

Go ahead and download the slides now because they contain little details that you might want to see during my awesome presentation, but don't look ahead because that's not very cool and you want to be cool, right?

<https://github.com/tollmanz/wcchi-2014>

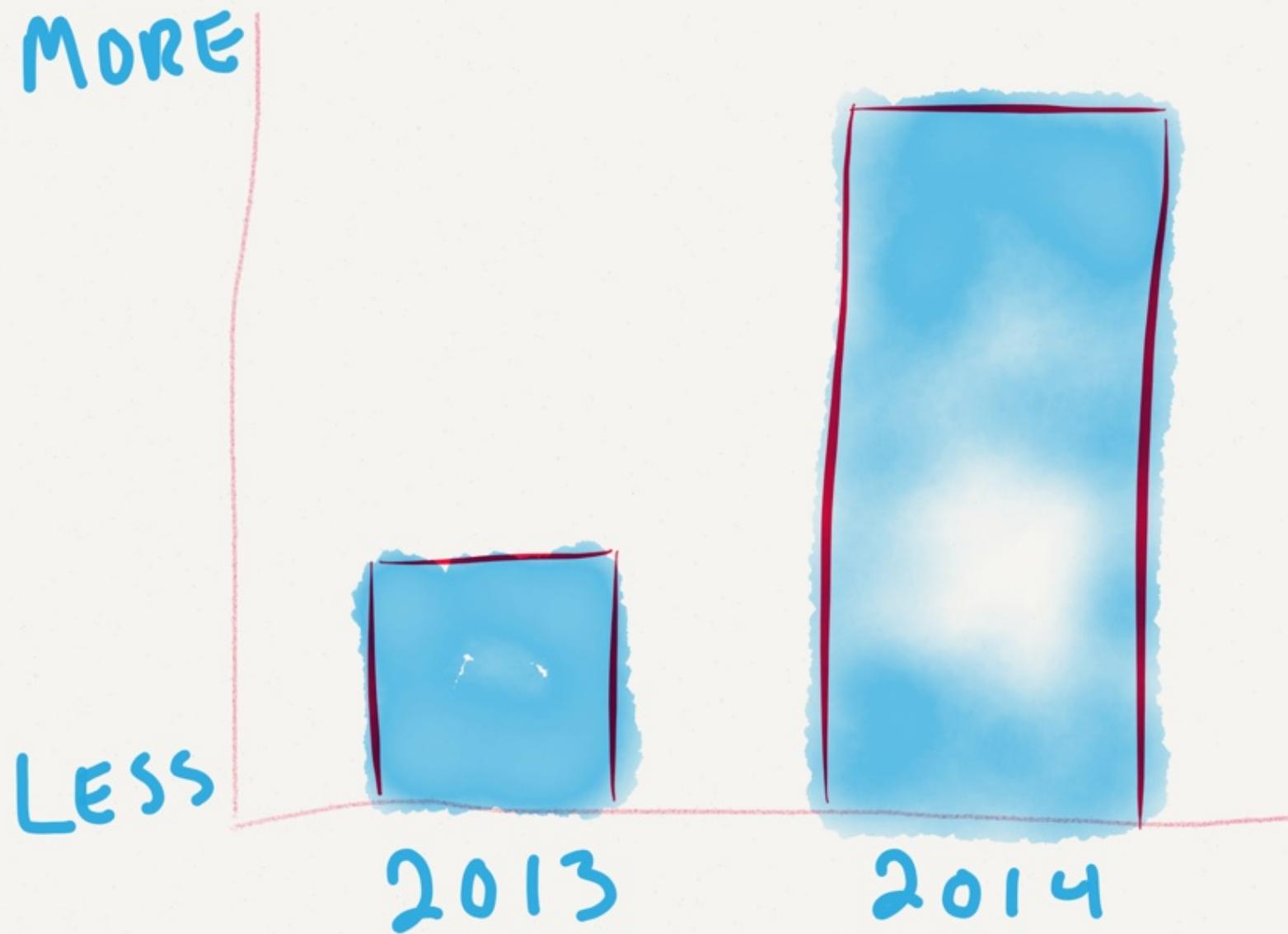
# SPEED AS A FEATURE

Getting a Handle on

# PAGE LOAD TIME

THE THEME FOUNDRY @TOLLMANZ

# GIT BISECT USAGE



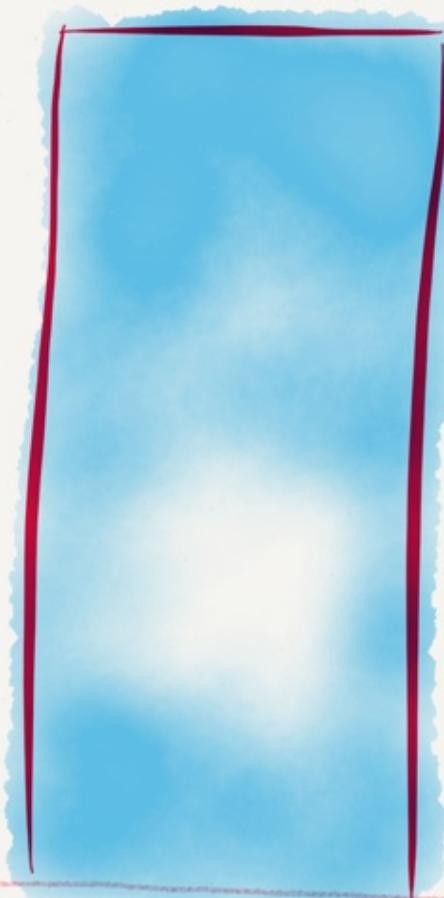
## FEAR OF SVN

MORE

LESS

2013

2014



# WORDPRESS ADDS OFFICIAL GIT MIRRORS



Andrew Nacin 12:49 pm on January 15, 2014

Tags: git (2)

## Git mirrors for WordPress

I'm pleased to share we now have an official Git mirror for the WordPress core development SVN repository.

```
git clone git://develop.git.wordpress.org/
```

Read-only mirrors are also set up for a few other WordPress.org repositories, including BuddyPress, bbPress, and the [old core.svn "build" repository](#):

```
git clone git://buddypress.git.wordpress.org/
git clone git://bbpress.git.wordpress.org/
git clone git://core.git.wordpress.org/
git clone git://gлотpress.git.wordpress.org/
```

Make sure you use the `git` protocol (not `http`) and include the trailing slash.

**Can you use `develop.git.wordpress.org` for core development?** Yes! For all practical purposes, the SVN and Git repositories are now equals. Pick your poison; use whatever you'd like for all your development and deployment needs.

# SVN VCS SWITCHES TO GIT

## Details

Type:	<input checked="" type="checkbox"/> Task	Status:	<b>CLOSED</b>
Priority:	<input checked="" type="checkbox"/> Major	Resolution:	Not a Problem
Component/s:	Git	Fix Version/s:	Apr 2013
Labels:	None		

## Description

Grrrr... vote passed. Not happy, but here we go:

Infra: please migrate our repository at /repos/asf/subversion/ over to the Git repository stuffs.

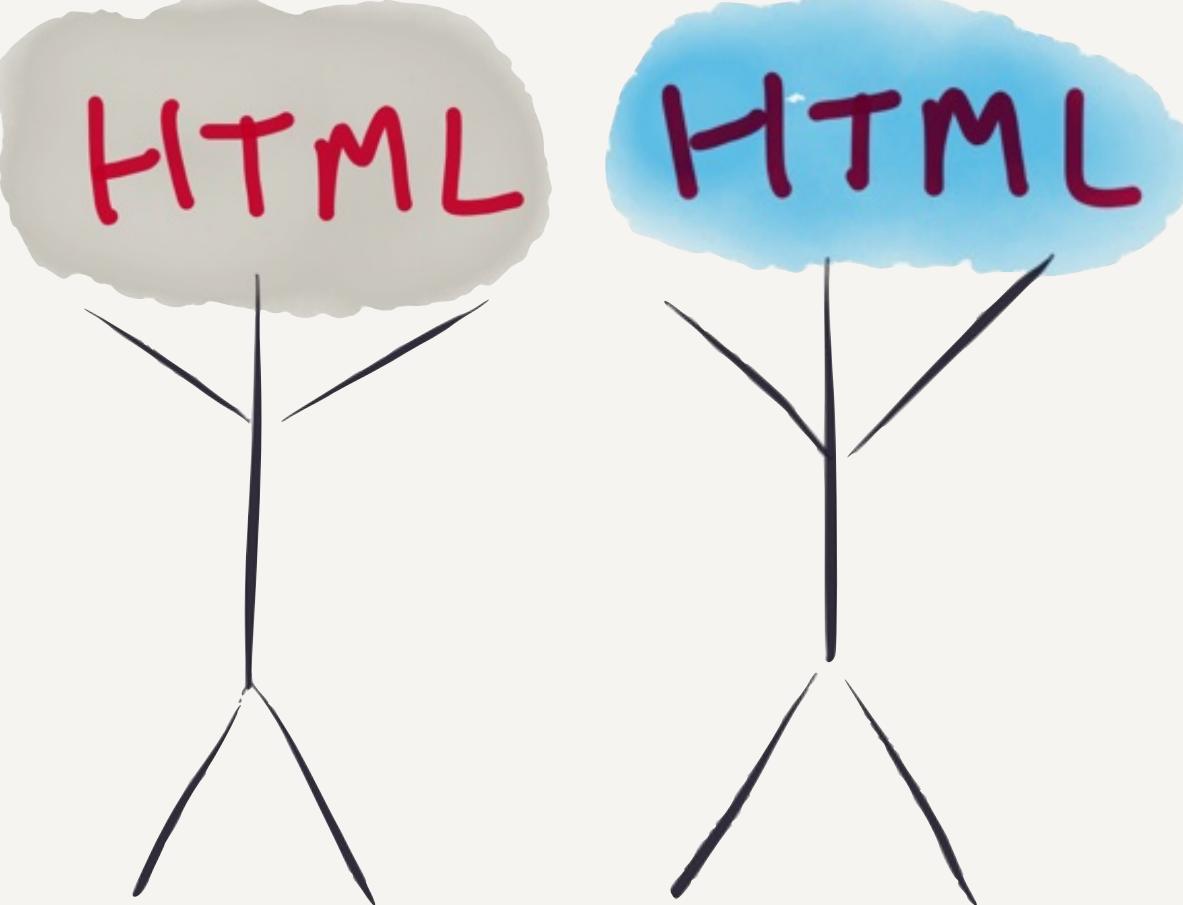
We already have the mirror at git.apache.org. But that has always been there as a read-only mirror (along with the copy over to GitHub). Will the git repo be at git-wip.apache.org? (is it \*still\* considered -wip "work in progress"?)

Not sure what else you guys need. Haven't exactly studied up on the migration process. Please let me know.

(tho I'm up late here now and need to sleep soon; others from the PMC will be able to help)

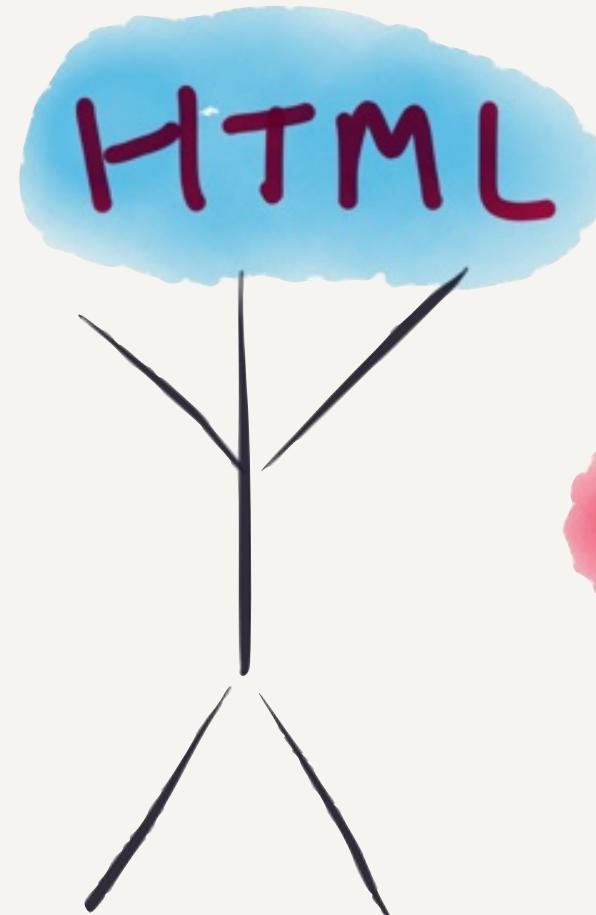
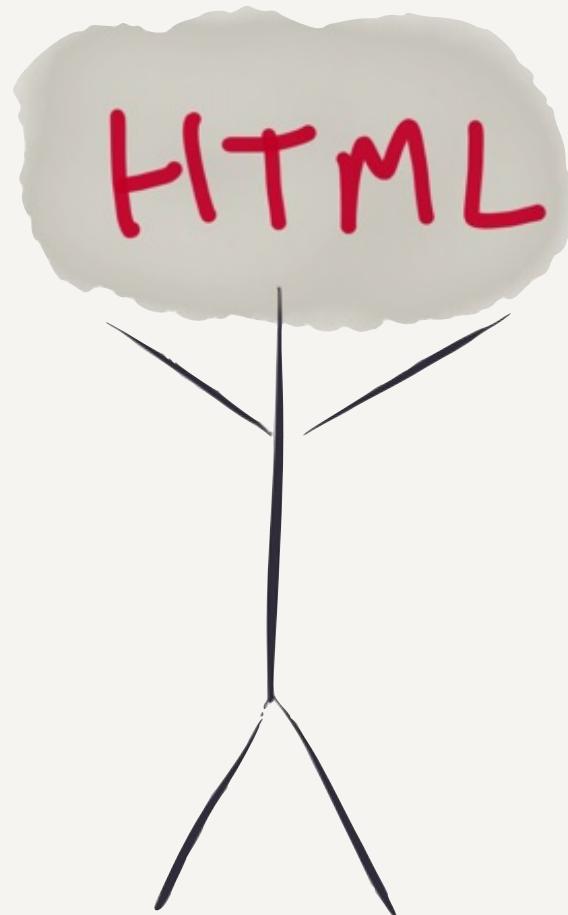
<https://issues.apache.org/jira/browse/INFRA-7524>

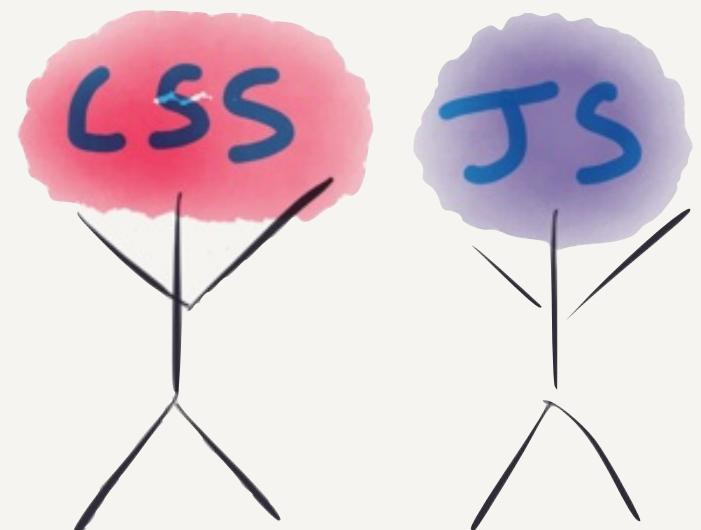
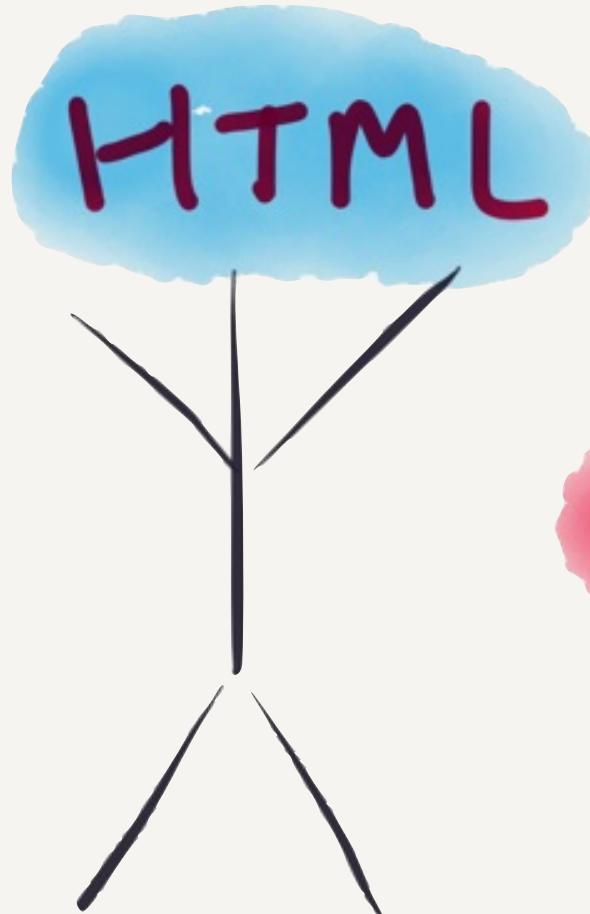
\* April Fool's joke

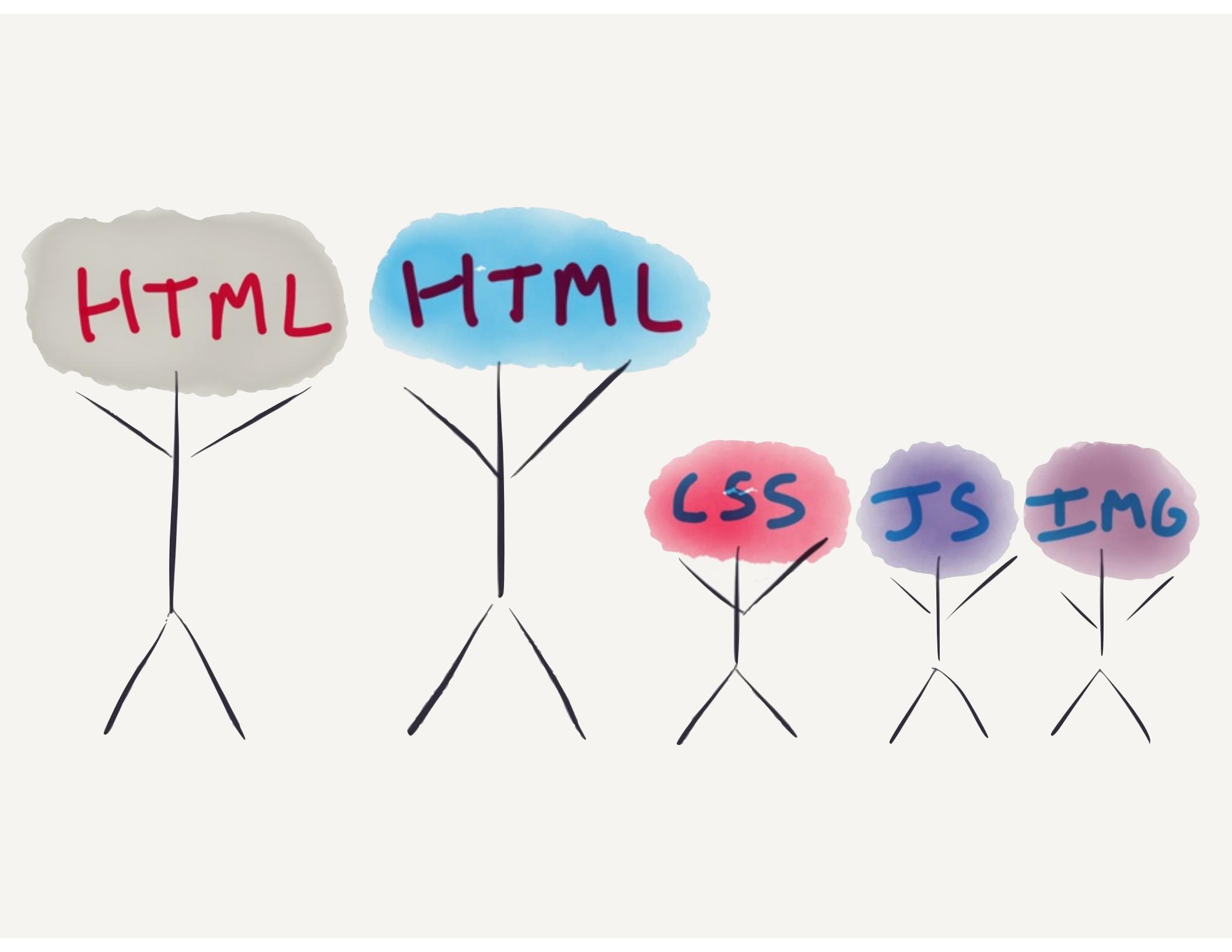


HTML

HTML







HTML

HTML

CSS

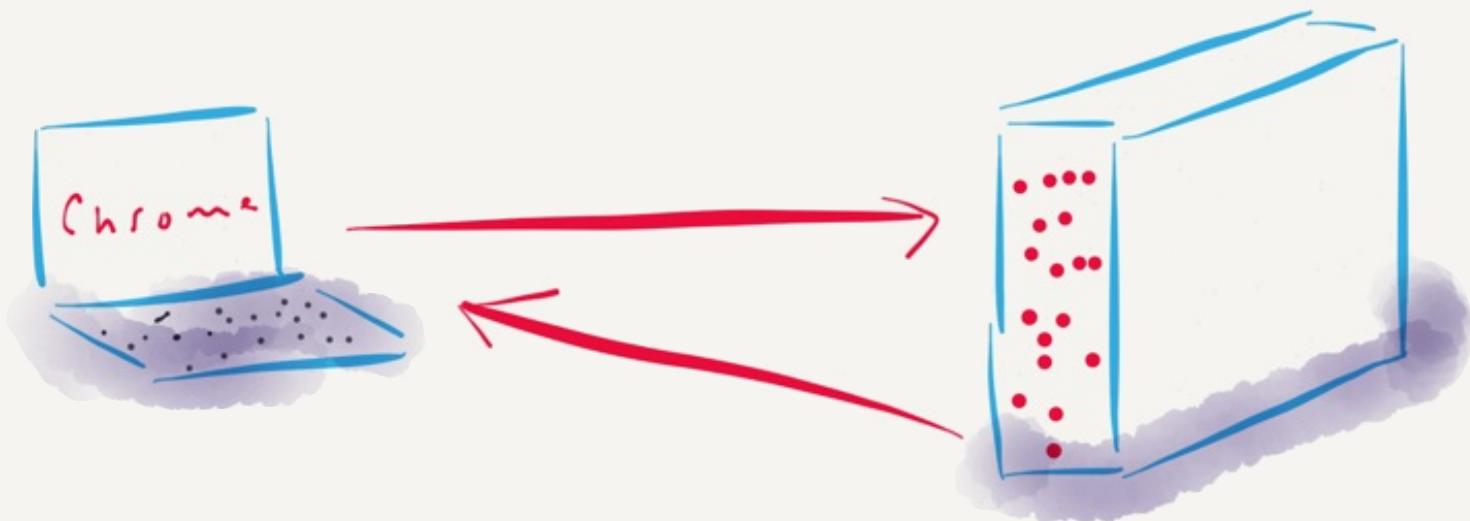
JS

IMG



UNDERSTAND WHY YOUR PAGE IS SLOW

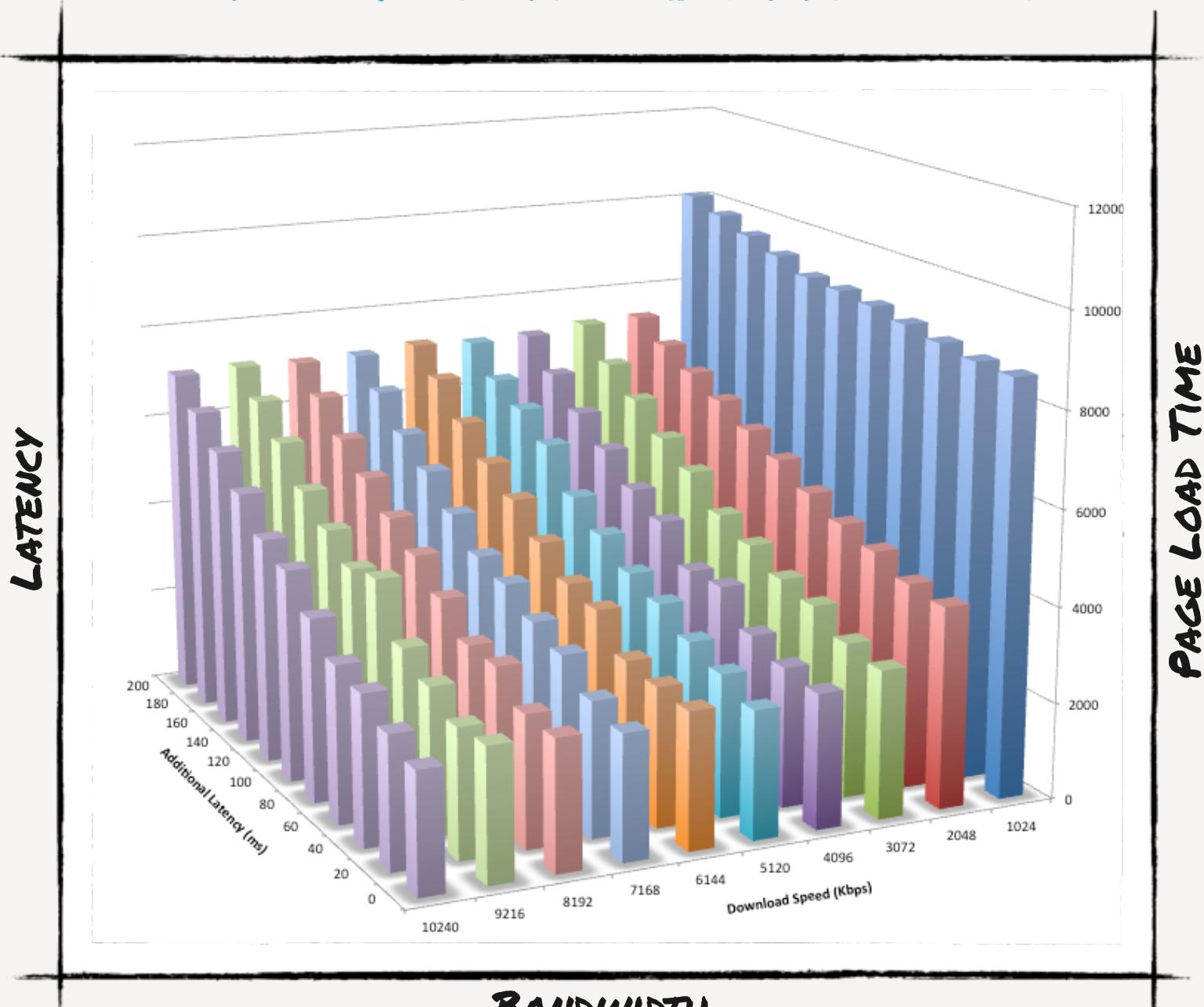
## LATENCY / ROUND TRIP TIME



Time to transmit signal to server and receive a response

80 - 20 RULE

# LATENCY IS THE BOTTLENECK



BANDWIDTH

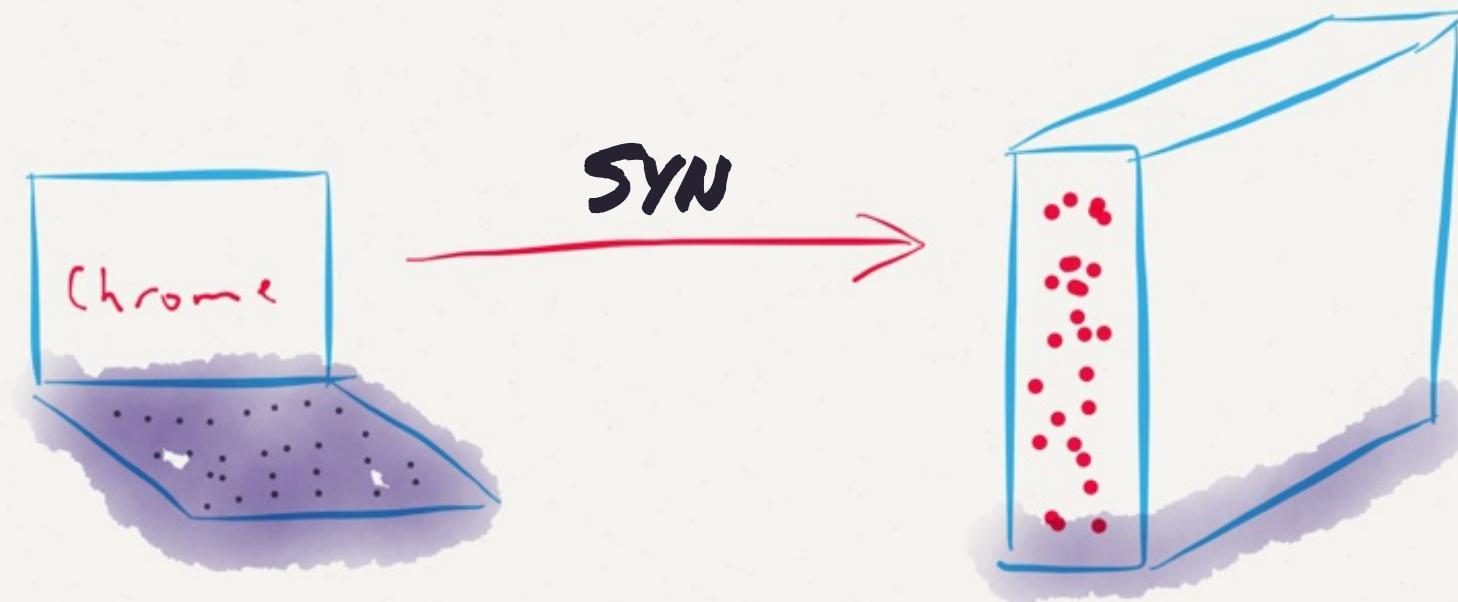
<https://twitter.com/AndyDavies/status/459716093993447424>

<https://www.belshe.com/2010/05/24/more-bandwidth-doesnt-matter-much/>

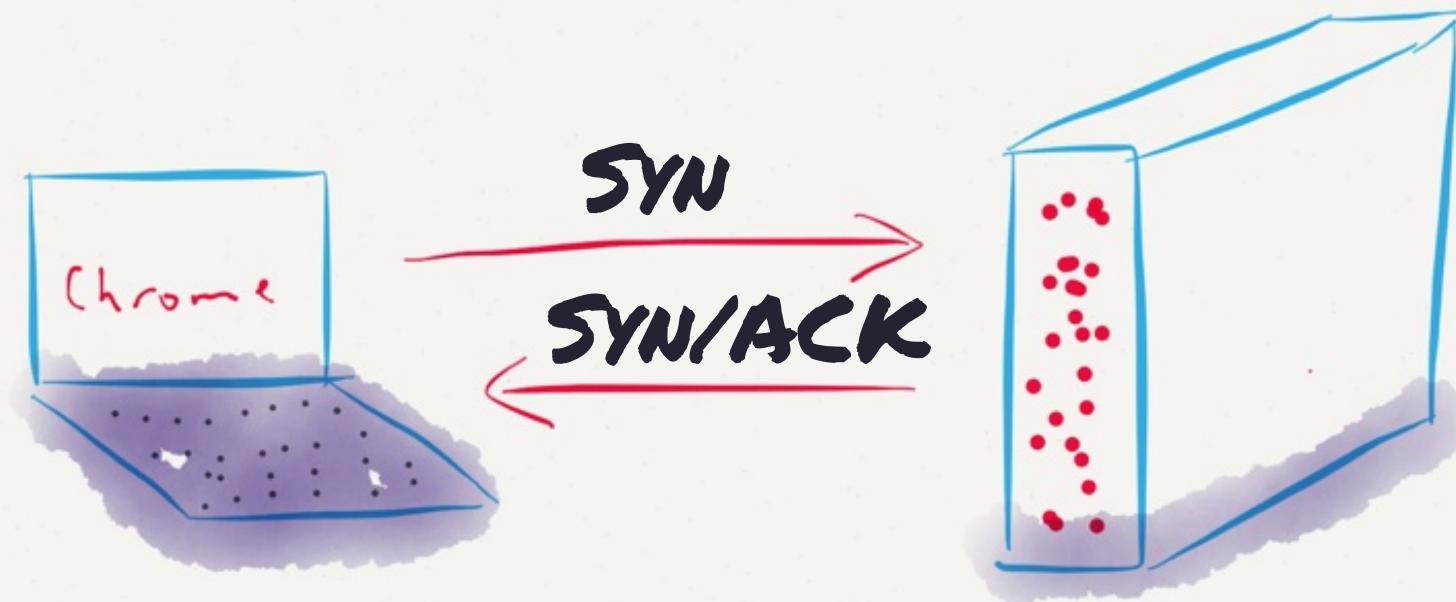
WE MUST ACCEPT LATENCY

HTTP 1.1 IS A LAYER ABOVE TCP/IP

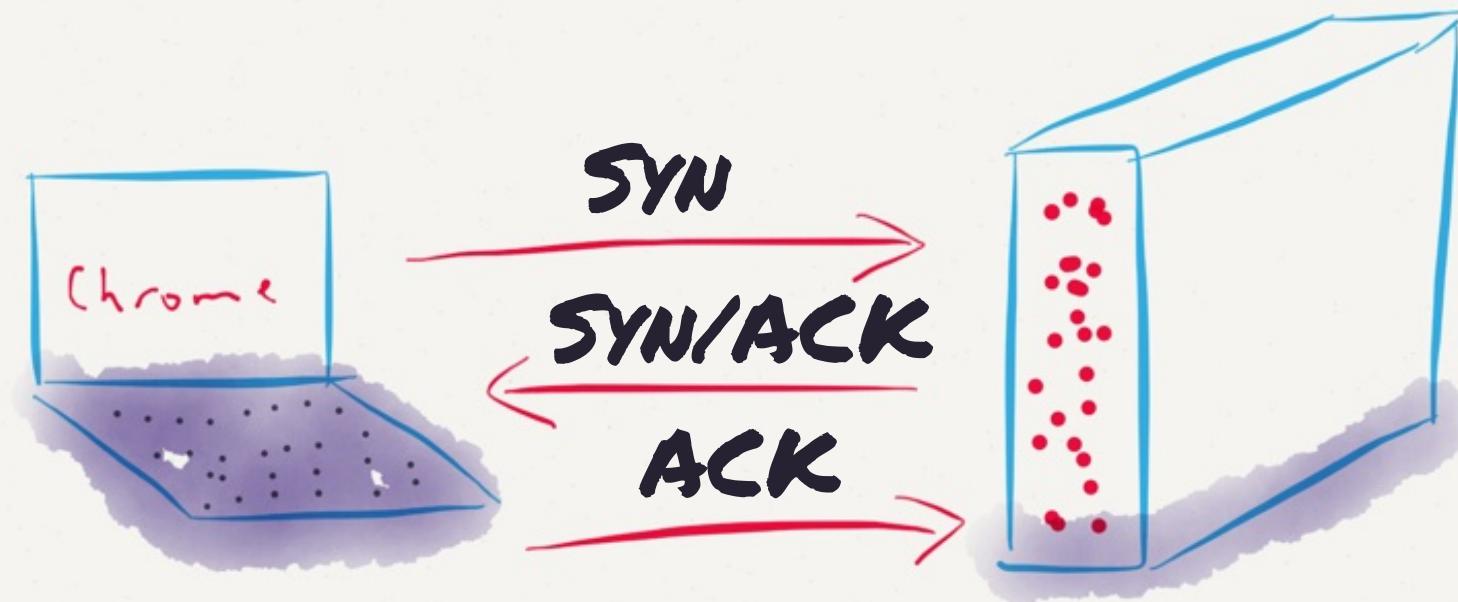
## TCP THREE WAY "HANDSHAKE"



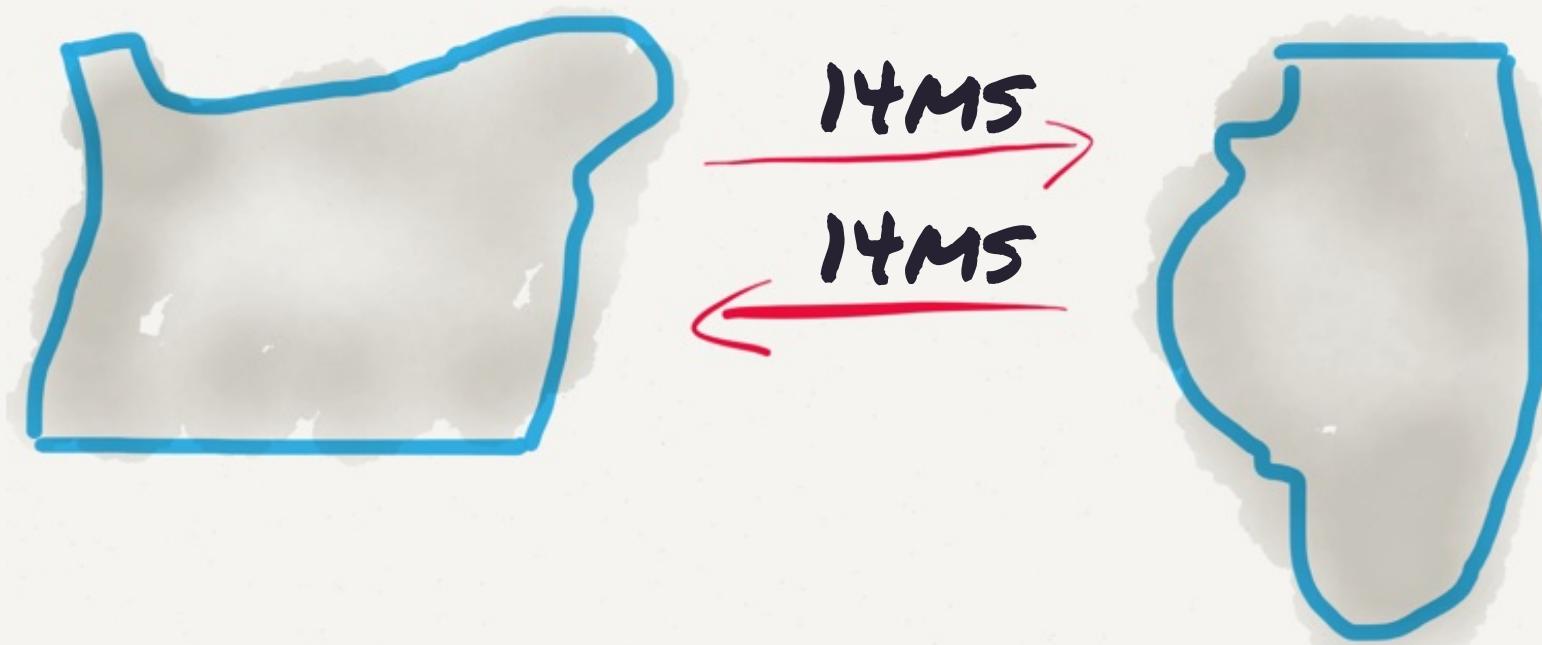
## TCP THREE WAY "HANDSHAKE"



## TCP THREE WAY "HANDSHAKE"



## PERFECT CONDITIONS



28MS RTT

## ACTUAL CONDITIONS

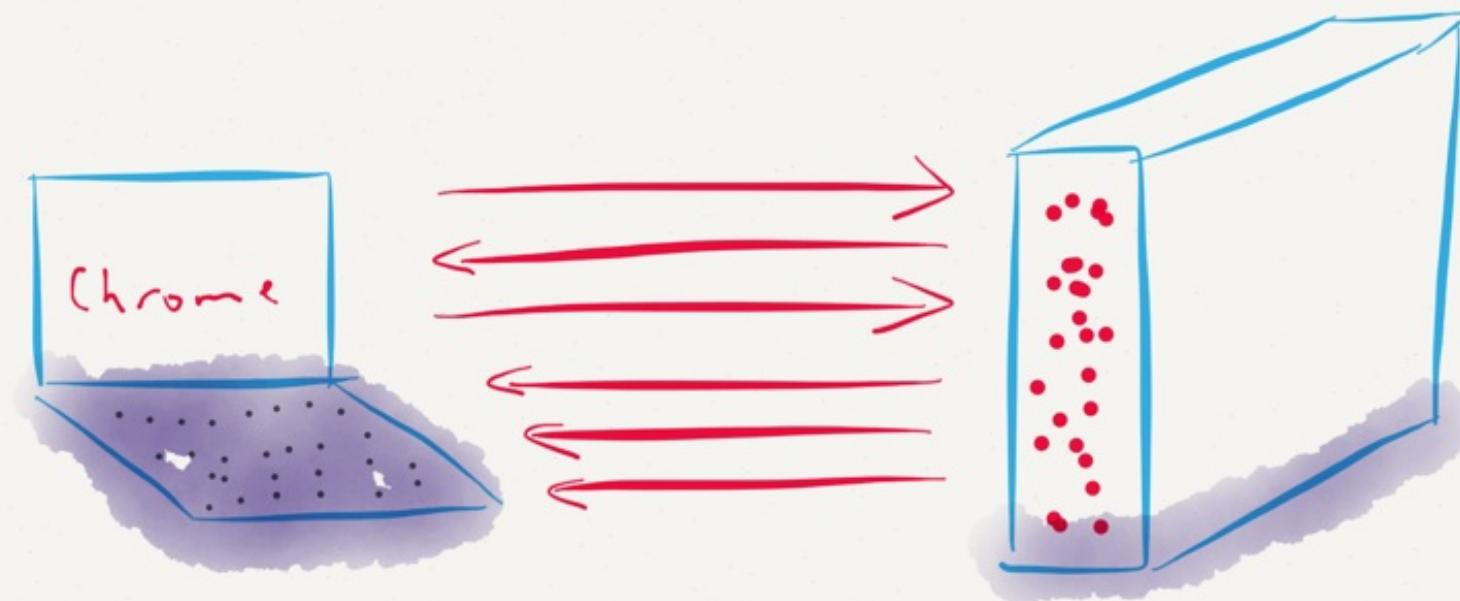


AVERAGE PING TIME TO 69.175.11.202

57 MS AND NO HTTP YET

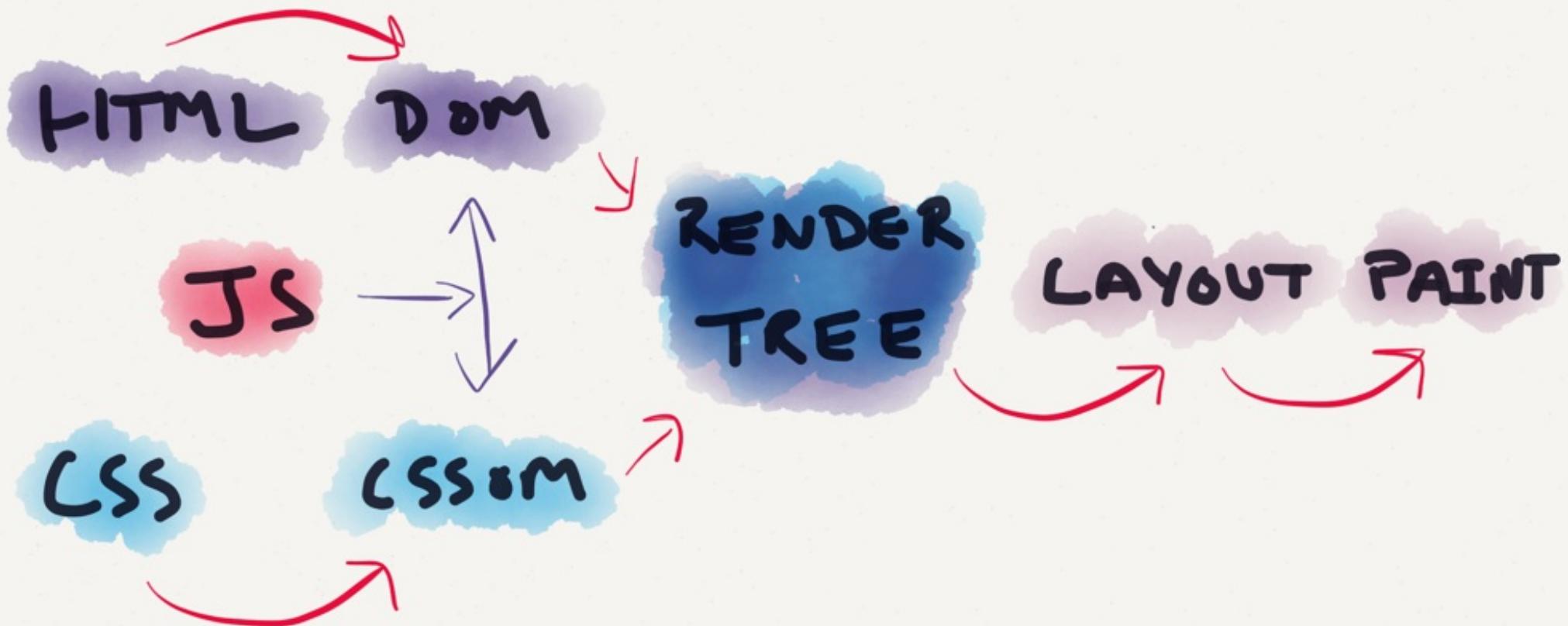
IT GETS WORSE

# HTML TRANSFERS WILL TAKE MULTIPLE TRIPS

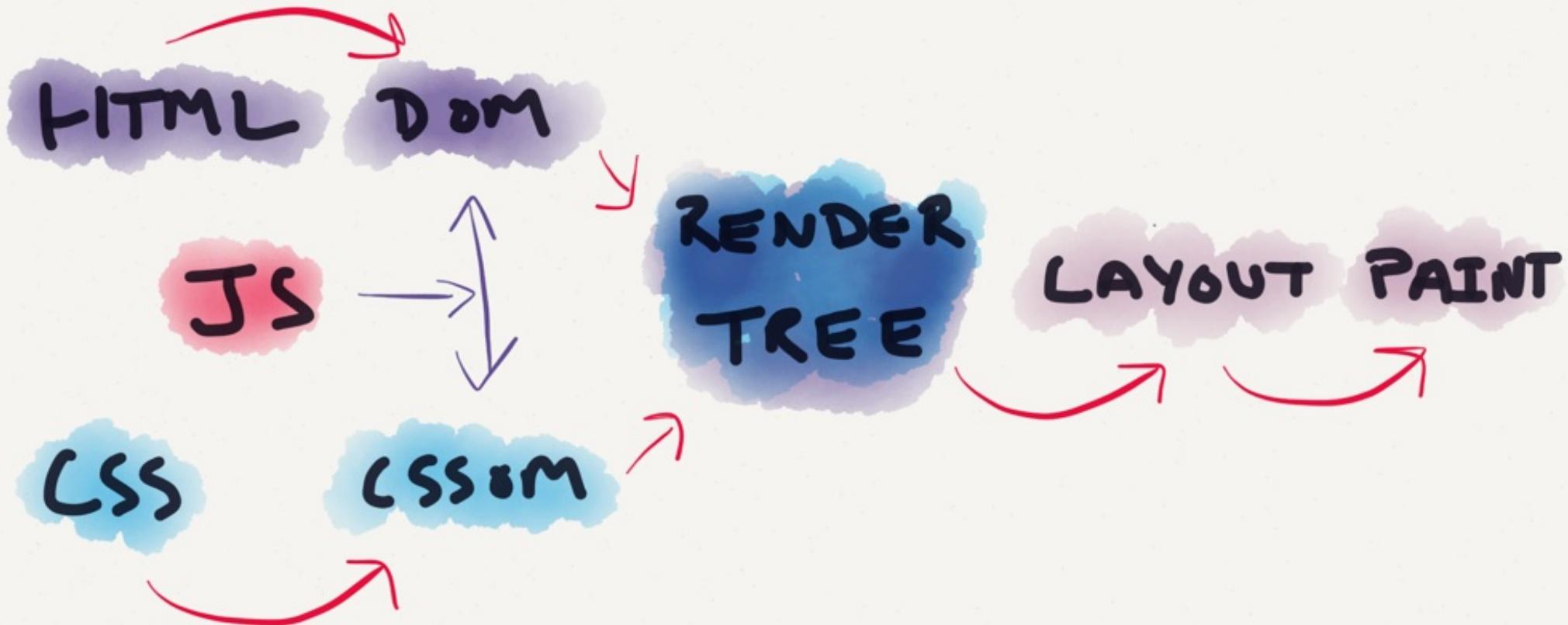


TIME TO FIRST BYTE (TTFB)

# HTML PARSING



## CSSOM BLOCKS JS EXECUTION



## JS BLOCKS DOM CONSTRUCTION

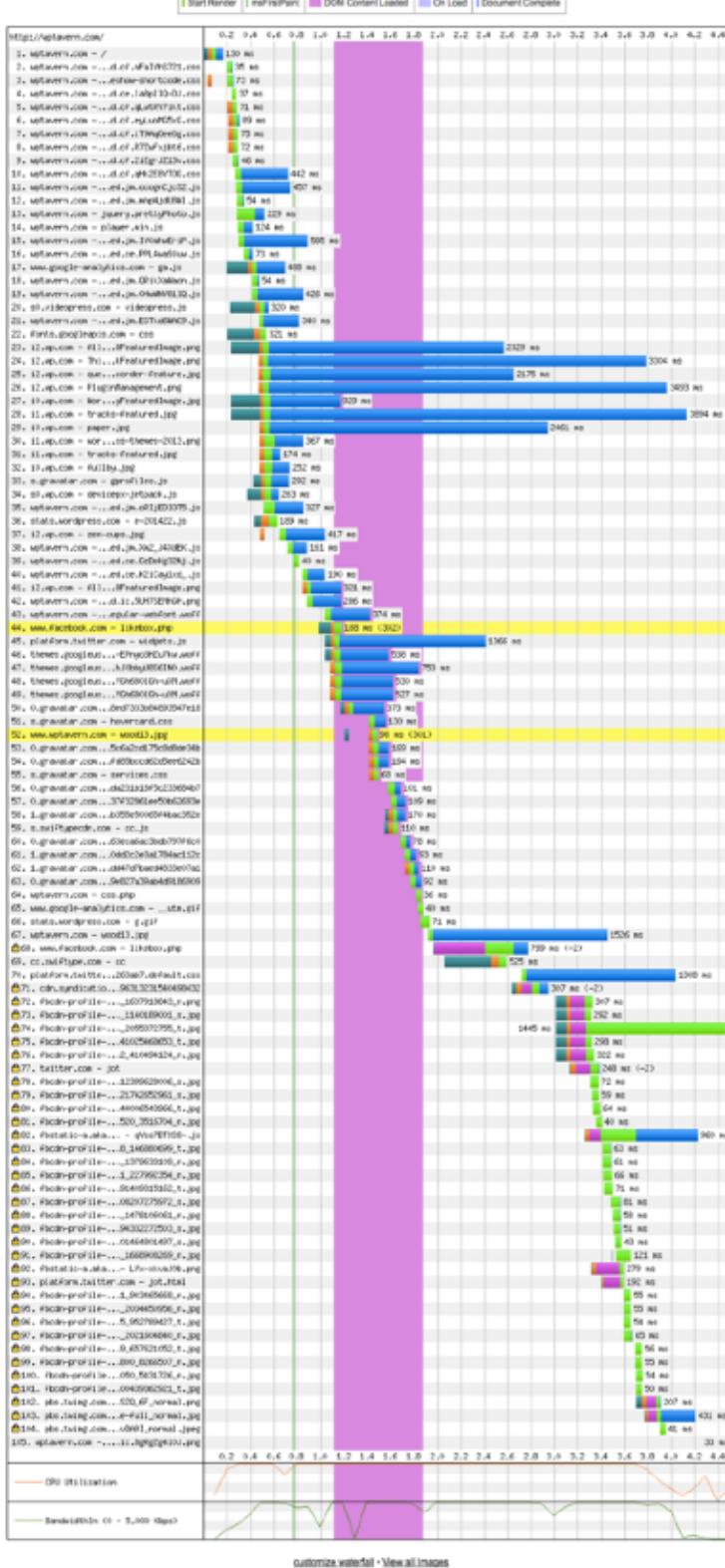
EACH NEW ASSETS REQUIRES AN HTTP REQUEST

**HTTP = TCP CONNECTION = LATENCY**

BROWSERS WILL MAKE 4-8 CONNECTIONS TO A  
DOMAIN

# WP TAVERN

EST  2007

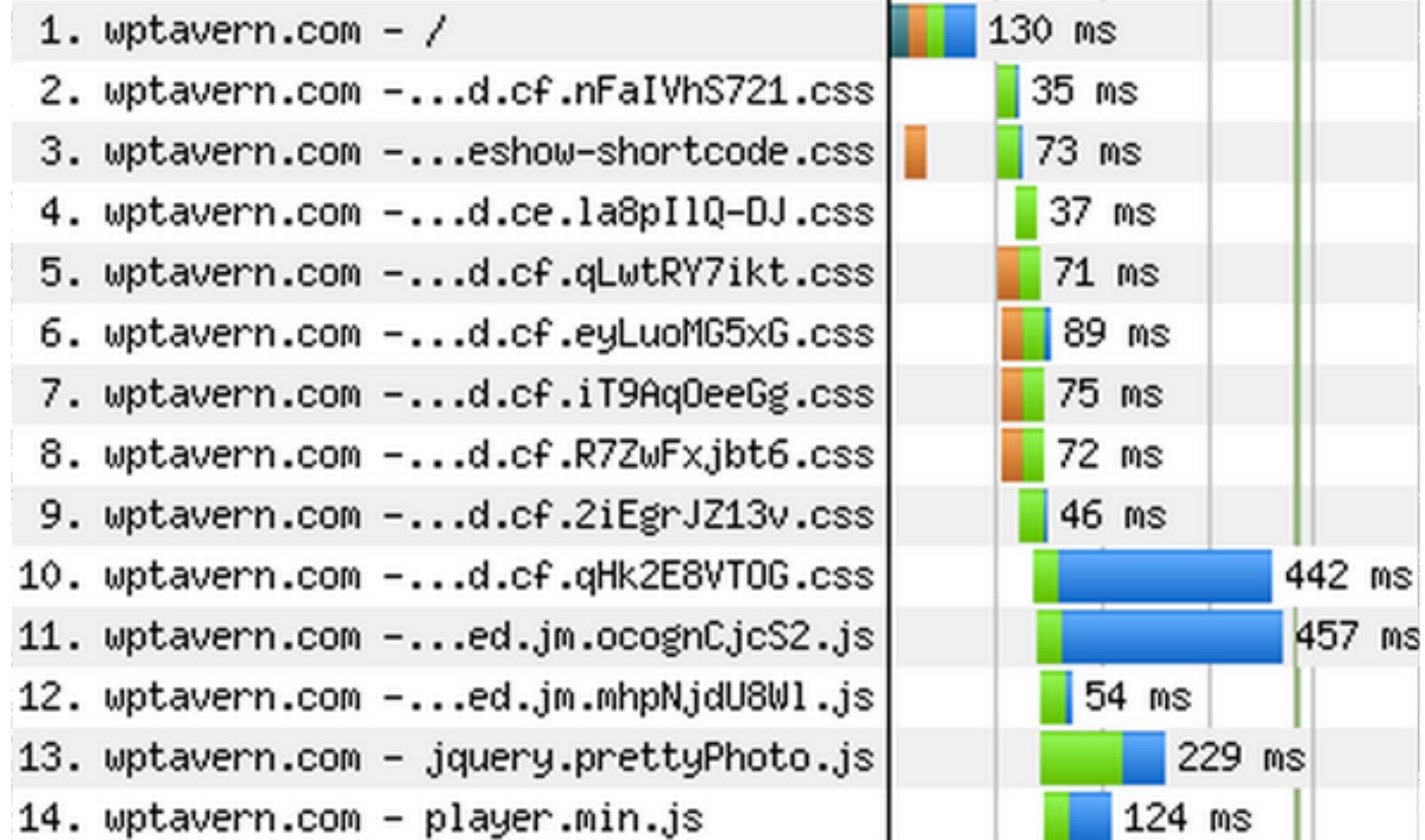


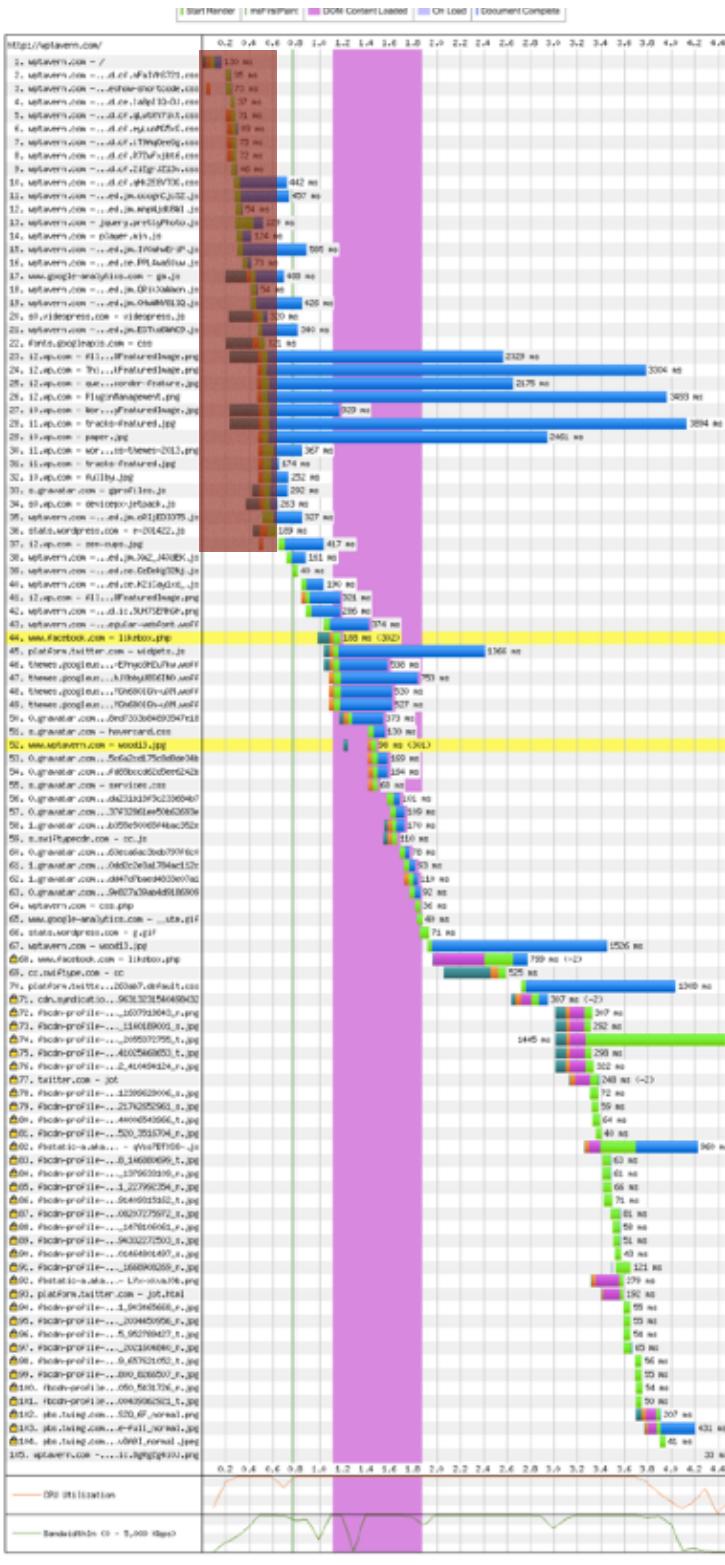
Median of 9 Chrome runs  
106 requests (1.8 MB)  
2.7 s visually complete

2.7 s visually complete

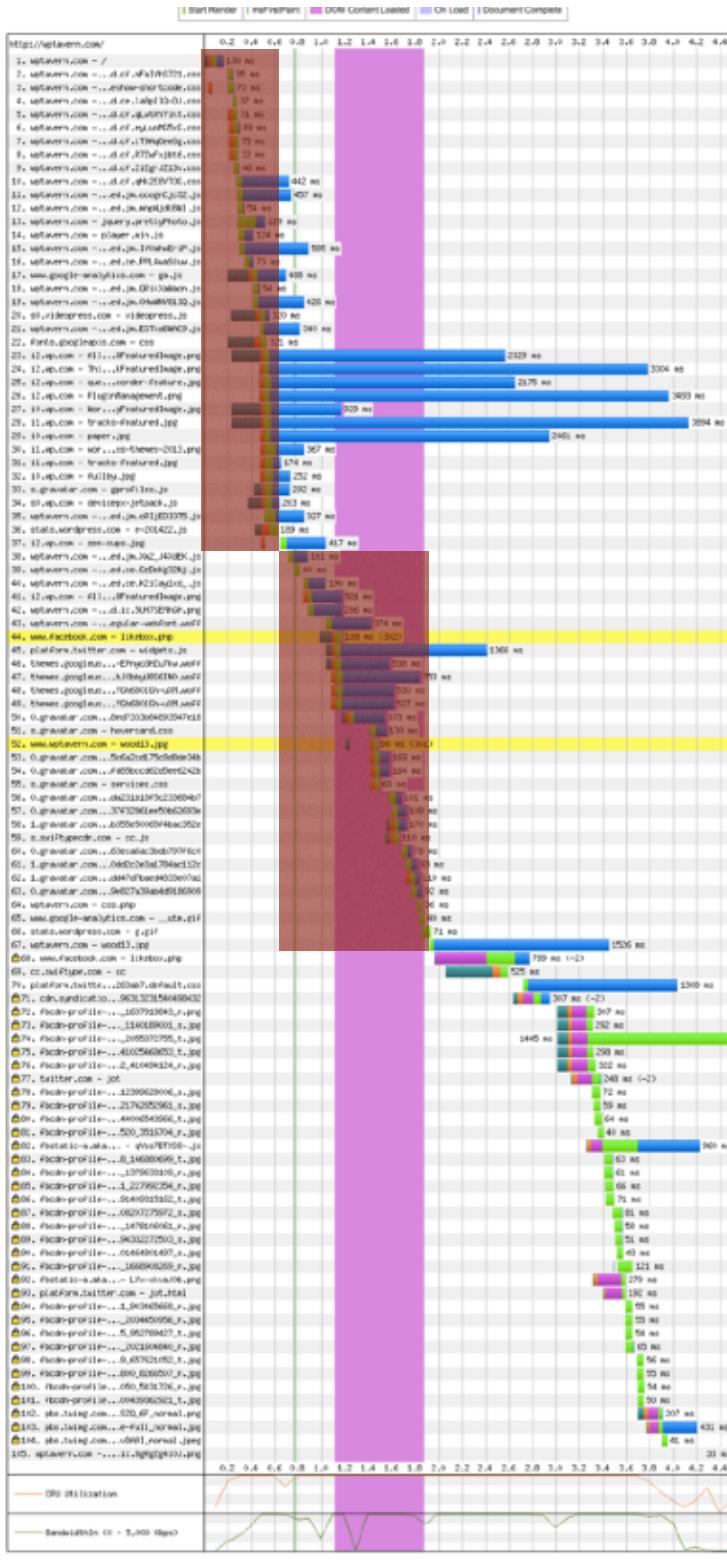
[http://www.webpagetest.org/result/140601\\_0T\\_2355baaff3ff37dfa133714b0505022b](http://www.webpagetest.org/result/140601_0T_2355baaff3ff37dfa133714b0505022b)

http://wptavern.com/





First 37 assets start download in ~400ms



Next 29 assets start download in ~1200ms

1.1s

1.2s

1.3s

1.4s

0%

36%

36%

36%

2.4s

2.5s

2.6s

2.7s

WP TAVERN



93%

93%

93%

100%

WP TAVERN



WordPress Pingin All in One SEO Releases Important Security Update

WP TAVERN

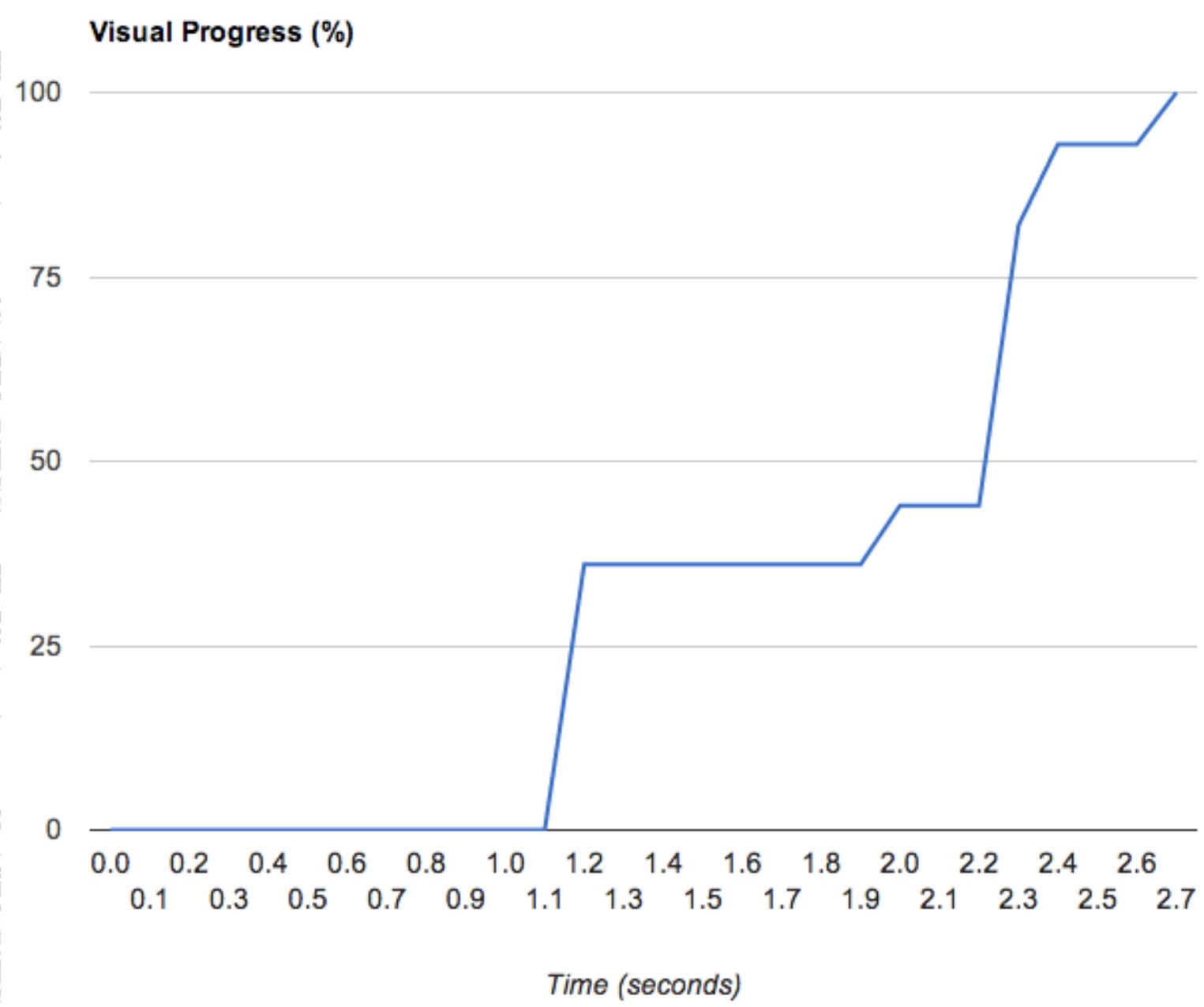


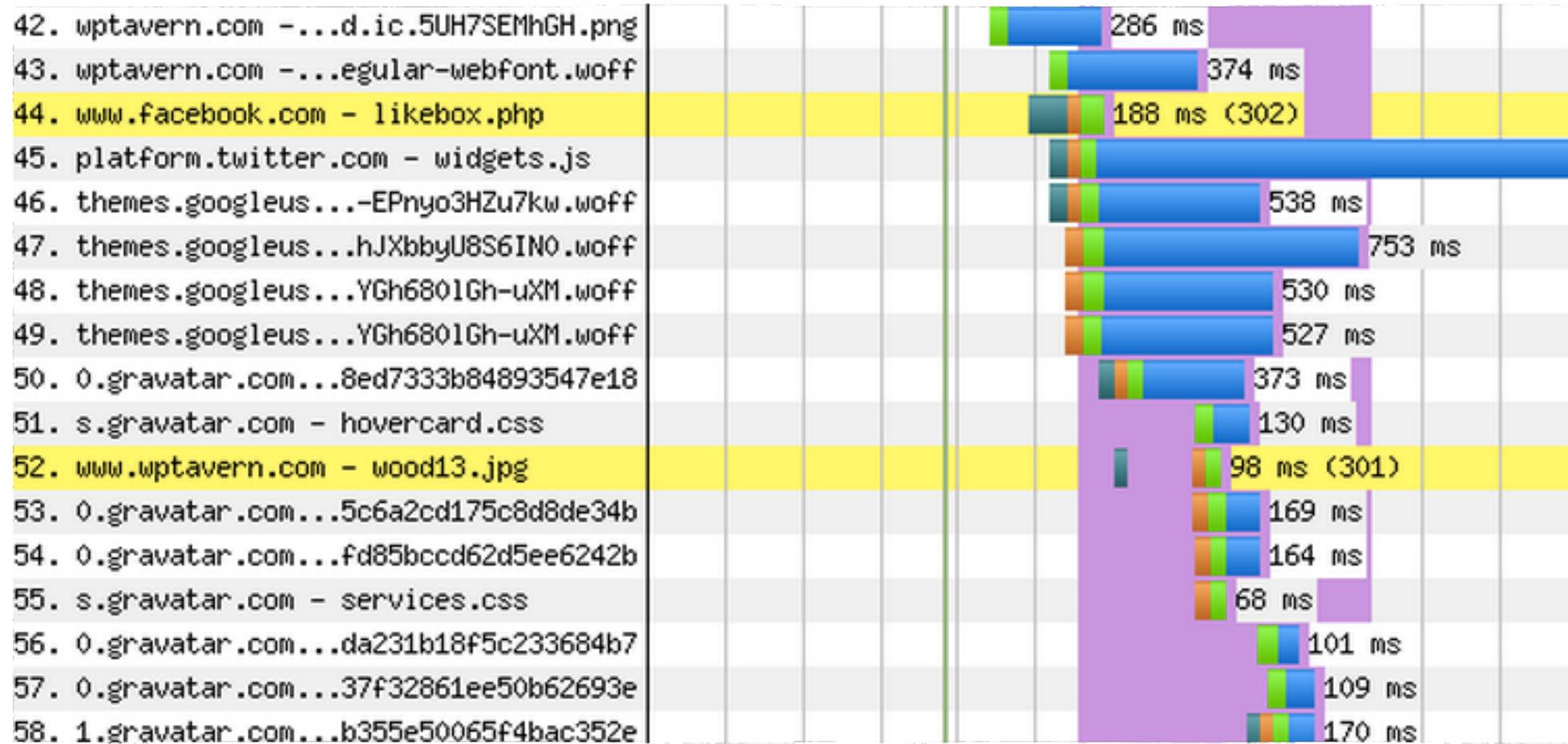
WordPress Pingin All in One SEO Releases Important Security Update

WP TAVERN



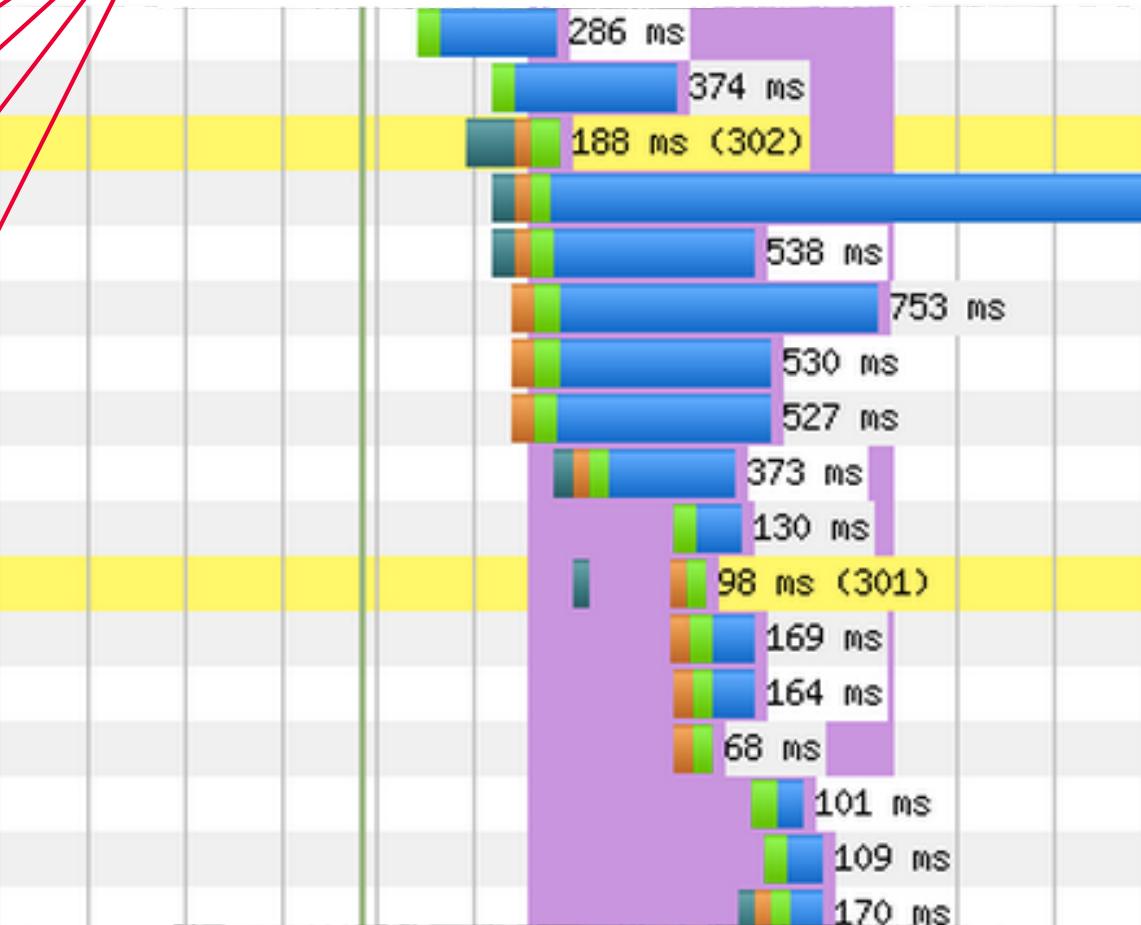
WordPress Pingin All in One SEO Releases Important Security Update





# FONTS

42. wptavern.com - ...d.ic.5UH7SEMhGH.png
43. wptavern.com - ...egular-webfont.woff
44. www.facebook.com - likebox.php
45. platform.twitter.com - widgets.js
46. themes.googleus...-EPnyo3H2u7kw.woff
47. themes.googleus...hJXbbyU8S6IN0.woff
48. themes.googleus...YGh6801Gh-uXM.woff
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50. 0.gravatar.com...8ed7333b84893547e18
51. s.gravatar.com - hovercard.css
52. www.wptavern.com - wood13.jpg
53. 0.gravatar.com...5c6a2cd175c8d8de34b
54. 0.gravatar.com...fd85bccd62d5ee6242b
55. s.gravatar.com - services.css
56. 0.gravatar.com...da231b18f5c233684b7
57. 0.gravatar.com...37f32861ee50b62693e
58. 1.gravatar.com...b355e50065f4bac352e



10 EXTERNAL NON-ASYNC SCRIPTS IN HEADER  
5 INLINED JS BLOCKS

JS IS BLOCKING CSSOM

FONT DISCOVERY IS REALLY SLOW  
1.2 S TO START FONT DOWNLOADS

## RECOMMENDATIONS

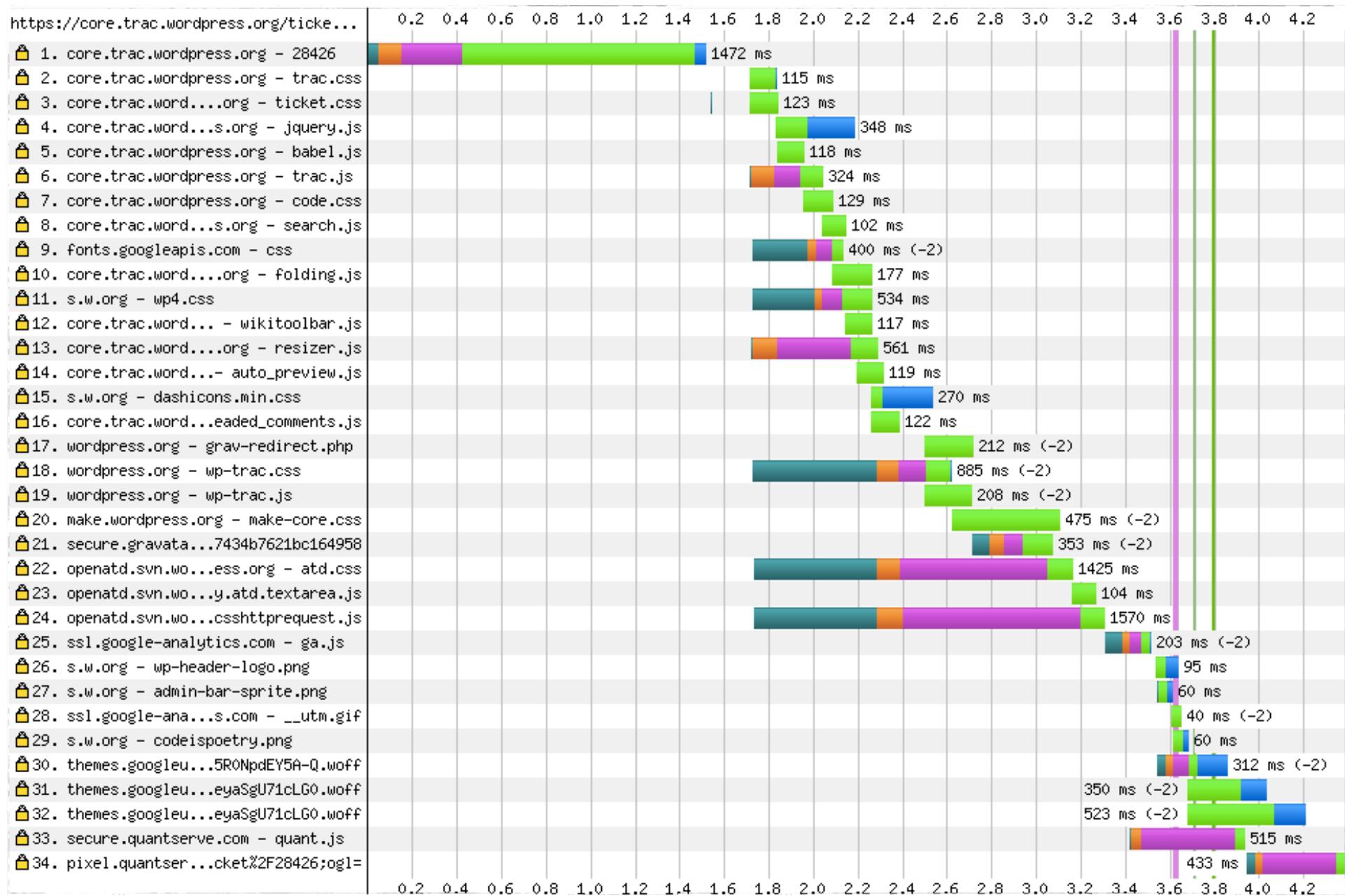
Audit scripts

Concatenate scripts

Remove unneeded fonts

Compress images

# <https://core.trac.wordpress.org/ticket/28426>



34 REQUESTS (647KB)  
4.3 S VISUALLY COMPLETE

[http://www.webpagetest.org/result/140601\\_78\\_5e0b2a188cf008c79811ab12be2ad2b/](http://www.webpagetest.org/result/140601_78_5e0b2a188cf008c79811ab12be2ad2b/)



1017 MS TTFB

1472 MS TO RECEIVE FULL HTML

TCP

SSL

110 ms

267 ms



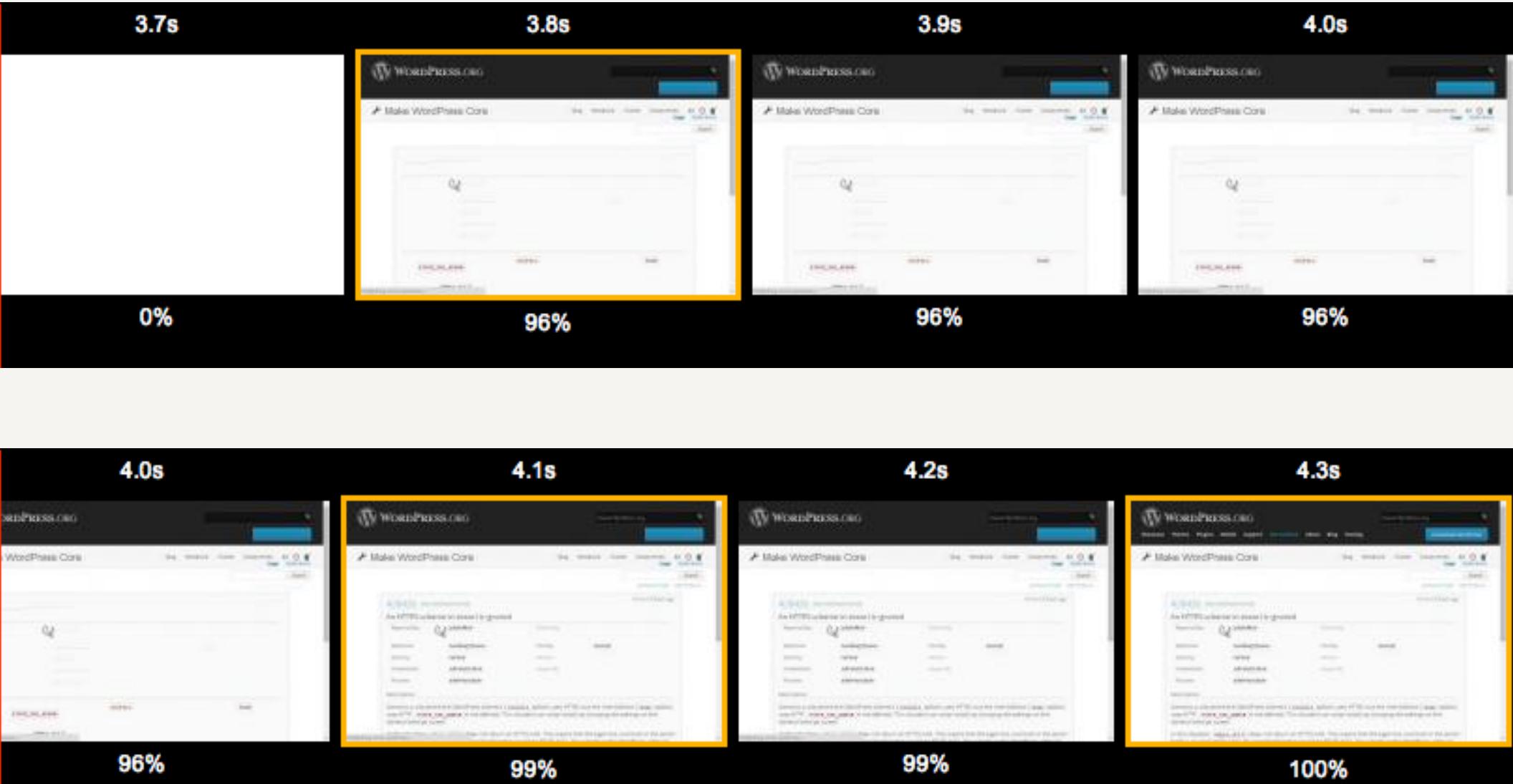
BACKEND DOWNLOAD

1047 ms

48 ms

# 3.8s START RENDER

# 4.3s VISUALLY COMPLETE

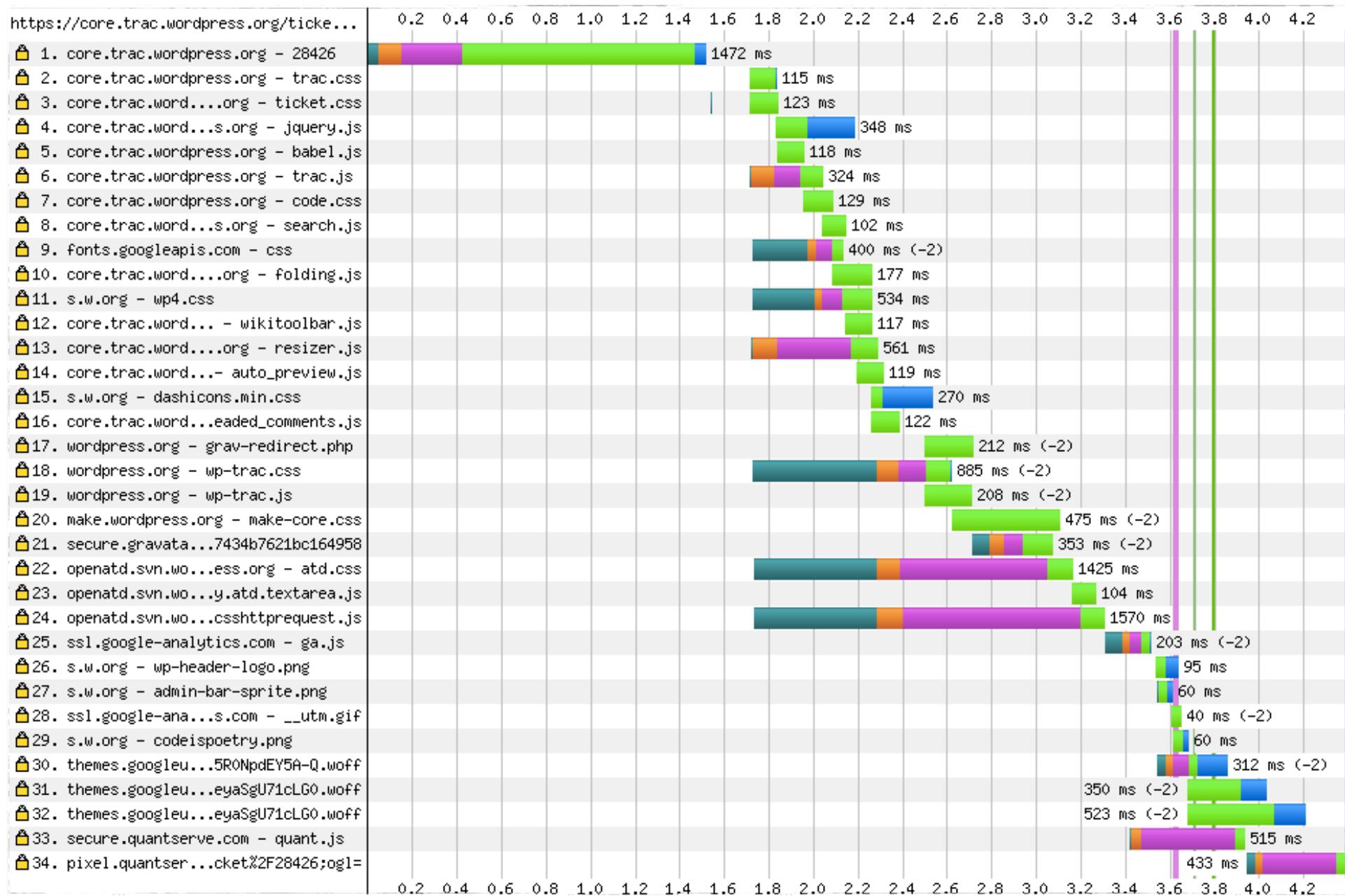


SUBTRACT OUT THE 1.45 HTML LOAD TIME

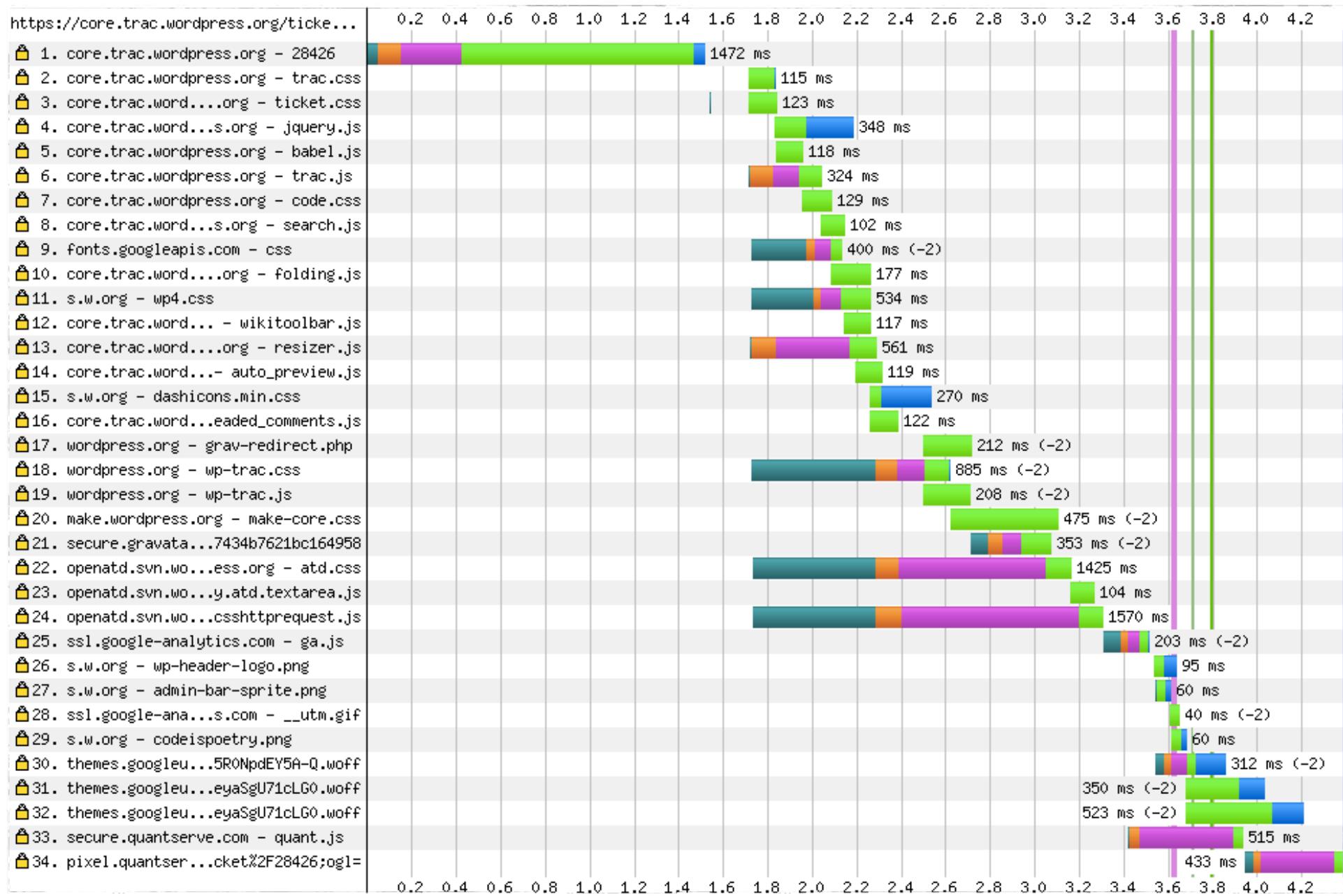
2.45 START RENDER

2.95 VISUALLY COMPLETE

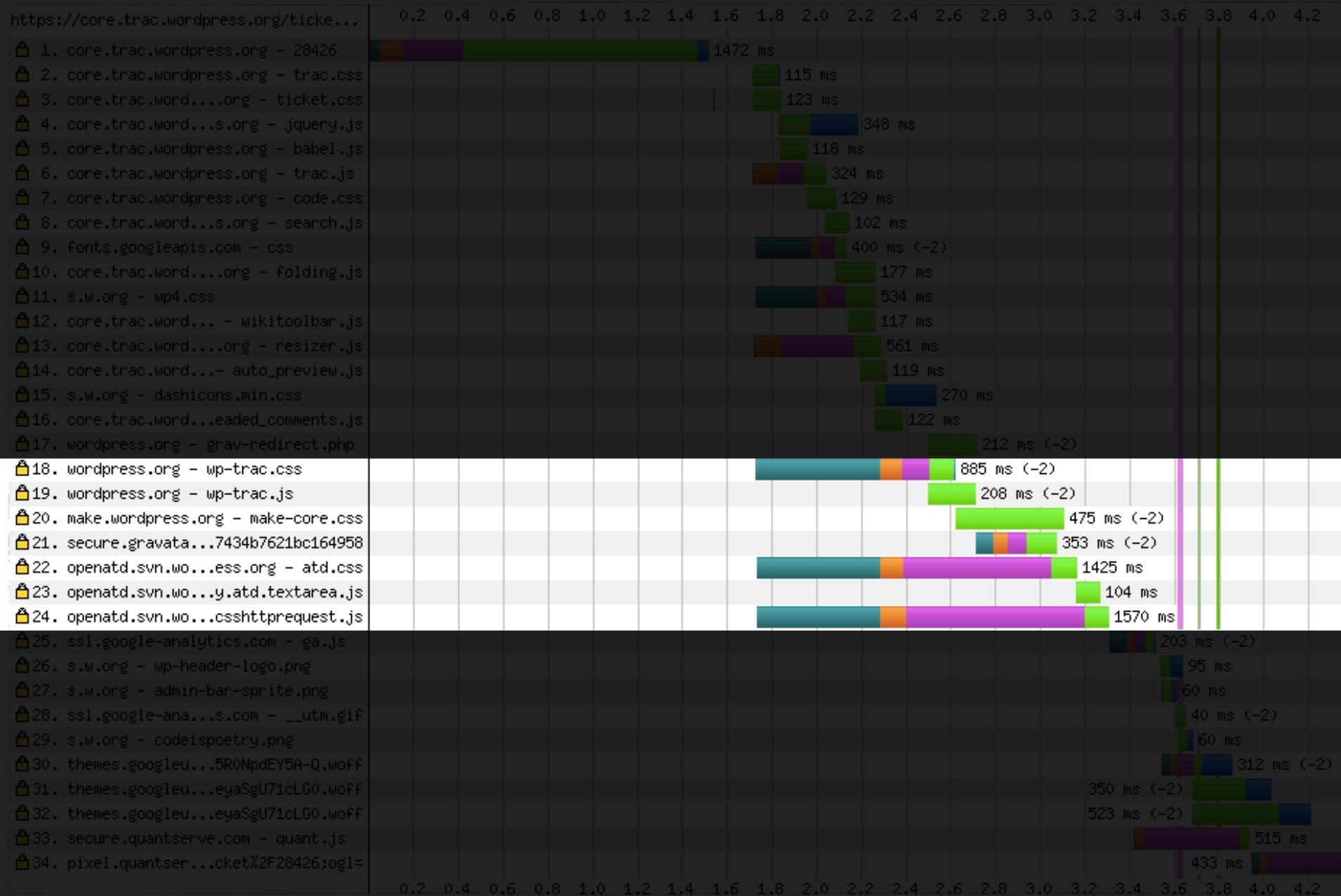
# <https://core.trac.wordpress.org/ticket/28426>

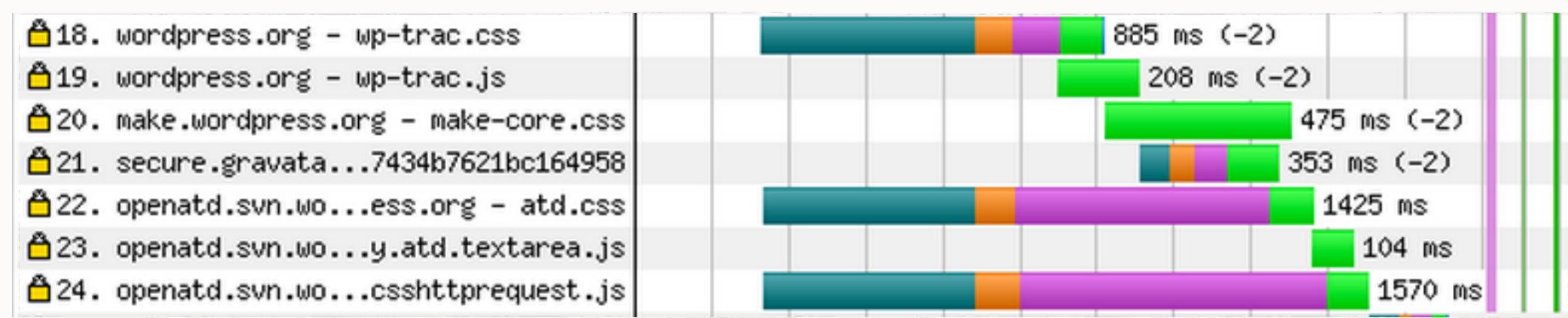


# DNS TCP SSL



# DNS TCP SSL

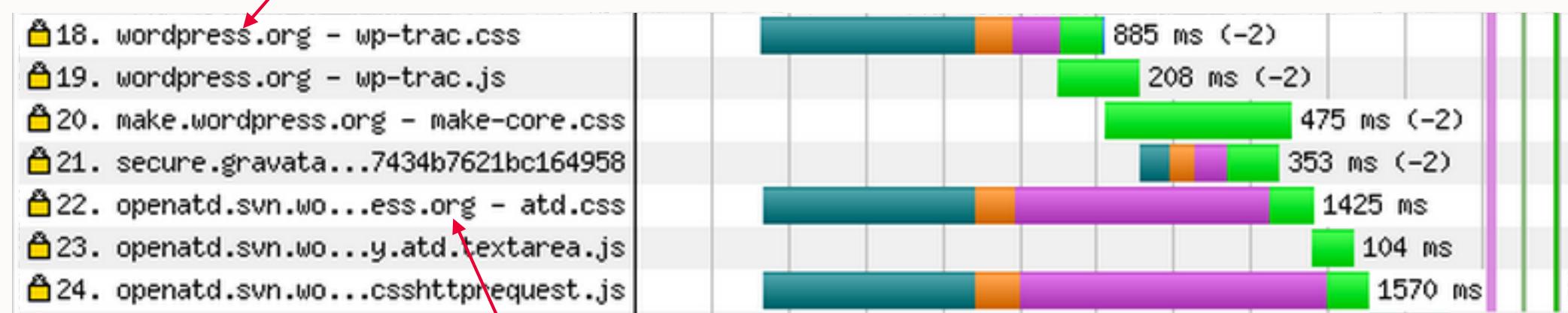




1.65

3.85

# WORDPRESS.ORG



1.65

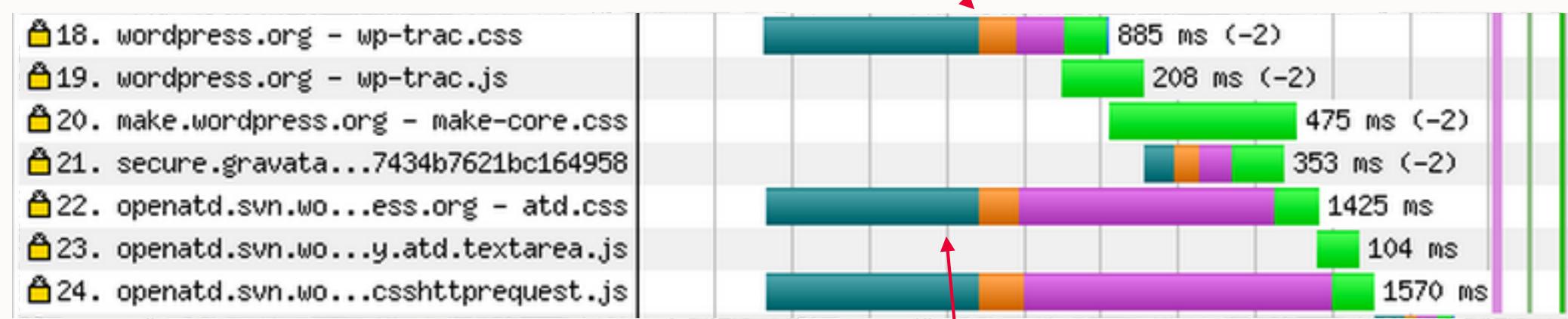
3.85

OPENATD.SVN.WORDPRESS.ORG

# WORDPRESS.ORG

768 ms TOTAL CONNECTION TIME

546 ms DNS \* 102 ms TCP \* 120 ms SSL



1.6 s

3.8 s

# OPENATD.SVN.WORDPRESS.ORG

1311 ms TOTAL CONNECTION TIME

548 ms DNS \* 102 ms TCP \* 661 ms SSL

CSSOM IS BLOCKING RENDERING

## RECOMMENDATION

Move assets to same domain

## RECOMMENDATION

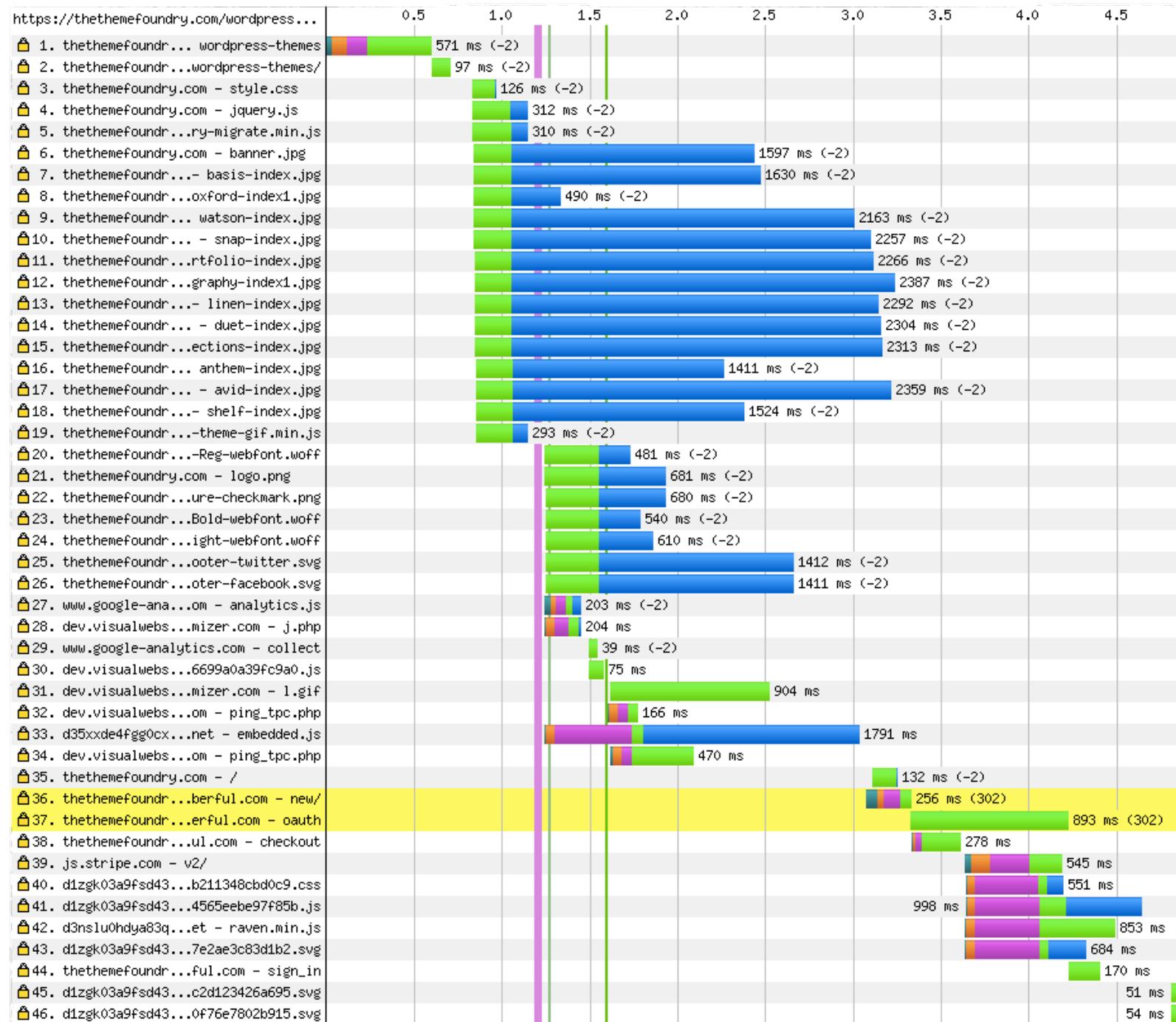
Enable SPDY

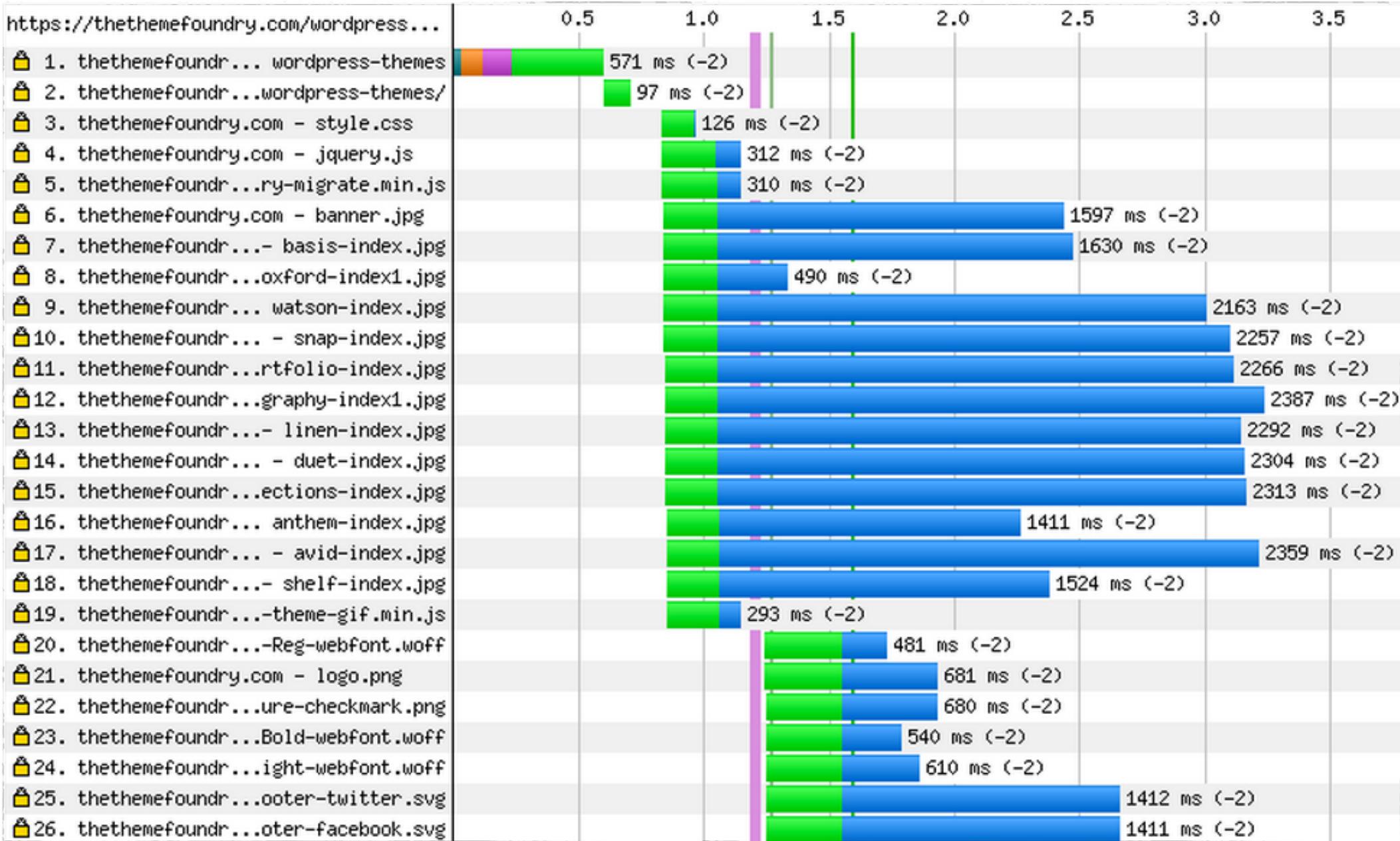
# SPDY

Protocol on top of SSL  
Allows HTTP multiplexing

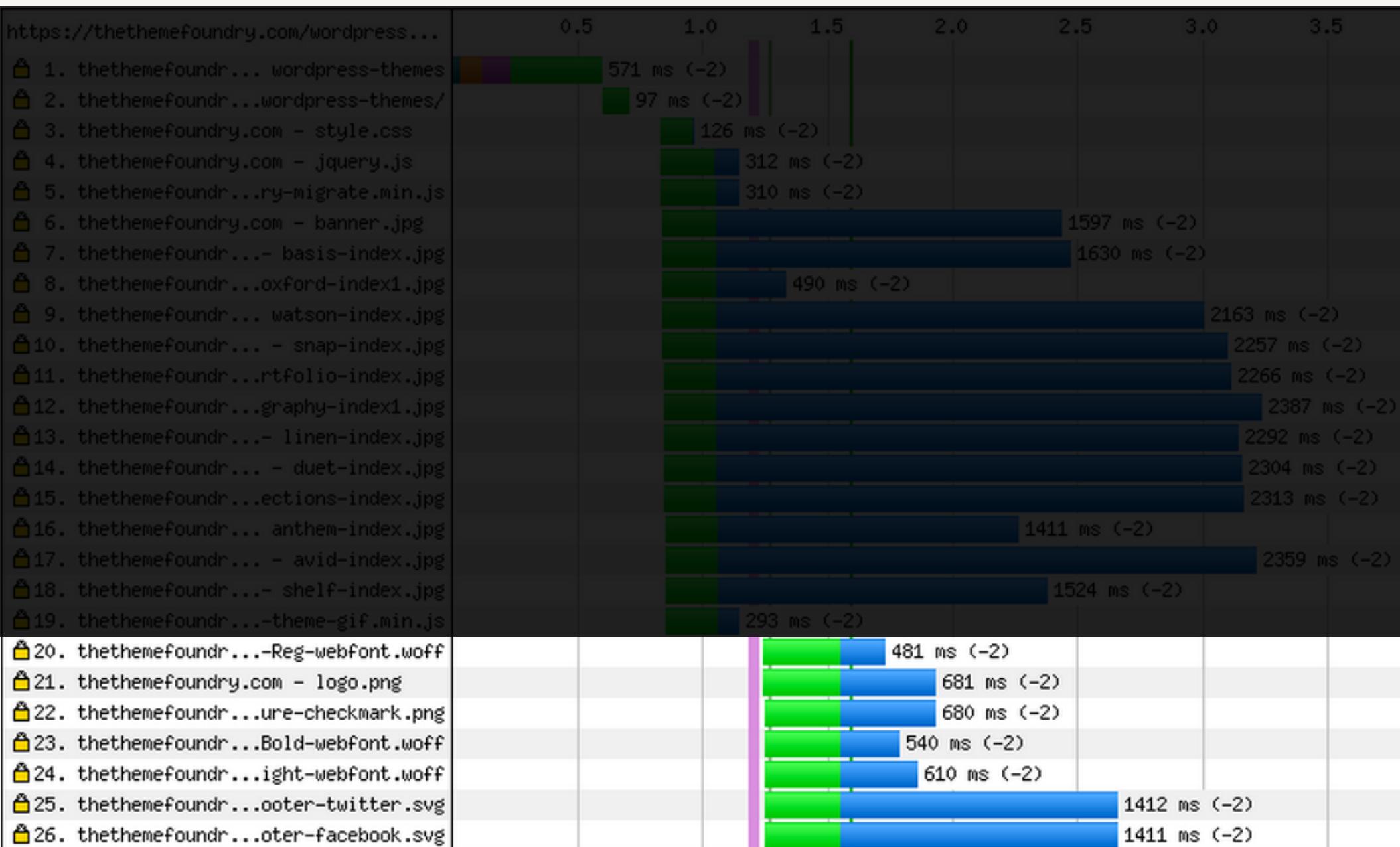
**REDUCES THE REPEATED CONNECTION LATENCY**

# <https://thethemefoundry.com/wordpress-themes>

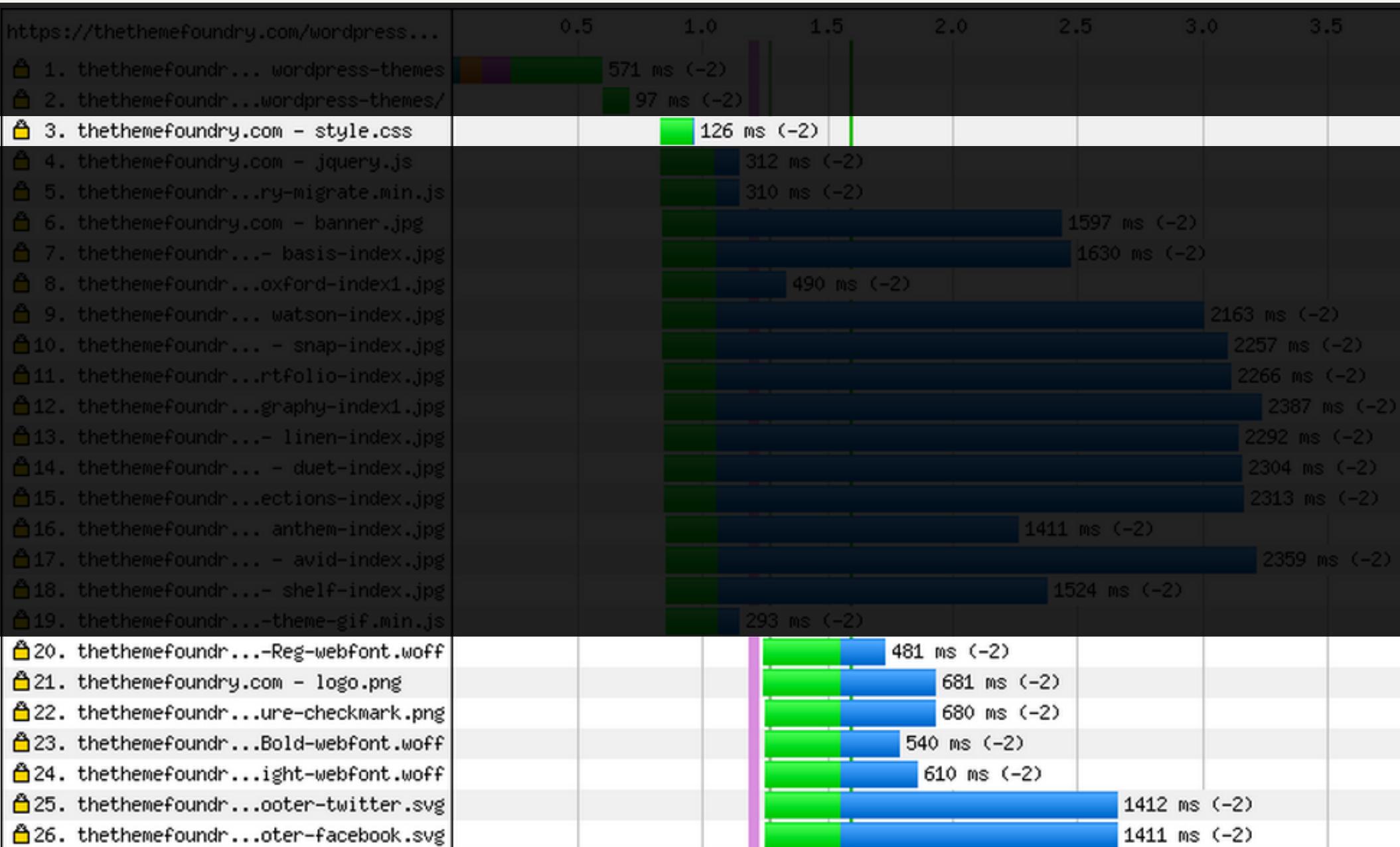




# FONTS AND IMAGES LOADED VIA CSS



# FONTS AND IMAGES LOADED VIA CSS



IT IS A MUST THAT YOU  
SHOULD ALWAYS NEVER LISTEN TO DOGMA

UNDERSTAND THE PROBLEM BEFORE SOLVING IT

## RESOURCES

High Performance Browser Networking: Ilya Grigorik

High Performance Web Sites: Steve Souders

Web Performance: Andy Davies