

**Esri Developer Summit**

March 8–11, 2016 | Palm Springs, CA



# Building 3D Web Apps: A Step by Step Guide

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Javier Gutierrez & Russ Roberts

# Intro to JS API 4.0

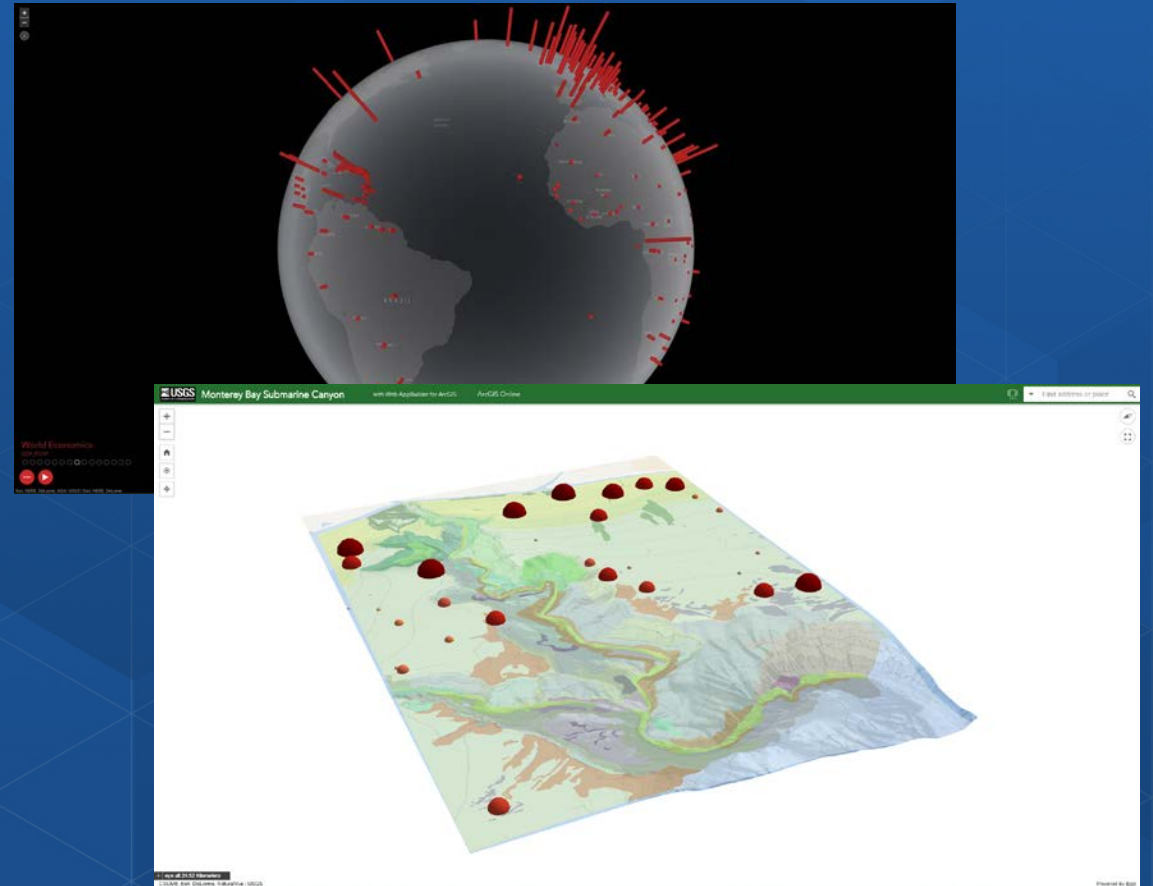
- 4.x
  - a new, modern, lean API project started late 2013
  - introduction of 3D
  - WebScene
  - new SDK rebuilt from scratch
  - Consistent coding pattern: properties, watch, promises...
- Current release beta3:  
<https://developers.arcgis.com/javascript/beta>  
4.0 is coming soon!

# Intro to Web Scenes

- The scene viewer is an app built into the ArcGIS Online & Portal for creating and interacting with 3D scenes
- Scene Viewer and ArcGIS Pro both author web scenes
- Web scenes can be global or local
  - Local web scenes can be in any projected coordinate system

# 3D Web Apps in the ArcGIS Platform

- **Web Scene Viewer**
  - Released Dec 2014
  - Read/Write web scenes
- **ArcGIS Online February Update (2016)**
  - Configurable 3D web apps were released
    - Templates
    - Web App Builder
  - Read web scenes only



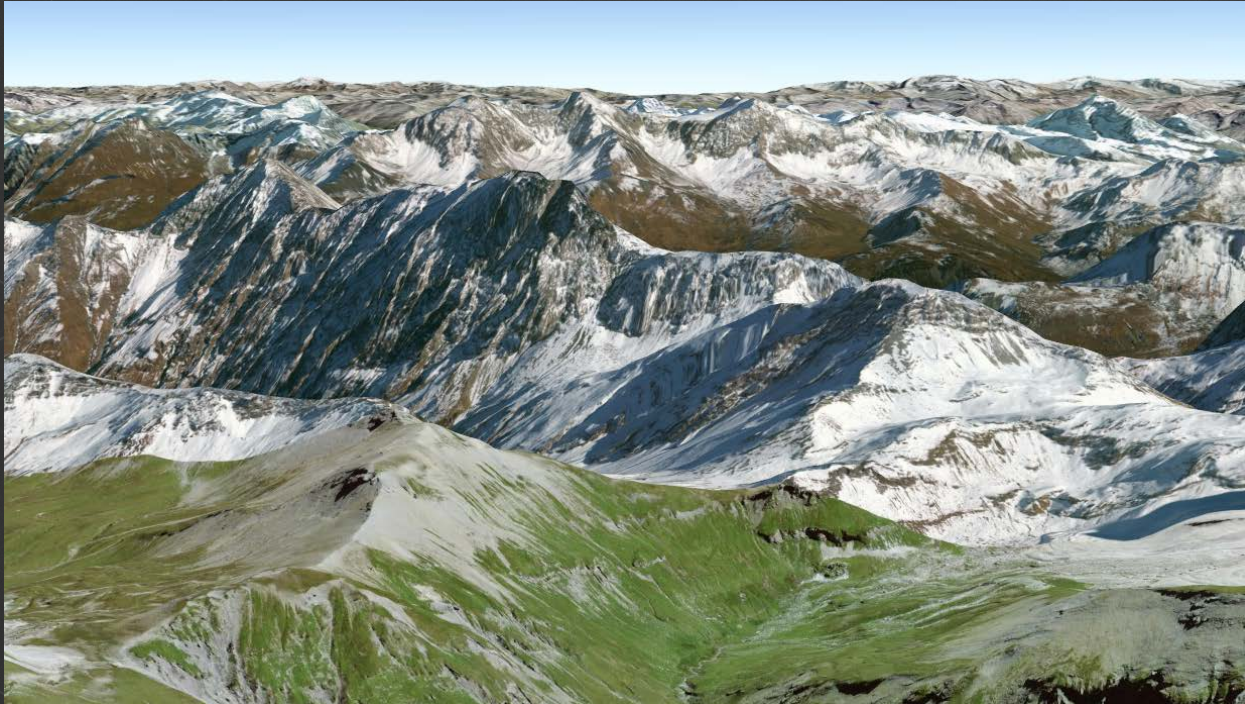
# What are People Creating with Web Scenes?



# Intro to 3D in 4.0 JS API

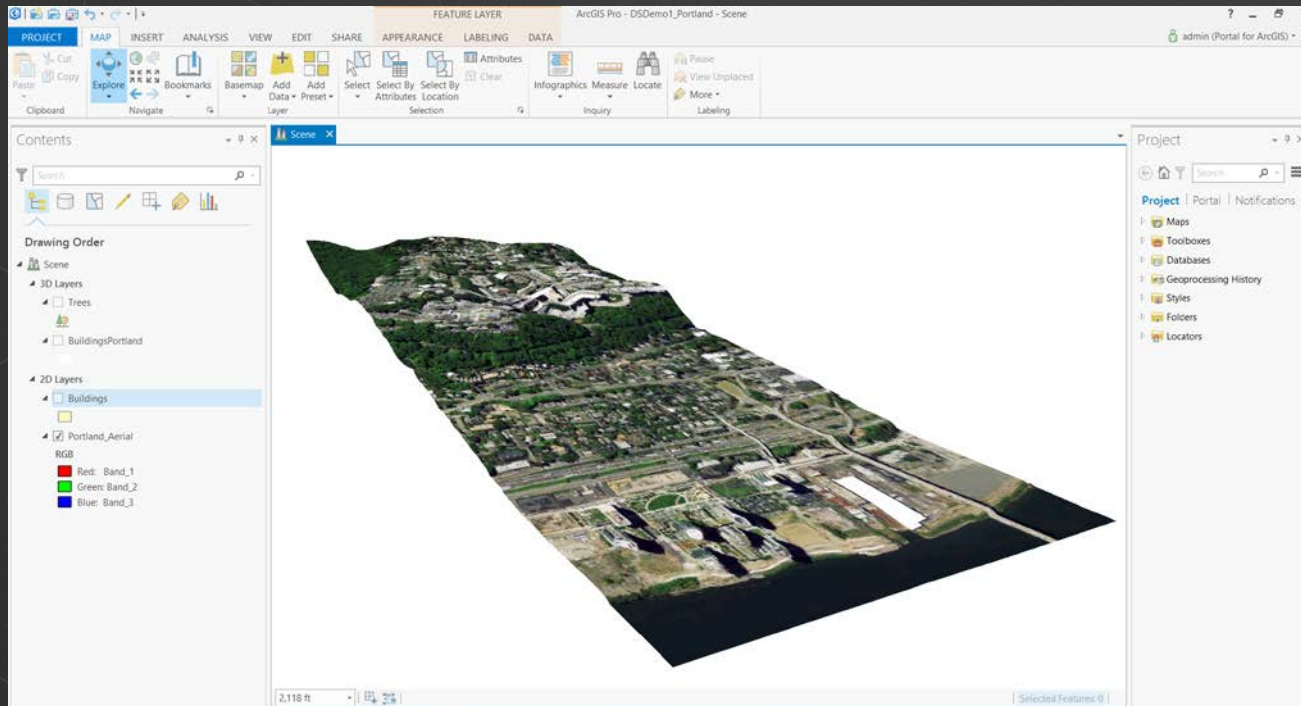
Javier

```
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>Create a local scene - 4.0beta3</title>
7 <style>
8   html,
9   body {
10     padding: 0;
11     margin: 0;
12   }
13
14 #homeDiv {
15   left: 15px;
16   top: 130px;
17   z-index: 35;
18   position: absolute;
19 }
20 </style>
21
22 <link rel="stylesheet" href="https://js.arcgis.com/4.0beta3/esri/css/main.css">
23 <script src="https://js.arcgis.com/4.0beta3/"></script>
24
25 <script>
26   require([
27     "esri/WebScene",
28     "esri/views/SceneView",
29     "esri/layers/FeatureLayer",
30     "esri/geometry/Extent",
31     "esri/PopupTemplate",
32     "esri/geometry/SpatialReference",
33     "esri/renderers/SimpleRenderer",
34     "esri/symbols/ObjectSymbol3DLayer",
35     "esri/symbols/IconSymbol3DLayer",
36     "esri/symbols/PointSymbol3D",
37     "esri/tasks/QueryTask",
38     "esri/tasks/support/Query",
39     "esri/widgets/Home",
40     "esri/widgets/Home/HomeViewModel",
41     "dojo/domReady!"
42   ], function(WebScene, SceneView, FeatureLayer, Extent,
43     PopupTemplate, SpatialReference, SimpleRenderer, ObjectSymbol3DLayer,
44     IconSymbol3DLayer, PointSymbol3D, QueryTask, Query, Home, HomeVM
45   ) {
```



# Creating an Elevation Service

Russ



# Authoring and Sharing a Scene

Russ



## Demo Re-cap

- **Using my own elevation service**
- **Published a local web scene from Pro**
  - This creates a scene service from a multipatch feature class
  - Feature layer also created with building footprints
  - Tiled layer also created when scene was published from the Aerial Imagery

# Creating a 3D web app with 4.0 JS API using a web scene

Javier

```
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5 <meta name="viewport" content="initial-scale=1,maximum-scale=1,user-scalable=no">
6 <title>Create a local scene - 4.0beta3</title>
7 <style>
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14 #homeDiv {
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17   z-index: 35;
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23 <script src="https://js.arcgis.com/4.0beta3/"></script>
24
25 <script>
26 require([
27   "esri/WebScene",
28   "esri/views/SceneView",
29   "esri/layers/FeatureLayer",
30   "esri/geometry/Extent",
31   "esri/PopupTemplate",
32   "esri/geometry/SpatialReference",
33   "esri/renderers/SimpleRenderer",
34   "esri/symbols/ObjectSymbol3DLayer",
35   "esri/symbols/IconSymbol3DLayer",
36   "esri/symbols/PointSymbol3D",
37   "esri/tasks/QueryTask",
38   "esri/tasks/support/Query",
39   "esri/widgets/Home",
40   "esri/widgets/Home/HomeViewModel",
41   "dojo/domReady!"
42 ], function(WebScene, SceneView, FeatureLayer, Extent,
43   PopupTemplate, SpatialReference, SimpleRenderer, ObjectSymbol3DLayer,
44   IconSymbol3DLayer, PointSymbol3D, QueryTask, Query, Home, HomeVM
45 ) {
```

# Final Notes

- **JS API 4.0 coming soon!**
  - Beta 3 available since December(2015)
- **3D Web apps available today!**
  - Web App Builder
  - Templates
  - Web Scene Server

