LAB 10 - HEARTBLEED ATTACK LAB

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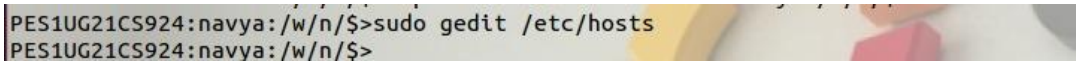
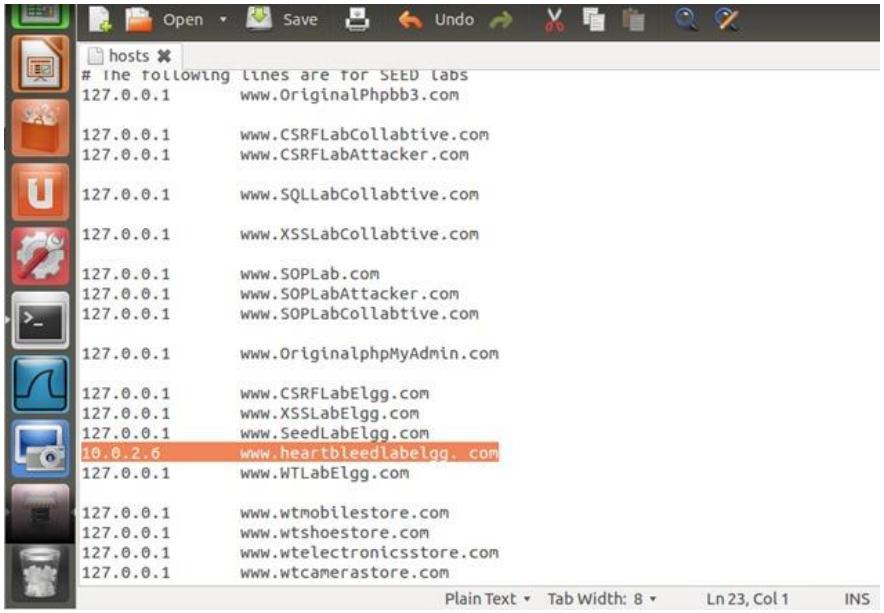
Step 1

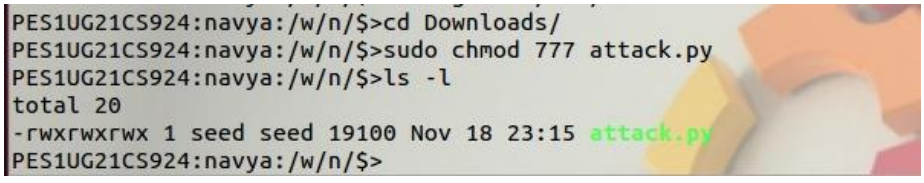
In the given process, we have used the sudo gedit command to open and modify /etc/hosts on the attacker's machine. We have changed the ip address of the heartbleed website to that of the victim's web server's ip, which is 10.0.2.6. We have done so, to make them believe that the website is on the server machine. Hence the change in ip.





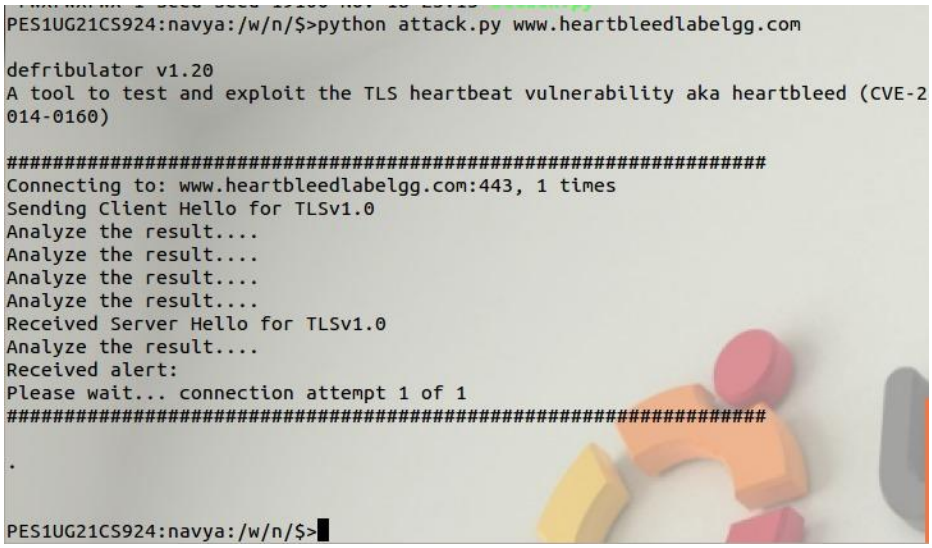
Step 2

We make attack.py executable by using the below command. We used sudo chmod 777 to change the permissions of the file to give anyone full read, write, and execute permissions.



After giving the permissions to the attack.py file, we ran the file. We used this program to send a malicious heartbeat request to the website on the server. The website then send random data from the server. This vulnerability allows attackers to steal sensitive data, such as usernames, passwords, and encryption keys, from affected servers. This occurs through a vulnerability present in the OpenSSL crypto library. The vulnerability is caused by a flaw in the implementation of the TLS

heartbeat extension. The heartbeat extension is used to keep a secure connection alive by periodically sending a small piece of data (a heartbeat) from one end of the connection to the other. Essentially, a malformed heartbeat request sent by an attacker can trick the server into responding with more data from it's memory than required, therefore giving out more sensitive information. Here, we have sent a heartbeat request to the server which is accepted and then we are able to view the website.



We were able to view the website.

I was unable to log in as admin in the website. Hence, I couldn't do the further steps.