Web AppBuilder for ArcGIS: Creating Custom Widgets and Themes

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Introduction

Web AppBuilder for ArcGIS
Building Web Apps for Your Organization
Using the ArcGIS API for JavaScript
Building an App

GUI Builder

widgets

Themes

Stem App

An App

config
Access Type

- **38%** Private
- **16%** Shared
- **33%** Public
- **13%** Account

Total AppBuilder Apps: **518,364**
Web AppBuilder (Developer Edition)
Widgets

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

Themes

- Applied at run time
- Configure-in, not modify css
- Need container
- Self sufficient and distributable
- Has programing framework of container
Widgets
Building blocks of apps
It's really just a web app

MyWidget.css
MyWidget.js
MyWidget.html
Inheriting from BaseWidget

```javascript
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 (JavaScript)
Conventions and Structure

MyWidget
- css/
  - styles.css
- images/
  - icon.png
- nls/
  - strings.js
- setting/
  - config.json
  - manifest.json
  - Widget.html
  - Widget.js

es-es/
...

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?

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What Makes Up The WAB UI?

WAB UI

Jimu widgets

Dojo dijits

ArcGIS API widgets
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

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Controller Widget</th>
<th>Functional Widget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Displays app information</td>
<td>Provides one specific functionality to the app</td>
</tr>
<tr>
<td></td>
<td>• Defines app behaviors, interactions, workflows, etc.</td>
<td></td>
</tr>
<tr>
<td>Folder Structure</td>
<td></td>
<td>Very similar</td>
</tr>
<tr>
<td>Manifest</td>
<td>isController</td>
<td>True</td>
</tr>
<tr>
<td></td>
<td>isThemeWidget</td>
<td>True</td>
</tr>
<tr>
<td></td>
<td>inPanel</td>
<td>Always false</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>Very similar</td>
</tr>
</tbody>
</table>
Community
For you and by you
Helpful Resources

Online help documentation

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/

• Example widgets and theme shown today: (need to update)
Questions?
Please Take Survey on the App