

How to set up HTTPS on localhost or local server made simple

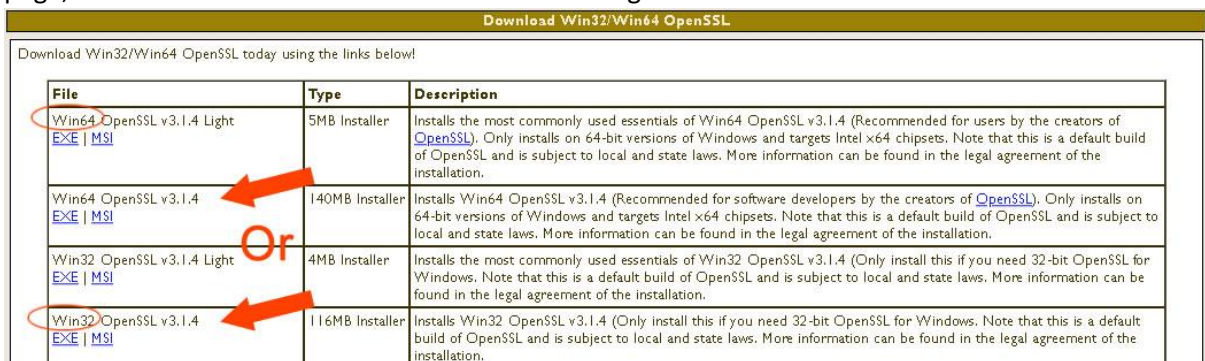
I didn't think that there will be a time where websites would be saying if you don't have a website that is not on HTTPS server then you may not be able to use our services. So, I experienced that myself and you too will experience that at one point or the other as you go in your Web Development journey.

I thank God for the OpenSSL project that has provided us with this powerful tool to be able to achieve this task. So, without further ado, let's get started.

Any version of WampServer can be used in this setup.

Today, we are going to learn how to set up HTTPS on your localhost. Let me tell you briefly why I am recording this video. I wanted to integrate a payment gateway into my website, and I needed to test it on my localhost before going live. The company website requires that the test be done on HTTPS website, so I started looking for guides. Most of the guides I found were not comprehensive enough, and some did not zoom for proper viewing. Then, fortunately, I came across a guide that gave me 80% of the understanding, and I decided to record this video to give you 100% understanding and clarity. So, without further ado, let's get started.

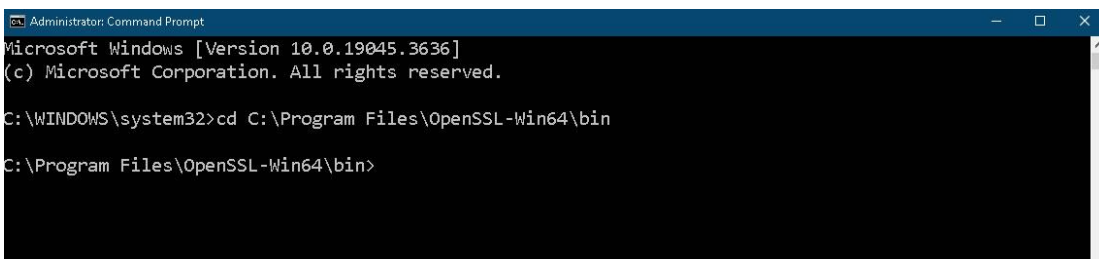
1. Go to WampServer website and download and install it. You can click [here](#) to do that.
2. OpenSSL can be used on Command Prompt to create the SSL certificate and private key. You can get it for win 32 and 64. Download the version based on your system [here](#). On the download page, scroll down to the section as shown in the image below:



| File | Type | Description |
|--|-----------------|--|
| Win64 OpenSSL v3.1.4 Light EXE MSI | 5MB Installer | Installs the most commonly used essentials of Win64 OpenSSL v3.1.4 (Recommended for users by the creators of OpenSSL). Only installs on 64-bit versions of Windows and targets Intel x64 chipsets. Note that this is a default build of OpenSSL and is subject to local and state laws. More information can be found in the legal agreement of the installation. |
| Win64 OpenSSL v3.1.4 EXE MSI | 140MB Installer | Installs Win64 OpenSSL v3.1.4 (Recommended for software developers by the creators of OpenSSL). Only installs on 64-bit versions of Windows and targets Intel x64 chipsets. Note that this is a default build of OpenSSL and is subject to local and state laws. More information can be found in the legal agreement of the installation. |
| Win32 OpenSSL v3.1.4 Light EXE MSI | 4MB Installer | Installs the most commonly used essentials of Win32 OpenSSL v3.1.4 (Only install this if you need 32-bit OpenSSL for Windows. Note that this is a default build of OpenSSL and is subject to local and state laws. More information can be found in the legal agreement of the installation. |
| Win32 OpenSSL v3.1.4 EXE MSI | 116MB Installer | Installs Win32 OpenSSL v3.1.4 (Only install this if you need 32-bit OpenSSL for Windows. Note that this is a default build of OpenSSL and is subject to local and state laws. More information can be found in the legal agreement of the installation. |

3. Let's create a Private Key, click Start button on your computer, type **cmd** or **comm**, right-click on **Command Prompt** and select **Run as administrator**. While the **Command Prompt** is still opened, go to the location you installed the **OpenSSL**, copy the line below and paste if the location is the same as yours and click Enter.

```
cd C:\Program Files\OpenSSL-Win64\bin
```



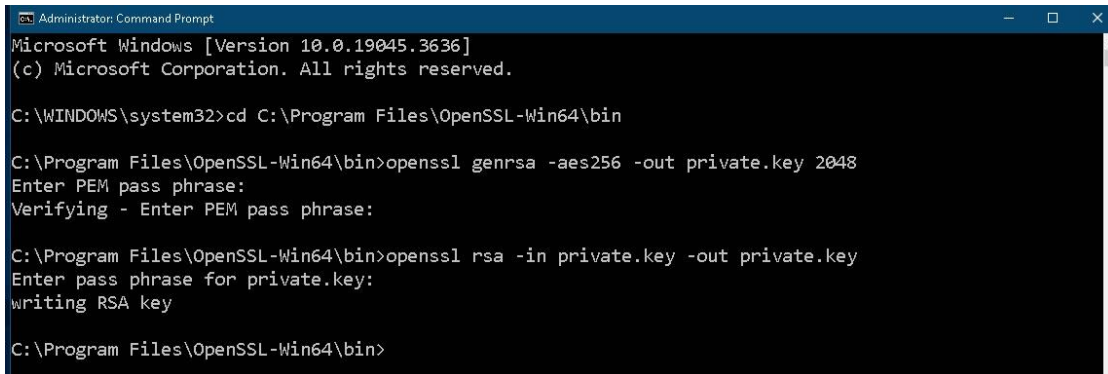
```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.3636]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:\Program Files\OpenSSL-Win64\bin
C:\Program Files\OpenSSL-Win64\bin>
```

Create a private key by copying and pasting each of the lines below and clicking Enter key each time you copy and paste, when asked for pass phrase, it can be any number of characters you like, e.g., **1234**:

```
openssl genrsa -aes256 -out private.key 2048
```

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



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19045.3636]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd C:\Program Files\OpenSSL-Win64\bin

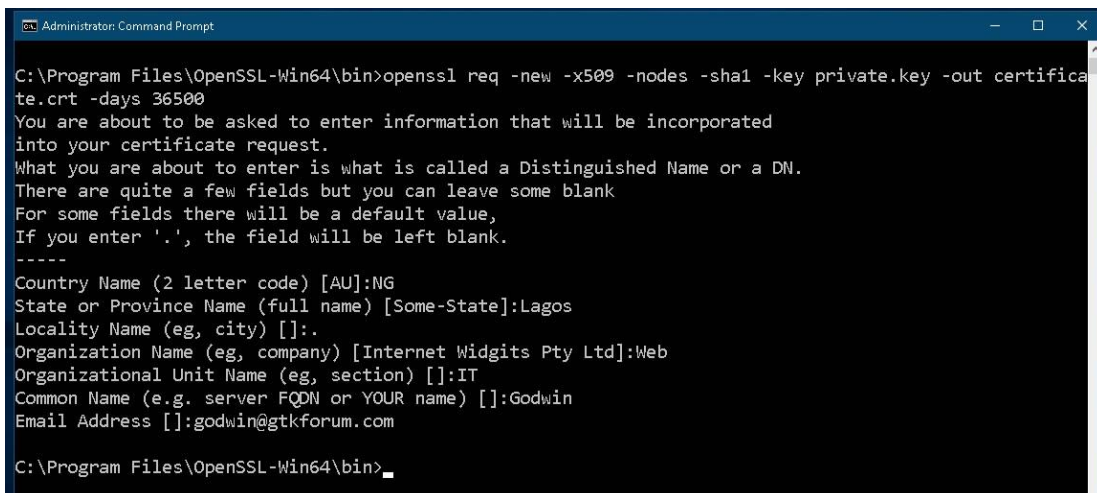
C:\Program Files\OpenSSL-Win64\bin>openssl genrsa -aes256 -out private.key 2048
Enter PEM pass phrase:
Verifying - Enter PEM pass phrase:

C:\Program Files\OpenSSL-Win64\bin>openssl rsa -in private.key -out private.key
Enter pass phrase for private.key:
writing RSA key

C:\Program Files\OpenSSL-Win64\bin>
```

4. Let's create an **SSL Certificate** by entering following command on the **Command Prompt**, read and answer any questions being asked, see image below as sample:

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

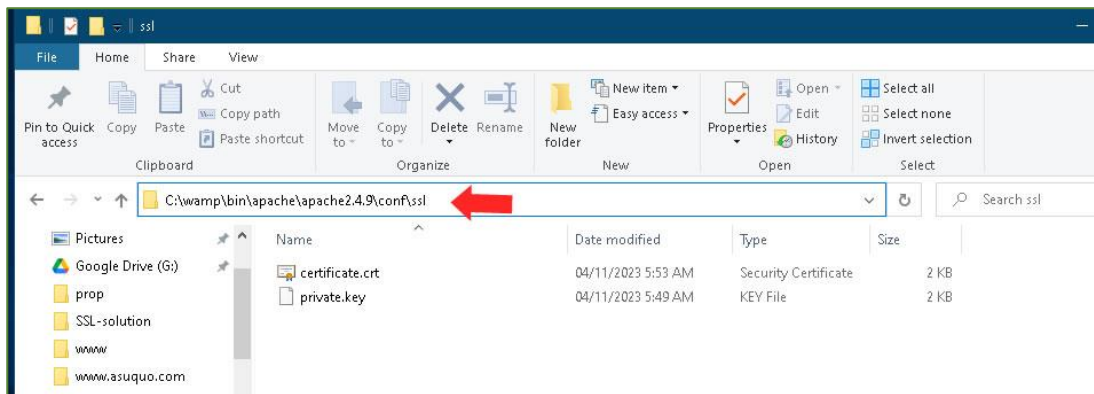
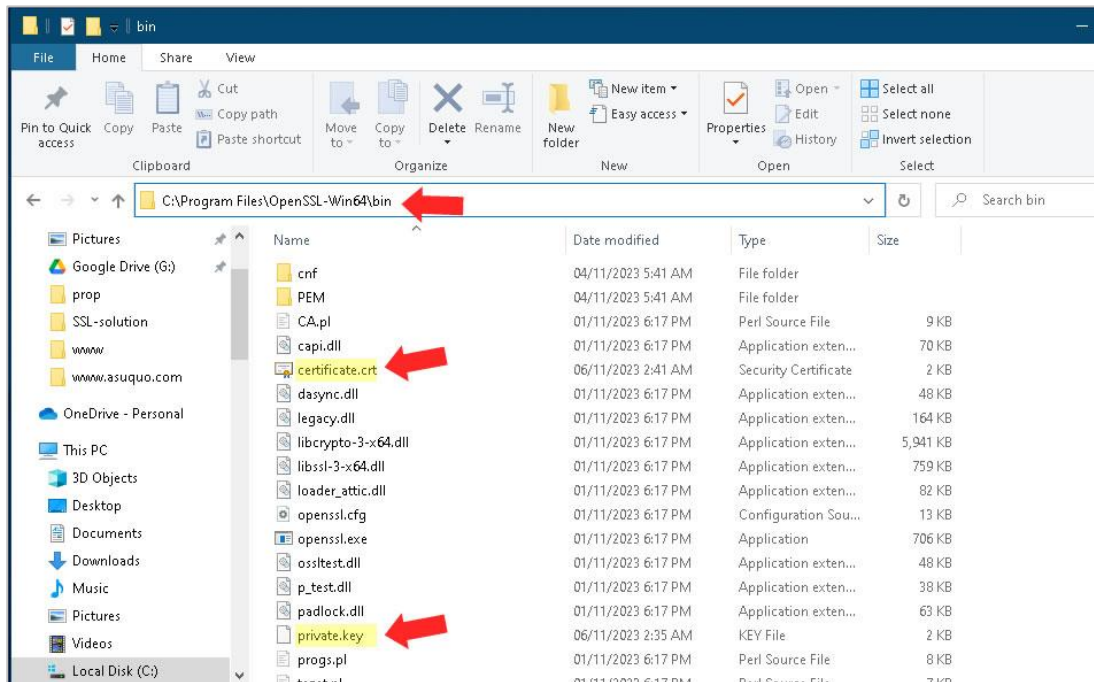


```
Administrator: Command Prompt

C:\Program Files\OpenSSL-Win64\bin>openssl req -new -x509 -nodes -sha1 -key private.key -out certificate.crt -days 36500
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:NG
State or Province Name (full name) [Some-State]:Lagos
Locality Name (eg, city) []:.
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Web
Organizational Unit Name (eg, section) []:IT
Common Name (e.g. server FQDN or YOUR name) []:Godwin
Email Address []:godwin@gtkforum.com

C:\Program Files\OpenSSL-Win64\bin>
```

5. Now, we are **moving/cutting** the **Private Key** and the **Certificate** files, which are **certificate.crt** and **private.key** created in this location: **C:\Program Files\OpenSSL-Win64\bin**. See steps 3 and 4 above. Create a new folder with related name called **ssl** in your server location, e.g.: **C:\wamp\bin\apache\apache2.4.9\conf**, then paste those two files you copied into the **ssl** folder.



- Let's configure the **httpd.conf** file, go to **C:\wamp\bin\apache\apache2.4.9\conf\httpd.conf** (depending on your WampServer installed drive), open the **httpd.conf** file with any text editor of choice, uncomment that is, remove the hash # symbol behind each of the 3 lines below, you copy each line, then **Ctrl+F** to find:

LoadModule ssl_module modules/mod_ssl.so

Include conf/extra/httpd-ssl.conf

LoadModule socache_shmcb_module modules/mod_socache_shmcb.so

Save the file or press **Ctrl+S**

- Next, configure the **httpd-ssl.conf** file, go to **C:\wamp\bin\apache\apache2.4.9\conf\extra\httpd-ssl.conf**, open file with any text editor, add the lines below if they don't exist or modify if they exist, you copy first word on each line, then **Ctrl+F** to find, replace each path/location that relates to your system, e.g., **c:/wamp/**, **c:/wamp/bin/apache/apache2.4.9** etc.

DocumentRoot "c:/wamp/www"

ServerName localhost:443

ServerAdmin admin@example.com

SSLCertificateKeyFile "c:/wamp/bin/apache/apache2.4.9/conf/ssl/private.key"

SSLCertificateFile "c:/wamp/bin/apache/apache2.4.9/conf/conf/ssl/certificate.crt"

SSLSessionCache "shmcb:c:/wamp/bin/apache/apache2.4.9/logs/ssl_scache(512000)"

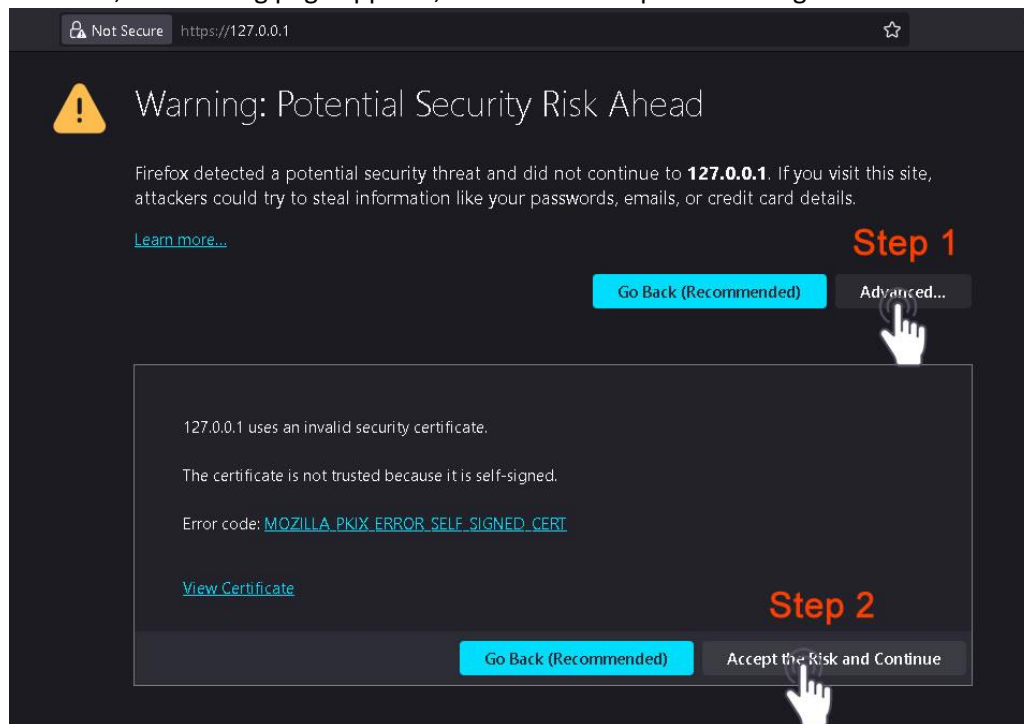
**CustomLog "c:/wamp/bin/apache/apache2.4.9/logs/ssl_request.log" **
"%t %h %{SSL_PROTOCOL}x %{SSL_CIPHER}x \"%r\" %b"

Save the file or press **Ctrl+S** when you are done.

8. Last but not least, restart the **WampServer**, if the icon turns **green**, then everything is **OK**. If the icon turns **orange** or **red**, there is a problem with your server configuration somewhere.

Check for any **syntax errors** by going to this location on your **Command Prompt**:
C:\wamp\bin\apache\apache2.4.9\bin and run this command: **httpd -t**, if it shows errors, go through the errors and fix them but if it shows Syntax OK, then you are done.

Test what you have done by going to **https://localhost** or **https://127.0.0.1** on your browser software, if a warning page appears, then see the steps in the image below to fix it.



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