



2010 Website Performance Benchmarks



How fast should your web site load? In this paper we present industry averages for web site load times based on the average load times of the Fortune 500 company homepages.

The average load times across the Fortune 500 provides good guidance for the experience website visitors are accustomed to and to see, and a benchmark for all websites meet.

The data in this report was compiled by performing thousands of performance tests against Fortune 500 websites, and we include information on how you can measure the performance of your own website.

The Four Benchmarks

Here are the 4 important performance benchmarks based on averages across the Fortune 500 companies. The load times are real world “end user load times” – how long it takes to load a page from the time a user enters an URL in their browser to when the page displays in the browser.

#	Benchmark	Load Time	Description
1	First view load time (Domestic)	7.066 seconds	Time to load the homepage for a first-time visitor located in the United States.
2	First view load time (International)	9.462 seconds	Time to load the homepage for a first-time visitor located internationally.
2	Repeat view load time	3.970 seconds	Time to load the homepage for a repeat visitor located in the United States.
3	Start render time	2.960 seconds	Time a first-time visitor watches a blank page before it starts to draw.

The averages for the Fortune 500 are a standard every website should aim to achieve or improve upon. For domestically focused websites, the domestic benchmarks are the most important. For globally focused websites, both the domestic and global benchmarks are important.

How to Test Your Own Website

Load times testing is based on [PageTest](#) – a free online tool that uses dedicated computers from locations around the world to test the speed of websites. To see how much faster the site could be accelerated by optimizing the client load time, use Aptimize’s [website-speed-test](#). This tool uses PageTest to measure the current load time, then uses the results to estimate how much faster the site could be with optimization.



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Key findings

There are four key findings from benchmarking the Fortune 500 website load times:

1. Global load times are slower than domestic load times

On average, global load times are 2.385 seconds longer than domestic load times. This is caused by network latency - slower broadband across international connections, and the additional travel-time for data packets over long distance.

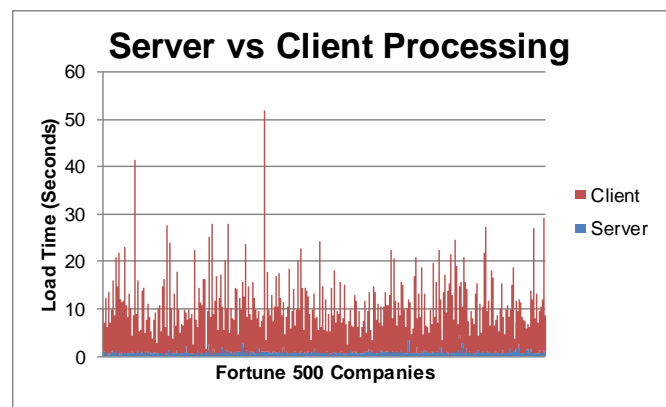
2. Why are we waiting?

Client processing is 89% of page load times.

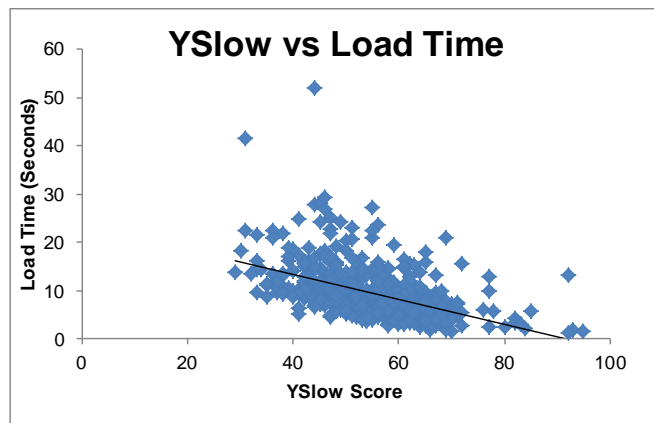
Page load times are a combination of server processing (the time for the server to process the page request, load data from databases and back end systems, and produce the page ready for download); and client processing (the time it takes to load all the page resources and display the page).

On average, server processing contributes 11% and client processing contributes 89% to load times.

To match the Fortune 500 average, a website should have 1.019 seconds server processing, and 8.443 client processing.



3. YSlow score is the best indicator of load times



The [YSlow](#) score is a score from 0-100 evaluating the composition of the webpage against performance best practices. It is useful for measuring compliance against best practice, and for the Fortune 500 provides the best indicator or prediction of load times.

YSlow scores ranged 29 to 95, with an average of 55 and a median of 56.



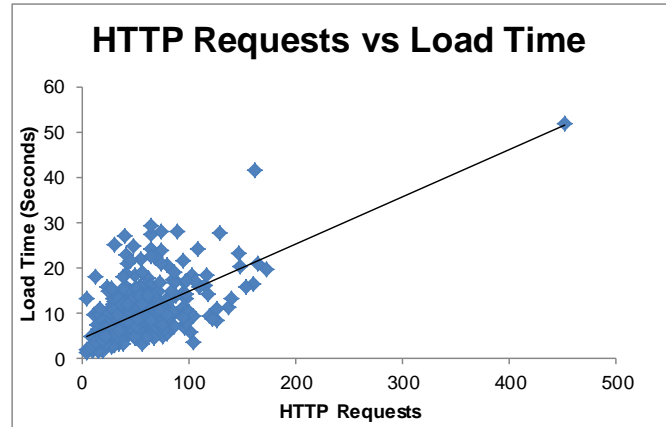
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4. HTTP requests and page size are both good indicators of load times

Both the number of HTTP requests and the page size are good indicators of load time.

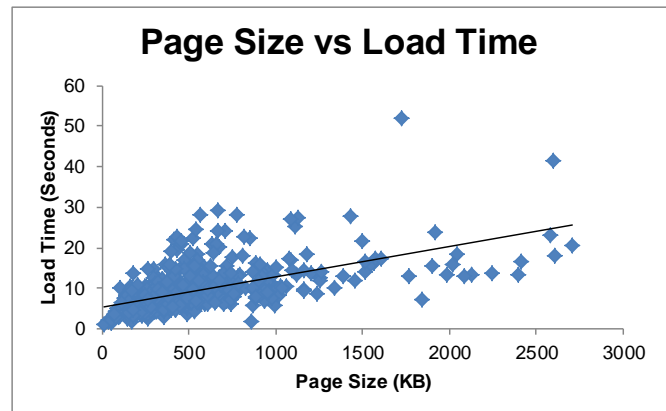
Every additional stylesheet, javascript file, image, or piece of syndicated content on a webpage adds one or more extra HTTP request – a round trip from client to server to load the resource. These contribute significantly to client processing, and can impact scalability on the web server as it has to process more HTTP requests.

The number of HTTP requests for a first view ranged from 4 to 452, with an average of 48 and a median of 41.



Page size is also an indicator of load times – the larger the page size, the more bytes have to be transmitted over the internet from server to client

The average page size for a first view ranged from 33 KB to 2.7 MB, with an average of 538 KB and a median of 427 KB.



Methodology Used

To obtain these results, we used PageTest – a free online tool that accurately measures load times by using Internet Explorer 7 on a dedicated machine from locations around the world to load the webpage and measure load times to “document complete” – where all the page elements are loaded, but before any flash animations begin. We performed over 1500 tests, measuring load times from Dulles VA USA; Wellington, New Zealand and Gloucester UK. The domestic measurements are obtained from the Dulles VA test location, the global load times are an average of the test results from the three locations. For more information and a copy of the raw test results, contact service@aptimize.com.

To test your own website using the same methodology, use the free [website-speed-test](#).

About Aptimize

The report was compiled by Aptimize, the world leader in automated website performance tuning, www.aptimize.com. In 2008, Aptimize revolutionized website performance with Aptimize Website Accelerator, a web server software product that dynamically accelerates websites and intranets in real time. Now available for Windows and Linux based websites, Aptimize accelerates websites instantly with no code changes, no extra hardware.