

Resources & Further Learning

Google Progressive Web Apps

Google's portal on everything PWA.

A wealth of resources on developing, testing and optimising Progressive Web Apps.

<https://developers.google.com/web/progressive-web-apps/>



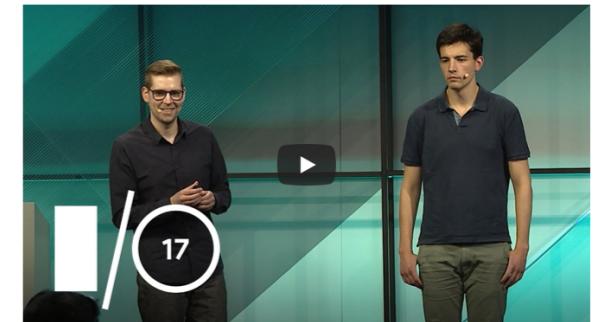
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Progressive Web Apps

A new way to deliver amazing user experiences on the web.

- **Reliable** - Load instantly and never show the downasaur, even in uncertain network conditions.
- **Fast** - Respond quickly to user interactions with silky smooth animations and no janky scrolling.
- **Engaging** - Feel like a natural app on the device, with an immersive user experience.

This new level of quality allows Progressive Web Apps to earn a place on the user's home screen.

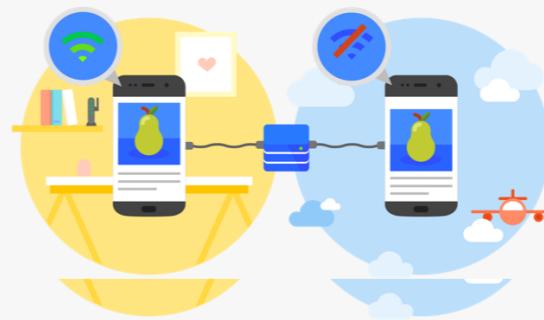


Reliable

When launched from the user's home screen, service workers enable a Progressive Web App to load instantly, regardless of the network state.

A service worker, written in JavaScript, is like a client-side proxy and puts you in control of the cache and how to respond to resource requests. By pre-caching key resources you can eliminate the dependence on the network, ensuring an instant and reliable experience for your users.

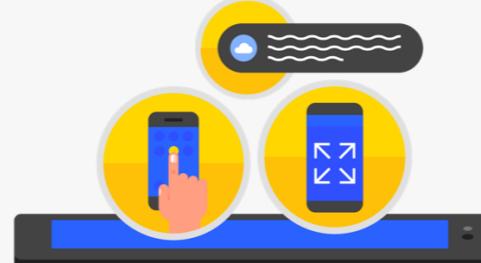
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Fast

53% of users will abandon a site if it takes longer than 3 seconds to load! And once loaded, users expect them to be fast—no janky scrolling or slow-to-respond interfaces.

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Engaging

Progressive Web Apps are installable and live on the user's **home screen**, without the need for an app store. They offer an **immersive full screen** experience with help from a web app manifest file and can even re-engage users with **web push notifications**.

The Web App Manifest allows you to control how your app appears and how it's launched. You can specify home screen icons, the page to load when the app is launched, screen orientation, and even whether or not to show the browser chrome.

[WEB APP MANIFEST](#) [WEB PUSH NOTIFICATIONS](#)



Why build a Progressive Web App?

Building a high-quality Progressive Web App has incredible benefits, making it easy to delight your users, grow engagement and increase conversions.

✓ Worthy of being on the home screen

When the Progressive Web App criteria are met, Chrome prompts users to add the Progressive Web App to their home screen.

✓ Work reliably, no matter the network conditions

Service workers enabled Konga to send 63% less data for initial page loads, and 84% less data to complete the first transaction!

✓ Increased engagement

Web push notifications helped eXtra Electronics increase engagement by 4X. And those users spend twice as much time on the site.

✓ Improved conversions

The ability to deliver an amazing user experience helped AliExpress improve conversions for new users across all browsers by 104% and on iOS by 82%.

Progressive web apps

Progressive web applications are like good old web sites but **better**. In a modern browser they exhibit **super-powers** and become...

Discoverable	Installable	Linkable	
Identifiable as applications, findable by search engines.	Available on the device, on users' home screens — without the hassle of an app store.	Easily shareable via URLs, without requiring complex installation.	
Network independent	Progressive	Re-engageable	
Works offline or on low quality networks.	Works for every user, regardless of browser choice.	Makes user engagement easy by drawing attention, even when users aren't using their devices.	
Responsive	Safe		
Fits any form factor: desktop, mobile, tablet, or whatever comes next.	Delivery mechanism prevents snooping and ensures content hasn't been tampered with.		

In This Article
See also

See also

- ↗ Progressive web apps on Google Developers
- ↗ Progressive Web Apps: Escaping Tabs Without Losing Our Soul by Alex Russell
- ↗ Progressive Web Apps Check List
- ↗ The Lighthouse Tool by Google
- ↗ Tools for building progressive web apps with Angular
- ↗ React PWA Guide Kit
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Progressive Web Apps

Mozilla Developer Network's PWA Guide

An easy to resource from which to find all the official PWA documentation, spec and related APIs.

<https://developer.mozilla.org/en-US/Apps/Progressive>



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is SERVICEWORKER ready?

Status * Spec * Intro * Resources * GitHub

Service worker enthusiasm

The first thing any implementation needs.



Chrome: Shipped.

Firefox: Shipped.

Samsung Internet: Shipped. Based on Chromium 44.2403 with some [additions and changes](#). (See "Service Worker" section.)

Safari: In development.

Edge: In development.

Support does not include iOS versions of third-party browsers on that platform (see [Safari support](#)).

Promises

Not service worker-specific, but required by service worker. [Spec](#).



Debugging

State of debugging tools.



Chrome: You can debug service worker scripts as any other. "Application" panel in devtools has service worker & cache sections.

Firefox: Debuggable from the "Workers" page in `about:debugging`.

Firefox: [Web Console](#) can display console messages from service workers.

Firefox: `about:serviceworkers` has some under-the-hood stuff.

Opera: Debuggable from the resources panel in [Opera developer](#) if you [enable super-experimental devtools](#).

Opera: Console messages from the service worker appear in the pages' console in [Opera stable](#).

Opera: `browser://serviceworker-internals` in [Opera developer](#) has some under-the-hood stuff.

Chrome & Opera: Debuggable from the resources panel in [Chrome Canary](#) and [Opera developer](#) if you [enable super-experimental devtools](#).

Chrome & Opera: Console messages from the service worker appear in the pages' console.

Chrome & Opera & Samsung Internet: `chrome://serviceworker-internals` resp. `browser://serviceworker-internals` (in [Opera developer](#)) has some under-the-hood stuff.

`navigator.serviceWorker`

Namespace for page-side service worker API. [Spec](#). [Test](#).



is SERVICEWORKER ready ?

Jake Archibald

A quick reference as to the current state of Service Worker support.

<https://jakearchibald.github.io/isserviceworkerready/>



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HN PWA

Hacker News reader as Progressive Web Apps

A project for collecting various strategies of building the same Hacker News app as a Progressive Web App.

This resource will particularly help with framework specific implementations, such as React, Angular etc.

<https://hnpwa.com>



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HN PWA

Hacker News readers as Progressive Web Apps

A spiritual successor to TodoMVC

TodoMVC has helped thousands of developers select an MV* framework for their JavaScript applications. However, the web ecosystem has evolved in the past few years allowing us to build powerful applications using modern browser capabilities.

To provide developers with examples, we collected a list of unofficial Hacker News clients built with a number of popular JavaScript frameworks and libraries. Each implementation is a complete **Progressive Web App** that utilizes different progressive technologies to provide a fast, reliable and engaging experience.

Our implementations aim to follow a loose specification. They are primarily a learning tool and should not be used to compare the performance of one PWA to another. They can differ based on server infrastructure, performance patterns used and other factors.

React HN

kristoferbaxter/react-hn

Lighthouse: 91/100

Interactive (Emerging Markets): 2.7s

Interactive (Faster 3G): 2.3s

Framework/UI libraries: React, React Router

Module bundling: Webpack

Service Worker: Application Shell with OfflinePlugin

Performance patterns: HTTP/2 with Server Push, Brotli and Zopfli static assets

Server-side rendering: Yes

API: In-memory cached Hacker News Firebase API

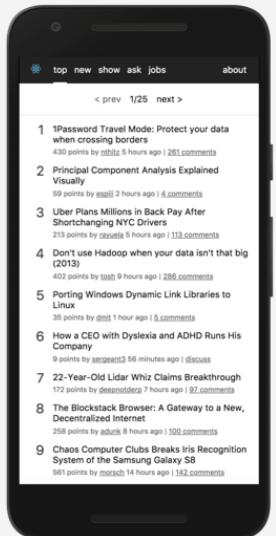
Hosting: Webfaction + Cloudflare

Author:



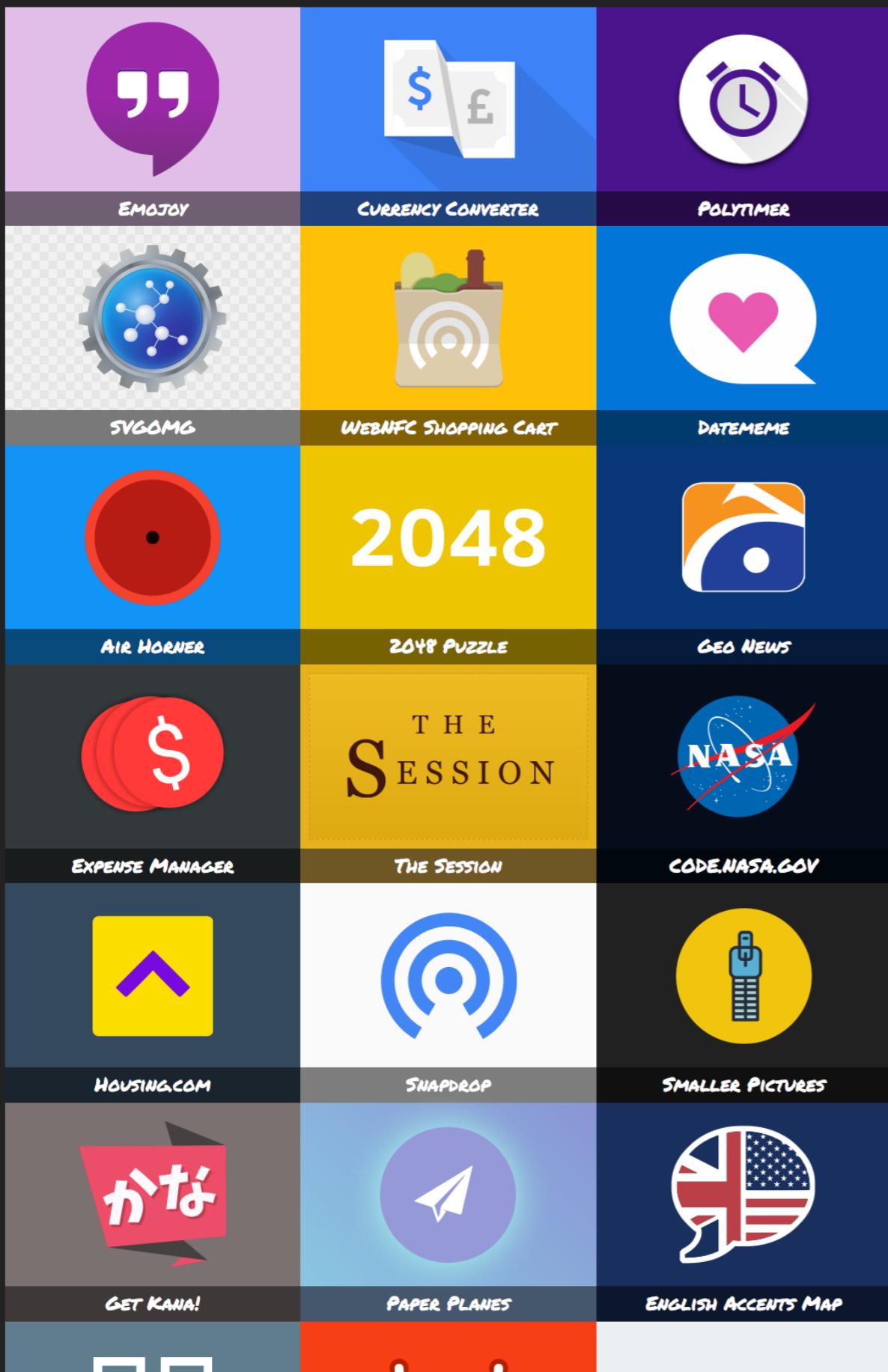
[VIEW APP](#)

[SOURCE CODE](#)



PROGRESSIVE WEB APPS

all business demo event game news reference shopping social tool other



PWA Rocks

Collection of interesting PWAs

PWA Rocks is a site for finding some of the latest Progressive Web Apps.

A good source of ideas and inspiration.

<https://pwa.rocks>



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