

Apache and Virtual Hosts

Exercises

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Install Apache version 2 from Package

Set the path to your network ftp package source --- you may have already done this in earlier sessions

```
# set
FTP_ROOT=ftp://10.10.10.200/pub/FreeBSD/releases/i386/8.2-RELEASE/packages/All
```

Note: the above command is one line

Adding Apache package

```
# pkg_add $FTP_ROOT/apache-2.2.17_1.tbz
```

Now we will configure Apache to run on your machines.

Configure Apache version 2

Apache is a Third Party software package. The configuration files for Apache reside in the `/usr/local/etc` directory. In order for Apache to run you must first do the following:

```
# ee /etc/rc.conf
```

Add a line to the bottom of this file and enter:

```
apache22_enable="YES"
```

Now exit and save the file.

If you install Third Party software and need to know what to enter in the `/etc/rc.conf` file to enable it, read the initialization script for that software. For instance, for Apache you can do:

```
# less /usr/local/etc/rc.d/apache22
```

You will see comments at the top of the file describing the options you can place in the `/etc/rc.conf` file to run the service.

See the section:

```
#  
# Add the following lines to /etc/rc.conf to enable apache22:  
# apache22_enable (bool):      Set to "NO" by default.  
#                             Set it to "YES" to enable apache22
```

Press “q” to exit from the `less` command.

Start Apache version 2

This is quite simple. Now that the service has been enabled in `/etc/rc.conf` type:

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

If you would like to prove that Apache is working on your computer open a web browser and enter in the address:

```
http://localhost/
```

You should see a page that says, “It works!”

The file where this text resides is:

```
/usr/local/www/apache22/data/index.html
```

Making Changes To Your Home Page

We edit the file `/usr/local/www/apache22/data/index.html`

```
# ee /usr/local/www/apache22/data/index.html
```

Enter the text

```
"This is my website, Created in the AfNOGChix 2011  
Class"
```

Reload/Refresh on your browser

```
http://localhost/
```

Configure Virtual Hosts in Apache 2

There are several ways to approach virtual hosting. The first thing you must determine is your directory structure where each web site will reside. For our purposes we will use:

```
/usr/local/www/share
```

All of your PCs have multiple entries for their assigned IP addresses. At the very least you have: -

***** *xxxxx.afchix.mw = is domain registered during DNS exercise* *****

```
pcX.afchix.mw ==> 10.10.10.X  
www.yourdomain.afchix.mw ==> 0.10.10.X
```

We will take advantage of this for the exercise.

Let's create three web directories:

```
# cd /usr/local/www/  
# mkdir share  
# cd share  
# mkdir default  
# mkdir mtgdomain  
# mkdir ws
```

Now let's copy the original `index.html` file to our `default` directory, and the `mtg` and `ws` directories as well..

```
# cp ../apache22/data/index.html default/.
# cp ../apache22/data/index.html mtgdomain/.
# cp ../apache22/data/index.html ws/.
```

Edit the `index.html` files in `mtg` and `ws`.

```
# ee mtgdomain/index.html
```

Add the text “**Meeting Domain Virtual Host**” to “This is my website, Created in the AfNOGChix 2011 Class!”. Close and save the file.

```
# ee ws/index.html
```

Add the text “**Workshop Virtual Host**” to “This is my website, Created in the AfNOGChix 2011 Class”. Close and save the file.

Next we need to edit the Apache configuration files to adjust for our new directory settings.

```
# cd /usr/local/etc/apache22
# ee httpd.conf
```

In the file `httpd.conf` we are looking first for the following line:

```
DocumentRoot "/usr/local/www/apache22/data"
```

Change this line to read:

```
DocumentRoot "/usr/local/www/share/default"
```

Then look for the line that reads:

```
<Directory "/usr/local/www/apache22/data">
```

And change this to:

```
<Directory "/usr/local/www/share">
```

Now find the line that says:

```
#Include etc/apache22/extra/httpd-vhosts.conf
```

And change this by removing the hash (**#**) at the beginning of the line – we are

uncommenting this line to use vhosts:

```
Include etc/apache22/extra/httpd-vhosts.conf
```

Now let's verify that Apache is still working.

```
# /usr/local/etc/rc.d/apache22 restart
```

In a web browser (on your machine) open the URL "http://localhost/" once again. It should still read, "This is my website, Created in the AfNOGChix 2011 Class".

Now we will add the configuration for our two virtual hosts:

```
# cd /usr/local/etc/apache22/extra
# ee httpd-vhosts.conf
```

Find the line that says:

```
NameVirtualHost *:80
```

And ***delete everything after*** that line. Now let's configure your two virtual hosts. Add the following to the file below the "NameVirtualHost *:80" line:

```
<VirtualHost *:80>
    ServerAdmin afnogchix@localhost
    DocumentRoot "/usr/local/www/share/default"
    ServerName 10.10.10.X
    ErrorLog "/var/log/httpd-error_log"
    CustomLog "/var/log/httpd-access_log" common
</VirtualHost>
```

```
<VirtualHost *:80>
    ServerAdmin afnogchix@localhost
    DocumentRoot "/usr/local/www/share/mtg"
    ServerName www.yourdomain.afchix.mw
    ErrorLog "/var/log/mtg-error_log"
    CustomLog "/var/log/mtg-access_log" common
</VirtualHost>
```

```
<VirtualHost *:80>
    ServerAdmin afnogchix@localhost
    DocumentRoot "/usr/local/www/share/ws"
    ServerName pcX.afchix.mw
    ErrorLog "/var/log/ws-error_log"
```

```
    CustomLog "/var/log/ws-access_log" common
</VirtualHost>
```

Once you are done save the file and quit. Now we must restart Apache to load the new configuration. You can do this two different ways:

Either:

```
# /usr/local/etc/rc.d/apache22 restart
```

Or:

```
# apachectl restart
```

After restarting prove to yourself that virtual hosting is working. Do the following on your browser:

Browser Tab	Type the address
Tab 1	localhost
Tab 2	127.0.0.1
Tab 3	10.10.10.X
Tab 4	pcX.afchix.mw
Tab 5	www.yourdomain.afchix.mw

Do you see what you expect? Remember to replace the “X” and “xx” with the appropriate numbers. For example, for pc10.afchix.or.ke the urls would be:

- localhost
- 127.0.0.1
- 41.215.76.10
- pc10.afchix.mw
- www.yourdomain.afchix.mw

Homework:

If you have defined additional hosts for your IP address feel free to add them in to your `/usr/local/etc/apache22/extra/httpd-vhosts.conf` file. Remember to create a directory for their DocumentRoot and to place an html file in that directory.