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Google AMP Gotcha



Gotcha

What is AMP

How it works

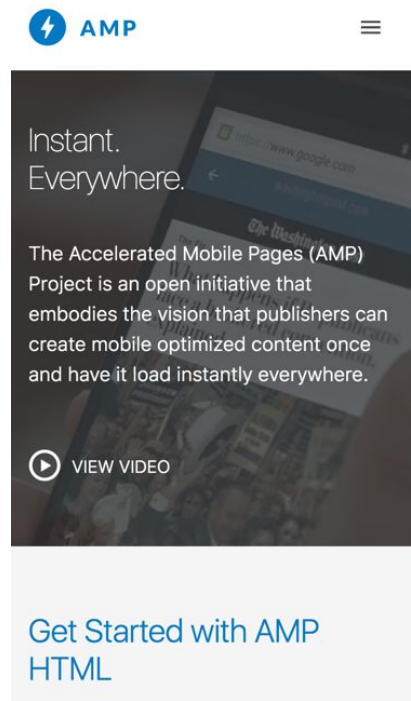
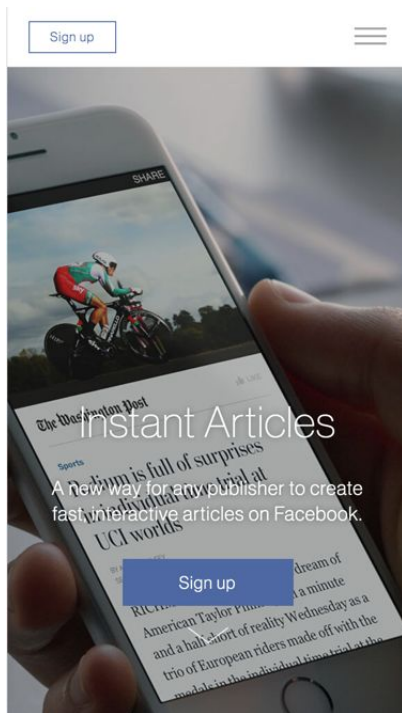
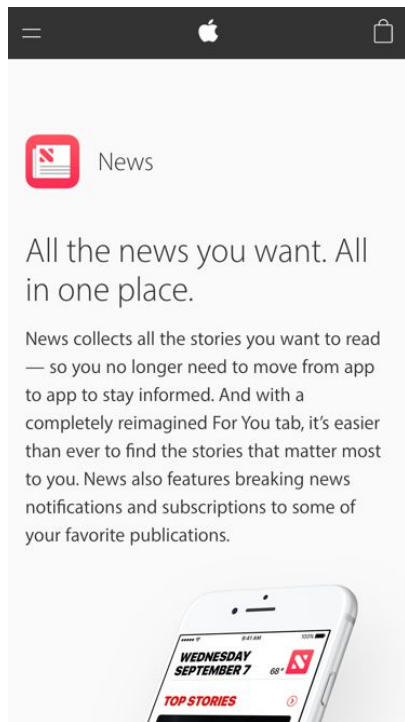
AMP in action

Building an AMP extension

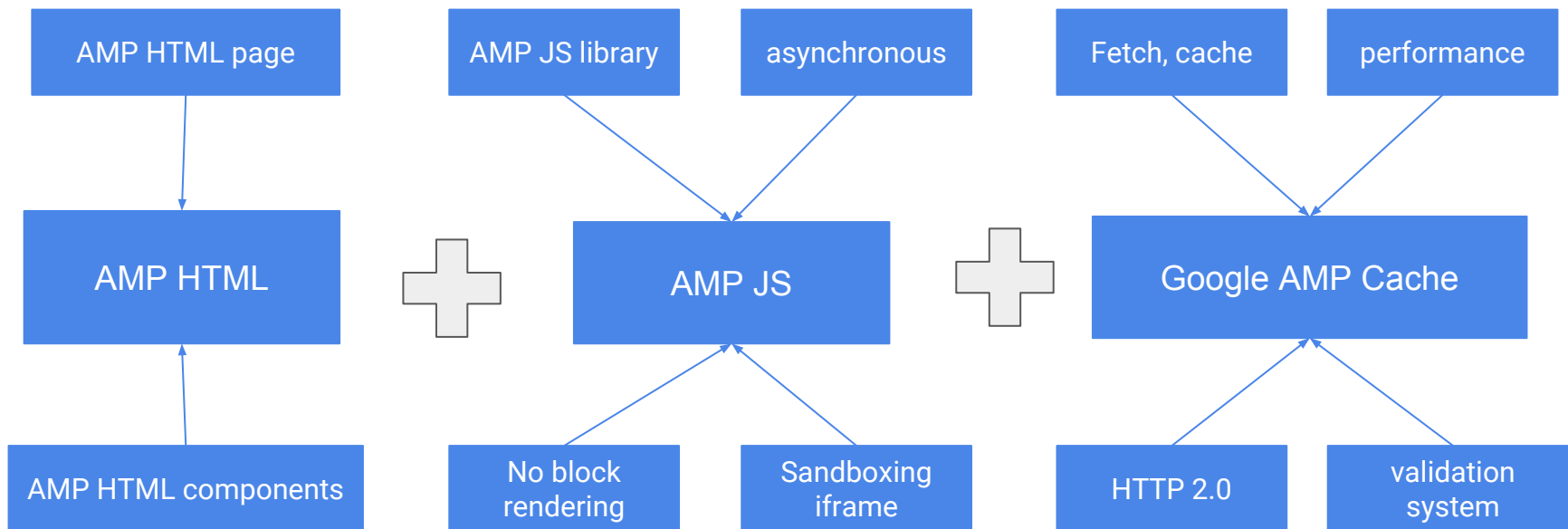
What is AMP ?



Apple has [Apple News](#). Facebook has [Instant Articles](#). Now Google has [AMP: Accelerated Mobile Pages](#).

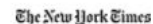


AMP is a way to build web pages for static content that render fast



AMP real world usage

27 Ads Platforms, 12 Analytics Platforms, 8 Content Platforms, 5 CMS Platforms, 4 Video Platforms



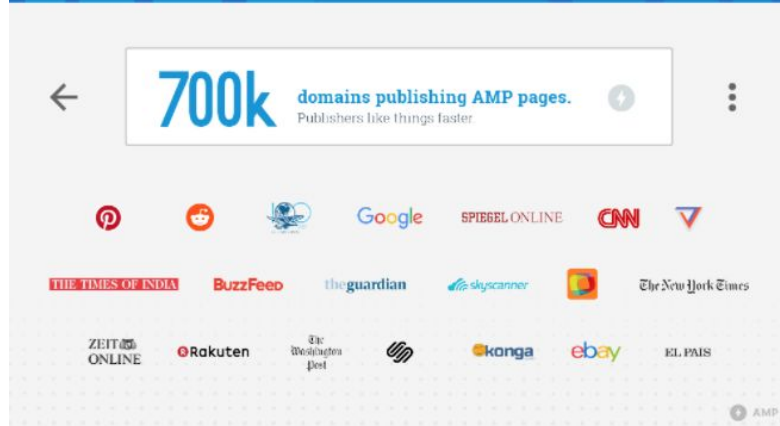
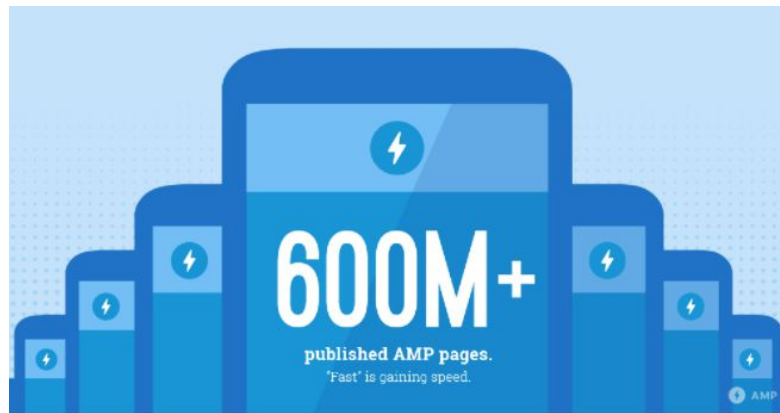


AMP

CELEBRATING A YEAR OF SPEEDING THINGS UP

4X faster page
loading
with AMP.
The faster
the better.





+23%

increase in repeat
mobile search users
on The Washington Post.
People like things faster, too.



AMP



10X

less bandwidth
used by AMP pages.

Seriously, don't waste
your bandwidth.

AMP

+73%

increase in visits per monthly unique
visitors from Google mobile search.
Speed things up and they will come.

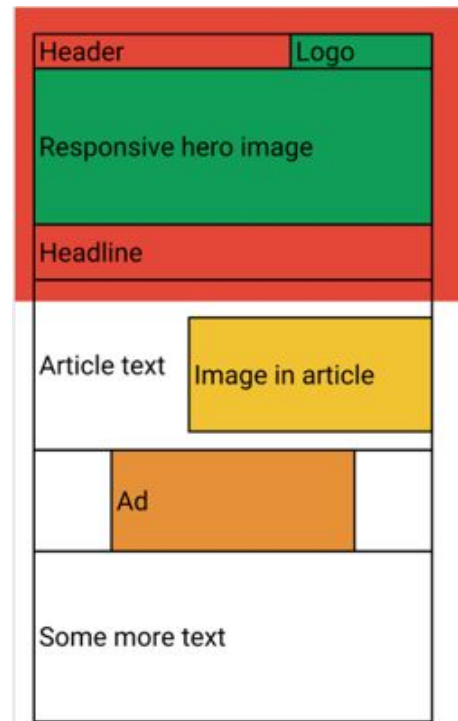


AMP

How it works



1. Allow only asynchronous scripts & no document.write
2. Size all resources statically
3. Don't let extension mechanisms block rendering
4. Keep all third-party JavaScript out of the critical path
5. All CSS must be inline and size-bound
6. Font triggering must be efficient
7. Minimize style recalculations
8. Only run GPU-accelerated animations
9. Prioritize resource loading
10. Load pages in an instant with The new [preconnect API](#)



AMP in action



Supported Browsers

In general we support the **2 latest versions** of major browsers like **Chrome, Firefox, Edge, Safari and Opera**. We support **desktop, phone, tablet** and the web view version of these respective browsers.

Support for the **Android 4.0** system browser and **Chrome 28+** on phones.



example.html

```
html body section main p
1 <!doctype html>
2 <html AMP>
3 <head>
4   <meta charset="utf-8">
5   <link rel="canonical" href="hello-world.html">
6   <meta name="viewport" content="width=device-width,minimum-scale=1,initial-scale=1">
7   <style amp-boilerplate>body{-webkit-animation:-amp-start 8s steps(1,end) 0s 1 normal both;-moz-animation:-amp-start 8s
8   <script async src="https://cdn.ampproject.org/v0.js"></script>
9   <script async custom-element="amp-iframe" src="https://cdn.ampproject.org/v0/amp-iframe-0.1.js"></script>
10 </head>
11 <body>
12   <section class="main">
13     <p>hulu with amp-iframe</p>
14     <amp-iframe class="hulu-frame" width="320" height="320"
15       sandbox="allow-scripts allow-same-origin allow-popups allow-popups-to-escape-sandbox"
16       layout="responsive"
17       frameborder="0"
18       noloading="noloading"
19       src="https://secure.hulu.com/embed.html?eid=Bx6H30RBVFNp0e-ii0xp3A">
20     <div placeholder></div>
21   </amp-iframe>
22 </section>
23 </body>
24 </html>
```

Styling

```
1 <!doctype html>
2 <head>
3   ...
4   <style amp-custom>
5     /* any custom styles go here. */
6     body {
7       background-color: white;
8     }
9     amp-img {
10      border: 5px solid black;
11    }
12
13    amp-img.grey-placeholder {
14      background-color: grey;
15    }
16  </style>
17  ...
18 </head>
```


Components / Tags

amp-video (Built-in), amp-pixel (Built-in), **amp-img (Built-in)**, amp-access-laterpay, amp-access, amp-accordion, **amp-ad**, **amp-analytics**, amp-anim, amp-animation, amp-aposter-media, amp-app-banner, amp-audio, amp-brid-player, amp-brightcove, amp-carousel, amp-dailymotion, amp-dynamic-css-classes, amp-experiment, amp-facebook, amp-fit-text, amp-font, amp-form, amp-fx-flying-carpet, amp-gfycat, amp-google-vrview-image, **amp-hulu**, **amp-iframe**, amp-image-lightbox, amp-instagram, **amp-install-serviceworker**, amp-jwplayer, amp-kaltura-player, amp-lightbox, amp-list, amp-live-list, amp-mustache, amp-o2-player, amp-pinterest, amp-reach-player, amp-reddit, amp-share-tracking, amp-sidebar, amp-social-share, amp-soundcloud, amp-springboard-player, **amp-sticky-ad**, amp-twitter, amp-user-notification, amp-vimeo, amp-vine, amp-viz-vega, amp-youtube

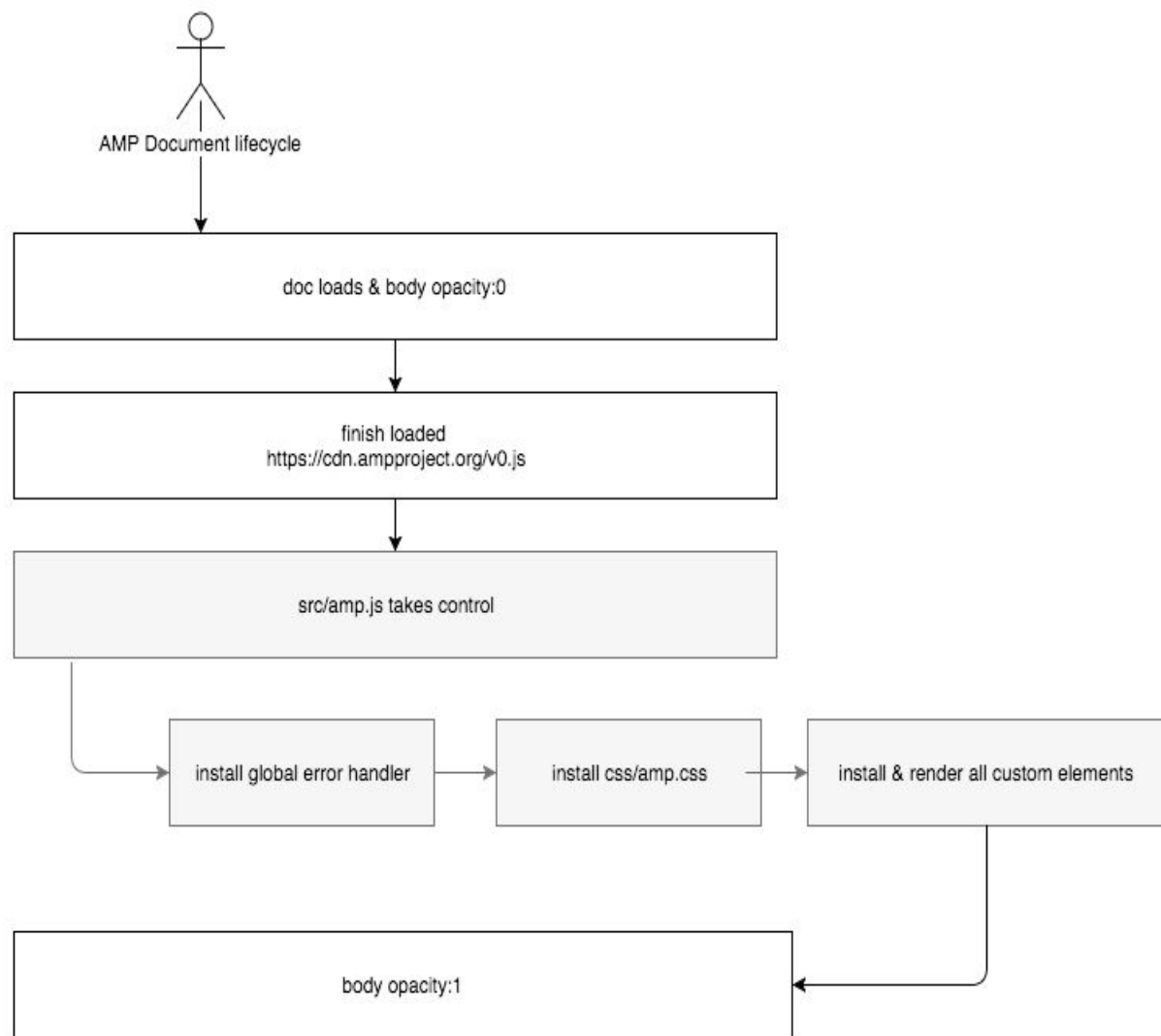
Building an AMP extension



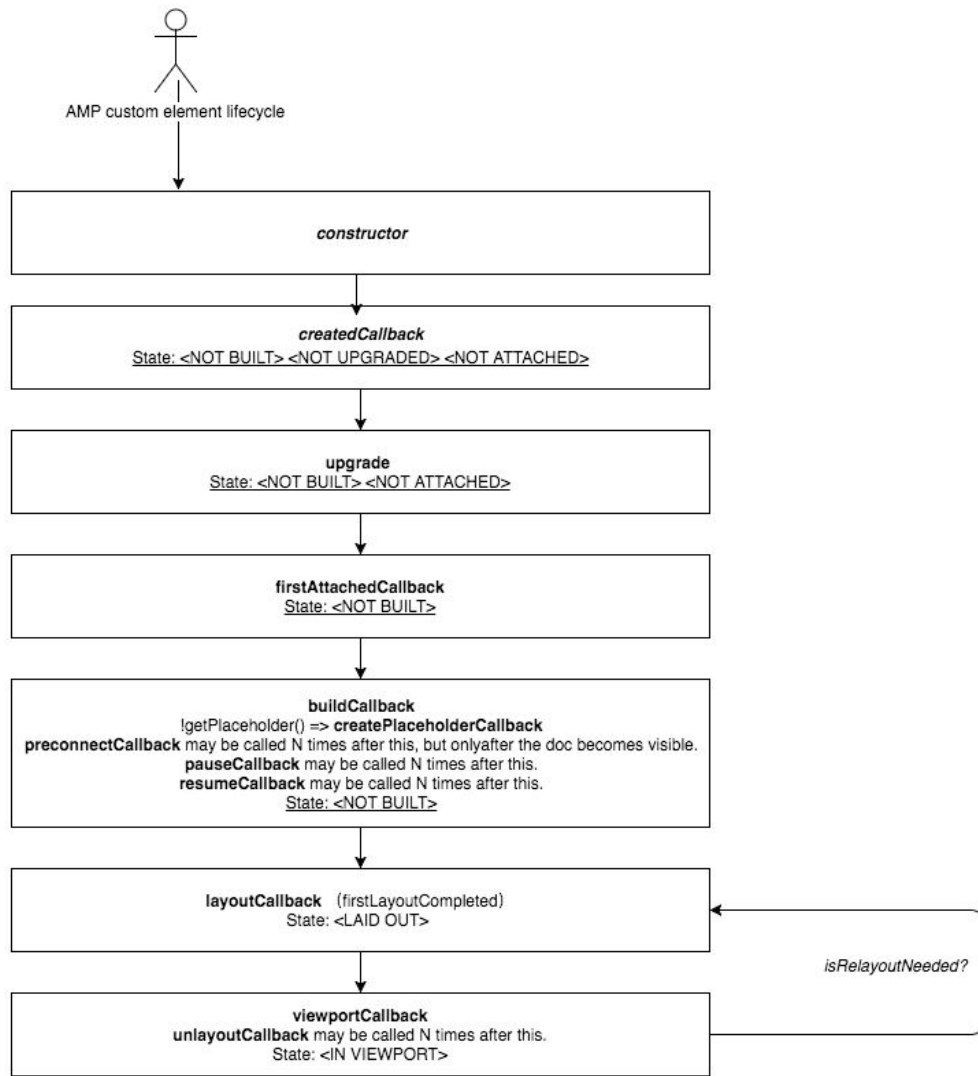
AMP Design Principles

- User Experience > Developer Experience > Ease of Implementation.
- Don't design for a hypothetical faster future browser.
- Don't break the web.
- Solve problems on the right layer.
- Only do things if they can be made fast.
- Prioritise things that improve the user experience – but compromise when needed.
- No whitelists.

Life of an AMP

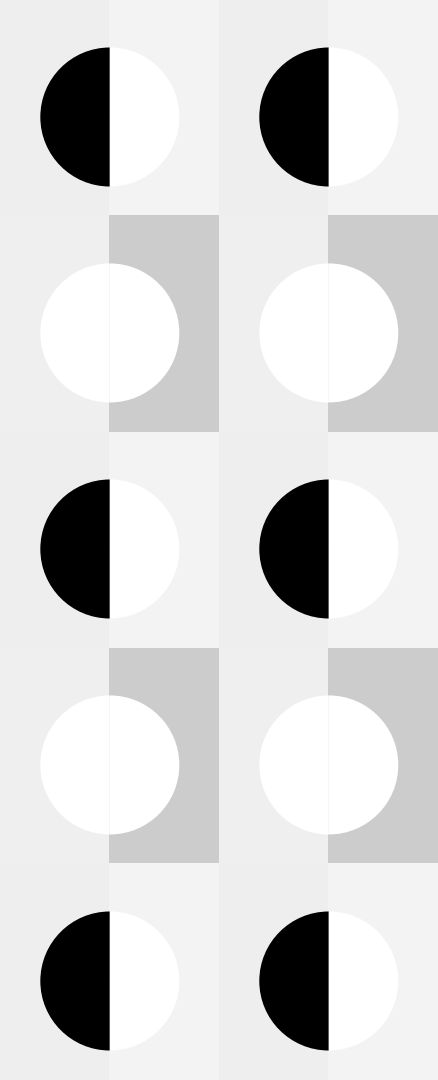


Life of an AMP



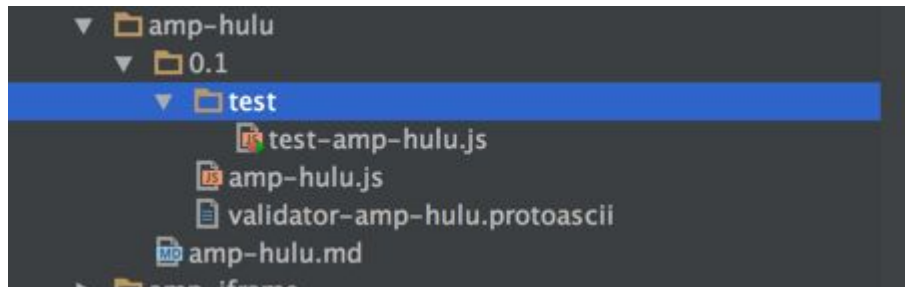
Layout System

Layout	Width/Height Required?	Defines Size?	Additional Elements	CSS "display"
nodisplay	no	no	no	none
fixed	yes	yes, specified by width and height	no	inline-block
responsive	yes	yes, based on parent container and aspect ratio of width:height	yes, i-amp-sizer	block
fixed-height	height only. width can be auto	yes, specified by the parent container and height	no	block
fill	no	yes, parent's size	no	block
container	no	no	no	block
flex-item	no	no	yes, based on parent container	block

- 
1. Fork amhtml (<https://github.com/ampproject/amhtml>) repo & create amp-hulu branch
 2. Write codes for amp-hulu in /extensions/amp-hulu
 3. Pull request to amhtml repo
 4. Build example for <https://ampbyexample.com/>

amp-hulu

- extensions/amp-my-element/
 - 0.1/
 - test/
 - **test-amp-my-element.js** (Unit test suite for your element)
 - More test JS files (Optional)
 - **amp-my-element.js** (Contains your elements implementation)
 - **amp-my-element.css** (Optional)
 - More JS files (Optional)
 - validator-amp-my-element.protoascii (Validator rules)
 - **amp-my-element.md** (Main usage documentation for your element)



amp-hulu.js

```
/** @override */
preconnectCallback() {
  this.preconnect.preload(this.getVideoIframeSrc());
}

/** @override */
isLayoutSupported(layout) {...}

/** @override */
layoutCallback() {
  const iframe = document.createElement('iframe');
  const src = this.getVideoIframeSrc();
  iframe.setAttribute('frameborder', '0');
  iframe.setAttribute('allowfullscreen', 'true');
  iframe.src = src;
  this.applyFillContent(iframe);
  this.element.appendChild(iframe);
  this.iframe_ = iframe;

  return this.loadPromise(iframe);
}

/** @override */
unlayoutOnPause() {...}

/** @override */
unlayoutCallback() {
  if (this.iframe_) {
    removeElement(this.iframe_);
    this.iframe_ = null;
  }
  return true;
}

/** @override */
buildCallback() {
  this.eid_ = user().assert(
    this.element.getAttribute('data-eid'),
    'The data-eid attribute is required for <amp-hulu> %s',
    this.element);
}

/** @return {string} */
getVideoIframeSrc() {
  dev().assert(this.eid_);
  return `https://secure.hulu.com/dash/mobile_embed.html?eid=${encodeURIComponent(this.eid_)}`;
}
```

test-amp-hulu.js

```
23 describe('amp-hulu', () => {
24
25   function getHulu(eid, opt_responsive) {
26     return createIframePromise().then(iframe => {
27       const hulu = iframe.doc.createElement('amp-hulu');
28       hulu.setAttribute('data-eid', eid);
29       hulu.setAttribute('width', '111');
30       hulu.setAttribute('height', '222');
31       if (opt_responsive) {
32         hulu.setAttribute('layout', 'responsive');
33       }
34       iframe.doc.body.appendChild(hulu);
35       hulu.implementation_.buildCallback();
36       return hulu;
37     });
38   }
39
40   it('renders', () => {
41     return getHulu('Bx6H30RBVFNp0e-ii0xp3A').then(hulu => {
42       const iframe = hulu.querySelector('iframe');
43       expect(iframe).to.not.be.null;
44       expect(iframe.tagName).to.equal('IFRAME');
45       expect(iframe.src).to.equal('https://secure.hulu.com/dash/');
46     });
47   });
48
49   it('renders responsively', () => {
50     return getHulu('Bx6H30RBVFNp0e-ii0xp3A', true).then(hulu => {
51       const iframe = hulu.querySelector('iframe');
52       expect(iframe).to.not.be.null;
53       expect(iframe.className).to.match(/-amp-fill-content/);
54     });
55   });
56
57   it('requires data-eid', () => {
58     return getHulu('').should.eventually.be.rejectedWith(
59       /The data-eid attribute is required for/);
60   });
61 });
```

gulp test --files=extensions/amp-hulu/0.1/test/test-amp-hulu.js --watch

```
[14:07:42] Using gulpfile /Workspace/Hulu/amphtml/gulpfile.js
[14:07:42] Starting 'build'...
[14:07:42] Bundling alp.js
Bundling service-worker.js
[14:07:42] Bundling amp-hulu
Recompiling CSS.
[14:07:42] Processing 3p/frame.max.html
[14:07:42] Finished 'build' after 245 ms
[14:07:42] Starting 'test'...
[14:07:42] Webserver started at http://localhost:31862
[14:07:42] Started test responses server on localhost:31862
14 11 2016 14:07:43.080:WARN [watcher]: Pattern "/Workspace/Hulu/amphtml/dist.tools/**/*.js" does not match any file.
[14:07:48] Compiled kill.js
[14:07:48] Compiled core.js
[14:08:01] Compiled integration.js
[14:08:02] Compiled inbox-host.js
[14:08:02] Compiled install-alp.js
[14:08:06] Compiled amp-hulu.js
[14:08:06] Compiled polyfills.js
[14:08:12] Compiled amp-inabox.js
[14:08:13] Compiled amp-shadow-babel.js
[14:08:13] Compiled amp-babel.js
[14:08:13] Compiled shell.js
[14:08:13] All current JS updates done.
14 11 2016 14:08:14.549:WARN [karma]: No captured browser, open http://localhost:9876/
Chrome 54.0.2840 (Mac OS X 10.11.6): Executed 3 of 3 SUCCESS (0.137 secs / 0.107 secs)
```



amp-hulu

Use case

Description	Displays a Hulu simple embed.
Availability	Stable
Required Script	<pre><script async custom-element="amp-hulu" src="https://cdn.ampproject.org/v0/amp-hulu-0.1.js"> </script></pre>
Supported Layouts	fill, fixed, fixed-height, flex-item, nodisplay, responsive

Example

```
<amp-hulu width="412" height="213" layout="responsive"
  data-eid="Bx6H30RBVFNp0e-ii0xp3A">
</amp-hulu>
```

Attributes

data-eid

In a URL like <https://secure.hulu.com/embed.html?eid=Bx6H30RBVFNp0e-ii0xp3A>

`Bx6H30RBVFNp0e-ii0xp3A` is the eid.



Why AMP is fast

AMP Anatomy with Malte Ubl (tech lead) - and the slider is here

How AMP achieves its speed - Google I/O 2016

Debunked: 10 Misconceptions about AMP

<amp;thanks>FAQ</amp;thanks>