TRACCIA:

Traccia: Tecniche di scansione con Nmap

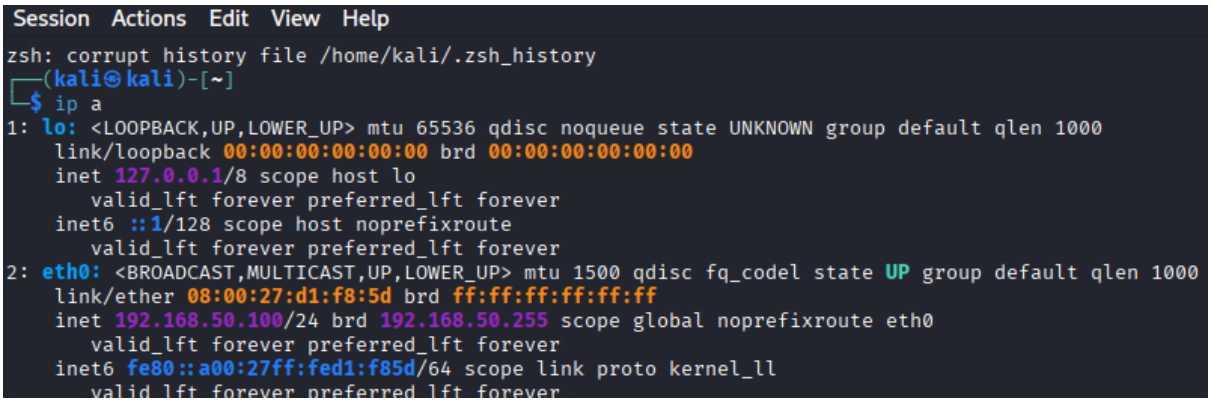
Si richiede allo studente di effettuare le seguenti scansioni sul target **Metasploitable** (target e attaccante devono essere su due reti diverse):

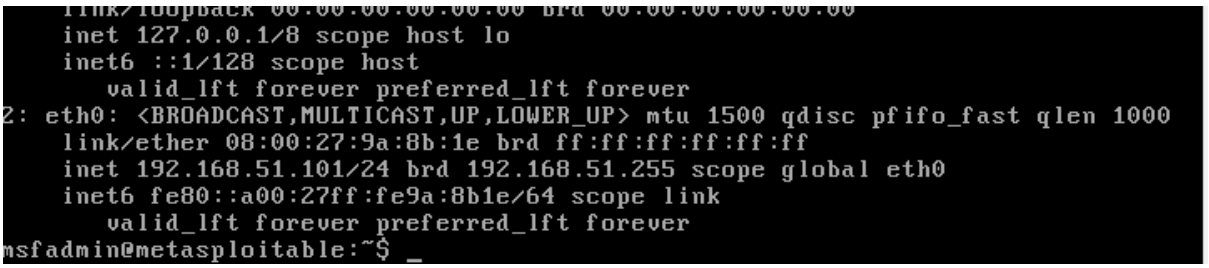
- OS fingerprint
- Syn Scan
- TCP connect - trovate differenze tra i risultati della scansioni TCP connect e SYN?
- Version detection

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

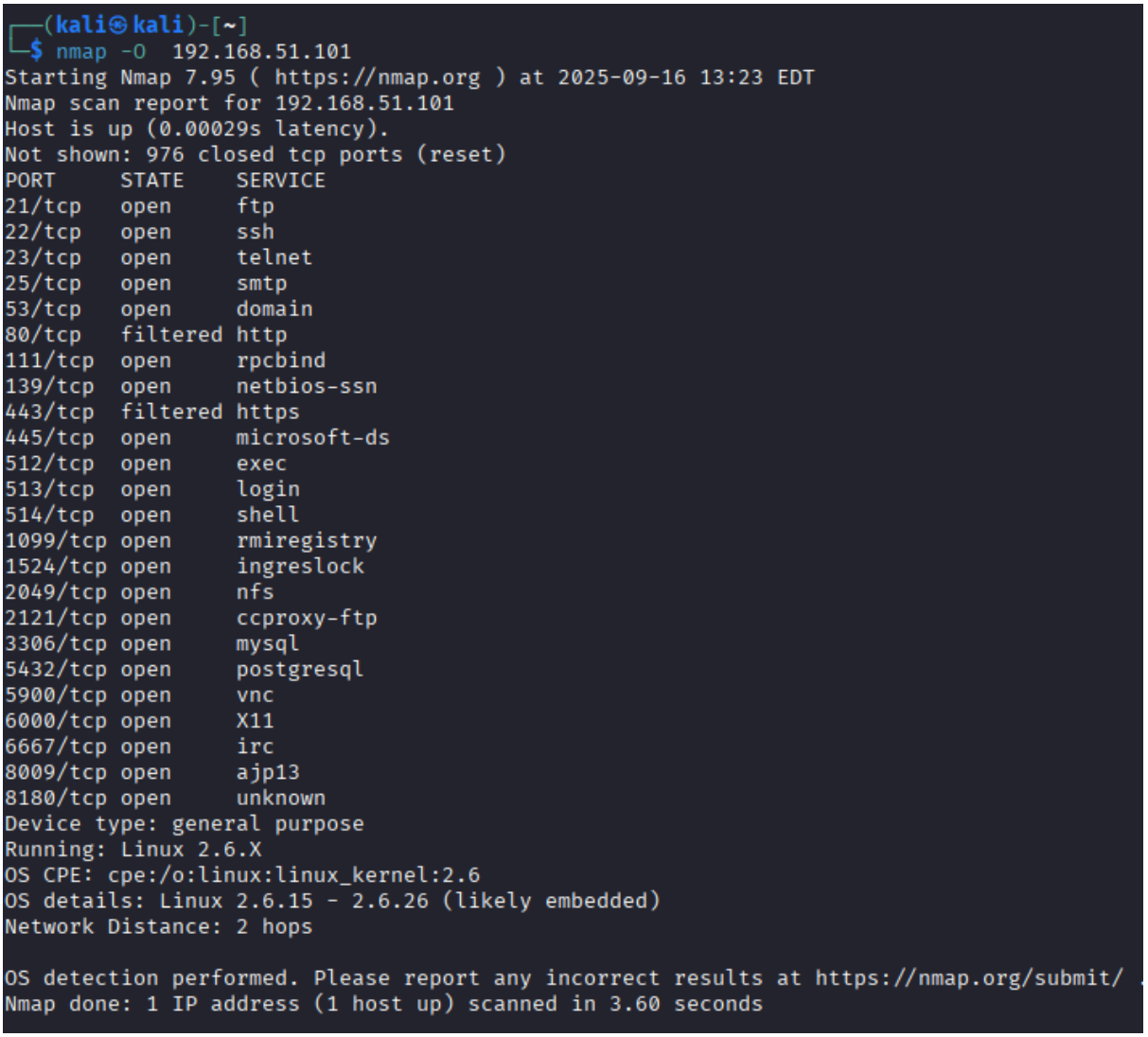
Premessa: (target e attaccante sono su due reti diverse)





SVOLGIMENTO:

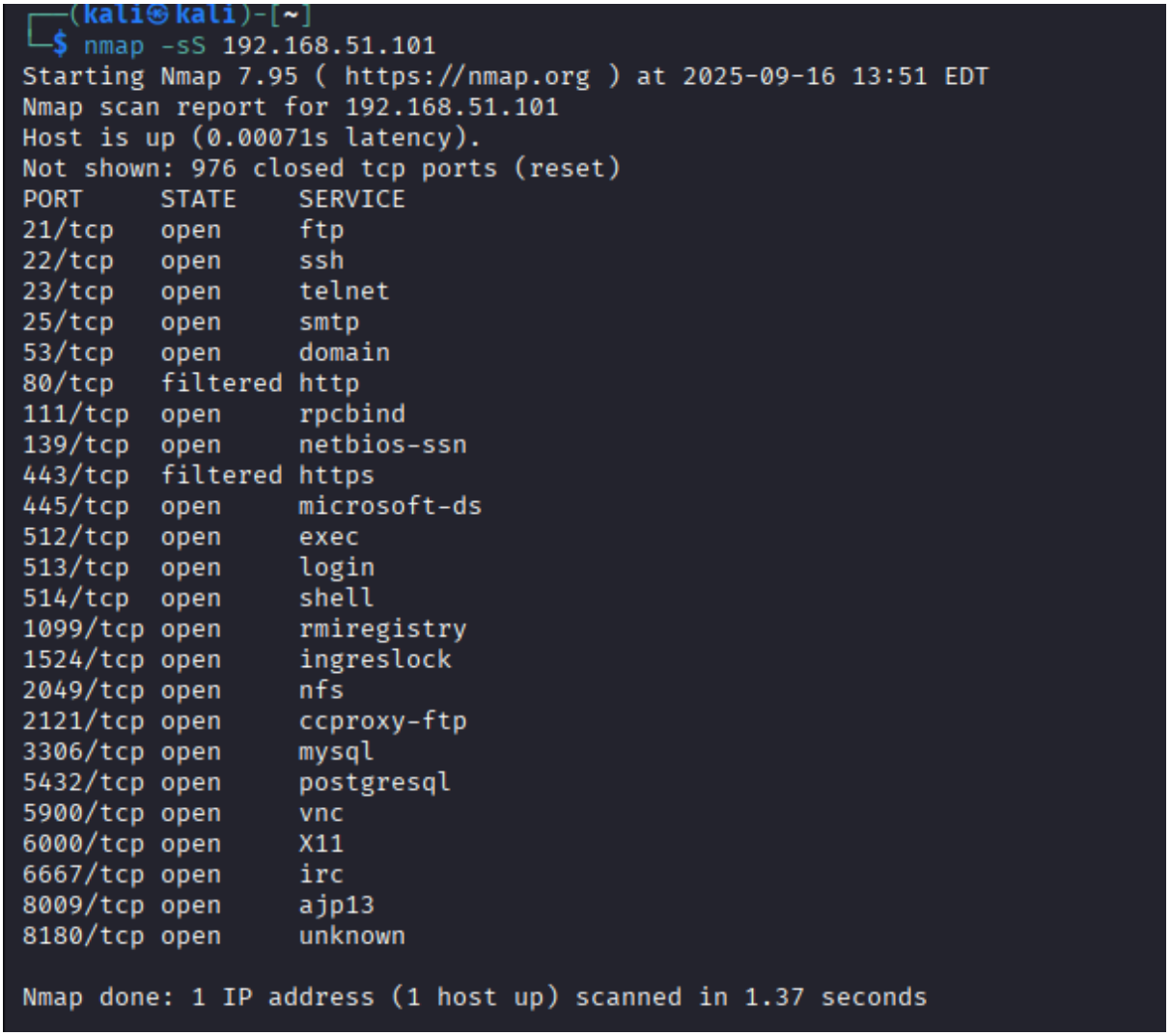
.OS fingerprint:



```
┌──(kali㉿kali)-[~]
└─$ nmap -O  192.168.51.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-09-16 13:23 EDT
Nmap scan report for 192.168.51.101
Host is up (0.00029s latency).
Not shown: 976 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   filtered http
111/tcp  open     rpcbind
139/tcp  open     netbios-ssn
443/tcp  filtered https
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
Device type: general purpose
Running: Linux 2.6.X
OS CPE: cpe:/o:linux:linux_kernel:2.6
OS details: Linux 2.6.15 - 2.6.26 (likely embedded)
Network Distance: 2 hops

OS detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 3.60 seconds
```

.Syn scan:


┌──(kali㉿kali)-[~]
└─$ nmap -sS 192.168.51.101
Starting Nmap 7.95 (https://nmap.org) at 2025-09-16 13:51 EDT
Nmap scan report for 192.168.51.101
Host is up (0.00071s latency).
Not shown: 976 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 filtered http
111/tcp open rpcbind
139/tcp open netbios-ssn
443/tcp filtered https
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 1.37 seconds

.TCP connect

```
┌──(kali㉿kali)-[~]
└─$ nmap -sT 192.168.51.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-09-16 13:59 EDT
Nmap scan report for 192.168.51.101
Host is up (0.00082s latency).
Not shown: 976 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   filtered http
111/tcp  open     rpcbind
139/tcp  open     netbios-ssn
443/tcp  filtered https
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 1.33 seconds
```

DIFFERENZE TRA SYN E TCP SCAN:

Dalle scansioni come possiamo vedere non ci sono differenze tra i due tipi di scan (le porte sono le stesse) l'unica differenza sta nel metodo utilizzato per effettuare il check sulla porta:
SYN: più veloce e più stealth perchè non completa il 3 way handshake, invia il pacchetto syn poi syn/ack la porta è aperta rst la porta è chiusa non completa il 3 way handshake con l'invio del pacchetto ack, la connessione rimane half-open.
TCP: scansione che stabilisce una connessione TCP quindi completa il 3 way handshake più facile da rilevare nei log.

.Version detection

```
┌──(kali㉿kali)-[~]
└─$ nmap -sV 192.168.51.101
Starting Nmap 7.95 ( https://nmap.org ) at 2025-09-16 14:01 EDT
Nmap scan report for 192.168.51.101
Host is up (0.00032s latency).
Not shown: 976 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   filtered http
111/tcp  open     rpcbind     2 (RPC #100000)
139/tcp  open     netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
443/tcp  filtered https
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     unknown
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 175.49 seconds
```

REPORT:

```
┌──(kali㉿kali)-[~]
└─$ sudo nmap -sS -p- -sV -O -A 192.168.51.101 -oA scansionemeta.xml
[sudo] password for kali:
Starting Nmap 7.95 ( https://nmap.org ) at 2025-09-16 14:13 EDT
Nmap scan report for 192.168.51.101
Host is up (0.00027s latency).
Not shown: 65439 closed tcp ports (reset), 67 filtered tcp ports (no-response)
PORT      STATE SERVICE     VERSION
21/tcp    open  ftp         vsftpd 2.3.4
|_ftp-anon: Anonymous FTP login allowed (FTP code 230)
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to 192.168.50.100
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      vsFTPd 2.3.4 - secure, fast, stable
|_End of status
22/tcp    open  ssh         OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)
| ssh-hostkey:
|   1024 60:0f:cf:e1:c0:5f:6a:74:d6:90:24:fa:c4:d5:6c:cd (DSA)
|_  2048 56:56:24:0f:21:1d:de:a7:2b:ae:61:b1:24:3d:e8:f3 (RSA)
23/tcp    open  telnet      Linux telnetd
25/tcp    open  smtp        Postfix smtpd
|_smtp-commands: metasploitable.localdomain, PIPELINING, SIZE 10240000, VRFY, ETRN, STARTTLS, ENHANCEDSTATUSCODES, 8BITMIME, DSN
53/tcp    open  domain      ISC BIND 9.4.2
| dns-nsid:
|_  bind.version: 9.4.2
111/tcp   open  rpcbind     2 (RPC #100000)
| rpcinfo:
|   program version    port/proto  service
|   100003  2,3,4       2049/tcp   nfs
|   100003  2,3,4       2049/udp   nfs
|   100005  1,2,3      49513/tcp   mountd
|   100005  1,2,3      59947/udp   mountd
|   100021  1,3,4      49595/udp   nlockmgr
|   100021  1,3,4      56439/tcp   nlockmgr
|   100024  1          34052/udp   status
|_  100024  1          39926/tcp   status
139/tcp   open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp   open  netbios-ssn Samba smbd 3.0.20-Debian (workgroup: WORKGROUP)
```

```
|_  100024  1          39926/tcp   status
139/tcp   open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp   open  netbios-ssn Samba smbd 3.0.20-Debian (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
| mysql-info:
|   Protocol: 10
|   Version: 5.0.51a-3ubuntu5
|   Thread ID: 10
|   Capabilities flags: 43564
|   Some Capabilities: Support41Auth, SupportsTransactions, SupportsCompression, SwitchToSSLAfterHandshake, ConnectWithDatabase, LongColumnFlag, Speaks41ProtocolNew
|   Status: Autocommit
|_  Salt: 7aaEr06\NQ/4X>m*()4j
5432/tcp  open  postgresql  PostgreSQL DB 8.3.0 - 8.3.7
|_ssl-date: 2025-09-16T20:17:30+00:00; +2h00m01s from scanner time.
| ssl-cert: Subject: commonName=ubuntu804-base.localdomain/organizationName=OCOSA/stateOrProvinceName=There is no such thing outside US/countryName=XX
| Not valid before: 2010-03-17T14:07:45
|_Not valid after:  2010-04-16T14:07:45
5900/tcp  open  vnc         VNC (protocol 3.3)
| vnc-info:
|   Protocol version: 3.3
|   Security types:
|_    VNC Authentication (2)
6000/tcp  open  X11         (access denied)
6667/tcp  open  irc         UnrealIRCd
6697/tcp  open  irc         UnrealIRCd
8009/tcp  open  ajp13       Apache Jserv (Protocol v1.3)
|_ajp-methods: Failed to get a valid response for the OPTION request
8180/tcp  open  http        Apache Tomcat/Coyote JSP engine 1.1
|_http-favicon: Apache Tomcat
|_http-title: Apache Tomcat/5.5
8787/tcp  open  drb         Ruby DRb RMI (Ruby 1.8; path /usr/lib/ruby/1.8/drb)
36780/tcp open  java-rmi    GNU Classpath grmiregistry
39926/tcp open  status      1 (RPC #100024)
49513/tcp open  mountd      1-3 (RPC #100005)
56439/tcp open  nlockmgr    1-4 (RPC #100021)
Device type: general purpose
Running: Linux 2.6.X
OS CPE: cpe:/o:linux:linux_kernel:2.6
OS details: Linux 2.6.15 - 2.6.26 (likely embedded)
Network Distance: 2 hops
Service Info: Hosts:  metasploitable.localdomain, irc.Metasploitable.LAN; OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

Host script results:
|_clock-skew: mean: 3h20m00s, deviation: 2h18m33s, median: 2h00m00s
|_nbstat: NetBIOS name: METASPLOITABLE, NetBIOS user: <unknown>, NetBIOS MAC: <unknown> (unknown)
```

```
Host script results:
|_clock-skew: mean: 3h20m00s, deviation: 2h18m33s, median: 2h00m00s
|_nbstat: NetBIOS name: METASPLOITABLE, NetBIOS user: <unknown>, NetBIOS MAC: <unknown> (unknown)
| smb-security-mode:
|   account_used: <blank>
|   authentication_level: user
|   challenge_response: supported
|_  message_signing: disabled (dangerous, but default)
|_smb2-time: Protocol negotiation failed (SMB2)
| smb-os-discovery:
|   OS: Unix (Samba 3.0.20-Debian)
|   Computer name: metasploitable
|   NetBIOS computer name:
|   Domain name: localdomain
|   FQDN: metasploitable.localdomain
|_  System time: 2025-09-16T16:15:58-04:00

TRACEROUTE (using port 8080/tcp)
HOP RTT     ADDRESS
1   0.15 ms 192.168.50.1
2   0.38 ms 192.168.51.101

OS and Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 257.79 seconds
```

io qui ho provato cercando come si fa un report di nmap per le scansioni fatte con però riscrivo i dati per il report.

IP TARGET: 192.168.51.101
SISTEMA OPERATIVO: LINUX 2.6.15
PORTE APERTE:

```
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   filtered http
111/tcp  open     rpcbind
139/tcp  open     netbios-ssn
443/tcp  filtered https
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
```