The “Art” of Hacking Ethically

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root@kali: /whoami

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AN **ETHICAL HACKER**!

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So, what exactly is an Ethical Hacker?

"…Ethical Hacker is a skilled professional who understands and knows how to look for weaknesses and vulnerabilities in target systems and uses the same knowledge and tools as a malicious hacker, but in a lawful and legitimate manner to assess the security posture of a target system(s)..."

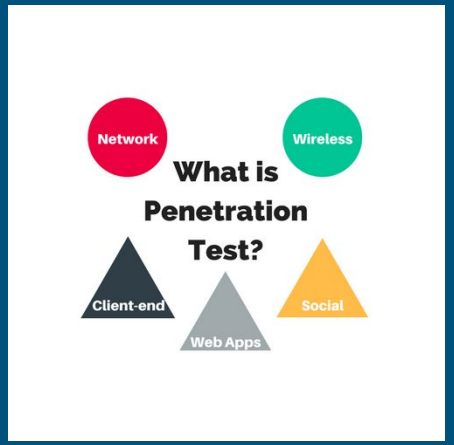
— EC Council (CEH)

You may be a ‘hacker.’ “Hacking is Progress…”

 # The essence of hacking is finding unintended or overlooked
 # uses for the laws and properties of a given situation and then
 # applying them in new and inventive ways to solve a
 # problem—whatever it may be.
#
—Jon Erickson, THE ART OF EXPLOITATION

Penetration Testing

- **Pen testing** is the **authorized** practice of **testing** a computer system, network or Web application to find vulnerabilities that an attacker could exploit.
- Specialized Operating Systems
  - Kali Linux (which replaced BackTrack in December 2012) based on Debian Linux
  - BackBox based on Ubuntu
  - BlackArch based on Arch Linux
  - Pentoo based on Gentoo Linux
  - WHAX based on Slackware Linux
- Types of Pen Testing
  - Social Engineering
  - Network Services
  - Client End
  - Web Apps
  - Wireless Security
  - Physical



Wireless Exploitation Activity

Disclaimer: ***"With great knowledge comes great responsibility; therefore, I am not responsible for your own actions; I am not a lawyer and can't help you if you don't, so please use this knowledge responsibly and only in an environment you own or educational environment with permission."***

WiFi Network Security

- Open
- WEP
- WPA/WPA-2
  - PSK
  - AES
  - Enterprise

WEP Cracking

- Very weak
- What is happening?

USB-Boot into Kali-Linux

"The quieter you are the more you can hear"

STOP: You may only use your personal device you own or receive prior permission from owner to do this activity.

Windows 10:

1. Search **Advanced Startup Options**
2. Click on **Use a Device**
3. **Select the USB**

Intel Based Mac:

1. **Turn off** computer
2. **Turn on and Hold** down the **Option** key,
3. **Use arrow keys to select USB**, press **Enter**

Other:

1. **Turn off** computer
2. **Turn on & immediately Press the F? Key (Dell is F12) to select "boot from device"**
3. **Use arrow keys to select USB**, press **Enter**

 # Ask for help if needed

Username

root

Password

toor

Three Commands

Open up Terminal, we are going to use three commands to crack the WiFi

root@kali: airmon-ng

root@kali: airodump-ng

root@kali: aircrack-ng

airmon-ng

- *airmon-ng*
  - Show your available interfaces
- *airmon-ng start wlan1*
  - To begin monitoring in promiscuous mode
- You should get an error that tells you there's processes that may interfere
- *kill xxxx*

```
~# airmon-ng check kill
Killing these processes:
PID Name
870 dhclient
1115 wpa_supplicant
```

  - Replace the x's with your process ID
    - NOTE: your PID **will** be different than mine
- *airmon-ng start wlan1*
  - Yes, again, to begin monitoring in promiscuous mode

airodump-ng

- *airodump-ng wlan1mon*
  - Identify the nearby access points
- CTRL+SHIFT+T
  - To open up a new terminal tab
- *airodump-ng –c 6 –w wepcrack --bssid 00:1D:7E:6A:2E:4F wlan1mon*
  - Run airodump-ng on channel 6, writing the files wepcrack*, for the network with the bssid of the MAC address

aircrack-ng

- CTRL+SHIFT+T
  - Open a new terminal tab
- *aircrack-ng wepcrack-01.cap*
  - This will start cracking the capture file

Deeper Resources:

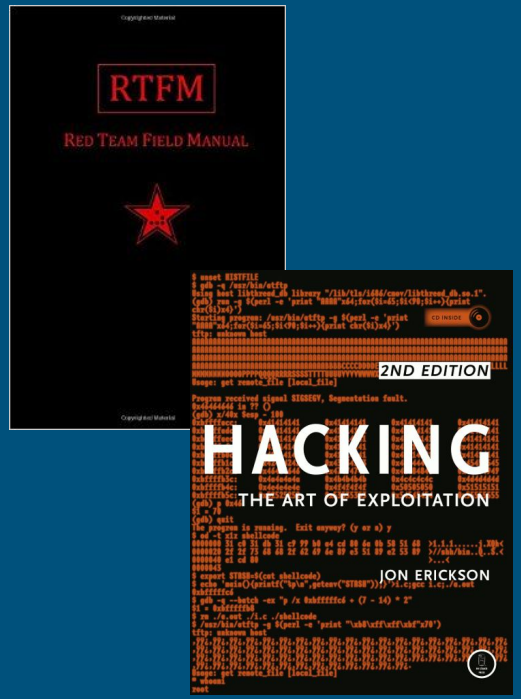
Get involved professionally:

- **Cybersecurity/Networking/IT Continuing Education Certifications:**
  - **CompTIA** - Computer Technology Association
    - CompTIA Security+ce
    - **CSA** CompTIA Security Analyst+ce
    - **CASP -** CompTIA Security Practitioner
  - **EC-Council**
    - **CEH** - Computer Ethical Hacker Certification
  - **Cisco / IC²** (CISSP) - Cisco Certified Information Security Professional

Deeper Resources:

Gain more raw knowledge. (Tools)

- **The Art of Exploitation** – Probably one of the best text books out there
  - io.hanselwei.me/hackingart
- **Red Team Field Manual** / **Blue Team Field Manual**
  - io.hanselwei.me/redteamfm
  - io.hanselwei.me/blueteamfm
- **Kali-Linux** - The Linux distribution with all pre-packaged hacking tools
  - Kalilinux.org



Deeper Resources:

Get involved in an ethical hacking community.

- **49th Security Division @ UNC Charlotte** – Free zero to hero Ethical Hacking Events, Friendly CTF Competitions, and Conferences 2-3 times a week to dive even deeper in ethical hacking and even in a secure lab environment.
  - To receive an interest form to join our Slack,
    - Email: 49securitydivision@gmail.com
    - Subject: Winthrop GenCyber
  - Our Website & Social Media
    - Website: https://www.49sd.com/
    - Twitter: @49sd

Contact me:

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