RECONNAISSANCE

(**Nmap** - The Active Eye of The Pentester)

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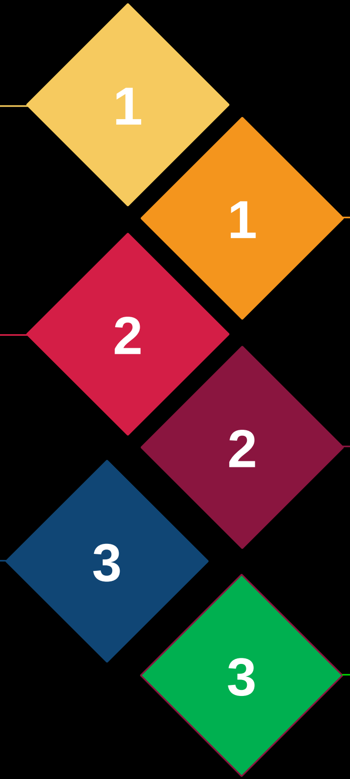
Who AM I

- ERIC NII SOWAH BADGER (NiiHack)
- S.O.C. Specialist (Pentest) at GCB Bank Ltd
- Consultant for Inveteck Global
- LinkedIn: Eric Nii Sowah Badger
- TWITTER: ens_nii
- Personal Website: https://www.niihackgh.com
- Inveteck Global Website: https://www.inveteckglobal.com

Reconnaissance – What it is

- Information Gathering and getting to know the target systems is the first process in ethical hacking / the cyber kill chain
- Reconnaissance is a set of processes and techniques (Footprinting, Scanning & Enumeration) used to covertly discover and collect information about a target system
- Ethical hackers attempt to gather as much information about a target system as possible during the reconnaissance stage.
- Reconnaissance is always the eye of the Ethical Hacker

Types of Reconnaissance



PASSIVE

This is the process of gathering information where there is no direct connection to the target.

PASSIVE

This is a form of targeted information data collection that takes place when an individual’s personal data, such as password, is stolen without the targeted individual’s knowledge.

PASSIVE

This can take place when the hacker is sifting through the target’s garbage in order to obtain discarded papers.

ACTIVE

This is the process of directly interacting or engaging with the targeted system to gain information.

ACTIVE

This type of recon gathers information about the target by probing the targeted system.

ACTIVE

This type of recon is faster to perform and generally yields more actionable information than passive recon

Passive Reconnaissance Tools

WIRESHARK

This is best known as network traffic analysis tool. This tool can be used to eavesdrop on the network traffic of a company

GOOGLE

Google can provide a vast amount of information on a variety of topic. By using specialized google queries (google dorking), you can gather sensitive information for attacking your target.

(eg. Index of /Hollywood)

FINDSUBDOMAINS.COM

This is one example of a variety of different websites designed to help identify website that belong to an organization.

VIRUSTOTAL

This is a website designed to help with analysis of potential malicious files.

SHODAN

This is a search engine for internet-connect devices.

Active Reconnaissance Tools

1 NMAP

This is probably the most well-known tool for active network reconnaissance

2 NESSUS

This is a commercial vulnerability scnner used to identify vulnerable applications running on a system.

3 OPENVAS

This is a vulnerability scanner that was developed in response to the commercialization of Nessus.

4 NIKTO

This is a web server vulnerability scanner that can be used for reconnaissance in a manner similar to Nessus and OpenVAS.

5 METASPLOIT

This is primarily designed as an exploitation toolkit.

NMAP – The Active eye

- When it comes to hacking, knowledge is power. The more knowledge you have about a target system or network, the more options you have available.
- Nmap (Network Mapper) is a free and open source (license) utility for network discovery and security auditing.
- Nmap was named "Security Product of the Year" by Linux Journal, Info World, LinuxQuestions.Org, and Codetalker Digest.
- Like most pentesting tools, nmap is run from the terminal. Nmap is probably the most famous reconnaissance tool among Pentesters and Hacker.

Nmap is …

POWERFUL

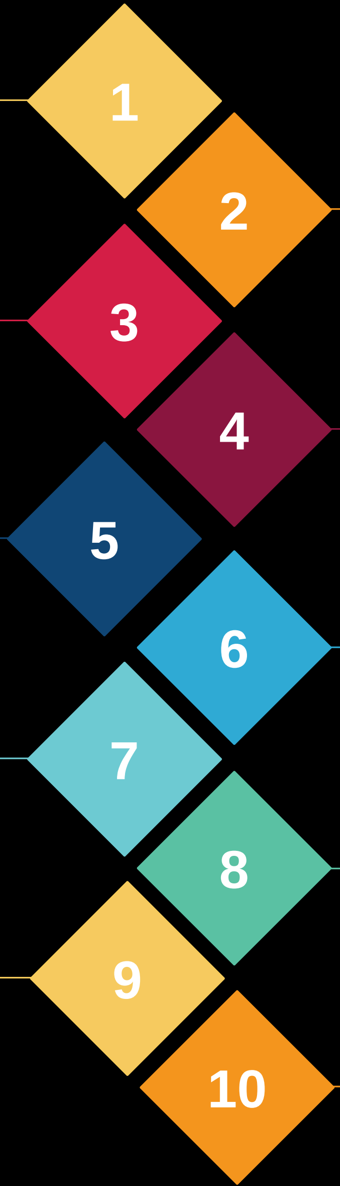
EASY

FLEXIBLE

FREE

POPULAR

Nmap Switches



-h
Print a help summary page

-sS
Perform a TCP SYN scan

-sU
Perform a UDP scan

-sV
Probe open ports to determine service/version info

-O
Enable OS detection

-v
Enable verbosity

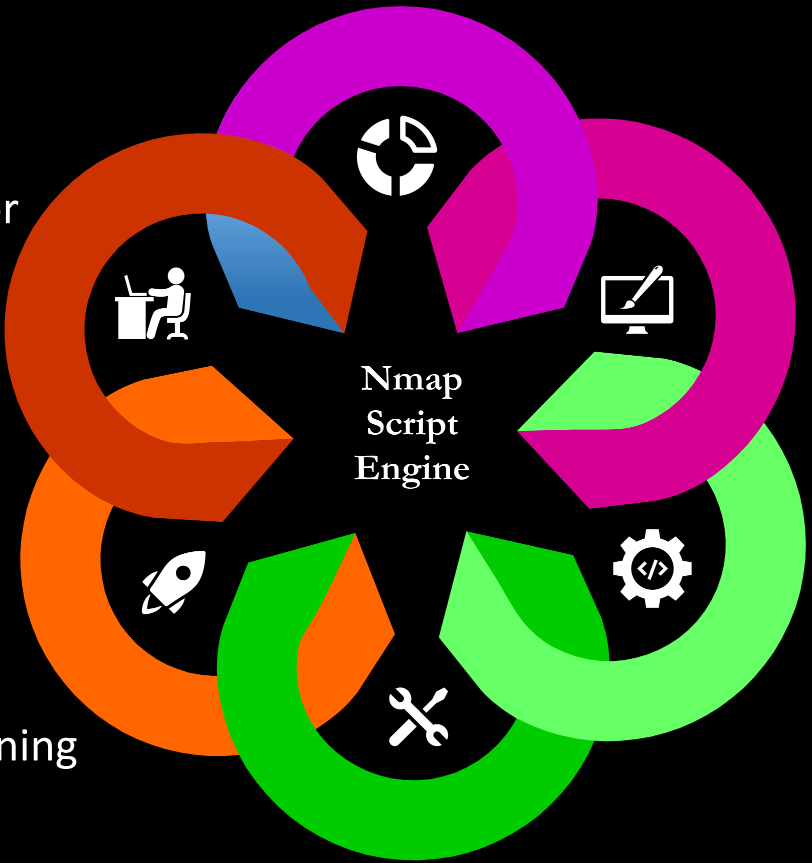
-oN
•Redirect normal output to a given filename

-oX
Produce output in a clean, XML format and store it in a given file

-p-
Perform a full port scan

-A
Enables “aggressive” scanning.

Nmap Script Engine (NSE)



1. SAFE

Won’t affect the target

2. INTRUSIVE

Not safe: likely to affect the target

3. VULN

Scan for vulnerabilities

4. EXPLOIT

Try to exploit a vulnerability

5. AUTH

Attempt to bypass authentication for running services

6. BRUTE

Try to brute force credentials for running services

PRACTICALS

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Practicals

- Nmap Scanning using switches (-v –sV, -A , etc)
- Nmap Scanning to detect anonymous ftp login
- NSE scanning to exploit Eternal Blue Vulnerability
- How to use nmap –h (help) switch to your advantage.

References

- Nmap - Switches and Scan Types in Nmap – JournalDev
- TryHackMe | Nmap
- Nmap: the Network Mapper - Free Security Scanner
- Ethical Hacking - Reconnaissance (tutorialspoint.com)
- Reconnaissance in The Cyber Kill Chain - Cyber Security Insights (stunsnroses.tech)
- https://github.com/inveteck/cybersecurtiy-presentations

Questions

Thank You