Resource Website Performance Standards

This document provides research-based KPIs for measuring the performance of websites.

These are not recommendations. The KPIs should be treated as pass/fail. Any failing KPI should be considered a *blocker* unless otherwise agreed upon by the project team.

Metrics

Test setup

Variable	Definition
Location	**Regional** (same continent)
Connection Speed	**5 Mbps** (Cable)
Browser	**Google Chrome**

KPIs

Metric	Standard	Methodology
Time to first byte	**250ms**	✈
Load time	**2s**	✈
Page size	**1333kb** (1.3mb)	✈
Time to interact	**3s**	✈
API response	**500ms**	✈
Animation	**60fps** (16.6ms)	⧉
Page speed score	**85/100**	⚐

Definitions

- **Time to first byte:** (TTFB) The time from the start of the initial request until the first byte is

received by the browser. More info
- **Load time:** The time from the start of the initial request until all the page's dependent assets have been loaded.
- **Page size:** The amount of data transfered up until the page is considered "loaded". See calculation methodology
- **Time to interact**: (TTI) Time of the last visual change to the page; a cue to the user that the page is ready to be interacted with. Also known as "visually complete".
- **API response:** The round trip time for a response from an API.
- **Animation:** The frame rate at which animation/movement is performed.
- **Page speed score:** Score determined by Google's PageSpeed Insights tool.

Testing Methodology

✈ Responsiveness

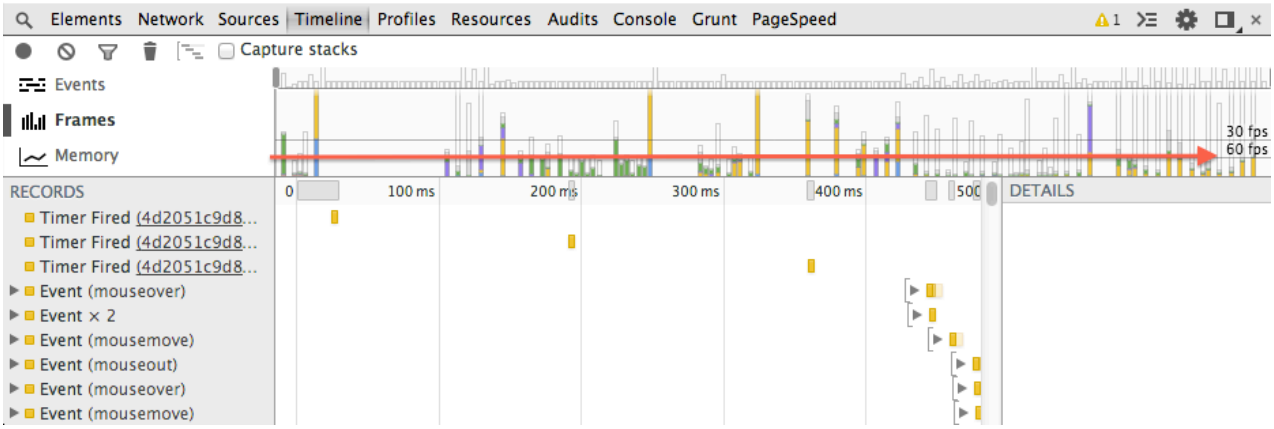
Use webpagetest.org to test a web page.

Use Postman to test an API.

⧉ Frames

Use Chrome Dev Tools' Frames Mode to measure frames per second.

Any event that breaks through the 60fps threshold should be noted.



⚐ Page Speed

Use Google's PageSpeed Insights.

Guidelines

- Follow Google's Web Performance Best Practices
- Designers and developers **must** collaborate in order to deliver performant websites. Good

performance is good design.

- Performance testing can be performed at any point in the project lifecycle. Some responsiveness KPIs can be verified before any code is written.

Educational Resources

- http://www.youtube.com/watch?v=z0_jD8nO5Zw
- http://jankfree.org/
- http://addyosmani.com/blog/performance-optimisation-with-timeline-profiles/
- http://moz.com/blog/how-website-speed-actually-impacts-search-ranking
- https://github.com/Snugug/north#performance
- http://aerotwist.com/blog/dont-guess-it-test-it/

Sources

- http://www.damcogroup.com/white-papers/ecommerce_website_perf_wp.pdf
- http://www.phocuswright.com/free_reports/consumer-response-to-travel-site-performance
- http://www.getelastic.com/ttfb-and-tti–2-kpis-more-important-than-page-load-speed/
- http://www.webperformancetoday.com/2013/10/15/new-findings-typical-leading-ecommerce-site-takes–5–3-seconds-to-become-interactive/
- http://blog.kissmetrics.com/loading-time/
- http://www.akamai.com/dl/reports/Site_Abandonment_Final_Report.pdf