Speed Program 2017

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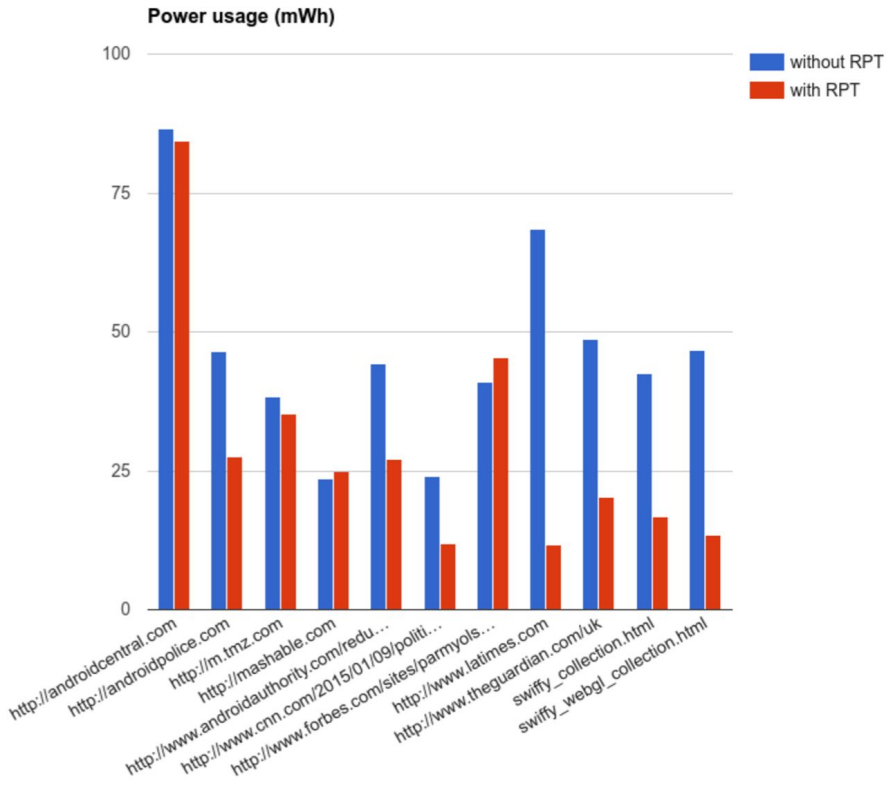
bit.ly/speed-program-2017

2016 Accomplishments

Background & offscreen throttling



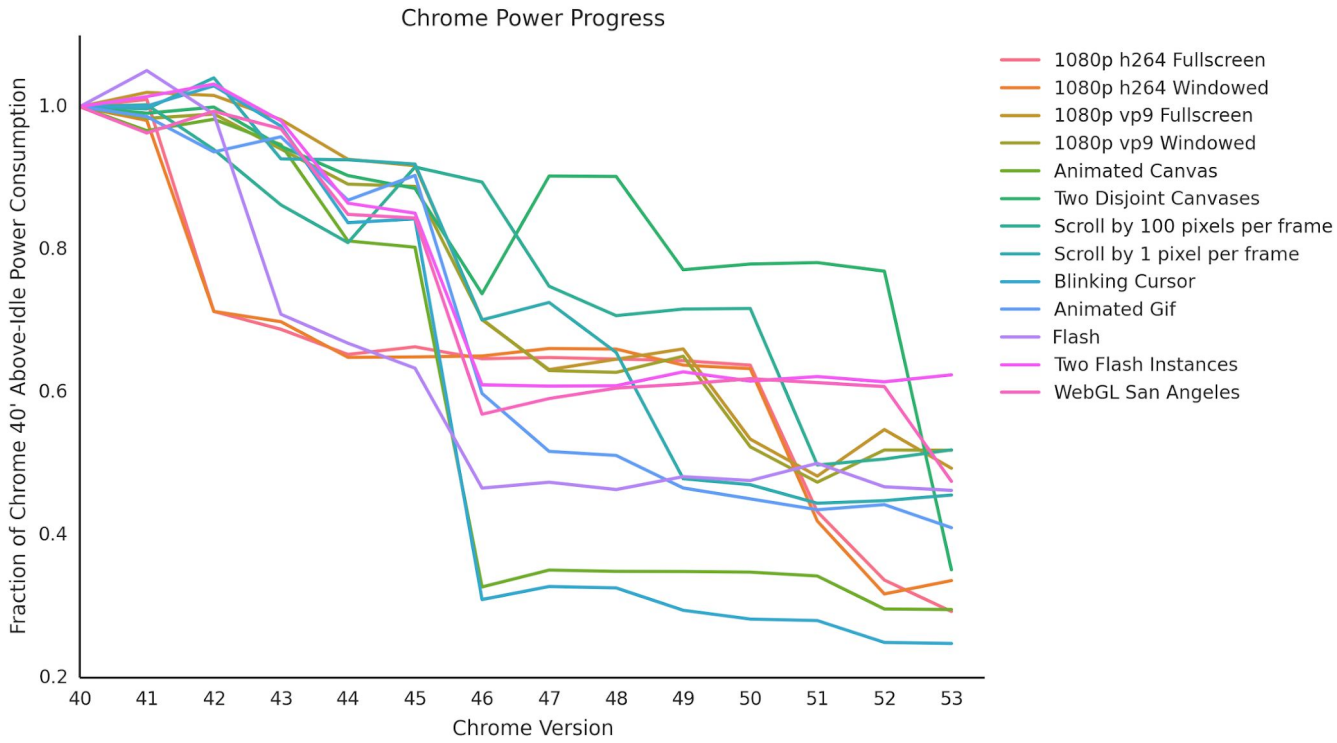
Document.write intervention

Among the 6% of affected 2G page loads:

- 10% increase in successful page loads
- 35% reduction in median ParseStartToFirstContentfulPaint
- 52% reduction in median parse duration
- 7% decrease in page reloads

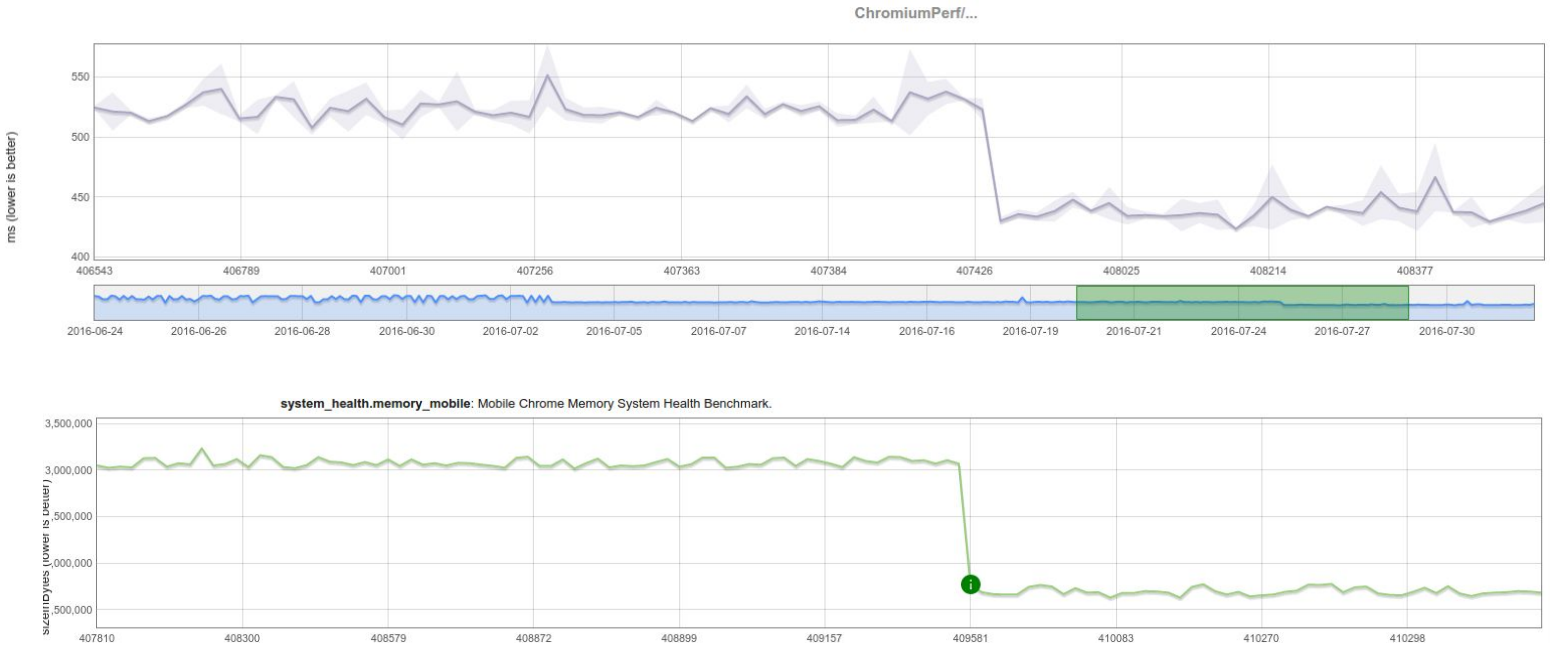
Across the entire web, **15% reduction in page loads attempting to insert parser-blocking script via document.write** over a 3 month period

Desktop power reduction

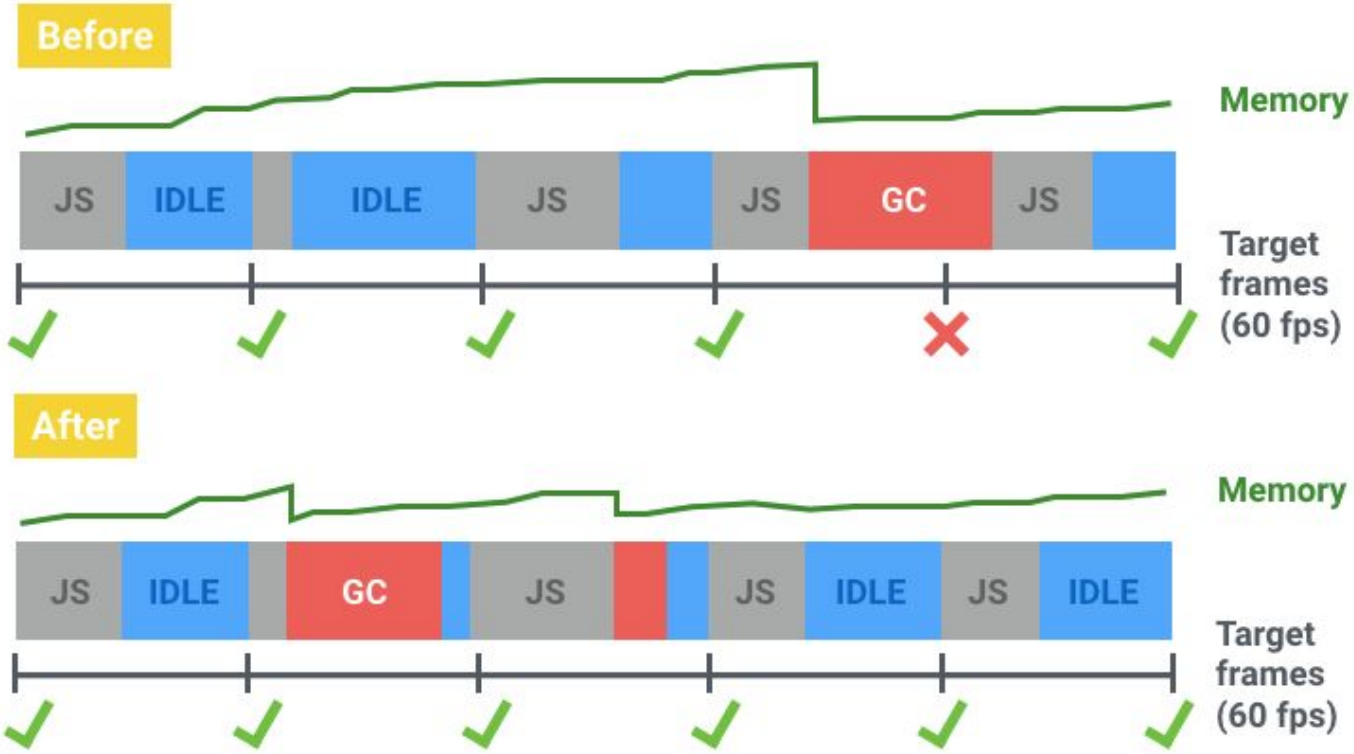


Font glyph cache optimization

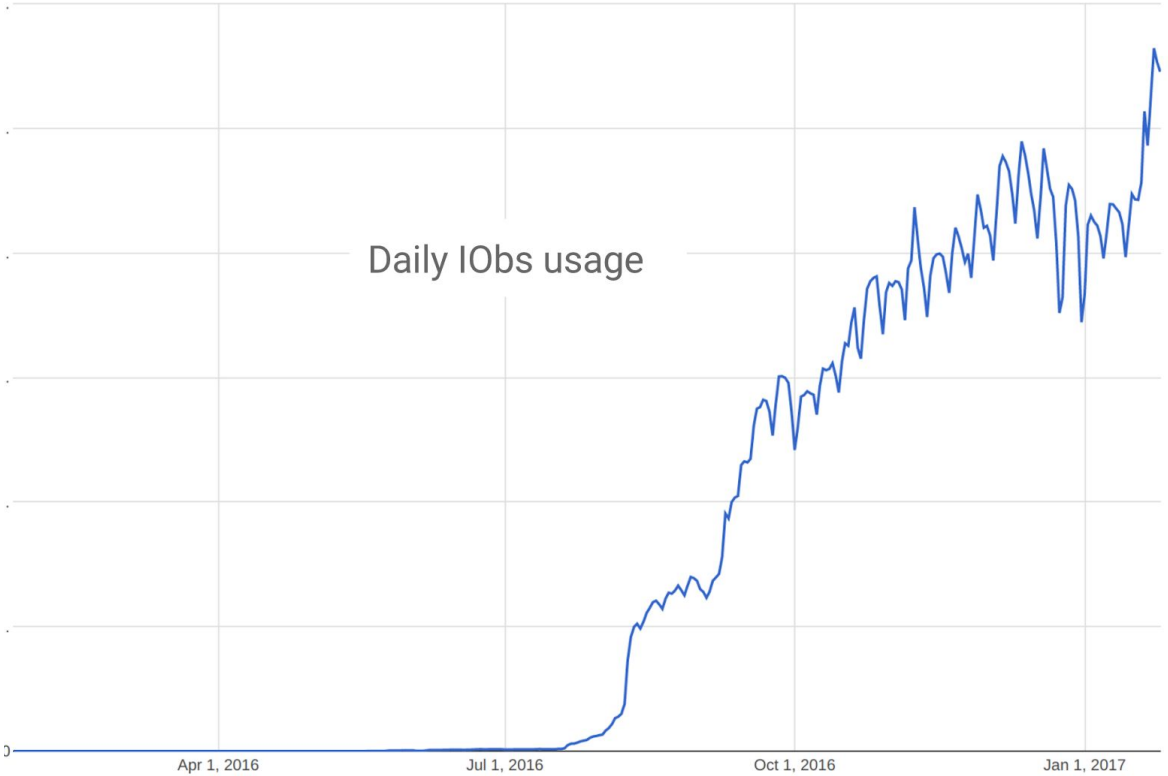
bit.ly/glyph-cache-optimization



Garbage collection during idle time



Intersection Observer



Lighthouse

BETA

Version: 1.4.1

Results for: https://mobile.nytimes.com/?referer=
Generated on: 1/26/2017, 10:15:42 AM PST

49
100

Progressive Web App

These audits validate the aspects of a Progressive Web App.

App can load on offline/flaky connections

Ensuring your web app can respond when the network connection is unavailable or flaky is critical to providing your users a good experience. This is achieved through use of a Service Worker.

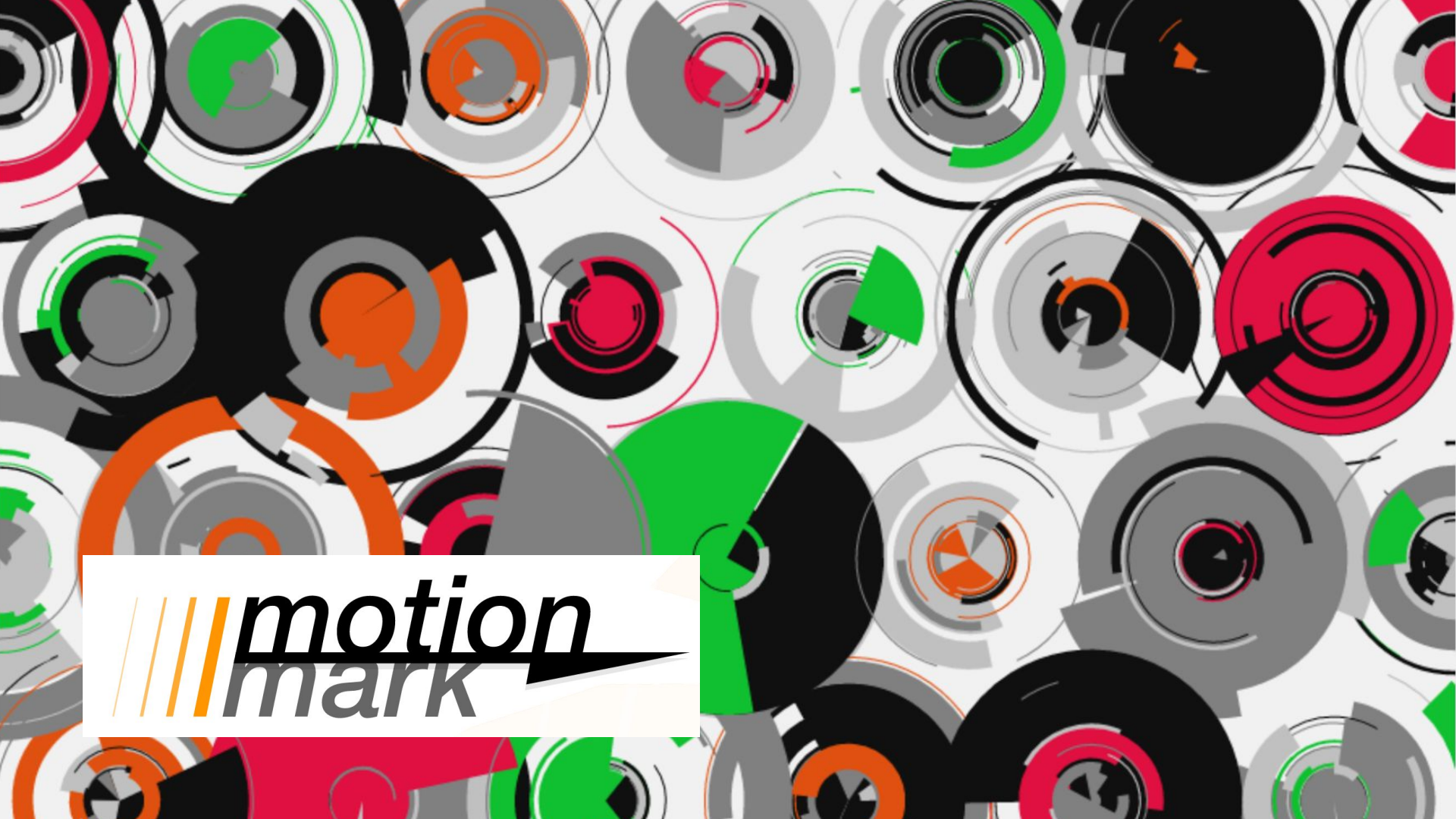
- Has a registered Service Worker

  The service worker is the technology that enables your app to use many Progressive Web App features, such as offline, add to homescreen, and push notifications. Learn more.

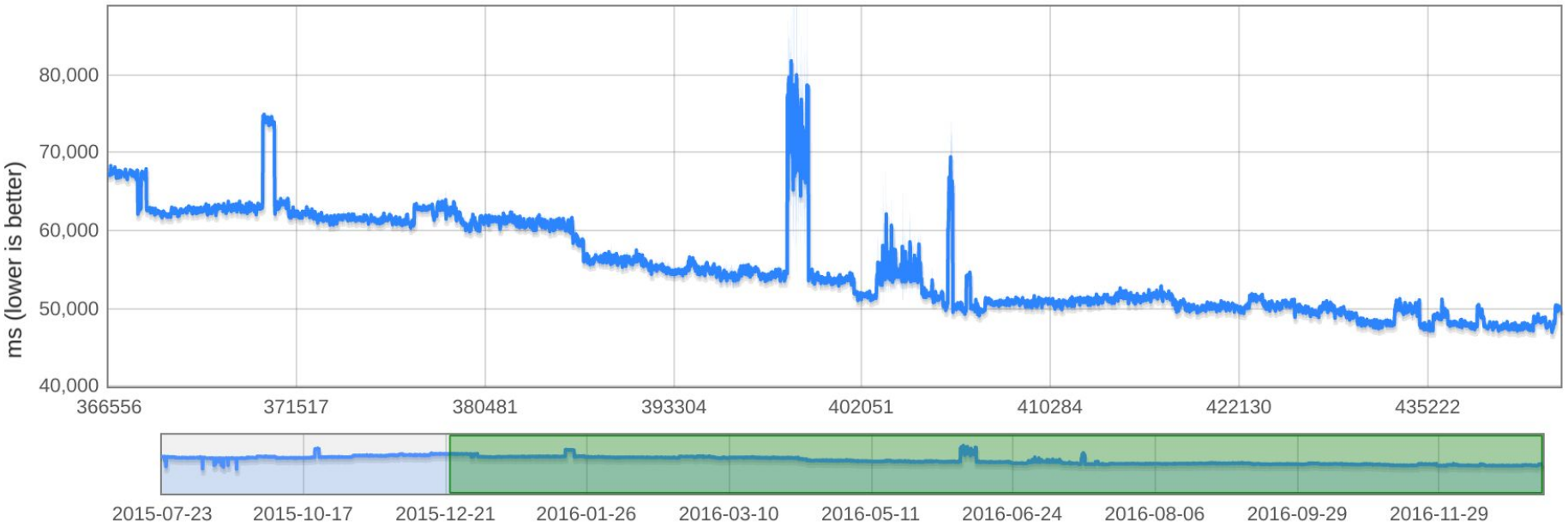
  No active service worker found for this origin.

- URL responds with a 200 when offline

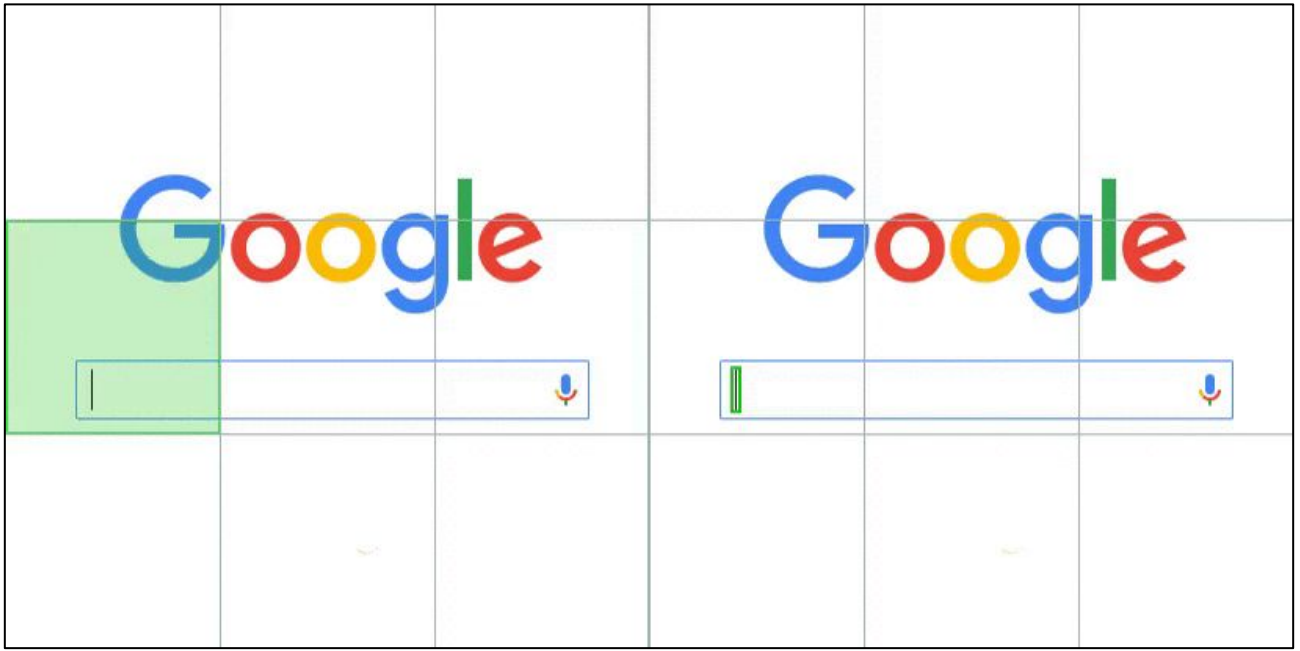
  If you're building a Progressive Web App, consider using a service worker so that your app can work offline. Learn


motion
mark

Speedometer & script startup improvements



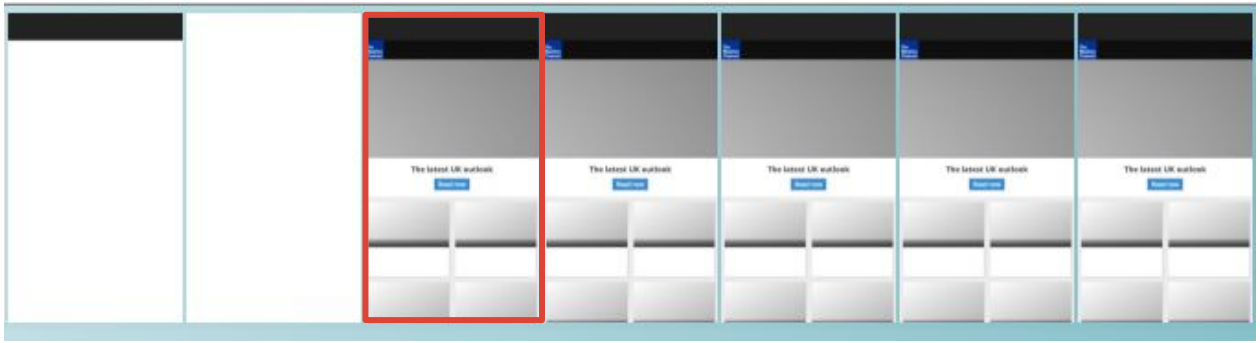
Partial tile redraw (& more!)

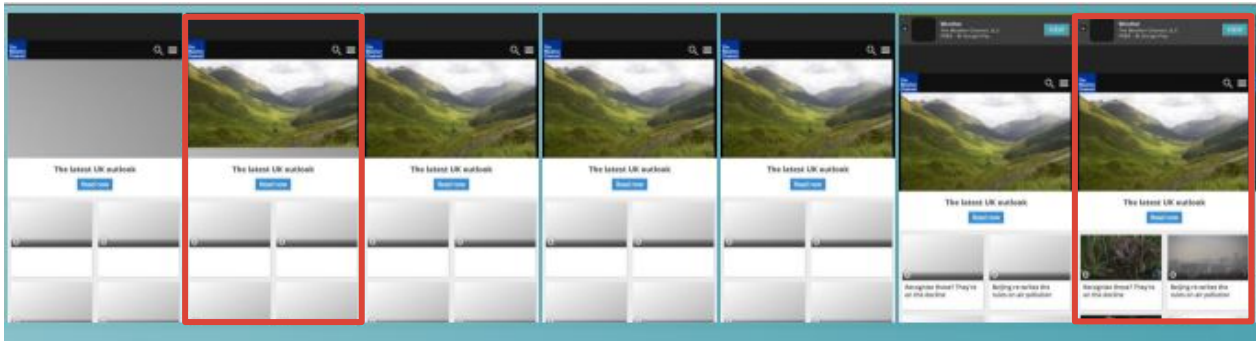


Performance Guided Optimization (PGO)

- **14.8%** improvement in NTP load time
- **5.9%** improvement in time to first paint
- **16.8%** improvement in startup time

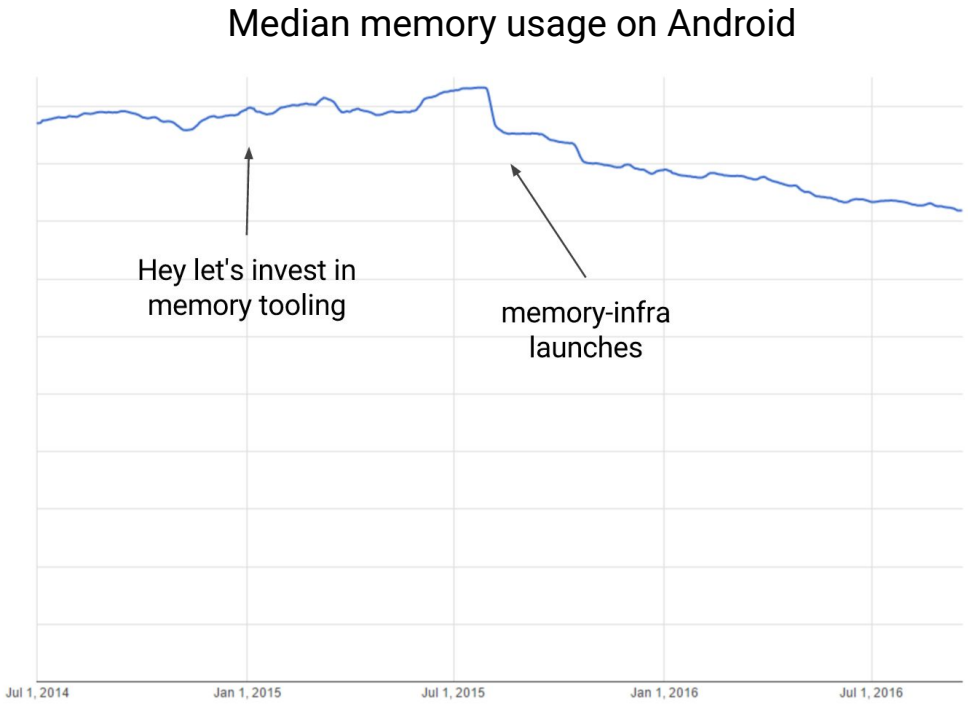
Progressive Web Metrics





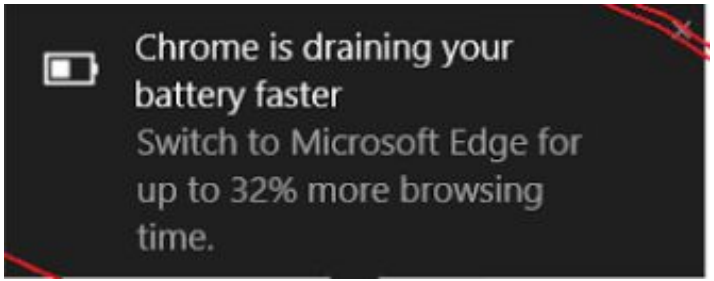
Simplified pages with Data Saver

Sustained Android memory reduction



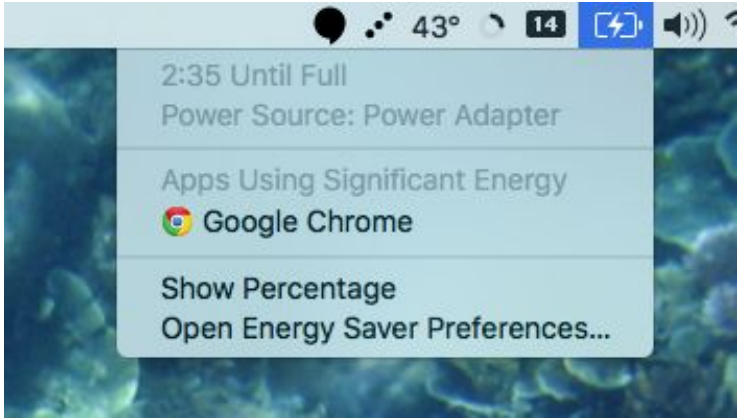
2017 Challenges & Opportunities

Windows


Chrome is draining your battery faster
Switch to Microsoft Edge for up to 32% more browsing time.


Aw, Snap!
Something went wrong while displaying this webpage.

Mac


43°
14
2:35 Until Full
Power Source: Power Adapter
Apps Using Significant Energy
Google Chrome
Show Percentage
Open Energy Saver Preferences...

Search the store

- Extensions
- Themes
- Apps
- Games

CATEGORIES

All

FEATURES

- Runs Offline
- By Google
- Free
- Available for Android
- Works with Google Drive

RATINGS

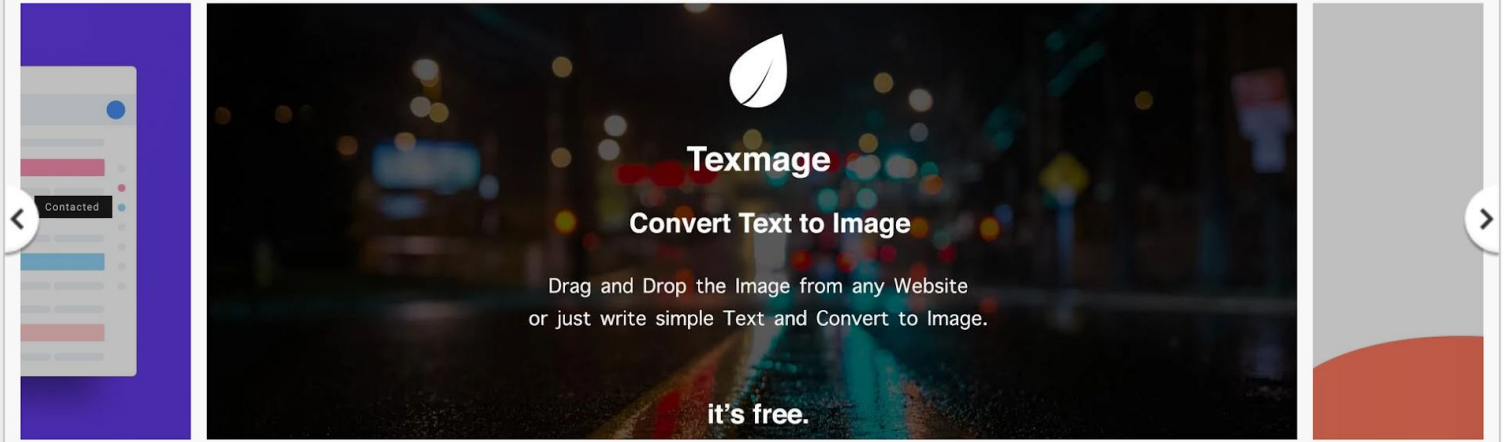
★★★★★

★★★★☆ & up

★★★☆☆ & up

★★☆☆☆ & up

Featured



Get Started

Make the most of Chrome with these must-have extensions

View all

Office Online
★★★★☆ (1052) FREE

Google Hangouts
★★★½☆ (29626) FREE

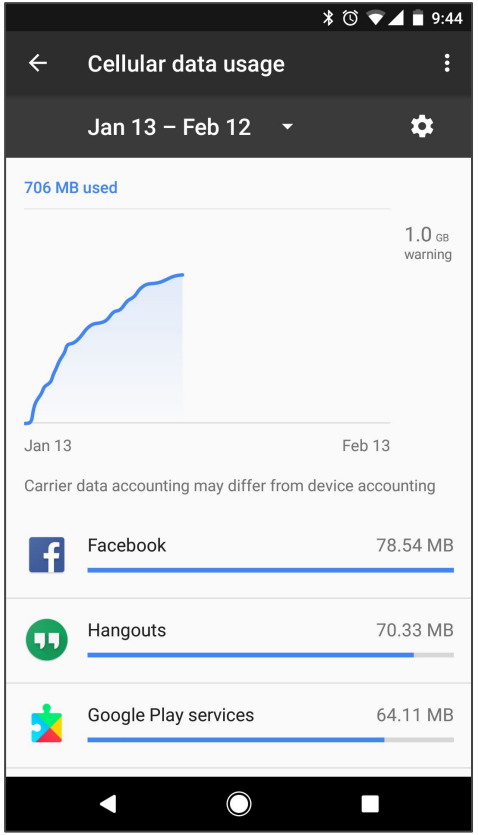
Momentum
★★★★½ (8943) FREE

Grammarly for Chrome
★★★★½ (15441) FREE

Android

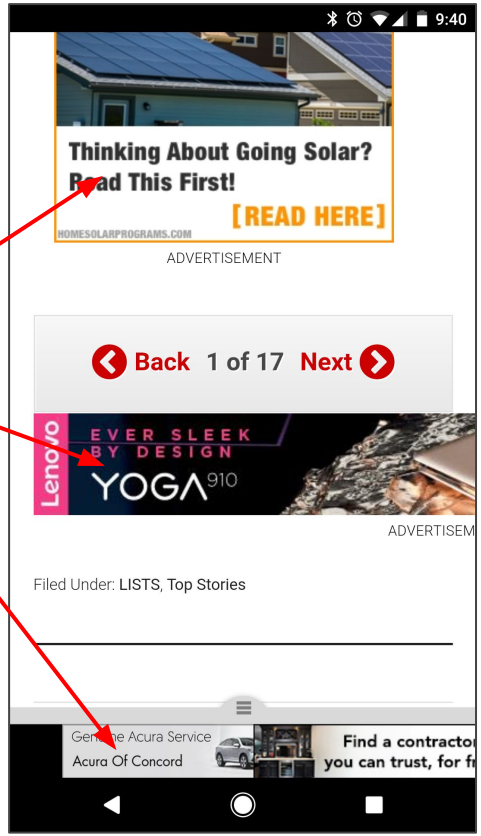
...but especially memory and responsiveness.

Emerging Markets



Third-party content

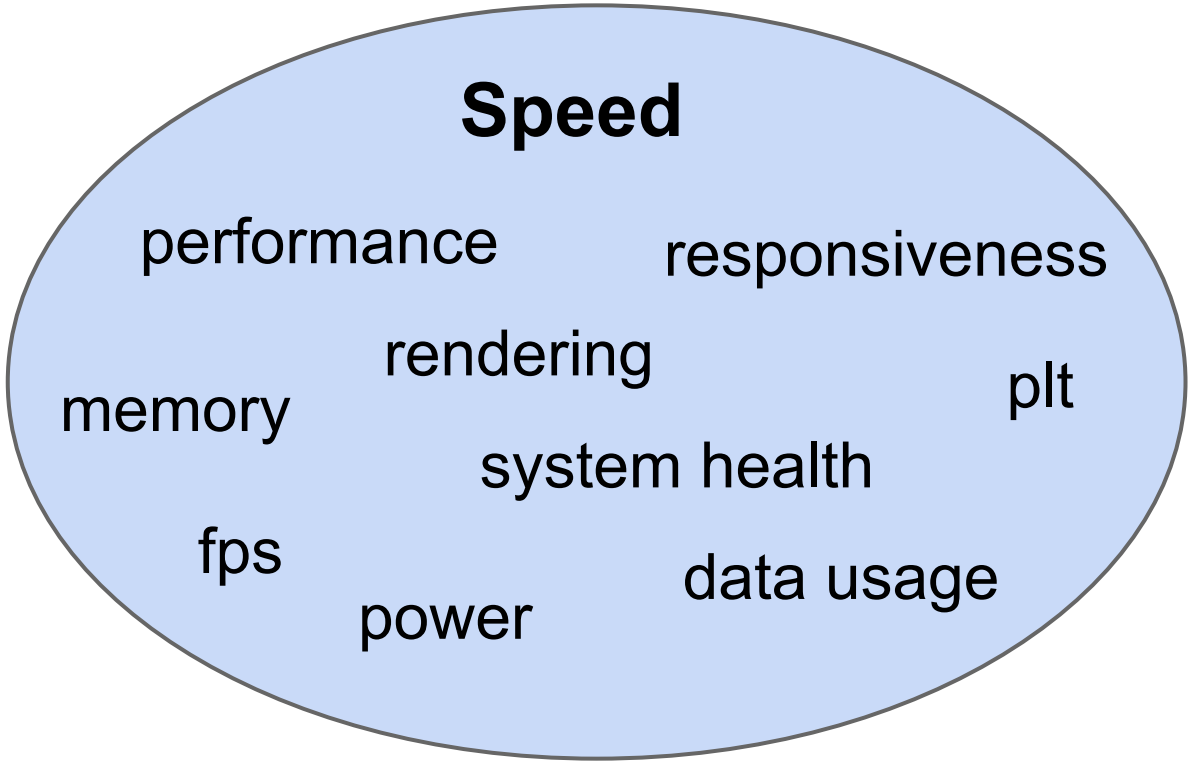
ugh.



But how?!


THIS IS FINE.

The Chrome Speed Program


Speed
performance
responsiveness
rendering
memory
plt
system health
fps
data usage
power

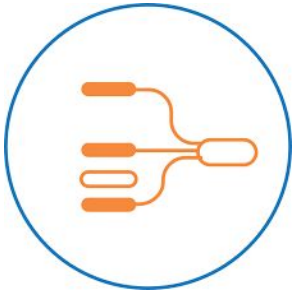
Chrome-level 2017 goals

1) Continue to understand our performance.
2) Stop performance regressions from hitting our stable users.
3) Build an architecture for Chrome Speed.

In other words...

Analytics

Operations



Architecture

Continue to understand our performanc

Analytics

- We all use the same [great] metrics to evaluate impact
- Get breakdowns of all our metrics. And, do way deeper analysis!
- Make our real world data actionable

Stop performance regressions

Operations

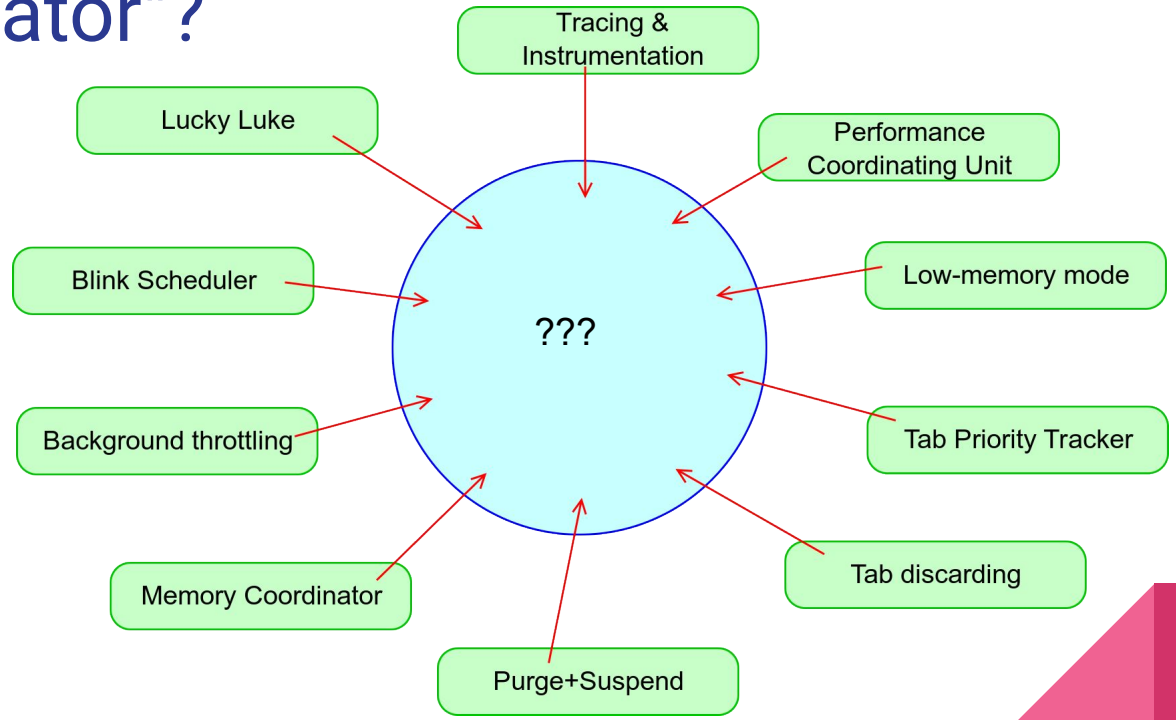
- Audit and dramatically reduce the 224 unmaintained, noisy benchmarks
- Perf waterfalls are constantly red. Fix that for good.
- Extend the Android System Health process into a Chrome-wide Speed Releasing process across all platforms and all key performance metrics.

Build an architecture for Chrome Speed

Architecture

- One way to measureme and coordinate memory, CPU, net resources
- Fewer and more coherent architecture projects: we have 16
- Get some big wins for our users via making smart tradeoffs: memory for speed, etc

Can these all become a "global resource coordinator"?



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