cream

Late to the party

Everything about loading third-party scripts

cream

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Late to the party

Everything about loading third-party scripts, like:

- conversion trackers
- visitor behaviour trackers
- chat widgets
- YouTube video’s
- Tag Manager
- analytics
- etc.

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- **Tag Manager**
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Why performance matter

A **one-second delay** in mobile load times can impact **conversion rates by up to 20%** *

Back in 2006, Amazon found that every **100ms** in added page load time **cost them 1% in sales** **

* Source: SOASTA,The State of Online Retail Performance, U.S., April 2017.
** http://glinden.blogspot.com/2006/11/marissa-mayer-at-web-20.html

Why performance matter

If a slow experience drives customers away,

a fast experience can help attract and keep them

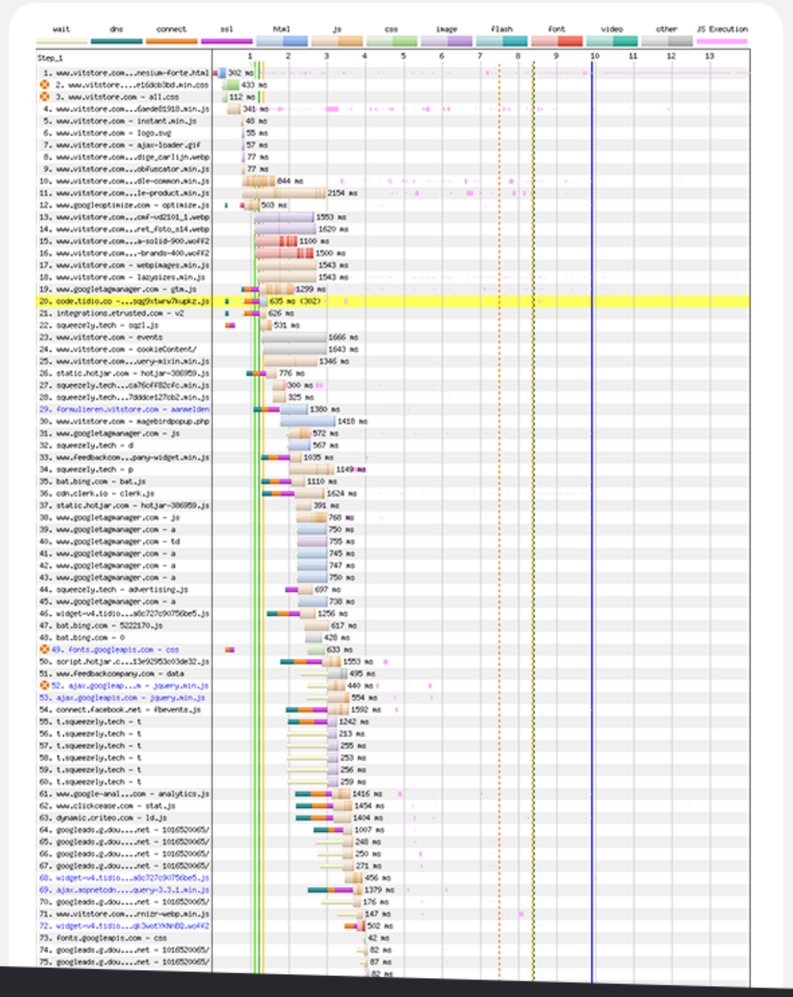
Is 100 points at pagespeed the ultimate goal?

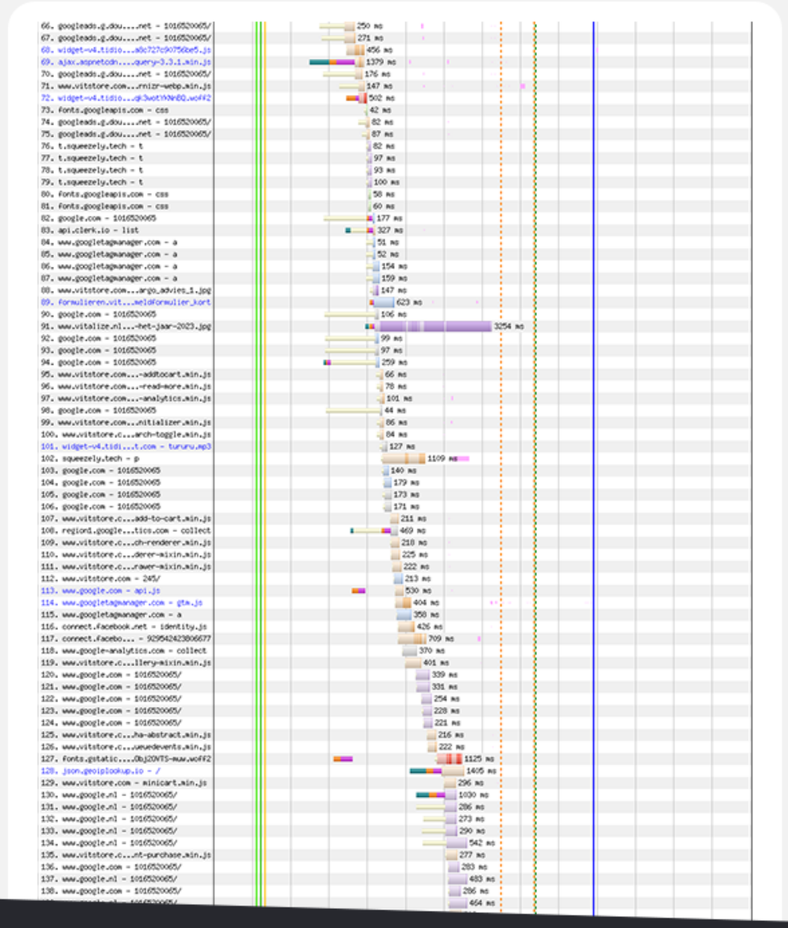
Is 100 points at pagespeed the ultimate goal?

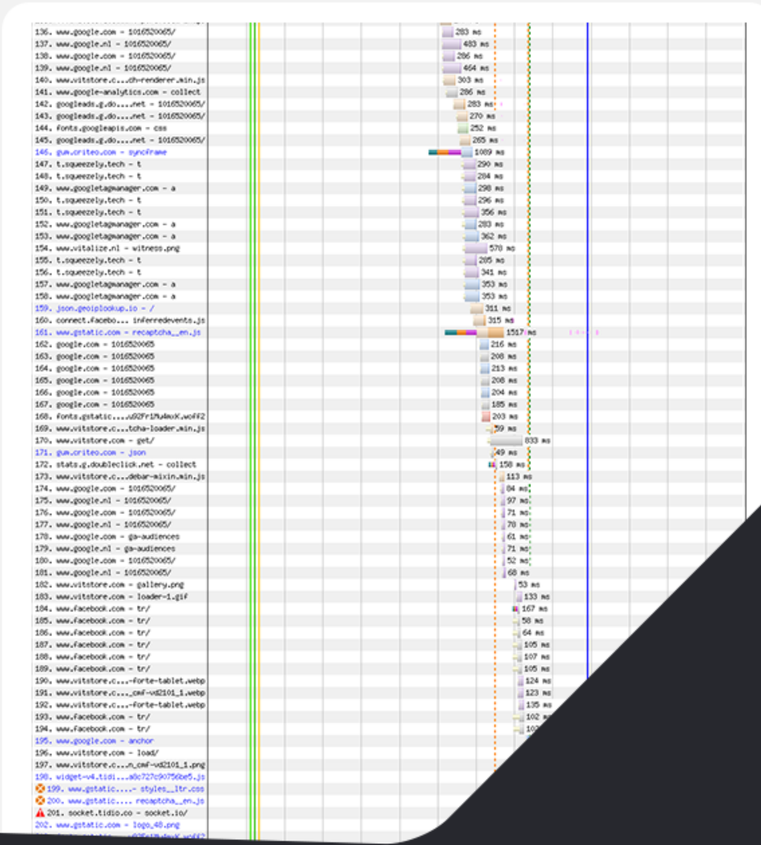
Pagespeed Insights a good starting point

Better insight with Devtools and tools like WebPageTest

The waterfall







But first the low hanging fruits

Scripts in tag manager from old site

Scripts that are loaded without a subscription

Script that do something, but no important for the business

Use native functionalities, like the Share API

Use alternative script

Load YouTube with **Lite YouTube Embed**, 224x faster

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

Load Google Analytics 4 with **Minimal Analytics 4**, just 2kb

https://gist.github.com/idarek/9ade69ac2a2ef00d98ab950426af5791?s=09

Avoid render blocking resources

```
<link rel="stylesheet" href="https://third-party.com/stylesheet.css" />

<script src="https://third-party.com/scripts.css" />
```

Avoid render blocking resources

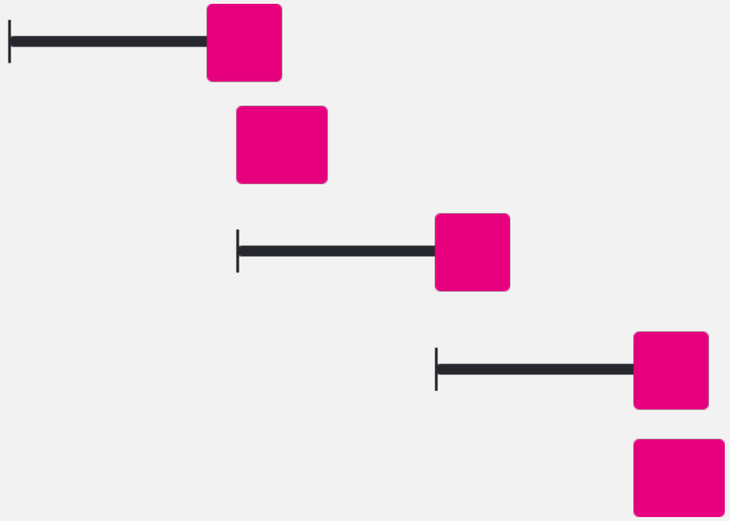
example.com

example.com/style.css

external.io/stylesheet.css

not-here.com/conversion.js

example.com/hero.png



Avoid render blocking resources

```
<link rel="stylesheet" href="../stylesheet.css" />

<script src="https://third-party.com/scripts.css" async defer />
```

Avoid render blocking resources

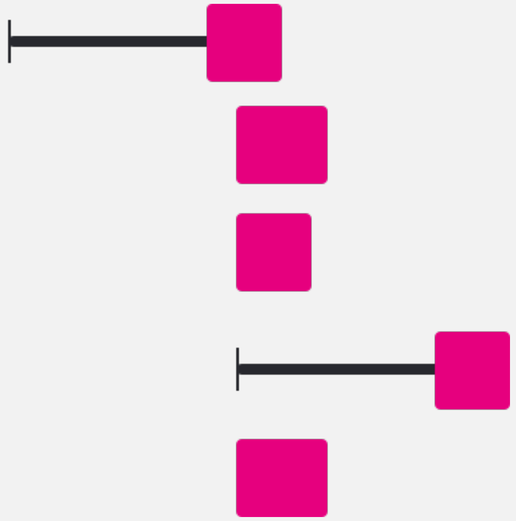
example.com

example.com/style.css

example.com/stylesheet.css

not-here.com/conversion.js (async)

example.com/hero.png



Adobe Typekit example

example.com

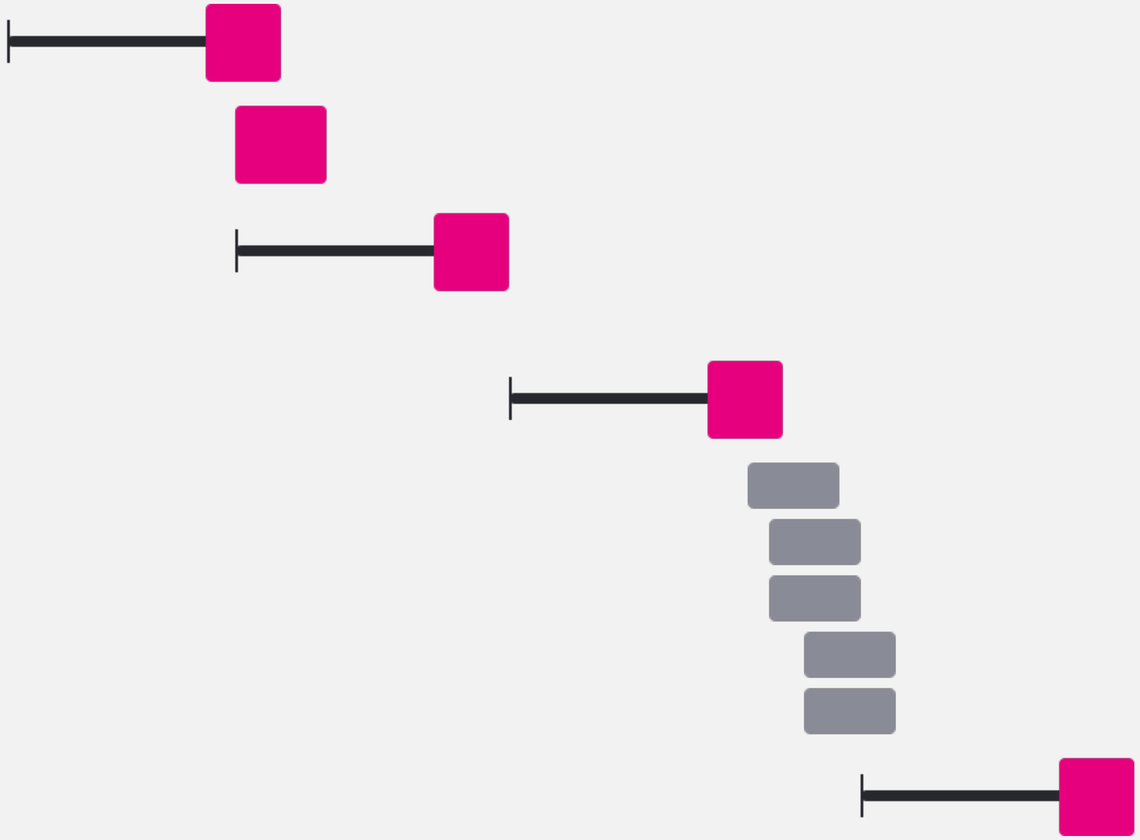
example.com/style.css

use.typekit.net/wlc2jxk.css

```
@import "p.typekit.net/p.css"
```

p.typekit.net/p.css

use.typekit.net/fonts.woff2



Preconnect & Prefetch

```
<link rel="preconnect" href="https://use.typekit.net">
<link rel="preconnect" href="https://p.typekit.net">

<link rel="preload"
      href="https://use.typekit.net/fonts.woff2"
      as="font"
      type="font/woff2"
>
```

Pre-connect & Pre-fetch

example.com

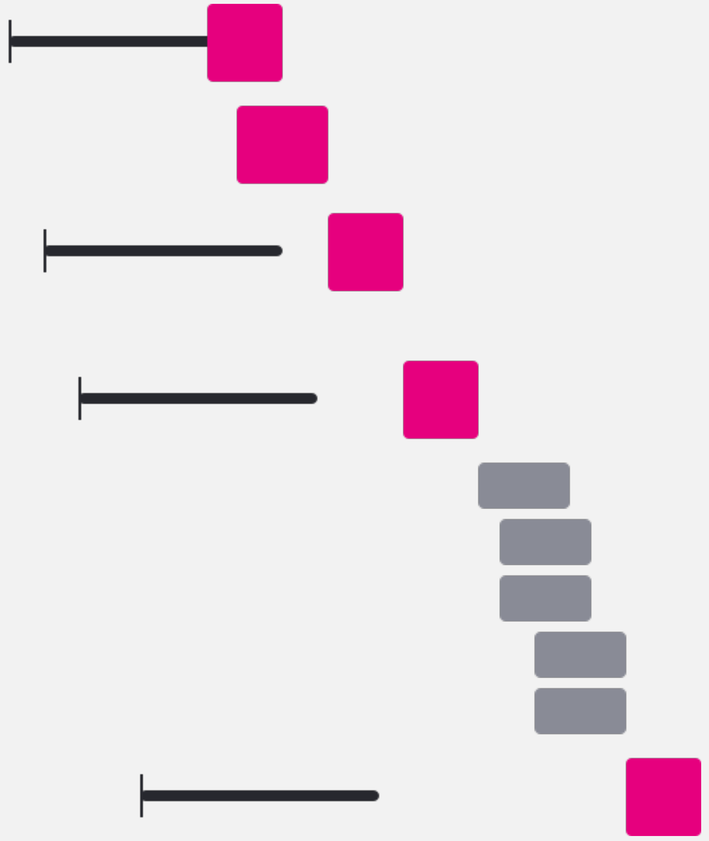
example.com/style.css

use.typekit.net/wlc2jxk.css

```
@import "p.typekit.net/p.css"
```

p.typekit.net/p.css

use.typekit.net/fonts.woff2



Host third-party scripts locally

This makes a third-party script a first-party script

You can re-download the script every night if they change a lot

Google Fonts is the best example (but not a script)

Load Tag Manager or scripts on user interaction

You can load Tag Manager on first interaction

Or set an event for user interaction

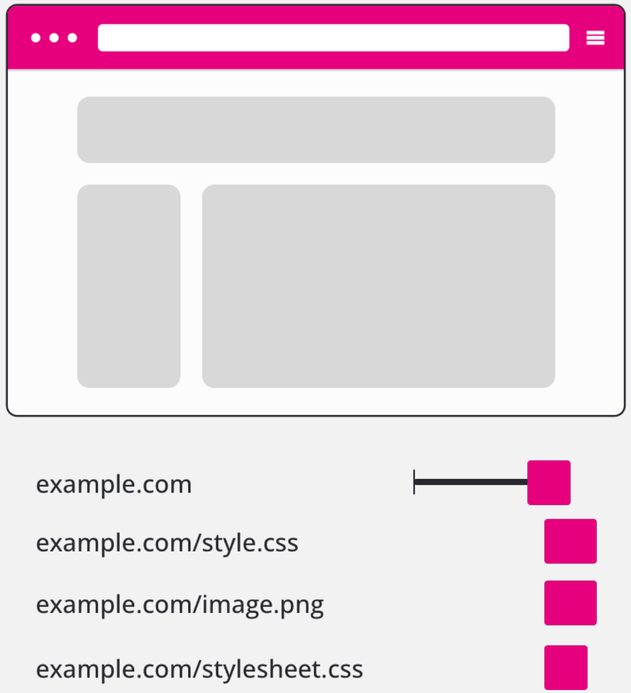
Load Tag Manager on user interaction

The moment the user has its first interaction, the JavaScript get loaded.

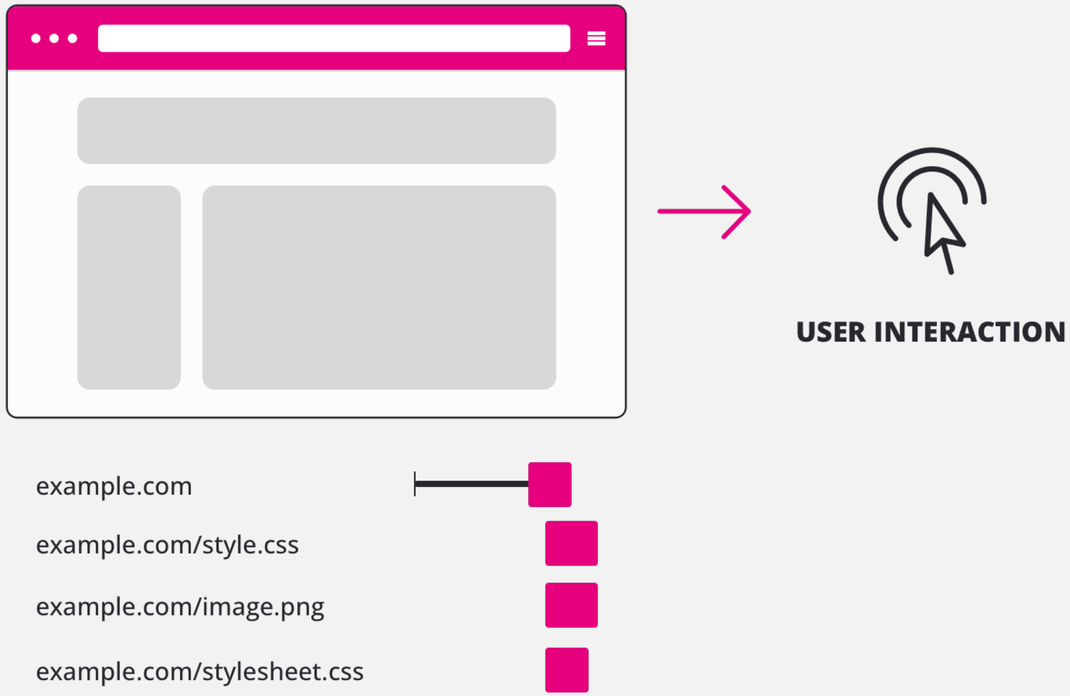
A user interaction is:

- Touchstart
- mouseover,
- wheel
- scroll
- keydown

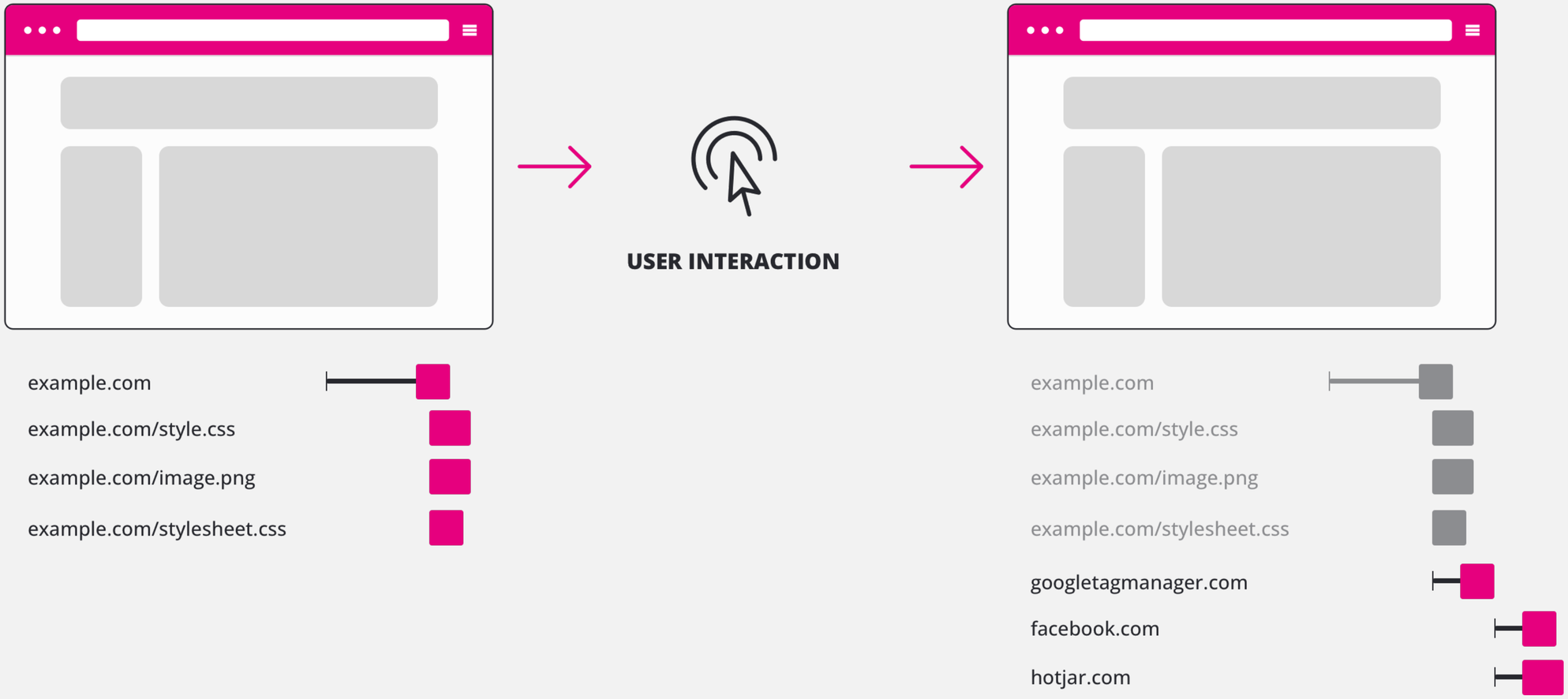
Load Tag Manager on user interaction



Load Tag Manager on user interaction



Load Tag Manager on user interaction



Load Tag Manager on user interaction

```
(events => {
  const loadMyLibrary = () => {
    events.forEach(type => window.removeEventListener(type, loadMyLibrary))
    // Load the library programatically here
  };
  events.forEach(type => window.addEventListener(type, loadMyLibrary, {once: true, passive: true}))
})(['touchstart', 'mouseover', 'wheel', 'scroll', 'keydown'])
```

* Source: https://docs.hyva.io/hyva-themes/writing-code/patterns/loading-external-javascript.html

Load Tag Manager on user interaction

```
window.addEventListener('init-external-scripts', () => {
   // Load the library programatically here
}, {once: true, passive: true});
```

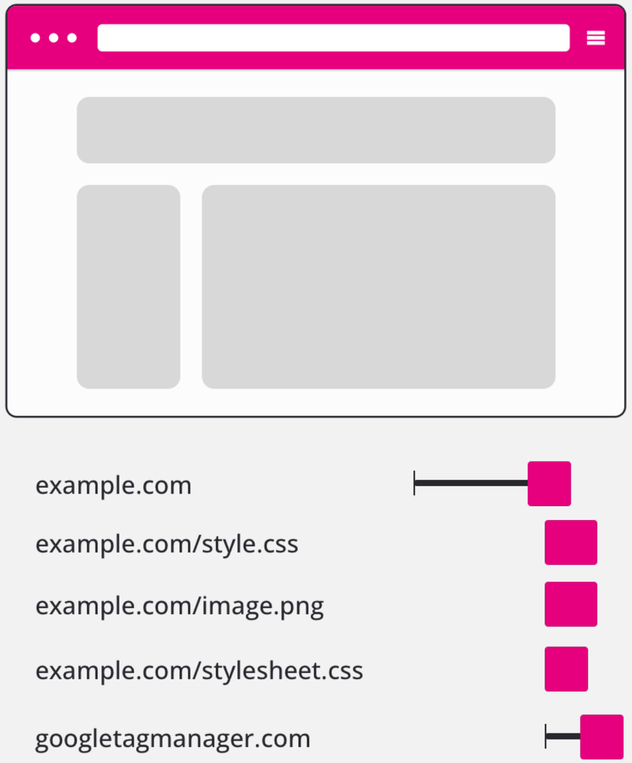
* Source: https://docs.hyva.io/hyva-themes/writing-code/patterns/loading-external-javascript.html

Load Tag Manager on user interaction

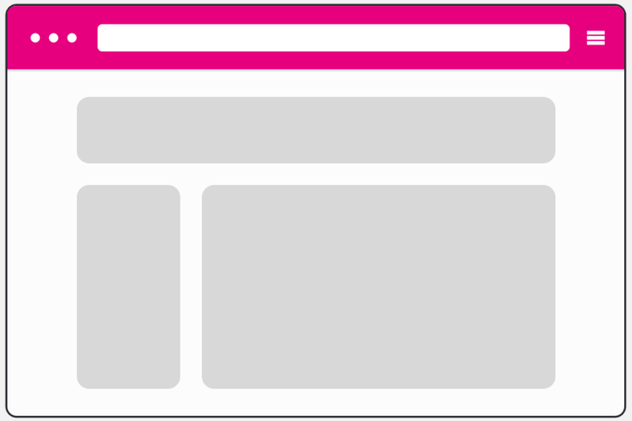
```
window.addEventListener('init-external-scripts', () => {

  (function(w,d,s,l,i){w[l]=w[l]||[];w[l].push({'gtm.start':
      new Date().getTime(),event:'gtm.js'});
      var f=d.getElementsByTagName(s)[0],j=d.createElement(s),dl=l!='dataLayer'?'&l='+l:'';j.async=true;
      j.src='https://www.googletagmanager.com/gtm.js?id='+i+dl;f.parentNode.insertBefore(j,f);
  })(window,document,'script','dataLayer','GTM-XXXXXX');

}, {once: true, passive: true});
```

* Source: https://docs.hyva.io/hyva-themes/writing-code/patterns/loading-external-javascript.html

Set trigger for user interaction



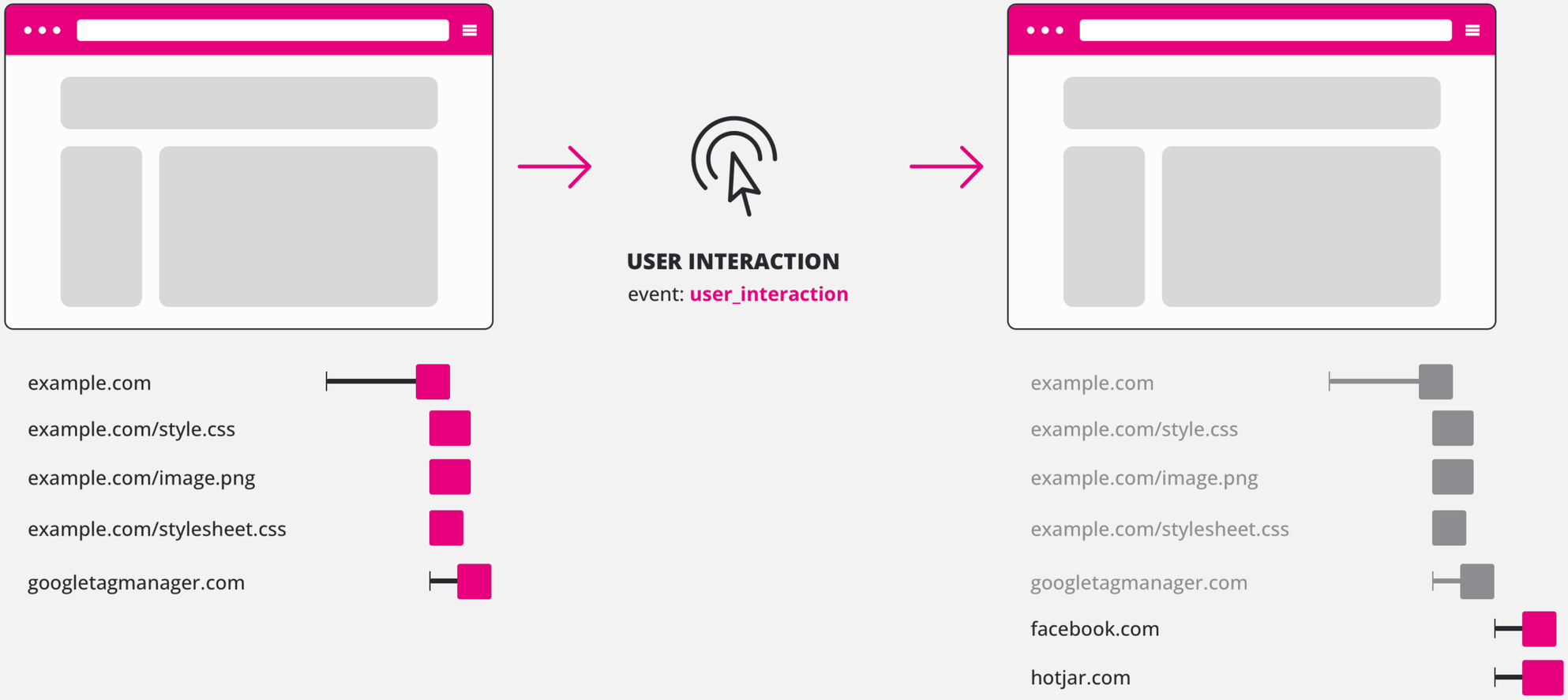
Set trigger for user interaction



USER INTERACTION

event: **user_interaction**

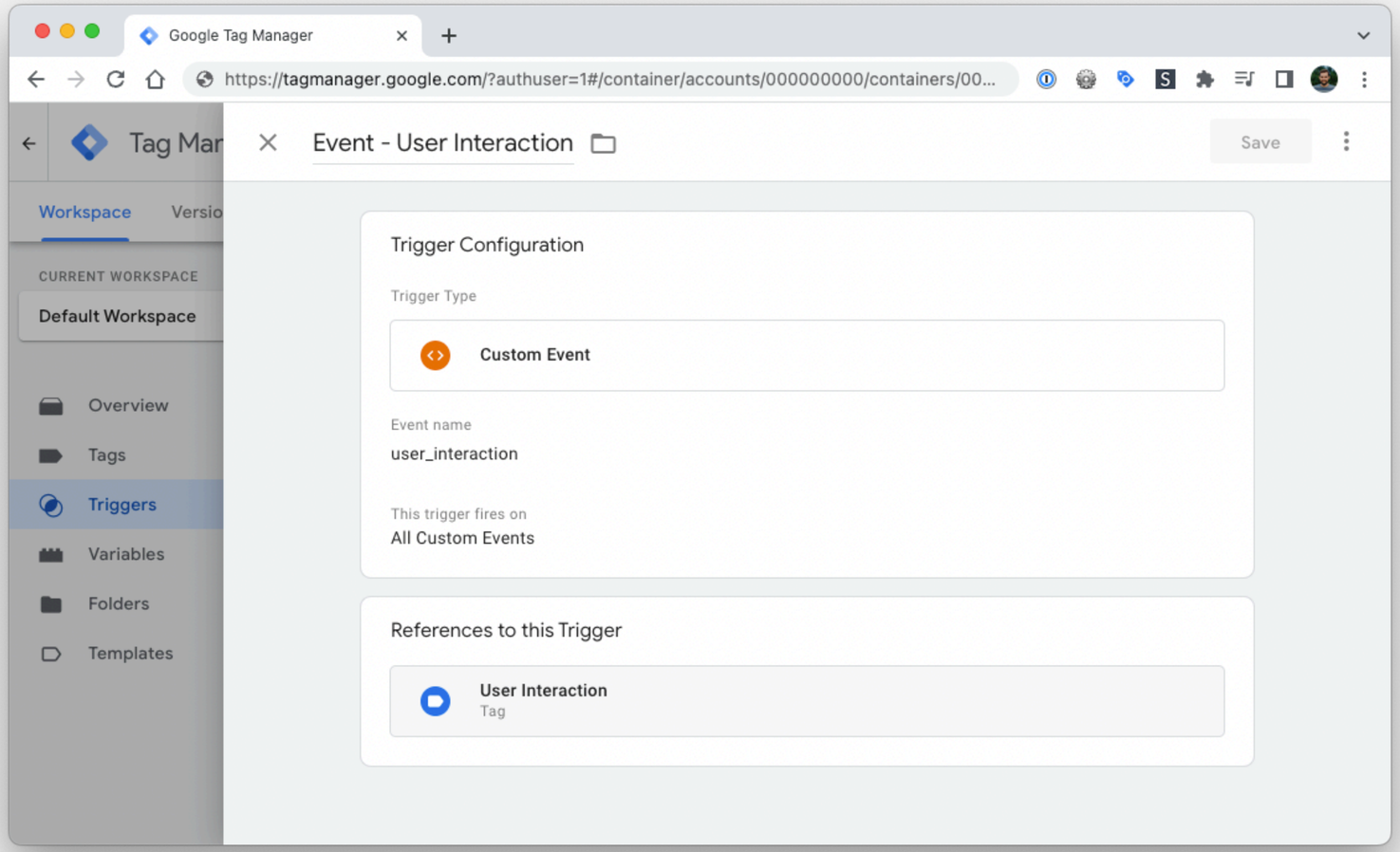
Set trigger for user interaction



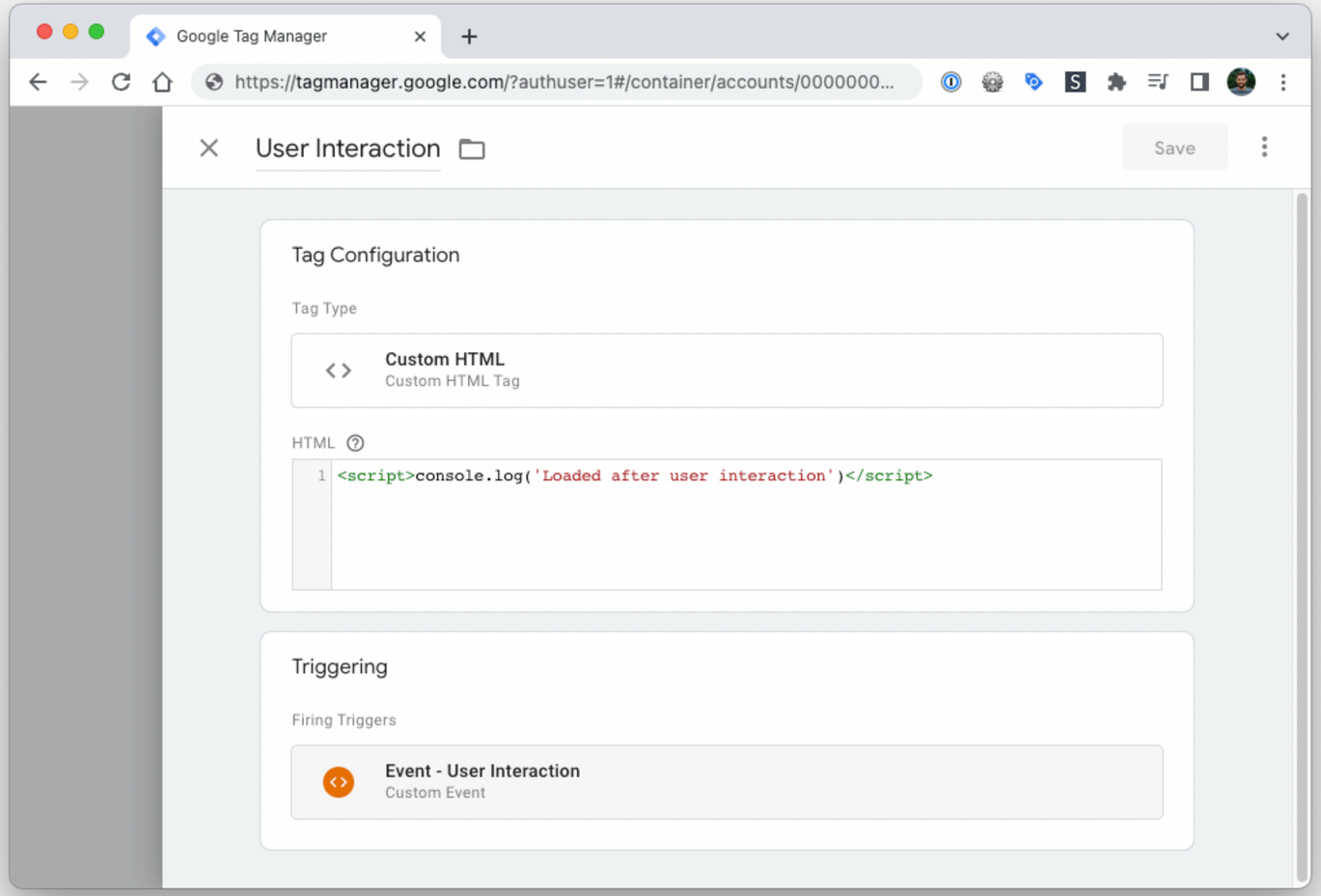
Set trigger for user interaction

```
window.addEventListener('init-external-scripts', () => {
    window.dataLayer = window.dataLayer || [];
    window.dataLayer.push({
        'event': 'user_interaction'
    });
}, {once: true, passive: true});
```

Set trigger for user interaction

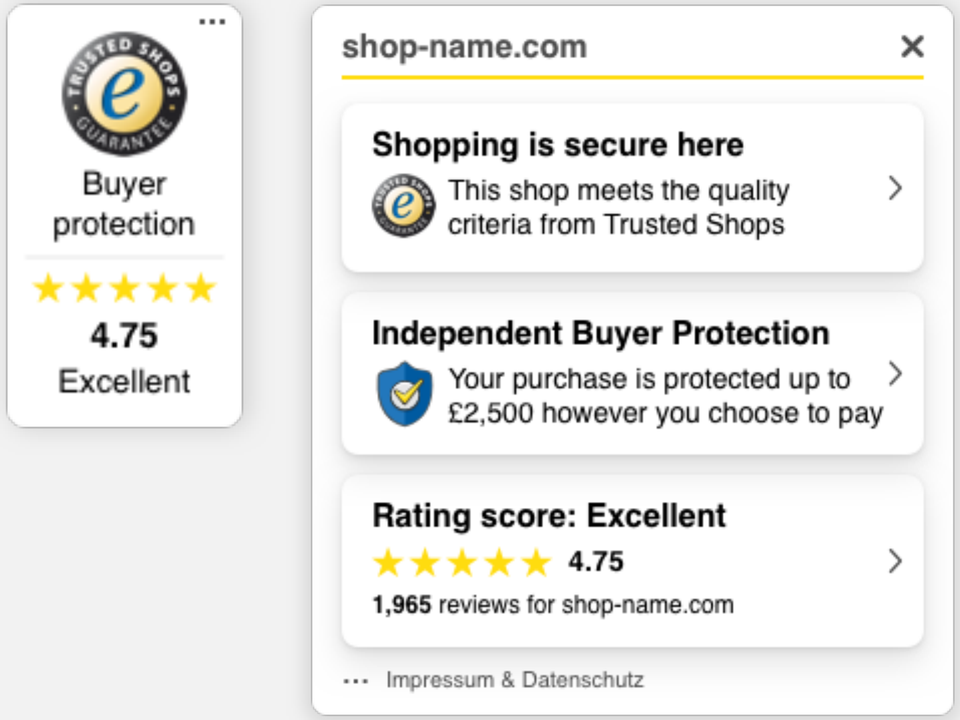


Set trigger for user interaction



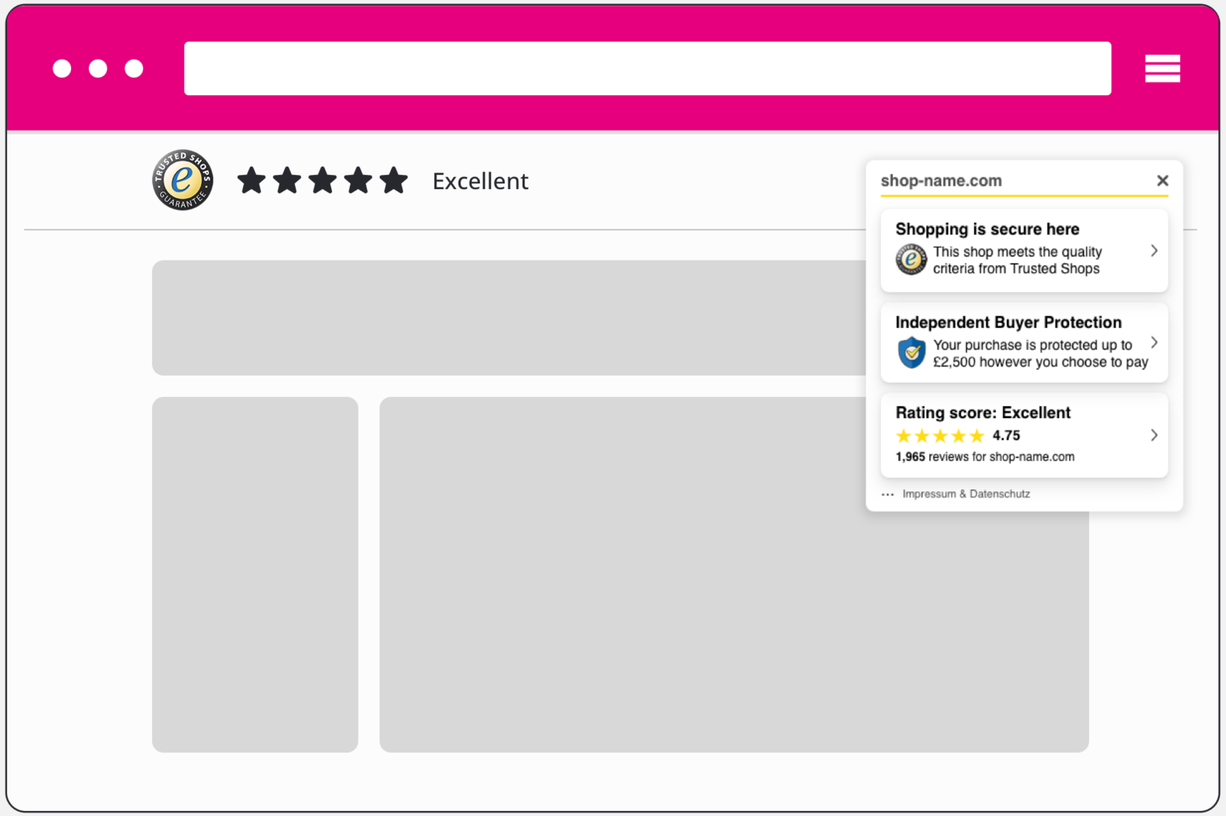
Load other script on user interaction

For example TrustedShops



Load other script on user interaction

Load other script on user interaction



Load chat widget on click

How many people do use the chat?

Chat widgets are large (500kb - 1MB), created in React or other libraries

Load it on click on fake button

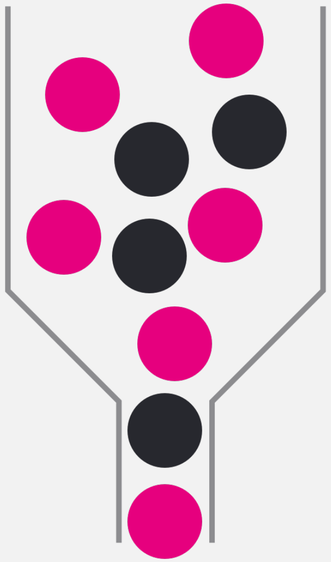
Partytown (beta)

Get third-party script of the main thread

https://partytown.builder.io/

Partytown

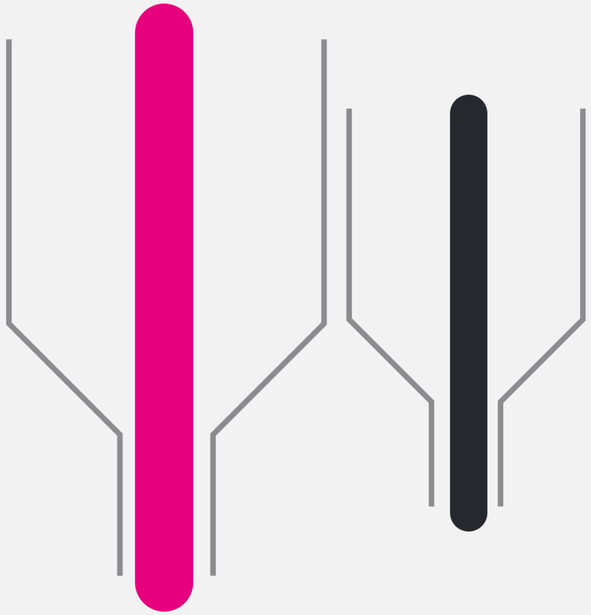
Without Partytown



Your code

Third-party scripts

With Partytown



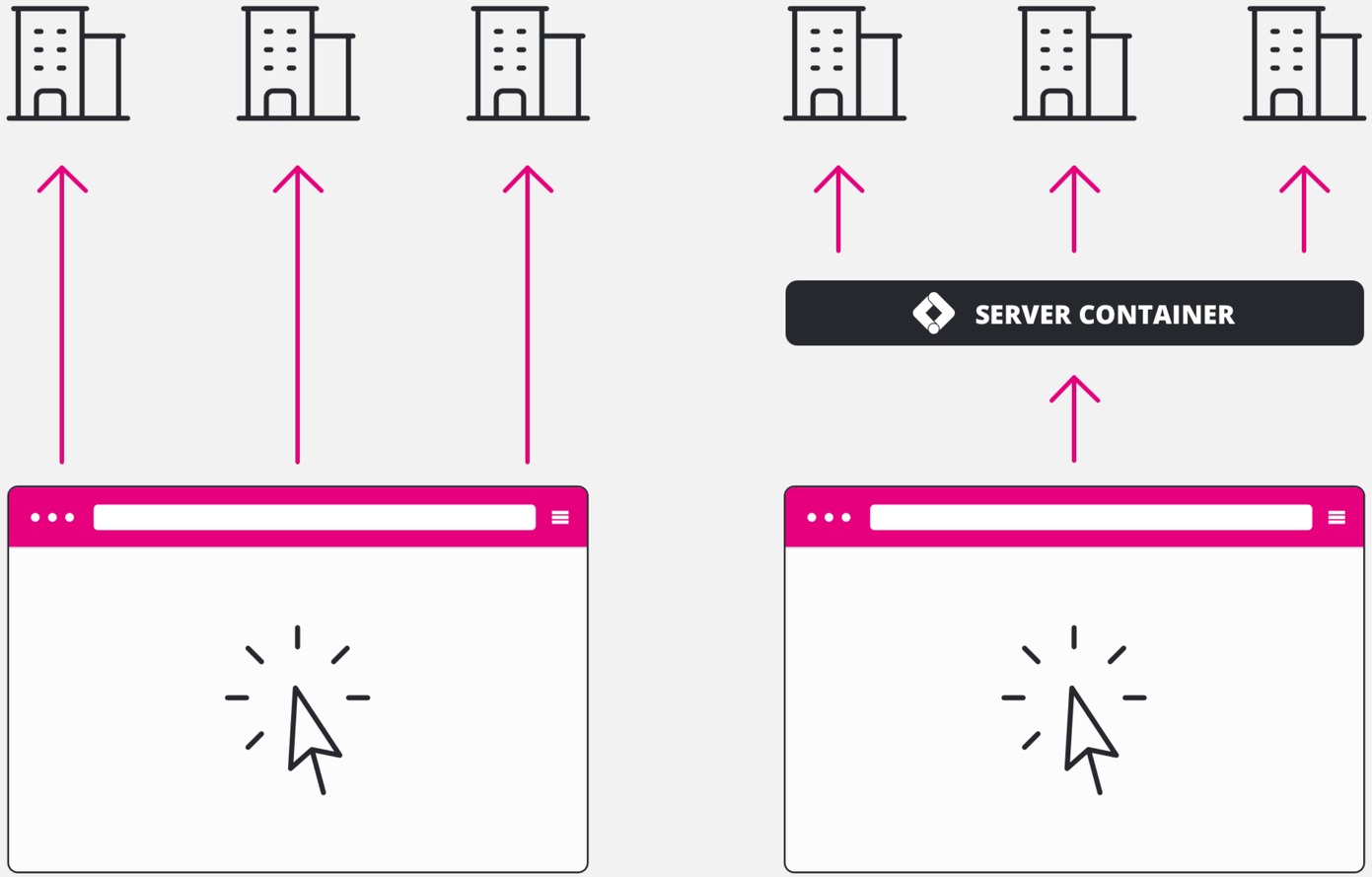
Main thread

Worker thread

Partytown

```
<head>
  <script>
    /* Inlined Partytown Snippet */
  </script>
  <script>
    partytown = {
      forward: ['dataLayer.push', 'fbq'],
    };
  </script>
  <script type="text/partytown">
    /* Insert GTM Script Here */
  </script>
</head>
```

Client side GTM vs. Server side GTM



GTM server side

Browser-based tracking and cookies won’t last long

server-side tracking is the future

It can make third-party script, first-party scripts

GTM server side

Only for tracking, analytics, marketing code

You still have scripts that needs JavaScript client side

It can get expensive (especially if you’re doing it wrong)

Server-side tracking can get very technical, very fast

This is the end, beautiful friend

Questions ???

This is the end, beautiful friend

https://twitter.com/edwinbos1

cream
Thanks for watching