AI FOR CYBERSECURITY WITH IBM QRADAR

ASSIGNMENT – 2

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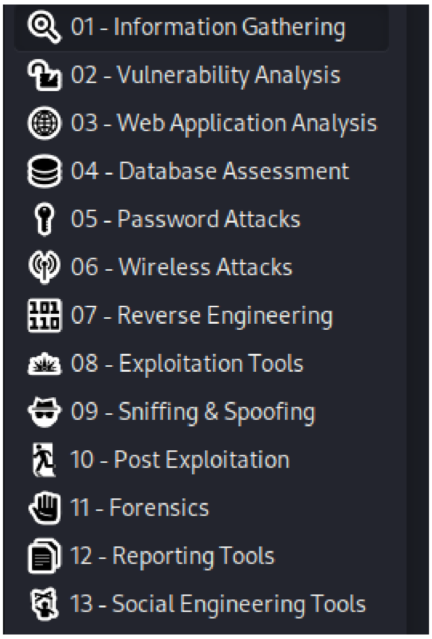
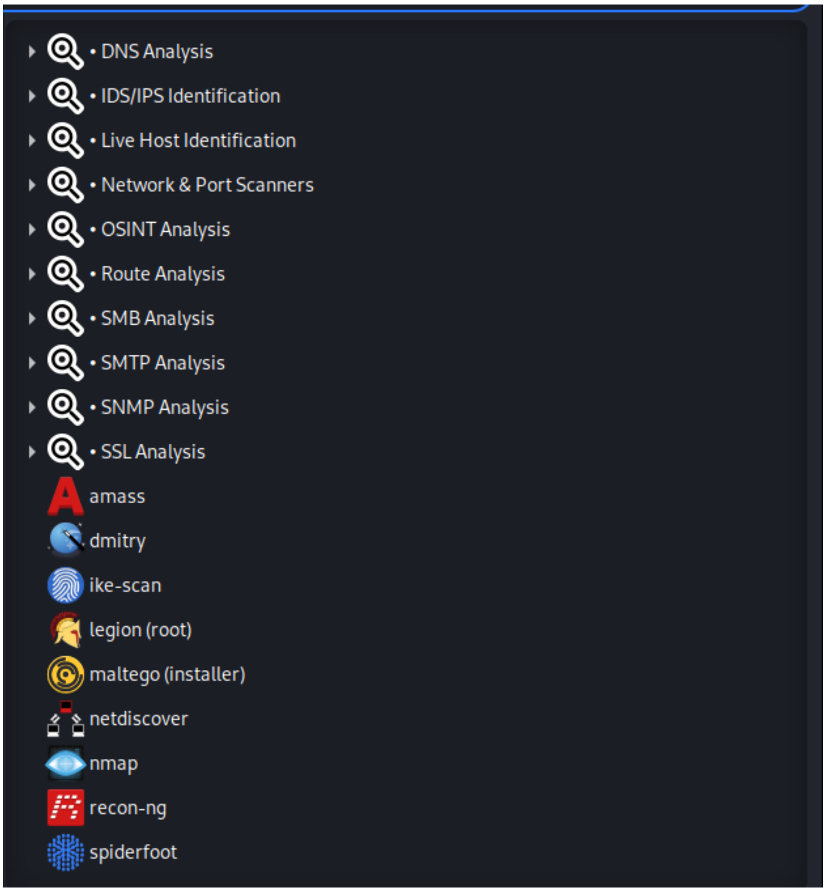
COLLEGE: VIT – VELLORE

THERE ARE 13 SECTIONS WITH DIFFERENT TOOLS WITH RESPECTIVE USAGE.



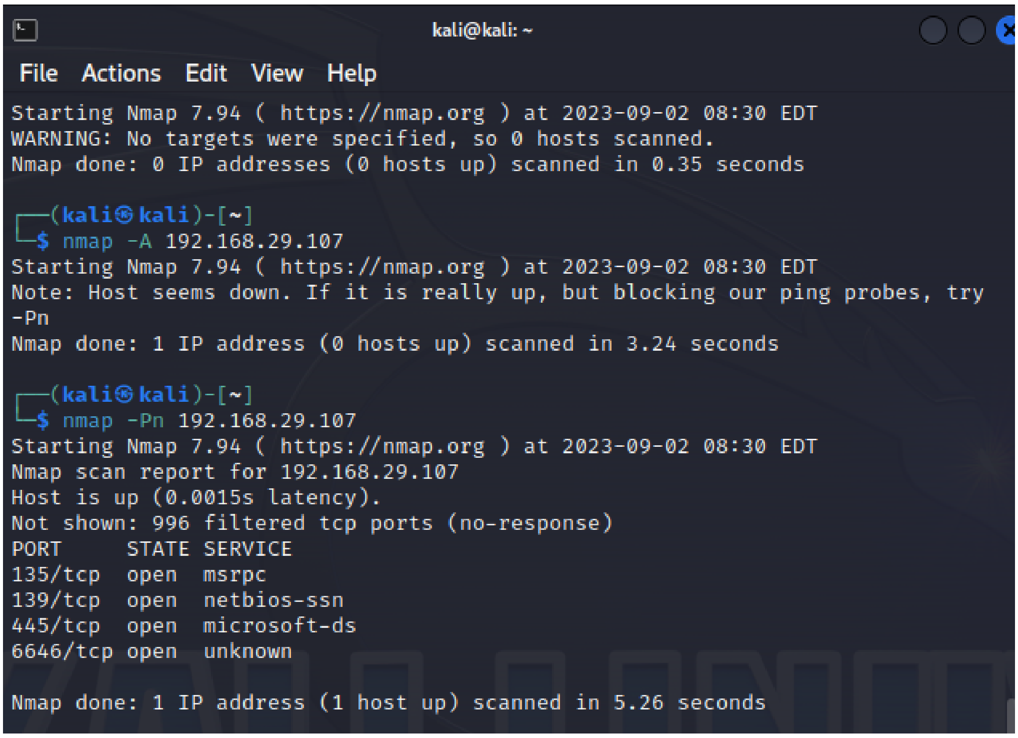
1. Information Gathering
   These are all the tools available under this section



Nmap:

Nmap ("Network Mapper") is an open-source tool for network exploration and security auditing. It was designed to rapidly scan large networks, although it works fine against single hosts. Nmap uses raw IP packets in novel ways to determine what hosts are available on the network, what services (application name and version) those hosts are offering, what operating systems (and OS versions) they are running, what type of packet filters/firewalls are in use, and dozens of other characteristics. While Nmap is commonly used for security audits, many systems and network administrators find it useful for routine tasks such as network inventory, managing service upgrade schedules, and monitoring host or service uptime.

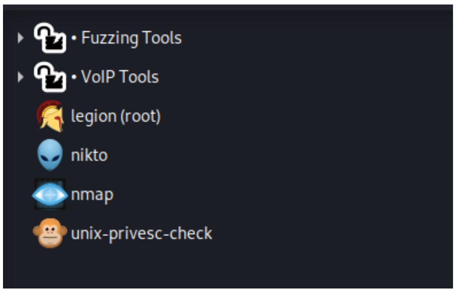
The output from Nmap is a list of scanned targets, with supplemental information on each depending on the options used. Key among that information is the "interesting ports table". That table lists the port number and protocol, service name, and state. The state is either open, filtered, closed, or unfiltered. Open means that an application on the target machine is listening for connections/packets on that port.



```
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
```

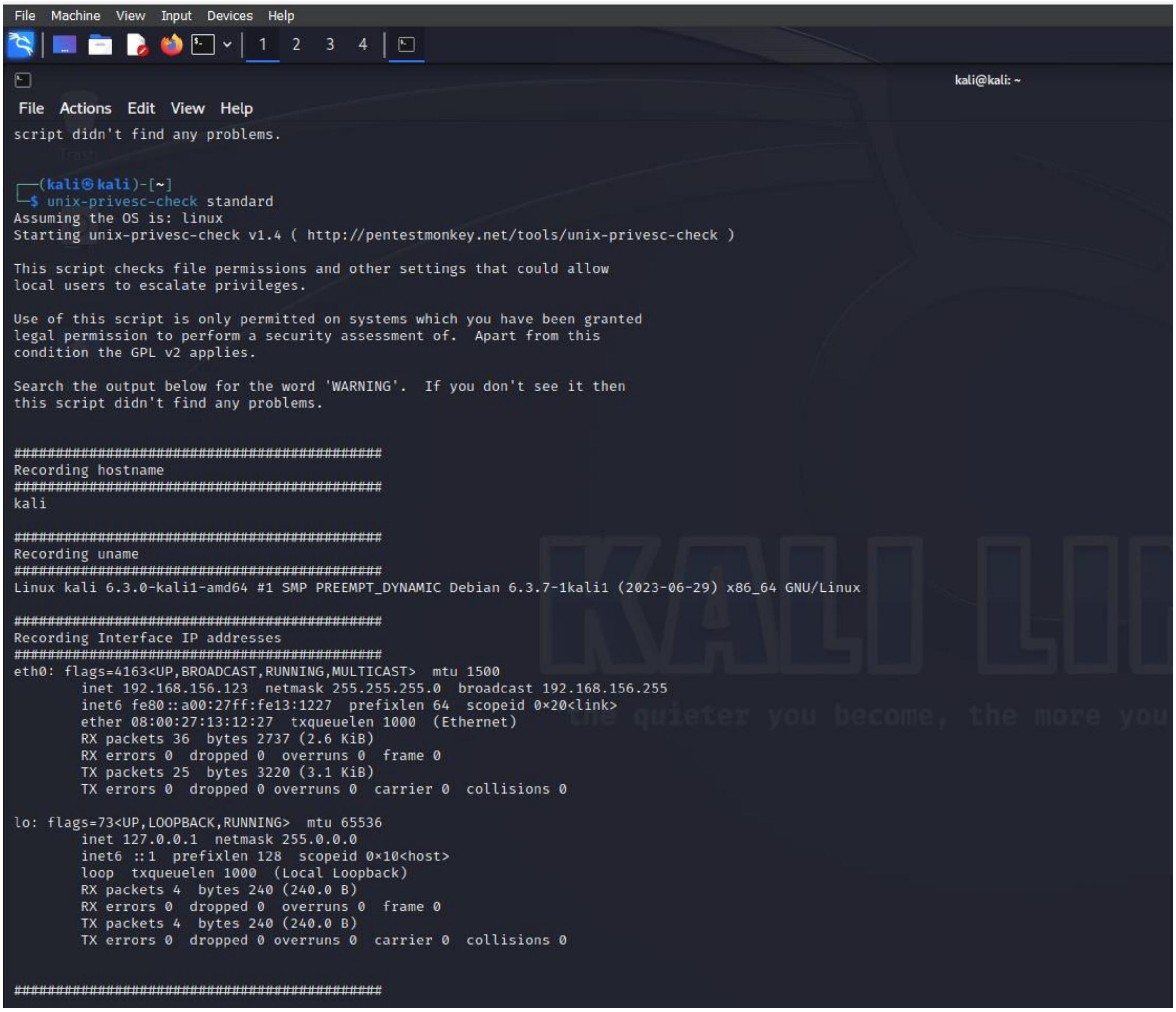
2. Vulnerability analysis

   These are all the tools available under this section



<u>Unix-privesc-check:</u>

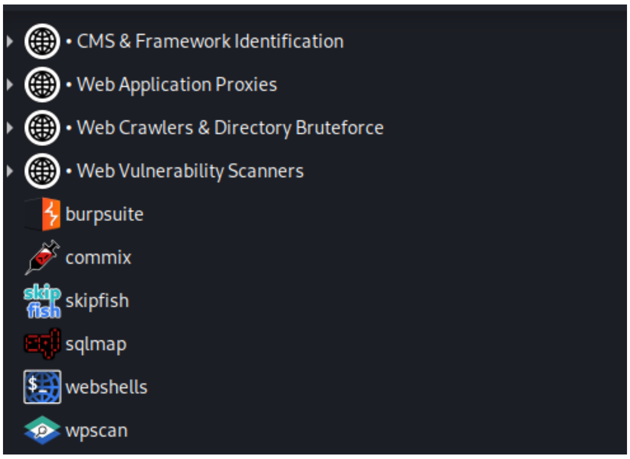
It does a vulnerability analysis check on the system its running and gives a detailed information of the vulnerabilities that are found.


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


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

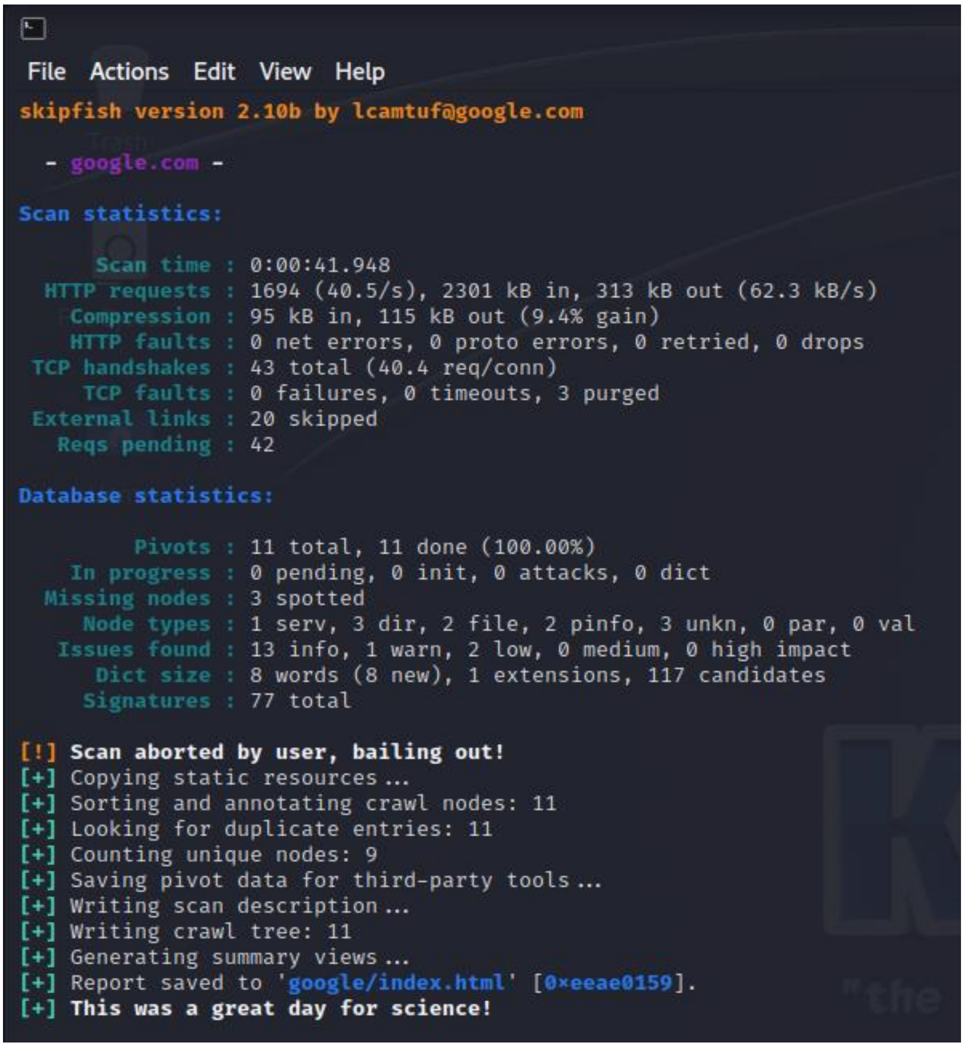
3. Web Application analysis

   These are all the tools available under this section


• CMS & Framework Identification
• Web Application Proxies
• Web Crawlers & Directory Bruteforce
• Web Vulnerability Scanners
burpsuite
commix
skipfish
sqlmap
webshells
wpscan

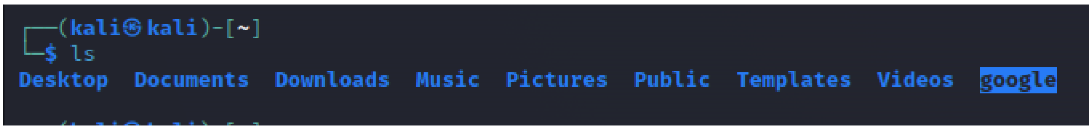
<u>Skipfish:</u>

skipfish is an active web application security reconnaissance tool. It prepares an interactive sitemap for the targeted site by carrying out a recursive crawl and dictionary-based probes. The resulting map is then annotated with the output from a number of active (but hopefully non-disruptive) security checks. The final report generated by the tool is meant to serve as a foundation for professional web application security assessments.

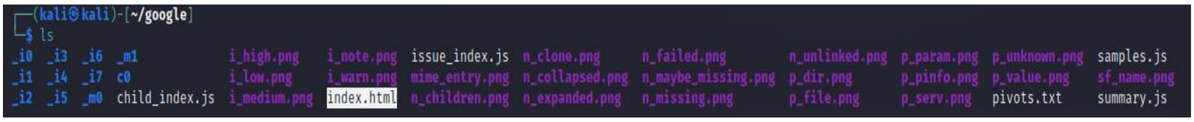


```
skipfish version 2.10b by lcamtuf@google.com

  - 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' [0×eeae0159].
[+] 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.

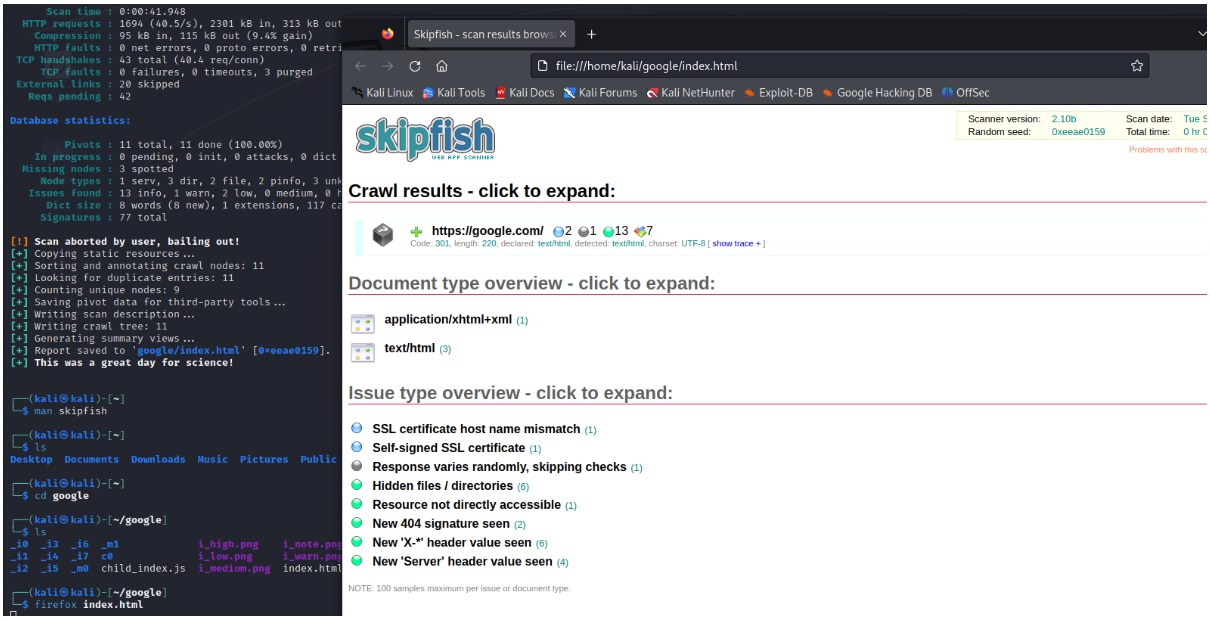


```
┌──(kali㉿kali)-[~]
└─$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos  google
```



```
┌──(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



```
        Scan time : 0:00:41.948
    HTTP requests : 1694 (40.5/s), 2301 kB in, 313 kB out
      Compression : 95 kB in, 115 kB out (9.4% gain)
      HTTP faults : 0 net errors, 0 proto errors, 0 retri
   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 unk
     Issues found : 13 info, 1 warn, 2 low, 0 medium, 0 h
        Dict size : 8 words (8 new), 1 extensions, 117 ca
       Signatures : 77 total

[!] Scan aborted by user, bailing out!
[+] Copying static resources ...
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[+] 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' [0×eeae0159].
[+] This was a great day for science!


┌──(kali㉿kali)-[~]
└─$ man skipfish

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

┌──(kali㉿kali)-[~]
└─$ cd google

┌──(kali㉿kali)-[~/google]
└─$ ls
_i0  _i3  _i6  _m1             i_high.png    i_note.png
_i1  _i4  _i7  c0              i_low.png     i_warn.png
_i2  _i5  _m0  child_index.js  i_medium.png  index.html

┌──(kali㉿kali)-[~/google]
└─$ firefox index.html
```

Scanner version: 2.10b Scan date: Tue S
Random seed: 0xeeae0159 Total time: 0 hr (

Problems with this sc

Crawl results - click to expand:

https://google.com/ 2 1 13 7
Code: 301, length: 220, declared: text/html, detected: text/html, charset: UTF-8 [show trace +]

Document type overview - click to expand:

application/xhtml+xml (1)

text/html (3)

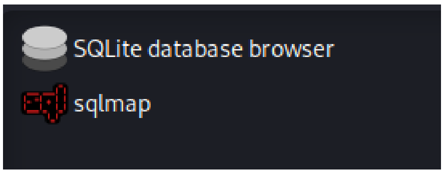
Issue type overview - click to expand:

- SSL certificate host name mismatch (1)
- Self-signed SSL certificate (1)
- Response varies randomly, skipping checks (1)
- Hidden files / directories (6)
- Resource not directly accessible (1)
- New 404 signature seen (2)
- New 'X-*' header value seen (6)
- New 'Server' header value seen (4)

NOTE: 100 samples maximum per issue or document type.

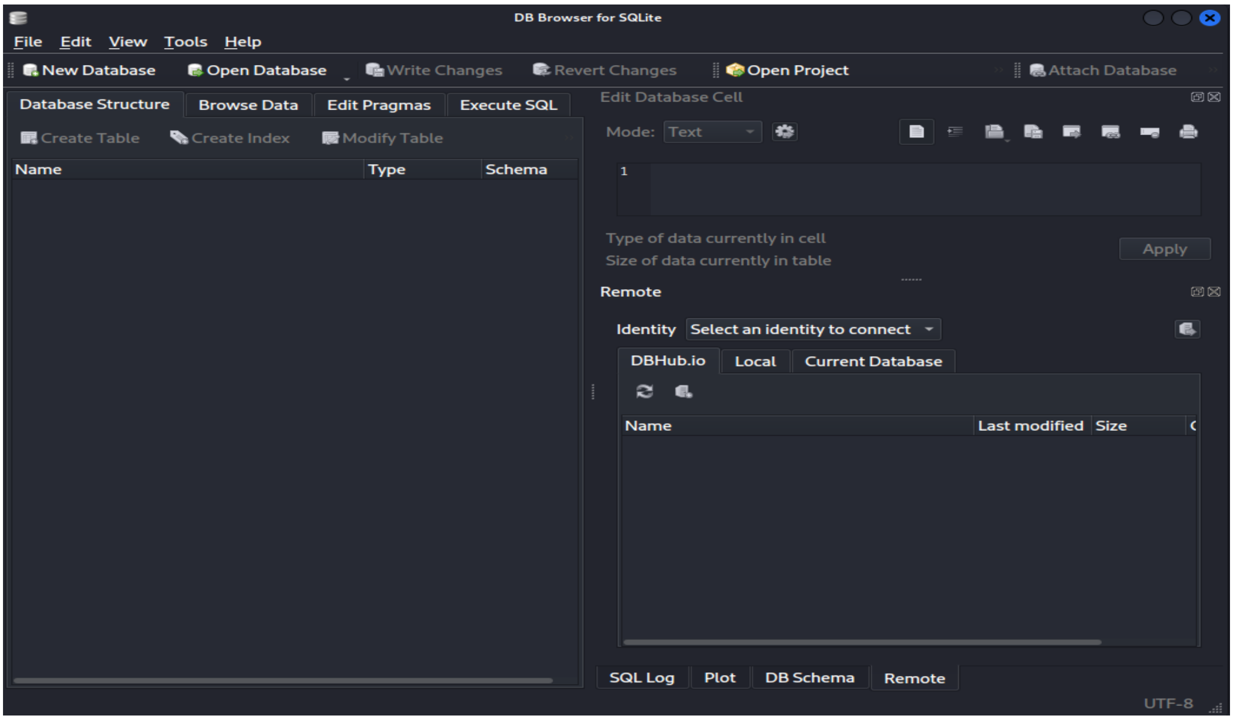
4. Database assessment

These are all the tools available under this section



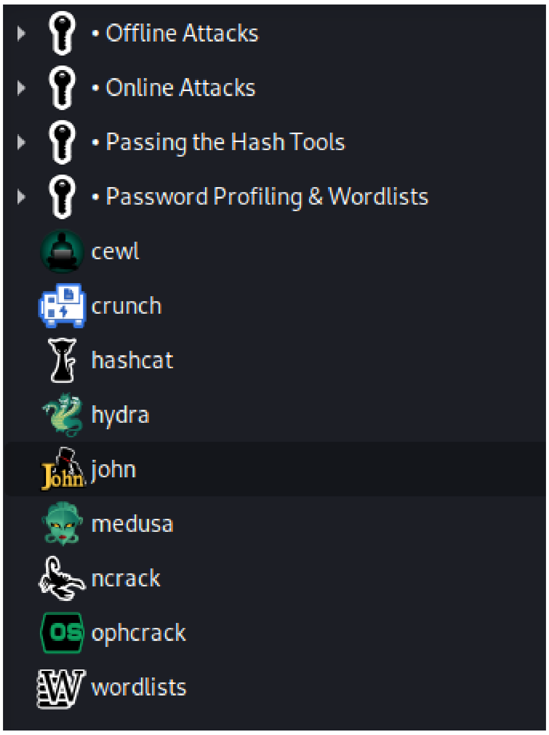
SQlite database browser:

SQLite Database Browser, also known as DB Browser for SQLite, is an open-source graphical user interface (GUI) tool for working with SQLite databases on Linux and other platforms. SQLite is a popular and lightweight relational database management system often used in embedded systems, mobile applications, and desktop software.



5. Password attacks

These are all the tools available under this section

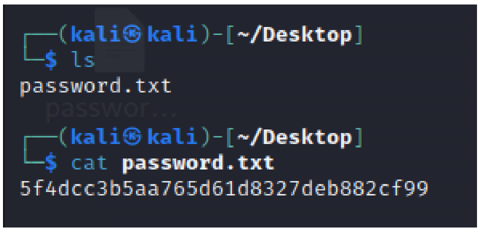


John the ripper:
This manual page documents briefly the john command. This manual page was written for the Debian GNU/Linux distribution because the original program does not have a manual page. john, better known as John the Ripper, is a tool to find weak passwords of users in a server. John can use a dictionary or some search pattern as well as a password file to check for passwords. John supports different cracking modes and understands many ciphertext formats, like several DES variants, MD5 and blowfish. It can also be used to extract AFS and Windows NT passwords.

To use John, you just need to supply it a password file and the desired options. If no mode is specified, john will try "single" first, then "wordlist" and finally "incremental".

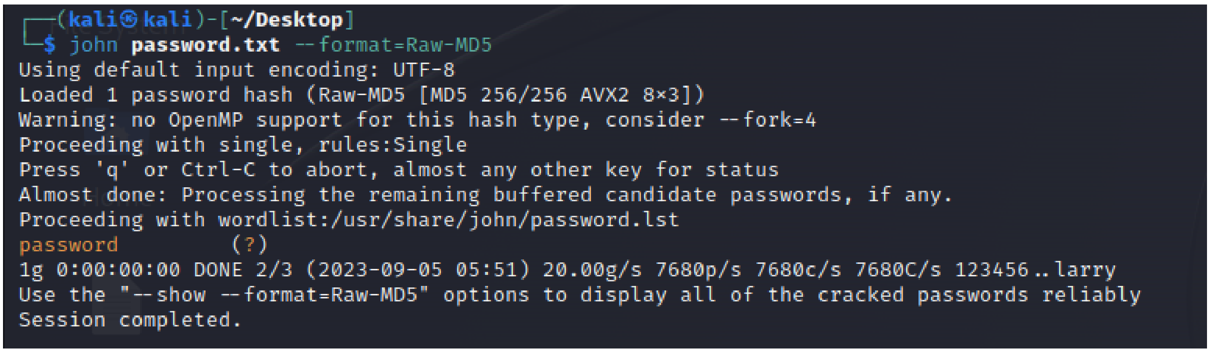
Once John finds a password, it will be printed to the terminal and saved into a file called ~/.john/john.pot. John will read this file when it restarts so it doesn't try to crack already done passwords.

First, create a text file with some md5 hash generated text in it.



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

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

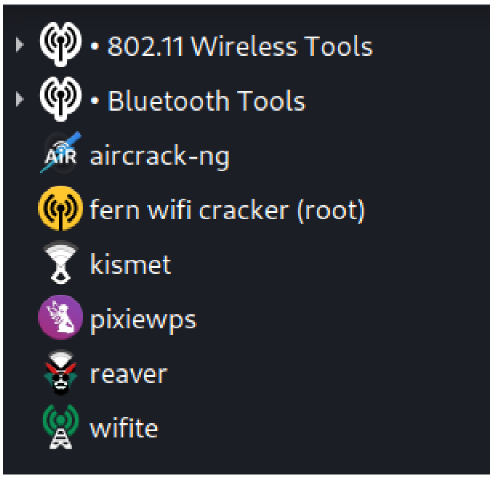
Now we have to use John the ripper to decrypt the text



```
┌──(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.
```

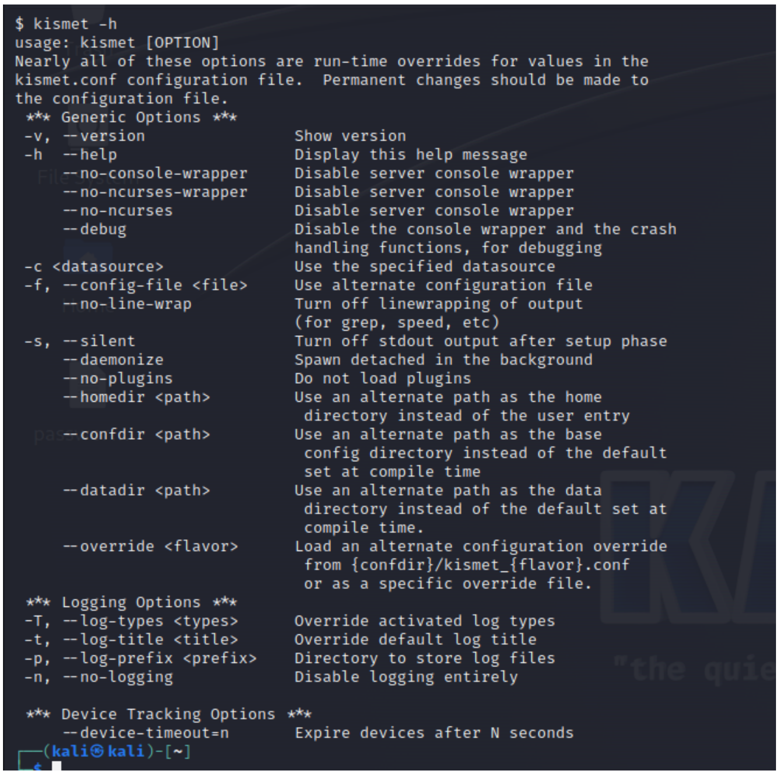
6. Wireless attacks

These are all the tools available under this section



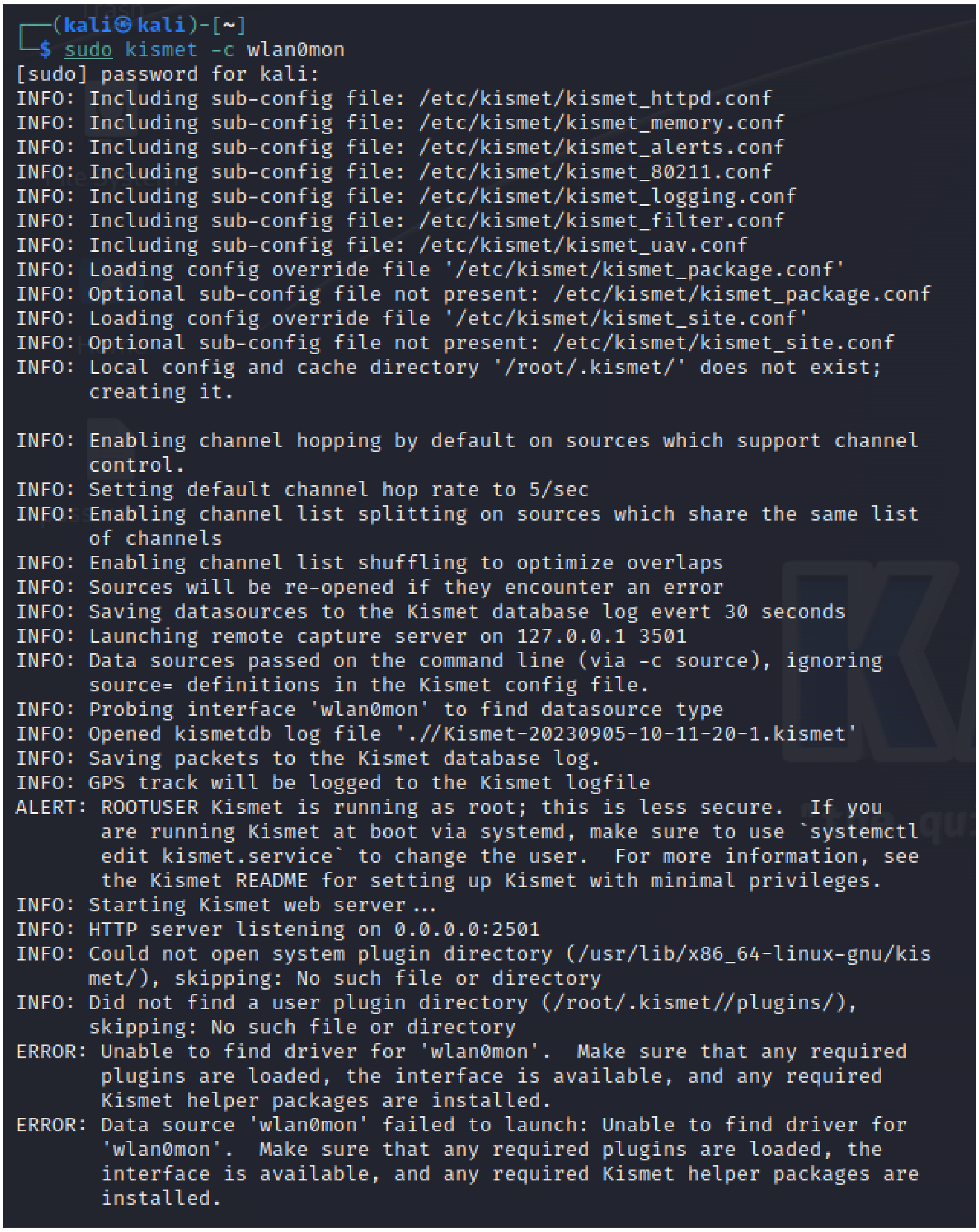
Kismet:

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.



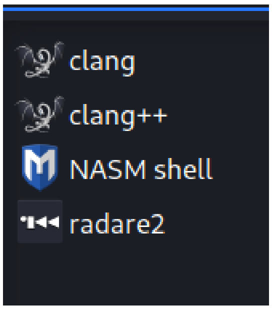
```
$ kismet -h
usage: kismet [OPTION]
Nearly all of these options are run-time overrides for values in the
kismet.conf configuration file.  Permanent changes should be made to
the configuration file.
 *** Generic Options ***
 -v, --version                Show version
 -h  --help                   Display 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



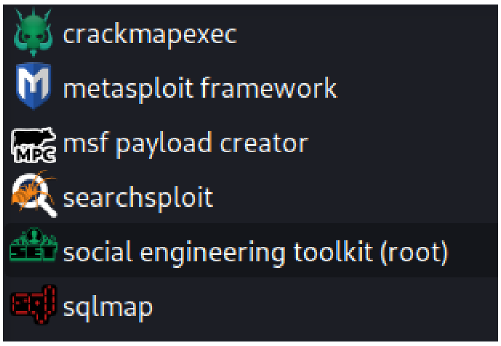
```
┌──(kali㉿kali)-[~]
└─$ sudo kismet -c wlan0mon
[sudo] password for kali:
INFO: Including sub-config file: /etc/kismet/kismet_httpd.conf
INFO: Including sub-config file: /etc/kismet/kismet_memory.conf
INFO: Including sub-config file: /etc/kismet/kismet_alerts.conf
INFO: Including sub-config file: /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

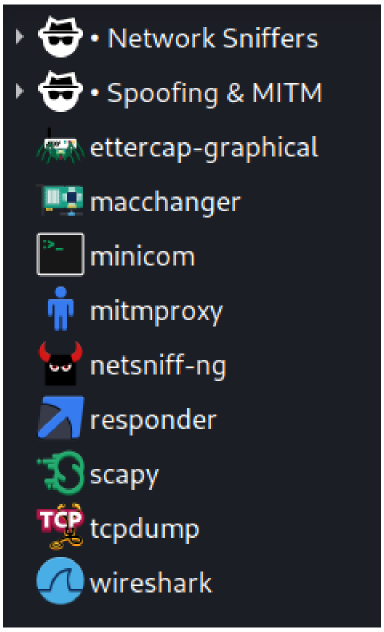
These are all the available tools under this section



- crackmapexec
- metasploit framework
- msf payload creator
- searchsploit
- social engineering toolkit (root)
- sqlmap

9. Sniffing and Spoofing

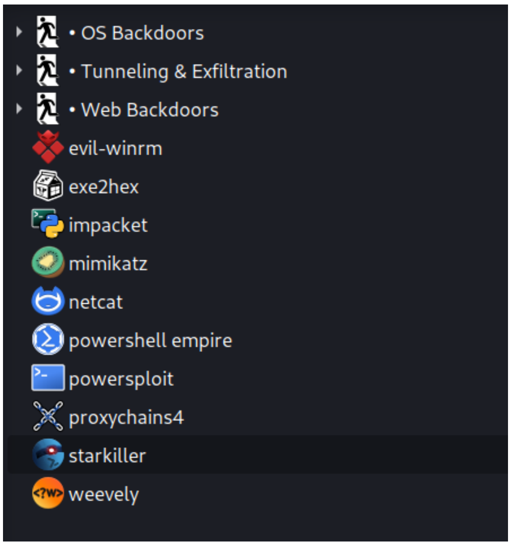
These are all the available tools under this section



- • Network Sniffers
- • Spoofing & MITM
- ettercap-graphical
- macchanger
- minicom
- mitmproxy
- netsniff-ng
- responder
- scapy
- tcpdump
- wireshark

10. Post Exploitation:

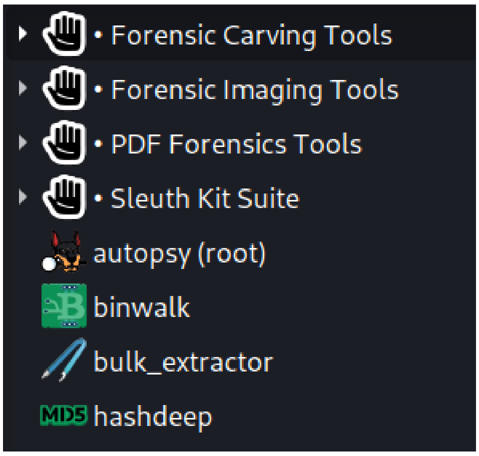
These are all the available tools under this section



- • OS Backdoors
- • Tunneling & Exfiltration
- • Web Backdoors
- evil-winrm
- exe2hex
- impacket
- mimikatz
- netcat
- powershell empire
- powersploit
- proxychains4
- starkiller
- weevely

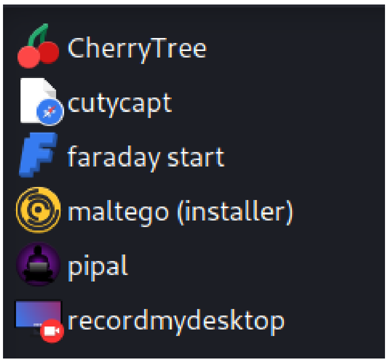
11. Forensics

    These are all the available tools under this section



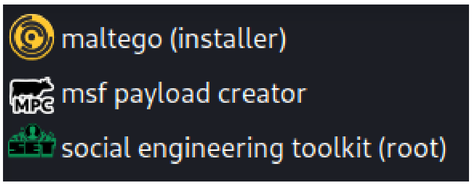
12. Reporting tools

    These are all the available tools under this section



13. Social Engineering tools

These are all the available tools under this section


maltego (installer)
MPC
msf payload creator
SET
social engineering toolkit (root)