Optimizing Your JavaScript App for Performance

Lloyd Heberlie
Rene Rubalcava
Agenda

• Introductions
• Web Optimizer
• Bower
• Other considerations
• Questions
### Web Optimizer

Lloyd Heberlie

<table>
<thead>
<tr>
<th>Package</th>
<th>Created</th>
<th>Status</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>mesa</td>
<td>8/9/16</td>
<td>Draft</td>
<td>CDN URL, Duplicate, Rename, Delete</td>
</tr>
<tr>
<td>cmv1</td>
<td>3/21/15</td>
<td>Completed</td>
<td>CDN URL, Duplicate, Rename, Delete</td>
</tr>
<tr>
<td>TestSmall</td>
<td>3/17/15</td>
<td>Completed</td>
<td>CDN URL, Duplicate, Rename, Delete</td>
</tr>
</tbody>
</table>
Why?

• AMD - Asynchronous Module Definition
• AMD loader
• CDN is a canned build
• Initial load times
• Mobile specific apps
Build options

- Zipped app
- URL scrape
- Module list
- Manual selection
Module list magic

- Traverse your application’s files
- Parse the network waterfall – HAR file
- Shell - grep
- Manually maintenance
Notifications

Build completed for configuration 3.21_map_simple

To: Lloyd Heberlie

Build completed for configuration 3.21_map_simple

dojo.js layer size: 177.0 KB gzipped (565.1 KB uncompressed)

Visit the Web Optimizer dashboard for more information and to download your build: http://jsa.arcgis.com/#/config/config-13244920262753834
Additional considerations

- Lazy loading of modules
- Removing too many files – 404 potential
- Removing locales – page fails to load
- Be ready to troubleshoot
- Mobile hybrid build considerations
Summary

- Build options
- Publish to CDN
- Application benefits
Local Builds
Rene Rubalcava
Options

- A JavaScript package manager
- [https://github.com/esri/arcgis-js-api](https://github.com/esri/arcgis-js-api)
- bower install arcgis-js-api
- npm install arcgis-js-api *coming soon*
- yarn add arcgis-js-api *coming soon*
  - Can do this now, [guide](#)
Options

- **Bower**
  - Easier to manage the dependencies
  - Tooling fits with the build system

- **NPM**
  - You already have it

- **Yarn**
  - Can install packages with custom names
What do I get?

• Minified, but unbuilt JavaScript API
• Source Sass files for 4.x
• Unminified source for Widget Views
Custom builds

- Demystifying the Dojo build system... *kinda*
- Using RequireJS for custom builds
- Key points you should know
- ES6 and Rollup
Frustrations

• Why can’t I just ...
  - Use Webpack *(working on it)*
• Why is the download so big?
Pros / Cons

• Over optimization
• HTTP2 benefits
• CDN hosted on HTTP2 server
arcgis-js-api

A minified, unbuilt version of the ArcGIS API for JavaScript to be used with bower.

Features

A minified, unbuilt version of the ArcGIS API for JavaScript. You can install this repo via bower and create your own custom builds with Dojo or RequireJS.

Instructions

Building an ArcGIS API for JavaScript application requires signing up for an ArcGIS account.

```
bower install arcgis-js-api
```

Requirements

To install and use as a bower installation:

- node
- q/t
- bower

This repo has dependencies on the following repos.
Other considerations

- Data generalization
- FeatureLayer considerations
- Indexes on query fields
- Gzip compression
- File minification
Questions?

- https://github.com/Esri/jsapi-resources/tree/master/bower
- https://github.com/lheberlie/web-optimizer-js
- https://github.com/Esri/enterprise-build-sample-js
- https://github.com/gbochenek/web-app-builder-build
Session Feedback

- Esri Partner Conference
  - March 4-6, 2017
  - Palm Springs, CA

- Esri Developer Summit
  - March 7-10, 2017
  - Palm Springs, CA

- Esri Water Conference
  - February 9-12, 2017
  - Orlando, FL

- Esri FedGIS

**Creating Optimized Builds of the ArcGIS API for JavaScript**

**Pasadena-Sierra-Ventura**

**Info**

**Add Reminder**

**TIME**

- Mar 09, 9:00 AM - 10:00 AM PST

**DESCRIPTION**

Learn how to structure your application to create optimized builds using the Web Optimizer or custom local builds using the Bower release of the ArcGIS API for JavaScript.

**MAP**

**Feedback**

- The title and description were consistent with the content presented
  - Low: 1, 2, 3, 4, 5, High

- The presentation was well organized and presented clearly
  - Low: 1, 2, 3, 4, 5, High

- The presenter exhibited strong public speaking skills
  - Low: 1, 2, 3, 4, 5, High

- The session provided information or techniques I can apply right away
  - Low: 1, 2, 3, 4, 5, High