Techmeme Leaderboard Load Times Benchmark

Summary

The Techmeme leaderboard is a highly respected list of the sites that are most frequently linked to by Techmeme's human editors and aggregation algorithms.

This report highlights the fastest and slowest relative load times of sites listed on the Techmeme Leaderboard. After measuring the load time of each site, Aptimize analyzed the most common performance problems and in this report provides simple recommendations for fixing these problems and accelerating the Techmeme Leaderboard websites.

Key Findings

- The average load time of a Techmeme Leaderboard site was 11.42 seconds for a first-time view
- This is significantly slower than the average load time of 7 seconds for the Fortune 500 websites
- Improperly sized and uncompressed images were the most common issue causing slower load times
- Advertisements also caused major slowdowns on many of the websites
- Social media widgets like syndicated feeds, Facebook like buttons, Digg and Tweet buttons were very common and all added extra load time pages
- The five fastest-loading homepages on the Techmeme Leaderboard were:
    - Android Central (less than 1 second on first view)
    - Associated Press (less than 1 second on first view)
    - Facebook (1.34 seconds on first view)
    - Marco.org (4.33 seconds on first view)
    - Windows Team Blog (4.37 seconds on first view)
- The five slowest-loading homepages on the Techmeme Leaderboard were:
    - Scobleizer (32.53 seconds on first view)
    - PreCentral (29.90 seconds on first view)
    - CultofMac (27.67 seconds on first view)
    - MocoNews (24.47 seconds on first view)
    - Gizmodo (24.16 seconds on first view)

A Brief Primer on Web Performance

On the web, less is faster and smaller is faster. About 80% of the time we wait for pages to load is spent with our browsers loading HTML, images, scripts and stylesheets - the stuff that makes websites interesting.

Each extra item on a page adds one or more “requests” – an extra round trip from browser to server. These round trips take extra time if the items are large or stored on an external or “third party” domain. So – less items, and smaller items make faster websites.

The 5 Worst Offenders:

1) Advertisements

Advertisements were easily the worst offenders in our research. Most media sites rely heavily on advertisements to generate revenue, so they are necessary to the sites themselves, but a problem that needs to be fixed nonetheless. The two biggest problems with the performance of advertisements were:

- Sub-contracting: When a webpage includes an advertisement, the user’s browser is re-directed to load the ad from the ad-provider. This takes time. To make matters worse, the ad-provider may sub-contract the ad content to another ad-provider, which in turn sub-contracts to another ad provider, and so on. Each sub-contract causes another re-direct and adds more load time.
- Blocking: Most websites normally allow ads to block other content from loading – so the page is stalled while all the sub-contracting is taking place, and the page is only loaded after the ad has loaded.

Because of these two primary problems, the load times for advertisements were inconsistent across the sites we analyzed. Depending on the third party advertising platform, we saw large variations in load times.

In some cases, such as on Electronista, advertisements took a full six seconds to load in the browser. This was not a result of an unusually large amount of ads, but due to the sub-contracting from the ad provider.

Solution:

Although you can’t speed up the sub-contracting, you can design pages to prevent blocking so the pages load in parallel with the ads, which creates a much faster experience for users. The two best techniques to accomplish this are:

1. Utilizing asynchronous JavaScript loading, so the ads load in parallel with the rest of the page

2. Place the ads in an I-Frame so they load as a separate page-within-the-page.

When selecting an advertising provider, check if they offer any performance guarantees – if you use a provider that cares about speed then everyone wins.

2) Analytics Products

Website analytics products such as Google Analytics are critical tools for media sites since they provide incredibly rich insights in to the behavior of a given readership. On the flip side, they also registered as one of our 5 Worst Offenders.

Our research found that Google Analytics is the fastest of all the analytics products we came across in our testing. We should note that while the product was the fastest we measured, it still contributed noticeably to total load times.

Other analytics providers, however, added many more seconds to page load times. One provider, Net Shelter, added 15 resources to the page load which amounted to an additional 4.5 seconds of load time in the browser.

Solution:

Based on our research, Aptimize recommends that media sites choose their analytics provider not just on features, but performance – you don't want the tool that monitors to also impact heavily on what is being monitored. It's also important to carefully weigh the benefits of getting a myriad of data and analytics at the expense of site performance and user experience.

More data is great, so long as it's not gathered by significantly sacrificing on the user experience.

3) Social Media Buttons and other Widgets

Social media buttons and widgets are one of the newer issues that we encountered in our research and it has a significant impact on performance. Simply put, the Facebook Like and Share buttons, various Send buttons, as well as Tweet, and Digg buttons are much heavier than site administrators seem to realize.

Even the smallest Like button put on a page will add at least one additional HTTP request. For example, every Tweet button generates 3 HTTP requests.

Other problems we spotted included the fact that each Tweet button downloads the button image once for every button that is installed on a page. So if it is placed at the base of all 15

articles on the front page of a blog, it will force the browser to download the image 15 times just to load the page.

The new Facebook Like boxes with people's Profile pictures suffer from the same performance problem. The images of a visitor's friends under an article are downloaded each time that the Like box is embedded in the page.

In the case of *TechCrunch*, this results in 21 requests, adding approximately 1.3 seconds to the total load time.

Separately, the Amazon reading list widget adds 5 seconds to *9to5 Mac's* load time.

Solution:

After reviewing the results of our research, Aptimize recommends using these resources carefully. While they can noticeably improve audience engagement and attract new traffic, these widgets and buttons can also have the opposite effect if your page loads particularly slowly.

To get started, we suggest using the lightweight "Like" button from Facebook in place of the full widget. We also recommend limiting redundancy with Tweet buttons and other smaller sharing tools.

4) Images

Images were by far the most widespread offender in our research. Most of the sites in the Techmeme Leaderboard were found to be mismanaging their images and adding unnecessary seconds to page loads.

Many websites have one or more of these three problems:

- Large images - Many photographs were more than 500 KB in size. With JPEG and PNG compression techniques, these almost can always be shrunk to a fraction of this size without any noticeable difference in quality.
- Improperly sized images - Some of these large images were resized in the HTML to be smaller. So browsers are forced to download a huge image, and then resize it to make it smaller. The simple solution is to make images the same dimensions as how they will appear on the page.
- Third party images - Every image referenced in a page, but stored on a remote website causes a longer load times, since the browser has to resolve the hostname via DNS, open a new HTTP connection, load the image then close the connection.

Solution: The web is not a fine art gallery demanding the highest resolutions. Watch images sizes and re-sample them to under 100KB, Re-size them to the correct dimensions for the webpage, and store them on your own site.

5) Things Forgotten: Two easy best practices and one hard one

While the research findings reveal culprits that bogged down load times, it's noteworthy to discuss the absence of techniques that could speed things up.

There are two very simple techniques that give a boost to websites, yet many sites in the Techmeme Leaderboard don't use them. This is low-hanging fruit that will immediately improve load times:

- Shrinking (or minifying) scripts and stylesheets. Taking out whitespace and comments from scripts and stylesheets will make them smaller and, ultimately faster.
- Gzip compressing text files – scripts, stylesheets and HTML will make them smaller. Again – smaller is faster.

Now for the hard one:

- On-demand image loading. Most webpages are taller than what the browser can display. The information without scrolling is called "above the fold". When you scroll down this is "below the fold" (a reference to newspapers that were folded in half, and had the important headlines above the fold). Instead of loading all the images on the webpage all at once, just load the images above the fold, and load the images below the fold "on-demand" as the user scrolls down.
- This technique is a little more complicated, but illustrates the wealth of hi-performance techniques available to designers to speed up the sites on the Techmeme leaderboard.

Methodology Used

To obtain these results we used WebPageTest, a free online tool that accurately measures end-user load times (what the user actually sees) using Internet Explorer 7 from different locations around the world. You can use WebPageTest yourself, and try different browsers and locations to see the difference in performance.

We performed over 300 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.

Page speed test results vary depending on a wide variety of factors including location, hardware resources, browsers and more. However, for the purposes of this report, all tests were conducted from the same three locations using the same browser, internet connection and hardware. The results reflect a relative comparison across the site based on these constants.

For more information and a copy of the raw test results, contact service@aptimize.com.

About Aptimize

This research report was produced by Aptimize, the worldwide leader in automated website performance tuning. 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.