

Esercitazione 2

Creazione Lab Virtuale

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Creazione del Lab

Il lab virtuale che stiamo creando è costituito da una **rete interna** di VirtualBox che include 3 macchine virtuali:

- **Kali Linux**
- **Windows 7**
- **Metasploitable**

Una volta scaricate le immagini delle VM, ho impostato la modalità di connessione in **rete interna** per ciascuna macchina virtuale. In questo modo si crea un ambiente di lavoro isolato che **non può interagire con l'esterno, neppure con la macchina host**.

Fatto ciò, ho impostato per ogni macchina un indirizzo IP statico. Nel dettaglio:

- Kali Linux: **192.168.50.100**
- Metasploitable: **192.168.50.101**
- Windows 7: **192.168.50.102**

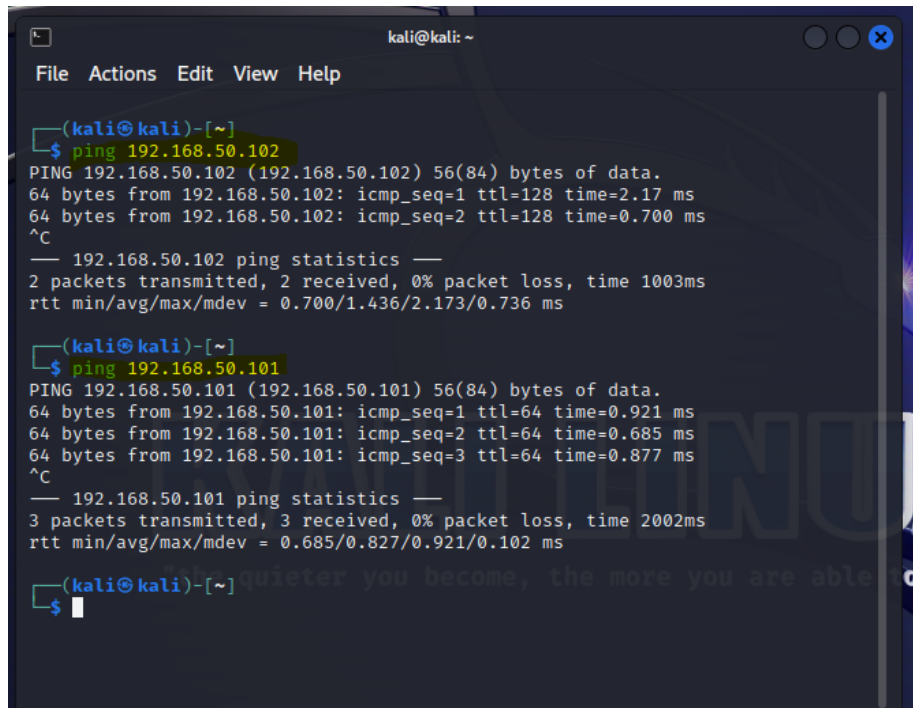
L'indirizzo IP della macchina host è: 192.168.1.4

Test del lab

In seguito (vedi screenshot nelle pagine successive) ho testato il funzionamento della rete interna per verificare le seguenti condizioni:

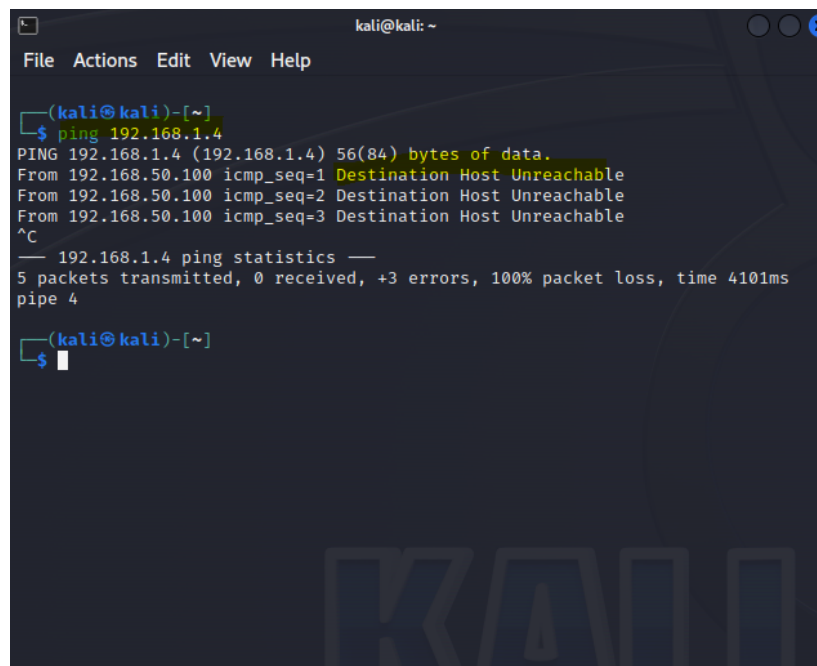
- Le 3 macchine virtuali del lab possono comunicare tra loro;
- Le macchine virtuali del lab non possono comunicare con l'esterno e neanche con la macchina host.

Kali Linux (IP 192.168.50.100) può comunicare con la VM Windows 7 (IP 192.168.50.102) e con la VM Metasploitable (IP 192.168.50.101).



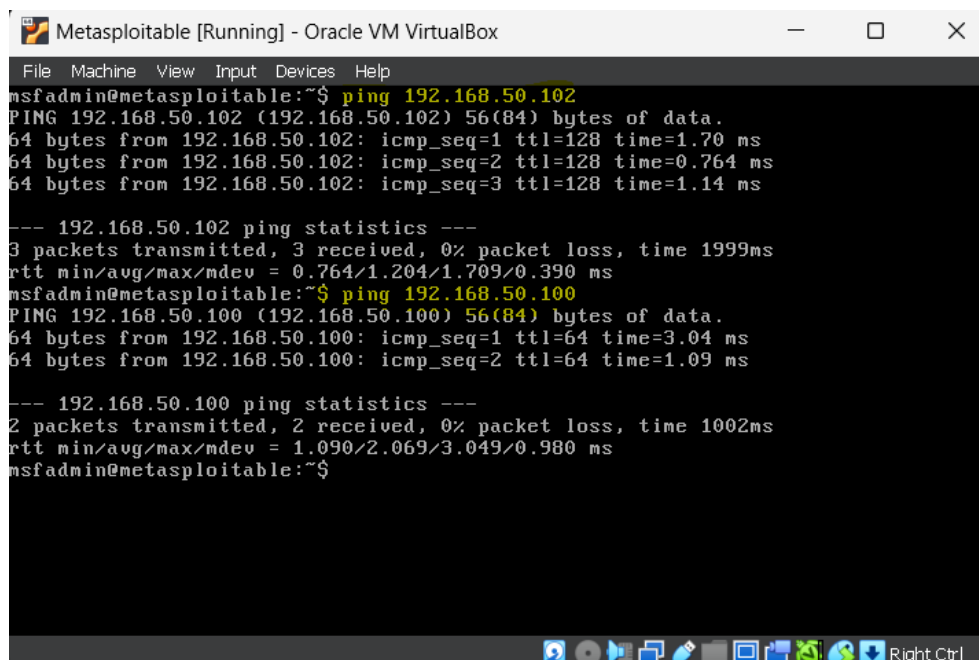
```
kali@kali: ~  
File Actions Edit View Help  
  
(kali@kali)-[~]  
$ ping 192.168.50.102  
PING 192.168.50.102 (192.168.50.102) 56(84) bytes of data.  
64 bytes from 192.168.50.102: icmp_seq=1 ttl=128 time=2.17 ms  
64 bytes from 192.168.50.102: icmp_seq=2 ttl=128 time=0.700 ms  
^C  
— 192.168.50.102 ping statistics —  
2 packets transmitted, 2 received, 0% packet loss, time 1003ms  
rtt min/avg/max/mdev = 0.700/1.436/2.173/0.736 ms  
  
(kali@kali)-[~]  
$ ping 192.168.50.101  
PING 192.168.50.101 (192.168.50.101) 56(84) bytes of data.  
64 bytes from 192.168.50.101: icmp_seq=1 ttl=64 time=0.921 ms  
64 bytes from 192.168.50.101: icmp_seq=2 ttl=64 time=0.685 ms  
64 bytes from 192.168.50.101: icmp_seq=3 ttl=64 time=0.877 ms  
^C  
— 192.168.50.101 ping statistics —  
3 packets transmitted, 3 received, 0% packet loss, time 2002ms  
rtt min/avg/max/mdev = 0.685/0.827/0.921/0.102 ms  
  
(kali@kali)-[~]  
$
```

Kali Linux (IP 192.168.50.100) non può comunicare con l'host (IP 192.168.1.4)



```
kali@kali: ~  
File Actions Edit View Help  
  
(kali@kali)-[~]  
$ ping 192.168.1.4  
PING 192.168.1.4 (192.168.1.4) 56(84) bytes of data.  
From 192.168.50.100 icmp_seq=1 Destination Host Unreachable  
From 192.168.50.100 icmp_seq=2 Destination Host Unreachable  
From 192.168.50.100 icmp_seq=3 Destination Host Unreachable  
^C  
— 192.168.1.4 ping statistics —  
5 packets transmitted, 0 received, +3 errors, 100% packet loss, time 4101ms  
pipe 4  
  
(kali@kali)-[~]  
$
```

Metasploitable (IP 192.168.50.101) può comunicare con la VM Windows 7 (IP 192.168.50.102) e con la VM Kali Linux (IP 192.168.50.100) .

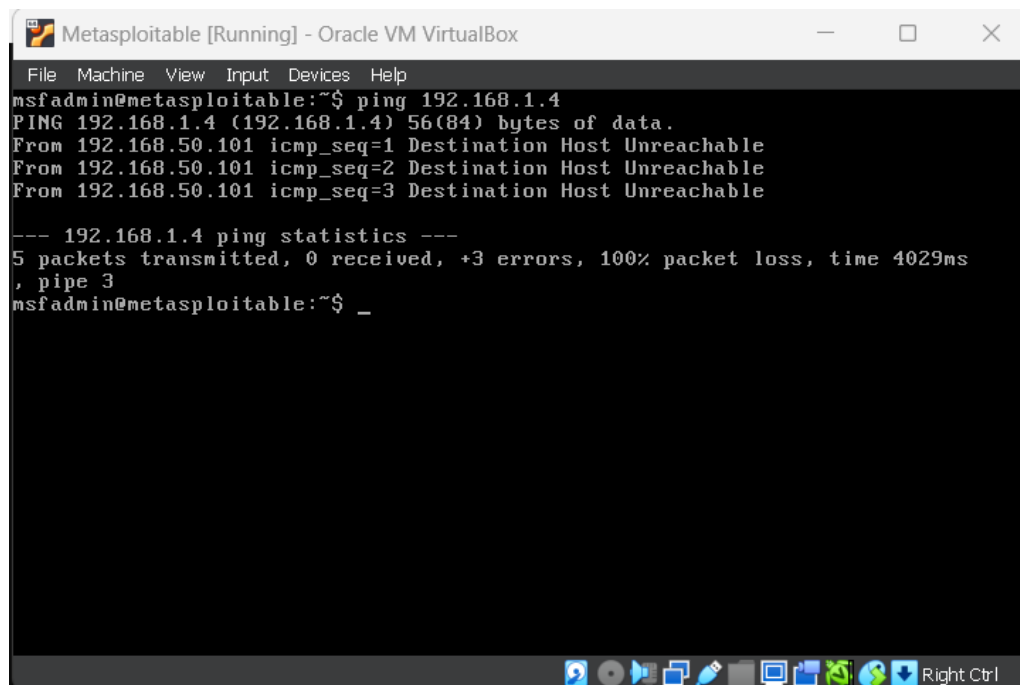


```
Metasploitable [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
msfadmin@metasploitable:~$ ping 192.168.50.102
PING 192.168.50.102 (192.168.50.102) 56(84) bytes of data.
64 bytes from 192.168.50.102: icmp_seq=1 ttl=128 time=1.70 ms
64 bytes from 192.168.50.102: icmp_seq=2 ttl=128 time=0.764 ms
64 bytes from 192.168.50.102: icmp_seq=3 ttl=128 time=1.14 ms

--- 192.168.50.102 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 1999ms
rtt min/avg/max/mdev = 0.764/1.204/1.709/0.390 ms
msfadmin@metasploitable:~$ ping 192.168.50.100
PING 192.168.50.100 (192.168.50.100) 56(84) bytes of data.
64 bytes from 192.168.50.100: icmp_seq=1 ttl=64 time=3.04 ms
64 bytes from 192.168.50.100: icmp_seq=2 ttl=64 time=1.09 ms

--- 192.168.50.100 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1002ms
rtt min/avg/max/mdev = 1.090/2.069/3.049/0.980 ms
msfadmin@metasploitable:~$
```

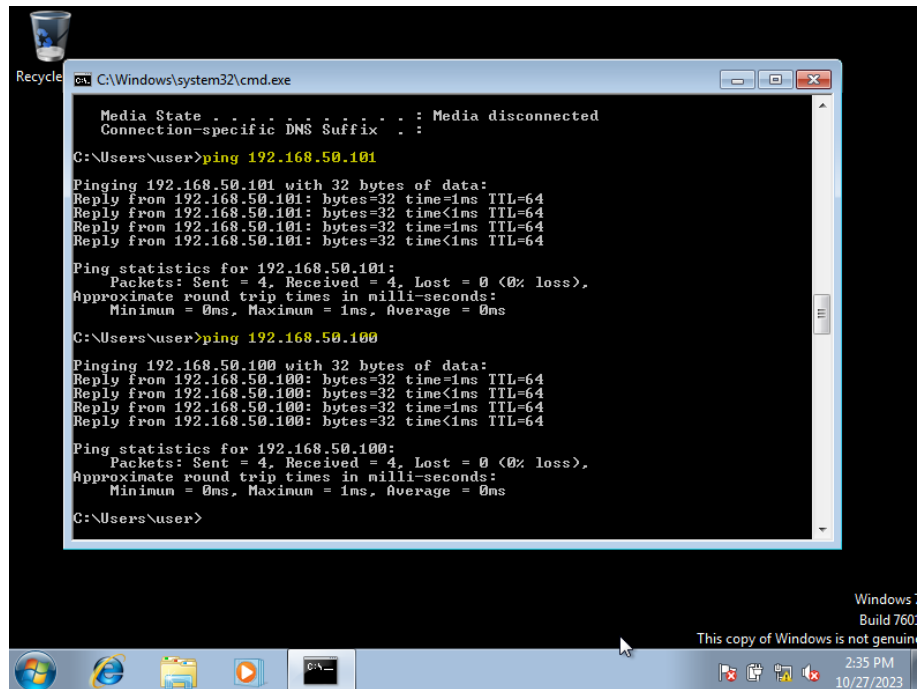
Metasploitable (IP 192.168.50.101) non può comunicare con l'host (IP 192.168.1.4)



```
Metasploitable [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
msfadmin@metasploitable:~$ ping 192.168.1.4
PING 192.168.1.4 (192.168.1.4) 56(84) bytes of data.
From 192.168.50.101 icmp_seq=1 Destination Host Unreachable
From 192.168.50.101 icmp_seq=2 Destination Host Unreachable
From 192.168.50.101 icmp_seq=3 Destination Host Unreachable

--- 192.168.1.4 ping statistics ---
5 packets transmitted, 0 received, +3 errors, 100% packet loss, time 4029ms
, pipe 3
msfadmin@metasploitable:~$ _
```

Windows 7 (IP 192.168.50.102) può comunicare con la VM Kali Linux (IP 192.168.50.100) e con la VM Metasploitable (IP 192.168.50.101).



The screenshot shows a Windows 7 desktop with a Recycle Bin icon on the left. A command prompt window titled "C:\Windows\system32\cmd.exe" is open, displaying the following text:

```
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix  . :

C:\Users\user>ping 192.168.50.101

Pinging 192.168.50.101 with 32 bytes of data:
Reply from 192.168.50.101: bytes=32 time=1ms TTL=64
Reply from 192.168.50.101: bytes=32 time<1ms TTL=64
Reply from 192.168.50.101: bytes=32 time=1ms TTL=64
Reply from 192.168.50.101: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.50.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\user>ping 192.168.50.100

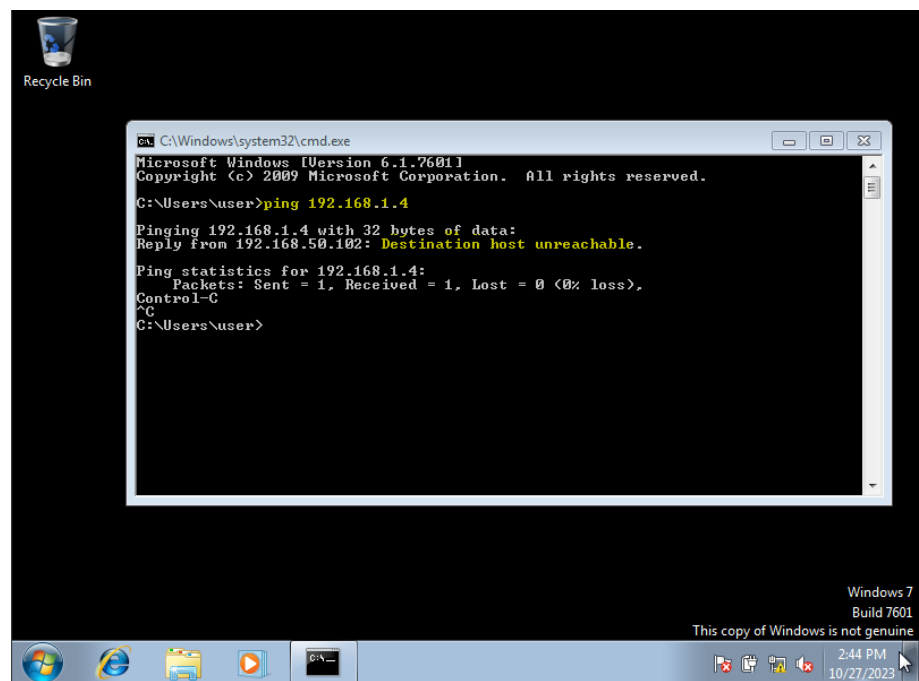
Pinging 192.168.50.100 with 32 bytes of data:
Reply from 192.168.50.100: bytes=32 time=1ms TTL=64
Reply from 192.168.50.100: bytes=32 time<1ms TTL=64
Reply from 192.168.50.100: bytes=32 time=1ms TTL=64
Reply from 192.168.50.100: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.50.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\user>
```

The taskbar at the bottom shows the Start button, Internet Explorer, File Explorer, and the command prompt icon. The system tray on the right displays "Windows 7 Build 7601", "This copy of Windows is not genuine", the time "2:35 PM", and the date "10/27/2023".

Windows 7 (IP 192.168.50.102) non può comunicare con l'host (IP 192.168.1.4)



The screenshot shows a Windows 7 desktop with a Recycle Bin icon on the left. A command prompt window titled "C:\Windows\system32\cmd.exe" is open, displaying the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

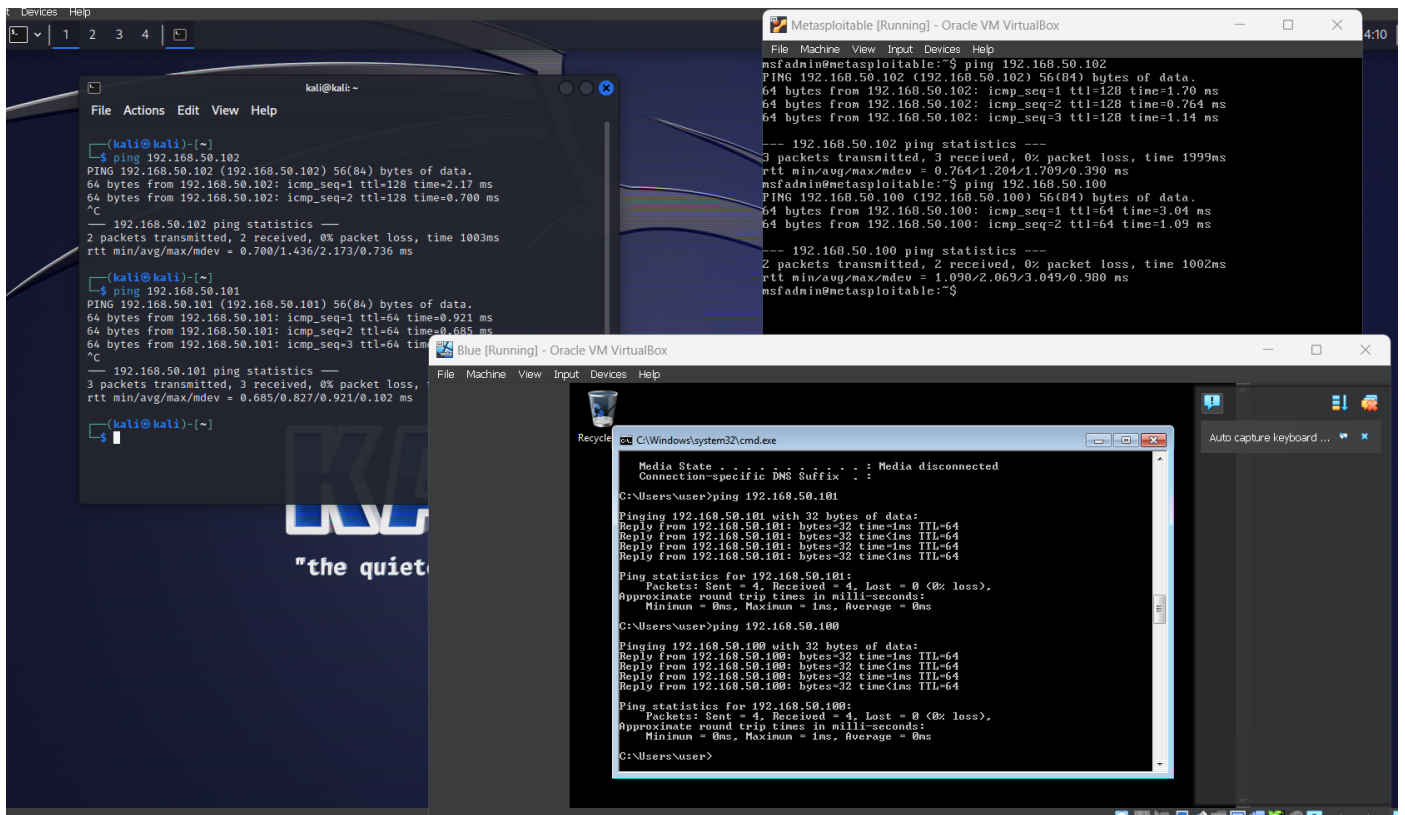
C:\Users\user>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:
Reply from 192.168.50.102: Destination host unreachable.

Ping statistics for 192.168.1.4:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
    Control-C
^C
C:\Users\user>
```

The taskbar at the bottom shows the Start button, Internet Explorer, File Explorer, and the command prompt icon. The system tray on the right displays "Windows 7 Build 7601", "This copy of Windows is not genuine", the time "2:44 PM", and the date "10/27/2023".

Overview: le 3 macchine virtuali possono comunicare tra loro:

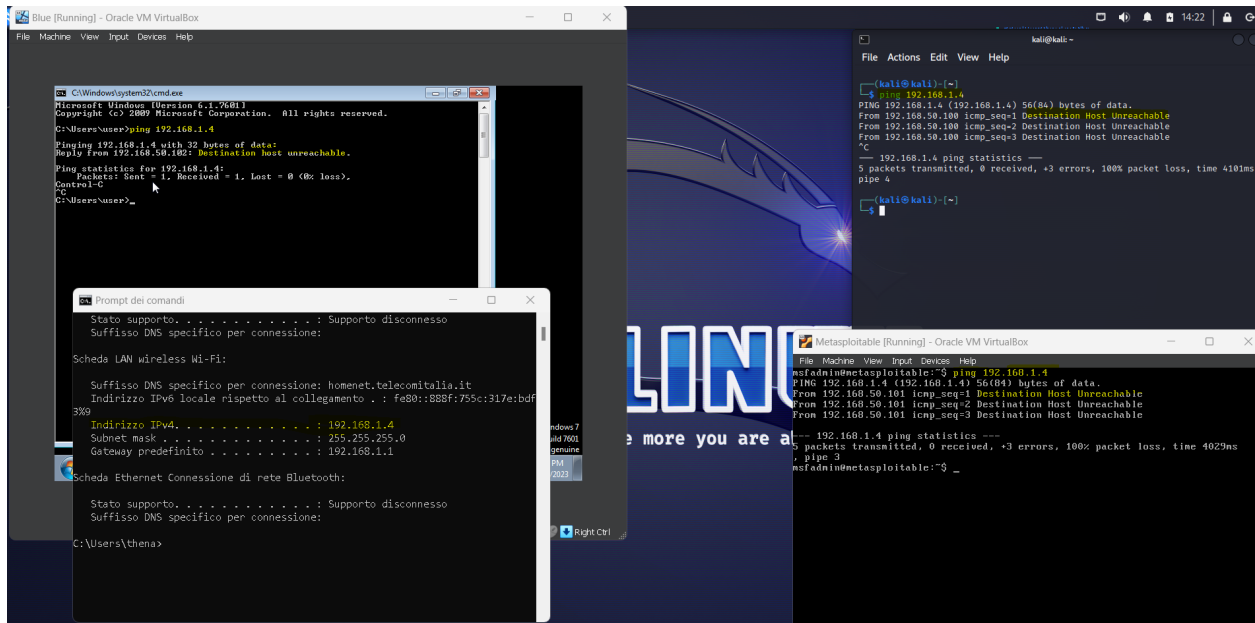


```
kali@kali:~$ ping 192.168.50.102
PING 192.168.50.102 (192.168.50.102) 56(84) bytes of data:
64 bytes from 192.168.50.102: icmp_seq=1 ttl=128 time=2.17 ms
64 bytes from 192.168.50.102: icmp_seq=2 ttl=128 time=0.700 ms
^C
--- 192.168.50.102 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1003ms
rtt min/avg/max/mdev = 0.700/1.436/2.173/0.736 ms

kali@kali:~$ ping 192.168.50.101
PING 192.168.50.101 (192.168.50.101) 56(84) bytes of data:
64 bytes from 192.168.50.101: icmp_seq=1 ttl=64 time=0.921 ms
64 bytes from 192.168.50.101: icmp_seq=2 ttl=64 time=0.685 ms
64 bytes from 192.168.50.101: icmp_seq=3 ttl=64 time=0.102 ms
^C
--- 192.168.50.101 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 1003ms
rtt min/avg/max/mdev = 0.685/0.827/0.921/0.102 ms

msfadmin@metasploitable:~$ ping 192.168.50.102
PING 192.168.50.102 (192.168.50.102) 56(84) bytes of data:
64 bytes from 192.168.50.102: icmp_seq=1 ttl=128 time=1.70 ms
64 bytes from 192.168.50.102: icmp_seq=2 ttl=128 time=0.764 ms
64 bytes from 192.168.50.102: icmp_seq=3 ttl=128 time=1.14 ms
^C
--- 192.168.50.102 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 1999ms
rtt min/avg/max/mdev = 0.764/1.204/1.709/0.390 ms
msfadmin@metasploitable:~$ ping 192.168.50.100
PING 192.168.50.100 (192.168.50.100) 56(84) bytes of data:
64 bytes from 192.168.50.100: icmp_seq=1 ttl=64 time=3.04 ms
64 bytes from 192.168.50.100: icmp_seq=2 ttl=64 time=1.09 ms
^C
--- 192.168.50.100 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1002ms
rtt min/avg/max/mdev = 1.090/2.069/3.049/0.980 ms
msfadmin@metasploitable:~$
```

Overview: le 3 macchine virtuali non possono comunicare con la macchina host:



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\User>ping 192.168.1.4
Pinging 192.168.1.4 with 32 bytes of data:
Reply from 192.168.50.102: Destination host unreachable.
Ping statistics for 192.168.1.4:
    Packets: Sent = 1, Received = 1, Lost = 0 (0% loss),
    Control-C
    C:\Users>User>

kali@kali:~$ ping 192.168.1.4
PING 192.168.1.4 (192.168.1.4) 56(84) bytes of data:
From 192.168.50.100 icmp_seq=1 Destination Host Unreachable
From 192.168.50.100 icmp_seq=2 Destination Host Unreachable
From 192.168.50.100 icmp_seq=3 Destination Host Unreachable
^C
--- 192.168.1.4 ping statistics ---
3 packets transmitted, 0 received, 100% packet loss, time 4101ms
pipe 4
kali@kali:~$

msfadmin@metasploitable:~$ ping 192.168.1.4
PING 192.168.1.4 (192.168.1.4) 56(84) bytes of data:
From 192.168.50.101 icmp_seq=1 Destination Host Unreachable
From 192.168.50.101 icmp_seq=2 Destination Host Unreachable
From 192.168.50.101 icmp_seq=3 Destination Host Unreachable
^C
--- 192.168.1.4 ping statistics ---
3 packets transmitted, 0 received, 100% packet loss, time 4029ms
pipe 3
msfadmin@metasploitable:~$
```