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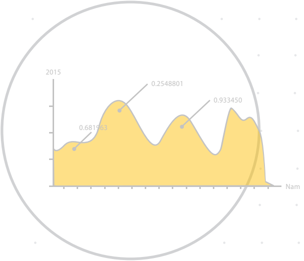
THE COMPLETE GUIDE TO SSL AND SEO

THE COMPLETE GUIDE TO SETTING UP SSL AND SEO

Google recently announced that HTTPS is now being used as a ranking signal in its search engine algorithm. Websites employing HTTPS, using a SSL 2048-bit key certificate, are receiving a rankings boost. At the moment, the boost is minimal, but Google says sites with HTTPS will likely see even larger rankings boosts in the future.

Simply put, SSL (Secure Sockets Layer) is a protocol that encrypts the connection between a website and its user. This encryption protects the privacy of the user while also protecting the site and services from attacks. If data integrity and privacy aren't reason enough to migrate to HTTPS, SSL certificates are also an authentication tool. When a user sees a website's SSL certificate, they can rest easy knowing the website they are visiting is owned and operated by the entity it claims to be. If Google wants to provide their users with a safe and credible web experience, then it is no wonder they have decided to implement HTTPS as a factor in their search results.



Webmasters who want to take advantage of the rankings boost, while simultaneously providing privacy and security to their users, must now migrate their sites from HTTP to HTTPS. The process of doing so differs depending on hosting environment and a site's needs. Proper server configuration is mandatory, every element of the site needs to be using HTTPS (Always On SSL), and many other factors need to be optimized for Google to properly notice the change. But change is a must, because while Google results are still primarily derived from credible, high quality and informative content, Google has admitted they are "working to make the Internet safer more broadly. A big part of that is making sure that websites people access from Google are secure." (Zineb Ait Bahajji and Gary Illyes) HTTPS is the next step for the Google ranking algorithm, and it will likely become more and more impactful sooner than later.

STEP 1

CHOOSING THE RIGHT SSL CERTIFICATE FOR YOUR SITE

Certificate Validation

There are three different kinds of validation to choose from when picking an SSL certificate: Domain Validation (DV), Organizational Validation (OV) and Extended Validation (EV). Each type of validation requires specific verification requirements for a certificate to be issued.

Domain Validation certificates simply require the purchaser of the certificate to have access to the website's administrative email account, therefore identifying the holder of the DV certificate as the owner-operator of the domain.

Organizational Validation certificates verify not only the domain, but the organization. For an OV certificate to be issued, the organization must provide outside proof of the legitimacy of the business. This added level of identity verification is commonly used by businesses of all sizes because it establishes a higher level of trust to a site's visitors.

Extended Validation certificates require the same verification process as an OV certificate, except the EV certificate adds an additional visual cue in a web browser's address bar. With EV certificates, the name of the business is highlighted in green and appears directly before the web address. EV certificates are commonly used by large businesses so the website's users are immediately assured their privacy and data are secured.

During the Google I/O 2014- HTTPS everywhere announcement, Ilya Grogorik and Pierre Far emphasized the importance of not only the encryption SSL provides, but also website authentication. Studies have shown far higher conversion rates from sites using OV certificates, and even higher from EV certificates, due to an immediate establishment of trust from site visitors. Because Google emphasizes the importance of authentication via SSL, an OV or EV certificate is highly recommended for sites where these needs can be applied.

Certificate Type

After you have chosen which certificate validation is best for your website, it is important to assess the website's needs and decide upon one of three certificate types: Single Domain SSL certificates, Wildcard SSL certificates and Multi-Domain SSL certificates.

Single domain SSL certificates are intended for a website owner who doesn't own multiple websites and their current site does not have sub-domains.

Wildcard SSL certificates encrypt the main domain (sslguru.com) and an unlimited amount of sub-domains (mail.sslguru.com, shop.sslguru.com, smtp.sslguru.com).

Multi-Domain SSL certificates are intended for website owners managing multiple sites under the same organization. For example, Jnj.com also owns Tylenlol.com, Neutrogena.com and Rembrandt.com. A Multi-Domain SSL would make the management of the SSL certificates far easier and more cost effective than issuing Single Domain SSLs individually.

Note: With whatever type of SSL certificate you chose, it is important the certificate issued is using SHA-256 instead of SHA-1. Many search engines, including Google, are placing far greater emphasis on SHA-256. In addition, plans are to deprecate the SHA-1 type certificates by the end of 2014.

STEP 2

UPDATING AND VETTING YOUR COMPANY INFORMATION

All WHOIS data must be current and your company needs to be correctly displayed in a third party directory before purchasing an SSL certificate and generating a CSR file.

Verifying WHOIS Data

To verify the accuracy of your WHOIS data, go to http://ipaddress.com/domain_whois/ and perform a Whois Lookup on your domain. If the data is incorrect, you will need to login to your control panel and make the appropriate updates/changes to the WHOIS information.

Note: WHOIS Privacy Protection must be disabled during the issuance process. Privacy Protection is able to be reinstated upon receipt of the SSL Certificate.

Verify WHOIS Data Matches a Third Party Directory

The Certificate Authority issuing your SSL certificate will need to verify that your domain's WHOIS data matches information on a third party directory. Often times the Certificate Authority will conduct a business search through the secretary of state's website, bbb.org or dnb.com. It is important that a valid phone number is listed on the third party directory. The listed phone number will be used by the Certificate Authority for phone verification.

Verify DCV E-mail Access

You must have access to one of the acceptable email addresses that will be used to verify the Domain Control Validation (DCV) message. Acceptable e-mails for verification include: Admin@, Administrator@, Postmaster@, Webmaster@, Hostmaster@ or your registered WHOIS e-mail address.

Verify SNI/ Dedicated IP

Before purchasing and installing your SSL certificate, check with your host or server admin to make sure that you have either Server Name Indication (SNI) enabled, or you are using a dedicated IP address. Without a dedicated IP address or SNI enabled, it will not be possible to install the SSL certificate.

STEP 3

PURCHASING YOUR SSL CERTIFICATE AND CSR GENERATION

Now that a proper certificate is selected, identity verification is prepared and certificate is purchased, the next step is generating the Certificate Signing Request (CSR). When generating the CSR file it is important that you input the information to precisely match your WHOIS data.

When generating a CSR file, a Private Key is also created. Best practice suggests saving the private key in a secure location. Anyone with access to the private key will have access to the encrypted information.

When the CSR file is generated, fill out the corresponding contact form and select the e-mail address that will be used for the DCV message. When the CSR generation and the content form are completed, a request will be sent to the CA and they will contact you to finalize the verification and issuance process.

Note: To make the issuance easier and more transparent, some Certificate Authorities may request your DUNS number.

Note: For Wildcard Certificate CSR generation only - when generating a CSR file to be used for a Wildcard certificate, be sure to include an asterisks before the domain name (*.sslguru.com). This will ensure the SSL certificate is configured correctly for all subdomains.

To practice generating a CSR file, feel free to use this very helpful SSLGURU CSR generation tool.

STEP 4

INSTALLING YOUR SSL CERTIFICATE AND OPTIMIZING YOUR SITE

Before installing a certificate, it is recommended that your server is running the latest version of your operating system (OS). It is now time to install the SSL certificate. Most servers/control panels make installation very simple: copy and paste the certificate in to the control panel, in plain text.

Note: It is best practice and highly recommended to run an OS that is compatible with the minimum security protocols and cipher suits.

For a full list of installation protocols please follow this link Certificate installation guides.

Once the SSL certificate has been installed (copy and pasted), you should now be able to access your site from both HTTP and HTTPS. From an SEO stand point, this is known as "duplicate content." From a security stand point, the site is still vulnerable. The first step to correct this issue is to redirect all traffic from HTTP to HTTPS. This is done from the server's configuration files or from a simple rewrite rule placed in the .htaccess file (Apache) in the public html folder.

Example

Apache has TLS enabled by default but will only be able to use the .htaccess file if the Apache configuration (httpd.conf or conf.d/ or sites-enabled/) file is set to follow symbolic links.

```
RewriteEngine ON
RewriteCond %{HTTP_HOST} ^adres.pl$
RewriteRule ^(.*) https://www.example.com/$1 [QSA,L,R=301]
```

Note: For the most up to date server configurations, please visit Mozilla's recommend configurations.

If your site is using a CMS, such as Wordpress, there are specific steps needed to enable SSL. For Example, if using Wordpress, go to the Admin Panel -> Settings -> General and make sure that the WordPress Address (URL) and Site Address (URL) are both configured to HTTPS. If not, simply add the "s" after HTTP and save.

STEP 5

SERVER OPTIMIZATION

Optimizing a server increases the overall security of a site, fixes any latency issues and makes a website run more efficiently over all. It is important to note that without root access enabling, some or all of these protocols will be very difficult.

HTTP Strict Transport Security (HSTS) speeds up SSL by telling browsers to always connect using HTTPS and it automatically appends http requests to https, avoiding the need for the server to perform a redirect.

SPDY (Pronounced Speedy) is a module developed by Google to speed up TLS connections by multiplexing multiple requests through one connection. Unfortunately, this handy tool is not compatible with all servers. Visit http://spdycheck.org/ for more information and to see if this tool can work for you.

Online Certificate Status Protocol (OCSP) is used to check if a certificate has been revoked. Normally the browser does this, but with OCSP stapling the server is able to send its certificate and OCSP results with the initial certificate request. This makes it so the browser doesn't have to download or cross reference with the certificate authority.

HTTPS Keep Alives allow an initial connection to stay open, reducing the need for additional handshakes between browser and server. This is especially important if you want your connection to run fast. TCP connections start slow and increase their speed over time until they finally reach their full potential. If you want your connection speed to grow, you want to give your users enough time to make their next request before the connection is closed. A good starting point is 60 seconds. It should be noted that sometimes a user's browser settings can override Keep Alives. There are many things to consider when implementing Keep Alives, do some research and find out what works best for your site.

Resumption and Session Tickets allow servers and browsers to communicate faster by further reducing time needed for a handshake. If a browser has already visited a site, it can be offered a session ticket. When the browser returns to the site, the session ticket tells the server that encryption has previously been negotiated and would like to be resumed. It is important to use this method wisely because session tickets can be considered as important as private keys.

STEP 6

TESTING WEBSITE AND SERVER CONFIGURATIONS

The last step in HTTPS migration is to test the server/ website to make sure protocols are up to date and the website is configured and operating correctly.

SSL Labs Certificate and Server Test

This test will rate your server's security score and give you insight into what changes could be made to increase site security. Keep in mind that increased security may limit some of your clients (older browsers) from being able to access your site.

Mixed Content Scan

If there is any mixed content on your site (a page which includes both HTTP and HTTPS content), you will need to either change the HTTP content to relative links or hard code the content to HTTPS. It is recommended to use relative links because it is far easier to move a site back and forth between dev environments and production.

In order to receive the rankings benefits from Google's new algorithm, it is important not to block your HTTPS site from being indexed by search engines. Allow the site to be crawled using robots.txt and monitor your migration progress in Webmaster Tools.

CONFIGURING YOUR SOCIAL SHARING BUTTONS

Once you migrate from HTTP to HTTPS you will find that the display of social share counts for the pages of your web site will have dropped to zero. The reason this happens is because the social sites consider http://www.yourdomain.com to be a different URL than https://www.yourdomain.com.

Fortunately, there is a way to write code that will help you continue to show the correct social share totals. The following code should handle this for you:

```
<?php
$httpurl = "http://www.".$_SERVER['HTTP_HOST'].$_SERVER['PHP_SELF'];
$httpsurl = "https://www.".$_SERVER['HTTP_HOST'].$_SERVER['PHP_SELF'];
 echo "
<div class='fb-like' data-href='".$httpurl."' data-send='false' data-
layout='box_count'></div>

<a href='https://twitter.com/share' class='twitter-share-button' data-
counturl='".$httpurl."' data-url='".$httpsurl."' data-count='vertical' data-
via='moz'>Tweet</a>

<div class='g-plusone' data-size='tall' data-href='".$httpurl."'></div>
";
?>
```

However, this is not yet a complete solution. The above code will display the HTTP social share counts on your pages, even after they have been converted to HTTPS. This will work great for your old posts. Note, however, any extra social shares performed on those posts will not be reflected in the totals.

In addition, for new posts you put up after the migration date, you need to modify the code a bit further – for those, you want to show the share counts for the HTTPS pages, not the HTTP pages.

With these changes you should be all set for Facebook, Twitter, and Google Plus.

Note that over time, Facebook and Google Plus will update anyway, even if you don't use this type of code, but Twitter does not. LinkedIn will also catch up within a week or so, so there is no special code needed for that. Pinterest counts do not update either, so if you are displaying Pinterest shares you will have to investigate a solution for that as well.

BASIC SEO CONSIDERATIONS

There are many steps related to SEO involved in converting from HTTP to HTTPS. Here are the most important ones:
Configuring Your Social Sharing Buttons

1. Make sure to convert everything on your site from HTTP to HTTPS. Otherwise, you will run into problems with your visitors getting security certificate errors. All your internal links that are absolute links will need to change from HTTP to HTTPS.

2. This also means converting all the widgets on the site, such as your site search widget. In addition, make sure your CSS and Javascript file references are all changed to https and references within those files are also converted. All references to your images must be changed to https as well.

3. Other files that need to be checked and updated are:

Your XML Sitemap
Robots.txt
Your .htaccess file (if you are on an Apache based web server)

4. You will need to implement 301 redirects from your HTTP based site to your HTTPS based site. Earlier in this guide we recommended that you implement HSTS to tell browsers to treat HTTPS as the default (good for site speed), but you will still want to set up these 301 redirects to pass the value of those links to the HTTPS version of the site.

Setup Webmaster Tools for the HTTPS version of your site on both Google and Bing. You will need this to make sure you continue to receive data on how these search engines see your site. Your original Webmaster Tools account will not receive this data as the search engines see these as different sites.

If you have a disavow file, load it into Google Webmaster Tools for your new site to ensure disavowed links are not seen by Google as links to your new HTTPS site.

COMMON PROBLEMS

There are some issues that are common during a site migration. Two of the most common ones are:

1. Content Delivery Networks (CDN) Incompatible – If you are using a CDN to speed up the performance of your web site, then you may have a problem. Most CDN's, including Akamai, do not currently support SSL.

However, Cloudflare does support SSL.

2. Site Search Tools (and Other Widgets) Generate Security Errors – It's likely that you will need to update any third party widgets that you use on your site.