



# Introduction to the ArcGIS API for JavaScript

Julie Powell

Jeff Archer

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# Agenda

- **Getting started with the JavaScript API**
- **Better Mapping**
- **Mobile Development & HTML5**
- **Roadmap**
- **Security**

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# Developers website

The screenshot displays the ArcGIS for Developers website. At the top, the navigation bar includes 'ArcGIS for Developers', 'PLATFORM', 'FEATURES', 'PLANS', 'DOCUMENTATION', and 'SUPPORT'. The 'esri' logo is on the right. Below the navigation bar is a purple header with the word 'Features' and a 'GET STARTED FOR FREE' button. The main content area is divided into two sections. The first section, 'Geocoding and Place Search', includes a description of the geocoding service and a link to 'Learn more about Geocoding'. The second section, 'Directions and Routing', includes a description of the directions service and a link to 'Learn more about Directions'. Both sections feature a map with blue location pins and a search bar.

ArcGIS for Developers PLATFORM FEATURES PLANS DOCUMENTATION SUPPORT SIGN IN

## Features

[Geocoding](#) [Directions](#) [Maps](#) [Cloud Storage](#) [Self-archived](#) [GET STARTED FOR FREE](#)

### Geocoding and Place Search

Use the geocoding service to convert addresses to and from geographic coordinates. Search for places within a region and get places matching your search.

[Learn more about Geocoding](#)

### Directions and Routing

The directions service allows you to generate routes between any number of places. Generate optimal routes to the nearest one of several places. Calculate areas accessible in a given amount of time.

[Learn more about Directions](#)

## ArcGIS API for JavaScript

[Tutorials](#) [Concepts](#) [API Reference](#) [Samples](#) [Forum](#)



### Get Started

Work through a tutorial to build your first web application using the ArcGIS API for JavaScript.

LET'S GO



### Get Help

Resources ranging from learning JavaScript to places to ask targeted ArcGIS API for JavaScript questions.

ENGAGE



### HTML5 and CSS3

Various HTML5 components are integrated in the API and we provide samples for others.

DEVELOP IT



### Tons of Samples

Dive into a huge collection of samples that demonstrate functionality included with the API.

EXPLORE



### Cloud Friendly

Use ArcGIS.com or your own on-premises cloud. The API provides tools to make working with both simple.

CHOOSE



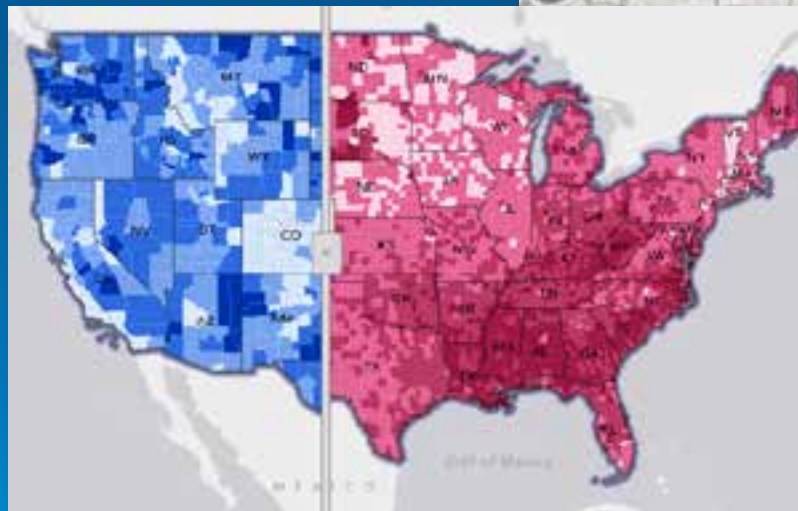
### Browser Support

Chrome, Safari, Firefox and Internet Explorer, as well as mobile browsers, just work.

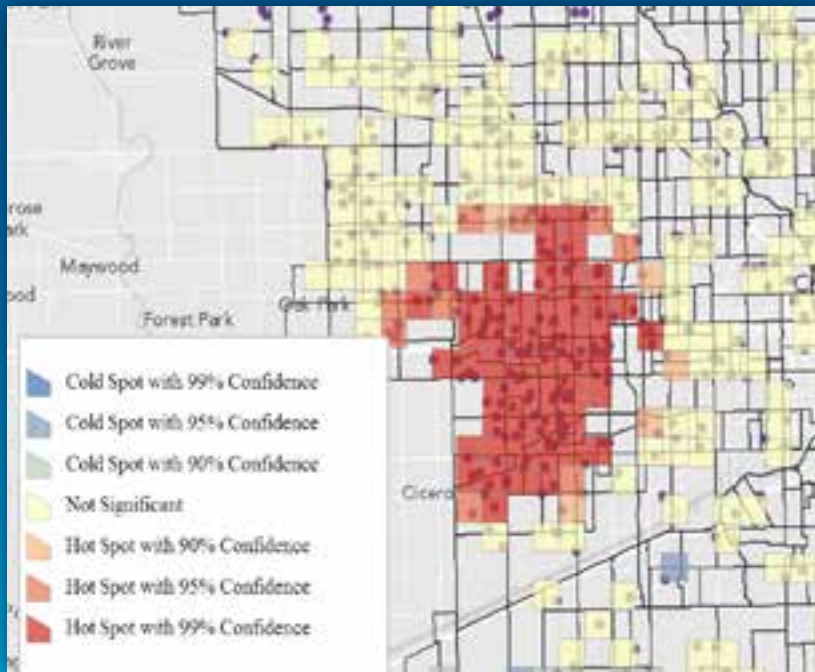
LEARN MORE

# Widgets

- Geolocation
- Geocoder
- Directions
- Printing
- Identity Manager
- Legend / Scalebar
- Measurement
- Basemap Gallery
- GeoEnrichment
- Histogram
- Swipe
- ...



# New Analysis Widgets



## Find Hot Spots

Analyze **VehicleTheft2011** to find statistically significant hot and cold spots

1. Choose an analysis field
2. Result layer name

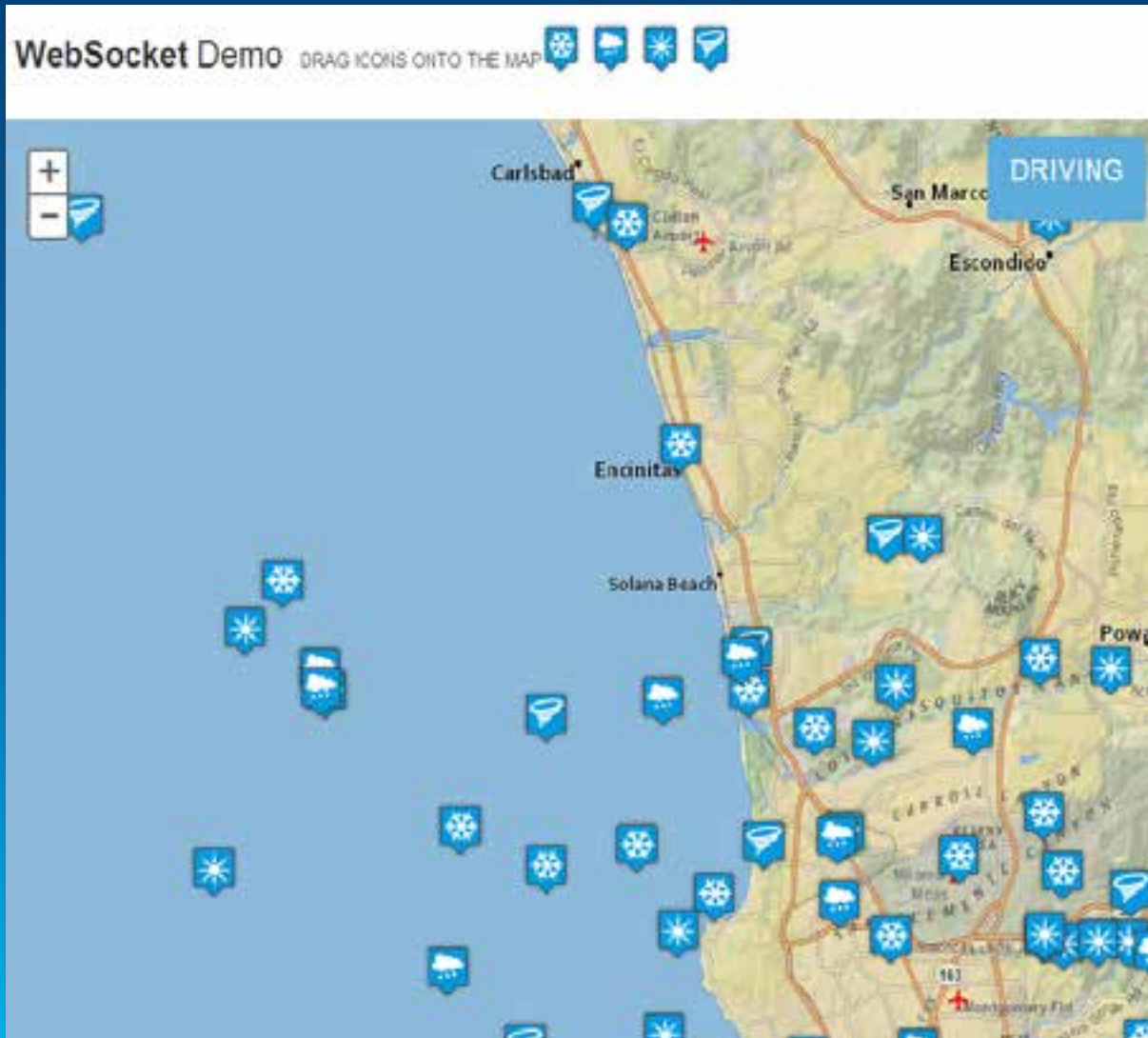
Use current map extent

# Layers

- **Tiled Basemaps**
  - **ArcGIS.com / ArcGIS Server**
  - **Web Tiled Layer**
- **Graphics**
- **Feature Layer**
- **KML**
- **GeoRSS**
- **Dynamic Map Services / Image Services**
- **WMS / WMTS**



# Real-time Data & StreamLayer



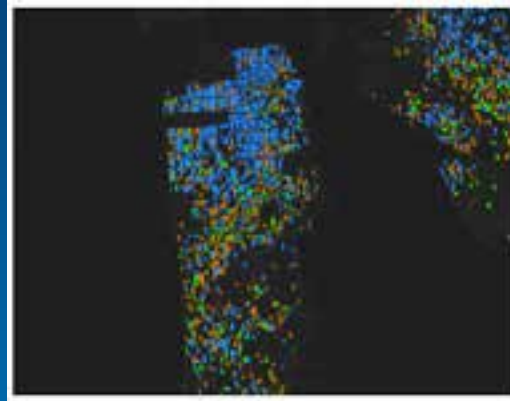
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# Better Vector Mapping



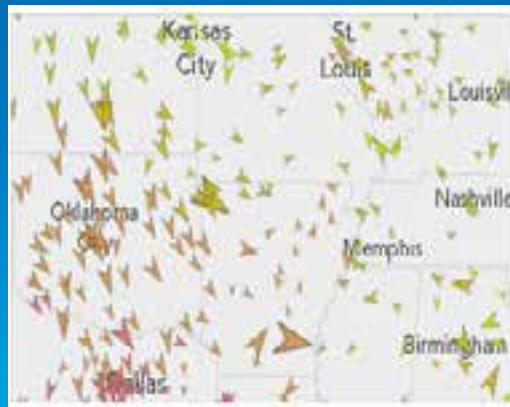
Proportional line symbols



Dot Density



Proportional point symbols



Symbol Rotation

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# Evolution of HTML5



## # File API - Working Draft

Method of manipulating file objects in web applications client-side, as well as programmatically selecting them and accessing their data.

*Usage stats:	Global
Support:	59.64%
Partial support:	4.36%
Total:	64%

Show all versions	IE	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Android Browser	Blackberry Browser
								2.1	
								2.2	
						3.2		2.3	
						4.0-4.1		3.0	
	8.0					4.2-4.3		4.0	
	9.0					5.0-5.1		4.1	
Current	10.0	18.0	24.0	5.1					
Near future		20.0	26.0		12.1	6.0	5.0-7.0	4.2	7.0
Farther future		21.0	27.0		12.5				10.0



# Offline Storage – the Challenge

- **What we want...**
  - **More storage**
  - **Persist on the client**
  - **Don't transmit to the server**
  
- **Why?**
  - **Disconnected editing**
  - **Local Tiling**
  - **Save state**
  - **Performance – low bandwidth**



# Web Storage

- **Named key/value pairs**
- **Stored natively in browser**
- **Not transmitted to server**
- **All data serialized to strings**
- **By default: 5 megabytes**
- **Be careful of race conditions!**

## HTML5 STORAGE SUPPORT

IE	FIREFOX	SAFARI	CHROME	OPERA	IPHONE	ANDROID
8.0+	3.5+	4.0+	4.0+	10.5+	2.0+	2.0+

# IndexedDB

- **Good:**
  - **Fast indexing and searching**
  - **Works in asynchronous mode & has some transaction locking**
  - **50MB storage limit with FF, but can request more**
  
- **Bad:**
  - **Lack of browser support**
    - IDBWrapper can help with browser

compatibility

WEB SQL DATABASE SUPPORT						
IE	FIREFO X	SAFARI	CHRO ME	OPERA	IPHON E	ANDRO ID
10	5+		12+		3.0+	2.0+

# Example: Offline Tiling



- Web Workers
- Use Web Storage for Tiles
- Coming soon... TPK
  - Using File API, BLOB API

# Mobile Development



Bootstrap Map JS

Get Started Simple Grid Web Map Four Maps

## Bootstrap Map JS

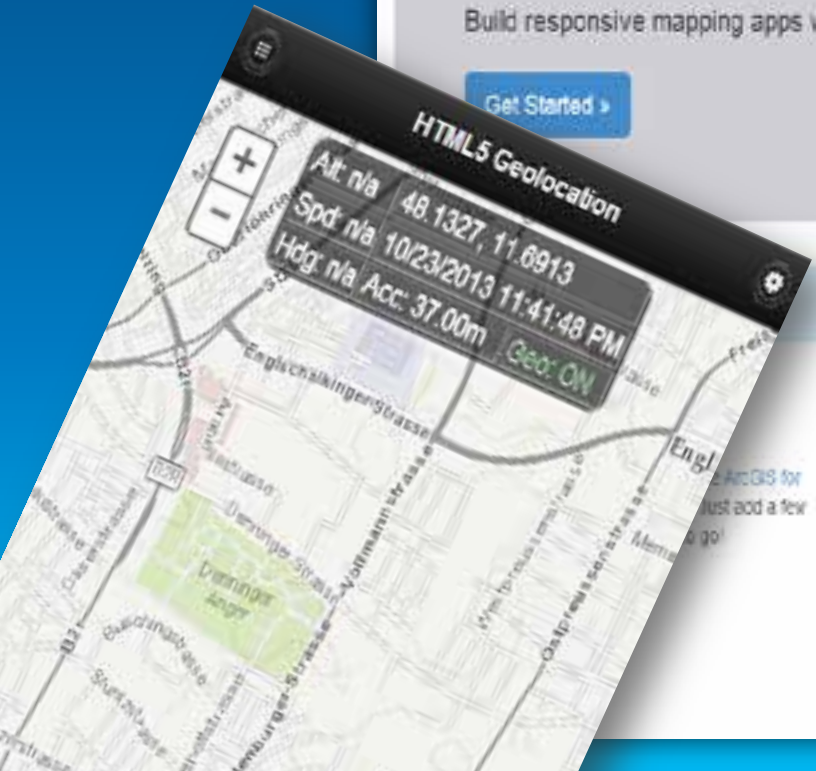
Build responsive mapping apps with a powerful web framework.

Get Started »

### Responsive

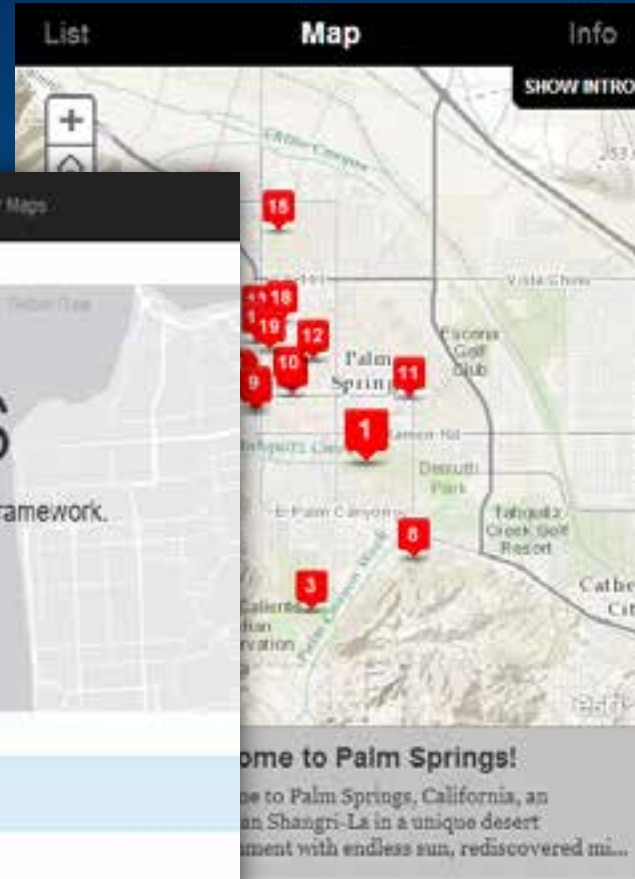
Use the new Bootstrap grid system to build responsive mapping applications for mobile, tablet and desktops. Maps will automatically resize and center when viewed on different devices.

See Examples »



HTML5 Geolocation

Alt: n/a 48.1327, 11.6913  
Spd: n/a 10/23/2013 11:41:48 PM  
Hdg: n/a Acc: 37.00m Geo: ON



List Map Info

SHOW INTRO

Welcome to Palm Springs!

...to Palm Springs, California, an  
...an Shangri-La in a unique desert  
...ment with endless sun, rediscovered mi...



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**Sneak Preview... (no  
photos please J )**



Help

Settings

Sign in

Attributes

Map

Widgets



Beijing Online

ArcGIS Online

Help

About



Widgets



Widget name



Widget name



Widget name



Widget name



Widget name

Fixed Position Widgets



Header

Zoom in/out



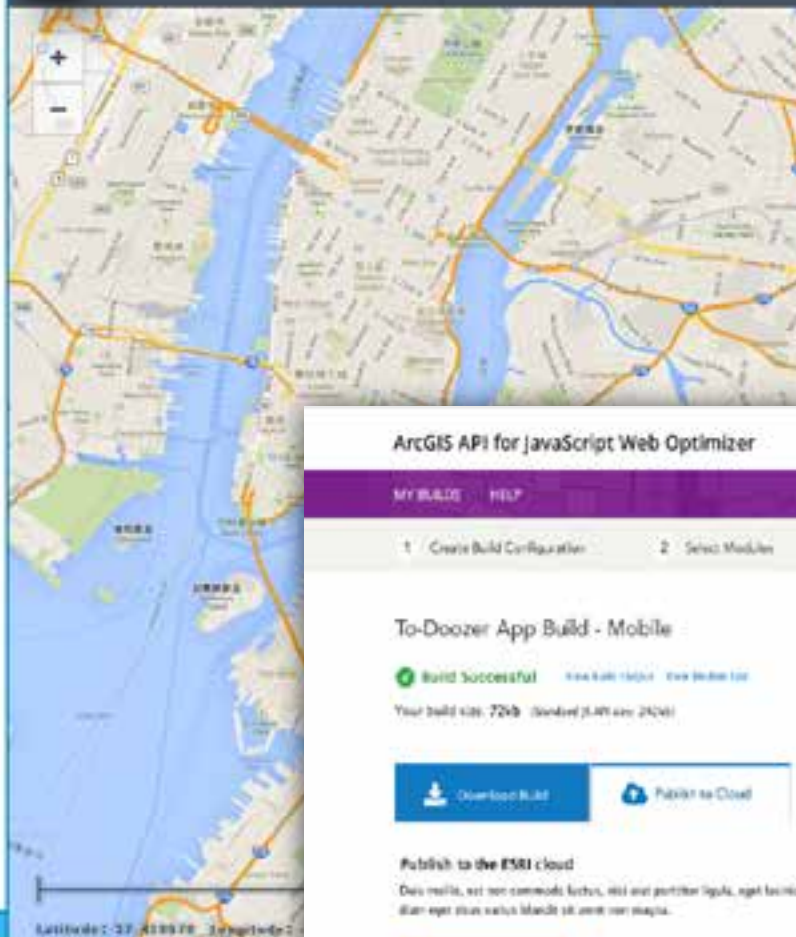
Scalebar



Preview More



Save



Panel 2



Sample

Bookmark name



Bookmark

ArcGIS API for JavaScript Web Optimizer



My Builds

Help

1 Create Build Configuration

2 Select Modules

3 Build

4 Results

To-Doozer App Build - Mobile

Build Successful

View Build Log

View Build Log

Your build size: 72kb (download 3.4M size: 212kb)



Download Build



Publish to Cloud

Publish to the ESRI cloud

Done! Build successful. You can now publish your app to the ESRI cloud. You can also publish your app to the ESRI cloud.




Publish to Cloud

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# Identity Manager, or...



Sign in ×

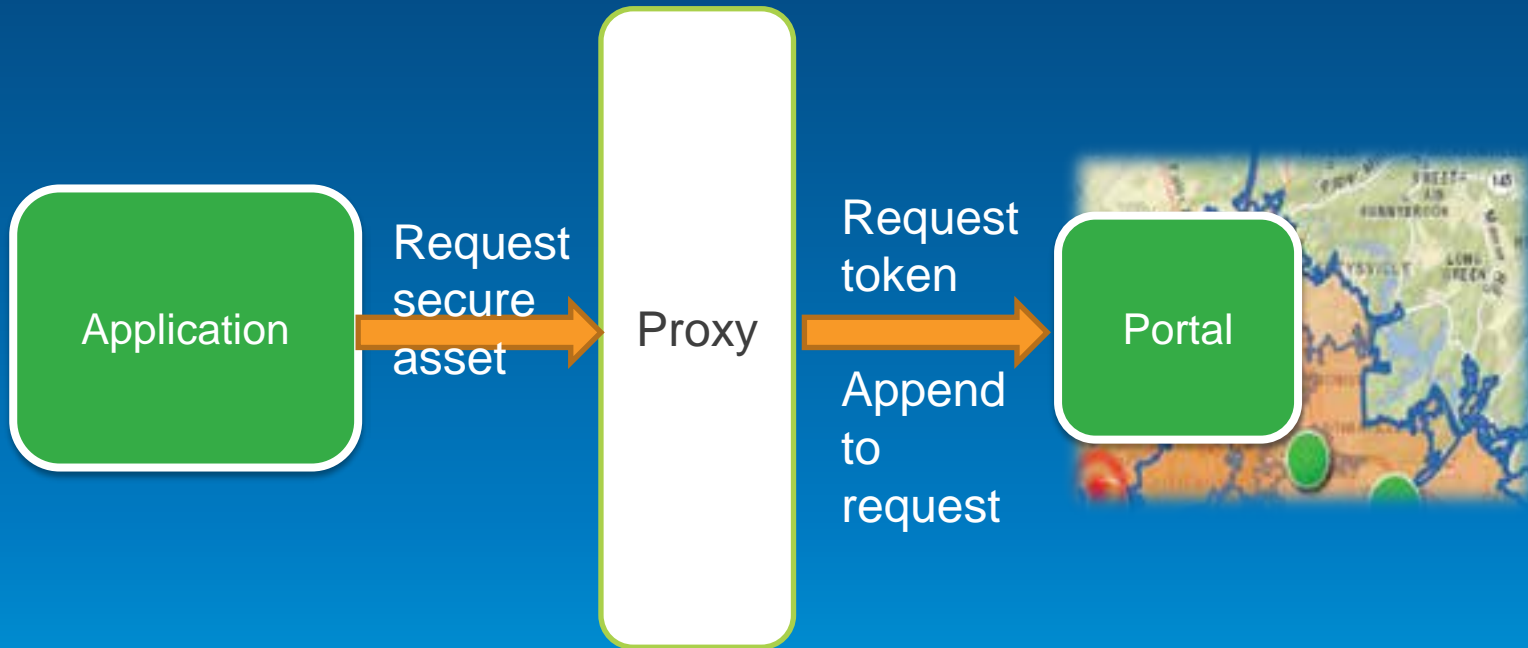
Please sign in to access the item on  
<https://servicesbeta.esri.com>  
(SanJuan/TrailConditions)

User Name:

Password:

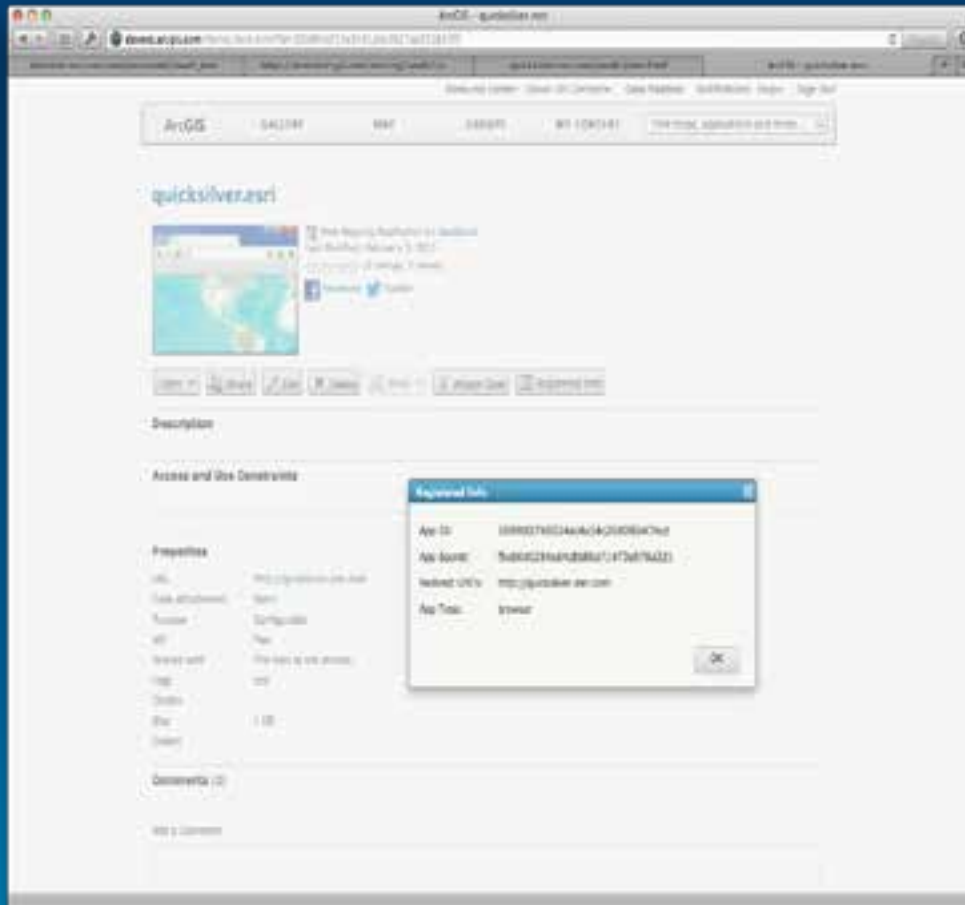
OK Cancel

# What if I don't want users to have to sign in?



\*\*Proxy will use an app user à  
"app secret"

# App Registration



What does it do?

- q Creates an item
- q **AppID = client\_id**
- q App Secret
- q Set **application name** (shown during login)
- q Setup **allowed redirect URLs** (just domain name is ok).

# What's the Point?

1. **I can use my Online account for accessing secured assets (AGOL items, AGS services, etc).**
2. **Single sign-on (I only have to sign in once).**
3. **I can federate enterprise identities through Portal.**
4. **Needed for app marketplace**

# Code Management and Change Control

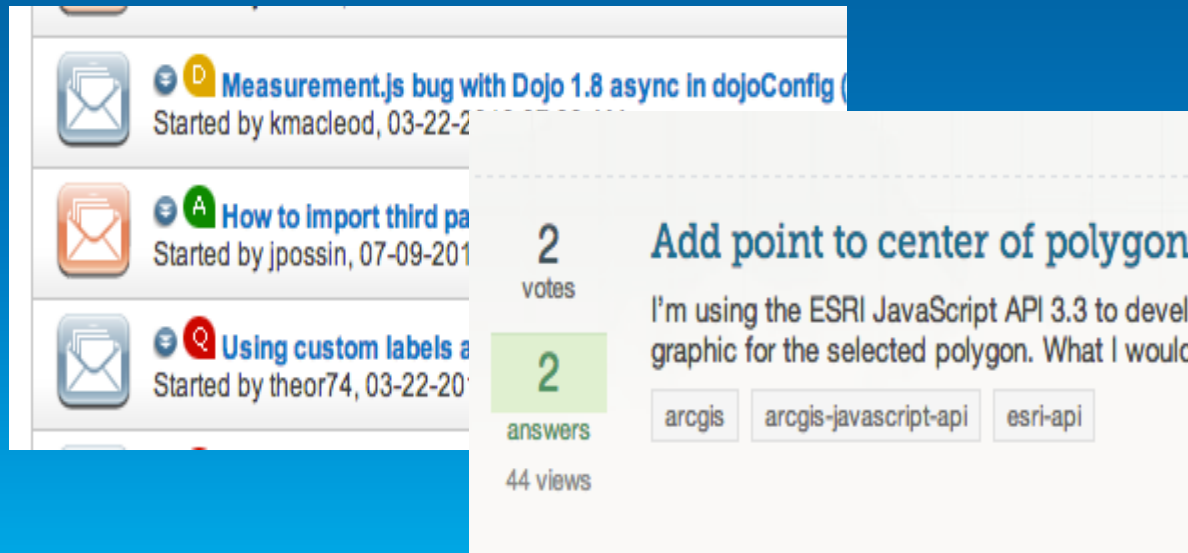
- **In-house**
  - Subversion
  - Master-slave based systems
- **Cloud-based**
  - Github
  - ?

# Tips and Tricks

- **Displaying lots of data – performance considerations**
- **Getting the map's center/zoom level**
- **Sample Sandbox**

# Getting Help

- [Community](#) page in the API documentation
- Traditional forum
- [GIS.StackExchange](#)
- Twitter: API team is on twitter or use #esrijs



# Thanks!

**Jeff Archer**

**@vee\_dubb**

**Julie Powell**

**@JuliePowellGIS**





Understanding our world.