SETTING UP AN APACHE WEB SERVER ON A RASPBERRY PI

Apache is a popular web server application you can install on the Raspberry Pi to allow it to serve web pages.

On its own, Apache can serve HTML files over HTTP, and with additional modules can serve dynamic web pages using scripting languages such as PHP.

INSTALL APACHE

First install the apache2 package by typing the following command in to the Terminal:

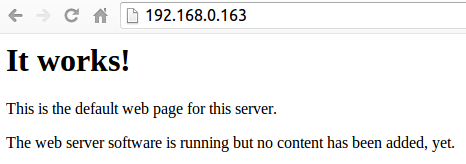
**YOU SHOULD ALREADY HAVE INSTALLED THIS!!!**

sudo apt-get install apache2 -y

TEST THE WEB SERVER

By default, Apache puts a test HTML file in the web folder. This default web page is served when you browse to http://localhost/ on the Pi itself, or http://192.168.1.10 (whatever the Pi's IP address is) from another computer on the network. To find the Pi's IP address, type hostname -I at the command line (or read more about finding your [IP address](https://www.raspberrypi.org/documentation/troubleshooting/hardware/networking/ip-address.md)).

Browse to the default web page either on the Pi or from another computer on the network and you should see the following:



This means you have Apache working!

CHANGING THE DEFAULT WEB PAGE

This default web page is just a HTML file on the filesystem. It is located at /var/www/index.html. navigate to this directory in the Terminal and have a look at what's inside:

cd /var/www

ls -al

This will show you:

total 12

drwxr-xr-x 2 root root 4096 Jan 8 01:29 .

drwxr-xr-x 12 root root 4096 Jan 8 01:28 ..

-rw-r--r-- 1 root root 177 Jan 8 01:29 index.html

This shows that there is one file in /var/www/ called index.html. The .refers to the directory itself /var/www/ and the .. refers to the parent directory/var/.

WHAT THE COLUMNS MEAN

1. The permissions of the file or directory
2. The number of files in the directory (or 1 if it's a file).
3. The user which owns the file or directory
4. The group which owns the file or directory
5. The file size
6. The last modification date & time

As you can see, by default the www directory and index.html file are both owned by the root user. In order to edit the file, you must gain rootpermissions. Either change the owner to your own user (sudo chown pi: index.html) before editing, or edit with sudo, e.g. sudo nano index.html.

Try editing this file and refreshing the browser to see the web page change.

YOUR OWN WEBSITE

If you know HTML you can put your own HTML files and other assets in this directory and serve them as a website on your local network.

ADDITIONAL - INSTALL PHP

To allow your Apache server to process PHP files, you'll need to install PHP5 and the PHP5 module for Apache. Type the following command to install these:

sudo apt-get install php5 libapache2-mod-php5 -y

Now remove the index.html file:

sudo rm index.html

and copy the default web server in this /var/www directory index.php,page1.php,page2.php,login3.php.

These files are available in DROPBOX under Final Web Template.

The default port that apache responds to is port 80. We need to all make unique port assignment to access our devices globally fofr our devices on the local network. Our devices have been given static addresses and we will set port forwarding for our unique ports to our local address within the router.

Let’s change the default port to something unique to our device and different than the default port :80.

>sudo vi /etc/apache2/ports.conf

**Modify**

NameVirtualHost \*:80

Listen 80

**To**

NameVirtualHost \*:9050

Listen 9050

>sudo vi /etc/apache2/sites-available/default

**Modify**

<VirtualHost \*:80>

**To**

<VirtualHost \*:9050>

**Reboot the system**

**The new default web server that I created is driven off a mysql database. I have created a script that need to be run to initialize the database. The script is called create\_initial\_login\_DB.py. It is located in the same directory as the 4 PHP files referenced earlier. The script was designed to be called from the system startup code and will be executed when a GPIO input is detected on power-up. For now modify the script to execute always and call it. Once correctly executed you’ll be able to login to your web server.**

**The default username password is administrator/123456789.**