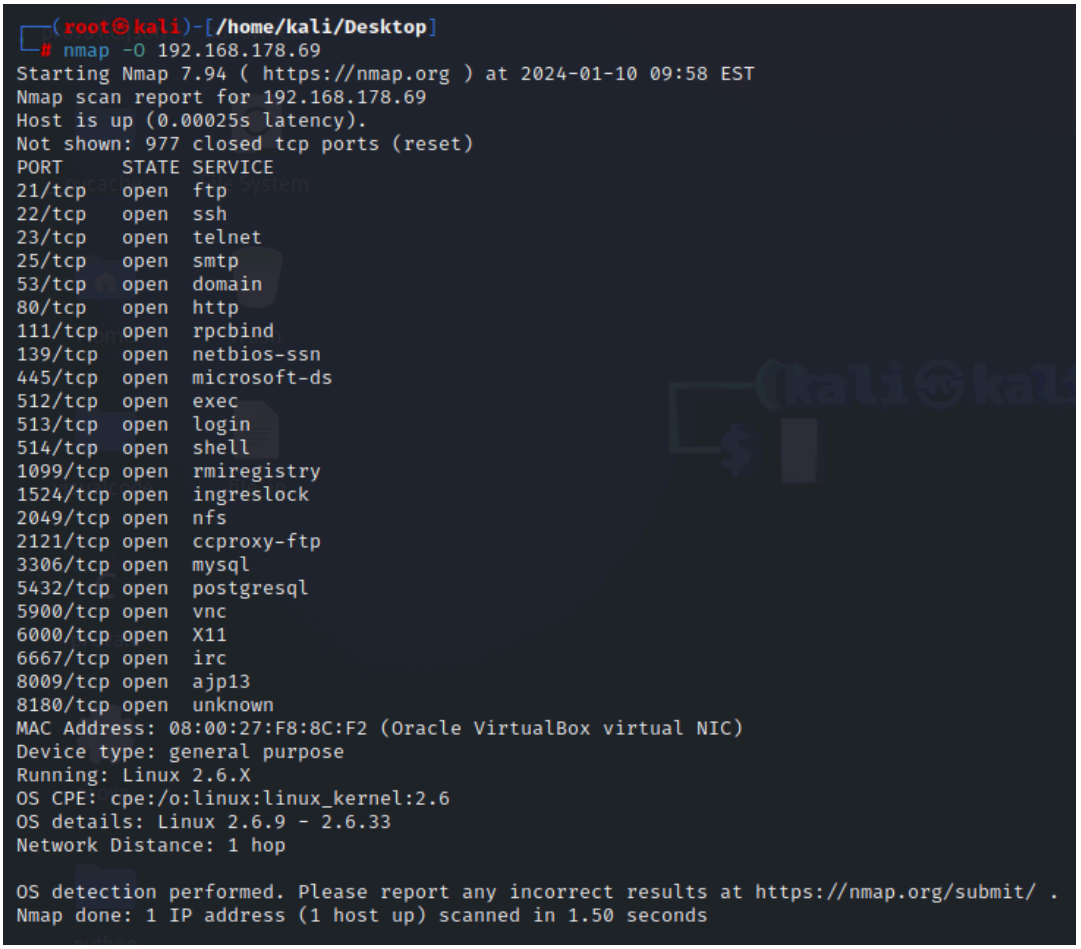
Ho un target, Metaspoitable, su cui dobbiamo eseguire delle scansioni che sono:

Os fingerprint: è il processo di identificazione per sapere che sistema operativo ha il target da noi scelto, si usa il comando “nmap -O <ip_target>”.



Syn scan: o stealth scan, in quanto non stabilisce una connessione completa con il target anche se le richieste di syn che invia possono essere rilevate da un IDS/IPS. Si usa il comando “nmap -sS <ip_target>”.

```
┌──(root㉿kali)-[/home/kali/Desktop]
└─# nmap -sS 192.168.178.69
Starting Nmap 7.94 ( https://nmap.org ) at 2024-01-10 10:07 EST
Nmap scan report for 192.168.178.69
Host is up (0.00010s 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:F8:8C:F2 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 0.22 seconds
```

TCP connect: è un metodo tanto invasivo, perchè per controllare se una porta è aperta, nmap usa il three-way-handshake, stabilendo quindi una connessione.
Si usa il comando “nmap -sT <ip_target>”.

```
┌──(root㉿kali)-[/home/kali/Desktop]
└─# nmap -sT 192.168.178.69
Starting Nmap 7.94 ( https://nmap.org ) at 2024-01-10 10:19 EST
Nmap scan report for 192.168.178.69
Host is up (0.00064s 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:F8:8C:F2 (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 0.17 seconds
```

Version detection: oltre ad avere una scansione dei servizi otteniamo anche la versione e i dettagli. Si usa il comando “nmap -sV <ip_target>.

```
┌──(root㉿kali)-[/home/kali/Desktop]
└─# nmap -sV 192.168.178.69
Starting Nmap 7.94 ( https://nmap.org ) at 2024-01-10 10:28 EST
Nmap scan report for 192.168.178.69
Host is up (0.00041s 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?
513/tcp  open  login       OpenBSD or Solaris rlogind
514/tcp  open  tcpwrapped
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:F8:8C:F2 (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 62.48 seconds
```

OS fingerprint e quesito extra:
L'OS fingerprint con target windows 7 invece ci dà il risultato mostrato perchè nmap non riesce a trovare ne una porta aperta ne una chiusa e capisce che il sistema operativo è inerente a windows 7 o versioni simili (per esempio 7.5 o 8).

```
┌──(root㉿kali)-[/home/kali]
└─# nmap -O 192.168.178.80
Starting Nmap 7.94 ( https://nmap.org ) at 2024-01-10 10:18 EST
Nmap scan report for 192.168.178.80
Host is up (0.00030s latency).
All 1000 scanned ports on 192.168.178.80 are in ignored states.
Not shown: 1000 filtered tcp ports (no-response)
MAC Address: 08:00:27:0A:81:9D (Oracle VirtualBox virtual NIC)
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: specialized|VoIP phone|general purpose|phone
Running: Allen-Bradley embedded, Atcom embedded, Microsoft Windows 7|8|Phone|XP|2012, Palmmicro embedded, VMware Player
OS CPE: cpe:/h:allen-bradley:micrologix_1100 cpe:/h:atcom:at-320 cpe:/o:microsoft:windows_7 cpe:/o:microsoft:windows_8 cpe:/o:microsoft:windows cpe:/o:micr
osoft:windows_xp::sp3 cpe:/o:microsoft:windows_server_2012 cpe:/a:vmware:player
OS details: Allen Bradley MicroLogix 1100 PLC, Atcom AT-320 VoIP phone, Microsoft Windows Embedded Standard 7, Microsoft Windows 8.1 Update 1, Microsoft Wi
ndows Phone 7.5 or 8.0, Microsoft Windows XP SP3 or Windows 7 or Windows Server 2012, Palmmicro AR1688 VoIP module, VMware Player virtual NAT device
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 22.08 seconds
```

Le informazioni ottenute sul target Metaspoitable sono:
-ip: 192.168.178.69/24
-OS: Linux 2.6.x
-porte aperte: un numero di 23 porte aperte