# Report Nmap scan Metasploitable /Windows 7

L'esercizio odierno richiedeva la scansione su target Metasploitable comprendente:

- OS fingerprint
- Syn Scan
- Tcp connect
   E su target Windows 7:
  - OS fingerprint

```
Starting Nmap 7.92 ( https://nmap.org ) at 2022-11-23 04:20 EST
Initiating ARP Ping Scan at 04:20
Scanning 192.168.1.10 [1 port]
Completed ARP Ping Scan at 04:20, 0.06s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 04:20
Completed Parallel DNS resolution of 1 host. at 04:21, 13.01s elapsed
DNS resolution of 1 IPs took 13.01s. Mode: Async [#: 1, OK: 0, NX: 0, DR: 1, SF: 0, TR: 3, CN: 0]
Initiating SYN Stealth Scan at 04:21
Scanning 192.168.1.10 [1000 ports]
Discovered open port 80/tcp on 192.168.1.10
Discovered open port 5900/tcp on 192.168.1.10
Discovered open port 22/tcp on 192.168.1.10
Discovered open port 3306/tcp on 192.168.1.10
Discovered open port 25/tcp on 192.168.1.10
Discovered open port 21/tcp on 192.168.1.10
Discovered open port 445/tcp on 192.168.1.10
Discovered open port 53/tcp on 192.168.1.10
Discovered open port 23/tcp on 192.168.1.10
Discovered open port 139/tcp on 192.168.1.10
Discovered open port 111/tcp on 192.168.1.10
Discovered open port 8009/tcp on 192.168.1.10
Discovered open port 1099/tcp on 192.168.1.10
Discovered open port 2121/tcp on 192.168.1.10
Discovered open port 5432/tcp on 192.168.1.10
Discovered open port 6000/tcp on 192.168.1.10
Discovered open port 1524/tcp on 192.168.1.10
Discovered open port 513/tcp on 192.168.1.10
Discovered open port 514/tcp on 192.168.1.10
Discovered open port 2049/tcp on 192.168.1.10
Discovered open port 512/tcp on 192.168.1.10
Discovered open port 6667/tcp on 192.168.1.10
Discovered open port 8180/tcp on 192.168.1.10
Completed SYN Stealth Scan at 04:21, 0.10s elapsed (1000 total ports)
Initiating OS detection (try #1) against 192.168.1.10
Nmap scan report for 192.168.1.10
Host is up, received arp-response (0.00089s latency).
Scanned at 2022-11-23 04:21:10 EST for 2s
Not shown: 977 closed tcp ports (reset)
PORT STATE SERVICE REASON
21/tcp open ftp syn-ack ttl 64
                              syn-ack ttl 64
22/tcp open ssh syn-ack ttl 64
23/tcp open telnet syn-ack ttl 64
25/tcp open smtp syn-ack ttl 64
53/tcp open domain syn-ack ttl 64
80/tcp open http syn-ack ttl 64
111/tcp open rpcbind syn-ack ttl 64
139/tcp open metbios-ssn syn-ack ttl 64
22/tcp open ssh
445/tcp open microsoft-ds syn-ack ttl 64
512/tcp open exec syn-ack ttl 64
513/tcp open login syn-ack ttl 64
                        syn-ack ttl 64
514/tcp open shell
```

```
514/tcp open shell
                             syn-ack ttl 64
1099/tcp open rmiregistry syn-ack ttl 64
1524/tcp open ingreslock syn-ack ttl 64
2049/tcp open nfs syn-ack ttl 64
2121/tcp open ccproxy-ftp syn-ack ttl 64
3306/tcp open mysql syn-ack ttl 64
5432/tcp open postgresql syn-ack ttl 64
               vnc
5900/tcp open
                             syn-ack ttl 64
6000/tcp open X11
                             syn-ack ttl 64
6667/tcp open irc
                            syn-ack ttl 64
                           syn-ack ttl 64
syn-ack ttl 64
8009/tcp open ajp13
8180/tcp open unknown
MAC Address: 08:00:27:C6:DE:4F (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
TCP/IP fingerprint:
OS:SCAN(V=7.92%E=4%D=11/23%OT=21%CT=1%CU=39248%PV=Y%DS=1%DC=D%G=Y%M=080027%
OS:TM=637DE608%P=x86_64-pc-linux-gnu)SEQ(SP=CB%GCD=1%ISR=CF%TI=Z%CI=Z%II=I%
OS:TS=7)0PS(01=M5B4ST11NW6%02=M5B4ST11NW6%03=M5B4NNT11NW6%04=M5B4ST11NW6%05
OS:=M5B4ST11NW6%O6=M5B4ST11)WIN(W1=16A0%W2=16A0%W3=16A0%W4=16A0%W5=16A0%W6=
OS:16A0)ECN(R=Y%DF=Y%T=40%W=16D0%O=M5B4NNSNW6%CC=N%Q=)T1(R=Y%DF=Y%T=40%S=0%
OS:A=S+%F=AS%RD=0%Q=)T2(R=N)T3(R=Y%DF=Y%T=40%W=16A0%S=0%A=S+%F=AS%0=M5B4ST1
OS:1NW6%RD=0%Q=)T4(R=Y%DF=Y%T=40%W=0%S=A%A=Z%F=R%O=%RD=0%Q=)T5(R=Y%DF=Y%T=4
OS:0%W=0%S=Z%A=S+%F=AR%0=%RD=0%Q=)T6(R=Y%DF=Y%T=40%W=0%S=A%A=Z%F=R%0=%RD=0%
OS:Q=)T7(R=Y%DF=Y%T=40%W=0%S=Z%A=S+%F=AR%O=%RD=0%Q=)U1(R=Y%DF=N%T=40%IPL=16
OS:4%UN=0%RIPL=G%RID=G%RIPCK=G%RUCK=G%RUD=G)IE(R=Y%DFI=N%T=40%CD=S)
Uptime guess: 0.019 days (since Wed Nov 23 03:54:23 2022)
Network Distance: 1 hop
TCP Sequence Prediction: Difficulty=203 (Good luck!)
IP ID Sequence Generation: All zeros
Read data files from: /usr/bin/../share/nmap
OS detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 15.13 seconds
           Raw packets sent: 1020 (45.626KB) | Rcvd: 1016 (41.430KB)
```

Tramite il fingerprinting, è possibile identificare da remoto il sistema operativo di un host, inviando una serie di pacchetti tcp ed udp esaminando ogni bit di risposta, comparando poi i risultati con il suo database e ne visualizza i risultati nel caso di check positivi dandoci informazioni quali il vendor, il sistema operativo, ed il tipo di device.

Nella scansione di tipo TCP connect, il tool Nmap richiede al sistema operativo una connessione con chiamata connect, ottenendo informazioni sullo stato di ogni tentativo di connessione. Rispetto ad un SYN scan è quindi meno efficiente limitandosi, rispetto ad una scansione semi aperta del sS, richiedendo inoltre più tempo e un numero maggiore di pacchetti

```
Starting Nmap 7.92 ( https://nmap.org ) at 2022-11-23 04:37 EST
Initiating Ping Scan at 04:37
Scanning 192.168.1.10 [2 ports]
Completed Ping Scan at 04:37, 0.00s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 04:37
Completed Parallel DNS resolution of 1 host. at 04:37, 13.01s elapsed
DNS resolution of 1 IPs took 13.01s. Mode: Async [#: 1, OK: 0, NX: 0, DR: 1, SF: 0, TR: 3, CN: 0]
Initiating Connect Scan at 04:37
Scanning 192.168.1.10 [1000 ports]
Discovered open port 80/tcp on 192.168.1.10
Discovered open port 111/tcp on 192.168.1.10
Discovered open port 3306/tcp on 192.168.1.10
Discovered open port 22/tcp on 192.168.1.10
Discovered open port 139/tcp on 192.168.1.10
Discovered open port 445/tcp on 192.168.1.10
Discovered open port 23/tcp on 192.168.1.10
Discovered open port 21/tcp on 192.168.1.10
Discovered open port 53/tcp on 192.168.1.10
Discovered open port 5900/tcp on 192.168.1.10
Discovered open port 25/tcp on 192.168.1.10
Discovered open port 5432/tcp on 192.168.1.10
Discovered open port 514/tcp on 192.168.1.10
Discovered open port 512/tcp on 192.168.1.10
Discovered open port 1099/tcp on 192.168.1.10
Discovered open port 8009/tcp on 192.168.1.10
Discovered open port 6667/tcp on 192.168.1.10
Discovered open port 6000/tcp on 192.168.1.10
Discovered open port 1524/tcp on 192.168.1.10
Discovered open port 8180/tcp on 192.168.1.10
Discovered open port 513/tcp on 192.168.1.10
Discovered open port 2121/tcp on 192.168.1.10
Discovered open port 2049/tcp on 192.168.1.10
Completed Connect Scan at 04:37, 0.08s elapsed (1000 total ports)
Nmap scan report for 192.168.1.10
Host is up, received syn-ack (0.00058s latency).
Scanned at 2022-11-23 04:37:30 EST for 0s
Not shown: 977 closed tcp ports (conn-refused)
PORT
        STATE SERVICE
                          REASON
        open ftp
open ssh
21/tcp
                           svn-ack
22/tcp
                            syn-ack
        open telnet
23/tcp
                           syn-ack
25/tcp
        open smtp
                           syn-ack
              domain
53/tcp
        open
                            syn-ack
        open http
80/tcp
                            syn-ack
111/tcp open rpcbind
                            syn-ack
139/tcp open netbios-ssn syn-ack
445/tcp
        open
              microsoft-ds syn-ack
512/tcp open exec
                           svn-ack
513/tcp open login
514/tcp open shell
                            syn-ack
                            syn-ack
514/tcp open shell
                            syn-ack
             rmiregistry sýn-ack
1099/tcp open
1524/tcp open
              ingreslock
                            syn-ack
                            syn-ack
2049/tcp open nfs
2121/tcp open ccproxy-ftp syn-ack
3306/tcp open
              mysql
                            syn-ack
5432/tcp open postgresql
                            syn-ack
5900/tcp open vnc
                            syn-ack
6000/tcp open X11
6667/tcp open irc
                            svn-ack
6667/tcp open
                            syn-ack
8009/tcp open ajp13
                            syn-ack
8180/tcp open unknown
                            syn-ack
Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 13.17 seconds
```

### SYN SCAN

Una connessione SYN scan è considerato lo scan di default . Risulta essere relativamente nascosto, poco invasivo poiché non completa le connessioni tcp più rapido rispetto ad un tcp scan, non limitata da firewall restrittivi.

Viene appunto mandato un pacchetto SyN per aprire una connessione come per aprire una connessione reale, in questo caso una risposta syn/ack indica che la porta è appunto in ascolto, quindi aperta, mentre una risposta RST indica che la porta è chiusa. Se non viene ricevuta risposta dopo qualche tentativo la porta verrà marcata come "filtered".

```
Initiating ARP Ping Scan at 04:31
Scanning 192.168.1.10 [1 port]
Completed ARP Ping Scan at 04:31, 0.07s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 04:31
Completed Parallel DNS resolution of 1 host. at 04:32, 13.03s elapsed
DNS resolution of 1 IPs took 13.03s. Mode: Async [#: 1, OK: 0, NX: 0, DR: 1, SF: 0, TR: 3, CN: 0]
Initiating SYN Stealth Scan at 04:32
Scanning 192.168.1.10 [1000 ports]
Discovered open port 111/tcp on 192.168.1.10
Discovered open port 5900/tcp on 192.168.1.10
Discovered open port 25/tcp on 192.168.1.10
Discovered open port 23/tcp on 192.168.1.10
Discovered open port 80/tcp on 192.168.1.10
Discovered open port 139/tcp on 192.168.1.10
Discovered open port 53/tcp on 192.168.1.10
Discovered open port 21/tcp on 192.168.1.10
Discovered open port 22/tcp on 192.168.1.10
Discovered open port 3306/tcp on 192.168.1.10
Discovered open port 445/tcp on 192.168.1.10
Discovered open port 1524/tcp on 192.168.1.10
Discovered open port 513/tcp on 192.168.1.10
Discovered open port 8009/tcp on 192.168.1.10
Discovered open port 8180/tcp on 192.168.1.10
Discovered open port 6667/tcp on 192.168.1.10
Discovered open port 2049/tcp on 192.168.1.10
Discovered open port 2121/tcp on 192.168.1.10
Discovered open port 1099/tcp on 192.168.1.10
Discovered open port 512/tcp on 192.168.1.10
Discovered open port 514/tcp on 192.168.1.10
Discovered open port 5432/tcp on 192.168.1.10
Discovered open port 6000/tcp on 192.168.1.10
Completed SYN Stealth Scan at 04:32, 0.10s elapsed (1000 total ports)
Nmap scan report for 192.168.1.10
Host is up, received arp-response (0.00089s latency).
Scanned at 2022-11-23 04:32:00 EST for 0s
Not shown: 977 closed tcp ports (reset)
Not shown: 977 closed tcp ports (reset)
PORT STATE SERVICE REASON
21/tcp open ftp syn-ack ttl 64
22/tcp open ssh syn-ack ttl 64
23/tcp open telnet syn-ack ttl 64
25/tcp open smtp syn-ack ttl 64
53/tcp open domain syn-ack ttl 64
80/tcp open http syn-ack ttl 64
111/tcp open rpcbind syn-ack ttl 64
1139/tcp open netbios-ssn syn-ack ttl 64
445/tcp open microsoft-ds syn-ack ttl 64
512/tcp open exec syn-ack ttl 64
512/tcp open exec syn-ack ttl 64
513/tcp open login syn-ack ttl 64
514/tcp open shell syn-ack ttl 64
1099/tcp open rmiregistry syn-ack ttl 64
```

```
1099/tcp open
                rmiregistry
                             syn-ack ttl
1524/tcp open ingreslock
                              syn-ack ttl 64
2049/tcp open nfs
                             syn-ack ttl 64
2121/tcp open ccproxy-ftp syn-ack ttl 64
3306/tcp open
               mysql
                             syn-ack ttl 64
5432/tcp open postgresql syn-ack ttl 64
                       syn-ack ttl 64
5900/tcp open vnc
6000/tcp open X11
6667/tcp open irc
                             syn-ack ttl 64
                             syn-ack ttl 64
8009/tcp open ajp13
                            syn-ack ttl 64
8180/tcp open unknown
                             syn-ack ttl 64
MAC Address: 08:00:27:C6:DE:4F (Oracle VirtualBox virtual NIC)
Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 13.52 seconds
Raw packets sent: 1001 (44.028KB) | Rcvd: 1001 (40.120KB)
```

## Version detection

La version detection scan ci restituisce invece come risultato una ricerca più raffinata riconoscendo versione e nome del servizio RPC (Remote procedure call), determinando programma e versione in esecuzione.

```
File Actions Edit View Help
  $ nmap -vvv -sV 192.168.1.10
Starting Nmap 7.92 ( https://nmap.org ) at 2022-11-23 04:40 EST
NSE: Loaded 45 scripts for scanning.
Initiating Ping Scan at 04:40
Scanning 192.168.1.10 [2 ports]
Completed Ping Scan at 04:40, 0.00s elapsed (1 total hosts) Initiating Parallel DNS resolution of 1 host. at 04:40
Completed Parallel DNS resolution of 1 host. at 04:40, 13.03s elapsed
DNS resolution of 1 IPs took 13.03s. Mode: Async [#: 1, OK: 0, NX: 0, DR: 1, SF: 0, TR: 3, CN: 0]
Initiating Connect Scan at 04:40
Scanning 192.168.1.10 [1000 ports]
Discovered open port 25/tcp on 192.168.1.10
Discovered open port 5900/tcp on 192.168.1.10
Discovered open port 23/tcp on 192.168.1.10
Discovered open port 21/tcp on 192.168.1.10
Discovered open port 80/tcp on 192.168.1.10
Discovered open port 139/tcp on 192.168.1.10
Discovered open port 445/tcp on 192.168.1.10
Discovered open port 111/tcp on 192.168.1.10
Discovered open port 3306/tcp on 192.168.1.10
Discovered open port 22/tcp on 192.168.1.10
Discovered open port 53/tcp on 192.168.1.10
Discovered open port 5432/tcp on 192.168.1.10
Discovered open port 1524/tcp on 192.168.1.10
Discovered open port 2049/tcp on 192.168.1.10
Discovered open port 1099/tcp on 192.168.1.10
Discovered open port 8009/tcp on 192.168.1.10
Discovered open port 514/tcp on 192.168.1.10
Discovered open port 6000/tcp on 192.168.1.10
Discovered open port 6667/tcp on 192.168.1.10
Discovered open port 513/tcp on 192.168.1.10
Discovered open port 8180/tcp on 192.168.1.10
Discovered open port 2121/tcp on 192.168.1.10
Discovered open port 512/tcp on 192.168.1.10
Completed Connect Scan at 04:40, 0.11s elapsed (1000 total ports)
Initiating Service scan at 04:40
Scanning 23 services on 192.168.1.10
Completed Service scan at 04:41, 36.18s elapsed (23 services on 1 host)
NSE: Script scanning 192.168.1.10.
NSE: Starting runlevel 1 (of 2) scan.
Initiating NSE at 04:41
Completed NSE at 04:41, 8.09s elapsed
NSE: Starting runlevel 2 (of 2) scan.
Initiating NSE at 04:41
Completed NSE at 04:41, 8.04s elapsed
Nmap scan report for 192.168.1.10
Host is up, received syn-ack (0.00047s latency).
Scanned at 2022-11-23 04:40:59 EST for 53s
Not shown: 977 closed tcp ports (conn-refused)
        STATE SERVICE
                           REASON VERSION
                           syn-ack vsftpd 2.3.4
21/tcp
        open ftp
```

```
Discovered open port 512/tcp on 192.168.1.10
Completed Connect Scan at 04:40, 0.11s elapsed (1000 total ports)
Initiating Service scan at 04:40
Scanning 23 services on 192.168.1.10
Completed Service scan at 04:41, 36.18s elapsed (23 services on 1 host)
NSE: Script scanning 192.168.1.10.
NSE: Starting runlevel 1 (of 2) scan.
Initiating NSE at 04:41
Completed NSE at 04:41, 8.09s elapsed
NSE: Starting runlevel 2 (of 2) scan.
Initiating NSE at 04:41
Completed NSE at 04:41, 8.04s elapsed
Nmap scan report for 192.168.1.10
Host is up, received syn-ack (0.00047s latency).
Scanned at 2022-11-23 04:40:59 EST for 53s
Not shown: 977 closed tcp ports (conn-refused)
PORT
         STATE SERVICE
                              REASON VERSION
21/tcp
         open ftp
                              syn-ack vsftpd 2.3.4
         open ssh
                              syn-ack OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)
22/tcp
23/tcp
          open telnet
                              syn-ack Linux telnetd
          open smtp
                              syn-ack Postfix smtpd
25/tcp
          open
                 domain
                               syn-ack ISC BIND 9.4.2
          open http
80/tcp
                              syn-ack Apache httpd 2.2.8 ((Ubuntu) DAV/2)
                rpcbind
                              syn-ack 2 (RPC #100000)
111/tcp
         open
139/tcp
         open netbios-ssn syn-ack Samba smbd 3.X - 4.X (workgroup: WORKGROUP) open netbios-ssn syn-ack Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp
512/tcp
         open exec
513/tcp
         open login?
                              syn-ack
514/tcp open shell
                              syn-ack Netkit rshd
1099/tcp open java-rmi syn-ack GNU Classpath grmiregistr
1524/tcp open bindshell syn-ack Metasploitable root shell
                              syn-ack GNU Classpath grmiregistry
2049/tcp open nfs
                               syn-ack 2-4 (RPC #100003)
2121/tcp open
                               syn-ack ProFTPD 1.3.1
                mysql syn-ack MySQL 5.0.51a-3ubuntu5
postgresql syn-ack PostgreSQL DB 8.3.0 - 8.3.7
3306/tcp open mysql
5432/tcp open
5900/tcp open vnc
                               syn-ack VNC (protocol 3.3)
6000/tcp open X11
                               syn-ack (access denied)
                               syn-ack UnrealIRCd
6667/tcp open irc
                               syn-ack Apache Jserv (Protocol v1.3)
8009/tcp open ajp13
                               syn-ack Apache Tomcat/Coyote JSP engine 1.1
8180/tcp open
                http
Service Info: Hosts: metasploitable.localdomain, irc.Metasploitable.LAN; OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel
Read data files from: /usr/bin/../share/nmap
Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 66.12 seconds
```

### WINDOWS 7

La scansione ovviamente non può ottenere riscontro poiché i firewall di Windows sono operativi.

# Cambiando le impostazioni Firewall invece il risultato dello scan ottenuto sarà dettagliata in modo seguente