

Intro to Performance



By jtkerb ([Running Ethiopian Highland Hare \(Lepus starcki\)](#)) [CC BY 2.0], via Wikimedia Commons

This is going to be quick, so...

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- #wikimedia-perf
- Phabricator: tag with Performance-team

Why we worry about performance

Performant site → Happy users

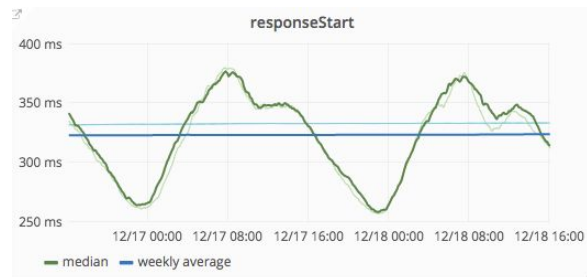
Why we worry about performance

Performant site → Happy users

Performant site → Increased trust in the authority of the site

How we measure: Real User Monitoring

- Collect data from clients and aggregate^[1]
- Track over time^[2]
- Pros:
 - Shows us what actual users are seeing!
- Cons:
 - So many confounding factors: Client device; client geo; client connectivity.



[1] - You can see it for yourself: open DevTools in your browser, open a page, and then display window.performance in the Javascript console

[2] - <https://grafana.wikimedia.org/dashboard/db/performance-metrics?refresh=5m&orgId=1>

How we measure: Synthetic Monitoring

- In a tightly controlled environment, take the same measurement over and over^[1]
- Track over time^[2]
- Pros:
 - Allows us to identify regressions or improvements, since variability is much lower
- Cons:
 - Doesn't give us a “real” measure of performance

[1] - We use a private [WebPageTest](#) instance for this

[2] - <https://grafana.wikimedia.org/dashboard/db/webpagetest-alerts?refresh=5m&orgId=1>

(Some of) what we measure

- RUM
 - responseStart: measures the performance of our infrastructure
 - domInteractive: when the HTML page has been parsed, and the initial DOM created
 - First Paint: when the browser displays the initial DOM
 - loadEventEnd: custom event that gives the time of the onLoadComplete event
 - saveTiming: custom event that reports the time required to save an edit
- Synthetic
 - Start Render: when the page content begins to render on the screen
 - Fully Loaded: when the page has completely rendered (should be similar to loadEventEnd)
 - Last Visual Change: when any post-load visual changes have occurred
 - **Speed Index**: measure of *perceived* performance^[1]

[1] - I really recommend checking out the description of Speed Index:

<https://sites.google.com/a/webpagetest.org/docs/using-webpagetest/metrics/speed-index>

Upcoming over the next 1-2 quarters

- Series of blog posts that give a detailed introduction to performance testing
- A self-paced training module on performance analysis
- Performance-testing-as-a-service
- Literature review of the existing research on Performance
- Collect Resource Timing info on slow page loads

Gaps

- Mobile apps
- Older browsers, which don't support the Navigation Timing API
- No good way to get Speed Index on the client side

Resources

- https://www.mediawiki.org/wiki/Wikimedia_Performance_Team
- https://wikitech.wikimedia.org/wiki/Measure_Performance
- <https://performance.wikimedia.org/>
- <https://developers.google.com/web/fundamentals/performance/rail>