



Web AppBuilder for ArcGIS: Customizing and Extending

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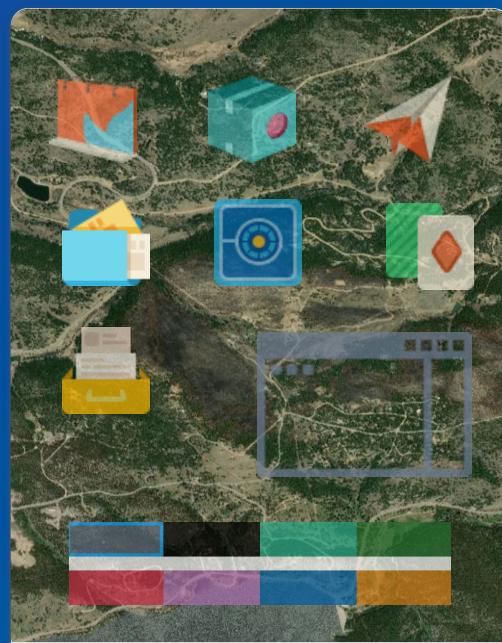




Introduction



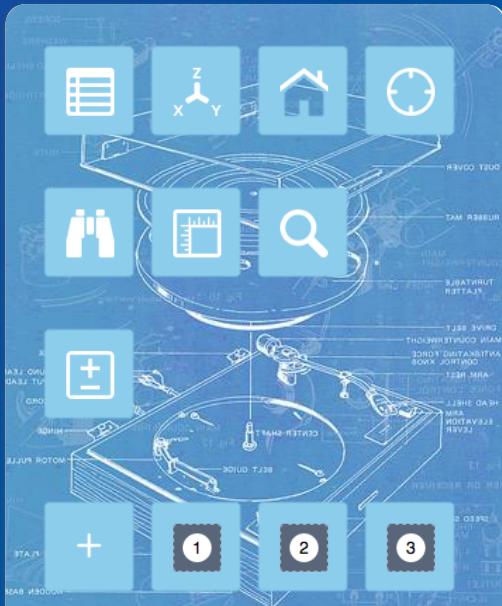
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What's Coming



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Create a Widget



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WAB Communities



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Q&A



David Martinez



Gavin Rehkemper

Introduction

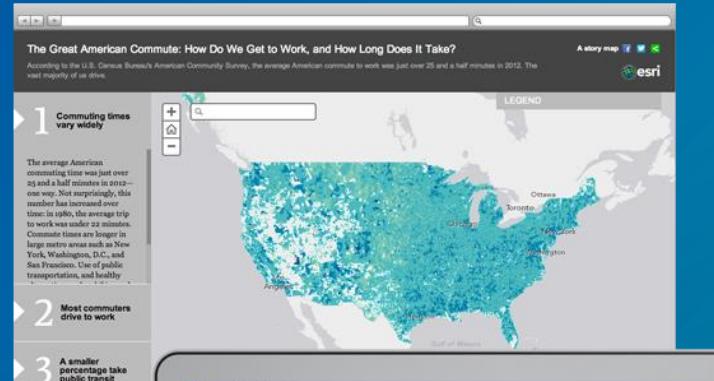
Web AppBuilder for ArcGIS

Building Web Apps for Your Organization Using the ArcGIS API for JavaScript

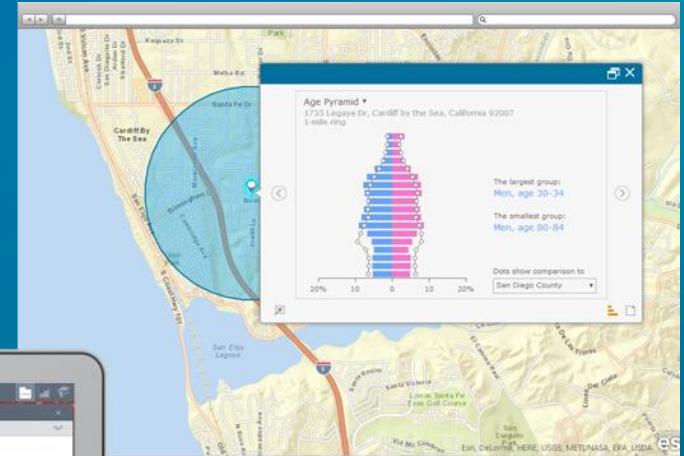
Samples



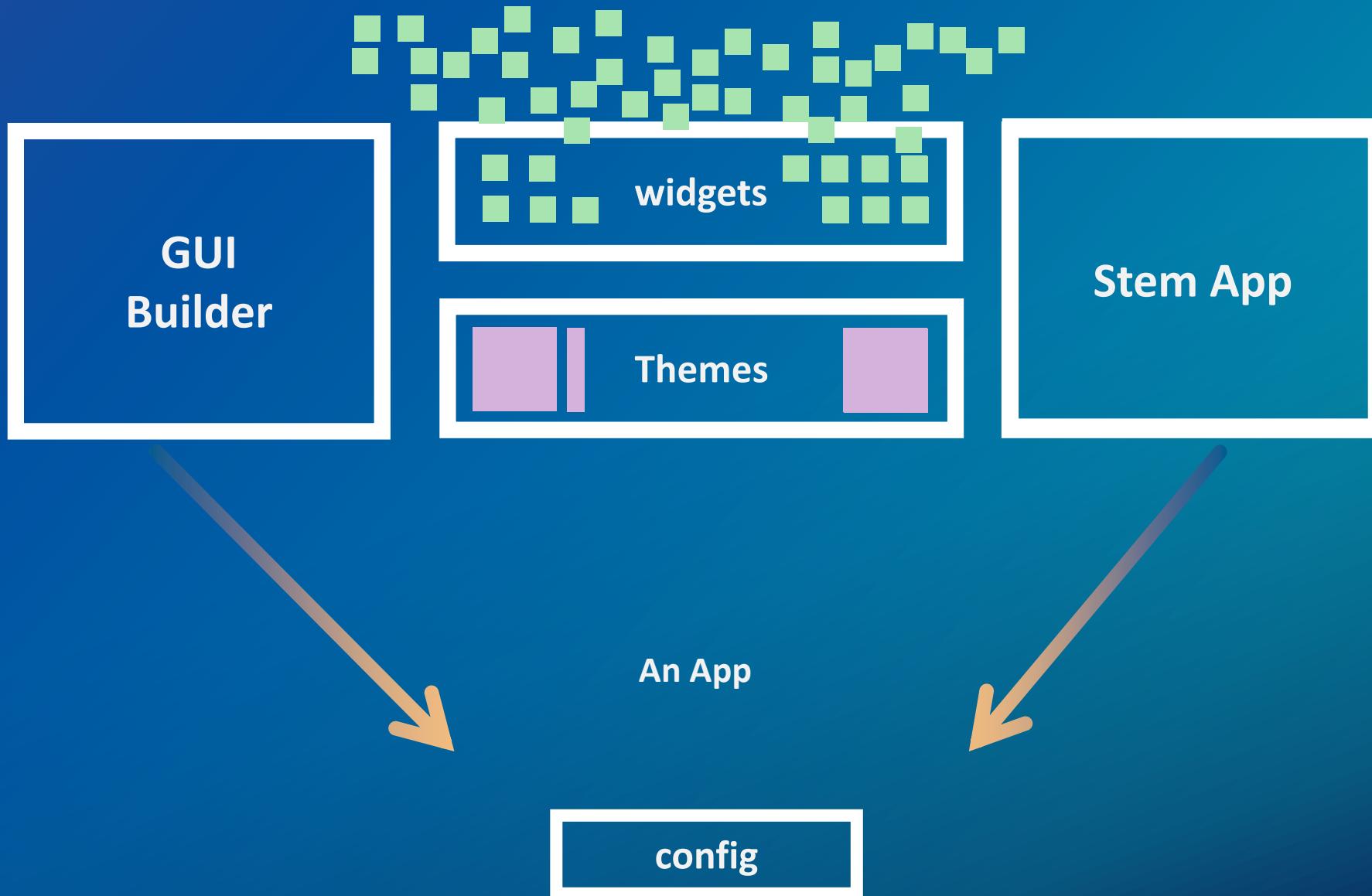
Configurable Apps & Builders



Widgets



Building an App



Access Type

38%

Private

15%

Shared

33%

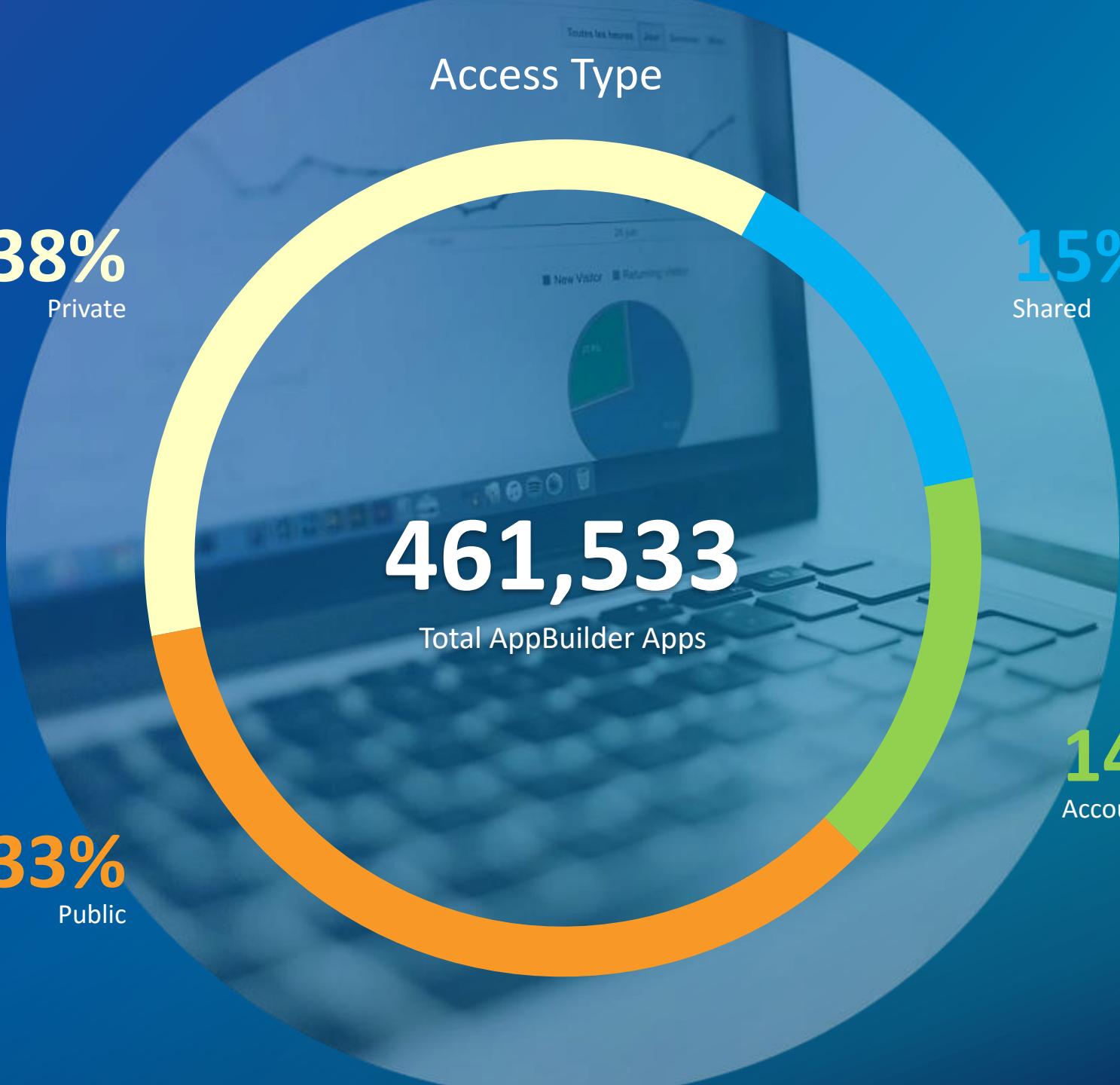
Public

14%

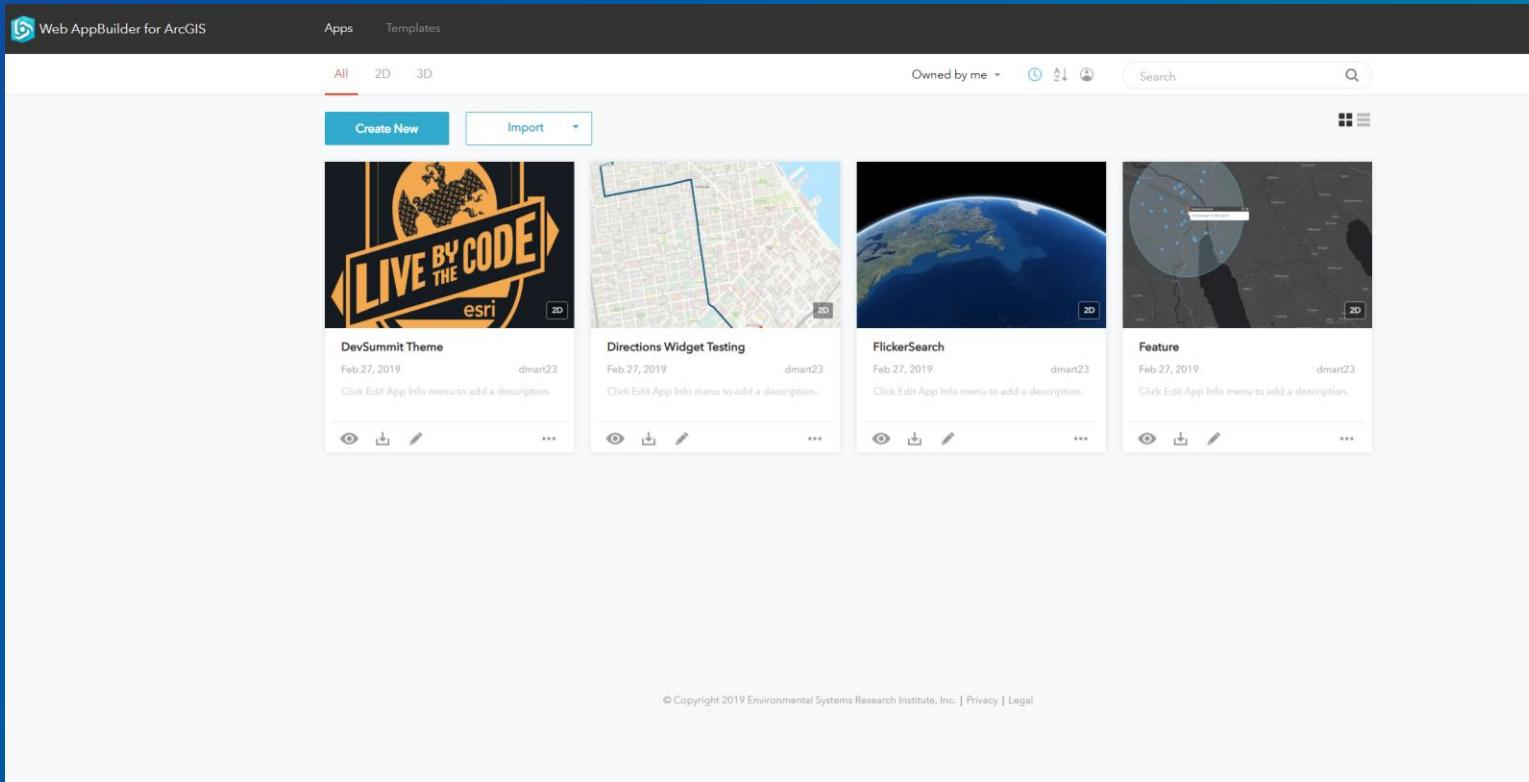
Account

461,533

Total AppBuilder Apps



Web AppBuilder (Developer Edition)



Widget

- Execution at run time
- Configure-in, not cut/paste
- Self sufficient and distributable
- Need container, no coding block
- Has programming framework of container

Theme

- Applied at run time
- Configure-in, not modify css
- Need container
- Self sufficient and distributable
- Has programming framework of container

Widgets

Building blocks of apps

It's really just a web app

MyWidget.css

MyWidget.js

MyWidget.html

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4    <meta charset="utf-8">
5    <meta name="viewport" content="initial-scale=1, maximum-scale=1,user-scalable=no">
6    <title>Add a Legend to Layerlist - 4.10</title>
7    <link rel="stylesheet" href="https://js.arcgis.com/4.10/esri/themes/dark/main.css">
8
9    <style>
10   html,
11   body,
12   #viewDiv {
13     padding: 0;
14     margin: 0;
15     height: 100%;
16     width: 100%;
17     overflow: hidden;
18   }
19   </style>
20   <script src="https://js.arcgis.com/4.10/"></script>
21   <script>
22     require([
23       "esri/WebMap",
24       "esri/views/MapView",
25       "esri/widgets/LayerList"
26     ], function(
27       WebMap, MapView, LayerList
28     ) {
29
30       const map = new WebMap({
31         portalItem: {
32           id: "d5dda743788a4b0688fe48f43ae7beb9"
33         }
34       });
35
36       // Add the map to a MapView
37       const view = new MapView({
38         container: "viewDiv",
39         map: map
40       });
41
42       // Add a Legend instance to the panel of a
43       // ListItem in a LayerList instance
44       const layerList = new LayerList({
45         view: view,
46         listItemCreatedFunction: function(event) {
47           const item = event.item;
48           if (item.layer.type != "group") { // don't show legend twice
49             item.panel = {
50               content: "legend",
51               open: true
52             };
53           }
54         }
55       });
56       view.ui.add(layerList, "top-right");
57
58     });
59   </script>
60 </head>
61 <body>
62   <div id="viewDiv"></div>
63 </body>
64 </html>
```

Inheriting from BaseWidget

```
define(['dojo/_base/declare', 'jimu/BaseWidget'],
function(declare, BaseWidget){
    var clazz = declare([BaseWidget], {
        });
    return clazz;
});
```

A widget derived from the BaseWidget class

Dijit lifecycle

- postCreate
- startup
- ...



Widget events

- onOpen, onActive
- onClose, onDeActive



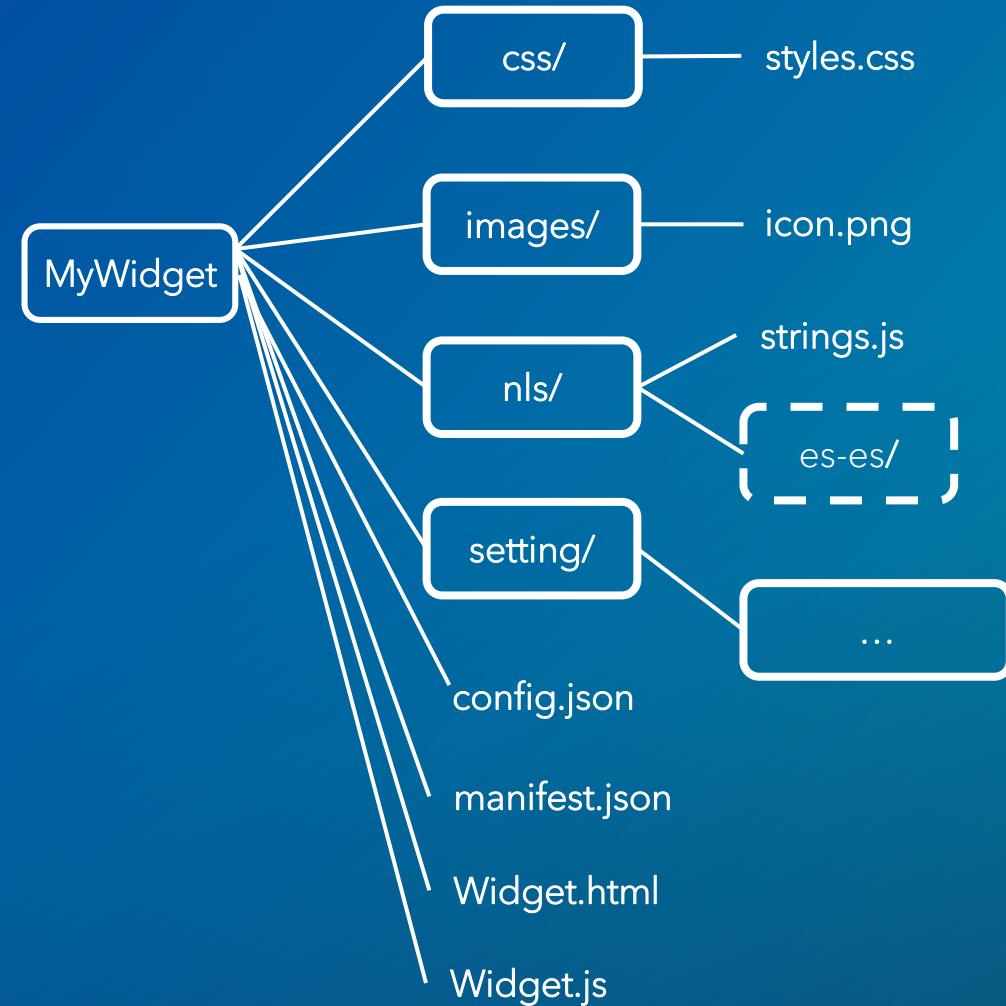
BaseWidget

- App properties (name, icon, localization)
- App config data
- Widget's config data
- Map object
- Widget state (open, closed, active...)
- Events (open/signIn)
- Widget communication

Your job?

- Widget UI (HTML/template)
- Widget config file (JSON)
- Widget styles (CSS)
- Localization
- **Your unique business logic / workflows (JavaScript)**

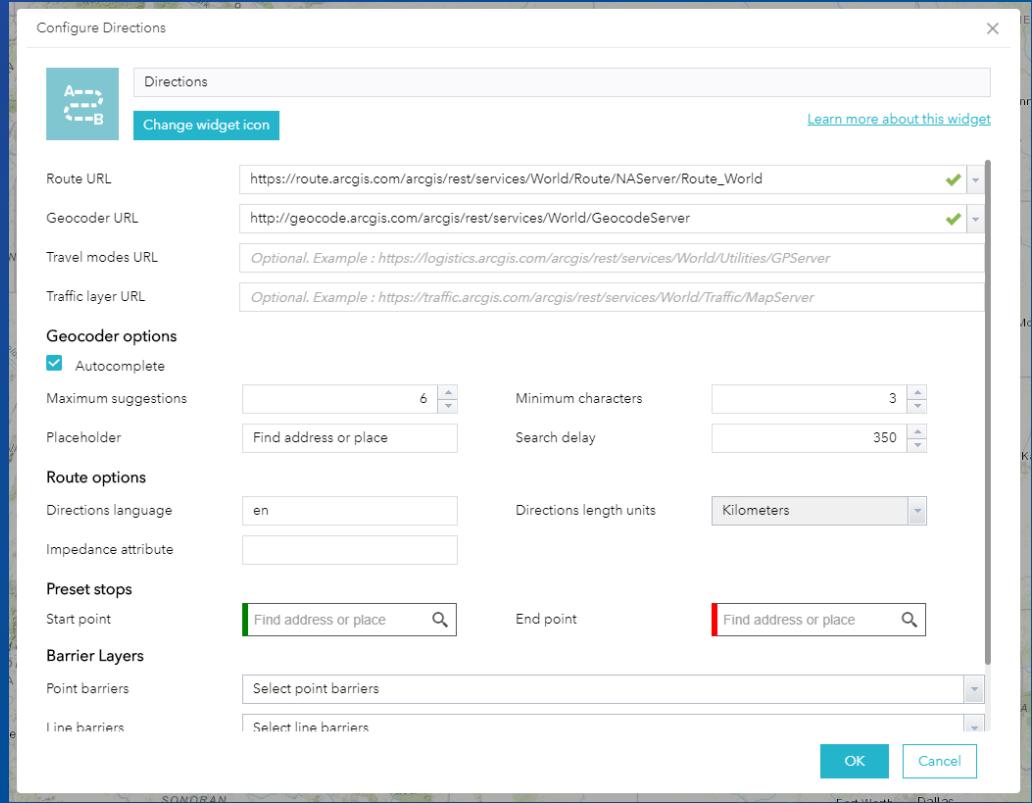
Conventions and Structure



Getting Started

1. Download developer edition
2. Connect to organization or portal
3. Copy widget template
4. Run the builder
5. Create an app with your widget
6. Build your widget in the app

Configure your custom widget inside the builder



- Building a UI for the user:
 - Setting.js
 - Config info
 - getConfig, setConfig
 - Setting.html
 - Usual localization pattern
 - CSS

Create a New Widget

Theme

App in style with personality



Theme is you

Major Components in a Theme

- Layout
- Panel
- Style
- Controller

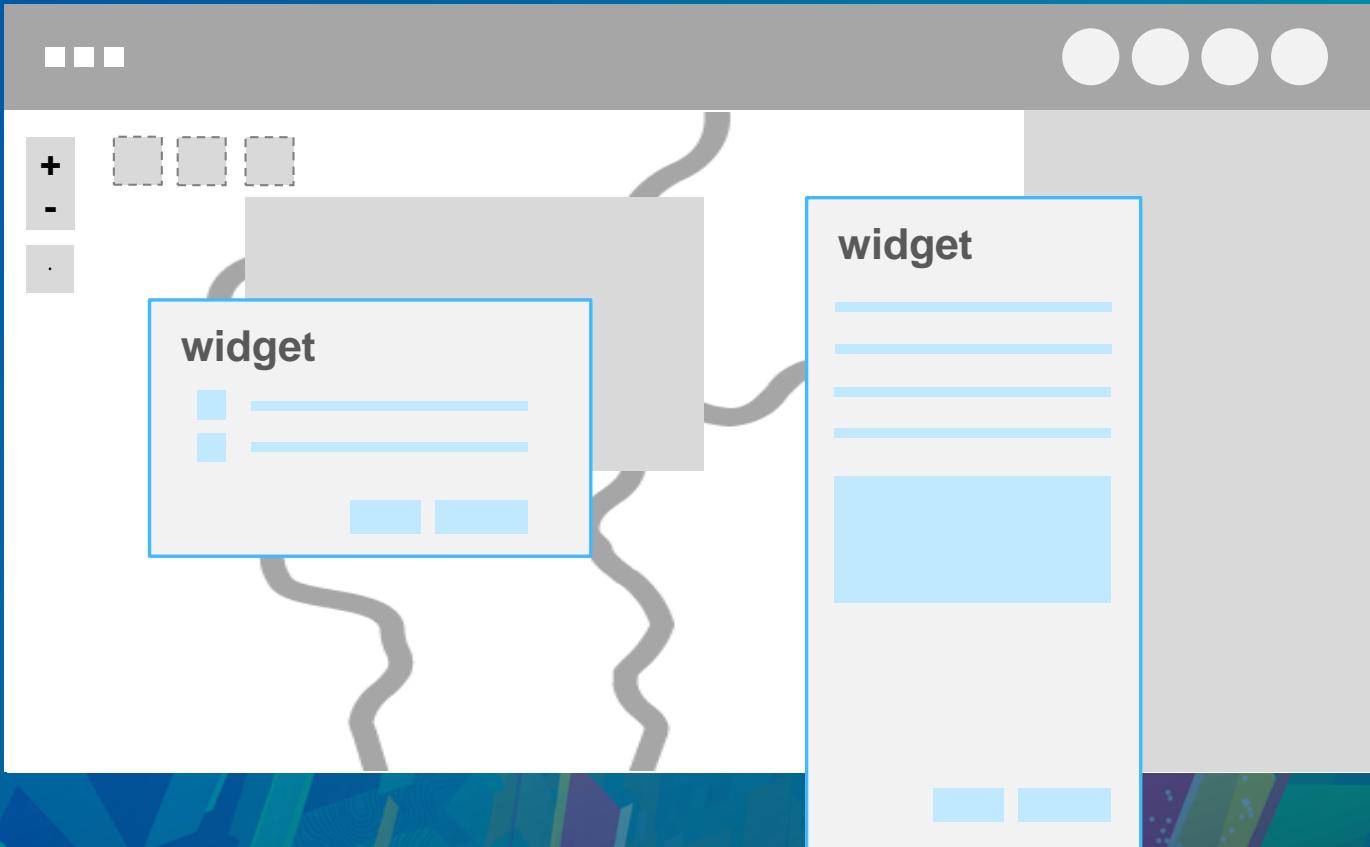
What Composes a Theme?

- Layout
- Panel
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- Controller



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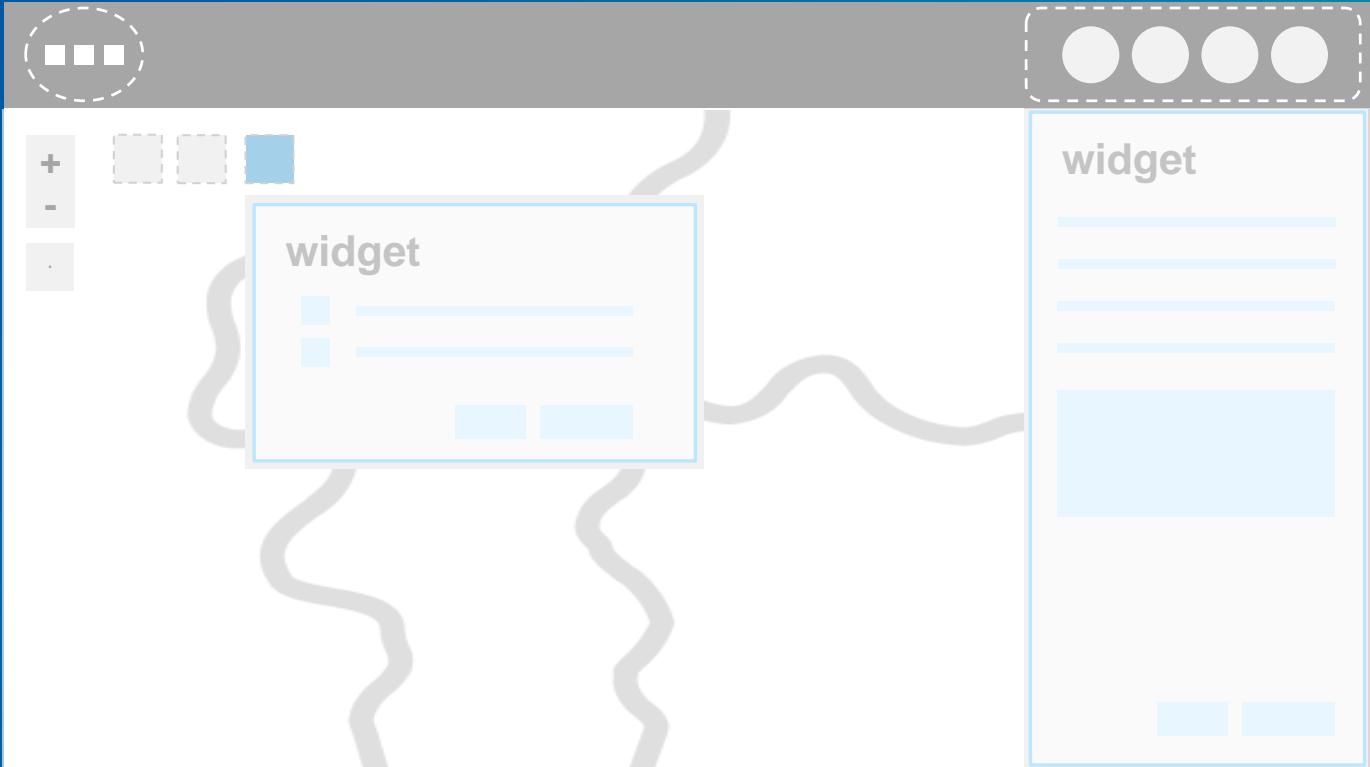
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What Makes Up The WAB UI?



How UI Libraries Work In WAB:



Theme: common.css, style.css

Jimu: jimu.css, jimu-override.css, etc.

ArcGIS API for JavaScript: esri.css

Dojo dijits: claro.css

Compare to a Functional Widget

		Controller Widget	Functional Widget
Purpose		<ul style="list-style-type: none">• Displays app information• Defines app behaviors, interactions, workflows, etc.	Provides one specific functionality to the app
Folder Structure			Very similar
Manifest	isController	True	False
	isThemeWidget	True	False
	inPanel	Always false	May vary
	Others	Very similar	

Let's Create a New Theme

Community

For you and by you

Helpful Resources

Online help documentation

<http://doc.arcgis.com/en/web-appbuilder>

Developer Edition help documentation

<http://developers.arcgis.com/web-appbuilder>

Web AppBuilder for ArcGIS Geonet

<https://community.esri.com/community/gis/web-gis/web-appbuilder>

Other Online Resources

- Esri Solutions Widgets:
 - <https://github.com/Esri/solutions-webappbuilder-widgets>
- Lists of Widgets:
 - <http://codesharing.arcgis.com/>
 - <http://esri-es.github.io/Web-AppBuilder-Custom-Widgets/>
- Example widgets and theme shown today: <https://git.io/fjTrM>

What's Coming



A photograph of a paved road curving through a field under a dramatic sunset sky. The sky is filled with dark, heavy clouds, with bright orange and yellow sunlight filtering through them, creating a warm glow. The road is asphalt with a white dashed center line, curving from the bottom left towards the horizon. The surrounding landscape is a mix of dry grass and low-lying vegetation.

“Experience Builder”

Experience Builder Key Features

- GUI builder to configure web apps and web pages
- Extensible framework for creating widgets and templates
- Extensible framework for different development roles
 - *Developers*
 - *Designer*
 - *Solution Developers*
 - *Domain Experts*

Experience Key Features (Continued)

- Mobile friendly- The same web app or web page on mobile can be configured separately from desktop
- Integrated 2D and 3D
- Analyze your web apps and web pages to build a complete picture of usage statistics.
- Extensible framework for developers to create widgets and templates

Experience Builder Release Plan



* Subject to change

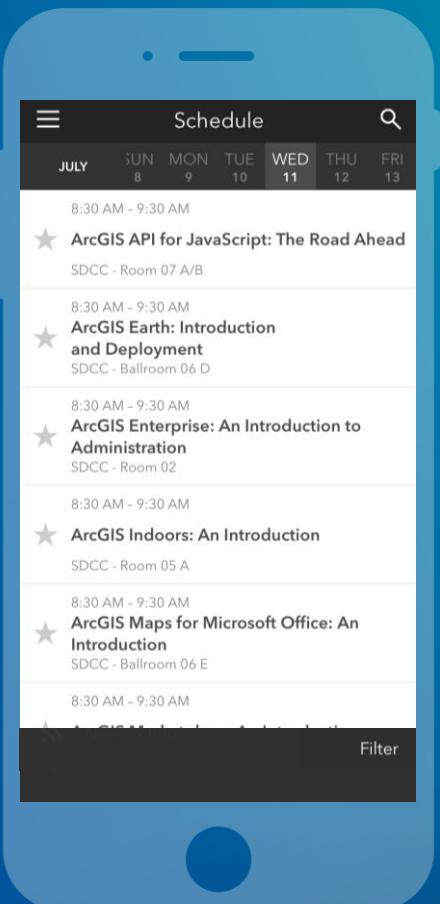
Questions?

Please Take Our Survey on the App

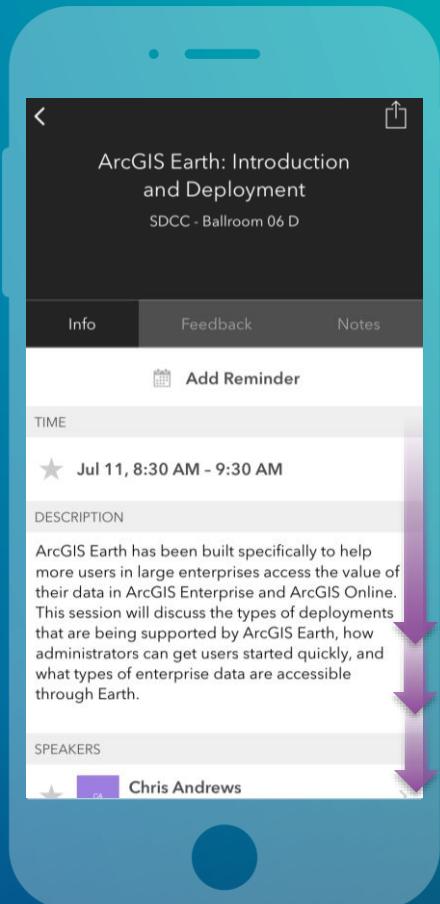
Download the Esri Events app and find your event



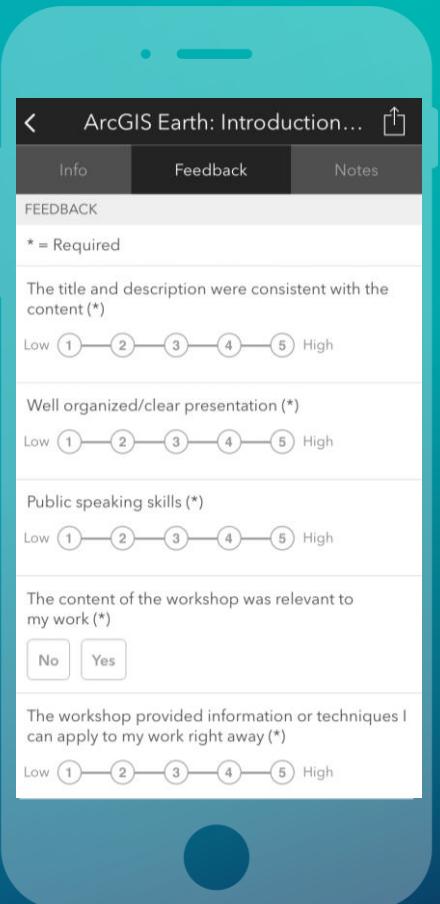
Select the session you attended



Scroll down to find the feedback section



Complete answers and select "Submit"





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