

Student:

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Time on Task:

0 hours, 59 minutes

Progress:

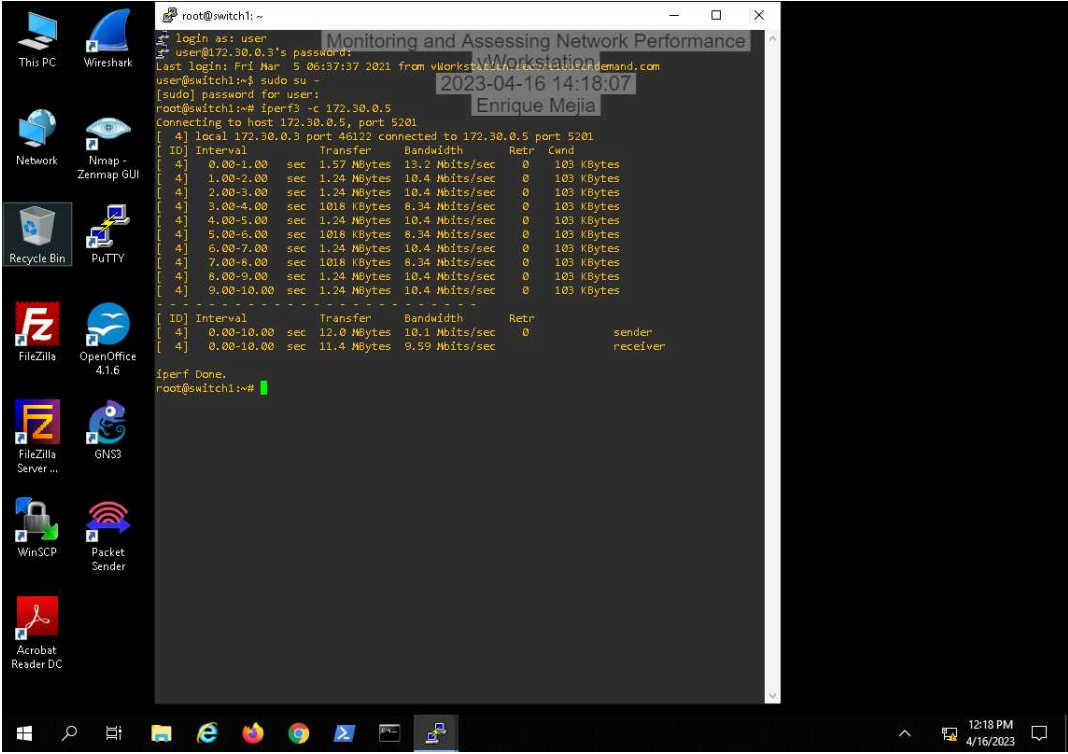
100%

Report Generated: Sunday, April 16, 2023 at 4:05 PM

Section 1: Hands-On Demonstration

Part 1: Assess Network Performance with Active Monitoring Tools

9. Make a screen capture showing the **iperf3** client output resulting from your **Switch1** to **Switch3** throughput test.

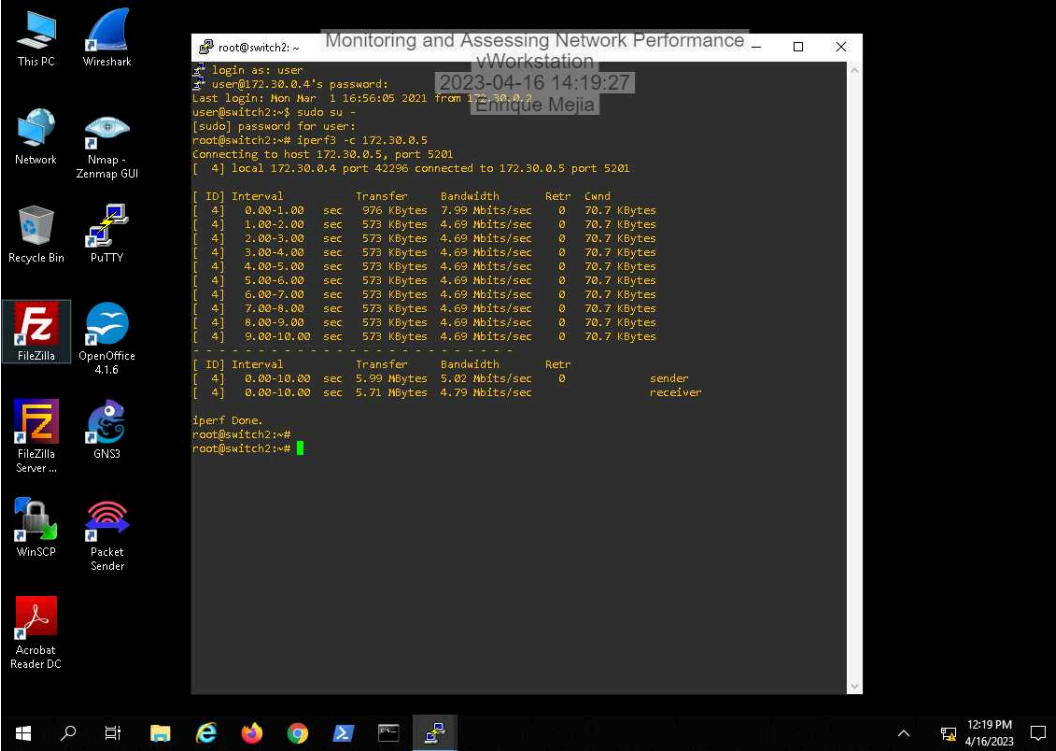


The screenshot shows a Windows desktop environment. On the left, there is a taskbar with icons for 'This PC', 'Wireshark', 'Network', 'Nmap - Zenmap GUI', 'Recycle Bin', 'PuTTY', 'FileZilla', 'OpenOffice 4.1.6', 'FileZilla Server...', 'GNS3', 'WinSCP', 'Packet Sender', and 'Acrobat Reader DC'. The main area of the desktop is occupied by a terminal window titled 'root@switch1: ~'. The terminal output shows the following commands and results:

```
root@switch1:~# login as: user
user@172.30.0.3's password:
Last login: Fri Mar 9 06:37:37 2021 from vltorkst.vWorkstation.demand.com
user@switch1:~$ sudo su -
[sudo] password for user:
root@switch1:~# iperf3 -c 172.30.0.5
Connecting to host 172.30.0.5, port 5201
[ 4] local 172.30.0.3 port 46122 connected to 172.30.0.5 port 5201
[ ID] Interval      Transfer    Bandwidth  Retr  Cwnd
[ 4] 0.00-1.00 sec  1.57 MBytes 13.2 Mbits/sec  0    103 KBytes
[ 4] 1.00-2.00 sec  1.24 MBytes 10.4 Mbits/sec  0    103 KBytes
[ 4] 2.00-3.00 sec  1.24 MBytes 10.4 Mbits/sec  0    103 KBytes
[ 4] 3.00-4.00 sec  1.01 MBytes 8.34 Mbits/sec  0    103 KBytes
[ 4] 4.00-5.00 sec  1.24 MBytes 10.4 Mbits/sec  0    103 KBytes
[ 4] 5.00-6.00 sec  1.01 MBytes 8.34 Mbits/sec  0    103 KBytes
[ 4] 6.00-7.00 sec  1.24 MBytes 10.4 Mbits/sec  0    103 KBytes
[ 4] 7.00-8.00 sec  1.01 MBytes 8.34 Mbits/sec  0    103 KBytes
[ 4] 8.00-9.00 sec  1.24 MBytes 10.4 Mbits/sec  0    103 KBytes
[ 4] 9.00-10.00 sec 1.24 MBytes 10.4 Mbits/sec  0    103 KBytes
--
[ ID] Interval      Transfer    Bandwidth  Retr  sender receiver
[ 4] 0.00-10.00 sec 12.0 MBytes 10.1 Mbits/sec  0
[ 4] 0.00-10.00 sec 11.4 MBytes 9.59 Mbits/sec  0
iperf Done.
root@switch1:~#
```

The terminal window also displays a watermark for 'Monitoring and Assessing Network Performance' and a date stamp '2023-04-16 14:18:07'.

12. Make a screen capture showing the **iperf3** client output resulting from your Switch2 to Switch3 throughput test.



The screenshot shows a vWorkstation window titled "Monitoring and Assessing Network Performance". Inside, a terminal window displays the following output:

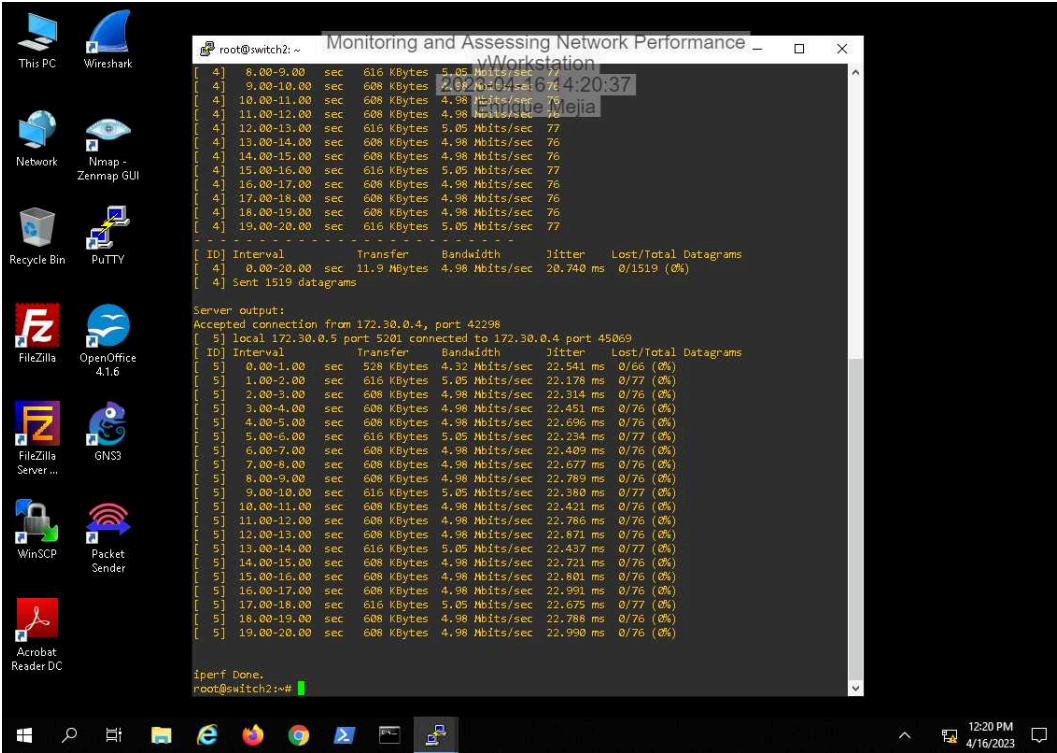
```
root@switch2: ~  
login as: user  
user@172.30.0.4's password:  
Last login: Mon Mar 1 16:56:05 2021 from 172.30.0.4  
user@switch2:~$ sudo su -  
[sudo] password for user:  
root@switch2:~# iperf3 -c 172.30.0.5  
Connecting to host 172.30.0.5, port 5201  
[ 4] local 172.30.0.4 port 42296 connected to 172.30.0.5 port 5201
```

| ID | Interval | Transfer | Bandwidth | Retr | Cwnd |
|------|----------------|------------|----------------|------|-------------|
| [4] | 0.00-1.00 sec | 976 KBytes | 7.99 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 1.00-2.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 2.00-3.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 3.00-4.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 4.00-5.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 5.00-6.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 6.00-7.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 7.00-8.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 8.00-9.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |
| [4] | 9.00-10.00 sec | 573 KBytes | 4.69 Mbits/sec | 0 | 70.7 KBytes |

```
root@switch2:~# iperf3 -s  
[ 4] Interval Transfer Bandwidth Retr  
[ 4] 0.00-10.00 sec 5.99 MBytes 5.02 Mbits/sec 0 sender  
[ 4] 0.00-10.00 sec 5.71 MBytes 4.79 Mbits/sec receiver
```

iperf Done.
root@switch2:~#
root@switch2:~#

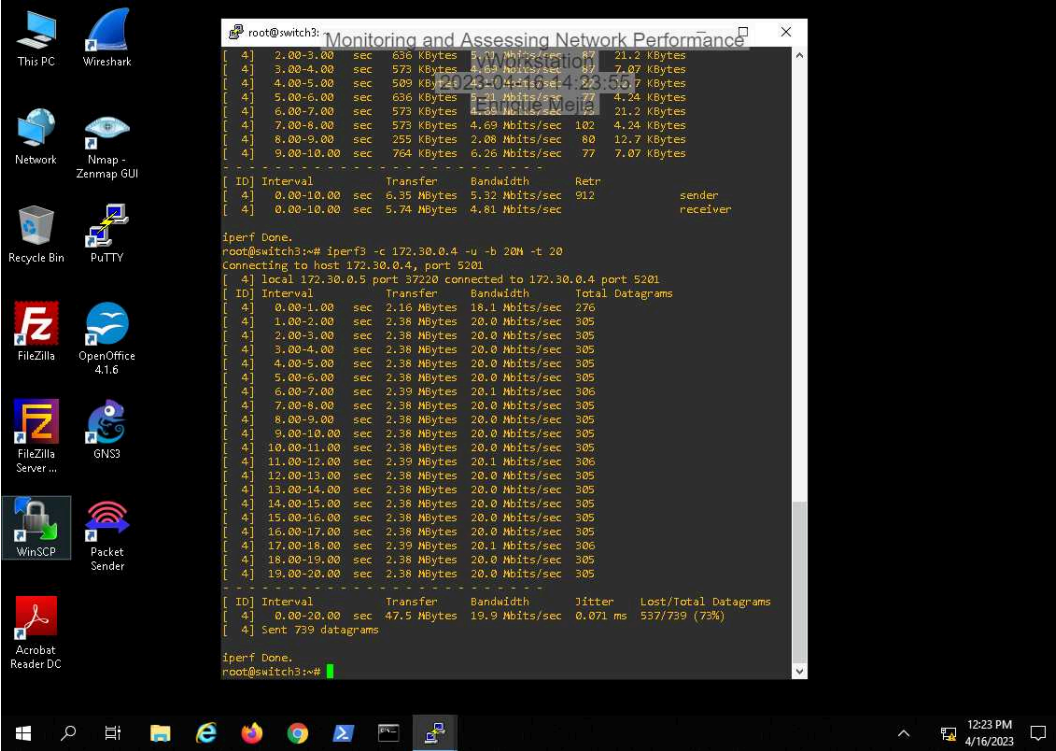
14. Make a screen capture showing the **iperf3** client output resulting from your Switch2 to Switch3 UDP test.



The screenshot shows a terminal window titled "Monitoring and Assessing Network Performance" running on a device labeled "root@switch2:~". The terminal displays the output of an iperf3 client test. The test results show a transfer of 616 Kbytes at 5.05 Mb/s with a jitter of 20.740 ms. The server output shows a local connection from 172.30.0.5 port 5201 to 172.30.0.4 port 45069. The server output table shows a transfer of 616 Kbytes at 5.05 Mb/s with a jitter of 20.740 ms. The terminal also shows the iperf3 Done message and the root@switch2:~ prompt.

```
root@switch2:~  
[ 4] 8.00-9.00 sec 616 Kbytes 5.05 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 9.00-10.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 10.00-11.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 11.00-12.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 12.00-13.00 sec 616 Kbytes 5.05 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 13.00-14.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 14.00-15.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 15.00-16.00 sec 616 Kbytes 5.05 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 16.00-17.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 17.00-18.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 18.00-19.00 sec 608 Kbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] 19.00-20.00 sec 616 Kbytes 5.05 Mb/s 20.740 ms 0/1519 (0%)  
-- -- --  
[ ID] Interval Transfer Bandwidth Jitter Lost/TOTAL Datagrams  
[ 4] 0.00-20.00 sec 11.9 Mbytes 4.98 Mb/s 20.740 ms 0/1519 (0%)  
[ 4] Sent 1519 datagrams  
  
Server output:  
Accepted connection from 172.30.0.4, port 42298  
[ 5] Local 172.30.0.5 port 5201 connected to 172.30.0.4 port 45069  
[ ID] Interval Transfer Bandwidth Jitter Lost/TOTAL Datagrams  
[ 5] 0.00-1.00 sec 528 Kbytes 4.32 Mb/s 22.541 ms 0/66 (0%)  
[ 5] 1.00-2.00 sec 616 Kbytes 5.05 Mb/s 22.178 ms 0/77 (0%)  
[ 5] 2.00-3.00 sec 608 Kbytes 4.98 Mb/s 22.314 ms 0/76 (0%)  
[ 5] 3.00-4.00 sec 608 Kbytes 4.98 Mb/s 22.451 ms 0/76 (0%)  
[ 5] 4.00-5.00 sec 608 Kbytes 4.98 Mb/s 22.696 ms 0/76 (0%)  
[ 5] 5.00-6.00 sec 616 Kbytes 5.05 Mb/s 22.234 ms 0/77 (0%)  
[ 5] 6.00-7.00 sec 608 Kbytes 4.98 Mb/s 22.409 ms 0/76 (0%)  
[ 5] 7.00-8.00 sec 608 Kbytes 4.98 Mb/s 22.677 ms 0/76 (0%)  
[ 5] 8.00-9.00 sec 608 Kbytes 4.98 Mb/s 22.789 ms 0/76 (0%)  
[ 5] 9.00-10.00 sec 616 Kbytes 5.05 Mb/s 22.380 ms 0/77 (0%)  
[ 5] 10.00-11.00 sec 608 Kbytes 4.98 Mb/s 22.421 ms 0/76 (0%)  
[ 5] 11.00-12.00 sec 608 Kbytes 4.98 Mb/s 22.786 ms 0/76 (0%)  
[ 5] 12.00-13.00 sec 608 Kbytes 4.98 Mb/s 22.871 ms 0/76 (0%)  
[ 5] 13.00-14.00 sec 616 Kbytes 5.05 Mb/s 22.437 ms 0/77 (0%)  
[ 5] 14.00-15.00 sec 608 Kbytes 4.98 Mb/s 22.721 ms 0/76 (0%)  
[ 5] 15.00-16.00 sec 608 Kbytes 4.98 Mb/s 22.801 ms 0/76 (0%)  
[ 5] 16.00-17.00 sec 608 Kbytes 4.98 Mb/s 22.091 ms 0/76 (0%)  
[ 5] 17.00-18.00 sec 616 Kbytes 5.05 Mb/s 22.675 ms 0/77 (0%)  
[ 5] 18.00-19.00 sec 608 Kbytes 4.98 Mb/s 22.788 ms 0/76 (0%)  
[ 5] 19.00-20.00 sec 608 Kbytes 4.98 Mb/s 22.990 ms 0/76 (0%)  
  
iperf3 Done.  
root@switch2:~#
```

21. Make a screen capture showing the **iperf3** client output resulting from your Switch3 to Switch2 UDP test with excess bandwidth.



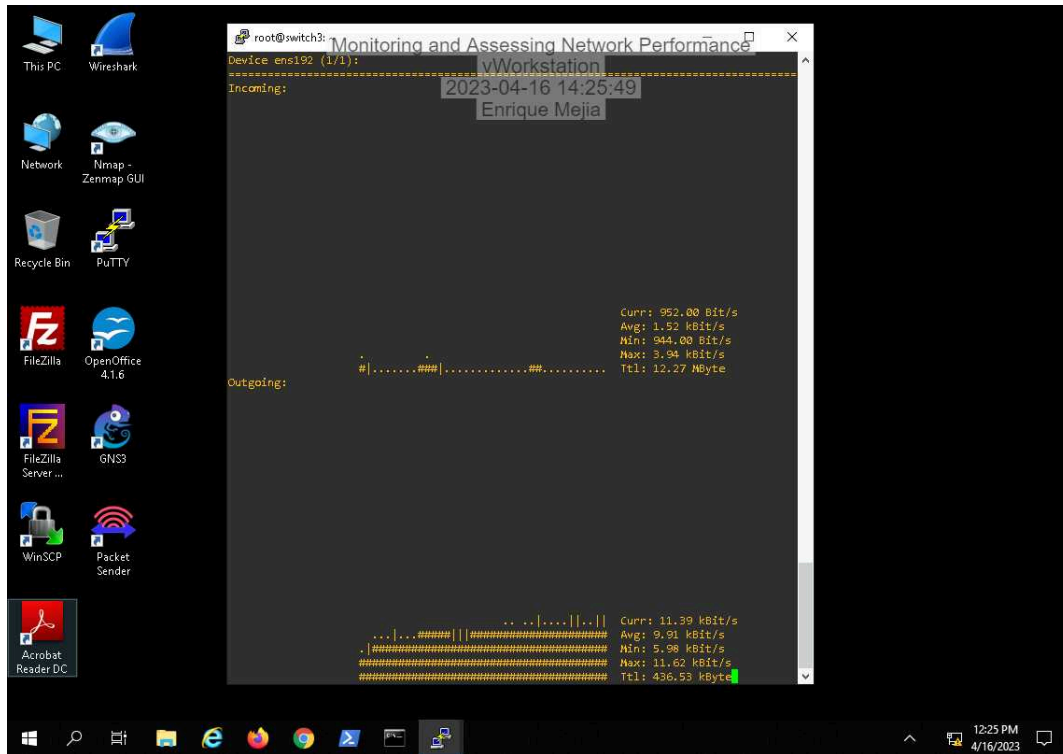
The screenshot shows a terminal window titled "Monitoring and Assessing Network Performance" with a root prompt at switch3. The output of the iperf3 command is as follows:

```
iperf Done.
root@switch3:~# iperf3 -c 172.30.0.4 -u -b 20M -t 20
Connecting to host 172.30.0.4, port 5201
[ 4] local 172.30.0.5 port 37220 connected to 172.30.0.4 port 5201
[ ID] Interval      Transfer      Bandwidth    Total Datagrams
[ 4] 0.00-1.00 sec  2.16 MBytes  18.1 Mbits/sec  276
[ 4] 1.00-2.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 2.00-3.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 3.00-4.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 4.00-5.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 5.00-6.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 6.00-7.00 sec  2.39 MBytes  20.1 Mbits/sec  306
[ 4] 7.00-8.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 8.00-9.00 sec  2.38 MBytes  20.0 Mbits/sec  305
[ 4] 9.00-10.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 10.00-11.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 11.00-12.00 sec 2.39 MBytes  20.1 Mbits/sec  306
[ 4] 12.00-13.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 13.00-14.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 14.00-15.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 15.00-16.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 16.00-17.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 17.00-18.00 sec 2.39 MBytes  20.1 Mbits/sec  306
[ 4] 18.00-19.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ 4] 19.00-20.00 sec 2.38 MBytes  20.0 Mbits/sec  305
[ ID] Interval      Transfer      Bandwidth    Jitter    Lost/Tot. Datagrams
[ 4] 0.00-20.00 sec 47.5 MBytes  19.9 Mbits/sec  0.071 ms  537/739 (73%)
[ 4] Sent 739 datagrams

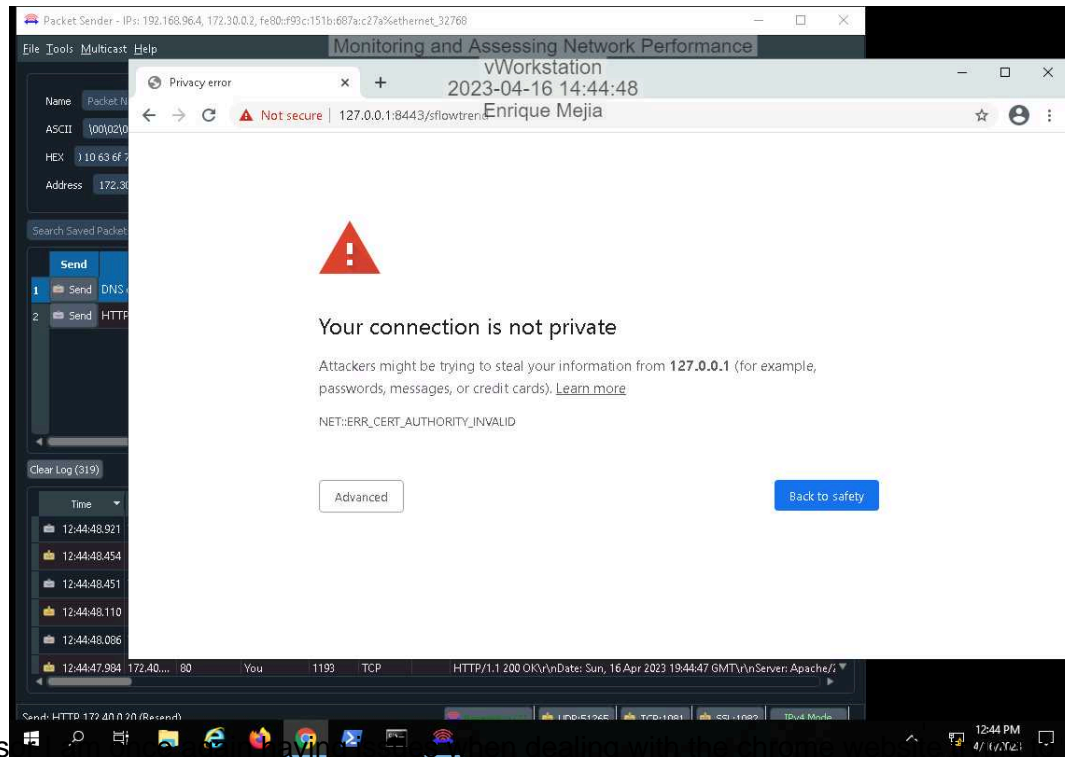
iperf Done.
root@switch3:~#
```

Part 2: Assess Network Performance with Passive Monitoring Tools

6. **Make a screen capture** showing the **output of the nload command for ens192**.

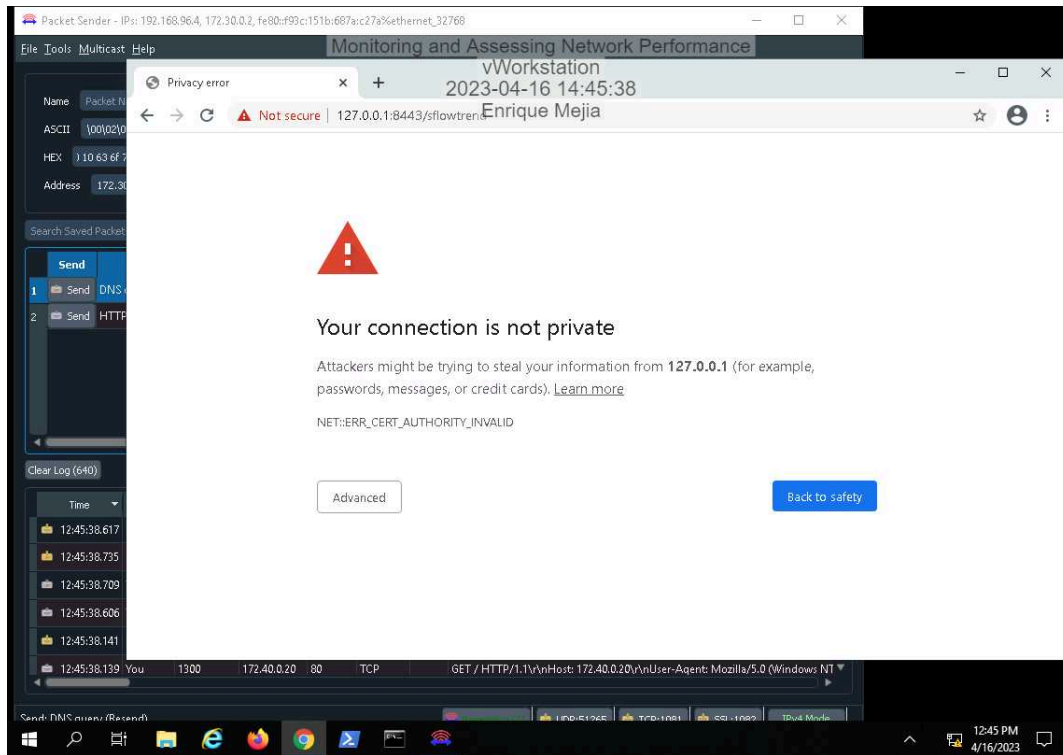


27. Make a screen capture showing the **Top N** bar chart for your selected interval.



Profess... input the address they provide in the lab.

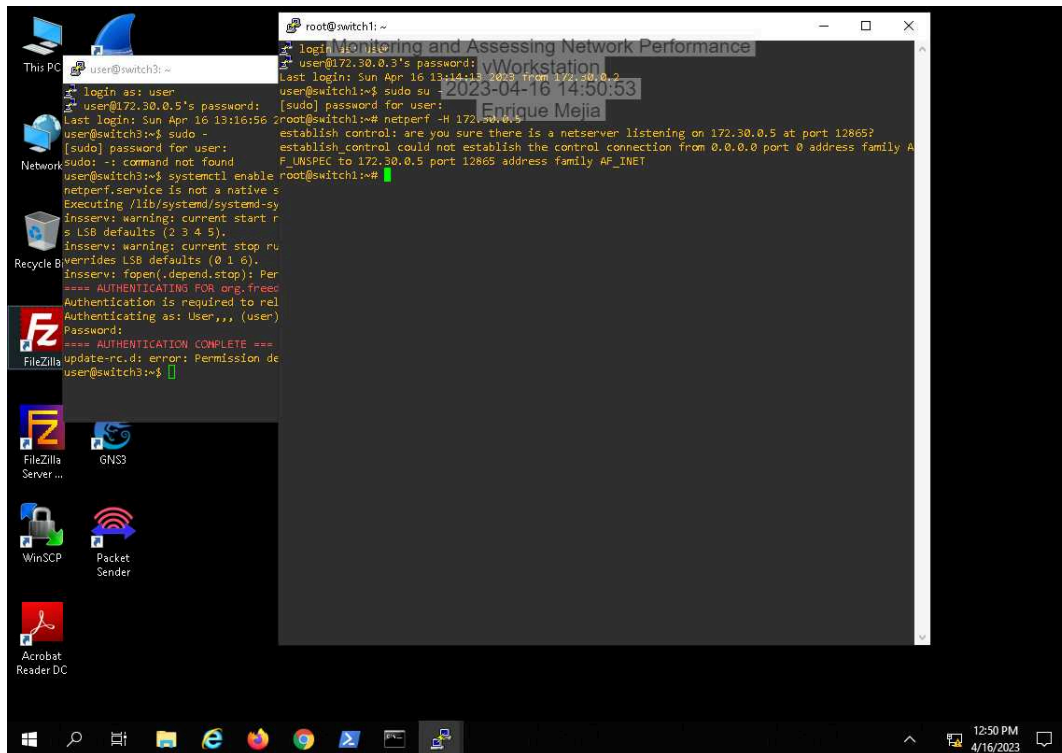
32. Make a screen capture showing the **traffic visualization** for all switches in the **Circles** view.



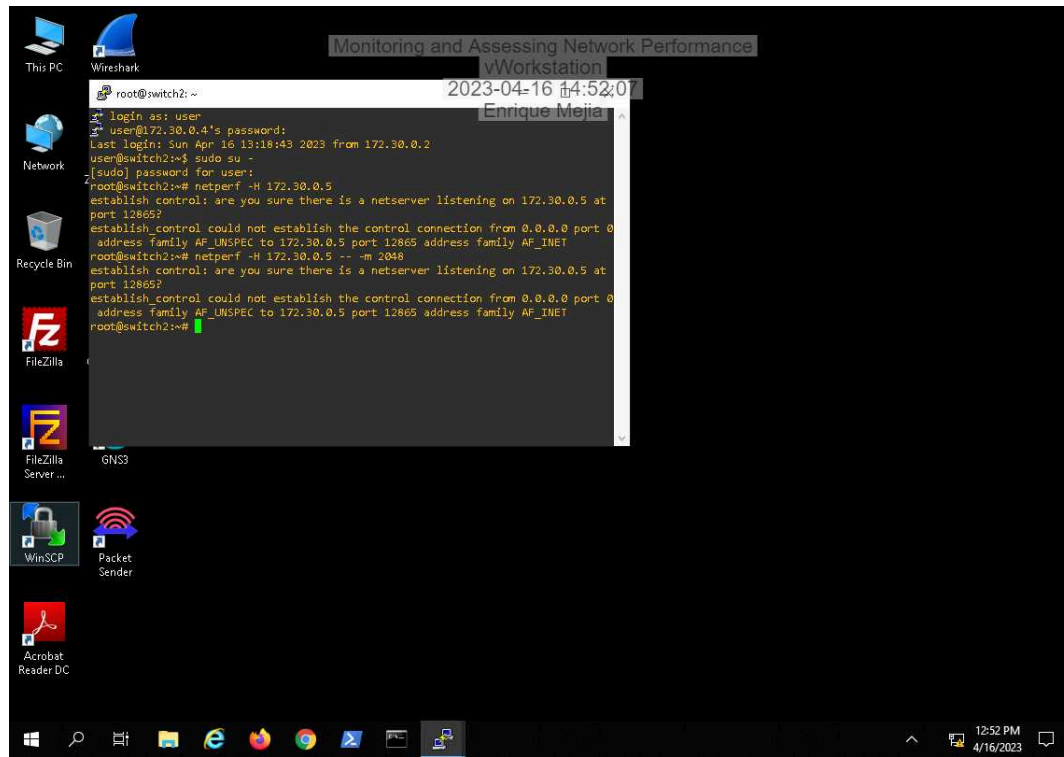
Section 2: Applied Learning

Part 1: Assess Network Performance with Active Monitoring Tools

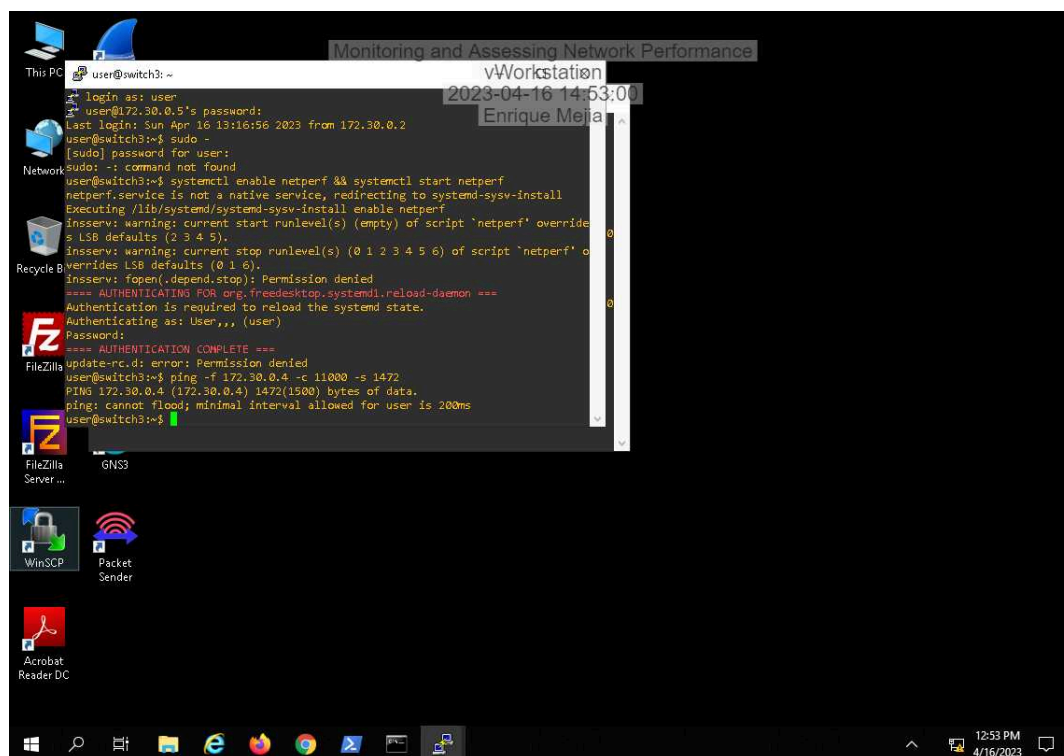
9. Make a screen capture showing the results of both of your Switch1 => Switch3 throughput tests.



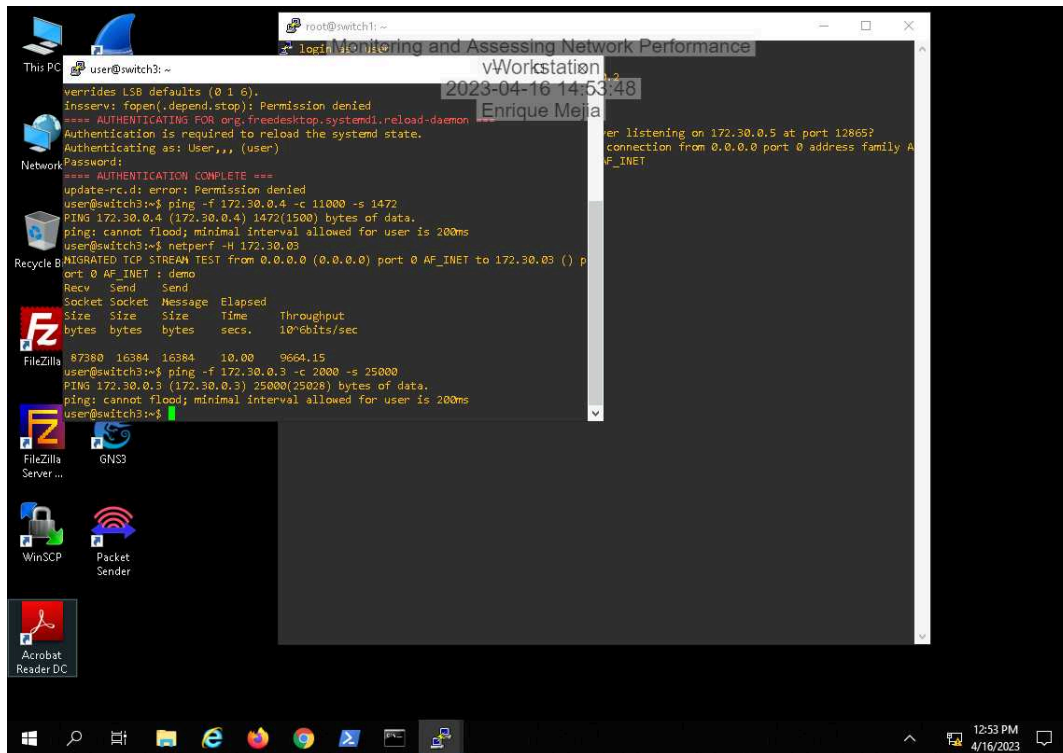
14. Make a screen capture showing the results of both of your Switch2 => Switch3 throughput tests.



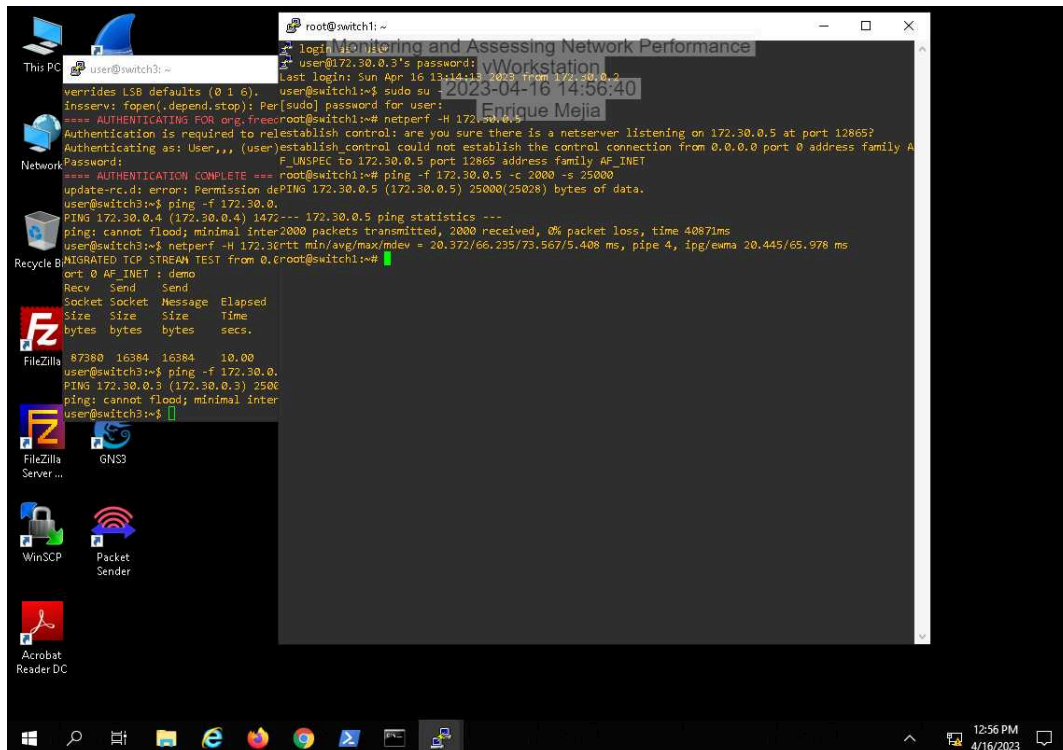
18. Make a screen capture showing the result of your ping flood from Switch3 => Switch3.



21. Make a screen capture showing the result of your ping flood from Switch3 => Switch1.

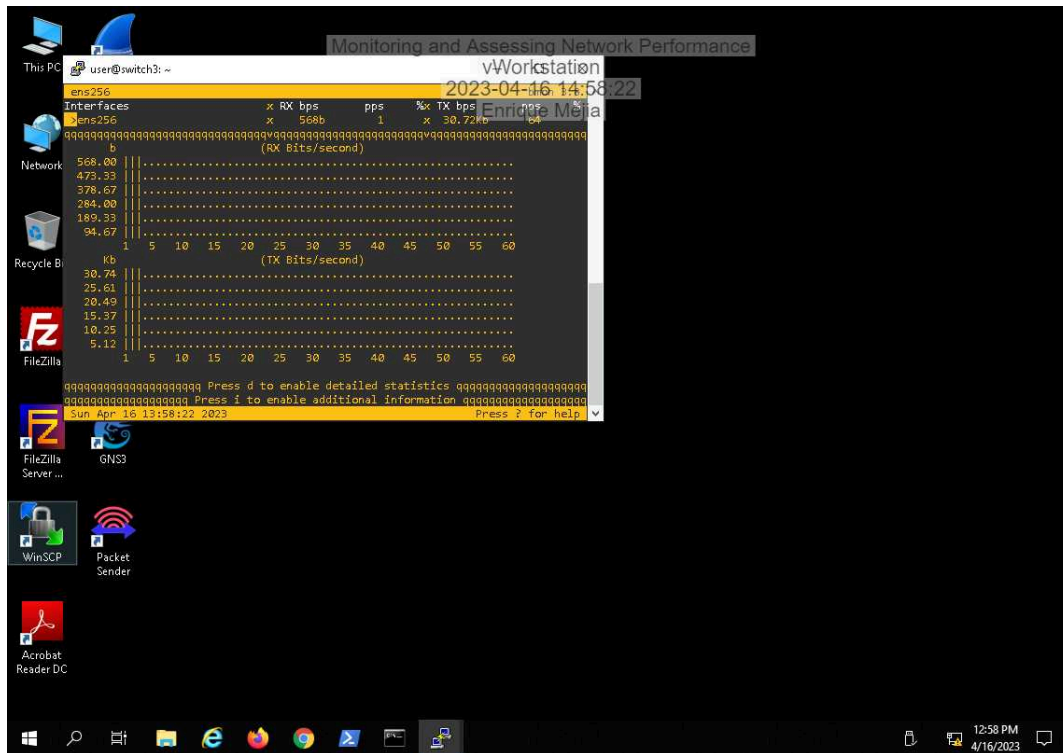


24. Make a screen capture showing the result of your ping flood from Switch1 => Switch3.

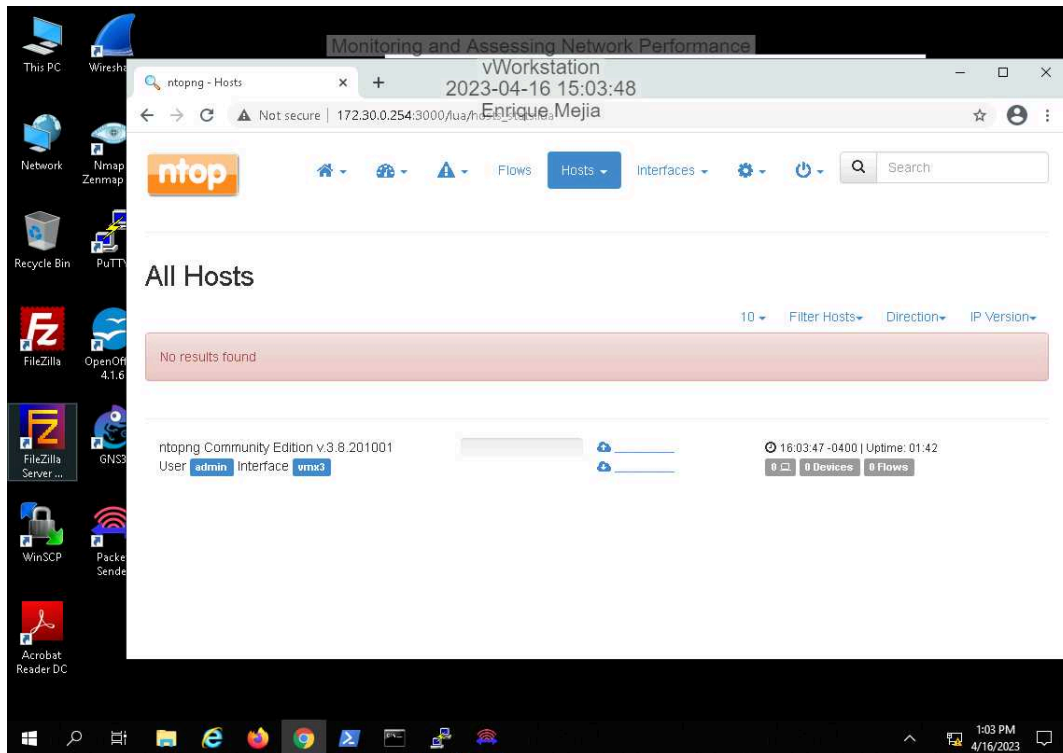


Part 2: Assess Network Performance with Passive Monitoring Tools

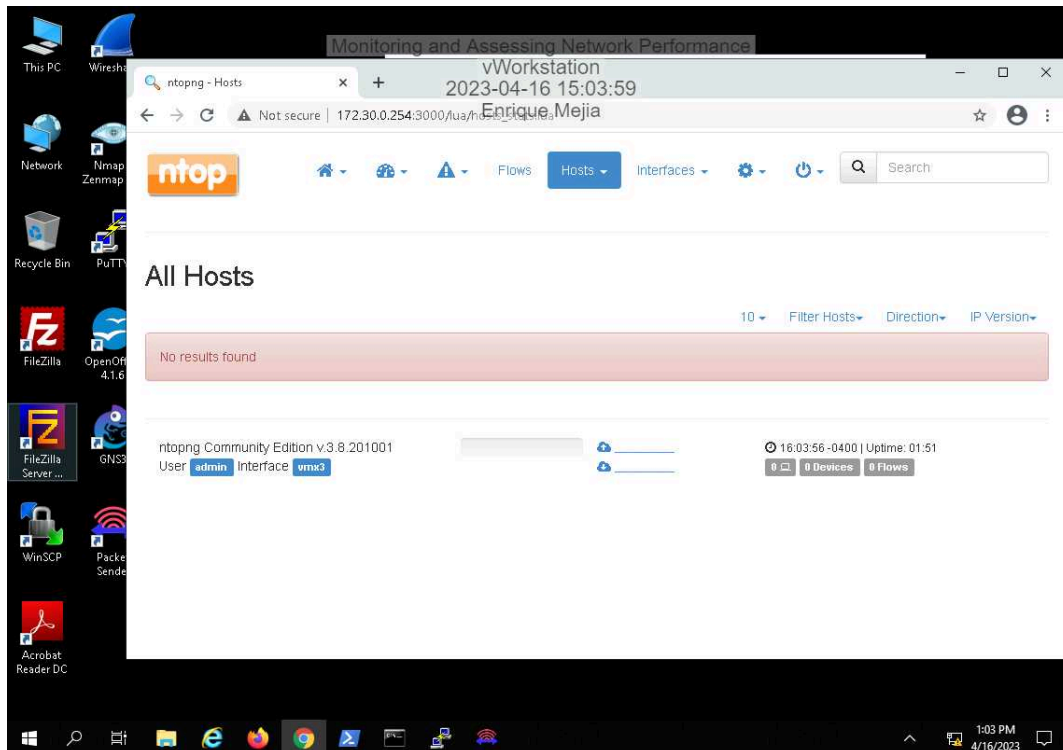
8. Make a screen capture showing the **bmon** output for the ens256 interface.



29. Make a screen capture showing the **Top Hosts** view in ntopng.



33. Make a screen capture showing the **tabulated application protocol data** in ntopng.



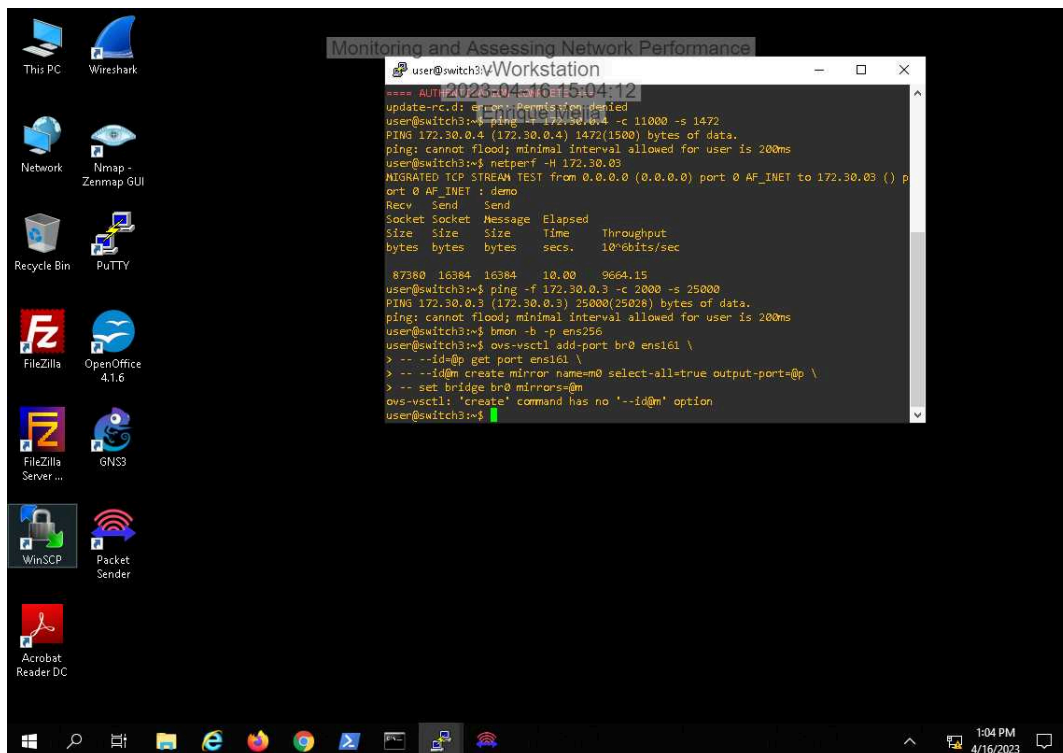
Section 3: Challenge and Analysis

Part 1: Monitor Incoming Traffic on the WAN

Record the IP address of the mysterious host.

Was having trouble.

Make a screen capture showing the breakdown of the flow between the legitimate VPN endpoint and the firewall.

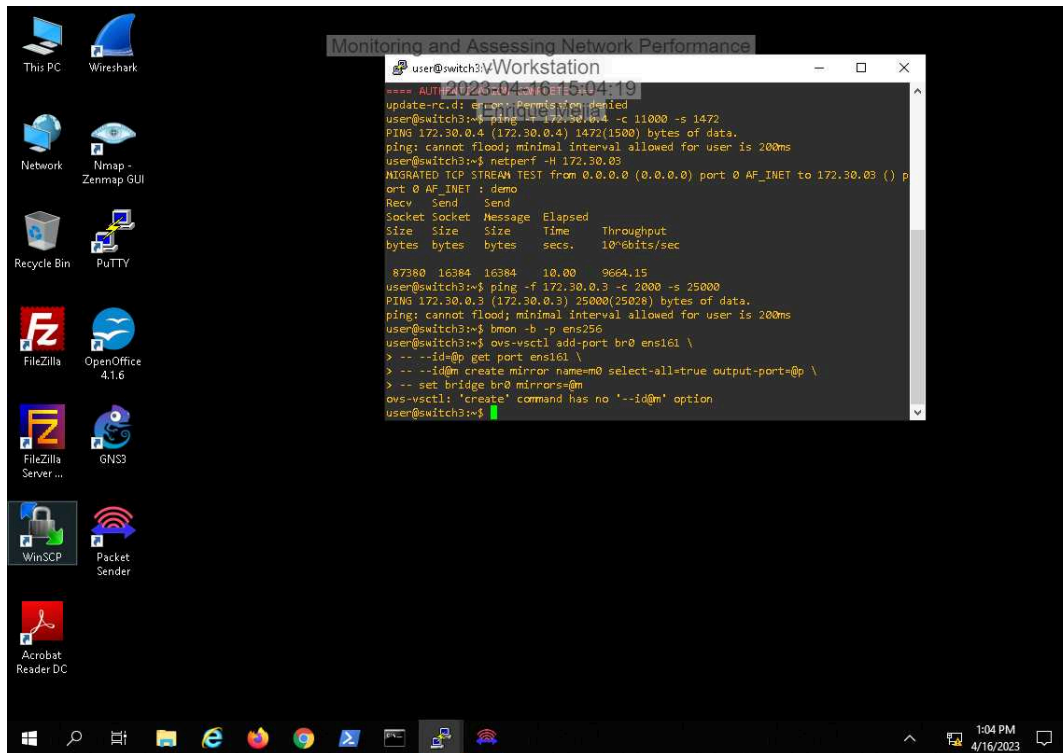


Part 2: Analyze Incoming Traffic on the WAN

Monitoring and Assessing Network Performance

Fundamentals of Communications and Networking, Third Edition - Lab 08

Make a screen capture showing the RST flag percentage in the TCP Flags Distribution section.



Record the five top server ports being probed by the suspicious target.

Was having issues