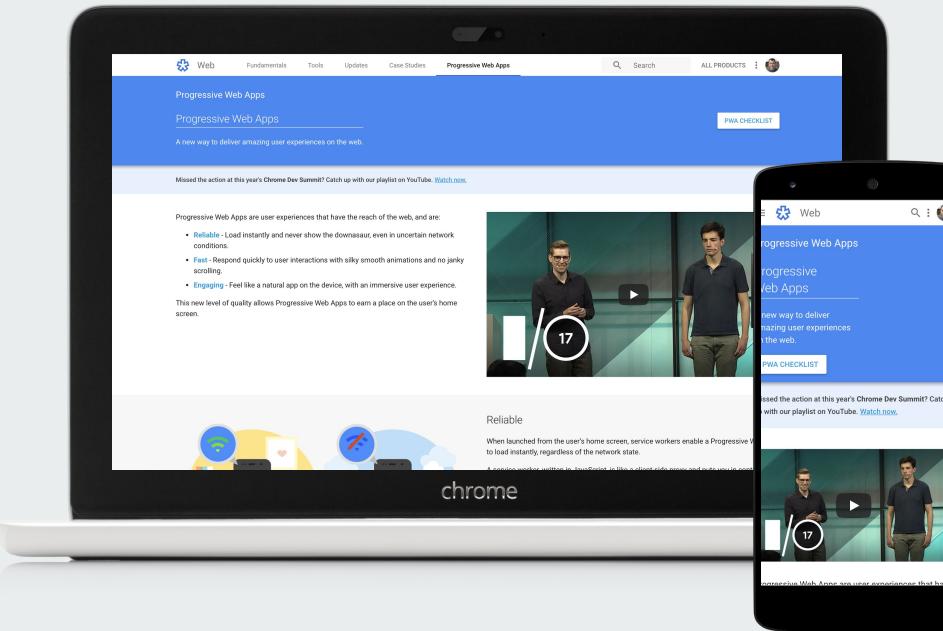


Progressive Web Apps

Earning your user's trust



Hi! I'm Jon.

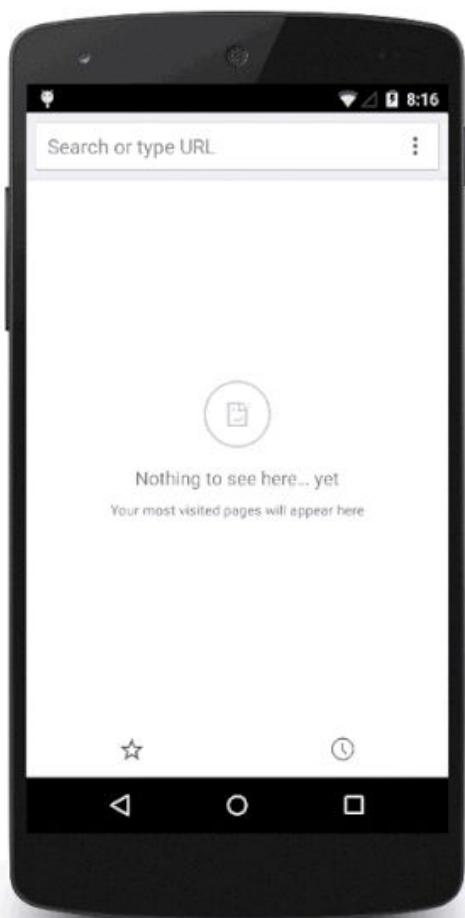




This is not a PWA vs Native apps talk.

This is a PWA ❤️ Native apps talk.

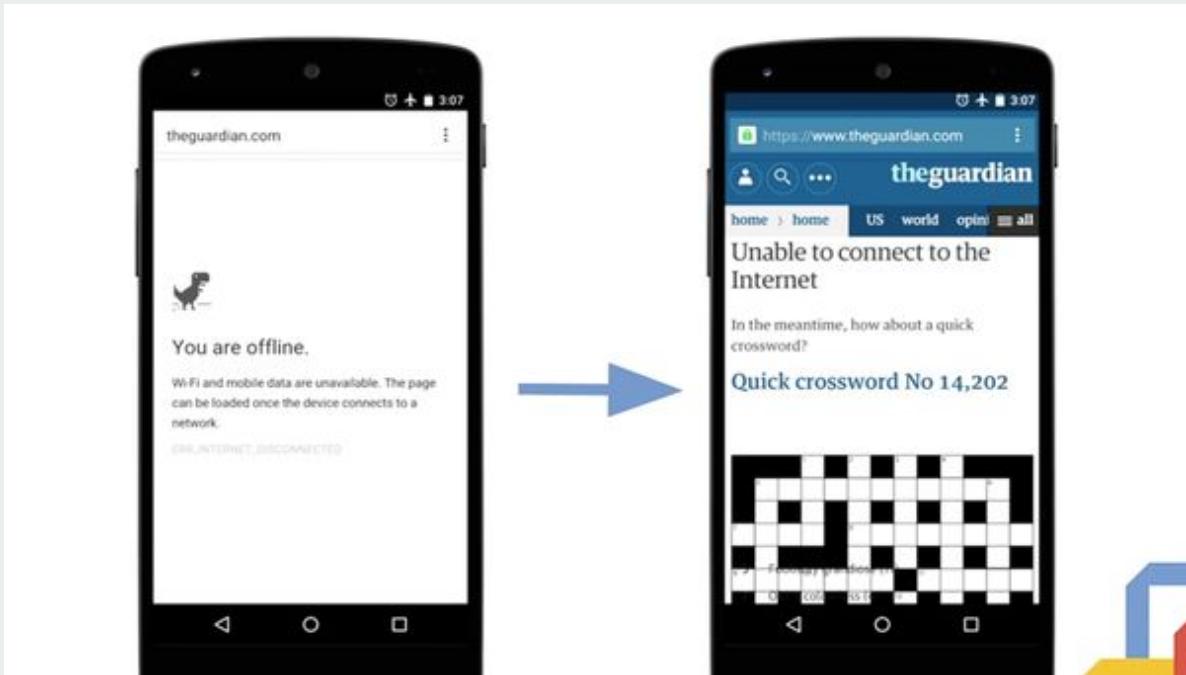
What is a PWA?





**What
Can they do?**

Offline



Save to home screen

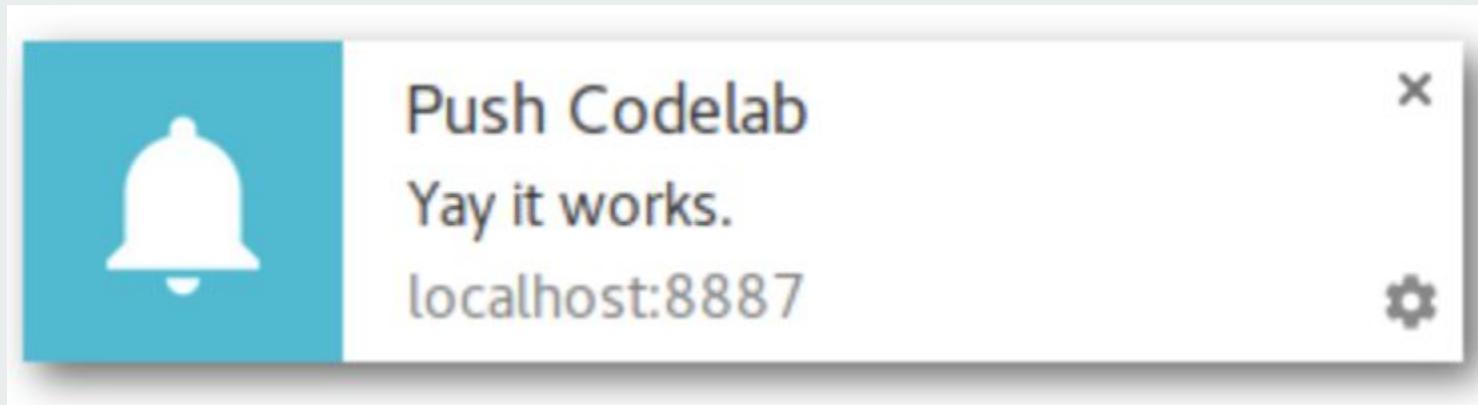


Fireworks!

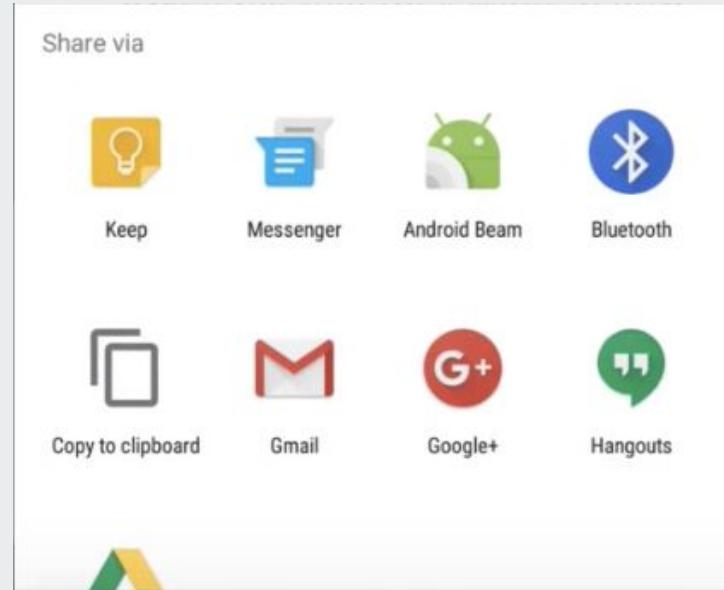


[ADD TO HOME SCREEN](#)

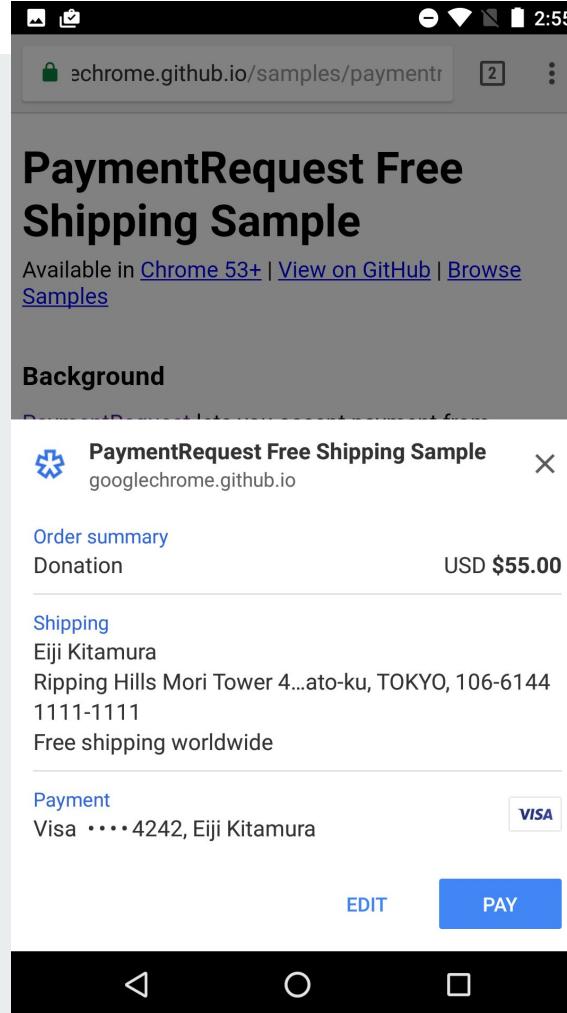
Push Notifications



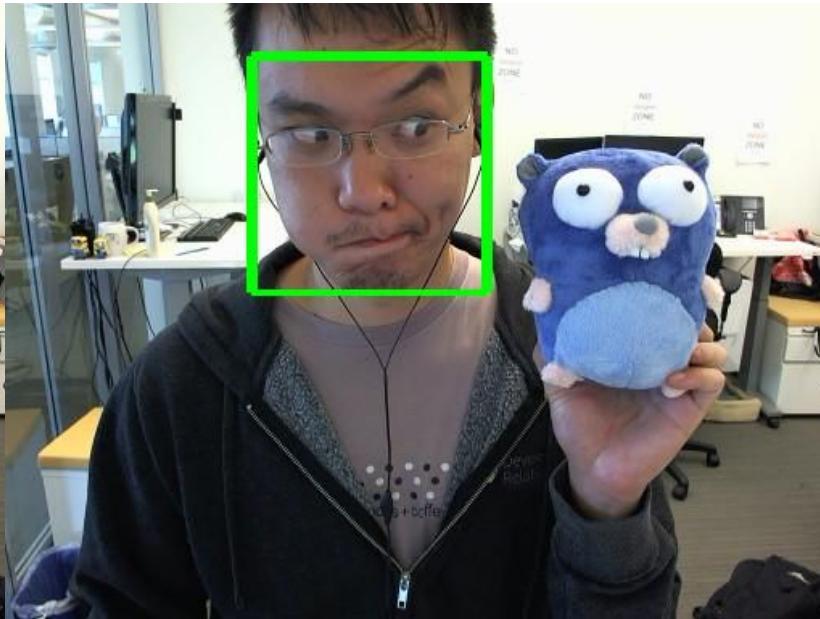
Web Share



Web Payments



Face Detection





Are they ready?



Is PWA Ready?

Grading

100 - 81 Supported

80 - 51 Partial support

50 - 1 Support but buggy

0 Not support

Are you ready?	Chrome	Firefox	UC	Firefox	Opera	Chrome	QQ Browser	Xiaomi
Suggest only support the browser got 80 or more.								

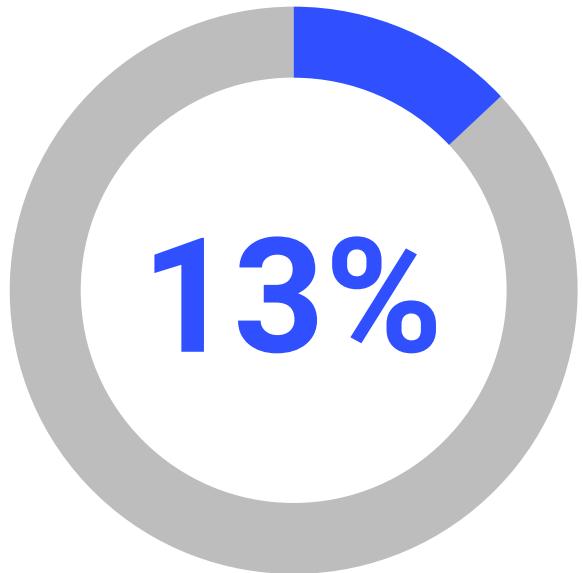
ServiceWorker enthusiasm

The first thing any implementation needs.

Chrome	Firefox	UC	Firefox	Opera	Chrome	QQ Browser	Xiaomi

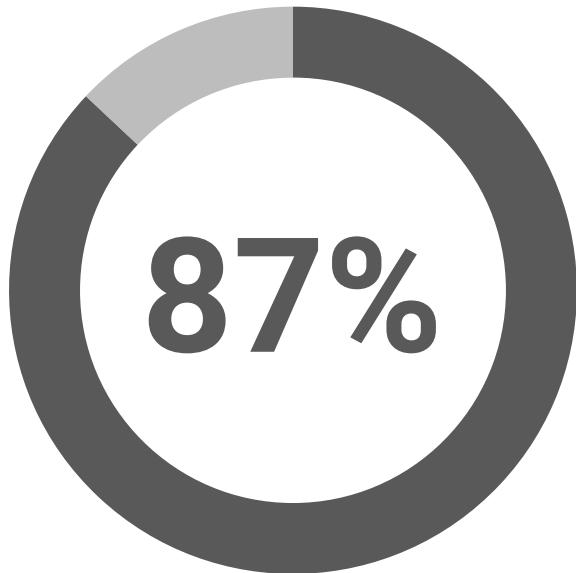


**Why you
should build
one**



Mobile web

.vs.



Apps

Source: comScore Mobile Metrix, U.S., Age 18+, June 2015

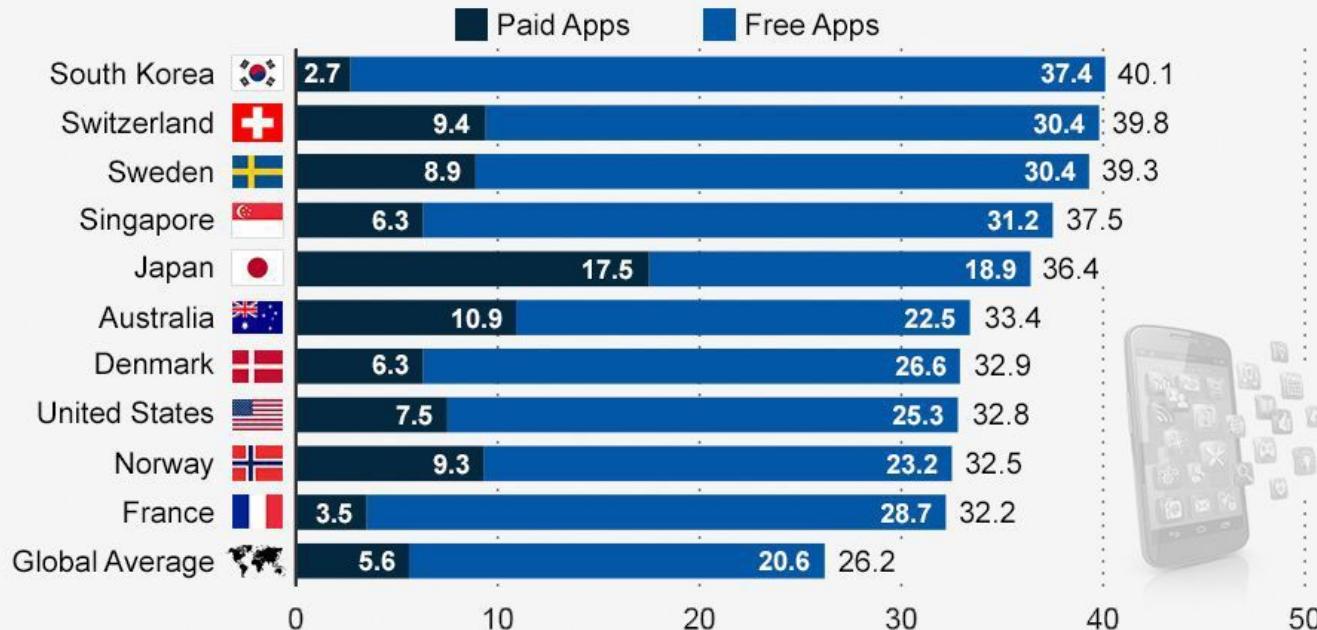
80%

**OF TIME SPENT IS IN
USERS' TOP 3 APPS**

Source: comScore Mobile Metrix, U.S., Age 18+, June 2015

The Average Smartphone User Has Installed 26 Apps

Top 10 countries with the highest average number of installed apps per smartphone user*



*as of March 2013; n=1,000 for all countries



The size of the Web platform

1B monthly mobile
Chrome users



Chrome OS and the Windows store

FEBRUARY 6, 2018 9:00 AM

Welcoming Progressive Web Apps to Microsoft Edge and Windows 10

By [Kyle Pflug](#), [Kirupa Chinnathambi](#), [Aaron Gustafson](#) and [Iqbal Shahid](#)

A little over a year ago, we outlined our vision to bring Progressive Web Apps (PWAs) to the more than half a billion devices running Windows 10. We believe PWAs are key to the web's future, and couldn't be more excited about their potential to enable more immersive web app experiences across all device form factors.

Today, we're excited to take a major step from vision to reality, starting with some updates on previewing PWAs in Windows and our roadmap to bring PWAs to the Microsoft Store.

Beginning with [EdgeHTML 17.17063](#), we have enabled Service Workers and push notifications by default in preview builds of Microsoft Edge—you can learn more about those features in Ali's post, "[Service Worker: Going beyond the page](#)." This completes the suite of technologies (including Fetch networking and the Push and Cache APIs) that lays the technical foundation for PWAs on Windows 10.

Over the coming weeks, we're also kicking off some experiments with crawling and indexing quality PWAs from the Web to list them in the Microsoft Store, where users can find them just like any other app on Windows 10.

RELATED POSTS

The Progress of Web Apps

[Read more](#)



Next-generation web apps for education

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Microsoft Edge at Build 2017

[Read more](#)

Service Workers: Going beyond the page

[Read more](#)



Watch Microsoft Edge Web Summit 2017 live on Channel 9

[Read more](#)



Jon Kuperman

@jkup



Imagine a world where Microsoft, Apple and Google all crawl the web and import PWAs directly into their app stores.

11:35 AM - 6 Feb 2018

8 Likes



8



Emerging Markets

CATEGORIES

- [Architecture](#)
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- [Team Profile](#)
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- [Events](#)

Building m.uber: Engineering a High-Performance Web App for the Global Market

By Angus Croll

June 27, 2017



[Facebook 429](#)

[Twitter 115](#)

[HN 25](#)

[Google+ 13](#)

[LinkedIn 757](#)

PWA Stats

A community-driven list of stats and news related to [Progressive Web Apps](#)

brought to you by  [Cloud Four](#)

Uber's PWA was designed to be fast even on 2G. The core app is only **50k** gzipped and takes less than **3** seconds to load on 2G networks.



#App Shell #Home Screen #Notifications #Service Worker
#Travel

Jan 11, 2018

Help us build this resource!



[Contribute a Story](#)



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[Device Lab](#)



PWA Stats

A community-driven list of stats and news related to [Progressive Web Apps](#)
brought to you by  [Cloud Four](#)

Flipkart's PWA is driving **50%** of its new customer acquisition.

Nearly **60%** of visitors to the PWA had previously uninstalled
the native app primarily to save space.



#App Shell #E-commerce #Home Screen #Notifications #Offline Aug 18, 2017

us build this resource!



[Contribute a Story](#)





Product

**Patrick
Traughber**

@ptraugher

Product Manager, Twitter

Only on Twitter

@twittereng

#twitterlite

Introducing Twitter Lite

By [Patrick Traughber](#)

Thursday, 6 April 2017

Every day, millions of people around the world use Twitter to see what's happening right now. However, there are several barriers to using Twitter, including slow mobile networks, expensive data plans, or lack of storage on mobile devices. While smartphone adoption grew to 3.8 billion connections by the end of 2016, 45% of mobile connections are still on slower 2G networks, [according to GSMA](#).

Today, we are rolling out **Twitter Lite**, a new mobile web experience which minimizes data usage, loads quickly on slower connections, is resilient on unreliable mobile networks, and takes up less than 1MB on your device. We also optimized it for speed, with up to 30% faster launch times as well as quicker navigation throughout Twitter. Twitter Lite provides the key features of Twitter—your timeline, Tweets, Direct Messages, trends, profiles, media uploads, notifications, and more. With Twitter Lite, we are making Twitter more accessible to millions of people—all you need is a smartphone or tablet with a browser.



How do we build a PWA?

Add to homescreen

Example manifest

```
1  {
2    "name": "HackerWeb",
3    "short_name": "HackerWeb",
4    "start_url": ".",
5    "display": "standalone",
6    "background_color": "#fff",
7    "description": "A simply readable Hacker News app.",
8    "icons": [
9      {
10        "src": "images/touch/homescreen48.png",
11        "sizes": "48x48",
12        "type": "image/png"
13      },
14      {
15        "src": "images/touch/homescreen72.png",
16        "sizes": "72x72",
17        "type": "image/png"
18      },
19      {
20        "src": "images/touch/homescreen96.png",
21        "sizes": "96x96",
22        "type": "image/png"
23      },
24      {
25        "src": "images/touch/homescreen144.png",
26        "sizes": "144x144",
27        "type": "image/png"
28      },
29      {
30        "src": "images/touch/homescreen168.png",
31        "sizes": "168x168",
32        "type": "image/png"
33      },
34      {
35        "src": "images/touch/homescreen192.png",
36        "sizes": "192x192",
37        "type": "image/png"
38      }],
39    "related_applications": []
40  }
```

display

Defines the developer's preferred display mode for the web application.

```
1 | "display": "standalone"
```

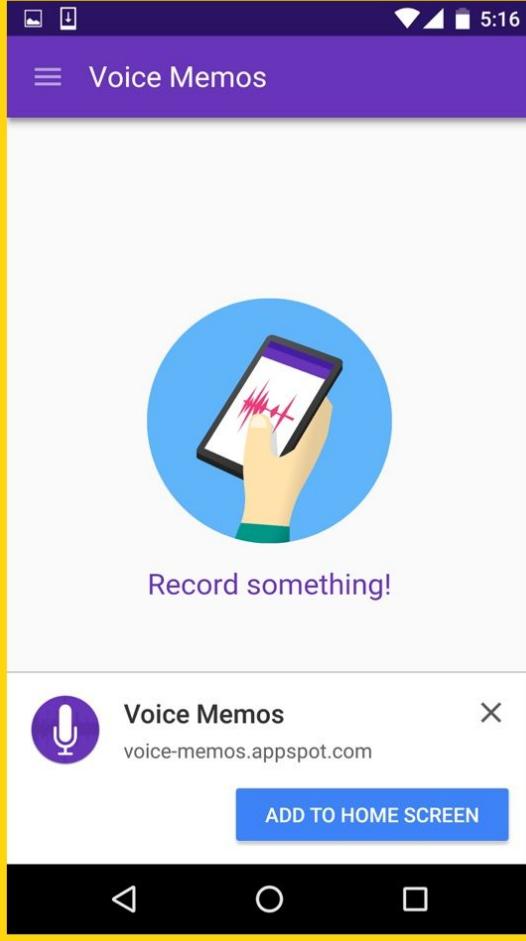
Valid values are:

Display Mode	Description	Fallback Display Mode
fullscreen	All of the available display area is used and no user agent chrome is shown.	standalone
standalone	The application will look and feel like a standalone application. This can include the application having a different window, its own icon in the application launcher, etc. In this mode, the user agent will exclude UI elements for controlling navigation, but can include other UI elements such as a status bar.	minimal-ui
minimal-ui	The application will look and feel like a standalone application, but will have a minimal set of UI elements for controlling navigation. The elements will vary by browser.	browser
browser	The application opens in a conventional browser tab or new window, depending on the browser and platform. This is the default.	(None)

Deploying a manifest

Web app manifests are deployed in your HTML pages using a link tag in the head of your document:

```
<link rel="manifest" href="/manifest.webmanifest">
```



Offline

Workbox



Workbox is a collection of libraries and build tools that make it easy to store your website's files locally, on your users' devices. Consider Workbox if you want to:



- Make your site work offline.
- Improve load performance on repeat-visits. Even if you don't want to go fully-offline, you can use Workbox to store and serve common files locally, rather than from the network.

[LEARN MORE](#)

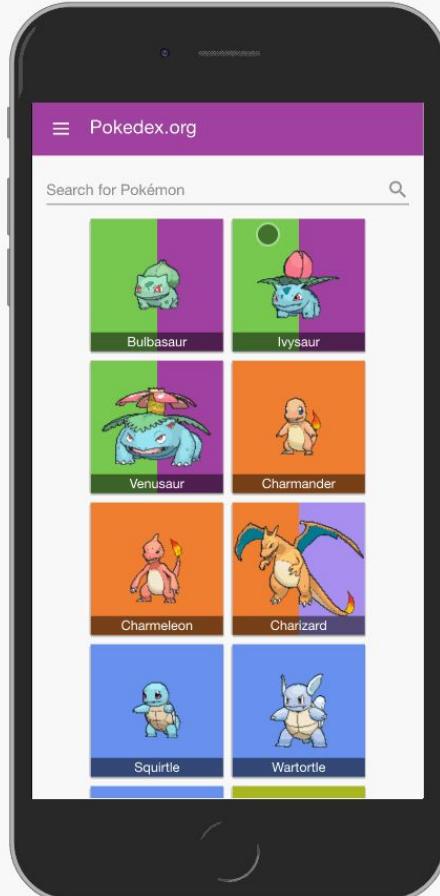
Get Started

Choose your build tool to get started:



This Page's JavaScript

```
if ('serviceWorker' in navigator) {  
  navigator.serviceWorker.register('service-worker.js');  
}
```



Push Notifications



Request Permission

main.js

```
Notification.requestPermission(function(status) {  
  console.log('Notification permission status:', status);  
});
```

Send a Notification

```
function displayNotification() {
  if (Notification.permission == 'granted') {
    navigator.serviceWorker.getRegistration().then(function(reg) {
      reg.showNotification('Hello world!');
    });
  }
}
```

PWA Checklist

- All requests over HTTPS
- Mobile friendly layout
- App loads **fast** even on 3G connections
- App works offline
- Manifest file for add to homescreen

Performance



Home - SHOP

Secure | https://shop.polymer-project.org

SHOP

Men's Outerwear

SHOP NOW

Progressive Web App

These audits validate the aspects of a Progressive Web App, as specified by the baseline [PWA Checklist](#).

0 failed audits

▶ 11 Passed Audits

▶ Manual checks to verify

Performance

These encapsulate your app's performance.

Metrics

These metrics encapsulate your app's performance across a number of dimensions.

100

88

100

85

100

SHOP Lighthouse report: https://... kayce@google.c...

blob:chrome-extension://blipmdconkpinefehnmjammfjpmpbjk/d2...

Results for: <https://shop.polymer-project.org/>

Generated on: 3/23/2017, 2:28:55 PM PDT

Export...

Performance

These encapsulate your app's performance.

- i Unused CSS rules ?
 - ▶ View details
- i Unoptimized images: **Potential savings of 5 KB (~30ms)** ?
 - ▶ View details
- i Oversized Images ?
- warning Critical Request Chains: **1** ?
 - Longest chain: **3,420.8ms over 1 requests, totalling 1.46KB**
 - ▶ View critical network waterfall
 - ▶ View details
- warning Render-blocking Stylesheets: **1 resource delayed first paint by 3ms** ?
 - ▶ View details
- i Render-blocking scripts ?



Applause from Jason Miller, Sean T. Larkin, and 2,254 others

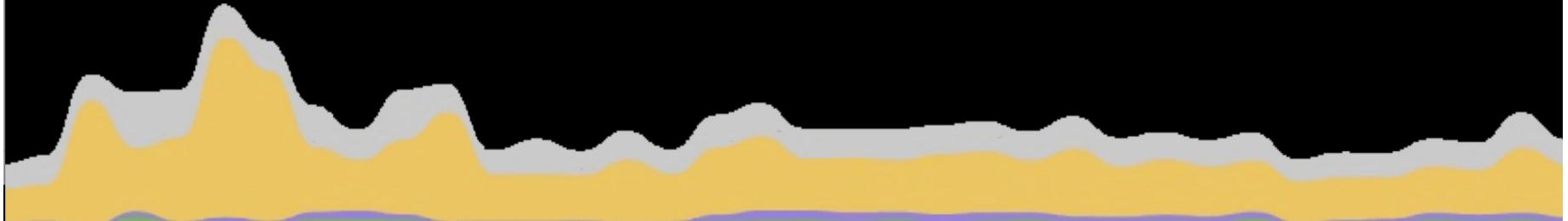


Addy Osmani

Eng. Manager at Google working with Chrome & DevRel • Creator of TodoMVC, Yeoman, Material Design Lite, Critical • Passionate about web performance.

Feb 9 · 12 min read

JavaScript *Start-up* ~~PERFORMANCE~~



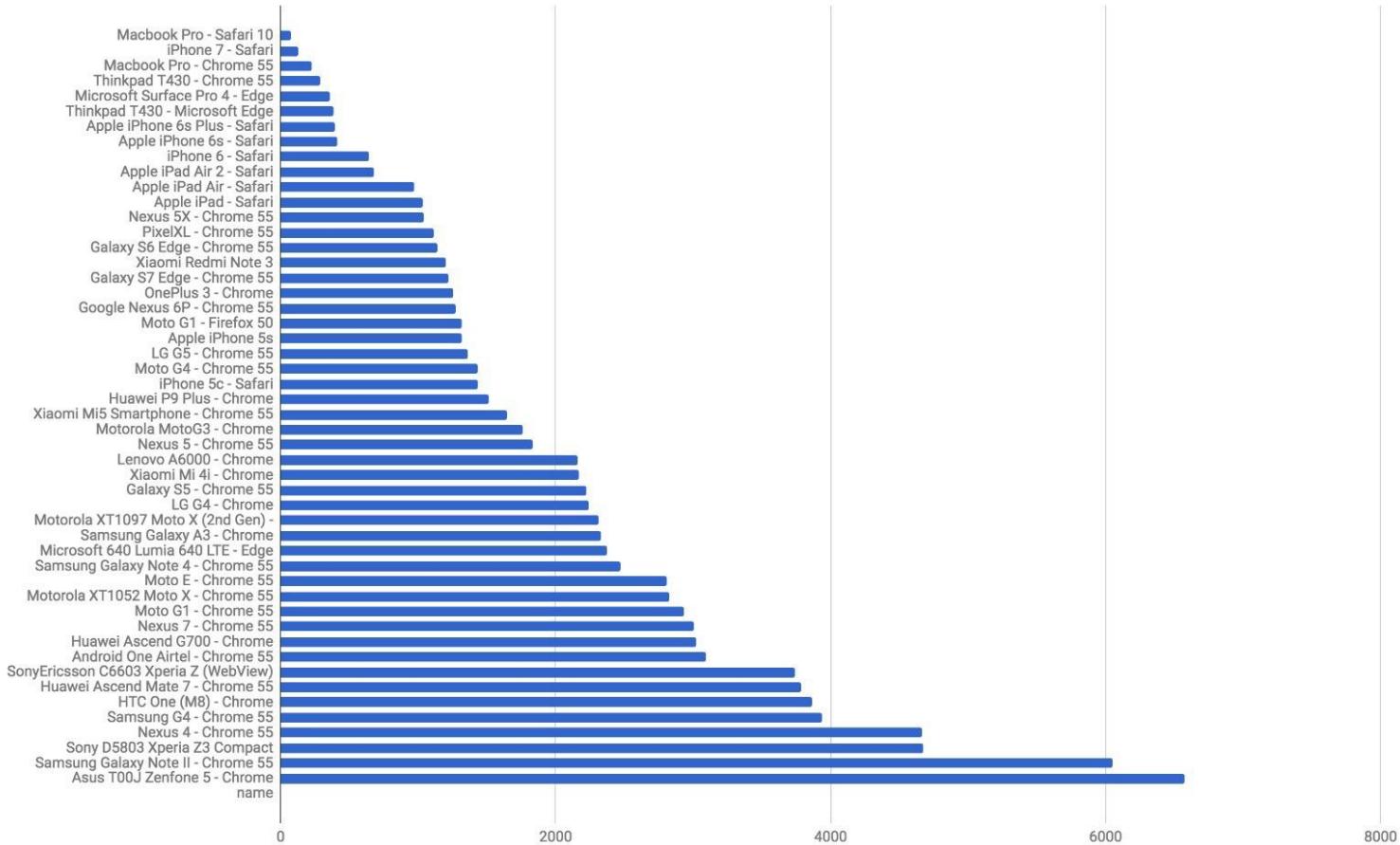
3.3K

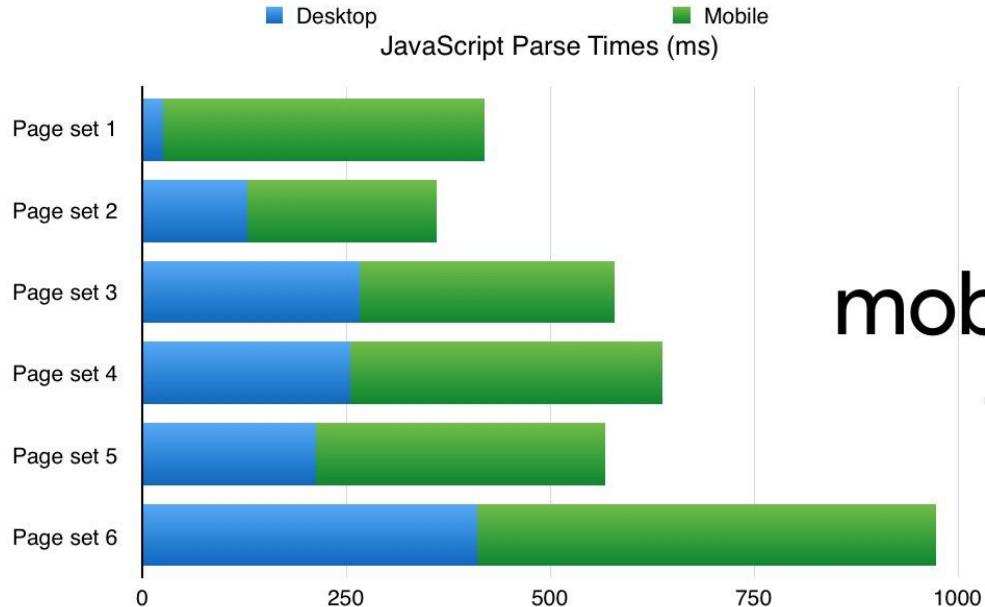


28



Next story
Why Progressive Web Apps Ar...





Parse times on mobile were 36% higher than on desktop

A note about compression



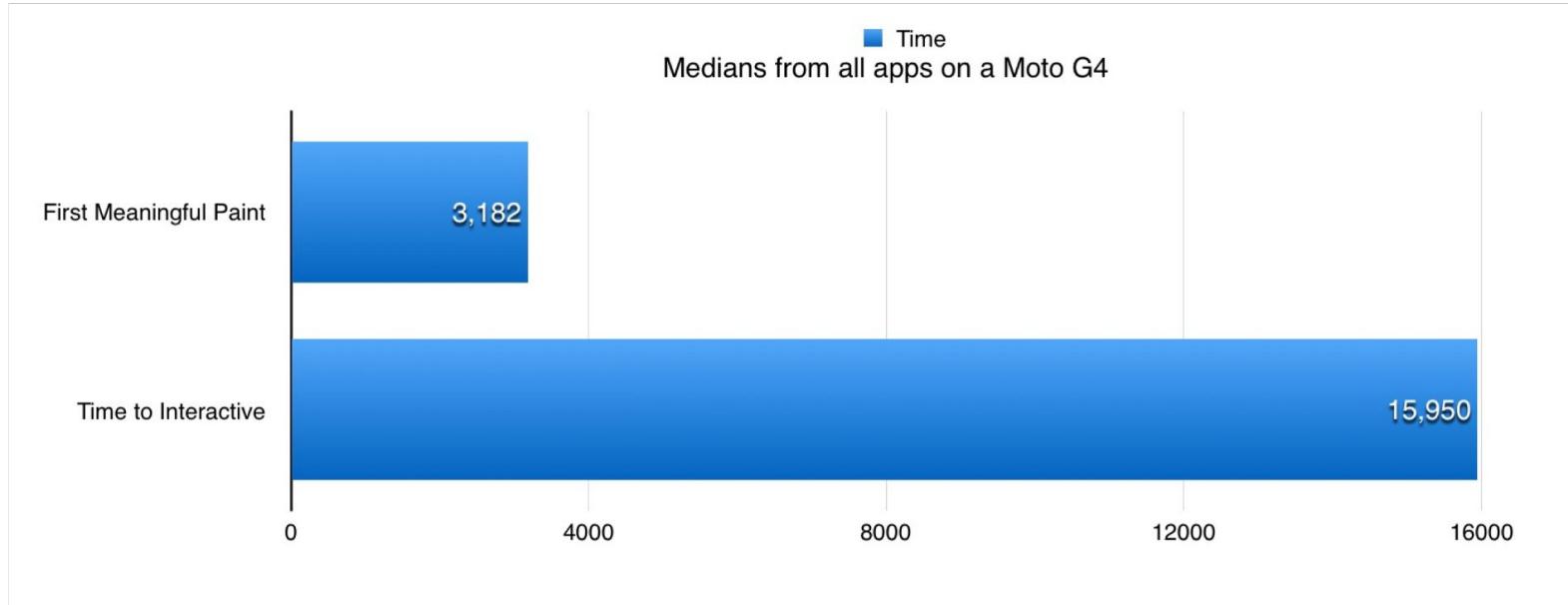
Remember that compressing your files (gzip or brotli) will help them get to your users faster but will not help your time to interactive.



But it helps a little bit.



Maybe.



JS apps became interactive in 16s on average mobile hardware over 3G

On desktop, most took 8 seconds to be fully usable on a cable connection.

Gaining trust over time

Earning your way to the home screen

[Search](#)

Firefox Web Browser

Fast and private browsing

[GET](#)

3.7 ★★★★☆

1.78K Ratings

#17

Utilities

17+

Age

Join hundreds
of millions of
Firefox users



Private Br
with Tra
Protect

Today

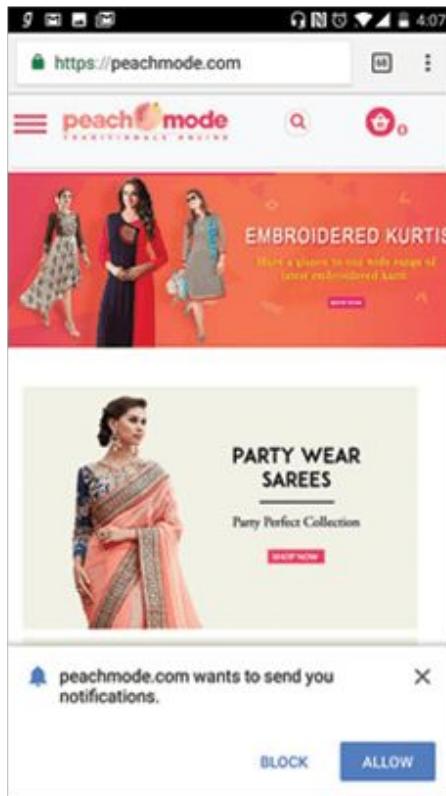
Games

Apps

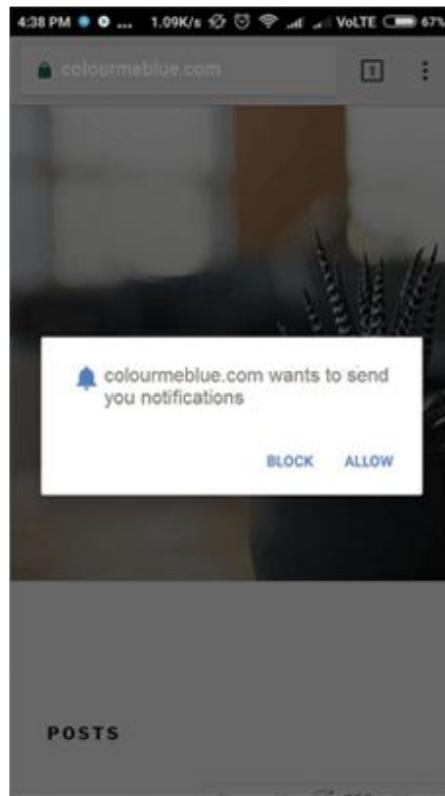
Updates

Search

Permissions



Before



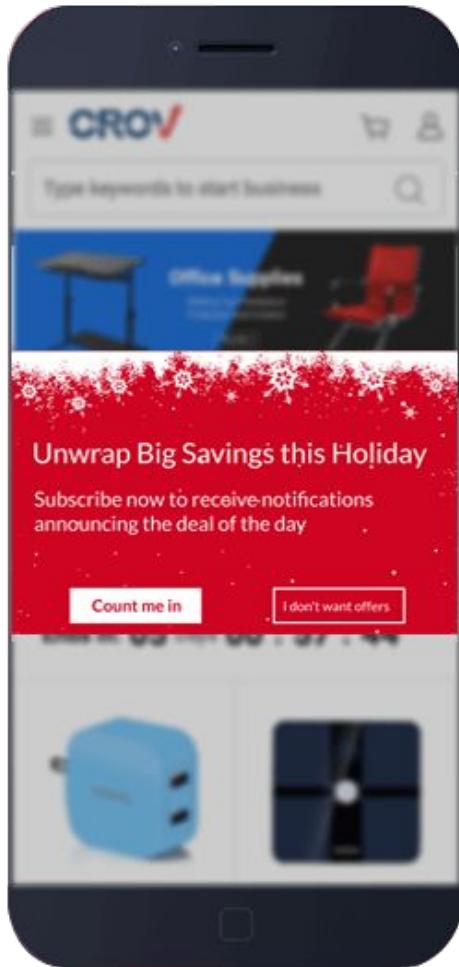
Now



What can you do?

Permissions best practices

- Present Value Proposition
- Have a settings page
- Don't show any prompts on initial page load (wait for interactions)
- Allow users to turn notifications off



Case Study: housing.com

housing.com asks you to subscribe to notifications when you scroll down till page 2/3 of search results. means you are genuinely interested.

- Ritesh Kumar

<https://housing.com/in/buy/search/?>

FILTER RELEVANCE SAVE SEARCH

1 BHK Apartment
12 days old
685 sqft · ₹ 3.6 K per sqft.
Sonar Pada,Dombivli East

₹ 25.0 Lacs kamlesh Prime Agent

1 RK Apartment
12 days old
435 sqft · ₹ 3.5 K per sqft.
Sonar Pada,Dombivli East

₹ 15.22 Lacs kamlesh Prime Agent

1 BHK Apartment
12 days old
590 sqft · ₹ 3.5 K per sqft.
Sonar Pada,Dombivli East

₹ 20.65 Lacs kamlesh Prime Agent

Can't find what you're looking for ? X

Turn on notifications to get property updates and hot deals and offers!

Turn on Notifications ✉

Home Favourites Profile

2 1 7

Case Study: mobile.twitter.com

If you go to notifications page and have notifications we'll show a "never miss a notification" full screen prompt.

- Charlie Croom

https://mobile.twitter.com/Firebase/s

1

:

← Tweet





Resources

1. Google official page <https://developers.google.com/web/progressive-web-apps/>
2. Success Stories <https://www.pwastats.com/>
3. Is service worker ready? <https://jakearchibald.github.io/isserviceworkerready/>