



ArcGIS for Developers

an introduction

Jim Barry, Hossam Sayed

**Esri Developer Summit
Middle East & Africa**

19-21 November 2013
Park Hyatt Dubai

Goals

- Cover all of ArcGIS, high pass, developer's angle
- *What is there?*
- *What can I do with it?*
- *What resources are available to get the most from it all?*
- *Where is the community?*
- How do I get started?

Who are you?

- GIS Pro
- Experienced developer, new to GIS
- Student
- Project Lead

Agenda

- ArcGIS for Developers program - *free*
- Overview of the ArcGIS Platform
 - ...thru a developer's lens
 - Desktop, Server, Web, Mobile, Online
- Developer Community

10.2.1

- **Online**
- **Desktop**
- **Server**
- **Mobile**



Web Developers

- JavaScript
- Flex
- Silverlight

Which is better?

- REST APIs
 - ArcGIS Server
 - Portal for ArcGIS (*ArcGIS Online*)

Runtime SDKs

- Create native apps for desktop and mobile devices
 - WPF, Windows Phone, Windows
 - Java, Android
 - iOS, Mac OS
 - Qt

REST APIs

- ArcGIS Server
- Portal
 - Portal for ArcGIS and ArcGIS Online



Geoservices

- Geocoding
 - Address finding, reverse geocoding
- Geometry service
 - Geometric operations, map projections
- Network services
 - Routing, directions, service areas
- *Geotrigger service – soon*
 - *Geofences, geoevents: enter, stay, leave*

The Location Platform for Apps

Quickly add geo to your apps using Esri's cloud services.
Develop in the API of your choice and deploy on any device.

TAKE A TOUR

SIGN UP



Power your applications with ArcGIS technology

Use maps, content and APIs from ArcGIS in your web and mobile applications.



Mapping and analysis for organizations

Build custom applications to help your organization visualize, create and share spatial data.



Get started with ready-to-use open source apps

Use Esri's sample code on GitHub as a starting point to build applications for your users or organization.

Geocoding and Place Search

Geocoding and Place



<http://developers.arcgis.com>

DEMO

ArcGIS for Developers

ArcGIS for Developers ▾ PLATFORM FEATURE

Applications GIS Tools Usage Summary

Notice: You are currently using the beta version of developers.arcgis.com

Search Your Applications

1. Create An Application

Register an application to [integrate ArcGIS features into your application](#).
Or use your application and OAuth 2 to [create an application for an organization](#) using ArcGIS Online.

+ CREATE AN APPLICATION

2. Start Building

Use one of these [samples](#) to build your application, or [create a new application](#).

JS

JavaScript

- [Tutorial](#)
- [Sample Code](#)

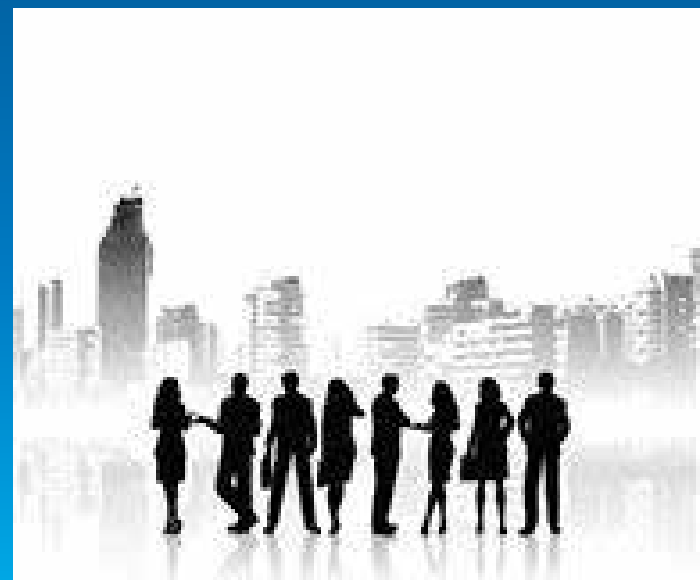
Social Coding and Esri

Not just sharing code and tools

Visibility and transparency

Collaboration, lessons learned, advice, insight

Esri shares/ Community shares



Esri is on github!

A premier Social Coding platform

Open code **version** & **release** management

Built on **git**

3.5 million developers*

5+ million repositories*



Esri is on github!

github.com/esri

150+ public repos

500+ contributors

Individual forums

Hundreds of source forks



What can you find on github.com/esri?

Apps

Templates

Samples

Quickstarts

Many different types of repos!



Objective-C



Microsoft
.net



C#



Ruby



Participate on github.com/Esri – **Download!**

Zip – easiest (no tracking changes)



Download ZIP

Clone – local, trackable copy



Clone in Desktop

Fork – trackable copy on github



Fork

13

Participate on github.com/Esri – **Collaborate!**

Push

Issues

Pull

Merge

Wiki



Participate on github.com/Esri – Collaborate!

Issues – your comments/feedback



Pull – accept changes from your
Forked github repo




Push – copy **local** changes to github

JimBarry (Jim Barry) x

← → ↻ [GitHub, Inc. \[US\]](#) <https://github.com/JimBarry> ☆ ☰

Apps For quick access, place your bookmarks here on the bookmarks bar. [Import bookmarks now...](#) Other bookmarks

🔍 Search or type a command ⚙ Explore Gist Blog Help JimBarry 🗑 ✕ 📄



Jim Barry
JimBarry

🌐 Esri
📍 Redlands, CA, USA
🌐 <http://twitter.com/JimBarry>
🕒 Joined on May 12, 2011

4 followers **4** starred **0** following

📁 Contributions 📁 Repositories 📁 Public Activity [Edit Your Profile](#)


Popular repositories

- 📁 **MO-Save-State** 1 ★
serializes a MO-based application
- 📁 **quickstart-map-js** 0 ★
ArcGIS JavaScript mapping samples to...
- 📁 **esri-leaflet** 0 ★
A lightweight set of tools for working wit...

Repositories contributed to

- 🔒 **ArcGIS/arcgis-for-developers** 3 ★
The ArcGIS Developers website

Your Contributions 🔒



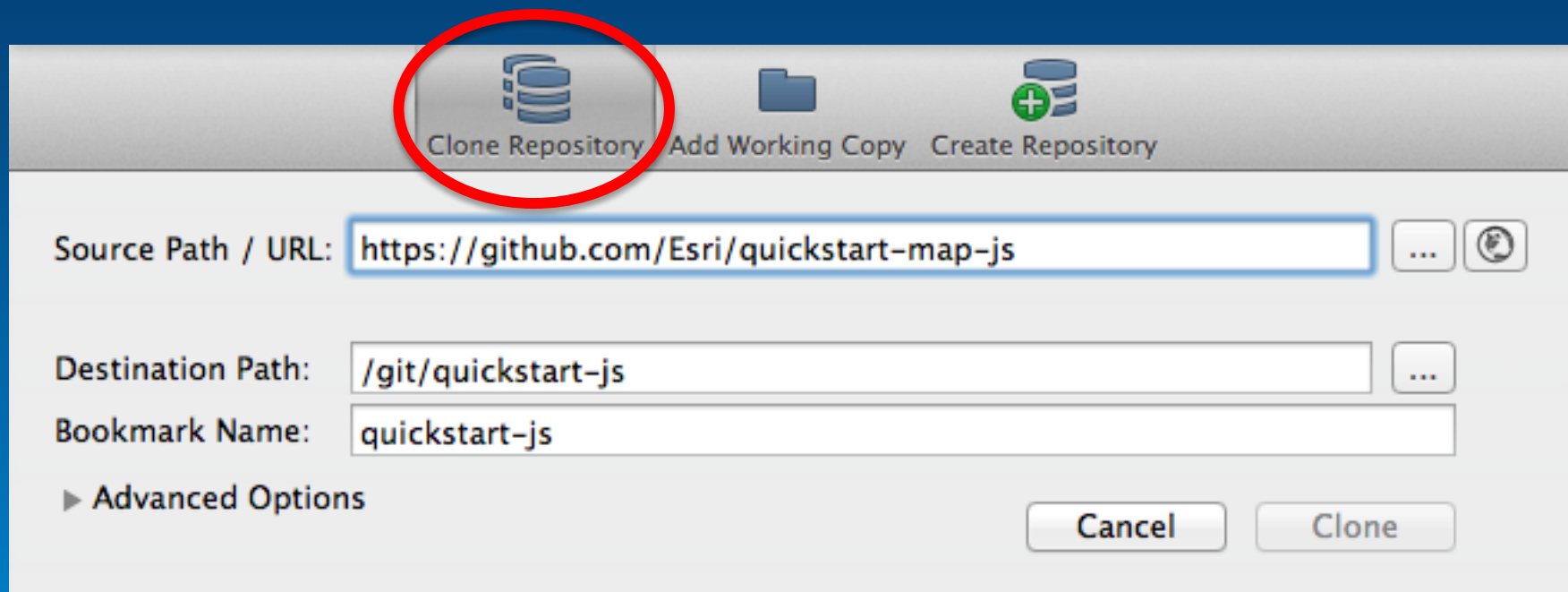
📄 Summary of Pull Requests, issues opened and commits. [Learn more](#) Less 🟡 🟢 🟢 🟢 More

288 Total Nov 19 2012 - Nov 19 2013	4 days July 16 - July 19	0 days Rock - Hard Place
---	------------------------------------	------------------------------------

[View Contributions](#) [Commit Stats](#) [Commit Stats](#)

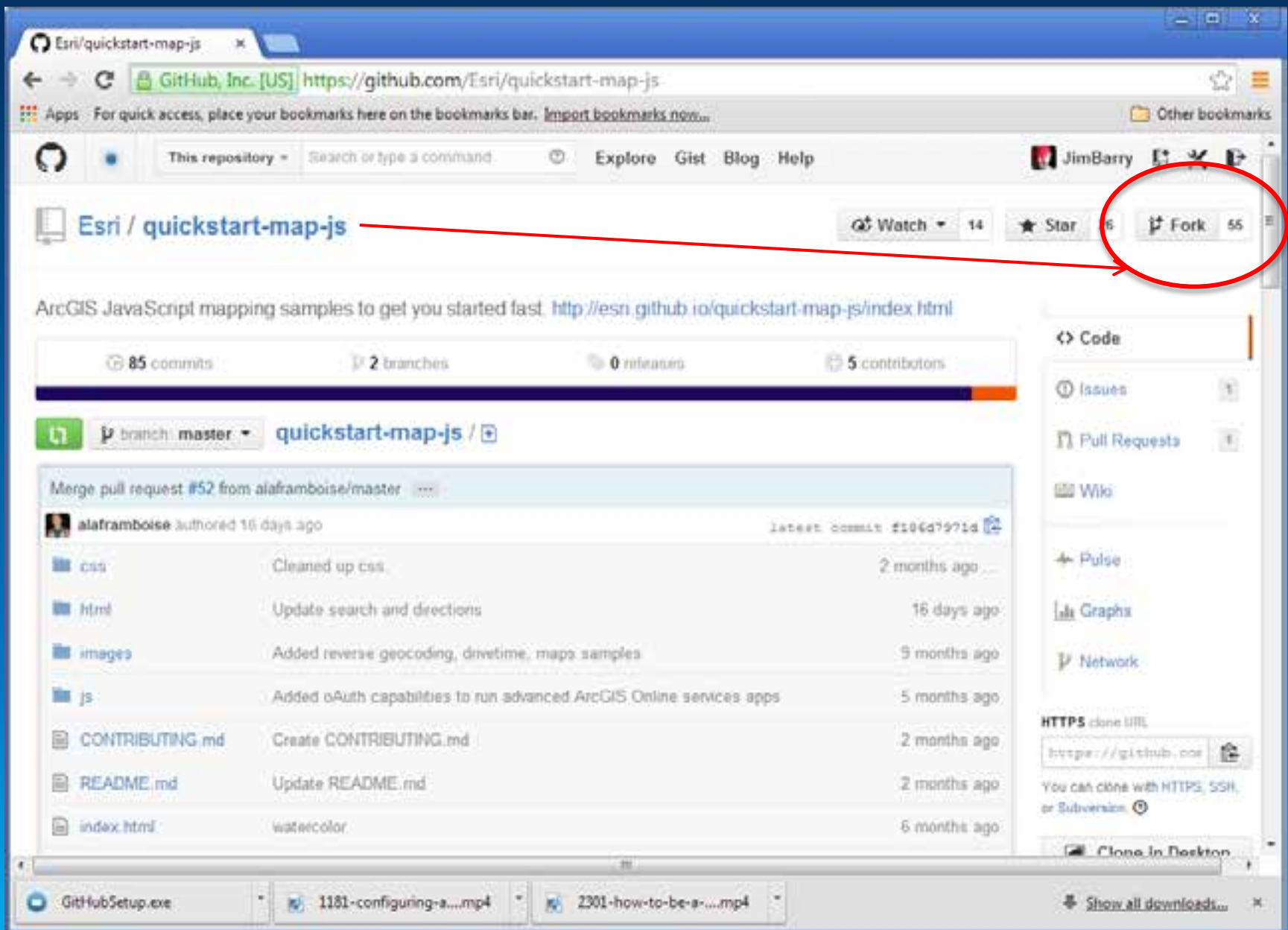
📄 GitHubSetup.exe - 📄 1181-configuring-a...mp4 - 📄 2301-how-to-be-a...mp4 - [Show all downloads...](#) ✕

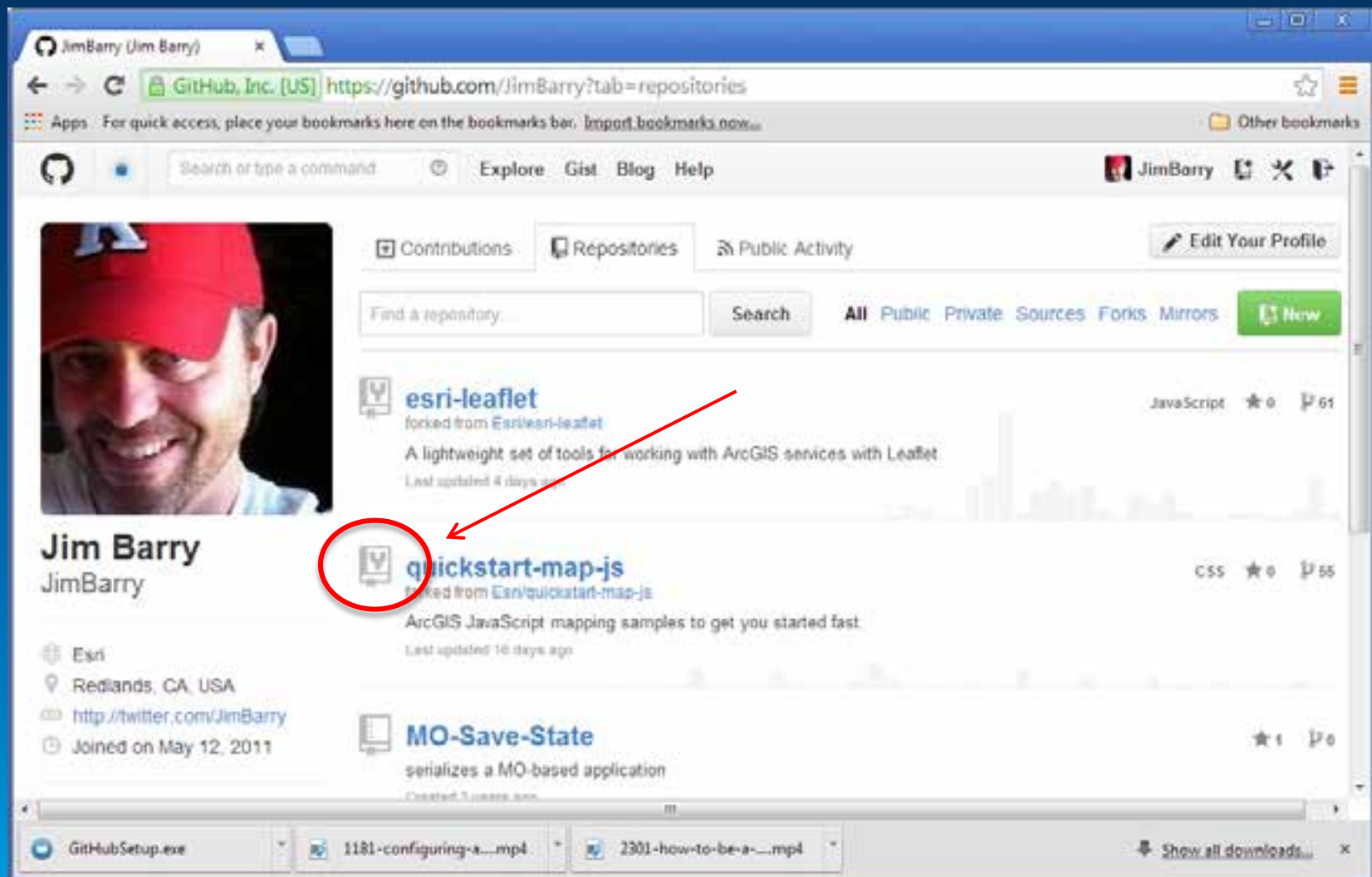
Local use: application or command-line



```
$ git clone https://github.com/username/Spoon-Knife.git
```

Clones your fork of the repository into the current directory in terminal






Windows.github.com



local

 repositories

github

 log in

welcome

connect

configure

repositories

connect

GITHUB GITHUB ENTERPRISE

JimBarry

.....

LOG IN

SKIP SETUP

sign up

Powerful collaboration, review, and code management for open source and private development projects.

Build software better, together.

 SIGN UP

local



repositories

github



Jim Barry



ArcGIS



Esri

welcome

connect

configure

repositories

configure git

Jim Barry

jimbarr@gmail.com

This will be used in the commits you create. Keep in mind that if you publish commits, anyone will have access to this email.

This will change your global gitconfig.

CONTINUE

SKIP

+ create refresh tools

local

repositories

github



Jim Barry



ArcGIS



Esri

Filter Repositories

JimBarry/esri-leaflet

JimBarry/MO-Save-State

JimBarry/quickstart-map-js

CLONE

quickstart-map-js

A set of simple samples that show you how to accomplish different mapping and GIS tasks with the ArcGIS API for JavaScript. The samples use ArcGIS Online basemaps and services. [Learn more here.](#)

[View the samples live here](#)



Features

- Basemaps - Set different basemaps interactively
- Geolocation - Find and display your geolocation



drag a repository here to add

+ create refresh tools

local

Filter Repositories



repositories



JimBarry/quickstart-map-js



github



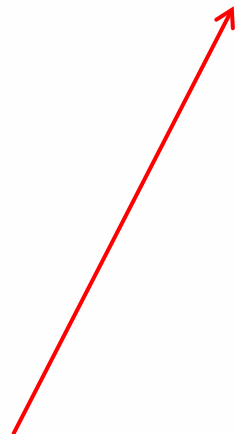
JimBarry



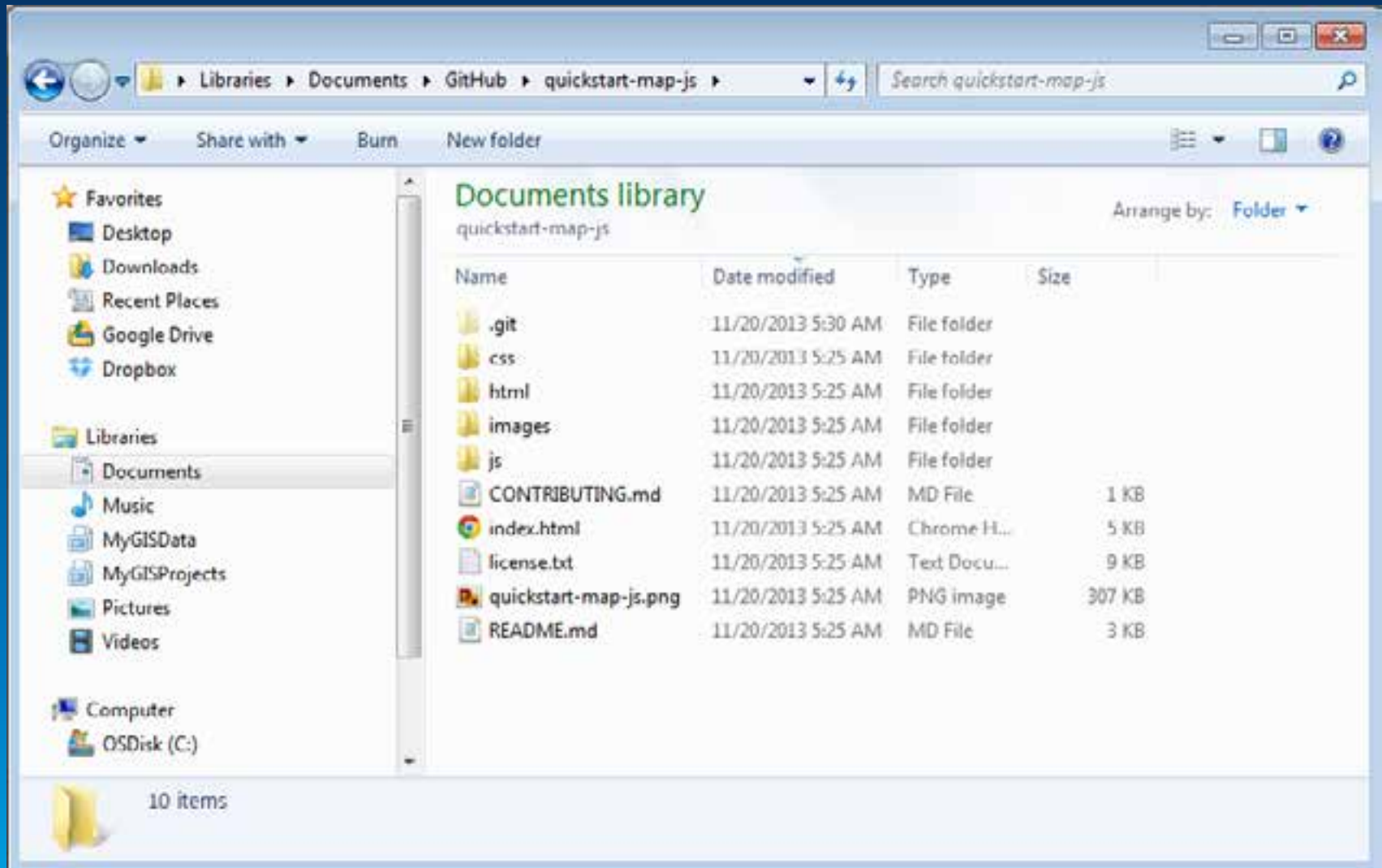
ArcGIS



Esri



drag a repository here to add



Flexviewer on github/esri



How to get started on github?

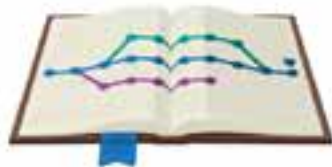
<http://help.github.com>

<http://try.github.io>

<http://video.esri.com/> > “github rockstar”



Set Up Git



Create A Repo



Fork A Repo



Be Social

video.esri.com/watch/2955/social-coding-with-github

The screenshot shows the Esri Video player interface. At the top, there is a navigation bar with the 'Esri Video' logo, a search bar labeled 'Search Videos', and links for 'Channels', 'Queue', and 'Login/Register'. The main content area is divided into two columns. The left column features a video player showing a GitHub repository page with the text 'Your first Repo'. Below the video player, the title 'Social Coding with GitHub' is displayed in green, followed by the description 'Esri staff review the important features of GitHub.' and metadata: 'Recorded: Jul 10th, 2013', 'Runtime: 1:12:33', 'Views: 9', and 'Published: Oct 28th, 2013'. There are also toggle switches for 'Night Mode (Off)' and 'HTML5 Video (Off)'. The right column has a 'Transcript' section which is currently empty, displaying 'No transcript available for this video.' Below this is a social sharing bar with icons for Facebook, Twitter, and YouTube, along with a 'Like' button and a 'Share This Video' link. At the bottom of the right column, there is a 'Download Video' button, an '<Embed>' link, and a 'Tags' section listing 'Andrew Turner', 'Development', 'Esri International User Conference', and 'software development'.

Esri Video Search Videos Channels Queue Login/Register

Your first Repo

Social Coding with GitHub
Esri staff review the important features of GitHub.

Recorded: Jul 10th, 2013 Runtime: 1:12:33 Views: 9
Published: Oct 28th, 2013

Night Mode (Off)
HTML5 Video (Off)

Transcript

No transcript available for this video.

Download Video <Embed>

Tags: Andrew Turner Development
Esri International User Conference software development

video.esri.com/watch/2955/social-coding-with-github

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Recorded: Jul 10th, 2013 Runtime: 1:12:33 Views: 9
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Night Mode (Off)
HTML5 Video (Off)

Transcript


No transcript available for this video.

Download Video <Embed>

Tags: Andrew Turner Development
Esri International User Conference software development

video.esri.com/watch/2301/how-to-be-a-github-rockstar

Esri Video Channels Queue Login/Register >



The Lingo

Repository = **Repo** = your project
Commit = snapshot
Pull = getting the latest
Merge = bringing it all together
Pull Request = please accept my code

Transcript

No transcript available for this video.

How To Be A GitHub Rockstar

Esri staff give an overview of GitHub.

Recorded: Mar 26th, 2013 Runtime: 59:55 Views: 144
Published: May 1st, 2013

Light Mode (Off)
HTML5 Video (Off)

Be the first to like this video

Download Video <Embed>

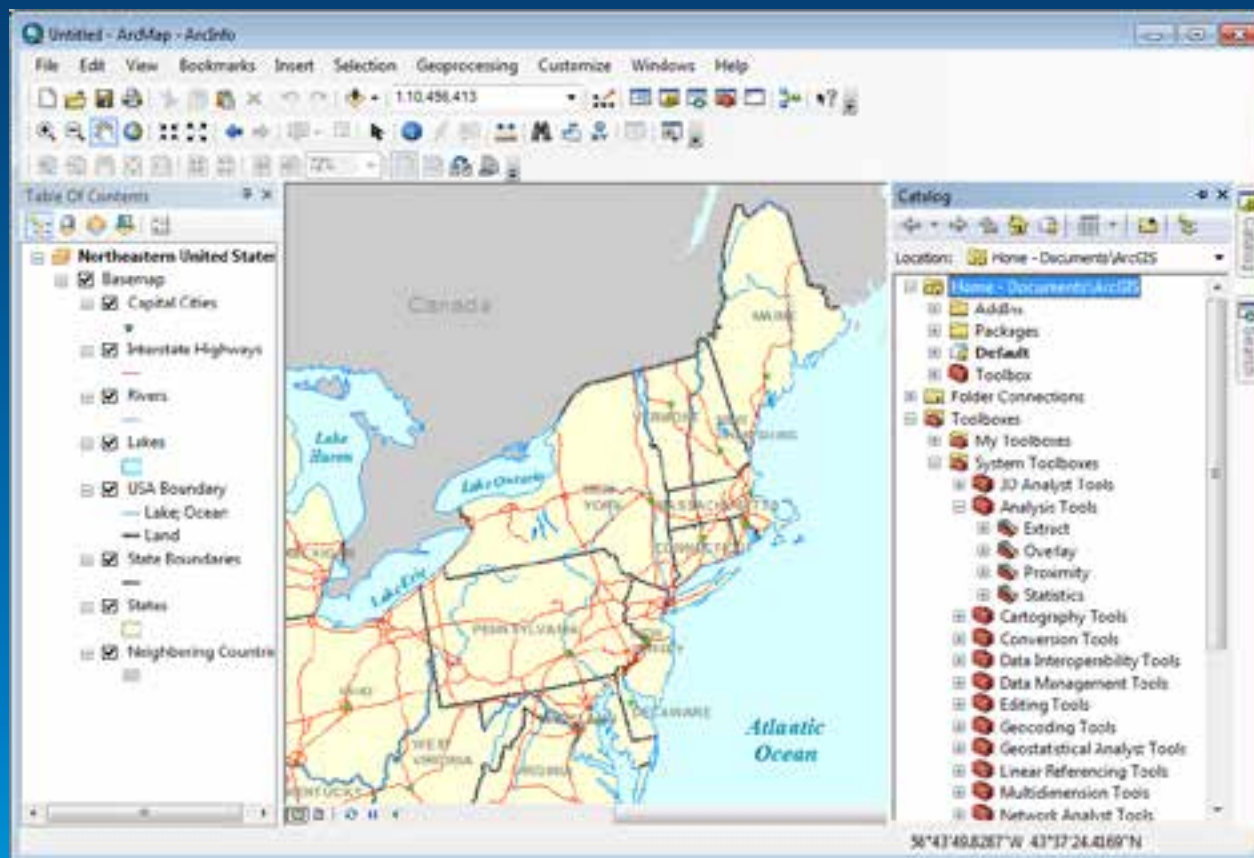
Tags: Allan Lalramboise Andrew Turner Dev Summit
Developers Esri International Developer Summit

Why Get Involved?

- Get answers and insight
- Make new friends
- Accelerate **your** learning curve
- Accelerate **others** learning curve
- Share knowledge/experience
- **Improve ArcGIS!**

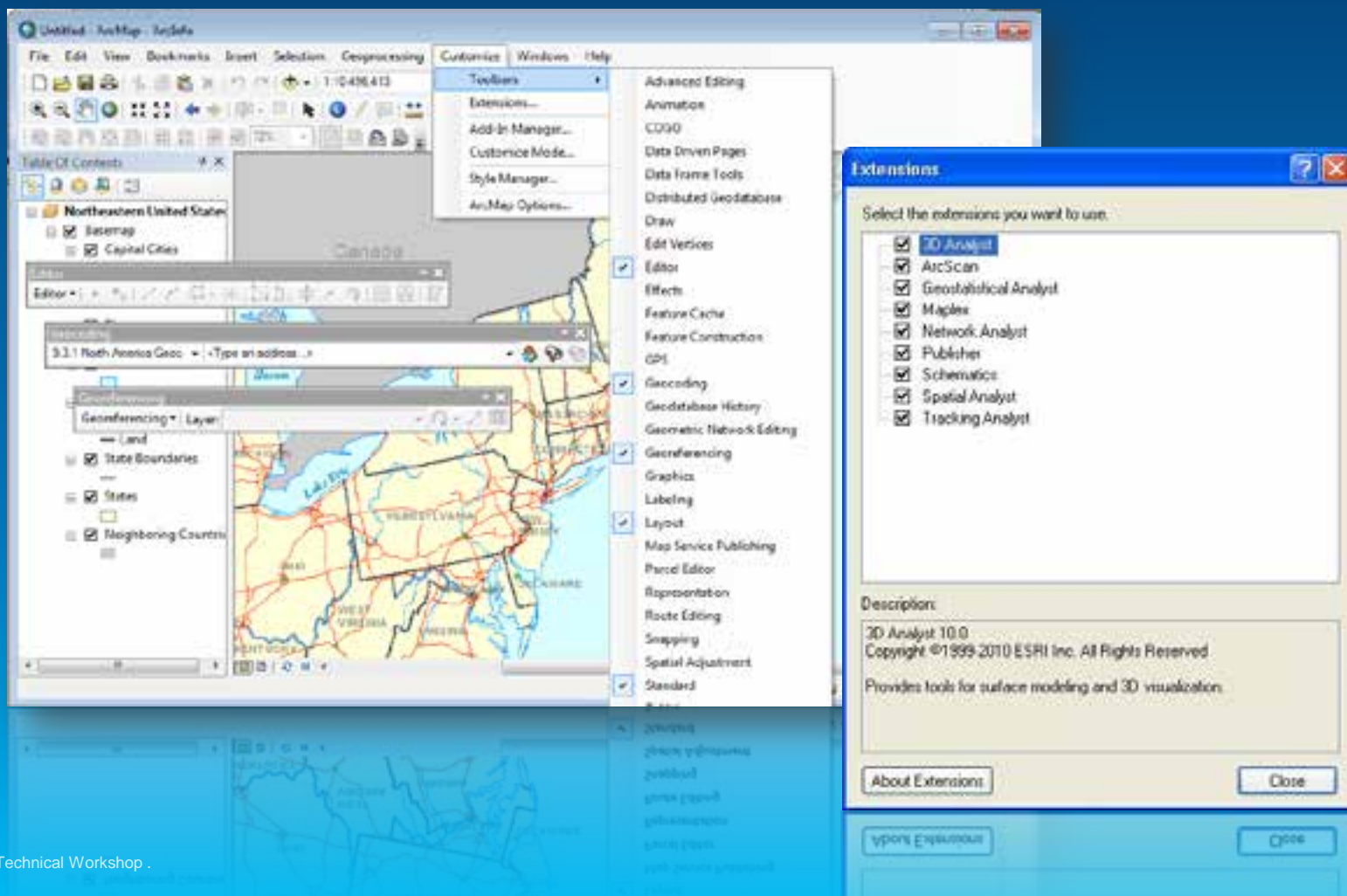


ArcGIS for Desktop



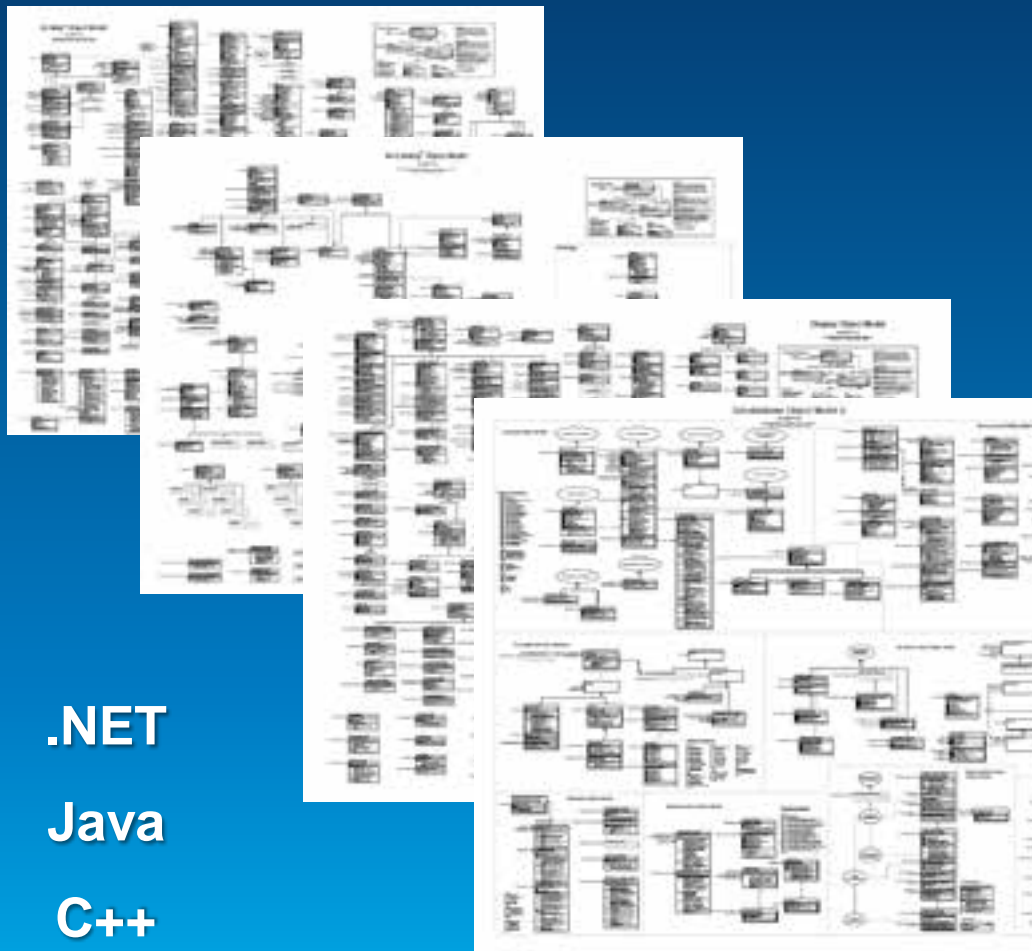
ArcGIS for Desktop

Customizing



ArcGIS for Desktop

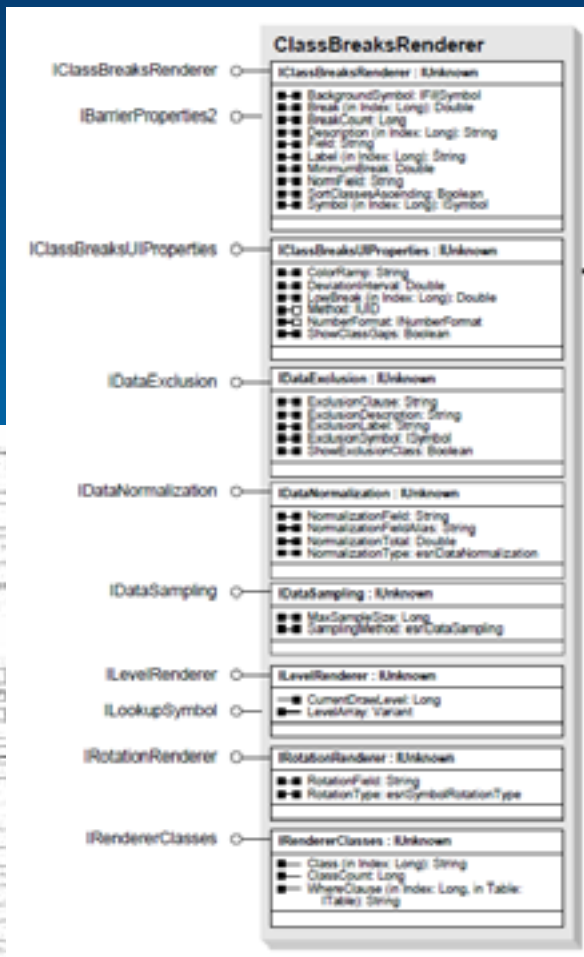
ArcObjects



.NET

Java

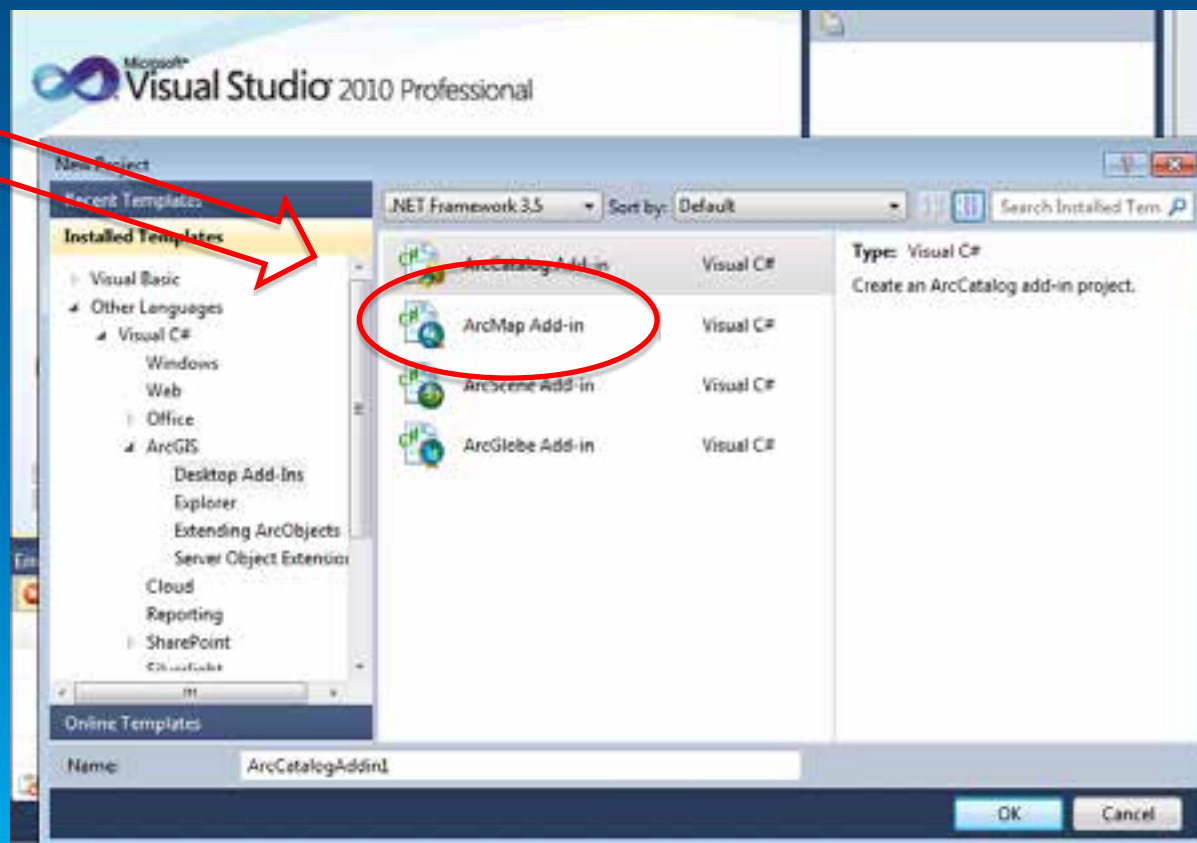
C++

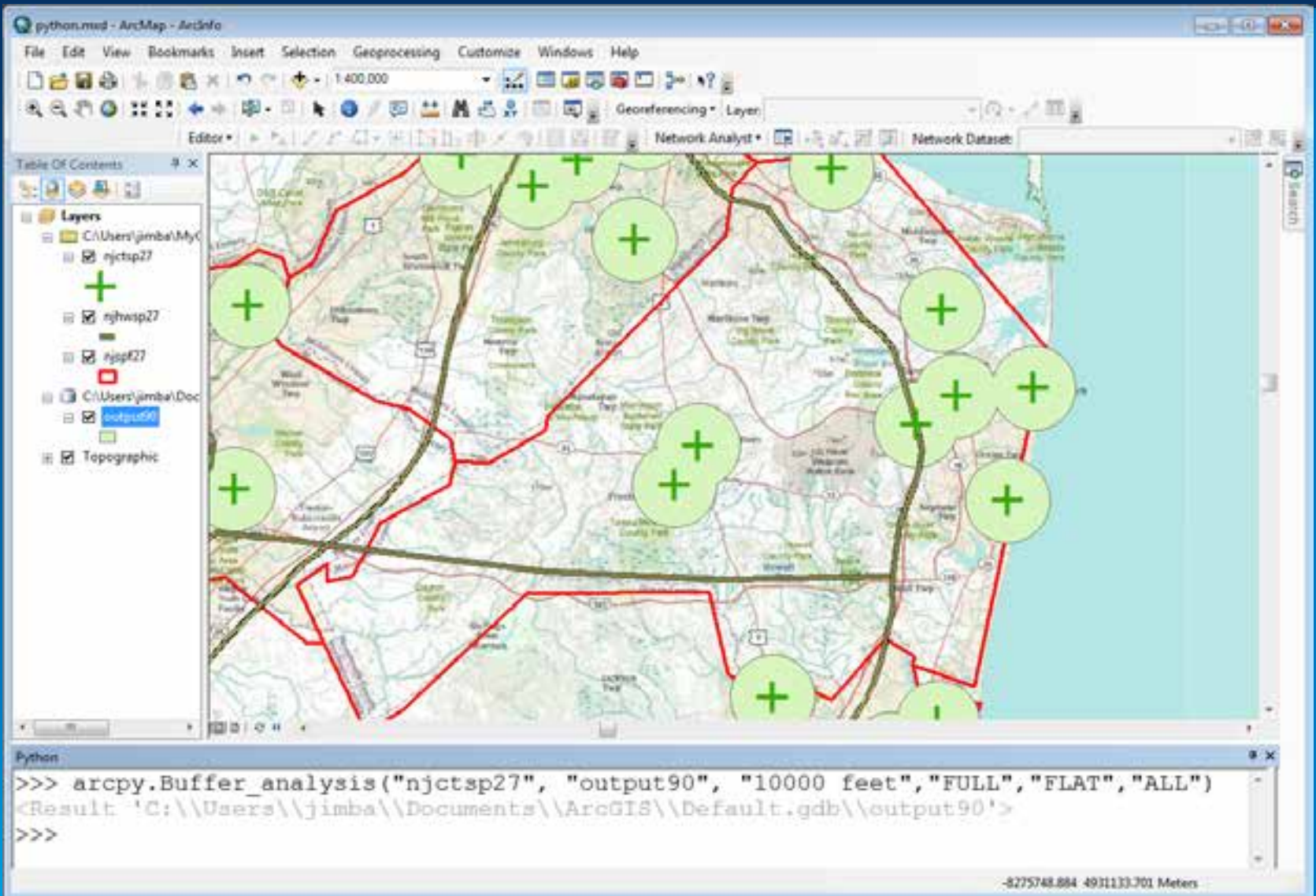


ArcGIS for Desktop

Creating add-ins

Visual Studio Templates





Python for ArcGIS

Communities

Spatial Analyst - Supplemental tools

A collection of script tools to supplement Spatial Analyst Tools.

[Read more »](#)


Quick Links

ArcGIS Python Code Recipes

- [ArcGIS Python Recipes](#)

Learning Python

- [Python tutorial](#)
- [Python.org beginners guide](#)
- [Dive into Python](#)
- [Popular Python recipes](#)
- [Python Module of the Week](#)

Python for ArcGIS

- [New at 10.1 for Python and ArcPy](#)
- [A quick tour of ArcPy](#)
- [Extending ArcGIS with Python Tutorials](#)
- [Python Scripting for ArcGIS](#)

Quick Links

ArcGIS Python Code Recipes

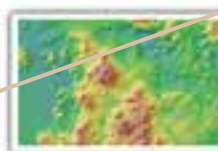
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- [Extending ArcGIS with Python Tutorials](#)
- [Python Scripting for ArcGIS](#)

[More Gallery posts »](#)


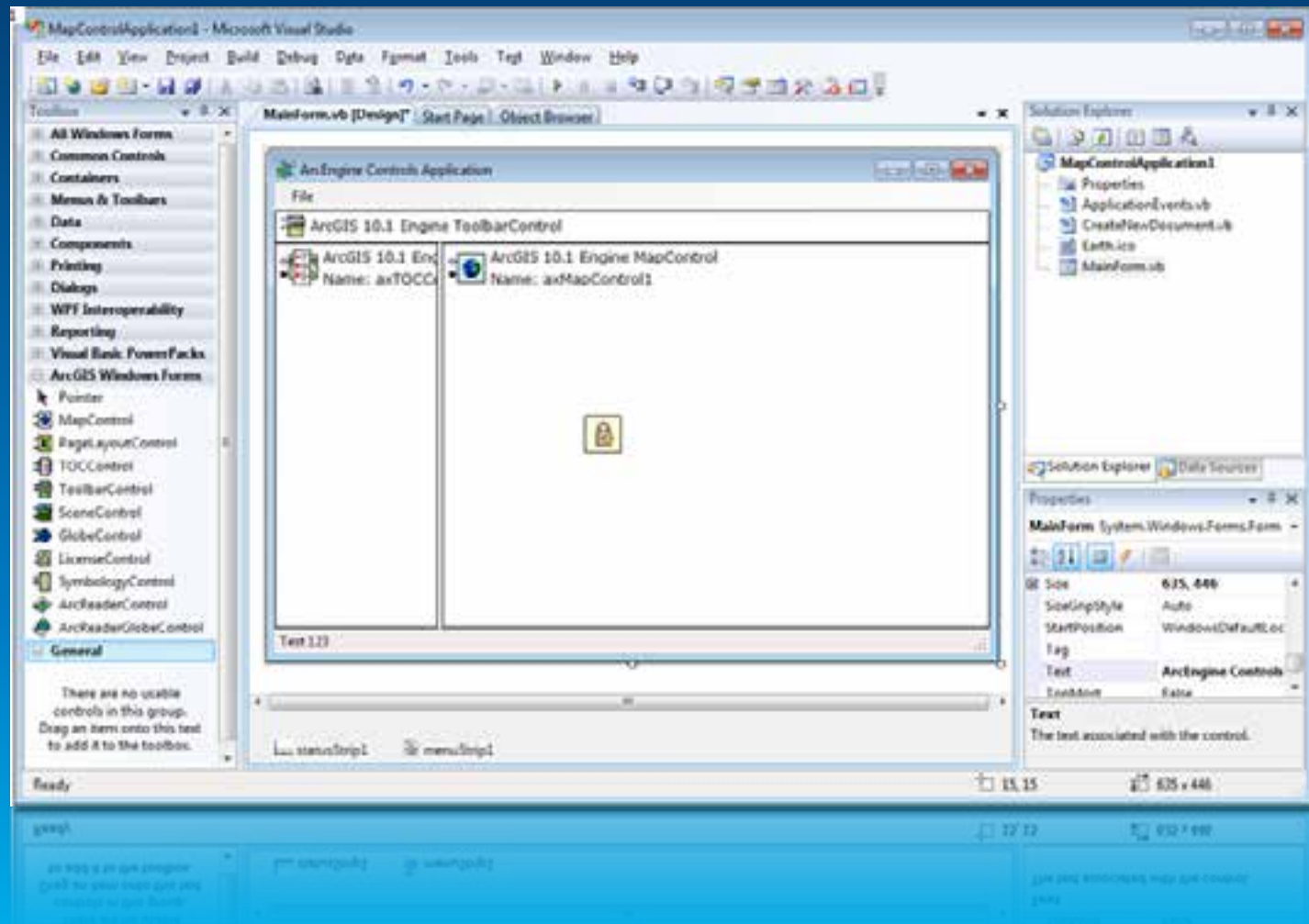
Benthic Terrain Modeler

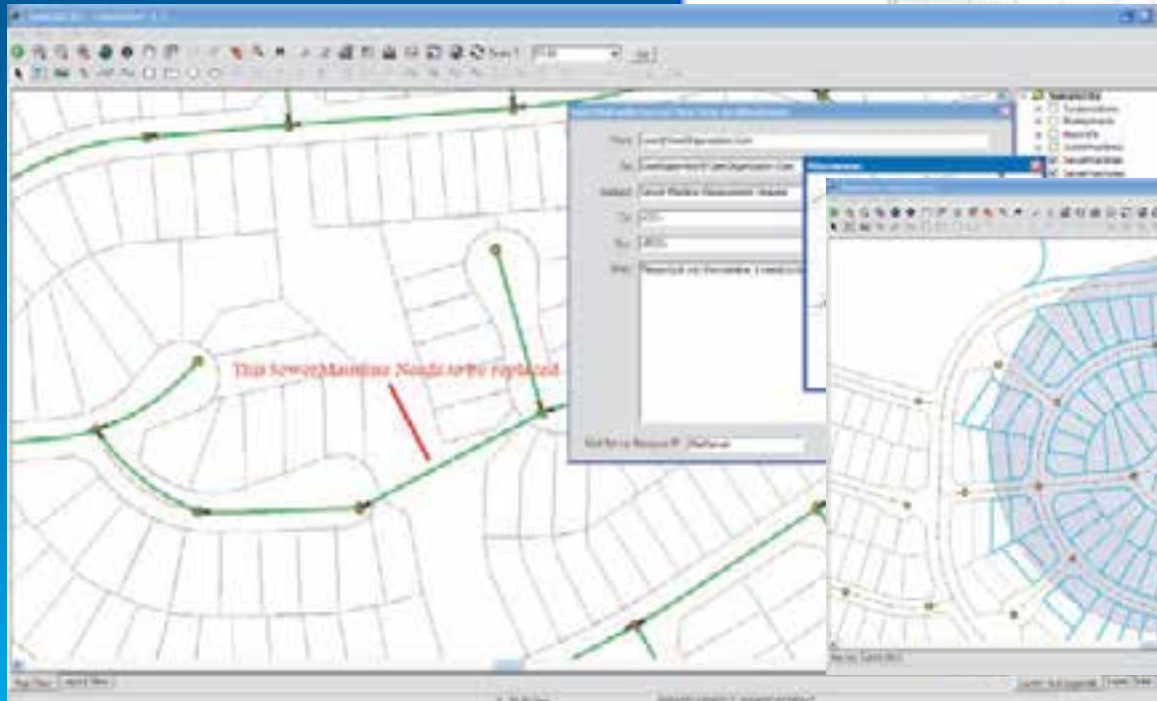
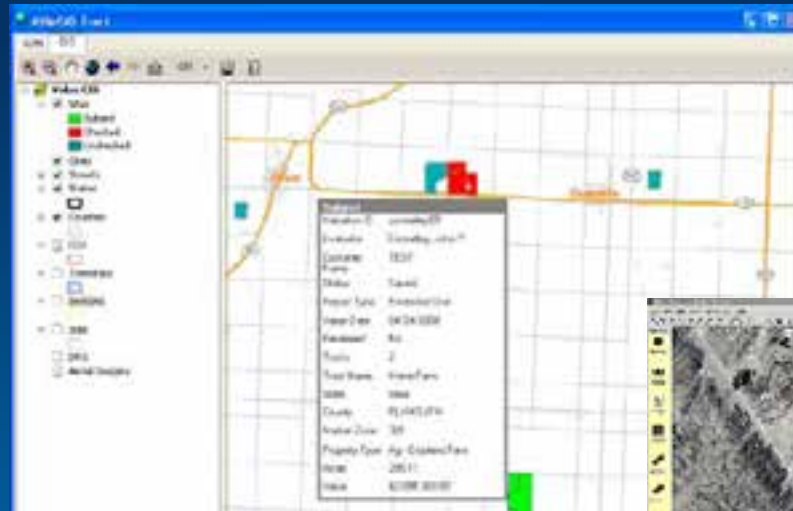
Automate publishing a
geoprocessing service
with ArcPy (JC 2013)

USA Soils

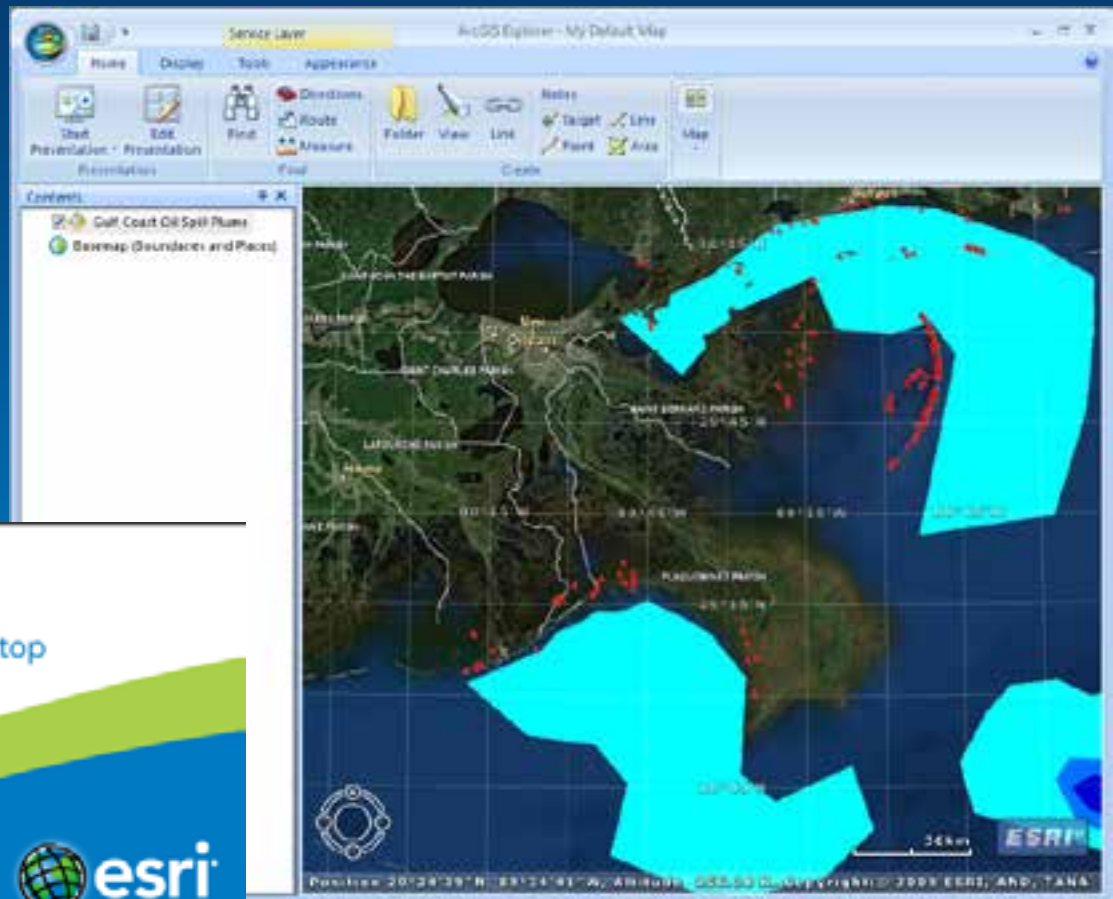
3D Cities: Portland
CityEngine Project

ArcGIS Engine



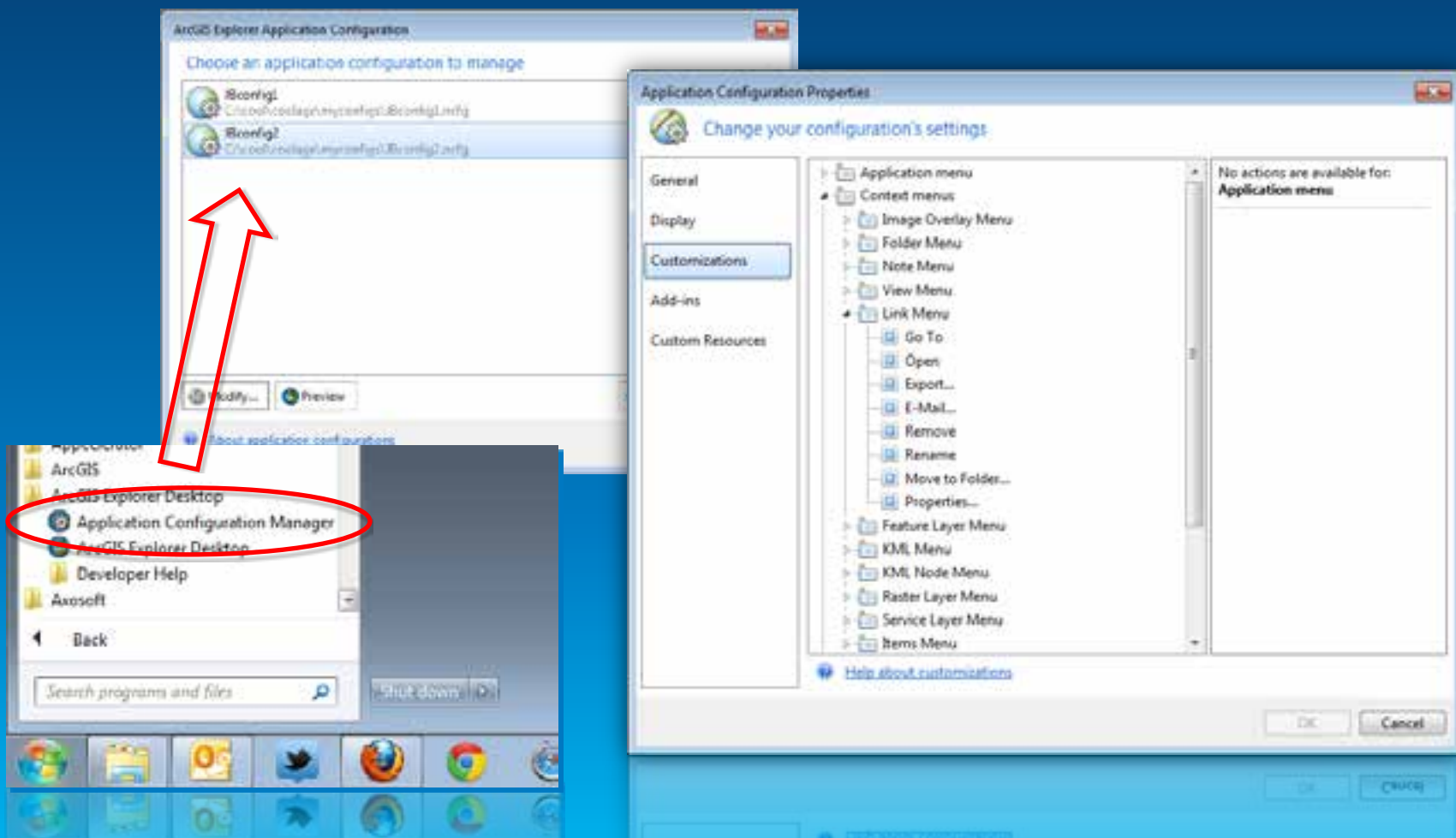


ArcGIS Explorer Desktop



ArcGIS Explorer Desktop

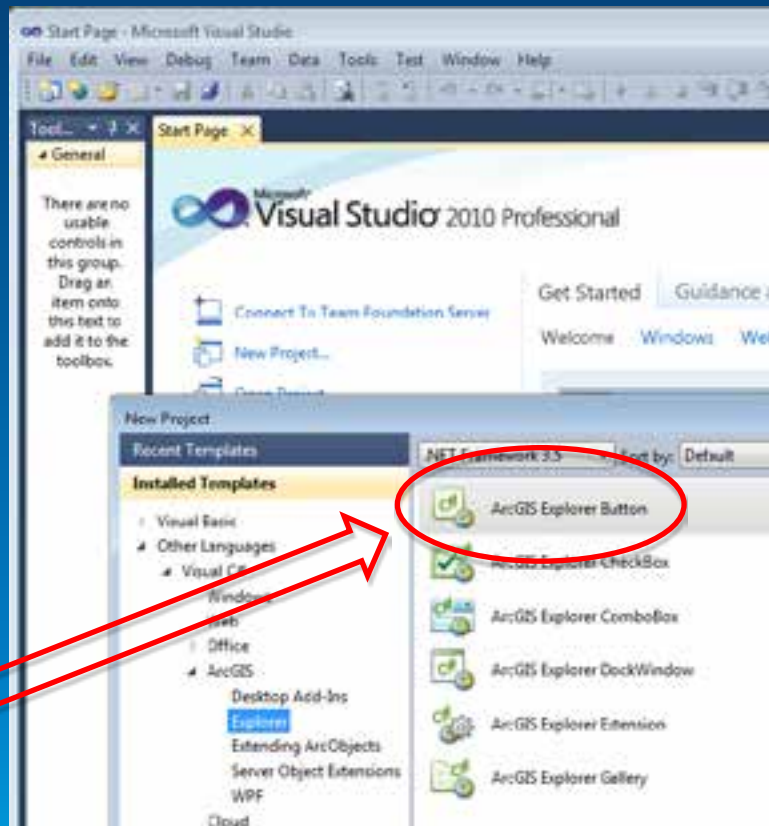
Application Configuration



ArcGIS Explorer Desktop

Creating Add-Ins

Visual Studio
Templates



Geodatabase

File Geodatabase API

File Geodatabase API

Class List

- FileGDBAPI::ByteArray
- FileGDBAPI::EnumRows
- FileGDBAPI::Envelope
- FileGDBAPI::FieldInfo
- FileGDBAPI::Geodatabase**
- FileGDBAPI::MultiPartShapeBuffer
- FileGDBAPI::MultiPatchShapeBuffer
- FileGDBAPI::MultiPointShapeBuffer
- FileGDBAPI::PointShapeBuffer
- FileGDBAPI::Row

FileGDBAPI::Geodatabase Class Reference

A class representing a File Geodatabase. More...

List of all members.

Public Member Functions

Schema browsing

fgdbError	GetDatasetTypes (std::vector< std::wstring > &datasetTypes) Gets a list of the dataset types in the geodatabase.
fgdbError	GetDatasetRelationshipTypes (std::vector< std::wstring > &relationshipTypes) Gets a list of relationship types in the geodatabase.

File Geodatabase API 1.3

Software

File Geodatabase API 1.3 version for Linux 32-bit	FileGDB_API_1_3-32.tar.gz
File Geodatabase API 1.3 version for Linux 64-bit	FileGDB_API_1_3-64.tar.gz
File Geodatabase API 1.3 version for Mac 64-bit	FileGDB_API_1_3-64.zip
File Geodatabase API 1.3 version for Windows (Visual Studio 2008)	FileGDB_API_VS2008_1_3.zip
File Geodatabase API 1.3 version for Windows (Visual Studio 2010)	FileGDB_API_VS2010_1_3.zip
File Geodatabase API 1.3 version for Windows (Visual Studio 2012)	FileGDB_API_VS2012_1_3.zip

Runtime SDKs

- Customize and extend Esri Apps
 - Operations Dashboard
 - Explorer for ArcGIS



Using ArcGIS on the web

Learn how ArcGIS provides more than just software. It provides a dynamic web destination to put your information to use.

[Learn more >](#)[View this map >](#)[Tutorial: Explore a web map >](#)

Popular Communities

[All Communities >](#)

Find maps and applications, blog posts, forum threads, videos, documentation, and tweets for your community

- Desktop
- Server
- Local Government
- 3D
- Analysis
- Imagery
- Flex
- JavaScript
- Silverlight
- Android
- iOS
- Python

Data Reviewer @ UC 2013

2 hours ago

Data quality is one of the most overlooked aspects of managing a GIS. This year, at the Esri International User Conference, you...



Learn about ArcGIS

- Getting Started with ArcGIS
- Maps & SDKs: iOS & Android versions
- Creating a web map

Learn about ArcGIS

Communities

- Desktop
- Server

- 3D
- Analysis

- Imagery
- Flex

- JavaScript
- Silverlight

- Android
- iOS

- Python
- Local Government

ArcGIS for Developers **New!**

Add geo to your apps and develop using the API of your choice on any device

Learn more about the ArcGIS for Developers API

ArcGIS for Developers **New!**

Tutorials - Try ArcGIS now [More >](#)

- Explore a web map
- Create a web map
- Explore a web map

Tutorials - Try ArcGIS now [More >](#)

<http://resources.arcgis.com>

EDN

- Developer Licenses
- Annual Subscription

Esri Developer Network		
Main	What You Get	Pricing
What You Get		
EDN subscriptions include:		
	EDN Standard	EDN Advanced
ArcGIS Runtime	✓	✓
ArcGIS Web Mapping APIs	✓	✓
ArcGIS Online*		✓
ArcGIS for Desktop**		✓
ArcGIS Engine	✓	✓
ArcGIS for Server***	✓	✓
ArcGIS for Windows Mobile	✓	✓
Esri Tracking Server	✓	✓
ArcGIS for INSPIRE	✓	✓
Data and Maps for ArcGIS	✓	✓
Data and Maps for Server	✓	✓

Training

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Build Your Skills, Grow Your Career

Learn the latest ArcGIS tools, faster ways to get reliable results, and tips to make your next project go more smoothly.

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[Instructor-Led Workshops for ArcGIS Online Publishers and Users »](#)

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Recommended Courses

FREE

Live Training Seminar

[Workshop](#) [Working with](#)

Live Training Seminar

FREE

training.esri.com

Other Developer Training

- w3schools.org
- Lynda.com
- CodeAcademy.com

We are an online community

100+ Forums

250 new posts a day

20,000 registered users

MVP program

forums.arcgis.com



rscheitlin 

Robert Scheitlin

 **Forums MVP**

 **Senior Member**

Join Date: Mar 2010










Posts: 8,023

Points: 4324

Answers Provided: 722

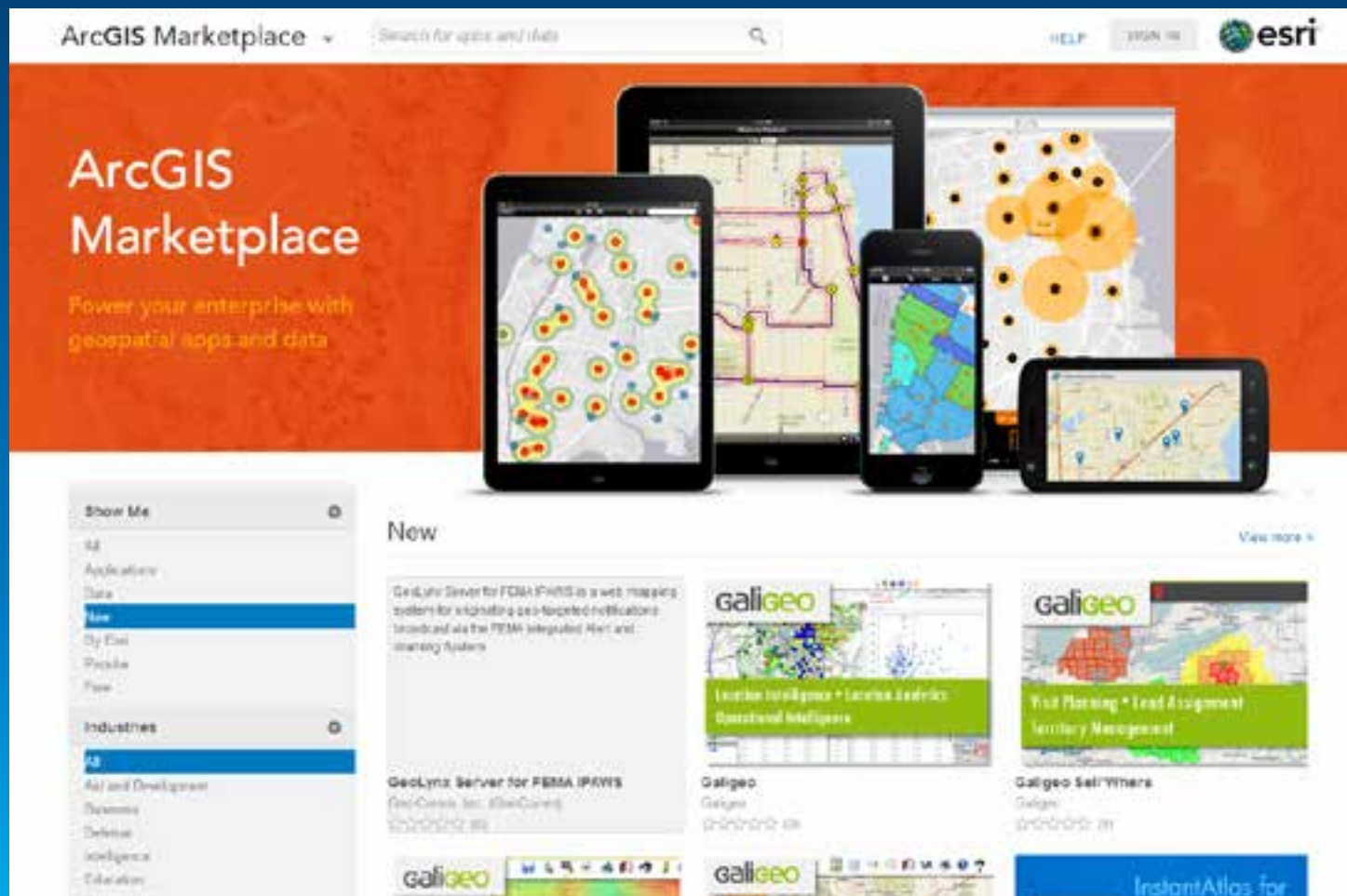
+ Post New Thread

Forum: Developers

Sub-Forums			Last Post
 ArcGIS API for Flex		Threads: 3,774 Posts: 15,249	 Authentication, user logins... by nasha001 Today, 07:23 AM
 ArcGIS API for JavaScript		Threads: 5,046 Posts: 19,774	 Trouble with JS API v3.4 in... by Kelly Today, 08:59 AM
 ArcGIS API for Silverlight		Threads: 4,633 Posts: 19,723	 Question regarding... by hochas Today, 03:16 AM

~13,500 threads
~55,000 posts!

ArcGIS Marketplace



Esri Partner Network

[Overview](#)[Program Tiers](#)[Solutions and Services](#)[What's in it for You?](#)[Who Qualifies?](#)[Benefits](#)[Steps to Apply](#)[Partner Spotlight](#)[Contact Us](#)[Business Partner Advantage Program](#)[Marketplace Provider](#)

ArcGIS Marketplace Provider

Interested in publishing your Apps on the [ArcGIS Marketplace](#)? Here's what it takes to qualify to apply:

- Be a partner in the Esri Partner Network
- Actively participate in the ArcGIS Online Campaign for Partners
- Develop Apps that require an ArcGIS Online subscription

Join the Esri Partner Network and become part of a worldwide community of partners that develop cutting-edge solutions and services for the ArcGIS Platform.



Find out if the Esri Partner Network is right for your organization.

[Learn more](#)

Already in the Esri Partner Network and meet the criteria above?

Tell us a about your App, which industries it's for, what makes it unique, and why you would like it to be published on the ArcGIS Marketplace.

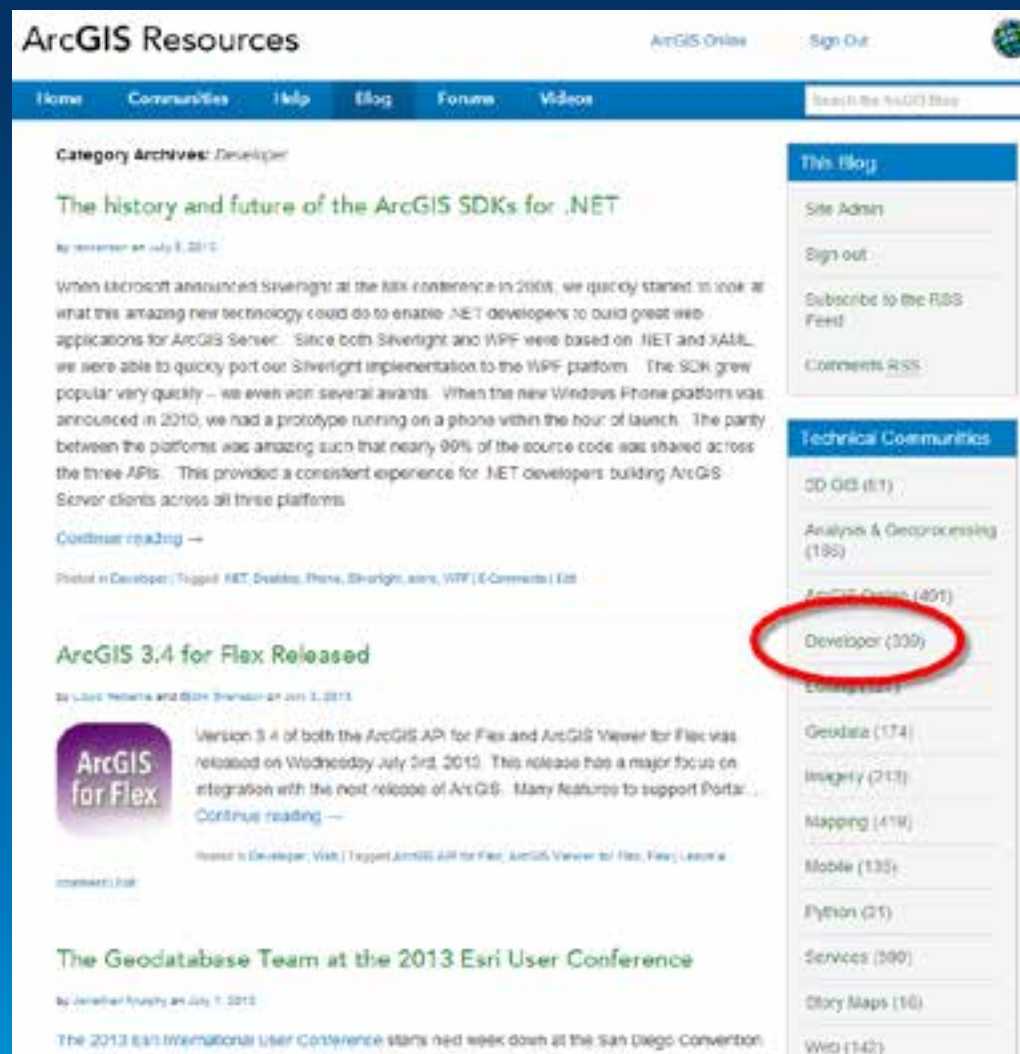
[I'm Interested](#)

DevSummit

- International – Palm Springs, March 2014
 - Europe – Berlin, November 2014
 - MEA – ?, November 2014
-
- *video.arcgis.com*



Developer Blog



ArcGIS Resources

Home Communities Help Blog Forums Videos

Category Archives: Developer

The history and future of the ArcGIS SDKs for .NET

By Benjamin on July 8, 2013

When Microsoft announced Silverlight at the MIX conference in 2005, we quickly started to look at what this amazing new technology could do to enable .NET developers to build great web applications for ArcGIS Server. Since both Silverlight and WPF were based on .NET and XAML, we were able to quickly port our Silverlight implementation to the WPF platform. The SDK grew popular very quickly – we even won several awards. When the new Windows Phone platform was announced in 2010, we had a prototype running on a phone within the hour of launch. The parity between the platforms was amazing such that nearly 90% of the source code was shared across the three APIs. This provided a consistent experience for .NET developers building ArcGIS Server clients across all three platforms.

[Continue reading —](#)

Posted in Developer | Tagged .NET, Desktop, Phone, Silverlight, xaml, WPF | 4 Comments | Edit

ArcGIS 3.4 for Flex Released

By Liang Roberts and Bob Brennan on July 3, 2013

Version 3.4 of both the ArcGIS API for Flex and ArcGIS Viewer for Flex was released on Wednesday July 3rd, 2013. This release has a major focus on integration with the next release of ArcGIS. Many features to support Portal...

[Continue reading —](#)

Posted in Developer, Web | Tagged ArcGIS API for Flex, ArcGIS Viewer for Flex, Flex | Leave a comment | Edit

The Geodatabase Team at the 2013 Esri User Conference

By Jonathan Kuykendall on July 1, 2013

The 2013 Esri International User Conference starts next week down at the San Diego Convention

This Blog

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Technical Communities

- 3D GIS (81)
- Analysis & Geoprocessing (185)
- ArcGIS Online (401)
- Developer (309)**
- Editing (14)
- Geodata (174)
- Insight (213)
- Mapping (419)
- Mobile (135)
- Python (21)
- Services (390)
- Story Maps (16)
- Web (142)

- <http://blogs.esri.com/esri/arcgis/category/developer>



Understanding our world.