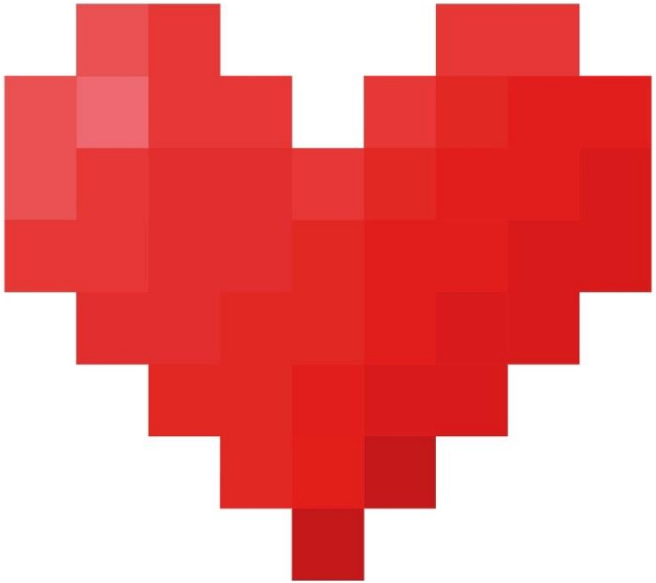
Pushing #WebPerf Limits

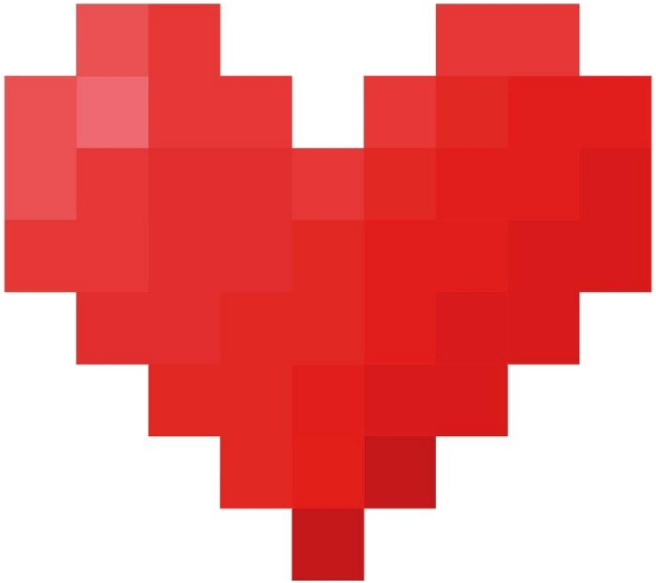
@TimVereecke

Akamai

scalemates



WE LOVE SPEED



WE (REALLY) LOVE SPEED

Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48

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95.000+ plastic modelers use us

New releases (Helicopters in 1:48)

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Hot kits (Helicopters in 1:48)

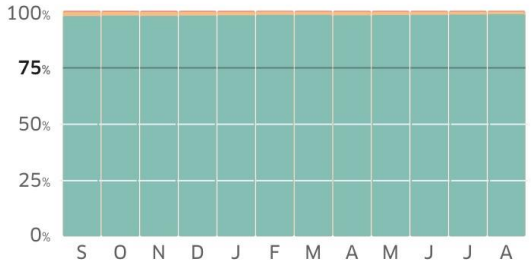
Largest Contentful Paint CWV

0.6s

Good <= 2.5s 98.5%

Need Impr. 1.1%

Poor > 4.0s 0.5%



Cumulative Layout Shift CWV

0

Good <= 0.1 99.8%

Need Impr. 0.1%

Poor > 0.25 0.1%

Interaction to Next Paint CWV

50ms

Good <= 200ms 96.4%

Need Impr. 3%

Poor > 500ms 0.7%

TREO

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Why bother?

CORE WEB VITALS

75%
GOOD

GOOD ENOUGH?

GOOD ENOUGH?

SEO: Yes!

GOOD ENOUGH?

SEO: Yes!

UX: Nooooo!

How to get here?

How to get here?

How to get here?

How to get here?

1.
COMMON
PRACTICES

2.
DESIGN
CHOICES

3.
FRESH
TECHNIQUES

1. COMMON PRACTICES

2. DESIGN CHOICES

3. FRESH TECHNIQUES

1. COMMON PRACTICES

103 Early Hints	fetchpriority=high	Long max-age
TLS 1.3	CDN	Tuned DB
Minification	Preload fonts	Keep-alive
Loading=lazy	AVIF/WEBP	No document.write()
Fast DNS	preconnect	BfCache
Brotli	H3	Reduce 3rd parties
.woff2	Remove unused ...	Reduce DOM Elements
Reduce JS	Use srcset	...

1. COMMON PRACTICES

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1. COMMON PRACTICES

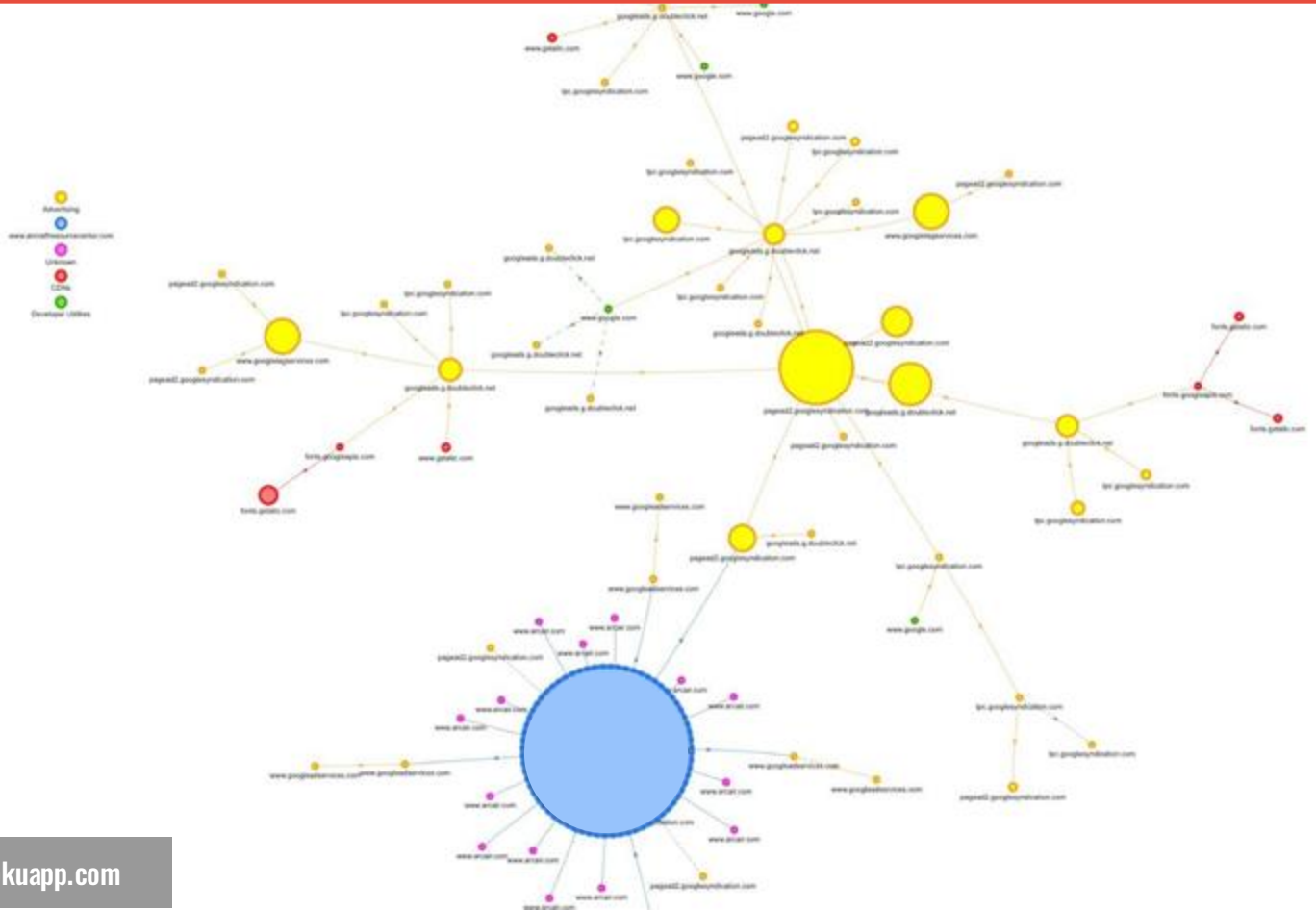
2. DESIGN CHOICES

3. FRESH TECHNIQUES

Pushing the limits

Design Choices

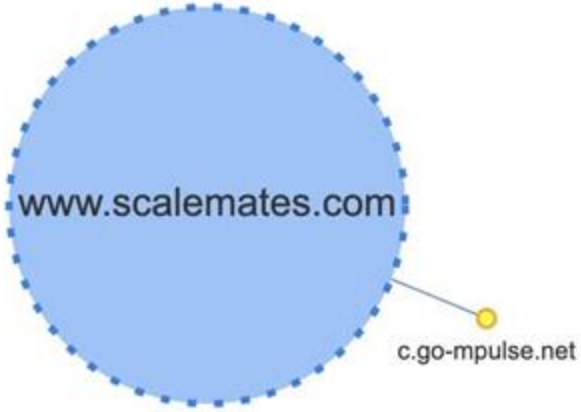
2011



requestmap.herokuapp.com

scalemates

2024



2011

MPA

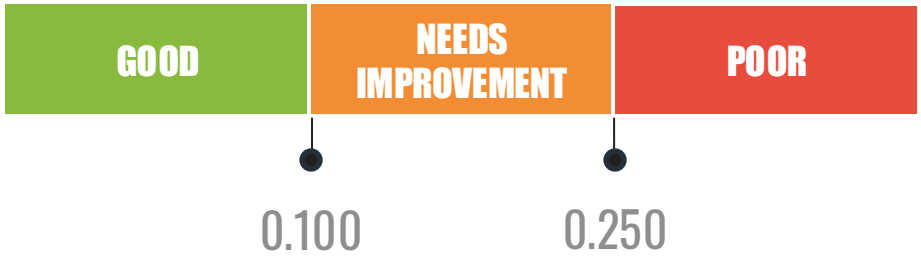
2024

php

MPA

Pushing the limits

CLS



CLS

CLS

0.002

scalemates.com/kits/airfix-a09010-consolidated-b-24h-liberator--1523742

Consolidated B-24H Liberator

Airfix | No. A09010 | 1:72

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New releases (Propeller in 1:72)

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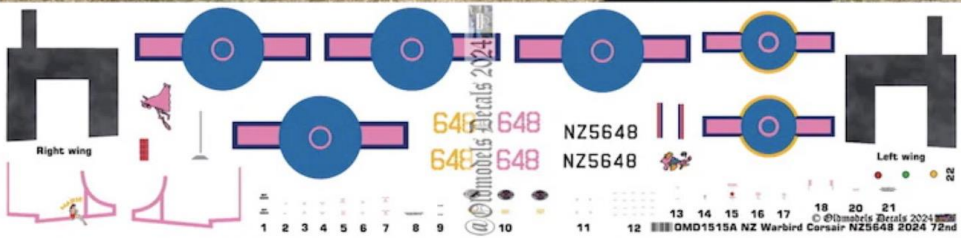
scalemates.com/kits/oldmodels-decals-omd1515a-new-zealand-warbird-corsair-nz5648-2024--1572878

New Zealand Warbird Corsair NZ5648 2024

Oldmodels Decals | No. OMD1515A | 1:72



OMD1515A - NZ Warbird Corsair NZ5648 2024 72nd

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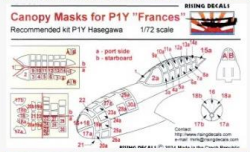
New releases (Propeller in 1:72)



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scalemates.com/kits/les-barjots-la-cyano-bc2024-02-b-24h-liberator-patsy-jack--1573064

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All sections

News Feed | Kits | Paints | Books | Magazines | Brands | Shops | Events | Updates

B-24H Liberator "PATSY JACK"

Les Barjots de la cyano | No. BC2024-02 | 1:72

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New releases (Propeller in 1:72)

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scalemates.com/kits/airfix-a09010-consolidated-b-24h-liberator--1523742

Consolidated B-24H Liberator

Airfix | No. A09010 | 1:72

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New releases (Propeller in 1:72)

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```
html{overflow-y:scroll;scrollbar-gutter:stable}
```

Ad Blockers

Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48

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970x90

Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48

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New releases (Helicopters in 1:48)

View more »

300x250

```
<style>
 .bannerAd{width:300px;height:250px}
</style>
```

Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48

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New releases (Helicopters in 1:48)

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Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48
Type:	Full kit
Released:	2023 New tool
Barcode:	5063129001018 (EAN)

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New releases (Helicopters in 1:48)

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Hot kits (Helicopters in 1:48)

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Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
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New releases (Helicopters in 1:48)

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Hot kits (Helicopters in 1:48)

View more »

▼<section class="av">
▼<ins id="revive-0-3" class="bannerAd" data-revive-zoneid="3">
▶<a href="https://www.scalemates.com/sas/www/delivery/ck.php?oaparams=2__
e%2Fmug_too_many_stash_club-2561811897305082 30" target="_blank">…</a>
</ins>
</section>

Extra Wrapper

```
<style>
 .av{width:300px;height:250px}
</style>
```

Extra Wrapper

```
<style>
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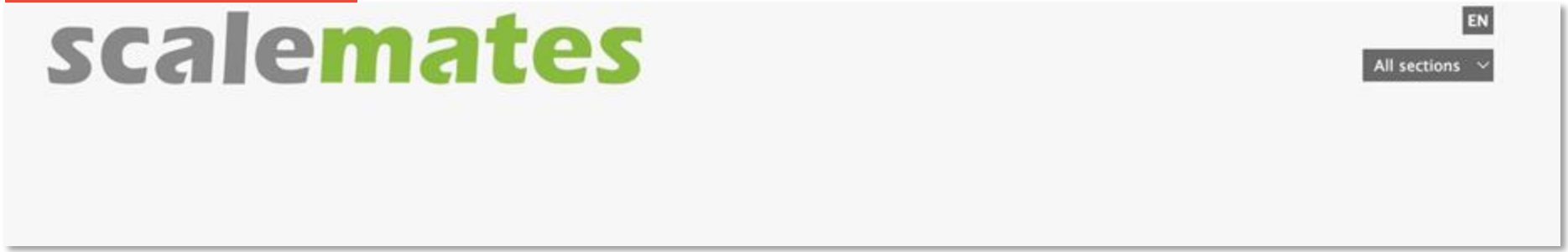
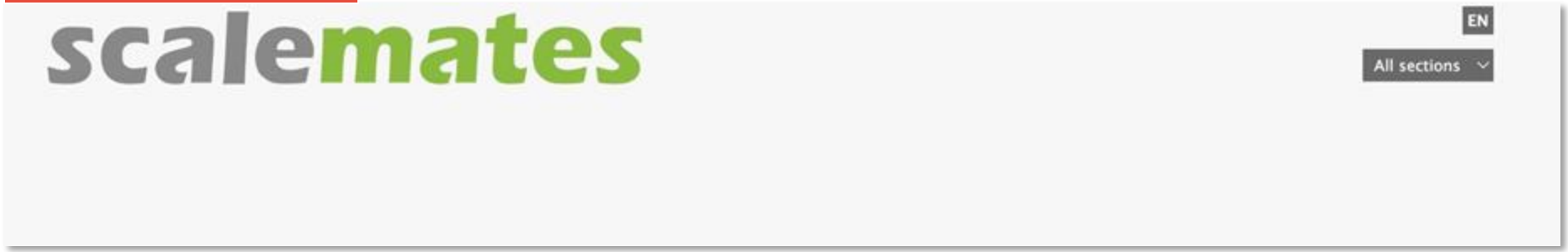
</style>
```

HTML Streaming

FCP



FCP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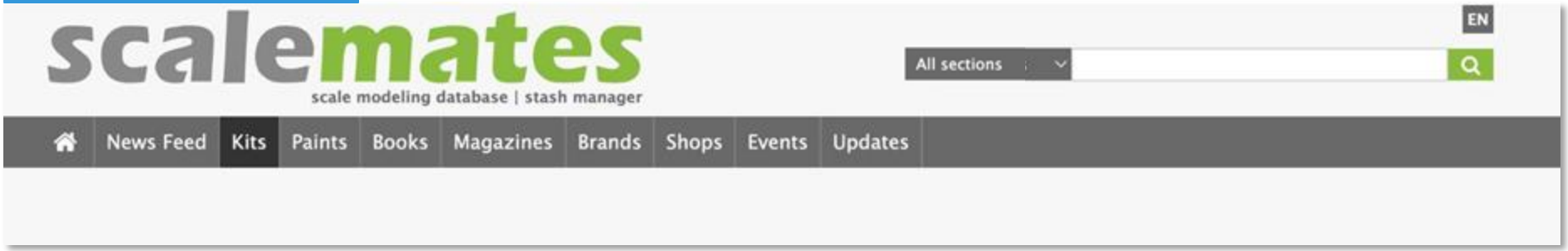
FCP+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Paints
Books
Magazines
Brands
Shops
Events
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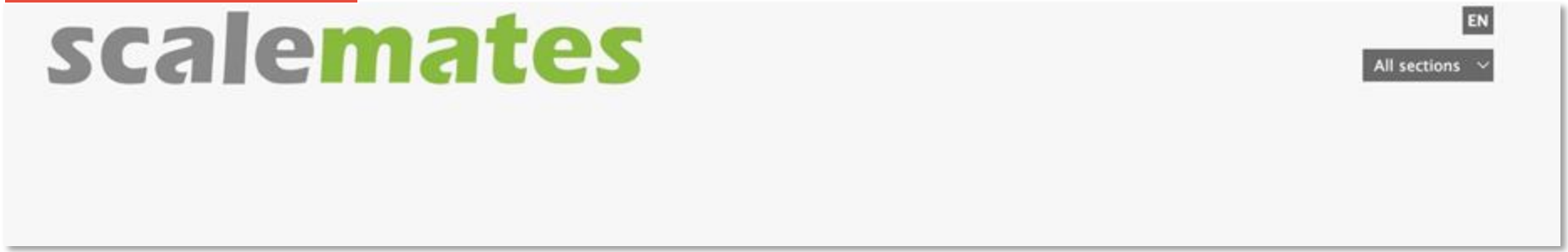
FCP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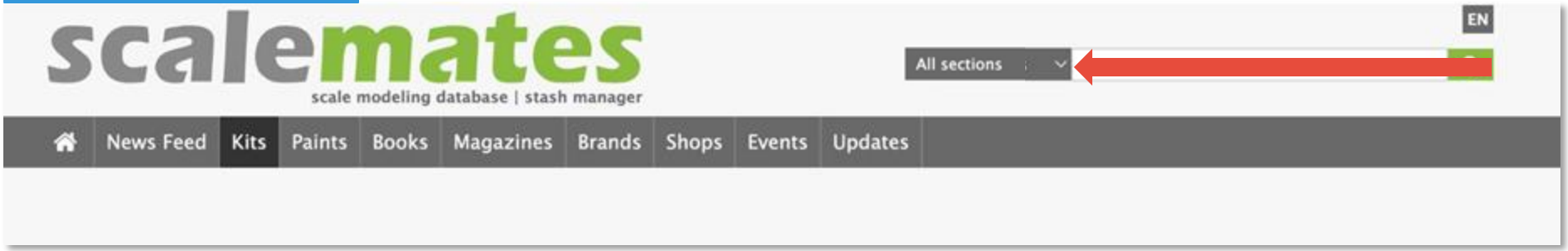
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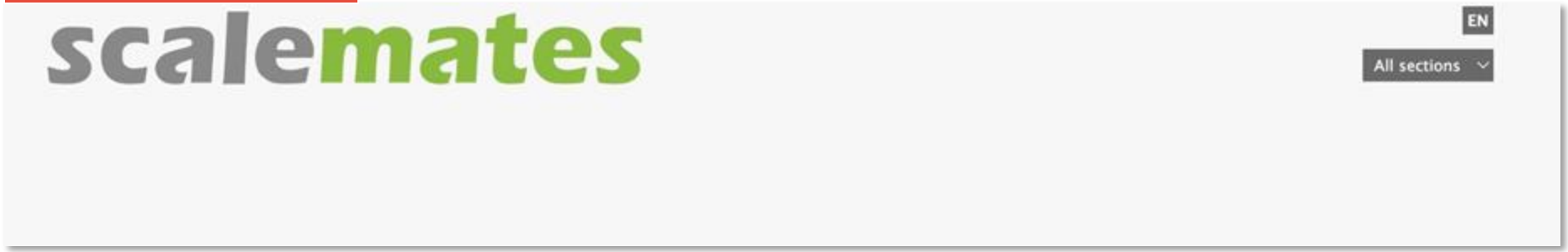
FCP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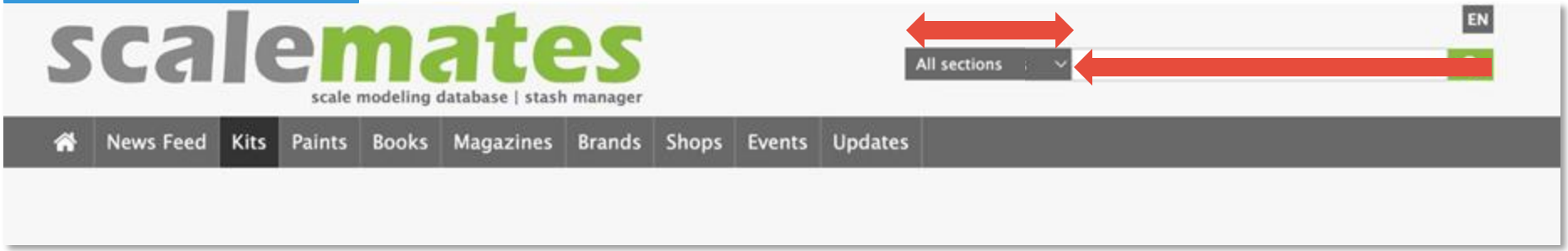
FCP+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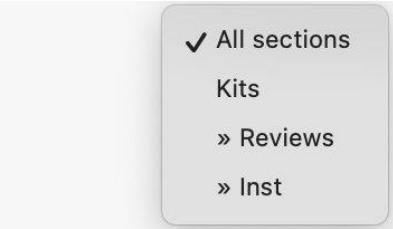


```
<!DOCTYPE html>
<html lang="en">
▶ <head> ⋯ </head>
▼ <body class="bgl">
  ▼ <header id="hdr" class="bx dg right p8 ut"> grid
    ▶ <a href="/?l=1" class="h0 db pr" id="lc"> ⋯ </a>
    ▼ <form class="hrspb" action="/search.php?l=1">
      ▶ <nav id="ub"> ⋯ </nav>
      ▼ <select name="fkSECTION[]" class="fsh p5 bgd" aria-label="Section">
          <option value="All">All sections</option> slot
          <option value="Kits">Kits</option> slot
          <option value="Reviews">» Reviews</option> slot
          <option value="Instructions">» Inst</option> slot
```

```
<body class="bgl">
```

```
<option value="Instructions">» Inst</option> slot
```

```
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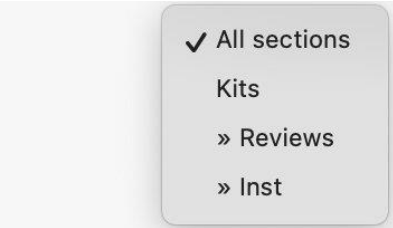
```

```
<option value="Instructions">» Instru</option> slot
```




```
<!DOCTYPE html>
<html lang="en">
▶ <head> ··· </head>
▼ <body class="bgl">
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          <option value="Reviews">» Reviews</option> slot
          <option value="Instructions">» Inst</option> slot
```

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```
<link rel="alternate" hreflang="cs" href="https://www.scalemates.com/cs/kits/tamiya-24345-mercedes-amg-gt3--1093631">
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Google Search Console

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    <xhtml:link rel="alternate" hreflang="es" href="https:/www.scalemates.com/es/kits/tamiya-24345-mercedes-amg-gt3--1093631"></
    <xhtml:link rel="alternate" hreflang="fr" href="https:/www.scalemates.com/fr/kits/tamiya-24345-mercedes-amg-gt3--1093631"></
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    <xhtml:link rel="alternate" hreflang="hu" href="https:/www.scalemates.com/hu/kits/tamiya-24345-mercedes-amg-gt3--1093631"></
    <xhtml:link rel="alternate" hreflang="nl" href="https:/www.scalemates.com/nl/kits/tamiya-24345-mercedes-amg-gt3--1093631"></
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9 lines, 1009 bytes

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ws, Reviews, History + Marketplace | Mercedes-AMG GT3 | EAN: 4950344243457">
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<meta property="og:type" content="website">
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<meta property="twitter:site" content="@ScalematesTim">
<meta property="twitter:url" content="https://www.scalemates.com/kits/tamiya-24345-mercedes-amg-gt3--1093631">
```

Logged in User

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  ▶<script>…</script>
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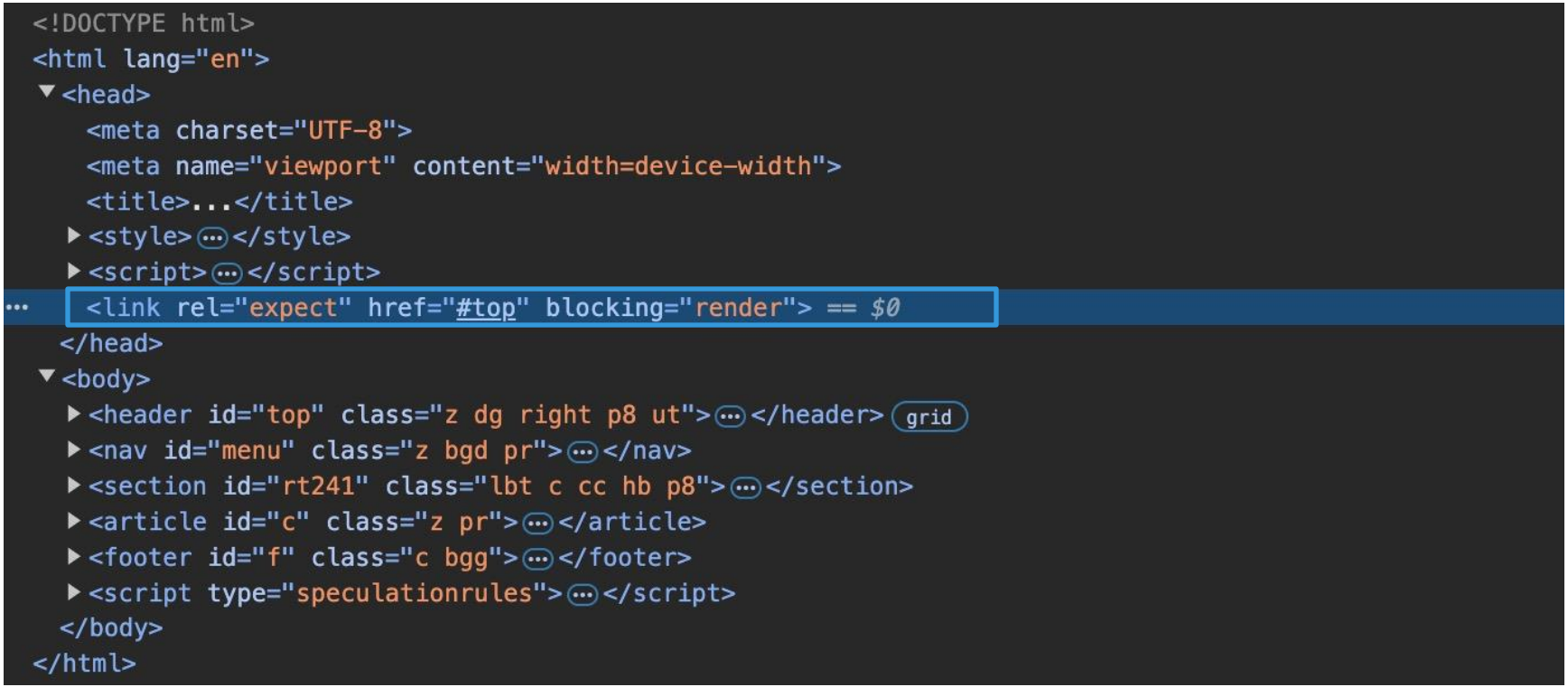
<link rel=expect href=... blocking=render >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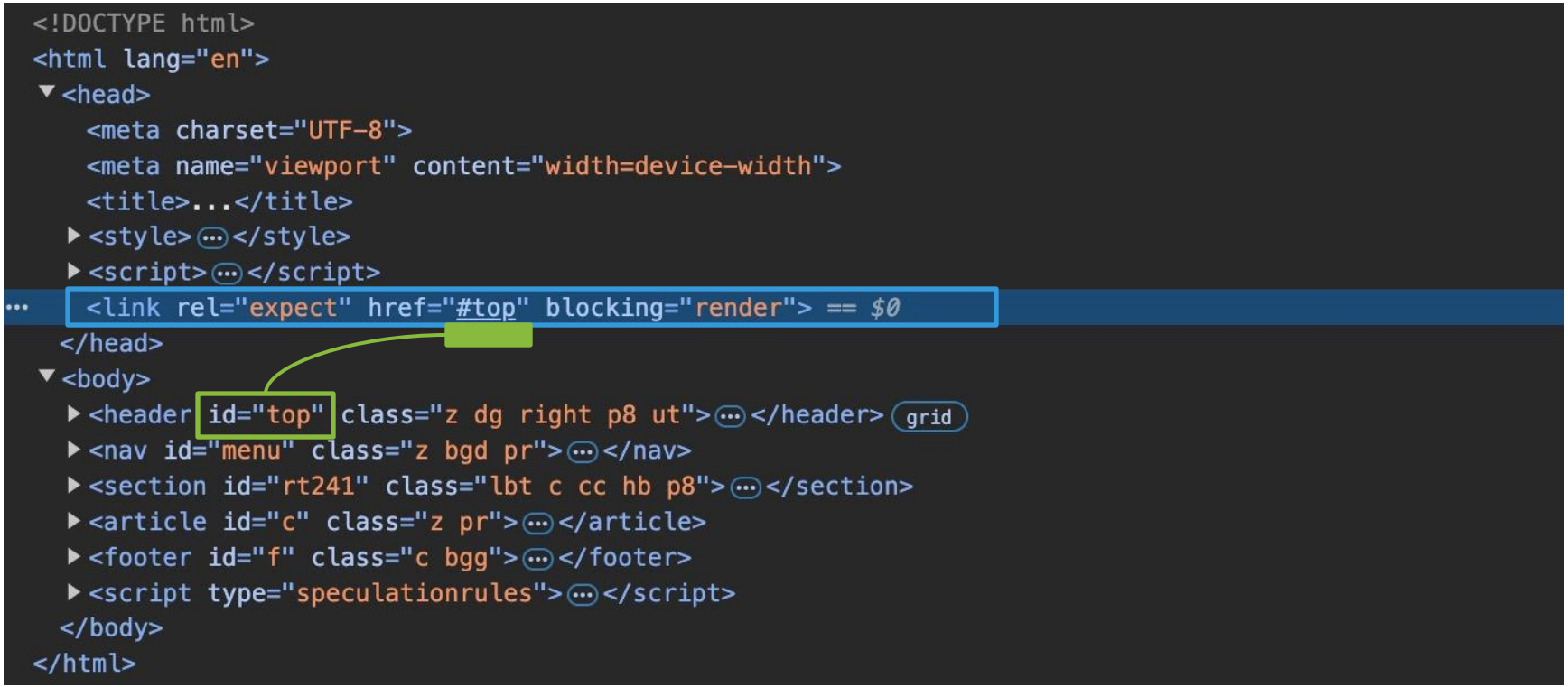
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width">
<title>...</title>
<style>...</style>
<script>...</script>
<link rel="expect" href="#top" blocking="render"> == $0
</head>
<body>
<header id="top" class="z dg right p8 ut">...</header> grid
<nav id="menu" class="z bgd pr">...</nav>
<section id="rt241" class="lbt c cc hb p8">...</section>
<article id="c" class="z pr">...</article>
<footer id="f" class="c bgg">...</footer>
<script type="speculationrules">...</script>
</body>
</html>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grid
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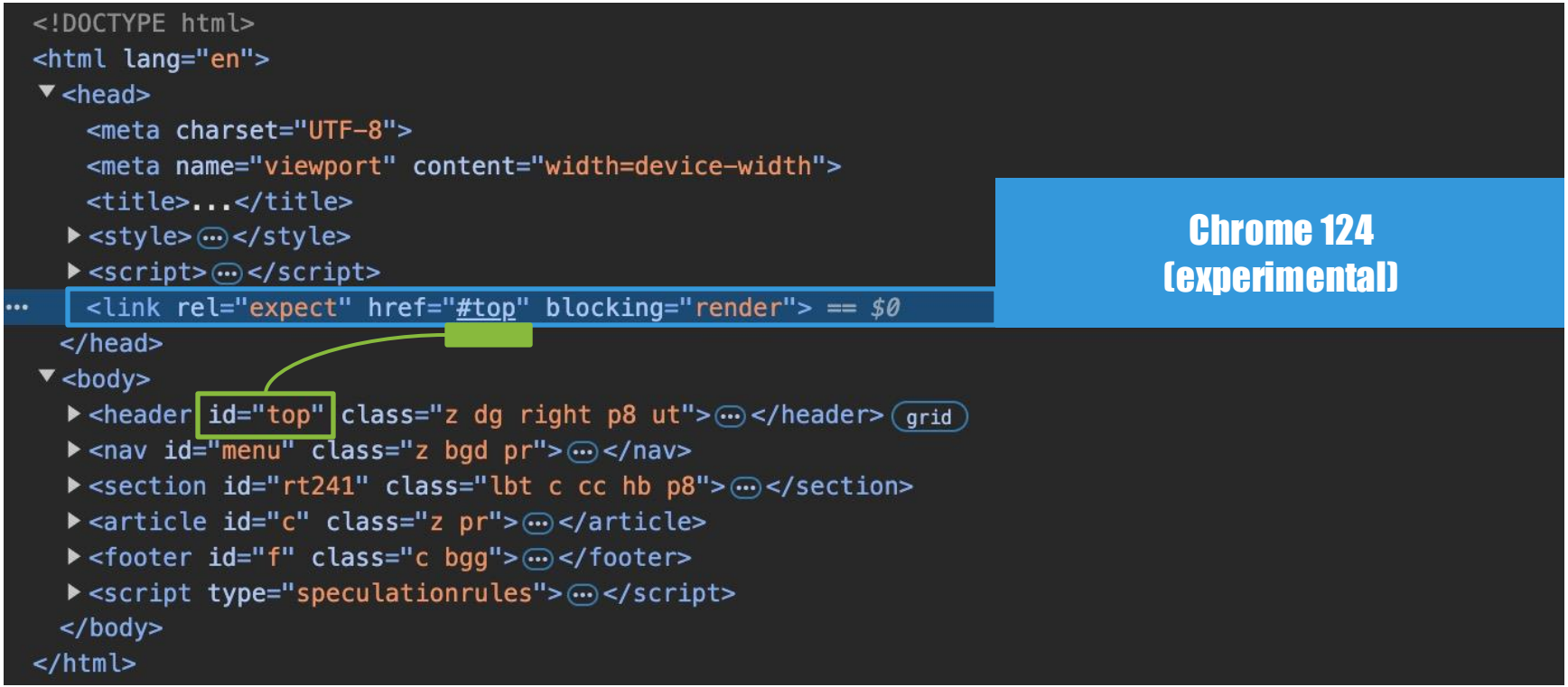
</body>
</html>


<!DOCTYPE html>
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<meta charset="UTF-8">
<meta name="viewport" content="width=device-width">
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<style>...</style>
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<section id="rt241" class="lbt c cc hb p8">...</section>
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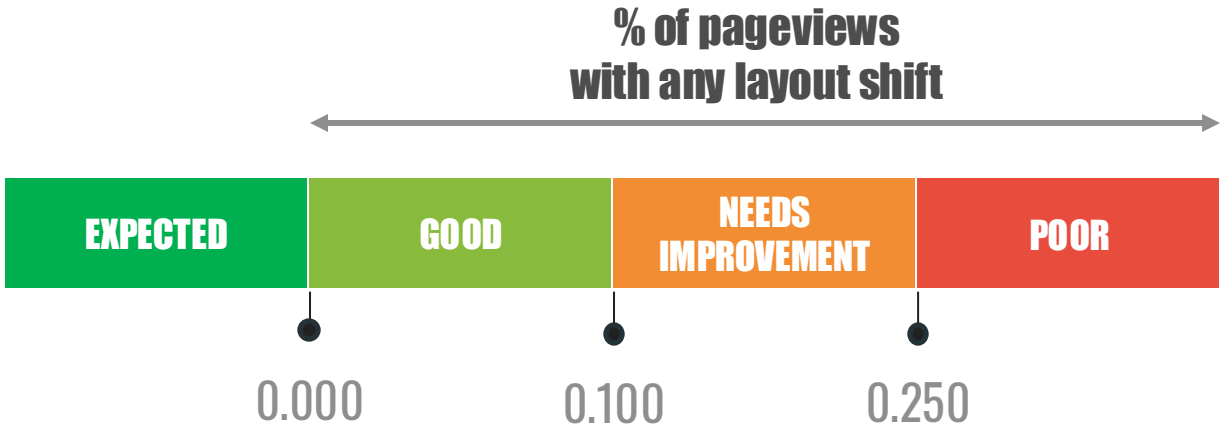
<footer id="f" class="c bgg">...</footer>
<script type="speculationrules">...</script>
</body>
</html>
Chrome 124
(experimental)

EXPECTED
GOOD
NEEDS IMPROVEMENT
POOR
0.000
0.100
0.250

CLS Frequency



CLS Frequency

#AimForZero

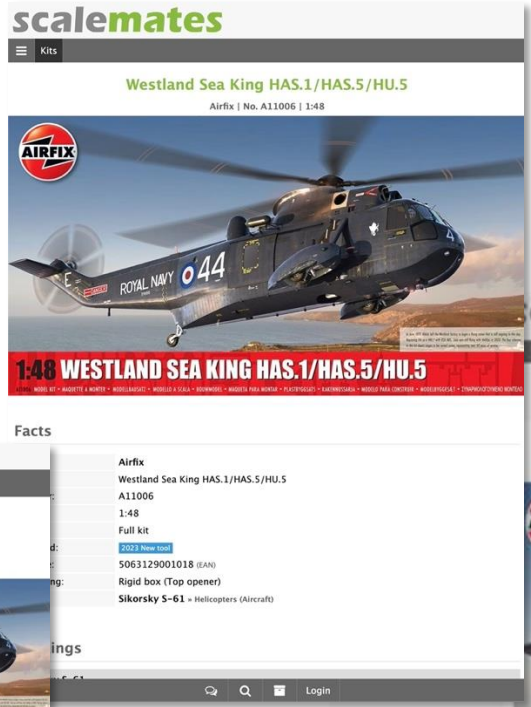
Wild Wild Web

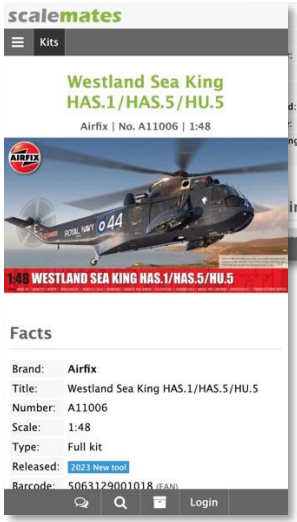
Row	Browser	Cumulative Layout Shift Sc	Beacons Bar	Red Beacons	Red Beacon Percent
1	Edge	0.00	731	89	12.18%
	Edge/85	0.49	111	89	80.18%
	Edge/89	0.00	0	0	0.00%
	Edge/98	0.00	0	0	0.00%
	Edge/90	0.00	0	0	0.00%
	Edge/92	0.00	0	0	0.00%
	Edge/87	0.00	0	0	0.00%
	Edge/117	0.00	0	0	0.00%
	Edge/95	0.00	0	0	0.00%
	Edge/97	0.00	0	0	0.00%
	Edge/18	0.00	0	0	0.00%
	Other - Edge	0.00	620	0	0.00%
Total		0.00	731	89	12.18%

Pushing the limits

LCP

LCP


scalemates
Kits
Westland Sea King HAS.1/HAS.5/HU.5
Airfix | No. A11006 | 1:48
1:48 WESTLAND SEA KING HAS.1/HAS.5/HU.5
Facts
Airfix
Westland Sea King HAS.1/HAS.5/HU.5
A11006
1:48
Full kit
2023 New tool
5063129001018 (EAN)
Rigid box (Top opener)
Sikorsky S-61 » Helicopters (Aircraft)
Login


scalemates
Kits
Westland Sea King HAS.1/HAS.5/HU.5
Airfix | No. A11006 | 1:48
1:48 WESTLAND SEA KING HAS.1/HAS.5/HU.5
Facts
Brand: Airfix
Title: Westland Sea King HAS.1/HAS.5/HU.5
Number: A11006
Scale: 1:48
Type: Full kit
Released: 2023 New tool
Barcode: 5063129001018 (EAN)
Login

scalemates
Westland Sea King HAS.1/HAS.5/HU.5
Airfix | No. A11006 | 1:48
1:48 WESTLAND SEA KING HAS.1/HAS.5/HU.5
Facts

```
<picture>
  <source media="(min-width:1440px)" srcset="1080.jpg 1x, 1440.jpg 1.5x, 2160.jpg 2x">
  <source media="(min-width:700px)" srcset="720.jpg 1x, 1080.jpg 1.5x, 1440.jpg 2x">
  <source media="(min-width:500px)" srcset="540.jpg 1x, 720.jpg 1.5x, 1080.jpg 2x">
  <source media="(max-width:500px)" srcset="360.jpg 1x, 540.jpg 1.5x, 720.jpg 2x">
  <img fetchpriority=high src=720.jpg ...>
</picture>
```

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<picture>
  <source media="(min-width:1440px)" srcset="1080.jpg 1x, 1440.jpg 1.5x, 2160.jpg 2x">
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```

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```

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</picture>
```

```
<picture>
  <source media="(min-width:1440px)" srcset="1080.jpg 1x, 1440.jpg 1.5x, 2160.jpg 2x">
  <source media="(min-width:700px)" srcset="720.jpg 1x, 1080.jpg 1.5x, 1440.jpg 2x">
  <source media="(min-width:500px)" srcset="540.jpg 1x, 720.jpg 1.5x, 1080.jpg 2x">
  <source media="(max-width:500px)" srcset="360.jpg 1x, 540.jpg 1.5x, 720.jpg 2x">
  <img fetchpriority=high src=720.jpg ...>
</picture>
```

```
<picture>
  <source media="(min-width:1440px)" srcset="1080.jpg 1x, 1440.jpg 1.5x, 2160.jpg 2x">
  <source media="(min-width:700px)" srcset="720.jpg 1x, 1080.jpg 1.5x, 1440.jpg 2x">
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  <source media="(max-width:500px)" srcset="360.jpg 1x, 540.jpg 1.5x, 720.jpg 2x">
  <img fetchpriority=high src=720.jpg ...>
</picture>
```

CDN Efficiency

Dimensions	Edge Hits
2160px	965
1440px	3561
1080px	6203
720px	9011
540px	323
360px	153

CDN Efficiency

Dimensions	Edge Hits
2160px	965
1440px	3561
1080px	6203
720px	9011
540px	323
360px	153

CDN Efficiency

```
<picture>
  <source media="(min-width:1440px)" srcset="1080.jpg 1x, 1440.jpg 1.5x, 2160.jpg 2x">
  <source media="(min-width:700px)" srcset="720.jpg 1x, 1080.jpg 1.5x, 1440.jpg 2x">
  <source media="(min-width:500px)" srcset="540.jpg 1x, 720.jpg 1.5x, 1080.jpg 2x">
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  <img fetchpriority=high src=720.jpg ...>
</picture>
```

CDN Efficiency

<img srcset="540.jpg 540w, 720.jpg 720w, 1080.jpg 1080w, 1440.jpg 1440w, 2160.jpg 2160w ...>

<img srcset="540.jpg 540w, 720.jpg 720w, 1080.jpg 1080w, 1440.jpg 1440w, 2160.jpg 2160w ...>

No DPR Capping

No DPR Capping

Wrong LCP Candidates

Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48
Type:	Full kit
Released:	2023 New tool
Barcode:	5063129001018 (EAN)
Packaging:	Rigid box (Top opener)
Topic:	**Sikorsky S-61** » Helicopters (Aircraft)

Markings

Login | Register
95,000+ plastic modelers use us

New releases (Helicopters in 1:48)

View more »

Hot kits (Helicopters in 1:48)

Westland Sea King HAS.1/HAS.5/HU.5

Airfix | No. A11006 | 1:48

LCP Candidate

Facts

Brand:	**Airfix**
Title:	Westland Sea King HAS.1/HAS.5/HU.5
Number:	A11006
Scale:	1:48
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Released:	2023 New tool
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Markings

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95,000+ plastic modelers use us

New releases (Helicopters in 1:48)

View more »

Hot kits (Helicopters in 1:48)

Porsche 911 GT3 RS

Alpha Model | No. AM02-0037 | 1:24

Facts

Brand:	**Alpha Model**
Title:	Porsche 911 GT3 RS
Number:	AM02-0037
Scale:	1:24
Type:	Full kit
Released:	2022 New tool
Topic:	**Porsche 911 (991)** » Cars (Vehicles)

Product timeline

Full history »

Marketplace

Online shops

gpmodeling € 0.00 | € 198.00

Login | Register
95.000+ plastic modelers use us

New releases (Cars in 1:24)

View more »

Hot kits (Cars in 1:24)

LCP Candidate

Porsche 911 GT3 RS

Alpha Model | No. AM02-0037 | 1:24

Facts

Brand:	**Alpha Model**
Title:	Porsche 911 GT3 RS
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Scale:	1:24
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Product timeline

Full history »

Marketplace

Online shops

gpmodeling € 0.00 € 198.00

Login Register
95.000+ plastic modelers use us

New releases (Cars in 1:24)

View more »

Hot kits (Cars in 1:24)

Late discovered = SLOW

Porsche 911 GT3 RS

Alpha Model | No. AM02-0037 | 1:24

Facts

Brand:	**Alpha Model**
Title:	Porsche 911 GT3 RS
Number:	AM02-0037
Scale:	1:24
Type:	Full kit
Released:	2022 New tool
Topic:	**Porsche 911 (991)** » Cars (Vehicles)

Product timeline

Full history »

Marketplace

Online shops

gpmodeling € 0.00 € 198.00

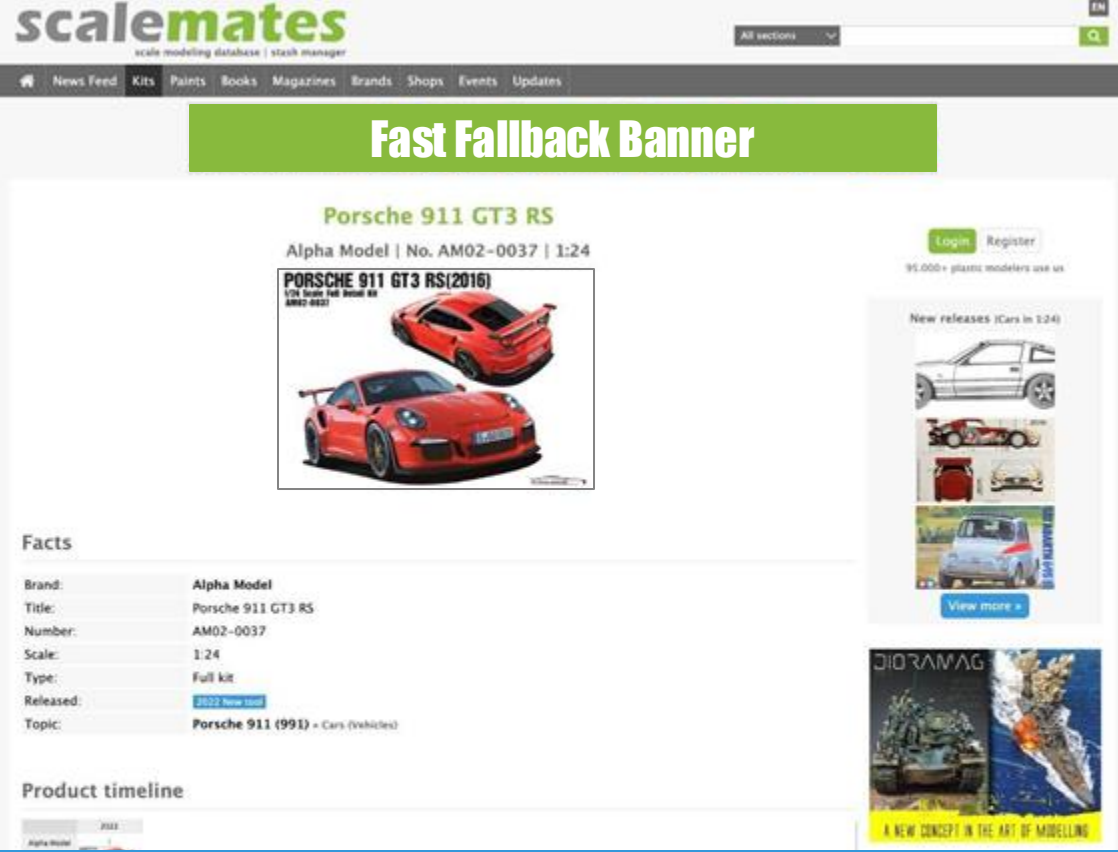
Login Register
95.000+ plastic modelers use us

New releases (Cars in 1:24)

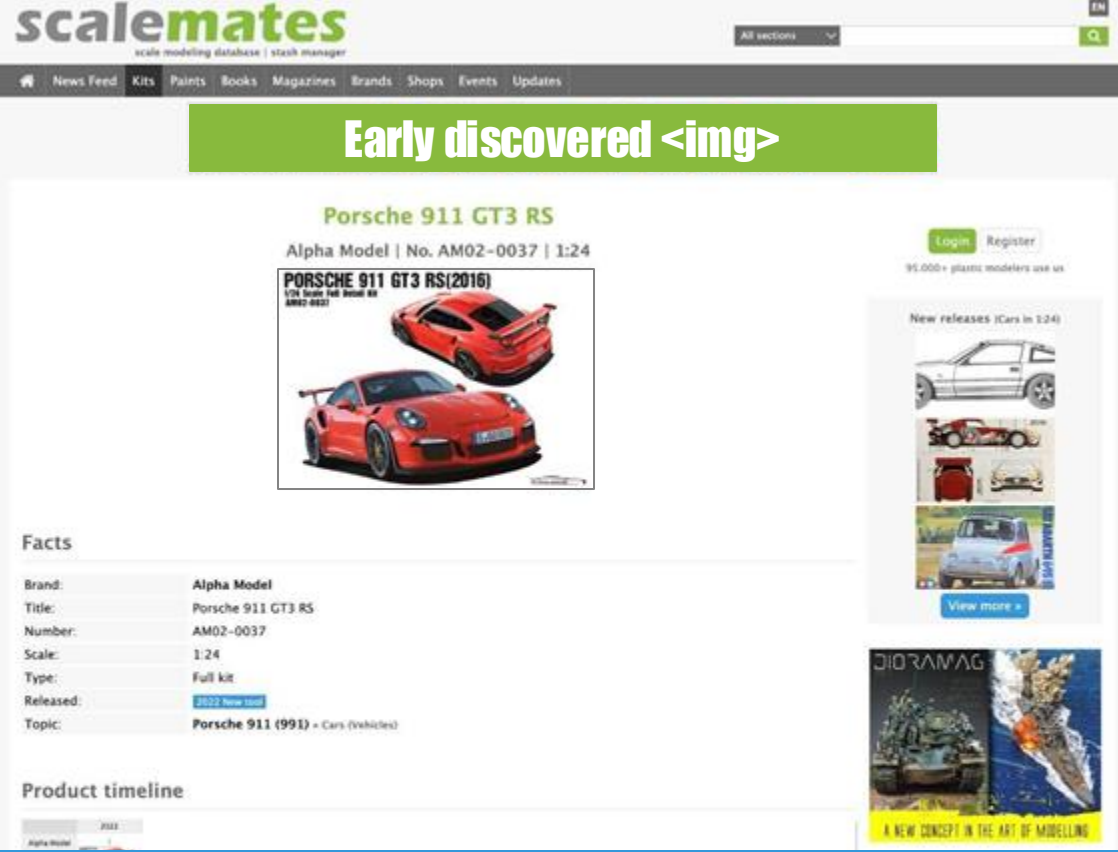
View more »

Hot kits (Cars in 1:24)

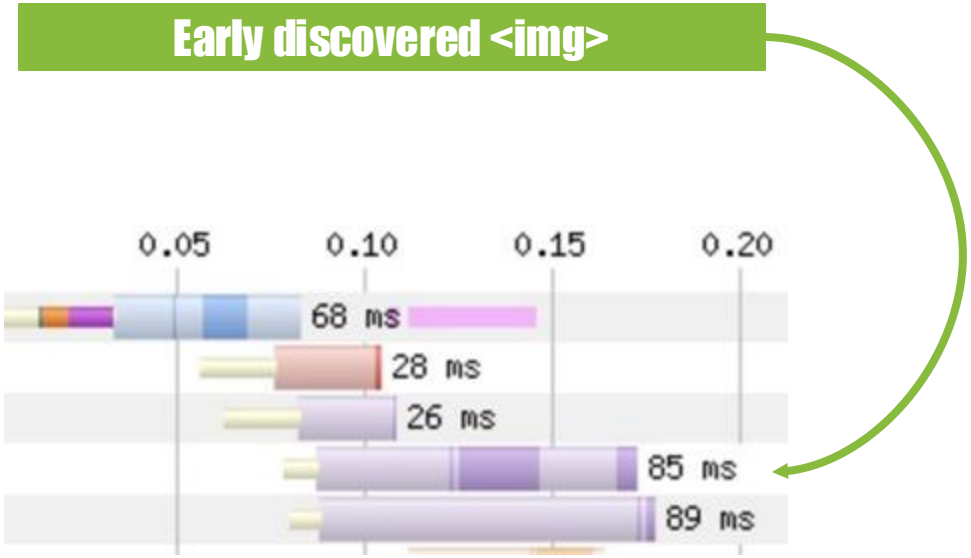
Plan A: Send more bytes



Plan B: Fast Fallback Banner



Plan B: Fast Fallback Banner



Plan B: Fast Fallback Banner

Beating Latency

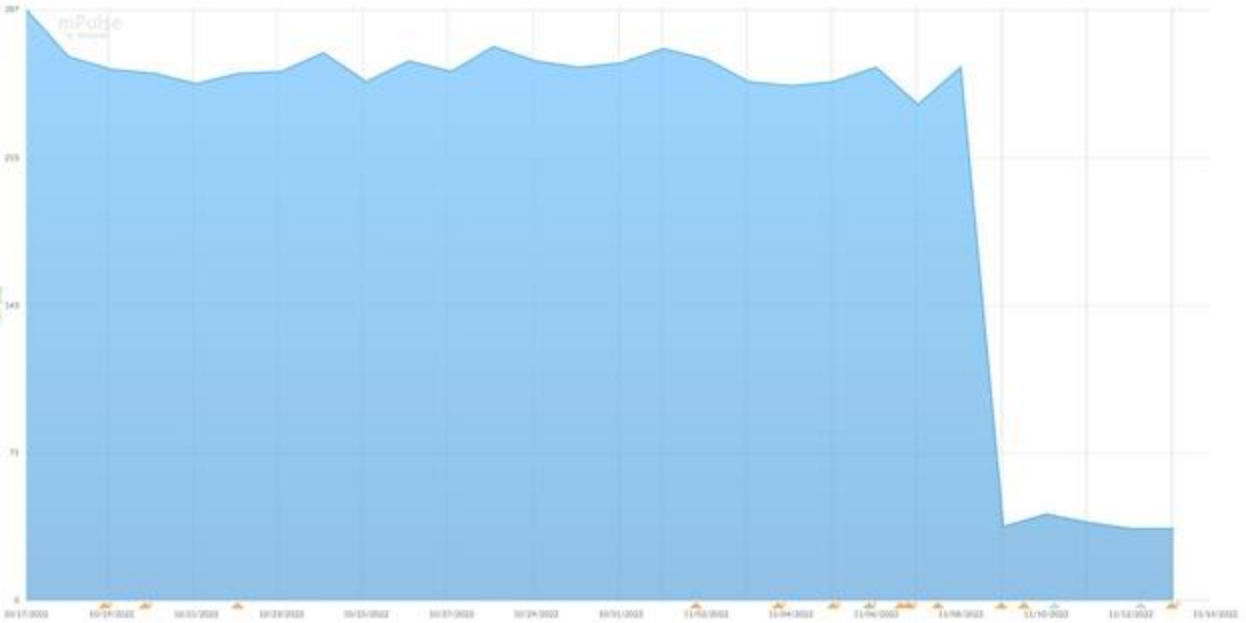
Country
Waiting
Pageviews
Performance Budget
United States 25011 51.0%
United Kingdom 23251 92.9%
Germany 20605 94.7%
France 10380 89.4%
Netherlands 7271 93.7%
Poland 5984 90.7%
Spain 5801 88.5%
Canada 5733 56.7%
Italy 5598 88.8%
Belgium 5572 91.3%
Australia 5204 12.9%
Czechia 5032 93.2%
Russia 4568 70.9%
Switzerland 4024 91.0%
Japan 2959 21.6%
Other 40340 63.5%
All 177333 74.7%
High Latency

Greenland
Iceland
Finland
Sweden
Norway
Russia
United Kingdom
Poland
Germany
Ukraine
Canada
France
Spain
Italy
Kazakhstan
Mongolia
United States
North Atlantic Ocean
Türkiye
China
Japan
South Korea
Afghanistan
Iraq
Iran
Pakistan
Algeria
Libya
Egypt
Saudi Arabia
India
Thailand
Mexico
Mali
Niger
Sudan
Chad
Nigeria
Ethiopia
Venezuela
Colombia
Kenya
DRC
Tanzania
Indonesia
Papua New Guinea
Brazil
Peru
Angola
Bolivia
Namibia
Botswana
Madagascar
Indian Ocean
South Pacific Ocean
Chile
South Atlantic Ocean
Australia
South Africa
Argentina
New Zealand

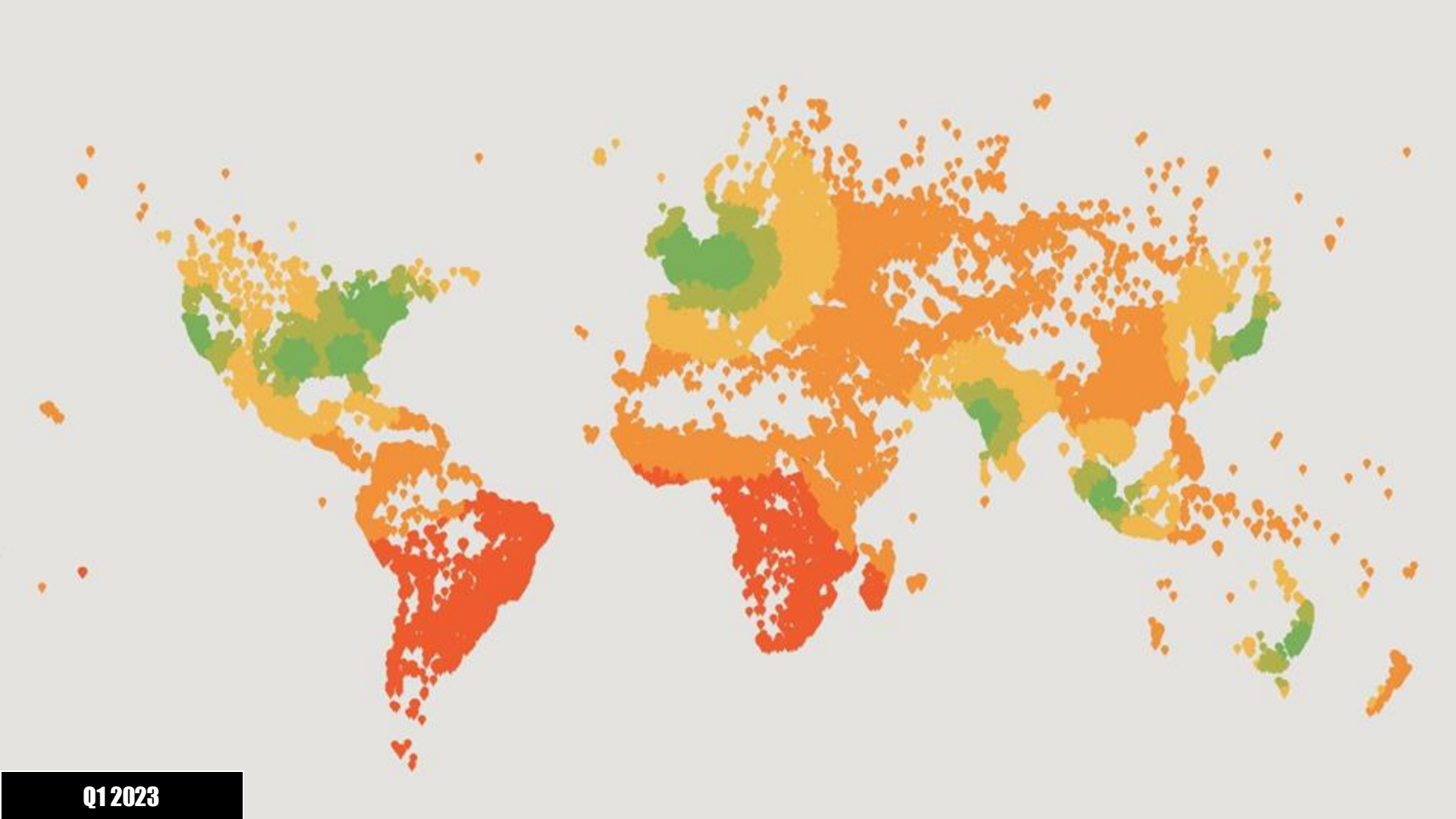
Old School

Old School

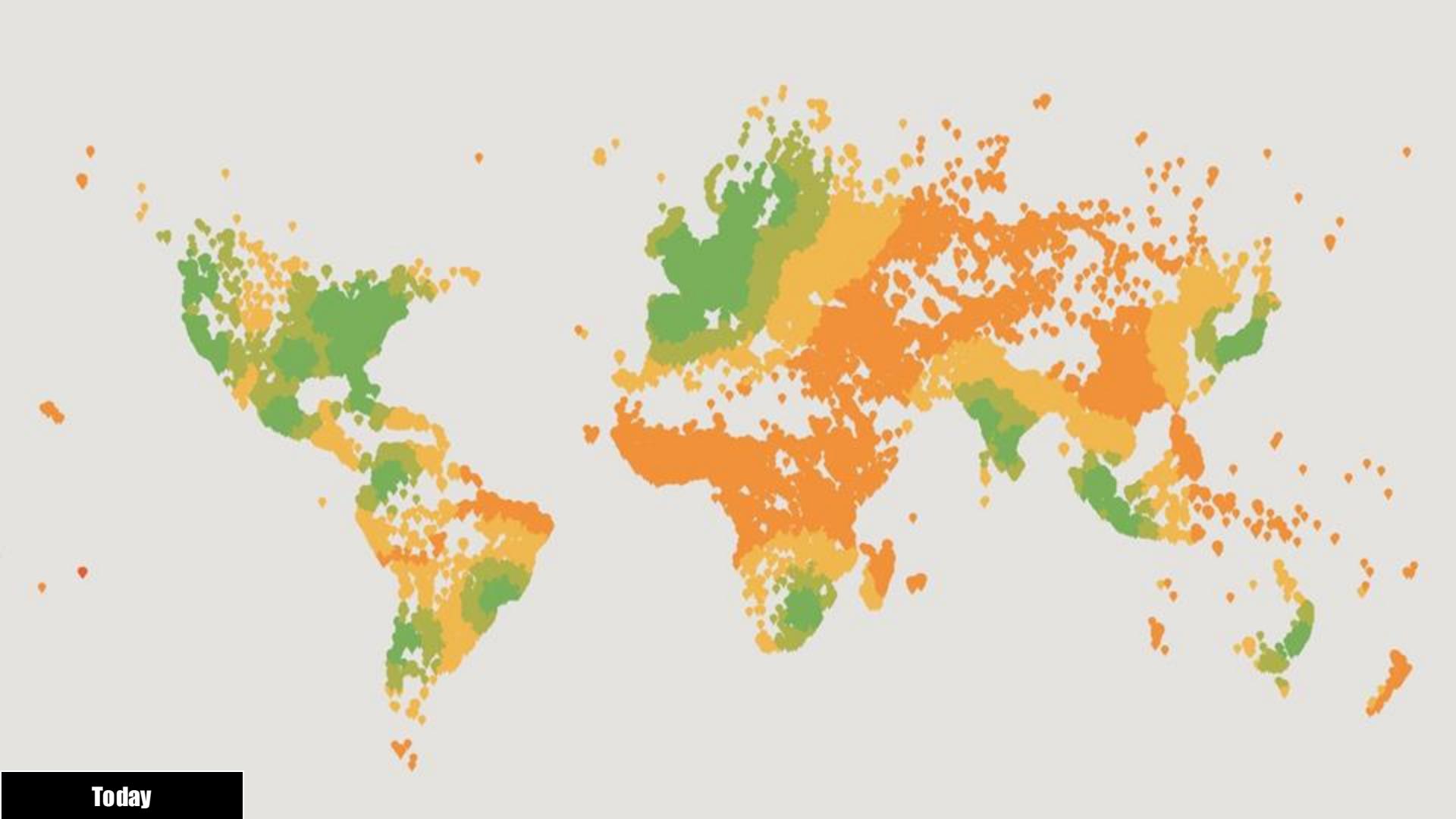
Replication Test

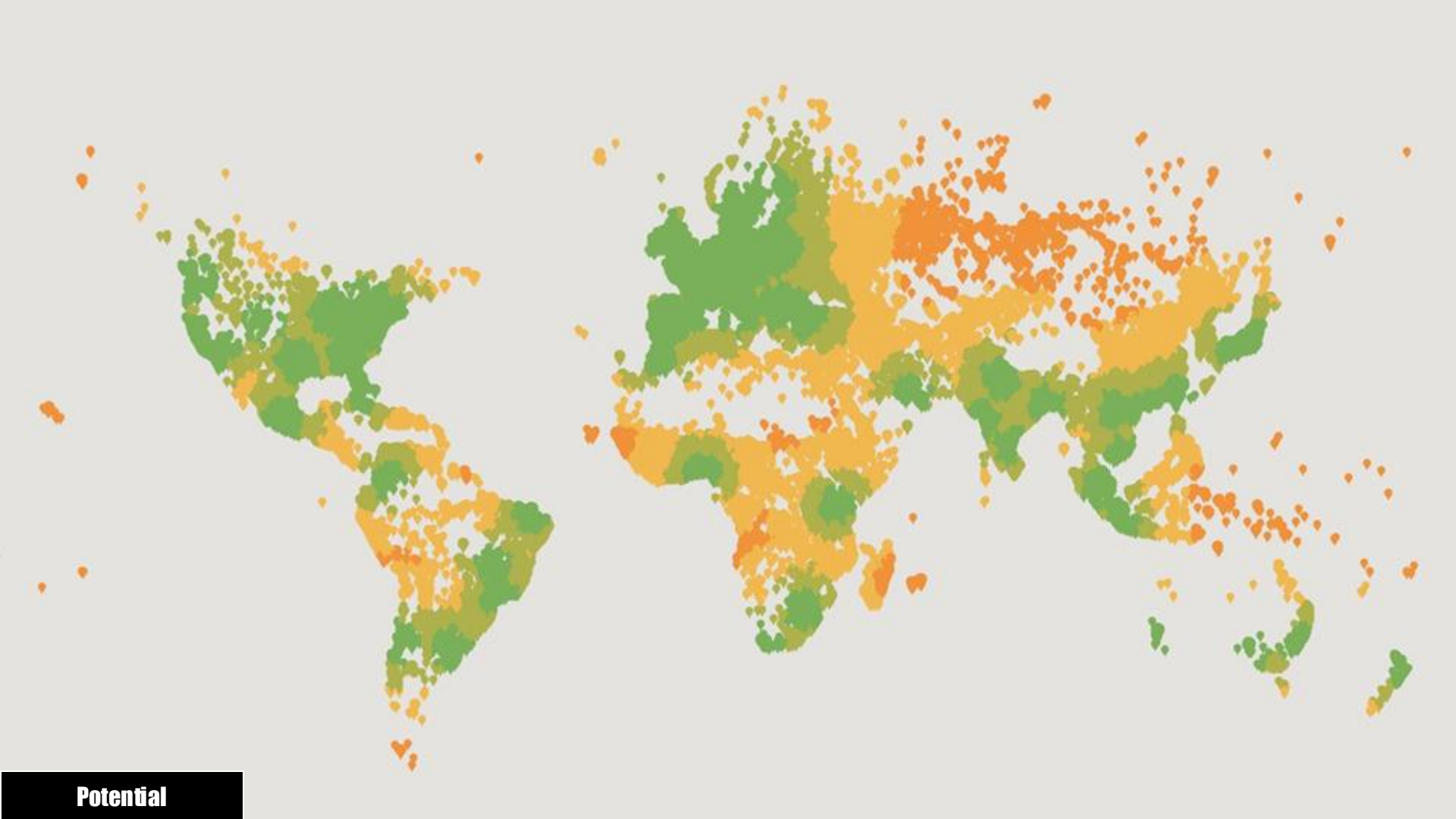


scalemates

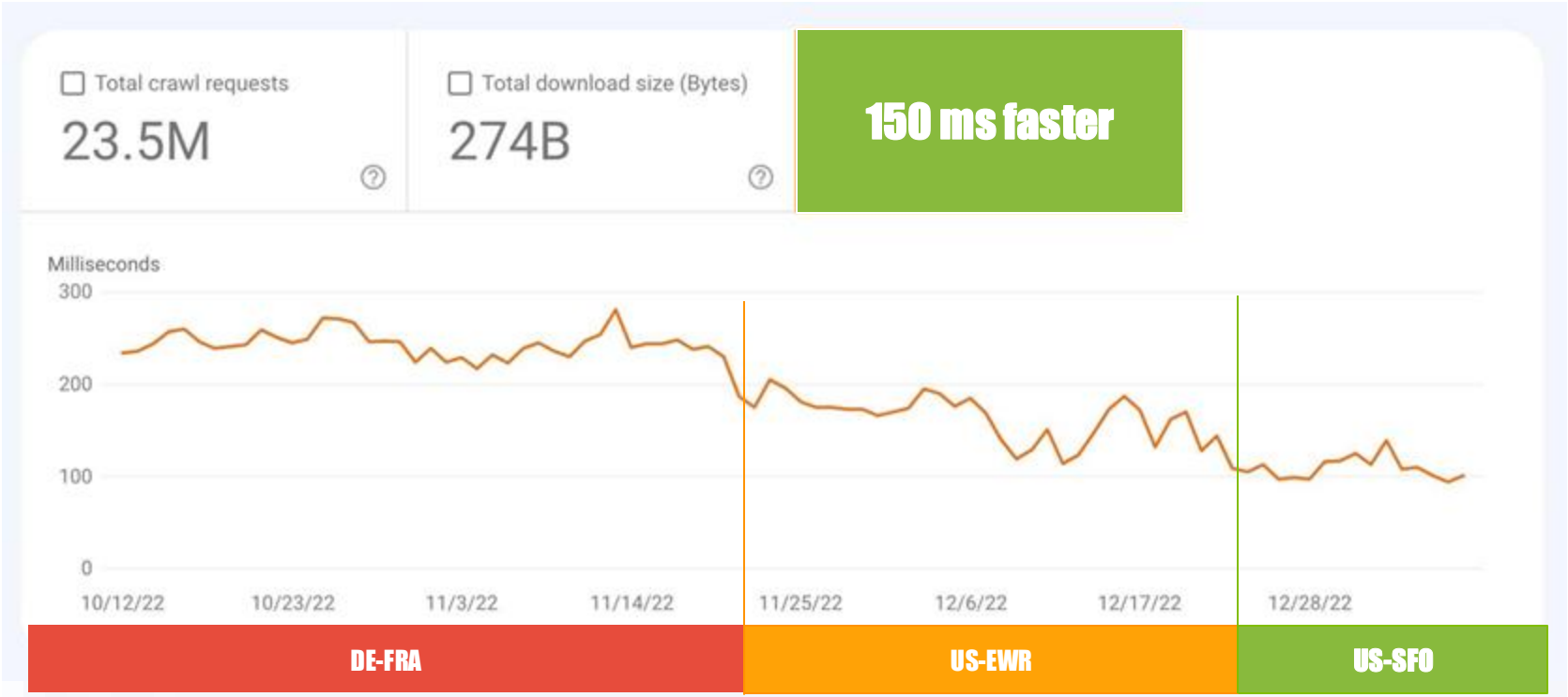


Q1 2023


Today


Potential

Google Search Console



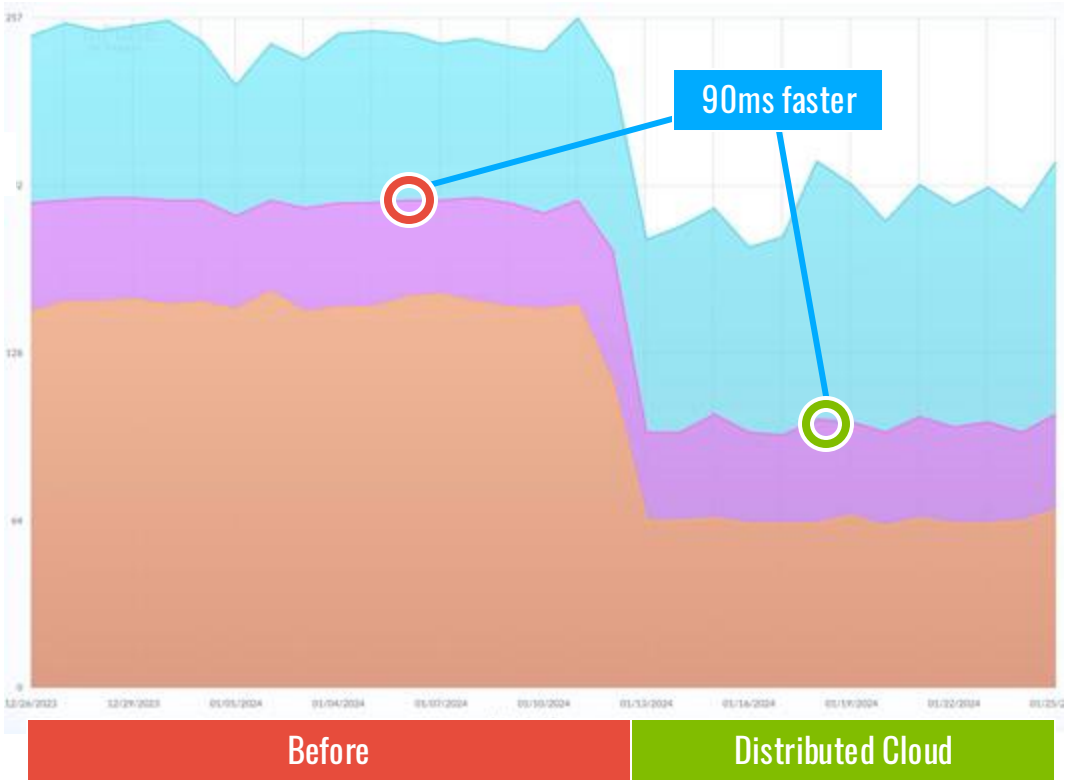
scalemates

Search Facets Performance

▼ Scale (60)
- [ ] 1:72 *(171186)*
- [x] 1:48 *(121042)*
- [x] 1:35 *(113110)*
- [ ] 1:43 *(50344)*
- [ ] 1:24 *(47510)*
- [ ] 1:32 *(45394)*

▼ Brand (75)
- [ ] Eduard *(11477)*
- [ ] Revell *(2639)*
- [ ] Hasegawa *(4832)*
- [ ] Tamiya *(6207)*
- [ ] Model Monkey *(625)*
- [ ] Airfix *(819)*

▼ Group (20)
- [ ] Aircraft *(105385)*
- [ ] Vehicles *(78244)*
- [ ] Ships *(1012)*
- [ ] Humans *(16551)*
- [ ] Utensils *(310)*
- [ ] Science Fiction *(1977)*

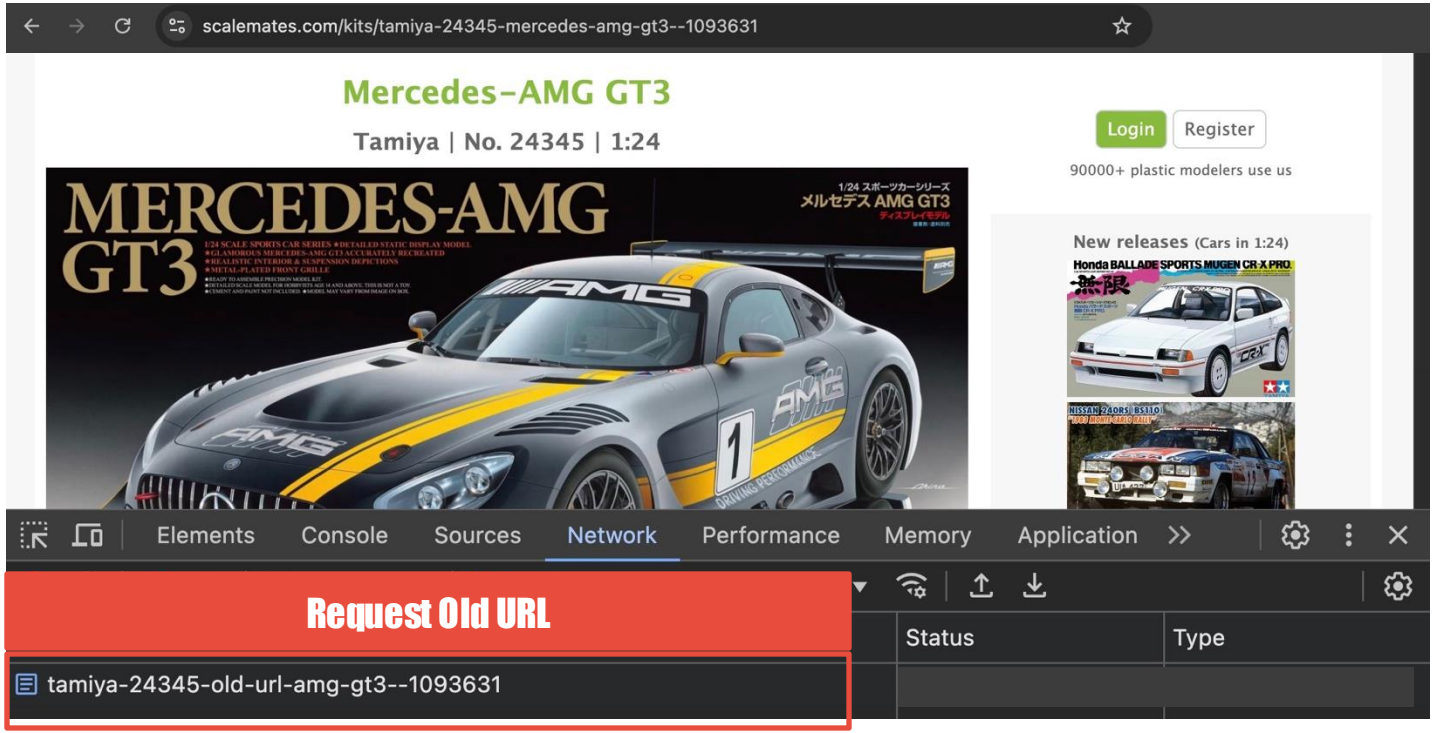


Redirects

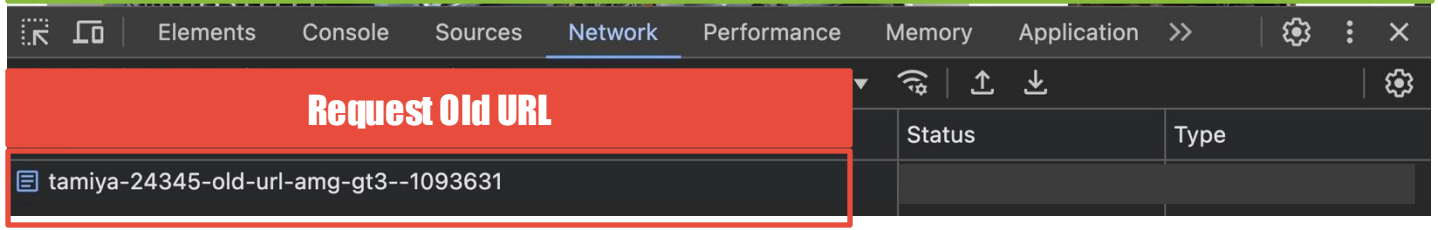
Redirects

Are STUPID!!!

Redirect Liquidation

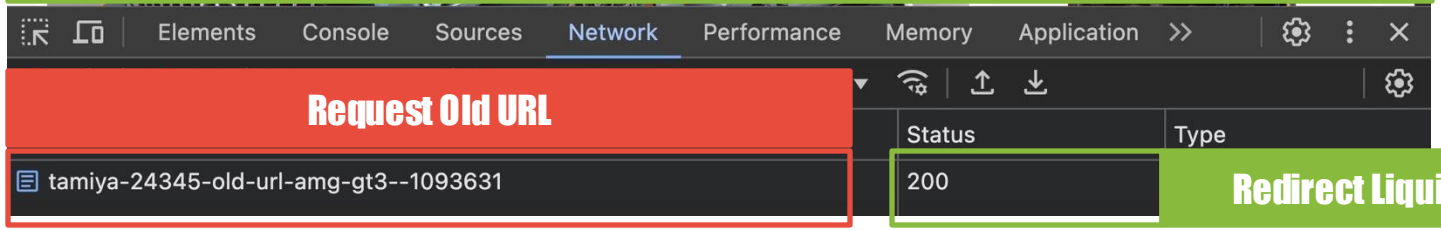

scalemates.com/kits/tamiya-24345-mercedes-amg-gt3--1093631
Mercedes-AMG GT3
Tamiya | No. 24345 | 1:24
MERCEDES-AMG GT3
1/24 スポーツカーシリーズ
メルセデス AMG GT3
ディスプレイモデル
Login
Register
90000+ plastic modelers use us
New releases (Cars in 1:24)
Honda BALLADE SPORTS MUGEN CR-X PRO
Elements
Console
Sources
Network
Performance
Memory
Application
Request Old URL
Status
Type
tamiya-24345-old-url-amg-gt3--1093631

See New URL



Request Old URL

See New URL



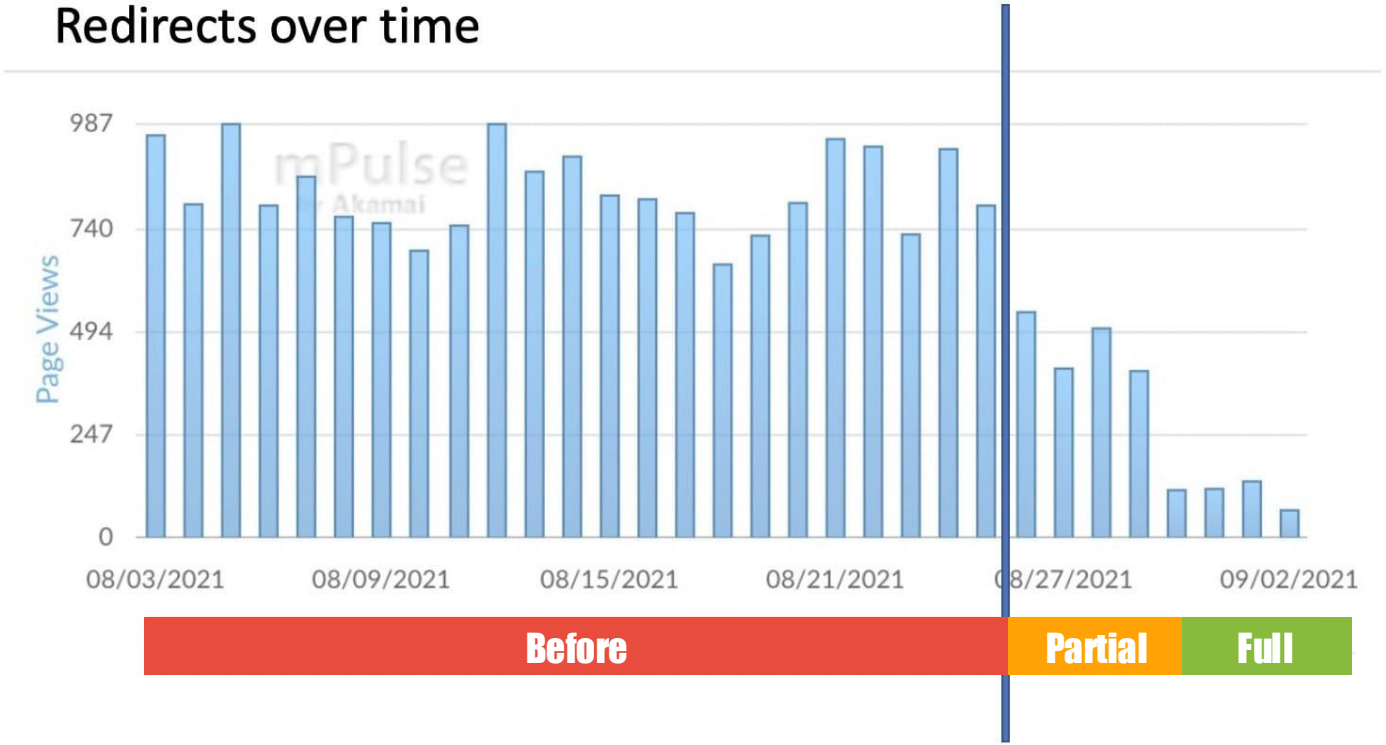
Request Old URL

Redirect Liquidated

```
<html lang="en">
▼<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width">
    <title>Mercedes-AMG GT3, Tamiya 24345 (2017)</title>
    <script>history.replaceState("", "","/kits/tamiya-24345-mercedes-amg-gt3--1093631");</script>
    <link rel="canonical" href="/kits/tamiya-24345-mercedes-amg-gt3--1093631">
  </head>
▼<body>
```

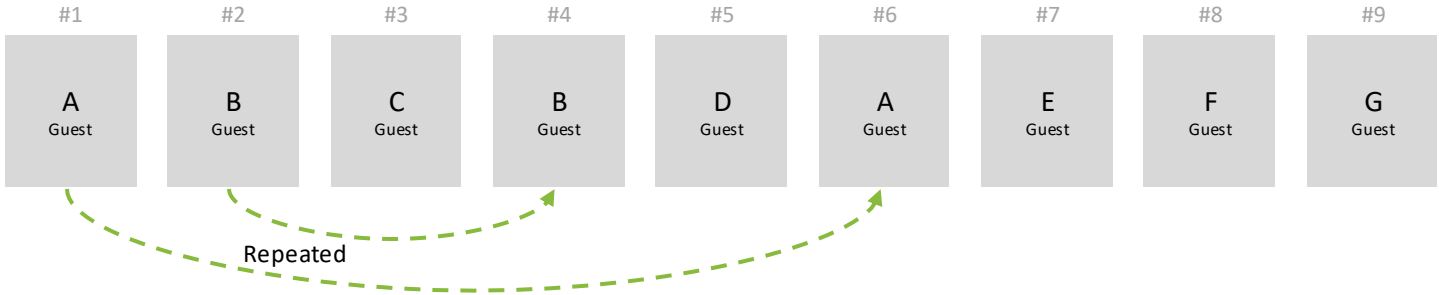
Not a Crawler

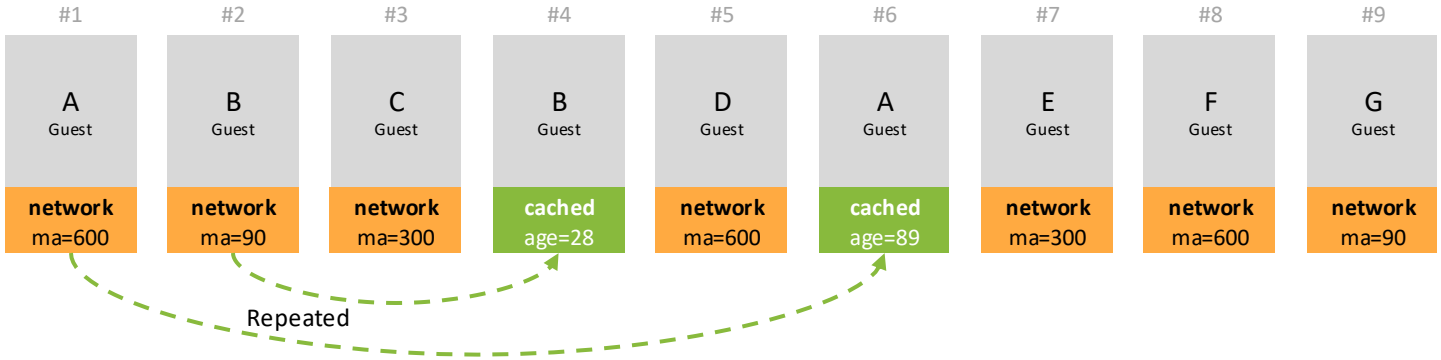
```
<html lang="en">
▼<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width">
    <title>Mercedes-AMG GT3, Tamiya 24345 (2017)</title>
    <script>history.replaceState("", "","/kits/tamiya-24345-mercedes-amg-gt3--1093631");</script>
    <link rel="canonical" href="/kits/tamiya-24345-mercedes-amg-gt3--1093631">
  </head>
▼<body>
```

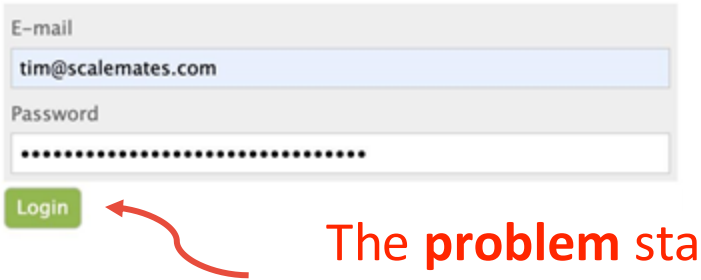

Redirects over time
987
740
494
247
0
Page Views
08/03/2021
08/09/2021
08/15/2021
08/21/2021
08/27/2021
09/02/2021
Before
Partial
Full

HTML Browser Caching

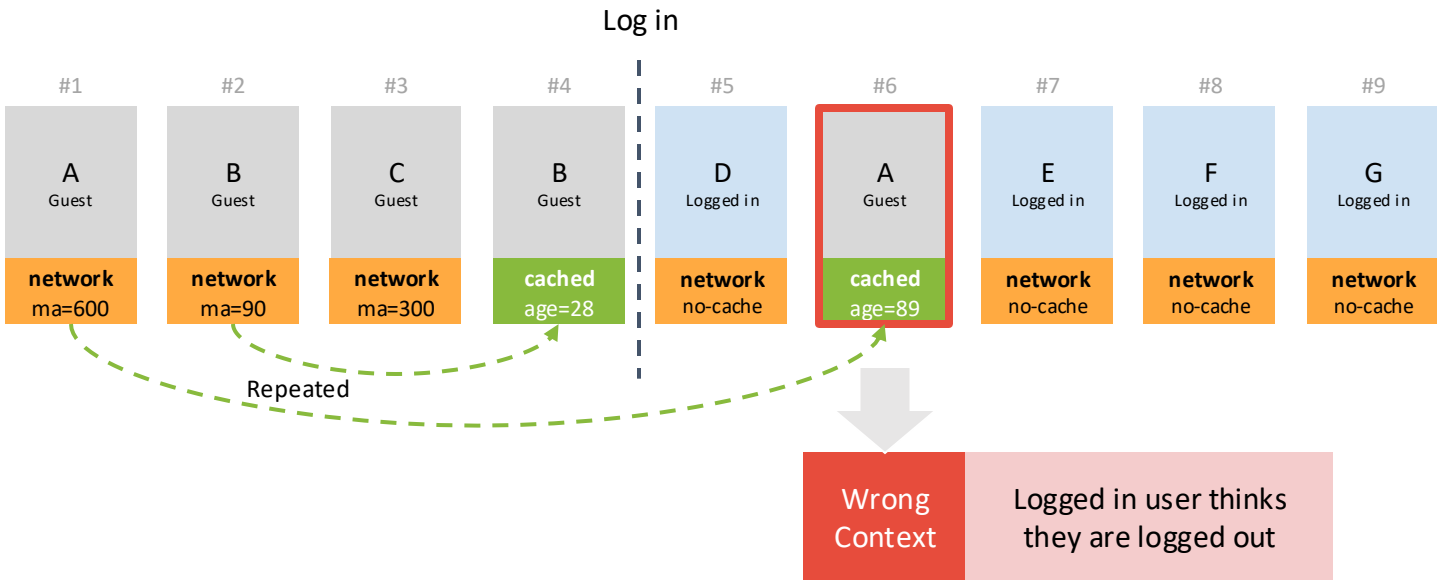
#1	#2	#3	#4	#5	#6	#7	#8	#9
A Guest	B Guest	C Guest	B Guest	D Guest	A Guest	E Guest	F Guest	G Guest

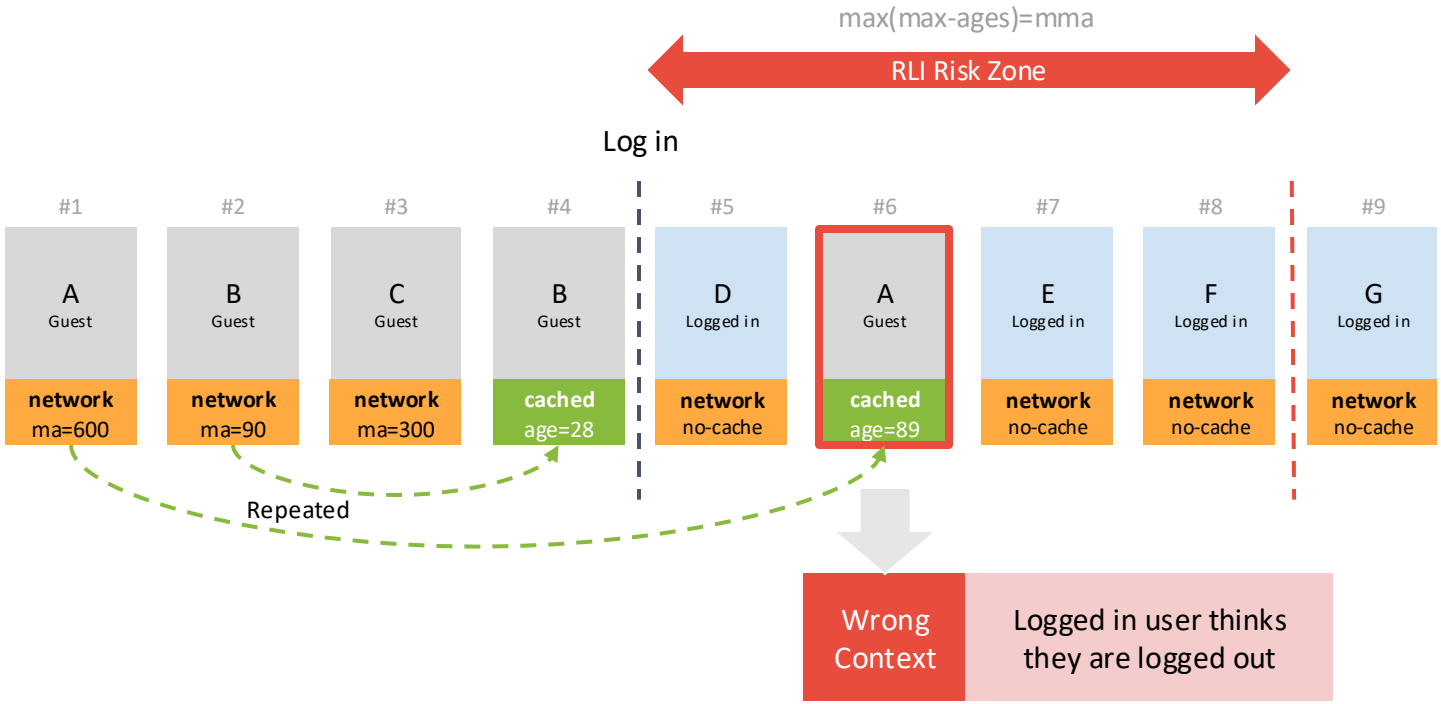

#1
A
Guest
#2
B
Guest
#3
C
Guest
#4
B
Guest
#5
D
Guest
#6
A
Guest
#7
E
Guest
#8
F
Guest
#9
G
Guest
Repeated


#1
A
Guest
network
ma=600
#2
B
Guest
network
ma=90
#3
C
Guest
network
ma=300
#4
B
Guest
cached
age=28
#5
D
Guest
network
ma=600
#6
A
Guest
cached
age=89
#7
E
Guest
network
ma=300
#8
F
Guest
network
ma=600
#9
G
Guest
network
ma=90
Repeated



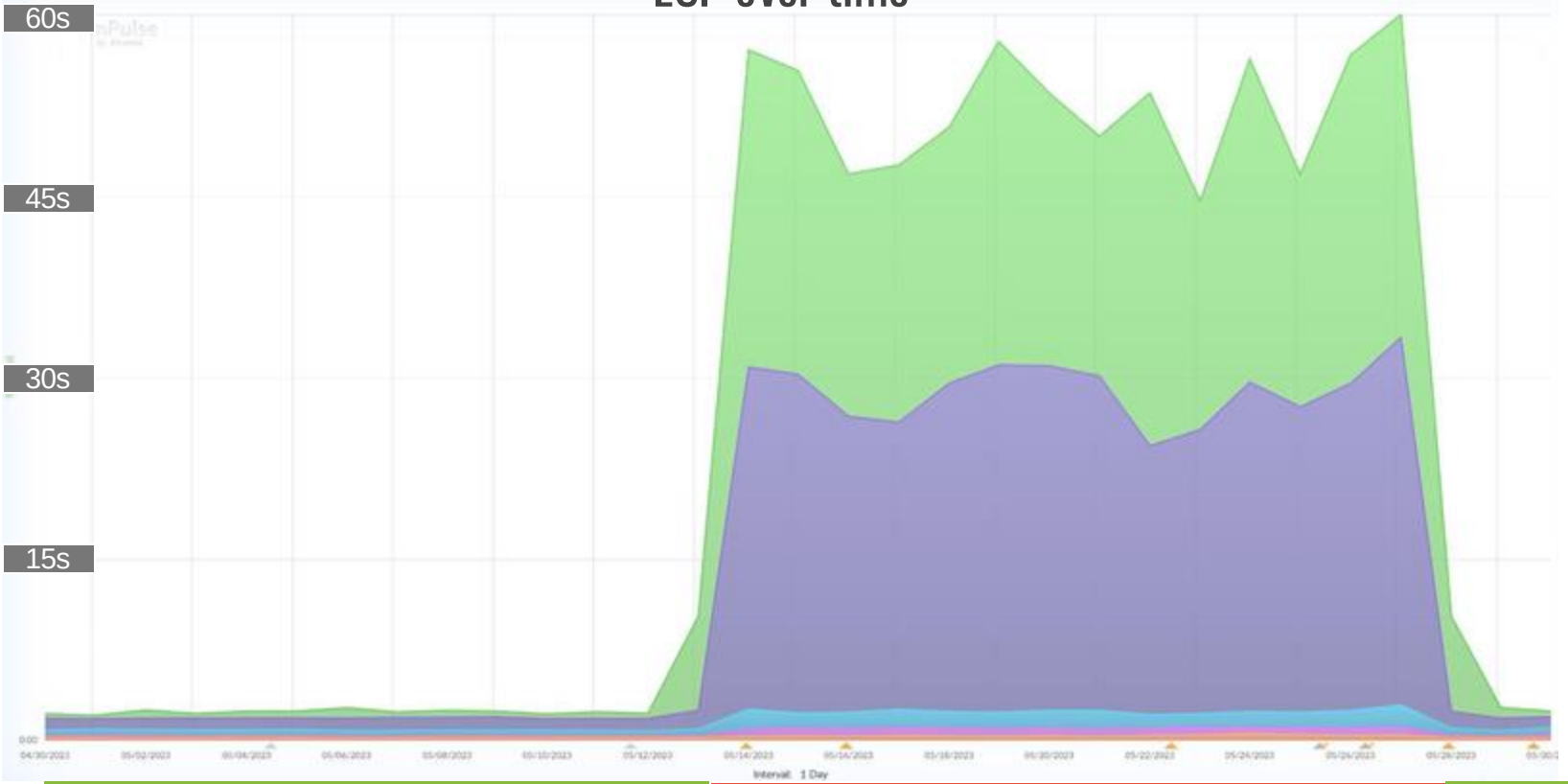
The **problem** starts **here...**


Log in
#1
A
Guest
network
ma=600
#2
B
Guest
network
ma=90
#3
C
Guest
network
ma=300
#4
B
Guest
cached
age=28
#5
D
Logged in
network
no-cache
#6
A
Guest
cached
age=89
#7
E
Logged in
network
no-cache
#8
F
Logged in
network
no-cache
#9
G
Logged in
network
no-cache
Repeated
Wrong Context
Logged in user thinks they are logged out


max(max-ages)=mma
RLI Risk Zone
Log in
#1
A
Guest
network
ma=600
#2
B
Guest
network
ma=90
#3
C
Guest
network
ma=300
#4
B
Guest
cached
age=28
#5
D
Logged in
network
no-cache
#6
A
Guest
cached
age=89
#7
E
Logged in
network
no-cache
#8
F
Logged in
network
no-cache
#9
G
Logged in
network
no-cache
Repeated
Wrong Context
Logged in user thinks they are logged out

Clear-Site-Data: cache

LCP over time



Before | Clear-Site-Data: cache | Reverted

RLI-BCB

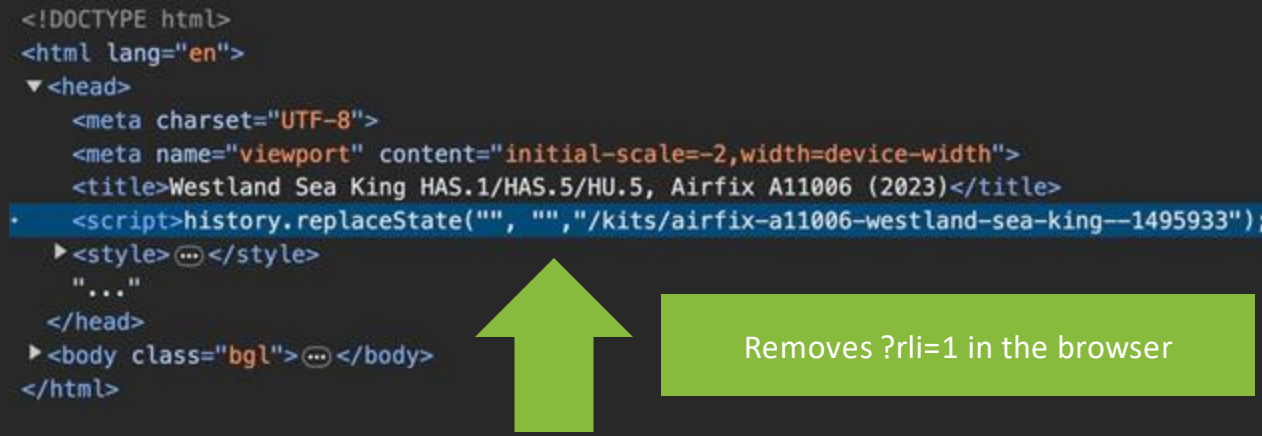
Recently Logged In
Browser Cache Bypassing

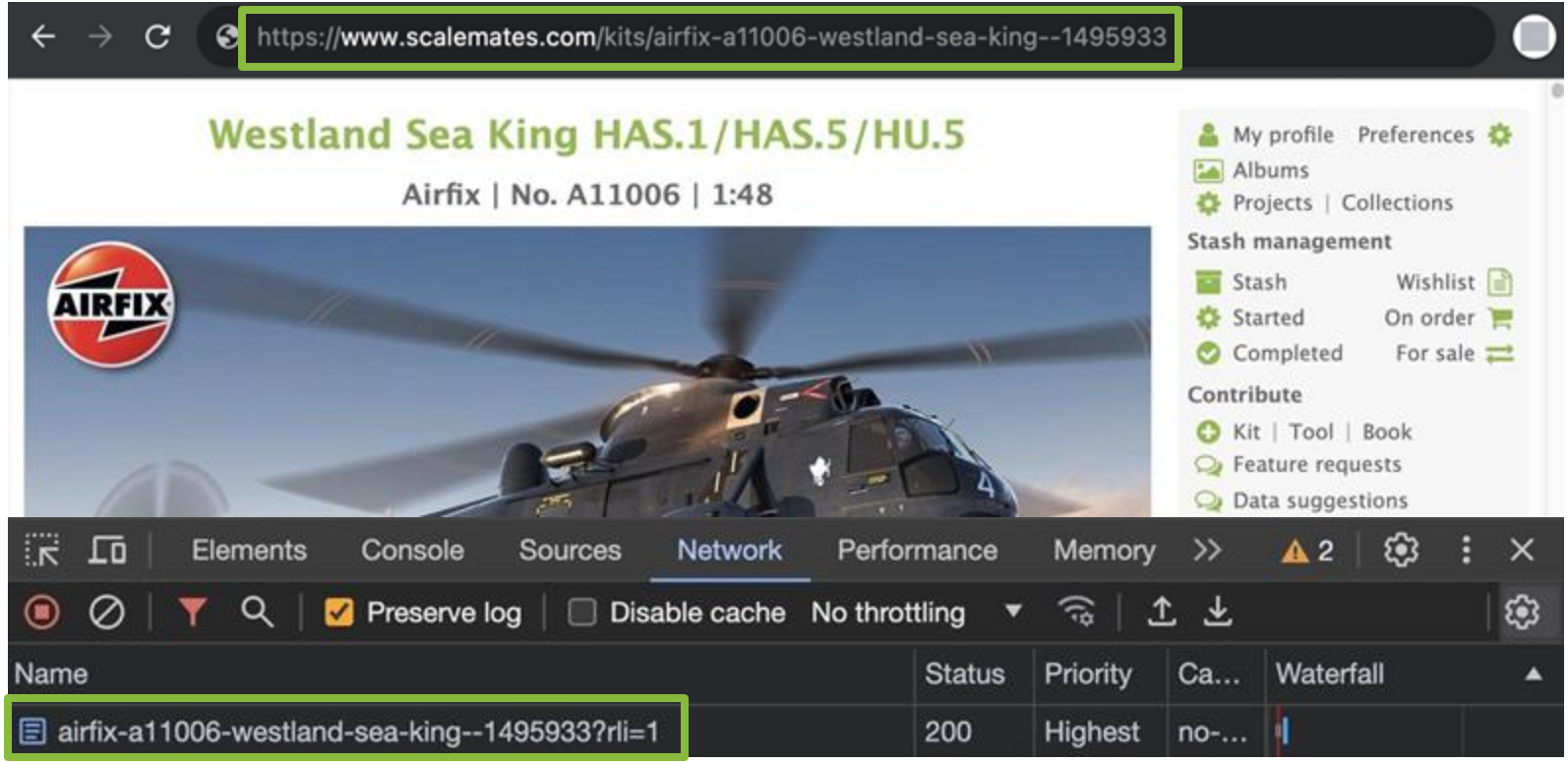
Name	Value	Domain	Path	Expires / Max-Age
RLI	1	.www.scalemates.com	/	2023-12-14T12:11:25.000Z

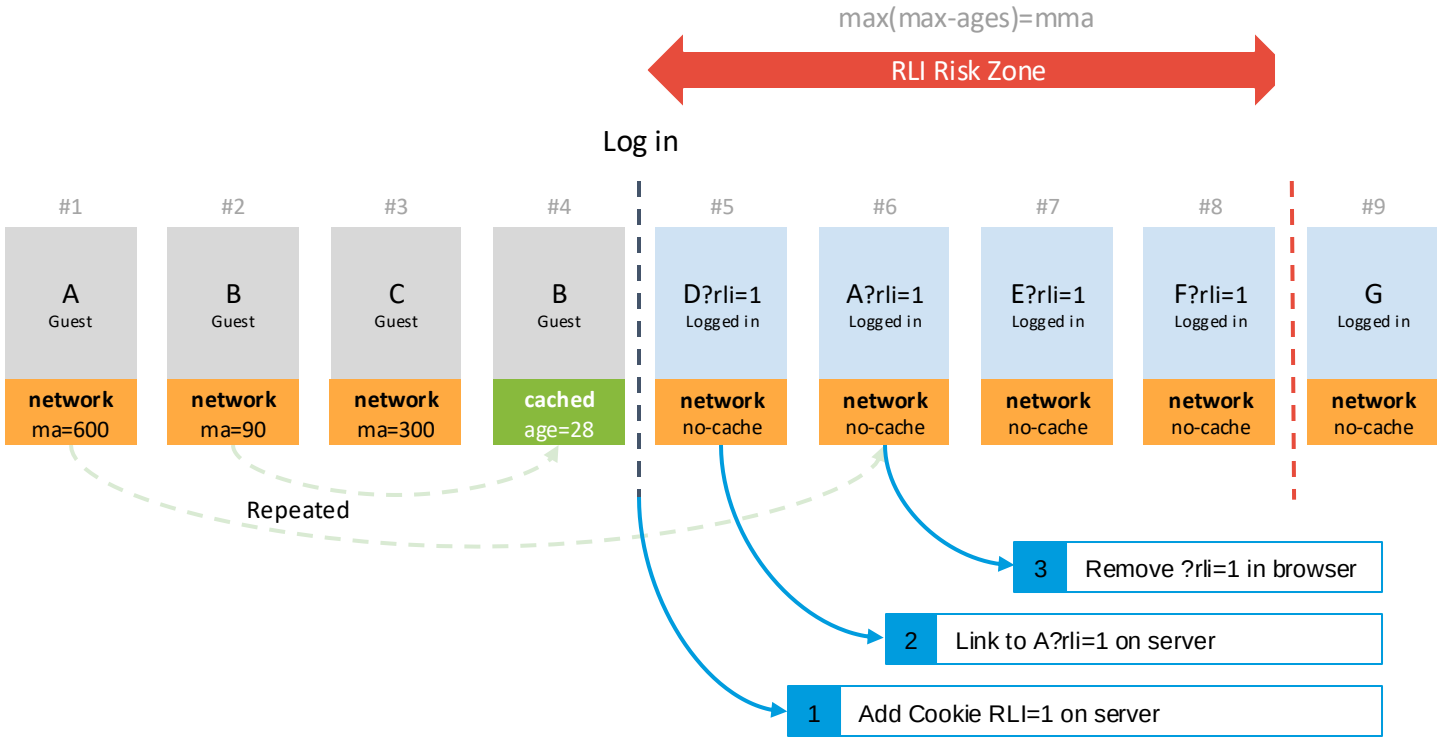
```
▼<nav id="mainmenu">
    <a href="/">Home</a>
    <a href="/kits/">Kits</a>
    <a href="/colors/">Paints</a>
    <a href="/books/">Books</a>
    <a href="/profiles/user.php?id=9876">My Profile</a>
  </nav>
▼<nav id="mainmenu">
    <a href="/?rli=1">Home</a>
    <a href="/kits/?rli=1">Kits</a>
    <a href="/colors/?rli=1">Paints</a>
    <a href="/books/?rli=1">Books</a>
    <a href="/profiles/user.php?id=9876&rli=1">My Profile</a>
  </nav>
```

Standard

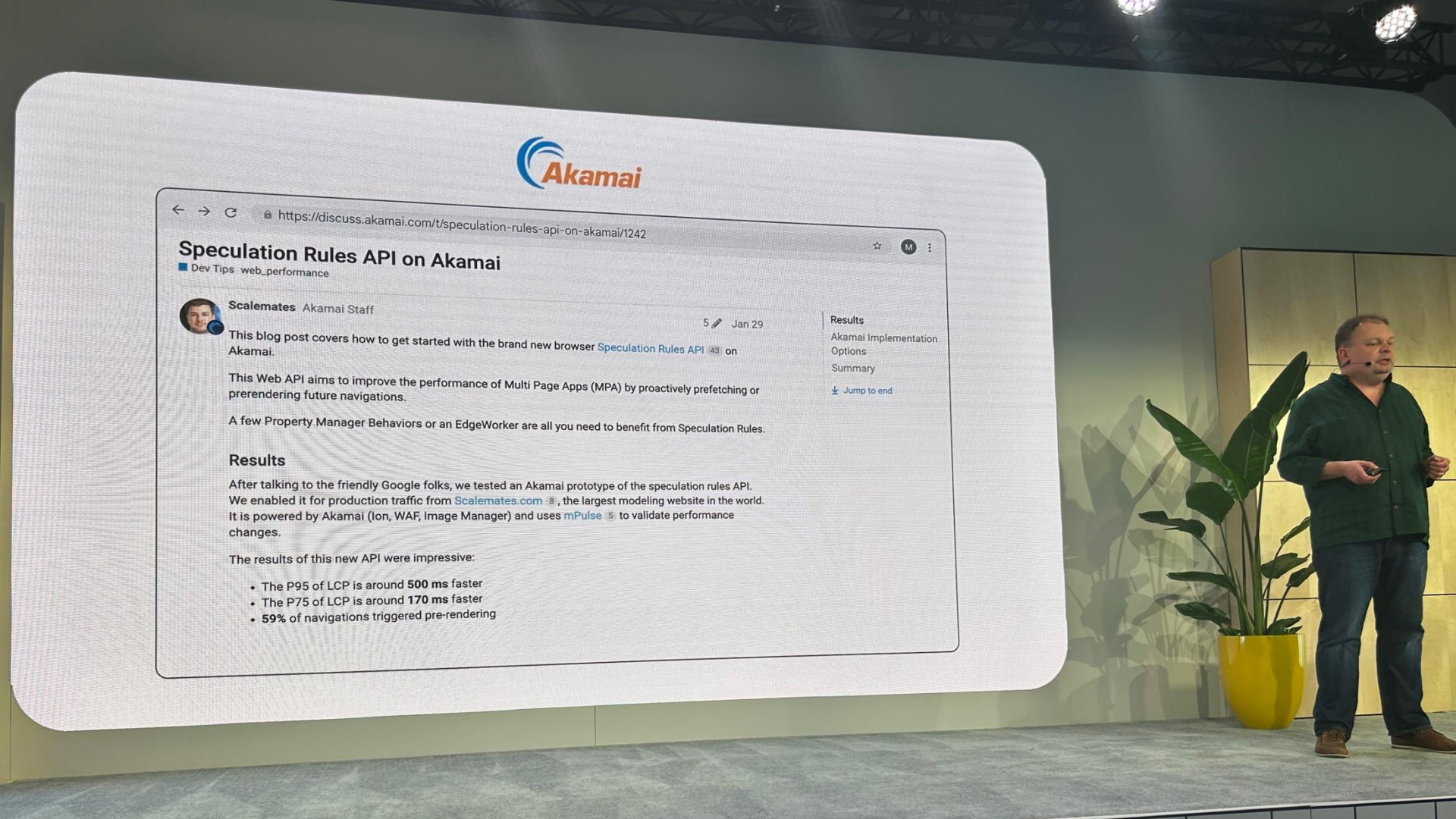
RLI Risk Zone


<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="initial-scale=-2,width=device-width">
<title>Westland Sea King HAS.1/HAS.5/HU.5, Airfix A11006 (2023)</title>
<script>history.replaceState("", "","/kits/airfix-a11006-westland-sea-king--1495933");</script> == $0
<style>…</style>
"..."
</head>
<body class="bgl">…</body>
</html>
Removes ?rli=1 in the browser


https://www.scalemates.com/kits/airfix-a11006-westland-sea-king--1495933
Westland Sea King HAS.1/HAS.5/HU.5
Airfix | No. A11006 | 1:48
AIRFIX
My profile
Preferences
Albums
Projects | Collections
Stash management
Stash
Wishlist
Started
On order
Completed
For sale
Contribute
Kit | Tool | Book
Feature requests
Data suggestions
Elements
Console
Sources
Network
Performance
Memory
2
Preserve log
Disable cache
No throttling
Name
Status
Priority
Ca...
Waterfall
airfix-a11006-westland-sea-king--1495933?rli=1
200
Highest
no-...


max(max-ages)=mma
RLI Risk Zone
Log in
#1
A
Guest
network
ma=600
#2
B
Guest
network
ma=90
#3
C
Guest
network
ma=300
#4
B
Guest
cached
age=28
#5
D?rli=1
Logged in
network
no-cache
#6
A?rli=1
Logged in
network
no-cache
#7
E?rli=1
Logged in
network
no-cache
#8
F?rli=1
Logged in
network
no-cache
#9
G
Logged in
network
no-cache
Repeated
3
Remove ?rli=1 in browser
2
Link to A?rli=1 on server
1
Add Cookie RLI=1 on server

Progressive Speculation


Akamai
https://discuss.akamai.com/t/speculation-rules-api-on-akamai/1242
Speculation Rules API on Akamai
Dev Tips web_performance
Scalemates Akamai Staff
5 Jan 29
This blog post covers how to get started with the brand new browser Speculation Rules API 43 on Akamai.
This Web API aims to improve the performance of Multi Page Apps (MPA) by proactively prefetching or prerendering future navigations.
A few Property Manager Behaviors or an EdgeWorker are all you need to benefit from Speculation Rules.
Results
After talking to the friendly Google folks, we tested an Akamai prototype of the speculation rules API. We enabled it for production traffic from Scalemates.com 8, the largest modeling website in the world. It is powered by Akamai (Ion, WAF, Image Manager) and uses mPulse 5 to validate performance changes.
The results of this new API were impressive:
The P95 of LCP is around 500 ms faster
The P75 of LCP is around 170 ms faster
59% of navigations triggered pre-rendering
Results
Akamai Implementation Options
Summary
Jump to end

Nearly INSTANT performance

```
<script type="speculationrules">
    {"prerender":
        [{"source": "document","where":{"selector_matches":"nav a, a.article"},"eagerness":"moderate"}
    ]}
</script>
```

https://developer.mozilla.org/en-US/docs/Web/API/Speculation_Rules_API

Action
prerender | prefetch

```
<script type="speculationrules">
    {"prerender":
        [{"source": "document","where":{"selector_matches":"nav a, a.article"},"eagerness":"moderate"}
    ]}
</script>
```

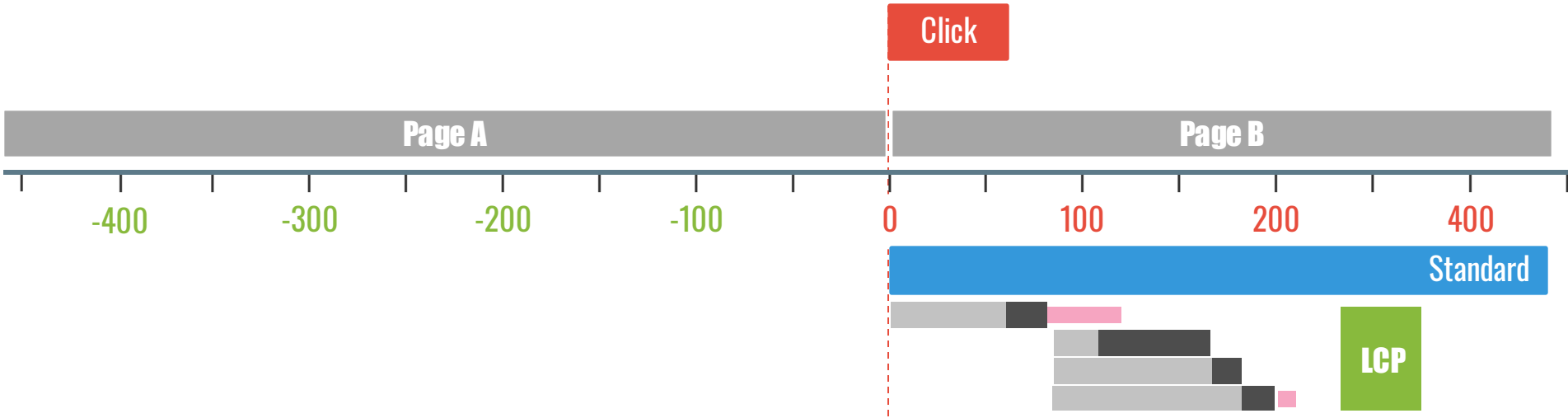
https://developer.mozilla.org/en-US/docs/Web/API/Speculation_Rules_API

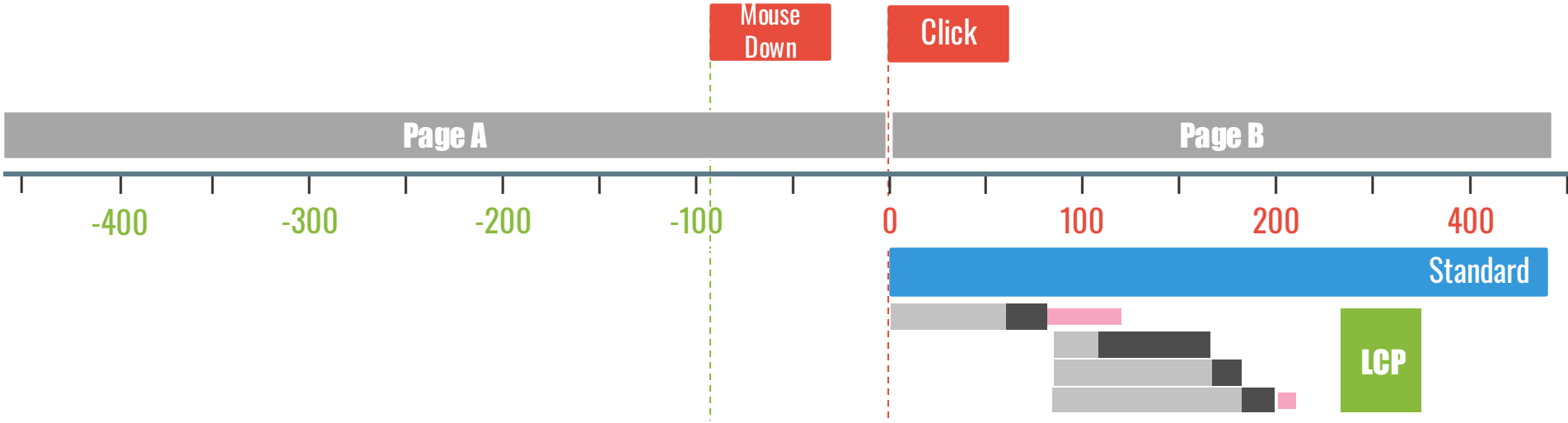
Action
prerender | prefetch

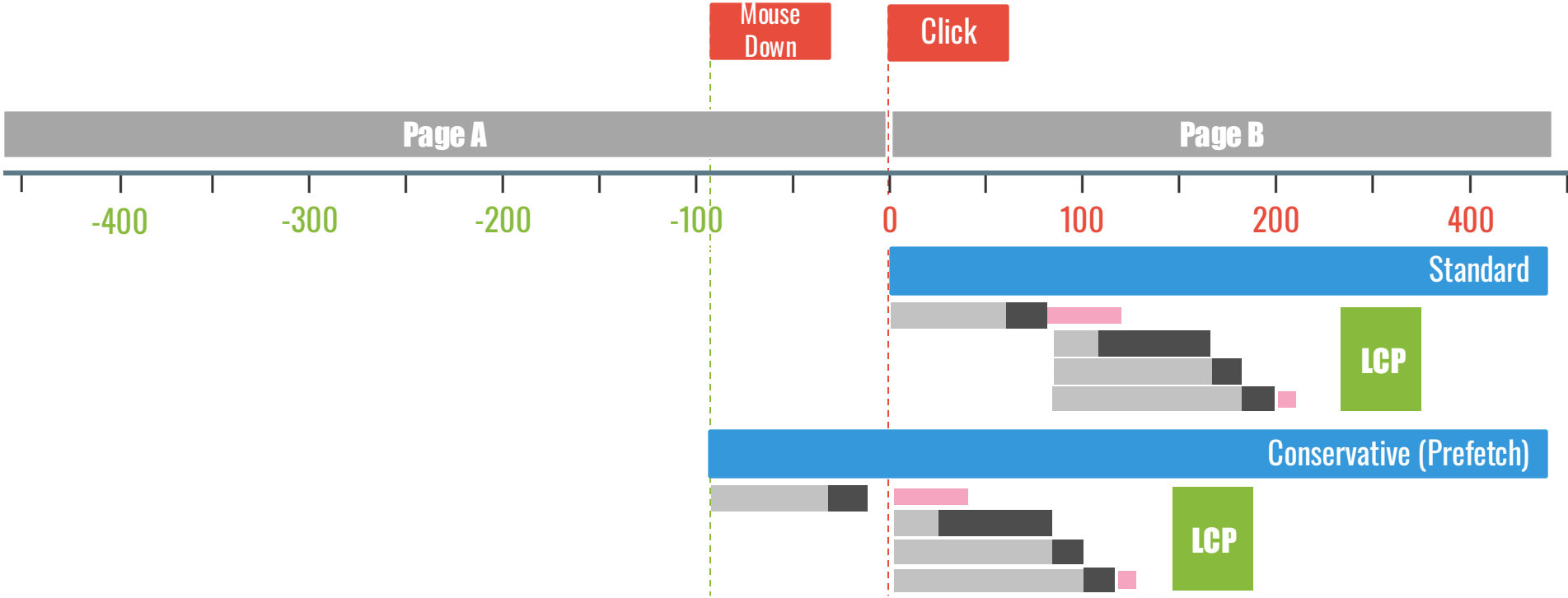
```
<script type="speculationrules">
    {"prerender":
        [{"source": "document","where":{"selector_matches":"nav a, a.article"},"eagerness":"moderate"}
    ]}
</script>
```

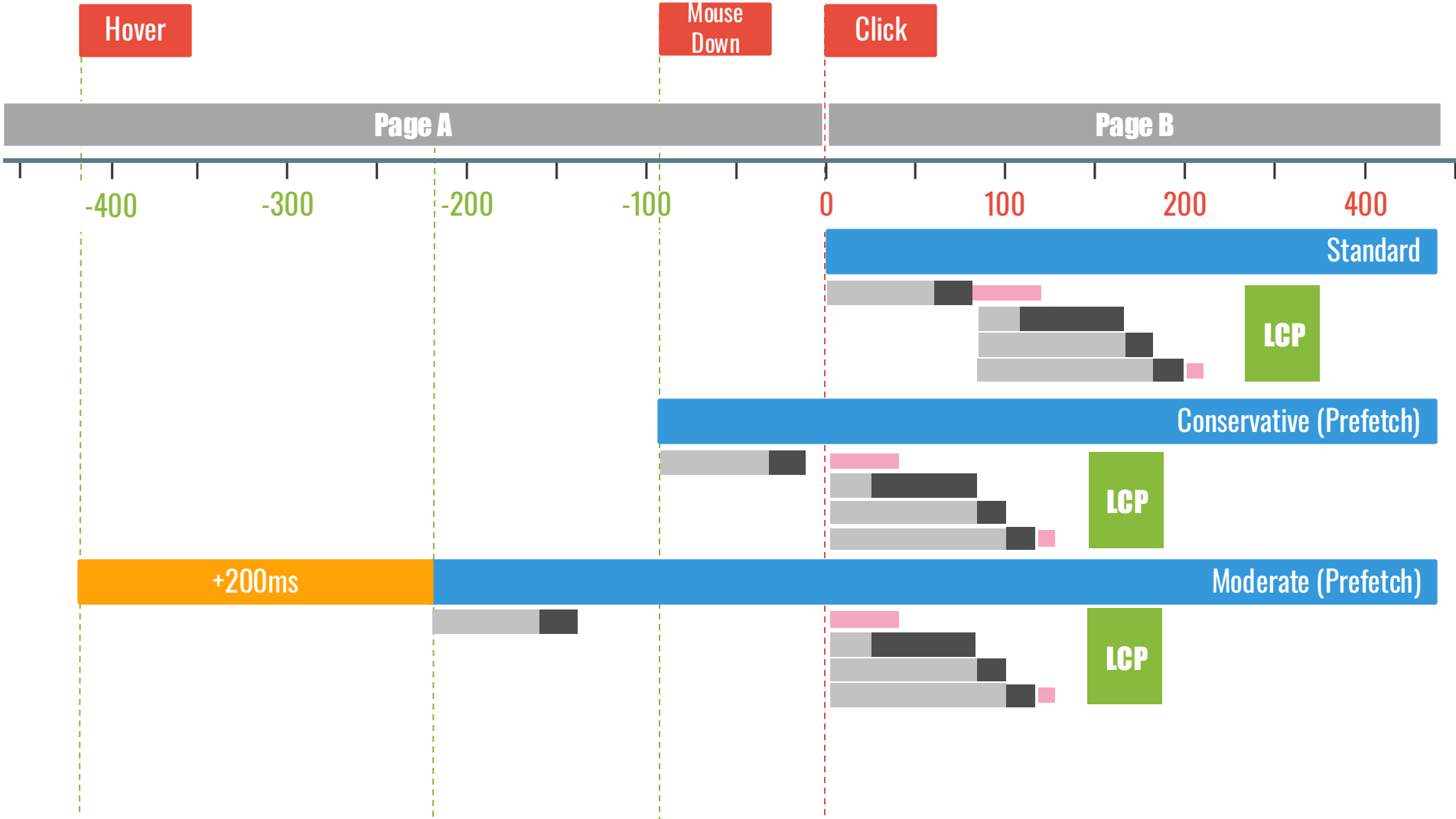
Eagerness
eager | moderate | conservative

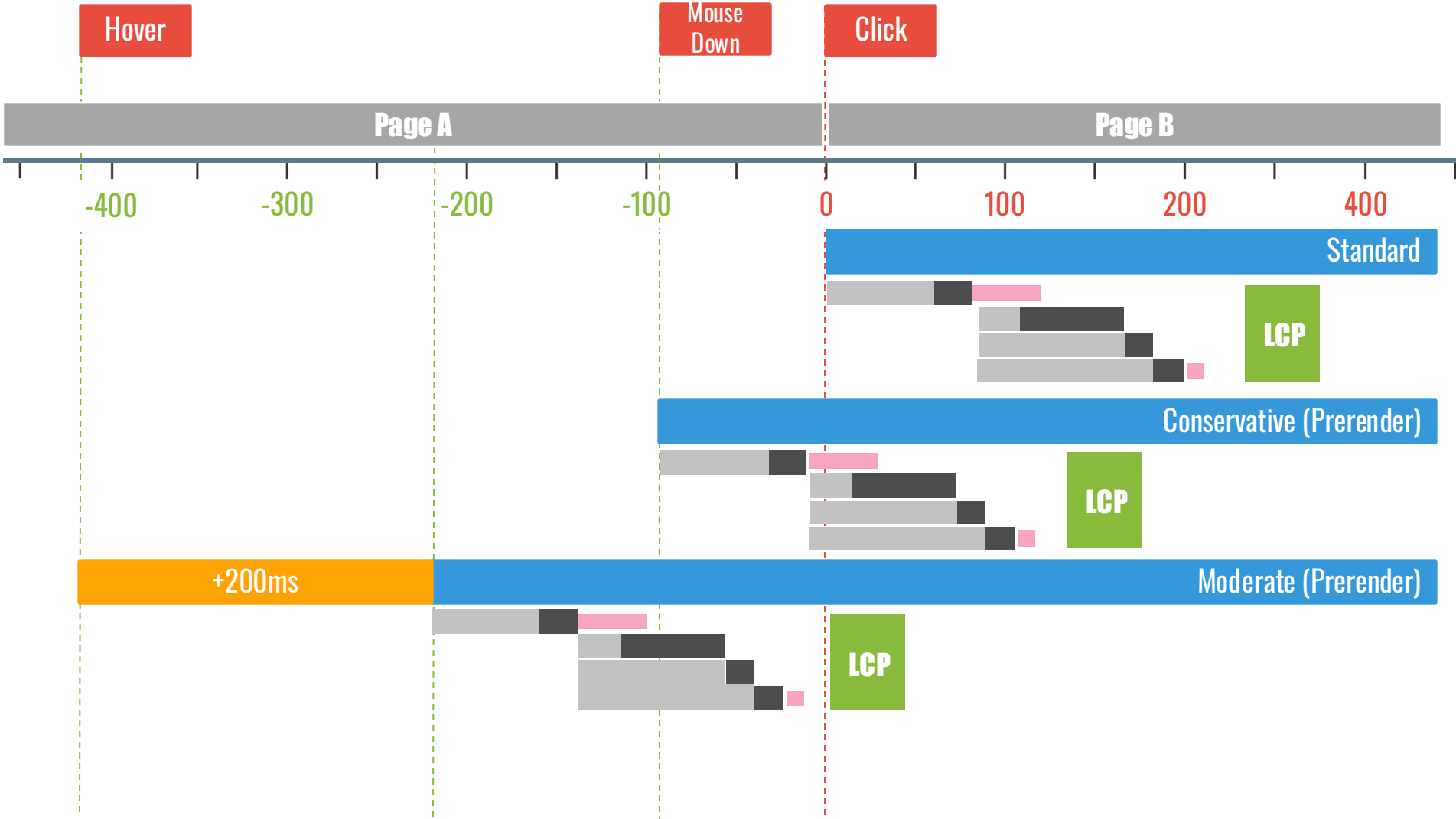
https://developer.mozilla.org/en-US/docs/Web/API/Speculation_Rules_API

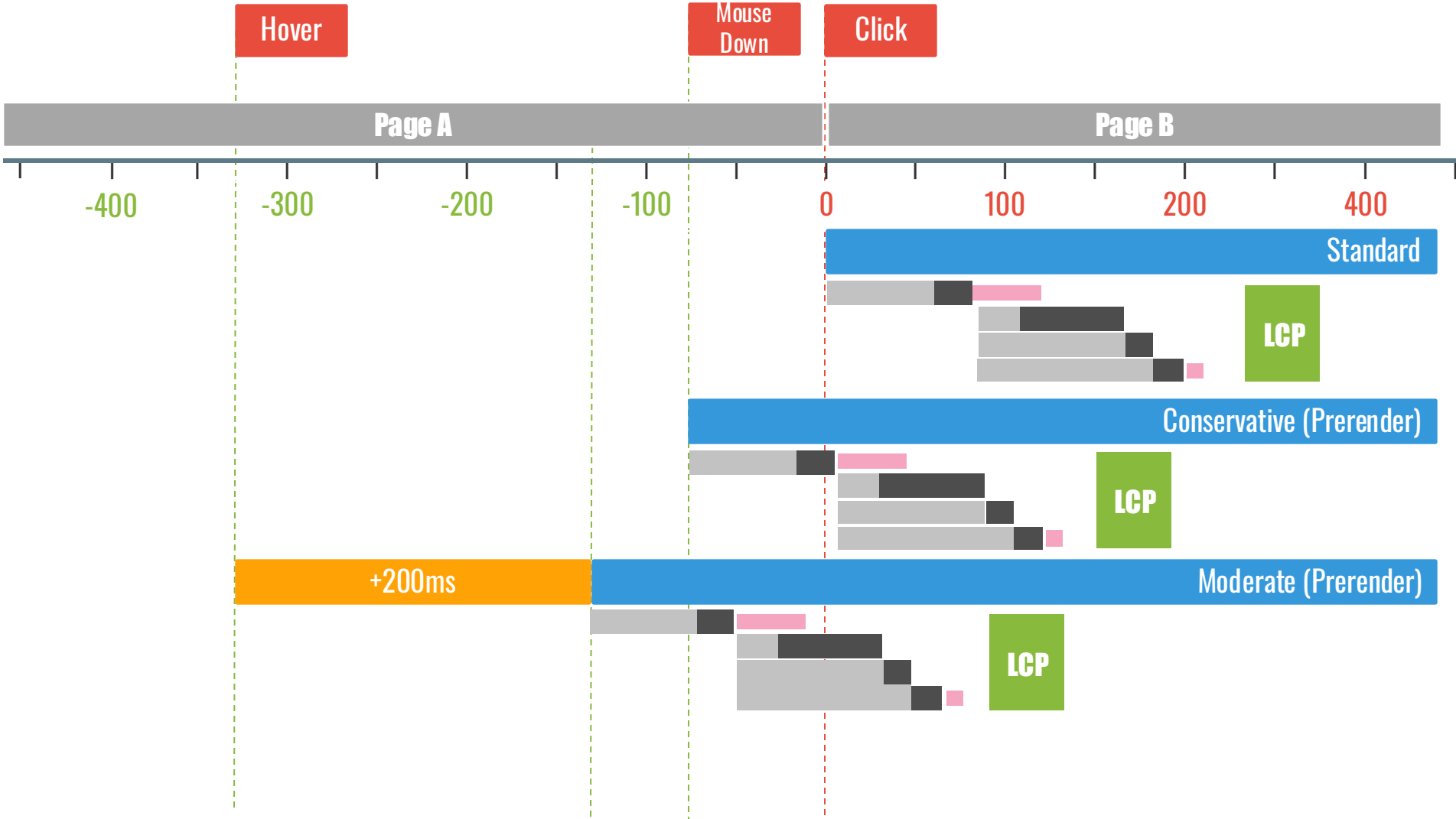

Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP

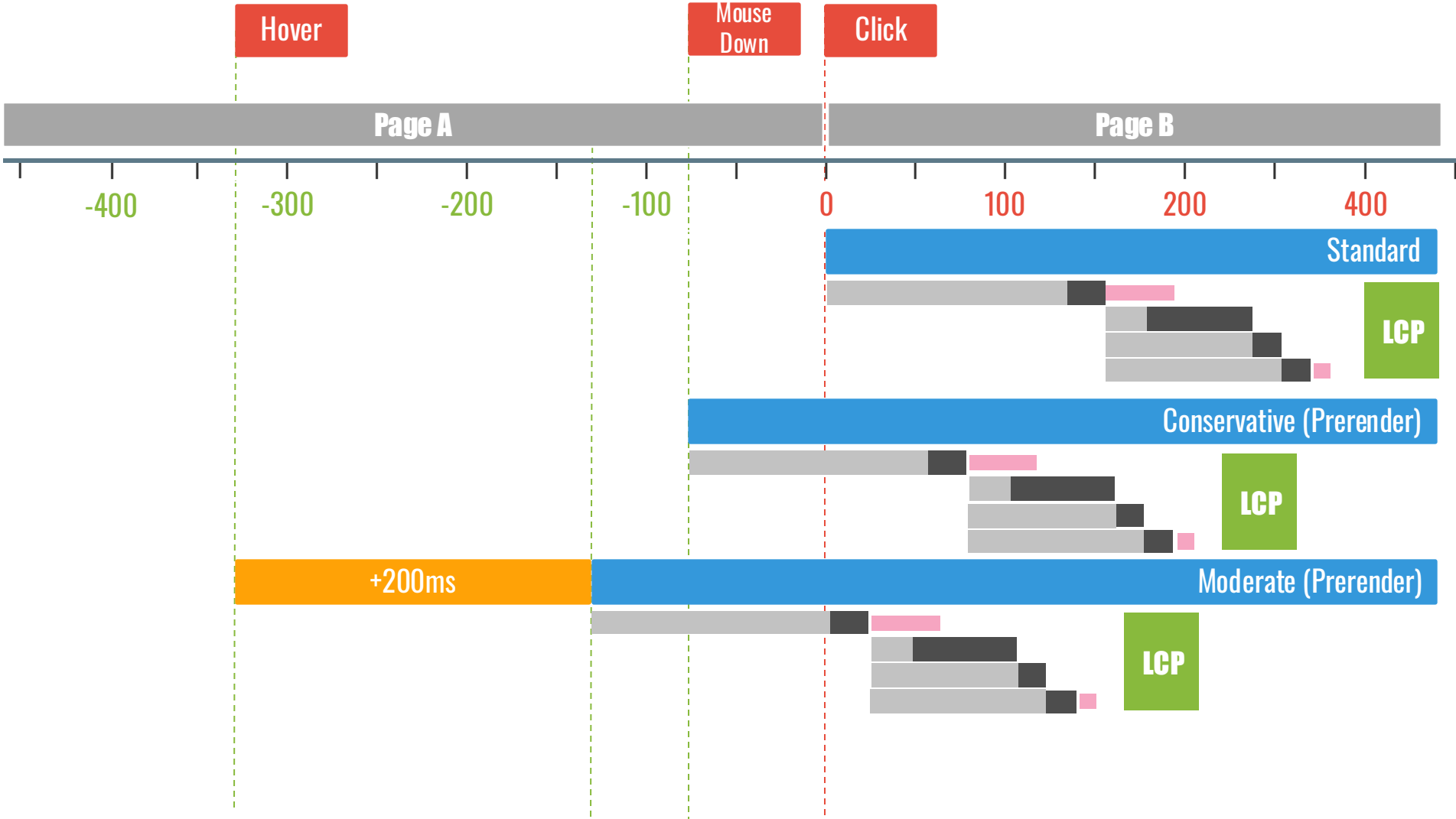

Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP

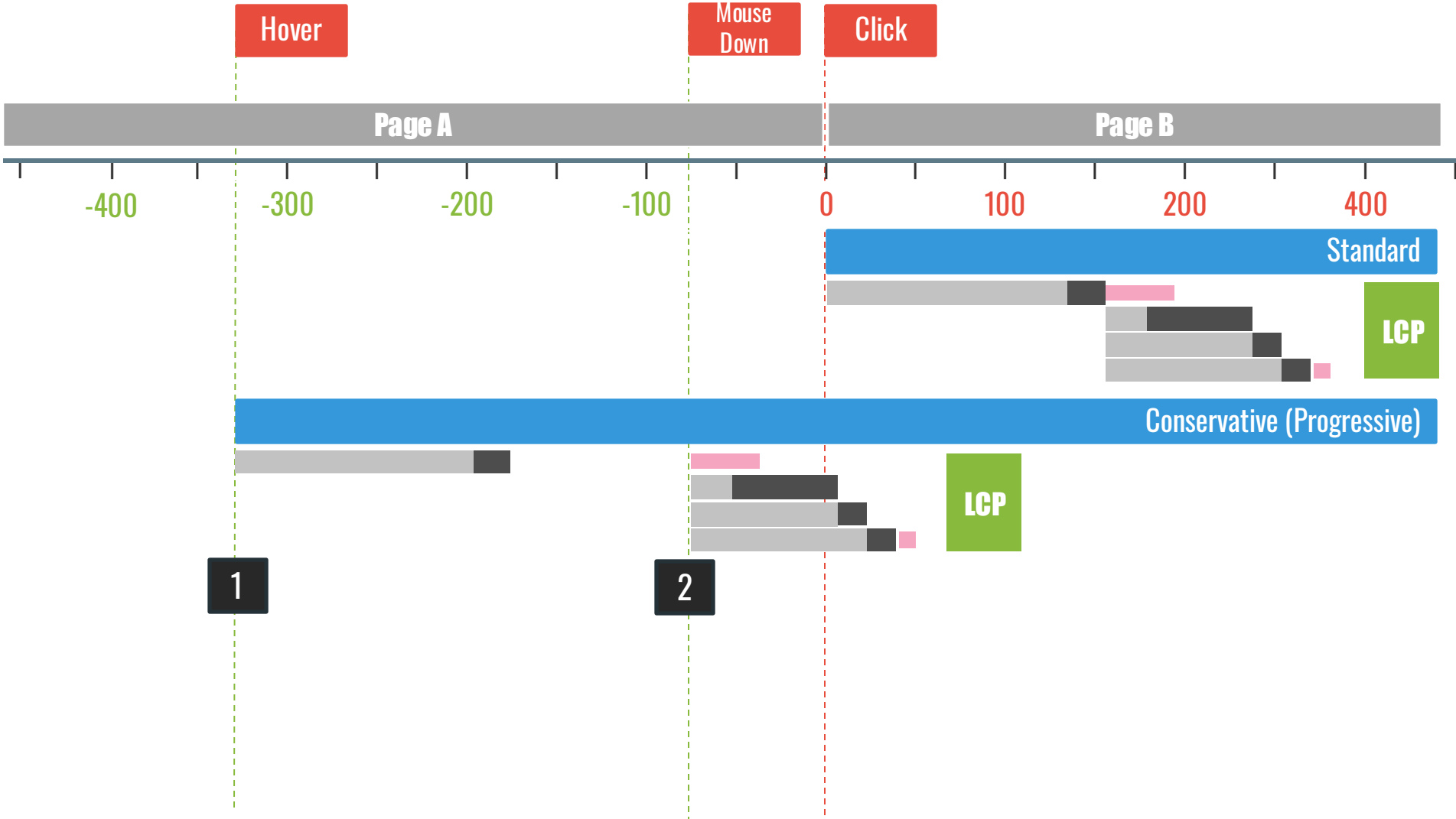

Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Prefetch)
LCP

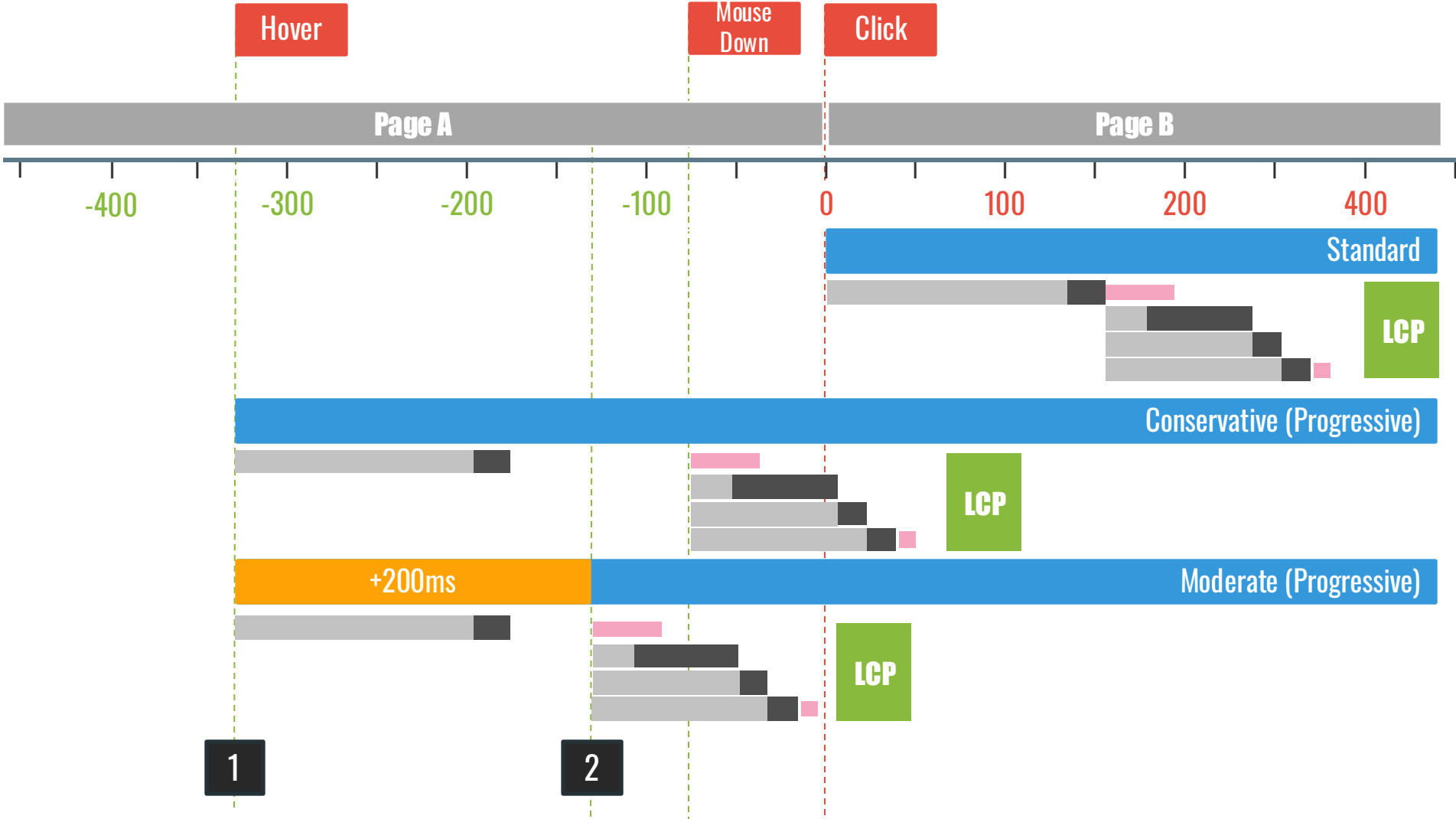

Hover
Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Prefetch)
LCP
+200ms
Moderate (Prefetch)
LCP

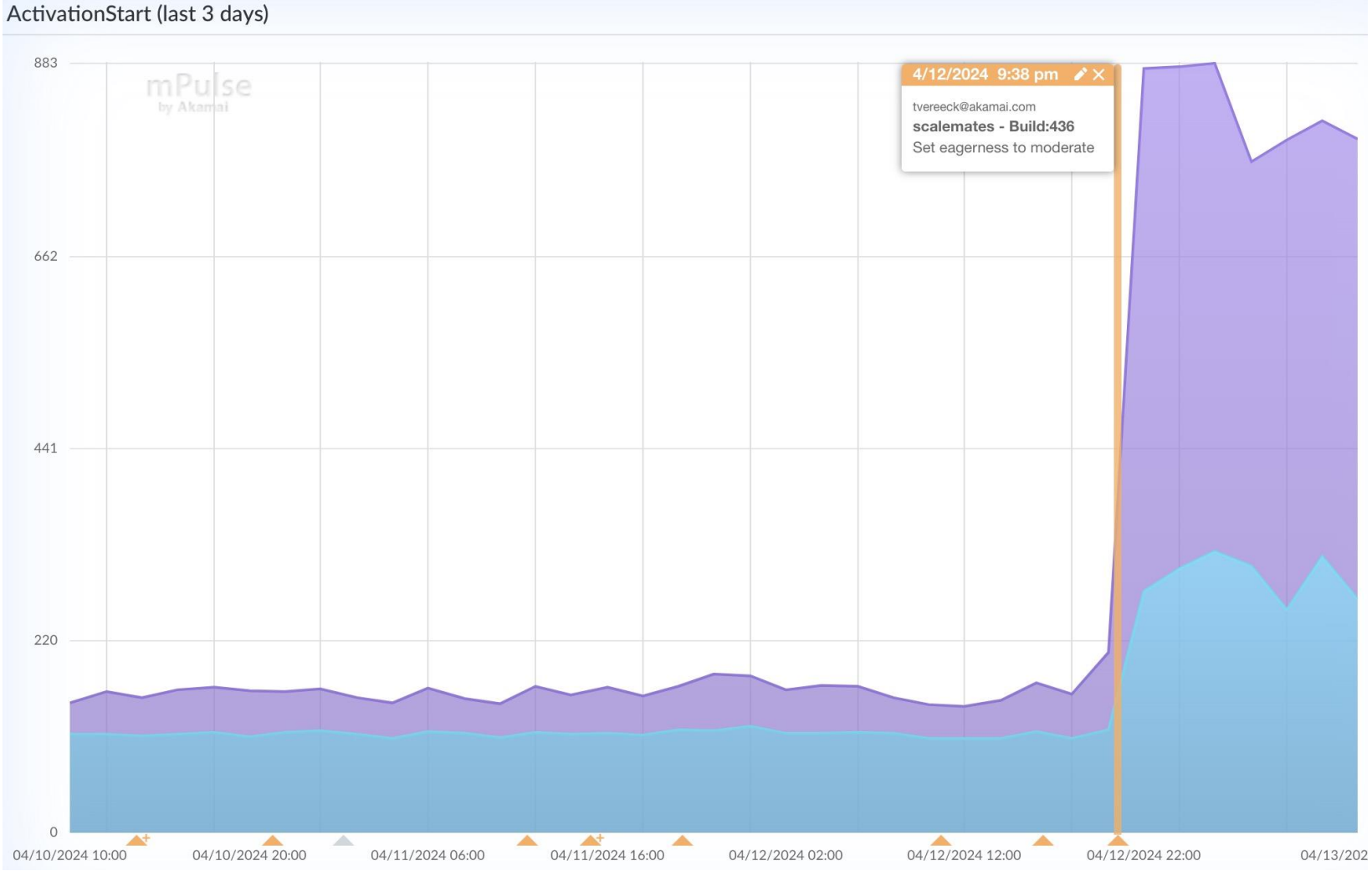

Hover
Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Prerender)
LCP
+200ms
Moderate (Prerender)
LCP


Hover
Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Prerender)
LCP
+200ms
Moderate (Prerender)
LCP


Hover
Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Prerender)
LCP
+200ms
Moderate (Prerender)
LCP


Hover
Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Progressive)
LCP
1
2


Hover
Mouse Down
Click
Page A
Page B
-400
-300
-200
-100
0
100
200
400
Standard
LCP
Conservative (Progressive)
LCP
+200ms
Moderate (Progressive)
LCP
1
2


ActivationStart (last 3 days)
mPulse
by Akamai
883
662
441
220
0
4/12/2024 9:38 pm
tvereeck@akamai.com
scalemates - Build:436
Set eagerness to moderate
04/10/2024 10:00
04/10/2024 20:00
04/11/2024 06:00
04/11/2024 16:00
04/12/2024 02:00
04/12/2024 12:00
04/12/2024 22:00
04/13/202

Pushing the limits

INP

MPA

scalemates

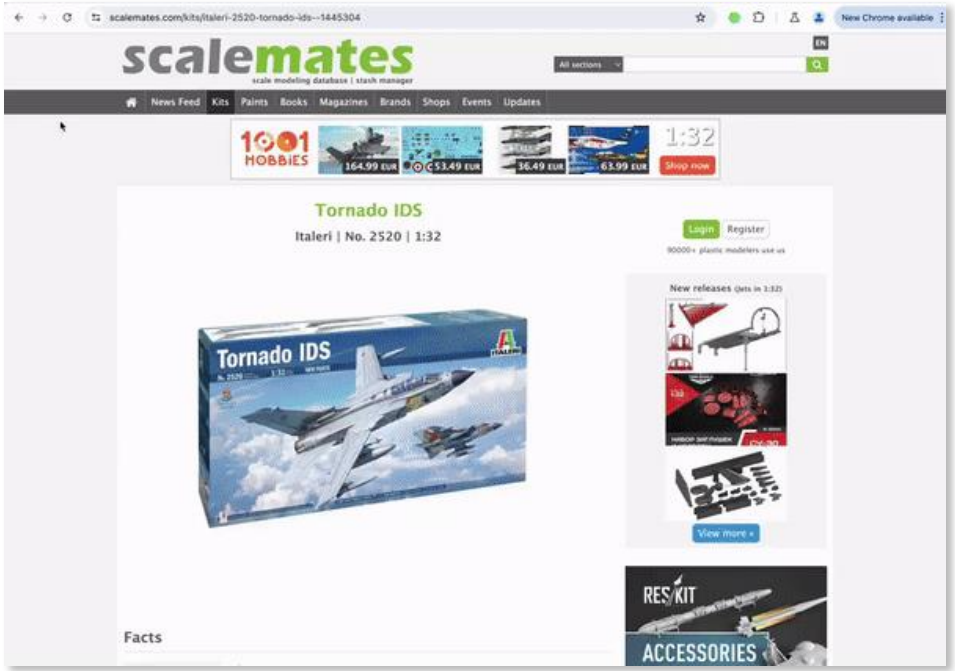
Beyond CWV

1080px

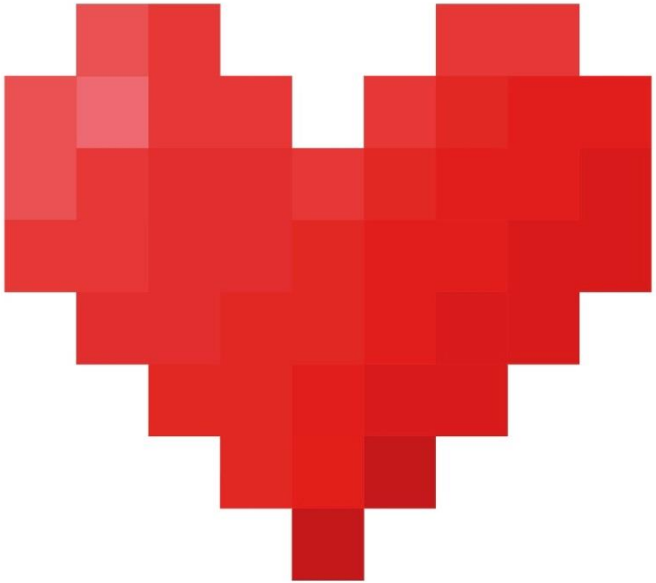
720px

2.25x

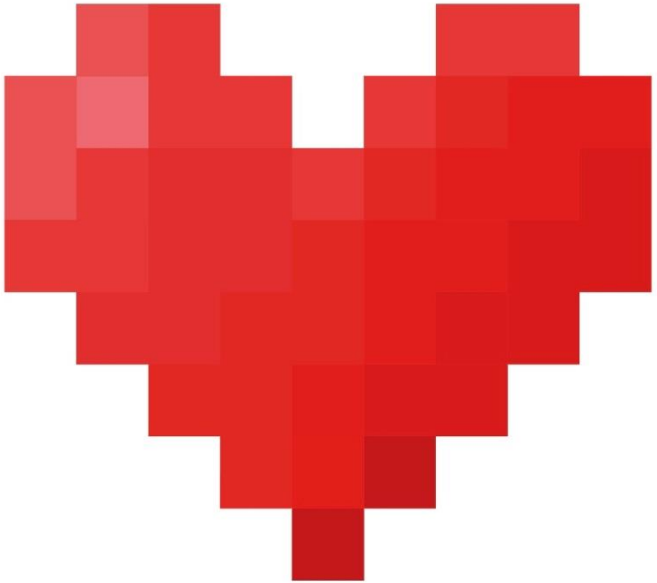
more pixels



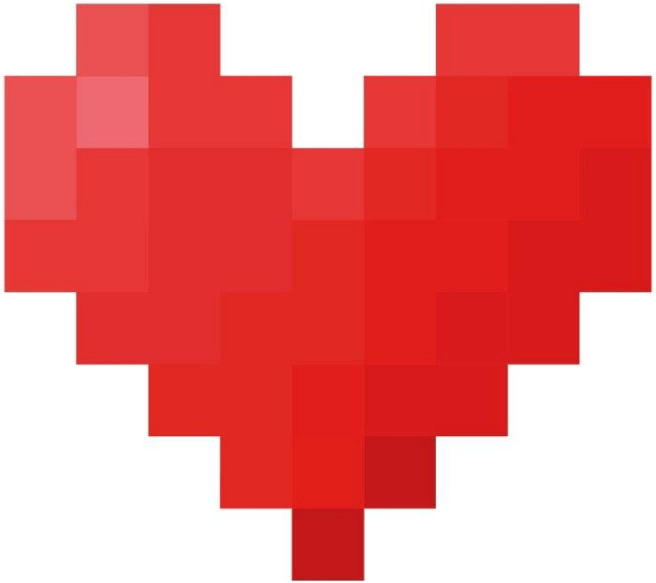
View Transitions 100ms “slower”



CORE WEB VITALS



P75

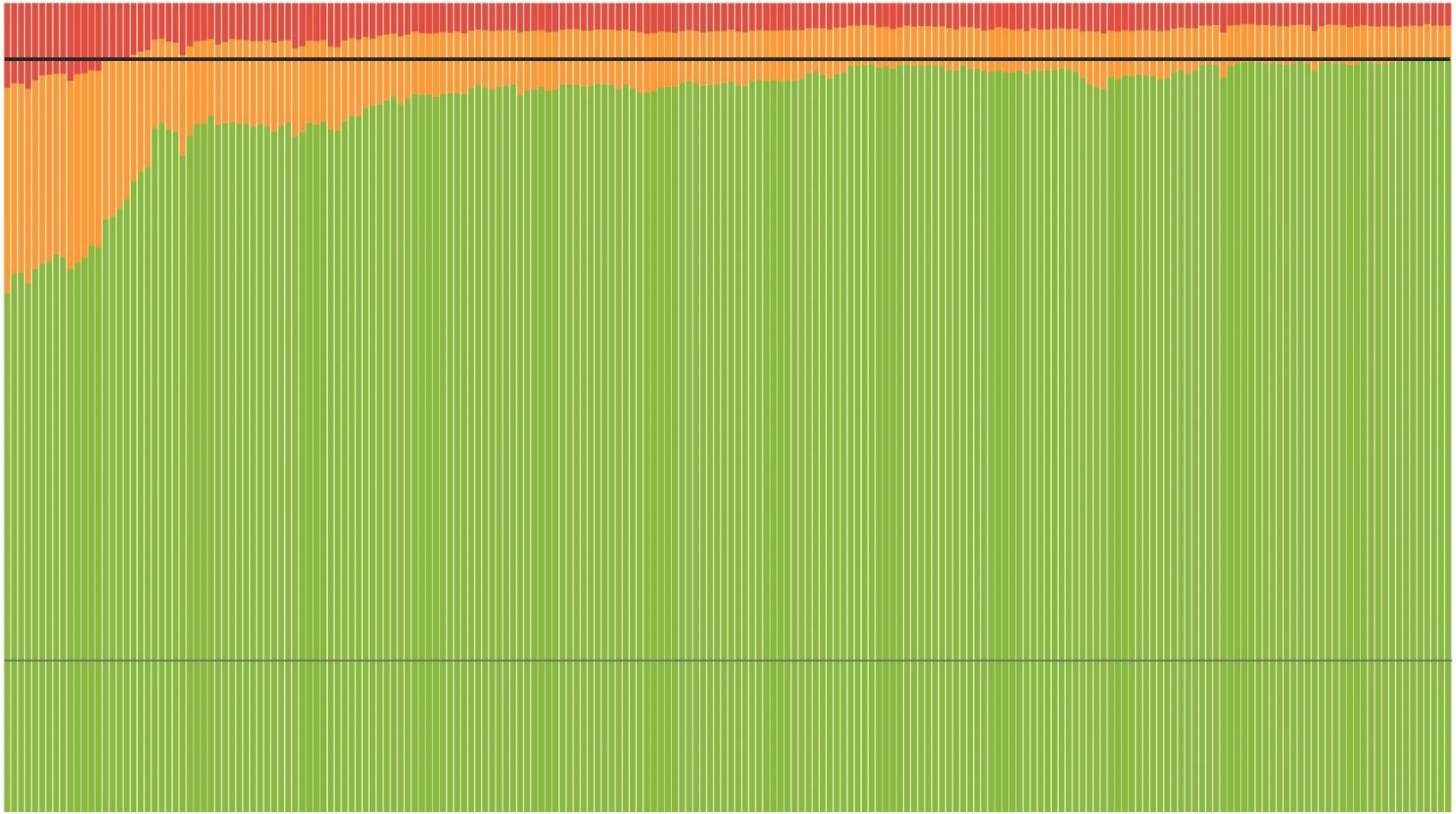


P99

Thank you!

@TimVereecke

Questions?

@TimVereecke

Past 4 Years