

SCHOOL OF INFORMATION TECHNOLOGY AND  
ENGINEERING  
DIGITAL ASSIGNMENT 1  
WINTER SEMESTER 2022-23

Course : Information Security Management Lab

Marks :10

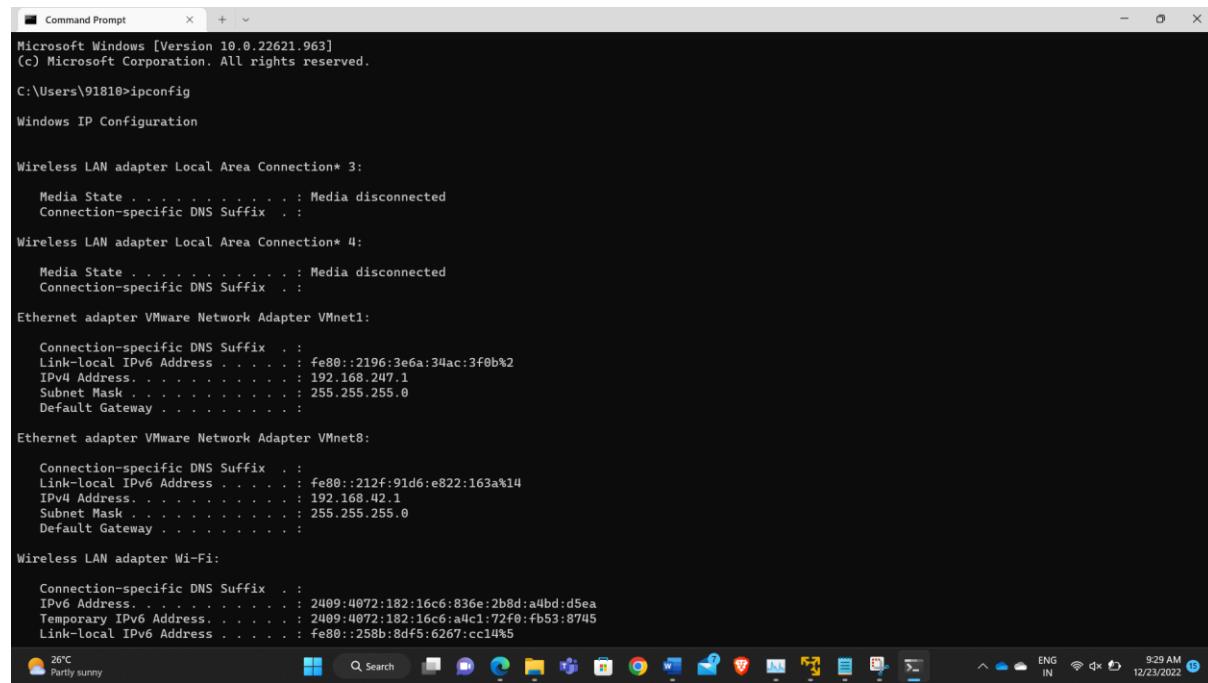
Course Code : CSE3502

Slot : L25+26

**Name : Chavan Mukul Manish**

**Reg no: 20BIT0238**

**System IP**



```
Microsoft Windows [Version 10.0.22621.963]
(c) Microsoft Corporation. All rights reserved.

C:\Users\91810>ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 3:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . :

Wireless LAN adapter Local Area Connection* 4:
  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix . :

Ethernet adapter VMware Network Adapter VMnet1:
  Connection-specific DNS Suffix . :
  Link-Local IPv6 Address . . . . . : fe80::2196:3e6a:34ac:3f0b%2
  IPv4 Address . . . . . : 192.168.247.1
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :

Ethernet adapter VMware Network Adapter VMnet8:
  Connection-specific DNS Suffix . :
  Link-Local IPv6 Address . . . . . : fe80::212f:91d6:e822:163a%14
  IPv4 Address . . . . . : 192.168.42.1
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :

Wireless LAN adapter Wi-Fi:
  Connection-specific DNS Suffix . :
  IPv6 Address . . . . . : 2409:4072:182:16c6:836e:2b8d:a4bd:d5ea
  Temporary IPv6 Address . . . . . : 2409:4072:182:16c6:a4c1:72f0:fb53:8745
  Link-Local IPv6 Address . . . . . : fe80::258b:8df5:6267:c14%5

  26°C
  Partly sunny
  Search
  Start
  File Explorer
  Task View
  Edge
  Google Chrome
  File Manager
  Mail
  File History
  OneDrive
  ENG IN
  9:29 AM
  12/23/2022
```

## Metasploitable IP (192.168.42.129)

The screenshot shows a VMware Workstation Player window titled "Metasploitable2-Linux - VMware Workstation 17 Player (Non-commercial use only)". The window contains a terminal session with the following output:

```
To access official Ubuntu documentation, please visit:  
http://help.ubuntu.com/  
No mail.  
msfadmin@metasploitable:~$ ifconfig  
eth0      Link encap:Ethernet HWaddr 00:0c:29:a8:1b:56  
          inet addr:192.168.42.129 Bcast:192.168.42.255 Mask:255.255.255.0  
          inet6 addr: fe80::20c:29ff:fea8:1b56/64 Scope:Link  
            UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1  
            RX packets:60 errors:0 dropped:0 overruns:0 frame:0  
            TX packets:76 errors:0 dropped:0 overruns:0 carrier:0  
            collisions:0 txqueuelen:1000  
            RX bytes:5598 (5.4 KB) TX bytes:7808 (7.6 KB)  
            Interrupt:17 Base address:0x2000  
  
lo       Link encap:Local Loopback  
          inet addr:127.0.0.1 Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
            UP LOOPBACK RUNNING MTU:16436 Metric:1  
            RX packets:92 errors:0 dropped:0 overruns:0 frame:0  
            TX packets:92 errors:0 dropped:0 overruns:0 carrier:0  
            collisions:0 txqueuelen:0  
            RX bytes:19393 (18.9 KB) TX bytes:19393 (18.9 KB)  
  
msfadmin@metasploitable:~$ _
```

At the bottom of the terminal window, there is a message from VMware Tools:

VMware Tools enables many features and improves mouse movement, video and performance. Log in to the guest operating system and click "Install Tools".

Buttons for "Install Tools", "Remind Me Later", and "Never Remind Me" are available.

## Kali linux IP (192.168.42.130)

The screenshot shows a terminal window titled "20BIT0213\_kali-linux-2022.4-vmware-amd64 - VMware Workstation 17 Player (Non-commercial use only)". The terminal is running on a Kali Linux system with IP 192.168.42.130. The user has run the command "ifconfig" to check network interfaces. The output shows two interfaces: eth0 (Ethernet) and lo (Loopback). The eth0 interface is connected to the network with an IP of 192.168.42.130, a netmask of 255.255.255.0, and a broadcast address of 192.168.42.255. The lo interface has a local IP of 127.0.0.1. The user then runs a script named "0001f0218.txt" which performs a security audit. The script outputs several lines of text, including:

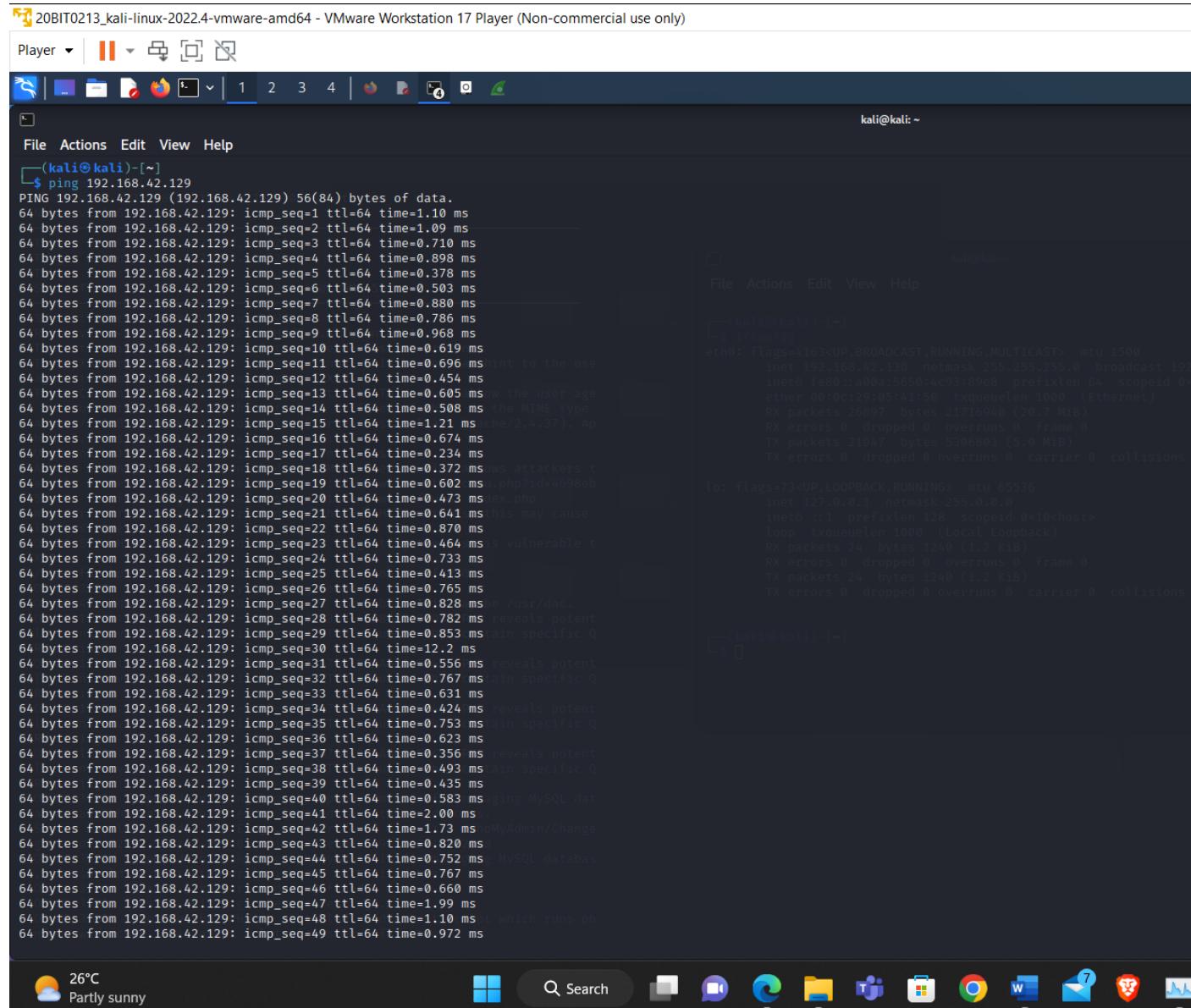
```
(kali㉿kali)-[~] 0001f0218.txt
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 192.168.42.130  netmask 255.255.255.0  broadcast 192.168.42.255
        inet6 fe80::a00a:5650:4c93:89e8  prefixlen 64  scopeid 0x20<link>
            ether 00:0c:29:05:41:50  txqueuelen 1000  (Ethernet)
                RX packets 26897  bytes 21716940 (20.7 MiB)
                RX errors 0  dropped 0  overruns 0  frame 0
                TX packets 21947  bytes 5306803 (5.0 MiB)
                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 24  bytes 1240 (1.2 KiB)
                RX errors 0  dropped 0  overruns 0  frame 0
                TX packets 24  bytes 1240 (1.2 KiB)
                TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

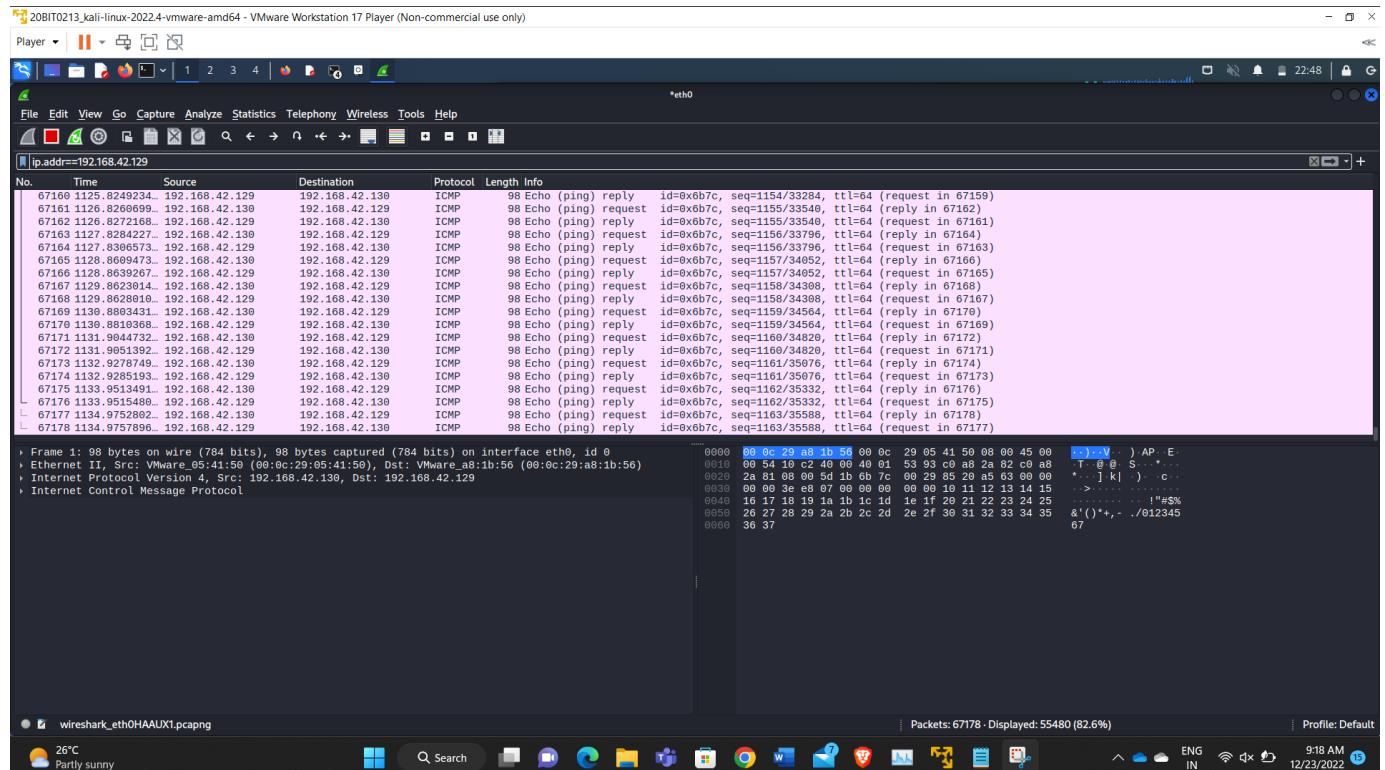
$ [REDACTED]
(kali㉿kali)-[~] 0001f0218.txt
$ [REDACTED]
(kali㉿kali)-[~] 0001f0218.txt
$ [REDACTED]
```

The terminal window also includes a weather icon showing "Partly sunny" at 26°C, a search bar, and a taskbar with various application icons.

**1. Perform a Ping of Metasploitable IP on Kali Linux command and observe the packets in Wireshark. Give 2 snapshots one for pinging to metasploitable IP and another for wireshark capturing request and response packets to metasploitable IP ( 2 marks)**



```
$ ping 192.168.42.129
PING 192.168.42.129 (192.168.42.129) 56(84) bytes of data.
64 bytes from 192.168.42.129: icmp_seq=1 ttl=64 time=1.10 ms
64 bytes from 192.168.42.129: icmp_seq=2 ttl=64 time=1.09 ms
64 bytes from 192.168.42.129: icmp_seq=3 ttl=64 time=0.710 ms
64 bytes from 192.168.42.129: icmp_seq=4 ttl=64 time=0.898 ms
64 bytes from 192.168.42.129: icmp_seq=5 ttl=64 time=0.378 ms
64 bytes from 192.168.42.129: icmp_seq=6 ttl=64 time=0.503 ms
64 bytes from 192.168.42.129: icmp_seq=7 ttl=64 time=0.880 ms
64 bytes from 192.168.42.129: icmp_seq=8 ttl=64 time=0.786 ms
64 bytes from 192.168.42.129: icmp_seq=9 ttl=64 time=0.968 ms
64 bytes from 192.168.42.129: icmp_seq=10 ttl=64 time=0.619 ms
64 bytes from 192.168.42.129: icmp_seq=11 ttl=64 time=0.696 ms
64 bytes from 192.168.42.129: icmp_seq=12 ttl=64 time=0.454 ms
64 bytes from 192.168.42.129: icmp_seq=13 ttl=64 time=0.605 ms
64 bytes from 192.168.42.129: icmp_seq=14 ttl=64 time=0.508 ms
64 bytes from 192.168.42.129: icmp_seq=15 ttl=64 time=1.21 ms
64 bytes from 192.168.42.129: icmp_seq=16 ttl=64 time=0.674 ms
64 bytes from 192.168.42.129: icmp_seq=17 ttl=64 time=0.234 ms
64 bytes from 192.168.42.129: icmp_seq=18 ttl=64 time=0.372 ms
64 bytes from 192.168.42.129: icmp_seq=19 ttl=64 time=0.602 ms
64 bytes from 192.168.42.129: icmp_seq=20 ttl=64 time=0.473 ms
64 bytes from 192.168.42.129: icmp_seq=21 ttl=64 time=0.641 ms
64 bytes from 192.168.42.129: icmp_seq=22 ttl=64 time=0.870 ms
64 bytes from 192.168.42.129: icmp_seq=23 ttl=64 time=0.464 ms
64 bytes from 192.168.42.129: icmp_seq=24 ttl=64 time=0.733 ms
64 bytes from 192.168.42.129: icmp_seq=25 ttl=64 time=0.413 ms
64 bytes from 192.168.42.129: icmp_seq=26 ttl=64 time=0.765 ms
64 bytes from 192.168.42.129: icmp_seq=27 ttl=64 time=0.828 ms
64 bytes from 192.168.42.129: icmp_seq=28 ttl=64 time=0.782 ms
64 bytes from 192.168.42.129: icmp_seq=29 ttl=64 time=0.853 ms
64 bytes from 192.168.42.129: icmp_seq=30 ttl=64 time=12.2 ms
64 bytes from 192.168.42.129: icmp_seq=31 ttl=64 time=0.556 ms
64 bytes from 192.168.42.129: icmp_seq=32 ttl=64 time=0.767 ms
64 bytes from 192.168.42.129: icmp_seq=33 ttl=64 time=0.631 ms
64 bytes from 192.168.42.129: icmp_seq=34 ttl=64 time=0.424 ms
64 bytes from 192.168.42.129: icmp_seq=35 ttl=64 time=0.753 ms
64 bytes from 192.168.42.129: icmp_seq=36 ttl=64 time=0.623 ms
64 bytes from 192.168.42.129: icmp_seq=37 ttl=64 time=0.356 ms
64 bytes from 192.168.42.129: icmp_seq=38 ttl=64 time=0.493 ms
64 bytes from 192.168.42.129: icmp_seq=39 ttl=64 time=0.435 ms
64 bytes from 192.168.42.129: icmp_seq=40 ttl=64 time=0.583 ms
64 bytes from 192.168.42.129: icmp_seq=41 ttl=64 time=2.00 ms
64 bytes from 192.168.42.129: icmp_seq=42 ttl=64 time=1.73 ms
64 bytes from 192.168.42.129: icmp_seq=43 ttl=64 time=0.820 ms
64 bytes from 192.168.42.129: icmp_seq=44 ttl=64 time=0.752 ms
64 bytes from 192.168.42.129: icmp_seq=45 ttl=64 time=0.767 ms
64 bytes from 192.168.42.129: icmp_seq=46 ttl=64 time=0.660 ms
64 bytes from 192.168.42.129: icmp_seq=47 ttl=64 time=1.99 ms
64 bytes from 192.168.42.129: icmp_seq=48 ttl=64 time=1.10 ms
64 bytes from 192.168.42.129: icmp_seq=49 ttl=64 time=0.972 ms
```



## 2. Perform a NMAP scan of determining the version of the services running in metasploitable IP. Give snapshot of the same. ( 2 Marks)

```

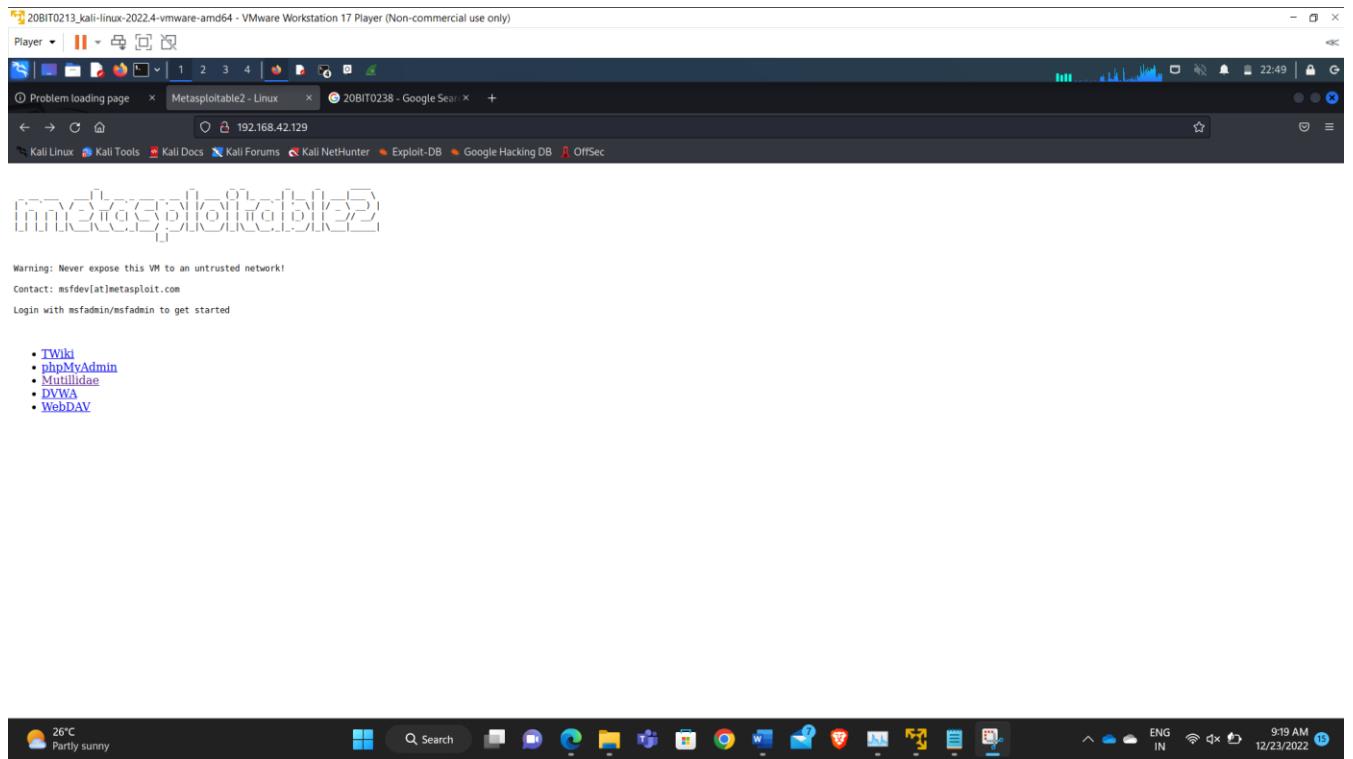
20BIT0213_kali-linux-2022.4-vmware-amd64 - VMware Workstation 17 Player (Non-commercial use only)
Player | ||| [ ] 
File Edit View Go Capture Analyze Statistics Telephone Wireless Tools Help
File Edit View Go Capture Analyze Statistics Telephone Wireless Tools Help
*eth0
ip.addr==192.168.42.129
No. Time Source Destination Protocol Length Info
0 67166 11:25.024924 --. 192.168.42.129 ICMP 96 Echo (ping) reply id=0xb7c, seq=1154/33284, ttl=64 (request in 67159)
0 67161 11:26.0268699 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1155/33540, ttl=64 (reply in 67162)
0 67162 11:26.0272168 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1155/33540, ttl=64 (request in 67161)
0 67163 11:27.8284227 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1156/33796, ttl=64 (reply in 67164)
0 67164 11:27.8369573 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1156/33796, ttl=64 (request in 67163)
0 67165 11:28.8699473 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1157/34052, ttl=64 (reply in 67166)
0 67166 11:28.8639267 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1157/34052, ttl=64 (request in 67165)
0 67167 11:29.8623014 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1158/34308, ttl=64 (reply in 67168)
0 67168 11:29.8628010 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1158/34308, ttl=64 (request in 67167)
0 67169 11:29.8883431 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1159/34564, ttl=64 (reply in 67170)
0 67170 11:29.8810368 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1159/34564, ttl=64 (request in 67169)
0 67171 11:29.9840368 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1160/34829, ttl=64 (reply in 67172)
0 67172 11:29.9843239 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1160/34829, ttl=64 (request in 67171)
0 67173 11:32.0278749 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1161/35070, ttl=64 (reply in 67173)
0 67174 11:32.0285103 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1161/35070, ttl=64 (request in 67173)
0 67175 11:33.0513491 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1162/35332, ttl=64 (reply in 67176)
0 67176 11:33.0515480 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1162/35332, ttl=64 (request in 67175)
0 67177 11:34.0752802 192.168.42.129 ICMP 98 Echo (ping) request id=0xb7c, seq=1163/35588, ttl=64 (reply in 67178)
0 67178 11:34.0757896 192.168.42.129 ICMP 98 Echo (ping) reply id=0xb7c, seq=1163/35588, ttl=64 (request in 67177)

Frame 1: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on interface eth0, id 0
Ethernet II, Src: VMWare_05:41:50 (00:0c:29:05:41:50), Dst: VMWare_a8:1b:56 (00:0c:29:a8:1b:56)
Internet Protocol Version 4, Src: 192.168.42.130, Dst: 192.168.42.129
Internet Control Message Protocol
0000  00 0c 29 a8 1b 56 00 0c 29 05 41 50 00 00 45 00 ..-V.. AP...E.
0001  00 54 10 c2 40 00 40 01 53 c0 a8 28 82 c0 a8 T-@.S.....
0002  28 00 00 00 00 00 00 00 00 29 05 20 a5 00 00 00 .-..K|.C...
0003  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ...-..K|.C...
0004  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 ...-..K|.C...
0005  16 17 18 19 1a 1b 1c 1d 1e 1f 20 21 22 23 24 25 .....!#$%
0006  26 27 28 29 2a 2b 2c 2d 2e 2f 30 31 32 33 34 35 &!*+,- ./012345
0007  36 37 67

Packets: 67178 - Displayed: 55480 (82.6%)
Profile: Default

```

### 3. Run metasploitable IP in firefox browser of Kali. Give Snapshot (2 Marks)



**4. Perform a Nikto Scan of metasploitable IP. Give snapshot and save the results in a text file. Save the text file in google drive link and share the link in the document.**

20BIT0213\_kali-linux-2022-4-vmware-amd64 - VMware Workstation 17 Player (Non-commercial use only)

Player | 1 2 3 4

kali@kali: ~

```
(kali㉿kali)-[~]
$ nikto -h 192.168.42.129 -o 20BIT0238.txt
Nikto v2.1.6

[+] Target IP:          192.168.42.129
[+] Target Hostname:   192.168.42.129
[+] Target Port:        80
[+] Start Time:        2022-12-22 22:34:20 (GMT-5)

+ Server: Apache/2.2.8 (Ubuntu) DAV/2
+ Retrieved x-powered-by header: PHP/5.2.4-2ubuntu5.10
+ The anti-clickjacking X-Frame-Options header is not present.
+ The X-XSS-Protection header is not defined. This header can hint to the user agent to protect against some forms of XSS
+ The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type
+ Apache/2.2.8 appears to be outdated (current is at least Apache/2.4.37). Apache 2.2.34 is the EOL for the 2.x branch
+ Uncommon header 'tcn' found, with contents: list
+ Apache mod negotiation is enabled with MultiViews, which allows attackers to easily brute force file names. See http://www.wisec.it/sectou.php?id=4698eb
dc59d15. The following alternatives for 'index' were found: index.php
+ Web Server returns a valid response with junk HTTP methods, this may cause false positives.
+ OSVDB-877: HTTP TRACE method is active, suggesting the host is vulnerable to XST
+ /phpinfo.php: Output from the phpinfo() function was found.
+ OSVDB-3268: /doc/: Directory indexing found.
+ OSVDB-48: /doc/: The directory is browsable. This may be /usr/doc.
+ OSVDB-12184: /=?PHPBB85F2A0-3C92-11d3-A3A9-4C7B08C10000: PHP reveals potential sensitive information via certain HTTP requests that contain specific Q_Qo_d negotiation is enabled with MultiViews, which allows UERY strings.
+ OSVDB-12184: /=?PHPE9568F34-D428-11d2-A769-00AA001ACF42: PHP reveals potential sensitive information via certain HTTP requests that contain specific Q_Qo_d negotiation is enabled with MultiViews, which allows UERY strings.
+ OSVDB-12184: /=?PHPE9568F34-D428-11d2-A769-00AA001ACF42: PHP reveals potential sensitive information via certain HTTP requests that contain specific Q_Qo_d negotiation is enabled with MultiViews, which allows UERY strings.
+ OSVDB-12184: /=?PHPE9568F34-D428-11d2-A769-00AA001ACF42: PHP reveals potential sensitive information via certain HTTP requests that contain specific Q_Qo_d negotiation is enabled with MultiViews, which allows UERY strings.
+ OSVDB-3092: /phpMyAdmin/changelog.php: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.
+ Server may leak inodes via ETags, header found with file /phpMyAdmin/ChangeLog, inode: 92462, size: 40540, atime: Tue Dec 9 12:24:00 2008
+ OSVDB-3092: /phpMyAdmin/Changelog: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.
+ OSVDB-3268: /test/: Directory indexing found.
+ OSVDB-3092: /test/: This might be interesting...
+ OSVDB-3233: /phpinfo.php: PHP is installed, and a test script which runs phpinfo() was found. This gives a lot of system information.
```

20BIT0213\_kali-linux-2022.4-vmware-amd64 - VMware Workstation 17 Player (Non-commercial use only)

Player

-/20BIT0238.txt - Mousepad

File Edit Search View Document Help

1 Nikto v2.1.6/2.1.5  
2 + Target Host: 192.168.42.129  
3 + Target Port: 80  
4 + GET Retrieved x-powered-by header: PHP/5.2.4-2ubuntu5.10  
5 + GET The anti-clickjacking X-Frame-Options header is not present.  
6 + GET The X-XSS-Protection header is not defined. This header can hint to the user agent to protect against some forms of XSS  
7 + GET The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type  
8 + HEAD Apache/2.2.8 appears to be outdated (current is at least Apache/2.4.37). Apache 2.2.34 is the EOL for the 2.x branch.  
9 + GET Uncommon header 'tcn' found, with contents: list  
10 + GET Apache mod\_negotiation is enabled with MultiViews, which allows attackers to easily brute force file names. See <http://www.wisec.it/sectou.php?id=4698ebcd59d15>. The following alternatives for 'index' were found: index.php  
11 + WLKQIGZN Web Server returns a valid response with junk HTTP methods, this may cause false positives.  
12 + OSVDB-3248: GET /doc/: Directory indexing found.  
13 + GET /phpinfo.php: Output from the phpinfo() function was found.  
14 + OSVDB-3248: GET /doc/: Directory indexing found.  
15 + OSVDB-48: GET /doc/: The /doc/ directory is browsable. This may be /usr/doc.  
16 + OSVDB-12184: GET />PHP#088F2A0-3C92-11d3-A3A9-4C7808C10000: PHP reveals potentially sensitive information via certain HTTP requests that contain specific QUERY strings.  
17 + OSVDB-12184: GET />PME#956F836-D428-11d2-A769-00AA001ACF42: PHP reveals potentially sensitive information via certain HTTP requests that contain specific QUERY strings.  
18 + OSVDB-12184: GET />PME#956F834-D428-11d2-A769-00AA001ACF42: PHP reveals potentially sensitive information via certain HTTP requests that contain specific QUERY strings.  
19 + OSVDB-12184: GET />PME#956F835-D428-11d2-A769-00AA001ACF42: PHP reveals potentially sensitive information via certain HTTP requests that contain specific QUERY strings.  
20 + OSVDB-3092: GET /phpMyAdmin/changelog.php: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.  
21 + GET Server may leak inode via Etags, header found with file /phpMyAdmin/ChangeLog, inode: 92462, size: 40540, mtime: Tue Dec 9 12:24:00 2008  
22 + OSVDB-3092: GET /phpMyAdmin/changelog: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.  
23 + OSVDB-3092: GET /test/: Directory indexing found.  
24 + OSVDB-3092: GET /test/: This might be interesting...  
25 + OSVDB-3233: GET /phpinfo.php: PHP is installed, and a test script which runs phpinfo() was found. This gives a lot of system information.  
26 + OSVDB-3233: GET /icons/: Directory indexing found.  
27 + OSVDB-3233: GET /icons/README: Apache default config file found.  
28 + GET /phpMyAdmin/: phpMyAdmin directory found.  
29 + OSVDB-3092: GET /phpMyAdmin/documentation.html: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.  
30 + OSVDB-3092: GET /phpMyAdmin/README: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.  
31

26°C  
Partly sunny

9:21 AM 12/23/2022

Google Drive link : [https://drive.google.com/file/d/18-dM8z5-rl-NzQxwxhLIEaGo-wI\\_7Nr1/view?usp=sharing](https://drive.google.com/file/d/18-dM8z5-rl-NzQxwxhLIEaGo-wI_7Nr1/view?usp=sharing)