Throughout my web development career, I have worked on different projects some are big, some are small. Sometimes I have to work on web servers (production servers) that come with SSL enabled to use the HTTPS protocols and whereas my local development machines use HTTP, and this makes my development system different from the production one. But as a developer, I am sure that every developer always likes to have an exact environment like the production system. By default, we can’t use HTTPS for our WAMP connections. So here is the step-by-step tutorial on how I installed a self-signed SSL certificate on my local WAMP server to use HTTPS communication.

**Step 1: Download and Install WAMP(Windows machine)**

[Download & install WAMP](http://www.wampserver.com/en/#download-wrapper) (Assuming that WAMP is installed, in my case, it’s on G:/ drive, I did it because I prefer to separate my projects from other files )

**Step 2: Download OpenSSL**

[Download OpenSSL – Shining Light Productions](http://slproweb.com/products/Win32OpenSSL.html) choose the appropriate version according to your Operating system. I used [“**Win64 OpenSSL v1.1.0i Light**“](http://slproweb.com/download/Win64OpenSSL_Light-1_1_0i.exe). While installing I have selected the default (C:\OpenSSL-Win64) installation folder.

**Step 3: Create SSL Private Key and Certificate**

Now we will generate a private key which is 2048bits encryption. **“private.key”** will be our key file. So to do that we need open the command-prompt and **“Run as Administrator”.**Go to the installed OpenSSL bin folder.

C:\OpenSSL-Win64\bin**>**

Once we are in the **“bin”** directory (Where the OpenSSL installed) type the following command to generate the private key. You will prompt to enter a pass-phrase (password) and also ask to verify the phrase, just enter any password(e.g. “localhost”) you like.  
**3.1. Generate the private key**

openssl genrsa -aes256 -out private.key 2048

Now we will remove the passphrase (WAMP doesn’t support pass-phrase for key) from the RSA private key. We will also take a backup copy of the original file. It’ll ask you the pass-phrase(use the password entered on step 3.1).

**3.2. Private key backup**

copy private.key private.key.backup

**3.3. Removing the passphrase (use the password entered on step 3.1)**

openssl rsa -in private.key.backup -out private.key

Now we will generate a self-signed certificate, which will be used to certify the connection for encrypted traffic. **“certificate.crt”** will be our certificate. **This is a single line command.**

**3.4. Creating the certificate**

openssl req -new -x509 -sha1 -key private.key -out certificate.crt -days 36500

You’ll be asked a few questions. Just make sure you enter your domain name (eg xxx.localhost.com), for Common Name (e.g. YOUR name). Once we are done, 2 files will be generated(private.key and certificate.crt) in “**C:\OpenSSL-Win64\bin**”

**Step 4: Copy the Created SSL Key and Certificate file**

Now, create a folder “**key**“at: “**G:\wamp\bin\apache\apache2.4.23\conf\key**” and**c**opy “**private.key**” and “**certificate.crt”** to “**key**” folder.

**In case you are having any other version than apache2.4.23 then change it.**

**Step 5: Open httpd.conf, php.ini & uncomment**

Open “**httpd.conf**” in a text editor, located at “**G:\wamp\bin\apache\apache2.4.23\conf\httpd.conf**“. uncomment these lines by removing at# the beginning of the line, then save the file.

LoadModule ssl\_module modules/mod\_ssl.so

Include conf/extra/httpd-ssl.conf

LoadModule socache\_shmcb\_module modules/mod\_socache\_shmcb.so

Open **“php.ini”** in a text editor located at “**G:\wamp\bin\php\php7.0.10\php.ini**“. Check if this is uncommented.

extension=php\_openssl.dll

**Step 6: Open httpd-ssl.conf and make the final changes**

Open “**G:\wamp\bin\apache\apache2.4.23\conf\extra\httpd-ssl.conf**“, Find “**<VirtualHost \_default\_:443>**” and below that line find and update below configuration according to your setup. Pay attention to the path, I ve created a folder “**ssl**” inside “**G:/wamp/bin/apache/apache2.4.23/logs”**

1. Change “SessionCache….” → SSLSessionCache**“shmcb:G:/wamp/bin/apache/apache2.4.23/logs/ssl/ssl\_scache(512000)”**
2. Change “DocumentRoot …” → DocumentRoot “**G:/wamp/www**“
3. Change “ServerName…” → ServerName “**localhost:443**“
4. Change “ErrorLog….” → Errorlog “**G:/wamp/bin/apache/apache2.4.23/logs/ssl/error.log**“
5. Change “TransferLog ….” → TransferLog “**G:/wamp/bin/apache/apache2.4.23/logs/ssl/access.log**“
6. Change “SSLCertificateFile ….” → SSLCertificateFile “**G:/wamp/bin/apache/apache2.4.23/conf/key/certificate.crt**“
7. Change “SSLCertificateKeyFile ….” → SSLCertificateKeyFile “**G:/wamp/bin/apache/apache2.4.23/conf/key/private.key**“
8. On the same file replace ‘**<Directory “c:/Apache24/cgi-bin”>**‘ with ‘**<Directory “G:/wamp/www”**>’
9. On the same file Change “CustomLog….” → CustomLog “**G:/wamp/bin/apache/apache2.4.23/logs/ssl/ssl\_request.log**“

**Step 6: In Quick Version**

Open "G:\wamp\bin\apache\apache2.4.23\conf\httpd.conf",

1. Add (Define SRVROOT "${INSTALL\_DIR}") after (Define INSTALL\_DIR e:/wamp)

2. Find "**<**VirtualHost \_default\_:443**>**" and below that line Change "DocumentRoot …" → DocumentRoot "${SRVROOT}/www"

3. Now, create a folder "conf"at: "G:\wamp" and copy "private.key" and "certificate.crt" to "key" folder.

4. Rename the private.key -> server.key and certificate.crt -> server.crt

**Step 7: Copy PHP DDL files to windows**

Copy **ssleay32.dll & libeay32.dll** from “**G:\wamp\bin\php\php7.0.10**” folder to “**C:\windows\system32**“.

Now restart all the services in WAMP server and try to load https://localhost/

**You’ll get a security warning which is because we are using the self-signed certificate.You need to add it to an exception to access the page.**

**Step 8: Test to make sure it works!**

Now go back to command prompt window, from the **G:\wamp\bin\apache\apache2.4.23\bin**  type the following and check if you are getting **Syntax is OK**