Faster Mobile Websites
Why is speed so important?
100 millisecond delay
100 millisecond delay
Decreased sales by 1%
£1
A slow site will:

Affect the impression of your brand
A slow site will:

- Affect the impression of your brand
- Increase user frustration
A slow site will:

- Affect the impression of your brand
- Increase user frustration
- Cost your user’s money
A slow site will:

- Affect the impression of your brand
- Increase user frustration
- Cost your user’s money
- Make your user’s use your competitor’s
A slow site will:

- Affect the impression of your brand
- Increase user frustration
- Cost your user’s money
- Make your user’s use your competitors
- Affect your SEO rankings
People != Patience
Mobile Devices?
Mobile
Mobile is
Mobile is HUGE
Mobile commerce will be 40% of eCommerce by the end of 2015.

source: criteo.com/resources/mobile-commerce-q1-2015/
Mobile transactions grew 10% in the last 3 months.
So what can we do?
Understand Mobile Networks
Network Overhead

100ms

RRC Negotiation
Network Overhead

RRC Negotiation

DNS Lookup

100ms

200ms
Network Overhead

- RRC Negotiation: 100ms
- DNS Lookup: 200ms
- TCP Connection: 200ms
Network Overhead
Latency is
Latency is bad.
Latency is
Latency is “the new web performance bottleneck.”
3G
200 - 3500 ms delay

4G
3G
200 - 3500 ms delay

4G
100 - 600 ms delay
In North America, 92% of smartphones took > 200ms to load a 20KB file.
Deliver only the goods that will be used!
RAIL in Action
RAIL in Action

1. Reduce page size \((Load)\)
RAIL in Action

1. Reduce page size (*Load*)
2. Reduce HTTP requests (*Load*)
1. Reduce page size \((Load)\)
2. Reduce HTTP requests \((Load)\)
3. Reduce Blocking \((Load, Idle)\)
RAIL in Action

1. Reduce page size (Load)
2. Reduce HTTP requests (Load)
3. Reduce Blocking (Load, Idle)
4. Improve render times (Animation, Idle, Response)
1. Reduce page size
1. Reduce page size
Reduce page size

- Optimize images
- Remove unused CSS
- Minify CSS and JS files
- Responsive images
Optimize images
Before

After

160 KB

110 KB
We optimize your images and accelerate your websites.

Kraken is a robust, ultra-fast image optimizer and compressor with best-in-class algorithms. We'll save you bandwidth and storage space and will dramatically improve your website's load times.

See Plans and Pricing — or — Try Free Web Interface

Kraken PRO & Powerful API
Free Online Image Optimizer

THOUSANDS OF CUSTOMERS FROM AROUND THE WORLD TRUST IN KRAKEN.IO
Remove unused CSS
Before 107 KB

After 30 KB
86%

Unused CSS
Chrome Developer Tools
Gulp  Grunt
Responsive images
<picture>
<source media="(min-width: 1024px)" srcset="dest/1024/dog.jpg">
<source media="(min-width: 640px)" srcset="dest/640/dog.jpg">
<source srcset="dest/320/dog.jpg">
<img src="dest/640/dog.jpg" alt="The fallback image.">
<p>This is some accessible text.</p>
</picture>
<picture>
  <source media="(min-width: 1024px)" srcset="dest/1024/dog.jpg">
  <source media="(min-width: 640px)" srcset="dest/640/dog.jpg">
  <source srcset="dest/320/dog.jpg">
  <img src="dest/640/dog.jpg" alt="The fallback image.">
</picture>

<p>This is some accessible text.</p>
<picture>
  <source media="(min-width: 1024px)" srcset="dest/1024/dog.jpg">
  <source media="(min-width: 640px)" srcset="dest/640/dog.jpg">
  <source srcset="dest/320/dog.jpg">
  <img src="dest/640/dog.jpg" alt="The fallback image.">
</picture>
<p>This is some accessible text.</p>
Gulp-Responsive  Responsive -images
2. Reduce HTTP Requests
2. Reduce *HTTP* Requests
Reduce HTTP Requests

★ Combine Styles and Scripts
Reduce HTTP Requests

★ Combine Styles and Scripts
★ Spriting
Reduce *HTTP Requests*

- Combine Styles and Scripts
- Spriting
- Caching
Reduce HTTP Requests

★ Combine Styles and Scripts
★ Spriting
★ Caching
★ Do you really need that?
Combine
Gulp  Grunt
Automate all the things!

yeoman.io/blog/performance-optimization.html
Spriting
1 request
1 request

many images
- No whitespace

Sprites
- No whitespace
- Optimize & cache
- No whitespace
- Optimize & cache
- Aim for similar palettes
Caching
- Beware of proxies
- Beware of proxies
- Standardize your file **capitalization**
- Beware of proxies
- Standardize your file capitalization
- Determine the best cache lifetime
- Beware of proxies
- Standardize your file capitalization
- Determine the best cache lifetime
- Minimize churn
Do you really need that?
“When you want to be fast, you have to give up the things slowing you down.”

Addy Osmani
Consider:

CSS instead of images
Consider:

CSS instead of images

Social Widgets
Social buttons are next to worthless: moovweb.com/blog/anyone-us...

More ammo: ia.net/know-how/sweep...

#deathtobullshit
“Across the 61 million mobile sessions we studied, we found that only 0.2% of mobile users do any social sharing.”

source: http://moovweb.com/blog/anyone-use-social-sharing-buttons-mobile/
Consider:

CSS instead of images
Social Widgets
3rd Party Scripts
Consider:

CSS instead of images
Social Widgets
3rd Party Scripts
Carousels
shouldiuseacarousel.com
Deliver only the goods that will be used!
3. Reduce *Blocking*
3. Reduce *Blocking*

Load / Idle
HTML
“More Weight Doesn't Mean More Wait”

Scott Jehl
Finding the Critical Path
Continuous Input In Mobile Devices: Pain Or Gain?

By Igor Fastovski

March 10th, 2015
Design Patterns, iOS
6 Comments

Working with text has long been the domain of desktops and notebooks. Yet the screen size, resolution and software of mobile devices have improved in recent years which has made typing a fairly large amount of text quite achievable.
14 KB
Continuous Input In Mobile Devices: Pain Or Gain?

By Igor Fastovski

March 10th, 2015
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6 Comments

Working with text has long been the domain of desktops and notebooks. Yet the screen size, resolution and software of mobile devices have improved in recent years, which has made typing a fairly large amount of text quite achievable.
<!doctype html>
<head>
  <style> /* inlined critical CSS */
  </style>
  <script> loadCSS('deferred.css');
  </script>
</head>
<body>
  ...body goes here
</body>
</html>
<!doctype html>
<head>
  <style> /* inlined critical CSS */
</style>
  <script> loadCSS('deferred.css');
</script>
</head>
<body>
  ...body goes here
</body>
</html>
Inline?
4. Improve Rendering
4. Improve Rendering

Animation, Idle, Response
Dev Tools are your **Best Friend**
Profiling tools are everywhere
Find your *slowest* points
Find your *slowest* points
Find your *slowest* points
Stay Jank Free!
jankfree.org
Building 60 FPS Web Apps

Explore and Master Chrome DevTools

What You'll Learn in This Course:

- Chapter 1: Getting Started & Basic DOM and Styles
- Chapter 2: Advanced DOM and Styles
- Chapter 3: Working With the Console

17 Videos
75+ Challenges
8 Badges

Badges you can earn:
An Introduction To Unit Testing In AngularJS Applications

By Sébastien Fragnaud

October 7th, 2014

AngularJS has grown to become one of the most popular single-page application frameworks. Developed by a dedicated team at Google, the outcome is substantial and widely used in both community and industry projects.
An Introduction To Unit Testing In AngularJS Applications

By Sébastien Fragnaud

AngularJS applications are using unit tests to verify the outcome is substantial and widely used in both community and industry projects.

2065ms (421ms)

Nothing is more frustrating than stubborn management. That's why we have published Digital Adaptation, a new book by Kevin Boag on how to help managers and teams overcome legacy practices and make the right choices.

It's done. The Smashing Book brand new book with smart techniques and design approaches.
Recap

1. Reduce page size
2. Reduce HTTP requests
3. Reduce Blocking
4. Improve render times
Show me the Money
A FRONT-END CONFERENCE FOR ANYONE WHO MAKES FOR THE WEB

19th May 2015 @ The Comedy Store, Manchester UK

Buy tickets

FULL PRICE £114 INCLUDING FEES & VAT
Stats

52 HTTP Requests
950 KB Total
250 KB of CSS
158 KB of JavaScript
Speed Index - 2075
15 seconds
Grunt-UnCSS
Kraken.io
Grunt-Responsive-images
Grunt-Critical-CSS
After

32 HTTP Requests
402 KB Total
3.7 KB of CSS
44 KB of JavaScript
Speed Index - 1675
After

32 HTTP Requests

402 KB Total

3.7 KB of CSS

44 KB of JavaScript

Speed Index - 1675
3.7 seconds
Critical Path
bit.ly/upfront-conf

A FRONT-END CONFERENCE FOR ANYONE WHO MAKES FOR THE WEB

19th May 2015 @ The Comedy Store, Manchester UK
Pagespeed Insights

85 / 100 Speed

Should Fix:
Leverage browser caching
Show how to fix

Consider Fixing:
Optimize images
Remote debugging Android
Remote debugging iOS
Remote debugging iOS

developer.apple.com/safari/tools
Summary

The importance of a fast website
Summary

The importance of a fast website
The latency delay in mobile networks
Summary

The importance of a fast website
The latency delay in mobile networks
Summary

The importance of a fast website
The latency delay in mobile networks
RAIL
Critical Path
Summary

The importance of a fast website
The latency delay in mobile networks
RAIL
Critical Path
Improve rendering
Summary

The importance of a fast website
The latency delay in mobile networks
RAIL
Critical Path
Improve rendering
Profiling & testing tools
Think lean
Think fast!
Thank you @deanohume