

### Traccia: Tecniche di scansione con Nmap

Si richiede allo studente di effettuare le seguenti scansioni sul target **Metasploitable** (target e attaccante devono essere su due reti diverse):

- OS fingerprint
- Syn Scan
- TCP connect - trovate differenze tra i risultati della scansioni TCP connect e SYN?
- Version detection

A valle delle scansioni, è prevista la produzione di un **report** contenente le seguenti info (dove disponibili):

- IP
- Sistema Operativo
- Porte Aperte
- Servizi in ascolto con versione
- Descrizione dei servizi

iniziamo con una scansione approfondita della macchina target con il comando `sudo nmap -O 192.168.50.101`

```
(root@kali)-[/home/kali]
# sudo nmap -O 192.168.50.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-12-06 08:52 CET
Nmap scan report for 192.168.50.101 (192.168.50.101)
Host is up (0.0016s latency).
Not shown: 977 closed tcp ports (reset)
PORT      STATE SERVICE
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
MAC Address: 08:00:27:B6:8D:1B (PCS Systemtechnik/Oracle VirtualBox virtual NIC)
Device type: general purpose
Running: Linux 2.6.X
OS CPE: cpe:/o:linux:linux_kernel:2.6
OS details: Linux 2.6.9 - 2.6.33
Network Distance: 1 hop

OS detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 7.68 seconds
```

info ottenute dalla scansione:

Nmap ha identificato:

IP: 192.168.50.101

OS: Linux 2.6.x

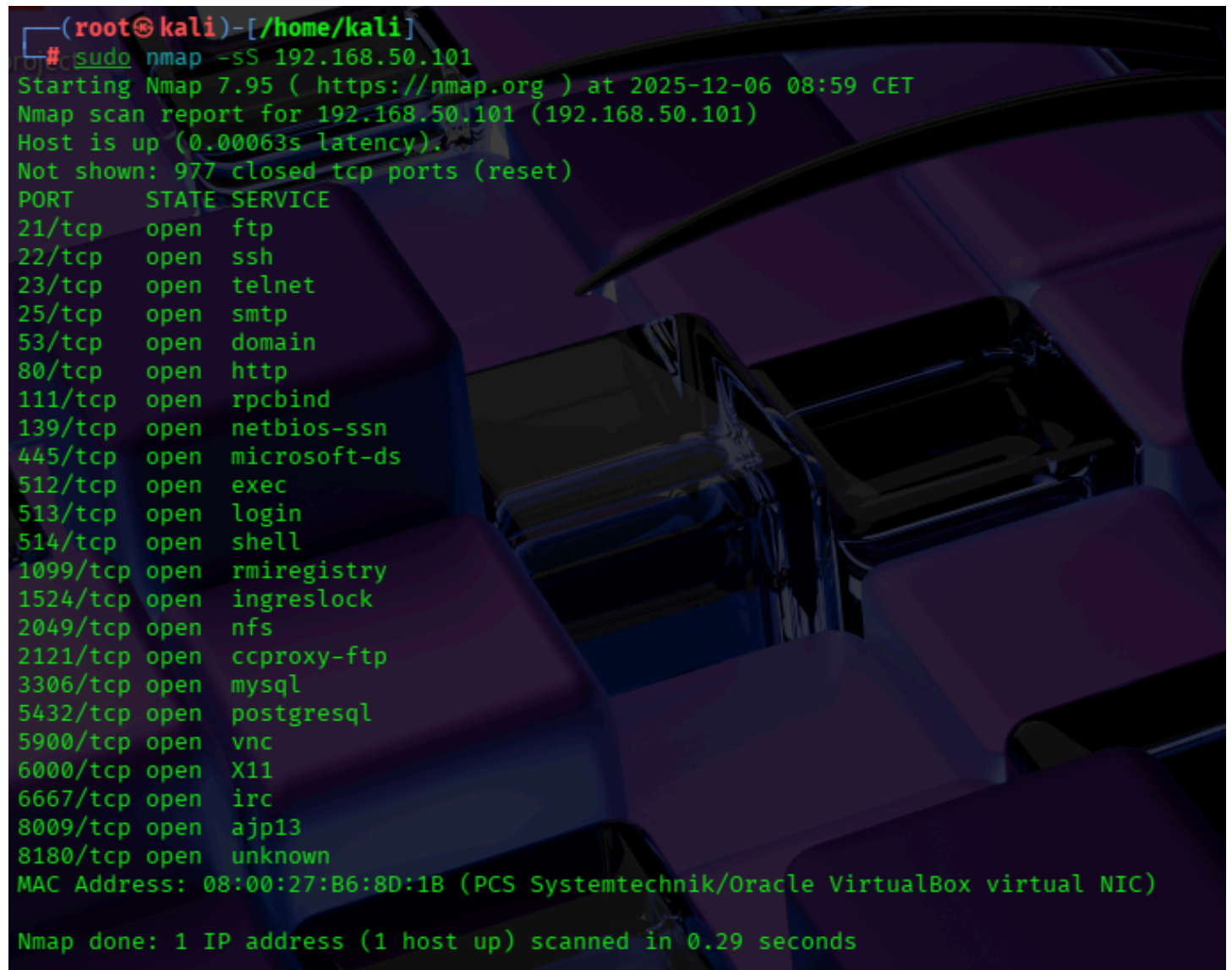
Range: Linux 2.6.9 – 2.6.33

Device Type: General purpose (server virtualizzato)

MAC Vendor: Oracle, virtualbox praticamente

Network distance: 1 hop

## SYN scan



```
(root@kali)-[/home/kali]
# sudo nmap -sS 192.168.50.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-12-06 08:59 CET
Nmap scan report for 192.168.50.101 (192.168.50.101)
Host is up (0.00063s latency).
Not shown: 977 closed tcp ports (reset)
PORT      STATE SERVICE
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
MAC Address: 08:00:27:B6:8D:1B (PCS Systemtechnik/Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 0.29 seconds
```

## Tcp connect

```
(root@kali)-[/home/kali]
# sudo nmap -sT 192.168.50.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-12-06 09:00 CET
Nmap scan report for 192.168.50.101 (192.168.50.101)
Host is up (0.0052s latency).
Not shown: 977 closed tcp ports (conn-refused)
PORT      STATE SERVICE
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
MAC Address: 08:00:27:B6:8D:1B (PCS Systemtechnik/Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 0.20 seconds
```

## Risultati e differenze

In questo caso non vedremo grandi differenza (o nessuna) nel risultato perché meta è facilmente bucabile. La differenza principale sta “nell’aggressività” del metodo utilizzato, il SYN scan (-sS) a differenza del tcp (-sT) non completa l’handshake quindi è meno invasivo.

## Version detection

**sudo nmap -sV 192.168.50.101**

**! richiede più tempo, ci ha impiegato 53 secondi**

```
(root@kali)-[/home/kali]
# sudo nmap -sV 192.168.50.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-12-06 09:04 CET
Nmap scan report for 192.168.50.101 (192.168.50.101)
Host is up (0.00056s latency).
Not shown: 977 closed tcp ports (reset)
PORT      STATE SERVICE      VERSION
21/tcp    open  ftp          vsftpd 2.3.4
22/tcp    open  ssh          OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)
23/tcp    open  telnet       Linux telnetd
25/tcp    open  smtp         Postfix smtpd
53/tcp    open  domain       ISC BIND 9.4.2
80/tcp    open  http         Apache httpd 2.2.8 ((Ubuntu) DAV/2)
111/tcp   open  rpcbind      2 (RPC #100000)
139/tcp   open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp   open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
512/tcp   open  exec         netkit-rsh rexecd
513/tcp   open  login?
514/tcp   open  shell        Netkit rshd
1099/tcp  open  java-rmi     GNU Classpath grmiregistry
1524/tcp  open  bindshell    Metasploitable root shell
2049/tcp  open  nfs          2-4 (RPC #100003)
2121/tcp  open  ftp          ProFTPD 1.3.1
3306/tcp  open  mysql        MySQL 5.0.51a-3ubuntu5
5432/tcp  open  postgresql   PostgreSQL DB 8.3.0 - 8.3.7
5900/tcp  open  vnc          VNC (protocol 3.3)
6000/tcp  open  X11          (access denied)
6667/tcp  open  irc          UnrealIRCd
8009/tcp  open  ajp13        Apache Jserv (Protocol v1.3)
8180/tcp  open  http         Apache Tomcat/Coyote JSP engine 1.1
MAC Address: 08:00:27:B6:8D:1B (PCS Systemtechnik/Oracle VirtualBox virtual NIC)
Service Info: Hosts: metasploitable.localdomain, irc.Metasploitable.LAN; OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 53.08 seconds
```