

## Site Speed

Site speed, is a factor that will benefit visitors to your website and the search engines. There has been much debate around the importance of site speed as a ranking factor and how much impact this actually has on your rankings. This of course all depends on how slow your site is to start with and also how competitive your niche is.

The most important thing to remember as with all elements of site optimisation is that you are primarily building your site for visitors and **NOT** the search engines! The better the user experience is on your site the more traffic you are going to get, the lower your bounce rate will be and the better you are likely to fair in the search engines.

When reducing the load time on sites and making them noticeably quicker we have seen significant impact on the bounce rate and an increase in rankings – remember Google wants to serve the most relevant results. Site speed is important for all websites, but some big gains can be made with e-commerce sites as they commonly have large product catalogues with hundreds, in some cases thousands, of pages. Increasing your site speed means your site becomes more efficient to crawl for search engines which is a good thing.

Site speed has also been shown to improve your conversion rate, which is vital for any e-commerce business. Traffic is all well and good, but if it isn't converting you may as well not have any! [Kiss Metrics](#) in a recent study looked at site speed and stated the following:

**“a one second delay in page response can result in a 7% reduction on conversions.”**

Tag Management did a further study which can be found [here](#) and their results confirmed this fact.

So we know that there are lots of advantages to having a fast site, but let's have a look at how we can speed it up. Firstly we need to find out what areas we can work on to speed it up, so you need to run it through a speed tool such as [gtmetrix.com](#) or [Google Page Speed Insights](#).

## Images

Identify which images on your site are large; when we perform this process for our clients we tend to look at images over 100kb to start with. We recommend doing this by setting up a crawl with Screaming Frog a tool we recommend for your arsenal and that we have discussed earlier in this guide. If you don't use Screaming Frog you can download and install it [here](#).

Once you have the tool installed, you can run an image crawl by entering your domain in the “Enter URL to spider” box, select the image filter from the drop down box on the top left and click start. Once you have a list of your images you can click export, download them as a csv and order them by size. This will give you a great starting point for optimizing your images. An easy way to optimise them is by using an FTP client (I use [Filezilla](#)) to connect to your site and download the images from their location specified in the csv you have exported. Then run them through a graphics program such as Photoshop and use the save for web option to reduce their file size. If you have a lot of file you could consider creating a batch process in Photoshop to optimize all the images in a directory.

If you don't have access to a package such as Photoshop there are several tools online that you can use to reduce the size of your images, one such tool is <http://www.imageoptimizer.net/Pages/Home.aspx>.

If you are using a popular ecommerce platform such as Magento you can use one of the many image optimization plugins such as <http://www.magentocommerce.com/magento-connect/gtspeed.html> to optimize your images automatically.

## CDN

Another great way to speed up the loading of your site is to setup a Content Delivery Network (CDN) that will serve your media files such as images and reduce the load on your own web server. A popular CDN is [Amazon CloudFront](#) which I would recommend using in conjunction with the Amazon S3 service. Hongkait has a [simple guide to the setup](#) here and they also illustrate the difference it made to their site.

**\*\*Making incorrect changes to your .htaccess or web.config files can crash your website and stop it loading – only attempt if you are confident with this!\*\***

### Gzip Compression and Leveraging Browser Caching (For Apache servers).

Firstly you need to connect to the root directory of your website and download the .htaccess file. Then load this by right clicking the file and selecting open with notepad.

```
<ifModule mod_gzip.c>
mod_gzip_on Yes
mod_gzip_dechunk Yes
mod_gzip_item_include file \.(html?|txt|css|js|php|pl)$
mod_gzip_item_include handler ^cgi-script$
mod_gzip_item_include mime ^text/*
mod_gzip_item_include mime ^application/x-javascript.*
mod_gzip_item_exclude mime ^image/*
mod_gzip_item_exclude rspheader ^Content-Encoding:.*gzip.*
</ifModule>
```

Gzip compression will reduce your file size significantly making it much quicker for the browser to load.

### Leverage Browser Caching (For Apache servers).

```
<IfModule mod_expires.c>
ExpiresActive On
ExpiresByType image/jpg "access 1 year"
ExpiresByType image/jpeg "access 1 year"
ExpiresByType image/gif "access 1 year"
ExpiresByType image/png "access 1 year"
ExpiresByType text/css "access 1 month"
ExpiresByType text/html "access 1 month"
ExpiresByType application/pdf "access 1 month"
ExpiresByType text/x-javascript "access 1 month"
ExpiresByType application/x-shockwave-flash "access 1 month"
```

ExpiresByType image/x-icon "access 1 year"

ExpiresDefault "access 1 month"

</IfModule>

## GZIP Compression (On IIS 7 Servers)

```
<system.webServer>
```

```
<httpCompression directory="%SystemDrive%\inetpub\
temp\IIS Temporary Compressed Files">
```

```
<scheme name="gzip" dll="%Windir%\system32\inetsrv\gzip.dll"/>
```

```
<dynamicTypes>
```

```
<add mimeType="text/*" enabled="true"/>
```

```
<add mimeType="message/*" enabled="true"/>
```

```
<add mimeType="application/javascript" enabled="true"/>
```

```
<add mimeType="*/*" enabled="false"/>
```

```
</dynamicTypes>
```

```
<staticTypes>
```

```
<add mimeType="text/*" enabled="true"/>
```

```
<add mimeType="message/*" enabled="true"/>
```

```
<add mimeType="application/javascript" enabled="true"/>
```

```
<add mimeType="*/*" enabled="false"/>
```

```
</staticTypes>
```

```
</httpCompression>
```

```
<urlCompression doStaticCompression="true" doDynamicCompression="true"/>
```

```
</system.webServer>
```

## Leverage Browser Caching (On IIS 7 Servers)

```
<configuration>
```

```
<system.webServer>
```

```
<staticContent>
```

```
<clientCache cacheControlMode="UseMaxAge" cacheControlMaxAge="10.00:00:00" />
```

```
</staticContent>
```

```
</system.webServer>
```

```
</configuration>
```

Further Information on [IIS Configuration](#)

Warning: Before making any changes to your .htaccess or web.config files please make sure you take a backup and only attempt this if you are confident with making changes to your servers configuration, otherwise get assistance from a suitable developer/tech. You may also need to enable certain modules/settings on your server for these code snippets to take effect depending on your configuration.

**\*\*Making incorrect changes to your .htaccess or web.config files can crash your website and stop it loading – only attempt if your are confident with this!\*\***

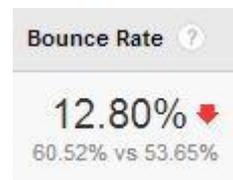
## JavaScript and Cascading Style Sheets Optimization for Speed.

One of the most common ways to optimise these types of file for site speed is to minify them, which involves reducing the size of them so that the size of the files the browser has to download is less. This can be done by removing comments and whitespace, such as extra lines. You can do this by hand or you can use one of the many tools that are available, such as [YUI Compressor](#) or [HTML Compressor](#).

If you are using the Magento E-commerce Platform then you can install a module to minify your JavaScript and CSS which is available [here](#).

## Results

We made the majority of these changes to a site that we were working on in the last week of August and below is a graph of the organic traffic up until November. During September no other major on-site changes were made and the content strategy and links acquisitions for this site didn't get underway until October. I have also take a screenshot of the bounce rate change from the week before implementation and the week of implementation, you can see the significant difference it made to the bounce rate in a short time (12.80% decrease).



However significant the impact is on a site, there can only be positive results from speeding it up and there are several areas that this guide has highlighted that you can implement to make an impact on your site and the user experience!