DEVELOPER SUMMIT

EUROPE

Web AppBuilder for ArcGIS: Customizing and Extending

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Let’s talk about App Creation

10 challenges for people building apps

- Quickly turn business requirements into usable apps
- Build apps without dependencies on developer skills
- Easily maintain apps
- Unified UX to build apps that work across multiple form factors and platforms
- Understand how apps are used by end-users
- Understand if the apps are effective at getting the job done
- Secure aps, their content and functionality
- Deploy apps simply and securely
- Monitor and control the use of premium services

How did you create apps?

A Traditional way to Build an App

“Well, that’s not exactly what we wanted…”

Builder

Simply, build a better experience for the users

A different way to Build an App

Access Type

37%
Private

16%
Shared

14%
Account

33%
Public

Introduction

David Martinez

Create a Theme

David Martinez

Q&A

David Martinez

Julian Kissling

Create a Widget

Introduce Web AppBuilder widgets and how to create a widget

Julian Kissling

WAB Communities

David Martinez

Introduction

Web AppBuilder for ArcGIS

Building Web Apps for Your Organization

Using the ArcGIS API for JavaScript

Samples

Configurable Apps & Builders

Widgets

Web AppBuilder (Developer Edition)

Widget

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

Theme

- 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

```html
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
    <!--The viewport meta tag is used to improve the presentation and behavior of the samples
      on iOS devices-->
    <meta name="viewport" content="initial-scale=1, maximum-scale=1,user-scalable=no">
    <title>Class Breaks Renderer</title>

    <link rel="stylesheet" href="http://js.arcgis.com/3.13/esri/css/esri.css">
    <style>
      html, body, #map{
        height: 100%;
        margin: 0;
        padding: 0;
      }
    </style>
    <script src="http://js.arcgis.com/3.13/"></script>
    <script>
      var map;
      require([
        "esri/map", "esri/layers/FeatureLayer",
        "esri/InfoTemplate", "esri/symbols/SimpleFillSymbol",
        "esri/renderers/ClassBreaksRenderer",
        "esri/Color", "dojo/dom-style", "dojo/domReady!"
      ], function(
        Map, FeatureLayer,
        InfoTemplate, SimpleFillSymbol,
        ClassBreaksRenderer,
        Color, domStyle
      ) {
        map = new Map("map", {
          basemap: "streets",
          center: [-98.215, 38.382],
          zoom: 7,
          slider: false
        });

        var symbol = new SimpleFillSymbol();
        symbol.setColor(new Color([150, 150, 150, 0.5]));

        // Add five breaks to the renderer.
        // If you have ESRI's ArcMap available, this can be a good way to determine break values.
        // You can also copy the RGB values from the color schemes ArcMap applies, or use colors
        // from a site like www.colorbrewer.org
        //
        // alternatively, ArcGIS Server's generate renderer task could be used
        var renderer = new ClassBreaksRenderer(symbol, "POP07_SQMI");
        renderer.addBreak(0, 25, new SimpleFillSymbol().setColor(new Color([56, 168, 0, 0.5])));
        renderer.addBreak(25, 75, new SimpleFillSymbol().setColor(new Color([139, 209, 0, 0.5])));
        renderer.addBreak(75, 175, new SimpleFillSymbol().setColor(new Color([255, 255, 0, 0.5])));
        renderer.addBreak(175, 400, new SimpleFillSymbol().setColor(new Color([255, 128, 0, 0.5])));
        renderer.addBreak(400, Infinity, new SimpleFillSymbol().setColor(new Color([255, 0, 0, 0.5])));

        var infoTemplate = new InfoTemplate("${NAME}", "${*}");
        var featureLayer = new FeatureLayer("http://sampleserver1.arcgisonline.com/ArcGIS/rest/services/Demographics
          mode: FeatureLayer.MODE_SNAPSHOT,
          outFields: ["*"],
          infoTemplate: infoTemplate
        });

        featureLayer.setDefinitionExpression("STATE_NAME = 'Kansas'");
        featureLayer.setRenderer(renderer);
        map.addLayer(featureLayer);
      });
    </script>
  /head>

  body>
    <div id="map"></div>
  /body>

</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 / worklows (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

Theme

App in style with personality

Theme is you

Major Components in a Theme

- Layout
- Panel
- Style
- Widget

What Composes a Theme?

- **Layout**
- Panel
- Style
- Widget

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What Composes a Theme?

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What Composes a Theme?

- Layout
- Panel
- Style
- **Widget**

Community

For you and by you

Documentation

Online help documentation
http://doc.arcgis.com/en/web-appbuilder

Developer Edition help documentation
http://developers.arcgis.com/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/
  - https://github.com/gavinr/wab-widget-search
- “Awesome ArcGIS” https://github.com/hhkaos/awesome-arcgis
- Example widget shown today: http://esriurl.com/13950

Questions

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