

# Wireless Penetration Testing

**SSID** Discovery











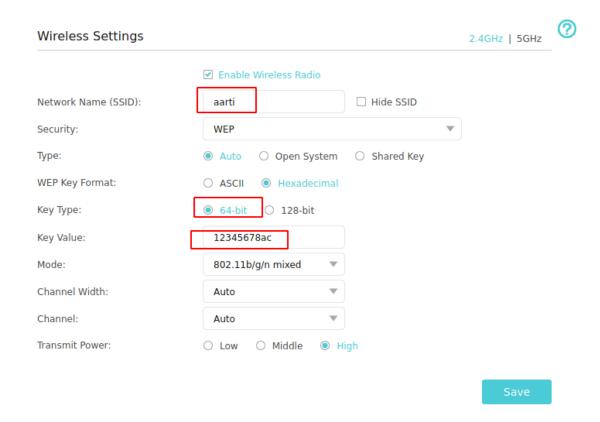
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### Introduction

SSID acronym is used for **Service Set Identifier** also known as the network identification which is the name of the wireless network. This may be viewed by anybody with a wireless device within reach of your network. It could be set up to 32 characters long and are case-sensitive of your choice.



After the network manager has set up the SSID, the router or another Wi-Fi base station broadcasts it to the surrounding region. Then when a device scans the neighboring networks, its SSIDs are displayed—the user only has to pick the one and connect to the device.



In Wi-Fi Pentesting, we need to discover SSID, Security, Channels, and connected client for further exploitation. Through this post, I divulge some tool names that may help you to discover the following:

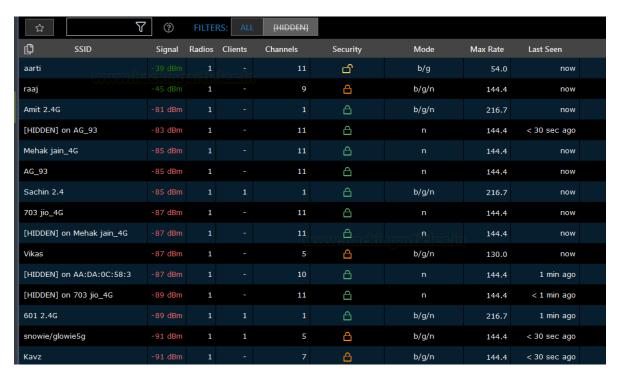
- Wi-Fi Network Name
- MAC Address
- Channel
- Wifi Mode
- Client
- Security

#### inSSIDer

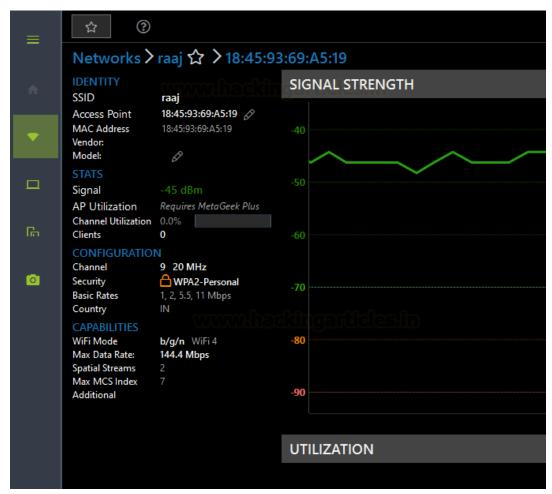
inSSIDer analyzes the configuration of your WiFi including channel settings, security, signal strength, and the impact of neighboring WiFi networks. It is easy to install and use for enumeration neighboring WiFi networks.

Download it from here





After execution, it will list all SSIDs and select an SSID in which you are interested.



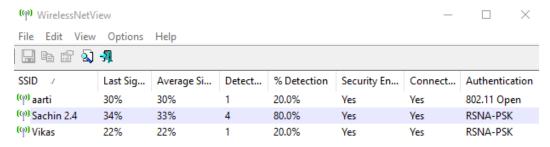


#### Wireless NetView

Wireless NetView is a small utility that runs in the background and monitors the activity of wireless networks around you. For each detected network, it displays the following information: SSID, Last Signal Quality, Average Signal Quality, Detection Counter, Authentication Algorithm, Cipher Algorithm, MAC Address, RSSI, Channel Frequency, Channel Number, and more.

#### Download it from here

This tool is very easy to use, unzip the folder and run the executable file which will start SSID scanning and will list neighboring Wi-Fi networks.





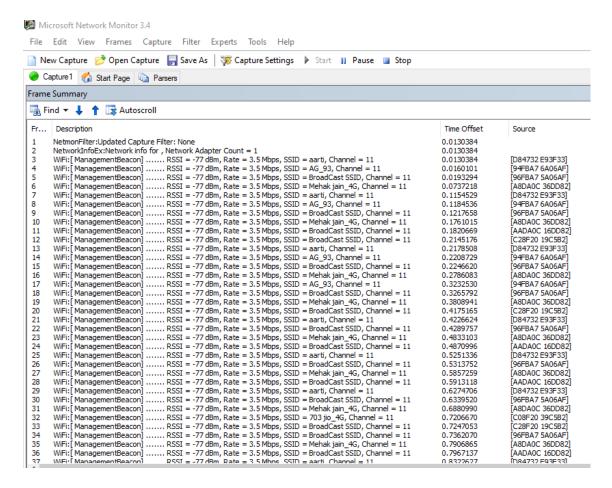
#### **Microsoft Network Monitor**

Microsoft Network Monitor is a tool for viewing the contents of network packets that are being sent and received over a live network connection or from a previously captured data file. It provides filtering options for the complex analysis of network data.

Note: To use this tool you may need an external wi-fi adapter.

You can download it from <a href="here">here</a>:





## **NetSurveyor**

NetSurveyor is a diagnostic tool that falls under the category of WiFi Scanners or 802.11 Network Discovery Tools. The best known in this category is NetStumbler. A discovery tool reports the Service Set Identifier (SSID) for each wireless network it detects, along with the channel used by the access point (AP) servicing that network.

You can download it from <a href="here">here</a>:



	SSID	BSSID (MAC)	Cha	Bea	Beaco	Signal Quality	Radio Type	Encryption	Active
	UNKNOWN_SSID	96:fb:a7:5a:06:af	11	-100	2	No Signal	Unknown	YES	NO
	aarti	d8:47:32:e9:3f:33	11	-39	77	Excellent	OFDM24	YES	YES
	raaj	18:45:93:69:a5:19	9	-45	70	Excellent	Unknown	YES	YES
	UNKNOWN SSID	aa:da:0c:16:dd:82	11	-100	2	No Signal	Unknown	YES	NO
	Amit 2.4G	68:14:01:5a:0e:9c	1	-100	2	No Signal	Unknown	YES	NO
	UNKNOWN_SSID	c2:8f:20:19:c5:b2	11	-100	2	No Signal	Unknown	YES	NO
	Sachin 2.4	40:49:0f:3c:49:88	1	-77	30	Low	Unknown	YES	YES
	AG_93	94:fb:a7:6a:06:af	11	-100	2	No Signal	Unknown	YES	NO
	A602_4G	a8:da:0c:78:34:fe	10	-100	2	No Signal	Unknown	YES	NO
	ajoy	70:c7:f2:ed:6a:44	4	-100	2	No Signal	Unknown	YES	NO
	Vikas	30:cc:21:e3:47:88	8	-85	20	Very Low	Unknown	YES	YES
	Mehak jain_4G	a8:da:0c:36:dd:82	11	-100	2	No Signal	Unknown	YES	NO
	703 jio_4G	c0:8f:20:39:c5:b2	11	-100	2	No Signal	Unknown	YES	NO
	snowie/glowie5g	6c:eb:b6:2f:83:34	5	-100	2	No Signal	Unknown	YES	NO
	UNKNOWN_SSID	aa:da:0c:1c:fc:a3	1	-89	16	Very Low	Unknown	YES	YES
	Kavz	74:5a:aa:76:66:44	7	-100	2	No Signal	Unknown	YES	NO
	Tan_4	a8:da:0c:1c:fc:a3	1	-100	2	No Signal	Unknown	YES	NO
	UNKNOWN_SSID	aa:da:0c:58:34:fe	10	-100	2	No Signal	Unknown	YES	NO

#### **Kismet**

Kismet is an 802.11 layer-2 wireless network and device detector, sniffer, wardriving tool, and WIDS (wireless intrusion detection) framework. Kismet works with Wi-Fi interfaces, Bluetooth interfaces, some SDR (software-defined radio) hardware like the RTLSDR, and other specialized capture hardware. Kismet works on Linux, OSX, and, to a degree, Windows 10 under the WSL framework.

Start the Kismet server, using the wireless interface as the capture source (-c wlan0mon)

Note: To use this tool you may need an external wi-fi adapter.

kismet -c wlan0mon

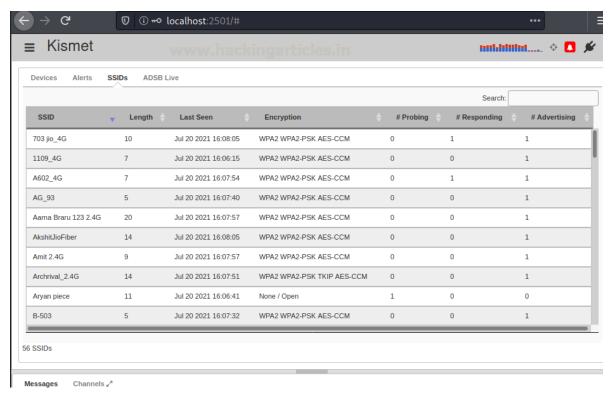


The service will be running at localhost on port 2501 which is accessible through web browser *http://localhost:2501* 



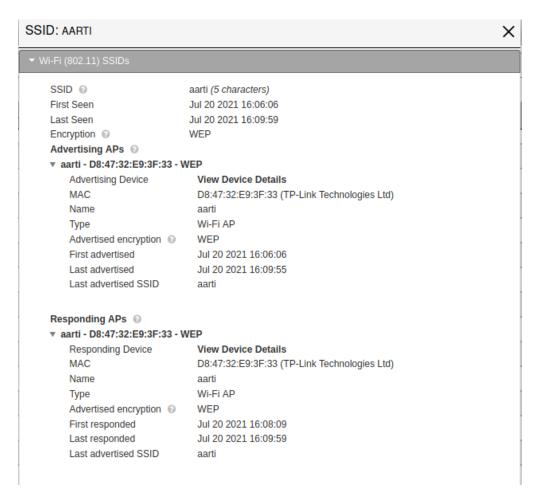
```
KISMET - Point your browser to http://localhost:2501 (or the address of this system) for
INFO: Registered PHY handler 'BTLE' as ID 6
INFO: Registered PHY handler 'RTLAMR' as ID 7
INFO: Indexing ADSB ICAO db
INFO: Completed indexing ADSB ICAO db, 322495 lines 6450 indexes
INFO: Registered PHY handler 'RTLADSB' as ID 8
INFO: Registered PHY handler '802.15.4' as ID 9
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/).
```

Kismet will enumerate neighboring WiFi networks along with their MAC address and Encryption type.



If you choose any Network ID it will depict the Wi-Fi configuration details. As you can see, we are interested in "SSID: AARTI" that has WEP encryptions (less secure and highly exploitable).





# Airodump-ng

Airodump-ng is included in the aircrack-ng package and is used for packet capturing of raw 802.11 frames. It is ideal for collecting WEP IVs for use with aircrack-ng. If you have a GPS receiver connected to the computer, airodump-ng can log the coordinates of the discovered access points.

Note: To use this tool you may need an external wi-fi adapter.

airodump-ng wlan0mon

```
root to kali)-[~]
# airodump-ng wlan0mon
```

The following command monitors all wireless networks, frequency hopping between all wireless channels.



```
CH 11 ][ Elapsed: 6 s ][ 2021-07-20 16:13
                  PWR Beacons
                                  #Data, #/s CH
                                                  MB
                                                       ENC CIPHER AUTH ESSID
F4:79:60:3B:55:58
                                      0
                                          0
                                                 270
                                                       WPA2 CCMP
                                                                   PSK K 307
                                      0
30:CC:21:E8:8E:EA -73
                                          0
                                                 130
                                                       WPA2 CCMP
                                                                   PSK
                                                                       Abhiraj
AA:DA:0C:58:34:FE
                                                       WPA2 CCMP
                                                 130
                                                                   PSK
                                                                        <length:
                                                                        <length:
98:35:ED:D9:A1:B8
                             0
                                      0
                                          0
                                                                                  0>
                                                 130
                                                       WPA2 CCMP
                                                                   PSK
18:45:93:69:A5:19 -21
                                          0
                                                                        raaj
                                                                       Amit 2.4G
68:14:01:5A:0E:9C
                                          0
                                                 195
                                                       WPA2 CCMP
                                                                   PSK
70:C7:F2:ED:6A:44
                                          0
                                                 130
                                                       WPA2 CCMP
                                                                   PSK
                                                                        ajoy
1A:59:C0:33:EB:8A -67
                                                       WPA2 CCMP
                                                                        riddikenator@orbi
                                     4
                                                 360
                                                                   PSK
                                          0
E8:D0:B9:A3:12:F9
                                                 270
                                                       WPA2 CCMP
                                                                   PSK
                                                                        Jasmeen_2G
AC:37:28:64:D5:C9
                  -70
                             0
                                     0
                                          0
                                                 130
                                                       WPA2 CCMP
                                                                   PSK
                                                                       Abhiaka
04:95:E6:63:6F:D8
                                                  130
                                                       WPA2 CCMP
                                                                   PSK
                                                                        B-503
B0:08:75:19:83:50
                                                       WPA2 CCMP
                                      0
                                          Ø
                                                 130
                                                                   PSK
                                                                        Mayank-A
                                              4
BSSID
                  STATION
                                     PWR
                                           Rate
                                                  Lost
                                                          Frames
                                                                  Notes Probes
98:35:ED:D9:A1:B8 52:83:23:F2:A8:94
                                           0 - 1
                                                      0
(not associated)
                  38:A4:ED:CF:8E:8D
                                    -48
                                           0 - 1
                                           0 - 1
                  CA:7B:54:EE:02:1D
                                    -70
                                                     10
                                                                         Kavz_5G
(not associated)
(not associated)
                  96:D9:7A:8D:95:18
                                    -74
                                                      0
(not associated)
                  F8:E4:E3:9E:24:9C
                                     -76
                                                                         MetNet
                                                      0
-20
                                                    126
                                                               8
```

#### Wash

Wash is a tool for discovering WPS-enabled access points. It may either survey from a live interface or scan a list of pcap files. Wash is included in the Reaver package. It comes preinstalled in Kali Linux and you can execute the following command for SSID discovery.

```
wash -i wlan0mon
```

Note: To use this tool you may need an external wi-fi adapter.

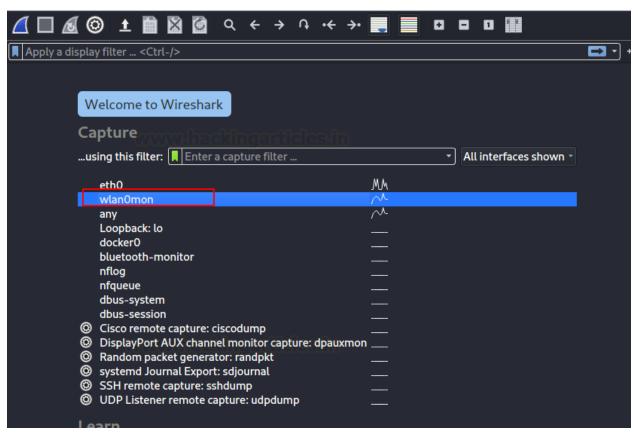
```
0
   wash -i wlan0mon
BSSID
                   Ch dBm WPS Lck Vendor
                                                ESSID
68:14:01:5A:0E:9C
                    1
                      -65
                                      Broadcom Amit 2.4G
                            2.0
                                 No
68:14:01:0B:BB:B5
                       -71
                            2.0
                                 No
                                      Broadcom
                                                Aarna Braru 123 2.4G
96:FB:A7:54:C1:F4
                            1.0
                                 No
                                      RalinkTe
                                                (null)
68:14:01:34:B9:E3
                       -71
                            2.0
                                      Broadcom JioFiber-QwXYk
                                 No
40:49:0F:3C:49:88
                            2.0
                                      Broadcom
                                                Sachin 2.4
                                 No
                    1 -69
68:14:01:6A:F1:57
                            2.0
                                 No
                                      Broadcom
                                                Jas303 2.4G
                                      Broadcom Vikash jio_4G
                    1 -75
18:82:8C:F2:5C:C8
                            2.0
                                 No
                    1 -79
                                      Broadcom Mohsinhind 2.4 G
68:14:01:35:45:96
                            2.0
                                 No
40:49:0F:0A:AB:D6
                    1 -75
                                      Broadcom 203 Jio 2.4 G
                            2.0
                                 No
                    1 -75 2.0
                                      Broadcom 1109_4G
A8:DA:0C:B3:65:99
                                 No
                    1 -79
18:82:8C:ED:86:CA
                            2.0
                                      Broadcom Marvel
                                 No
68:14:01:3A:AF:3A
                       -75
                                                Durgesh 2.4G
                            2.0
                                 No
                                      Broadcom
96:FB:A7:54:F1:26
                    2 -75
                            1.0
                                 No
                                      RalinkTe
                                                (null)
94:FB:A7:64:F1:26
                     2
                       -75
                            1.0
                                 No
                                      RalinkTe
                                                Ankush 4G
30:CC:21:E3:47:88
                    3 -49
                            2.0
```



#### Wireshark

Wireshark is the world's foremost and widely-used network protocol analyzer. It lets you see what's happening on your network at a microscopic level. It is also WAN/LAN Analyzer and Decryption support for many protocols, including IPsec, ISAKMP, Kerberos, SNMPv3, SSL/TLS, WEP, and WPA/WPA2

Note: To use this tool you may need an external wi-fi adapter for SSID discovery.



Start Wireshark and choose the interface for the Wi-Fi adapter and it will list all network ID available in the surroundings.

