# REPORT UNIT 1.3

## **MODULO 4**

Configuro gli indirizzi IP su entrambe le VM, settandole su rete interna. Controllo che gli indirizzi combacino

```
kali@kali: ~
 File Actions Edit View Help
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
         inet 192.168.32.100 netmask 255.255.255.0 broadcast 192.168.32.255 inet6 fe80::a00:27ff:fec7:e136 prefixlen 64 scopeid 0×20<link>
         ether 08:00:27:c7:e1:36 txqueuelen 1000 (Ethernet)
         RX packets 117 bytes 11996 (11.7 KiB)
         RX errors 0 dropped 0 overruns 0 frame 0
TX packets 37 bytes 3744 (3.6 KiB)
         TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
Metasploitable [Running] - Oracle VM VirtualBox
                                                                                     ile Machine View Input Devices Help
To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
RX bytes:0 (0.0 B) TX bytes:2954 (2.8 KB)
Base address:0xd020 Memory:f0200000-f0220000
```

Controllo che le VM siano raggiungibili tra loro

```
File Actions Edit View Help

$\sifconfig \text{eth0:} flags=\frac{4163}{632.100}, \text{BROADCAST}, \text{RUNNING}, \text{MULTICAST} \text{mtu} \text{1500} \\
inet 192.168.32.100 \text{netmask 255.255.255.255.0} \text{broadcast 192.168.32.255} \\
inet 64 \text{inet 680::} a00: 27ff; fec7: e136 \text{prefixten 64 scopeid 0x20<link} \\
ether 08::00: 27; c7: e1:36 \text{txqueuelen 1000} \text{(Ethernet)} \\
RX \text{packets 117 bytes 11996 (11.7 KiB)} \\
RX \text{packets 37 bytes 3744 (3.6 KiB)} \\
TX \text{packets 37 bytes 3744 (3.6 KiB)} \\
TX \text{errors 0 dropped 0 overruns 0 carrier 0 collisions 0}

$\text{Metasploitable} \text{[Running]} \text{-Oracle VM VirtualBox} \\
File \text{Machine View Input Devices Help} \\
msfadmin@metasploitable: \text{$\sigma ping 192.168.32.100} \\
File \text{Machine View Input Devices Help} \\
msfadmin@metasploitable: \text{$\sigma sigma ping 192.168.32.100} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=1 ttl=64 time=0.902 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=2 ttl=64 time=0.474 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=2 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=3 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_seq=4 ttl=64 time=0.466 ms} \\
64 \text{ bytes from 192.168.32.100: icmp_
```

Utilizzo il comando nmap –sP, esegue una ricerca rapida della rete di destinazione per vedere quali host sono in linea senza realmente fare una scansione per individuare le porte aperte

```
(kali® kali)-[~]
$ sudo nmap -sP 192.168.32.100/24
[sudo] password for kali:
Starting Nmap 7.93 ( https://nmap.org ) at 2023-05-18 09:21 EDT
Nmap scan report for 192.168.32.101
Host is up (0.00097s latency).
MAC Address: 08:00:27:4F:6A:19 (Oracle VirtualBox virtual NIC)
Nmap scan report for 192.168.32.100
Host is up.
Nmap done: 256 IP addresses (2 hosts up) scanned in 30.83 seconds
```

#### Scansione TCP su VM Meta (nmap -sT)

```
-(kali®kali)-[~]
 s nmap -sT 192.168.32.101
Starting Nmap 7.93 ( https://nmap.org ) at 2023-05-18 09:40 EDT
Nmap scan report for 192.168.32.101
Host is up (0.0020s latency).
Not shown: 977 closed tcp ports (conn-refused)
        STATE SERVICE
PORT
21/tcp open ftp
22/tcp open ssh
23/tcp open telnet
25/tcp open smtp
53/tcp open domain
80/tcp open http
111/tcp open rpcbind
139/tcp open netbios-ssn
445/tcp open microsoft-ds
512/tcp open exec
513/tcp open login
514/tcp open shell
1099/tcp open rmiregistry
1524/tcp open ingreslock
2049/tcp open nfs
2121/tcp open ccproxy-ftp
3306/tcp open mysql
5432/tcp open postgresql
5900/tcp open vnc
6000/tcp open X11
6667/tcp open irc
8009/tcp open ajp13
8180/tcp open unknown
Nmap done: 1 IP address (1 host up) scanned in 13.88 seconds
```

#### Scansione SYN VM Meta (nmap -sS)

```
___(kali⊛ kali)-[~]
$ sudo nmap -sS 192.168.32.101
[sudo] password for kali:
Starting Nmap 7.93 ( https://nmap.org ) at 2023-05-18 09:42 EDT
Nmap scan report for 192.168.32.101
Host is up (0.00026s latency).
Not shown: 977 closed tcp ports (reset)
          STATE SERVICE
PORT
21/tcp open ftp
22/tcp open ssh
23/tcp open telnet
          open smtp
25/tcp
53/tcp open domain
80/tcp open http
111/tcp open rpcbind
139/tcp open netbios-ssn
445/tcp open microsoft-ds
512/tcp open exec
513/tcp open login
514/tcp open shell
1099/tcp open rmiregistry
1524/tcp open ingreslock
2049/tcp open nfs
2121/tcp open ccproxy-ftp
3306/tcp open mysql
5432/tcp open postgresql
5900/tcp open vnc
6000/tcp open X11
6667/tcp open irc
8009/tcp open ajp13
8180/tcp open unknown
MAC Address: 08:00:27:4F:6A:19 (Oracle VirtualBox virtual NIC)
Nmap done: 1 IP address (1 host up) scanned in 13.32 seconds
```

Scansione switch a (nmap –A)

```
e ACTIONS Edit View Help

1808024 1 380804/ccp status
1808024 1 36927/udp status
4/rcp open nethios-ssn Samba smbd 3.0-20-Debian (workgroup: WORKGROUP)
4/rcp open nethios-ssn Samba smbd 3.0-20-Debian (workgroup: WORKGROUP)
4/rcp open sheel
4/rcp open sheel
4/rcp open sheel
4/rcp open sindshell
5/rcp open sindshell
6/rcp op
      900/trp open vnc VNC (protocol 3.3)
vnc-info:
Protocol version: 3.3
Security types:
Security types:
000/trp open X11
Garcess denied)
000/trp open X11
Garcess denied)
000/trp open inc UnrealIRGd
0009/trp open ajpi3 Apache Jserv (Protocol v1.3)
ajp-methods: Failed to get a valid response for the OPTION request
180/trp open http Apache Tomcat/Coyote JSP engine 1.1
Alttp-favicon: Apache Tomcat-Goyote/1.1
Alttp-favicon: Apache Tomcat-Goyote/1.1
Alttp-favicon: Apache Tomcat-Goyote/1.1
Alttp-favicon: Apache Tomcat-Goyote/1.1
Mintp-favicon: Apache Tomcat-Goyote/1.1
Mi
smb2-time: Protocol negotiation failed (SMB2)
   TRACEROUTE
HOP RTT ADDRESS
1 0.47 ms 192.168.32.101
```

### Nmap -sT con Wireshark

```
42 Who has 192.168.32.191? Tell 192.168.32.199
69 192.168.32.191 is at 08:09:27.4f.68.19
42 Who has 192.168.32.17 Tell 192.168.32.199
42 Who has 192.168.32.17 Tell 192.168.32.190
43 Who has 192.168.32.17 Tell 192.168.32.190
74 58634 — 993 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 35114 — 22 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 49988 — 135 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 37988 — 3389 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 37840 — 344 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 38400 — 443 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 38461 — 1723 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 38461 — 1723 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 38461 — 1723 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
74 38461 — 1723 [SYN] Seg=0 Win-04240 Len=0 WSS-1406 SACK_PEM TSVal=3884107991 .
                                                                                                                                                                                                                                                                     74 22 - 35114 [SYN, ACK] Seq=0 Ack=1 Win=5792 Len=0 MSS=1460 SACK_PERM TSval=258383 TS
                                                                                                                                                                                                                                                                   06 35 - 49988 [RSI, ACK] Seq=1 ACK=1 Win=64256 Len=0 TSVal=3384107091 TSecr=258383
66 35114 - 22 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSVal=3384107091 TSecr=258383
   26 13.082830987 192.168.32.100 192.168.32.101 TCP 27 13.082863909 192.168.32.100 192.168.32.101 TCP
                                                                                                                                                                                                                                                                  66 49192 - 111 (ACK) Segri Ack=1 Min=04256 Len=9 TSval=3384107992 TSecr=258383
66 39942 - 25 (ACK) Seg-1 Ack=1 Min=04256 Len=0 TSval=3384107992 TSecr=258383
66 58952 - 23 (ACK) Seg-1 Ack=1 Min=04256 Len=0 TSval=3384107992 TSecr=258383
```

No. ▼ 1	Гime	Source	Destination	Protocol	Length Info
1 (	9.00000000	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.101? Tell 192.168.32.100
2 (	0.000637994	PcsCompu_4f:6a:19	PcsCompu_c7:e1	ARP	60 192.168.32.101 is at 08:00:27:4f:6a:19
3 (	0.040512451	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
4:	1.071173292	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
5 2	2.091839331	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
6 4	4.126535527	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
7 5	5.133276388	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
8 (	6.170558488	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
9 8	8.148719044	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
10 9	9.187948496	PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
		PcsCompu_c7:e1:36	Broadcast	ARP	42 Who has 192.168.32.1? Tell 192.168.32.100
12 :	13.227671883	192.168.32.100	192.168.32.101	TCP	58 57121 → 199 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 256 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 110 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
15 :	13.227819673	192.168.32.100	192.168.32.101	TCP	58 57121 → 21 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
16 1	13.227847251	192.168.32.100	192.168.32.101	TCP	58 57121 → 23 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 445 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100		TCP	58 57121 → 3306 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 1025 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 8080 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 3389 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.101	192.168.32.100		60 199 → 57121 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
		192.168.32.101	192.168.32.100	TCP	60 256 → 57121 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
		192.168.32.101	192.168.32.100	TCP	60 110 → 57121 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
		192.168.32.101		TCP	60 21 → 57121 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
		192.168.32.100		TCP	54 57121 → 21 [RST] Seq=1 Win=0 Len=0
		192.168.32.101		TCP	60 23 → 57121 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
		192.168.32.100		TCP	54 57121 → 23 [RST] Seq=1 Win=0 Len=0
		192.168.32.101	192.168.32.100	TCP	60 445 - 57121 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
		192.168.32.101	192.168.32.100	TCP	60 3306 - 57121 [SYN, ACK] Seq=0 Ack=1 Win=5840 Len=0 MSS=1460
		192.168.32.100			54 57121 - 445 [RST] Seq=1 Win=0 Len=0
		192.168.32.100		TCP TCP	54 57121 → 3306 [RST] Seq=1 Win=0 Len=0 60 1025 → 57121 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
		192.168.32.101			
		192.168.32.101 192.168.32.101	192.168.32.100 192.168.32.100	TCP TCP	60 8080 → 57121 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0 60 3389 → 57121 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
		192.168.32.101		TCP	58 57121 → 80 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 80 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 22 [STN] Seq=0 Win=1024 Len=0 MSS=1460
		192.168.32.100	192.168.32.101	TCP	58 57121 → 111 [51N] Seq=0 Win=1024 Len=0 MSS=1400
		192.168.32.100	192.168.32.101	TCP	58 57121 → 8888 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
40 .	10.200101120	132.100.32.100	102.100.32.101	TOP	50 57121 → 0000 [518] 3eq-0 will-1024 Lell-0 #35-1400

tcp	.port==23				×c						
No.	Time	Source	Destination	Protocol	ol Length Info						
		192.168.32.100	192.168.32.101	TCP	74 59662 - 23 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3387319977 TSecr=						
		192.168.32.101	192.168.32.100	TCP	74 23 - 59662 [SYN, ACK] Seq=0 Ack=1 Win=5792 Len=0 MSS=1460 SACK_PERM TSval=579322						
		192.168.32.100	192.168.32.101		66 59662 → 23 [ACK] Seq=1 Ack=1 Win=64256 Len=0 TSval=3387319978 TSecr=579322						
L	13.058127051	192.168.32.100	192.168.32.101	TCP	66 59662 - 23 [RST, ACK] Seq=1 Ack=1 Win=64256 Len=0 TSval=3387319978 TSecr=579322						
▶ Eth	nernet II, Src	:: PcsCompu_c7:e1:	36 (08:00:27:c7:e	1:36), [	d (528 bits) on interface eth0, id 0 Dst: PcsCompu_df:6a:19 (08:00:27:df:6a:19)						
	Internet Protocol Version 4, Src: 192.168.32.198, Dst: 192.168.32.191 - Transmission Control Protocol. Src Port: 59652, Dst Port: 23. Seq: 1, Ack: 1, Len: 9										
	Source Port: 5		C POIL: 59002, DS	t Port.	. 25, Seq. 1, Ack. 1, Len. 0						
	Source Port: 59602 Destination Port: 23										
	DESTINATION FOR 23										
	[Stream index. 22] [Stream index. 22] [Conversation completeness: Complete, NO_DATA (39)]										
	TOP Segment Len: 91										
	Top Sequence Number: 1 (relative sequence number)										
		er (raw): 37707387									
	Next Sequence	Number: 1 (re	elative sequence r	number)]	h .						
	Acknowledgment Number: 1 (relative ack number)										
		number (raw): 13									
		eader Length: 32 b	oytes (8)								
	Flags: 0x014 (	(RST, ACK)									
	Window: 502										
		indow size: 64256									
		scaling factor: 12	28]								
		240 [unverified]									
		us: Unverified]									
	Jrgent Pointer		(1100) 11 0								
		oytes), No-Operati	ton (NOP), No-Oper	ation (I	(NOP), Timestamps						
-	[Timestamps]										

#### st

Prendo la porta telnet aperta e la metto come filtro, nella scansione st si può vedere come il 3way handshake venga completato, mentre nella scansione ss non viene completato ed invia un pacchetto reset rst