



SPEED MATTERS:

21 Expert Tips to
an Ultra-Fast
WordPress Website

WHY DOES SITE SPEED MATTER?

INTRO

There is much research that indisputably shows that the loading speed of a website is really important. In an age where new technologies appear every day, where the speed of computers and the Internet increases greatly with each new innovation that becomes widely used, the attention span of the visitor is much shorter than it used to be a few years ago.

As a webmaster, you have only a few precious seconds to grab and retain your visitor's attention and you shouldn't waste those seconds on loading. It doesn't matter if you sell goods, offer services or have a simple blog. If your website is slow, you will be losing traffic, visitors and possibly money. Generally, if your website takes more than a second to load - it's slow and needs optimizing.



At **SiteGround**, we have spent a lot of time developing a platform that optimizes speed and applies performance enhancing technologies specifically for our WordPress customers. Although having a web host that uses the latest hardware and speed enhancing technologies is essential to your site performance, it is not the only thing. There are several other tools and techniques you can use and apply to improve the speed of your WordPress website and we'd like to share them with you.



1

IDENTIFY AND PRIORITIZE **ISSUES**

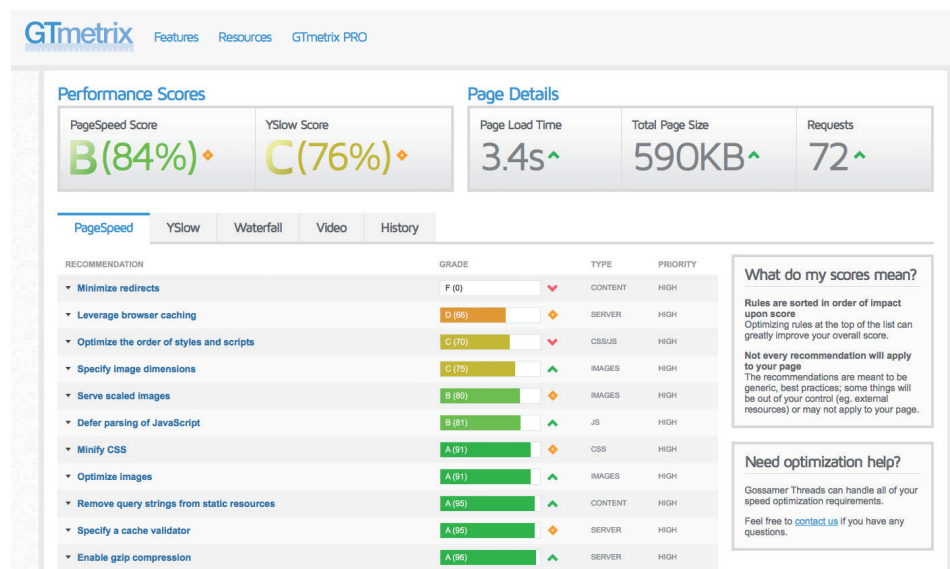
BENCHMARK

The first thing you should do is find out if you actually have a problem. The easiest way to do so is to use benchmark tests. There are some free tools such as:



GTmetrix (<https://gtmetrix.com>)

If you perform a benchmark test on your site using GTmetrix, you get results from both the Google PageSpeed test and Yahoo Slow test in a single report. The results are sorted in order of severity.



Pingdom Tools (<https://tools.pingdom.com>)

The Pingdom Tool displays results in several tabs, but two of them are the most important. The Waterfall, which shows the site loading time and how much time each resource takes and the Performance Grade tab, which gives you recommendations on how to improve, similar to GTmetrix.

There are many other tools out there and generally if you have the time, the more tests you perform on your site the better. However, these two tools are usually sufficient to get a clear picture about how your website is performing in terms of speed.

Pro Tip: Even though most of the benchmarking tools will give you a “grade”, don’t go too far chasing it. If your website loads in under one second, you’ve done the biggest part of the job.

COMMON ISSUES



If the benchmark tests show you have an issue with your site speed, the next step is to identify the actual blockers. Although every website is different and has its own set of speed issues, some problems are very common and it's safe to start with them:

- *Too many posts on the front page*
- *Too many social and sharing plugins and widgets*
- *Too many external fonts*
- *Bloated themes with too many features*
- *Large and unoptimized images*

PRIORITIZE THE ISSUES



Your research and analysis of the causes of slowness may result in a very long list of things you could do. But you need to prioritize that list. Fixing some of these problems may be time consuming, but will not result in major improvements in speed. There are two things that you should consider when prioritizing your fixes:

- *How difficult will it be to fix the issue?*
- *What effect will resolving the issue have on your site?*

You can use the answers to these questions in order to create a list of optimizations starting from those that will have the most significant impact for the time spent.



PAGE SIZE & CONTENT **OPTIMIZATIONS**

1. REDUCE THE NUMBER OF POSTS SHOWN ON YOUR INDEX PAGE

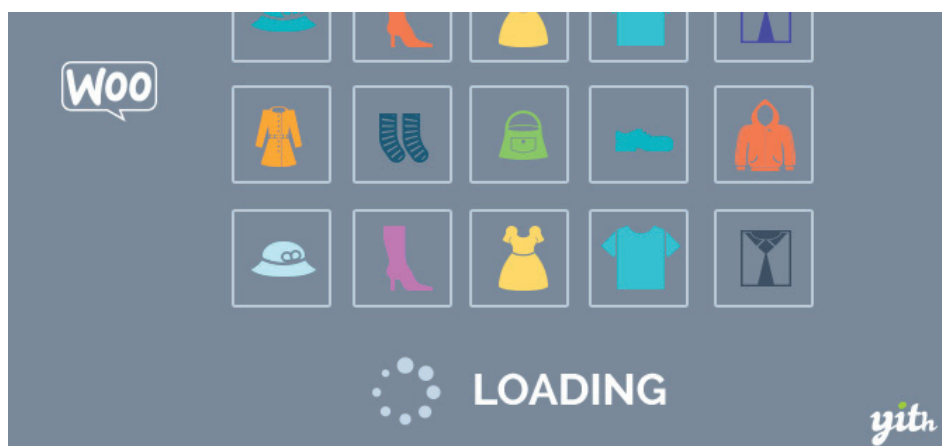


Decreasing the number of posts shown on your homepage can be easily done from the WordPress administration panel. Go to:

Settings -> Reading Settings -> Blog pages show at most

Then, change the Blog pages “show at most” value to a lower number.

Alternatively, you can use a plugin like [YITH Infinite Scrolling](#). It will dynamically show more posts when your users scroll down near the end of your page, similar to the way Facebook shows more posts when you’re scrolling.



2. SPLIT LONG POSTS ON YOUR INDEX PAGE



If your site tends to rely on long posts, you may want to split them into pages using the `<!--nextpage-->` tag within the post content. By doing this, you will see a pagination under the page or posts and your users will be able to navigate through them by clicking on the next pages.

This will split one big and slow page into several faster ones.

3. REPLACE SLIDER WITH MULTIPLE IMAGES WITH ONE STATIC IMAGE



Sliders usually use a lot of JavaScript to operate. Furthermore, not all of the plugins that enable the slider functionality on WordPress sites are written in light and optimized code. Last but not least, sliders aren't particularly user-friendly on mobile devices. So, if your design allows it, simply replace your slider with a single static image.

However, if you really need and want a slider, I recommend using [Soliloquy](#). It comes in a free and a professional version, which includes more features. This plugin renders a fast and lightweight slider that has everything most people would need from a slider plugin. Another good solution is the [Meta Slider](#) plugin which is another free and well-written extension.

4. USE APPROPRIATE IMAGE SIZES



Images are an essential part of a website and may need some time to be transferred from the server while the site is loading.

If you want to display an image 300x300 pixels, don't upload a 1024x1024 pixels image and then set it to be shown smaller with HTML or CSS.

5. OPTIMIZE IMAGE SIZE WITHOUT DAMAGING QUALITY



I recommend using a free plugin called [EWWW Image Optimizer](#). It optimizes the file size of your images without damaging their quality and strips them off of all the unnecessary data that your camera saves when you take a photograph (e.g. GPS location of the photo, make and model of the camera used).

Even if the image file is reduced by just a few KBs, when you combine all the images on one page, usually the performance gain is significant.

6. REDUCE THE USAGE OF EXTERNAL FONTS



Each font that you use from Google Free Fonts or another similar service has multiple variations, weight (300, 400, 500, 700), encoding (Latin, Cyrillic), style and so on.

Check your website and include only the font variation that you're actually using.

Furthermore, if you're loading a font for a small piece of text somewhere on your site, I recommend compromising on the design and simply using a font you already have on other pages.

7. MANAGE THE VOLUME OF COMMENTS ON YOUR SITE

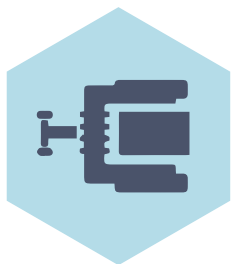


If you get a lot of comments, this may be slowing your site in two ways. First - this makes your page more dynamic (if you have enabled caching, it has to be cleared more often) and second - each comment adds to the size of your page and HTML output.

In such cases, I recommend replacing the default WordPress comment system with a plugin called [Epoch](#). It will replace the default way WordPress handles comments with a more optimized code that can really speed up your site especially if you get a lot of comments.

[Disqus](#) is also an option, but it's a third party service that relies on a plugin to replace your default comment system with theirs. It will offload the comments from your site, but they will no longer be stored on your server.

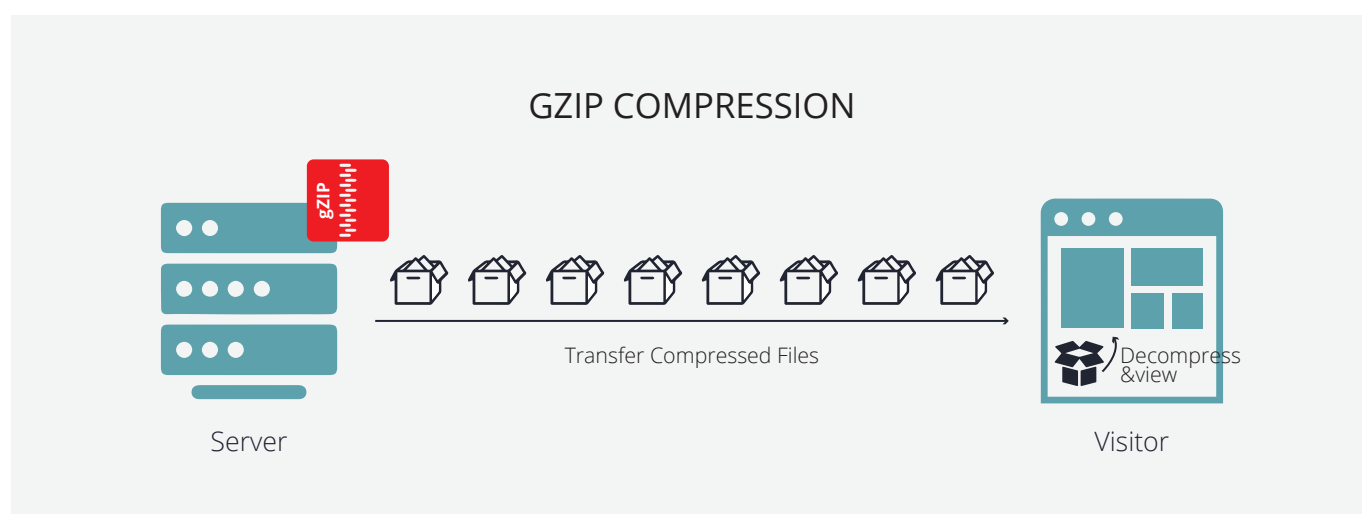
8. ENABLE GZIP COMPRESSION FOR YOUR PAGES



With gZIP compression enabled, the final HTML output of your site and some of the static resources will be compressed before being transmitted to your visitor. Then, your visitor's browser decompresses the content before rendering. It's much faster to compress and decompress this content than to transfer it without compression.

Enabling gZIP compression is very easy and requires almost no effort. Simply add this code to the .htaccess file in your WordPress main folder:

```
AddOutputFilterByType DEFLATE text/plain
AddOutputFilterByType DEFLATE text/html
AddOutputFilterByType DEFLATE text/xml
AddOutputFilterByType DEFLATE text/css
AddOutputFilterByType DEFLATE application/xml
AddOutputFilterByType DEFLATE application/xhtml+xml
AddOutputFilterByType DEFLATE application/rss+xml
AddOutputFilterByType DEFLATE application/javascript
AddOutputFilterByType DEFLATE application/x-javascript
```



gZip decompresses content before rendering, making the transfer faster.

9. MINIFY AND COMBINE JS AND CSS FILES



Minification and combination are two techniques with one purpose - to reduce the size and number of JavaScript and CSS files that your site loads. Minification strips all unnecessary symbols by removing precious bites from being loaded every time you request an URL.

Combination on the other hand, combines multiple JavaScript and CSS files into one. This reduces the number of requests your site makes. There are a few plugins that do this really well. Either [WP Rocket](#), a premium option or [WP Super Minify](#), a good free plugin, can do the job.

10. ENABLE CACHING



Caching is a great technology that saves the outcome of different operations your site has to perform in order to produce your final content. It then serves this ready “product” to the next visitor of your site. With a good caching solution enabled and functioning, your site will be as fast as a static page until you make a change. When this occurs, the page will load dynamically for the first visitor after the modification. Then, the cache will be refreshed and the next time it will load the much faster, cached version of the page.

The easiest way to cache your site is through a plugin. This saves the cached content on the server’s hard disk and significantly improves site performance since your content won’t be dynamically loaded every time. [WP Rocket](#) is a great premium option, or if that’s outside your budget, try [WP Super Cache](#).

Further down in the book I’ll talk about caching as a part of the services your hosting provider can offer. When caching is enabled at the server level, the content gets saved not on the hard disk, but in the server RAM. This makes the site performance gains much greater since reading from the memory is faster than reading from the disc.

3

THEME & PLUGINS **OPTIMIZATIONS**

Both themes and plugins are essential to the speed of your site since they are basically pieces of code that your site executes when it gets accessed. That code often needs optimizations as well.

11. SELECT A REPUTABLE THEME FROM A SOLID PROVIDER

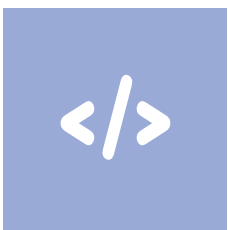


When choosing a theme, look for one either in the WordPress repository, or if you're after a premium theme, look for a reputable company that's well known in the WordPress community.

Every hour you spend researching your theme provider and the theme itself will save you days later on when you invest time and money in your site and add all your content. Read reviews for the themes, try getting some actual feedback from users, check whether the company is trusted in the WordPress community. Don't trust a theme provided by an unknown designer that does not respond to his/her customers.

It's important to have a well-written theme because the quality of the theme code affects every part of your site. For example, some themes have a plugin functionality and added features such as relative posts under your normal posts. Such functionality often causes slow loading times because of the way queries to the MySQL database are structured. In short, you don't have to be a good developer to have a good site, but make sure your theme is written by a good one.

12. AVOID BLOATED THEMES



When you're looking for a theme for your website, you will surely stumble upon themes that claim they can be used for virtually any kind of website. Many of these are full of features, sliders, carousels, etc. All of these features require JavaScript and CSS resources to work and if you're not using them, you're simply wasting resources.

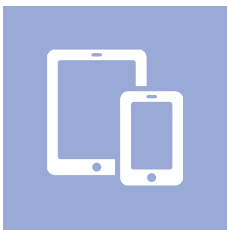
Functionalities such as carousels and sliders should not be part of your theme. You can always add them using a plugin later on when you want them to be loaded. So, pick a theme that has the main functionality you need without tons of additional features.

13. ALWAYS USE A CHILD THEME WHEN CREATING YOUR SITE



WordPress updates are released often and many of them include performance optimizations. Themes are harder to update, but the good ones often get new versions with numerous updates. Using a child theme allows you to keep the parent theme up-to-date, while keeping all your customizations intact. It's easy to set a child theme, just follow the [instructions on WordPress.org](#).

14. OPTIMIZE FOR MOBILE DEVICES



Every year more and more traffic comes from mobile devices. Tablets and smartphones are becoming even more popular for browsing than standard desktop computers. That's why, it's important to make sure your site works as fast as possible on such devices.

Usually, when people browse your page on their mobile phone, they are on 2G, 3G or LTE, which is generally a slower connection than the one they have at home. That's why it's good practice to show only what users need to see on mobile, rather than a shrunken version of your pages. Here are a few steps for optimizing your mobile site:

1

Test your pages with the [Google Mobile-Friendly Test](#) which will give you information if a certain part of your page is not well optimized for mobile.

2

Always select a theme that's either mobile-first or has a native mobile version. When you run tests for your website, make sure you test the mobile version as well.

3

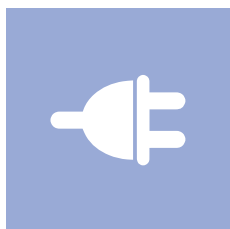
If your theme doesn't have a mobile version, consider using a plugin such as [WP Touch](#) that will generate a mobile version of your page. However, having a native mobile version is always preferable.

15. WHEN USING ICONS, USE AN ICON FONT



Icon-like images have become a trend in the past few years. If you want to use such images, try utilizing an icon font rather than separate images. [Genericon'd](#) is a great plugin that will help. With it, you can add vector icons as if they were normal alphabet symbols.

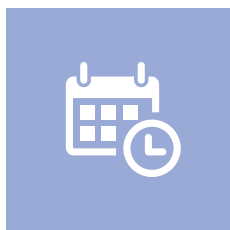
16. DON'T OVERLAP FUNCTIONALITY WITH PLUGINS



If a plugin includes several functions, make sure you use most of them. Don't install another plugin if one of your active plugins can already do the job.

For example, if you're using the Yoast SEO plugin and you want to have a Google XML Sitemap, just enable this functionality in the plugin settings page instead of adding another plugin, even though there are dozens available in the plugin repository.

17. ALWAYS KEEP YOUR PLUGINS UP-TO-DATE



Most of the updates in plugins either offer security patches, new features, bug fixes, speed improvements or a combination of the above.

In addition, there are new features, functions, etc. constantly being introduced with WordPress core updates. A lot of them are designed to allow plugins to operate better and faster. By keeping your plugins updated, you will get all the performance improvements from the newest release.

Keeping your plugins up-to-date will allow you to use more recent PHP versions including PHP7, which gives your site a huge performance boost.

If you're not using a plugin, delete it. There is no need to keep them on your account. It's good security practice and one less thing to slow down your back-end.

18. CLEAN UP PLUGIN OPTIONS FROM YOUR DATABASE



Some plugins leave options and settings data in your database after you delete them. To get rid of that garbage, use a plugin called [Garbage Collector](#).

Most plugins don't bother cleaning your database after you've uninstalled them. They delete the plugin files, but the tables with different settings they've been utilizing, remain. This plugin will identify the options that are not being used by any plugin and allow you to remove them. Even though that's a relatively safe operation, I recommend backing up your database before erasing any data.



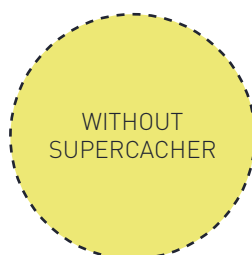
SERVER & HOSTING **OPTIMIZATIONS**

19. TAKE ADVANTAGE OF SERVER LEVEL CACHING



WordPress specialized hosting providers often provide some form of caching. At SiteGround, we have implemented NGINX as a reverse proxy and developed a special WordPress plugin called [SG CachePress](#). It saves the outcome of all PHP operations, database queries, etc. in the server RAM and then when another visitor opens the same page, it serves the content from the memory without even reaching the web server.

You can easily enable server-level caching from your control panel, giving you a huge performance improvement. Depending on the website, your loading time can go from 2-3 seconds to 0.5 seconds! Furthermore, using such a caching service will increase the amount of traffic you can handle on your account. A test with a default WordPress installation on the same SiteGround hosting account shows amazing results:



26.3K HITS
for 2 minutes with 50
concurrent users



207.6K HITS
for 2 minutes with 500
concurrent users

Needless to say, that's a huge peak in traffic that's handled without problems mostly because of the caching system running on the server.

For websites with big databases, you can also implement object caching like Memcached or Redis. These are services that your hosting provider must install on their server, and provide you with the ability to use them with your application. For example, at SiteGround we provide Memcached as part of our WordPress performance services, that can be activated with a single click.

20. USE A CDN



If you have visitors from different geographical regions, it's a good idea to use a CDN service such as [Key CDN](#) , [Max CDN](#) or [CloudFlare](#). CDN providers essentially clone your website amongst multiple host nodes. Then, when a visitor requests a URL, it gets served from the closest host node rather than from the central server. SiteGround offers free CloudFlare integration for our customers, but you can enable any other CDN service of your choice.

21. USE SSL AND UTILIZE HTTP/2



SSL protects your visitors and customers by encrypting all the information travelling between browser and server, ensuring extra security for your users and their data. It is essential for eCommerce sites and those handling sensitive data, and strongly recommended for all websites following recent developments on the web. Previously, SSL certification was believed to slow down your website. Not any more! If you have a [server that supports HTTP/2](#), and a working SSL certificate, your traffic will be going through HTTP/2.

MULTIPLEXING



3 TCP connections



1 TCP connection

The HTTP/2 protocol is much faster and allows the browser to make multiple simultaneous requests for resources to the server, which results in faster and safer sites. [Learn more.](#)

If you're worried about the cost of an SSL certificate, there is a free solution called Let's Encrypt. With it you can maintain the security of your websites without compromising on speed.

[Learn more.](#)

CONCLUSION

SUMMARY

Optimizing for speed is a continuous and important part of building and maintaining your WordPress site. Without optimization, you risk paying more, losing visitors and conversions and even damaging your brand and reputation.

By following the above steps, many of which can be implemented without a deep level of technical expertise, you will be well on your way to ensuring an optimal website experience for all your visitors.

Learn more about WordPress web hosting engineered for speed
www.siteground.com/wordpress-hosting.htm



ABOUT THE AUTHOR

Hristo has been working for SiteGround as a WordPress expert for more than eight years now. He's done it all: supported WordPress clients, built websites, designed WordPress themes. In addition to that he's author of many online tutorials and guides about WordPress.

He's been fortunate to have his passion for all things WordPress and his job overlap at SiteGround, where he develops and implements various in-house performance boost solutions to help make WordPress websites faster and more secure.

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