SYNOPSIS ON

Cyber Security Tools

Submitted By:

Anirudh Kumar Kushwaha
181500093
B. Tech CSE – 3K

Submitted To:

Mr. Piyush Vashishth

Problem Statement

Over the years, the term Cyber Security has gained much importance and become a common part of each one's life who is associated with a computer or a smartphone device.
When people submit their data online, it becomes vulnerable to cyber-attacks or cyber-crimes. Moreover, cyber-attacks can happen over an external facing DNS server or an internal firewall, which in turn effects the data and infrastructure within the enterprise that inherently causes significant damage to the business of the associated organization.

Cyber Security involves protecting key information and devices from cyber threats. Lot of money are invested in protecting all this information in an online platform. With the number of people accessing the information online increasing each day, threats to the information are also increasing, with the cost of online crimes estimated in billions.

Reasons for Selecting this Topic

As we are heading towards digital era where everything is being done online from banking to shopping, we need to be more careful than ever. With a little cyber awareness, we can lead a proper and safe digital life.

Creating such tools doesn't only help us in Penetration Testing but also helps us to know how things actually work.

Objective of this Project

This project will be combination of various tools such as: -

- MAC Changer
- Network Scanner
- ARP Spoofer
- DNS Spoofer
- Web Crawler

Tools mentioned above will be fully interactive

Methodology

Each tool will have their own independent implementation

- MAC Changer – Spoofed Packets
- Network Scanner – Pinging all IPs
- ARP Spoofer – Spoofed Packets
- DNS Spoofer – MITM, Spoofed Packets
- Web Crawler – GET requests on a list of sub-domains

Hardware and Software to be Used

Language -
Python 3.x

Software Used -
Visual Studio Code, Firefox Browser, Kali OS

Hardware Used -
Lenovo IdeaPad 330, 12GB DDR3 RAM, 2TB HDD, Intel I-5 8th Gen

Testing Techniques to be used

Since most of the tools are network related, they will be tested in a WIFI network with other devices being in the same network.

Web crawler will be tested on various online websites.

What contribution would the project make and where?

All the tools can be used to check if a network is prone to such attacks i.e., they can be used in pen testing/auditing a network of a company.

Web Crawler can be used to find sub-domains of a website and finding hidden URLs/Links. They can also be used to make sure that no sensitive URL is exposed to the public network such as private login page.

Scope for extension into a major project

These mini tools can be combined into a single major application which can single handedly scan a network automatically for any vulnerabilities in a network and generate a scan report based on it.

A VPC tool can also be created which on running would change MAC and DNS of all the devices on the network to a different pre-defined value which would ultimately create a VPC.

Conclusion

After successful completion of this project, we'll gain in-depth knowledge of a basic networking and will be able to perform security audit on a network.