

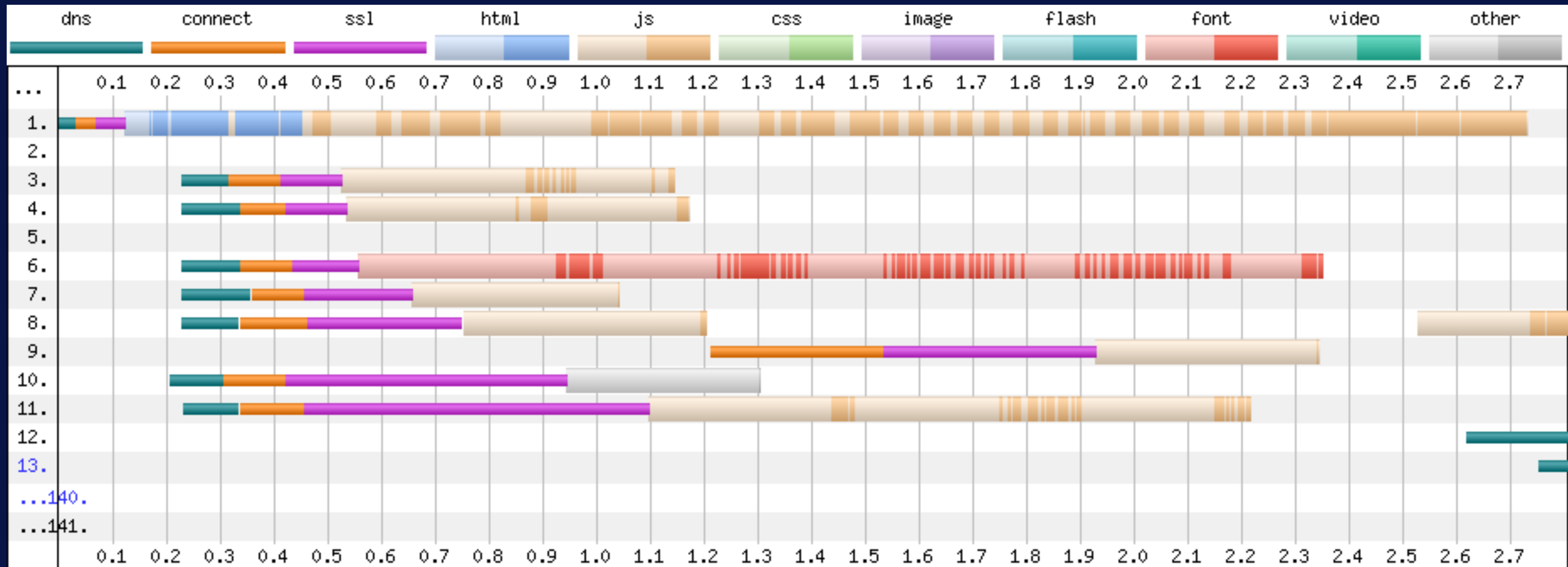


Reducing the Impact of Third-Party Tags

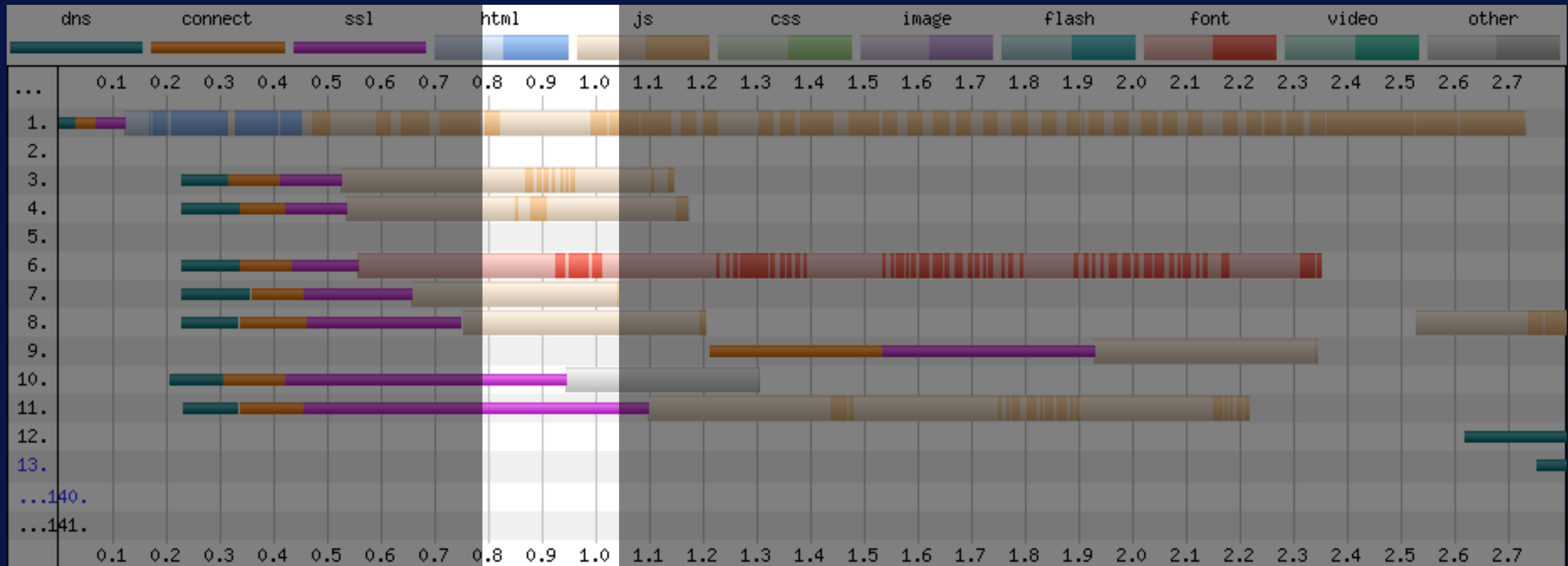
Andy Davies · Oct 2022 · #PerfNow



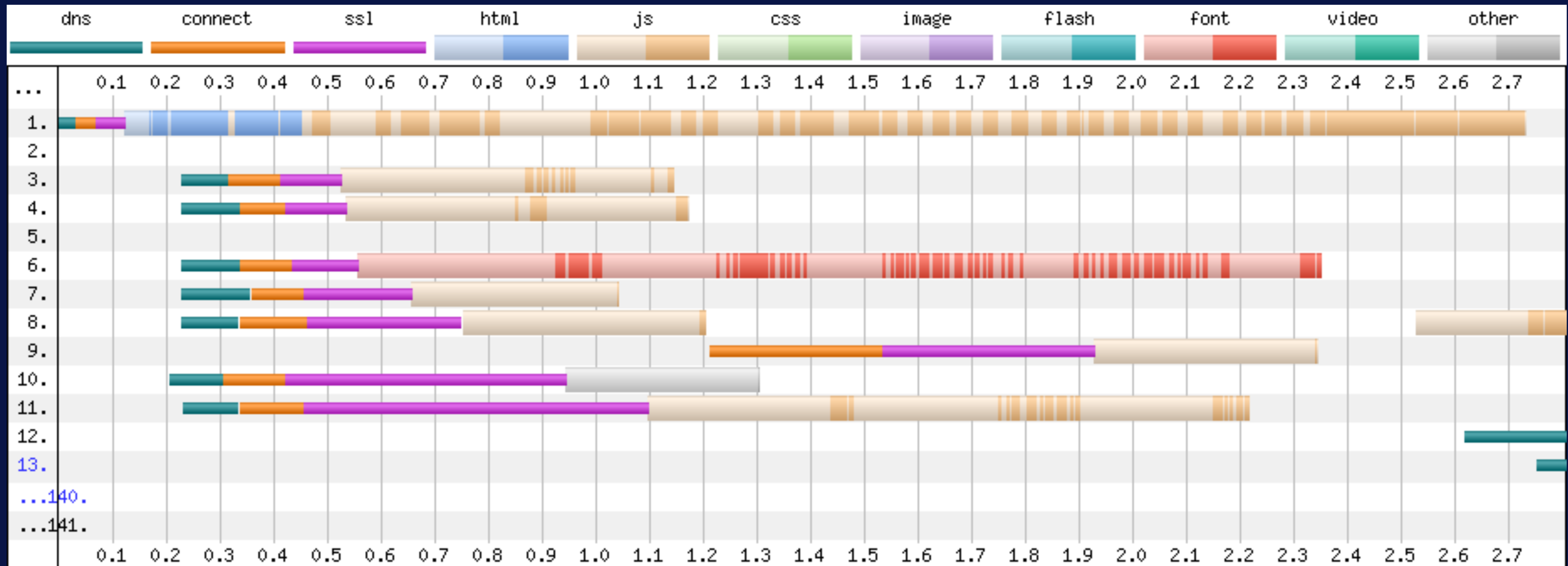
Compete for the Network



Compete for the Network



Make us wait for new connections



Fight for the Main Thread

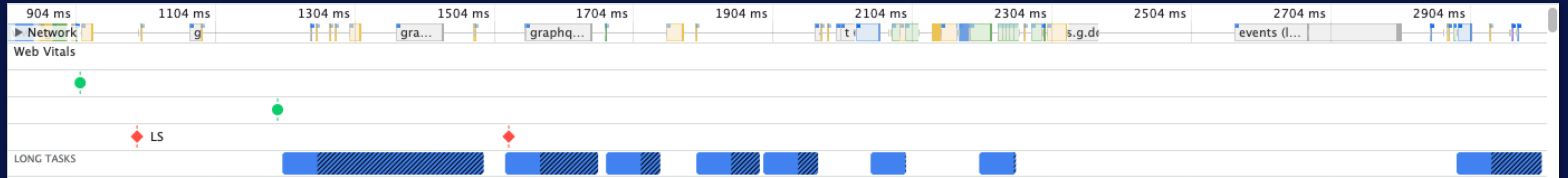


Fight for the Main Thread

Before



After



They may provide important features too:

Advertising

Analytics

Content

Error Reporting

Experimentation and Testing

Personalisation

Real User Monitoring

Revenue Attribution

Reviews

Session Replay

User Generated Content

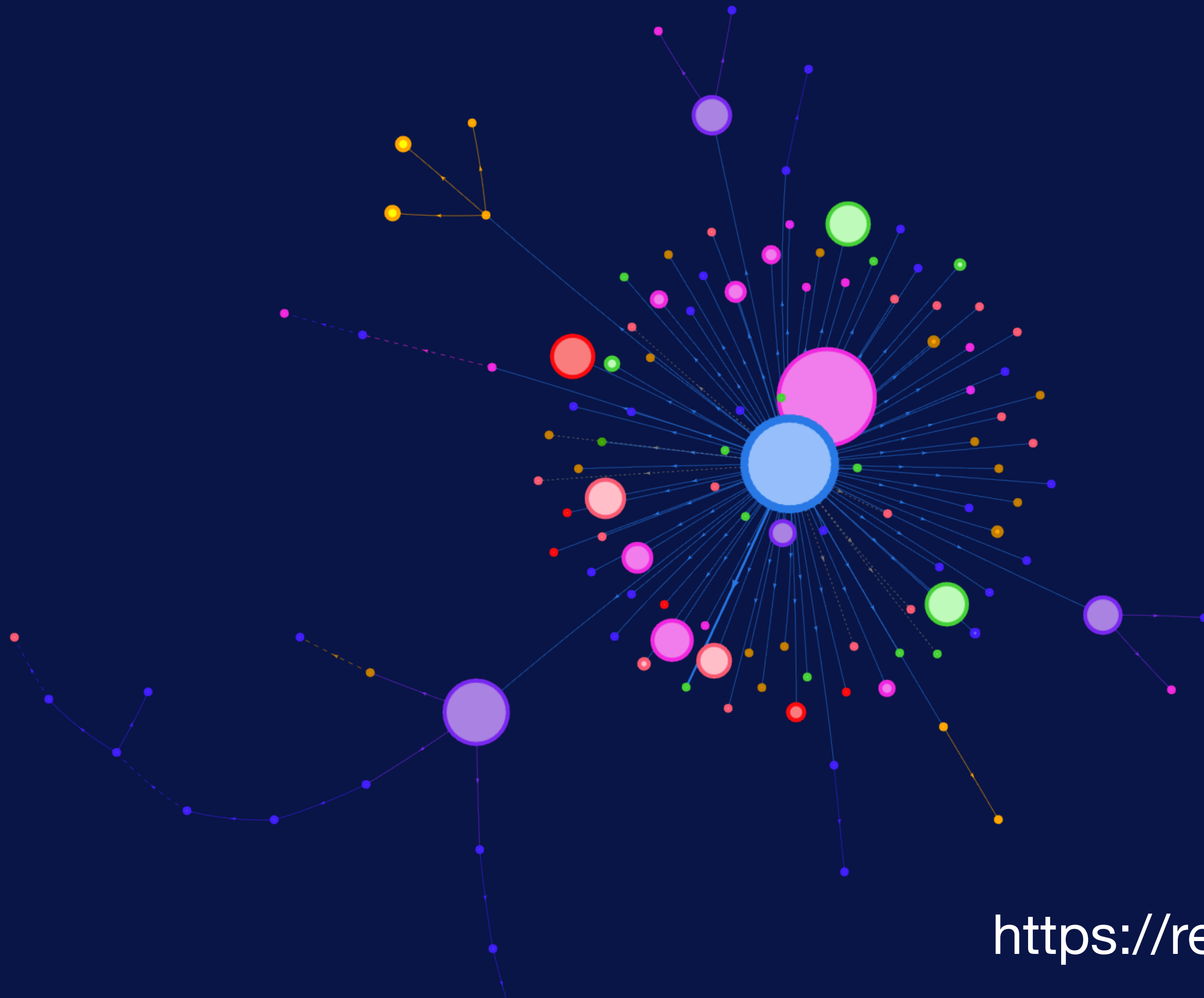
and much, much more...

A person's legs and feet are visible, standing on a wooden balance board. The board is supported by a single green roller in the center. The roller has the text "HOUSE FOR MAKERS" written on it. The background is a blurred outdoor setting with a wooden deck and a body of water.

How do we find the balance between...

...their benefits and their challenges?

What's on your page and where is it from?



Some key questions...

Are we still paying for it?

Does anyone still use it?

Are there any duplicates?

For static content, can we replace it with a locally hosted version?

What's the tag's impact on the visitor's experience?

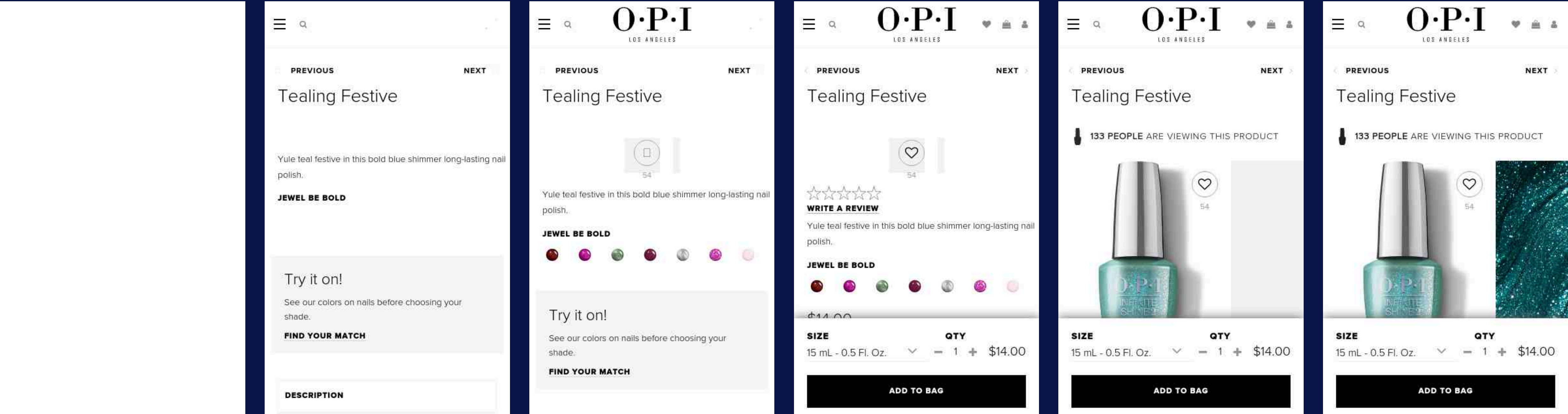
When should we load it?

Where should it be executed?

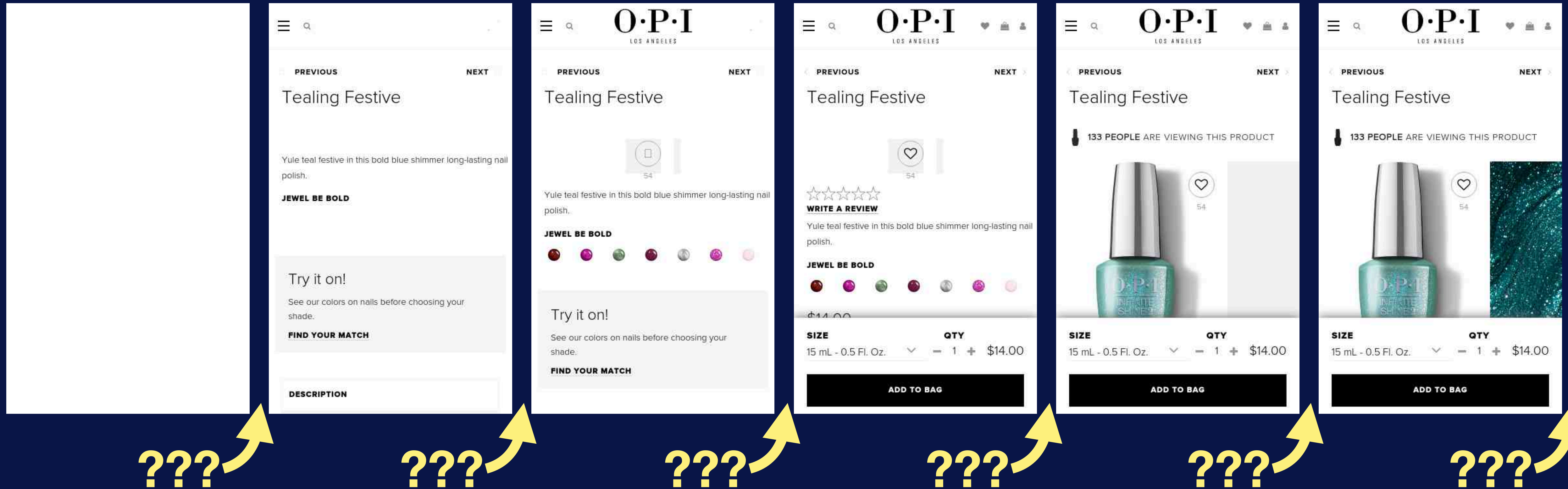
May not be easy for Ad funded sites



If page load is a journey...



If page load is a journey...



...where do our third-parties fit in?

Early tags can have a Critical Impact

Often parser or render blocking

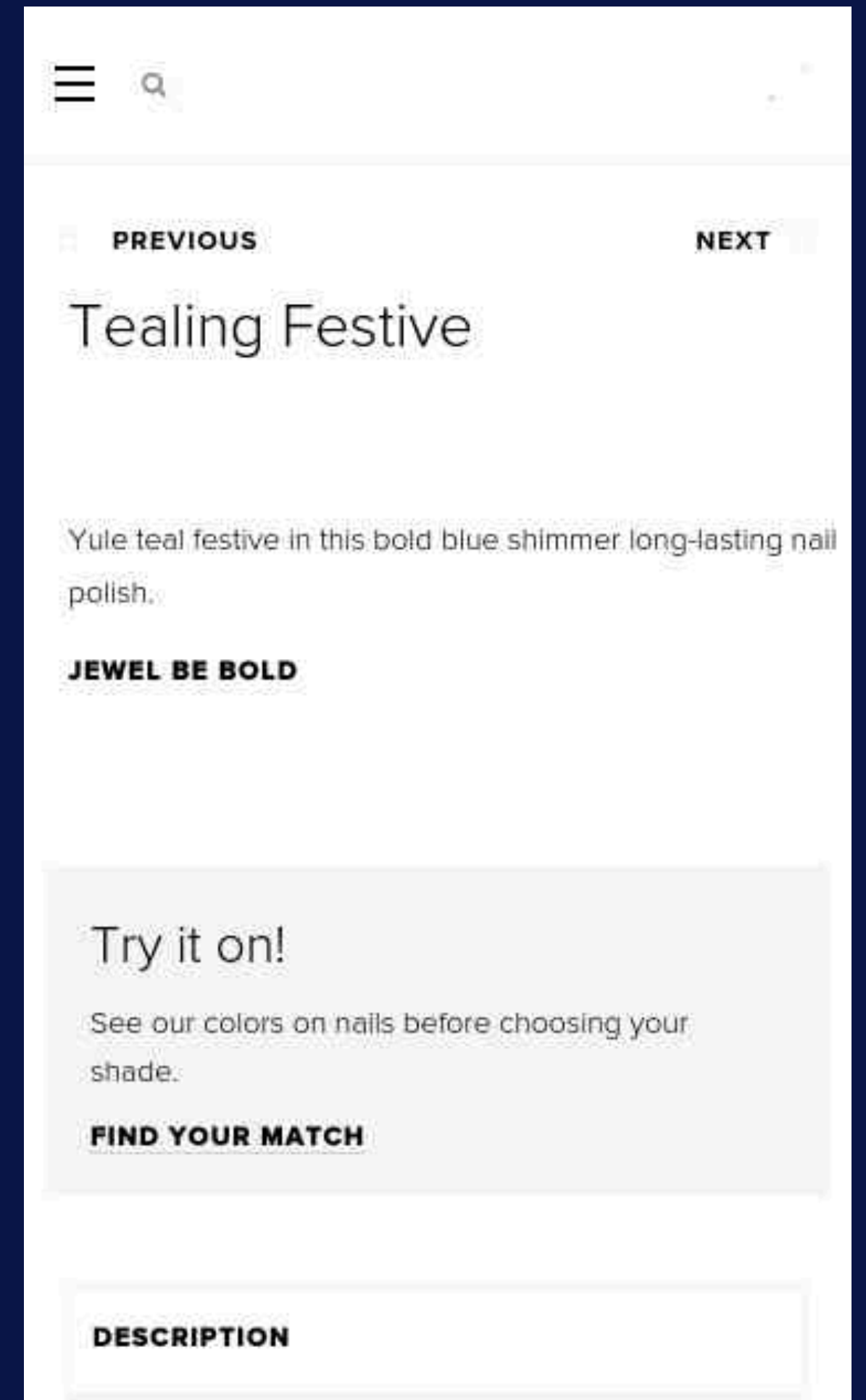
Compete for main thread even when loaded async

Typical tags

Tag Managers

Experimentation

Personalisation

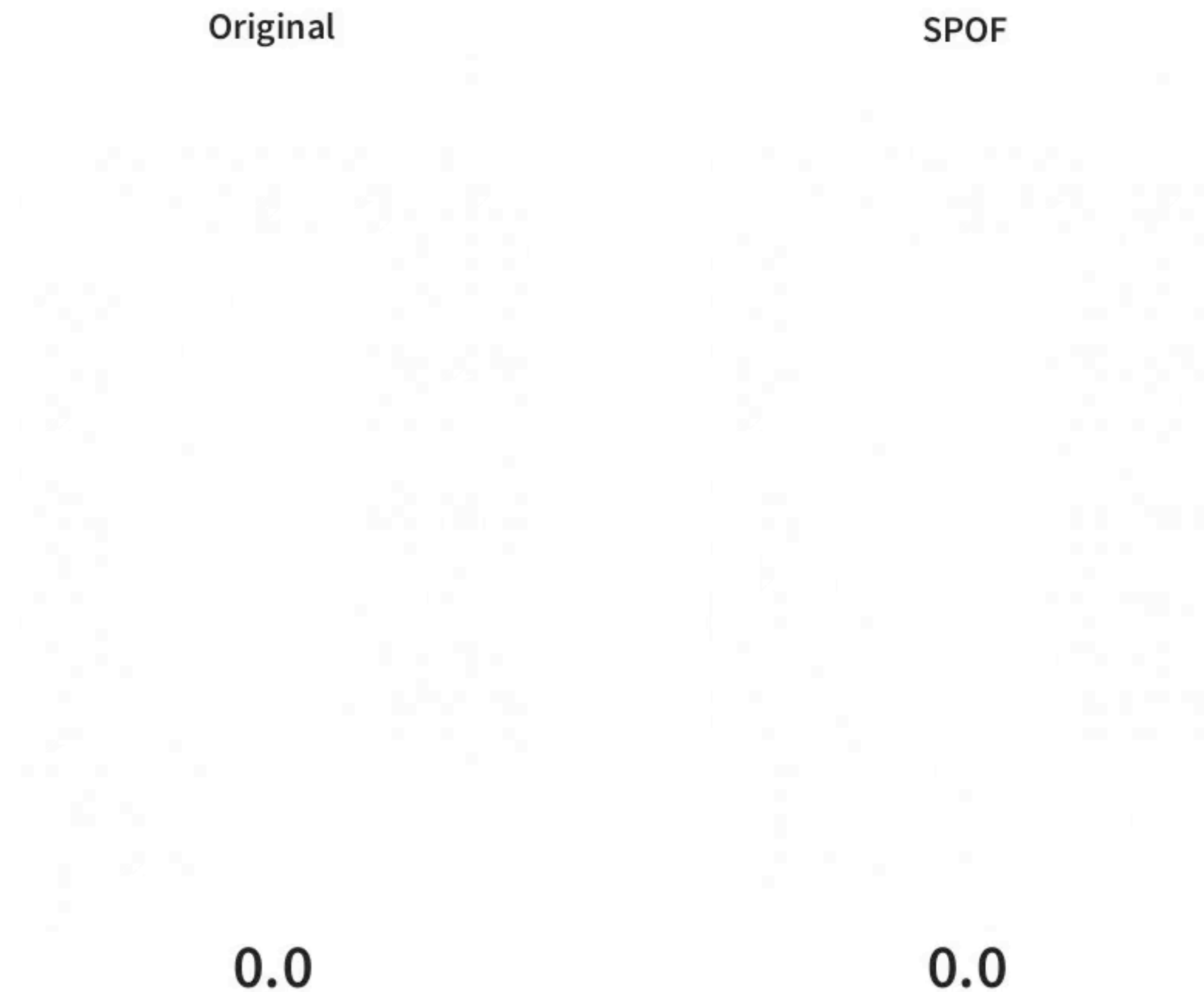


Avoid Render Blocking 3rd-Parties

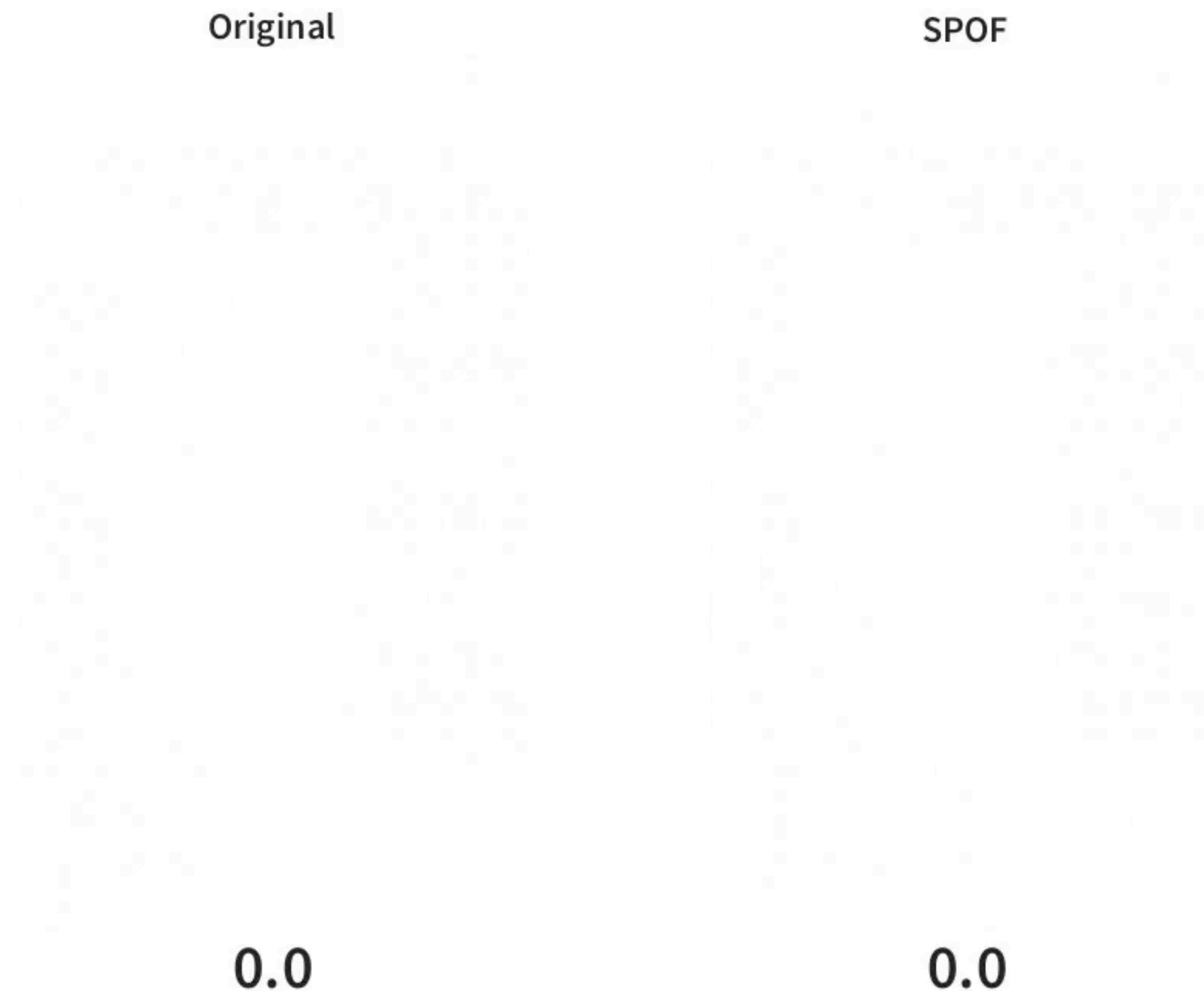
```
<link rel="stylesheet" href="some-3rd-party.example.com/styles.css" />
```

```
<script src="some-3rd-party.example.com/script.js"></script>
```

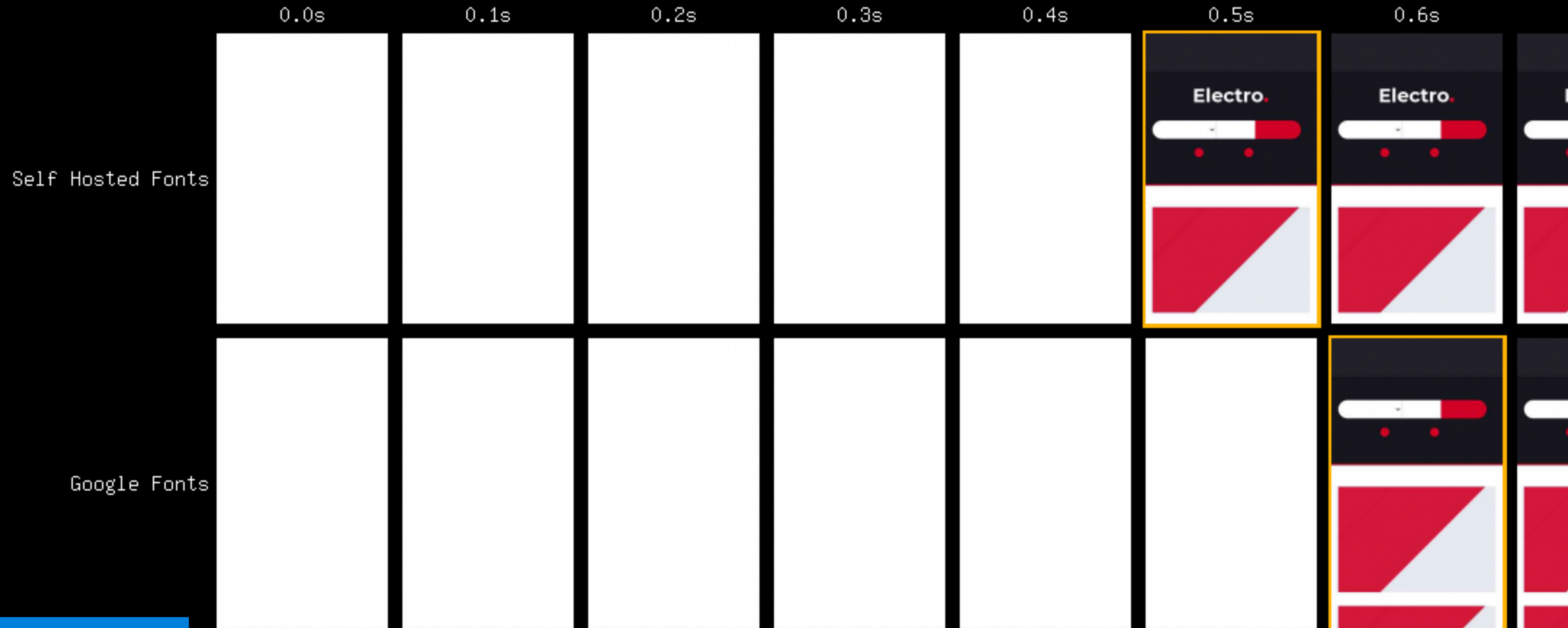
Often focus on blocking requests failing...



Often focus on blocking requests failing...

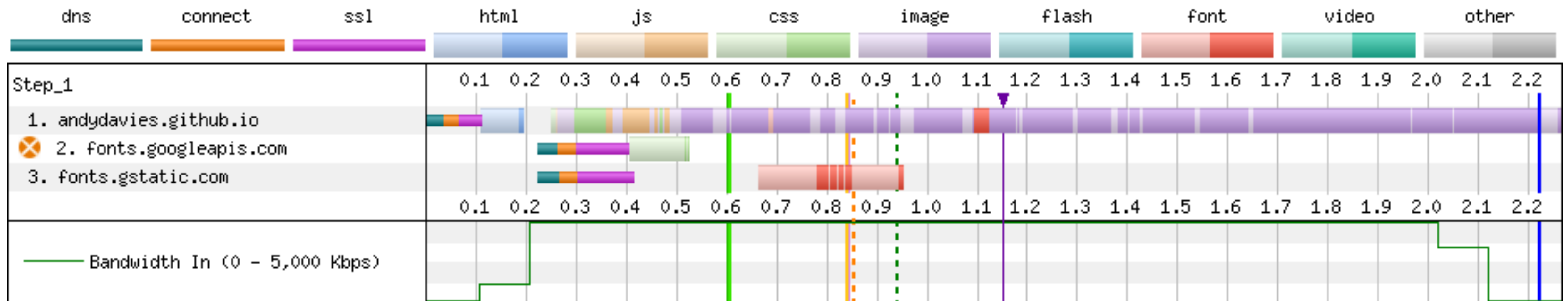


But what happens when they succeed?



Preconnect won't save us...

(And neither will early hints in this example)



Might not be able to use it anyway...

```
<link rel="preconnect" href="third-party-origin.example.com">
```

Might not be able to use it anyway...


```
<link rel="preconnect" href="third-party-origin.example.com">
```

Discloses a visitor's IP address to 3rd-party

Did you ask for their consent first?

LEGAL

Website fined by German court for leaking visitor's IP address via Google Fonts

108 

Now that's egg on your typeface

 [Thomas Claburn](#)

Mon 31 Jan 2022 // 20:40 UTC



Earlier this month, a German court fined an unidentified website €100 (\$110, £84) for violating EU privacy law by importing a Google-hosted web font.

The [decision](#), by Landgericht München's third civil chamber in Munich, found that the website, by including Google-Fonts-hosted font on its pages, passed the unidentified plaintiff's IP address to Google without authorization and without a legitimate reason for doing so. And that violates Europe's General Data Protection Regulation (GDPR).

That is to say, when the plaintiff visited the website, the page made the user's browser fetch a font from Google Fonts to use for some text, and this disclosed the netizen's IP address to the US internet giant. This kind of hot-linking is normal with Google Fonts; the issue here is that the visitor apparently didn't give permission for their IP address to be shared. The website could have avoided this drama by self-hosting the font, if possible.

"The unauthorized disclosure of the plaintiff's dynamic IP address by the defendant to Google constitutes a violation of the general right of personality in the form of the right to informational self-determination according to § 823 Para. 1 BGB," the ruling stated, as

https://www.theregister.com/2022/01/31/website_fine_google_fonts_gdpr/

The decision says IP addresses represent personal data because it's theoretically

**If Google Fonts isn't considered
'legitimate usage'**

**Then surely static content from other
third-party hosts isn't either***

*** and I think that's a good thing**



31 May, 2019

Self-Host Your Static Assets

Table of Contents

One of the quickest wins—and one of the first things I recommend my clients do—to make websites faster can at first seem counter-intuitive: you should self-host all of your static assets, forgoing others' CDNs/infrastructure. In this short and hopefully very straightforward post, I want to outline the disadvantages of hosting your static assets 'off-site', and the overwhelming benefits of hosting them on your own origin.

What Am I Talking About?

It's not uncommon for developers to link to an external resource. For example, jQuery, that we might link to like

<https://csswizardry.com/2019/05/self-host-your-static-assets/>

I Am Not a Lawyer

nor a

Data Protection Officer

I Am Not a Lawyer

You should

nor a

talk to yours

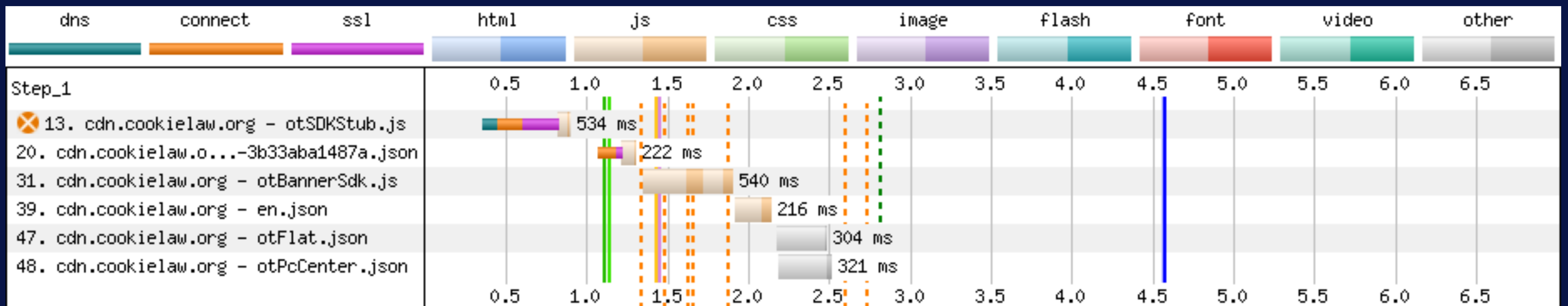
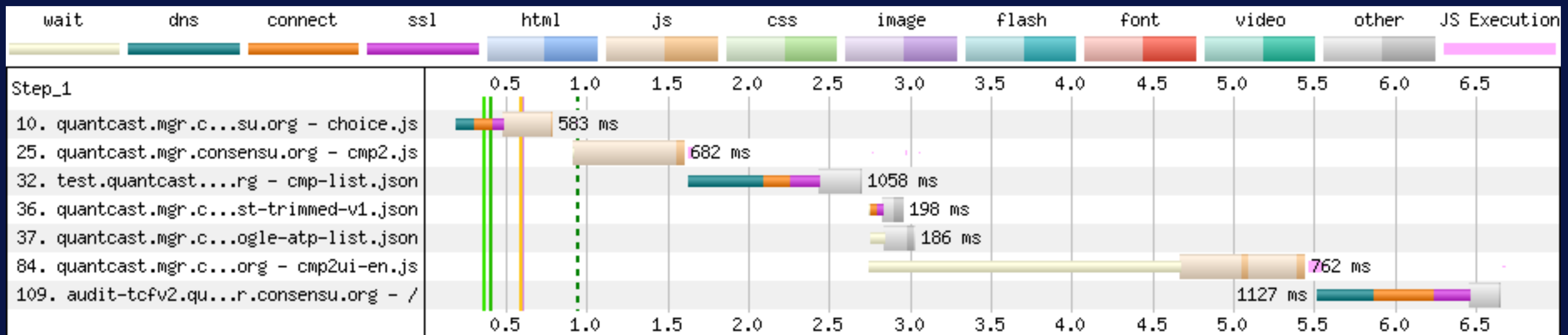
Data Protection Officer

NO
TRESPASSING

CMPs

Need Consent before loading 3rd-Parties

And some CMPs are faster than others





An ideal candidate for edge compute?



**Or should consent
management be built
into browsers?**

[CREATE A POLYFILL BUNDLE](#)[NPM PACKAGES](#)[SUPPORTED BROWSERS](#)[API REFERENCE](#)[REPORT A BUG](#)[SECURITY POLICY](#)

Upgrade the web. Automatically.

What is Polyfill.io?

It's a service which accepts a request for a set of browser features and returns only the polyfills that are needed by the requesting browser.

Why do I need it?

There are lots of differing browsers and browser versions in use throughout the world, each one has a slightly different set of features to the rest. This can make developing for browsers a difficult task. The latest versions of the popular browsers provide a good set of features, but you may still have to support the older browsers. Polyfill.io makes it simpler to support differing browsers by attempting to recreate the missing features with polyfills:

You can make use of the latest and greatest features in browsers which support them, and in those that do not.

Consent brings other challenges too

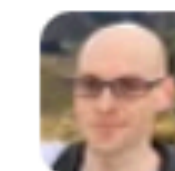
Taming third parties with a single-origin website

Almost all webpages today load resources from origins other than the one the page came from. These third-party scripts slow down your site, make it harder to write a strict Content-Security-Policy, and hand full access to your site to the third party. Using Compute@Edge and edge-based proxying, there might be a better way.

Our [Developer Hub](#) is a great example of a statically generated website that serves most of its pages and resources from a cloud storage bucket ([Google Cloud Storage](#) in our case). But like many other websites, those pages also pull in resources from other domains. For example, we use:

- [Google Analytics](#) for measuring traffic
- [Sentry](#) for reporting and aggregating JavaScript errors
- [FormKeep](#) for collecting user sentiment and feedback
- [Swifttype](#) to search

These are pretty popular. According to a 2020 study by [Ghostery](#), a browser privacy assistant, the average news and media website has more than 10 third-party scripts for tracking alone.



Andrew Betts

Head of Developer Relations

EDGE

PRODUCT

Published May 11, 2022

Want to continue the conversation?

[Schedule time with an expert](#) →

Share this post



<https://www.fastly.com/blog/taming-third-parties-with-a-single-origin-website>

A close-up photograph of a person's face, seen through the glass of a large, clear glass jar. The person's eyes are looking directly at the camera. Inside the jar, there are several cookies of different shapes and sizes, some with visible chocolate chips. The background is slightly blurred, showing what appears to be a wooden cabinet or wall.

Cookies and Headers need to be filtered



There may still be difficult choices to make

**Is a render blocking AB testing script
worse
than an anti-flicker snippet?**

**Is a render blocking AB testing script
worse
than an anti-flicker snippet?**

And how does consent fit into the puzzle?

Self Hosting may help but requires work

How we shaved 1.7 seconds off casper.com by self-hosting Optimizely



Kyle Rush

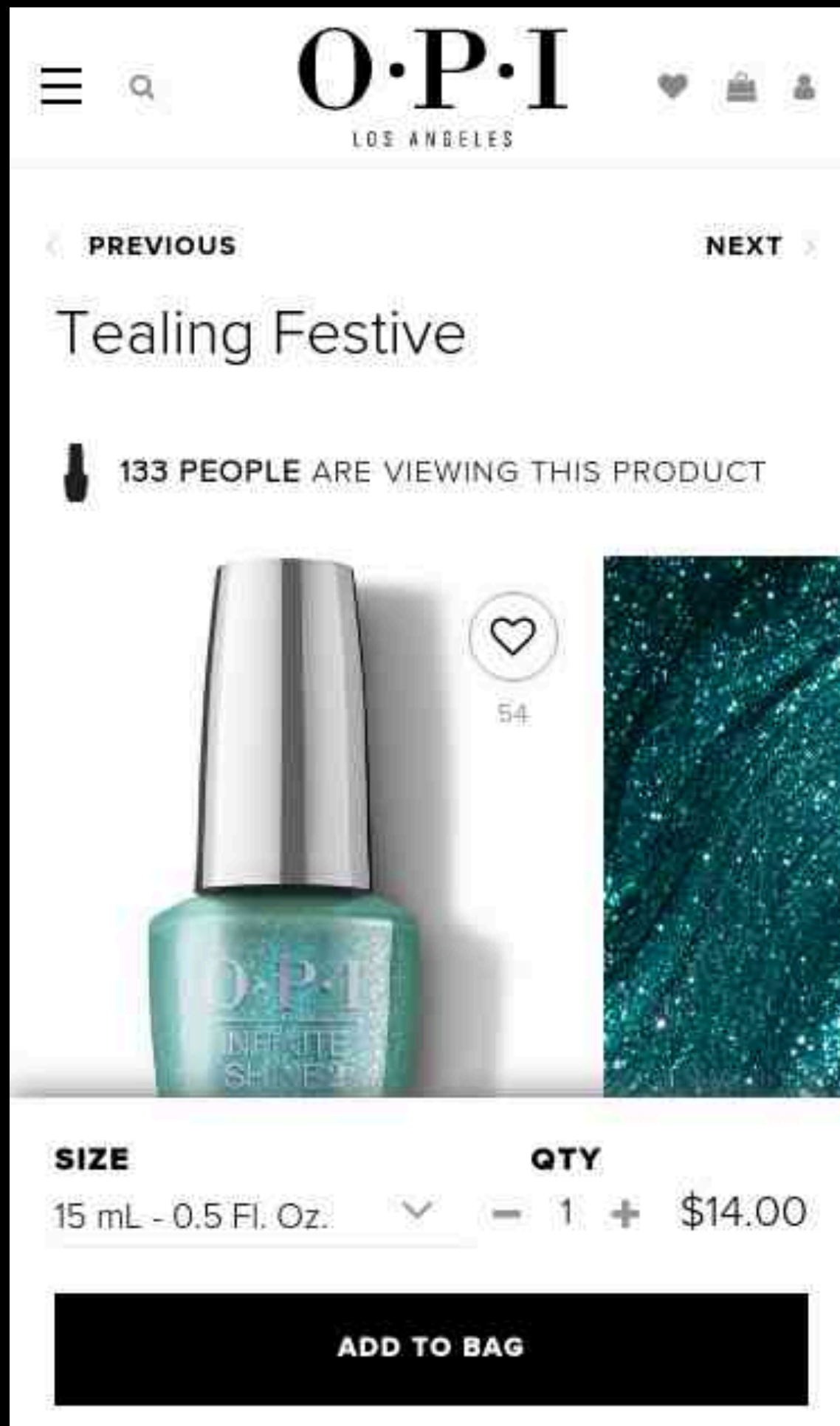
Follow

Aug 28, 2018 · 7 min read

We recently deployed a change to casper.com that loaded a piece of 3rd party JavaScript from our own server instead of the vendor's server. This change shaved 1.7 seconds off of the start

<https://man.gl/casper-self-host-optimizely>

Other tags can wait until page is 'complete'



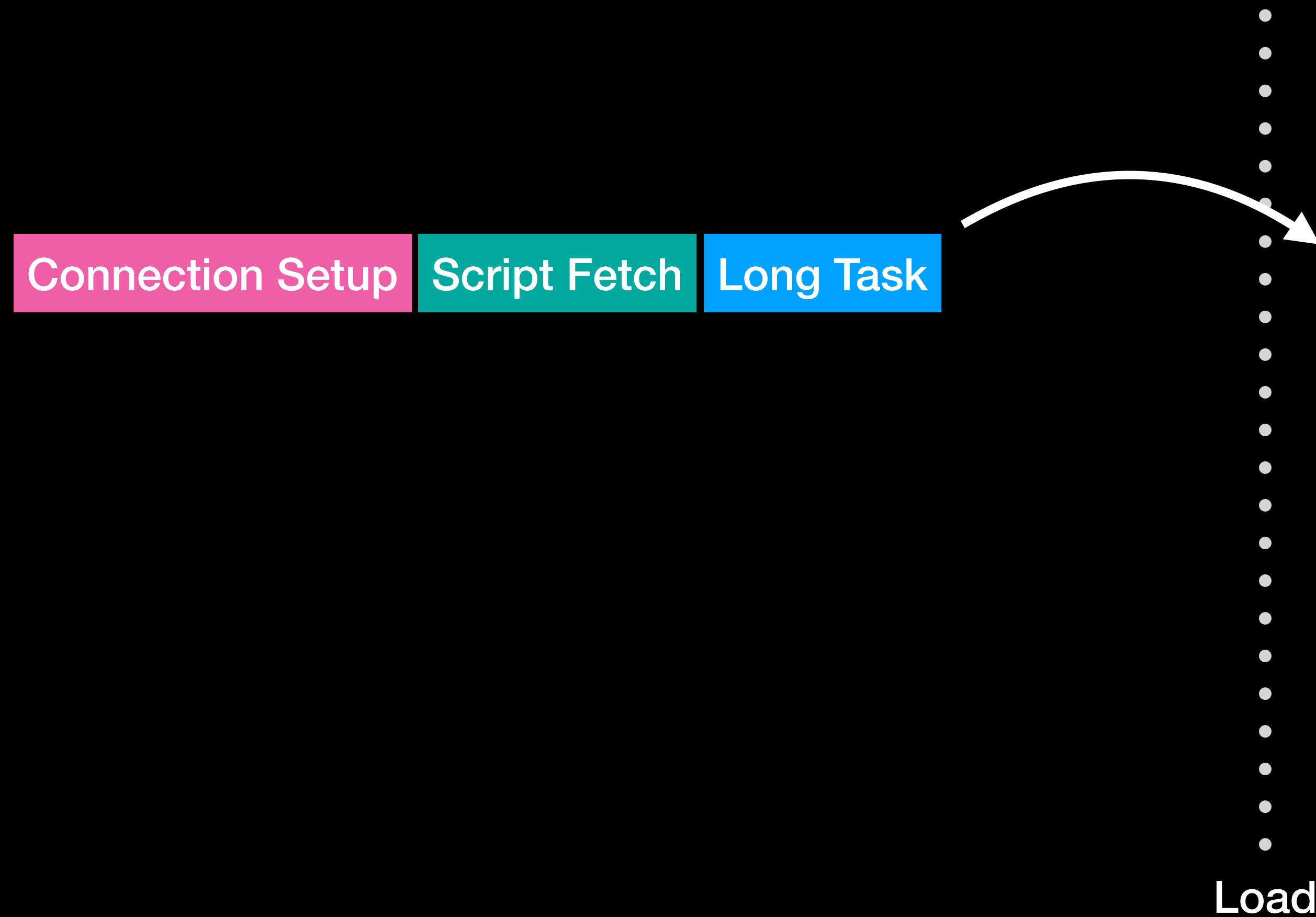
What's the point in loading interactive elements such as

- Chat
- Session Replay
- User feedback

if our visitor is still waiting for the page to load?

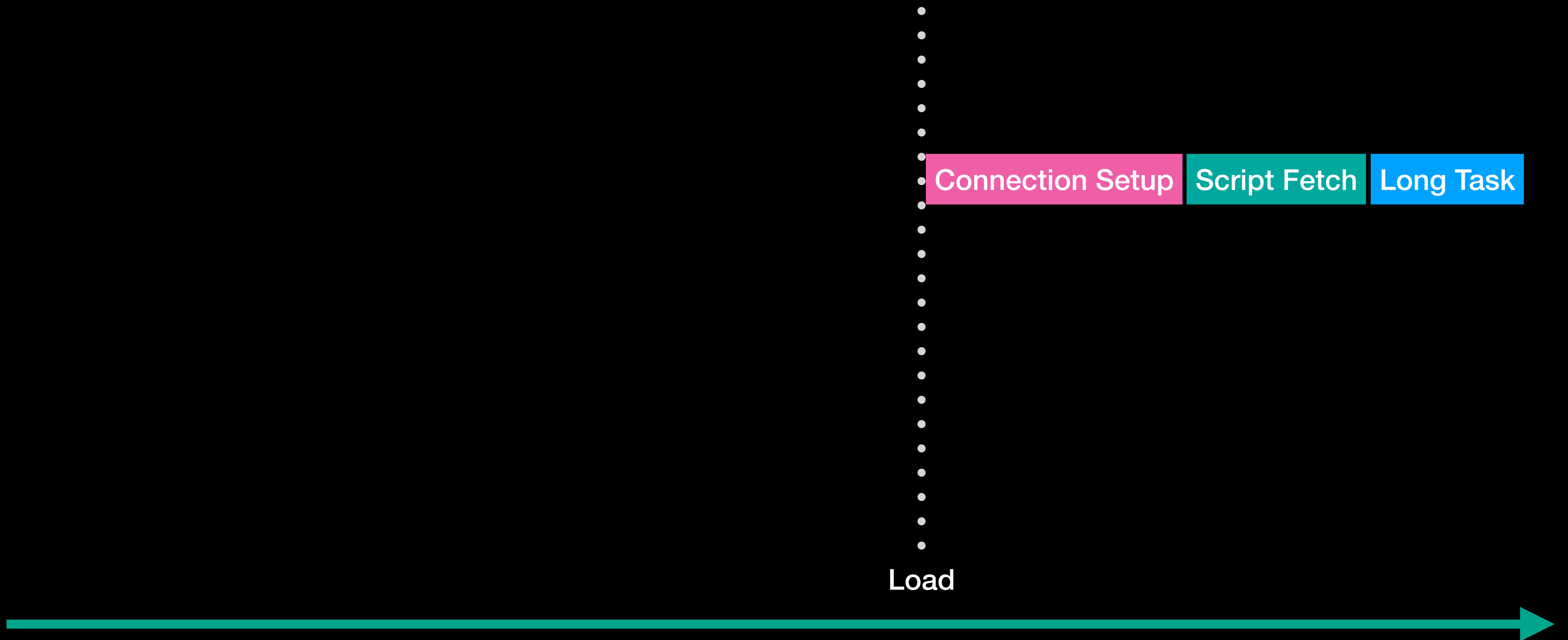
Watch for TTI / firstCPUIdle changes

Delaying scripts will also delay any long tasks they generate



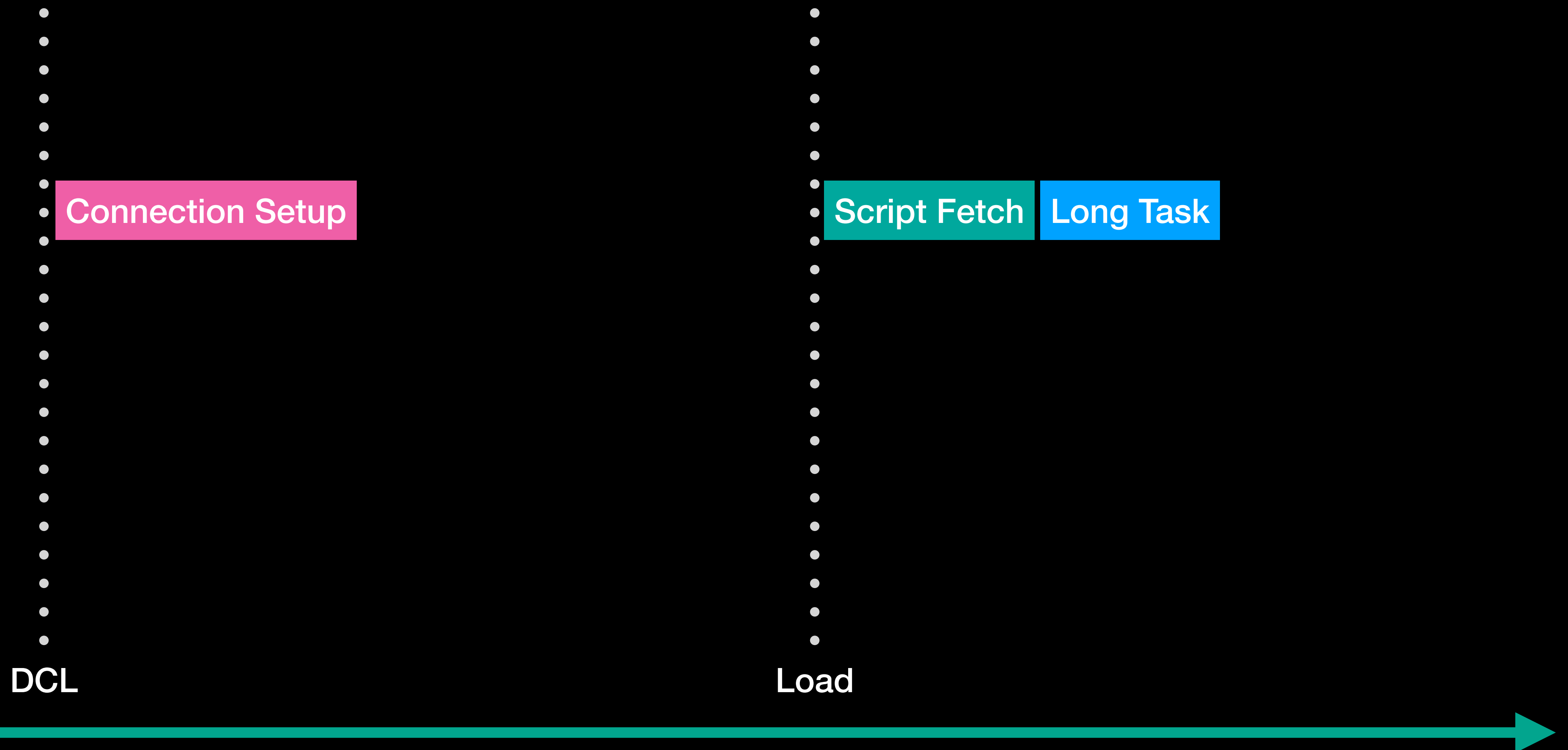
Watch for TTI / firstCPUIdle changes

Delaying scripts can also bring load forward and compensate



Injecting preconnects can help






For example inject a preconnect at DCL for a late loaded script



Tag Managers can help schedule loading

× Choose trigger type 🔍

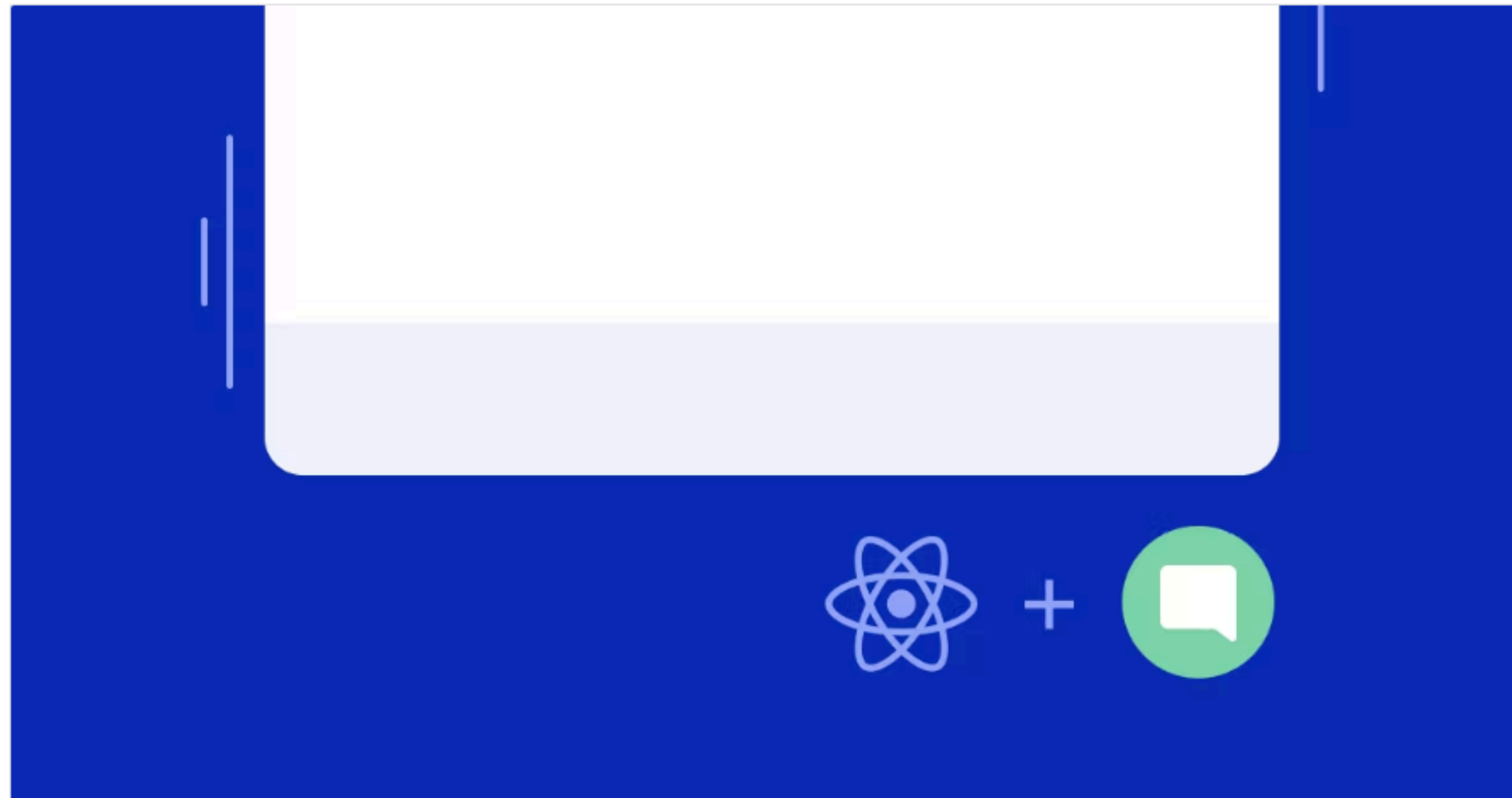
Page View

-  Consent Initialization
-  Initialization
-  Page View
-  DOM Ready
-  Window Loaded

Could the tag be loaded on interaction?



How We Improved the Performance of Our Live Chat by 30%



Michael Dijkstra

November 25, 2019 (Updated: July 25, 2022)

In this article, we look at the high user experience of our live chat and uncover how to implement chat without affecting performance—with our strategy, we improved the Time to Interactive on our new marketing site by more than 90%.

<https://calibreapp.com/blog/fast-live-chat>



Search or jump to...



Pull requests

Issues

Marketplace

Explore



📄 paulirish / **lite-youtube-embed**

Public

👁 Watch 48

🍴 Fork 206

★ Starred 4.4k

<> Code

🔍 Issues 21

🔗 Pull requests 5

🎬 Actions

🛡 Security

📊 Insights

🔗 master

🔗 2 branches

🏷 6 tags

Go to file

Add file

Code



Merge pull request #109 from paulirish/ytapi

✓ be6f03e on 11 Sep ⌚ 90 commits

📁 .github/workflows	Update node and GitHub Actions versions (#126)	last month
📁 src	more specificity on the autoplay useragent checks	last month
📁 variants	Merge branch 'master' into ytapi	last month
📄 .editorconfig	Add .editorconfig (#107)	11 months ago
📄 LICENSE	chore: license (#32)	3 years ago
📄 index.html	multiple embeds test page	11 months ago
📄 package-lock.json	lockfile bump	11 months ago
📄 package.json	0.2.0	2 years ago
📄 readme.md	Updated progressive enhancement example (#118)	9 months ago
📄 vercel.json	Rename now.json to vercel.json (#115)	9 months ago
📄 youtube-thumbnail-urls.md	extract thumbnail discussion to a markd	

About

A faster youtube embed.

🔗 paulirish.github.io/lite-youtube-embed/

📖 Readme

📜 View license

★ 4.4k stars

👁 48 watching

🍴 206 forks

Releases

🏷 6 tags

Packages

No packages published

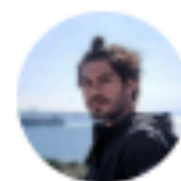
☰ readme.md

<https://github.com/paulirish/lite-youtube-embed>

[← Back to blog](#)

Improve web performance lazy loading reCaptcha

Last updated June 29, 2020



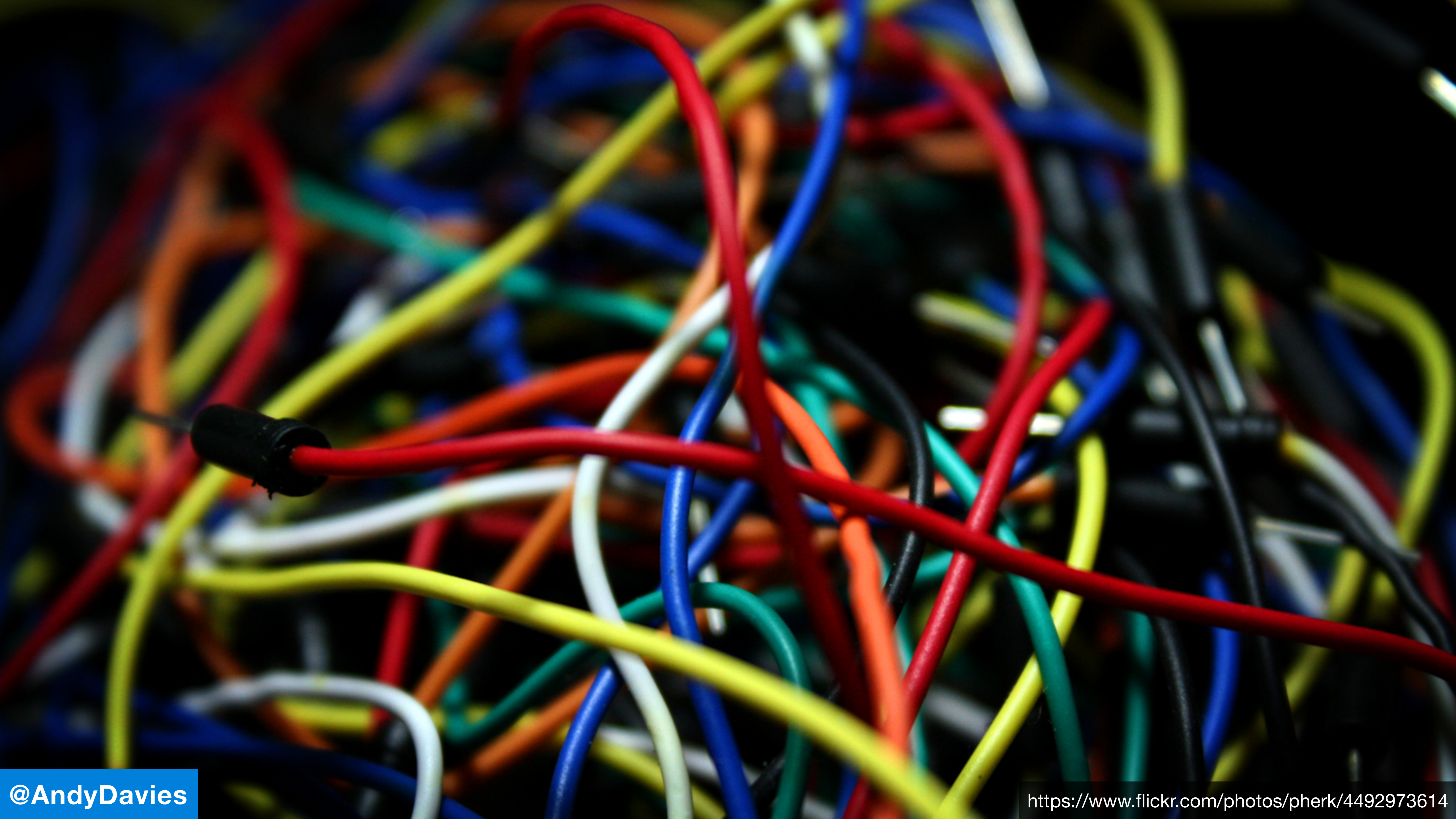
Antonio Ufano

[Follow @uf4no](#)

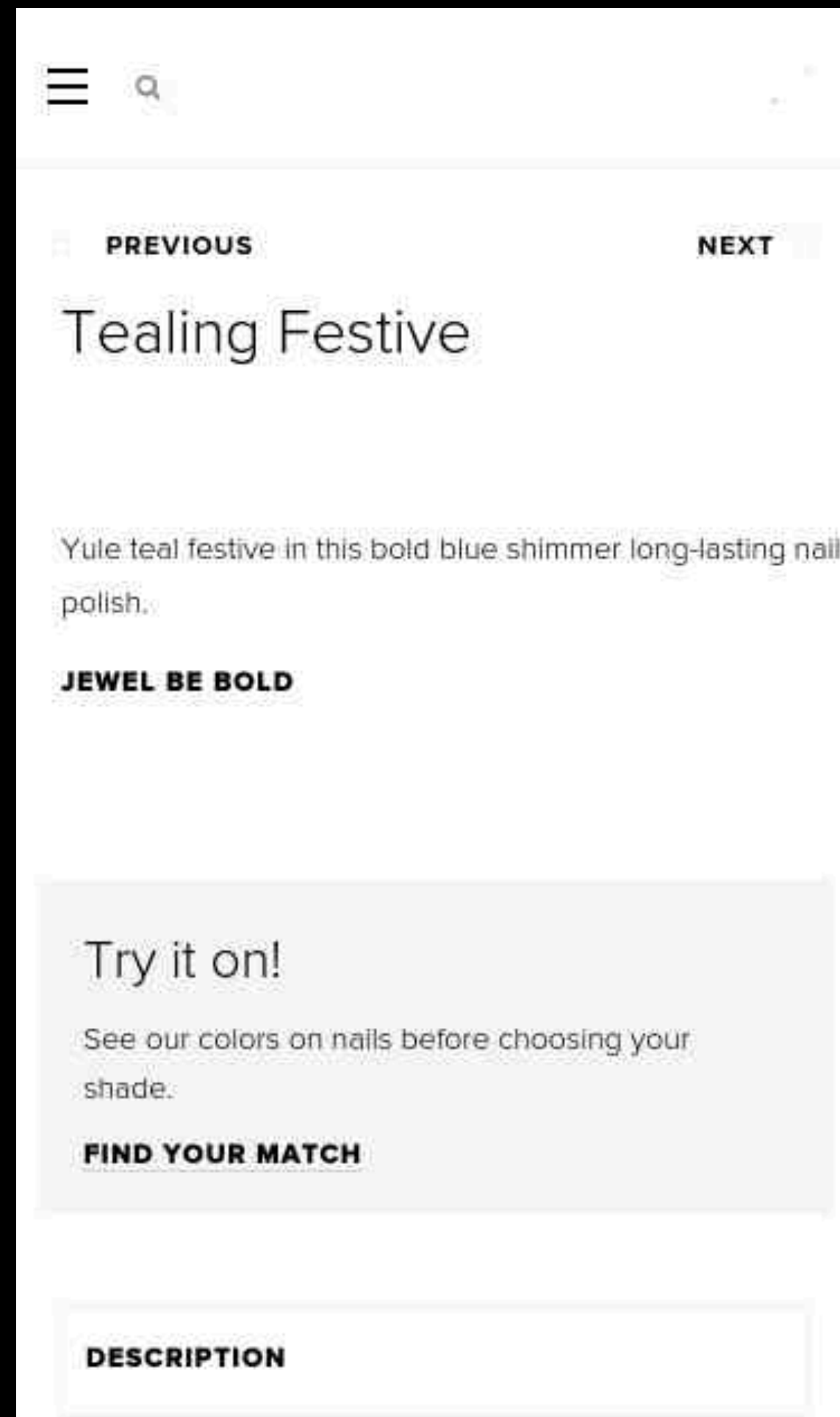
A few days ago I ran Lighthouse in a couple of my websites and the performance score wasn't very good (around ~50). Most of the recommendations provided to improve the score were server side, like caching and compressing assets but the score gains when I applied them was not that good. I realized that what was impacting the website performance the most was reCaptcha.

I use reCaptcha in every page that contains a form to avoid spam so getting rid of it was not an option. After searching online for some ways to improve the situation, I found [this article](#) which explained how to solve all my issues. The solution is awesome by its simplicity: do not load recaptcha on the initial page load but lazy load it when the user actually interacts with one of your forms .

<https://antonioufano.com/articles/improve-web-performance-lazy-loading-recaptcha/>



The 'Messy Middle'



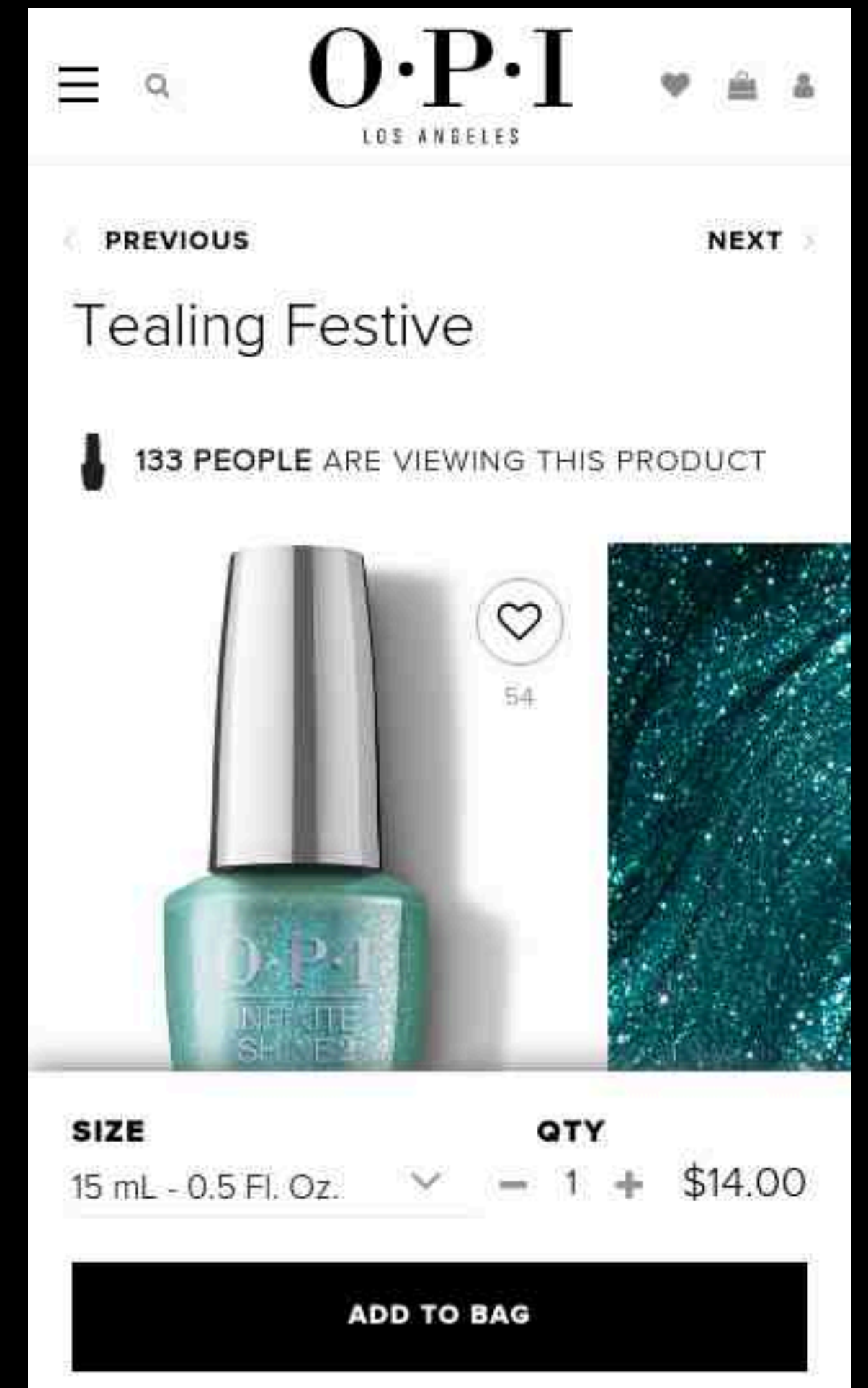
This is a fuzzy area...

Does the tag provide user content?

How much data loss are you willing allow?

Try not to block the browser

Server-Side Tagging helps

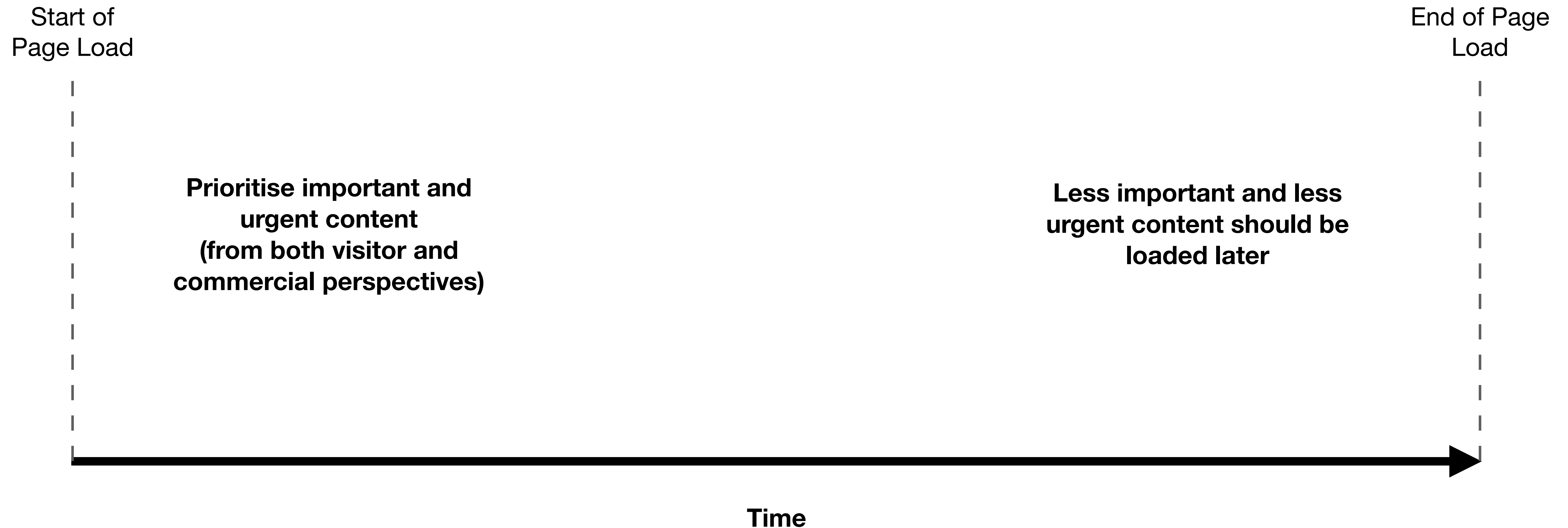


Example

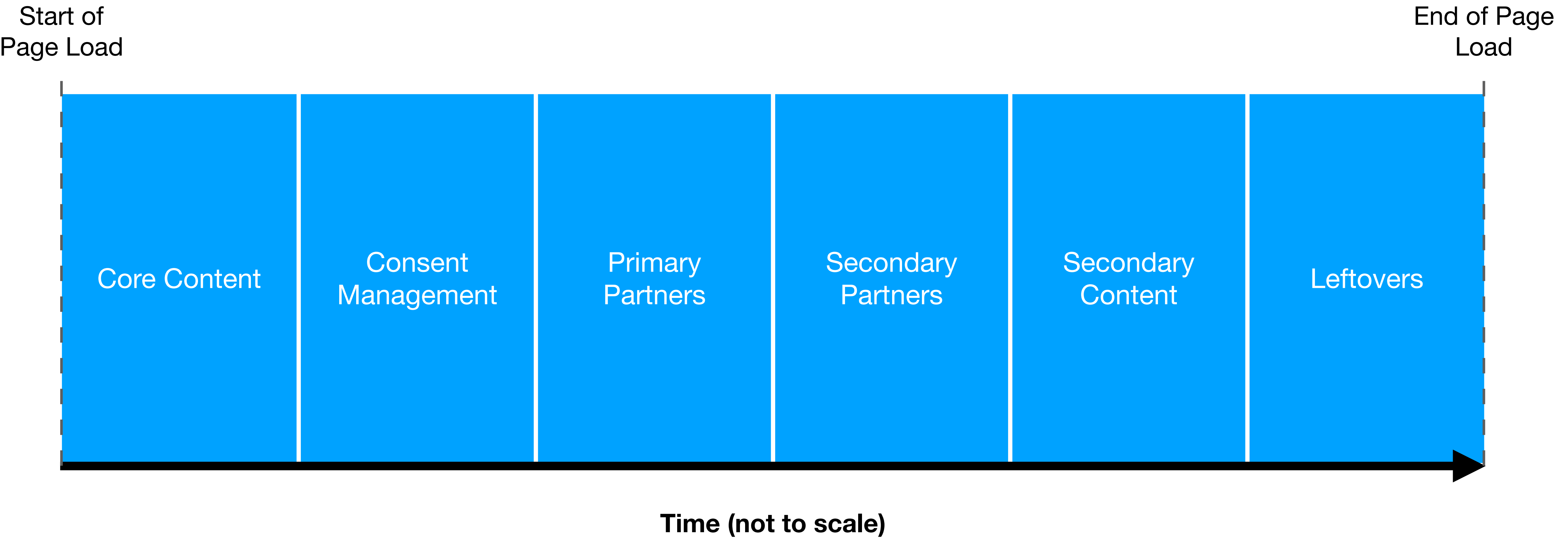
From a newspaper I worked with in early 2021

Prioritise by Importance and Urgency

Delaying less important content stops it competing for network and device resources with more important content

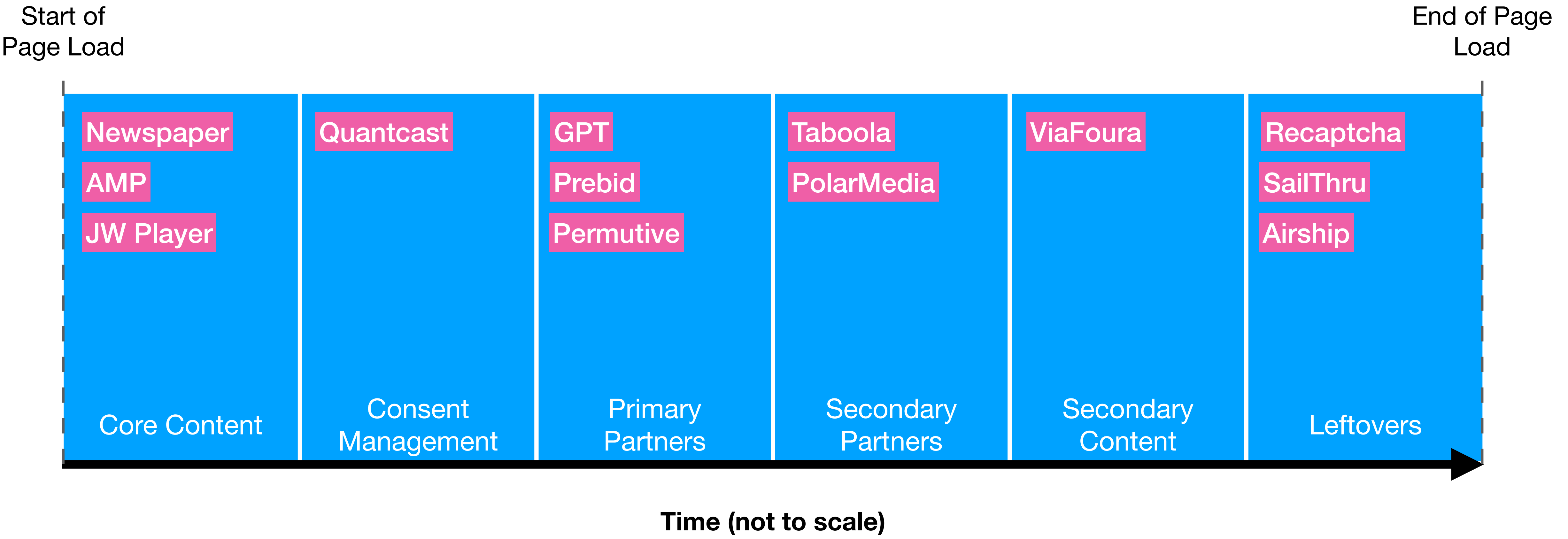


Categorise into strategic buckets



How existing content fits this strategy

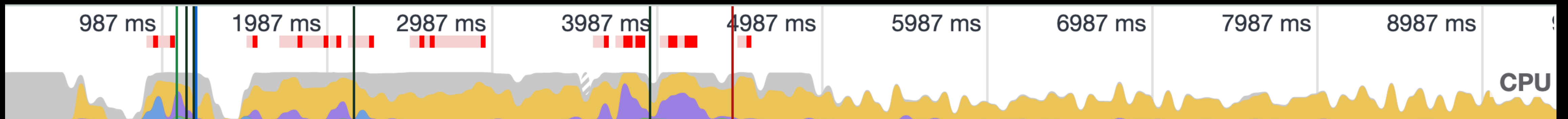
There will be some blurring of the boundaries between the buckets, and some challenges e.g. JW Player waits for Permutive, it's also possible to defer some content until visitor scrolls. Shrinking content size (both core and partner) is still important too.





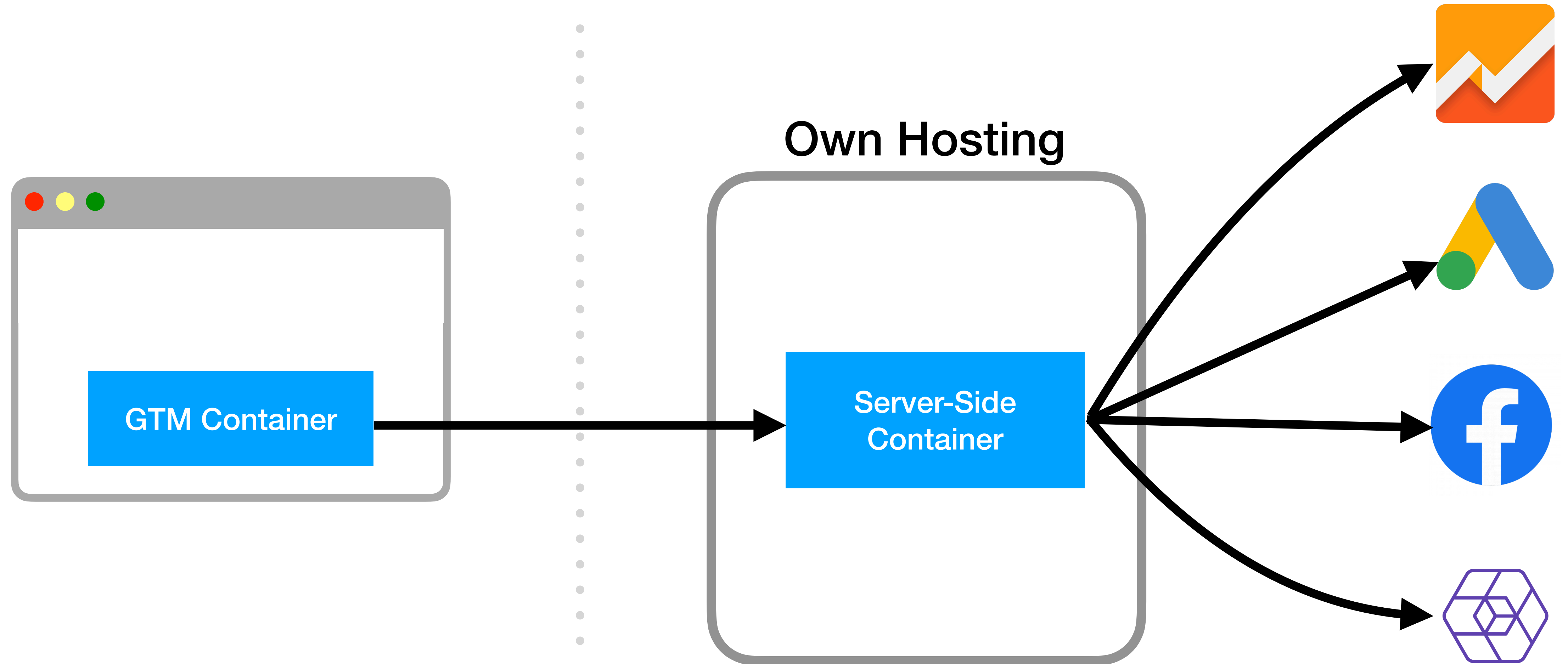
Where should a tag be executed?

Generally, tags execute on the main thread



But there are some interesting alternatives

Server-Side Tagging = Less Tags & Beacons



What about executing on the Edge?





Search or jump to...



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)



[WICG / proposals](#) Public

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[Code](#) [Issues 56](#) [Pull requests](#) [Actions](#) [Projects](#) [Security](#) [Insights](#)

Client-side A/B testing #54

New issue

Open alexnj opened this issue on 14 Apr · 2 comments



alexnj commented on 14 Apr · edited



Introduction

Client-side A/B testing refers to the method of performing experimentation related changes to a web application in the browser — sometimes without integrating code changes to the actual application source code. This is popular in the industry as the method usually helps to cut down resources required for experimentation and to scale A/B testing involving external teams. This is a proposal to explore ways of conducting the same outcome, while avoiding or minimizing the performance penalty that is associated with the techniques used today.

Please [read the complete Explainer](#). The associated [prototype and code can be found here](#).

You can view the W3PerfWG March 17 2022 [Presentation and Notes here](#).

Longer version

A/B testing on the web involves creating variations of a web application that can be selected for a sample of traffic, in order to verify a hypothesis. With infinitely scalable engineering resources, every experimentation could happen right inside the application engineering team and application source code, and could modify the application structurally to suit the needs.

Assignees

No one assigned

Labels

repo_adopted

Projects

None yet

Milestone

No milestone

No branches or pull requests

Notifications

Customize

<https://github.com/WICG/proposals/issues/54>

INTRODUCTION

How Does It Work?
Trade-Offs
Browser Support

GETTING STARTED

Overview
Partytown Scripts
Copy Library Files
Atomics
Distribution

INTEGRATIONS

Angular

NextJS

Nuxt

Run Third-Party Scripts From A Web Worker

Partytown is a lazy-loaded library to help relocate resource intensive scripts into a [web worker](#), and off of the [main thread](#). Its goal is to help speed up sites by dedicating the main thread to your code, and offloading third-party scripts to a web worker.

Even with a fast and highly tuned website following all of today's best practices, it's all too common for your performance wins to be erased the moment third-party scripts are added. By third-party scripts we mean code that is embedded within your site, but not directly under your control. A few examples include: analytics, metrics, ads, A/B testing, trackers, etc.


Partytown is maintained by [Builder.io](#) and is currently in [Beta](#).

[Smashing Magazine: How Partytown Eliminates Website Bloat From Third-Party Scripts](#)

Goals

- Sandbox third-party scripts and allow or deny their access to main thread APIs.
- Isolate long-running tasks within the web worker thread.
- Reduce layout thrashing coming from third-party scripts by batching DOM setters/getters into group updates.

ON THIS PAGE

Overview
Goals
Web Workers
Negative Impacts from Third-Party Scripts
Use-Cases
"Ready to Party" Plugins / Libraries
Articles
 Edit this page

We can execute tags in workers too

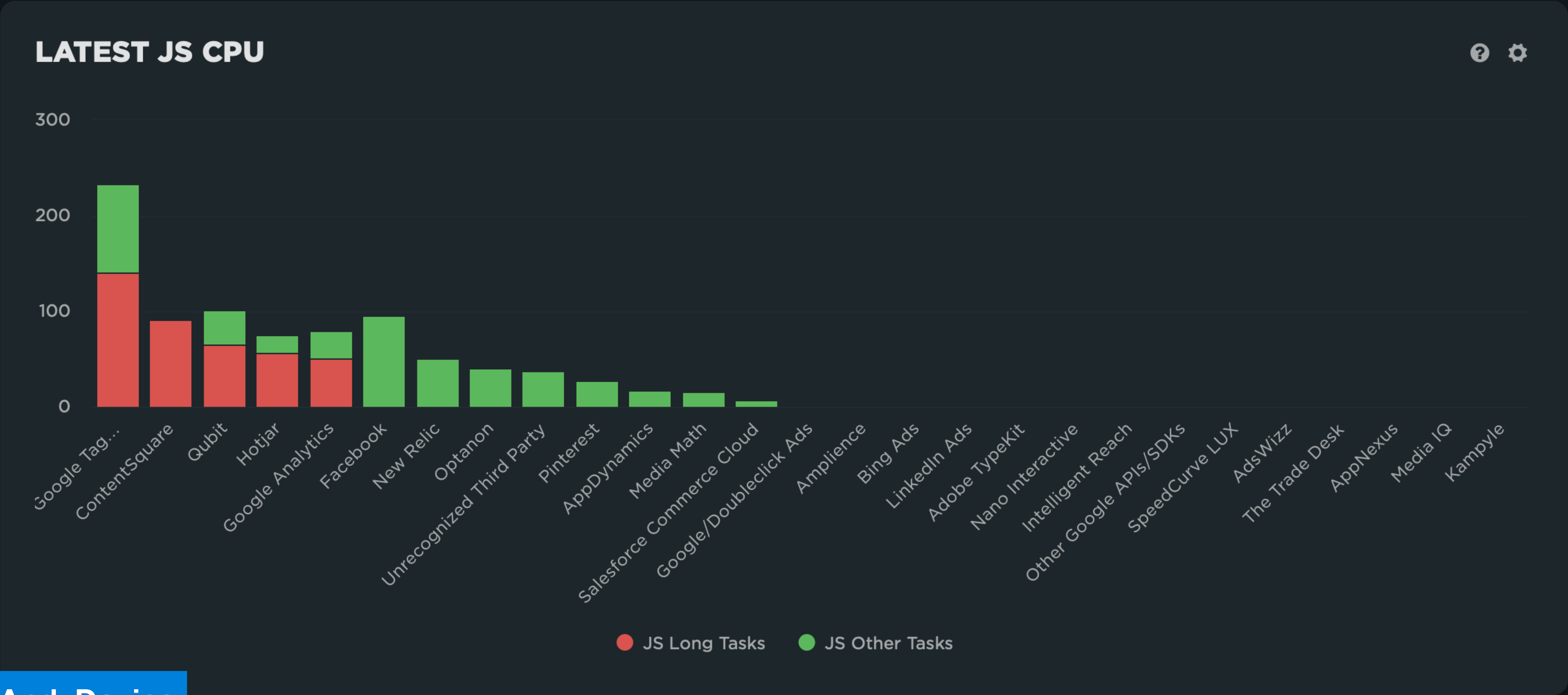
<https://partytown.builder.io/>

A multitude of options to consider!

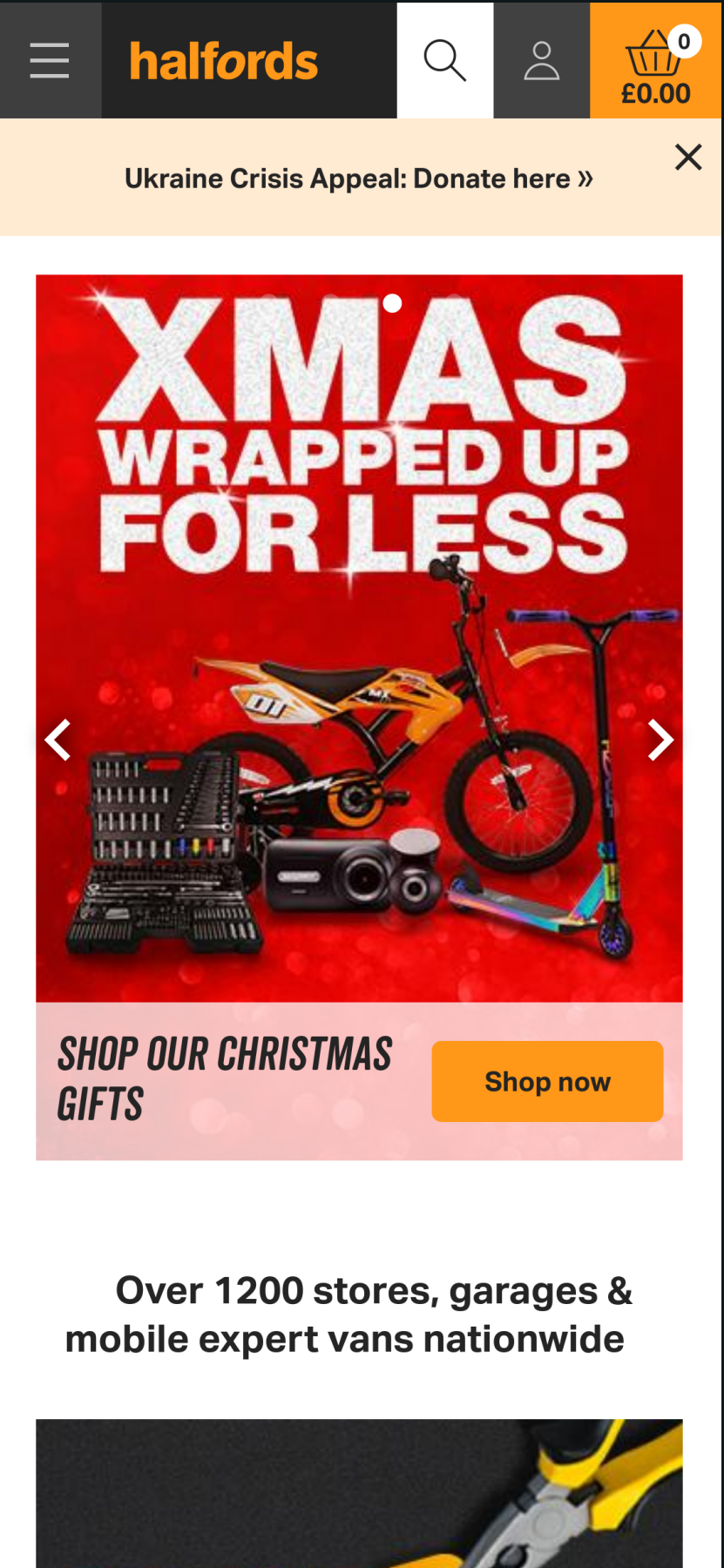
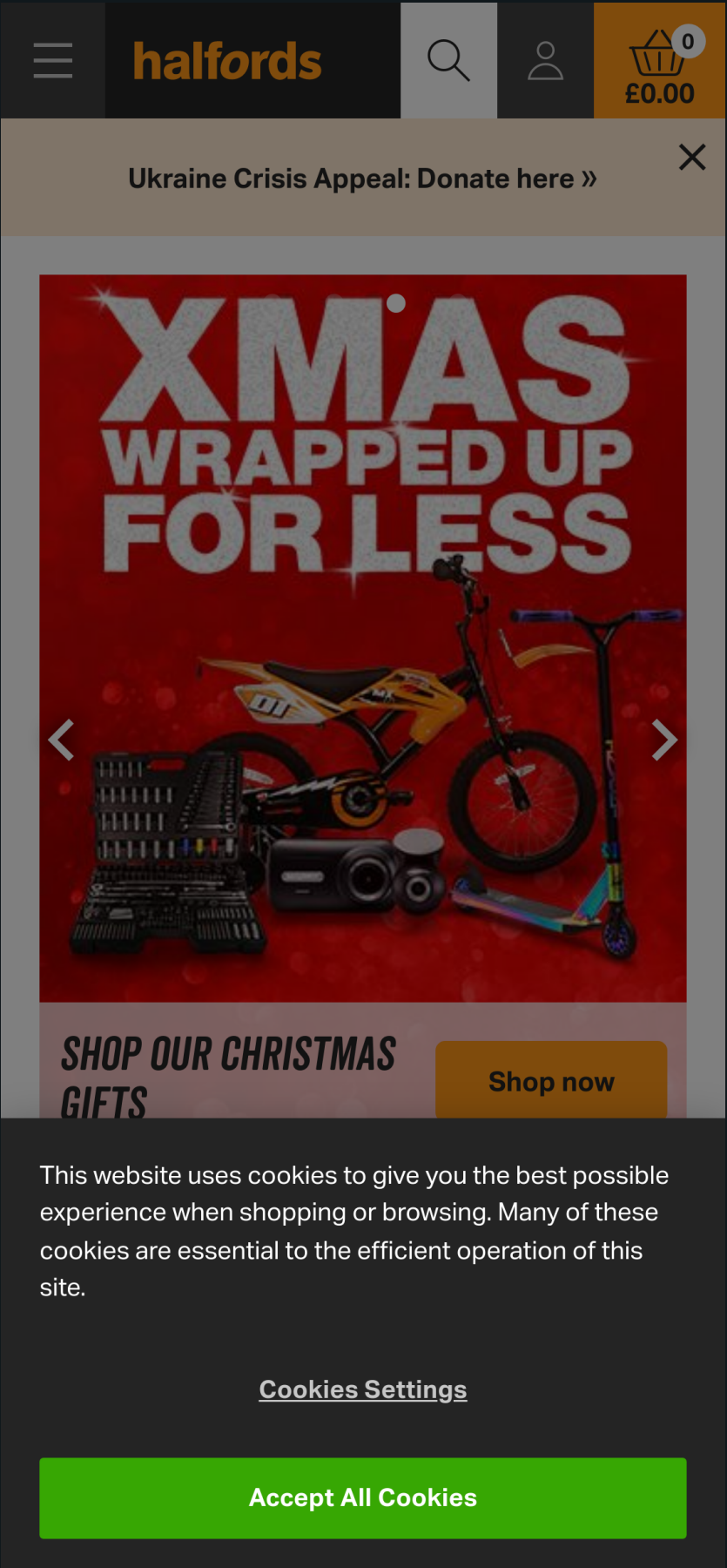
	Response Start	FCP	CMP Load	Tag Manager Load	DCL	Page Load	Interaction
Server Side							
Edge							
Worker							
Main Thread							



Monitor third-party performance



Measure with and without Consent

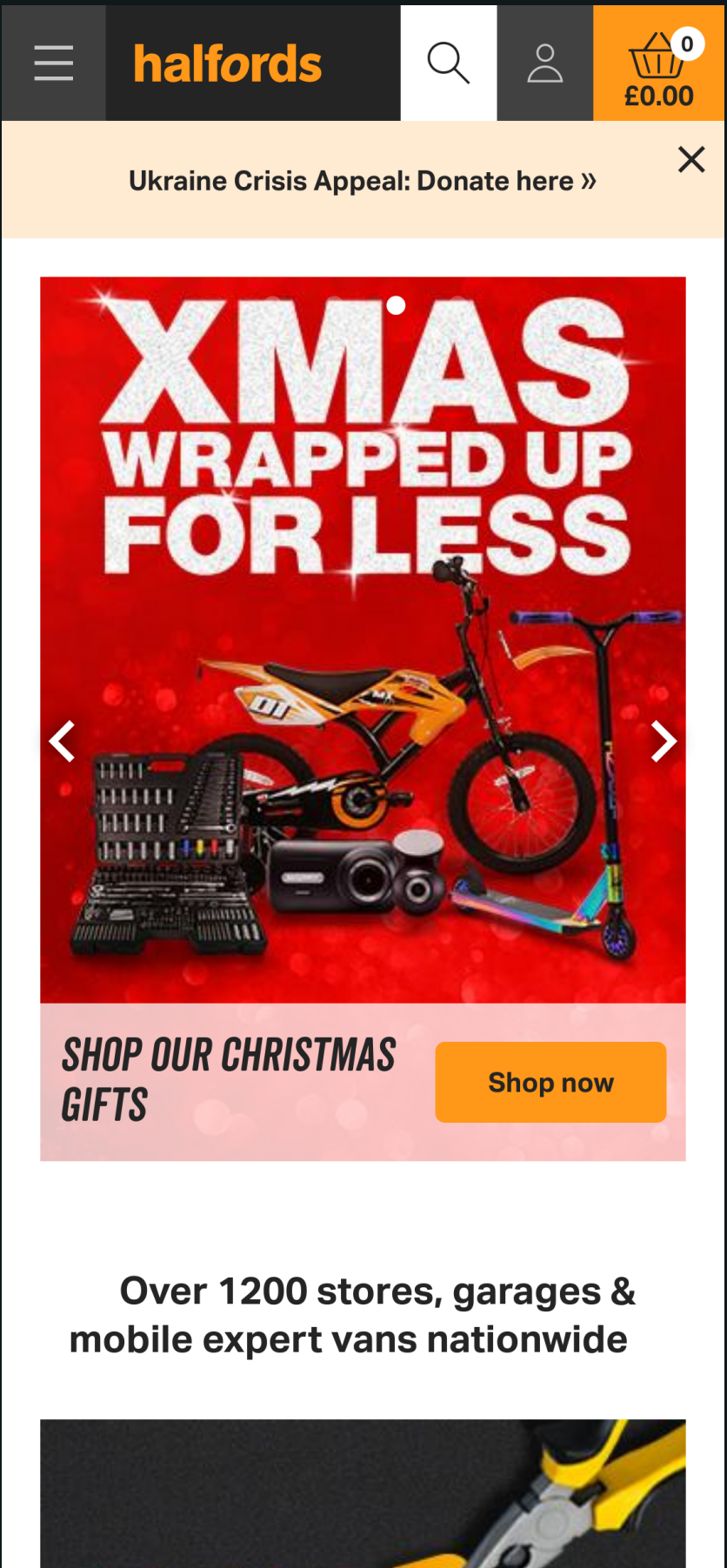
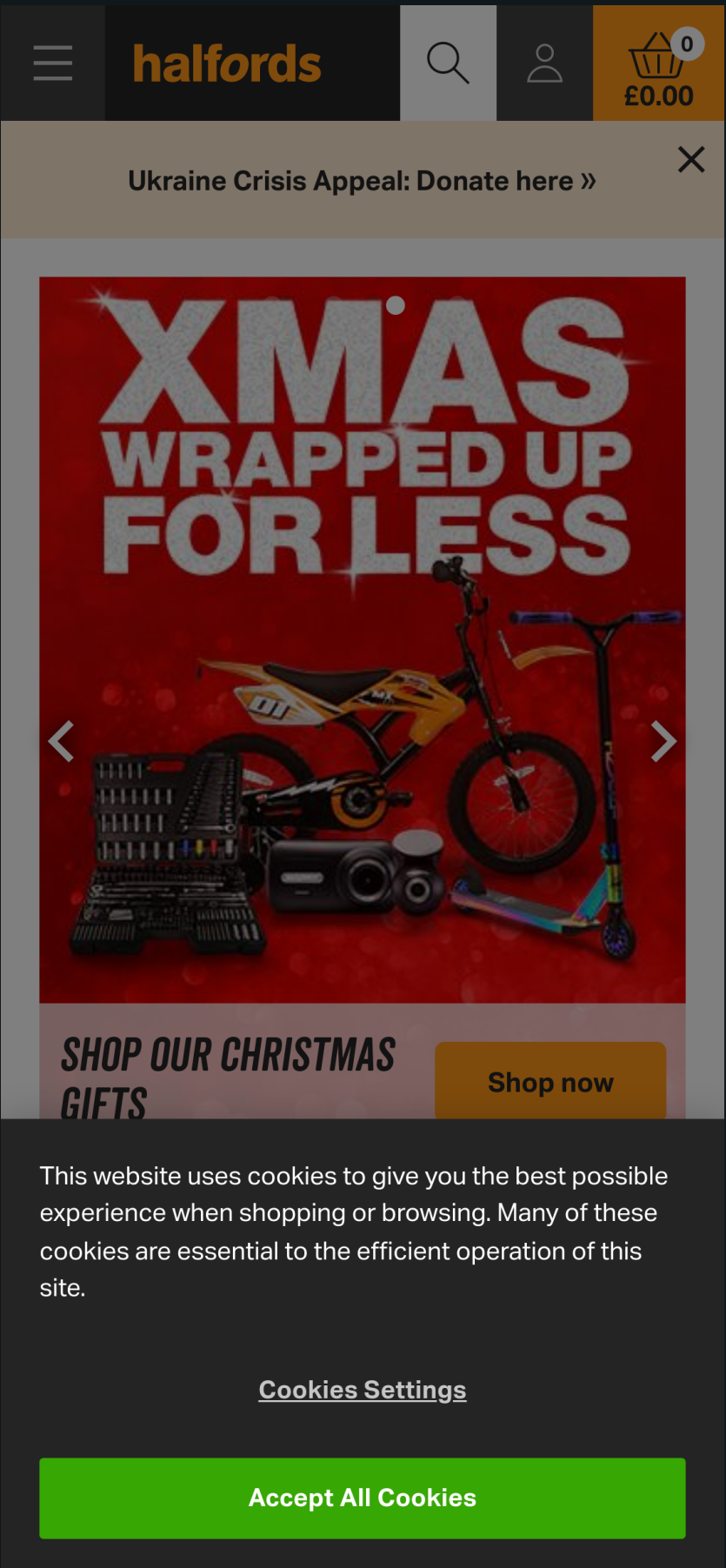
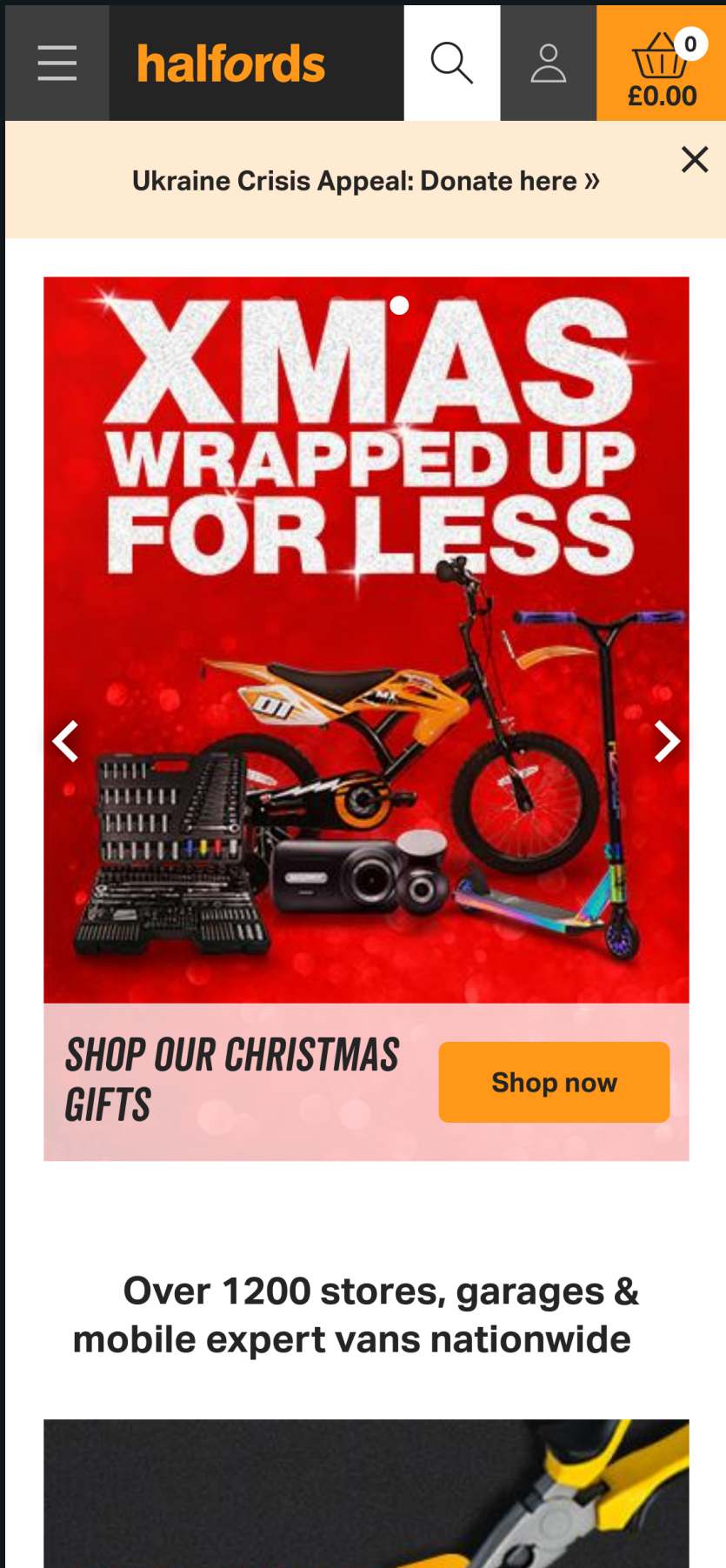


Requests
Size (KB)

41 + 55
589 + 1280

41 + 128
589 + 1750

And maybe even without 3rd-Parties?



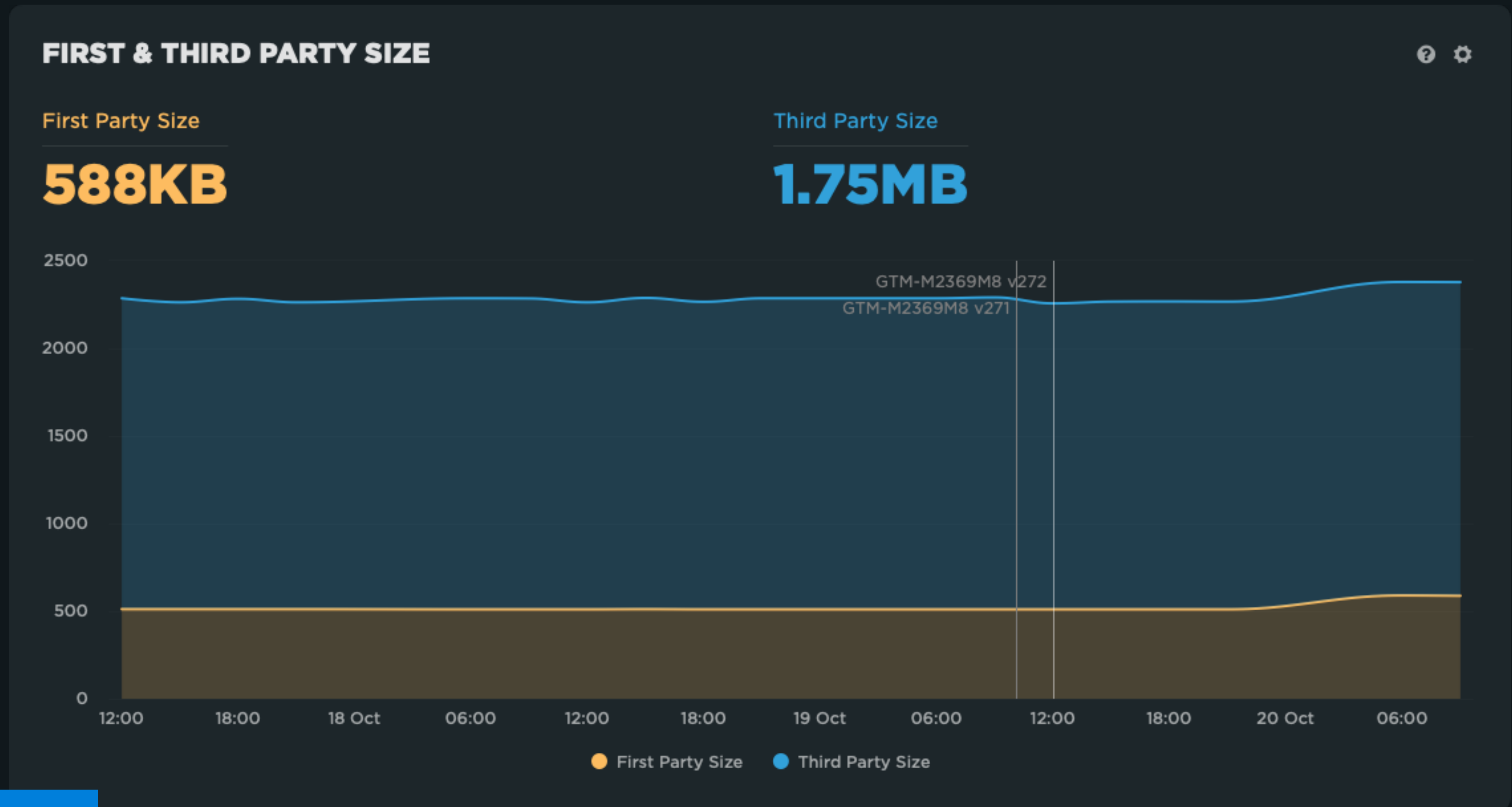
Requests
Size (KB)

41 + 11
589 + 246

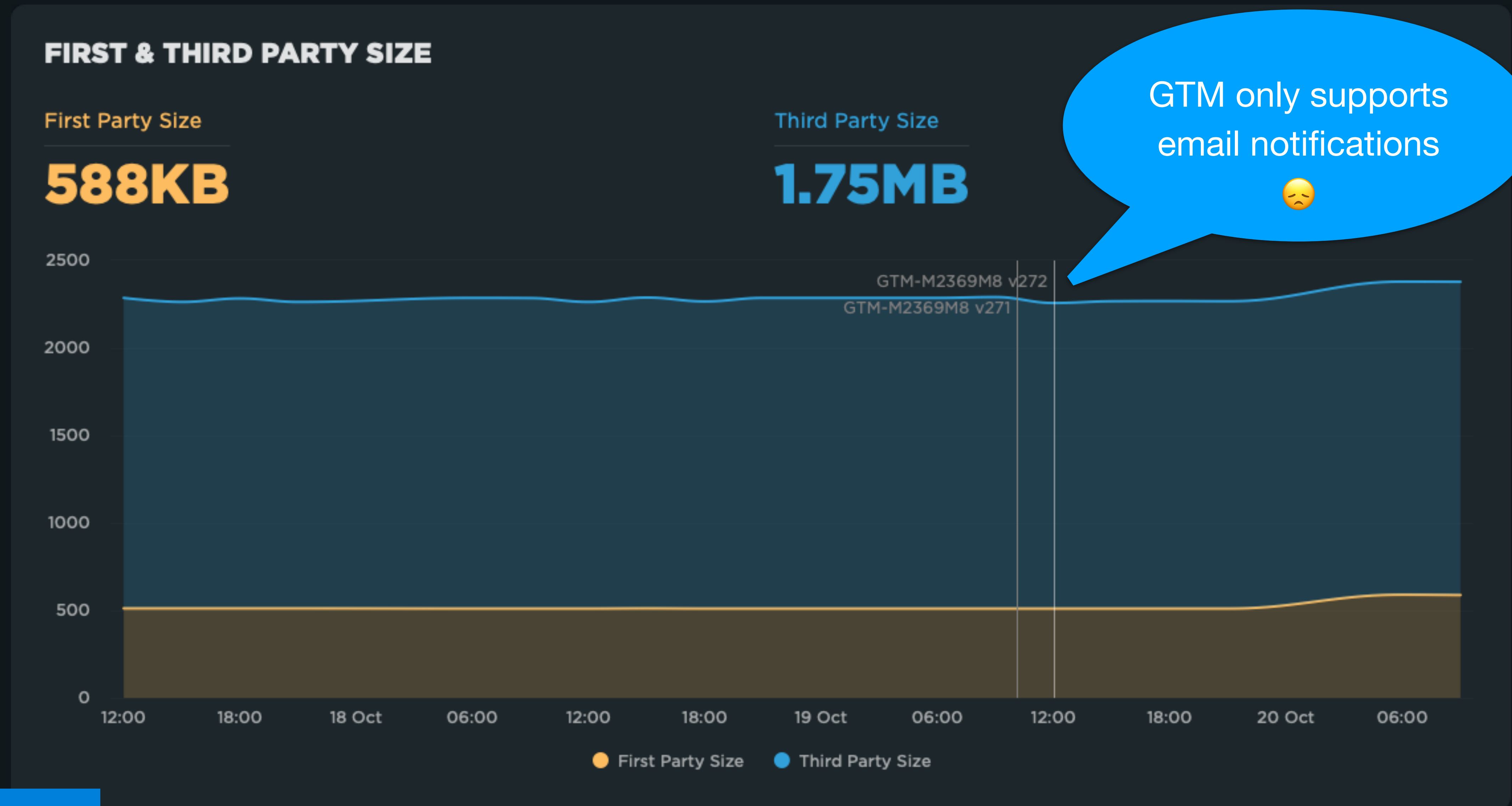
41 + 55
589 + 1280

41 + 128
589 + 1750

Track Tag Container Releases



Track Tag Container Releases





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[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)



[andydavies](#) / [gtm-watcher](#) Private

[Unwatch](#) 1

[Fork](#) 0

[Star](#) 0

[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)

[main](#) 1 branch 0 tags

[Go to file](#)

[Add file](#)

[Code](#)



[andydavies](#) Add update.yml

0f72dbc 3 minutes ago 5 commits



.github/workflows

Add update.yml

3 minutes ago



LICENSE

Initial commit

3 hours ago



README.md

Update README.md

6 minutes ago



screenshot.png

Add screenshot

11 minutes ago



README.md



GTM Watcher

Add a note to a SpeedCurve site when a GTM container is changed

FIRST & THIRD PARTY SIZE



About



Fetches GTM containers and calls the SpeedCurve API when they're updated

[Readme](#)

[MIT license](#)

0 stars

1 watching

0 forks

Releases

No releases published

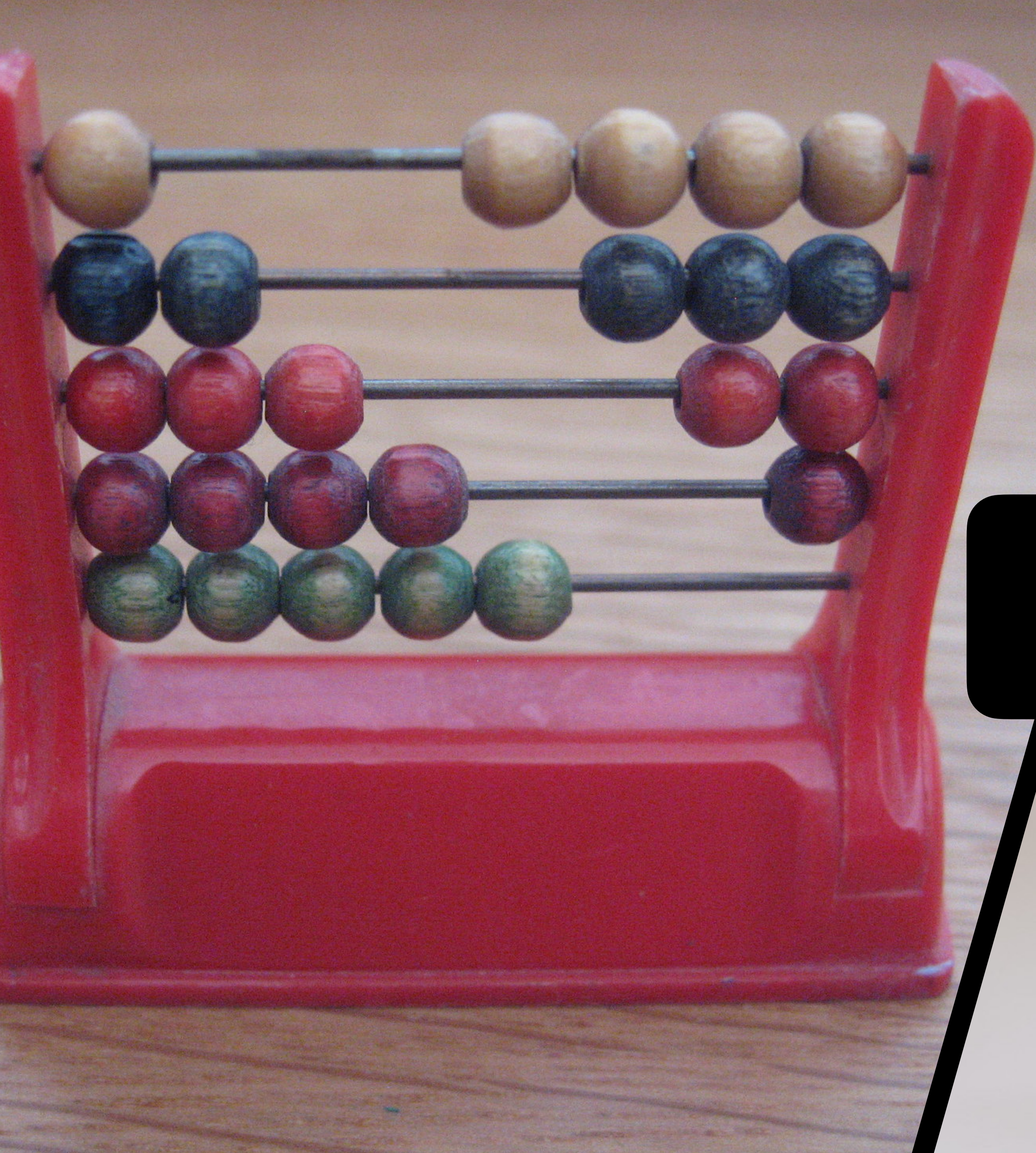
[Create a new release](#)

Packages

No packages published

[Publish your first package](#)

<https://github.com/andydavies/gtm-watcher>



V



How long is an anti-flicker snippet active?

```
(function (node, selector, name) {  
  
    performance.mark(name + '-start');  
  
    const callback = function (mutationsList, observer) {  
  
        // Use traditional 'for loops' for IE 11 support  
        for (const mutation of mutationsList) {  
  
            if (mutation.attributeName === 'class' &&  
                !mutation.target.classList.contains(selector) &&  
                mutation.oldValue.includes(selector)) {  
  
                performance.mark(name + '-end');  
                performance.measure(name + '-duration', name + '-start', name + '-end');  
  
                observer.disconnect();  
                break;  
            }  
        }  
    }  
}  
  
const observer = new MutationObserver(callback);  
observer.observe(node, { attributes: true, attributeOldValue: true });  
  
})(document.documentElement, 'async-hide', 'anti-flicker');
```


When is an IAB EU CMP Ready?

```
// Creates User Timing marks for cmpuishown, useractioncomplete & tcloaded
if (typeof window.__tcfapi === 'function') {

    window.__tcfapi('addEventListener', 2, (tcddata, success) => {

        if(success) {

            performance.mark('tcf-' + tcddata.eventStatus);

            // Stop listening after TCF loaded, or user action complete to prevent generation
            // of extra cmpuishown & useractioncomplete marks if visitor reopens CMP UI
            if(tcddata.eventStatus === 'useractioncomplete' ||
                tcddata.eventStatus === 'tcloaded') {
                window.__tcfapi('removeEventListener', 2, (success) => { }, tcddata.tcfListenerId);
            }
        }
    });
}
```


When did a GPT creative load?

```
var googletag = googletag || {};  
googletag.cmd = googletag.cmd || [];  
  
googletag.cmd.push(function() {  
  
    // This listener will be called when the creative's iframe onload event fires  
    googletag.pubads().addEventListener('slot0nload', function(event) {  
  
        performance.mark('adslot-' + event.slot.getSlotElementId() + '-loaded');  
  
    });  
});
```




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Code

About



andydavies Add GPT and IAB EU CMP examples

564f6d9 4 minutes ago 12 commits



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anti-flicker

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consent-managers

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4 minutes ago



LICENSE

Initial commit

2 years ago



README.md

Update README.md

2 years ago

Examples of how to measure events – particularly those from third-party tags – in web pages

Readme

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Timing Snippets for 3rd-Party Tags

Sometimes 3rd-Party tags provide content that's core to our visitors experience, other times they provide invisible features that allow us to get a better understanding of our visitors experience and how they behave.

Tags can have a crucial impact on visitor experience, yet that impact is often invisible. Tags often provide no information on when their key milestones are reached.

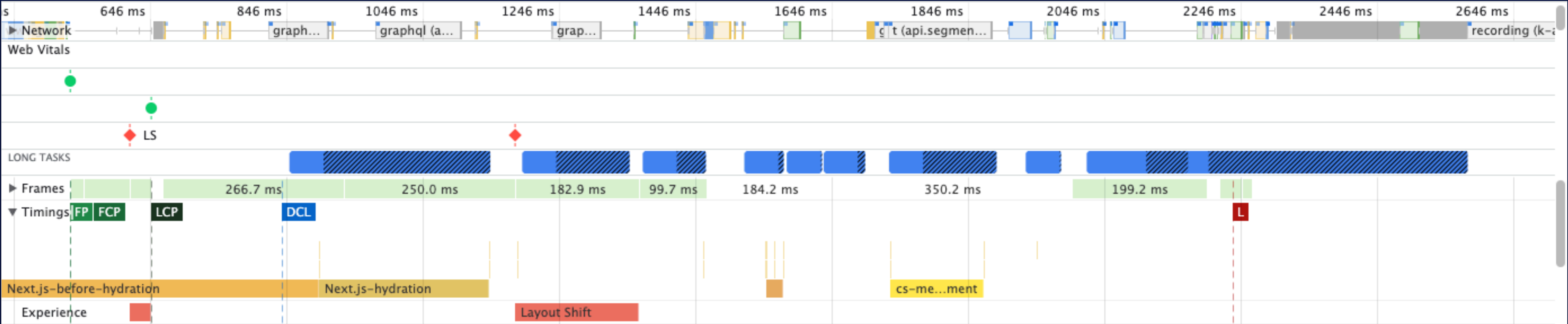
<https://github.com/andydavies/tag-timing-snippets>



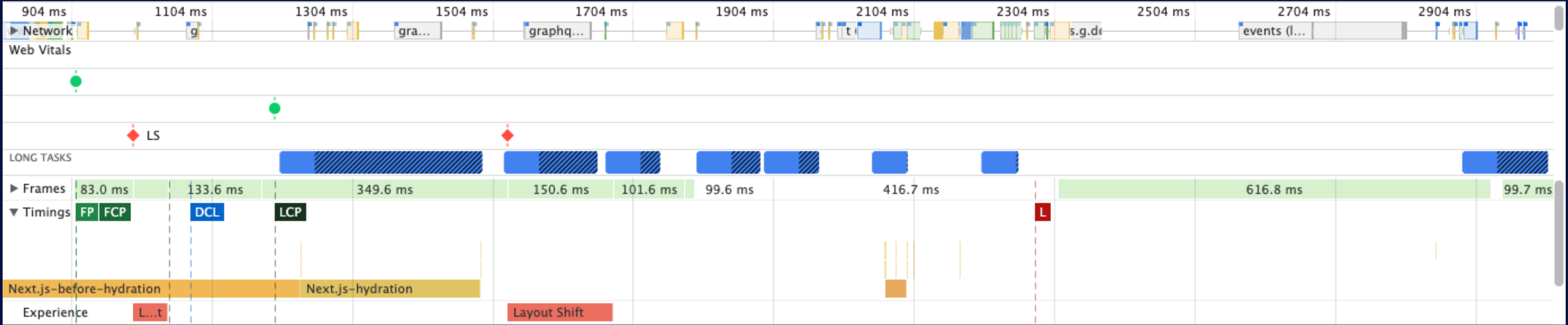


Let's return to our 3rd-Party Puzzle

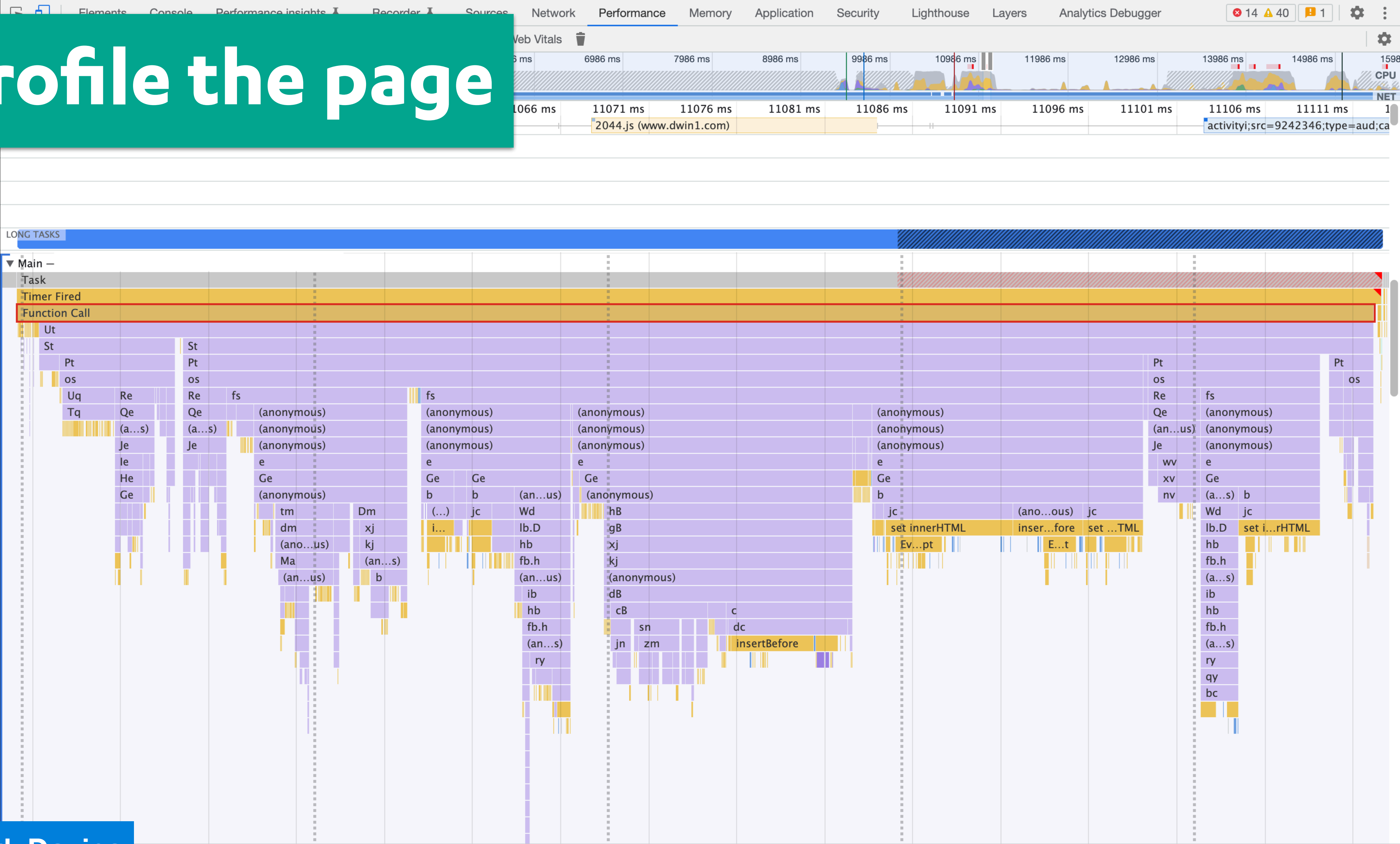
Before



After



Profile the page



```
1 // Copyright 2012 Google Inc. All rights reserved.
2 (function(w, g) {
3     w[g] = w[g] || {};
4     w[g].e = function(s) {
5         return eval(s);
6     }
7     ;
8 }
9 )(window, 'google_tag_manager');
10 (function() {
11
12     var data = {
13         "resource": {
14             "version": "117",
15
16             "macros": [{
17                 "function": "__u",
18                 "vtp_component": "PATH",
19                 "vtp_enableMultiQueryKeys": false,
20                 "vtp_enableIgnoreEmptyQueryParam": false
21             }, {
22                 "function": "__e"
23             }, {
24                 "function": "__d",
25                 "vtp_elementId": "hidOrderNo",
26                 "vtp_attributeName": "value",
27                 "vtp_selectorType": "ID"
28             }, {
29                 "function": "__d",
30                 "vtp_elementId": "hiddenBasketTotal",
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32                 "vtp_selectorType": "ID"
33             }, {
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35                 "vtp_javascript": ["template", "(function(){var a=window.location.href;if(a.match(/schuh.co.uk\\\\\\\\/gi))return\\"UK\\";if(a.match(/schuh.ie\\\\\\\\/gi))return\\"IE\\";if(a.match(/schuh.eu\\\\\\\\/en-eu
36             }, {
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41             }, {
42                 "function": "__smm",
43                 "vtp_setDefaultValue": false,
```

Read the Source...


```
var v = function() {  
    var h = {}  
        , m = this.document.createElement("div");  
    m.innerHTML = "<P><I></P></I>";  
    h.va = "<P><I></P></I>" !== m.innerHTML;  
    m.innerHTML = "<P><i><P></P></i></P>";  
    h.ua = 2 === m.childNodes.length;  
    return h  
}()
```




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Code



dllopis-sfdc W-9972083 Open Source Programs Office compliance ([#511](#))

d57766a on 12 Oct 2021 368 commits

	src	style(lint): fix lint issues	6 years ago
	test	style(lint): fix lint issues	6 years ago
	.codeclimate.yml	chore(coverage): publish coverage to codeclimate (#182)	7 years ago
	.editorconfig	docs(LICENSE): update date in LICENSE	7 years ago
	.eslintignore	feat: big update to v2 with many changes (#138)	7 years ago
	.eslintrc.js	feat: big update to v2 with many changes (#138)	7 years ago
	.gitignore	chore(build): clean out dist and add sourcemaps (#179)	7 years ago
	.jscsrc	style(lint): fix lint issues	6 years ago
	.npmignore	chore(build): clean out dist and add sourcemaps (#179)	7 years ago
	.travis.yml	chore(coverage): publish coverage to codeclimate (#182)	7 years ago
	AUTHORS	feat: big update to v2 with many changes (#138)	
	CHANGELOG.md	fix(parsing): fix problem with iframe src containing badly quoted do	
	CLA.md	docs(CLA): update company in CLA (#170)	7 years ago

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Asynchronously write javascript, even with document.write.

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<https://github.com/krux/postscribe/>



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Releases 5

v2.0.8 Latest
on 23 Nov 2016

+ 4 releases

<https://github.com/krux/postscribe/>

Tag Configuration

Tag Type



Custom HTML
Custom HTML Tag



Postscribe is only
included if this box is
checked

☐

Support document.write ?



Advanced Settings

Tag Configuration

Tag Type



Custom HTML
Custom HTML Tag

Postscribe is only included if this box is checked

And only needed if the tag uses `document.write`*

☐ Support document.write ?

> Add new tag

* not needed if page uses `document.open`, `document.write`, `document.close` sequence

Find "vtp_supportDocumentWrite": \s?true,

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activity;src=4783302;type=count0;cat=000un0;ord=48761418

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gtm.js?id=GTM-M2369M8-formatted

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return eval(s);

;(window, 'google_tag_manager');

(function() {

var data = {

resource: {

version: "273",

macros: [{

function: "__e"

}, {

function: "__u",

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vtp_enableIgnoreEmptyQueryParam: false

}, {

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}, {

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vtp_dataLayerVersion: 2,

vtp_setDefaultValue: false,

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}, {

function: "__v",

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vtp_setDefaultValue: true,

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}, {

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vtp_setDefaultValue: false,

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}, {

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}, {

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vtp_javascript: ["template", "(function(){var a=", ["escape", ["macro", 6], 8, 16], ",b=[],c=[];a.purchase?b=a.purchase.products:a

}, {

function: "__jsm",

vtp_javascript: ["template", "(function(){return 800\u003Cscreen.width?\\"Desktop\\":480\u003Cscreen.width?\\"Tablet\\":480\u003E=screen

}, {

function: "__jsm",

vtp_javascript: ["template", "(function(){var a=", ["escape", ["macro", 6], 8, 16], ",b=[],c=[];a.purchase?b=a.purchase.products:a

}, {

function: "ism"

@AndyDavies

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Line 1, Column 1

Coverage: n/a

Find "vtp_supportDocumentWrite": \s?true,

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activity;src=4783302;type=count0;cat=000un0;ord=48761418

gtm.js?id=GTM-M2369M8

gtm.js?id=GTM-M2369M8-formatted

```
1  Copyright 2012 Google Inc. All rights reserved.
2
3  return eval(s);
4
5  }
6
7  ;
8  }
9  )(window, 'google_tag_manager');
10 (function() {
11
12     var data = {
13         "resource": {
14             "version": "273",
15
16             "macros": [{
17                 "function": "__e"
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51             }, {
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56                 "vtp_javascript": ["template", "(function(){return 800\u003C=screen.width?\\"Desktop\\":480\u003Cscreen.width?\\"Tablet\\":480\u003E=screen",
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60             }, {
61                 "function": "__ism",
```

@AndyDavies

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Line 1, Column 1

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"vtp_supportDocumentWrite":\s?true,

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33 characters selected

Coverage: n/a

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"metadata": ["map"],

"once_per_event": true,

"vtp_html": "\u003Cscript type=\"text/gtm-script\">\u003E(function(){var b={\"@context\":\"http://schema.org\", \"@type\":\"Breadcr

"vtp_supportDocumentWrite": false,

"vtp_enableIframeMode": false,

"vtp_enableEditJsMacroBehavior": false,

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}, {

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"metadata": ["map"],

"setup_tags": ["list", ["tag", 531, 1]],

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"vtp_enableIframeMode": false,

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"metadata": ["map"],

"setup_tags": ["list", ["tag", 531, 1]],

"once_per_event": true,

"vtp_html": ["template", "\u003Cscript type=\"text/gtm-script\">\u003Efbq(\"track\", \"InitiateCheckout\", {content_type: \"product\", c

"vtp_supportDocumentWrite": false,

"vtp_enableIframeMode": false,

"vtp_enableEditJsMacroBehavior": false,

"tag_id": 63

"vtp_supportDocumentWrite":\s?true,

1 of 3

Aa

.*

Cancel

33 characters selected

Coverage: n/a

@AndyDavies48-ad0f-87cf00c478be

Postscribe removed from George Clothing

Previous 6 Mar - 15 Mar	Change	Latest 15 Mar - 25 Mar
Google Tag Manager JS Long Tasks Time, CategoryPage 75ms	↓ 23%	Google Tag Manager JS Long Tasks Time, CategoryPage 58ms
Google Tag Manager JS Long Tasks Time, HomePage 139ms	↓ 26%	Google Tag Manager JS Long Tasks Time, HomePage 103ms
Google Tag Manager JS Long Tasks Time, PDP - Clothing 77ms	↓ 17%	Google Tag Manager JS Long Tasks Time, PDP - Clothing 64ms
Google Tag Manager JS Long Tasks Time, PLP 85ms	↓ 38%	Google Tag Manager JS Long Tasks Time, PLP 53ms
Google Tag Manager JS Size, CategoryPage 63KB	↓ 6%	Google Tag Manager JS Size, CategoryPage 59KB
Google Tag Manager JS Size, HomePage 63KB	↓ 6%	Google Tag Manager JS Size, HomePage 59KB
Google Tag Manager JS Size, PDP - Clothing 63KB	↓ 6%	Google Tag Manager JS Size, PDP - Clothing 59KB
Google Tag Manager JS Size, PLP 63KB	↓ 6%	Google Tag Manager JS Size, PLP 59KB

<https://mobile.twitter.com/rnebhawani/status/1376514746107752452>



What other secrets does GTM hold?

Add log points for DOM operations

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► bat.bing.com
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► connect.facebook.net
► ct.pinterest.com
► dd6zx4ibq538k.cloudfront.net
► googleads.g.doubleclick.net
► js-agent.newrelic.com
► match.adsrvr.org
► p.cquotient.com
► p.typekit.net
► pixel.mathtag.com
► resources.digital-cloud.medallia.eu
► s.pining.com
► script.hotjar.com
► snap.licdn.com
► static.goqubit.com
► static.hotjar.com
► t.contentsquare.net
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► www.google.co.uk
► www.google.com
► www.googleadservices.com
▼ www.googletagmanager.com
 ► gtag
 ► gtm.js?id=GTM-M2369M8
 ► gtm.js?id=GTM-MP77J24
► www.ist-track.com

```
8529   };  
8530  
8531   (function() {  
8532     /*  
8533     Copyright The Closure Library Authors.  
8534     SPDX-License-Identifier: Apache-2.0  
8535     */  
8536     var C = this || self  
8537       , D = function(n, v) {  
8538         var w = n.split(".")  
8539         , q = C;  
8540         w[0] in q || "undefined" == typeof q.execScript || q.execScript("var " + w[0]);  
8541         for (var t; w.length && (t = w.shift()); )  
8542           w.length || void 0 === v ? q = q[t] && q[t] !== Object.prototype[t] ? q[t] : q[t] = {} : q[t] = v  
8543       };  
8544     /*  
8545     Copyright (c) 2014 Derek Brans, MIT license https://github.com/kruX/postscribe/blob/master/LICENSE. Portions derived from simplehtmlparser, which  
8546     var E, F = function() {};  
8547     (function() {  
8548       function n(h, m) {  
8549         h = h || "";  
8550         m = m || {};  
8551         for (var y in v)  
8552           v.hasOwnProperty(y) && (m.N && (m["fix_" + y] = !0),  
8553             m.G = m.G || m["fix_" + y]);  
8554         var z = {  
8555           comment: /\x3c!--/,  
8556           endTag: /\x3c\/\//,  
8557           atomicTag: /\x3c\s*(script|style|noscript|iframe|textarea)\s\/>/i,  
8558           startTag: /\x3c\/\//,  
8559           chars: /\x3c\/\//  
8560         };  
8561         , e = {  
8562           comment: function() {  
8563             var a = h.indexOf("--\x3e");  
8564             if (0 <= a)  
8565               return {  
8566                 content: h.substr(4, a),  
8567                 length: a + 3  
8568             };  
8569           },  
8570           endTag: function() {  
8571             var a = h.match(q);  
8572             if (a)  
8573               return {  
8574                 tagName: a[1],  
8575                 length: a[0].length  
8576             };  
8577           },  
8578           atomicTag: function() {  
8579
```


Add log points for DOM operations

- ▶ bam.eu01.nr-data.net
- ▶ bat.bing.com
- ▶ cdn.appdynamics.com
- ▶ cdn.cookiecutter.org
- ▶ cdn.cquotient.com
- ▶ cdn.media.amplience.net
- ▶ cdn.media.halfords.com
- ▶ connect.facebook.net
- ▶ ct.pinterest.com
- ▶ dd6zx4ibq538k.cloudfront.net
- ▶ googleads.g.doubleclick.net
- ▶ js-agent.newrelic.com
- ▶ match.adsrvr.org
- ▶ p.cquotient.com
- ▶ p.typekit.net
- ▶ pixel.mathtag.com
- ▶ resources.digital-cloud.medallia.eu
- ▶ s.pining.com
- ▶ script.hotjar.com
- ▶ snap.licdn.com
- ▶ static.goqubit.com
- ▶ static.hotjar.com
- ▶ t.contentsquare.net
- ▶ tracker.metracool.com
- ▶ use.typekit.net
- ▶ www.google-analytics.com
- ▶ www.google.co.uk
- ▶ www.google.com
- ▶ www.googleadservices.com
- ▼ www.googletagmanager.com
 - ▶ gtag
 - ▶ gtm.js?id=GTM-M2369M8
 - ▶ gtm.js?id=GTM-MP77J24
- ▶ www.ist-track.com

```
8529 };
8530
8531 (function() {
8532     /*
8533     Copyright The Closure Library Authors.
8534     SPDX-License-Identifier: Apache-2.0
8535     */
8536     var C = this || self
8537     , D = function(n, v) {
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8539         , q = C;
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8542             w.length || void 0 === v ? q = q[t] && q[t] !== Object.prototype[t] ? q[t] : q[t] = {} : q[t] = v
8543     };
8544     /*
8545     Copyright (c) 2014 Derek Brans, MIT license https://github.com/kruX/postscribe/blob/master/LICENSE. Portions derived from simplehtmlparser, which
8546     var E, F = function() {};
8547     (function() {
8548         function n(h, m) {
8549             h = h || "";
8550             m = m || {};
8551             for (var y in v)
8552                 v.hasOwnProperty(y) && (m.N && (m["fix_" + y] = !0),
8553                 m.G = m.G || m["fix_" + y]);
8554             var z = {
8555                 comment: /\x3c!--/,
8556                 endTag: /\x3c\/\s*/,
8557                 atomicTag: /\x3c\s*(script|style|noscript|iframe|textarea)\s\/>/i,
8558                 startTag: /\x3c\s*/,
8559                 chars: /\x3c\s*/
8560             };
8561             e = {
8562                 comment: function() {
8563                     var a = h.indexOf("--\x3e");
8564                     if (0 <= a)
8565                         return {
8566                             content: h.substr(4, a),
8567                             length: a + 3
8568                         };
8569                 },
8570                 endTag: function() {
8571                     var a = h.match(q);
8572                     if (a)
8573                         return {
8574                             tagName: a[1],
8575                             length: a[0].length
8576                         };
8577                 },
8578                 atomicTag: function() {
8579
```


- ▼ top
- ▼ www.halfords.com
- ▼ never-beaten-on-price
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- ▶ on/demandware.static
- ▶ cdn.cookieclaw.org
- ▶ cdn.media.amplience.net
- ▶ cdn.media.halfords.com
- ▶ p.typekit.net
- ▶ use.typekit.net
- ▶ serviceWorker.js

⌘ P Open file

⌘ ⬆ P Run command

Drop in a folder to add to workspace

[Learn more about Workspaces](#)

🔍📄

Elements

Console

Performance insights 📊

Recorder 🎙️

Sources

⚠️ Network

Performance

Memory

Application

Security

Lighthouse

Page

Filesystem

Overrides

Content scripts

Snippets

⋮

🏠

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📄 ?_gl=1*2n4vd2*_up*MQ..&gclid=EAlaQobChMI0-PQ7e34-gl

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▶ ☁️ p.typekit.net

▶ ☁️ use.typekit.net

▶ ⚙️ serviceWorker.js

⌘ P Open file

⌘ ⬆ P Run command

Drop in a folder to add to workspace

[Learn more about Workspaces](#)

insertBefore

⬆ ⬇

Aa .*

Cancel

Line 22447, Column 29

Coverage: n/a

	Elements	Console	Performance insights	Recorder	Sources	Network	Performance	Memory	Application	Security	Lighthouse	1	3		
		top		Filter								Info only	3 Issues: 3	5 hidden	
<code><script type="text/javascript" async src="https://www.googleadservices.com/pagead/conversion_async.js"></script></code>												VM3741:1			
<code><script type="text/javascript" async src="https://t.contentsquare.net/uxa/a7f44c7117be3.js"></script></code>												VM3743:1			
<code><script type="text/javascript" id src="//www.ist-track.com/ProcessClickJavaScript.ashx?id=B8708C57-7A02-4CF6-B2C0-DC36B54A327E&useDom=1"></script></code>												VM3744:1			
<code><script type="text/javascript" id src="https://static.goqubit.com/smartserve-3183.js"></script></code>												VM3745:1			
<code>><script type="text/javascript" id>...</script></code>												VM3746:1			
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<code>><script type="text/javascript" id>...</script></code>												VM3750:1			
<code><script type="text/javascript" async src="https://www.google-analytics.com/analytics.js"></script></code>												VM3760:1			
<code>><script type="text/javascript" id>...</script></code>												VM3761:1			
<code>>#text</code>												VM3763:1			
<code>><script type="text/javascript" id>...</script></code>												VM3764:1			
No Breadcrumbs Found on Page												VM3765:2			
<code>><script type="text/javascript" id>...</script></code>												VM3766:1			
<code>><script type="text/javascript" id>...</script></code>												VM3778:1			
<code><script type="text/javascript" async src="https://bat.bing.com/bat.js"></script></code>												VM3784:1			
<code><script type="text/javascript" async src="https://static.hotjar.com/c/hotjar-654917.js?sv=7"></script></code>												VM3785:1			
<code><script type="text/javascript" async src="https://s.pinimg.com/ct/core.js"></script></code>												VM3786:1			
<code><script type="text/javascript" async src="https://snap.licdn.com/li.lms-analytics/insight.min.js"></script></code>												VM3787:1			
												VM3789:1			
<code>><iframe height="0" width="0" style="display: none; visibility: hidden;" src="//4783302.fls.doubleclick.net/activityi;src=4783302;type=count0;cat=0...up*MQ..%26gclid%3DEAIaIQobChMI0-PQ7e34-gIVhu3tCh2V6QE-EAAYASA AEgIl1vD_BwE?">...</iframe></code>												ad			
<code><script type="text/javascript" id src="//pixel.mathtag.com/event/js?mt_id=1280806&mt_adid=203258&mt_exem=&mt_e...ndefined&s6=undefined&s7=undefined&s8=undefined&s9=undefined&s10=undefined"></script></code>												VM3810:1			
<code>><script type="text/javascript" id="gtm__utmzz-cookie-replicator">...</script></code>												VM3811:1			
<code>><script type="text/javascript" id>...</script></code>												VM3813:1			
<code>><script type="text/javascript" id>...</script></code>												VM3815:1			
gtm_performancehorizon_dedupe=0;domain=.halfords.com;path=/;expires=Wed, 23 Nov 2022 15:56:50 GMT												VM3816:2			
<code>>#text</code>												VM3817:1			
<code></code>												VM3818:1			
<code>><script type="text/javascript" id>...</script></code>												VM3819:1			
<code><script type="text/javascript" id src="https://cdn.speedcurve.com/js/lux.js?id=1989537944"></script></code>												VM3821:1			
201												VM3779:5			
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<code>><script type="text/javascript" id>...</script></code>												VM3884:1			
<code>>#text</code>												VM3886:1			
<code>><script type="text/javascript" id>...</script></code>												VM3897:1			
<code><script type="text/javascript" async src="https://www.googletagmanager.com/gtag/js?id=G-VK44BRER97&l=dataLayer&cx=c"></script></code>												VM3899:1			

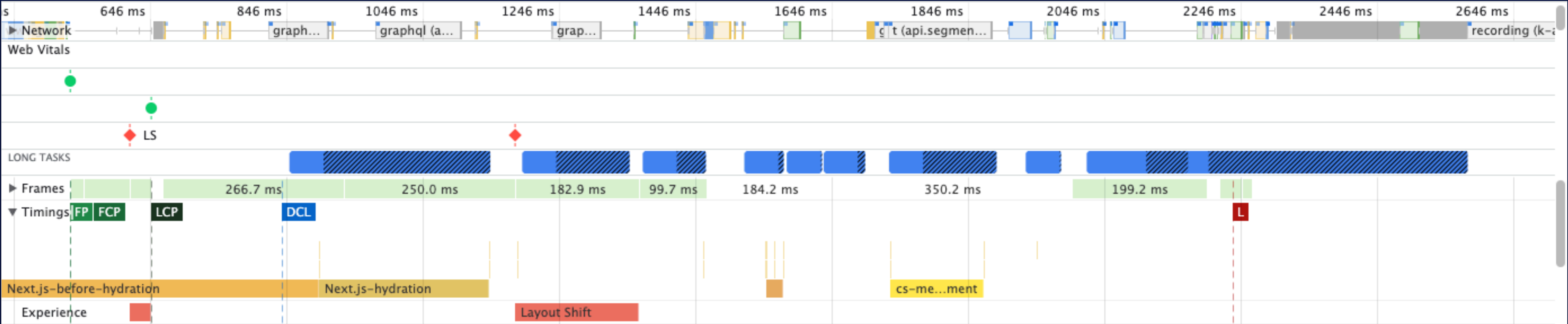
	Elements	Console	Performance insights	Recorder	Sources	Network	Performance	Memory	Application	Security	Lighthouse	1	3		
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<script type="text/javascript" async src="https://www.googleadservices.com/pagead/conversion_async.js"></script>												VM3741:1			
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<script type="text/javascript" id src="//www.ist-track.com/ProcessClickJavaScript.ashx?id=B8708C57-7A02-4CF6-B2C0-DC36B54A327E&useDom=1"></script>												VM3744:1			
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▶<iframe height="0" width="0" style="display: none; visibility: hidden;" src="//4783302.fl.s.doubleclick.net/activityi;src=4783302;type=count0;cat=0...up*MQ..%26gclid%3DEAIaIQobChMI0-PQ7e34-gIVhu3tCh2V6QE-EAAYASA AEgIl1vD_BwE?">...</iframe>															
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<script type="text/javascript" async src="https://www.googletagmanager.com/gtag/js?id=G-VK44BRER97&l=dataLayer&cx=c"></script>												VM3899:1			

Some other things we discovered...

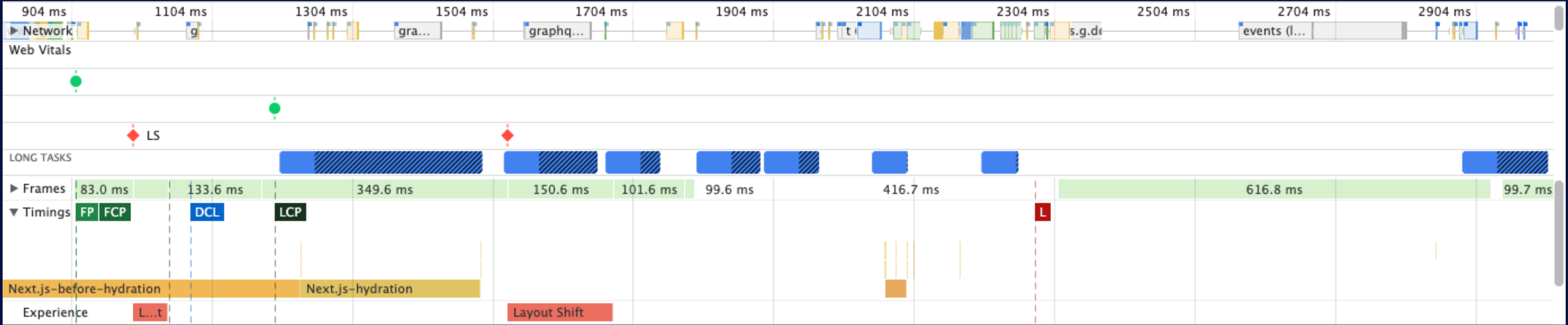
- When Google Optimize is enabled it adds another copy of Analytics (even if you don't actively use Optimize)
- Custom Google Analytics dimensions can be expensive when set from GTM (we removed unused ones)
- Other miscellaneous cleanups

I suspect we just 'scratched the surface and there was other gains to find

Before



After



3rd Party Tags can make or break your visitor experience

Make friends with the team that manages your tags

Audit tags - remove the ones that aren't needed

Don't accept the defaults - choreograph tag loading

Push the boundaries beyond the browsers main thread

Chase 3rd-Parties to fix their issues

Adding controls to Google Tag Manager

Category: [Blog](#)

This page was originally created on 25-May-2019 and last edited on 30-Jul-2019.

Introduction

Google Tag Manager (GTM) is extremely popular and is used by [22% of all websites](#). As its name suggests, it allows managing of marketing tags on a website. Marketing departments love these tags as they allow them to track their marketing campaigns and see if they are directing their budgets to the right places. So if they buy a lot of Facebook ads, they like to see how many people come to the site (which can be measured by clicks on the ad) but also crucially if those clicks led to anything: typically purchases or sign ups. This requires linking the click from the ad, to an action on specific pages (e.g. confirmation pages). So this usually requires adding of a piece of JavaScript to the confirmation page. Similarly remarketing tags involve telling an ad agency that someone was looking at a product on your site, and then the ad agency using that information to display ads for that product, or similar ones, to try to entice you back to finish that purchase. This requires a small snippet of JavaScript on the product page which fires off a call to the ad agency and then they take care of showing appropriate ads when it sees the same user on another site.

How to add these JavaScript snippets depends on how the website is set up and what Content Management System (if any) is used to publish the site. Often it requires web developers to release the snippet onto a page, or to fire it on a certain action. And often these snippets change slightly each time they launch a new ad campaign. Rather than having to go to web developers each time they want to add or change tracking tags to their site, the marketing department can ask the web developers to add the GTM JavaScript snippet once to all pages, and then manage the tags in there. GTM allows you then to fire tags based on various triggers so it will only load the appropriate tags at the appropriate time (on page load, when an event occurs, or whatever). So you can fire a Google Adwords snippet if the URL contains "checkout-complete.html" for example, and can even grab hold of the products purchased and send them to Google Adwords.

This all sounds well and good, and frees up web developers to do real web development and allows marketing to do their job. Everyone's happy. However there are some serious downsides to using a tag manager like GTM: in particular security and performance. By definition tag managers allow injection of scripts and code into the website. JavaScript is a really powerful language and can fire off requests to ad agencies, or change the entire look and feel of the webpage or... well pretty much anything really! So that means that, by definition, anyone who has access to GTM has access to inject JavaScript and so, in effect, has full control of the website

Some would recom

marketing is a large

realistic one and we

usage to reduce the

<https://www.tunetheweb.com/blog/adding-controls-to-google-tag-manager/>

of the advice will apply to other tag managers, or even those placing tags on their pages manually. I am less familiar with other tag managers so don't know

Improving third-party web performance at The Telegraph



Gareth Clubb

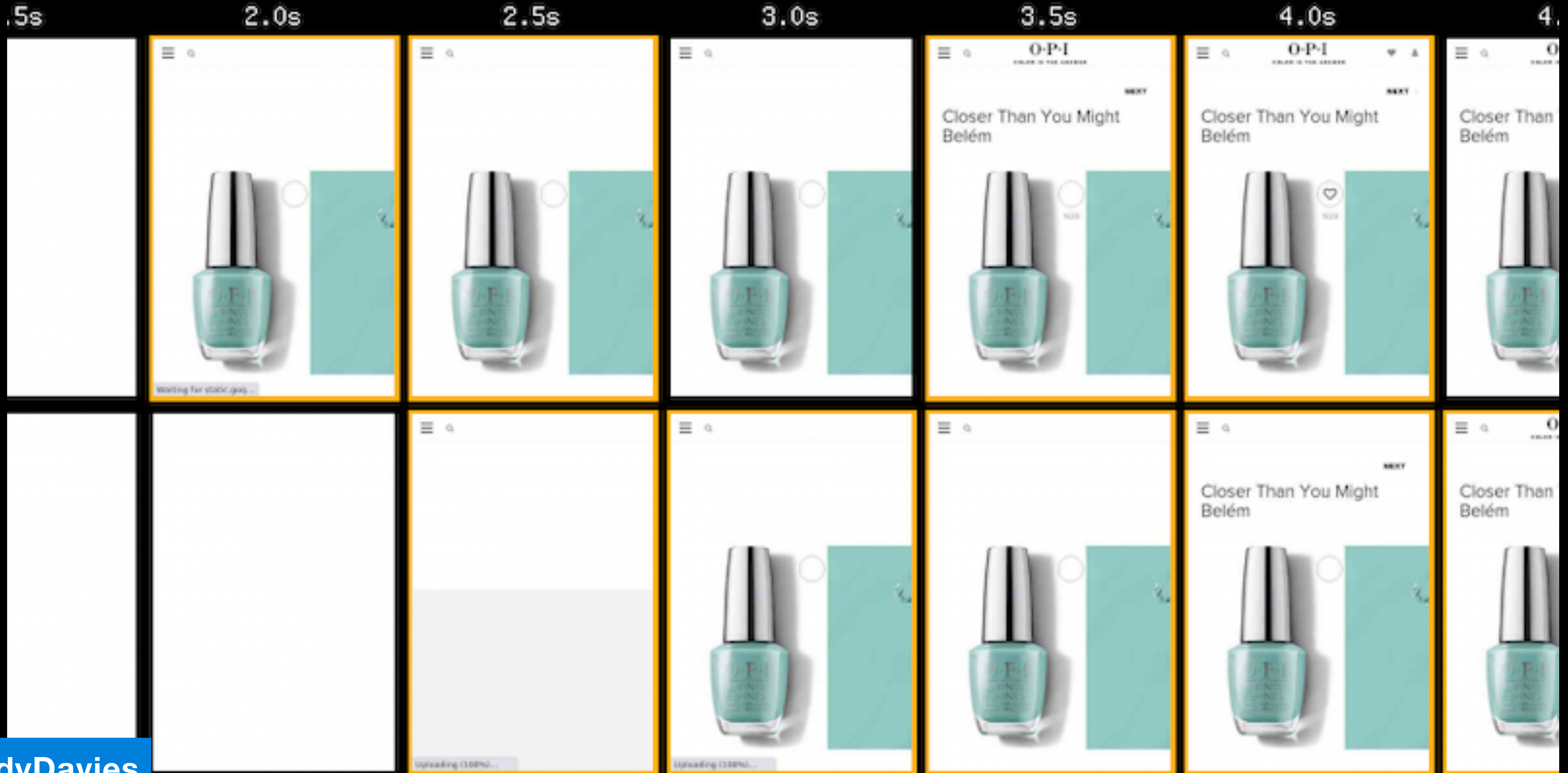
Follow

Apr 30 · 9 min read

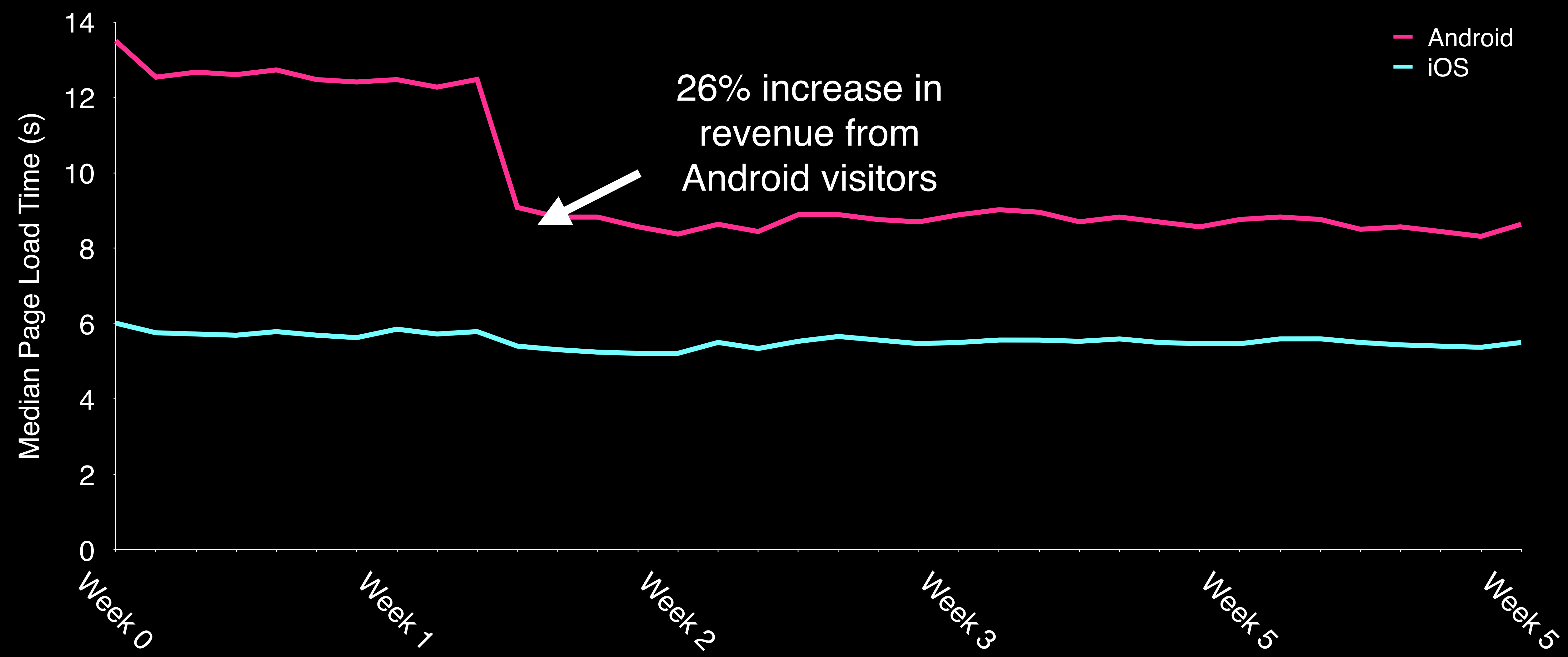
At The Telegraph we're currently going through a process of rebuilding our public-facing website. This gives us the opportunity to take learnings from the existing build but also write some of the code from scratch. You can see our progress so far on pages such as Gaming and Culture. We can monitor the impact this has on metrics across accessibility.

<https://man.gl/telegraph-3rd-party-performance>

Taming Tags improves user experience



It can also deliver financial benefits



Thanks!

@AndyDavies

hello@andydavies.me

