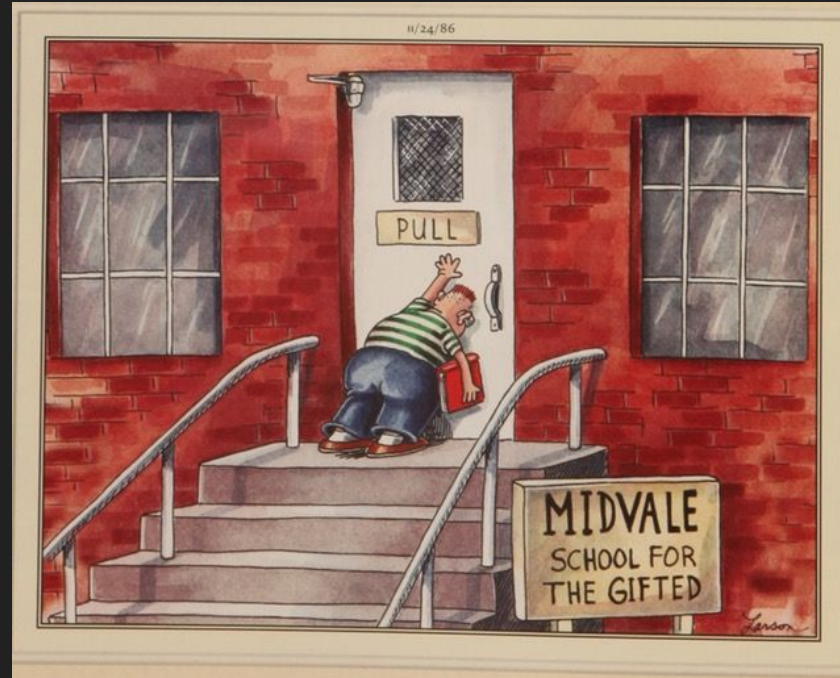
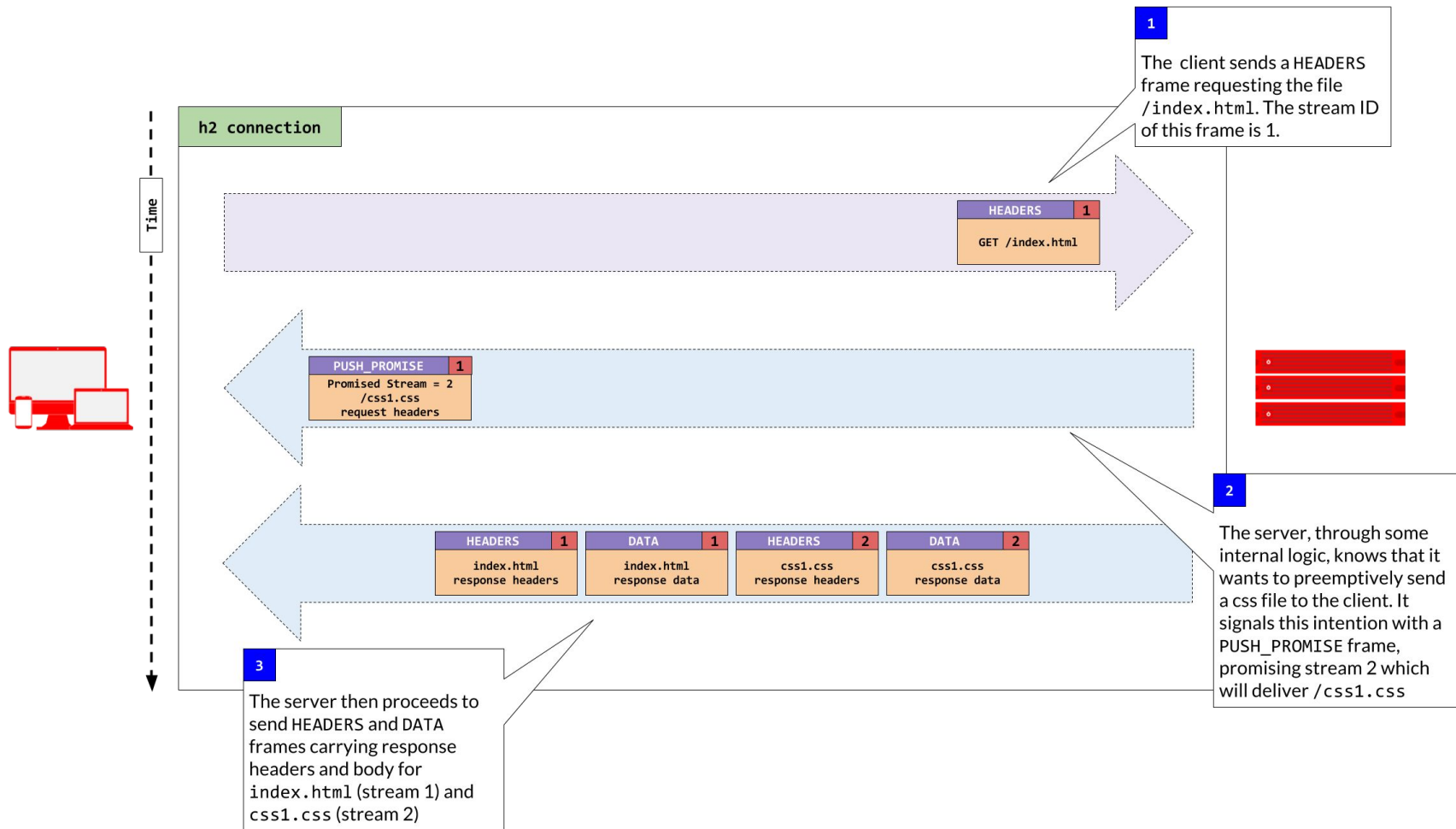


HTTP/2 Server Push





What to push?

- A replacement for inlining
 - All the RTT-saving benefits + caching
- Google paper:
 - https://docs.google.com/a/fastly.com/drawings/d/1mWwY_MeNAjzDRCF0uT97KgN0lh_jX79a53X6iOuH_Is/pub?w=2330&h=1350
- Facebook:
 - <https://www.facebook.com/atscaleevents/videos/1775942979345465/>
- TTFMP:
 - <https://www.youtube.com/watch?v=4pQ2byAoIX0&feature=youtu.be&list=PL37ZVnwpeshF0XmpjKBj3-0kvr3b5ZpJR>

Link: `</css1.css>; rel=preload; as=style`

<https://w3c.github.io/preload/>

Doesn't the Link header already mean something to the browser?




Link: </css1.css>; rel=preload; as=style; nopush

<https://w3c.github.io/preload/>

Link: </css1.css>; rel=preload; as=style; x-http2-push-only











Benefits?

No push:

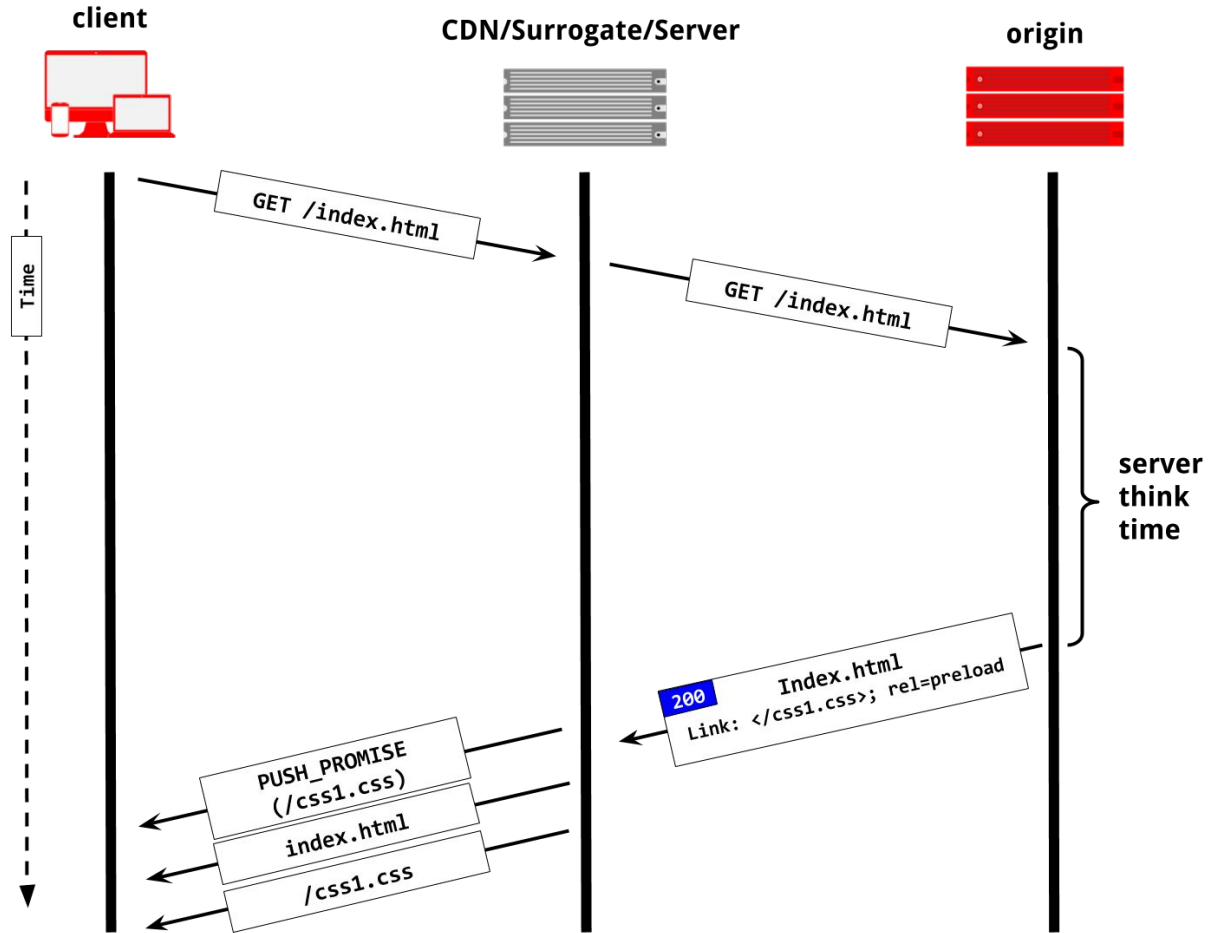
Name	Method	Status	Protocol	Type	Initiator	Size	Time	Connecti...	Content...	Timeline – Start Time
 css_push.php	GET	200	h2	document	Other	483 B	264 ms	106800	208	
 css01.css	GET	200	h2	text/css	css_push.php:8	752 B	82 ms	106800	607	
 css02.css	GET	200	h2	text/css	css_push.php:9	678 B	85 ms	106800	607	
 css03.css	GET	200	h2	text/css	css_push.php:10	696 B	85 ms	106800	607	
 css04.css	GET	200	h2	text/css	css_push.php:11	677 B	87 ms	106800	607	

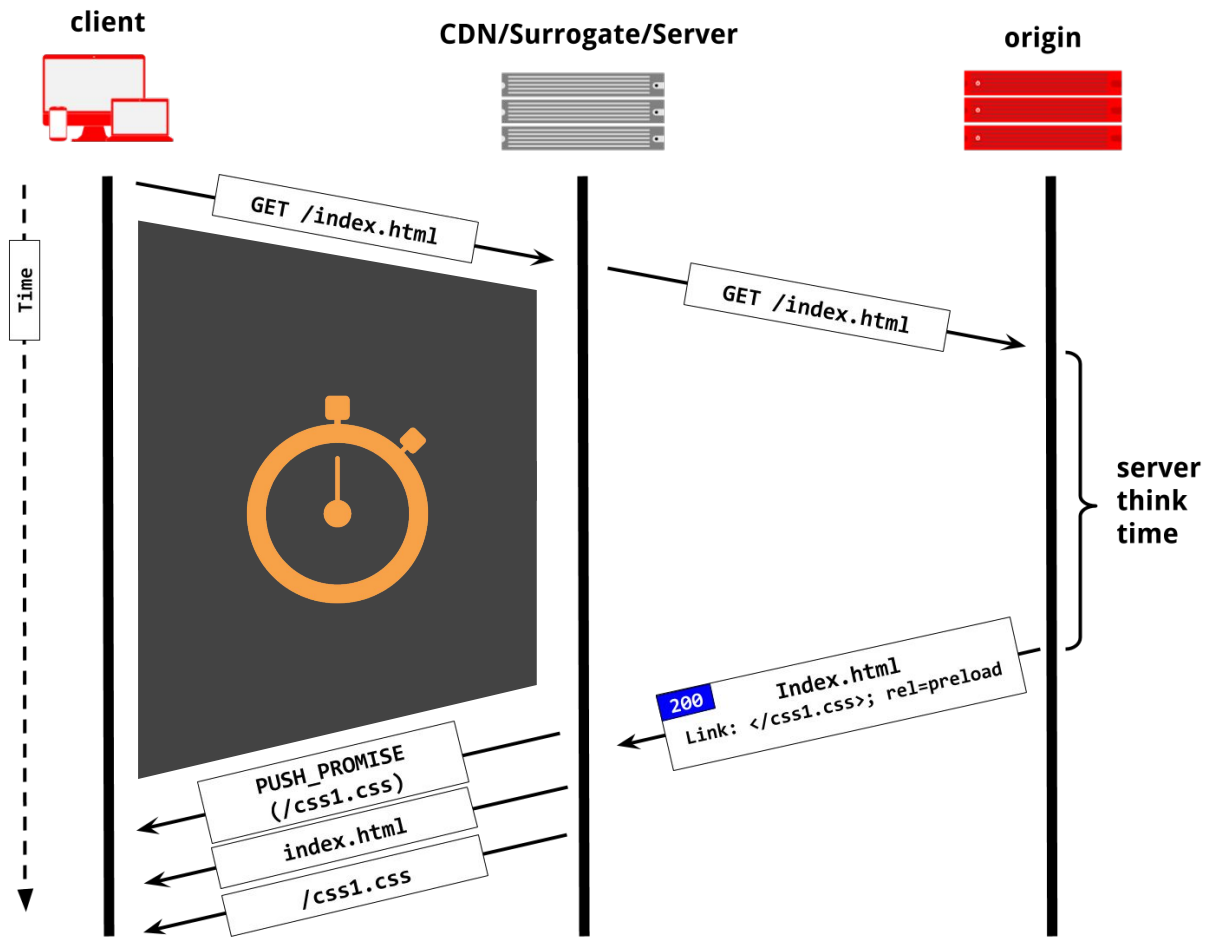
Push:



Name	Method	Status	Protocol	Type	Initiator	Size	Time	Connecti...	Content...	Timeline – Start Time
 css_push.php?push	GET	200	h2	document	Other	865 B	82 ms	106800	208	
 css01.css	GET	200	h2	text/css	Push / css_push.php?push:2	678 B	3 ms	106800	607	
 css02.css	GET	200	h2	text/css	Push / css_push.php?push:2	674 B	7 ms	106800	607	
 css03.css	GET	200	h2	text/css	Push / css_push.php?push:2	724 B	7 ms	106800	607	
 css04.css	GET	200	h2	text/css	Push / css_push.php?push:2	787 B	7 ms	106800	607	

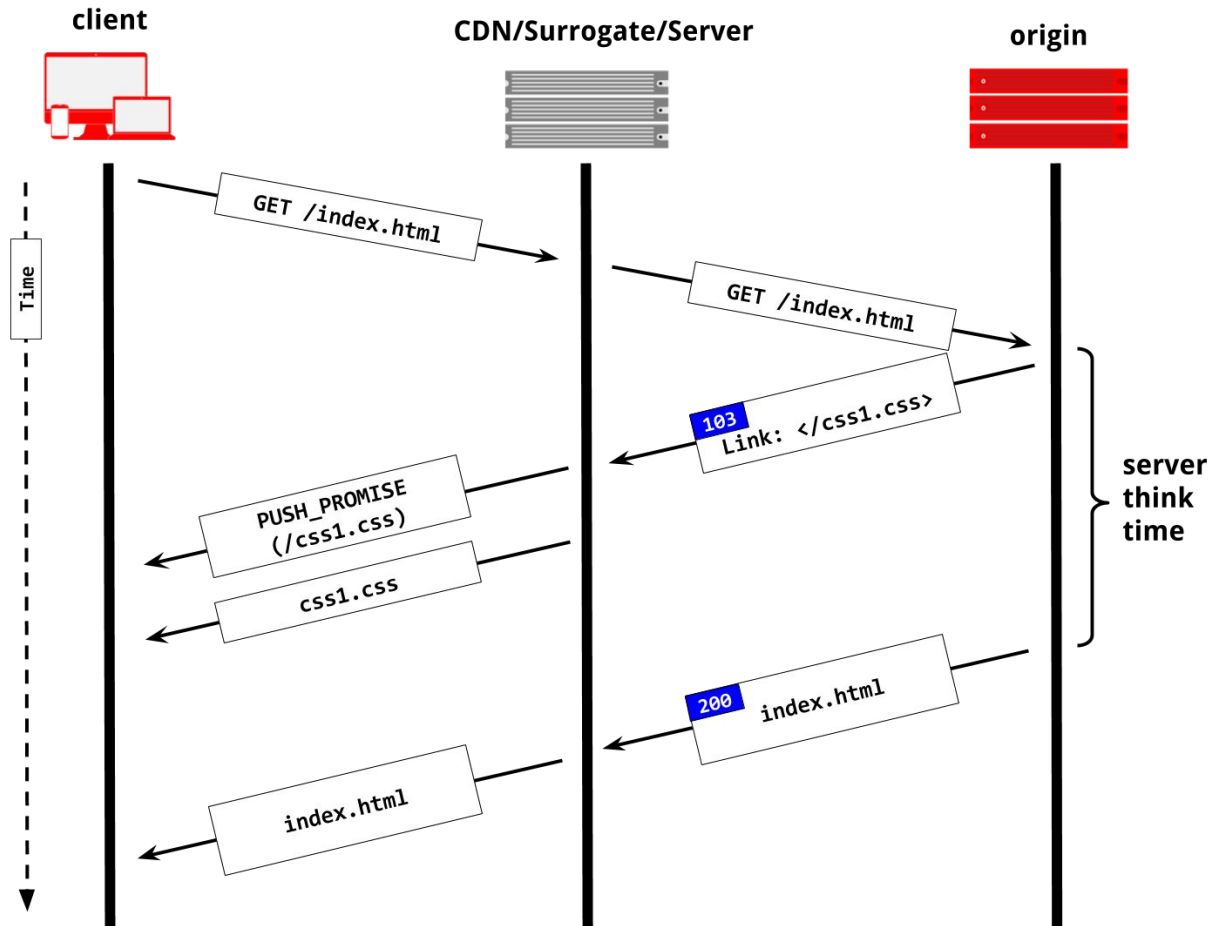
That's cool, but...

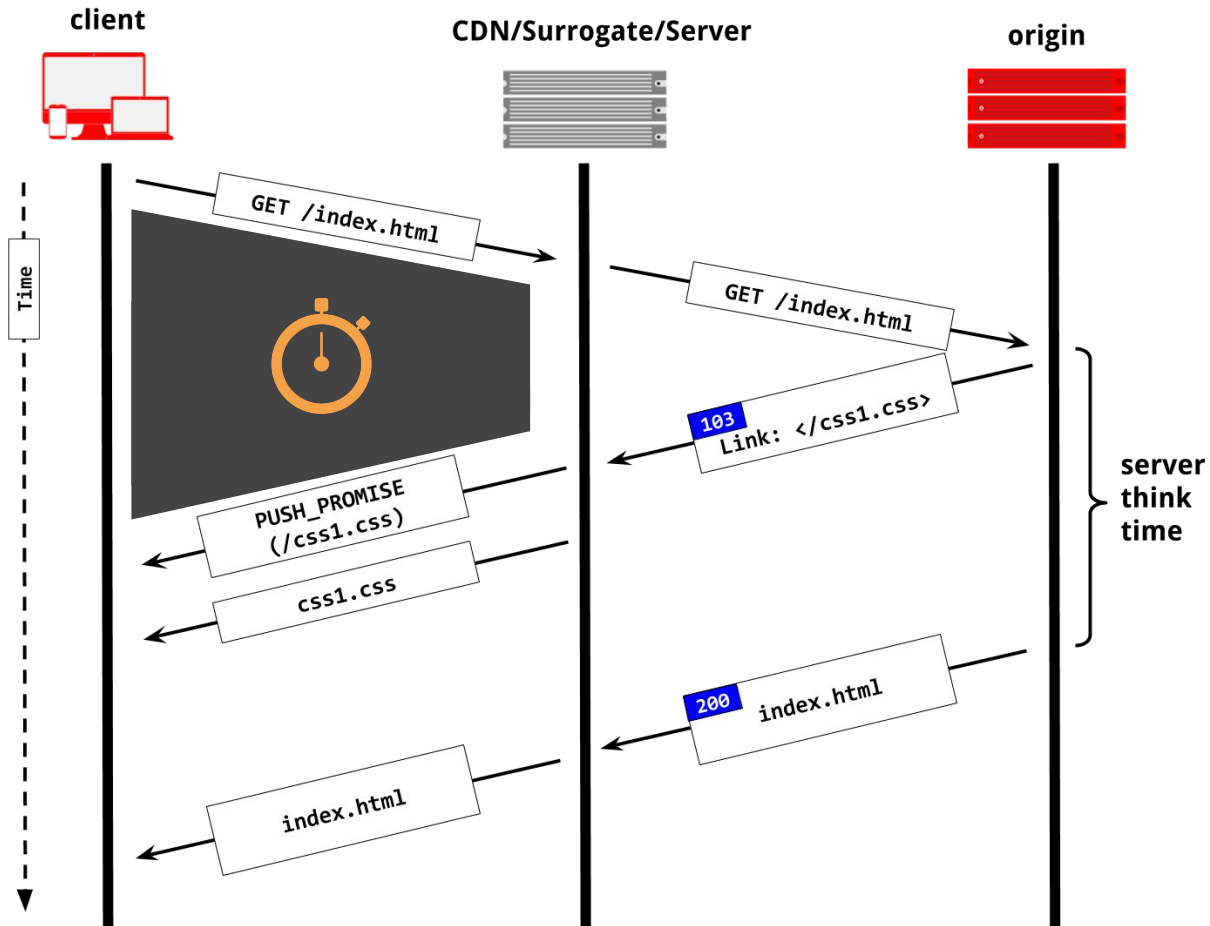




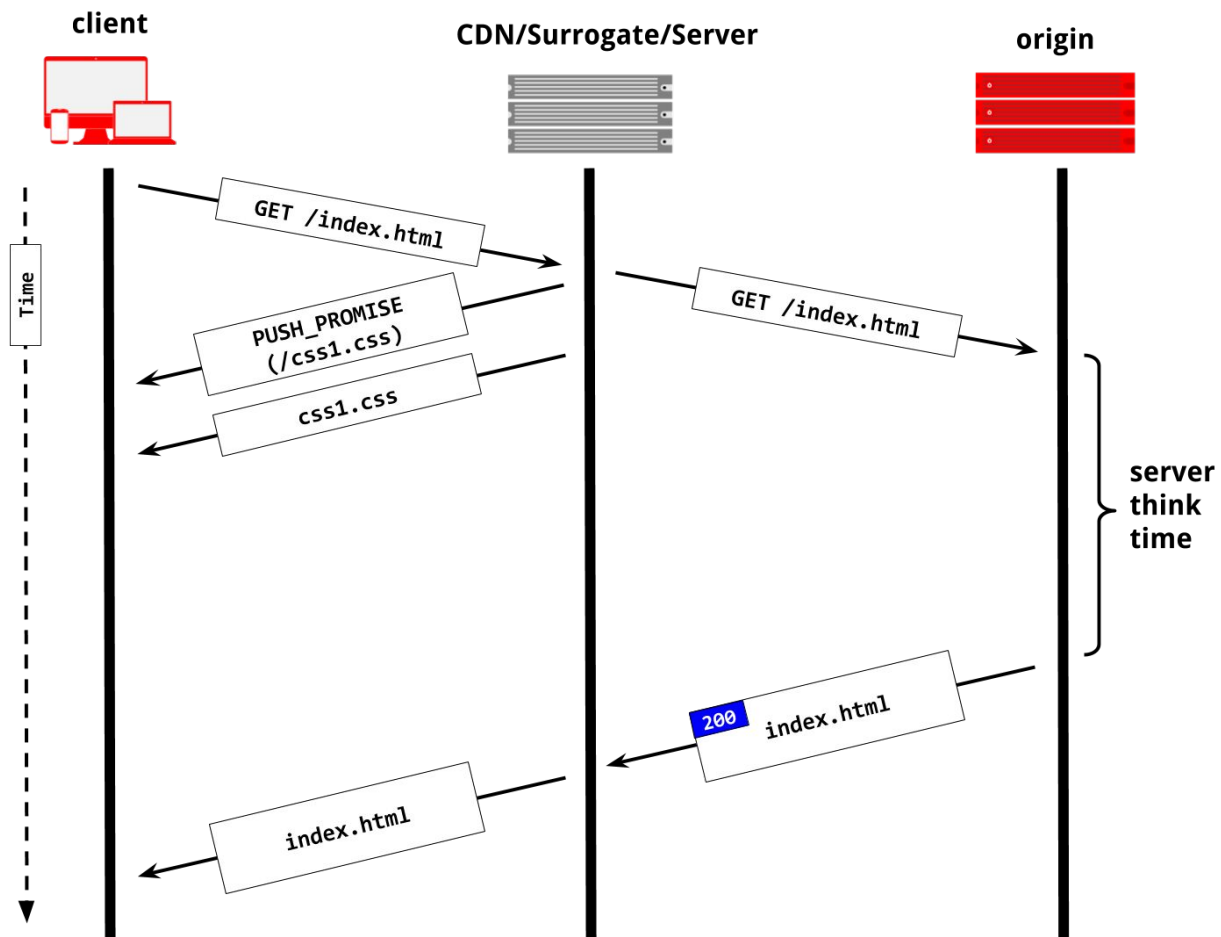
Early Hints

<http://httpwg.org/http-extensions/early-hints.html>

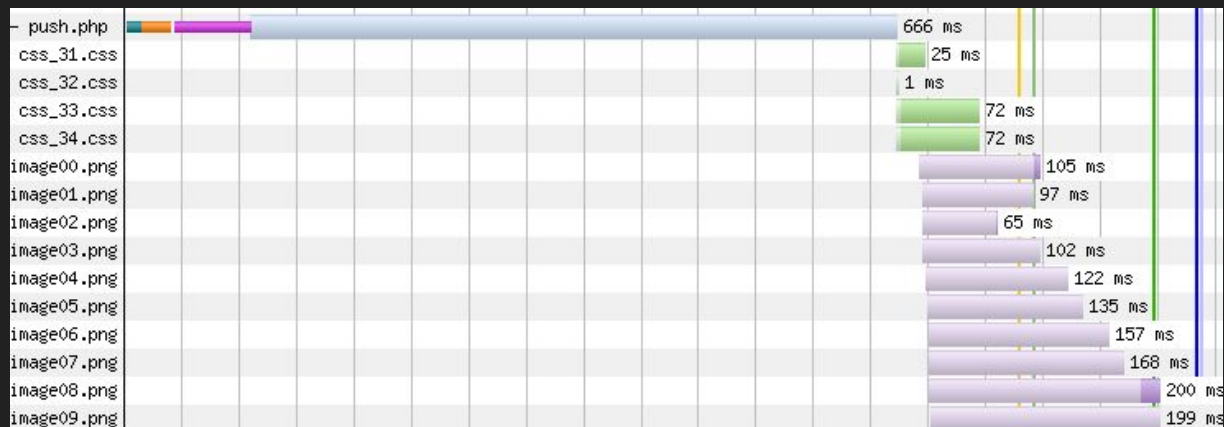




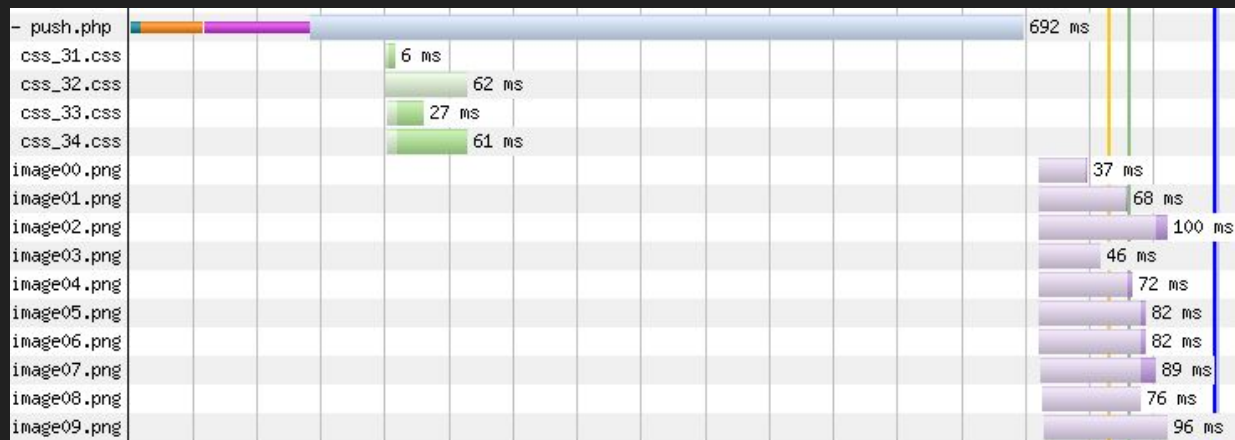
Non-header trigger



Push with Link header



"Async" Push



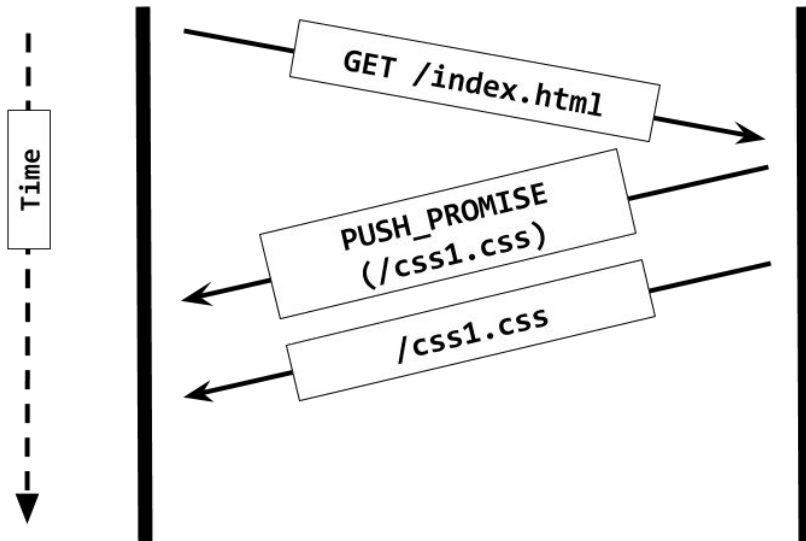
The client cache

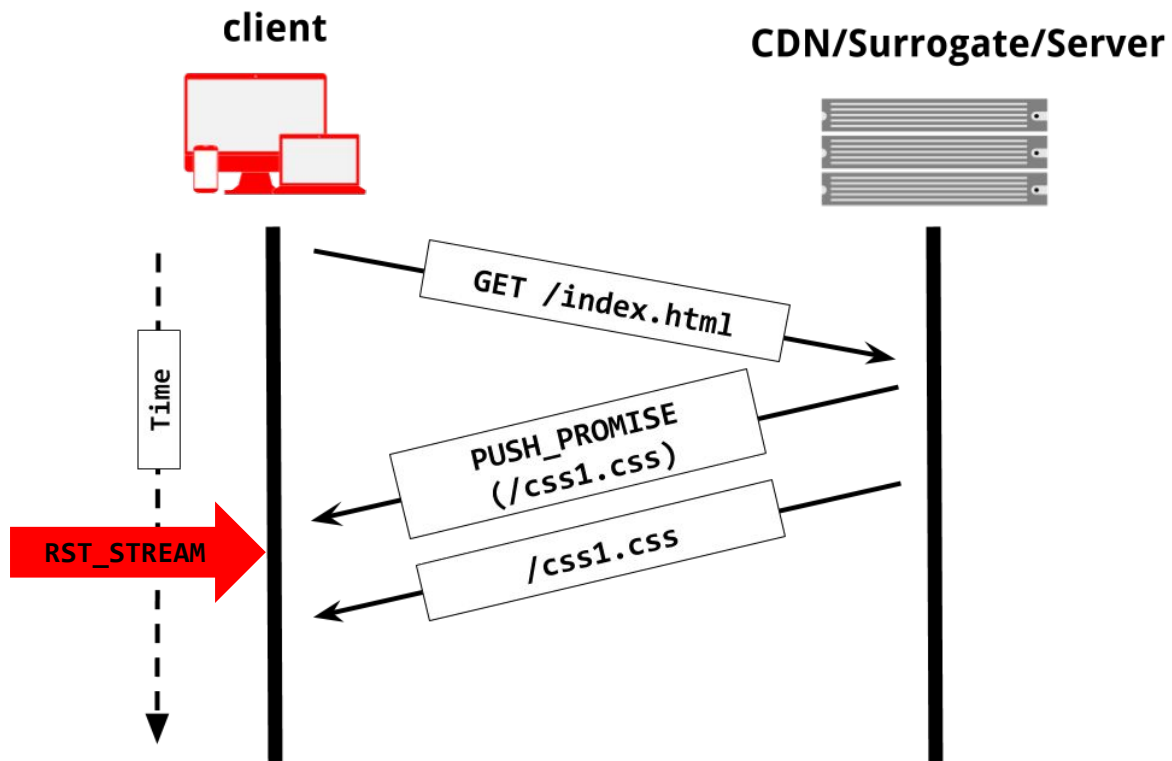
RST_STREAM

client



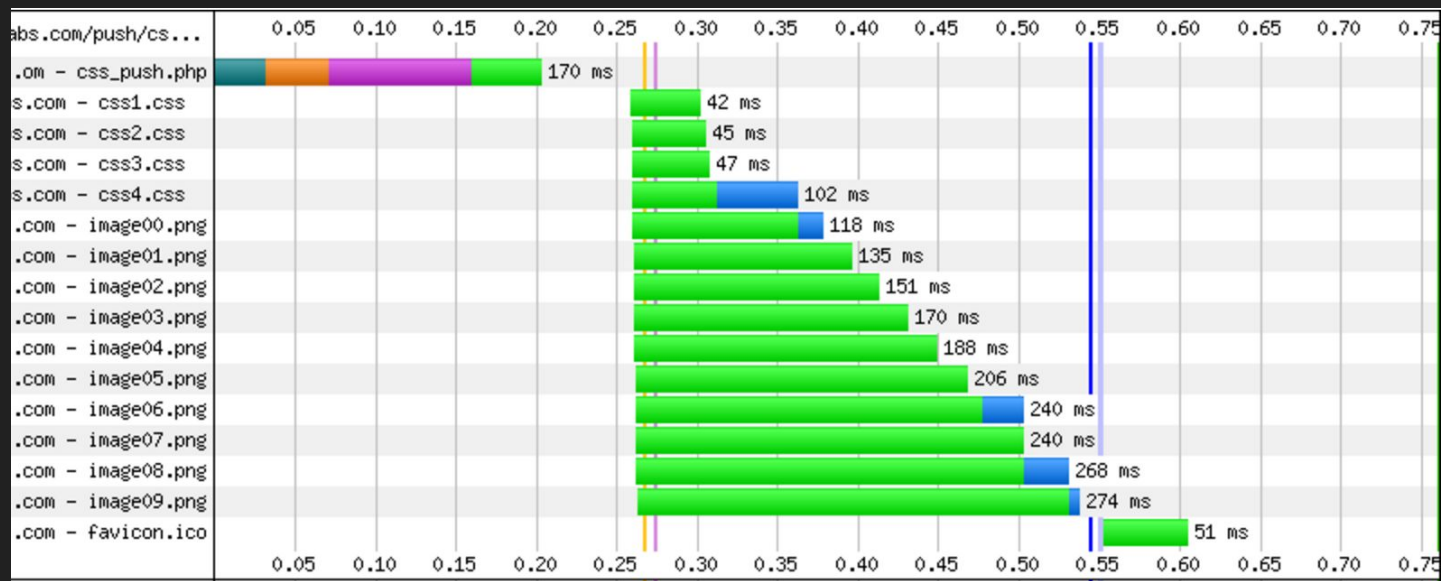
CDN/Surrogate/Server



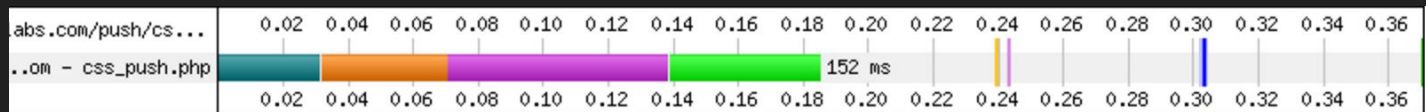


No Push

First view

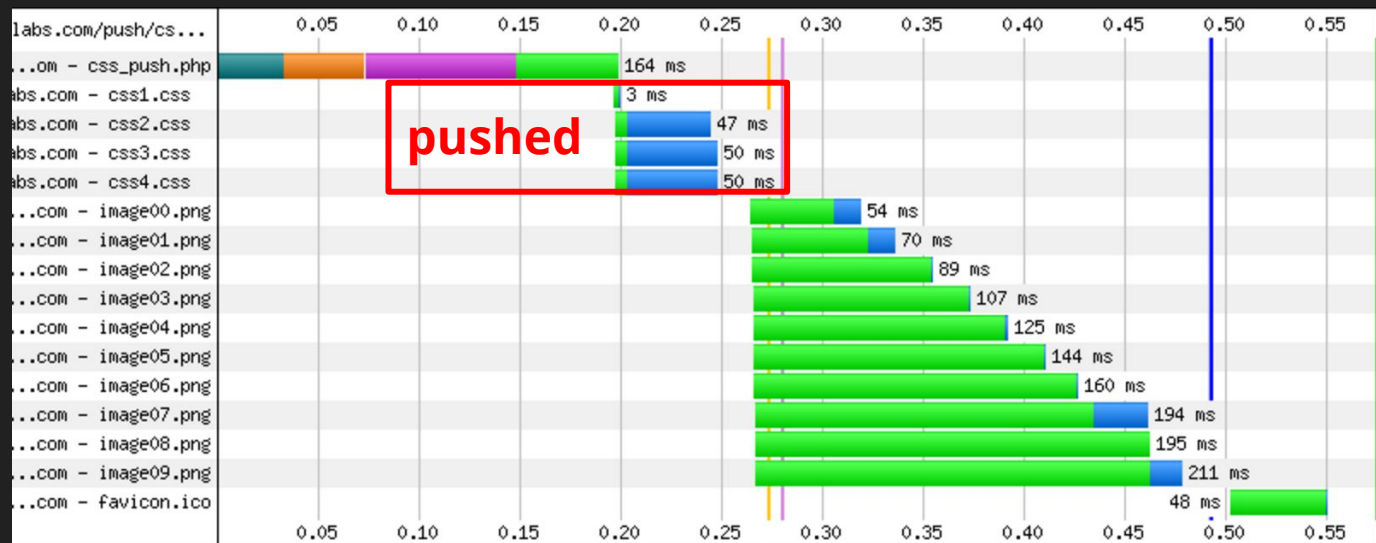


Repeat view

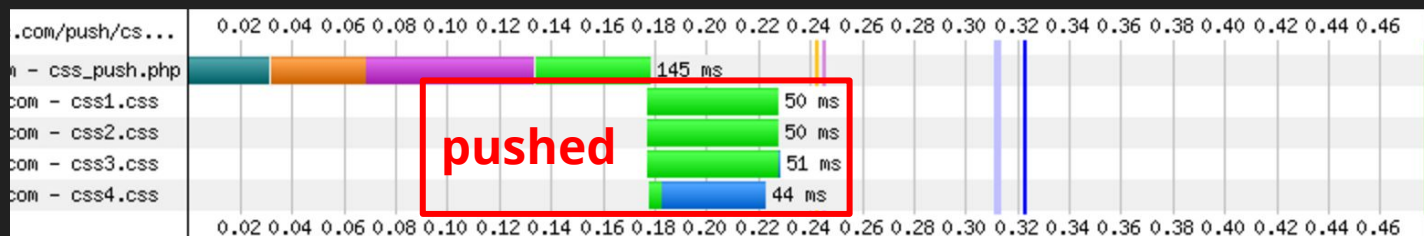


Push

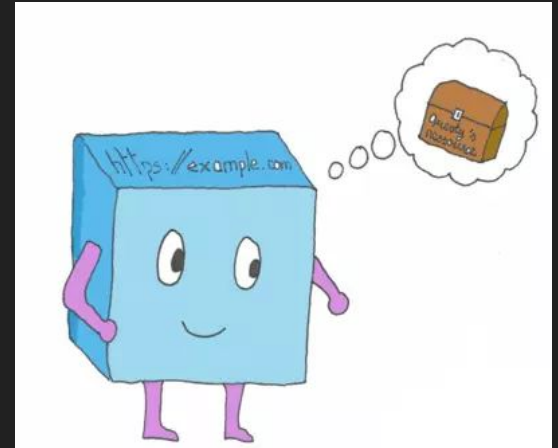
First view



Repeat view



<https://blog.yoav.ws/tale-of-four-caches/>



Cache Digests

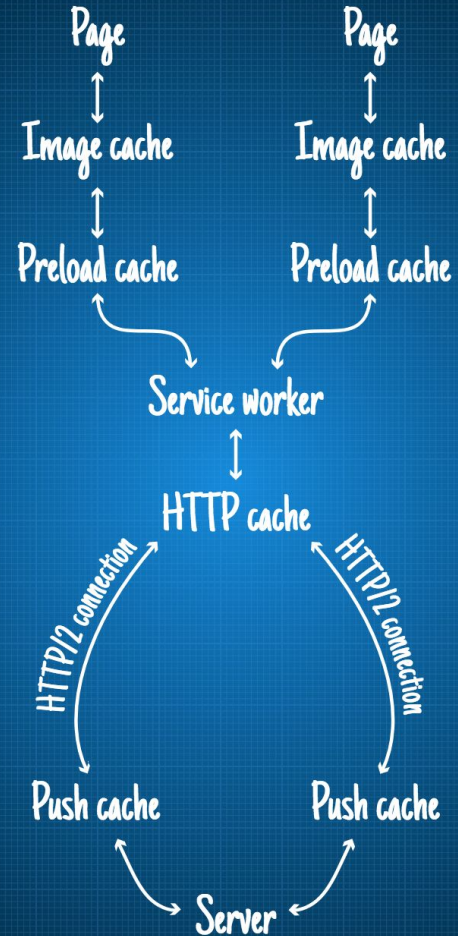
<http://httpwg.org/http-extensions/cache-digest.html>

+-----+-----+	
Origin-Len (16)	Origin? (*) ...
+-----+-----+	
Digest-Value? (*)	...
+-----+-----+	

We still have work to do...

HTTP/2 push is tougher
than I thought

<https://jakearchibald.com/2017/h2-push-tougher-than-i-thought/>



Discuss...