

## Asymmetric (Public/Private Key) Encryption

### OpenSSL Tutorial:

<http://i.amniels.com/mysql-database-encryption-using-public-private-keys#comments>

**Download OpenSSL** - <http://www.php.net/manual/en/openssl.setup.php>

**Direct link** - <http://gnuwin32.sourceforge.net/packages/openssl.htm>

### WAMP & OpenSSL Configuration:

<http://www.phpjoel.com/2011/04/07/installing-ssl-using-openssl-on-a-wamp-localhost/>

**Original:** <http://forum.wampserver.com/read.php?2,28731,page=1>

### How to Create a Certificate Signing Request on the CSS SCA:

[http://www.cisco.com/en/US/products/hw/contnetw/ps2083/products\\_tech\\_note09186a0080094b2d.shtml](http://www.cisco.com/en/US/products/hw/contnetw/ps2083/products_tech_note09186a0080094b2d.shtml)

### Wamp2 HTTPS and SSL Setup Step-by-Step guide:

<http://forum.wampserver.com/read.php?2,32986,page=1>

# HTTPS SSL on WAMPServer2

Based on Guide from: <http://guides.jlbn.net/setssl/setssl1.html>

## What You Need

- [WampServer](#) version 2.2D (Tutorial based off of Apache 2.2.21)
- A web-browser ([Firefox](#), [Chrome](#), [Opera](#))
- A text-editor ([Notepad++](#), [Crimson Editor](#), [Programmer's Notepad](#))

## Steps

1. Open Command Prompt
2. Navigate to the binary folder located in the Apache folder in WAMP  
`cd C:\wamp\bin\apache\apache2.2.21\bin`
3. Generate an 256 bit AES passkey  
`openssl genrsa -aes256 -out pass.key 2048`
4. Enter a passphrase it will be used in step #7
5. Verify passphrase
6. Create key for server  
`openssl rsa -in pass.key -out server.key`
7. Enter passphrase from step #4
8. Create self-signed SSL certificate  
`openssl req -new -x509 -nodes -sha1 -key server.key -out server.crt -days 365 -config C:\wamp\bin\apache\apache2.2.21\conf\openssl.cnf`
9. Fill out the certificate
10. Create a new folder called "ssl" in the Apache configuration folder  
`cd C:\wamp\bin\apache\apache2.2.21\conf`  
`mkdir ssl`
11. Copy the key: `server.key` and certificate: `server.crt` to the new location  
`cd C:\wamp\bin\apache\apache2.2.21\bin`  
`copy server.crt C:\wamp\bin\apache\apache2.2.21\conf\ssl`  
`copy server.key C:\wamp\bin\apache\apache2.2.21\conf\ssl`
12. Create a new folder called "logs" in the new ssl folder  
`cd C:\wamp\bin\apache\apache2.2.21\conf\ssl`  
`mkdir logs`
13. Go to the extra folder in the Apache configuration folder and open `httpd-ssl.conf`  
`cd C:\wamp\bin\apache\apache2.2.21\conf\extra`
14. Replace line 62 with this (this is all on 1 line)  
`SSLSessionCache`  
`"shmcb:C:/wamp/bin/apache/Apache2.2.21/conf/ssl/logs/ssl_scache(512000) "`
15. Replace line 99 with this  
`SSLCertificateFile "C:/wamp/bin/apache/Apache2.2.21/conf/ssl/server.crt"`
16. Replace line 107 with this  
`SSLCertificateKeyFile "C:/wamp/bin/apache/Apache2.2.21/conf/ssl/server.key"`
17. Replace line 68 with this (if not already)  
`SSLMutex default`
18. Replace lines 77-81 with these lines  
`DocumentRoot "C:/wamp/www"`

```
ServerName localhost:443
ServerAdmin admin@localhost
ErrorLog "C:/wamp/bin/apache/Apache2.2.21/conf/ssl/logs/ssl_error.log"
TransferLog "C:/wamp/bin/apache/Apache2.2.21/conf/ssl/logs/ssl_access.log"
```

19. On line 193 replace the Directory with

```
<Directory "C:/wamp/www">
SSLOptions +StdEnvVars
Options Indexes FollowSymLinks MultiViews
AllowOverride All
Order allow,deny
allow from all
</Directory>
```

20. Replace line 232 (used to be line 228 before step 19) with this

```
CustomLog "C:/wamp/logs/ssl_request.log" \
```

21. Go back a directory or use this and open `httpd.conf`

```
cd C:\wamp\bin\apache\apache2.2.21\conf
```

22. On line 479 uncomment (remove the #) this statement

```
Include conf/extra/httpd-ssl.conf
```

23. Left-click the WAMP tray icon and check off the ssl module (WAMP may stop working, if this happens you can download my `httpd-ssl.conf` file upon request)

**Apache > Apache modules > ssl\_module**

24. Click on WAMP again but this time enable php openssl

**PHP > PHP extensions > php\_openssl**

25. Copy these 2 libraries into the System32 folder (Make sure you are running Command prompt as Administrator)

```
cd C:\wamp\bin\apache\apache2.2.21\bin
copy libeay32.dll C:\windows\System32
copy ssleay32.dll C:\windows\System32
```

26. Create a test file called `index.php` in your www folder or WAMP and open a web-browser.

27. Type the following URL in the web browser

```
https://localhost
```

28. You will get a warning, just click the following (Based on Firefox)

**Add Exception**

**Get Certificate**

**Confirm Security Exception**

29. You are done! You've just finished setup HTTPS SSL on WAMP, and much better, you can obtain a free SSL certificate through these <http://www.cacert.org> or <http://cert.startcom.org>

After SSL is set up you can use this tutorial: [MySQL Database Encryption Using Public/Private Keys](#) for asymmetric encryption in PHP