



The Chrome Process

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Overview - Blink

- Blink is a web engine
 - Others include WebKit, Gecko, Trident, ...
- It powers many browsers
 - Chrome, Opera, ...
- It is Open Source
 - Open governance
 - Open discussion
 - Open development
- HTML spec is implemented in Blink



Why should you be involved?

Web Facing improvements

- HTML features that drive core business
 - WebVR
 - Telepresence
 - ...
- You can influence the platform

Internal Architectural improvements

- Improvements that target your SoC
- Impact battery life
- Enhance user experience

- Help create a better embedded web story

The Blink Intent Process - Enhancement

<http://www.chromium.org/blink#launch-process>

Intent to Implement

- Email sent to blink-dev mailing list
 - A template for the email is provided
 - Announces intent to community
 - Allows early discussion
- No formal authorization required
- Implementation off-tree
 - No commits back to blink repos

Intent to Ship

- Email sent to blink-dev mailing list
 - A template for the email is provided
 - Allows discussion about implementation
 - Requires spec (w3c, whatwg,...) published
 - Requires info on intent from other vendors
- Formal authorization required
 - Need approval from 3 API owners
 - LGTM (looks good to me) sent to blink-dev



The Blink Intent Process - Deprecation

<http://www.chromium.org/blink#launch-process>

Intent to Deprecate

- Email sent to blink-dev mailing list
 - A template for the email is provided
- If a web facing feature (css, html, js)
 - Measure usage of the feature
 - Add usage counter to blink
 - Monitor chromestatus.com for usage data
- Add deprecation warning to Chrome
 - Gives developers a chance to argue case for the feature to remain

Intent to Remove

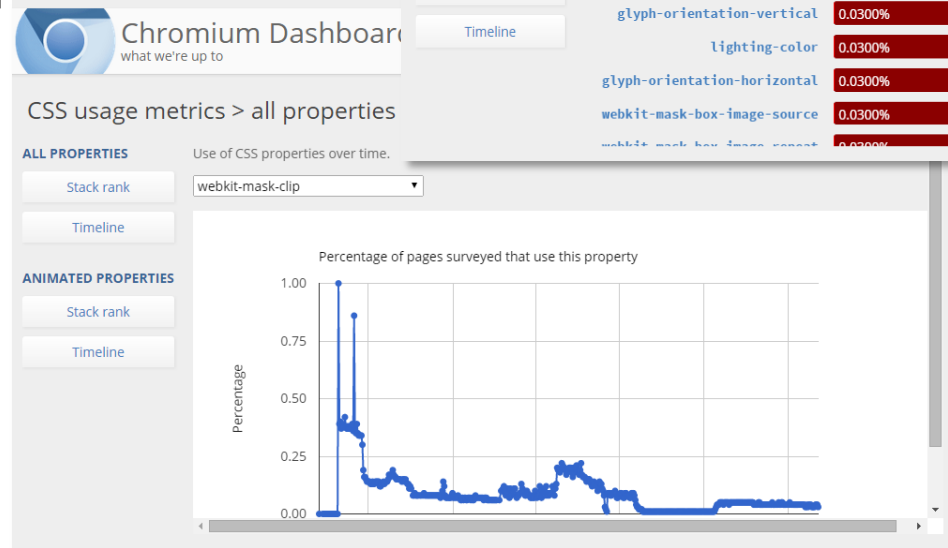
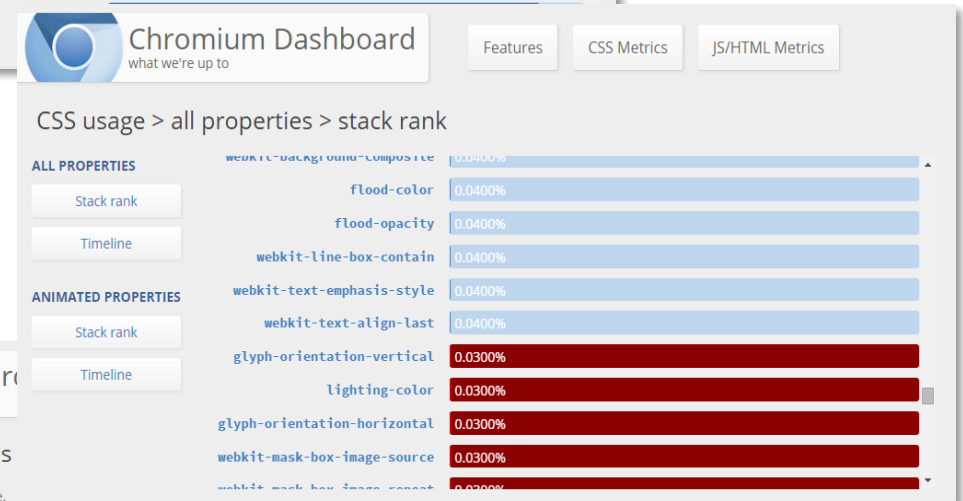
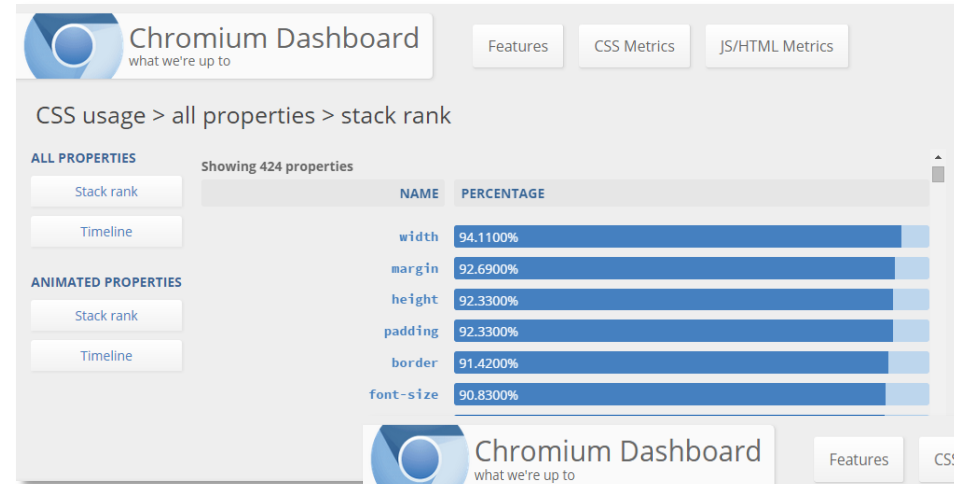
- Email sent to blink-dev mailing list
 - A template for the email is provided
- Formal approval required
 - Wait for 3 LGTMs from API owners
- Commit removal to trunk



Chrome API Monitoring

<https://www.chromestatus.com/>

- Live metrics captured from Chrome
 - HTML, CSS and JS functions used
 - Not pages visited or navigation
 - Anonymous reporting
- Allows tracking of (in-)active features
- Less than 0.03% target for deprecation
- Removing unused features helps streamline the platform
- Shows important areas to focus performance improvements



Internal Engine Changes

OilPan

<http://www.chromium.org/blink/blink-gc>

- **Goal**

- Improve the memory management and garbage collection within Chrome

- **Benefits**

- Compile time enforcement of memory constraints
- Time sliced Garbage Collection - allow pre-empting garbage collection when needed
- Should improve responsiveness, especially on mobile platforms

- **Why of Interest**

- Will have a positive impact on the majority of real world use-cases
- Some use-cases show a regression in performance, the decision may be made to ship with these regressions, so we may need to create messaging around this if it impacts our ecosystem

Slimming Paint

<http://www.chromium.org/blink/slimming-paint>

- **Goal**

- Refactor and improve the rendering pipeline in Chrome

- **Benefits**

- Streamline Chrome -> Skia -> Ganesh -> GLES integration
- Move layer creation into the compositor, this allows GPU aware layer creation to be made
- Treat updates as a stream of 'delta's' to the scene graph, allows for selective update (tx elimination)

- **Why of Interest**

- The work is showing promising results so far
- Should allow for Mali GPU efficient paths to be created and optimised

Blink in JS

<http://www.chromium.org/blink/blink-in-js>

- **Goal**
 - Enable developers to implement DOM features in HTML/CSS/JS
- **Benefits**
 - Improved security - JS is naturally sandboxed
 - Appropriate technology, <marquee> tag re-implemented show better performance
 - Helps move web platform forwards - ie Web Components
- **Why of Interest**
 - We may see performance regressions for JS intensive tasks
 - For example XSLT is proposed to be moved to JS, which is complex and CPU intensive

Thank You

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