



KANOPI STUDIOS PRESENTS

Shine A Light On Me

Aka. What could be better about my website

October 4, 2019

**Maker and
breaker of
things** ➤



Paul Sheldrake

Technical Lead



What is Lighthouse



A tool to audit the frontend of a webpage

It considers 4 metrics

- Performance
- Accessibility
- Best Practices
- SEO

And maybe:

- Progress Web Apps
 - Works offline
 - Has service workers, etc



What it is not

- It does not do load testing
 - As a developer I want to see how fast the site will load when 1000 people visit the page
- It is not multi step
 - As a developer I want to do a “Search,Pick,Buy” process and have a report for each step
- A perfect testing tool
 - It doesn't check everything in all the different ways
- Does not fix your stuff for you.

What do the scores mean

The color-coding maps to these Performance score ranges:

- 0 to 49 (slow): Red
- 50 to 89 (average): Orange
- 90 to 100 (fast): Green



Performance



Accessibility



Best Practices



SEO



One other thing

Testing on your local development instance and testing on a production like will give different results.





The Metrics





Test Options

 Device

- Mobile
- Desktop

 Audits

- Performance
- Progressive Web App
- Best practices
- Accessibility
- SEO

 Throttling

- Simulated Fast 3G, 4x CPU Slowdown
- Applied Fast 3G, 4x CPU Slowdown
- No throttling

Clear storage

Run audits

Performance

These audit primarily report on how fast it takes the page to become usable to the user.

It can measure things like Time To First byte and Meaning Paint.

Not all the metrics are weighted the same

Has the ability to show the network/memory/browser trace so we can see when used from a local browser

If you've ever used Page Speed Insights from Google this is the same tool.



Performance

Metrics

First Contentful Paint

3.9 s 

First Meaningful Paint

5.8 s 

Speed Index

4.8 s 

First CPU Idle

7.7 s 

Time to Interactive

7.7 s 

Estimated Input Latency

40 ms 



Example of the Performance audit

There are more audits that are performed but these are the top 6 that always show. The scores are partially calculated against global averages that google get from being up in our business.



Timeline Graph

Resource Waterfall

What the user sees

Browser stats

Page processing

Accessibility

Provides some basic checks on obvious items.

- Aria Labels
- Alt tags
- Contrast checking
- etc

Each item is pass or fail.

Not as extensive as a dedicate tool like Axe

Does recommend doing manual testing



Accessibility



These checks highlight opportunities to [improve the accessibility of your web app](#). Only a subset of accessibility issues can be automatically detected so manual testing is also encouraged.

Contrast

These are opportunities to improve the legibility of your content.

- 1 Background and foreground colors do not have a sufficient contrast ratio. ▲ ▼

Names and labels

These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

- 2 Image elements do not have [alt] attributes ▲ ▼
- 3 Form elements do not have associated labels ▲ ▼
- 4 Links do not have a discernible name ▲ ▼

Navigation

These are opportunities to improve keyboard navigation in your application.

- 5 Some elements have a [tabIndex] value greater than 0 ▲ ▼

- 🔍 **Additional items to manually check** 11 audits ▼
- ✓ **Passed audits** 17 audits ▼
- ⊖ **Not applicable** 13 audits ▼



Best Practices

Checks for general best practices that don't directly impact other categories.

The Best Practices audits are equally weighted.

Examples:

- Uses HTTPS
- Includes front-end JavaScript libraries with known security vulnerabilities



Best Practices



1	Does not use HTTPS	47 insecure requests found	⚠	∨
2	Does not use HTTP/2 for all of its resources	28 requests not served via HTTP/2	⚠	∨
3	Does not use passive listeners to improve scrolling performance		⚠	∨
4	Links to cross-origin destinations are unsafe		⚠	∨
5	Page is missing the HTML doctype Expected publicId to be an empty string		⚠	∨
6	Includes front-end JavaScript libraries with known security vulnerabilities	4 vulnerabilities detected	⚠	∨
7	Browser errors were logged to the console		⚠	∨
✓	Passed audits			8 audits ∨

SEO

Again, just does some basic checks for common things

- Metatags
- Robots.txt
- etc

There isn't a lot of available information about how this score is put together from a technical perspective.



SEO

These checks ensure that your page is optimized for search engine results ranking. There are additional factors Lighthouse does not check that may affect your search ranking. [Learn more.](#)



Content Best Practices

Format your HTML in a way that enables crawlers to better understand your app's content.

- 1 Document does not have a meta description ⚠️ ▾

Mobile Friendly

Make sure your pages are mobile friendly so users don't have to pinch or zoom in order to read the content pages. [Learn more.](#)

- 2 Document doesn't use legible font sizes 35.62% legible text ⚠️ ▾
64.38% of text is too small (based on 39.76% sample).
- 3 Tap targets are not sized appropriately 50% appropriately sized tap targets ⚠️ ▾

🔍 Additional items to manually check 1 audits ▾

✅ Passed audits 9 audits ▲

- 1 Has a `<meta name="viewport">` tag with width or initial-scale ✅ ▾
- 2 Document has a `<title>` element ✅ ▾
- 3 Page has successful HTTP status code ✅ ▾
- 4 Links have descriptive text ✅ ▾
- 5 Page isn't blocked from indexing ✅ ▾
- 6 robots.txt is valid ✅ ▾
- 7 Document has a valid hreflang ✅ ▾
- 8 Document has a valid rel=canonical ✅ ▾
- 9 Document avoids plugins ✅ ▾



Mobile Friendly

Make sure your pages are mobile friendly so users don't have to pinch or zoom in order to read the content pages. [Learn more](#).

- 2 Document doesn't use legible font sizes 35.62% legible text  
64.38% of text is too small (based on 39.76% sample).

Font sizes less than 12px are too small to be legible and require mobile visitors to “pinch to zoom” in order to read. Strive to have >60% of page text $\geq 12\text{px}$. [Learn more](#).

Source	Selector	% of Page Text	Font Size
...advagg_css/css__9dYd....css:5:1477 (mises.docksal)	#admin-menu-wrapper	11.40%	10px
Add'l illegible text		52.98%	< 12px
Legible text		35.62%	$\geq 12\text{px}$



Where to get it



Chrome Extension

Can add it from the web store

<https://chrome.google.com/webstore/detail/lighthouse/blipmdconlkpinefehnmjammfjpmpbjk?hl=en>

Adds an icon and will open a new tab to run the tests against

CLI Tool

If you 'node' then you can install Lighthouse and run it on the command line

<https://www.npmjs.com/package/lighthouse>

Chrome Dev Tools

If you inspect a page in Chrome and then go to the Audits tab that will run Lighthouse for you.

Lighthouse Viewer

If you need to share a report you can save the JSON file and use the viewer

<https://googlechrome.github.io/lighthouse/viewer/>



Workflows





**There are a couple of
different ways to do this:**

- Try and remember to run this manually
 - As a developer I want to remember to always manually run Lighthouse against the homepage and an interior page before I merge
- Or automate it :)



**We want to check each PR
for changes**

kanopicode commented 3 hours ago Member + 😊 ...

Lighthouse scores

Tested url: <https://developers.google.com/web/tools/lighthouse/>

Best scores across 3 parallel runs:

- ✘ performance: 60/90
- ✘ accessibility: 71/90
- ✘ best-practices: 86/90
- ✘ seo: 88/90

Detailed reports: [run 1](#), [run 2](#), [run 3](#)



Code Time!

<https://github.com/kanopi/lighthouse-circleci>



Next Steps

- Figure out solutions for sites not hosted on Pantheon
- Authenticated testing
- More tools testing in a similar fashion
 - Accessibility checking: aXe or pa11y
 - Load testing
 - Open to suggestions :)



KANOPI STUDIOS

Thank you!

Questions?

