Esri Southeast Regional
User Group Conference

May 2–4, 2011 | Jacksonville, FL

Creating Web Mapping Applications

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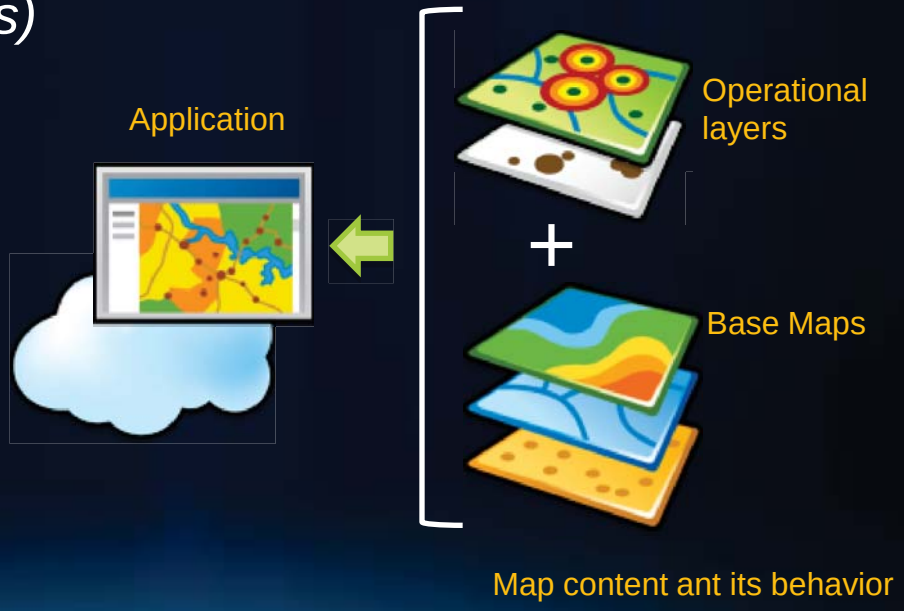
esri

Agenda

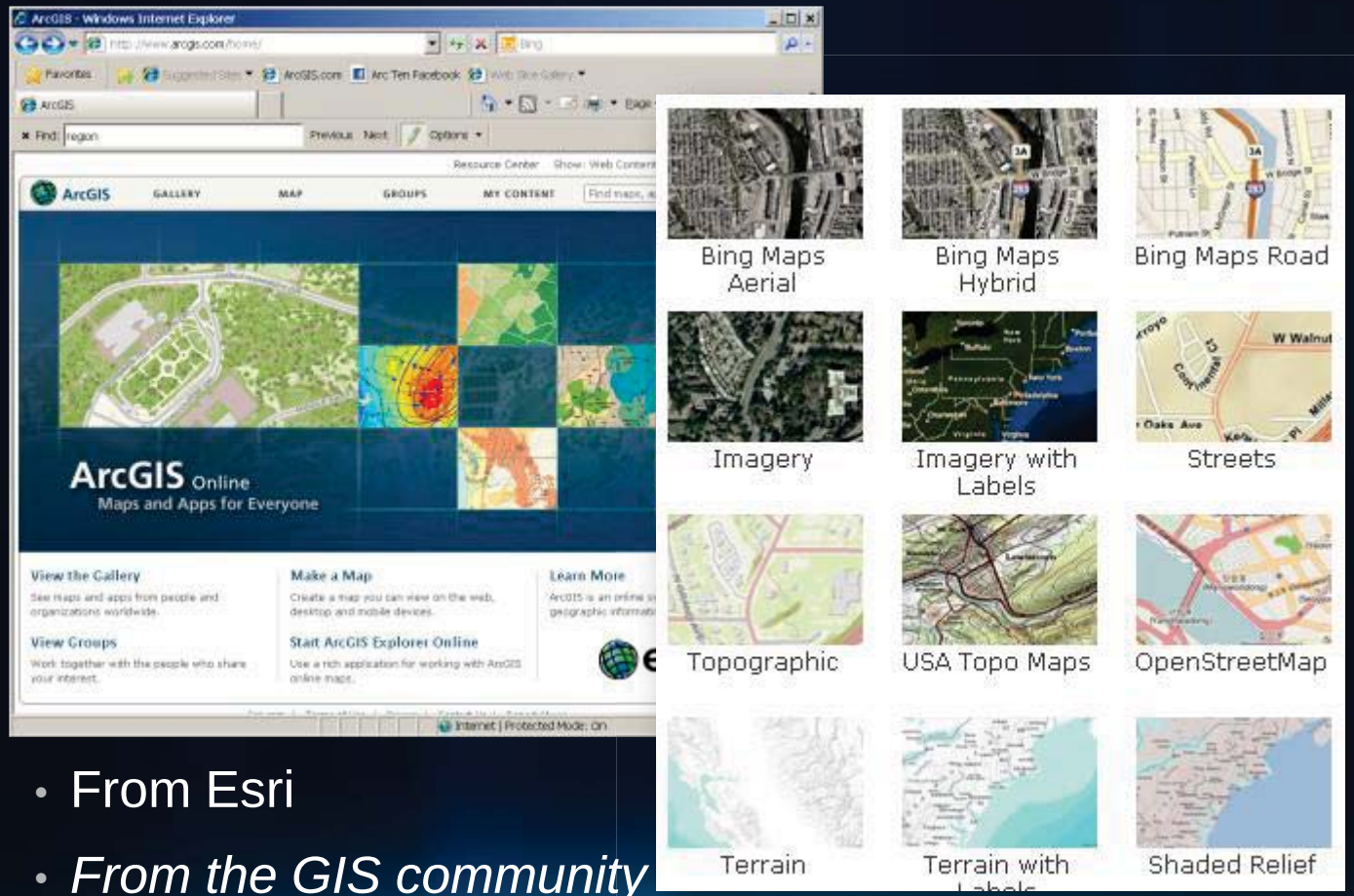
- **Web Mapping and Map Services Fundamentals**
- **ArcGIS Web Mapping Applications**
  - ArcGIS.com Viewer
  - ArcGIS Explorer Online
  - ArcGIS Viewer for Flex
  - ArcGIS Application Builder for Silverlight (beta)
  - ArcGIS Mapping for Sharepoint
  - ArcGIS Application Builder for Flex (alpha)
- **Q&A**

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



- 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

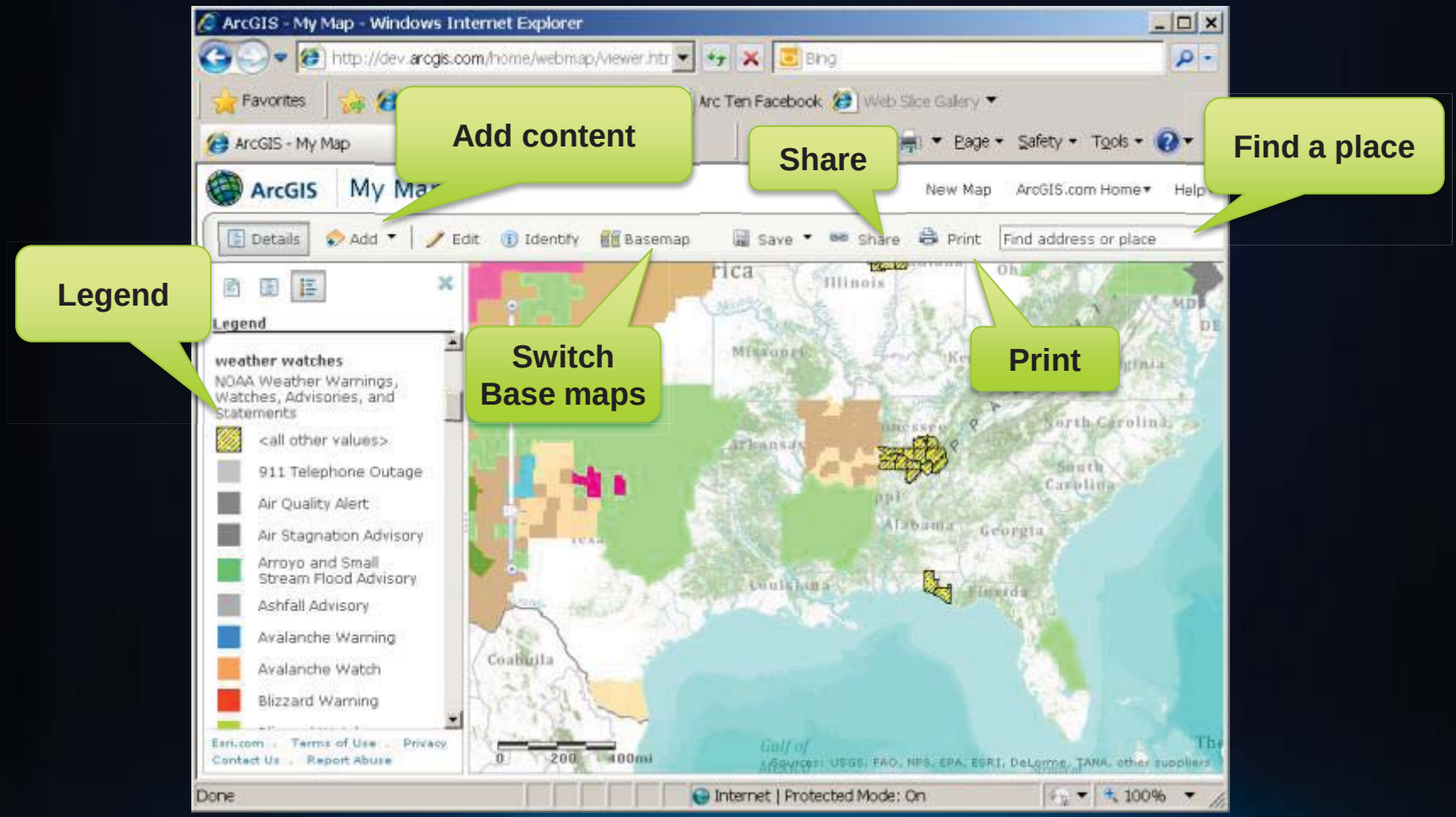
- A public site, hosted by ESRI
  - On-premises version also available
- Find, create and share geographic information
  - Empowering the non-GIS expert!
- Public and Private Groups
- Two ready to use applications:
  - ArcGIS.com Viewer
  - ArcGIS Explorer Online

arcgis.com

A gateway into your ArcGIS Server services and applications

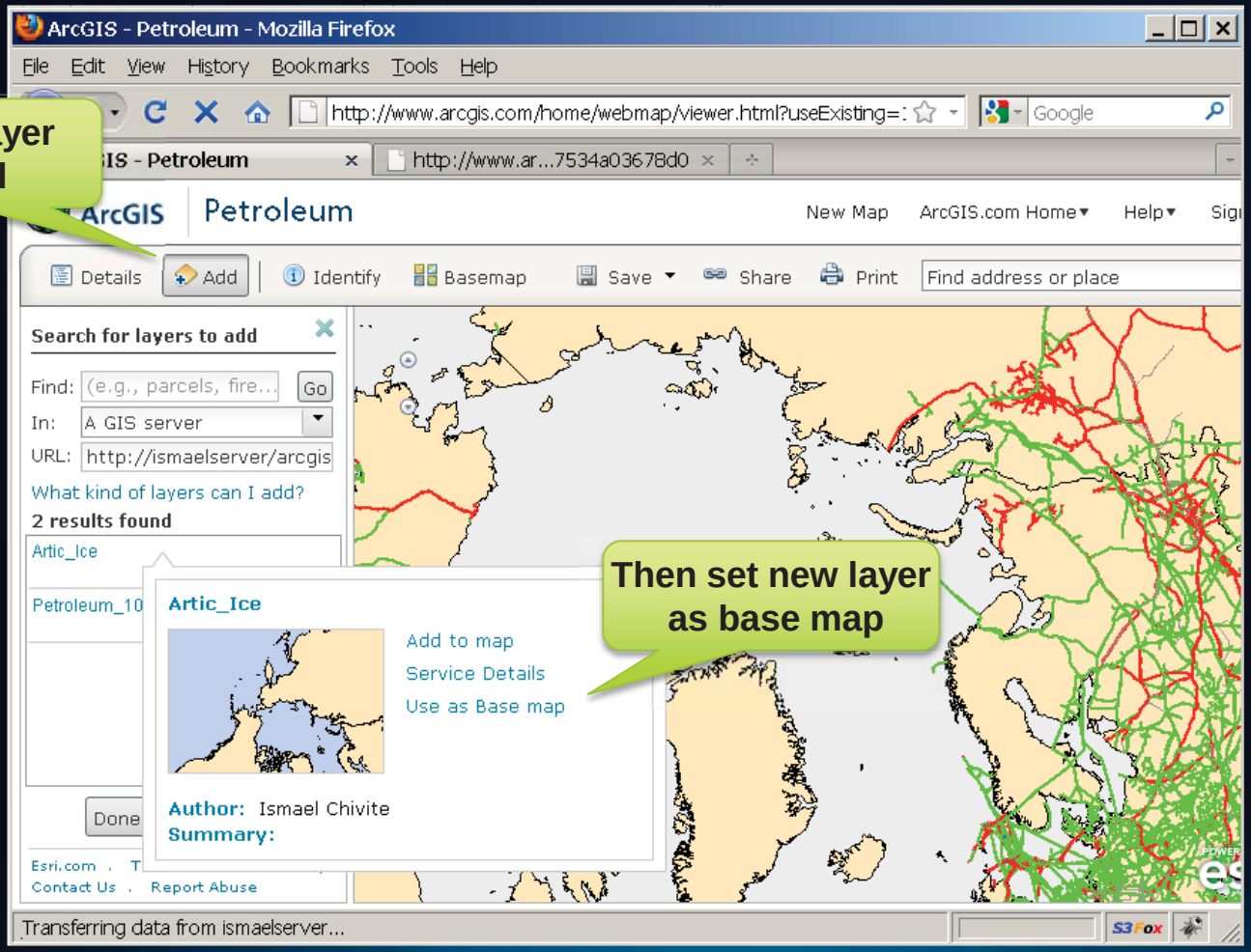
ArcGIS.com Viewer. The Basics

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

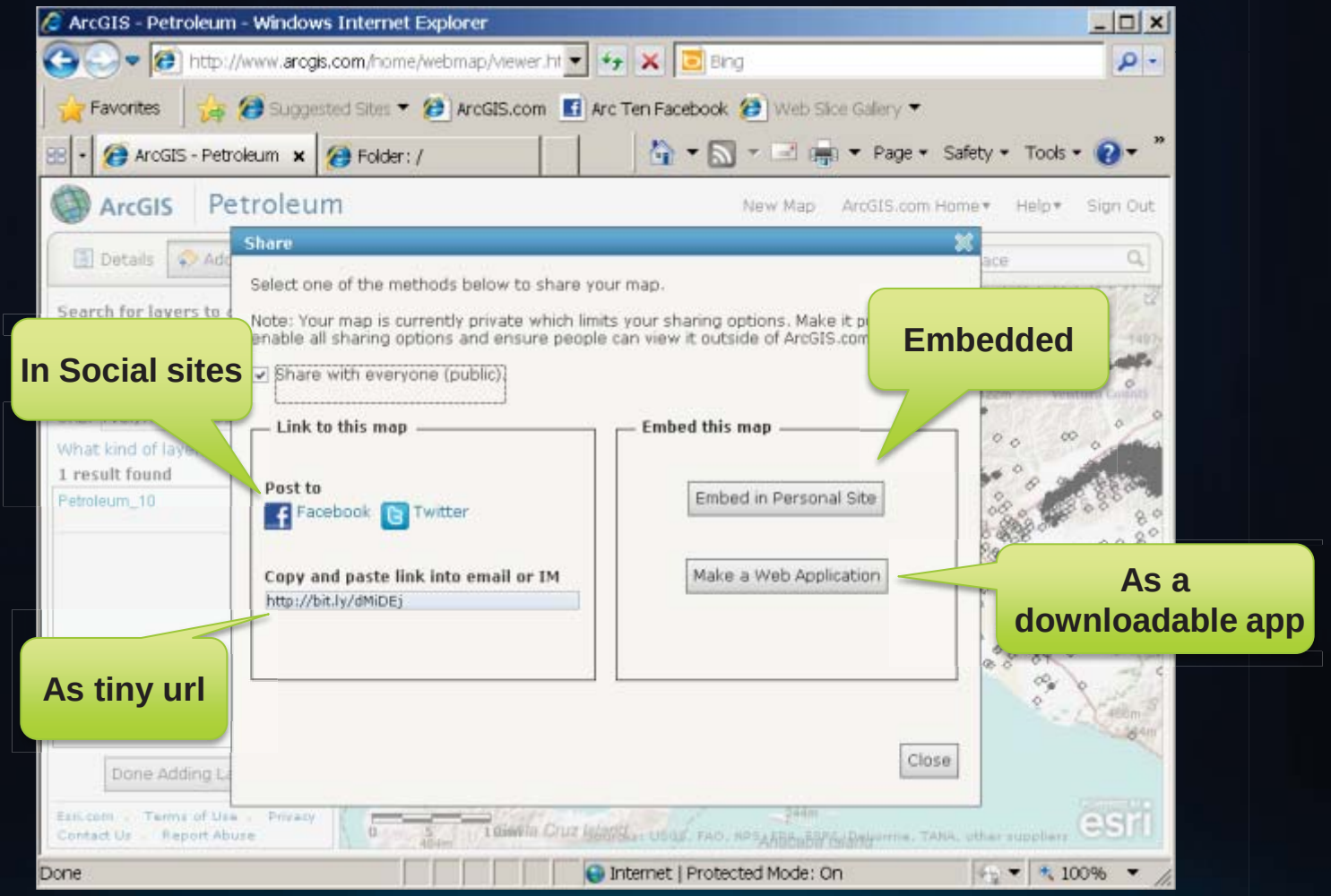


ArcGIS.com Viewer. Adding your content tip

How to set a layer as a ‘base map’



ArcGIS.com Viewer. Sharing your Web Map



ArcGIS.com Viewer. Embedding web maps

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

ArcGIS.com Demo

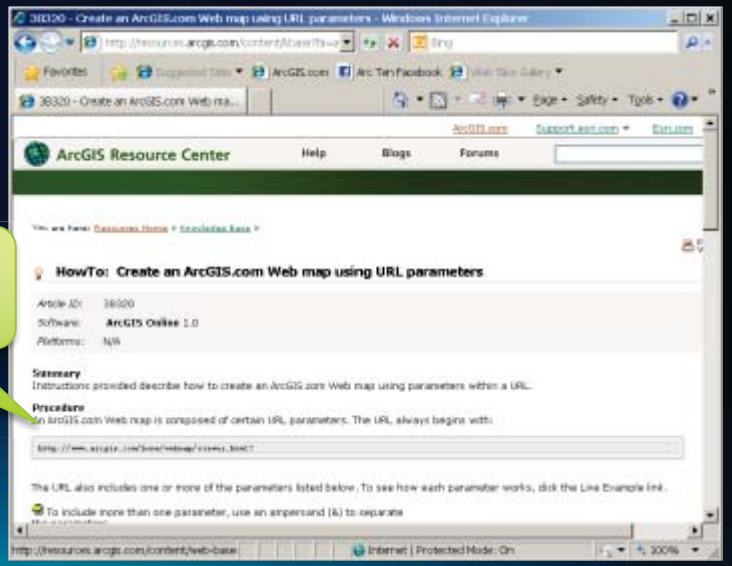
ArcGIS.com Viewer. Advanced tips on urls

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:
  - &center=-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

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

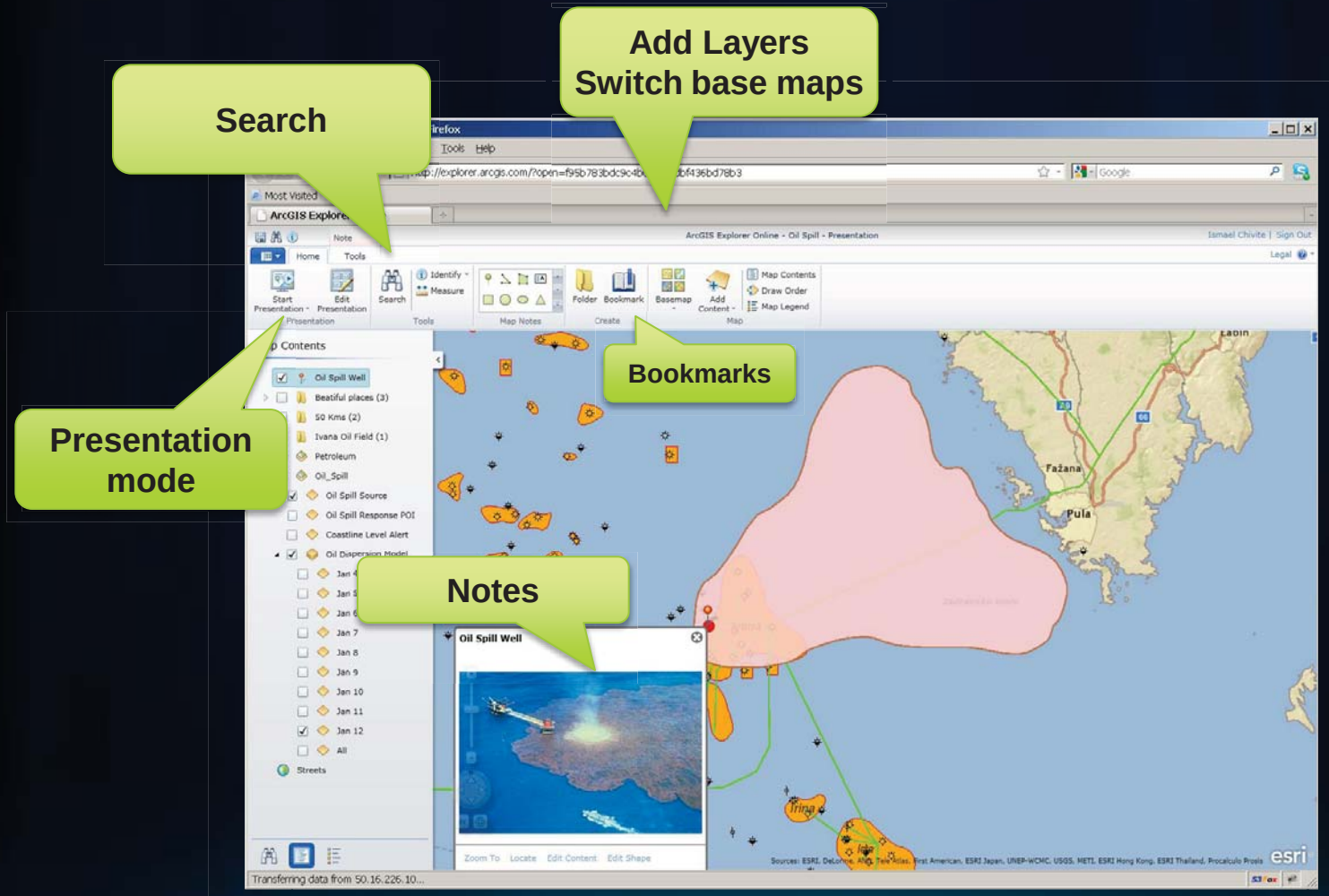
ArcGIS Viewer for Silverlight

ArcGIS Mapping for Sharepoint

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

ArGIS Explorer Online

http://explorer.arcgis.com/



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

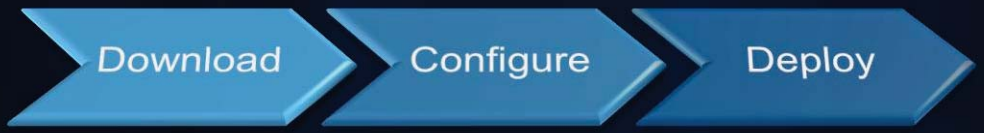
ArcGIS Mapping for Sharepoint

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

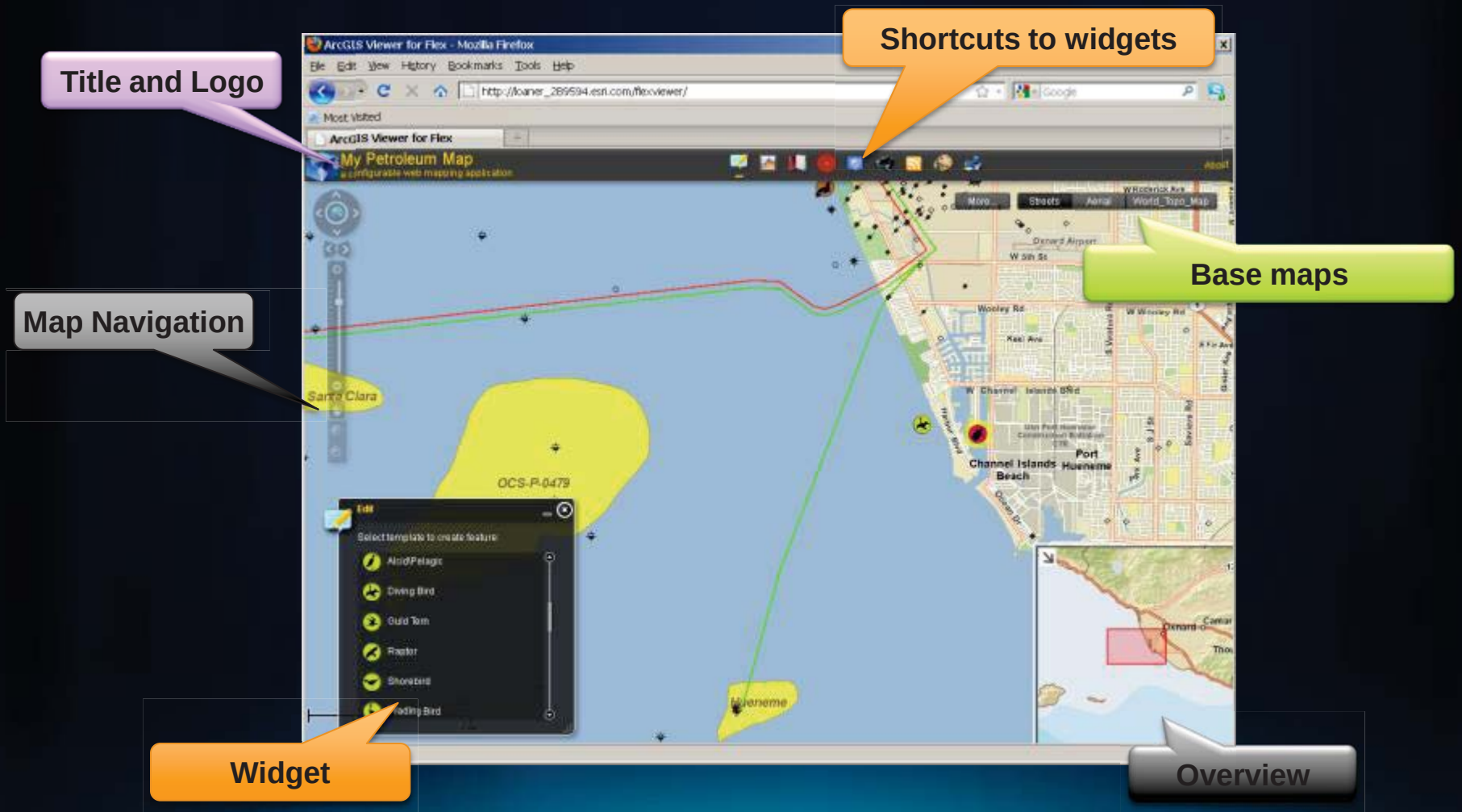


esri.com/flexviewer

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

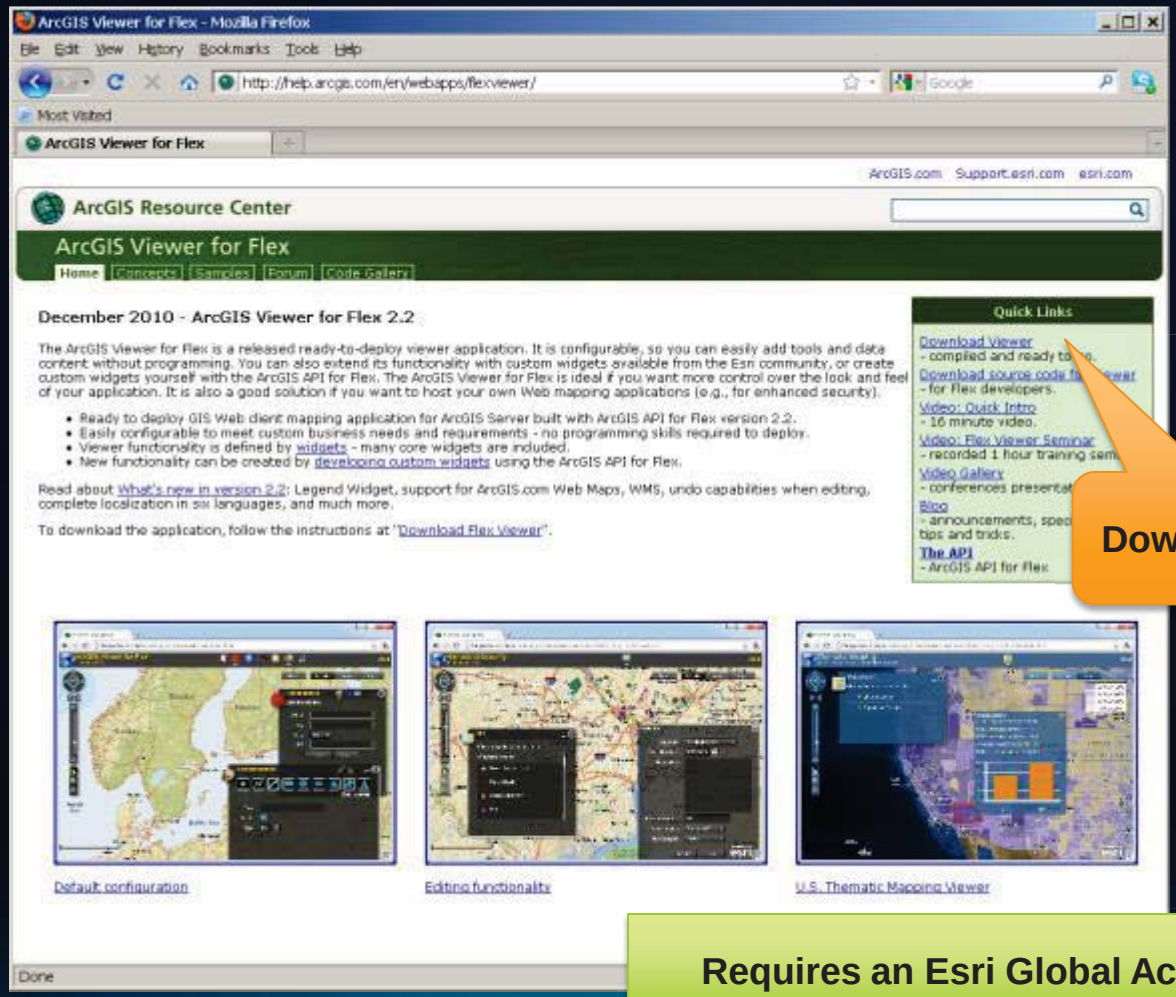
The app

http://www.esri.com/flexviewer



How to download it

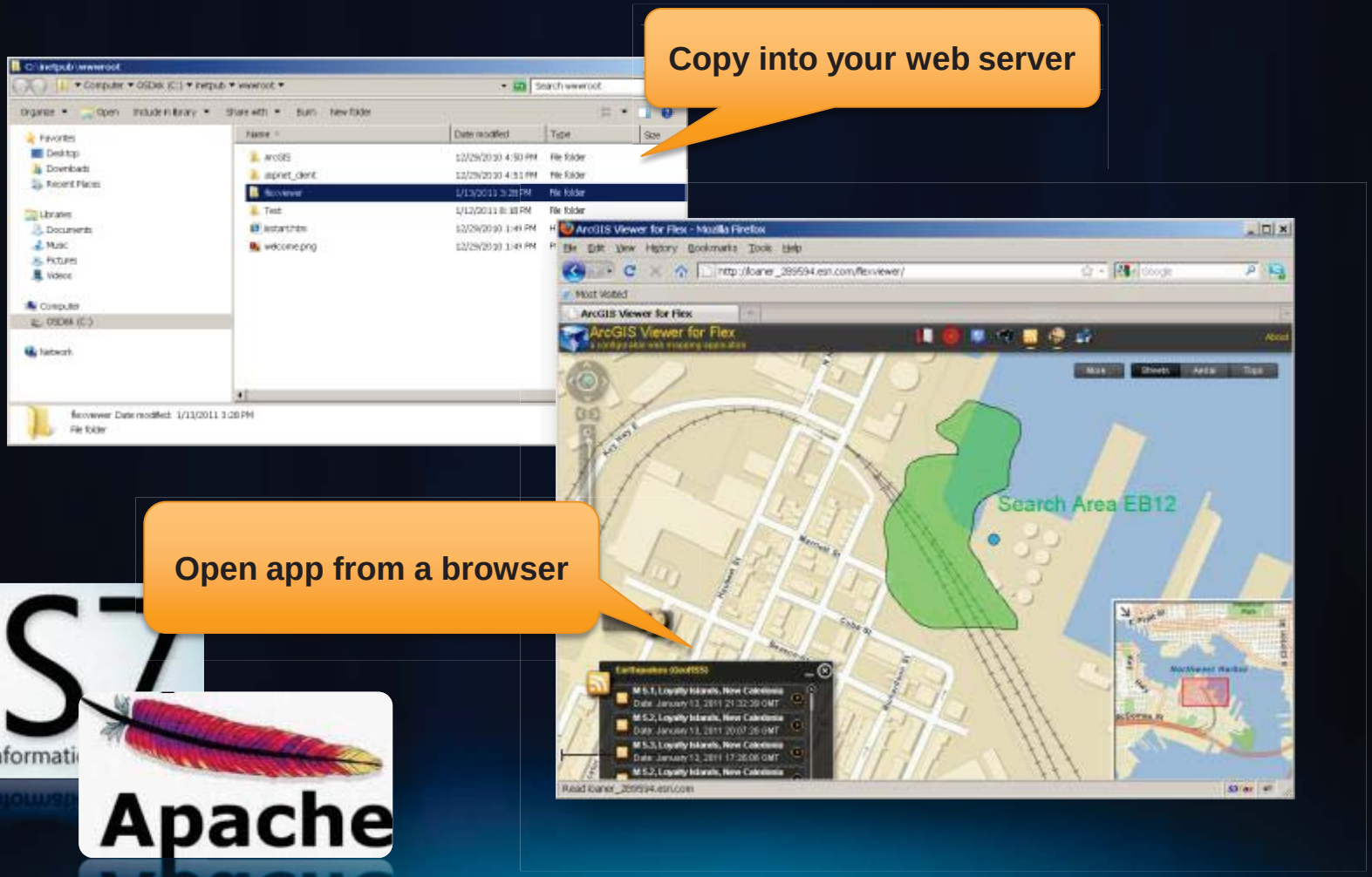
http://www.esri.com/flexviewer



Requires an Esri Global Account

Hosting on your own

Works on any http web server: IIS, Apache etc



Configuring it

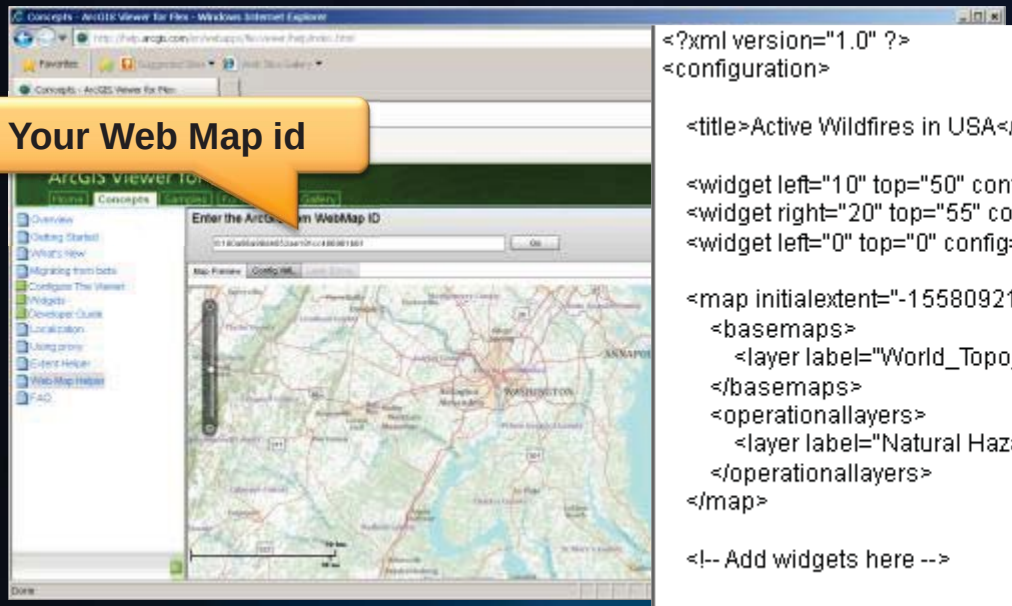
Through simple text files

- 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/NavigationWi
    <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/HeaderContr

    <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

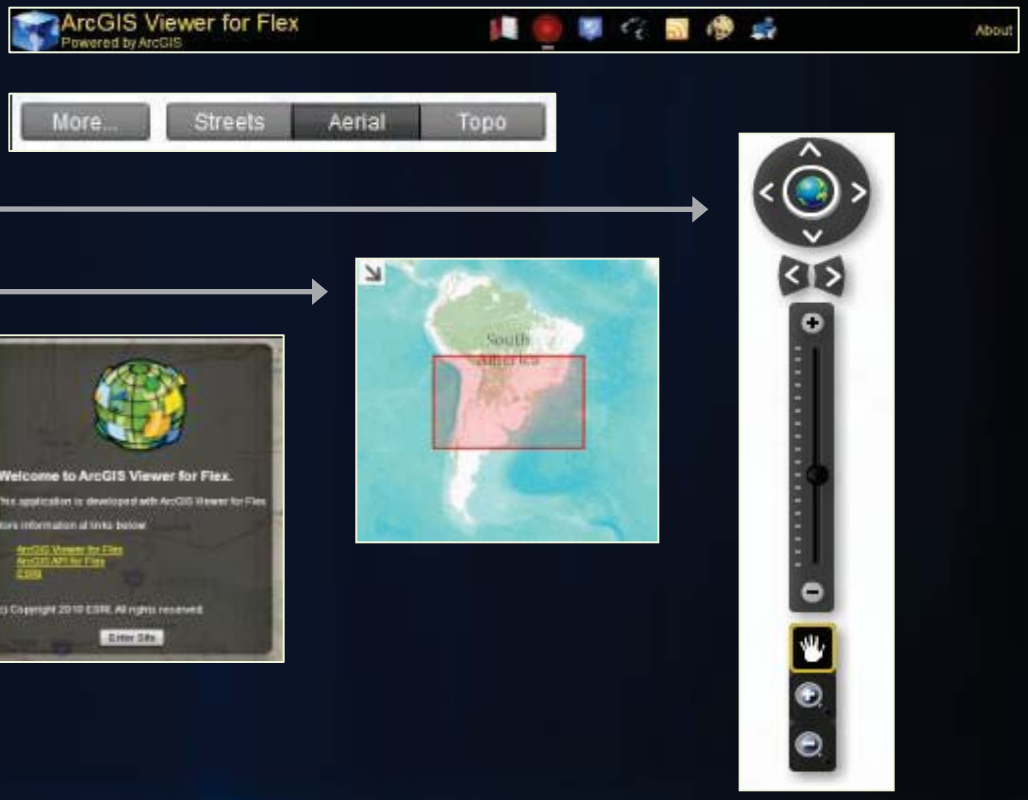


Auto-generated config

```
<?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

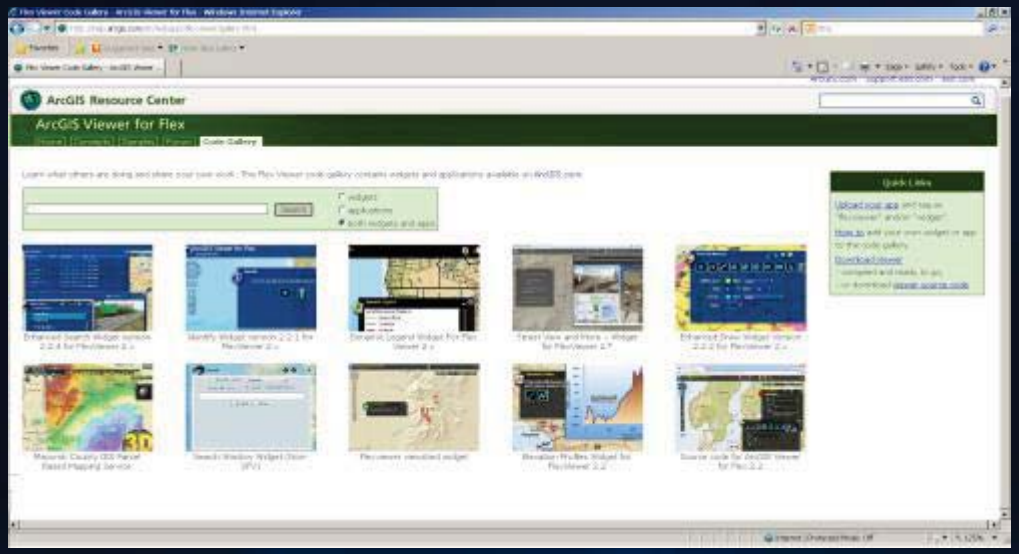
- Bookmark
- Data Extract
- Draw
- Edit
- GeoRSS
- Layer List
- Locate
- Print
- Query
- Search
- Time Slider
- Legend

- Use them as needed for your applications.

Additional Widgets from the community

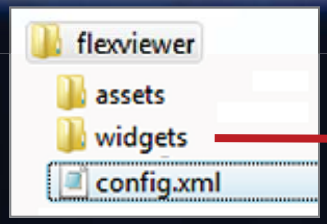
http://help.arcgis.com/en/webapps/flexviewer/gallery.html

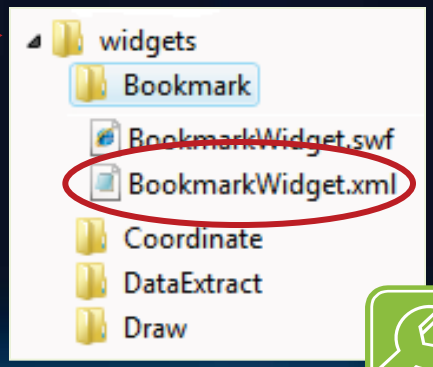
- Downloadable widgets written by ArcGIS developers
- Supported via user forums



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

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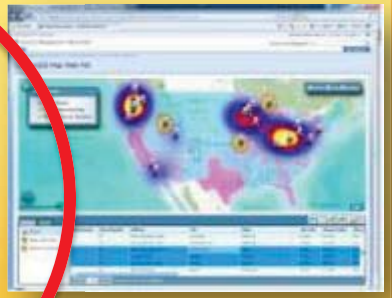
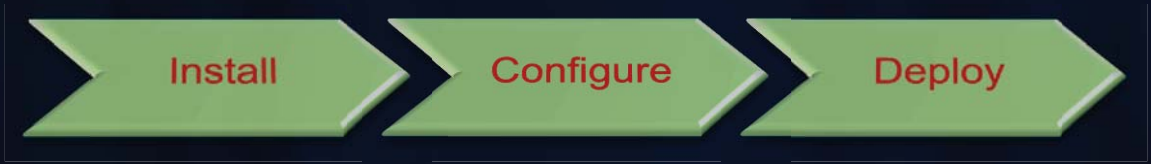


ArcGIS Mapping for Sharepoint

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

ArcGIS Viewer for Microsoft Silverlight

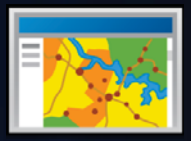
- Configurable *ready-to-deploy* Web client
  - Built with ArcGIS API for Silverlight 2.2
- **Easily and quickly** create and implement GIS Web mapping applications



- 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

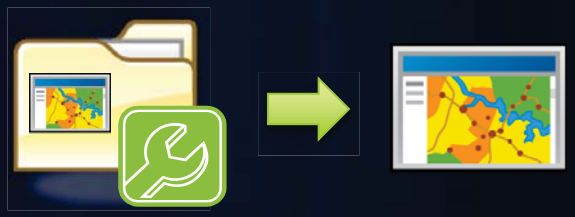
Non-linear workflow

3 Deploy Application

A

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

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

ArcGIS Mapping for SharePoint

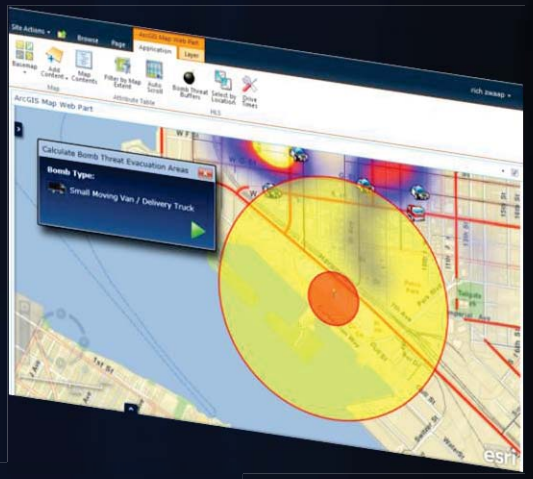
Configurable out of the box mapping components

- 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

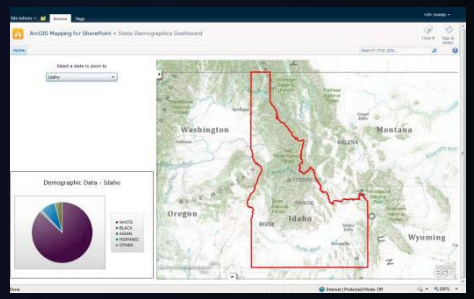
Download → Deploy → Configure

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

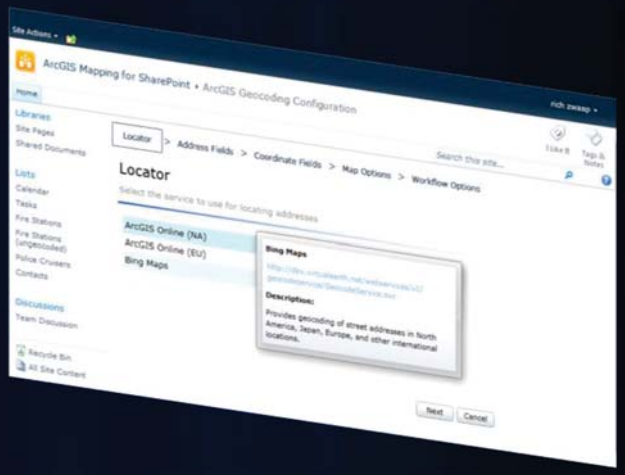


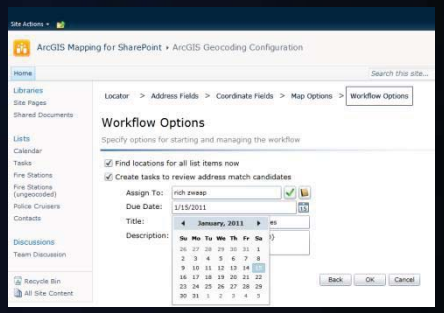
Download → Deploy → Configure

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



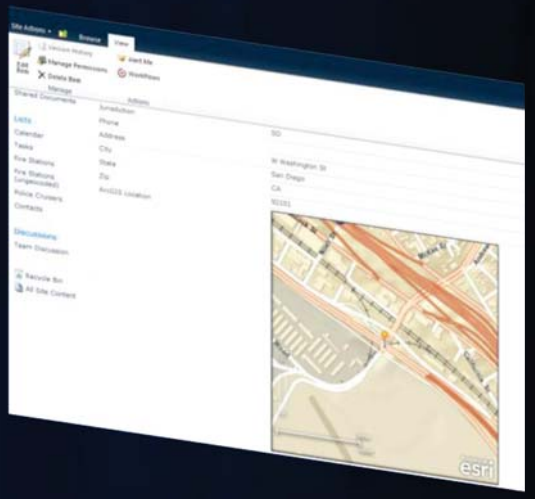


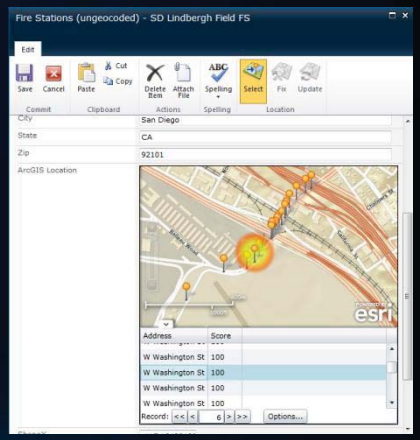
Download → Deploy → Configure

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

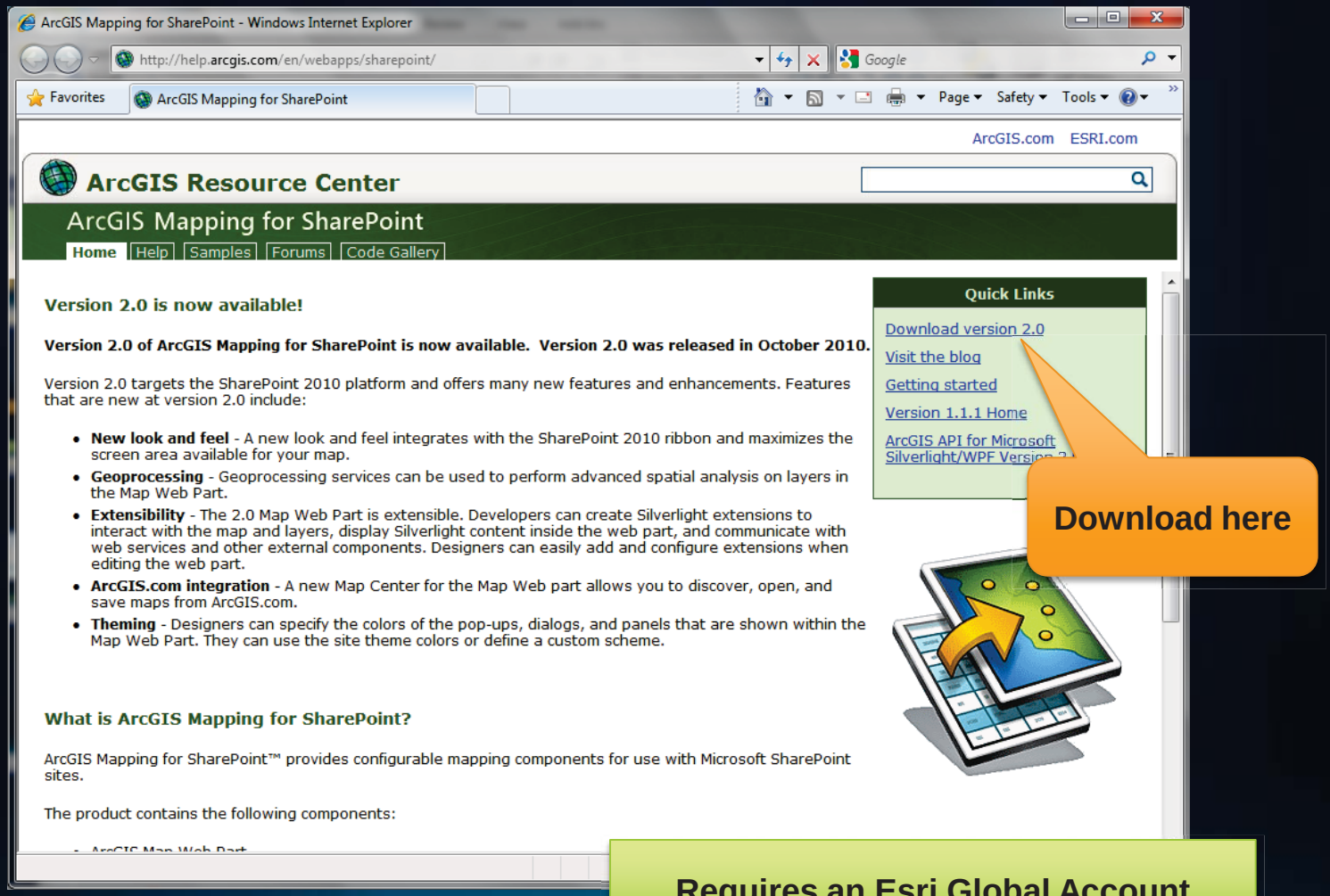




Download → Deploy → Configure

How to download it

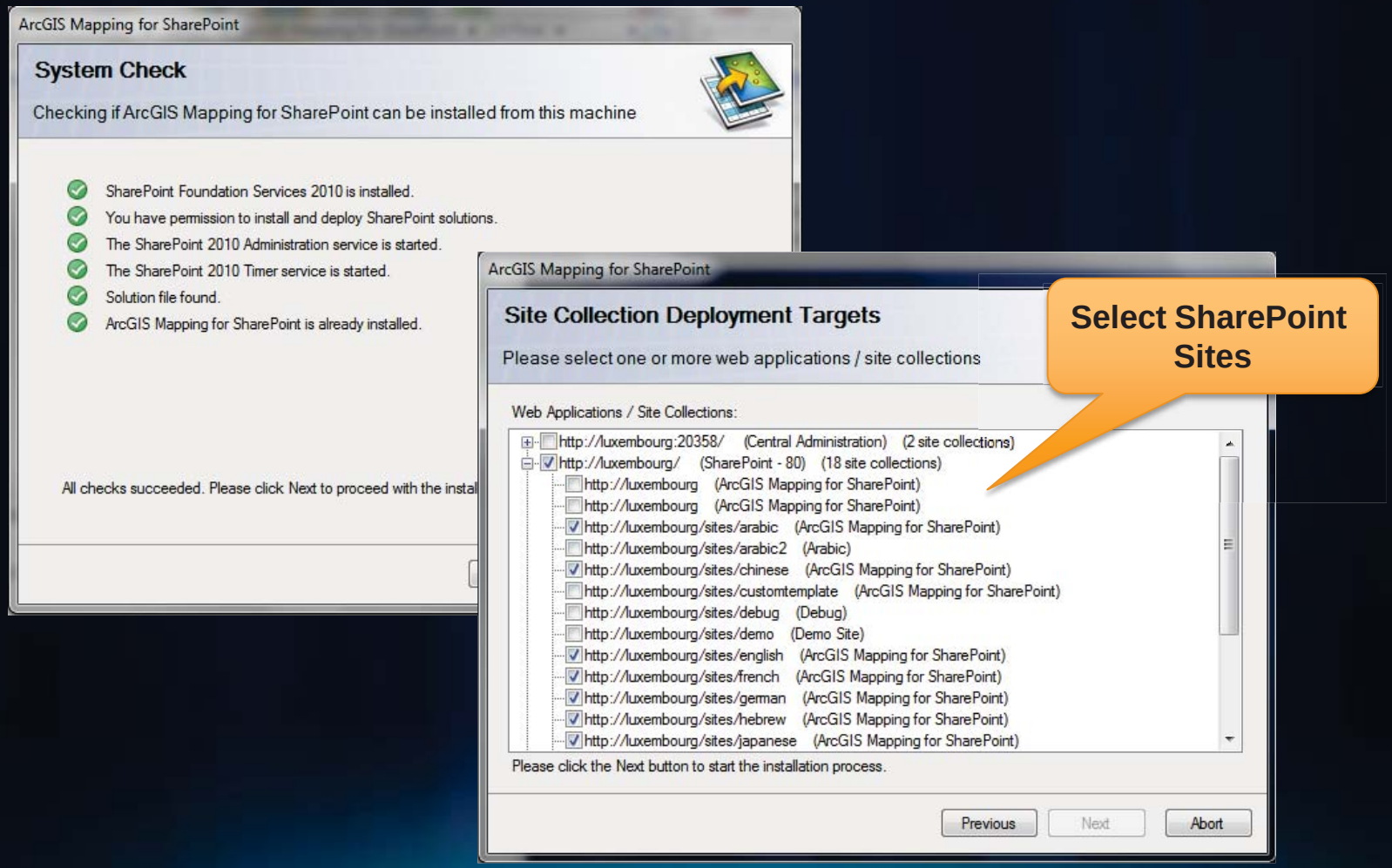
http://links.esri.com/sharepoint



Requires an Esri Global Account

Deployment

Simple installation experience



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

esri