

BlinkOn 10





Ben Galbraith

Director, Product Management Web
Platform

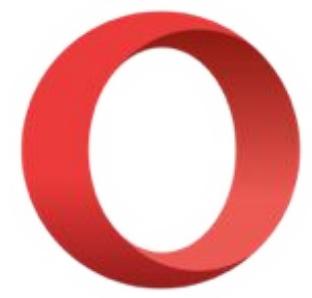
Google

bgalbs@google.com
[@bgalbs](https://twitter.com/bgalbs)

BlinkOn 10







Microsoft Edge Insider Channel

microsoftedgeinsider.com/en-us/download/

Microsoft | Microsoft Edge Insider [Download](#) What's New Community Addons Support All Microsoft Search

Microsoft Edge Insider Channels

Learn more about our different channels, download, and get started.



Beta Channel

Updated every 6 weeks

The Beta channel will be the most stable Microsoft Edge preview experience. It will be here soon, after we've had a chance to learn and improve in our other channels.

Coming soon for macOS
Notify me when it's available



Dev Channel

Updated weekly

Our dev builds are the best representation of our improvements in the past week. They have been tested by the Microsoft Edge team, and are generally more stable than Canary.

Coming soon for macOS
Notify me when it's available



Canary Channel

Updated daily

Want to see what we were working on yesterday? Canary will be released automatically almost every night to keep you up to date on our progress.

Coming soon for macOS
Notify me when it's available



“Suppose all the information stored on computers everywhere were linked. Suppose I could program my computer to create a space in which everything could be linked to everything.”

— Tim Berners-Lee

As We May Think - The Atlantic

theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/

The Atlantic Popular Latest Sections Magazine More Subscribe

160 YEARS OF ATLANTIC STORIES

As We May Think

“Consider a future device ... in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory.”

VANNEVAR BUSH JULY 1945 ISSUE

“The fight for the web is one of the most important causes of our time.”

— Tim Berners-Lee

Innovation

Innovation

Economic
Opportunity

Innovation

Economic
Opportunity

Free
Expression

A screenshot of a web browser window showing the homepage of contractfortheweb.org. The browser interface includes standard controls (red, yellow, green buttons) and a tab bar with the current page title. The website has a dark header with white text. The main content area features a large heading and several principles listed below it.

Principles for a Contract for the Web

The web was designed to bring people together and make knowledge freely available. Everyone has a role to play to ensure the web serves humanity. By committing to the following principles, governments, companies and citizens around the world can help protect the open web as a public good and a basic right for everyone.

The Contract Principles are available to read in [Arabic](#), [簡體中文](#) (Simplified Chinese), [正體中文](#) (Traditional Chinese), [Deutsch](#) (German), [Español](#) (Spanish), [Français](#) (French), [Italiano](#) (Italian), [Nederlands](#) (Dutch), and [Português](#) (Portuguese).

Governments will

Ensure everyone can connect to the internet
So that anyone, no matter who they are or where they live, can participate actively online.

Keep all of the internet available, all of the time
So that no one is denied their right to full internet access.

User Choice





“Make the Web the **premier platform** for
experiencing the world’s information,
and deliver the world’s **best implementation**
of the Web platform.”

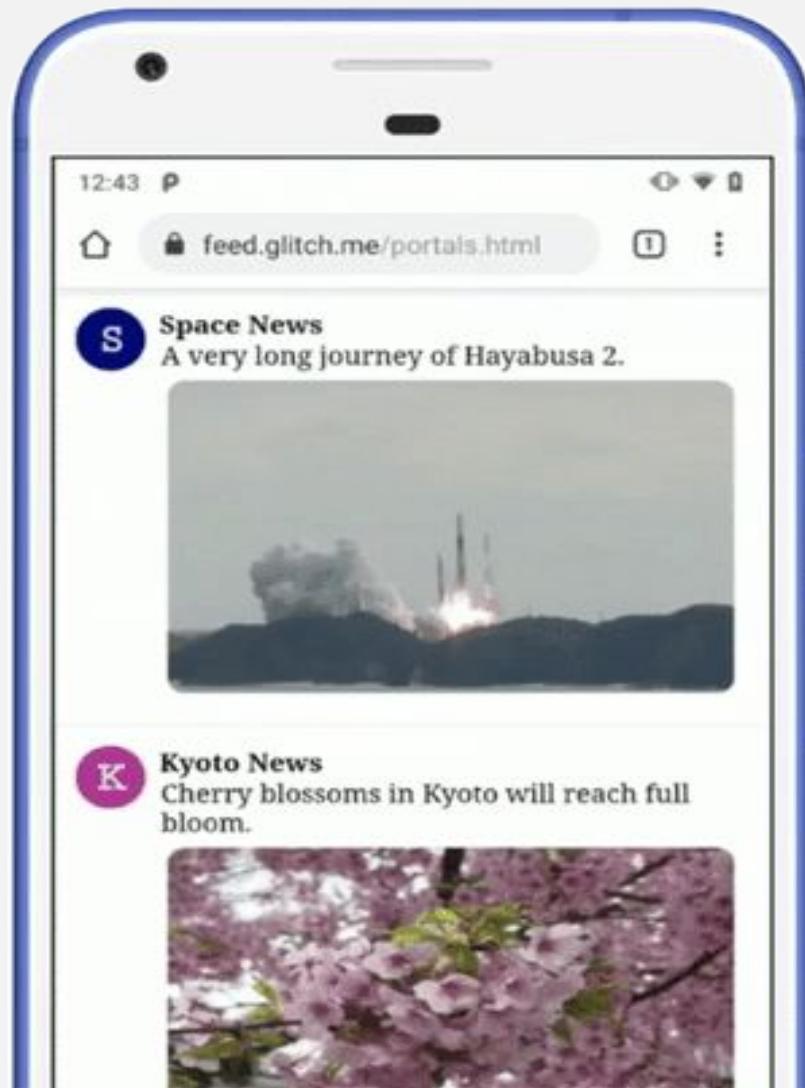
Web Content

Web Apps

Dev Success

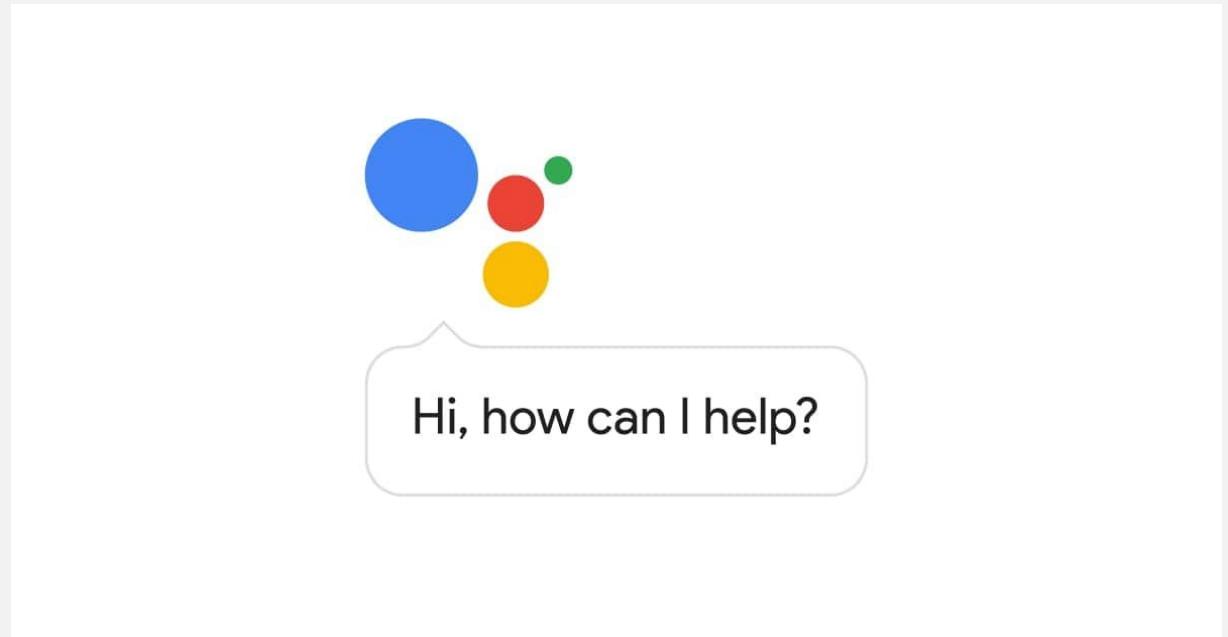
Web Content

The majority of visited sites
load instantly, work offline,
run seamlessly, and
transact easily



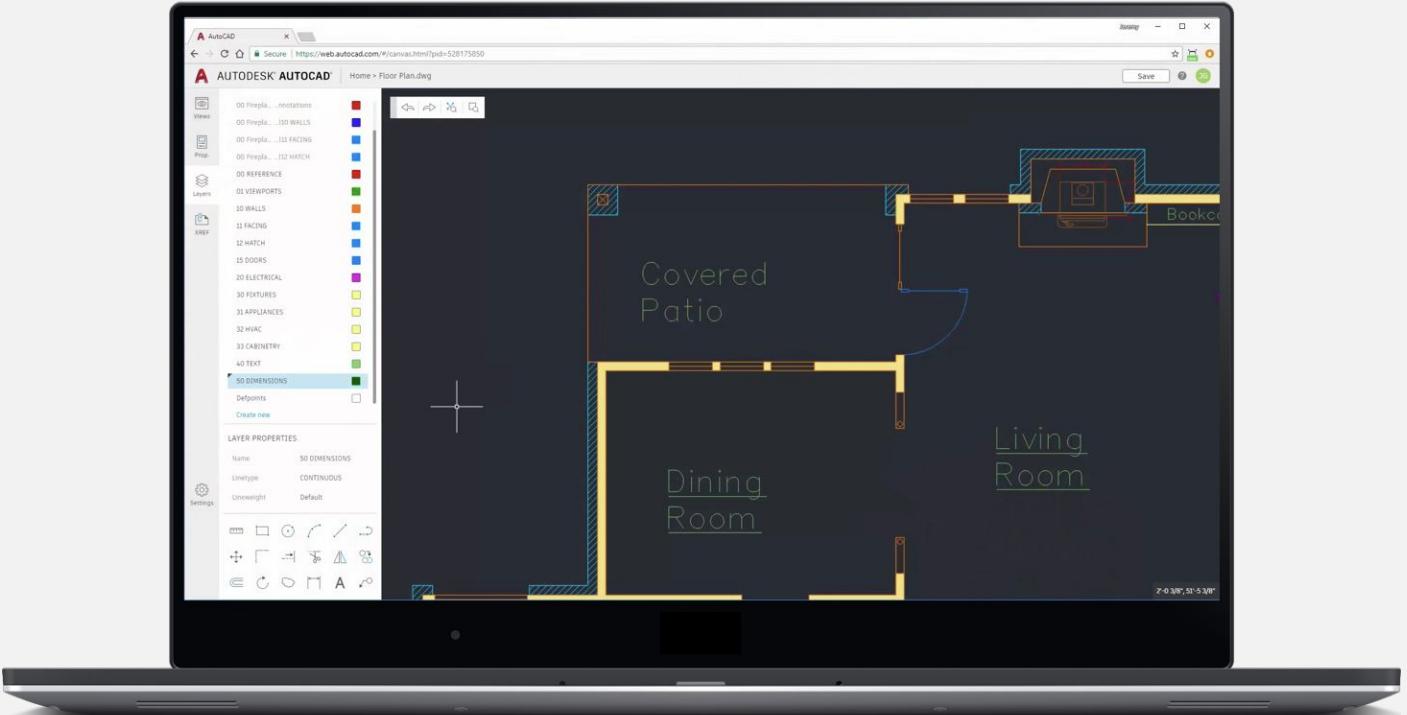
Web Content

The majority of visited sites
load instantly, work offline,
run seamlessly, and
transact easily



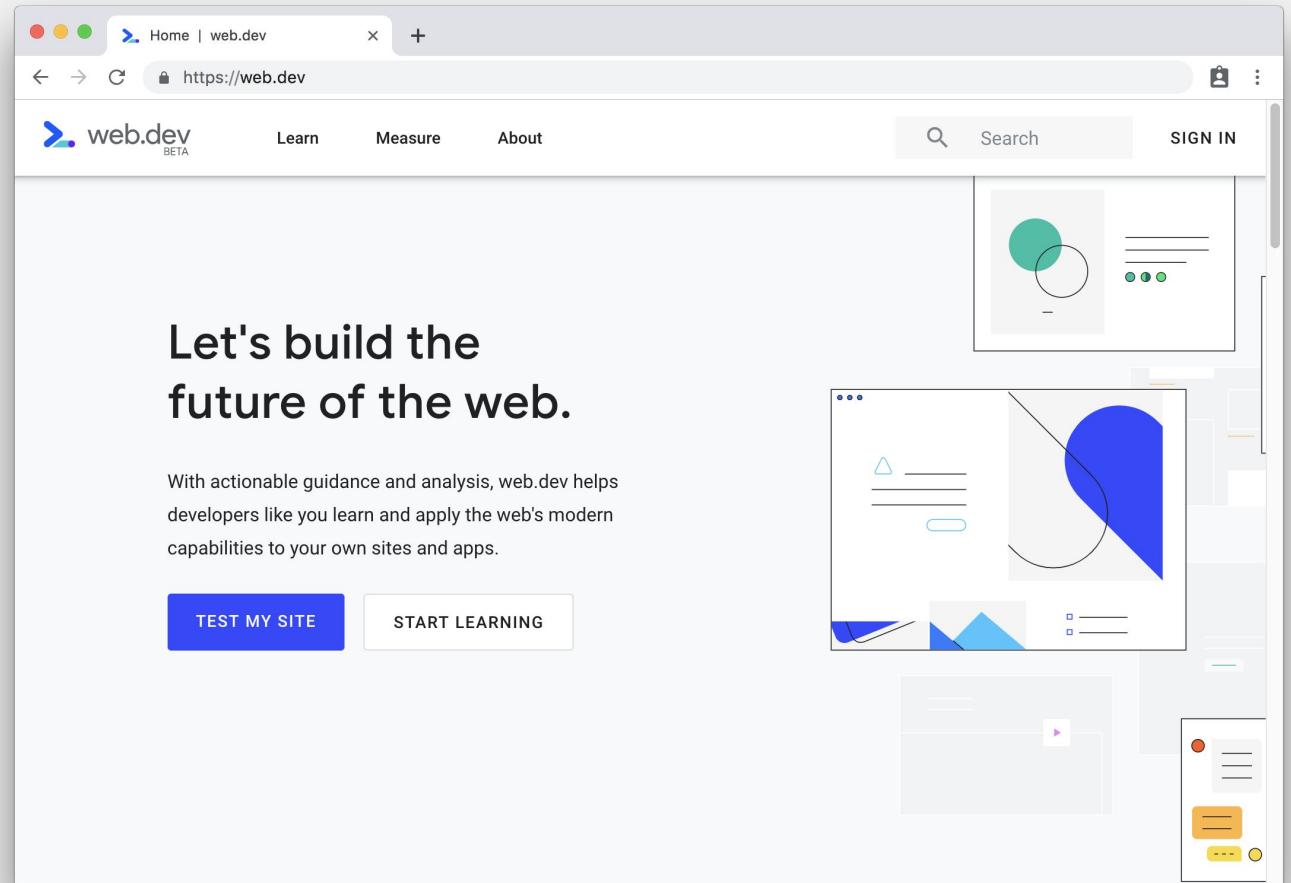
Web Apps

The Web is considered a
first-class app platform



Dev Success

The Web offers developers
the **best value**, and
encourages **high quality**
experiences by default



Web Content

Web Apps

Dev Success

Trust & Safety

Fundamentals

BlinkOn 10





MAKES CHROME FASTER
WITH BENCHMARKING & MONITORING

Annie Sullivan

Chrome performance metrics



Fundamentals

Shipping: Unified Heap

M74

Correctness

No memory leaks

Security

Tooling

Code clean-up/simplification

Performance

Memory

Shipped: Memory Improvements

- OOM intervention
 - -7% 99th percentile PrivateMemoryFootprint
 - -10% Out of Memory
- V8 bytecode flushing
 - -3% 99th percentile PrivateMemoryFootprint
 - -5-15% 50th percentile size of live objects on the heap
- JS Source String Compression
 - -4.4MiB in PrivateMemoryFootprint at 9the percentile
- Reduced V8's memory consumption by
 - ~10% with embedded builtins
 - Another ~10 % by reducing metadata size

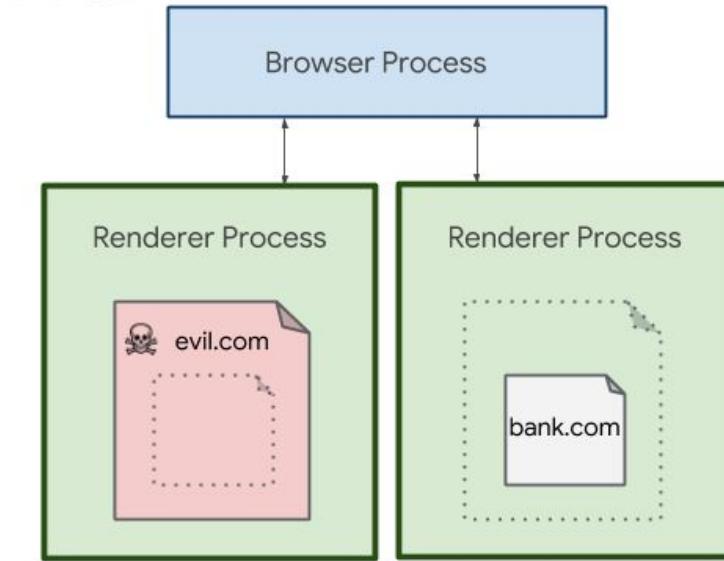
Shipped: Site Isolation on Desktop

M67

Visible page



Under the hood



And big things in progress...

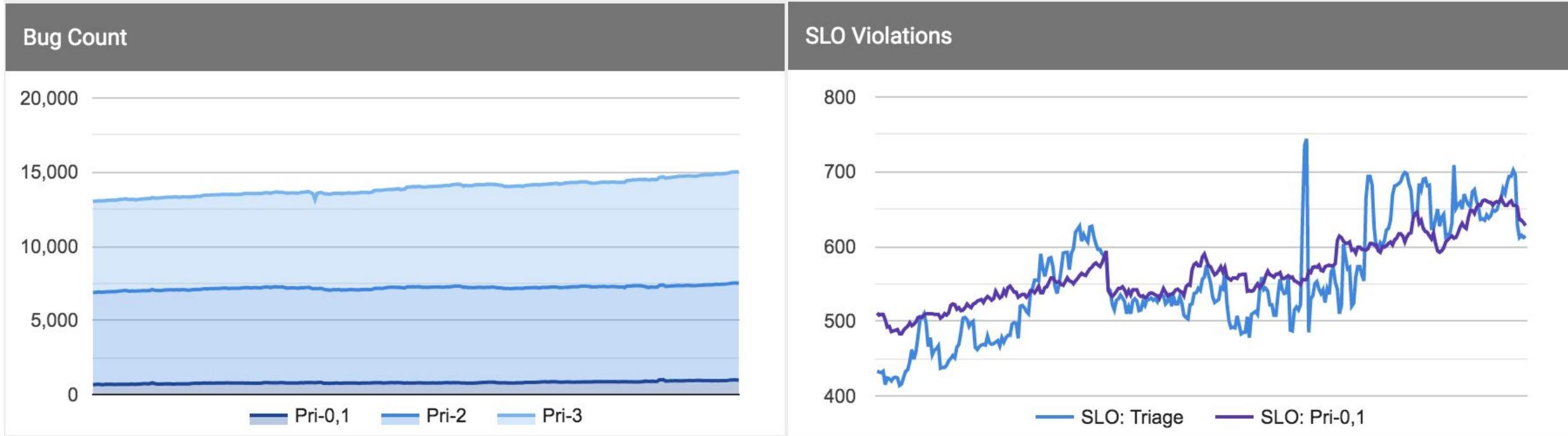
LayoutNG

BlinkGenPropertyTrees

Cooperative Scheduling

More v8 memory reductions

We're clearly not winning on bug health.



- Working on increased consistency in definitions of priorities
- Will be pushing on teams to do their part in triage.

We've made progress on code health

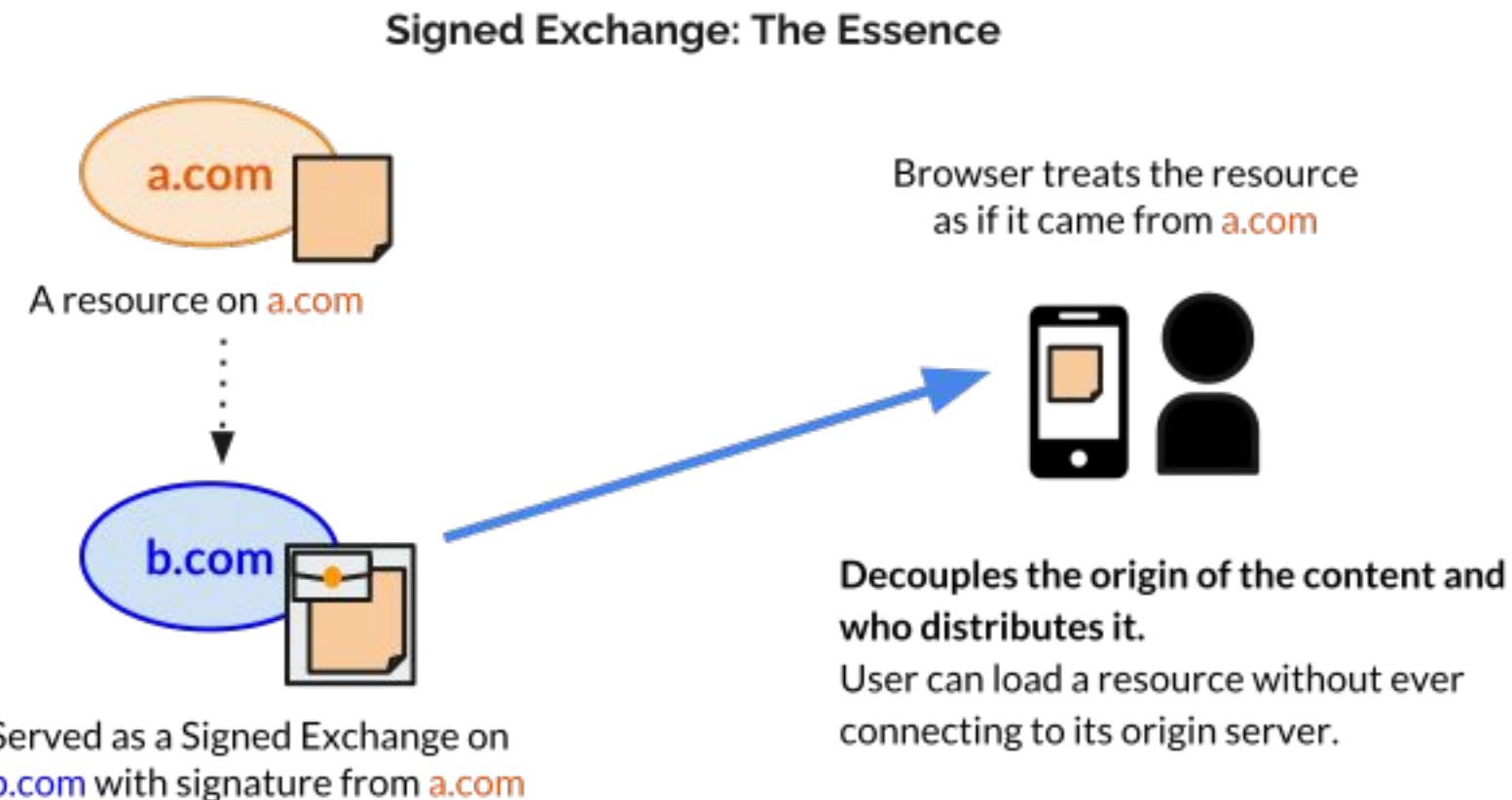
- 50% increase in markdown files in past 12 months
- Mojofication 93% done
- Onion Soup 60% done
- Removed many abstract classes and public APIs
- [third_party/WebKit removed from codebase](#)

But we need your help!

- Feedback on [Code Health Rotation Proposal](#)
- Join the discussion at [#techdebt](#) on chromium.slack.com
- Contribute to ongoing work:
 - Add more documentation
 - Finish Onion Soup
 - Merge WTF/ with //base/
 - Clean up platform/

Web Content

Shipped: Signed Exchanges



Speed improvements since last BlinkOn

[Lite pages](#) increased the count of non-painful page loads on 2G-like connections by ~3.4%.

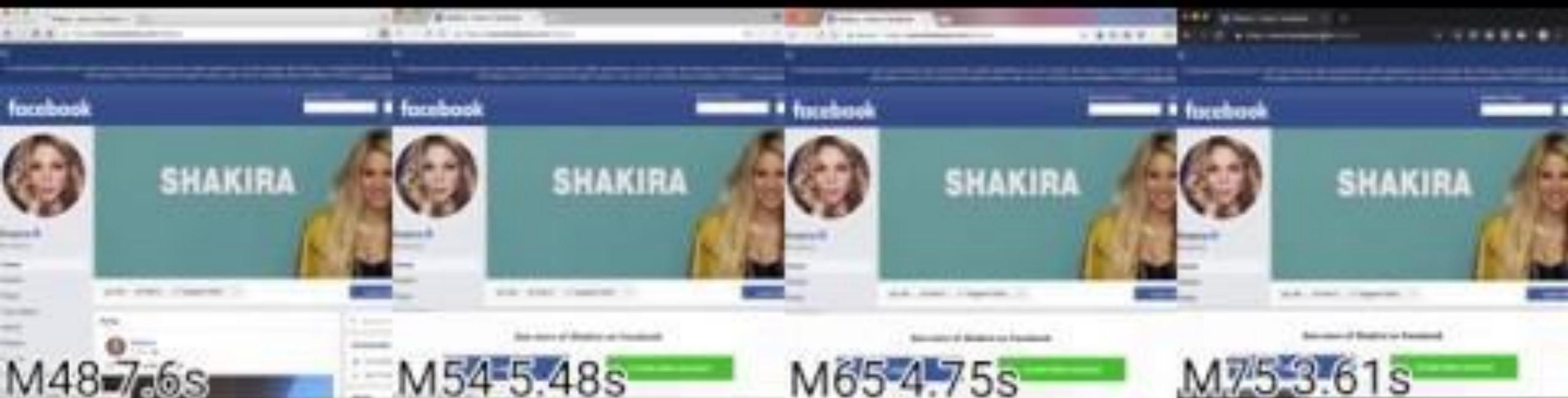
Resource scheduling changes in Chrome increased the count of non-painful page loads on 2G like connections under by 4%.

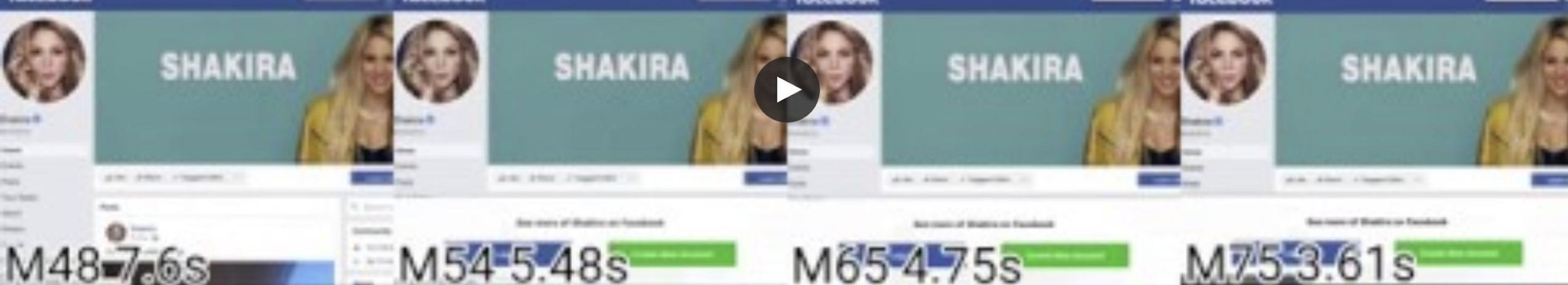
Shipped [Incremental Shadow DOM](#)

Shipped [Fast Flat Tree Traversal](#)

V8 improvements

- Improved sequential JS parsing by [~40%](#)
- Moved [~40 %](#) of JS parse off main thread
- Improved the speed of JS hot load scenarios by 20-60% with improved code-caching
- Improved Wasm loading speed by [10x](#)
- Launched incremental marking reducing Oilpan's atomic phase by [~50% on average.](#)
- Improved the [async use case](#)
- Enabled constant field tracking in V8
- Optimized non-extensible JavaScript objects



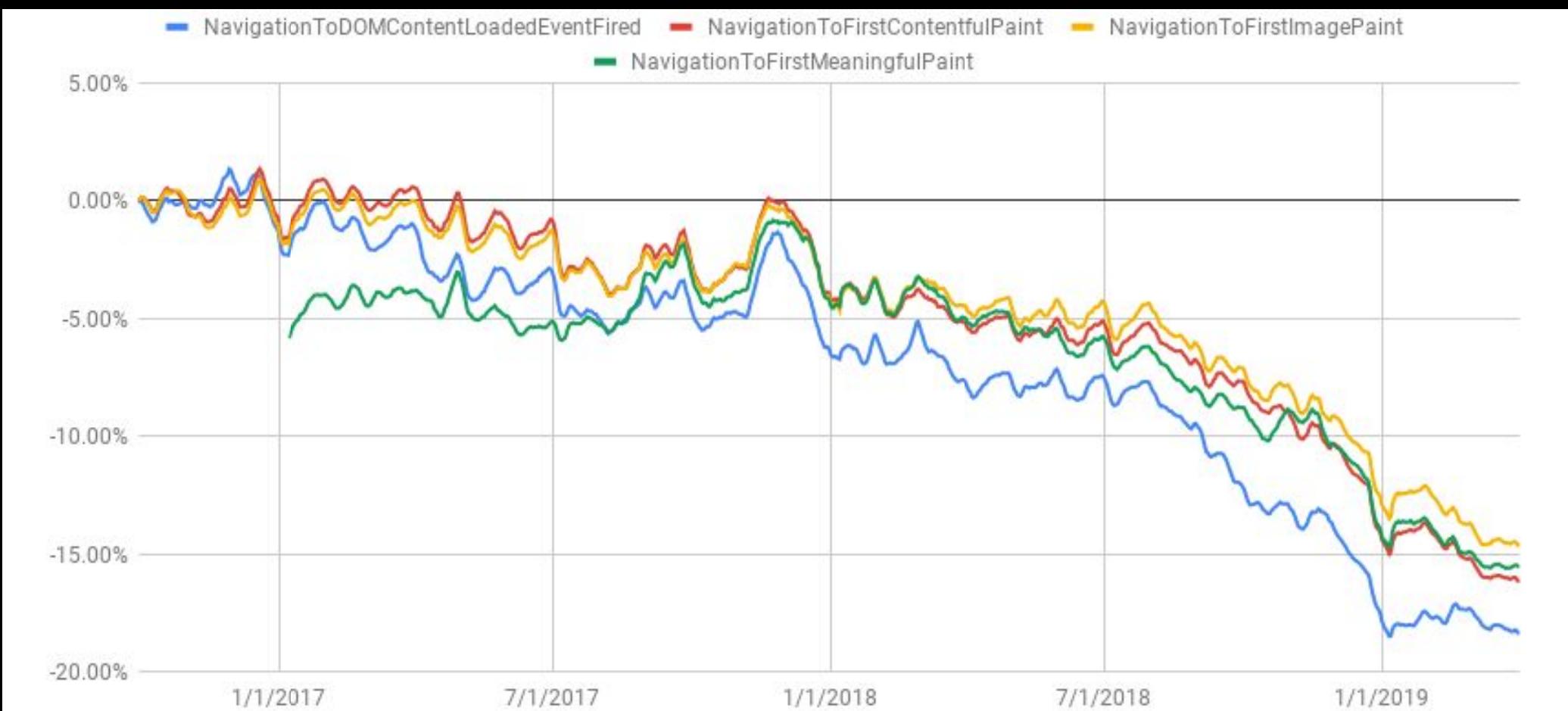


M48-7.6s

M54-5.48s

M65-4.75s

M75-3.61s



Lots more in the works

[Portals](#) for seamless navigations

BFCache for instant back/forward navigations
on Android

[LazyLoad](#) defers loading of images and iframes
below the viewport.

[Priority hints](#)

[Prefetch support for subresources via Signed
Exchanges](#)

[Out-of-renderer CORS](#)

[ScrollToTextFragment](#)

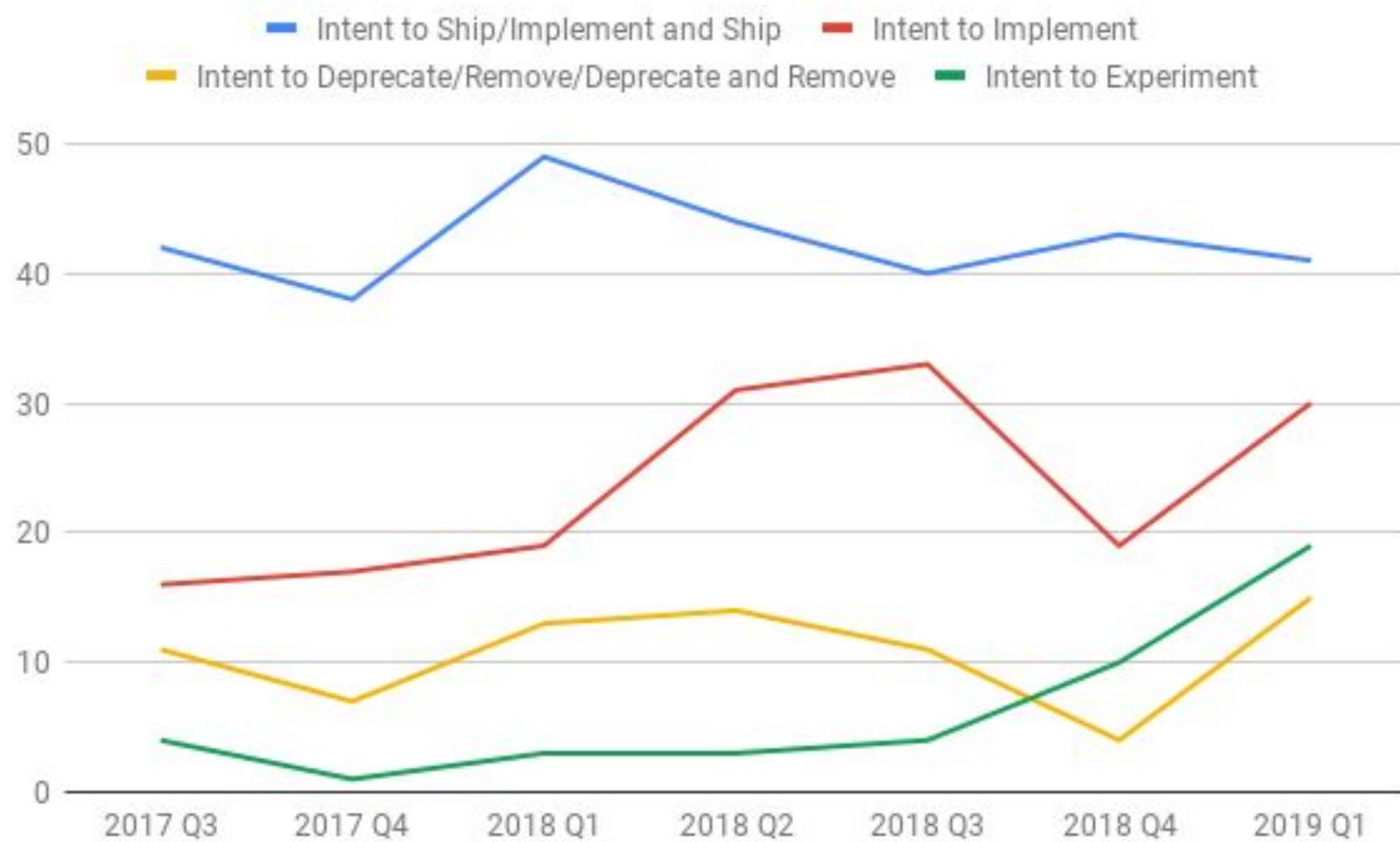
[CORS-only mode](#)

V8:

- [Concurrent optimizing compiler](#)
- Zero-latency compilation
- [V8 lite](#)

Web Apps

Intents



Shipped or Origin Trial

[Shape Detection API \(QR-code scanning, etc.\)](#)

[Badging API](#)

[WebAssembly Atomics/Threads](#)

[JS BigInt](#)

[JS Public & Private Class Fields](#)

[WebAssembly exportable globals](#)

[Structured cloning of WebAssembly modules](#)

[RegExp String.prototype.matchAll\(\)](#)

[Picture-in-Picture API](#)

[Support for AV1 \(video codec\)](#)

[Implicit Root Scroller](#)

[Persistent client hints](#)

[CSS logical flow relative values and box model properties](#)

[Motion sensors APIs based on Generic Sensor API](#)

Shipped: Service worker improvements

Performance:

Fixed [caches.match\(\) performance cliff](#)

[Process priority fix](#)

Shipped [new service worker architecture](#)

- Reduced IPCs, unblocked the network service, improved layering
- Experiment [result](#):
 - Reduced browser process memory usage on Desktop (6% at 95p)
 - Improved FCP on Android (13% at 95p)

API Improvements:

[resultingClientId](#)

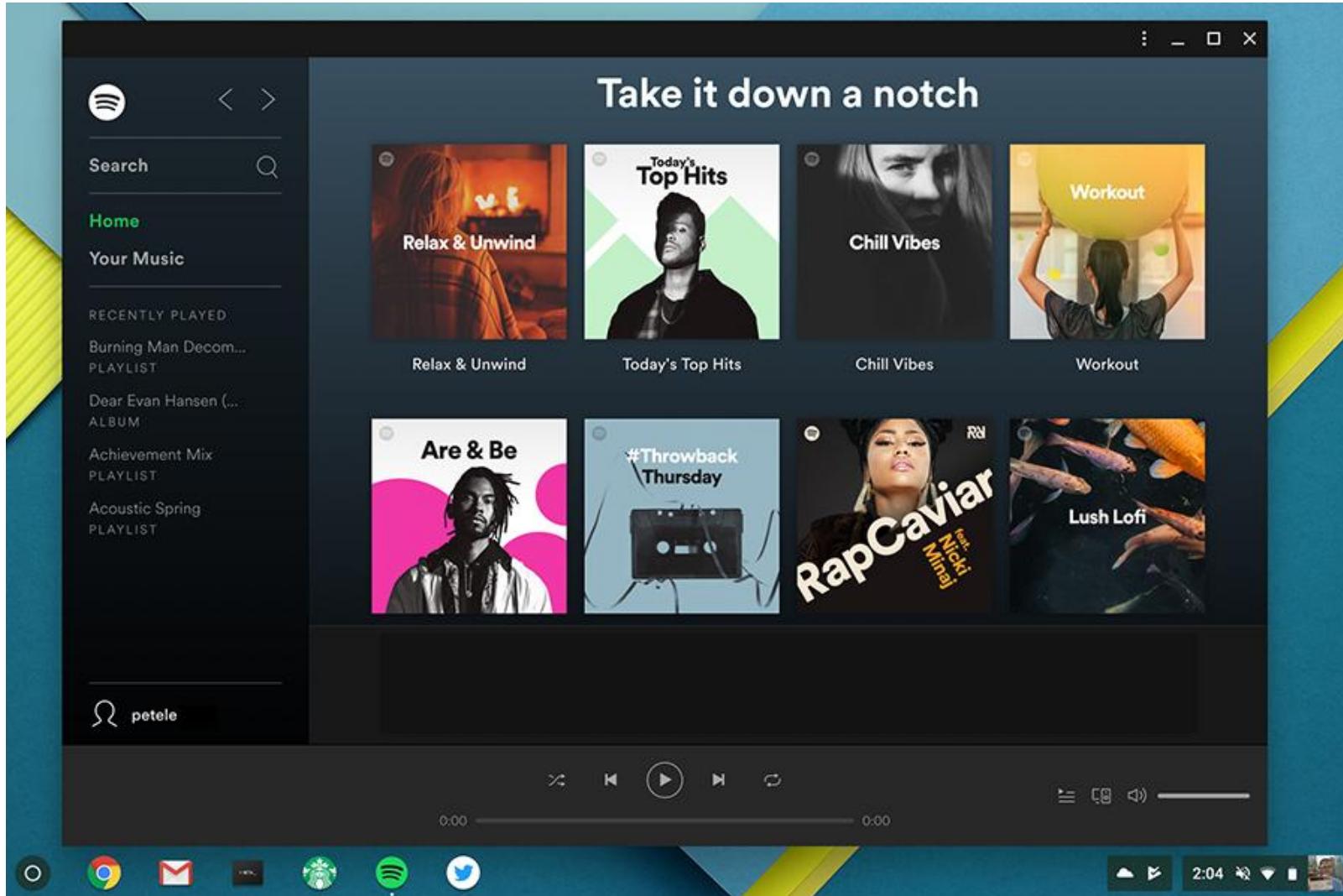
[favicon support](#)

[correct response URL](#)

[postMessage queuing](#)

Shipped [nested workers](#)

Shipped: Desktop PWAs on all platforms



Ongoing projects

Contact picker

Filesystem APIs (mimetype handling, writeable files, etc. etc.)

SMS OTP

Wake Lock

Better clipboard (images, raw access)

Improved quota

Local font access

Low-level audio

getInstalledRelated Apps

HID & Serial

Permissions

[Input for workers](#)

[Display locking](#)

[Virtual scroller](#)

[Form-associated custom elements](#)

Developer Success

Shipped

Origin trial of KV storage + import maps, the web's first built-in module

User Activation V2

Shipped the Reporting API and ReportingObserver

Feature Policy:

- Sync-xhr policy to help remove a performance anti-pattern from the web
- JavaScript Introspection API
- Violation reporting available in origin trial

In Progress

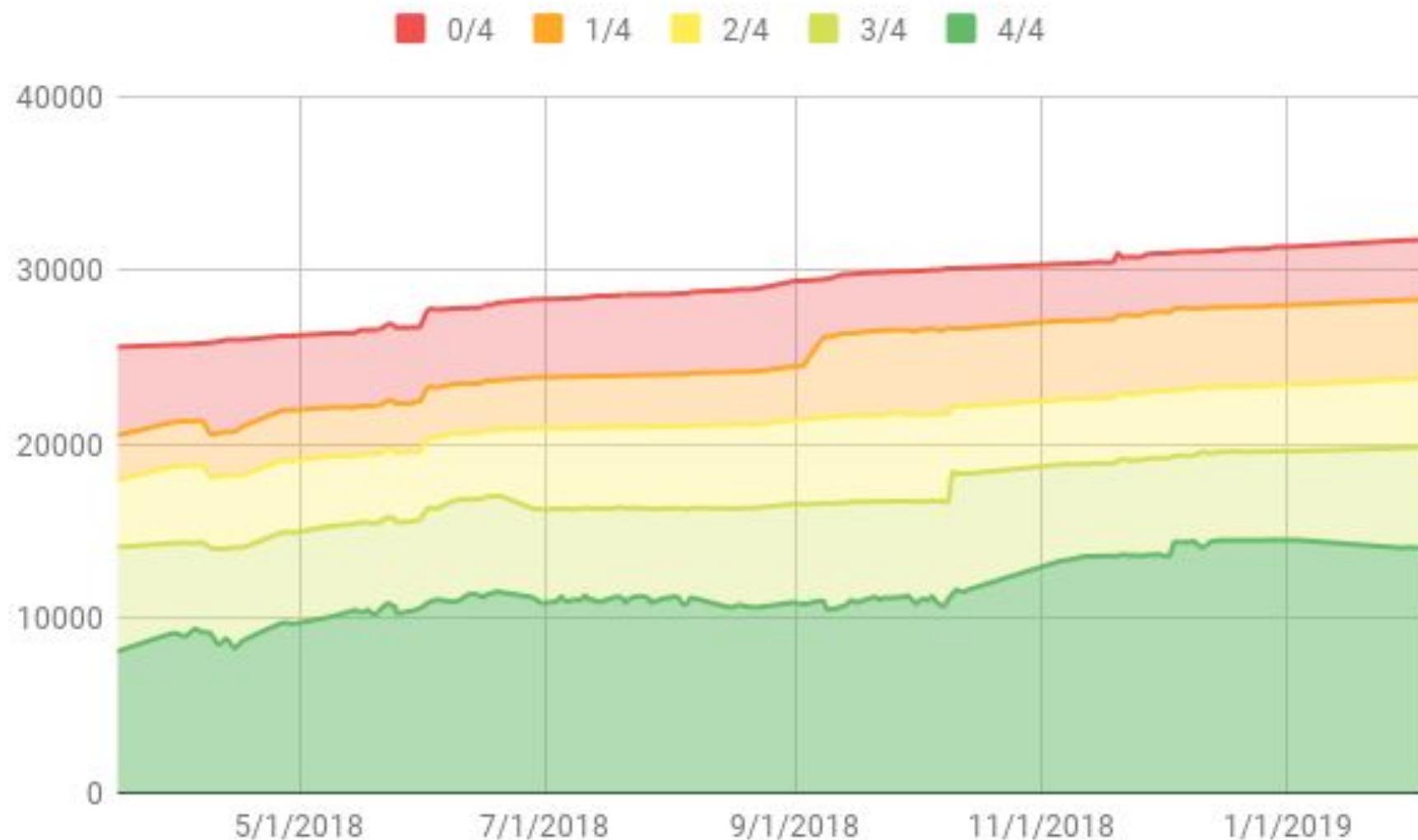
Feature Policy:

- [Image policies](#) to help address common developer mistakes, coming to origin trial in Chrome 75
- [Intrinsicsize attribute](#) to better support responsive images on the web
- Implementing [other policies](#) to help improve performance and UX, including [animations](#), [lazyload](#), [font display](#), [scrolling](#).

IDL compiler v2

[HTML Modules](#)

Interoperability has been improving!



But there's more to do...

- Use WPT in blink source+test changes:
 - Current usage at all-time-high of 49%!
 - But we want to **reach 90%**
- Help drive down Chrome-specific test failures:
 - New features make it easier to dig into Chrome-specific failures:
 - Filter wpt.fyi results by cross-browser test statuses
 - View screenshots of failing reftests
 - Contribute to bug [896242](#)

Thanks!



SAMSUNG Internet

Laszlo Gombos

Sr. Director, Web Platform

l.gombos@samsung.com

@laszlogombos

@samsunginternet



Samsung's Products



Samsung's Web Browser



11 Years and Counting

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018



Dolphin

Dolphin 2.0

Android Stock

Samsung Internet 1.0+

Samsung Internet GearVR

Tizen 1.0/2.0

Tizen 3.0+

Legend

Regular Engine Upgrades and Releases

- Engine upgraded twice a year
- 6 yearly releases independently from firmware updates



- Public Beta channel



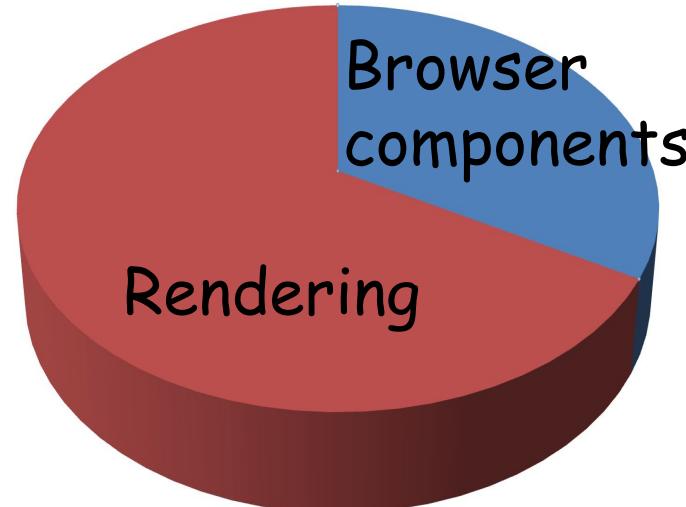
- Support for all android devices



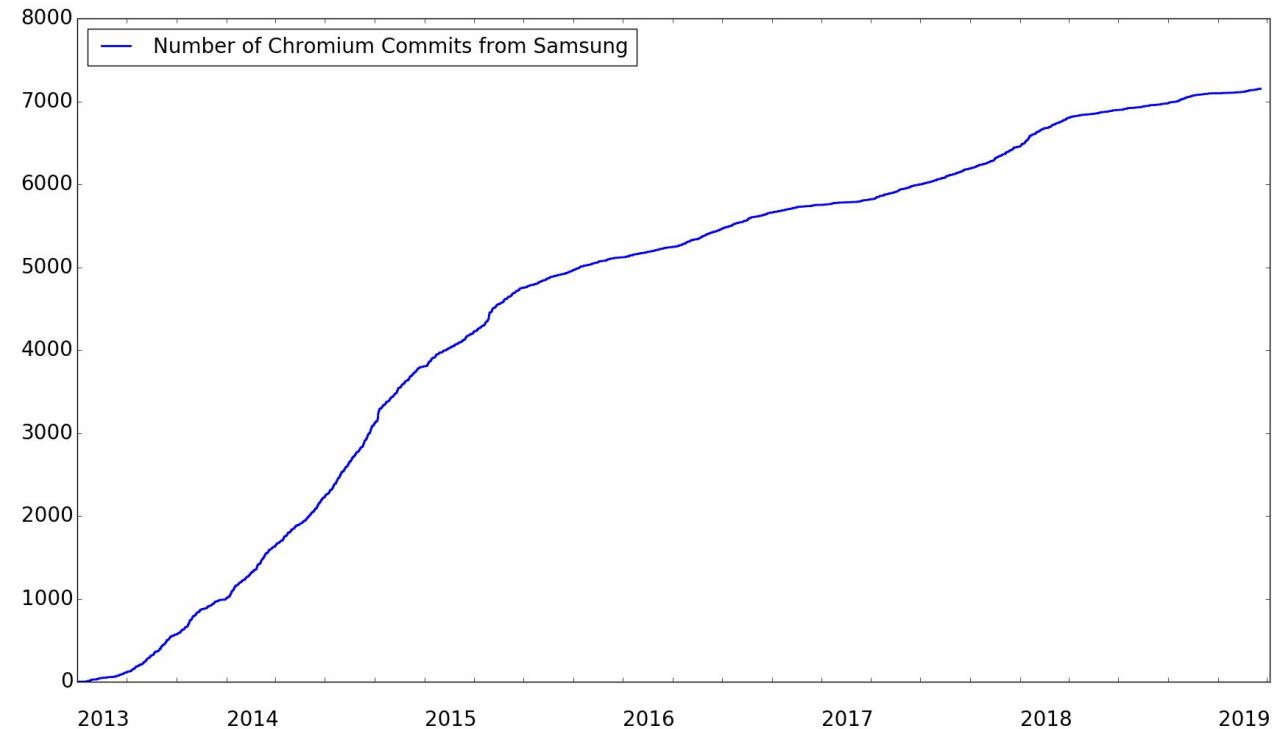
Downloads

Chromium Commits & Bugs (since 2013)

- 7100+ chromium commits
- 500+ commits (in 2018)
- 200+ contributors
- 20+ committers



- 1889+ bugs filed
- 1100+ bugs fixed

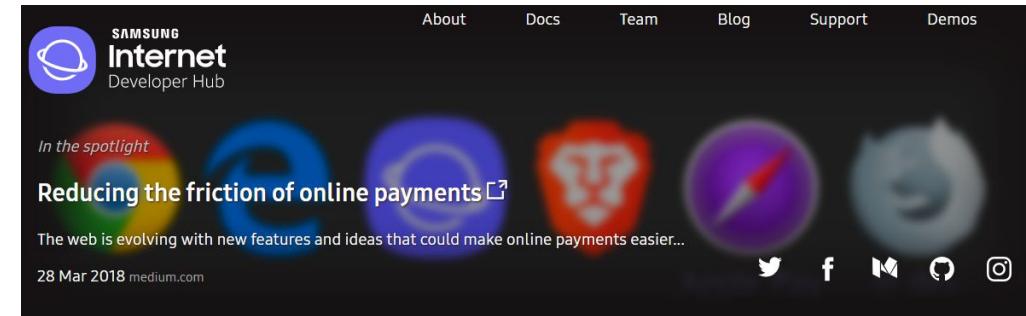


Samsung's contribution and focus

- Dark mode
- Web Payment
- Service Workers
- WebVR/WebXR
- GamePad
- ARM
- Smart Go Next
- Geometry Interface
- Canvas (2D)
- SVG
- Web Platform Tests

Beyond Chromium

- W3C participation in several areas including
 - Web Payment, Payment Handler
 - WebVR/WebXR
 - TAG
- Developer Advocacy
 - Events
 - Blogging



<https://samsunginter.net>

Say Hi !



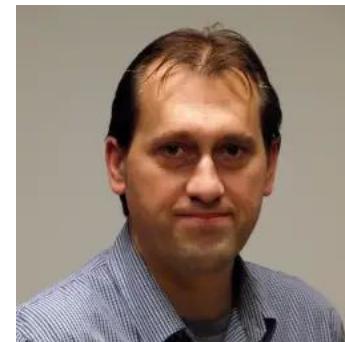
Jinho Bang
(Web Payment)



Prashant Nevase
(Graphics, Compositor)



Hwanseung Lee
(Web Payment,
Geometry Interfaces)



Laszlo Gombos
(Privacy,
Web Authentication)



Microsoft Edge

Jatinder Mann
Group Program Manager
Microsoft Edge Web Platform



Thank you!



Microsoft



chromium

Our Open Source Principles

1

We are making this decision for the long term

2

When seeking improvements in the web platform, our default position will be to contribute

3

We will respect the architectural requirements and engineering approaches used in Chromium

4

We believe the evolution of the web is best served through standards bodies

Areas of Focus

Accessibility

Editing

Security

ARM64

Fonts

Tooling

Authentication

Layout

Touch

Battery life

Scrolling

Web Standards

BlinkOn Sessions

Day	Room	Room	Talk
1	1	Main Stage	Microsoft Edge: Adopting and contributing to Chromium
2	2	120	Life without a Pixel
2	3	210	JsDbg: Browser-based debugging extension for Chromium