AI FOR CYBERSECURITY WITH IBM QRADAR

ASSIGNMENT – 2

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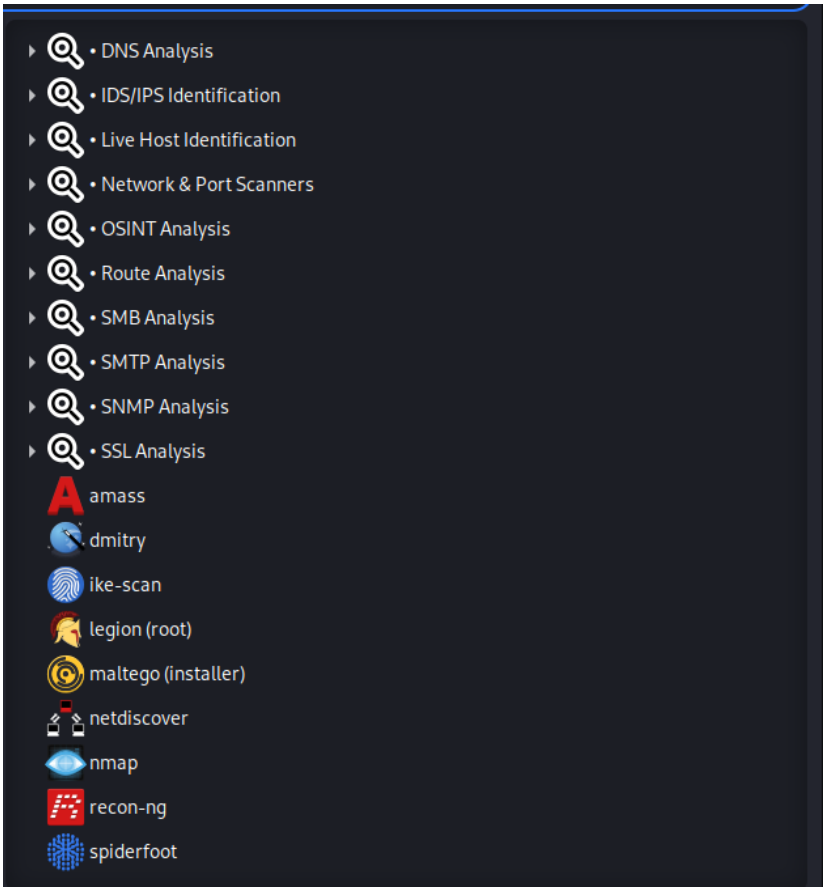
THERE ARE 13 SECTIONS WITH DIFFERENT TOOLS WITH RESPECTIVE USAGE.

1. Information Gathering
   These are all the tools available under this section



Nmap:

Nmap, which stands for "Network Mapper," is an open-source tool used for exploring networks and conducting security audits. Its primary purpose is to quickly scan large networks, although it can also be used for scanning individual hosts. Nmap employs unique methods involving raw IP packets to identify available hosts on a network, determine the services they offer (including application names and versions), identify their operating systems and versions, detect any packet filters or firewalls in use, and gather various other network-related information. While Nmap is commonly used by security professionals for security assessments, it is also valuable for routine tasks such as maintaining network inventories, managing service upgrades, and monitoring host and service availability.

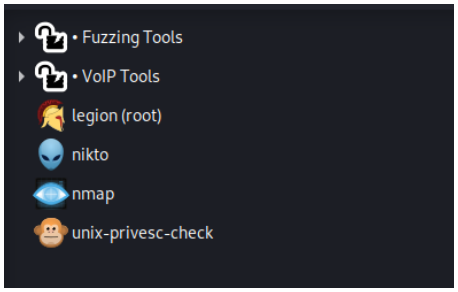
The output generated by Nmap provides a list of the scanned targets, accompanied by additional details based on the selected options. One crucial piece of information is the "interesting ports table," which includes details like port numbers, protocols, service names, and their current status. The status can be categorized as open (indicating that a target machine is actively listening for

connections or packets on that port), filtered, closed, or unfiltered.

```
kali@kali: ~
File  Actions  Edit  View  Help
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-02 08:30 EDT
WARNING: No targets were specified, so 0 hosts scanned.
Nmap done: 0 IP addresses (0 hosts up) scanned in 0.35 seconds

┌──(kali㉿kali)-[~]
└─$ nmap -A 192.168.29.107
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-02 08:30 EDT
Note: Host seems down. If it is really up, but blocking our ping probes, try
-Pn
Nmap done: 1 IP address (0 hosts up) scanned in 3.24 seconds

┌──(kali㉿kali)-[~]
└─$ nmap -Pn 192.168.29.107
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-02 08:30 EDT
Nmap scan report for 192.168.29.107
Host is up (0.0015s latency).
Not shown: 996 filtered tcp ports (no-response)
PORT     STATE SERVICE
135/tcp  open  msrpc
139/tcp  open  netbios-ssn
445/tcp  open  microsoft-ds
6646/tcp open  unknown

Nmap done: 1 IP address (1 host up) scanned in 5.26 seconds
```

2. Vulnerability analysis

   These are all the tools available under this section

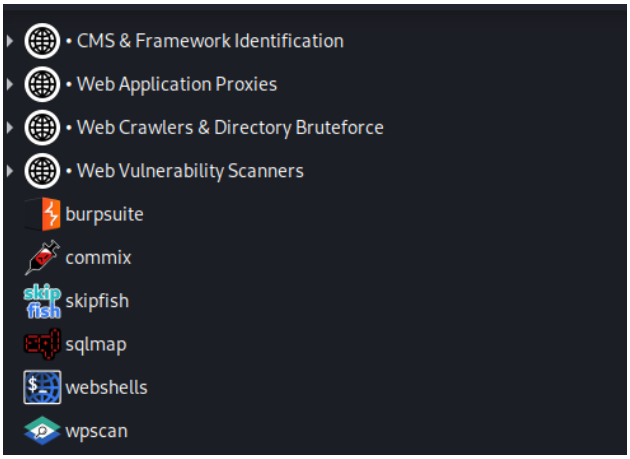


   Unix-privesc-check is a tool designed to perform vulnerability analysis checks on a Unix-based system. It provides a comprehensive assessment of the system's security and identifies potential vulnerabilities that could be exploited by attackers. The tool offers detailed information about any vulnerabilities it discovers, helping system administrators and security professionals take appropriate measures to address and mitigate these security risks.

```
File  Machine  View  Input  Devices  Help
1  2  3  4
kali@kali: ~
File  Actions  Edit  View  Help
script didn't find any problems.

┌──(kali㉿kali)-[~]
└─$ unix-privesc-check standard
Assuming the OS is: linux
Starting unix-privesc-check v1.4 ( http://pentestmonkey.net/tools/unix-privesc-check )

This script checks file permissions and other settings that could allow
local users to escalate privileges.

Use of this script is only permitted on systems which you have been granted
legal permission to perform a security assessment of.  Apart from this
condition the GPL v2 applies.

Search the output below for the word 'WARNING'.  If you don't see it then
this script didn't find any problems.


###############################################
Recording hostname
###############################################
kali

###############################################
Recording uname
###############################################
Linux kali 6.3.0-kali1-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.3.7-1kali1 (2023-06-29) x86_64 GNU/Linux

###############################################
Recording Interface IP addresses
###############################################
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.156.123  netmask 255.255.255.0  broadcast 192.168.156.255
        inet6 fe80::a00:27ff:fe13:1227  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:13:12:27  txqueuelen 1000  (Ethernet)
        RX packets 36  bytes 2737 (2.6 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 25  bytes 3220 (3.1 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 4  bytes 240 (240.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 4  bytes 240 (240.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0


###############################################
```

3. Web Application analysis

   These are all the tools available under this section



   Skipfish is a proactive web application security reconnaissance tool. Its main purpose is to create an interactive map (sitemap) of a targeted website through a combination of recursive crawling and dictionary-based probes. This map is then enhanced with information gathered from various active security checks, with the intention of being non-disruptive to the target website's operations. The end result is a comprehensive report that serves as a valuable

starting point for professional web application security assessments. In essence, Skipfish helps security professionals identify potential vulnerabilities and weaknesses in web applications, aiding in the process of securing them.

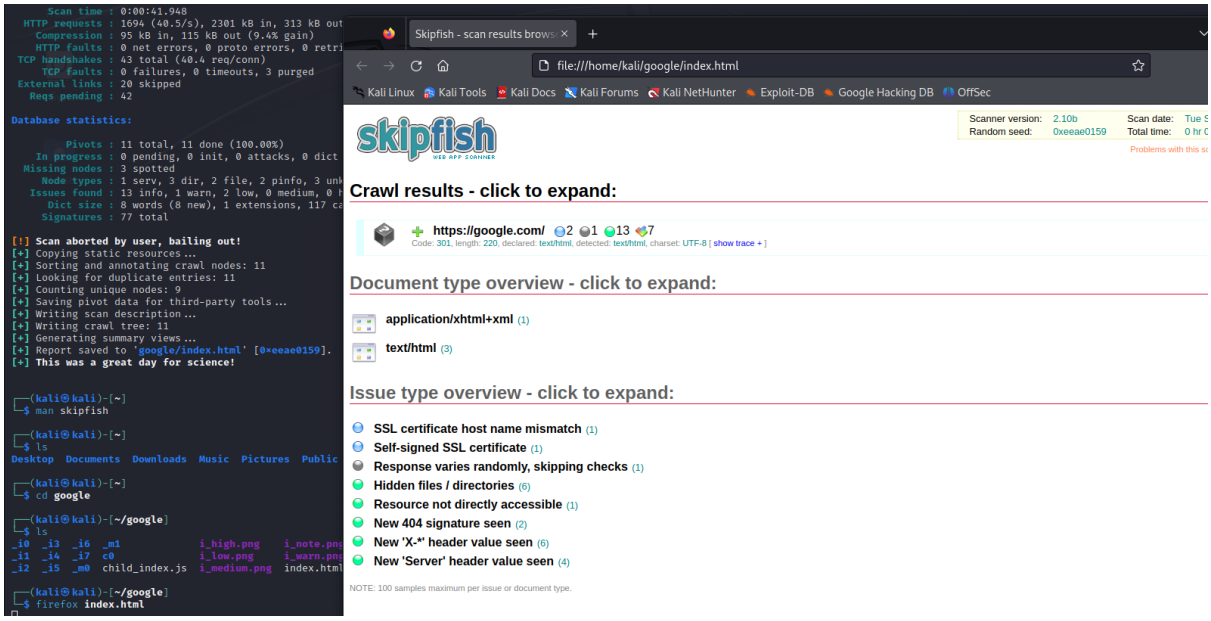
```
File  Actions  Edit  View  Help
skipfish version 2.10b by lcamtuf@google.com

  - google.com -

Scan statistics:

       Scan time : 0:00:41.948
   HTTP requests : 1694 (40.5/s), 2301 kB in, 313 kB out (62.3 kB/s)
     Compression : 95 kB in, 115 kB out (9.4% gain)
     HTTP faults : 0 net errors, 0 proto errors, 0 retried, 0 drops
  TCP handshakes : 43 total (40.4 req/conn)
      TCP faults : 0 failures, 0 timeouts, 3 purged
  External links : 20 skipped
    Reqs pending : 42

Database statistics:

          Pivots : 11 total, 11 done (100.00%)
     In progress : 0 pending, 0 init, 0 attacks, 0 dict
   Missing nodes : 3 spotted
      Node types : 1 serv, 3 dir, 2 file, 2 pinfo, 3 unkn, 0 par, 0 val
    Issues found : 13 info, 1 warn, 2 low, 0 medium, 0 high impact
       Dict size : 8 words (8 new), 1 extensions, 117 candidates
      Signatures : 77 total

[!] Scan aborted by user, bailing out!
[+] Copying static resources ...
[+] Sorting and annotating crawl nodes: 11
[+] Looking for duplicate entries: 11
[+] Counting unique nodes: 9
[+] Saving pivot data for third-party tools ...
[+] Writing scan description ...
[+] Writing crawl tree: 11
[+] Generating summary views ...
[+] Report saved to 'google/index.html' [0xeeae0159].
[+] This was a great day for science!
```

A new directory named google has been created. And the report that has been generated is stored in index.html file.

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

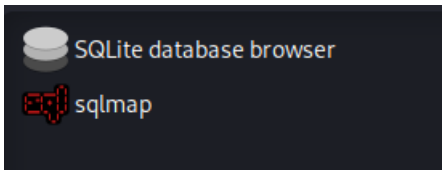
```
┌──(kali㉿kali)-[~/google]
└─$ ls
_i0  _i3  _i6  _m1          i_high.png   i_note.png  issue_index.js  n_clone.png     n_failed.png        n_unlinked.png  p_param.png  p_unknown.png  samples.js
_i1  _i4  _i7  c0           i_low.png    i_warn.png  mime_entry.png  n_collapsed.png n_maybe_missing.png p_dir.png       p_pinfo.png  p_value.png    sf_name.png
_i2  _i5  _m0  child_index.js i_medium.png index.html  n_children.png  n_expanded.png  n_missing.png       p_file.png      p_serv.png   pivots.txt     summary.js
```

The index file is displayed in the browser

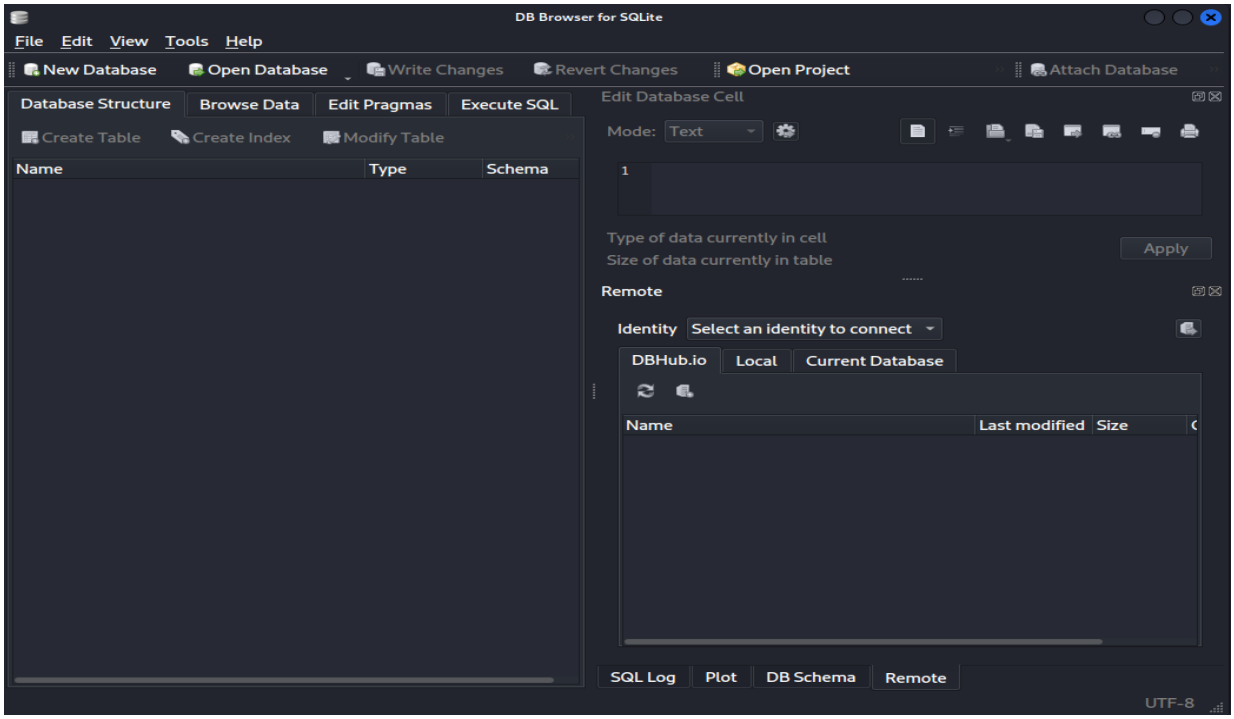


4. Database assessment

   These are all the tools available under this section



The SQLite Database Browser, or DB Browser for SQLite, is an open-source graphical user interface (GUI) tool. Its primary purpose is to facilitate working with SQLite databases on various platforms, including Linux. SQLite is a widely used and lightweight relational database management system (RDBMS) frequently employed in embedded systems, mobile apps, and desktop software. This tool provides a user-friendly interface to interact with and manage SQLite databases, making it easier for users to view, edit, and manipulate the data stored within them..



5. Password attacks
   These are all the tools available under this section

John the Ripper, often referred to as John, is a software tool designed to identify weak passwords used by users on a server. It is particularly useful for password cracking and security assessments. John can employ various methods, including dictionary attacks and search patterns, in addition to utilizing password files for checking the strength of passwords.

John supports multiple cracking modes and has the capability to decipher different ciphertext formats, such as various DES variants, MD5, and blowfish. Additionally, it can be used to extract passwords from AFS and Windows NT systems.

To use John, you typically provide it with a password file and specify the desired options. If no specific cracking mode is chosen, John will attempt "single," "wordlist," and "incremental" modes in sequence.

When John successfully identifies a password, it will display it on the terminal and save it in a file named "john.pot" within the "~/.john/" directory. This allows John to keep track of already cracked passwords and avoid reattempting them.

To get started, you can create a text file containing some MD5 hash-generated text, which John can be configured to crack using its various methods and modes.

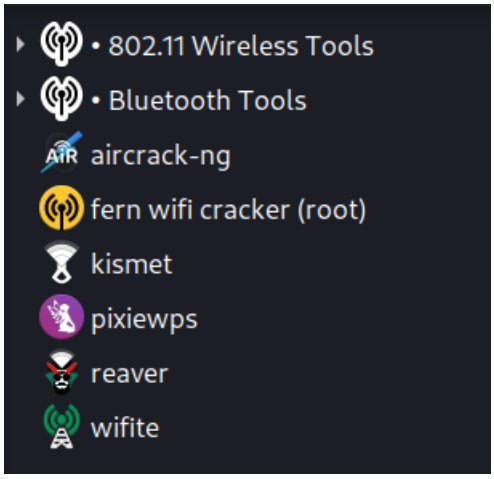
```
┌──(kali㉿kali)-[~/Desktop]
└─$ ls
password.txt

┌──(kali㉿kali)-[~/Desktop]
└─$ cat password.txt
5f4dcc3b5aa765d61d8327deb882cf99
```

Now we have to use John the ripper to decrypt the text

```
┌──(kali㉿kali)-[~/Desktop]
└─$ john password.txt --format=Raw-MD5
Using default input encoding: UTF-8
Loaded 1 password hash (Raw-MD5 [MD5 256/256 AVX2 8×3])
Warning: no OpenMP support for this hash type, consider --fork=4
Proceeding with single, rules:Single
Press 'q' or Ctrl-C to abort, almost any other key for status
Almost done: Processing the remaining buffered candidate passwords, if any.
Proceeding with wordlist:/usr/share/john/password.lst
password         (?)
1g 0:00:00:00 DONE 2/3 (2023-09-05 05:51) 20.00g/s 7680p/s 7680c/s 7680C/s 123456..larry
Use the "--show --format=Raw-MD5" options to display all of the cracked passwords reliably
Session completed.
```

6. Wireless attacks

These are all the tools available under this section



Kismet:

Nearly all of these options are run-time overrides for values in the kismet.conf configuration file. Permanent changes should be made to the configuration file.

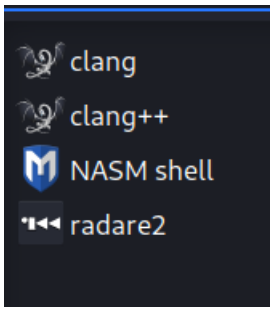
```
$ kismet -h
usage: kismet [OPTION]
Nearly all of these options are run-time overrides for values in the
kismet.conf configuration file.  Permanent changes should be made to
the configuration file.
 *** Generic Options ***
 -v, --version                 Show version
 -h  --help                    Display this help message
     --no-console-wrapper      Disable server console wrapper
     --no-ncurses-wrapper      Disable server console wrapper
     --no-ncurses              Disable server console wrapper
     --debug                   Disable the console wrapper and the crash
                               handling functions, for debugging
 -c <datasource>               Use the specified datasource
 -f, --config-file <file>      Use alternate configuration file
     --no-line-wrap            Turn off linewrapping of output
                               (for grep, speed, etc)
 -s, --silent                  Turn off stdout output after setup phase
     --daemonize               Spawn detached in the background
     --no-plugins              Do not load plugins
     --homedir <path>          Use an alternate path as the home
                                directory instead of the user entry
     --confdir <path>          Use an alternate path as the base
                                config directory instead of the default
                                set at compile time
     --datadir <path>          Use an alternate path as the data
                                directory instead of the default set at
                                compile time.
     --override <flavor>       Load an alternate configuration override
                                from {confdir}/kismet_{flavor}.conf
                                or as a specific override file.
 *** Logging Options ***
 -T, --log-types <types>       Override activated log types
 -t, --log-title <title>       Override default log title
 -p, --log-prefix <prefix>     Directory to store log files
 -n, --no-logging              Disable logging entirely

 *** Device Tracking Options ***
     --device-timeout=n        Expire devices after N seconds
┌──(kali㉿kali)-[~]
└─$
```

It scans for the available wireless connection

```
┌──(kali㉿kali)-[~]
└─$ sudo kismet -c wlan0mon
[sudo] password for kali:
INFO: Including sub-config file: /etc/kismet/kismet_httpd.conf
INFO: Including sub-config file: /etc/kismet/kismet_memory.conf
INFO: Including sub-config file: /etc/kismet/kismet_alerts.conf
INFO: Including sub-config file: /etc/kismet/kismet_80211.conf
INFO: Including sub-config file: /etc/kismet/kismet_logging.conf
INFO: Including sub-config file: /etc/kismet/kismet_filter.conf
INFO: Including sub-config file: /etc/kismet/kismet_uav.conf
INFO: Loading config override file '/etc/kismet/kismet_package.conf'
INFO: Optional sub-config file not present: /etc/kismet/kismet_package.conf
INFO: Loading config override file '/etc/kismet/kismet_site.conf'
INFO: Optional sub-config file not present: /etc/kismet/kismet_site.conf
INFO: Local config and cache directory '/root/.kismet/' does not exist;
      creating it.

INFO: Enabling channel hopping by default on sources which support channel
      control.
INFO: Setting default channel hop rate to 5/sec
INFO: Enabling channel list splitting on sources which share the same list
      of channels
INFO: Enabling channel list shuffling to optimize overlaps
INFO: Sources will be re-opened if they encounter an error
INFO: Saving datasources to the Kismet database log evert 30 seconds
INFO: Launching remote capture server on 127.0.0.1 3501
INFO: Data sources passed on the command line (via -c source), ignoring
      source= definitions in the Kismet config file.
INFO: Probing interface 'wlan0mon' to find datasource type
INFO: Opened kismetdb log file './/Kismet-20230905-10-11-20-1.kismet'
INFO: Saving packets to the Kismet database log.
INFO: GPS track will be logged to the Kismet logfile
ALERT: ROOTUSER Kismet is running as root; this is less secure.  If you
       are running Kismet at boot via systemd, make sure to use `systemctl
       edit kismet.service` to change the user.  For more information, see
       the Kismet README for setting up Kismet with minimal privileges.
INFO: Starting Kismet web server...
INFO: HTTP server listening on 0.0.0.0:2501
INFO: Could not open system plugin directory (/usr/lib/x86_64-linux-gnu/kis
      met/), skipping: No such file or directory
INFO: Did not find a user plugin directory (/root/.kismet//plugins/),
      skipping: No such file or directory
ERROR: Unable to find driver for 'wlan0mon'.  Make sure that any required
       plugins are loaded, the interface is available, and any required
       Kismet helper packages are installed.
ERROR: Data source 'wlan0mon' failed to launch: Unable to find driver for
       'wlan0mon'.  Make sure that any required plugins are loaded, the
       interface is available, and any required Kismet helper packages are
       installed.
```

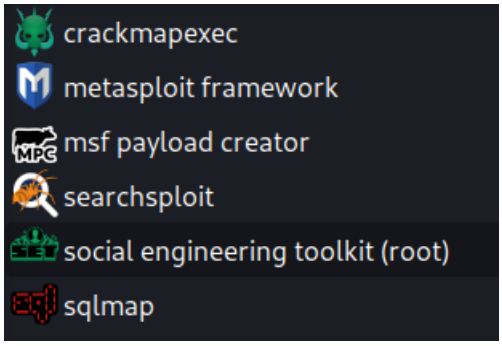
7. Reverse engineering

   These are all the available tools under this section



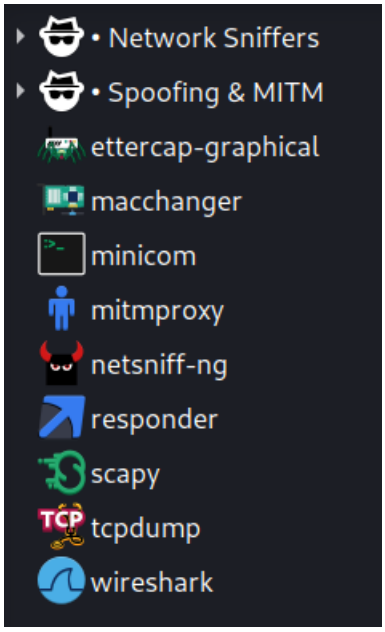
8. Exploitation tools

   These are all the available tools under this section



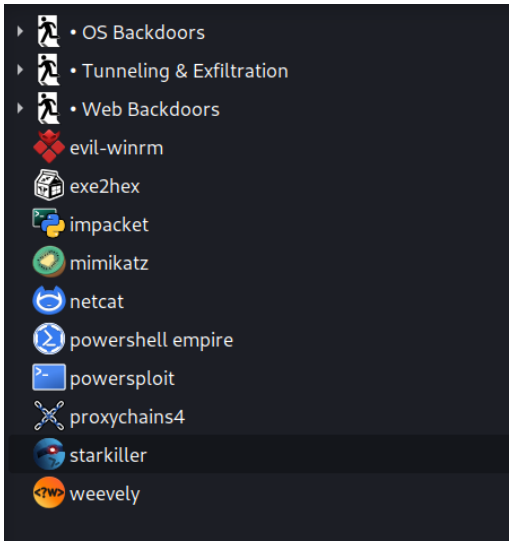
9. Sniffing and Spoofing

   These are all the available tools under this section



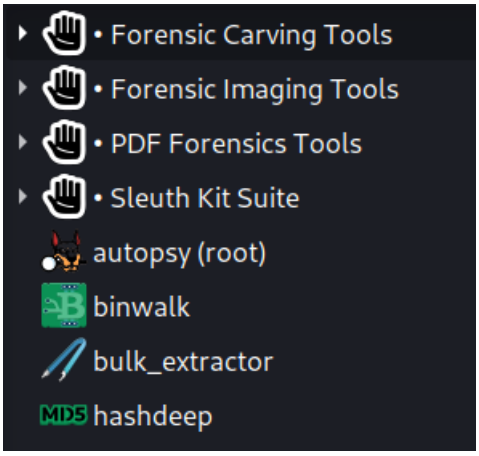
10. Post Exploitation:

These are all the available tools under this section



11. Forensics

    These are all the available tools under this section



12. Reporting tools

    These are all the available tools under this section

13. Social Engineering tools

These are all the available tools under this section