

**SIES COLLEGE OF ARTS, SCIENCE & COMMERCE**  
**(EMPOWERED AUTONOMOUS)**  
**SION(W), MUMBAI – 22**

**DEPARTMENT OF INFORMATION TECHNOLOGY**

**M.Sc. (I.T.) PART – II, SEMESTER – IV**

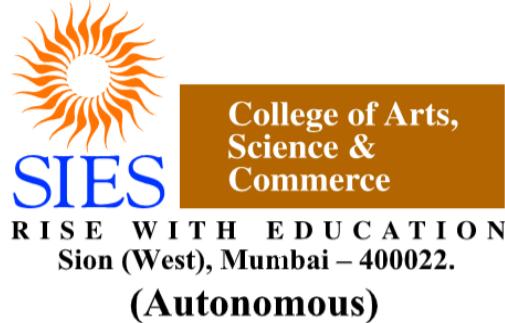
Practical Journal  
for  
the subject

**Ethical Hacking**

Submitted by

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For the academic year  
2023-2024



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**CERTIFICATE**

This is to certify that **Mr. Asai Prathamesh Mangesh** of M.Sc. [Information Technology], Part – II, Seat No. **SMIT2324003** has successfully completed the practicals and submitted it online in Microsoft Teams for the subject of **Ethical Hacking** as a partial fulfilment of the degree M.Sc. (I.T.) during the academic year 2023-24.

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College Seal

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## Practical No. 01 – Utilize the Nessus Vulnerability Scanner

As Nessus is a paid tool, we will be using an alternative tool for vulnerability scanning

Tool Used for this practical is NIKTO

Step 1: Open Kali Linux Vmware

Step 2: Go to Terminal Write a command

\$ nikto

(This command will help you to know different operation you can perform with nikto tool)

```
—(root1㉿kali)-[~]
$ nikto
- Nikto v2.5.0
-----
+ ERROR: No host (-host) specified

Options:
  -ask+          Whether to ask about submitting updates
                 yes   Ask about each (default)
                 no    Don't ask, don't send
                 auto  Don't ask, just send
  -check6         Check if IPv6 is working (connects to ipv6.google.com
or value set in nikto.conf)
  -Cgidirs+       Scan these CGI dirs: "none", "all", or values like "/
cgi/ /cgi-a/"
  -config+        Use this config file
  -Display+       Turn on/off display outputs:
                 1    Show redirects
                 2    Show cookies received
                 3    Show all 200/OK responses
                 4    Show URLs which require authentication
                 D    Debug output
                 E    Display all HTTP errors
```

```

          S    Scrub output of IPs and hostnames
          V    Verbose output
-dbcheck      Check database and other key files for syntax errors
-evasion+     Encoding technique:
              1    Random URI encoding (non-UTF8)
              2    Directory self-reference (./)
              3    Premature URL ending
              4    Prepend long random string
              5    Fake parameter
              6    TAB as request spacer
              7    Change the case of the URL
              8    Use Windows directory separator (\)
              A    Use a carriage return (0x0d) as a request separator
pacer
              B    Use binary value 0x0b as a request spacer
-followredirects   Follow 3xx redirects to new location
-Format+          Save file (-o) format:
                  csv  Comma-separated-value
                  json JSON Format
                  htm HTML Format
                  nbe Nessus NBE format
                  sql Generic SQL (see docs for schema)
                  txt Plain text

```

```

          (if not specified the format will be taken from the file extension passed to -output)
-Host          Target host/URL
-id+           Host authentication to use, format is id:pass or id:pass:realm
               -ipv4        IPv4 Only
               -ipv6        IPv6 Only
               -key+        Client certificate key file
               -list-plugins List all available plugins, perform no testing
               -maxtime+    Maximum testing time per host (e.g., 1h, 60m, 3600s)
               -mutate+     Guess additional file names:
               -mutate-options Provide information for mutates
               -nointeractive Disables interactive features
               -nolookup    Disables DNS lookups
               -nossl       Disables the use of SSL
               -noslash     Strip trailing slash from URL (e.g., '/admin/' to '/admin')
               -no404       Disables nikto attempting to guess a 404 page
               -Option      Over-ride an option in nikto.conf, can be issued multiple times
               -output+     Write output to this file ('.' for auto-name)
               -Pause+      Pause between tests (seconds)

```

```
-ssl          Force ssl mode on port
-Tuning+      Scan tuning:
              1  Interesting File / Seen in logs
              2  Misconfiguration / Default File
              3  Information Disclosure
              4  Injection (XSS/Script/HTML)
              5  Remote File Retrieval - Inside Web Root
              6  Denial of Service
              7  Remote File Retrieval - Server Wide
              8  Command Execution / Remote Shell
              9  SQL Injection
              0  File Upload
              a  Authentication Bypass
              b  Software Identification
              c  Remote Source Inclusion
              d  WebService
              e  Administrative Console
              x  Reverse Tuning Options (i.e., include all e
xcept specified)
-timeout+     Timeout for requests (default 10 seconds)
-Userdbs      Load only user databases, not the standard databases
              all  Disable standard dbs and load only user dbs
              tests Disable only db_tests and load udb_tests
```

### Step 3: Perform a vulnerability scanning for the target organization by writing IP address or host name

```
$ nikto -h siesascs.edu.in
```

```
(root1㉿kali)-[~]
$ nikto -h siesascs.edu.in
- Nikto v2.5.0
-----
+ Target IP:      169.38.89.3
+ Target Hostname: siesascs.edu.in
+ Target Port:    80
+ Start Time:    2024-01-31 15:57:23 (GMT5.5)
-----
+ Server: Microsoft-IIS/10.0
+ /: Retrieved via header: HTTP/1.1 forward.http.proxy:3128.
+ /: Retrieved x-powered-by header: PHP/8.0.0.
+ /: The anti-clickjacking X-Frame-Options header is not present. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Frame-Options
+ /: The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type. See: https://www.netsparker.com/web-vulnerability-scanner/vulnerabilities/missing-content-type-header/
+ /: Cookie PHPSESSID created without the httponly flag. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Cookies
+ Root page / redirects to: https://siesascs.edu.in/
+ No CGI Directories found (use '-C all' to force check all possible dirs)
```

Step 4: Perform a SSL vulnerability scanning for the target organization by writing IP address or host name with -ssl

```
$ nikto -h siesascs.edu.in -ssl
```

```
(root1㉿kali)-[~]
$ nikto -h siesascs.edu.in -ssl
- Nikto v2.5.0
-----
+ Target IP:          169.38.89.3
+ Target Hostname:    siesascs.edu.in
+ Target Port:        443
-----
+ SSL Info:           Subject: /CN=siesascs.edu.in
                      Ciphers: ECDHE-RSA-AES256-GCM-SHA384
                      Issuer:  /C=BE/O=GlobalSign nv-sa/CN=AlphaSSL CA - SHA256 -
G4
+ Start Time:         2024-01-31 16:01:20 (GMT5.5)
-----
+ Server: Microsoft-IIS/10.0
+ /: Retrieved x-powered-by header: PHP/8.0.0.
+ /: The anti-clickjacking X-Frame-Options header is not present. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Frame-Options
+ /: The site uses TLS and the Strict-Transport-Security HTTP header is not defined. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/Strict-Transport-Security
+ /: The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type. See: https://www.netsparker.com/web-vulnerability-scanner/vulnerabilities/missing-
```

#### port-Security

```
+ /: The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type. See: https://www.netsparker.com/web-vulnerability-scanner/vulnerabilities/missing-content-type-header/
+ /: Cookie PHPSESSID created without the secure flag. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Cookies
+ /: Cookie PHPSESSID created without the httponly flag. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Cookies
```

## Practical No. 02 - Implement Network Scanning

- a. Using Nmap command
- b. Using nmap Tool
- c. Using window cmd
- d. Using Kali Linux For DNS
- e. Using who.is
- f. Using Kali Linux for netstat
- g. Using Hping 3

### A. Using Nmap command

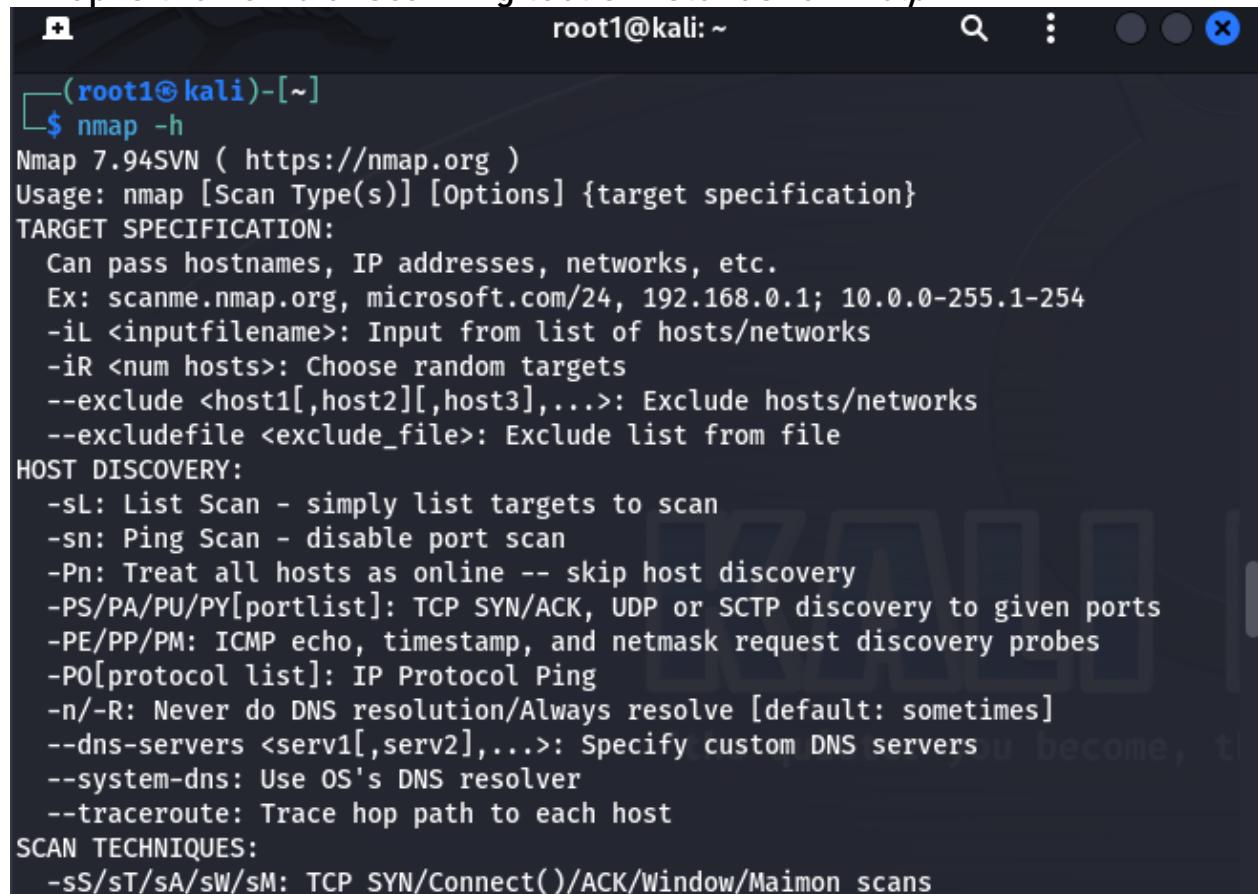
Step 1: Open Kali Linux

Step 2: Goto terminal

Write a Command

\$ nmap -h

Nmap is the name of scanning tool & h stands for "help"



The image shows a terminal window with a dark background and light-colored text. The title bar says "root1@kali: ~". The terminal prompt is "(root1㉿kali)-[~]". Below the prompt, the user types "\$ nmap -h" and presses Enter. The terminal then displays the Nmap 7.94SVN help text, which includes sections for TARGET SPECIFICATION, HOST DISCOVERY, and SCAN TECHNIQUES, along with various command-line options and their descriptions.

```
(root1㉿kali)-[~]
$ nmap -h
Nmap 7.94SVN ( https://nmap.org )
Usage: nmap [Scan Type(s)] [Options] {target specification}
TARGET SPECIFICATION:
  Can pass hostnames, IP addresses, networks, etc.
  Ex: scanme.nmap.org, microsoft.com/24, 192.168.0.1; 10.0.0-255.1-254
  -iL <inputfilename>: Input from list of hosts/networks
  -iR <num hosts>: Choose random targets
  --exclude <host1[,host2][,host3],...>: Exclude hosts/networks
  --excludefile <exclude_file>: Exclude list from file
HOST DISCOVERY:
  -sL: List Scan - simply list targets to scan
  -sn: Ping Scan - disable port scan
  -Pn: Treat all hosts as online -- skip host discovery
  -PS/PA/PY[portlist]: TCP SYN/ACK, UDP or SCTP discovery to given ports
  -PE/PP/PM: ICMP echo, timestamp, and netmask request discovery probes
  -PO[protocol list]: IP Protocol Ping
  -n/-R: Never do DNS resolution/Always resolve [default: sometimes]
  --dns-servers <serv1[,serv2],...>: Specify custom DNS servers
  --system-dns: Use OS's DNS resolver
  --traceroute: Trace hop path to each host
SCAN TECHNIQUES:
  -sS/sT/sA/sW/sM: TCP SYN/Connect()/ACK/Window/Maimon scans
```

```
root1@kali: ~
-sU: UDP Scan
-sN/sF/sX: TCP Null, FIN, and Xmas scans
--scanflags <flags>: Customize TCP scan flags
-sI <zombie host[:probeport]>: Idle scan
-sY/sZ: SCTP INIT/COOKIE-ECHO scans
-sO: IP protocol scan
-b <FTP relay host>: FTP bounce scan
PORT SPECIFICATION AND SCAN ORDER:
-p <port ranges>: Only scan specified ports
  Ex: -p22; -p1-65535; -p U:53,111,137,T:21-25,80,139,8080,S:9
--exclude-ports <port ranges>: Exclude the specified ports from scanning
-F: Fast mode - Scan fewer ports than the default scan
-r: Scan ports sequentially - don't randomize
--top-ports <number>: Scan <number> most common ports
--port-ratio <ratio>: Scan ports more common than <ratio>
SERVICE/VERSION DETECTION:
-sV: Probe open ports to determine service/version info
--version-intensity <level>: Set from 0 (light) to 9 (try all probes)
--version-light: Limit to most likely probes (intensity 2)
--version-all: Try every single probe (intensity 9)
--version-trace: Show detailed version scan activity (for debugging)
SCRIPT SCAN:
-sC: equivalent to --script=default
--script=<Lua scripts>: <Lua scripts> is a comma separated list of
```

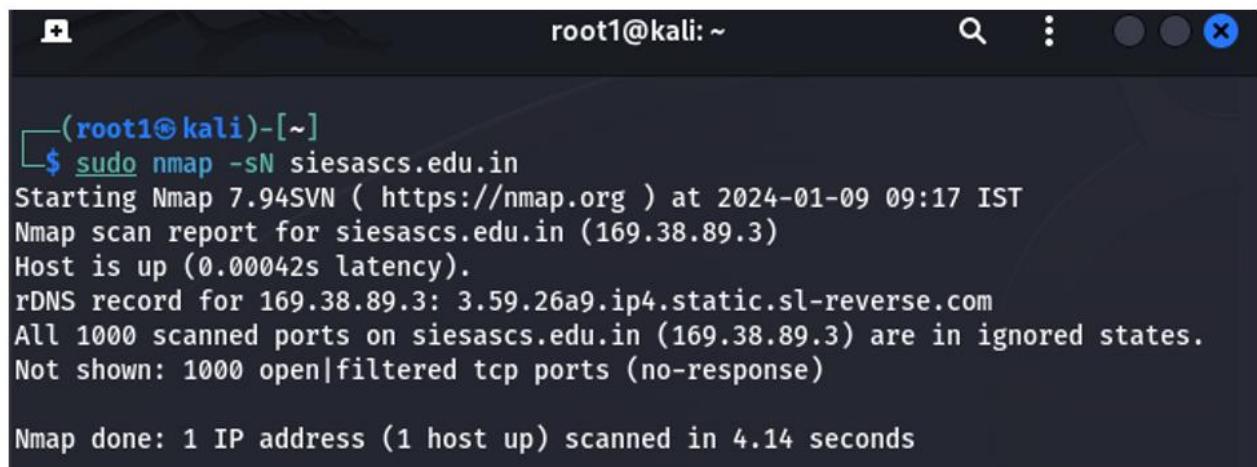
Step 3: Perform a simple scan for the target organization by writing IP address or host name

\$ sudo nmap siesascscs.edu.in

```
(root1@kali)-[~]
$ sudo nmap siesascscs.edu.in
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-01-09 09:18 IST
Nmap scan report for siesascscs.edu.in (169.38.89.3)
Host is up (0.0041s latency).
rDNS record for 169.38.89.3: 3.59.26a9.ip4.static.sl-reverse.com
Not shown: 997 filtered tcp ports (no-response)
PORT      STATE SERVICE
21/tcp    open  ftp
80/tcp    open  http
443/tcp   open  https
```

**Step 4: Perform a TCP Null, FIN and XMAS scanning for the target organization by writing IP address or host name**

```
$ sudo nmap -sN siesascs.edu.in
```



A terminal window titled "root1@kali: ~" showing the output of a Nmap -sN scan. The command entered was \$ sudo nmap -sN siesascs.edu.in. The output indicates the scan started at 2024-01-09 09:17 IST, the host is up with 0.00042s latency, and no ports are open or filtered. All 1000 scanned ports are in ignored states.

```
(root1㉿kali)-[~]
$ sudo nmap -sN siesascs.edu.in
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-01-09 09:17 IST
Nmap scan report for siesascs.edu.in (169.38.89.3)
Host is up (0.00042s latency).
rDNS record for 169.38.89.3: 3.59.26a9.ip4.static.sl-reverse.com
All 1000 scanned ports on siesascs.edu.in (169.38.89.3) are in ignored states.
Not shown: 1000 open|filtered tcp ports (no-response)

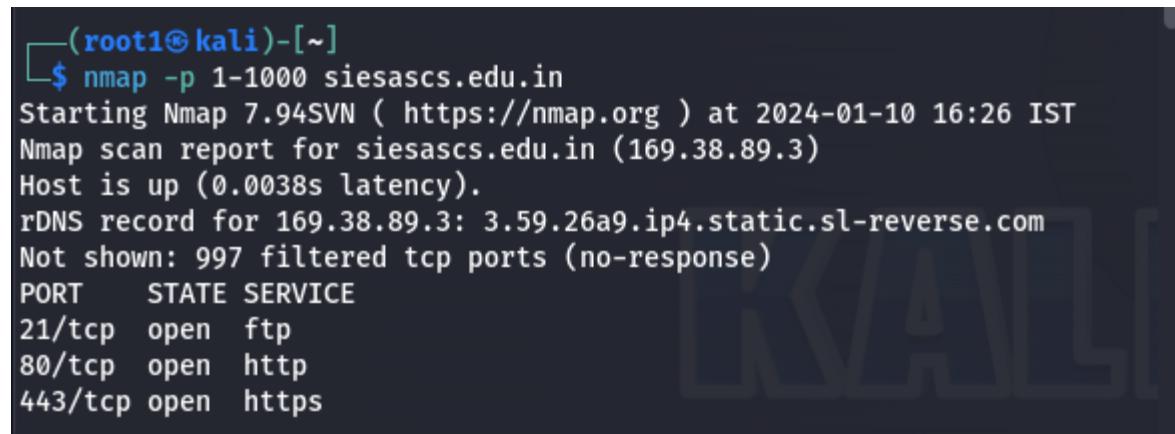
Nmap done: 1 IP address (1 host up) scanned in 4.14 seconds
```

**Step 5: Perform a port scanning for the target organization by writing IP address or host name**

```
$ nmap -p 1-1000 siesascs.edu.in
```

-p: ports

1-1000: 1 to 1000 port will be scanned



A terminal window titled "root1@kali: ~" showing the output of a Nmap -p 1-1000 scan. The command entered was \$ nmap -p 1-1000 siesascs.edu.in. The output indicates the scan started at 2024-01-10 16:26 IST, the host is up with 0.0038s latency, and no ports are open or filtered. All 997 scanned ports are in filtered state.

```
(root1㉿kali)-[~]
$ nmap -p 1-1000 siesascs.edu.in
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-01-10 16:26 IST
Nmap scan report for siesascs.edu.in (169.38.89.3)
Host is up (0.0038s latency).
rDNS record for 169.38.89.3: 3.59.26a9.ip4.static.sl-reverse.com
Not shown: 997 filtered tcp ports (no-response)
PORT      STATE SERVICE
21/tcp    open  ftp
80/tcp    open  http
443/tcp   open  https
```

## B. Using Nmap Tool

Step 1: Open Nmap tool in windows

Step 2: Write a target ip address

Step 3: Select a scanning type from drop down list

Step 4: Click on scan

The screenshot shows the Zenmap interface with the following details:

- Target:** 192.168.0.109
- Command:** nmap -O -v 192.168.0.109
- Host:** 192.168.0.109
- OS:** Microsoft Windows 7|2008
- CPE:** cpe:/o:microsoft:windows\_7:: - cpe:/o:microsoft:windows\_7::sp1 cpe:/o:microsoft:windows\_server\_2008::sp1 cpe:/o:microsoft:windows\_8
- OS details:** Microsoft Windows 7 SP0 - SP1, Windows Server 2008 SP1, or Windows 8
- Uptime guess:** 50.139 days (since Tue Dec 05 20:51:59 2017)
- Network Distance:** 1 hop
- TCP Sequence Prediction:** Difficulty=259 (Good luck!)
- IP ID Sequence Generation:** Incremental

## C. Using Window cmd

### Step 1: Check IP address of the machine

>ipconfig

```
C:\Users\sies>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

  Connection-specific DNS Suffix  . :
  Link-local IPv6 Address . . . . . : fe80::d4e8:f697:7374:4c2b%12
  IPv4 Address. . . . . : 192.168.11.120
  Subnet Mask . . . . . : 255.255.252.0
  Default Gateway . . . . . : 192.168.10.2

Ethernet adapter Ethernet 3:

  Connection-specific DNS Suffix  . :
  Link-local IPv6 Address . . . . . : fe80::757f:28d1:5b9:1ac4%13
  IPv4 Address. . . . . : 192.168.199.1
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :

Ethernet adapter Ethernet 4:

  Connection-specific DNS Suffix  . :
  Link-local IPv6 Address . . . . . : fe80::ce4:5605:48a3:f98%6
  IPv4 Address. . . . . : 192.168.127.1
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . :
```

### Step 2: Check network status of the machine

>netstat

```
C:\Users\sies>hostname
DESKTOP-NUJUK7F

C:\Users\sies>netstat

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    127.0.0.1:49685        DESKTOP-NUJUK7F:49686 ESTABLISHED
  TCP    127.0.0.1:49686        DESKTOP-NUJUK7F:49685 ESTABLISHED
  TCP    127.0.0.1:49687        DESKTOP-NUJUK7F:49688 ESTABLISHED
  TCP    127.0.0.1:49688        DESKTOP-NUJUK7F:49687 ESTABLISHED
  TCP    127.0.0.1:49763        DESKTOP-NUJUK7F:49764 ESTABLISHED
  TCP    127.0.0.1:49764        DESKTOP-NUJUK7F:49763 ESTABLISHED
  TCP    127.0.0.1:50033        DESKTOP-NUJUK7F:50034 ESTABLISHED
  TCP    127.0.0.1:50034        DESKTOP-NUJUK7F:50033 ESTABLISHED
  TCP    127.0.0.1:56010        DESKTOP-NUJUK7F:56011 ESTABLISHED
  TCP    127.0.0.1:56011        DESKTOP-NUJUK7F:56010 ESTABLISHED
  TCP    127.0.0.1:56281        DESKTOP-NUJUK7F:56282 ESTABLISHED
  TCP    127.0.0.1:56282        DESKTOP-NUJUK7F:56281 ESTABLISHED
  TCP    127.0.0.1:56283        DESKTOP-NUJUK7F:56284 ESTABLISHED
  TCP    127.0.0.1:56284        DESKTOP-NUJUK7F:56283 ESTABLISHED
  TCP    127.0.0.1:56285        DESKTOP-NUJUK7F:56286 ESTABLISHED
  TCP    127.0.0.1:56286        DESKTOP-NUJUK7F:56285 ESTABLISHED
  TCP    127.0.0.1:56287        DESKTOP-NUJUK7F:56288 ESTABLISHED
  TCP    127.0.0.1:56288        DESKTOP-NUJUK7F:56287 ESTABLISHED
  TCP    127.0.0.1:56289        DESKTOP-NUJUK7F:56290 ESTABLISHED
  TCP    127.0.0.1:56290        DESKTOP-NUJUK7F:56289 ESTABLISHED
  TCP    127.0.0.1:56291        DESKTOP-NUJUK7F:56292 ESTABLISHED
  TCP    127.0.0.1:56292        DESKTOP-NUJUK7F:56291 ESTABLISHED
  TCP    127.0.0.1:56293        DESKTOP-NUJUK7F:56294 ESTABLISHED
  TCP    127.0.0.1:56294        DESKTOP-NUJUK7F:56293 ESTABLISHED
  TCP    127.0.0.1:56295        DESKTOP-NUJUK7F:56296 ESTABLISHED
  TCP    127.0.0.1:56296        DESKTOP-NUJUK7F:56295 ESTABLISHED
  TCP    127.0.0.1:56297        DESKTOP-NUJUK7F:56298 ESTABLISHED
  TCP    127.0.0.1:56298        DESKTOP-NUJUK7F:56297 ESTABLISHED
  TCP    127.0.0.1:56299        DESKTOP-NUJUK7F:56300 ESTABLISHED
  TCP    127.0.0.1:56300        DESKTOP-NUJUK7F:56299 ESTABLISHED
  TCP    127.0.0.1:56301        DESKTOP-NUJUK7F:56302 ESTABLISHED
  TCP    127.0.0.1:56302        DESKTOP-NUJUK7F:56301 ESTABLISHED
  TCP    127.0.0.1:56303        DESKTOP-NUJUK7F:56304 ESTABLISHED
  TCP    127.0.0.1:56304        DESKTOP-NUJUK7F:56303 ESTABLISHED
  TCP    127.0.0.1:56305        DESKTOP-NUJUK7F:56306 ESTABLISHED
  TCP    127.0.0.1:56306        DESKTOP-NUJUK7F:56305 ESTABLISHED
  TCP    127.0.0.1:56307        DESKTOP-NUJUK7F:56308 ESTABLISHED
  TCP    127.0.0.1:56308        DESKTOP-NUJUK7F:56307 ESTABLISHED
  TCP    127.0.0.1:56309        DESKTOP-NUJUK7F:56310 ESTABLISHED
  TCP    127.0.0.1:56310        DESKTOP-NUJUK7F:56309 ESTABLISHED
  TCP    127.0.0.1:56311        DESKTOP-NUJUK7F:56312 ESTABLISHED
```

### Step 3: Check network status of the machine

>netstat -aon

Active Connections				
Proto	Local Address	Foreign Address	State	PID
TCP	0.0.0.0:135	0.0.0.0:0	LISTENING	1272
TCP	0.0.0.0:445	0.0.0.0:0	LISTENING	4
TCP	0.0.0.0:902	0.0.0.0:0	LISTENING	4900
TCP	0.0.0.0:912	0.0.0.0:0	LISTENING	4900
TCP	0.0.0.0:1158	0.0.0.0:0	LISTENING	11832
TCP	0.0.0.0:1521	0.0.0.0:0	LISTENING	3972
TCP	0.0.0.0:1831	0.0.0.0:0	LISTENING	9384
TCP	0.0.0.0:1832	0.0.0.0:0	LISTENING	9540
TCP	0.0.0.0:3306	0.0.0.0:0	LISTENING	5440
TCP	0.0.0.0:3938	0.0.0.0:0	LISTENING	7428
TCP	0.0.0.0:5040	0.0.0.0:0	LISTENING	8380
TCP	0.0.0.0:5501	0.0.0.0:0	LISTENING	7800
TCP	0.0.0.0:5502	0.0.0.0:0	LISTENING	3076
TCP	0.0.0.0:5520	0.0.0.0:0	LISTENING	11832
TCP	0.0.0.0:5522	0.0.0.0:0	LISTENING	7800
TCP	0.0.0.0:5523	0.0.0.0:0	LISTENING	3076
TCP	0.0.0.0:23232	0.0.0.0:0	LISTENING	15624
TCP	0.0.0.0:33060	0.0.0.0:0	LISTENING	5440
TCP	0.0.0.0:49664	0.0.0.0:0	LISTENING	996
TCP	0.0.0.0:49665	0.0.0.0:0	LISTENING	696
TCP	0.0.0.0:49666	0.0.0.0:0	LISTENING	1620
TCP	0.0.0.0:49667	0.0.0.0:0	LISTENING	2324
TCP	0.0.0.0:49668	0.0.0.0:0	LISTENING	3268
TCP	0.0.0.0:49672	0.0.0.0:0	LISTENING	3828
TCP	0.0.0.0:49673	0.0.0.0:0	LISTENING	4012
TCP	0.0.0.0:49674	0.0.0.0:0	LISTENING	4020
TCP	0.0.0.0:49675	0.0.0.0:0	LISTENING	3984
TCP	0.0.0.0:49676	0.0.0.0:0	LISTENING	3996

### Step 3: Check complete system information of the machine

>systeminfo

```
Microsoft Windows [Version 10.0.22621.525]
(c) Microsoft Corporation. All rights reserved.

C:\Users\sies>systeminfo

Host Name:           DESKTOP-NUJUK7F
OS Name:            Microsoft Windows 11 Pro
OS Version:          10.0.22621 N/A Build 22621
OS Manufacturer:    Microsoft Corporation
OS Configuration:   Standalone Workstation
OS Build Type:      Multiprocessor Free
Registered Owner:   sies
Registered Organization:
Product ID:          00331-20210-00000-AA302
Original Install Date: 17-08-2023, 13:04:53
System Boot Time:    05-09-2023, 15:23:32
System Manufacturer: Dell Inc.
System Model:        OptiPlex 3090
System Type:         x64-based PC
Processor(s):        1 Processor(s) Installed.
                      [01]: Intel64 Family 6 Model 165 Stepping 3 GenuineIntel ~3701 Mhz
BIOS Version:        Dell Inc. 2.0.7, 25-11-2021
Windows Directory:  C:\WINDOWS
System Directory:   C:\WINDOWS\system32
Boot Device:         \Device\HarddiskVolume1
System Locale:       en-us;English (United States)
Input Locale:        00004009
Time Zone:          (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Total Physical Memory: 7,904 MB
Available Physical Memory: 1,543 MB
Virtual Memory: Max Size: 12,768 MB
Virtual Memory: Available: 2,190 MB
Virtual Memory: In Use: 10,578 MB
Page File Location(s): C:\pagefile.sys
Domain:             WORKGROUP
Logon Server:       \\DESKTOP-NUJUK7F
Hotfix(s):          3 Hotfix(s) Installed.
                      [01]: KB5017026
                      [02]: KB5019311
                      [03]: KB5017233
Network Card(s):    3 NIC(s) Installed.
                      [01]: Realtek PCIe GbE Family Controller
                            Connection Name: Ethernet
                            DHCP Enabled: Yes
                            DHCP Server: 192.168.10.2
                            IP address(es)
                            [01]: 192.168.11.120
                            [02]: fe80::d4e8:f697:7374:4c2b
                      [02]: VMware Virtual Ethernet Adapter for VMnet1
                            Connection Name: Ethernet 3
                            DHCP Enabled: No
```

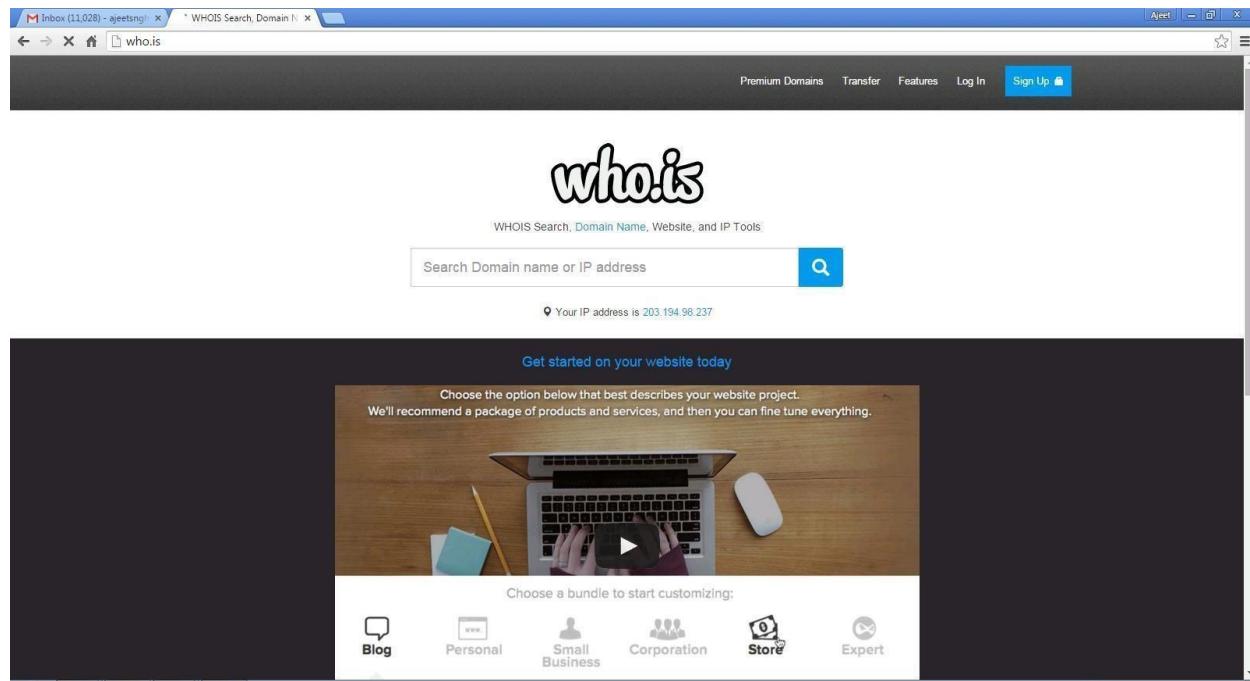
## D. Using Kali Linux for DNS

```
root1@kali: ~
└─(root1@kali)-[~]
$ sudo nslookup
> siesascs.edu.in
Server:      192.168.40.2
Address:     192.168.40.2#53

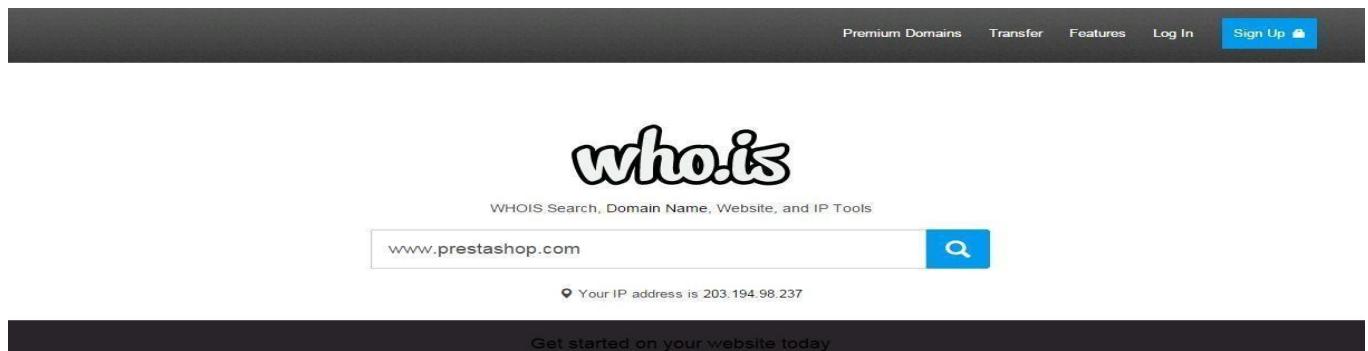
Non-authoritative answer:
Name:  siesascs.edu.in
Address: 169.38.89.3
>
zsh: suspended  sudo nslookup
```

## E. Using Who.is

### Step1: Open the WHO.is website



Step 2: Enter the website name and hit the “Enter button”.



## Step 3: Show you information about www.prestashop.com

Overview for **prestashop.com**

**Whois** Website Info History DNS Records Diagnostics

Registrar Info

Name	MAILCLUB SAS
Whois Server	whois.mailclub.net
Referral URL	<a href="http://safebrands.com">http://safebrands.com</a>
Status	clientTransferProhibited <a href="http://www.icann.org/epp#clientTransferProhibited">http://www.icann.org/epp#clientTransferProhibited</a>

Important Dates

Expires On	April 11, 2016
Registered On	April 11, 2007
Updated On	February 24, 2015

Name Servers

a.ns.mailclub.fr	195.64.164.8
b.ns.mailclub.eu	85.31.196.158
c.ns.mailclub.com	87.255.159.64

### Raw Registrar Data

Domain Name: PRESTASHOP.COM  
Registry Domain ID: 920363578\_DOMAIN\_COM-VRSN  
Registrar WHOIS Server: whois.mailclub.net  
Registrar URL: http://www.mailclub.fr  
Updated Date: 2015-02-24T05:43:34Z  
Creation Date: 2007-04-11T08:59:05Z  
Registrar Registration Expiration Date: 2016-04-11T08:59:05Z  
Registrar: Mailclub SAS  
Registrar IANA ID: 1290  
Domain Status: clientTransferProhibited  
<https://icann.org/epp#clientTransferProhibited>  
Registry Registrant ID:  
Registrant Name: NOMS DE DOMAINE Responsable  
Registrant Organization: PRESTASHOP  
Registrant Street: 12, rue d'Amsterdam  
Registrant City: Paris  
Registrant State/Province:  
Registrant Postal Code: 75009  
Registrant Country: FR  
Registrant Phone: +33.140183004  
Registrant Phone Ext:  
Registrant Fax: +33.972111878  
Registrant Fax Ext:  
Registrant Email: **domains@prestashop.com**  
Registry Admin ID:  
Admin Name: NOMS DE DOMAINE Responsable  
Admin Organization: PRESTASHOP  
Admin Street: 12, rue d'Amsterdam  
Admin City: Paris  
Admin State/Province:  
Admin Postal Code: 75009  
Admin Country: FR  
Admin Phone: +33.140183004  
Admin Phone Ext:  
Admin Fax: +33.972111878  
Admin Fax Ext:  
Admin Email: **domains@prestashop.com**  
Registry Tech ID:  
Tech Name: TINE, Charles  
Tech Organization: MAILCLUB S.A.S.  
Tech Street: Pole Media de la Belle de Mai 37 rue Guibal  
Tech City: Marseille  
Tech State/Province:

## F. Using Kali Linux for netstat

### Step 1: Check ip address

```
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
      inet 192.168.40.130 netmask 255.255.255.0 broadcast 192.168.40.255
      inet6 fe80::20c:29ff:fe2d:f8d3 prefixlen 64 scopeid 0x20<link>
        ether 00:0c:29:2d:f8:d3 txqueuelen 1000 (Ethernet)
          RX packets 51 bytes 4904 (4.7 KiB)
          RX errors 0 dropped 0 overruns 0 frame 0
          TX packets 65 bytes 8657 (8.4 KiB)
          TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
      inet 127.0.0.1 netmask 255.0.0.0
      inet6 ::1 prefixlen 128 scopeid 0x10<host>
        loop txqueuelen 1000 (Local Loopback)
          RX packets 24 bytes 1440 (1.4 KiB)
          RX errors 0 dropped 0 overruns 0 frame 0
          TX packets 24 bytes 1440 (1.4 KiB)
          TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

### Step 2: Check network status for all

```
$ sudo netstat -a
```

```
(root1㉿kali)-[~]
$ sudo netstat -a
[sudo] password for root1:
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address          Foreign Address      State
tcp6    0      0 [::]:1716                [::]:*              LISTEN
udp     0      0 kali:bootpc            192.168.40.254:bootps ESTABLISHED
udp6    0      0 [::]:1716                [::]:*              7
raw6    0      0 [::]:ipv6-icmp          [::]:*              7
Active UNIX domain sockets (servers and established)
Proto RefCnt Flags       Type      State      I-Node Path
unix   3      [ ]        STREAM    CONNECTED  29290
unix   3      [ ]        STREAM    CONNECTED  27575  /run/dbus/system_bus_s
ocket
unix   2      [ ]        DGRAM     24611
unix   3      [ ]        STREAM    CONNECTED  30906  /run/dbus/system_bus_s
ocket
unix   3      [ ]        STREAM    CONNECTED  30064  /run/user/1000/bus
unix   3      [ ]        STREAM    CONNECTED  30016
unix   3      [ ]        STREAM    CONNECTED  29783
unix   3      [ ]        STREAM    CONNECTED  29740  /run/systemd/journal/s
tdout
unix   3      [ ]        STREAM    CONNECTED  29444  /run/systemd/journal/s
```

### Step 3: Check groups

```
$ netstat -g
```

```
(root1㉿kali)-[~]
$ netstat -g
IPv6/IPv4 Group Memberships
Interface      RefCnt Group
-----
lo            1    all-systems.mcast.net
eth0           1    all-systems.mcast.net
lo            1    ip6-allnodes
lo            1    ff01::1
eth0           1    ff02::1:ff2d:f8d3
eth0           1    ip6-allnodes
eth0           1    ff01::1

(root1㉿kali)-[~]
```

### Step 4: Check interface

```
$ netstat -i
```

```
(root1㉿kali)-[~]
$ netstat -i
Kernel Interface table
Iface      MTU     RX-OK RX-ERR RX-DRP RX-OVR     TX-OK TX-ERR TX-DRP TX-OVR
 Flg
eth0      1500      46     0     0 0       60      0     0 0
 BMRU
lo        65536     24     0     0 0       24      0     0 0
 LRU

(root1㉿kali)-[~]
```

### Step 5: Check routing information

```
$ netstat -r
```

```
$ netstat -r
Kernel IP routing table
Destination     Gateway         Genmask        Flags   MSS Window irtt Iface
default         _gateway       0.0.0.0       UG        0 0          0 eth0
192.168.40.0   0.0.0.0       255.255.255.0 U          0 0          0 eth0
```

```
(root1㉿kali)-[~]
$ 
```

## Step 6: For Help

```
$ netstat -h
```

```
(root1㉿kali)-[~]
$ netstat -h
usage: netstat [-vWeenNcCF] [<Af>] -r           netstat {-V|--version|-h|--help}
               netstat [-vWnNcaeol] [<Socket> ...]
               netstat { [-vWeenNac] -i | [-cnNe] -M | -s [-6tuw] }

      -r, --route            display routing table
      -i, --interfaces       display interface table
      -g, --groups           display multicast group memberships
      -s, --statistics        display networking statistics (like SNMP)
      -M, --masquerade        display masqueraded connections

      -v, --verbose          be verbose
      -W, --wide              don't truncate IP addresses
      -n, --numeric           don't resolve names
      --numeric-hosts         don't resolve host names
      --numeric-ports         don't resolve port names
      --numeric-users          don't resolve user names
      -N, --symbolic          resolve hardware names
      -e, --extend             display other/more information
      -p, --programs           display PID/Program name for sockets
      -o, --timers             display timers
```

## G. Using Hping 3

### Step 1: Check ipaddress

```
root1@kali: ~
└─(root1㉿kali)-[~]
$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.40.130 netmask 255.255.255.0 broadcast 192.168.40.255
        inet6 fe80::20c:29ff:fe2d:f8d3 prefixlen 64 scopeid 0x20<link>
            ether 00:0c:29:2d:f8:d3 txqueuelen 1000 (Ethernet)
            RX packets 25 bytes 2978 (2.9 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 49 bytes 7478 (7.3 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
            RX packets 24 bytes 1440 (1.4 KiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 24 bytes 1440 (1.4 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

## Step 2: Check different operation that can be performed by hping 3

```
root1@kali: ~
└─(root1㉿kali)-[~]
$ hping3 -h
usage: hping3 host [options]
  -h --help      show this help
  -v --version   show version
  -c --count     packet count
  -i --interval  wait (uX for X microseconds, for example -i u1000)
                 --fast      alias for -i u10000 (10 packets for second)
                 --faster    alias for -i u1000 (100 packets for second)
                 --flood     sent packets as fast as possible. Don't show replies.
  -n --numeric   numeric output
  -q --quiet     quiet
  -I --interface interface name (otherwise default routing interface)
  -V --verbose    verbose mode
  -D --debug     debugging info
  -z --bind      bind ctrl+z to ttl          (default to dst port)
  -Z --unbind    unbind ctrl+z
  --beep       beep for every matching packet received
Mode
  default mode   TCP
  -0 --rawip     RAW IP mode
  -1 --icmp      ICMP mode
  -2 --udp       UDP mode
  -8 --scan      SCAN mode.
```

```
root1@kali:~          Q : X
-0  --tcpoff      set fake tcp data offset      (instead of tcphdrlen / 4)
-Q  --seqnum       shows only tcp sequence number
-b  --badcksum     (try to) send packets with a bad IP checksum
                   many systems will fix the IP checksum sending the packet
                   so you'll get bad UDP/TCP checksum instead.
-M  --setseq       set TCP sequence number
-L  --setack       set TCP ack
-F  --fin          set FIN flag
-S  --syn          set SYN flag
-R  --rst          set RST flag
-P  --push         set PUSH flag
-A  --ack          set ACK flag
-U  --urg          set URG flag
-X  --xmas         set X unused flag (0x40)
-Y  --ymas         set Y unused flag (0x80)
--tcpexitcode    use last tcp->th_flags as exit code
--tcp-mss        enable the TCP MSS option with the given value
--tcp-timestamp   enable the TCP timestamp option to guess the HZ/uptime
Common
-d  --data         data size                  "(default is 0)"
-E  --file         data from file
-e  --sign         add 'signature'
-j  --dump         dump packets in hex
-J  --print        dump printable characters
```

```
root1@kali:~          Q : X
ICMP
-f  --frag         split packets in more frag. (may pass weak acl)
-x  --morefrag     set more fragments flag
-y  --dontfrag     set don't fragment flag
-g  --fragoff      set the fragment offset
-m  --mtu          set virtual mtu, implies --frag if packet size > mtu
-o  --tos          type of service (default 0x00), try --tos help
-G  --rroute        includes RECORD_ROUTE option and display the route b
uffer
--lsrr            loose source routing and record route
--ssrr            strict source routing and record route
-H  --ipproto      set the IP protocol field, only in RAW IP mode
ICMP
-C  --icmptype     icmp type (default echo request)
-K  --icmpcode     icmp code (default 0)
--force-icmp      send all icmp types (default send only supported typ
es)
--icmp-gw         set gateway address for ICMP redirect (default 0.0.0
.0)
--icmp-toe        alias for --icmp -icmptypes 12 (TCMD + timestamp)
```

Step 3: Scan 1 to 30 ports of the target system

```
root1@kali:~
```

```
(root1㉿kali)-[~]
└─$ sudo hping3 -8 1-30 -A siesascs.edu.in
Scanning siesascs.edu.in (169.38.89.3), port 1-30
30 ports to scan, use -V to see all the replies
+-----+-----+-----+-----+-----+
|port| serv name | flags |ttl| id | win | len |
+-----+-----+-----+-----+-----+
All replies received. Done.
Not responding ports:

(root1㉿kali)-[~]
└─$ sudo hping3 -8 1-30 -A -V siesascs.edu.in
using eth0, addr: 192.168.40.130, MTU: 1500
Scanning siesascs.edu.in (169.38.89.3), port 1-30
30 ports to scan, use -V to see all the replies
+-----+-----+-----+-----+-----+
|port| serv name | flags |ttl| id | win | len |
+-----+-----+-----+-----+-----+
      1 tcpmux      : ..R..... 128 26885 32767 46
      2 nbp         : ..R..... 128 27141 32767 46
      3             : ..R..... 128 27397 32767 46
      4 echo        : ..R..... 128 27653 32767 46
      5             : ..R..... 128 27909 32767 46
```

#### Step 4: Craft your own packet & sent it to attacker

```
zsh: corrupt history file /home/root1/.zsh_history
(root1㉿kali)-[~]
└─$ sudo hping3 -S siesascs.edu.in -p 80 -c 5
[sudo] password for root1:
HPING siesascs.edu.in (eth0 169.38.89.3): S set, 40 headers + 0 data bytes
len=46 ip=169.38.89.3 ttl=128 id=3502 sport=80 flags=SA seq=0 win=64240
  rtt=7.7 ms
len=46 ip=169.38.89.3 ttl=128 id=3503 sport=80 flags=SA seq=1 win=64240
  rtt=7.6 ms
len=46 ip=169.38.89.3 ttl=128 id=3504 sport=80 flags=SA seq=2 win=64240
  rtt=6.8 ms
len=46 ip=169.38.89.3 ttl=128 id=3505 sport=80 flags=SA seq=3 win=64240
  rtt=6.2 ms
len=46 ip=169.38.89.3 ttl=128 id=3506 sport=80 flags=SA seq=4 win=64240
  rtt=6.4 ms

--- siesascs.edu.in hping statistic ---
5 packets transmitted, 5 packets received, 0% packet loss
```

## Step 5: Scan 100 ports of the target system

```
root1@kali:~ 
└──(root1㉿kali)-[~]
$ sudo hping3 --scan 10-100 siesascs.edu.in

Scanning siesascs.edu.in (169.38.89.3), port 10-100
91 ports to scan, use -V to see all the replies
+-----+-----+-----+-----+
|port| serv name | flags |ttl| id | win | len |
+-----+-----+-----+-----+
All replies received. Done.

Not responding ports: (10 ) (11 systat) (12 ) (13 daytime) (14 ) (15 netstat) (16 ) (17 qotd) (18 ) (19 chargen) (20 ftp-data) (21 ftp) (22 ssh) (23 telnet) (24 ) (25 smtp) (26 ) (27 ) (28 ) (29 ) (30 ) (31 ) (32 ) (33 ) (34 ) (35 ) (36 ) (37 time) (38 ) (39 ) (40 ) (41 ) (42 ) (43 whois) (44 ) (45 ) (46 ) (47 ) (48 ) (49 tacacs) (50 ) (51 ) (52 ) (53 domain) (54 ) (55 ) (56 ) (57 ) (58 ) (59 ) (60 ) (61 ) (62 ) (63 ) (64 ) (65 ) (66 ) (67 bootps) (68 bootpc) (69 tftp) (70 gopher) (71 ) (72 ) (73 ) (74 ) (75 ) (76 ) (77 ) (78 ) (79 finger) (80 http) (81 ) (82 ) (83 ) (84 ) (85 ) (86 ) (87 ) (88 kerberos) (89 ) (90 ) (91 ) (92 ) (93 )
```

```
root1@kali:~ 
└──(root1㉿kali)-[~]
$ sudo hping3 --scan 10-100 -V siesascs.edu.in
using eth0, addr: 192.168.40.130, MTU: 1500
Scanning siesascs.edu.in (169.38.89.3), port 10-100
91 ports to scan, use -V to see all the replies
+-----+-----+-----+-----+
|port| serv name | flags |ttl| id | win | len |
+-----+-----+-----+-----+
All replies received. Done.

Not responding ports: (10 ) (11 systat) (12 ) (13 daytime) (14 ) (15 netstat) (16 ) (17 qotd) (18 ) (19 chargen) (20 ftp-data) (21 ftp) (22 ssh) (23 telnet) (24 ) (25 smtp) (26 ) (27 ) (28 ) (29 ) (30 ) (31 ) (32 ) (33 ) (34 ) (35 ) (36 ) (37 time) (38 ) (39 ) (40 ) (41 ) (42 ) (43 whois) (44 ) (45 ) (46 ) (47 ) (48 ) (49 tacacs) (50 ) (51 ) (52 ) (53 domain) (54 ) (55 ) (56 ) (57 ) (58 ) (59 ) (60 ) (61 ) (62 ) (63 ) (64 ) (65 ) (66 ) (67 bootps) (68 bootpc) (69 tftp) (70 gopher) (71 ) (72 ) (73 ) (74 ) (75 ) (76 ) (77 ) (78 ) (79 finger) (80 http) (81 ) (82 ) (83 ) (84 ) (85 ) (86 ) (87 ) (88 kerberos) (89 ) (90 ) (91 ) (92 ) (93 ) (94 ) (95 ) (96 ) (97 ) (98 ) (99 ) (100 )
```

## Step 6: Craft your own packet & time to live

```
(root1㉿kali)-[~]
$ sudo hping3 -c 1 -S -p 80 --win 514 --ttl 60 siesascs.edu.in
HPING siesascs.edu.in (eth0 169.38.89.3): S set, 40 headers + 0 data bytes
len=46 ip=169.38.89.3 ttl=128 id=4302 sport=80 flags=SA seq=0 win=64240
rtt=12.5 ms

--- siesascs.edu.in hping statistic ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 12.5/12.5/12.5 ms
```

## Step 7: Scan port number 4444

```
root1@kali: ~
(root1㉿kali)-[~]
$ sudo hping3 -S -p 4444 siesascs.edu.in
HPING siesascs.edu.in (eth0 169.38.89.3): S set, 40 headers + 0 data bytes
len=46 ip=169.38.89.3 ttl=128 id=4304 sport=4444 flags=RA seq=0 win=642
40 rtt=21047.5 ms
len=46 ip=169.38.89.3 ttl=128 id=4305 sport=4444 flags=RA seq=1 win=642
40 rtt=21047.2 ms
len=46 ip=169.38.89.3 ttl=128 id=4306 sport=4444 flags=RA seq=2 win=642
40 rtt=21051.2 ms
len=46 ip=169.38.89.3 ttl=128 id=4307 sport=4444 flags=RA seq=3 win=642
40 rtt=21050.5 ms
len=46 ip=169.38.89.3 ttl=128 id=4308 sport=4444 flags=RA seq=4 win=642
40 rtt=21042.1 ms
len=46 ip=169.38.89.3 ttl=128 id=4309 sport=4444 flags=RA seq=5 win=642
40 rtt=21041.6 ms
len=46 ip=169.38.89.3 ttl=128 id=4310 sport=4444 flags=RA seq=6 win=642
40 rtt=21049.4 ms
len=46 ip=169.38.89.3 ttl=128 id=4311 sport=4444 flags=RA seq=7 win=642
```

## Practical No. 03 - Implement NET-BIOS Enumeration

### a. Using NBT Scan

Step 1: Open Kali Linux

Step 2: Open terminal check IP address

\$ifconfig

```
(root1㉿kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.40.130 netmask 255.255.255.0 broadcast 192.168.40.255
        inet6 fe80::20c:29ff:fe2d:f8d3 prefixlen 64 scopeid 0x20<link>
            ether 00:0c:29:2d:f8:d3 txqueuelen 1000 (Ethernet)
                RX packets 53 bytes 5306 (5.1 KiB)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 67 bytes 9041 (8.8 KiB)
                TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
                RX packets 24 bytes 1440 (1.4 KiB)
                RX errors 0 dropped 0 overruns 0 frame 0
                TX packets 24 bytes 1440 (1.4 KiB)
                TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

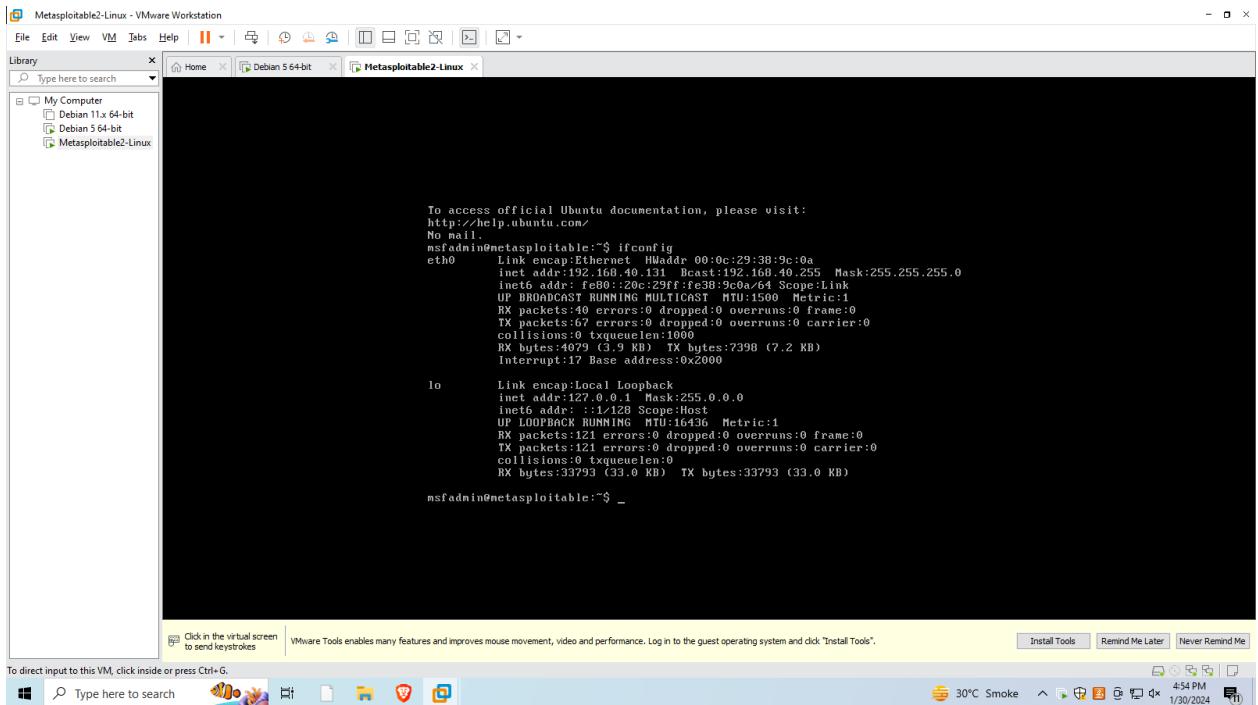
become, th
└─$ ┌─
```

Step 3: Open Metasploit VMWare

Step 4: Login using username & password

Step 5: Check IP address of Metasploit

\$ifconfig



## Step 6: Perform enumeration on Metasploit

\$ nbtscan 192.168.40.131

```
(root1㉿kali)-[~]
$ nbtscan 192.168.40.131
Doing NBT name scan for addresses from 192.168.40.131

IP address      NetBIOS Name      Server      User      MAC address
-----
192.168.40.131    METASPLOITABLE    <server>  METASPLOITABLE  00:00:00:00:00:00
```

Step 7: Perform enumeration on Metasploit & dump all the packets  
\$ nbtscan 192.168.40.131 -d

```
[root@kali:~] $ nbtscan 192.168.40.131 -d
Doing NBT name scan for addresses from 192.168.40.131

Packet dump for Host 192.168.40.131:

Incomplete packet, 335 bytes long.
Transaction ID: 0x0284 (644)
Flags: 0x8400 (33792)
Question count: 0x0000 (0)
Answer count: 0x0001 (1)
Name service count: 0x0000 (0)
Additional record count: 0x0000 (0)
Question name: CKAAAAAAAAAAAAAAAAAAAAAAA
Question type: 0x0021 (33)
Question class: 0x0001 (1)
Time to live: 0x00000000 (0)
Rdata length: 0x0119 (281)
Number of names: 0x0d (13)
Names received:
METASPLOITABLE      Service: 0x00 Flags: 0x0004
METASPLOITABLE      Service: 0x03 Flags: 0x0004
```

**Step 8: Perform enumeration on Metasploit & check verbose**

```
$ nbtscan 192.168.40.131 -vh
```

```
(root1㉿kali)-[~]
$ nbtscan 192.168.40.131 -vh
Doing NBT name scan for addresses from 192.168.40.131

NetBIOS Name Table for Host 192.168.40.131:

Incomplete packet, 335 bytes long.
Name           Service      Type
-----
METASPOITABLE  Workstation Service
METASPOITABLE  Messenger Service
METASPOITABLE  File Server Service
METASPOITABLE  Workstation Service
METASPOITABLE  Messenger Service
METASPOITABLE  File Server Service
__MSBROWSE__   Master Browser
WORKGROUP     Domain Name
WORKGROUP     Master Browser
WORKGROUP     Browser Service Elections
WORKGROUP     Domain Name
WORKGROUP     Master Browser
WORKGROUP     Browser Service Elections
```

**Step 9: Perform enumeration on Metasploit & check verbose**

```
$ nbtscan -h
```

```
(root1@kali)-[~]
$ nbtscan -h
"Human-readable service names" (-h) option cannot be used without verbose (-v) option.
Usage:
nbtscan [-v] [-d] [-e] [-l] [-t timeout] [-b bandwidth] [-r] [-q] [-s separator]
[-m retransmits] (-f filename)|( <scan_range>)
  -v          verbose output. Print all names received
              from each host
  -d          dump packets. Print whole packet contents.
  -e          Format output in /etc/hosts format.
  -l          Format output in lmhosts format.
  -t timeout  Cannot be used with -v, -s or -h options.
              wait timeout milliseconds for response.
              Default 1000.
  -b bandwidth Output throttling. Slow down output
              so that it uses no more than bandwidth bps.
              Useful on slow links, so that outgoing queries
              don't get dropped.
  -r          use local port 137 for scans. Win95 boxes
              respond to this only.
              You need to be root to use this option on Unix.
  -q          Suppress banners and error messages,
  -s separator Script-friendly output. Don't print
```

## Step 10: Perform enumeration on your own Kali Linux

```
$ nbtscan 192.168.40.130
```

```
(root1@kali)-[~]
$ nbtscan 192.168.40.130
Doing NBT name scan for addresses from 192.168.40.130

IP address      NetBIOS Name      Server      User      quieter      MAC address
-----
[root@kali ~]
```

## Step 11: Perform enumeration on your own Kali Linux

```
$ nbtscan 192.168.40.130 -vh
```

```
IP address      NetBIOS Name      Server      User      quieter      MAC address
-----
[root@kali ~]
$ nbtscan 192.168.40.130 -vh
Doing NBT name scan for addresses from 192.168.40.130

[root@kali ~]
```

## Step 12: Perform enumeration on telnet

```
$ telnet 192.168.40.131
```

```
(root1㉿kali)-[~]
$ telnet 192.168.40.131
Trying 192.168.40.131...
Connected to 192.168.40.131.
Escape character is '^]'.
```



```
Warning: Never expose this VM to an untrusted network!
```

```
Contact: msfdev[at]metasploit.com
```

```
Login with msfadmin/msfadmin to get started
```

```
metasploitable login: msfadmin
```

```
Password:
```

```
Login with msfadmin/msfadmin to get started

metasploitable login: msfadmin
Password:
Last login: Tue Jan 30 06:21:56 EST 2024 on tty1
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.
```

```
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

```
To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
```

```
No mail.
```

```
msfadmin@metasploitable:~$ exit
Connection closed by foreign host.
```

```
(root1㉿kali)-[~]
$ 
```

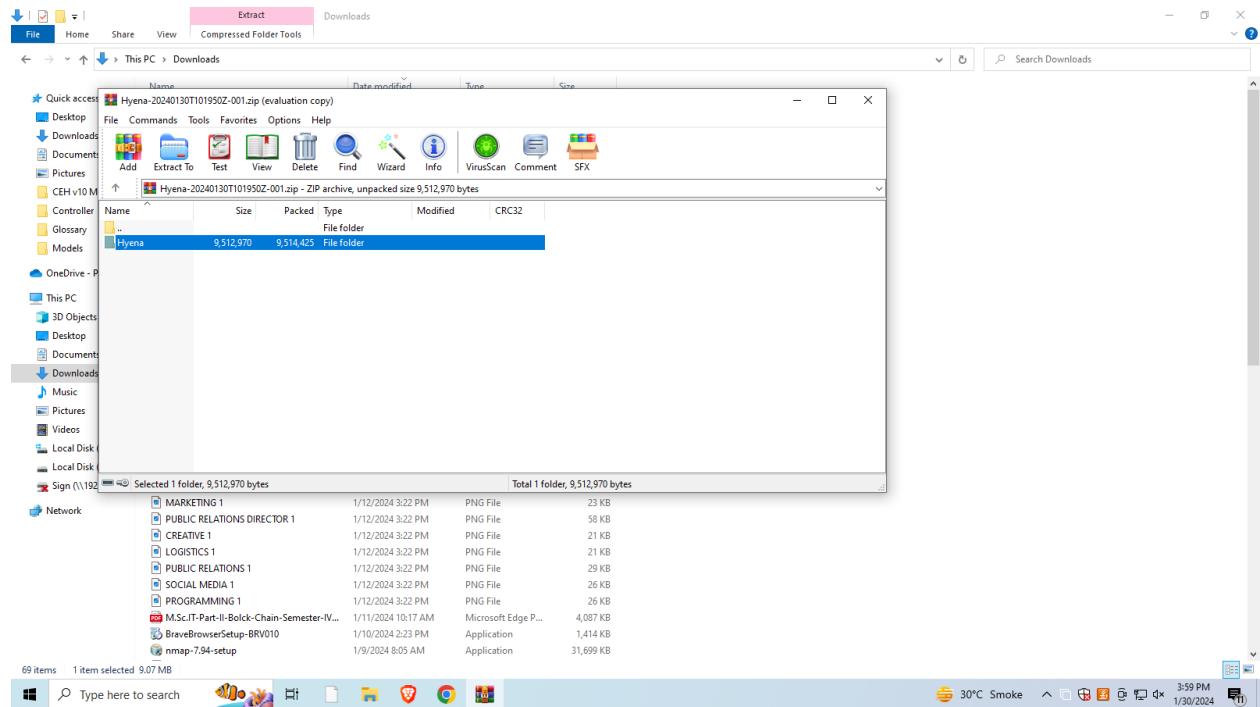
**Step 13: Perform enumeration on telnet, write a port number.  
\$ telnet 192.168.40.131 25**

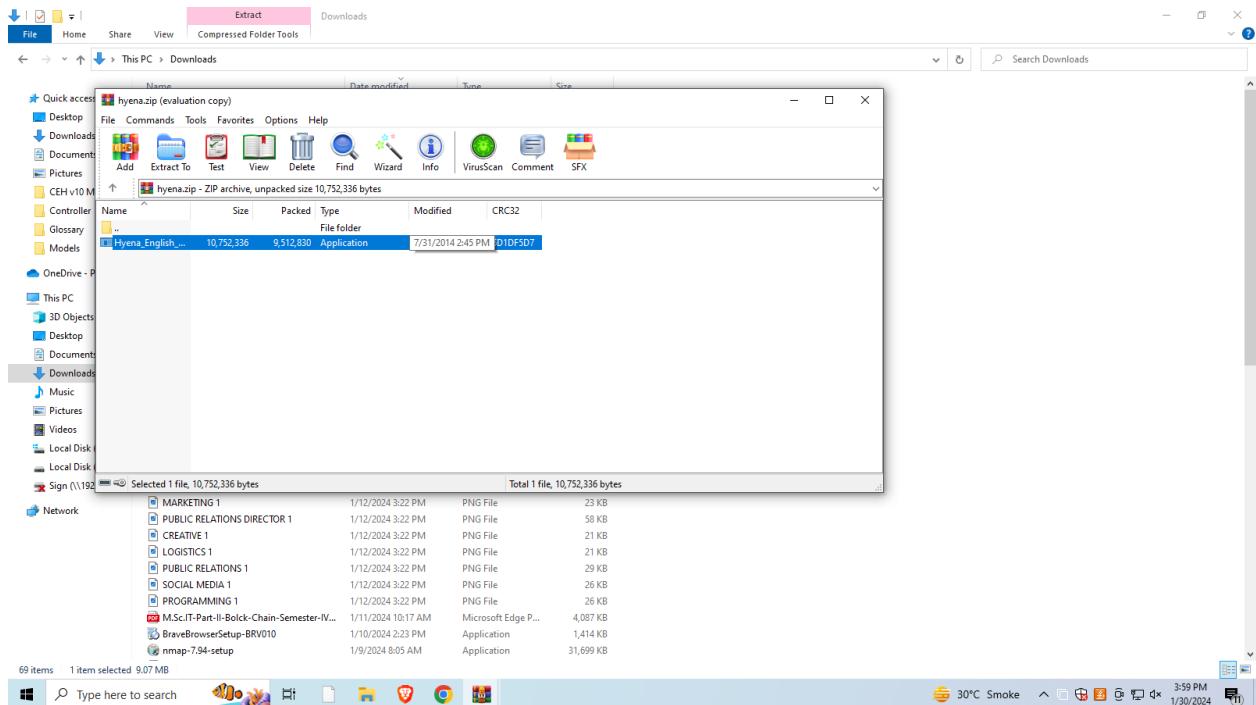
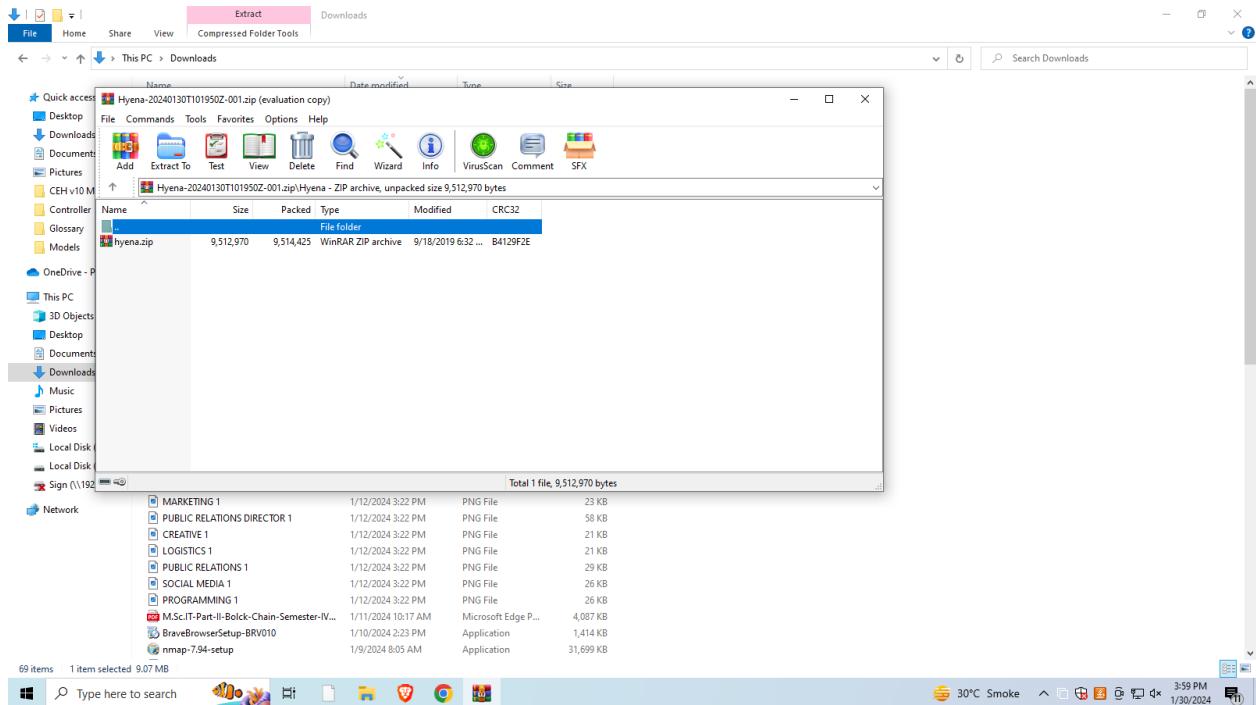
```
(root1㉿kali)-[~]
$ telnet 192.168.40.131 25
Trying 192.168.40.131...
Connected to 192.168.40.131.
Escape character is '^['.
220 metasploitable.localdomain ESMTP Postfix (Ubuntu)
```

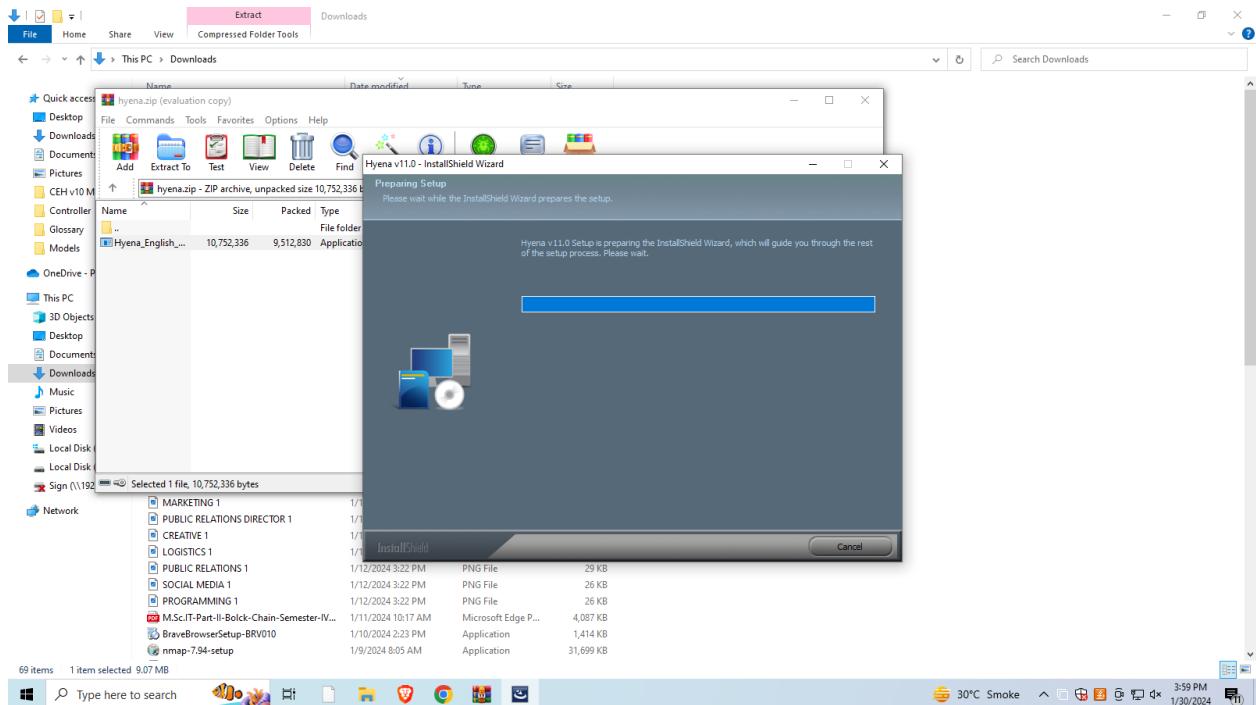
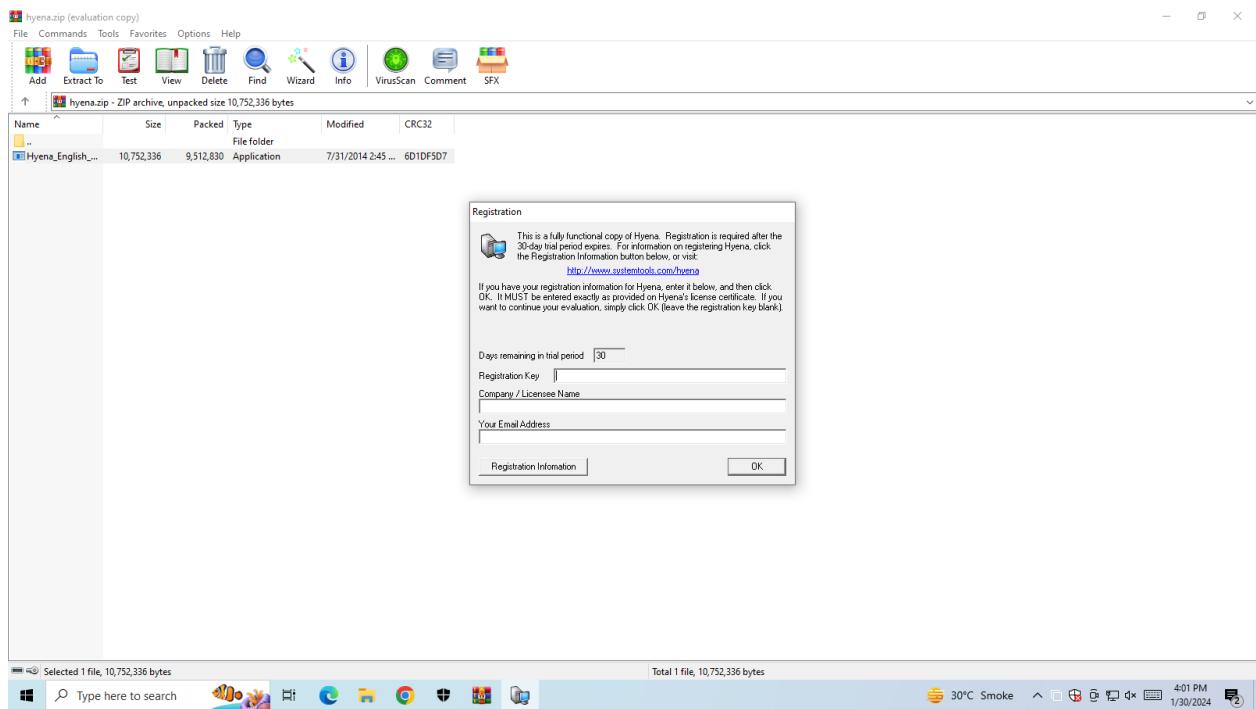
## B. Hyena

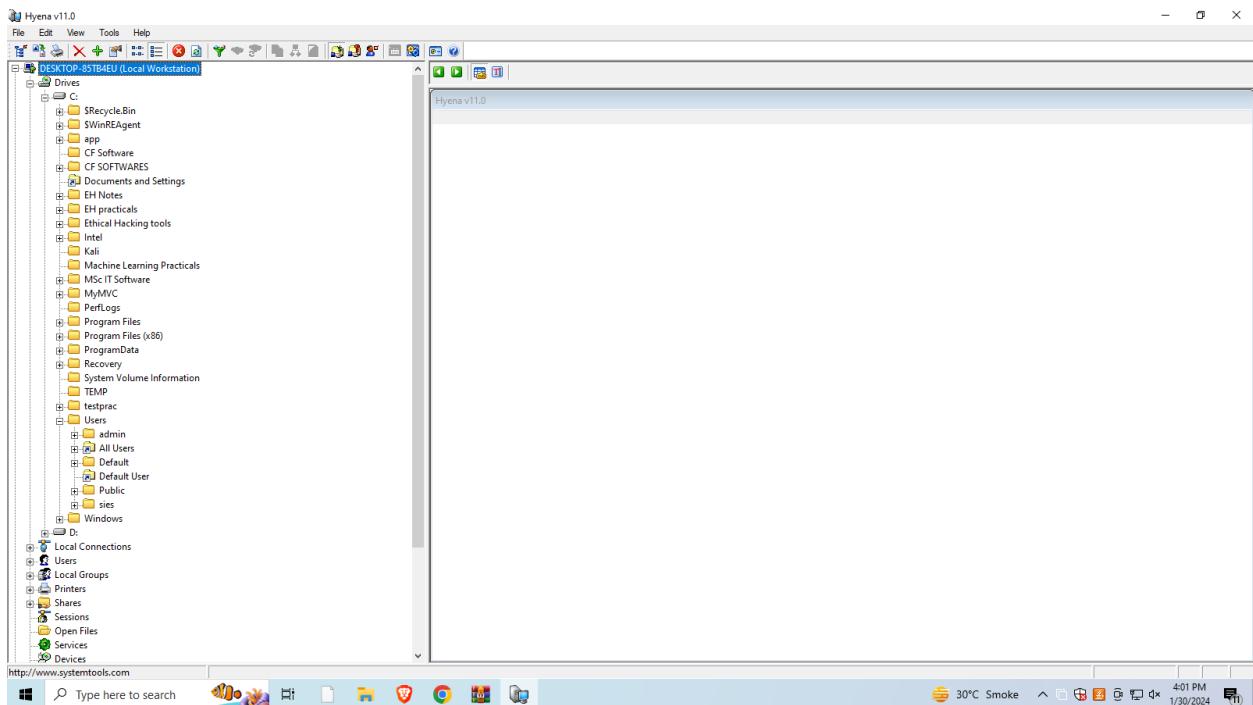
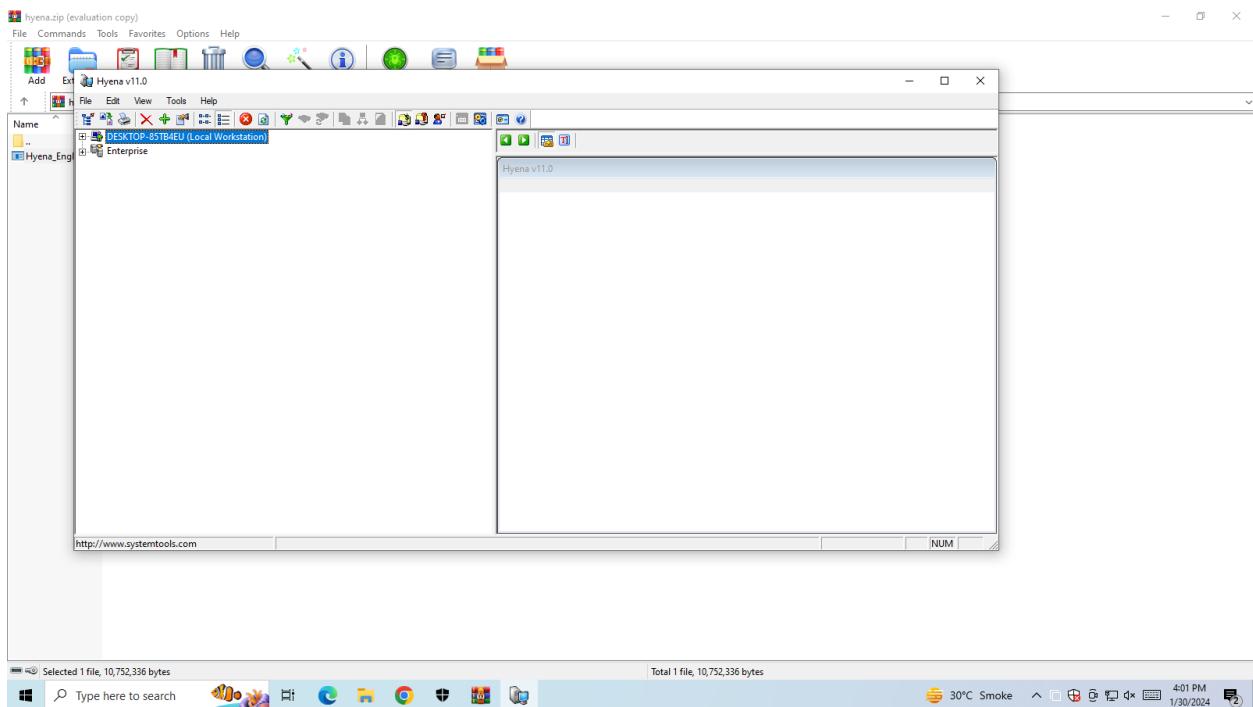
### Step 1: Open Hyena tool

### Step 2: Check all the files









Hyena v11.0 - C:\Users\All Users\Package Cache

File Edit View Tools Help

File Explorer

C:\Users\All Users\Package Cache

File Name	Type	Size	Attrib	Last Time Written	Last Access Time	Creation Time
c\users\all users						
91607A4DF03981C500F045FF1...				1/13/2024 4:15:35 PM	1/13/2024 4:16:54 PM	1/13/2024 4:15:35 PM
[0025DD72-A959-45B5-A0A3-7E...				10/20/2023 12:31:04 PM	1/13/2024 4:16:54 PM	10/20/2023 12:31:04 PM
[031EA40D-0777-3102-B9ED-DD...				1/13/2024 4:15:35 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[093099CD-C51E-3FB3-95DA-E8...				1/13/2024 4:15:38 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:38 PM
[116F6FD0-ABEF-4E6D-B008-EF...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:36 PM
[116F6669-9194-4096-8BDA-689...				1/13/2024 4:15:37 PM	1/30/2024 4:16:54 PM	1/13/2024 4:15:35 PM
[227585DF-BECC-4666-8A50-775...				1/13/2024 4:15:35 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[2540CD95-B644-4ACB-BC9D-6...				1/13/2024 4:15:35 PM	1/30/2024 4:16:54 PM	1/13/2024 4:15:35 PM
[3182A195-B671-44A8-B0C7-78...				10/20/2023 12:41:59 PM	1/13/2024 4:16:54 PM	10/20/2023 12:41:59 PM
[3277237E-B466-4FC4-B5F4-A82...				1/13/2024 4:15:35 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[327FE23-8B6A-4A84-89E1-746...				1/13/2024 4:15:35 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[33d1f9f0-4274-481-9c81-97e3...				10/20/2023 1:48:04 PM	1/15/2024 7:43:07 AM	10/20/2023 1:48:04 PM
[37BB89C7-03FB-3253-8781-251...				10/20/2023 1:48:07 PM	1/13/2024 4:16:54 PM	10/20/2023 1:48:06 PM
[401CE2E2-3487-4F90-8411-584...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[410c0ee1-0bb-41b6-9772-e12...				12/14/2023 10:44:20 AM	1/15/2024 7:43:07 AM	12/14/2023 10:44:20 AM
[51514CDAA-725E-429A-AEA0-95...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[568F99E8-9F2D-48D7-A05D-D6...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[6764BE50-AB13-4D68-8893-F2...				1/13/2024 4:15:35 PM	1/13/2024 4:16:54 PM	1/13/2024 4:15:35 PM
[68392BF8-F933-478E-8117-047...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[68F59E75-BE05-4C69-9C48-353...				1/13/2024 4:15:36 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:36 PM
[73F77E4E-SA17-46E5-ASFC-8A...				12/14/2023 10:44:21 AM	1/13/2024 4:16:54 PM	12/14/2023 10:44:20 AM
[894ebb72-1db4-453d-907e-4xb...				1/13/2024 4:15:34 PM	1/15/2024 7:43:05 AM	1/13/2024 4:15:34 PM
[8AAC7C31-2311-42B5-9233-E8...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[8B5384CA-D189-4CFF-8DFO-2D...				1/13/2024 4:15:36 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:36 PM
[8bdfe699-705-4184-936b-db9...				10/20/2023 12:31:04 PM	1/15/2024 7:43:07 AM	10/20/2023 12:31:04 PM
[8f4a7ef6-0703-498A-8CBF-25...				1/13/2024 4:15:35 PM	1/13/2024 4:16:54 PM	1/13/2024 4:15:35 PM
[99927287-8779-447A-9196-730...				1/13/2024 4:15:36 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:36 PM
[9B31DE90-F390-457A-9F5C-85...				1/13/2024 4:15:35 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[988818C6-A34F-470C-B0FD-17...				1/13/2024 4:15:38 PM	1/13/2024 4:16:54 PM	1/13/2024 4:15:37 PM
[A46C55AB-B1B1-427F-87D5-1B...				1/13/2024 4:15:35 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[B175520C-86A2-35A7-8619-86...				10/20/2023 1:48:05 PM	1/13/2024 4:16:54 PM	10/20/2023 1:48:05 PM
[B5A57B9F-FCTA-4FA6-BAE8-4...				1/13/2024 4:15:36 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:35 PM
[B7026C86-B219-4E2D-8AF8-5B...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[B8825300-73C6-454A-A89F-C3...				1/13/2024 4:15:37 PM	1/30/2024 7:51:36 AM	1/13/2024 4:15:37 PM
[BD95AB8D-1D9F-35AD-981A-3...				10/20/2023 1:48:05 PM	1/13/2024 4:16:54 PM	10/20/2023 1:48:04 PM
[C2C59CAB-8766-4ABD-A8EF-1...				12/14/2023 10:44:21 AM	1/13/2024 4:16:54 PM	12/14/2023 10:44:21 AM

http://www.systemtools.com 41 file(s) found in 'C:\Users\All Users\Package Cache' (0.00 bytes)

30°C Smoke 4:02 PM 1/30/2024

Hyena v11.0 - C:\Users\All Users\Oracle

File Edit View Tools Help

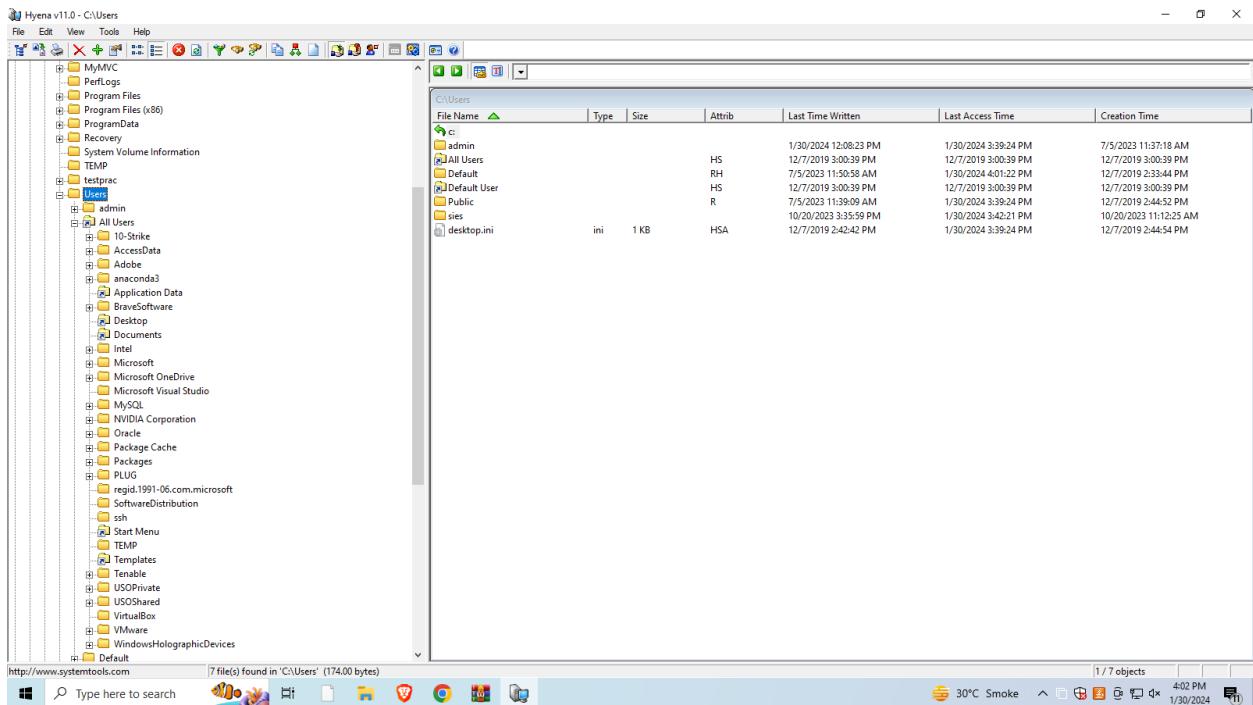
File Explorer

C:\Users\All Users\Oracle

File Name	Type	Size	Attrib	Last Time Written	Last Access Time	Creation Time
c\users\all users						
Java				12/14/2023 8:47:25 AM	1/30/2024 3:44:41 PM	10/26/2023 8:55:11 AM

http://www.systemtools.com 1 file(s) found in 'C:\Users\All Users\Oracle' (0.00 bytes)

30°C Smoke 4:02 PM 1/30/2024



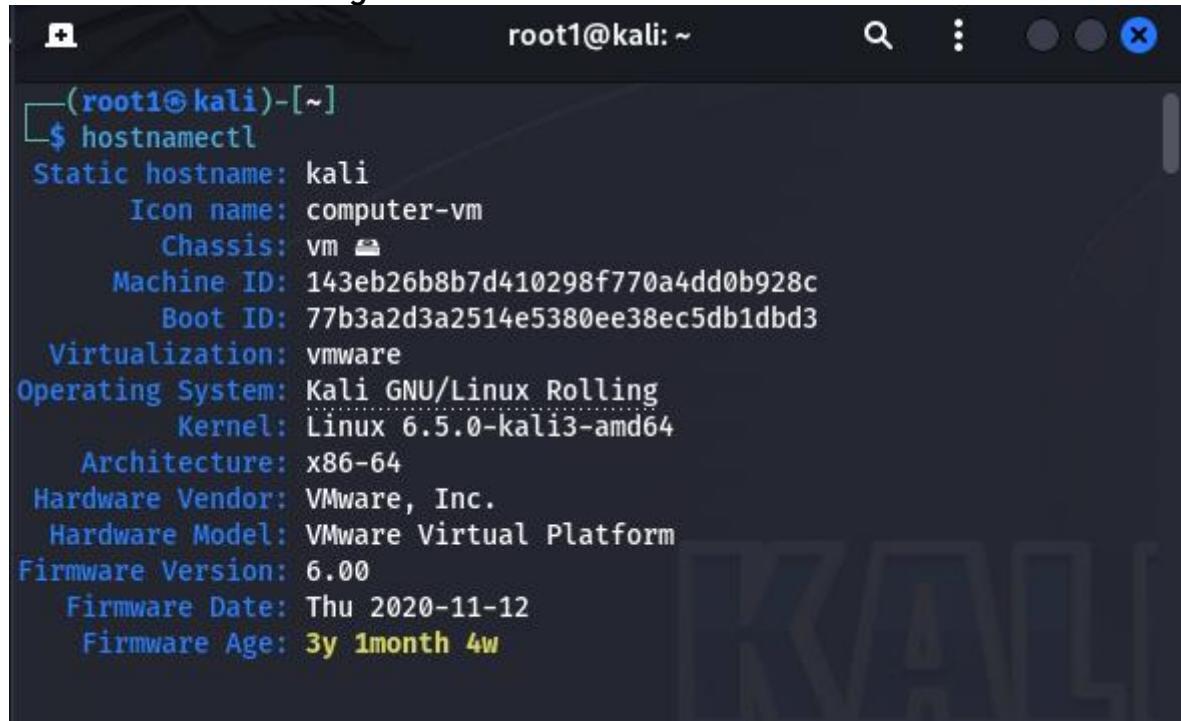
## C. Enumeration using Whatweb

```

zsh: corrupt history file /home/root1/.zsh_history
└── (root1㉿kali)-[~]
    $ sudo whatweb siesascs.edu.in
[sudo] password for root1:
http://siesascs.edu.in [302 Found] Cookies[PHPSESSID], Country[SWITZERLAND][CH],
    HTTPServer[Microsoft-IIS/10.0], IP[169.38.89.3], Microsoft-IIS[10.0], PHP[8.0.0],
    RedirectLocation[https://siesascs.edu.in/], Via-Proxy[HTTP/1.1 forward.http.proxy:3128],
    X-Powered-By[PHP/8.0.0]
https://siesascs.edu.in/ [200 OK] Bootstrap, Cookies[PHPSESSID], Country[SWITZERLAND][CH],
    Email[principalascs@sies.edu.in], Google-Analytics[UA-36251023-1], HT
    ML5, HTTPServer[Microsoft-IIS/10.0], IP[169.38.89.3], JQuery[2.1.4], Lightbox, M
    icrosoft-IIS[10.0], Modernizr, Open-Graph-Protocol, PHP[8.0.0], Script[text/java
    script], Title[SIES College of Arts, Science & Commerce (Empowered Autonomous)],
    X-Powered-By[PHP/8.0.0]

```

#### D. Enumeration using hostnamectl



```
(root1㉿kali)-[~]
$ hostnamectl
Static hostname: kali
Icon name: computer-vm
Chassis: vm 🖥
Machine ID: 143eb26b8b7d410298f770a4dd0b928c
Boot ID: 77b3a2d3a2514e5380ee38ec5db1dbd3
Virtualization: vmware
Operating System: Kali GNU/Linux Rolling
Kernel: Linux 6.5.0-kali3-amd64
Architecture: x86-64
Hardware Vendor: VMware, Inc.
Hardware Model: VMware Virtual Platform
Firmware Version: 6.00
Firmware Date: Thu 2020-11-12
Firmware Age: 3y 1month 4w
```

## Practical No. 04 - Implement SMNP Enumeration

### A] Using Hostnamectl

```
(root@kali)-[~]
$ hostnamectl
Static hostname: kali
    Icon name: computer-vm
    Chassis: vm
  Machine ID: 143eb26b8b7d410298f770a4dd0b928c
    Boot ID: 7360aec3aa1748c9ae012a82ea9b913f
Virtualization: vmware
Operating System: Kali GNU/Linux Rolling
          Kernel: Linux 6.5.0-kali3-amd64
      Architecture: x86-64
  Hardware Vendor: VMware, Inc.
  Hardware Model: VMware Virtual Platform
Firmware Version: 6.00
  Firmware Date: Thu 2020-11-12
  Firmware Age: 3y 2month 3w 3d
```

### B] Using Net View

```
C:\Users\admin>net view \\192.168.10.7
Shared resources at \\192.168.10.7

Share name          Type  Used as   Comment
-----
Backup_IT           Disk
BMS_SET_P           Disk
BMS_SET_Q           Disk
BMS_SET_R           Disk
Capture_Image       Disk
FY_Web_pracs        Disk
MSC                Disk
MscIT              Disk
NETLOGON           Disk      Logon server share
old_share           Disk
Photo               Disk
python-3.11.0-arm64 Disk
python-3.11.4-arm64 Disk
REMINST             Disk      Windows Deployment Services Share
share               Disk
Sign                Disk     Z:
SYSVOL              Disk      Logon server share
The command completed successfully.
```

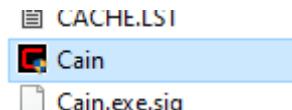
### C] Using NMAP in cmd

```
C:\Users\admin>nmap -sU -p 161 169.38.89.3
Starting Nmap 7.94 ( https://nmap.org ) at 2024-02-06 09:01 India Standard Time
Nmap scan report for 3.59.26a9.ip4.static.sl-reverse.com (169.38.89.3)
Host is up (0.0010s latency).

PORT      STATE      SERVICE
161/udp  open|filtered  snmp

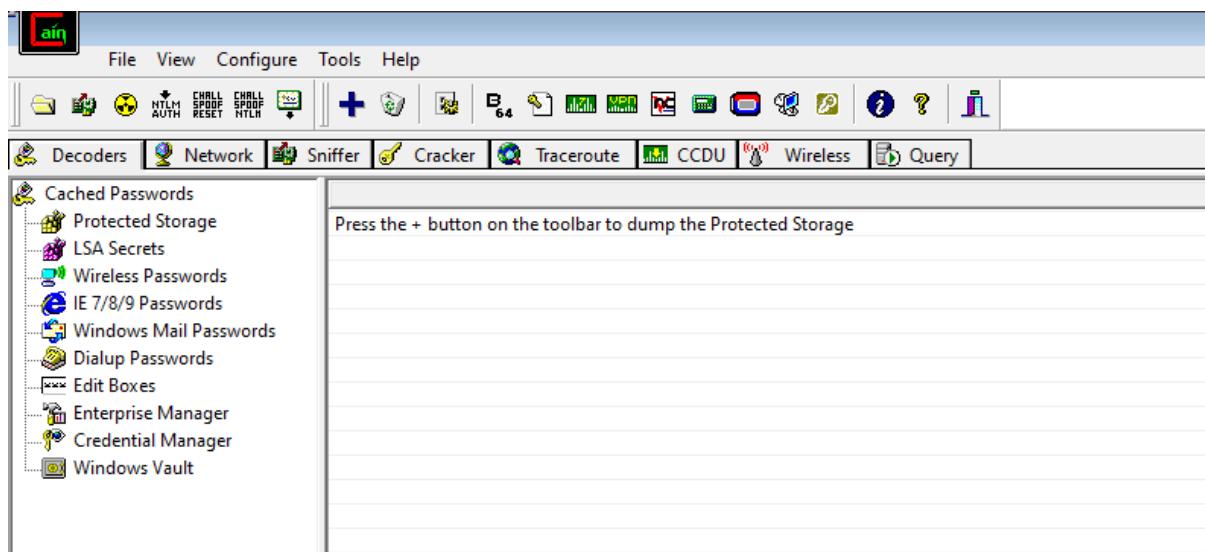
Nmap done: 1 IP address (1 host up) scanned in 3.44 seconds
```

## Practical No. 05 – Implement Password Cracking

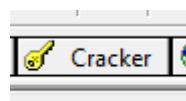


Install this in E: drive

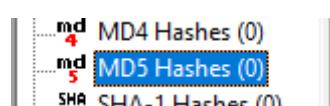
After installation it looks like this.



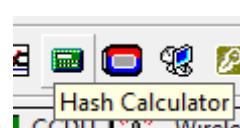
Then go to Cracker



Select this

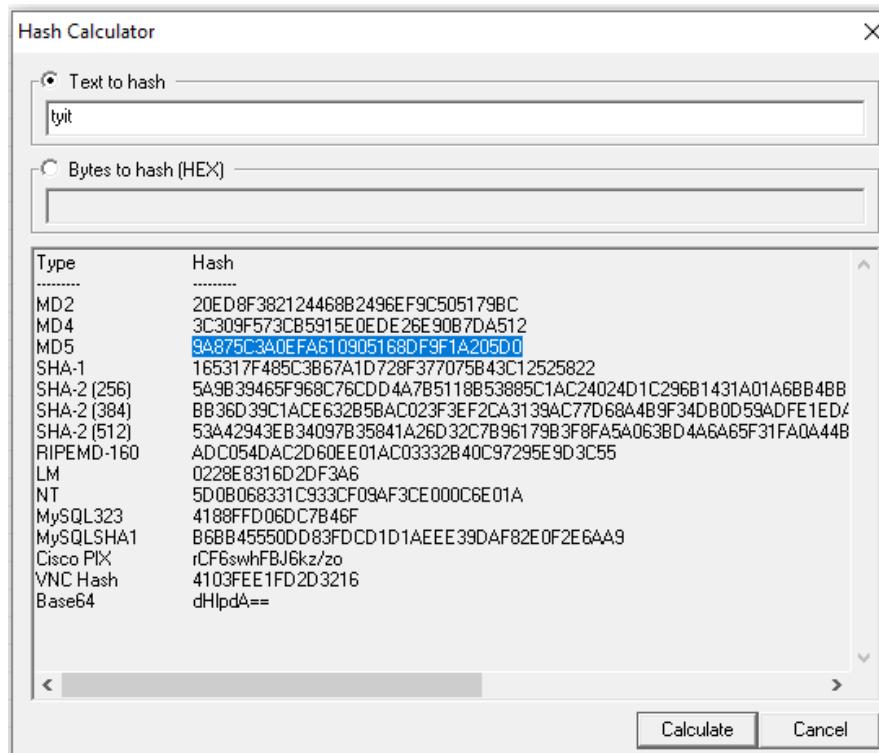


Click hash calculator



Then write any text and click calculate.

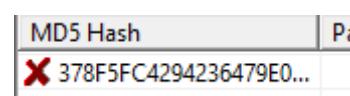
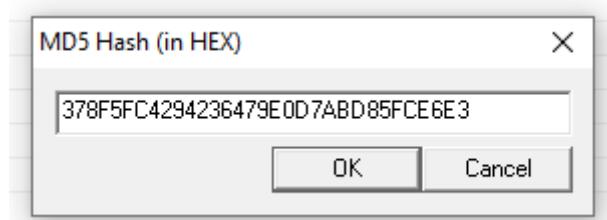
Copy MD5 hash value (ciphered text) then click cancel.



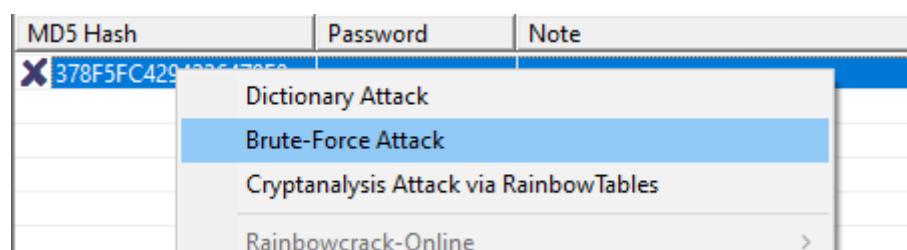
Click on this



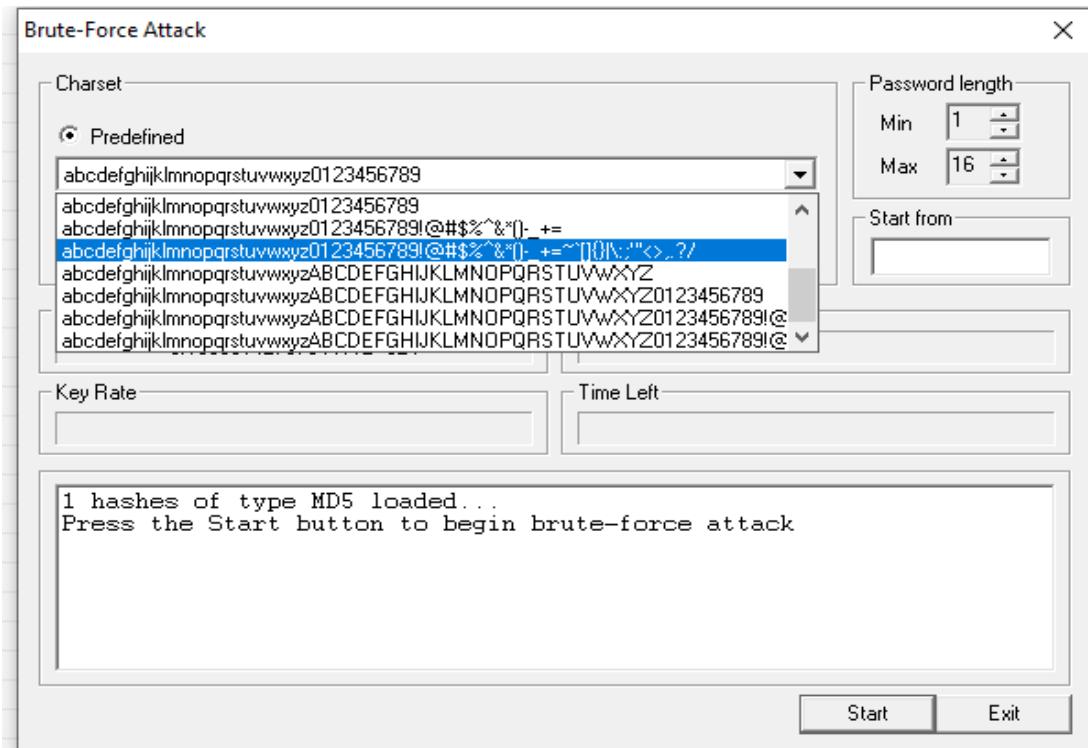
Paste the copied hash value then click OK



Right click on this and select this.

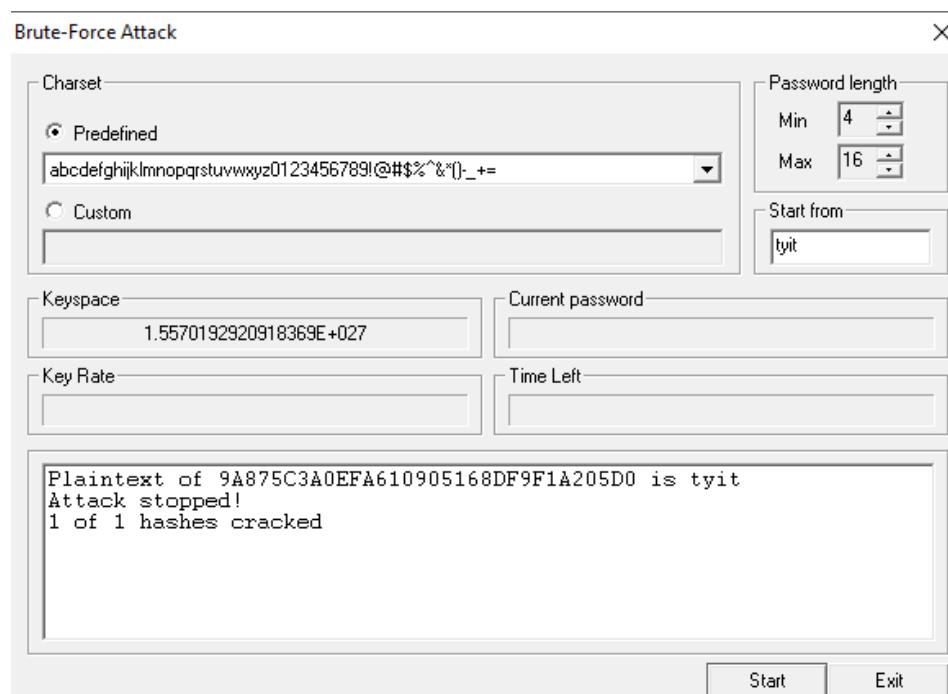


Then



**Then click start**

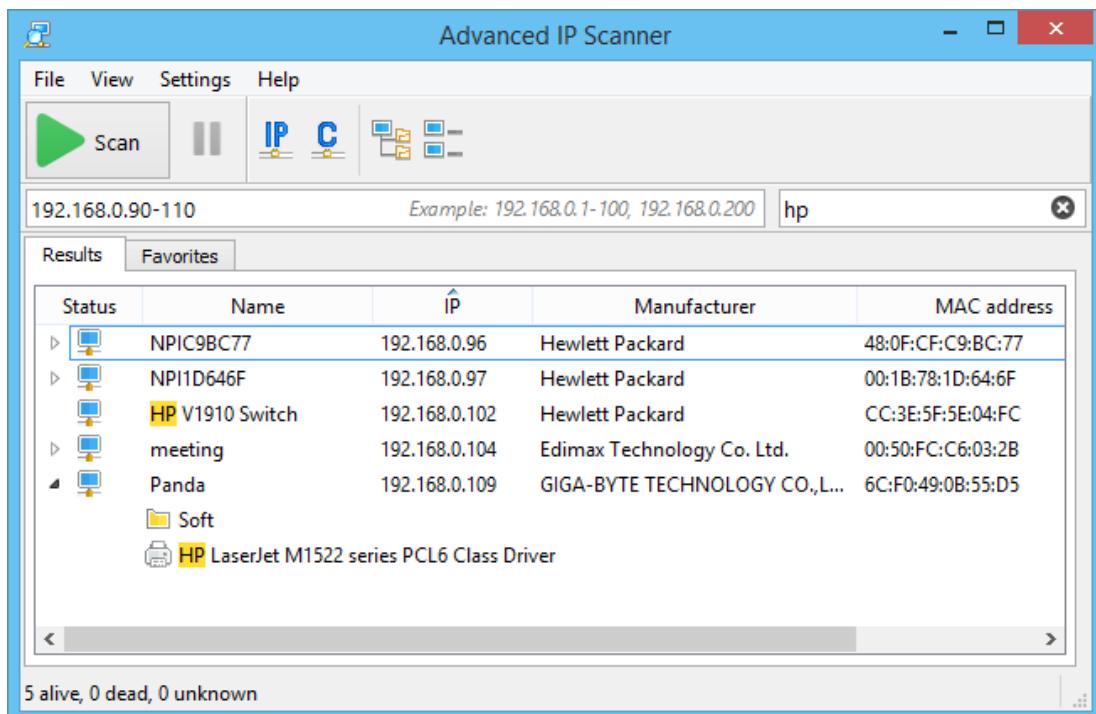
The text will be seen here



## Practical No. 06 - Perform IP Scanning

### Using Advanced IP Scanning

Advanced IP Scanner is a fast and powerful network scanner with a user-friendly interface. In seconds, Advanced IP Scanner can locate all computers on your wired or wireless local network and scan their ports. The program provides easy access to various network resources such as HTTP, HTTPS, FTP, and shared folders.



### Using Angry IP Scanning

Angry IP Scanner (or simply ipscan) is an open-source and cross-platform network scanner designed to be fast and simple to use. It scans IP addresses and ports as well as has many other features. It is widely used by network administrators and just curious users around the world, including large and small enterprises, banks, and government agencies. It runs on Linux, Windows, and Mac OS X, possibly supporting other platforms as well.

**IP Range - Angry IP Scanner**

Scan Go to Commands Favorites Tools Help

IP Range: 195.80.116.0 to 195.80.116.255 | IP Range |

Hostname: e-estonia.com | IP↑ /24 | Start |

IP	Ping	Hostname	Ports [3+]	Web detect
195.80.116.226	[n/a]	[n/s]	[n/s]	[n/s]
195.80.116.227	9 ms	[n/a]	80,443	Resin/4.0.37
195.80.116.228	10 ms	[n/a]	80,443	[n/a]
195.80.116.229	9 ms	[n/a]	80,443	Apache
195.80.116.230	13 ms	mx3.rmk.ee	[n/a]	[n/a]
195.80.116.231	10 ms	mx4.rmk.ee	[n/a]	[n/a]
195.80.116.232	[n/a]	[n/s]	[n/s]	[n/s]
195.80.116.233	[n/a]	[n/s]	[n/s]	[n/s]
195.80.116.234	[n/a]	[n/s]	[n/s]	[n/s]
195.80.116.235	9 ms	[n/a]	80,443	[n/a]
195.80.116.236	[n/a]	[n/s]	[n/s]	[n/s]
195.80.116.237	[n/a]	[n/s]	[n/s]	[n/s]

Ready | Display: All | Threads: 0

## Using Super Scan

Extract Downloads

File Commands Tools Favorites Options Help

SuperScan-20240130T02342Z-001.zip (evaluation copy)

Name	Date modified	Type	Size
SuperScan	2024-01-30 10:17:17	File folder	222,880 bytes

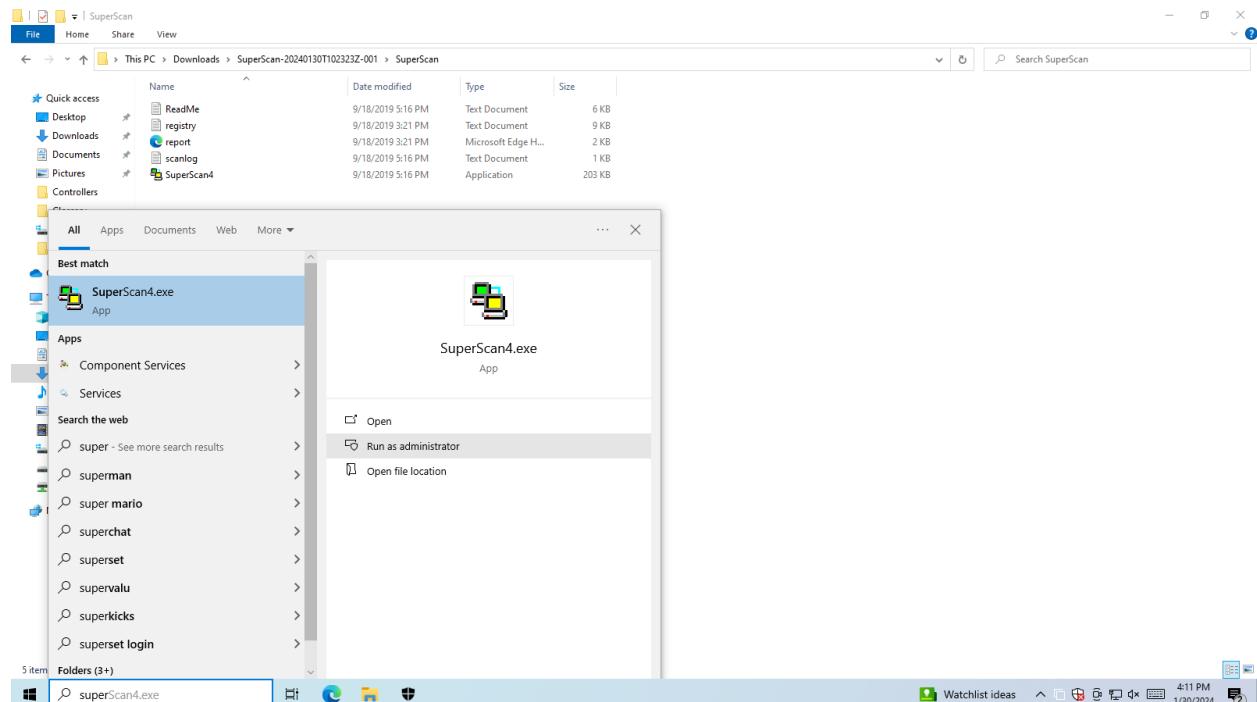
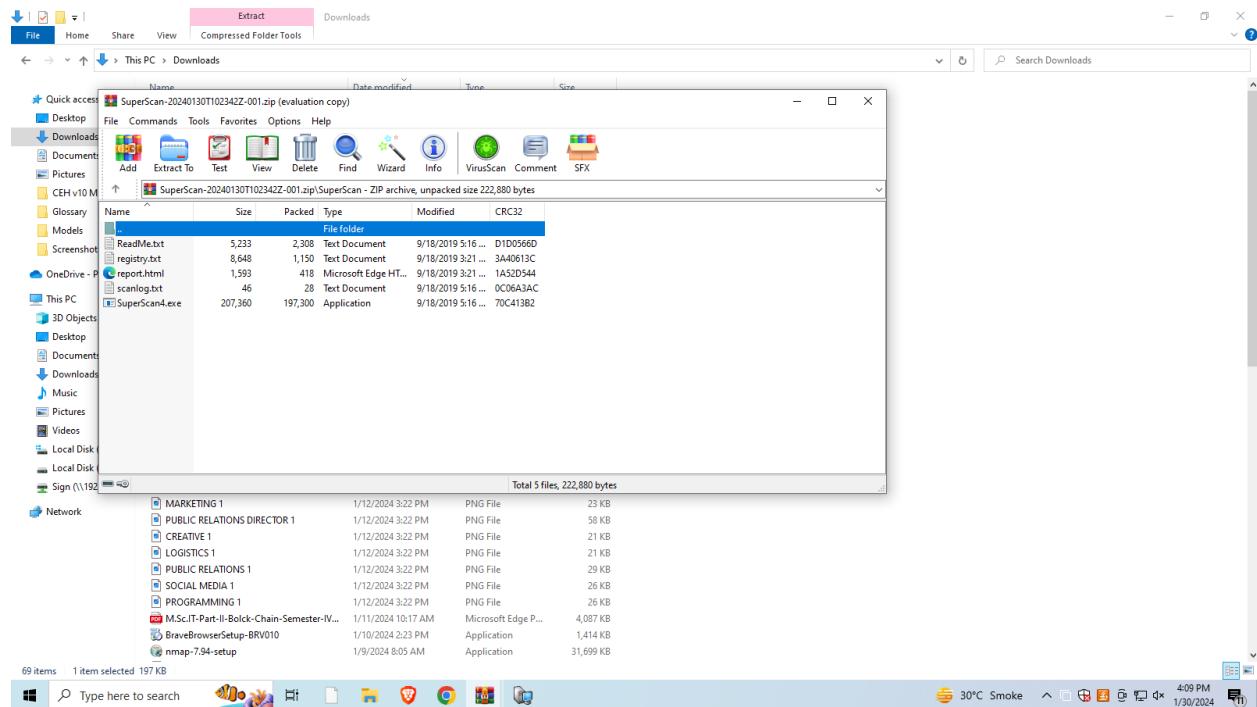
Network

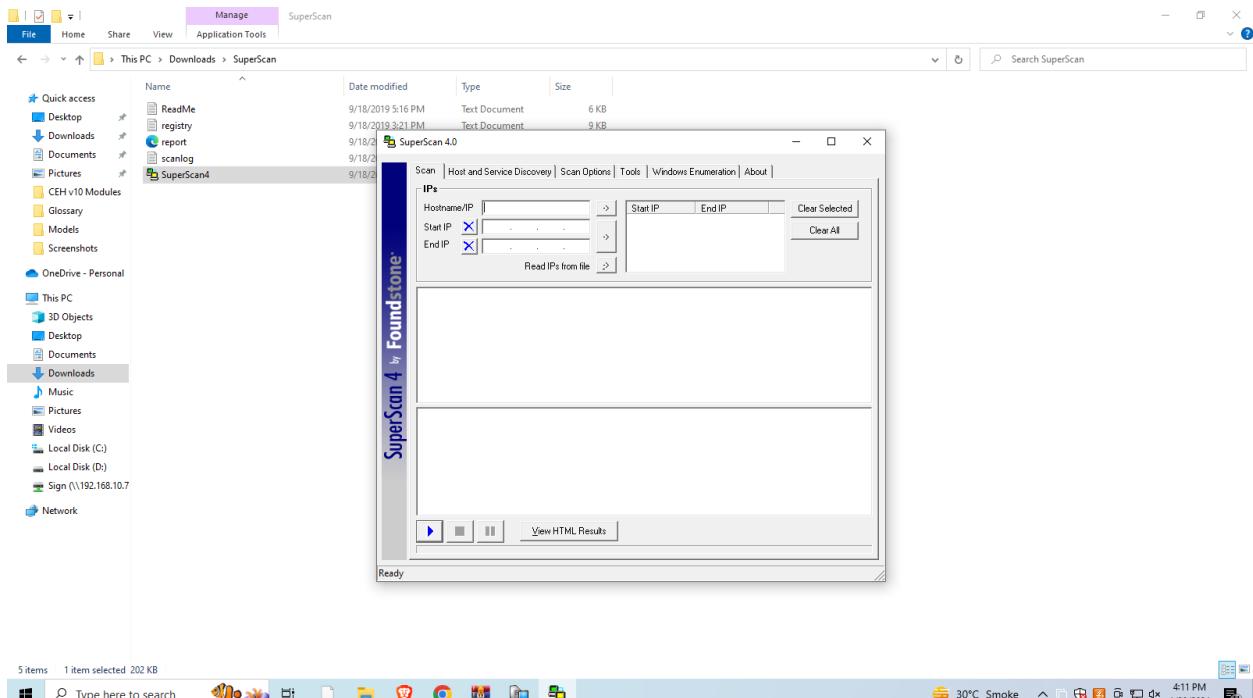
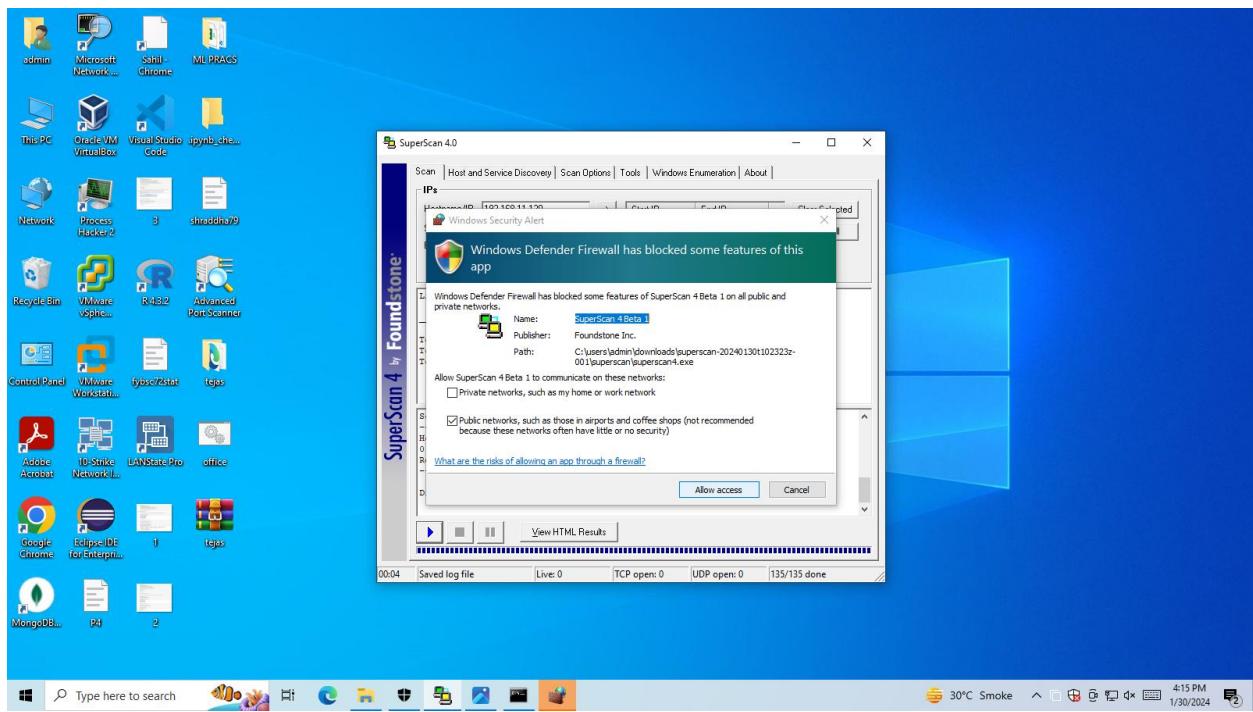
- MARKETING 1
- PUBLIC RELATIONS DIRECTOR 1
- CREATIVE 1
- LOGISTICS 1
- PUBLIC RELATIONS 1
- SOCIAL MEDIA 1
- PROGRAMMING 1
- M.Sc.IT-Part-II-Bolck-Chain-Semester-IV...
- BraveBrowserSetup-BRV010
- nmap-7.94-setup

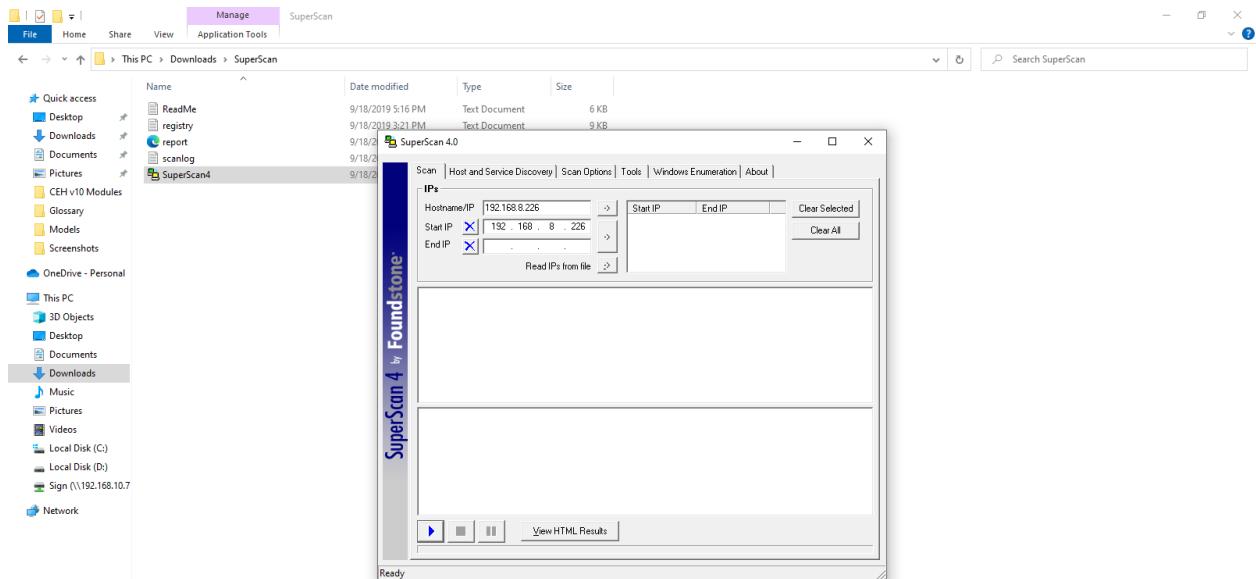
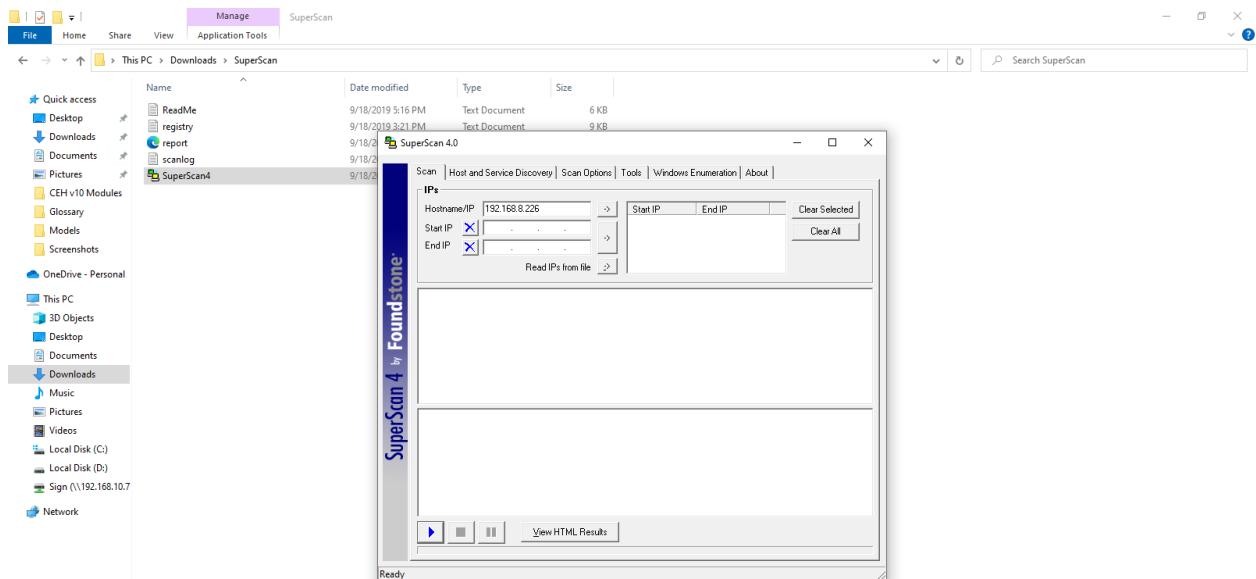
69 items 1 item selected 197 KB

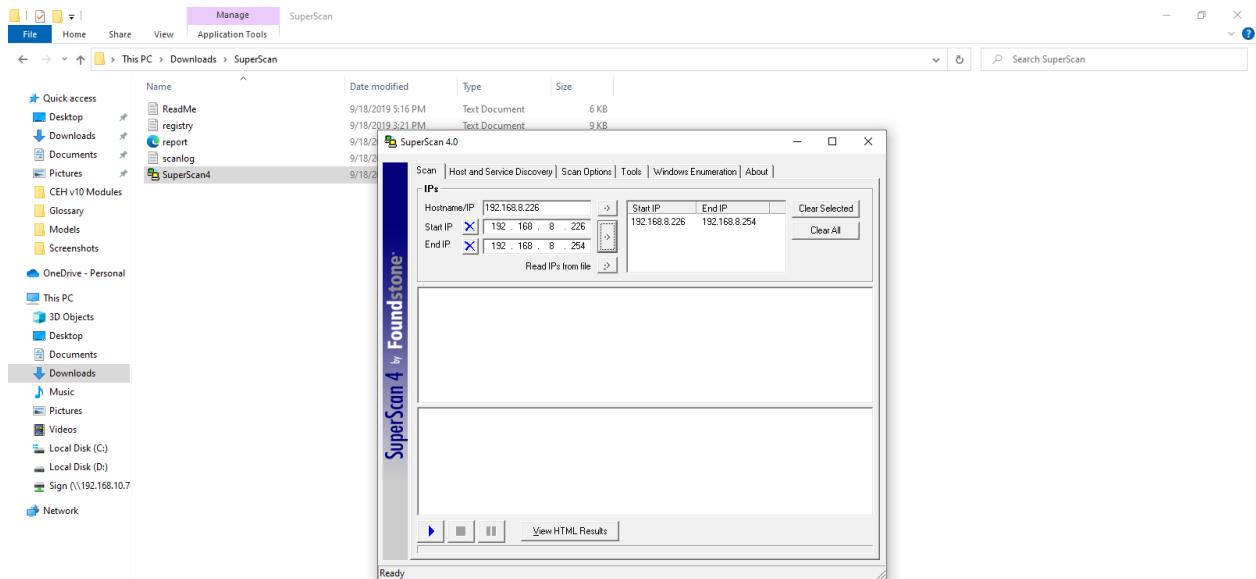
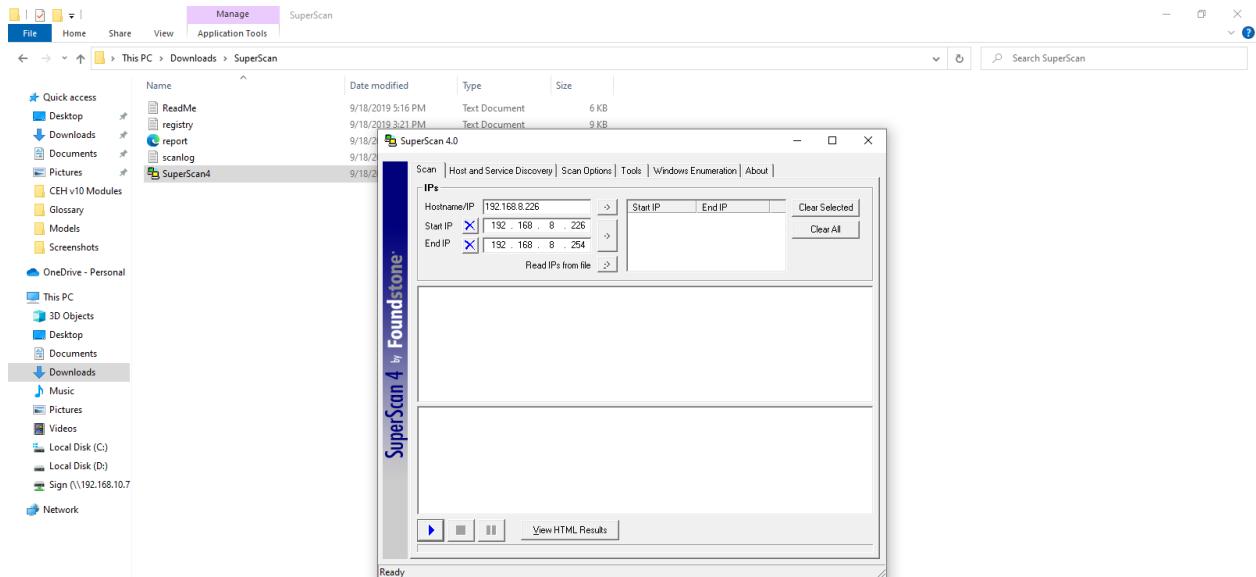
Type here to search

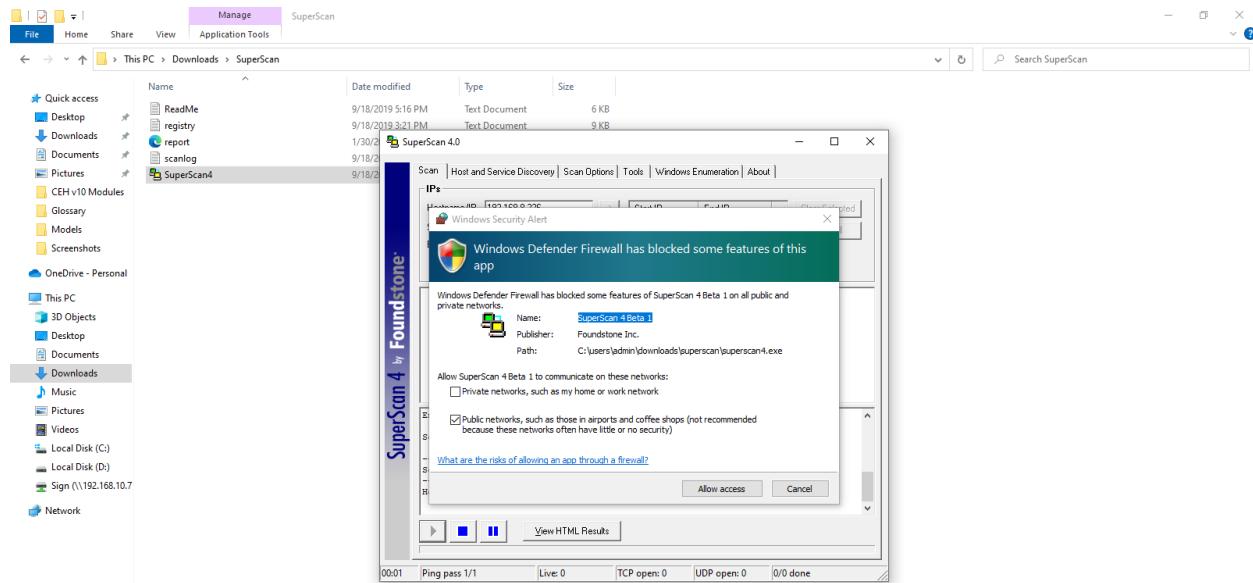
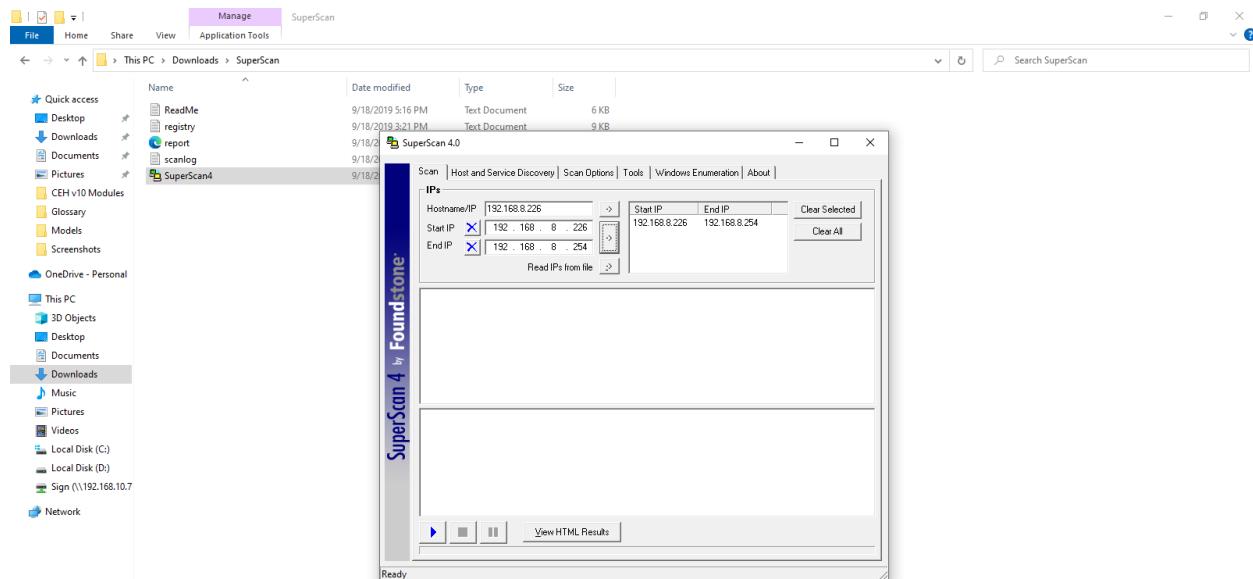
30°C Smoke 4:09 PM 1/30/2024

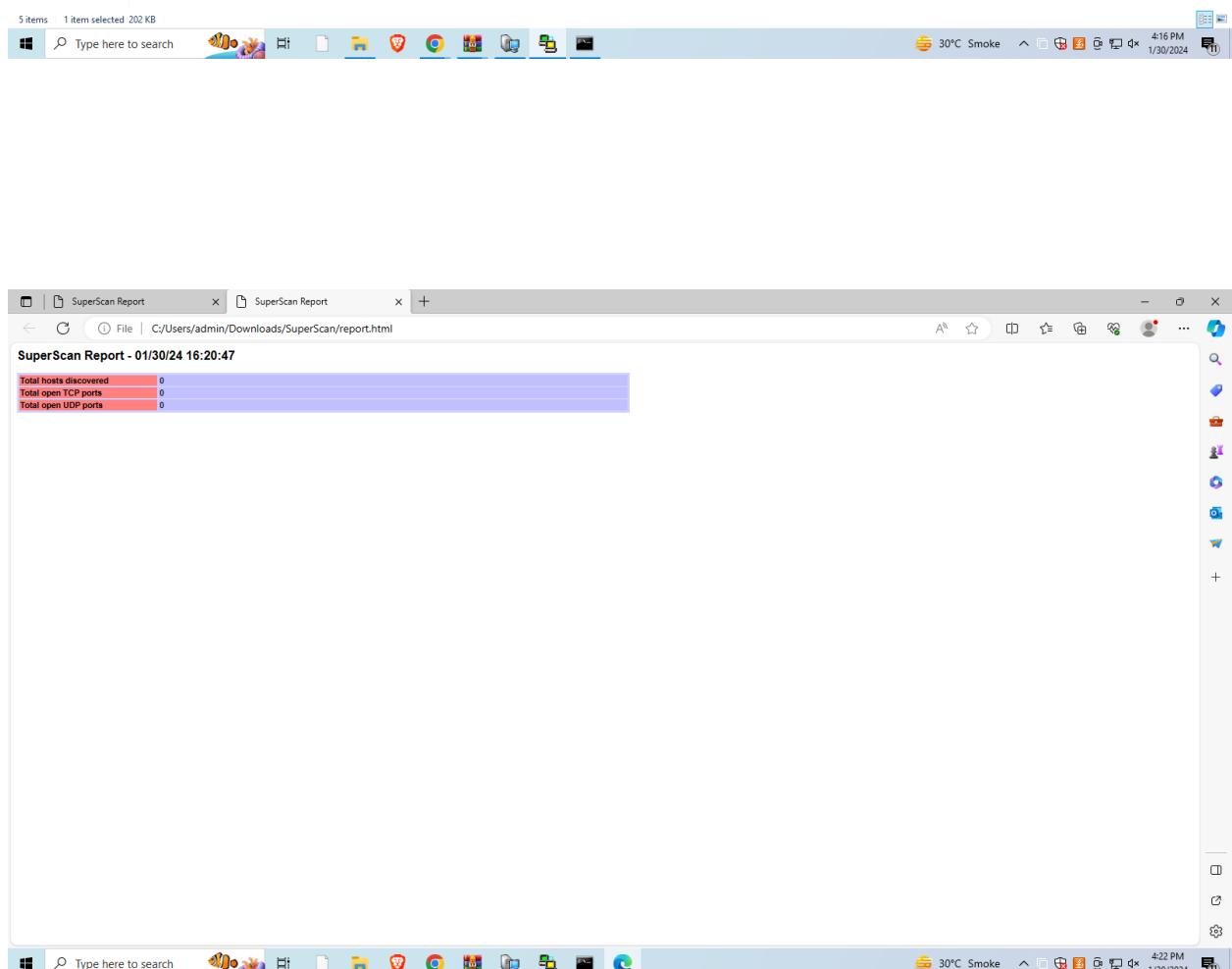
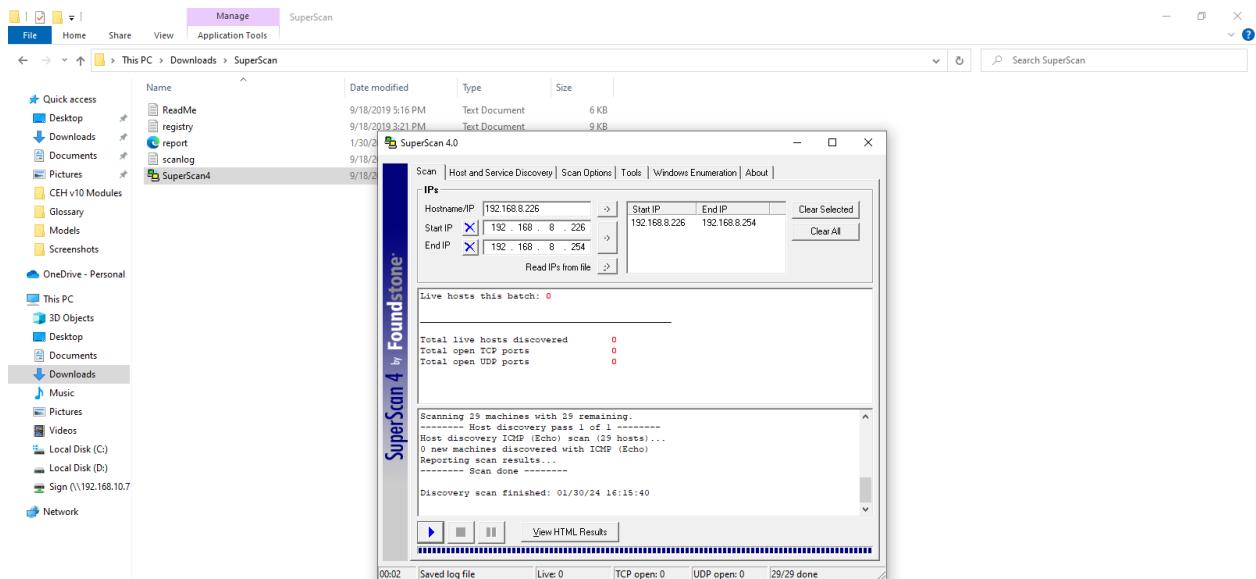








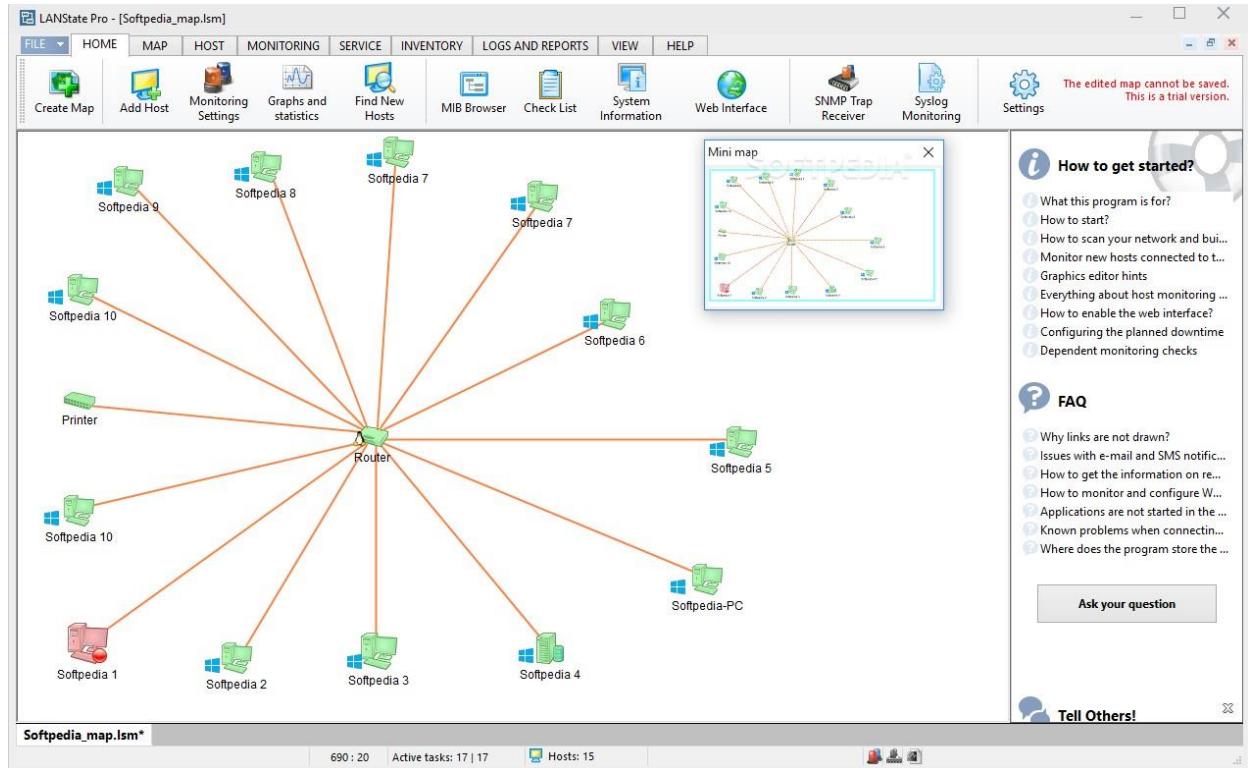




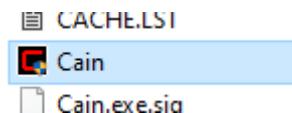
## Practical No. 07 - Perform Network Mapping

LANState is a simple network topology mapping, host monitoring, and management program.

Monitor the service availability. Manage servers, computers, switches, and other devices easier using the graphic map. Access devices' properties, RDP, web UI faster.

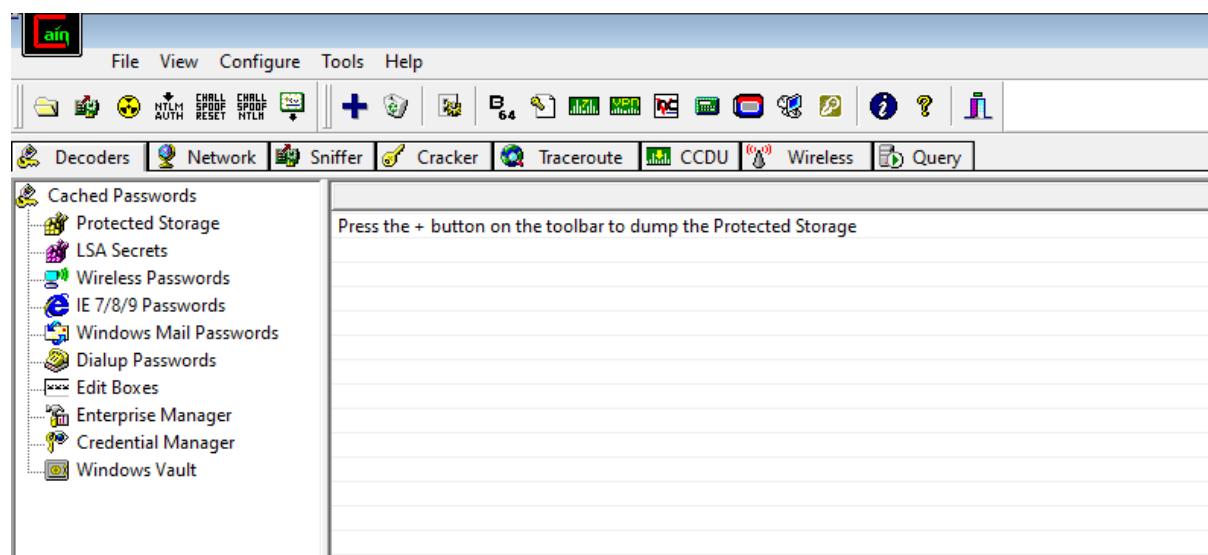


## Practical No. 08 - Perform Brute Force Attack

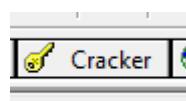


Install this in E: drive

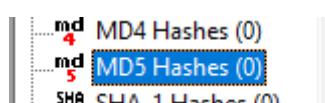
After installation it looks like this.



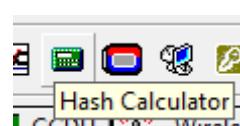
Then go to Cracker



Select this

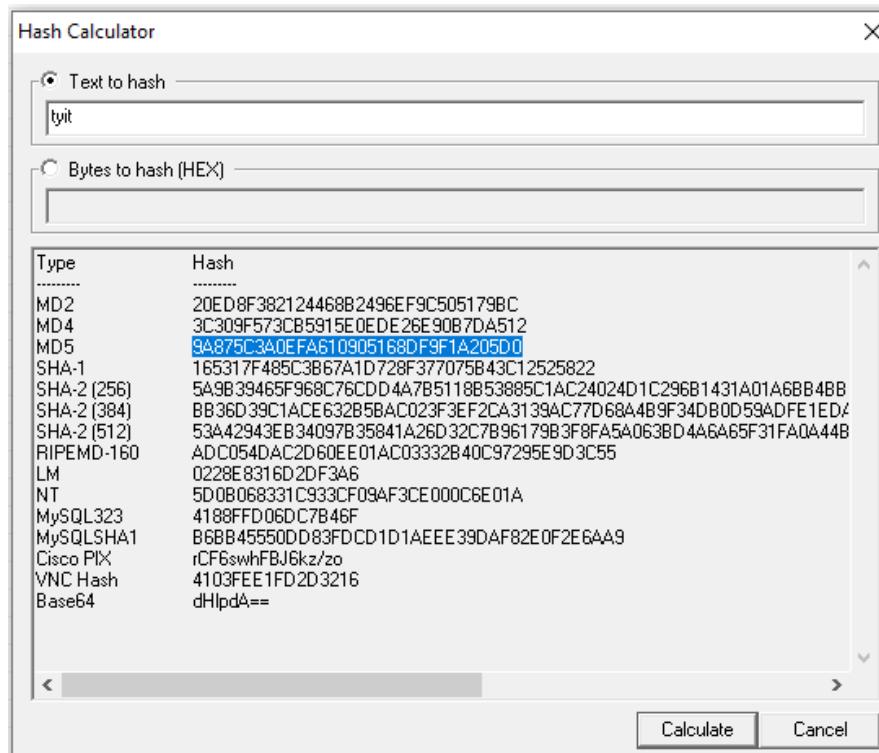


Click hash calculator



Then write any text and click calculate.

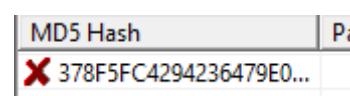
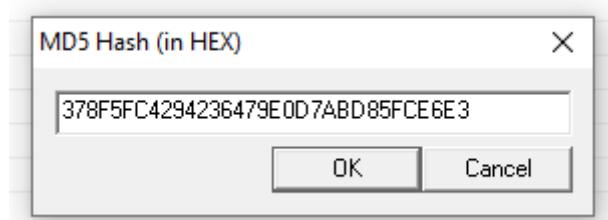
Copy MD5 hash value (canceled text) then click cancel.



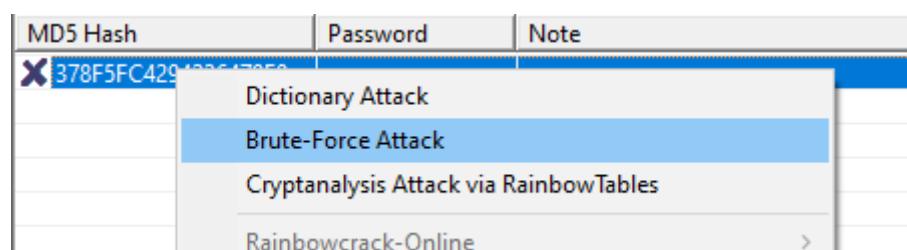
Click on this



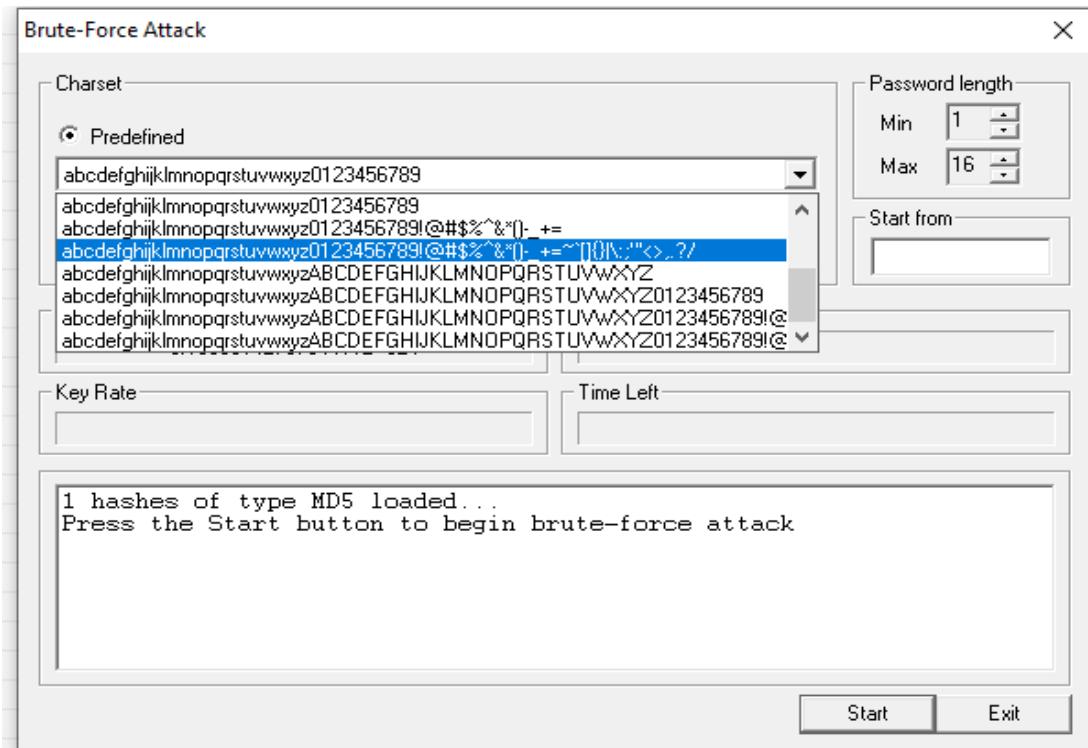
Paste the copied hash value then click OK



Right click on this and select this.



Then



Then click start

The text will be seen here

