

hello!

Eric Paxton
@eggmuhscrip

**OPTIMIZATION IS
USER EXPERIENCE**

#devsigner

Hello!

I WORK AT THINKSHOUT

@thinkshout

#devsigner

Hello!

FRONT END ENGINEER

Javascript and Sass

#devsigner

Hello!

BUILDING IS WHERE IT'S AT FOR ME

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OVERVIEW

- User Experience
- Tools
- Assets

USER EXPERIENCE

User experience is a **consequence** of brand image, presentation, functionality, **system performance**, interactive behaviour and assistive capabilities of the interactive system...

ISO 9241-210 (Ergonomics of human-system interaction)

1. SPEED IS A FEATURE

Nearly half of web users expect a site to load in **2 seconds** or less, and they tend to **abandon** a site that isn't loaded within **3 seconds**.

85% of mobile users expect sites to load
as fast or faster than desktop sites.

Google suggests getting paint to the page within **1 second** of the request

OUR INTENTIONS ARE GOOD

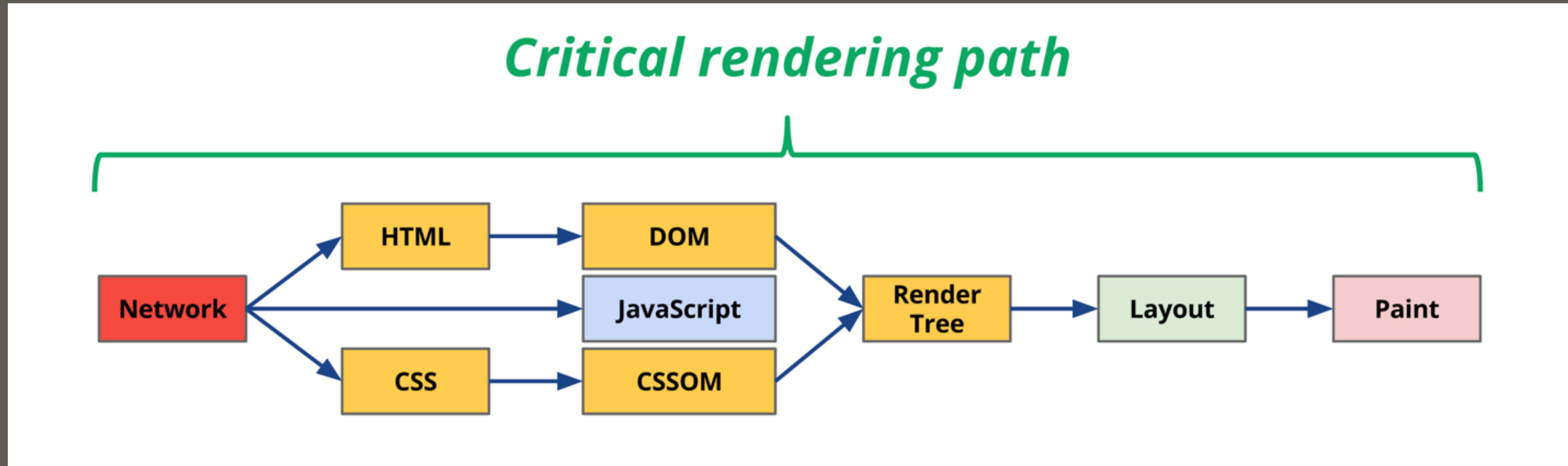
We craft experiences that work well on
our dev environment and on our test
servers

OUT IN THE WILD

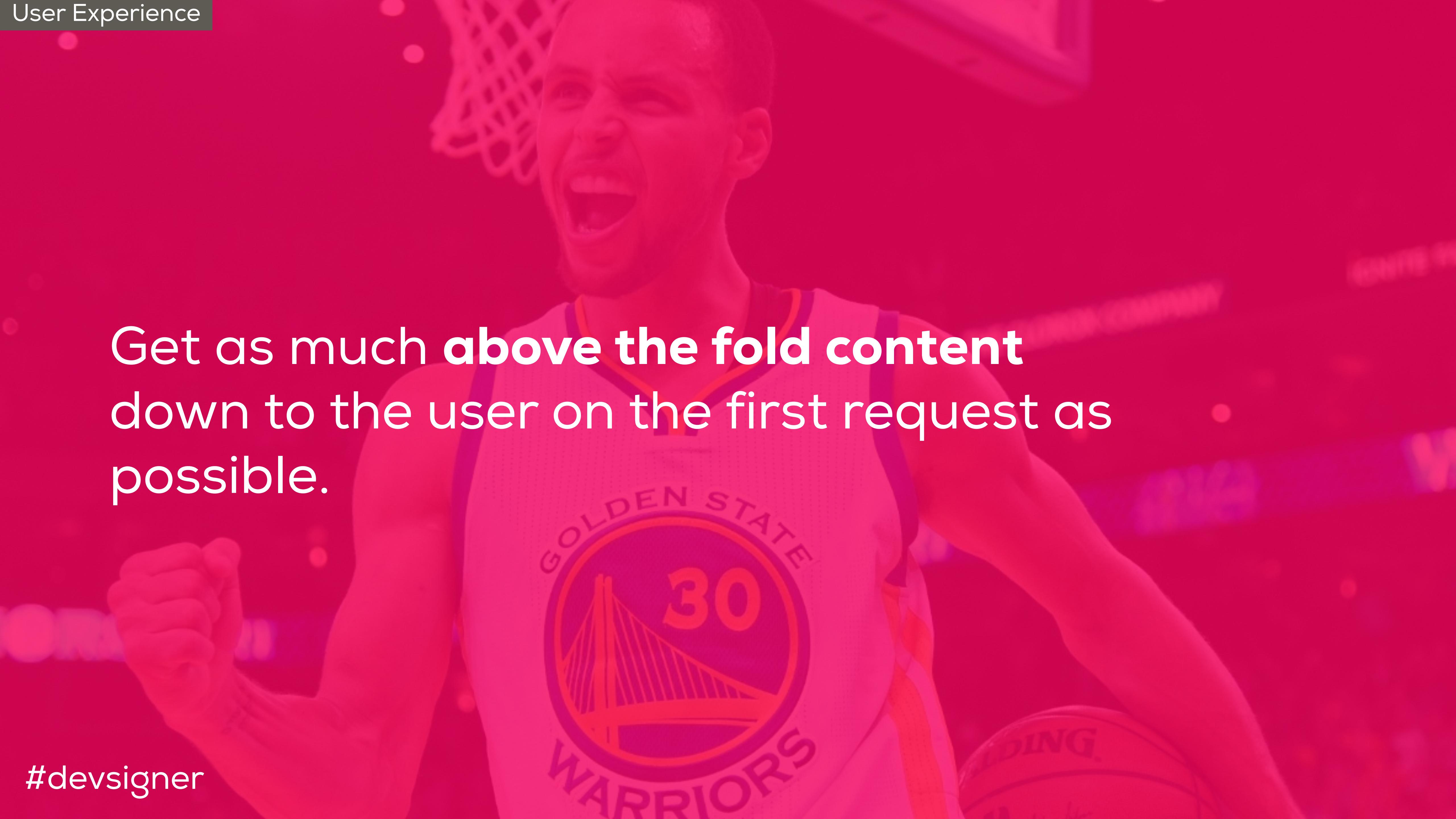
You have no control over network latency, user bandwidth, or user device capabilities.

2. MAKE THE FIRST REQUEST COUNT

OPTIMIZE FOR THE CRITICAL RENDERING PATH



Ilya Grigorik - Optimizing for the Critical Rendering Path

A basketball player in a Golden State Warriors jersey is shouting and pumping his fist. He is wearing a jersey with the number 30 and the words "GOLDEN STATE WARRIORS".

Get as much **above the fold content** down to the user on the first request as possible.



Ilya Grigorik - Critical Rendering Path

TOOLS FOR OPTIMIZING YOUR USERS' EXPERIENCE

YSlow

Extension that analyzes your site performance
and suggests ways to improve it

yslow.org

chrome-extension://ninejjcohidippngpapiilmkgllmakh/yslow.html#793

Home Grade Components Statistics Rulesets YSlow(V2) Edit Help

Grade B Overall performance score 80 Ruleset applied: YSlow(V2) URL: http://selma.splcenter.org/

ALL (23) FILTER BY: [CONTENT \(6\)](#) | [COOKIE \(2\)](#) | [CSS \(6\)](#) | [IMAGES \(2\)](#) | [JAVASCRIPT \(4\)](#) | [SERVER \(6\)](#)

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A Make fewer HTTP requests

F Use a Content Delivery Network (CDN)

A Avoid empty src or href

F Add Expires headers

C Compress components with gzip

A Put CSS at top

A Put JavaScript at bottom

A Avoid CSS expressions

n/a Make JavaScript and CSS external

A Reduce DNS lookups

A Minify JavaScript and CSS

A Avoid URL redirects

A Remove duplicate JavaScript and CSS

A Configure entity tags (ETags)

A Make AJAX cacheable

A Use GET for AJAX requests

A Reduce the number of DOM elements

A Avoid HTTP 404 (Not Found) error

A Reduce cookie size

F Use cookie-free domains

A Avoid AlphalmageLoader filter

F Do not scale images in HTML

A Make favicon small and cacheable

Grade A on Make fewer HTTP requests

This page has 9 external background images. Try combining them with CSS sprites.

Decreasing the number of components on a page reduces the number of HTTP requests required to render the page, resulting in faster page loads. Some ways to reduce the number of components include: combine files, combine multiple scripts into one script, combine multiple CSS files into one style sheet, and use CSS Sprites and image maps.

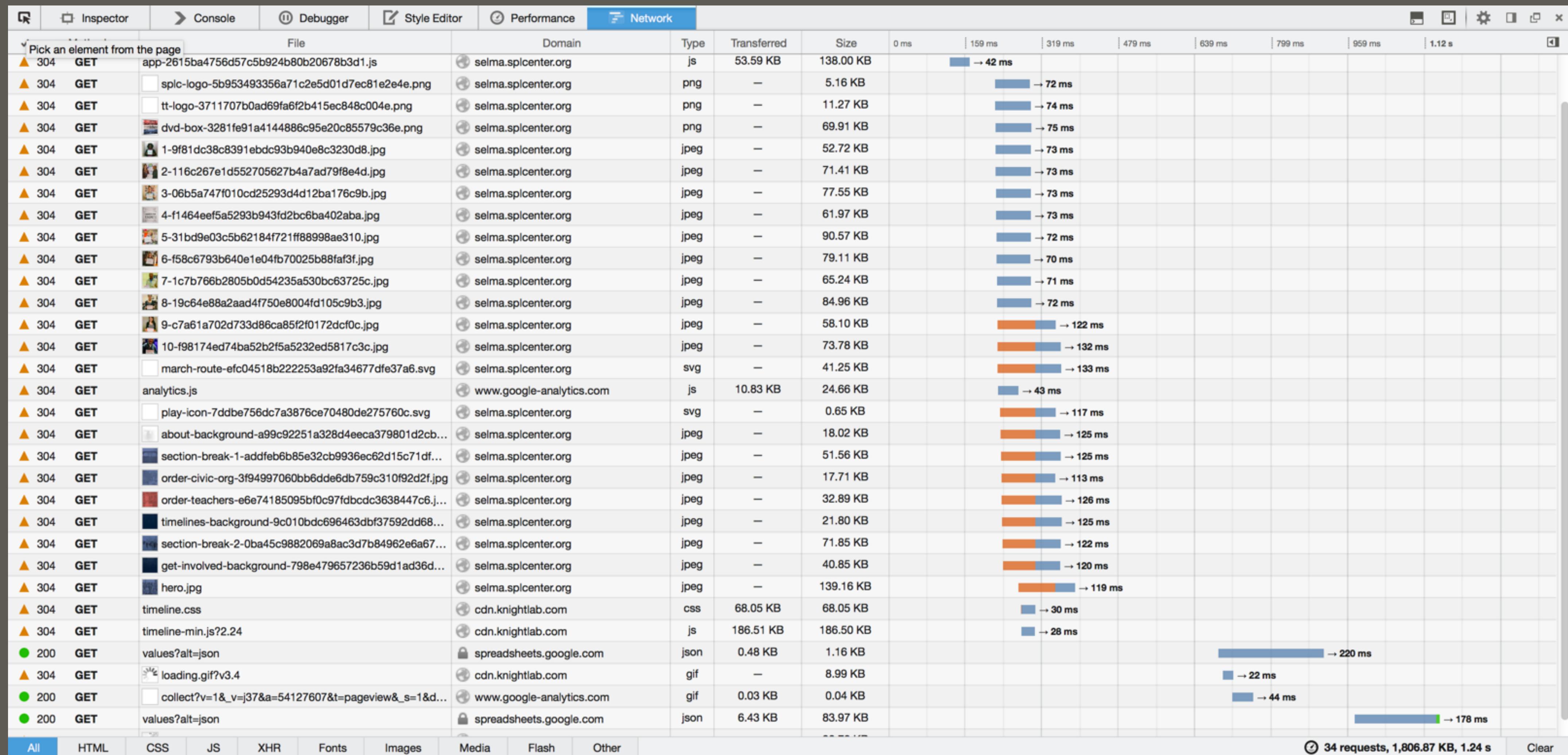
[»Read More](#)

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THE BROWSER

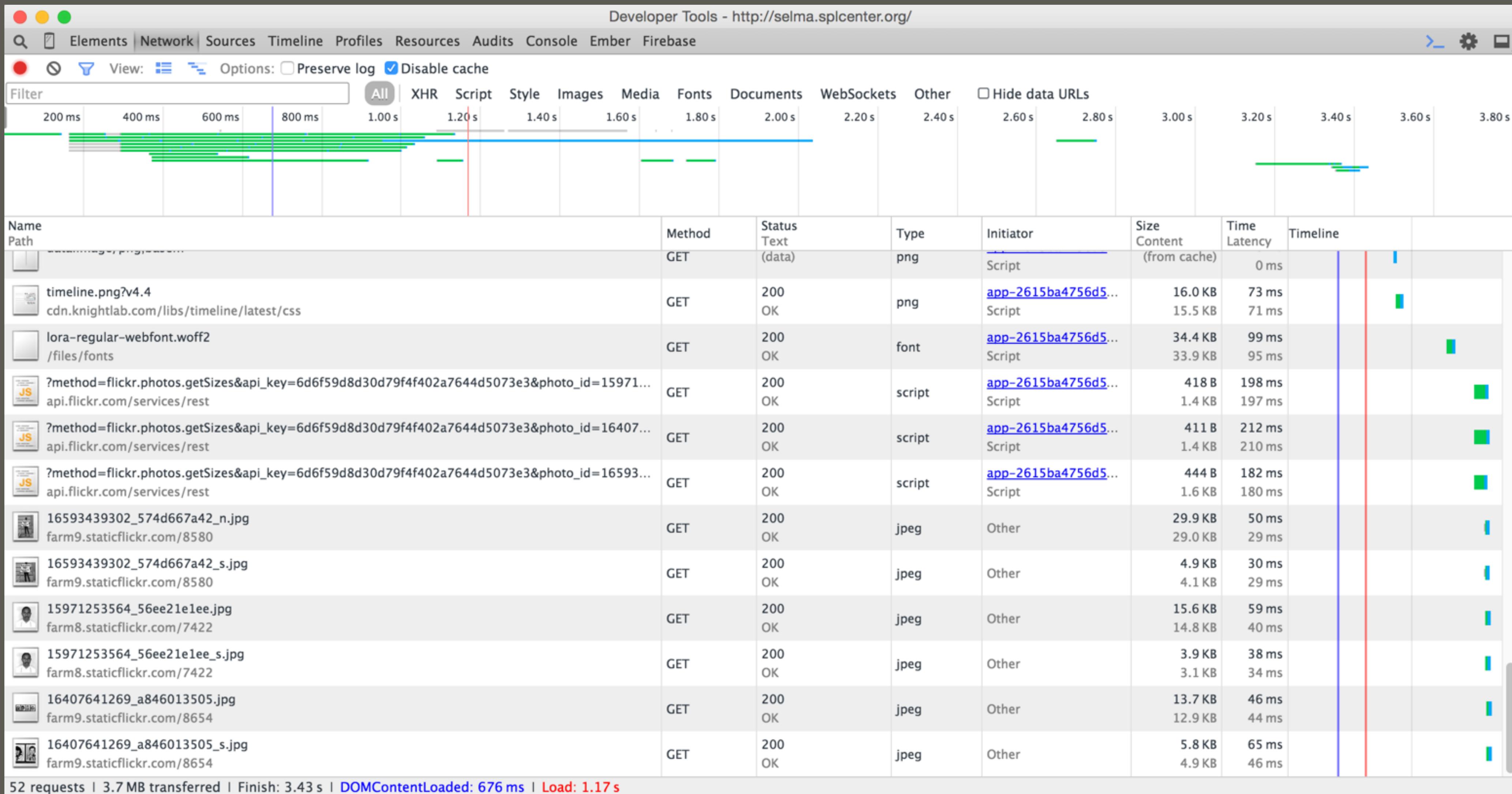
Your browser most likely has a network profiling tool

FIREFOX



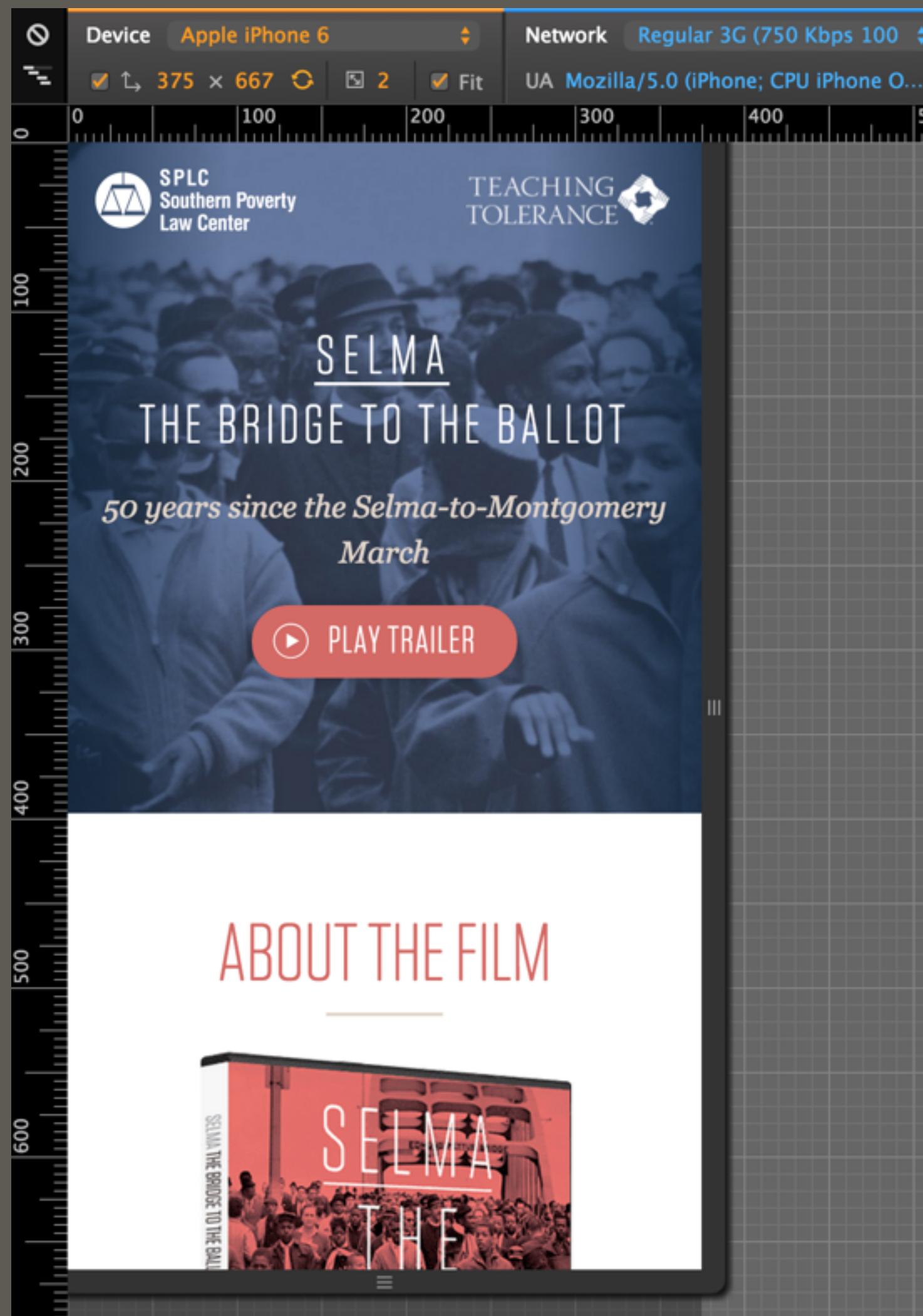
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CHROME



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CHROME



TINYPNG

Uses lossy compression techniques to reduce
the file size of your image files.

tinypng.com

TIPS FOR OPTIMIZING WEB ASSETS

Images, CSS and JS, Fonts

IMAGES

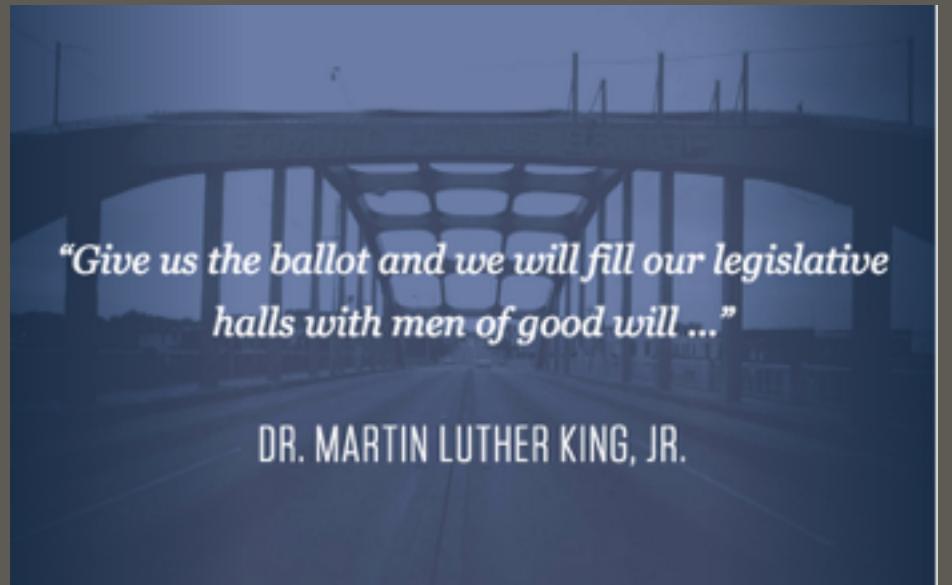
Unoptimized images are most responsible for slow load times on the entire internet.

IMAGES

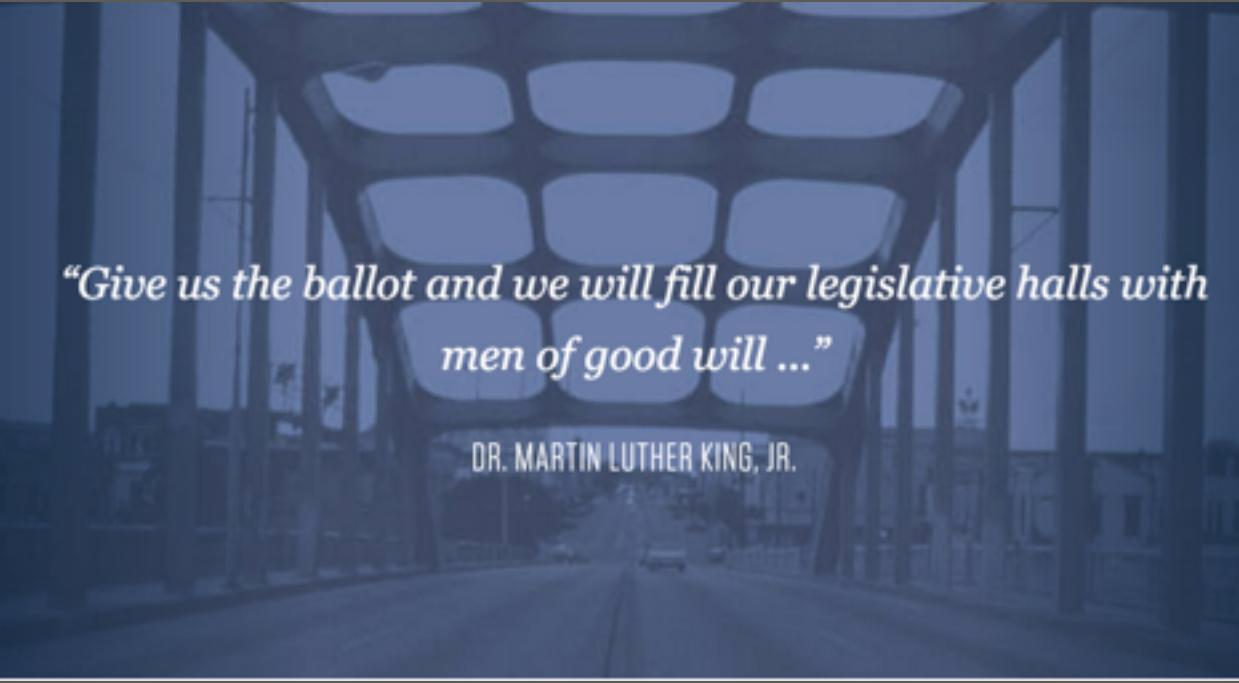
Set bigger images as background images,
not inline.

IMAGES

Mobile



Tablet



Desktop



Use a small image on mobile. Don't just resize the desktop sized image.

IMAGES

Makes sprites out of smaller sized background images

IMAGES

Use a site like icomoon.io or fontello.com to create a font icon instead of using images.

IMAGES

The screenshot shows the Fontello icon fonts generator interface. At the top, there's a navigation bar with links for "Fontello - icon fonts generator", "Feedback", "API", "GitHub", and social media icons for Twitter (Follow and Tweet). A counter indicates 5,243 users. On the right of the header is a "donate" button.

Below the header is a search bar, a font size selector set to 16px, a lock icon, a "font name" input field, and a red "Download webfont (16)" button.

Underneath the search bar is a navigation menu with tabs: "Select Icons" (which is active), "Customize Names", "Customize Codes", and "Help / Wiki".

The main content area is titled "Custom Icons" and includes a "clear all icons" link. It displays a grid of icons from the "Fontelico" font family, which is described as being crowdsourced for the Fontello project and licensed under SIL. Below this grid is another grid of icons from the "Font Awesome" font family, version 4.3.0, created by Dave Gandy and licensed under SIL. The "Font Awesome" grid includes a red circle highlighting the plus sign (+) icon.

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IMAGES

The screenshot shows the IcoMoon website homepage. At the top is a navigation bar with links: Home, Icon Fonts, Icon Packs, Premium, FAQ, Docs, Blog, About, IcoMoon App, and a user icon. Below the navigation is a large grid of various icons. In the center, there is a large white circle with a black dot in the middle, followed by the word "IcoMoon" in a large, bold, white sans-serif font. Below this, a tagline reads "Custom built and crisp icon fonts, done right". The main content area is divided into three sections: "IcoMoon App", "Icon Packs", and "Go Premium", each with a list of features.

IcoMoon App

- ✓ Browse 4000+ free vector icons
- ✓ Custom & crisp icon font generator
- ✓ Import your own vectors to make fonts
- ✓ Generate CSS sprites with any size or color
- ✓ Basic glyph editing

Icon Packs

- ✓ 2000+ vector icons
- ✓ Handcrafted on a grid
- ✓ In various formats: SVG, font, etc.
- ✓ Money back guarantee
- ✓ Free updates

Go Premium

- ✓ Cloud syncing
- ✓ Quick usage links
- ✓ Serve icon fonts or SVG icons
- ✓ Powered by Amazon Web Services
- ✓ Easily update your icon sets

CSS AND JAVASCRIPT

The faster you get the HTML, CSS and JS down, the happier your user will be.

CSS AND JAVASCRIPT

Where we declare our CSS/JS matters

CSS AND JAVASCRIPT

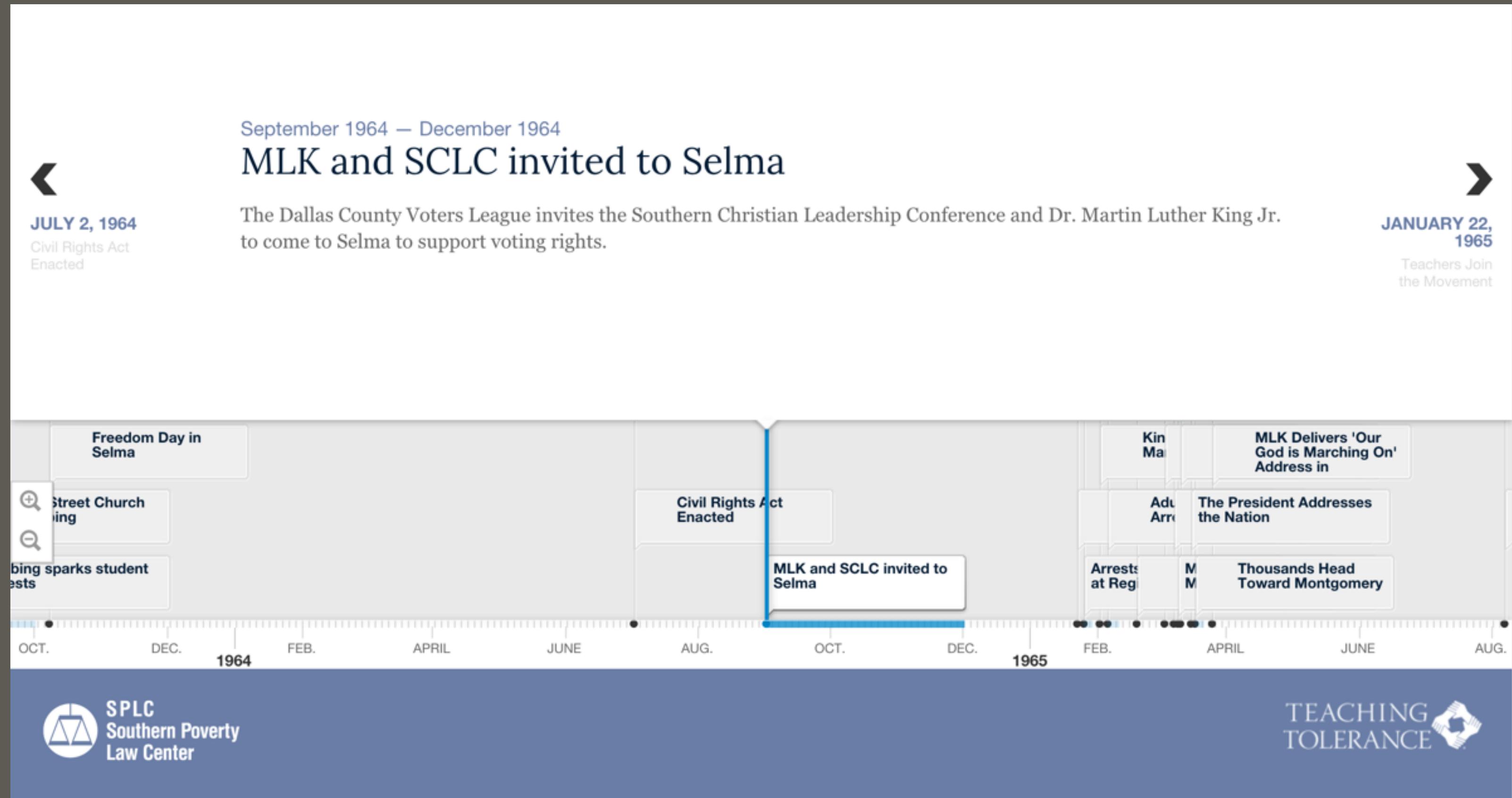
<head>



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CSS AND JAVASCRIPT

</body>



CSS AND JAVASCRIPT

Aggregate CSS and JS files

CSS AND JAVASCRIPT

```
<html>
  <head>
    <link href="header.css" rel="stylesheet">
    <link href="nav.css" rel="stylesheet">
    <link href="footer.css" rel="stylesheet">

    <script src="magic.js"></script>
    <script src="unicorns.js"></script>
    <script src="jellybeans.js"></script>
```

CSS AND JAVASCRIPT

```
<html>  
<head>  
<link href="style.css" rel="stylesheet">  
  
<script src="wario.js"></script>
```

CSS AND JAVASCRIPT



sass --watch input.scss:output.css --style compressed

sass-lang.info

CSS AND JAVASCRIPT

Uglify-JS

uglifyjs --compress -- input.js -- output.js

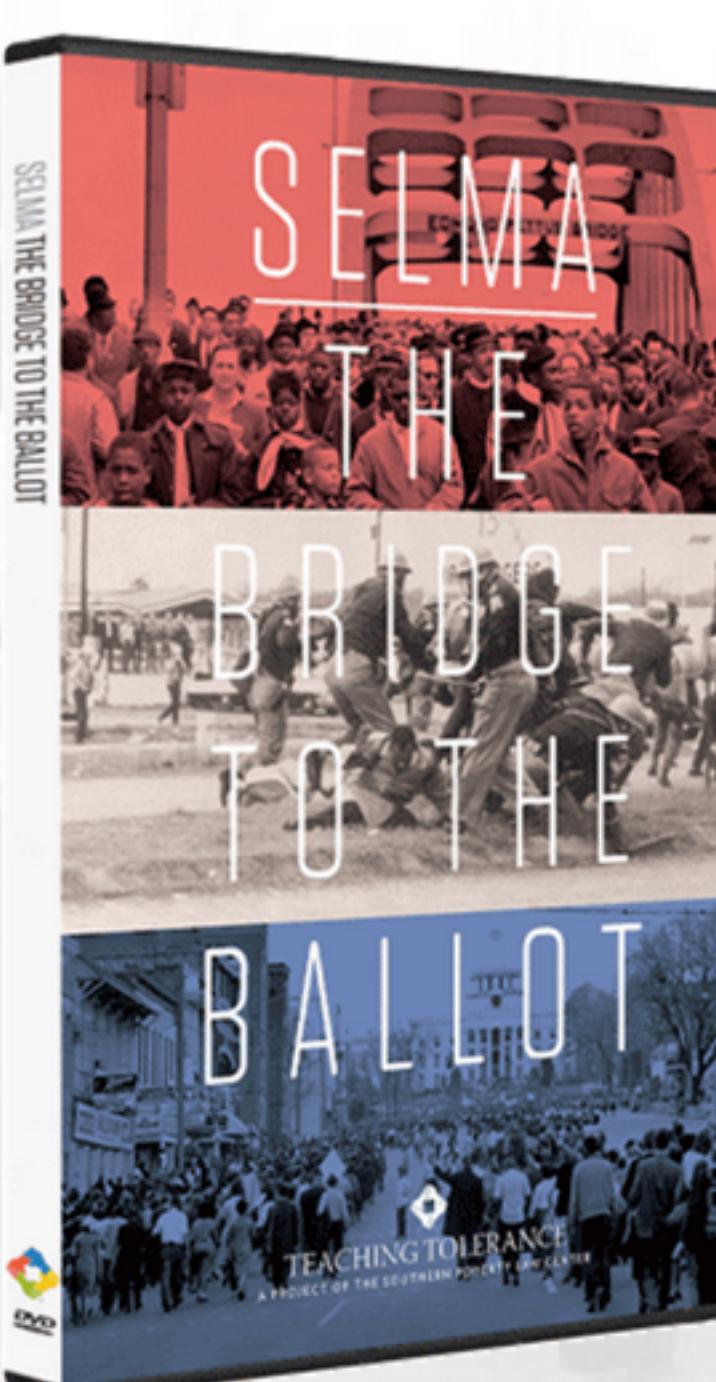
lisperator.net/uglifyjs

FONTS

Fonts that are already on your user's computer don't cost you any extra.

FONTS

ABOUT THE FILM



The image shows the front cover of a DVD for the documentary "Selma: The Bridge to the Ballot". The cover is red at the top, featuring the title "SELMA" in large white letters. Below this is a black and white photograph of a large crowd of people marching. The middle section has a white background with the words "THE BRIDGE TO THE BALLOT" in large, bold, white, sans-serif capital letters. At the bottom, there's a blue section with a smaller black and white photograph of a crowd, and the words "TEACHING TOLERANCE" and "A PROJECT OF THE SOUTHERN POVERTY LAW CENTER". A small "DVD" logo is in the bottom left corner.

Selma: The Bridge to the Ballot is the true story of the forgotten heroes in the fight for voting rights—the courageous students and teachers of Selma, Alabama, who stood up against injustice despite facing intimidation, arrests and violence. By organizing and marching bravely, these change-makers achieved one of the most significant victories of the civil rights era.

The sacrifices of those who fought so hard for equality should never be forgotten. In the 2012 presidential election, more than 90 million eligible voters did not go to the polls. In the 18–24 age group, only six out 10 voted. And, in 2014, voter turnout dropped to a 72-year low.

This 40-minute film, narrated by Academy Award winner Octavia Spencer, is a crucial reminder that each of us has the ability to bring about powerful social change and will help inspire young people and communities across the nation to exercise their right to participate in our democracy.

[ORDER THE FILM](#)

FONTS

Use an appropriate fallback font

```
body {  
  font-family: "My Web Font", "Georgia";  
}
```

SUMMARY

- Reduce file sizes
- Make the most of request
- Sprite Images
- Use fonts with care

WHERE TO GO FROM HERE

Google Developers

[developers.google.com/web/fundamentals/
performance](https://developers.google.com/web/fundamentals/performance)

Ilya Grigorik

igvita.com

hello!

Eric Paxton
@eggmuhsript

github.com/heypaxton/optimizationtalk

devsignercon.com/eval

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