Lighthouse Web page quality audits

CONCEPTS

Default run is mobile emulation with simulated slow 4G and a slowed CPU, so scores are lower than what a fast laptop feels. Use --preset=desktop for desktop.

Gather load page in Chrome, collect artifacts
↓ artifacts
Audit run audits on artifacts
↓ scores
Categories performance, a11y, SEO ...
↓ reporters
Report html / json / csv

Scores vary between runs. Close other tabs, run several times and compare medians before trusting a small change.

Needs Node 22+ and an installed Chrome or Chromium. Point CHROME_PATH at a specific binary.

RUNNING

lighthouse *<url>*
Audit a URL, write an HTML report to the cwd

lighthouse *<url>* **--view**
Open the HTML report when done

lighthouse --url-file=*<file>* **--output-path=***<dir>*
Audit every URL listed in a file

lighthouse *<url>* **--quiet**
Hide progress, debug logs and errors

OUTPUT

--output=*<html|json|csv>*
Pick the report format

--output=json --output=html
Write several formats in one run

--output-path=*<file|dir|stdout>*
Where to write the report

--view
Open the HTML report in a browser

--save-assets
Save trace and devtools log to disk

OUTPUT (cont.)

JSON output goes to stdout by default; HTML and CSV go to a file named from the URL and date.

CATEGORIES & AUDITS

--only-categories=*<a,b>*
Run only these categories

--only-audits *<id> ...*
Run only the named audits

--skip-audits *<id> ...*
Run everything except these audits

--preset=*<name>*
Built-in config: perf, desktop, experimental

--extra-headers *<json|file>*
Send extra HTTP headers (cookie, auth)

EMULATION & THROTTLING

--preset=desktop
Desktop viewport, desktop metrics scoring

--throttling-method=*<method>*
Throttling: simulate, devtools, provided

--throttling.cpuSlowdownMultiplier=*<n>*
Set CPU slowdown

CHROME

--chrome-flags="*<flags>***"**
Pass flags to the launched Chrome

--chrome-flags="--headless"
Run without a visible window

--chrome-flags="--no-sandbox"
Needed in many containers and CI

CHROME_PATH=*<path>* **lighthouse** *<url>*
Use a specific Chrome binary

GATHER & AUDIT SEPARATELY

For CI budgets and history across commits, use Lighthouse CI (GoogleChrome/lighthouse-ci) instead of scripting the CLI.