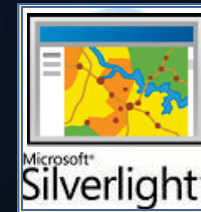
1 New map or Web Map



2 Configure:
•Data content
•Functionality
•Look & feel



Non-linear workflow

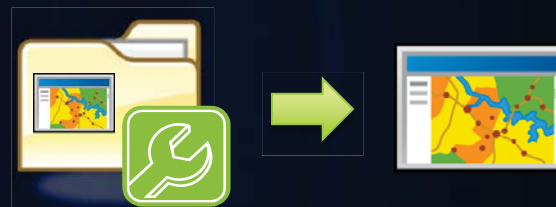


3 Deploy Application

Viewer Application Builder

- **Configure custom Web applications**
 - Set properties to meet business requirements
 - Flexible workflow

- **Easy to deploy**




- **Modify an existing published site**
 - Make configuration changes with Builder
- **Optional “*Getting started mode*”**
- **Builder can be extended with “add-ins”**

Extensibility Kits



- Viewer functionality defined by “add-ins”
 - “**Add-ins**” → modular code
- Developers can create custom “add-ins”
 - Requires ArcGIS API for Silverlight 2.2
- Viewer capabilities can be extended:
 1. **Tools** → custom functions
 2. **Behaviors** → custom non UI logic
 3. **Layouts** → custom application “look and feel”
 4. **Layers** → custom data layer types



Demo:
Explore Application Builder

```
function init() {  
  var map = new esri.Map(  
    "map", {  
      layers: [esri.layers.ArcGISDynamicMapServiceLayer(  
        "http://sampleserver1.arcgisonline.com/arcgis/rest/services/World/MapServer")  
      ]  
    }, {  
      map: map, addLayer: (l) => {  
        map.addLayer(l);  
      }  
    });  
}  
  
function getDriveTimePolygons(  
  var features = result.features;  
  for (var f=0, feature;  
  var feature = features[f];  
  f++) {  
    var polySymbol = new esri.PolySymbol(  
      {color: "#FF0000", width: 2, style: "solid"});  
    new dojo.Color([0, 0, 0, 0.5]);  
    polySymbol.setColor(polySymbol.getColor().alpha, 0.5);  
    feature.setSymbol(polySymbol);  
  }  
}  
  
new dojo.Color([0, 0, 0, 0.5]);  
polySymbol.setColor(polySymbol.getColor().alpha, 0.5);  
feature.setSymbol(polySymbol);  
else if (feature.symbol instanceof esri.PolySymbol) {  
  feature.setColor(polySymbol.getColor().alpha, 0.5);  
  feature.setSymbol(polySymbol);  
}
```

ArcGIS includes ready to use configurable Web Apps

Hosted in
ArcGIS.com



ArcGIS.com Viewer



ArcGIS Explorer Online

Hosted
by you



ArcGIS Viewer for Flex



ArcGIS Viewer for
Silverlight



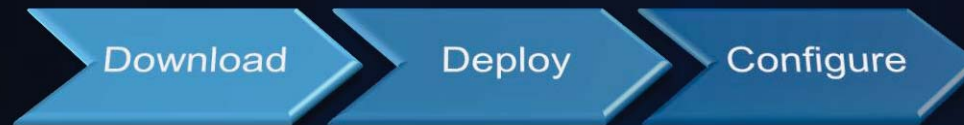
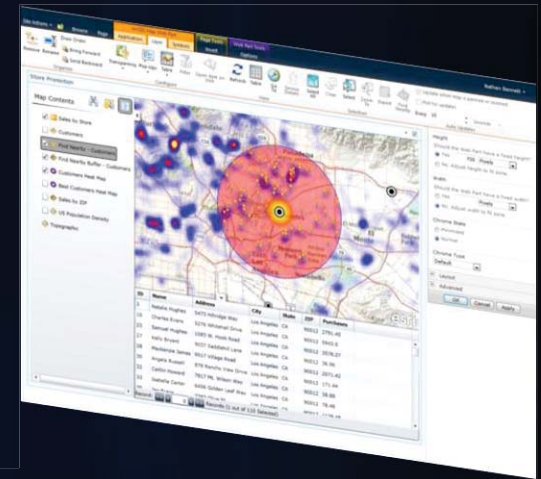
ArcGIS Mapping
for Sharepoint

<http://resources.arcgis.com/content/web/web-apps>

ArcGIS Mapping for SharePoint

Configurable out of the box mapping components

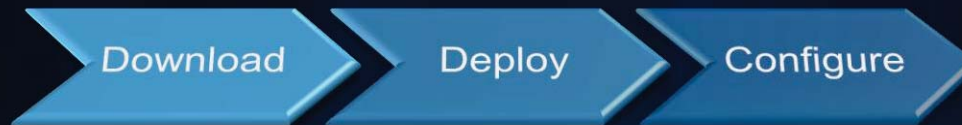
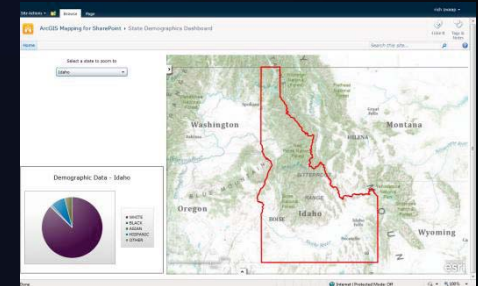
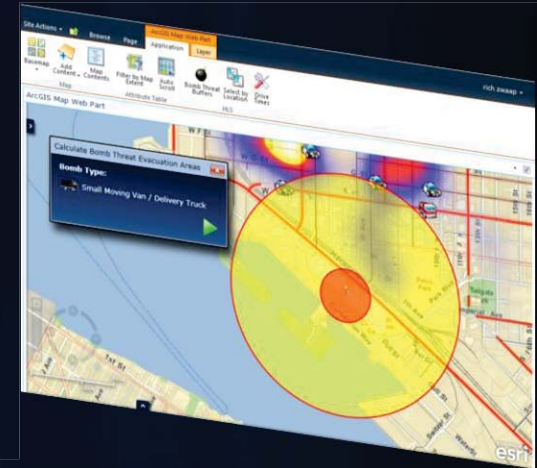
- Configurable
 - Map Web Part
 - Geocoding Workflow
 - Location Field
- Ideal for
 - Creation of focused GIS apps on SharePoint pages
 - Spatially enabling SharePoint data
- You host it, you control it



Map Web Part

A configurable out of the box map

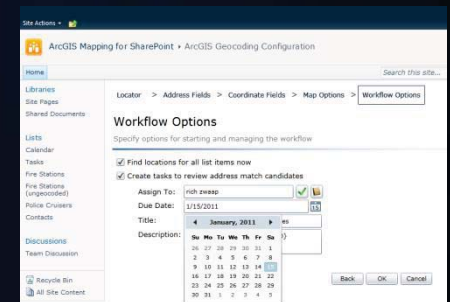
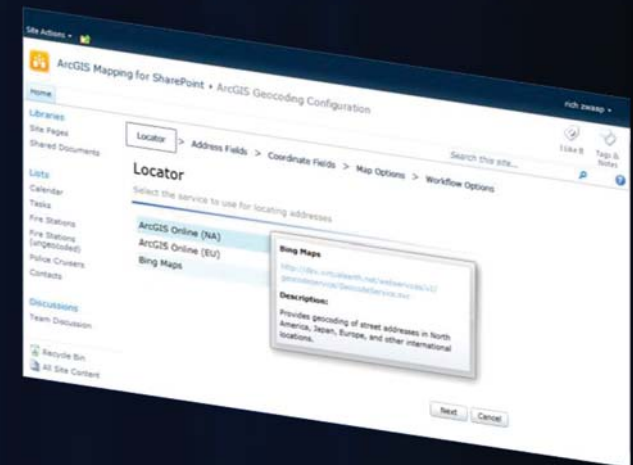
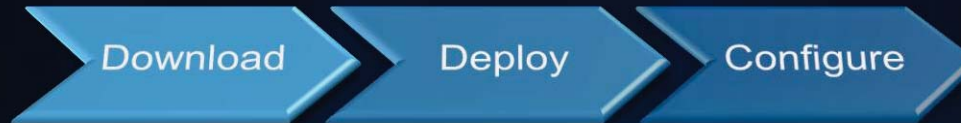
- Configurable
 - Map content
 - Capabilities
 - Color scheme
- Configured interactively through point and click
- Can be embedded in any SharePoint web part or wiki page
- Extensible



Geocoding Workflow

Spatially enable SharePoint lists

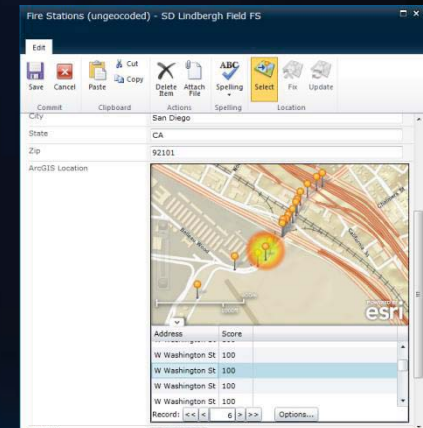
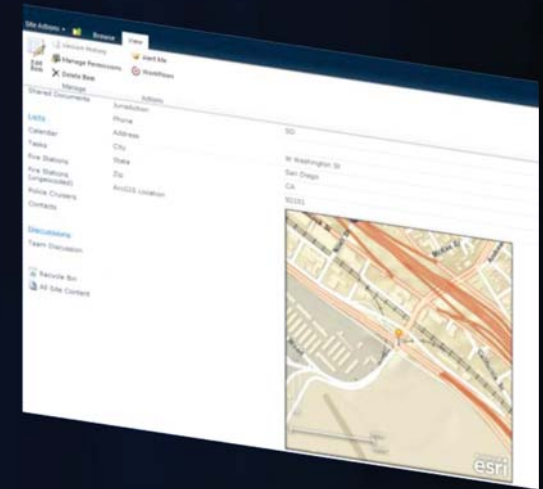
- Geocode SharePoint lists of addresses
- Select locator service
 - ArcGIS Online
 - Bing Maps
 - ArcGIS Server
- Automatically geocode when
 - New records are added
 - Addresses are updated



Location Field

Spatially edit SharePoint list items

- Embeds a map of an item's location within the item form
- Edit location
 - Drag to new location
 - Update based on new address
- Review and select address match candidates



How to download it

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

ArcGIS Mapping for SharePoint - Windows Internet Explorer

http://help.arcgis.com/en/webapps/sharepoint/

ArcGIS.com ESRI.com

ArcGIS Resource Center

ArcGIS Mapping for SharePoint

Home Help Samples Forums Code Gallery

Version 2.0 is now available!

Version 2.0 of ArcGIS Mapping for SharePoint is now available. Version 2.0 was released in October 2010.

Version 2.0 targets the SharePoint 2010 platform and offers many new features and enhancements. Features that are new at version 2.0 include:

- **New look and feel** - A new look and feel integrates with the SharePoint 2010 ribbon and maximizes the screen area available for your map.
- **Geoprocessing** - Geoprocessing services can be used to perform advanced spatial analysis on layers in the Map Web Part.
- **Extensibility** - The 2.0 Map Web Part is extensible. Developers can create Silverlight extensions to interact with the map and layers, display Silverlight content inside the web part, and communicate with web services and other external components. Designers can easily add and configure extensions when editing the web part.
- **ArcGIS.com integration** - A new Map Center for the Map Web part allows you to discover, open, and save maps from ArcGIS.com.
- **Theming** - Designers can specify the colors of the pop-ups, dialogs, and panels that are shown within the Map Web Part. They can use the site theme colors or define a custom scheme.

What is ArcGIS Mapping for SharePoint?

ArcGIS Mapping for SharePoint™ provides configurable mapping components for use with Microsoft SharePoint sites.

The product contains the following components:

- ArcGIS Map Web Part

Quick Links

- [Download version 2.0](#)
- [Visit the blog](#)
- [Getting started](#)
- [Version 1.1.1 Home](#)
- [ArcGIS API for Microsoft Silverlight/WPF Version 2.0](#)

Download here

Requires an Esri Global Account

Deployment

Simple installation experience

ArcGIS Mapping for SharePoint

System Check

Checking if ArcGIS Mapping for SharePoint can be installed from this machine

- ✓ SharePoint Foundation Services 2010 is installed.
- ✓ You have permission to install and deploy SharePoint solutions.
- ✓ The SharePoint 2010 Administration service is started.
- ✓ The SharePoint 2010 Timer service is started.
- ✓ Solution file found.
- ✓ ArcGIS Mapping for SharePoint is already installed.

All checks succeeded. Please click Next to proceed with the installation.

ArcGIS Mapping for SharePoint

Site Collection Deployment Targets

Please select one or more web applications / site collections

Web Applications / Site Collections:

- http://luxembourg:20358/ (Central Administration) (2 site collections)
- http://luxembourg/ (SharePoint - 80) (18 site collections)
 - http://luxembourg (ArcGIS Mapping for SharePoint)
 - http://luxembourg (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/arabic (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/arabic2 (Arabic)
 - http://luxembourg/sites/chinese (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/customtemplate (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/debug (Debug)
 - http://luxembourg/sites/demo (Demo Site)
 - http://luxembourg/sites/english (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/french (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/german (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/hebrew (ArcGIS Mapping for SharePoint)
 - http://luxembourg/sites/japanese (ArcGIS Mapping for SharePoint)

Please click the Next button to start the installation process.

Previous Next Abort

Select SharePoint Sites

Summary ArcGIS Mapping for Sharepoint

- Configurable web part
 - WYSIWYG
 - Setup by Sharepoint administrator required
- Customizable
 - Extensible widget framework
- Downloadable
 - Does not require connection to external servers
- Classic web-GIS app
 - *The 80% viewer* (navigation, search, editing, print etc)
- Requires Sharepoint and Silverlight plugin
- Great integration with Sharepoint
 - Reads sharepoint lists
 - etc



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