**To install PFsense Firewall and block a website (Author = Mukthar H)**

* Go to https://www.pfsense.org/download/
* click on “Download”
* It will take to you Netstat website.
* Add the product to your cart and check out, fill in your details and it will then allow you to install the software.
* When the software is installed, right click on the file go to 7-zip and click on “extract the files”. You will need to have 7-zip already installed to extract the files.
* On you virtual box, click on “New” then type in “pfsense firewall” as the name. In "Type" select BSD. In "Version" select FreeBSD (64-bits). A screenshot of a computer

  Description automatically generated
* Select 2 gb as memory and two cores of processor. Keep everything else as default and click on next and finish at the end.

A computer screen shot of a network

Description automatically generated

* Once the virtual machine has been created, go to its settings and make sure you select “Bridge adapter” as the network settings.
* Start the machine, when prompted to “Select-start-up disk” click on the folder, click on “Add” , navigate to where you have stored the pfsense (the file that you initially downloaded).
* Click on Start.
* Accept
* Install pfsense
* Continue with the default
* Auto (UFS) BIOS
* A screenshot of a computer

  Description automatically generatedSelect: No (when asked to make any final manual modifications)
* When the system prompted you to reboot the system select Reboot, while the system is rebooting go and shutdown the pfsense system then go to settings> storage, right click on the file and remove the attachment like shown on the right. Keep in mind that this step needs to be done before the system comes back on.
* Start the system.
* Select: No (When asked to configure VLANS)
* Type in em0 as the WAN interface.
* When asked to configure LAN interface just press enter, don’t type anything.
* Type: Yes
* The system will proceed with the installation, and you will get to what it looks like below with an IP address, this means the PFsense is now successfully installed.

A screenshot of a computer

Description automatically generated

* Type the ip address into a web browser
* The login details are username: admin
* Password: pfsense
* A screenshot of a computer

  Description automatically generatedGo to System > setup wizard > Click next, next until you get to how it looks in the screenshot below.
* Select Static instead of DHCP like shown in the screenshot above. Scroll down to Static IP Configuration and type IP address of Pfsense server, type the subnet mask. Also in upstream gate way type in the default gateway, to get the default gateway go to CMD on your local pc and type ipconfig /all then get the default gateway of ethernet if you’re physically connected or Wi-Fi if you are on Wi-Fi. Click next after filling this.
* Change the password
* Reload
* Finish
* You will then be taken to pfsense’s dashboard.

**To block a website for example Defendtheweb.net do the followings:**

* Go to firewall > aliases and configure the below
* To find the ip which is shown below in the screenshot as 3.10.42.19 go to cmd on your local pc, then type in nslookup then type defendtheweb.net this will provide you with the ip address of the website.

A screenshot of a computer

Description automatically generated

* Select: Save
* Go to Firewall > rule > click on add and configure the below, my ip address in the screenshot below is 192.13.0.0 /16 , you can get yours by going to cmd and typing in ipconfig /all to get your network ip and subnet mask.

A screenshot of a computer

Description automatically generated

* Also create this rule shown below to make sure everything else is allowed in rules:

A screenshot of a computer

Description automatically generated

* The rules should now look like in the image below:

A screenshot of a computer

Description automatically generated

* Then apply the settings bellow to your network adapter on your local device. Right click on your network or Wi-Fi icon at the bottom right of the screen > open network and internet settings > change adapter options > select the right connection for example “ethernet” right click > properties > IPV4 > select “use the following ip address” and type in the ip address like shown bellow in the screenshot.

A screenshot of a computer

Description automatically generated

* Now if you go to Defendtheweb.net, you will realise it’s unreachable. Also if you type in ipconfig /all in your local device, you default gateway should be your firewall’s ip address.