

Date – May 2010 - Kigali

## AfNOG 11

### Apache 2.2 with SSL, PHP, Mysql and Wordpress Exercises

#### Installation:

```
$ cd /usr/ports/www/apache22/  
$ make install clean
```

In /etc/rc.conf, add the following line

```
apache22_enable="YES"
```

To start apache run

```
$ /usr/local/etc/rc.d/apache22 start
```

#### Creating the SSL Certificates:

```
$ cd /usr/local/etc/apache22/
```

```
$ openssl genrsa -des3 -out server.key 1024
```

\*\*Password-Phrase is needed to encrypt the key. This pass-phrase will be needed at every apache restart. To get rid of the pass-phrase prompts at every apache restart and maintain the original key.

```
$ cp server.key server.key.org
```

```
$ openssl rsa -in server.key.org -out server.key
```

#### Create Certificate Request

```
$openssl req -new -key server.key -out server.csr
```

\*\* The CommonName is the name of the Website you will use in this case the localhost name i.e www.name.afnog.org.rw

#### Self Signing your Own Certificate

```
$ openssl x509 -req -days 3650 -in server.csr -signkey server.key -out server.crt
```

#### Enabling SSL

```
vi /usr/local/etc/apache22/extra/httpd-ssl.conf
```

Each virtual host must have its own certificate file see comments on "CommonName".

The path is where the certificate File and Keys are located in this case /usr/local/etc/apache22/ (see virtualhost example below

```
SSLCertificateFile /path/to/this/server.crt  
SSLCertificateKeyFile /path/to/this/server.key
```

Edit the httpd.conf file and **uncomment** the line below;

```
# include etc/apache22/extra/httpd-ssl.conf
```

```
include etc/apache22/extra/httpd-ssl.conf
```

At the end of the file (**httpd-ssl.conf**) add the virtual hosts that will be handled with SSL

```
<VirtualHost www.name.afnog.org.rw:443>  
ServerAdmin webmaster@name.afnog.org.rw  
DocumentRoot /home/afnog/name  
ServerName www.name.afnog.org.rw  
ErrorLog "/var/log/httpd-error.log"  
TransferLog "/var/log/httpd-access.log"  
SSLEngine on  
SSLCertificateFile /usr/local/etc/apache22/server.crt  
SSLCertificateKeyFile /usr/local/etc/apache22/server.key  
<FilesMatch "\.(cgi|shtml|phtml|php)$">  
    SSLOptions +StdEnvVars  
</FilesMatch>  
<Directory "/usr/local/www/apache22/cgi-bin">  
    SSLOptions +StdEnvVars  
</Directory>  
  
BrowserMatch ".*MSIE.*" \  
    nokeepalive ssl-unclean-shutdown \  
    downgrade-1.0 force-response-1.0  
  
CustomLog "/var/log/httpd-ssl_request.log" \  
    "%t %h %{SSL_PROTOCOL}x %{SSL_CIPHER}x \"%r\" %b"  
</VirtualHost>
```

## **Enable IPv6 in FreeBSD**

As user root, vi /etc/rc.conf and add:-

```
ipv6_enable="YES"
```

add (manual) interface configuration:-

***ipv6\_network\_interfaces=" bge0"***

Use the above option to limit the interface to enable IPv6. By default it's "auto", meaning to enable IPv6 on all the interfaces.

***ipv6\_ifconfig bge0="2001:4348:0:219:196:200:219:X"***

(where x is your pc number, eg.1, 2, 3 ...)

•Add the default router:-

***ipv6\_defaultrouter=" 2001:4348:0:219:196:200:219:254"***

•Reboot!

Test with traceroute6 and ping6

a)to your neighbour's ipv6 address

b)An external host e.g tracroute6 [www.afrinic.net](http://www.afrinic.net)

Open your browser and go to

<http://www.afrinic.net>

[http://\[2001:610:240:a50::2\]/](http://[2001:610:240:a50::2]/)

or go to <http://ipv6.google.com>

[www.kame.net](http://www.kame.net)

Without having to reboot do this after editing the /etc/rc.conf;

***\$ ifconfig bge0 inet6 2001:4348:0:219:196:200:219:X prefixlen 64***

***\$ route add -inet6 default 2001:4348:0:219:196:200:219:254***

***\$/etc/rc.d/network\_ipv6 start***

### **Configuring Virtual IPv4 and IPv6 hosts**

***Vi /usr/local/etc/apache/httpd.conf***

Edit the httpd.conf file and **uncomment** the line

***#include etc/apache22/extra/httpd-vhosts.conf***

***include etc/apache22/extra/httpd-vhosts.conf***

Ensure that Apache listens on port 80

***Listen 80*** # Listen for virtual host requests on all IP addresses (both Ipv4 and IPv6)

***ServerName \*:80*** # to avoid binding to DNS Names or IP

Edit /usr/local/etc/apache22/extra/httpd-vhosts.conf to define the virtual hosts. In the exercise “name” should be replaced with your name as in the DNS exercise.

**NameVirtualHost \*:80**

```
<VirtualHost *:80>  
ServerAdmin webmaster@name.afnog.org.rw  
DocumentRoot /home/afnog/name  
ServerName www.name.afnog.org.rw  
</VirtualHost>
```

Therefore the need to create the directory “name” in afnog home directory and also give it the right permissions for apache to access it – in this case

```
$cd /home/afnog/  
$mkdir name  
$chown -R www:www name  
$chmod u+x name
```

By default apaches Directory access permissions are restrictive to deny all. This requires that any directory access for apache outside the Document root should be explicitly set.

*\*\*To allow from all from httpd.conf may resolve but is not recommended. The best option is as follows;*

*create a file called name.conf (where name is same as “name” above for ease of management) in /usr/local/etc/apache22/Includes/*

*Inside the file have the following*

```
<Directory /home/afnog/name>  
Order deny,allow  
Allow from all  
</Directory>
```

## **Installing PHP & PHP Extensions**

```
$ cd /usr/ports/lang/php5  
$ make install clean
```

*\*\* Select Apache Option # Build Apache Module option*

*Once its completes, proceed to add the following into the apache httpd.conf file to enable PHP in apache*

```
$ vi /usr/local/etc/apache22/httpd.conf
```

Find directory index as below and add the index.php

DirectoryIndex index.html index.htm ***index.php***

Also find the Addtype section and add the 2 lines below

```
AddType application/x-httpd-php .php  
AddType application/x-httpd-php-source .phps
```

Copy the php initialization file that has the php features.

```
$ cp /usr/local/etc/php.ini-dist /usr/local/etc/php.ini
```

Install php5-extensions which provide support for various modules like mysql and others.

```
$ cd /usr/ports/lang/php5-extensions  
$ make install clean
```

\*\* Select mysql and IMAP support

Once it is complete

Restart Apache

```
apachectl restart
```

## **Test PHP installation**

Create PHP test page

```
vi /home/afnog/name/test.php
```

```
<?php  
$hostname = gethostbyaddr($_SERVER['REMOTE_ADDR']);  
echo "Your IP Address is $hostname";  
?>
```

got to <http://www.name.afnog.org.rw/test.php> from browser

(If you have IPv6 AAAA record for [www.name.afnog.org.rw](http://www.name.afnog.org.rw) the result will be the Ipv6 address or otherwise the IPv4 address.) At your own time you can add the AAAA resource record, change serial number and see the results.

## **Mysql50 Server Installation**

```
cd /usr/ports/databases/mysql50-server/
```

```
Make install clean
```

Edit /etc/rc.conf for mysql to start add the line

***mysql\_enable="YES"***

Start Mysql

***\$ /usr/local/etc/rc.d/mysql-server start***

Create root password

***\$ mysqladmin -u root password newpassword***

The "newpassword" is the password of your choice e.g afnog10

### **Install and Configure Wordpress**

***\$ cd /usr/ports/www/wordpress***

***\$ make install clean***

***\$mysql -p***

***Mysql> create database wordpress***

Create a virtual host for wordpress in apache

Modify the wordpress config in /usr/local/www/data/wordpress/

***\$ cd /usr/local/www/data/wordpress***

***\$ cp wp-config-sample.php wp-config.php***

Edit the wp-config with the database name, username and passwords created above

Save and restart apache and happy blogging