Still Loading:

Guide to Website Speed Benchmarks

Understanding Google's Core Web Vitals
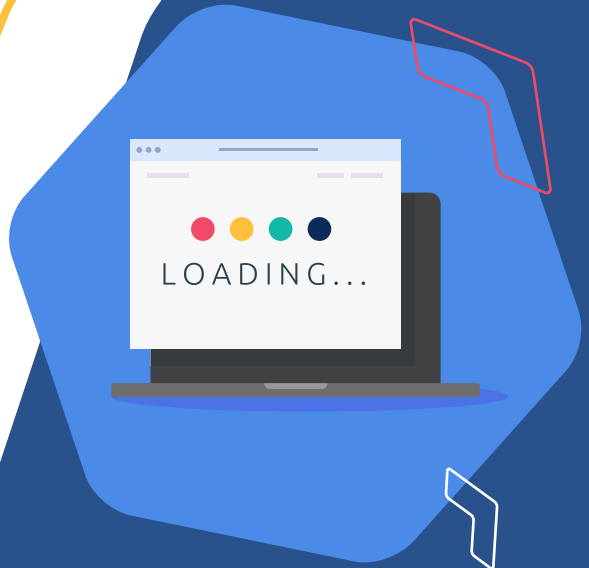
LOADING...

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Introduction

In May 2021, Google updated its search algorithm to favor sites with top-performing Core Web Vitals in its results.

— *What are Core Web Vitals?*

Core Web Vitals measure loading time, interactivity, and visual stability via the following three signals:

1-   Largest Contentful Paint (LCP), or the time it takes for a page's primary piece of content to load

2-   First Input Delay (FID) is the delay a user experiences when interacting with the page for the first time.

3-   Cumulative Layout Shift (CLS) measures page stability, by monitoring significant movements of the elements on the page that may frustrate or mislead the user.

* Note: We do not measure FID in this report as it requires a real user to interact with a page. Instead, we measure the Max Potential FID, the worst value a First Input Delay could have.

This update prioritizes on-site experience and ensures Google not only connects users with helpful content but also with websites that have exceptional user experiences. A recent Contentsquare, CommerceNEXT, and BizRate Insights survey found that online shoppers list slow page load times as the second most frustrating part of online shopping, right behind on-site pop-ups.

Today's users want answers quickly. If your site takes too long to load or if the page layout is unstable, they will become frustrated and go somewhere else. By seeing how your site stacks up against industry benchmarks, you can identify what areas of your site you need to improve and ensure Google doesn't penalize your site.

Methodology

We monitored the homepages of **2,000** leading online websites every day from January 9 to January 26, using desktop and mobile testing sites in the U.S., U.K., France, and Hong Kong (China). For each site performance metric measured, we retrieved the value of the 80th percentile during this period. Every industry and region is then represented by its median value in this report.

2.000
websites

4
countries:
U.S., U.K., France, and Asia

4
site loading KPIs

Through this method, we've compiled a list of site loading performance benchmarks to look at how your industry is fairing against the following metrics:

- Time to First Byte (**TTFB**)
- Largest Contentful Paint (**LCP**)
- Cumulative Layout Shift (**CLS**)
- Total Blocking Time (**TBT**)
- Max Potential First Input Delay (**FID**)

TIME TO FIRST BYTE (TTFB)

What is Time to First Byte?

Time to first byte (TTFB) indicates the time elapsed between the sending of the request requiring the web page and the reception of the first data by the user (the HTML code of the related web page)..
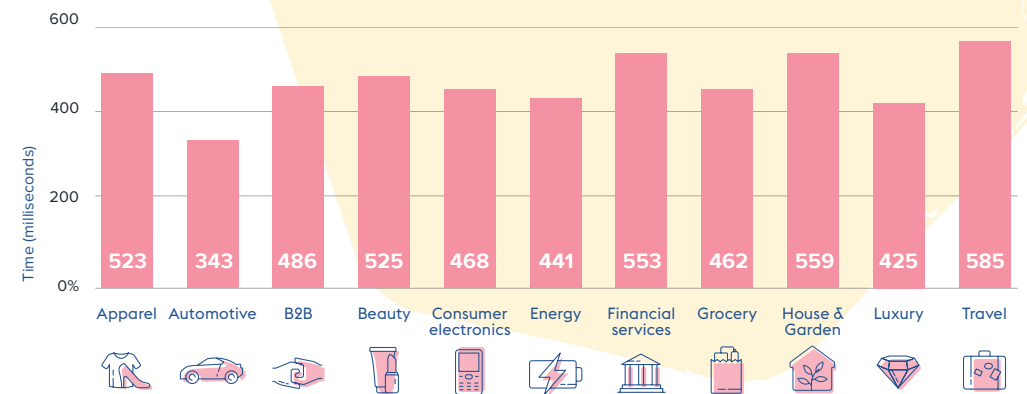
494 ms
Median Desktop TTFB across All Industries

1049 ms
Median Mobile TTFB across All Industries

While Google PageSpeed Insights recommends* websites have a server response time of under **200** milliseconds (ms), our data found that **no industry met that standard**. The industry with the lowest TTFB was automotive, which clocked in at **343 ms** when tested on a desktop experience. While Google's recommended **200 ms** is certainly something to strive for, it's very rare for websites to be able to hit that mark – most websites come in around the **350 - 450 ms** mark.

— *Desktop Time to First Byte per Industry*

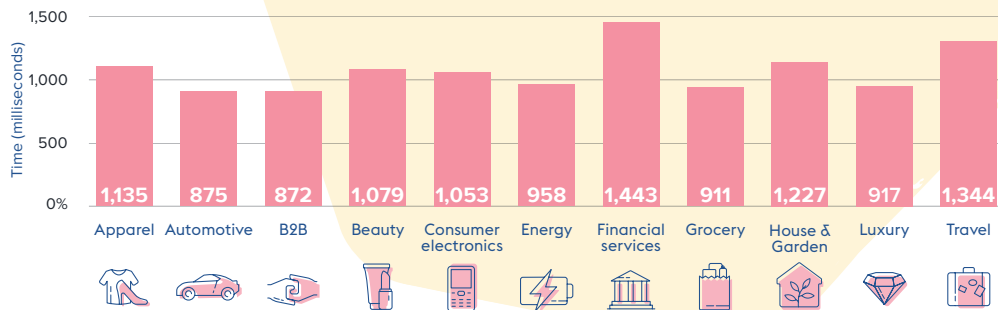|										
Apparel	Automotive	B2B	Beauty	Consumer electronics	Energy	Financial services	Grocery	House & Garden	Luxury	Travel
523	343	486	525	468	441	553	462	559	425	585

Time (milliseconds)

The median across all industries was **494 ms**, which while high, isn't cause for concern just yet. It's important to note that websites with more dynamic content than static content will naturally have slower server responsiveness, so a desktop TTFB of **200-350 ms** is still acceptable. Just note, a TTFB greater than **400 ms** could cost you visitors and conversions, so you should investigate what's slowing down your server. The three industries with the highest desktop TTFB and the most room for improvement were travel (**585 ms**), home & garden (**559 ms**), and financial services (**553 ms**).

— *Highest TTFB on Desktop*　　— *Lowest TTFB on Desktop*

Travel
585 ms

Automotive
343 ms

Travel had the highest TTFB on both desktop and mobile, which could be due to the dynamic nature of most of its content, as many travel sites pull prices and availability from other airlines, car rental, and hotel websites, as well as feature data-heavy inspirational photos and videos. The home and garden industry was also top of the list, so reducing TTBT is a promising opportunity for improving the industry's online experience, which could help keep customers around long after the pandemic ends.

— *Mobile Time to First Byte per Industry*

	Apparel	Automotive	B2B	Beauty	Consumer electronics	Energy	Financial services	Grocery	House & Garden	Luxury	Travel
Time (milliseconds)	1,135	875	872	1,079	1,053	958	1,443	911	1,227	917	1,344

As expected, our data revealed a huge discrepancy in TTFB between the desktop and mobile experience, as the latency on mobile bandwidth is higher. Across all industries, the median mobile TTFB was 1049 ms, or +112% slower compared to the median desktop time. This is a trend that all industries will want to make note of, especially as more and more users use their smartphones to discover, research, and try new goods and services.

Why does my site have a slow TTFB?

There are a few factors that could slow down your TTFB, like if your:
 - Server is located far away from your visitor's location
 - Website has complex firewall rules
 - DNS lookup times are slow
 - The secure version (HTTPS) requires multiple certificates validations (EV cert for example)
 - Visitor has a slow internet connection

"Even if the issue may come from the SSL certificate, the key to a good TTFB is often the cache management on servers as close as possible to the user. But don't think that a content delivery network (CDN) magically solves the problem. The only thing more complicated than managing a cache policy is managing a cache invalidation policy!"

Boris Schapira, Customer Success Manager, Product

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LARGEST CONTENTFUL PAINT (LCP)

What is Largest Contentful Paint?

Largest Contentful Paint (LCP) evaluates loading performance by measuring the time it takes for the largest content block to appear on a screen. It's an important UX metric as it measures the point when a user perceives the page has loaded, which typically encourages them to stay and interact with a page.
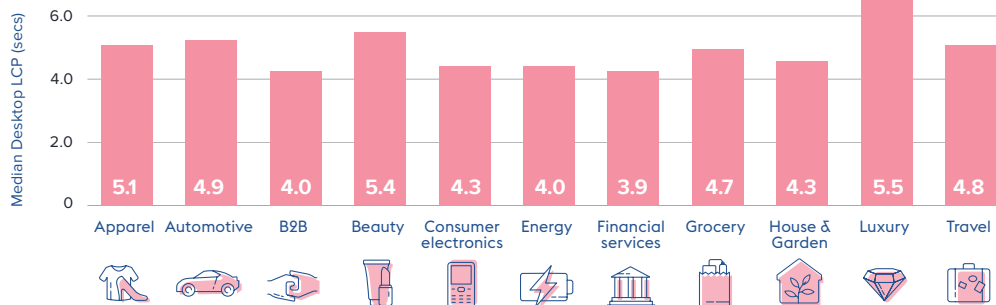
— *Median LCP across all industries*
Source: Google's web.dev

Good	Needs improvement	Poor

2.5 sec   4.0 sec

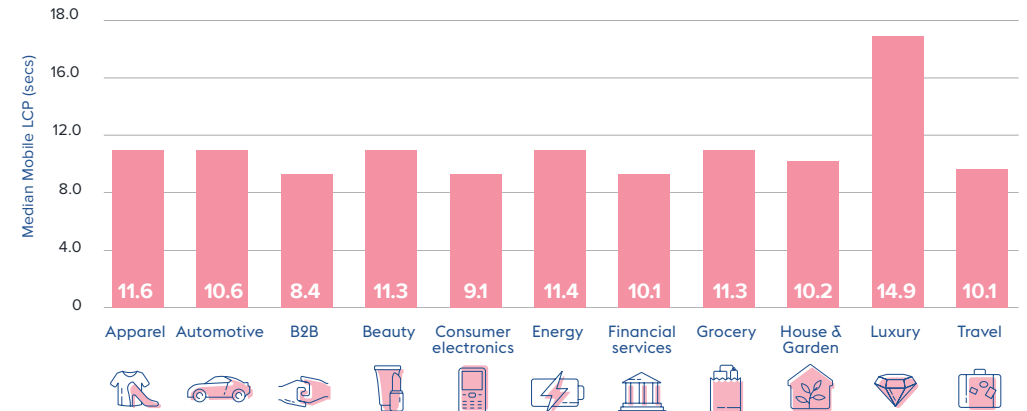| 4.6 secs	10.6 secs
Desktop	Mobile
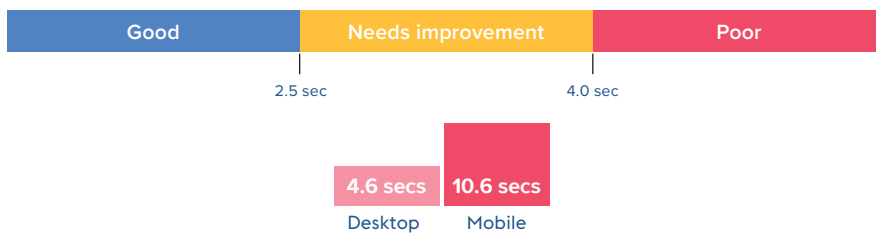
While an LCP of **2.5** secs or less is ideal, our data revealed most brands have a lot of work to do to get their LCP into that range. The median LCP across all industries for desktop was **4.6** seconds, almost double the suggested rate, and **10.6** seconds for mobile.

— *Desktop Largest Contentful Paint (secs) by Industry*

Apparel	Automotive	B2B	Beauty	Consumer electronics	Energy	Financial services	Grocery	House & Garden	Luxury	Travel
5.1	4.9	4.0	5.4	4.3	4.0	3.9	4.7	4.3	5.5	4.8

The industries with the lowest desktop LCP times were financial services (**3.9 secs**), B2B (**4.0 secs**), and energy (**4.0 secs**). The fast LCP load times of these industries could be attributed to the fact that they feature less dynamic content or have primarily text-based designs, which can speed up LCP loading times.

— *Mobile Largest Contentful Paint (secs) by Industry*

Apparel	Automotive	B2B	Beauty	Consumer electronics	Energy	Financial services	Grocery	House & Garden	Luxury	Travel
11.6	10.6	8.4	11.3	9.1	11.4	10.1	11.3	10.2	14.9	10.1

While all sites had a considerably slower LCP on mobile, the luxury industry suffered the highest loading times, taking a painful **14.9** seconds to load. Apparel (**11.6 secs**), energy (**11.4 secs**), beauty and grocery (both **11.3 secs**), and had the highest median mobile load times. These industries typically feature a lot of product images or videos on their homepages, two elements known to significantly slow down LCP loading times. Media, editorial images, visual backgrounds, and videos are commonly used by the luxury space to emphasize the quality of their products, which would account for the industry's significant desktop and mobile LCP times.

"Decorative images and videos taking up the entire screen size are a design trend of the last few years, but those media can really harm your LCP. Don't reject them systematically: what you lose in web performance, you may gain in brand image. A/B tests and focus group discussions can help you find the most efficient design."

**Boris Schapira,** Customer Success Manager, Product

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CUMULATIVE LAYOUT SHIFT (CLS)

What is Cumulative Layout Shift?

Have you ever been on a website, about to click on a CTA, link, image, etc. when the whole page suddenly shifts down, causing you to click on something else by mistake? That's a layout shift. Cumulative layout shift measures the stability of your page by multiplying the impact fraction, or the portion of the screen that shifted unexpectedly, by the distance fraction, or how far it moved down the page, for every layout shift on a page.

— *Median CLS across All Industries*
Source: Google's web.dev

Good	Needs improvement	Poor

0.1   0.25
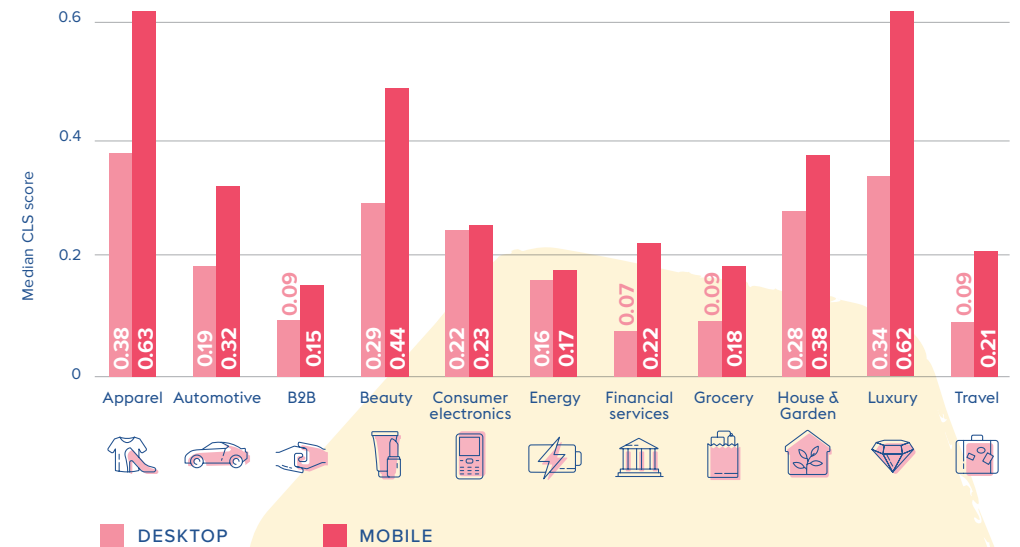
0.19	0.29
Desktop	Mobile
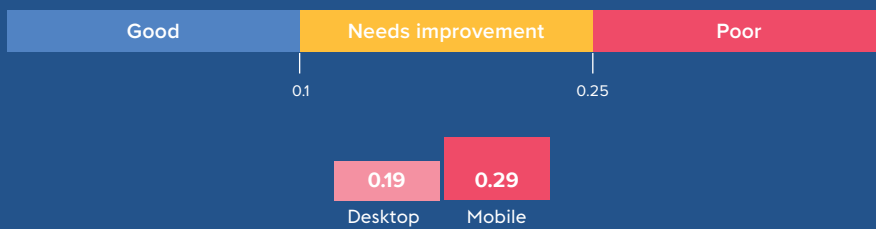
We found the median desktop CLS for all industries is **0.19**, a score that Google suggests "needs improvement." For mobile, the median jumped to **0.29**, which provides a poor experience to smartphone users, according to the search engine giant. Per Google's recommendations*, brands should aim for a CLS equal to or below **0.1** to give users the best possible experience.

Apparel and luxury are again at the bottom of the leaderboard, each taking **0.38** and **0.34**, respectively, to load for desktop users. The financial services (**0.07**) and B2B, travel and grocery (**0.09**) average desktop CLS times were right in Google's sweet spot, saving their customers from inconvenient layout shifts.

While no industry met Google's performance standards on mobile, B2B (**0.15**) and energy (**0.17**) had the lowest times of any sector, while luxury, apparel, and beauty again topped the charts for high load times.

— *Desktop and mobile CLS (secs) by industry*

	Apparel	Automotive	B2B	Beauty	Consumer electronics	Energy	Financial services	Grocery	House & Garden	Luxury	Travel
Desktop	0.38	0.19	0.09	0.29	0.22	0.16	0.07	0.09	0.28	0.34	0.09
Mobile	0.63	0.32	0.15	0.44	0.23	0.17	0.22	0.18	0.38	0.62	0.21

■ DESKTOP   ■ MOBILE
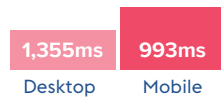
TOTAL BLOCKING TIME (TBT)

What is Cumulative Layout Shift?

Total Blocking Time (TBT) measures the total amount of time that a page is blocked from responding to user input (clicks, keyboard presses, etc) after the page has started to render content. It's calculated based on Long Tasks, or how long a task monopolizes a web browser (**>50** milliseconds) and blocks other critical tasks from being executed.

TBT is a sum, computed by adding the blocking portion of all Long Tasks between First Contentful Paint and Time to (Consistently) Interactive. The blocking portion of the long task is the duration over **50 ms**.

— *Median TBT across All Industries*

1,355ms	993ms
Desktop	Mobile

For total blocking time (TBT), we found websites on desktop had a median of **1355** ms to load and **993 ms** on mobile. These TBT values present a large opportunity for improvement for online businesses, as they are well above recommended values. According to Google*, a good TBT ranges from **0** to **300 ms**, while sites in the **300** to **600 ms** range are encouraged to improve their rates. Anything above **600 ms** is considered a poor user experience.

It's no surprise TBT on mobile was significantly lower than desktop, as many sites offer fewer JavaScript modules on mobile devices. For example, product carousels are often used on desktop experiences but left out of mobile. This can significantly speed up smartphone TBT times.

— *Median Total Blocking Time by Industry*
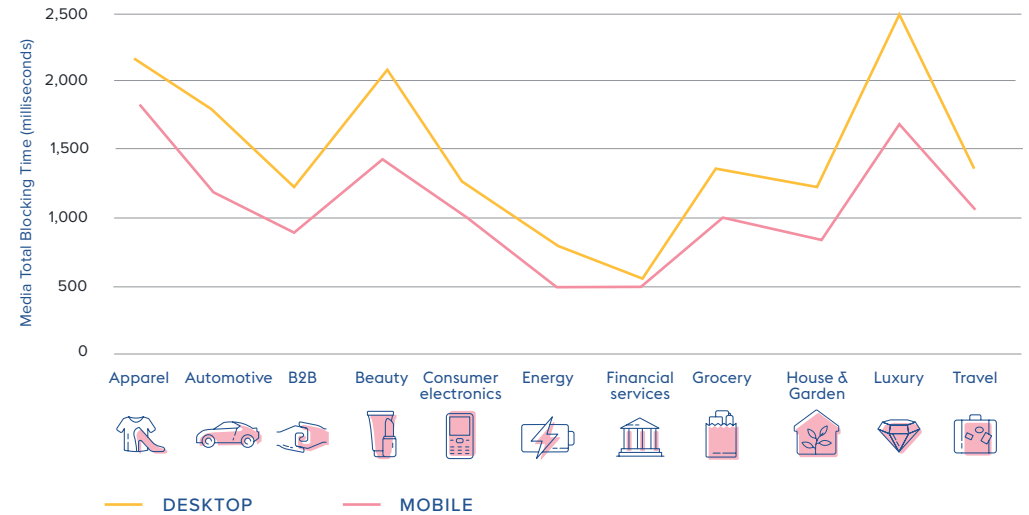
Looking at TBT by industry, financial services and energy had the best performing TBT on both desktop and mobile devices, though still a far cry from Google's standards. In line with the findings of the other site performance indicators in this report, the apparel, luxury, and beauty industries had the highest TBT times out of any industry.

"Total Blocking Time often translates a heavy reliance on JavaScript. Limit your use of JavaScript to improve the usability of your pages."

Damien Jubeau, Product Manager

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MAX POTENTIAL FIRST INPUT DELAY (FID)

What is Max Potential First Input Delay?

Max Potential First Input Delay (max FID) is the theoretical maximum delay a user could experience when interacting with a page.

Whereas First Input Delay (FID) is collected from a real user interacting with a page, Max Potential FID can be computed without a user. As a result, the value is the worst-case scenario delay that a user would face by interacting with the page when the page is least responsive.

— *Median Max Potential FID*

Good	Needs improvement	Poor

130 ms   250 ms

531 ms — Desktop   **447 ms** — Mobile
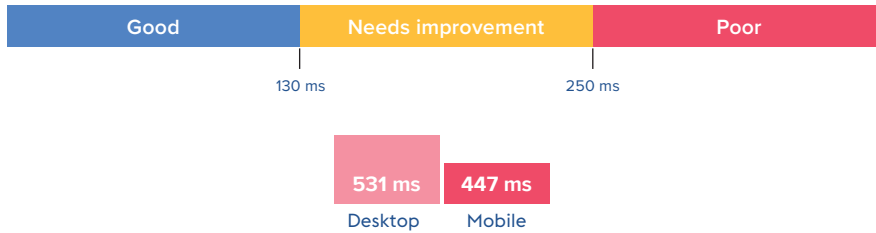
The max potential FID for desktop experiences was **531 ms** across all devices, while mobile was **447 ms**. Again, the energy, financial services, and B2B industries had the best performance on both desktop and mobile, while, again, luxury, apparel, and beauty topped the charts.

While Google recommends* a strong max potential FID is between 0 and 130 ms, our data came in much higher than that. It is important to note that we only tested these interactivity metrics on website homepages, which typically do not have more interactive elements like forms, videos, and filters. For your own brand, you might be more interested in how quickly your product listing pages, for example, become interactive to better understand when visitors can use on-page features like sorting and filtering and how delays affect your site experience.

— *Desktop and Mobile Max Potential FID by Industry*
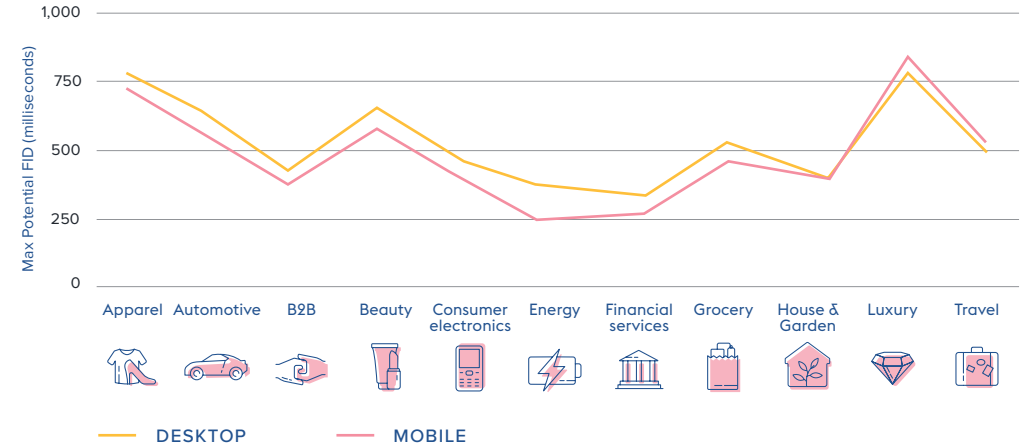
* All Google performance standards are taken from web.dev

Reduce page load times

Don't let your SEO efforts go to waste – prioritize your page load times in the coming months to ensure your site doesn't get penalized after the Google Core Web Vitals update. Today's digital landscape is so competitive that even a 2-second delay can push a user to abandon your site in favor of a faster experience.

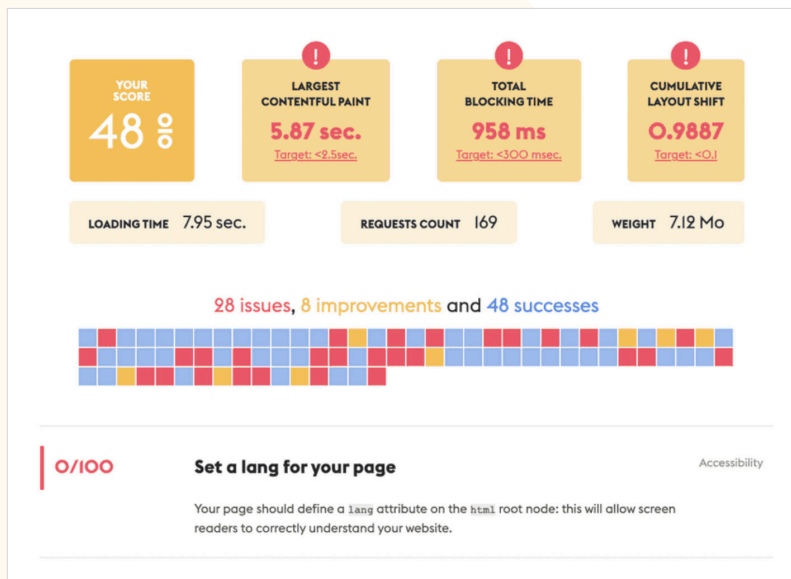# Get a free website speed performance report

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- Overall performance score
- Website speed
- Load time
- Number of issues

Plus get recommendations on quick wins and personalized, prioritized action items

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