



# Remotely Invoking ArcGIS Apps

James Tedrick

Brent Pierce



# App Extensibility

## What is a URL Scheme?

- Simply put, a URL Scheme is a method of invoking and passing state between applications
- in pretty common use today in many applications
- Who has used a URL Scheme before?

# App Extensibility

## What is a URL Scheme?

- Simply put, a URL Scheme is a method of invoking and passing state between applications
- in pretty common use today in many applications
- Who has used a URL Scheme before?

# Deep Linking

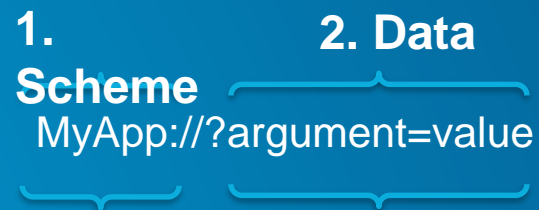
Sounds fancy ....

- **Way to link into a specific state or location of your app**
- **Methodology varies by platform iOS, Android, Blackberry, Windows all have specific technologies for handling this**
- **Esri has standardized on the iOS style URL Scheme for all platforms**
- **This mean one URL works on all platforms**

# URL Scheme Structure

## Basics

1. Identifying information for the app being invoked. This is often referred to as the “Scheme”. Note that this is the same for the app on all platforms but is different than the AGOL App ID.
2. App specific data or parameters

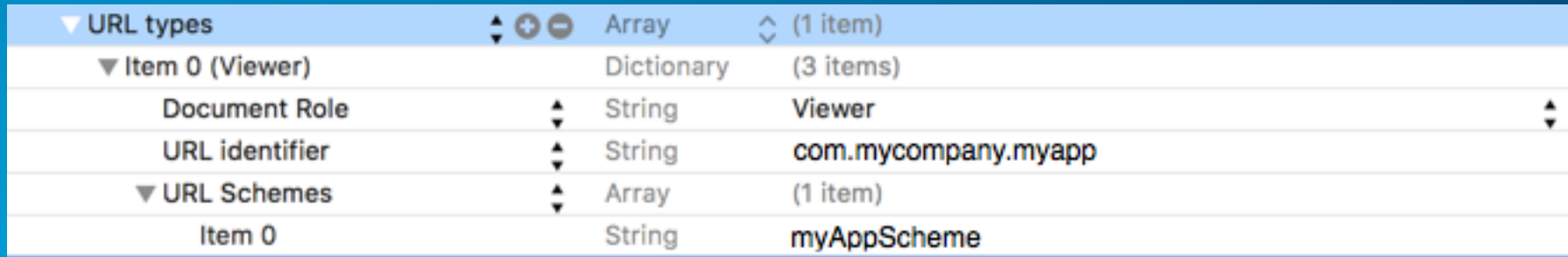


```
arcgis-explorer://?itemID=1cde286f20b74fa69b3c36dfa1e81a85
```

```
arcgis-  
navigator://?stop=777+East+Alejo+Rd,+Palm+Springs,+California&stop=2297+East+Alejo+Rd,+Palm+Sprin  
gs,+California&stop=315+North+Farrell+Dr,+Palm+Springs,+California&stop=1300+East+Tahquitz+Canyon  
+Way,+Palm+Springs,+California&stop=795+East+San+Lorenzo+Rd,+Palm+Springs,+California&stop=291+Ea  
st+Mel+Ave,+Palm+Springs,+California&stop=277+North+Avenida+Caballeros,+Palm+Springs,+California
```

# URL Schemes on iOS

- iOS apps will natively accept URL Schemes
- Must be defined in the plist



The image shows a screenshot of the Xcode interface for editing a plist file. The 'URL types' section is expanded, showing a single item named 'Item 0 (Viewer)'. This item is a dictionary containing three key-value pairs: 'Document Role' with the value 'Viewer', 'URL identifier' with the value 'com.mycompany.myapp', and 'URL Schemes' which is an array containing one item, 'myAppScheme'.

Key	Type	Value
URL types	Array	(1 item)
Item 0 (Viewer)	Dictionary	(3 items)
Document Role	String	Viewer
URL identifier	String	com.mycompany.myapp
URL Schemes	Array	(1 item)
Item 0	String	myAppScheme

- Handle the arguments after your app launches, typically this is in `didFinishLaunchingWithOptions` but it will vary by app

# URL Schemes on Android

## Intents

- Use Androids native intent framework to handle the arguments in a URL Scheme
- Add code to the manifest declaring the URL you want to accept
- Handle it in the activity

```
<activity
    android:name=".MainActivity"
    android:configChanges="orientation|screenSize"
    android:label="@string/eaf_app_name"
    android:launchMode="singleTask"
    @Override
    >
        protected void onNewIntent(Intent intent) {
            super.onNewIntent(intent);
        }
    <intent-filter>
        <action android:name="android.intent.action.VIEW" />
        // get stuff out of Intent
        <category android:name="android.intent.category.DEFAULT" />
        <category android:name="android.intent.category.BROWSABLE" />
        <data android:scheme="arctis-navigator" />
    </intent-filter>
</activity>
```

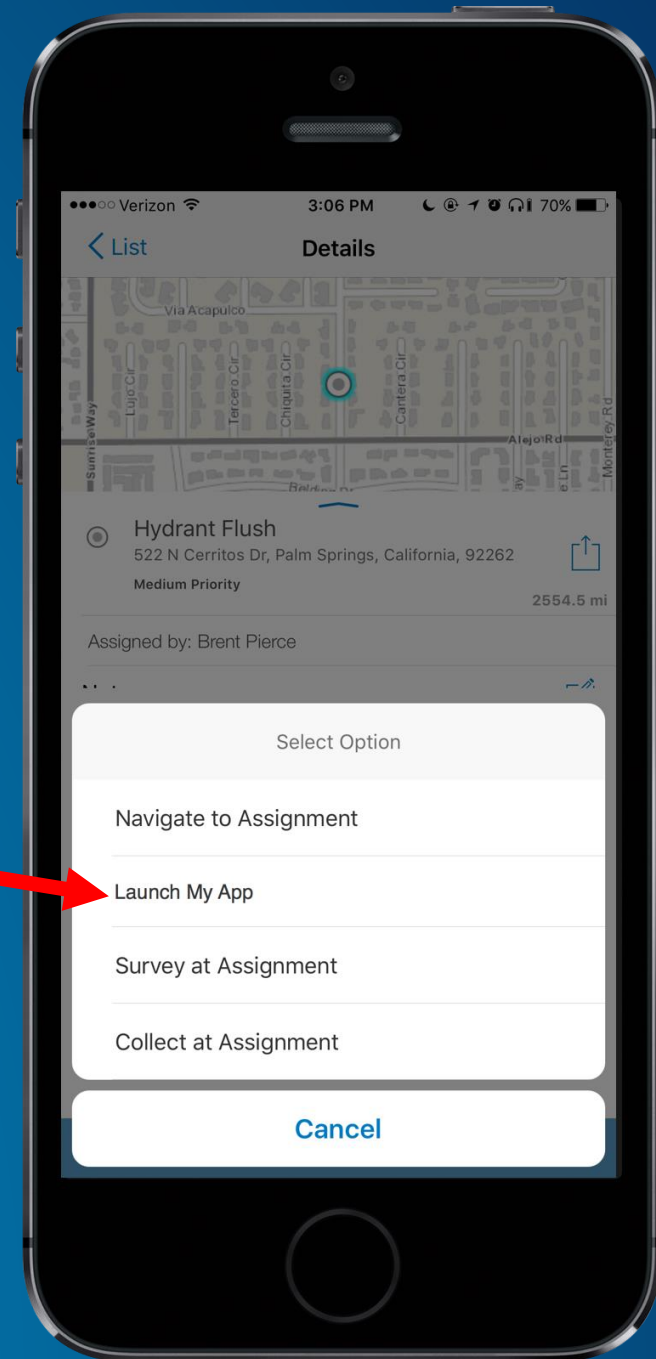
# Demos

Workforce  
Explorer  
Navigator  
Collector  
Survey123



# Workforce App Integrations

```
"assignmentIntegrations": [  
  {  
    "id": "default-navigator",  
    "prompt": "Navigate to Assignment",  
    "urlTemplate": "arcgis-navigator://?stop=${assignment.latitude},${assignment.longitude}  
      &stopname=${assignment.location}  
      &callback=arcgis-workforce://  
      &callbackprompt=Workforce"  
  },  
  {  
    "id": "MyCustomApp",  
    "prompt": "Launch My App",  
    "urlTemplate": "MyCustomApp://?awesomeness=true  
      &volume=11"  
  },  
  {  
    "id": "default-collector",  
    "prompt": "Collect at Assignment",  
    "urlTemplate": "arcgis-collector://?itemID=ab914ba3a7914e8f810efcace999906e  
      &center=${assignment.latitude},${assignment.longitude}"  
  },  
  {  
    "id": "default-survey123",  
    "prompt": "Survey at Assignment",  
    "urlTemplate": "arcgis-survey123://?itemID=bf74deedb6d44aac9220860be334b2b3  
      &center=${assignment.latitude},${assignment.longitude}"  
  },  
],
```





## Navigator URL Scheme

### Supported Arguments:

- **start** - Start location
- **stop** - Location of a stop
- **stopName** - Name of stop
- **callback** - Callback URL scheme
- **callbackPrompt** - Prompt displayed in the app
- **optimize** - Boolean to determine if route is optimized
- **travelmode** - Travel mode used when calculating the route

GitHub Repository: <https://github.com/Esri/navigator-integration>



## Explorer URL Scheme

### Supported Arguments:

- **itemID** - webmap or MMPK to open/download on launch
- **center** - Center point of map
- **scale** - scale to display the map at on launch
- **rotation** - custom map rotation
- **callback** - Callback URL scheme
- **callbackPrompt** - Prompt displayed in the app

GitHub Repository: <https://github.com/Esri/explorer-integration>



## Collector URL Scheme

### Supported Arguments:

- **itemID** - item ID of the webmap you want to to open on launch
- **Center** - coordinates of centering point

GitHub Repository: <https://github.com/Esri/collector-integration>



## Survey123 URL Scheme

### Supported Arguments:

- **itemID** - The ID of the form to load
- **field:<field\_name>** - assign a value to a given field/question
- **center** - The location for the point question

# The inner app communication Ecosystem

Not just Esri!



# Resources and Questions

Atlantic County, NJ: Navigator case study: <http://www.esri.com/library/fliers/pdfs/optimized-routing-atlantic-county.pdf>

Pima County, AZ: Navigator case study: <http://www.esri.com/library/fliers/pdfs/the-route-to-more-efficient-inspections.pdf>

## GitHub repos

- Navigator: <https://github.com/Esri/navigator-integration>
- Collector: <https://github.com/Esri/collector-integration>
- Explorer: <https://github.com/Esri/explorer-integration>

Survey123 help documentation: <http://doc.arcgis.com/en/survey123/desktop/create-surveys/integratewithotherapps.htm>

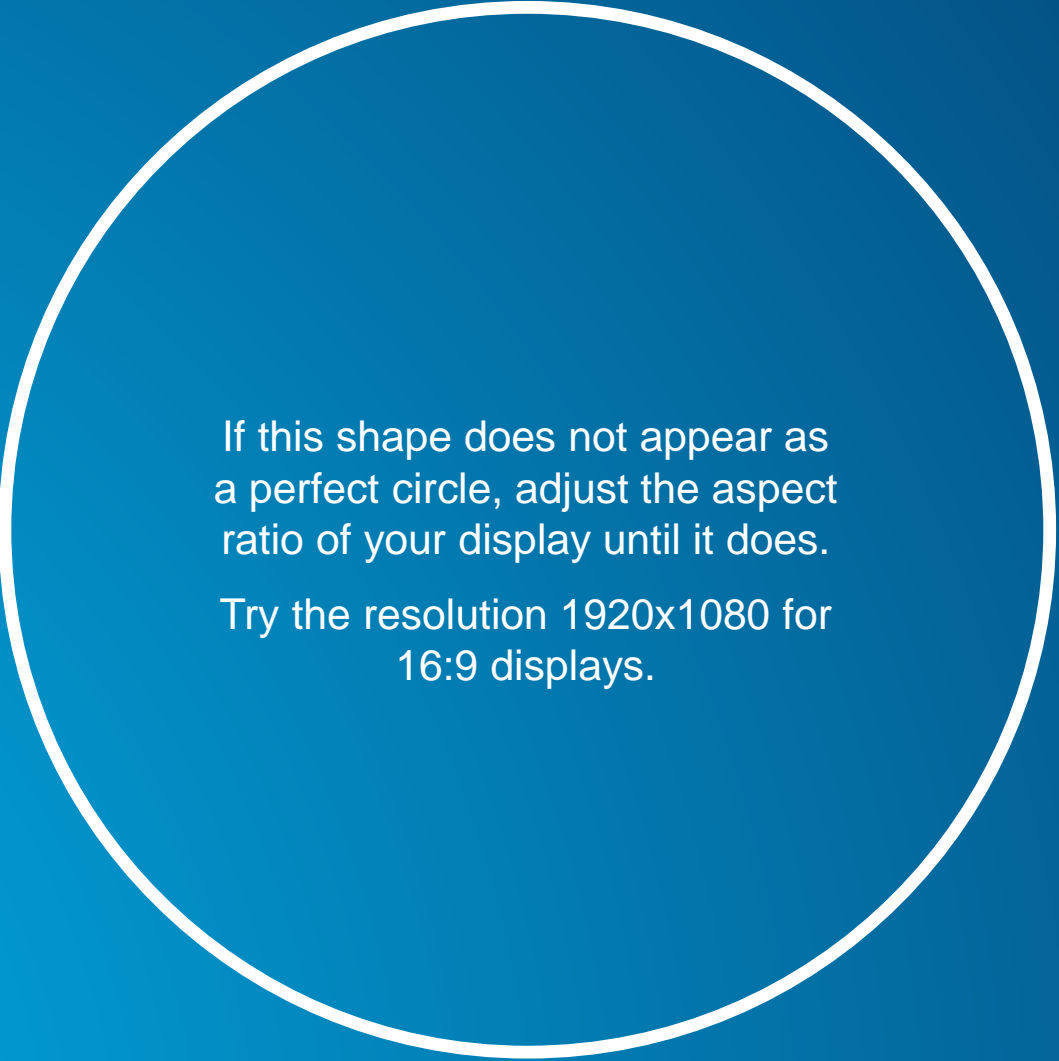


**esri**

**THE  
SCIENCE  
OF  
WHERE**



# Aspect Ratio Test



If this shape does not appear as a perfect circle, adjust the aspect ratio of your display until it does.

Try the resolution 1920x1080 for 16:9 displays.