



Late to the party

Everything about loading third-party scripts



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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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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

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

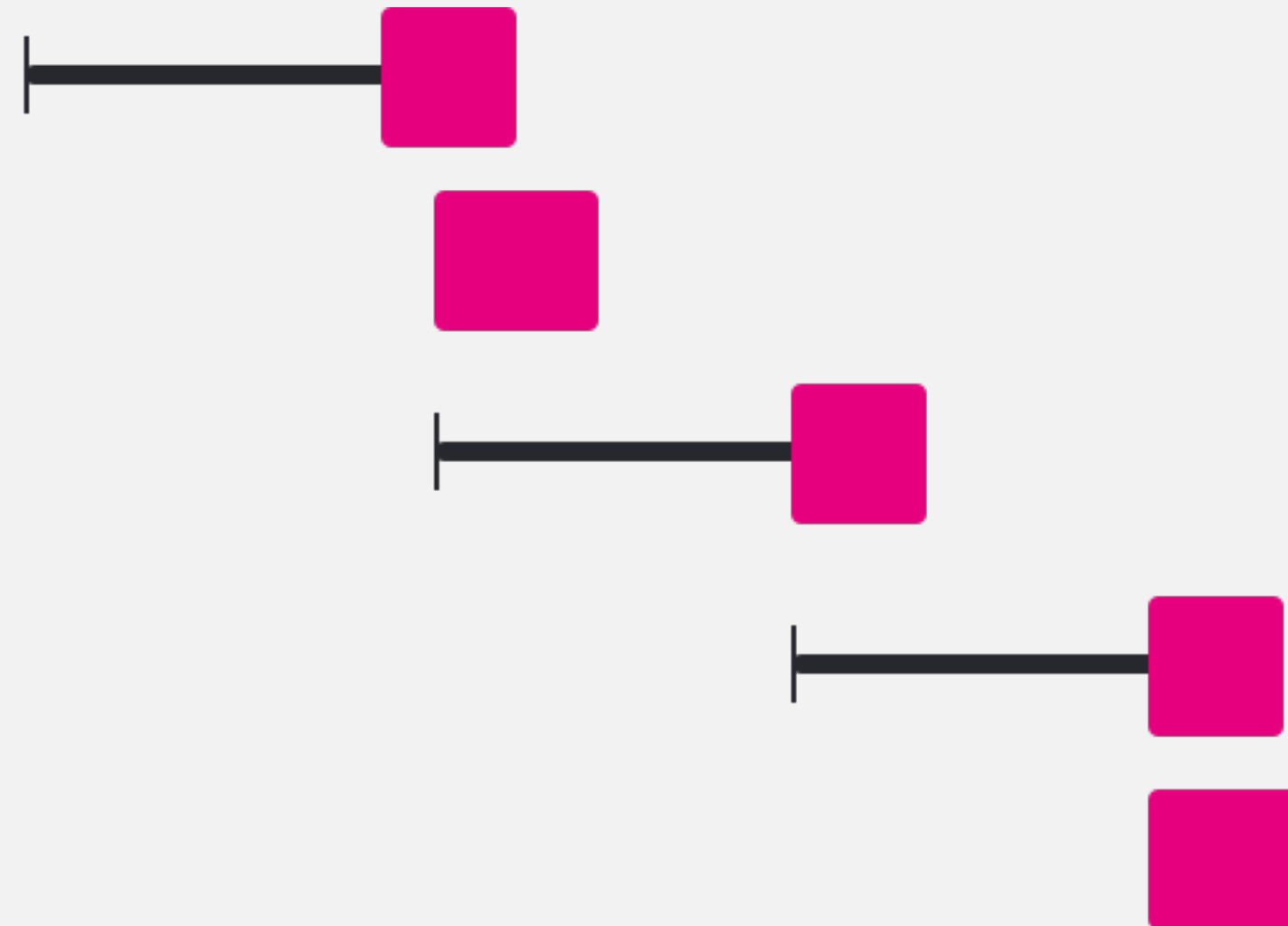
example.com

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

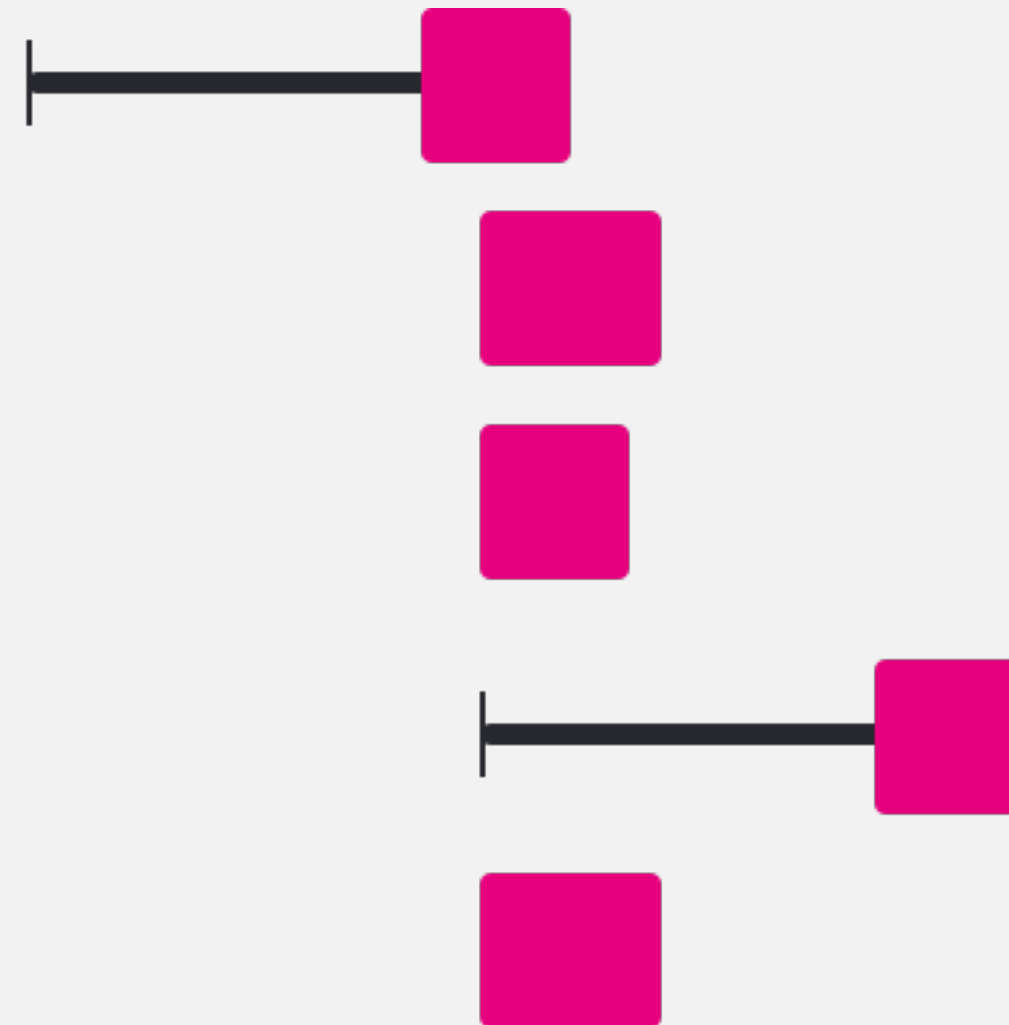
example.com

example.com/style.css

example.com/stylesheet.css

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

example.com/hero.png



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

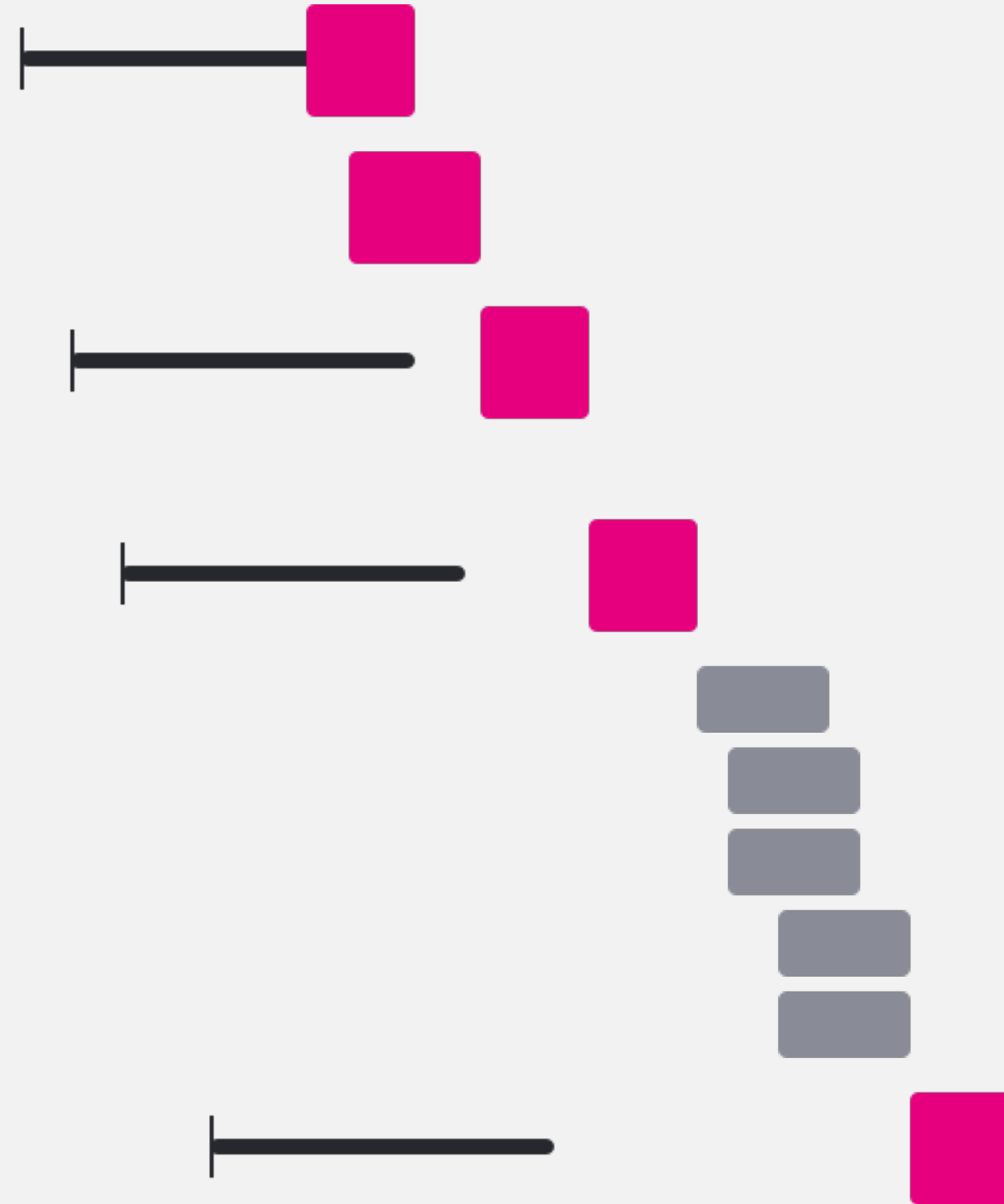
example.com/style.css

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

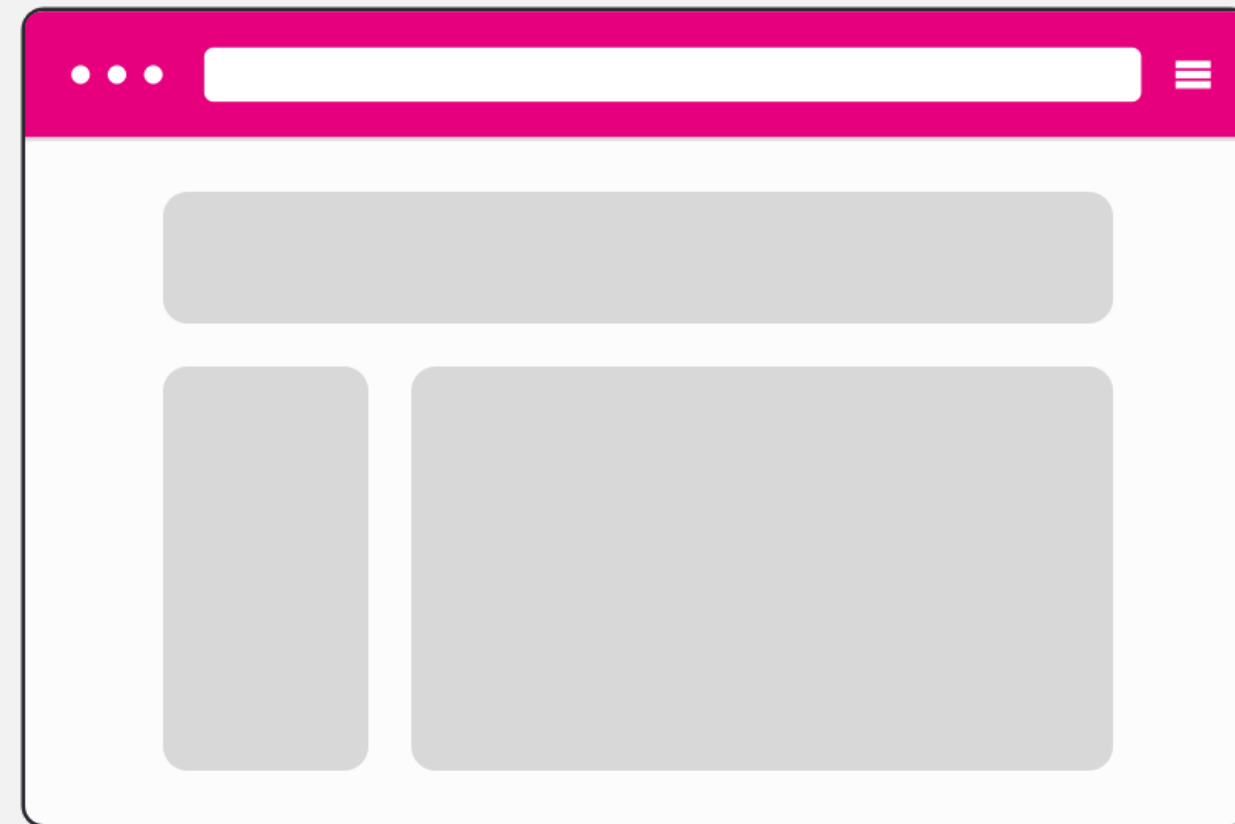
Load Tag Manager on user interaction

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



example.com



example.com/style.css



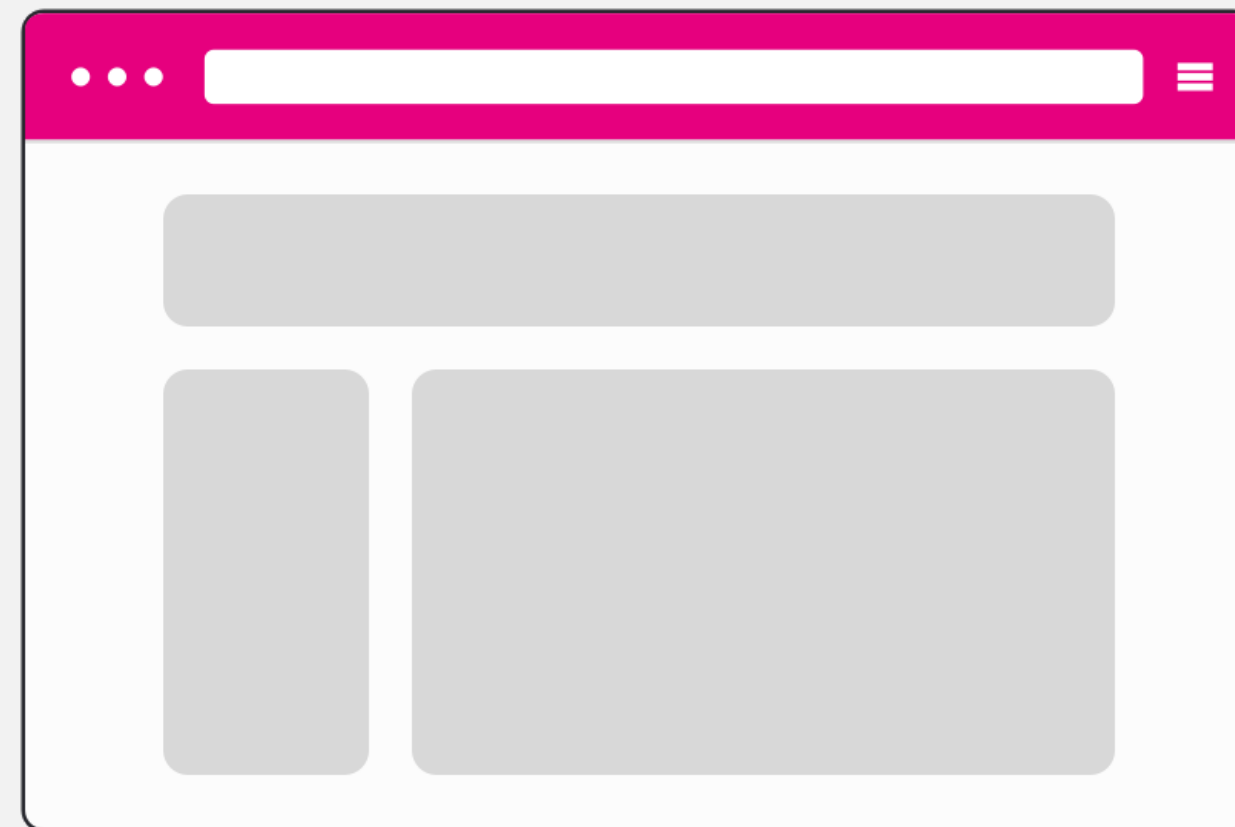
example.com/image.png



example.com/stylesheet.css



Load Tag Manager on user interaction



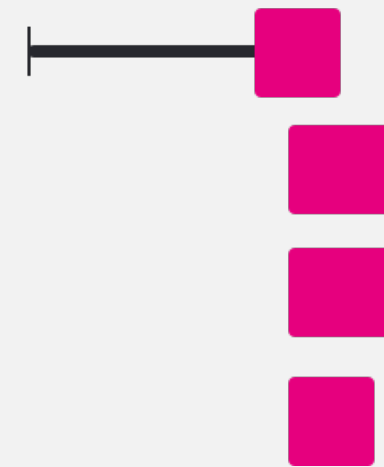
USER INTERACTION

example.com

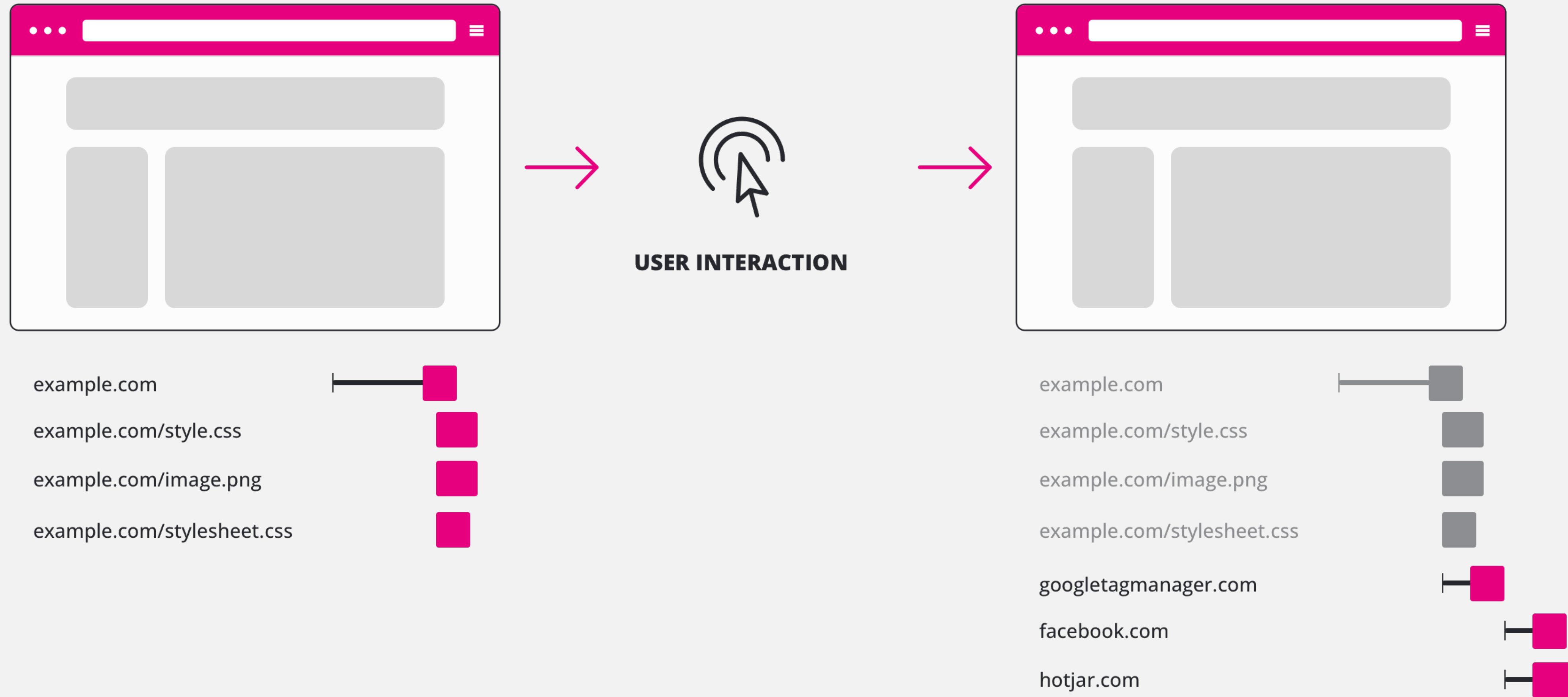
example.com/style.css

example.com/image.png

example.com/stylesheet.css



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});
```

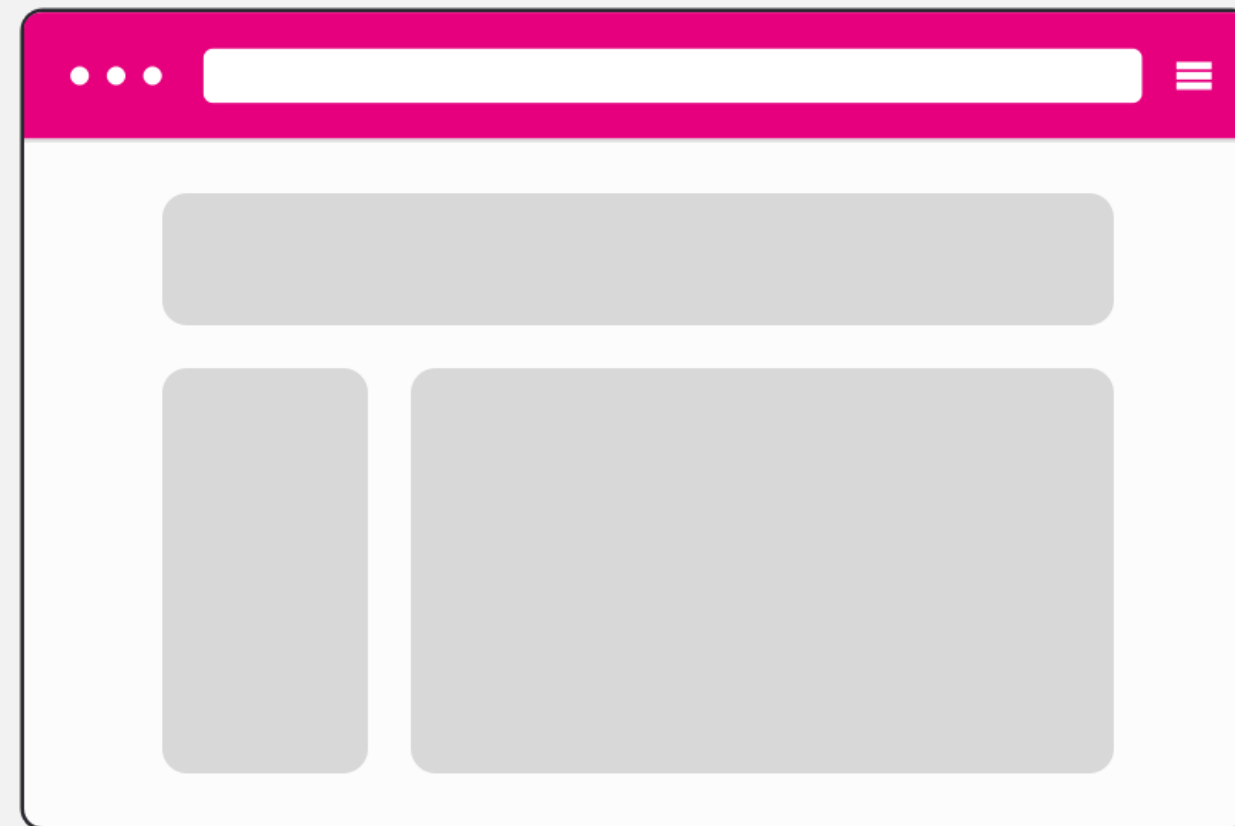
* Source: <https://docs.hyva.io/hyva-themes/writing-code/patterns/loading-external-javascript.html>

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



example.com



example.com/style.css



example.com/image.png



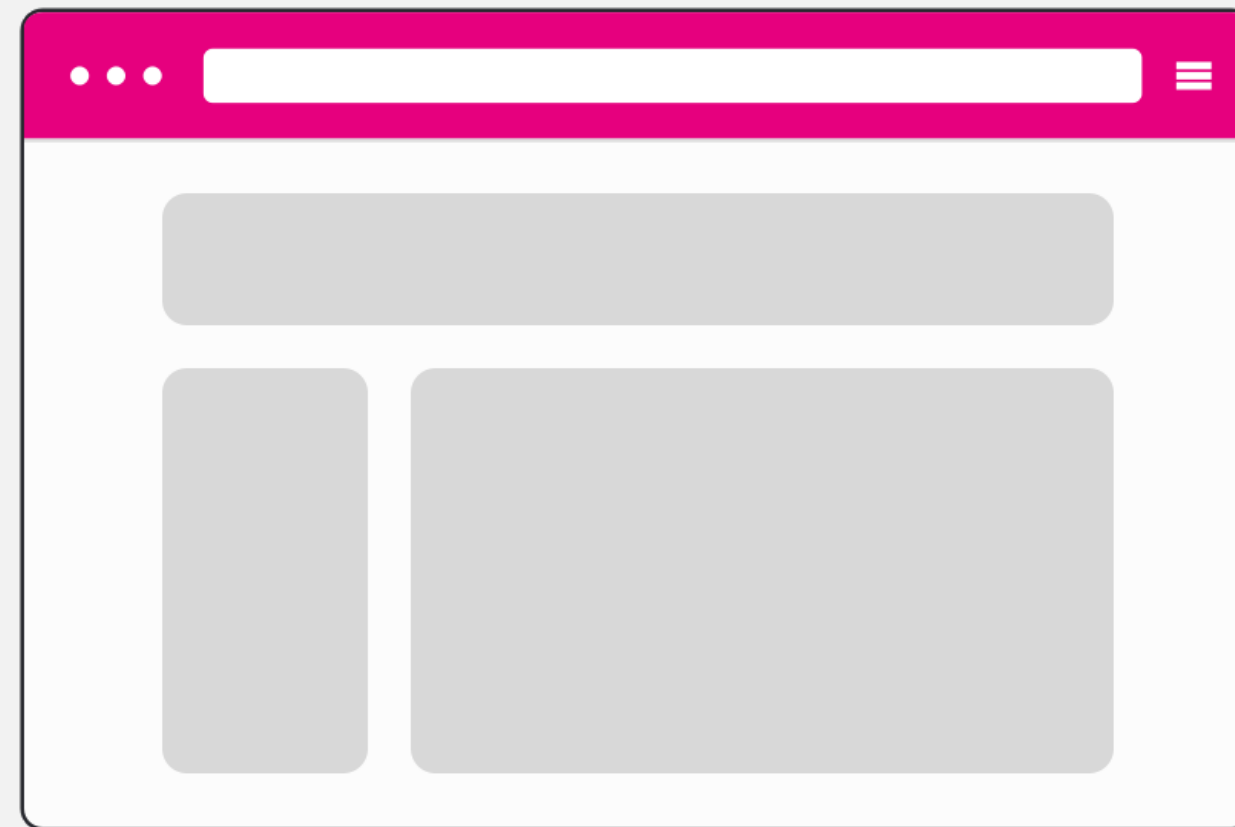
example.com/stylesheet.css



googletagmanager.com



Set trigger for user interaction



USER INTERACTION
event: **user_interaction**

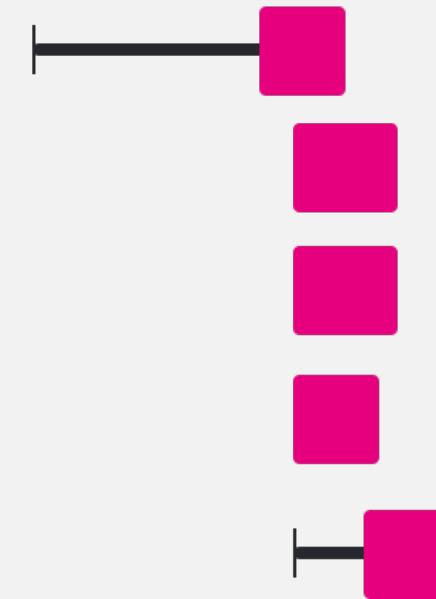
example.com

example.com/style.css

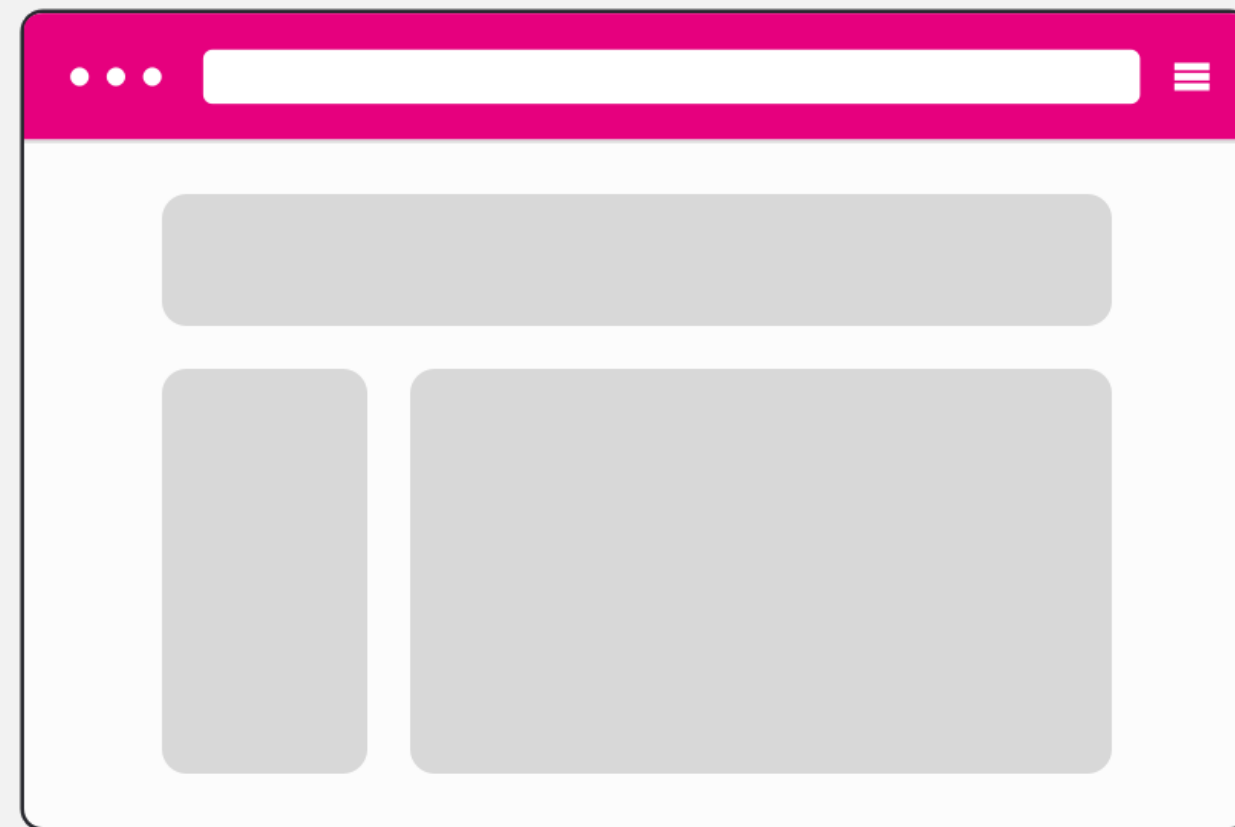
example.com/image.png

example.com/stylesheet.css

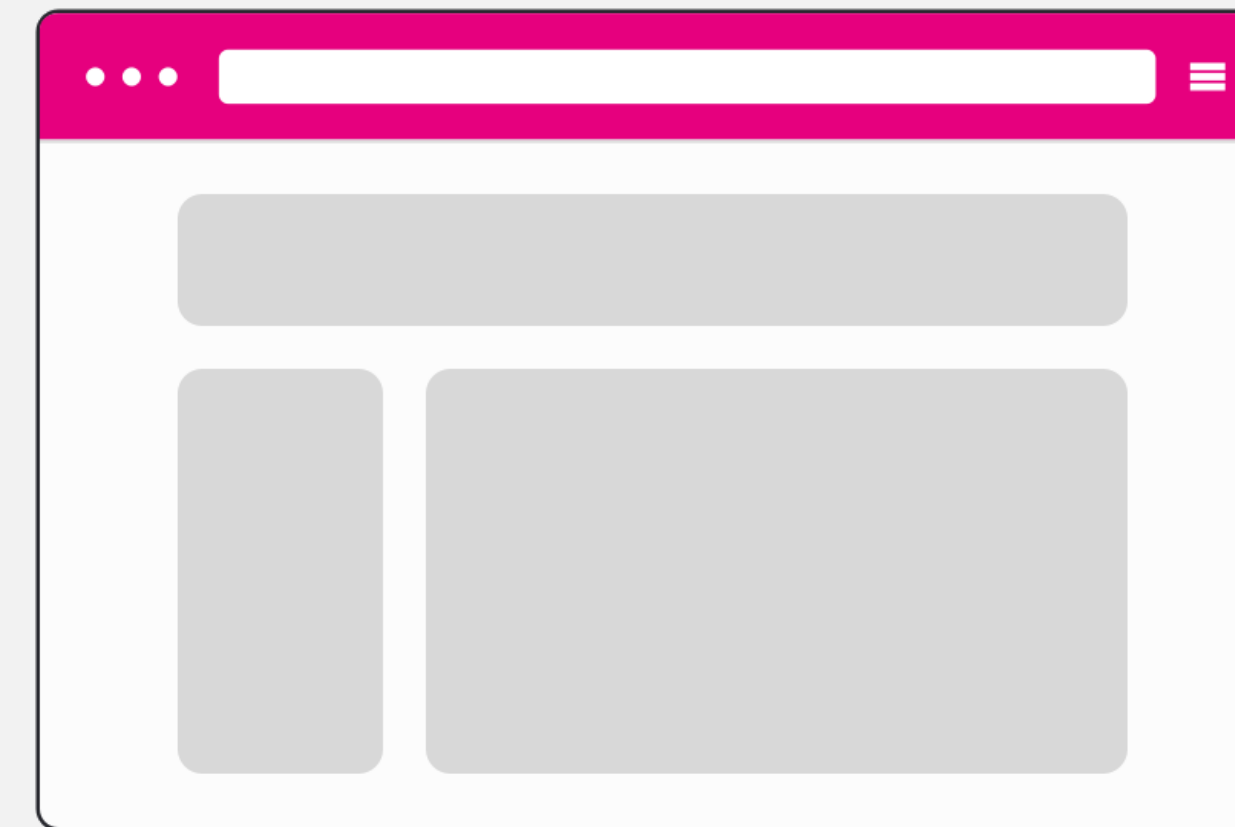
googletagmanager.com



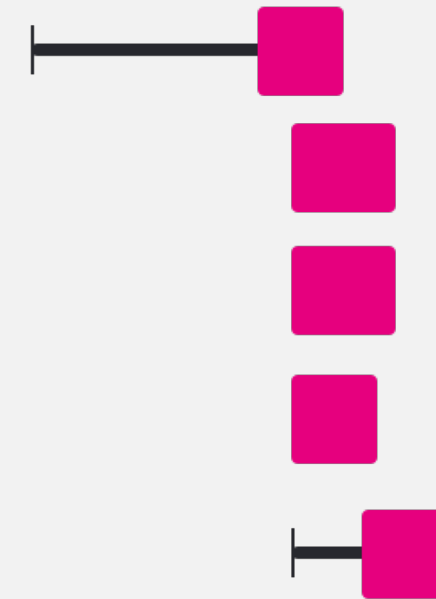
Set trigger for user interaction



USER INTERACTION
event: **user_interaction**



example.com



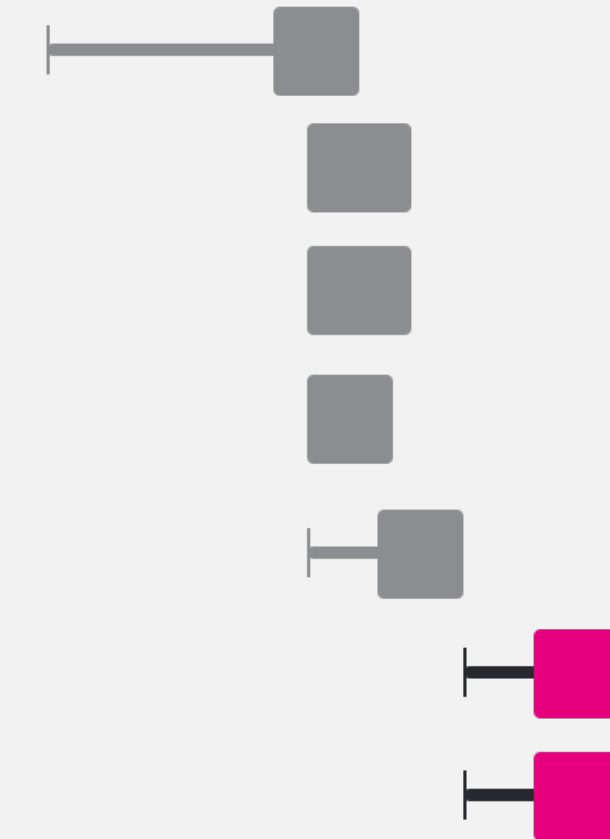
example.com/style.css

example.com/image.png

example.com/stylesheet.css

googletagmanager.com

example.com



example.com/style.css

example.com/image.png

example.com/stylesheet.css

googletagmanager.com

facebook.com

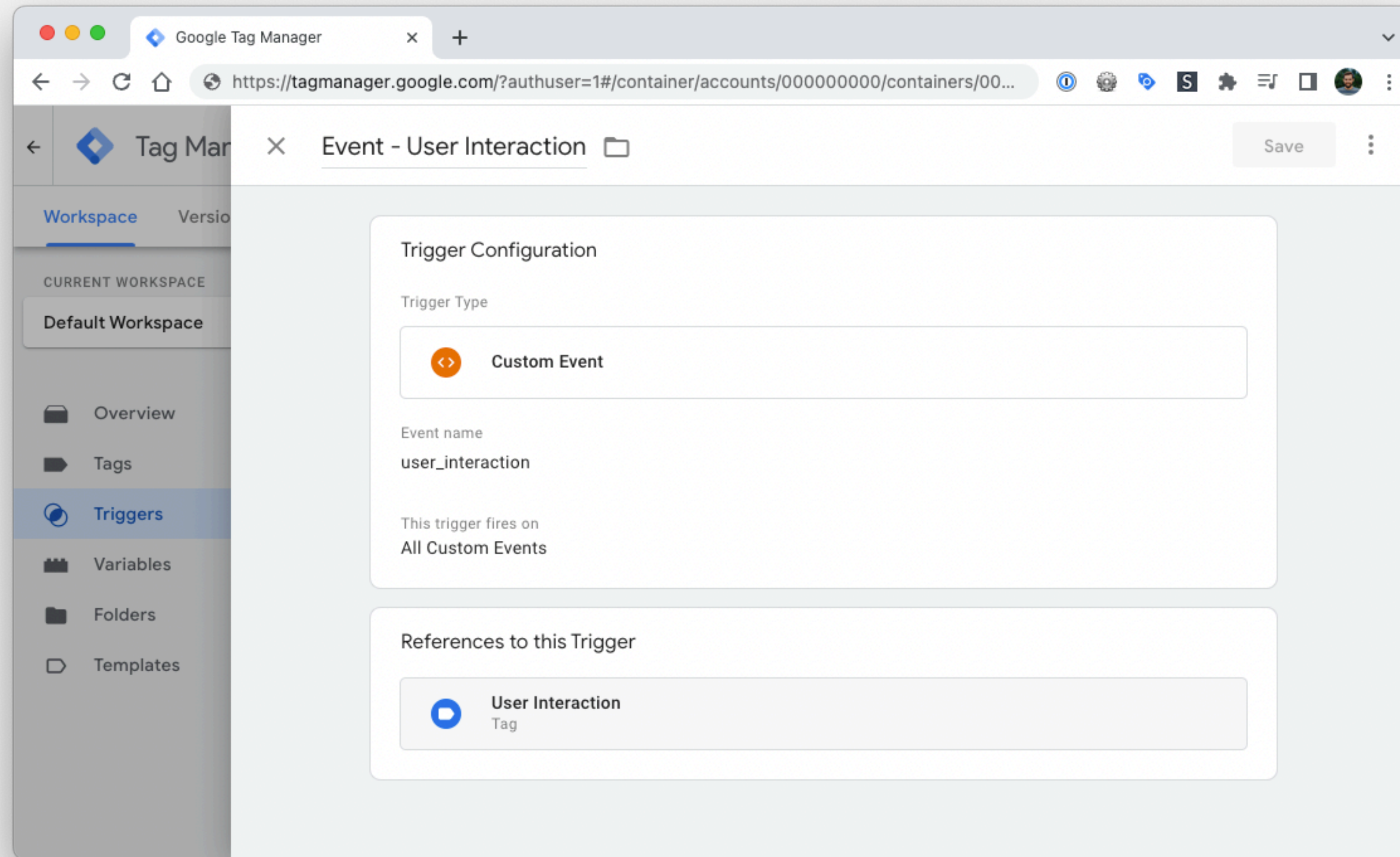
hotjar.com

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



The screenshot displays the Google Tag Manager interface in a browser window. The browser's address bar shows the URL: `https://tagmanager.google.com/?authuser=1#/container/accounts/000000000/containers/00...`. The page title is "Event - User Interaction".

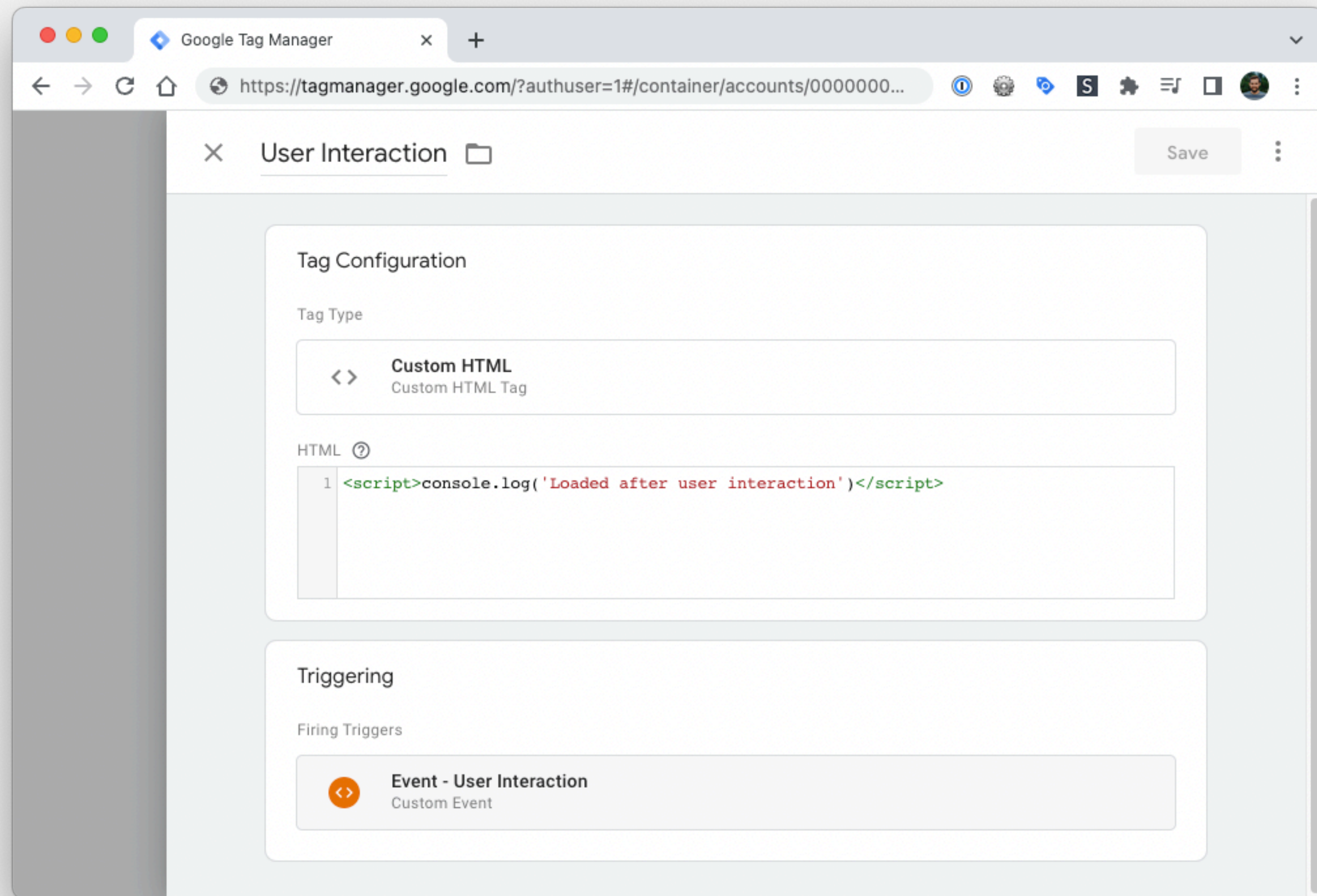
The interface is divided into a left sidebar and a main content area. The sidebar includes a "Workspace" section with "CURRENT WORKSPACE" and "Default Workspace", and a navigation menu with "Overview", "Tags", "Triggers" (highlighted), "Variables", "Folders", and "Templates".

The main content area is titled "Trigger Configuration" and contains the following details:

- Trigger Type:** Custom Event
- Event name:** user_interaction
- This trigger fires on:** All Custom Events

Below the configuration section is a "References to this Trigger" section, which lists a "User Interaction Tag".

Set trigger for user interaction



The screenshot shows the Google Tag Manager interface for configuring a tag. The browser address bar displays the URL: `https://tagmanager.google.com/?authuser=1#/container/accounts/0000000...`. The page title is "User Interaction" and there is a "Save" button in the top right corner.

Tag Configuration

Tag Type: Custom HTML
Custom HTML Tag

HTML [?]

```
1 <script>console.log('Loaded after user interaction')</script>
```


Triggering

Firing Triggers

Event - User Interaction
Custom Event

Load other script on user interaction

For example TrustedShops



Buyer protection

★★★★★
4.75
Excellent

shop-name.com

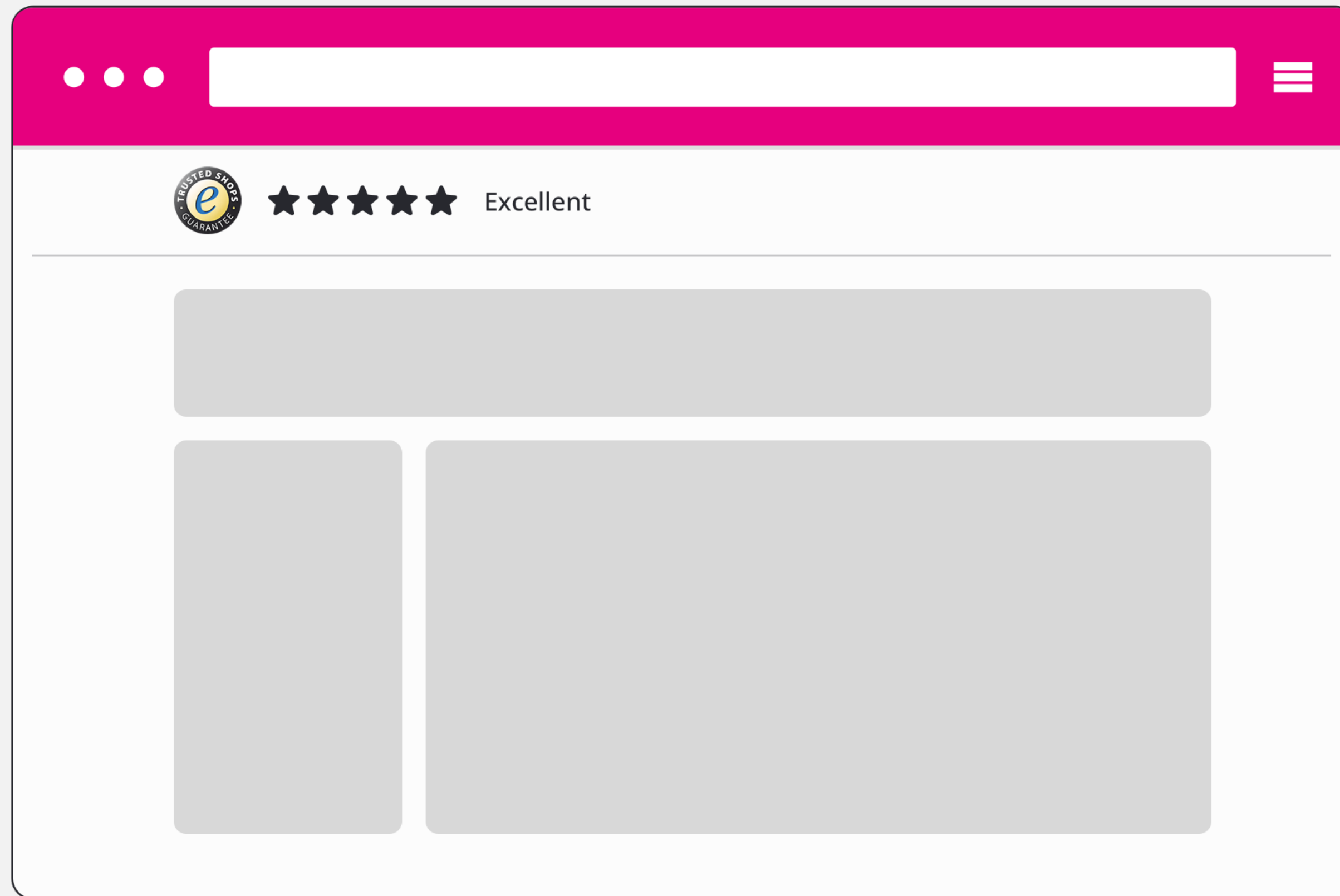
Shopping is secure here
This shop meets the quality criteria from Trusted Shops

Independent Buyer Protection
Your purchase is protected up to £2,500 however you choose to pay

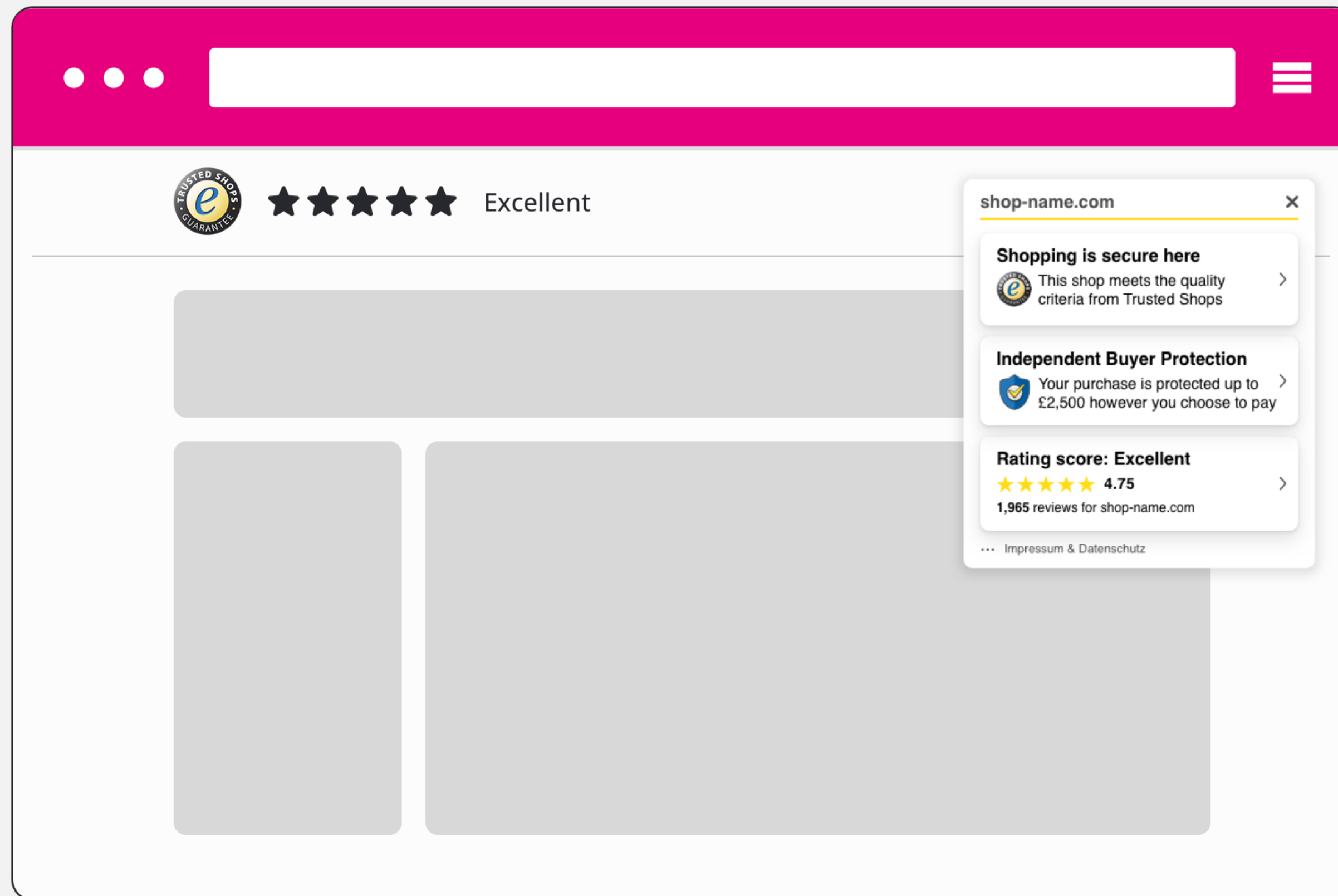
Rating score: Excellent
★★★★★ 4.75
1,965 reviews for shop-name.com

Impressum & Datenschutz

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

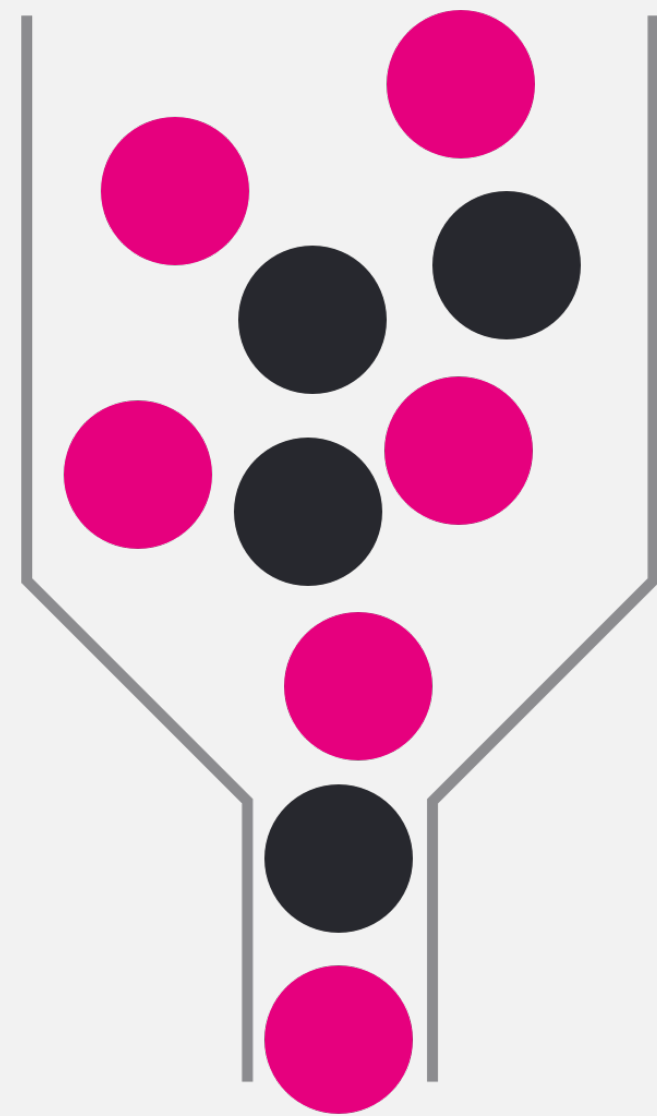
Partytown (beta)



Get third-party script of the main thread

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

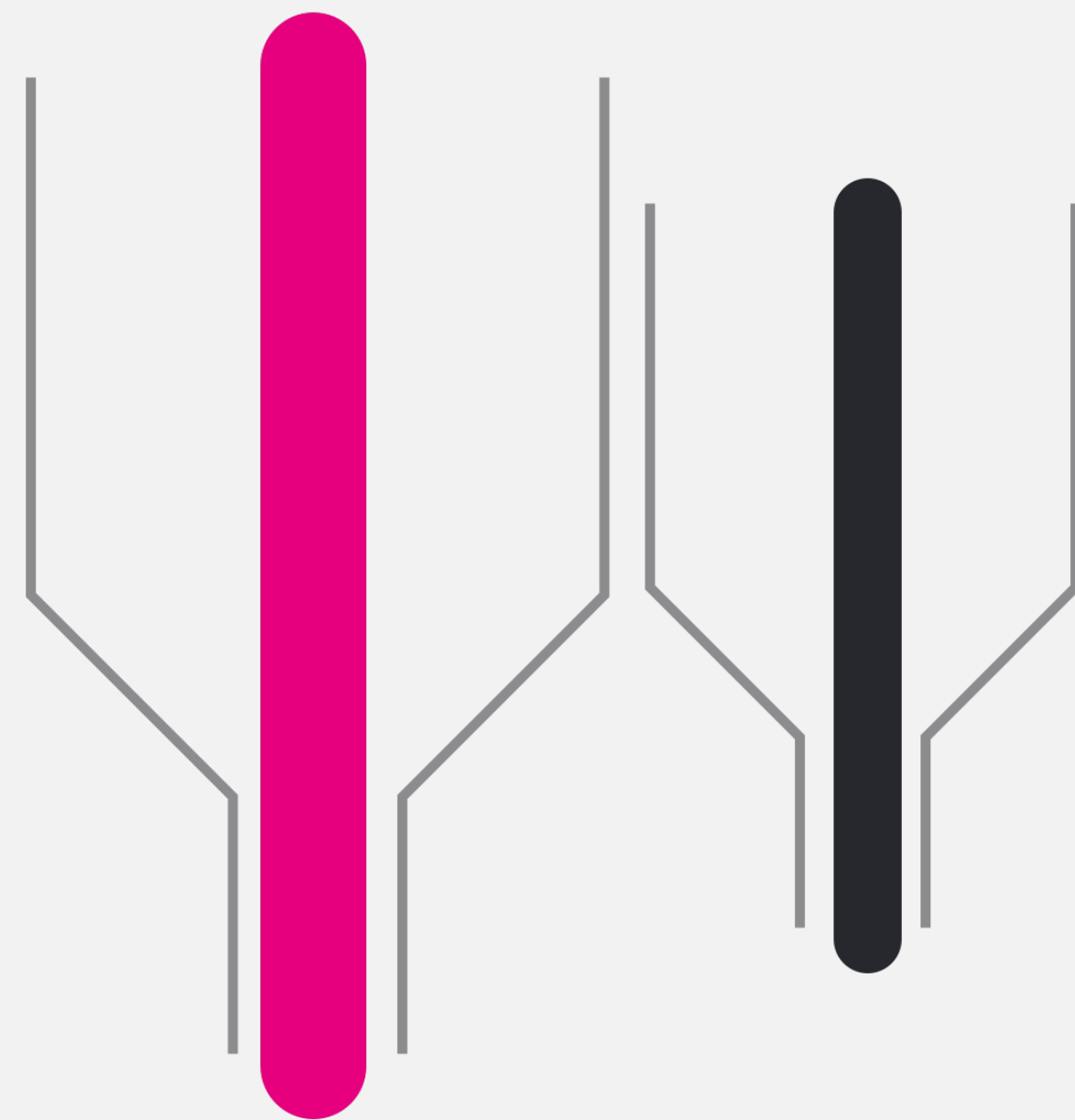
Partytown

Without Partytown



-  Your code
-  Third-party scripts

With Partytown



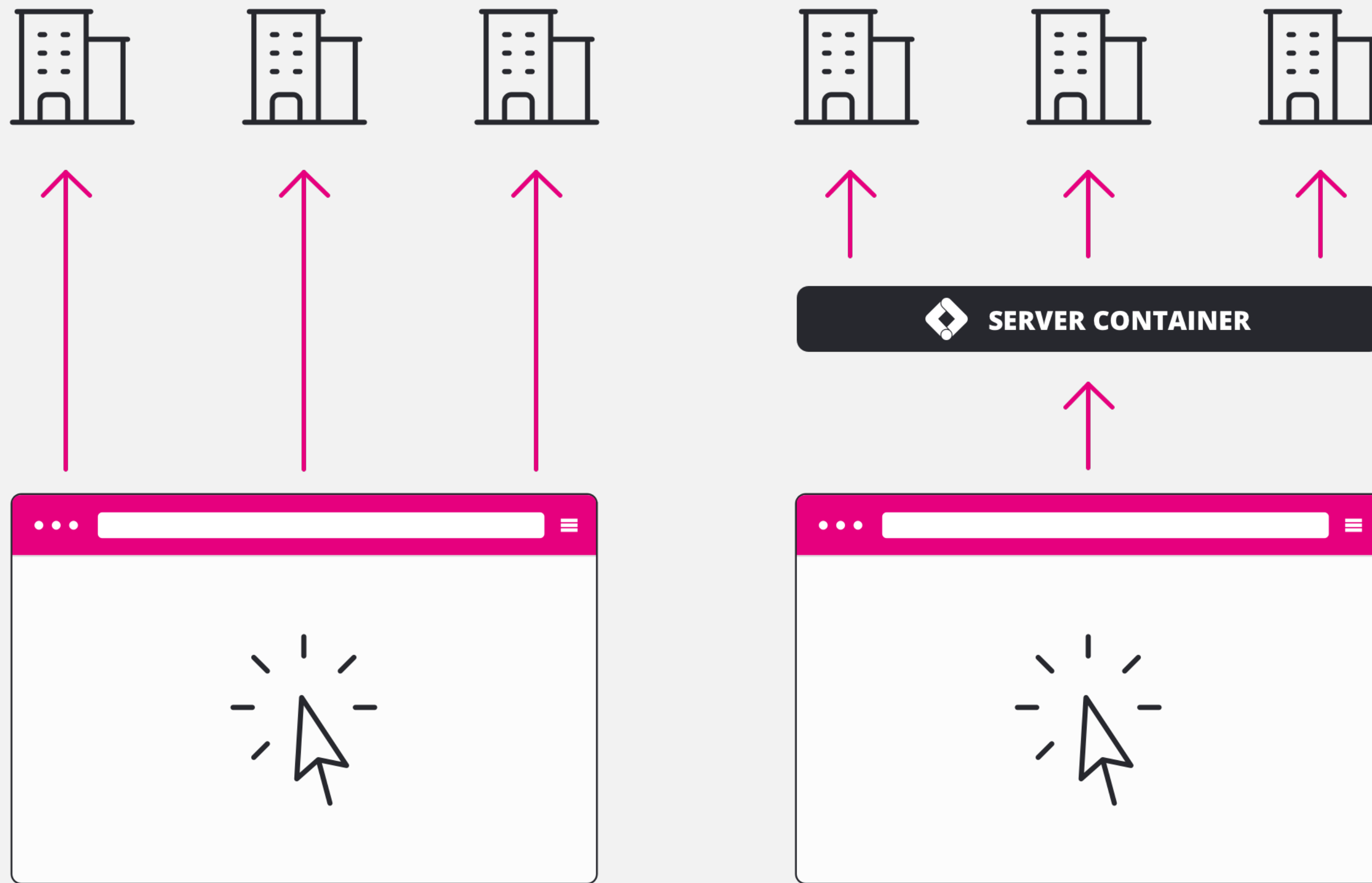
Main thread

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>



Thanks for watching