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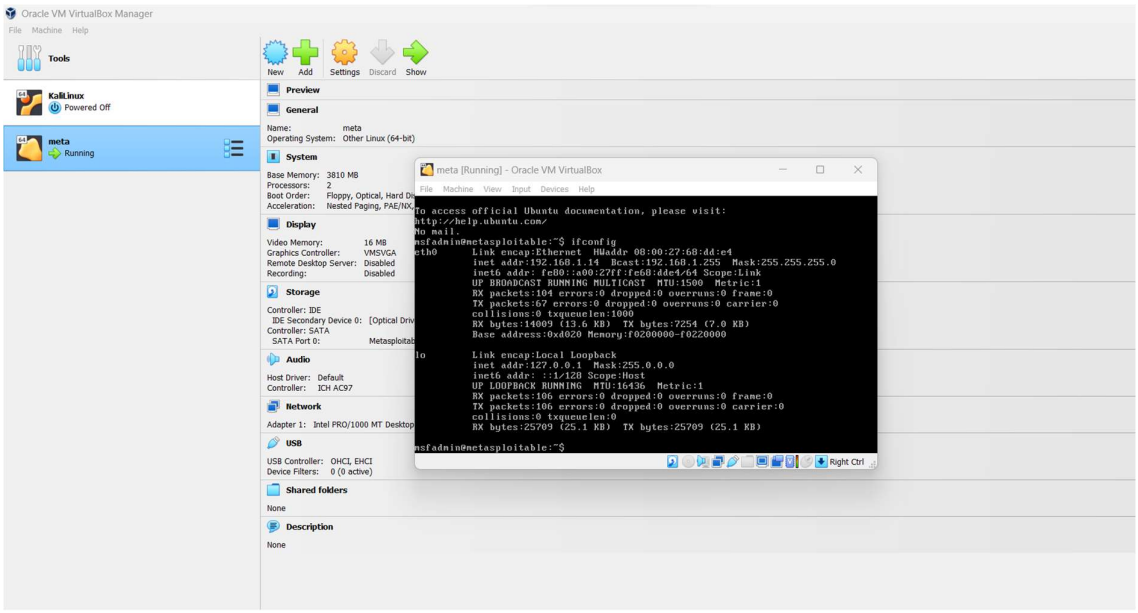
Task – 9

Installation of Metasploit in Virtual box and Exploring Nmap tool

Installing Metasploit in Virtual box :-



Exploring and Executing some Nmap commands in kali Linux.

nmap -A 192.168.1.14 – execute this command in kali Linux CLI

Nmap Cheat Sheet

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Different usage options
Port discovery and specification
Host discovery and specification
Vulnerability scanning
Application and service version detection
Software version detection against the ports
Firewall / IDS Spoofing

Port Specification Options

Syntax	Example	Description
-P	nmap -p 23 172.16.1.1	Port scanning port specific port
-P	nmap -p 23-100 172.16.1.1	Port scanning port specific port range
-p	nmap -pU:110,T:23-25,443 172.16.1.1	U-UDP,T-TCP different port types scan
-p-	nmap -p- 172.16.1.1	Port scan for all ports
-p	nmap -smtp,https 172.16.1.1	Port scan from specified protocols
-F	nmap -F 172.16.1.1	Fast port scan for speed up
-P "*"	namp -p "*" ftp 172.16.1.1	Port scan using name
-r	nmap -r 172.16.1.1	Sequential port scan

Scanning Types

Switch/Syntax	Example	Description
-sS	nmap 172.16.1.1 -sS	TCP SYN port scan
-sT	nmap 172.16.1.1 -sT	TCP connect port scan
-sA	nmap 172.16.1.1 -sA	TCP ACK port scan
-sU	nmap 172.16.1.1 -sU	UDP port scan
-Sf	nmap -Sf 172.16.1.1	TCP FIN scan
-sX	nmap -SX 172.16.1.1	XMAS scan
-Sp	nmap -Sp 172.16.1.1	Ping scan
-sU	nmap -Su 172.16.1.1	UDP scan
-sA	nmap -Sa 172.16.1.1	TCP ACK scan
-SL	nmap -Sl 172.16.1.1	list scan

Host /172.16.1.1 Discovery

Switch/Syntax	Example	Description
-sL	nmap 172.16.1.1-5 -sL	List 172.16.1.1 without scanning
-sn	nmap 172.16.1.1/8 -sn	Disable port scanning
-Pn	nmap 172.16.1.1-8 -Pn	Port scans only and no host discovery
-PS	nmap 172.16.1.185 -PS22-25,80	TCP SYN discovery on specified port
-PA	nmap 172.16.1.185 -PA22-25,80	TCP ACK discovery on specified port
-PU	nmap 172.16.1.1-8 -PU53	UDP discovery on specified port
-PR	nmap 172.16.1.1-1/8 -PR	ARP discovery within local network
-n	nmap 172.16.1.1 -n	no DNS resolution

Scanning Command Syntax

nmap [scan types] [options] {172.16.1.1 specification}

Use of Nmap Scripts NSE

nmap --script= test script 172.16.1.0/24	execute thoe listed script against target IP address
nmap --script-update-db	adding new scripts
nmap -sV -sC	use of safe default scripts for scan
nmap --script-help="Test Script"	get help for script

Version Detection

Switch/Syntax	Example	Description
-sV	nmap 172.16.1.1 -sV	Try to find the version of the service running on port
-sV --version-intensity	nmap 172.16.1.1 -sV --version-intensity 6	Intensity level range 0 to 9.
-sV --version-all	nmap 172.16.1.1 -sV --version-all	Set intensity level to 9
-sV --version-light	nmap 172.16.1.1 -sV --version-light	Enable light mode
-A	nmap 172.16.1.1 -A	Enables OS detection, version detection, script scanning, and traceroute
-O	nmap 172.16.1.1 -O	Remote OS detection

Nmap output Formats

Default/normal output	nmap -oN scan.txt 172.16.1.1
XML	nmap -oX scanr.xml 172.16.1.1
Grepable format	snmap -oG grep.txt 172.16.1.1
All formats	nmap -oA 172.16.1.1

172.16.1.1 Specification

nmap 172.16.1.1	single IP scan
nmap 172.16.1.1 172.16.100.1	scan specific IPs
nmap 172.16.1.1-254	scan a range of IPs
nmap xyz.org	scan a domain
nmap 10.1.1.0/8	scan using CIDR notation
nmap -iL scan.txt	scan 172.16.1.1s from a file
nmap --exclude 172.16.1.1	specified IP s exclude from scan

Firewall Proofing

nmap -f [172.16.1.1]	scan fragment packets
nmap -mtu [MTU] [172.16.1.1]	specify MTU
nmap -sI [zombie] [172.16.1.1]	scan idle zoombie
nmap -source-port [port] [172.16.1.1]	manual source port - specify
nmap -data-length [size] [172.16.1.1]	randomly append data
nmap -randomize-hosts [172.16.1.1]	172.16.1.1 scan order randomization
nmap -badsum [172.16.1.1]	bad checksum

Miscellaneous Commands

nmap -6	scan IPV6 targets
nmap -proxies proxy 1 URL, proxy 2 URL	Run in targets with proxies
nmap -open	Show open ports only

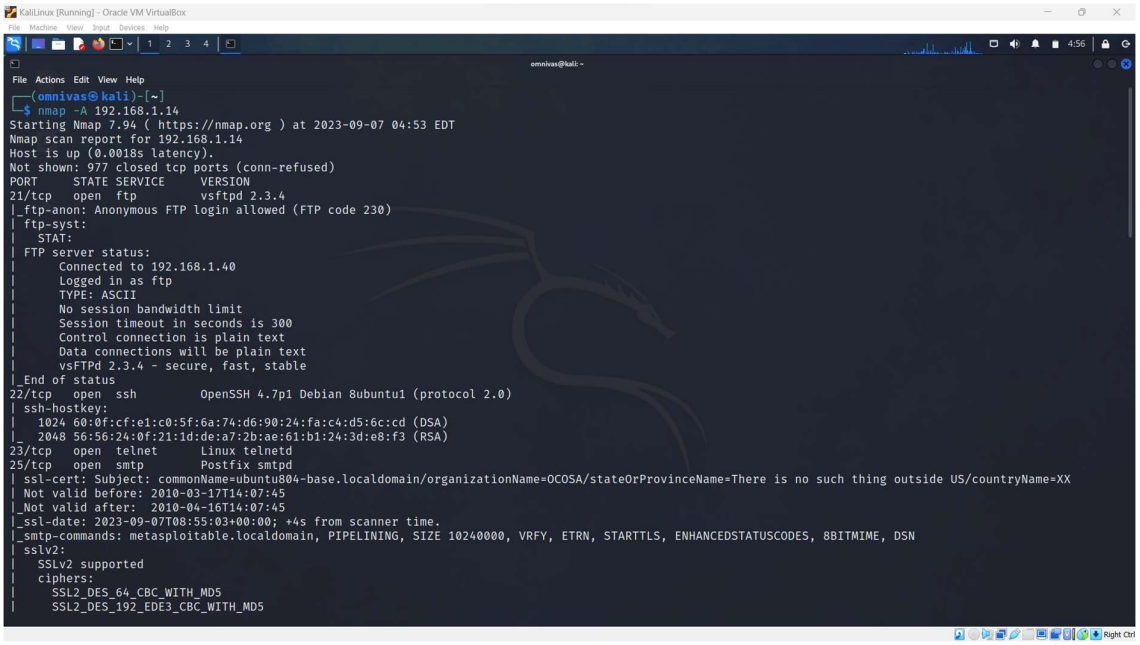
Nmap Timing Options

Syntax	Description
nmap -T0 172.16.1.1	Slowest scan
nmap -T1 172.16.1.1	Tricky scan to avoid IDS
nmap -T2 172.16.1.1	Timely scan
nmap -T3 172.16.1.1	Default scan timer
nmap -T4 172.16.1.1	Aggressive scan
nmap -T5 172.16.1.1	Very aggressive scan

Scan Options

Syntax	Description
nmap -sP 172.16.1.1	Ping scan only
nmap -PU 172.16.1.1	UDP ping scan
nmap -PE 172.16.1.1	ICMP echo ping
nmap -PO 172.16.1.1	IP protocol ping
nmap -PR 172.16.1.1	ARP ping
nmap -Pn 172.16.1.1	Scan without pinging
nmap -traceroute 172.16.1.1	Traceroute

Aggressive Scan in Nmap



Port-Scanning in Nmap

```
┌──(omnivas㉿kali)-[~]
└─$ nmap -p 443 127.0.0.1
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-30 10:59 EDT
Nmap scan report for localhost (127.0.0.1)
Host is up (0.00033s latency).

PORT    STATE  SERVICE
443/tcp closed https

Nmap done: 1 IP address (1 host up) scanned in 0.05 seconds

┌──(omnivas㉿kali)-[~]
└─$ nmap -p 80 127.0.0.1
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-30 11:00 EDT
Nmap scan report for localhost (127.0.0.1)
Host is up (0.00015s latency).

PORT   STATE  SERVICE
80/tcp closed http

Nmap done: 1 IP address (1 host up) scanned in 0.05 seconds
```

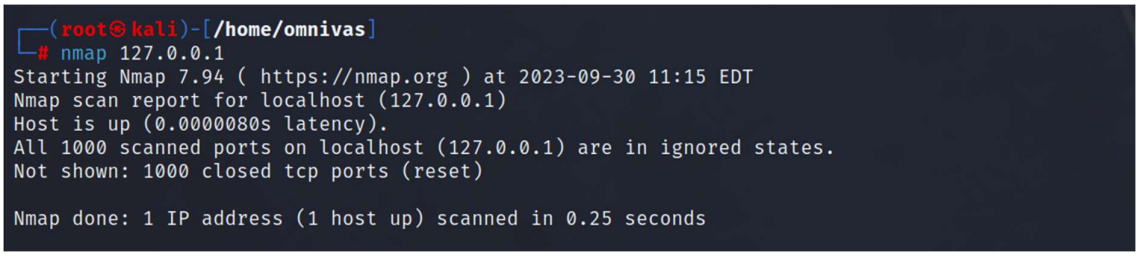
TCP Syn port scan

```
┌──(root㉿kali)-[/home/omnivas]
└─# nmap 127.0.0.1 -sS
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-30 11:01 EDT
Nmap scan report for localhost (127.0.0.1)
Host is up (0.0000080s latency).
All 1000 scanned ports on localhost (127.0.0.1) are in ignored states.
Not shown: 1000 closed tcp ports (reset)

Nmap done: 1 IP address (1 host up) scanned in 0.16 seconds
```

TCP connect port Scan

```
┌──(root㉿kali)-[/home/omnivas]
└─# nmap 127.0.0.1 -sT
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-30 11:03 EDT
Nmap scan report for localhost (127.0.0.1)
Host is up (0.00021s latency).
All 1000 scanned ports on localhost (127.0.0.1) are in ignored states.
Not shown: 1000 closed tcp ports (conn-refused)

Nmap done: 1 IP address (1 host up) scanned in 0.09 seconds
```

Normal Nmap Scanning



And some more commands