VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

School of Information Technology and Engineering

Lab Assessment-I, AUGUST 2020

B.Tech., Fall-2020-2021

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COURSE CODE	ITE3001
COURSE NAME	DATA COMMUNICATION & COMPUTER NETWORKS
SLOT	L15+L16
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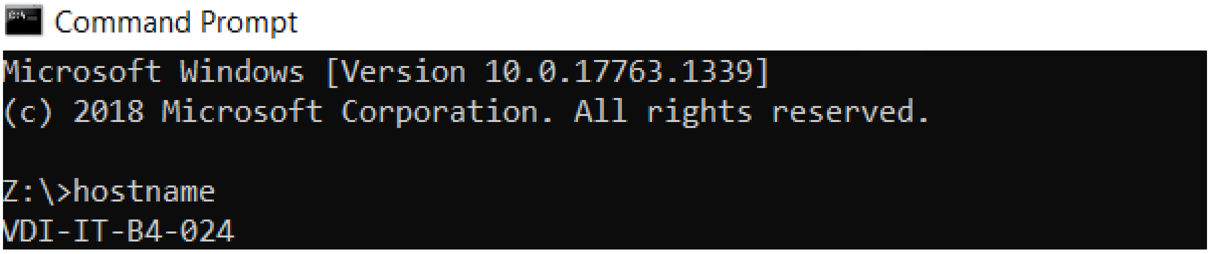
NOTE: VIT Virtual Lab’s VMWare software used to run the commands
https://virtuallabs.vit.ac.in/portal/webclient/index.html#/

1. hostname

a. Find the name of your system?
→ VDI-IT-B4-024



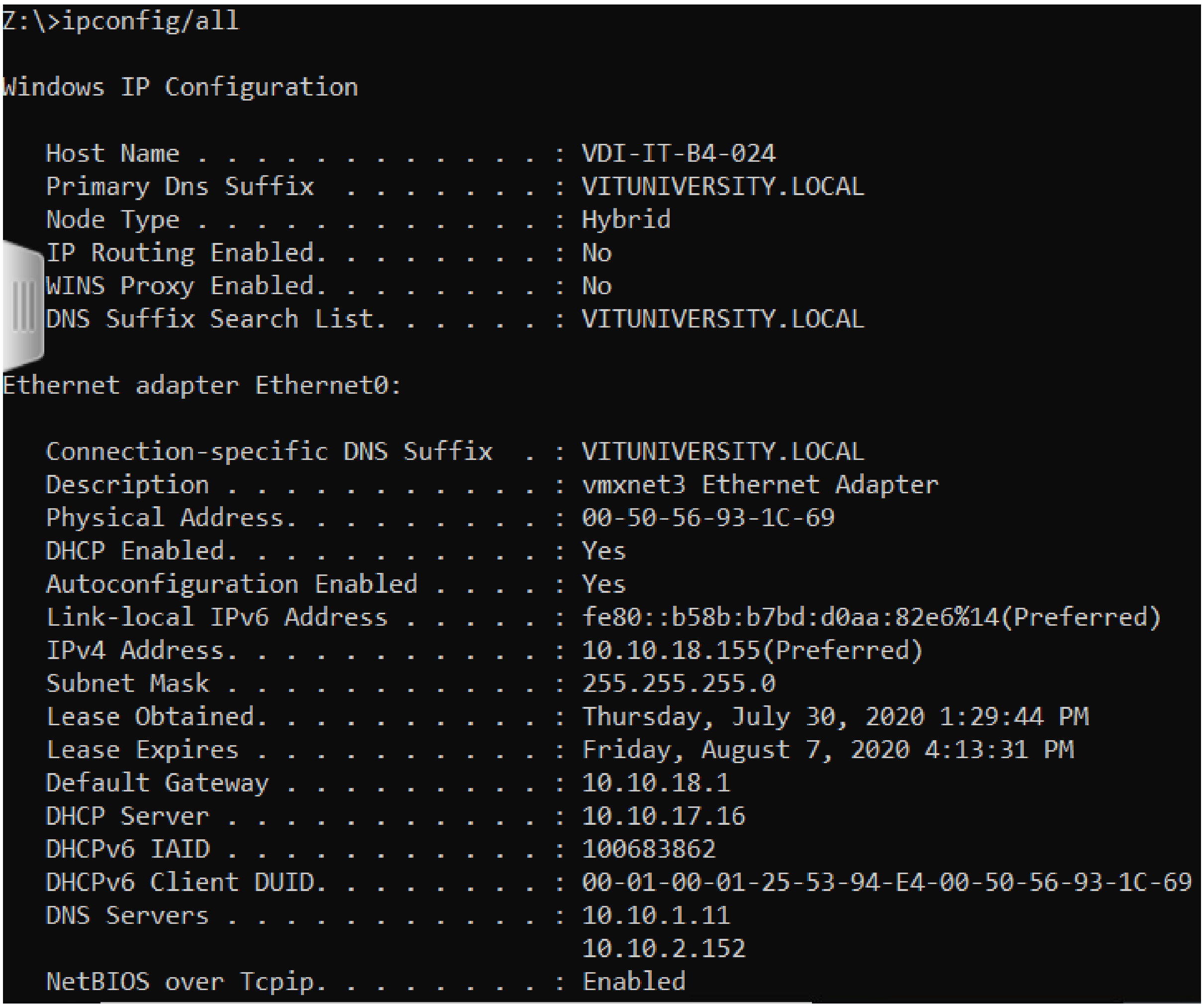
Command Prompt

```
Microsoft Windows [Version 10.0.17763.1339]
(c) 2018 Microsoft Corporation. All rights reserved.

Z:\>hostname
VDI-IT-B4-024
```

b. What is the significance of the name?
The hostname command is used to show or set a computer's host name and domain name.

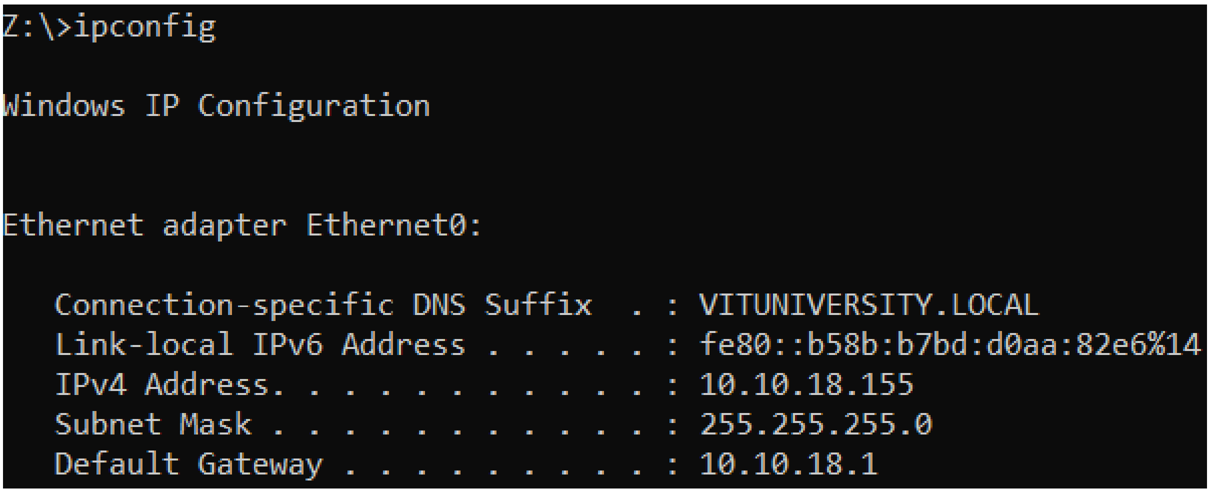
2. ipconfig

a. Find out the MAC address of the network interface card of your system?
→ 00-50-56-93-1C-69



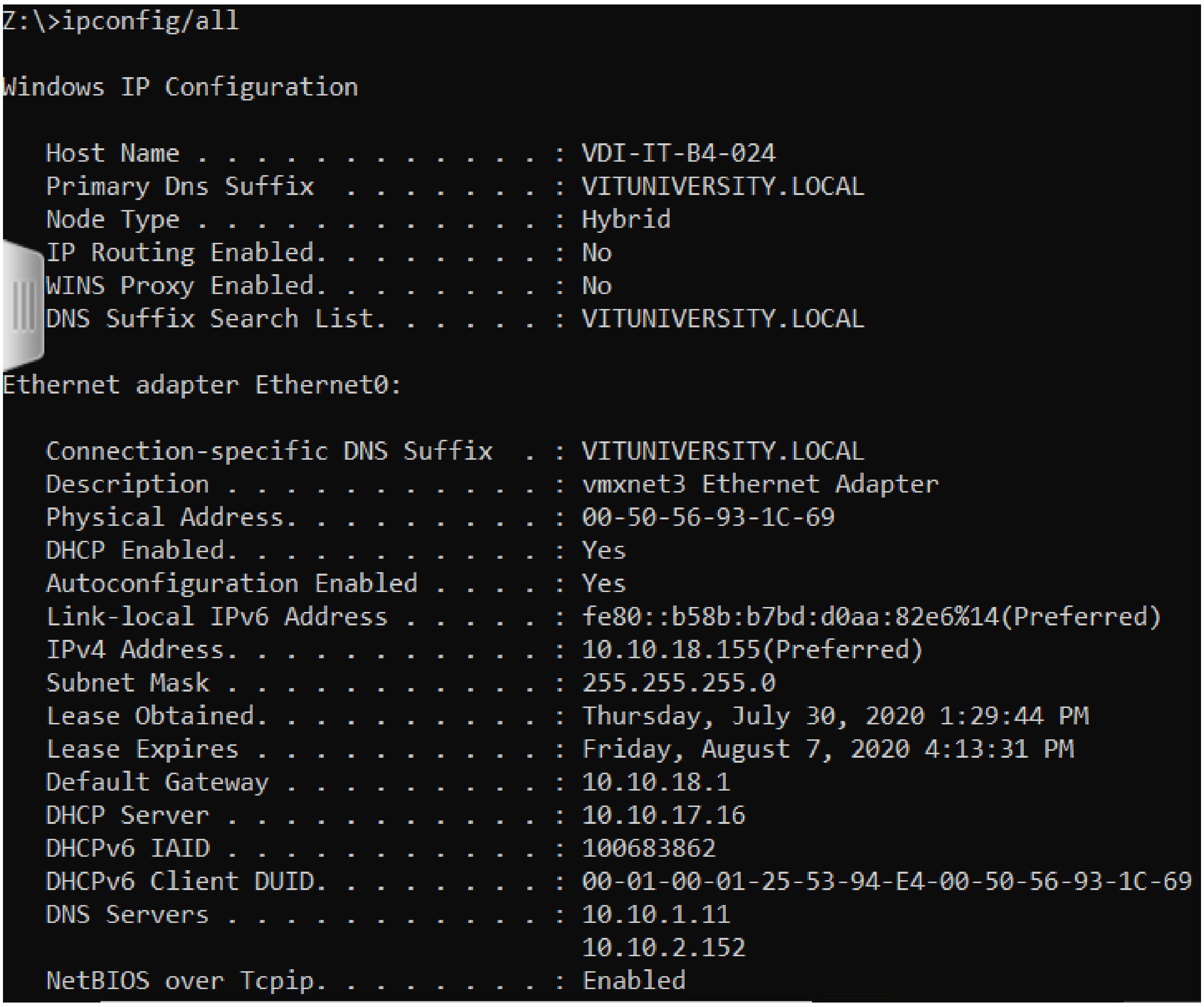
```
Z:\>ipconfig/all

Windows IP Configuration

   Host Name . . . . . . . . . . . . : VDI-IT-B4-024
   Primary Dns Suffix  . . . . . . . : VITUNIVERSITY.LOCAL
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : VITUNIVERSITY.LOCAL

Ethernet adapter Ethernet0:

   Connection-specific DNS Suffix  . : VITUNIVERSITY.LOCAL
   Description . . . . . . . . . . . : vmxnet3 Ethernet Adapter
   Physical Address. . . . . . . . . : 00-50-56-93-1C-69
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::b58b:b7bd:d0aa:82e6%14(Preferred)
   IPv4 Address. . . . . . . . . . . : 10.10.18.155(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Thursday, July 30, 2020 1:29:44 PM
   Lease Expires . . . . . . . . . . : Friday, August 7, 2020 4:13:31 PM
   Default Gateway . . . . . . . . . : 10.10.18.1
   DHCP Server . . . . . . . . . . . : 10.10.17.16
   DHCPv6 IAID . . . . . . . . . . . : 100683862
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-25-53-94-E4-00-50-56-93-1C-69
   DNS Servers . . . . . . . . . . . : 10.10.1.11
                                       10.10.2.152
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

b. Find the host IP address of your system?
→ 10.10.18.155



```
Z:\>ipconfig

Windows IP Configuration


Ethernet adapter Ethernet0:

   Connection-specific DNS Suffix  . : VITUNIVERSITY.LOCAL
   Link-local IPv6 Address . . . . . : fe80::b58b:b7bd:d0aa:82e6%14
   IPv4 Address. . . . . . . . . . . : 10.10.18.155
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 10.10.18.1
```

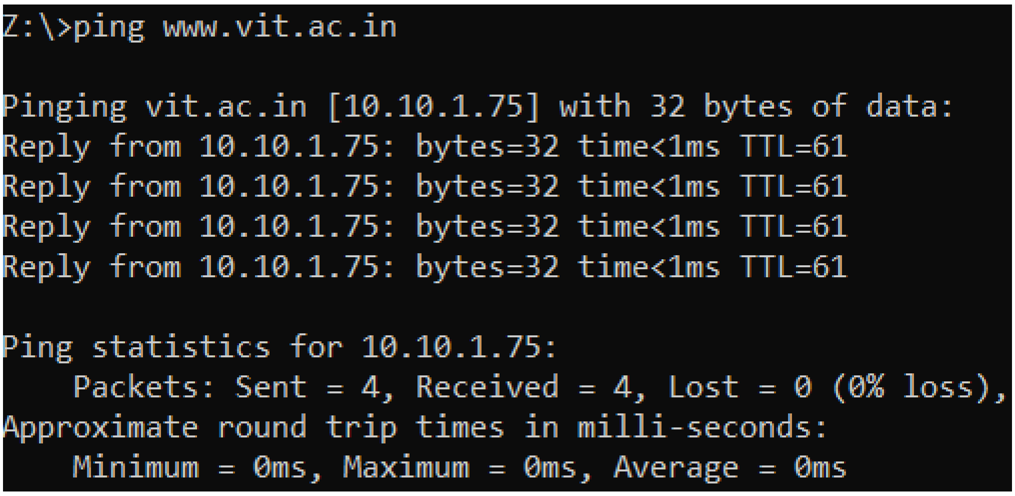
c. Find out all the network interfaces connected to your system.



```
Z:\>ipconfig/all

Windows IP Configuration

   Host Name . . . . . . . . . . . . : VDI-IT-B4-024
   Primary Dns Suffix  . . . . . . . : VITUNIVERSITY.LOCAL
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : VITUNIVERSITY.LOCAL

Ethernet adapter Ethernet0:

   Connection-specific DNS Suffix  . : VITUNIVERSITY.LOCAL
   Description . . . . . . . . . . . : vmxnet3 Ethernet Adapter
   Physical Address. . . . . . . . . : 00-50-56-93-1C-69
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::b58b:b7bd:d0aa:82e6%14(Preferred)
   IPv4 Address. . . . . . . . . . . : 10.10.18.155(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Thursday, July 30, 2020 1:29:44 PM
   Lease Expires . . . . . . . . . . : Friday, August 7, 2020 4:13:31 PM
   Default Gateway . . . . . . . . . : 10.10.18.1
   DHCP Server . . . . . . . . . . . : 10.10.17.16
   DHCPv6 IAID . . . . . . . . . . . : 100683862
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-25-53-94-E4-00-50-56-93-1C-69
   DNS Servers . . . . . . . . . . . : 10.10.1.11
                                       10.10.2.152
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

3. ping

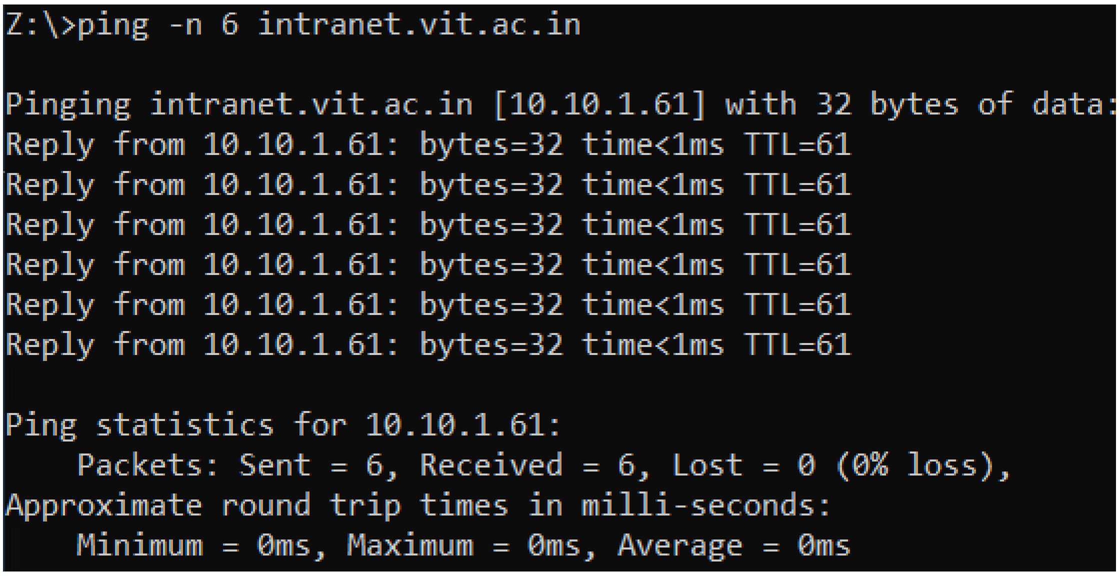
a. Find the IP address of www.vit.ac.in?
→ 10.10.1.75



```
Z:\>ping www.vit.ac.in

Pinging vit.ac.in [10.10.1.75] with 32 bytes of data:
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61

Ping statistics for 10.10.1.75:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

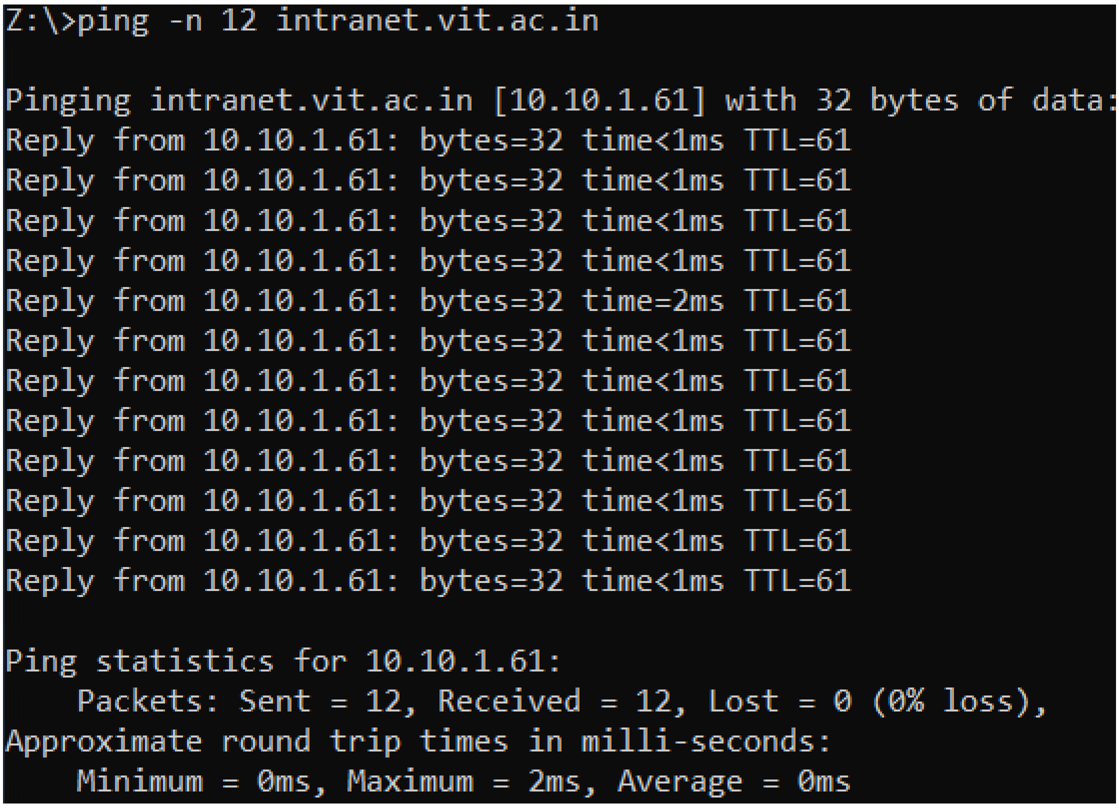
b. Indicate what percentage of packets sent resulted in a successful response. For the packets from which you received a response, write down the minimum, average, and maximum round trip times in milliseconds. Note that ping reports these times to you if you tell it how many packets to send on the command line. Explain the differences in minimum round-trip time to each of these hosts.

→ 100% packets resulted in a successful response while sending to ww.vit.ac.in in above part.
→ Round trip times:
Minimum = 0ms
Average = 0ms
Maximum = 0ms



```
Z:\>ping -n 6 intranet.vit.ac.in

Pinging intranet.vit.ac.in [10.10.1.61] with 32 bytes of data:
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61

Ping statistics for 10.10.1.61:
    Packets: Sent = 6, Received = 6, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

→ The further the destination is from VIT, the longer the propagation time. We are using VIT's Virtual Labs command prompt therefore the round-trip times for 6 packets to intranet.vit.ac.in is 0 milliseconds away.

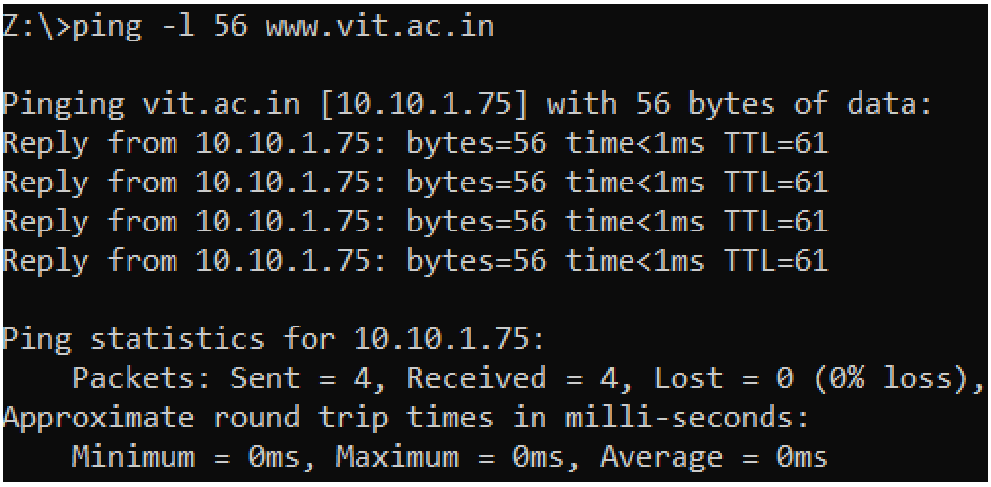


```
Z:\>ping -n 12 intranet.vit.ac.in

Pinging intranet.vit.ac.in [10.10.1.61] with 32 bytes of data:
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time=2ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61

Ping statistics for 10.10.1.61:
    Packets: Sent = 12, Received = 12, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

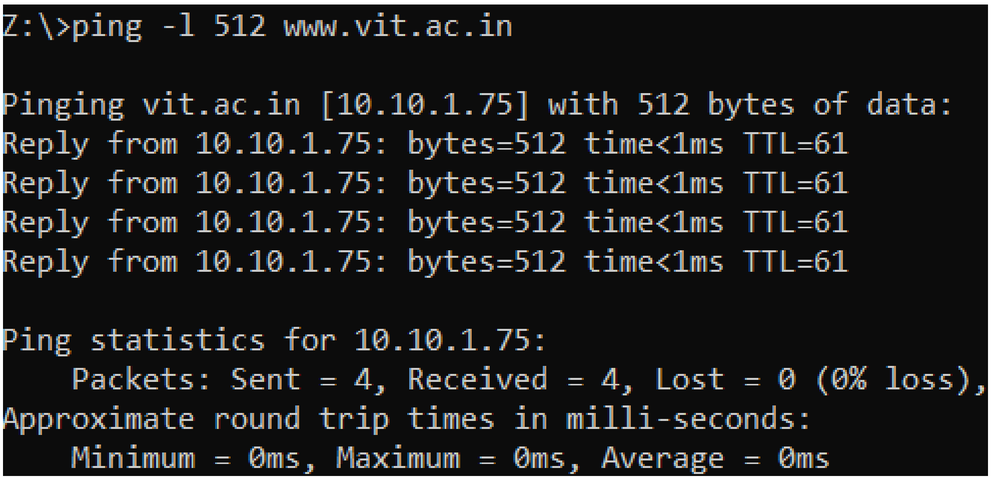
→ Now we are sending 12 packets to intranet.vit.ac.in instead of 6 packets. We can see that while minimum and average round-trip times are same i.e. 0ms, the maximum round-trip time has increased to 2ms. This is because sending a greater number of packets will require more propagation time as well.

c. Now send pings with 56, 512- and 1024-byte packets to the 4 hosts above. Write down the minimum, average, and maximum round trip times in milliseconds for each of the 12 pings. Why are the minimum round-trip times to the same hosts different when using 56, 512, and 1024-byte packets.

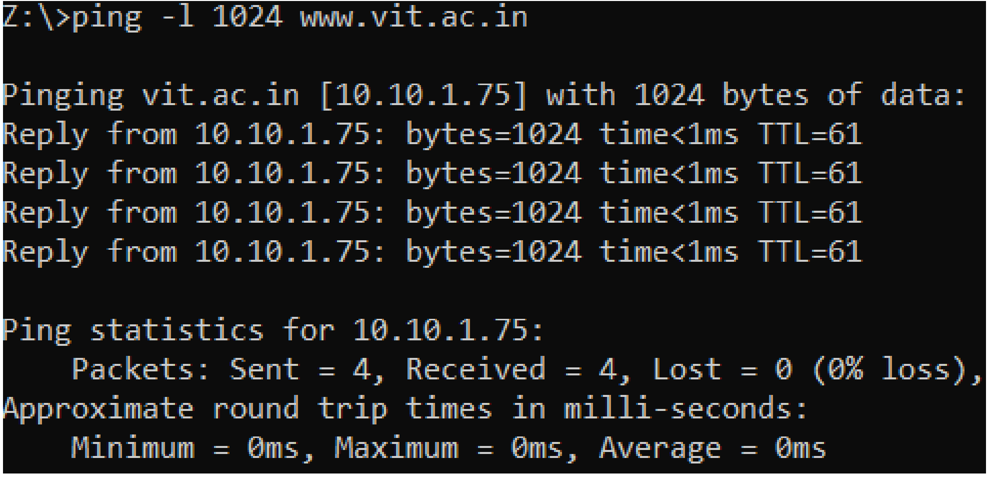
→ Round trip times for all 12 pings:
Minimum = 0ms
Average = 0ms
Maximum = 0ms
→ Because we are using VIT's Virtual Labs command prompt, the round-trip times to the same host (www.vit.ac.in) is same i.e. 0ms.



```
Z:\>ping -l 56 www.vit.ac.in

Pinging vit.ac.in [10.10.1.75] with 56 bytes of data:
Reply from 10.10.1.75: bytes=56 time<1ms TTL=61
Reply from 10.10.1.75: bytes=56 time<1ms TTL=61
Reply from 10.10.1.75: bytes=56 time<1ms TTL=61
Reply from 10.10.1.75: bytes=56 time<1ms TTL=61

Ping statistics for 10.10.1.75:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

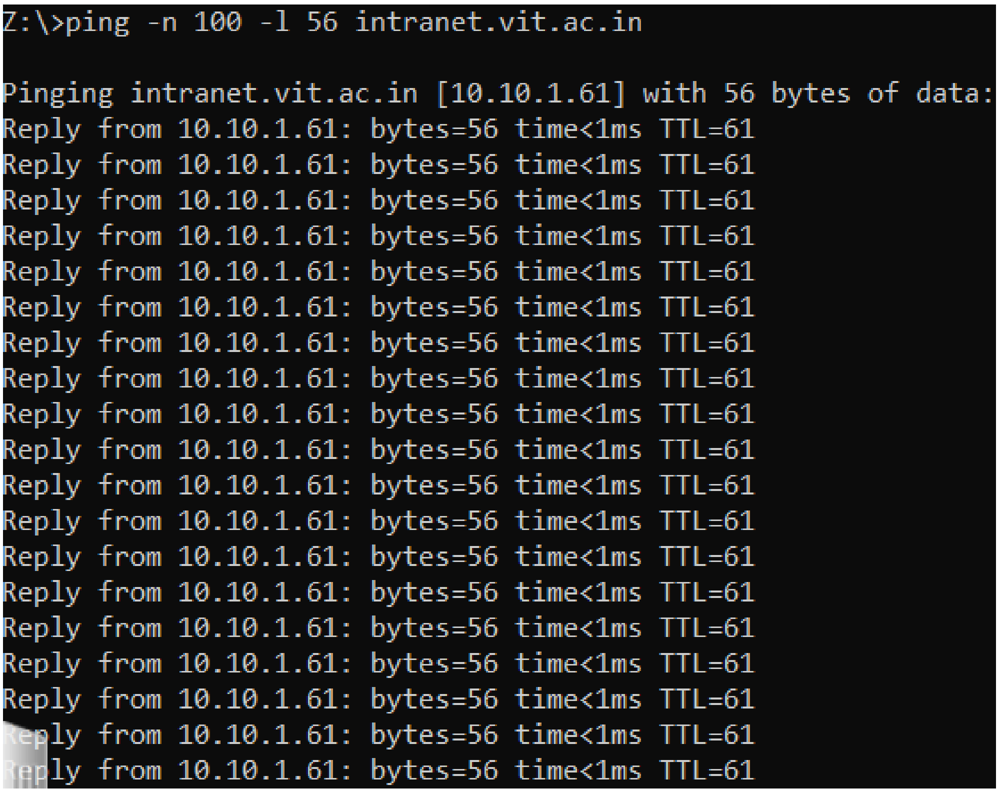


```
Z:\>ping -l 512 www.vit.ac.in

Pinging vit.ac.in [10.10.1.75] with 512 bytes of data:
Reply from 10.10.1.75: bytes=512 time<1ms TTL=61
Reply from 10.10.1.75: bytes=512 time<1ms TTL=61
Reply from 10.10.1.75: bytes=512 time<1ms TTL=61
Reply from 10.10.1.75: bytes=512 time<1ms TTL=61

Ping statistics for 10.10.1.75:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```



```
Z:\>ping -l 1024 www.vit.ac.in

Pinging vit.ac.in [10.10.1.75] with 1024 bytes of data:
Reply from 10.10.1.75: bytes=1024 time<1ms TTL=61
Reply from 10.10.1.75: bytes=1024 time<1ms TTL=61
Reply from 10.10.1.75: bytes=1024 time<1ms TTL=61
Reply from 10.10.1.75: bytes=1024 time<1ms TTL=61

Ping statistics for 10.10.1.75:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

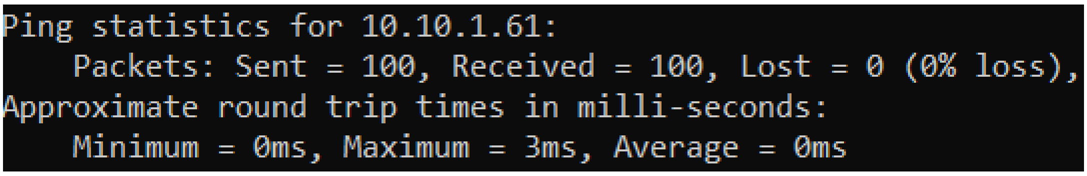
d. For the following hosts, intranet.vit.ac.in, send 100 packets that have a length of 56 data bytes. Indicate what percentage of the packets resulted in a successful response.



```
Z:\>ping -n 100 -l 56 intranet.vit.ac.in

Pinging intranet.vit.ac.in [10.10.1.61] with 56 bytes of data:
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
Reply from 10.10.1.61: bytes=56 time<1ms TTL=61
```

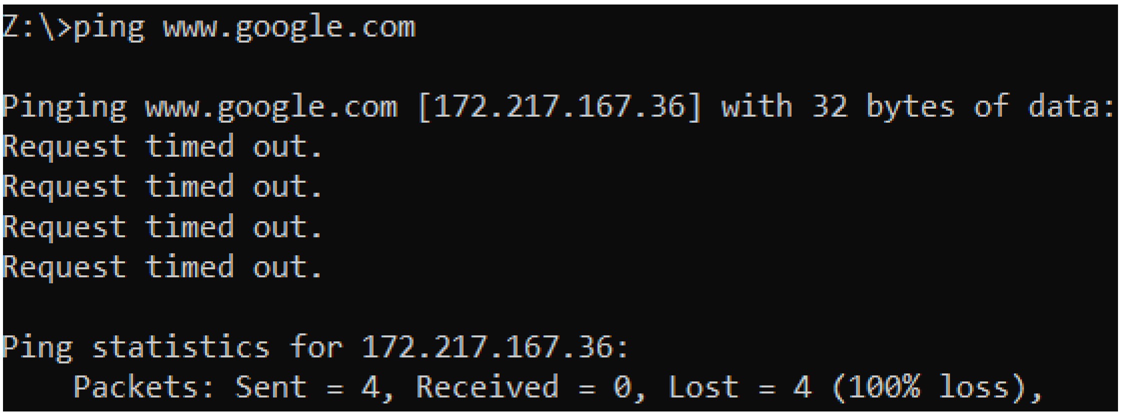
Note: Cannot fit screenshot for 100 packets as it is very long

Final ping statistics:



```
Ping statistics for 10.10.1.61:
    Packets: Sent = 100, Received = 100, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 0ms
```

e. For some of the hosts, you may not have received any responses for the packets you sent. What are some reasons as to why you might have not gotten a response?



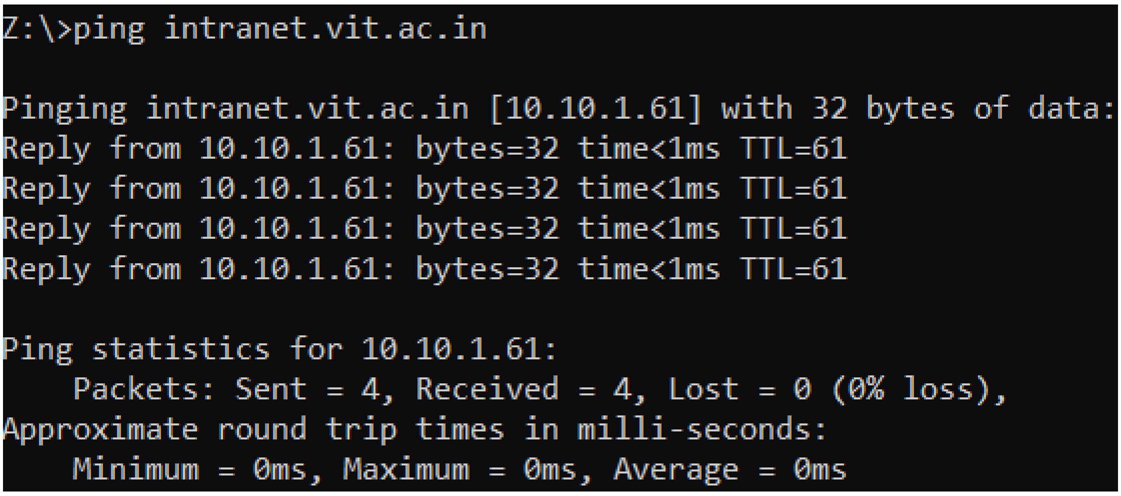
```
Z:\>ping www.google.com

Pinging www.google.com [172.217.167.36] with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.217.167.36:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

→ Google probably disabled ping response for security reasons, like denying ping flooding. Another reason could be the packets sent to the address are not received by the address hence loss of packets occurred.

f. For the following hosts, send pings and write down the minimum, average, and maximum round trip times in milliseconds.

i. intranet.vit.ac.in

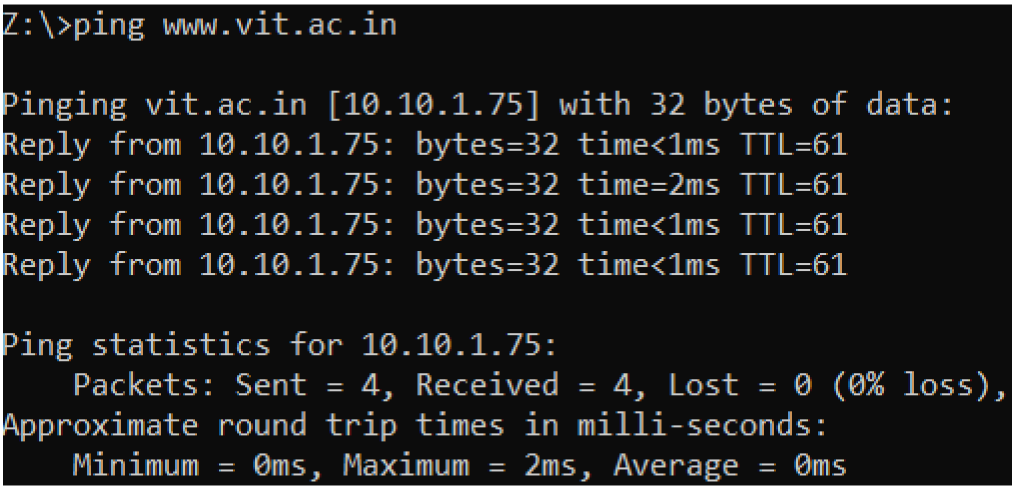
→ Round trip times:
Minimum = 0ms
Average = 0ms
Maximum = 0ms



```
Z:\>ping intranet.vit.ac.in

Pinging intranet.vit.ac.in [10.10.1.61] with 32 bytes of data:
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61
Reply from 10.10.1.61: bytes=32 time<1ms TTL=61

Ping statistics for 10.10.1.61:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

ii. www.vit.ac.in

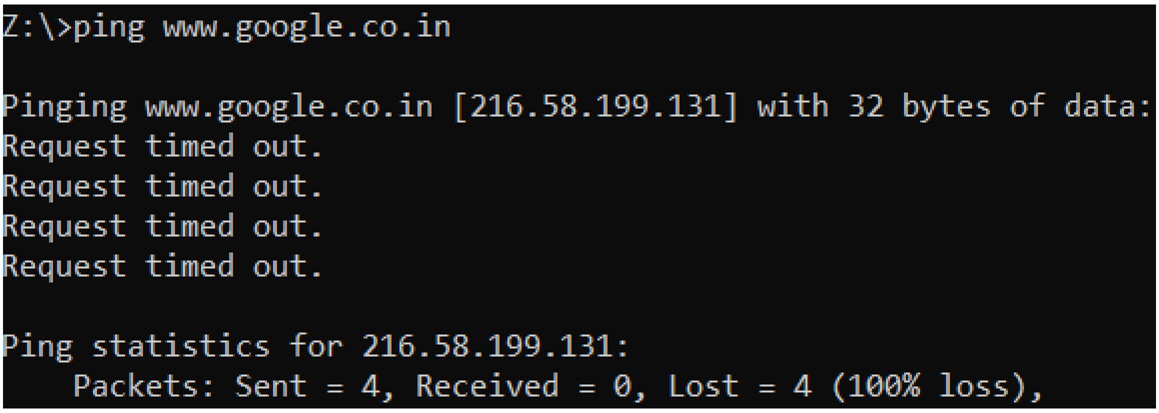
→ Round trip times:
Minimum = 0ms
Average = 0ms
Maximum = 0ms



```
Z:\>ping www.vit.ac.in

Pinging vit.ac.in [10.10.1.75] with 32 bytes of data:
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time=2ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61

Ping statistics for 10.10.1.75:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

iii. www.google.co.in

→ 100% loss of packets since there is no response from host

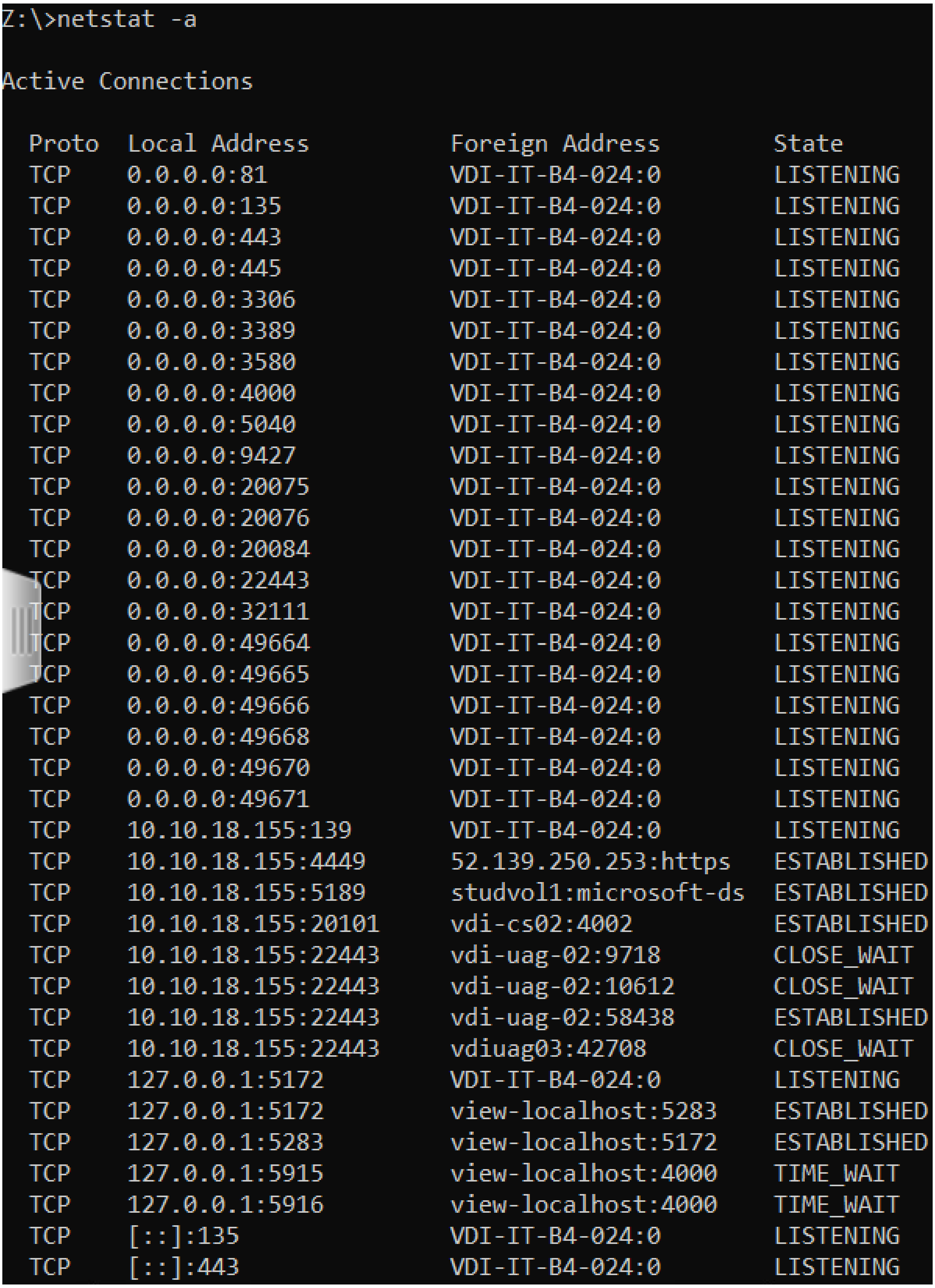


```
Z:\>ping www.google.co.in

Pinging www.google.co.in [216.58.199.131] with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 216.58.199.131:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

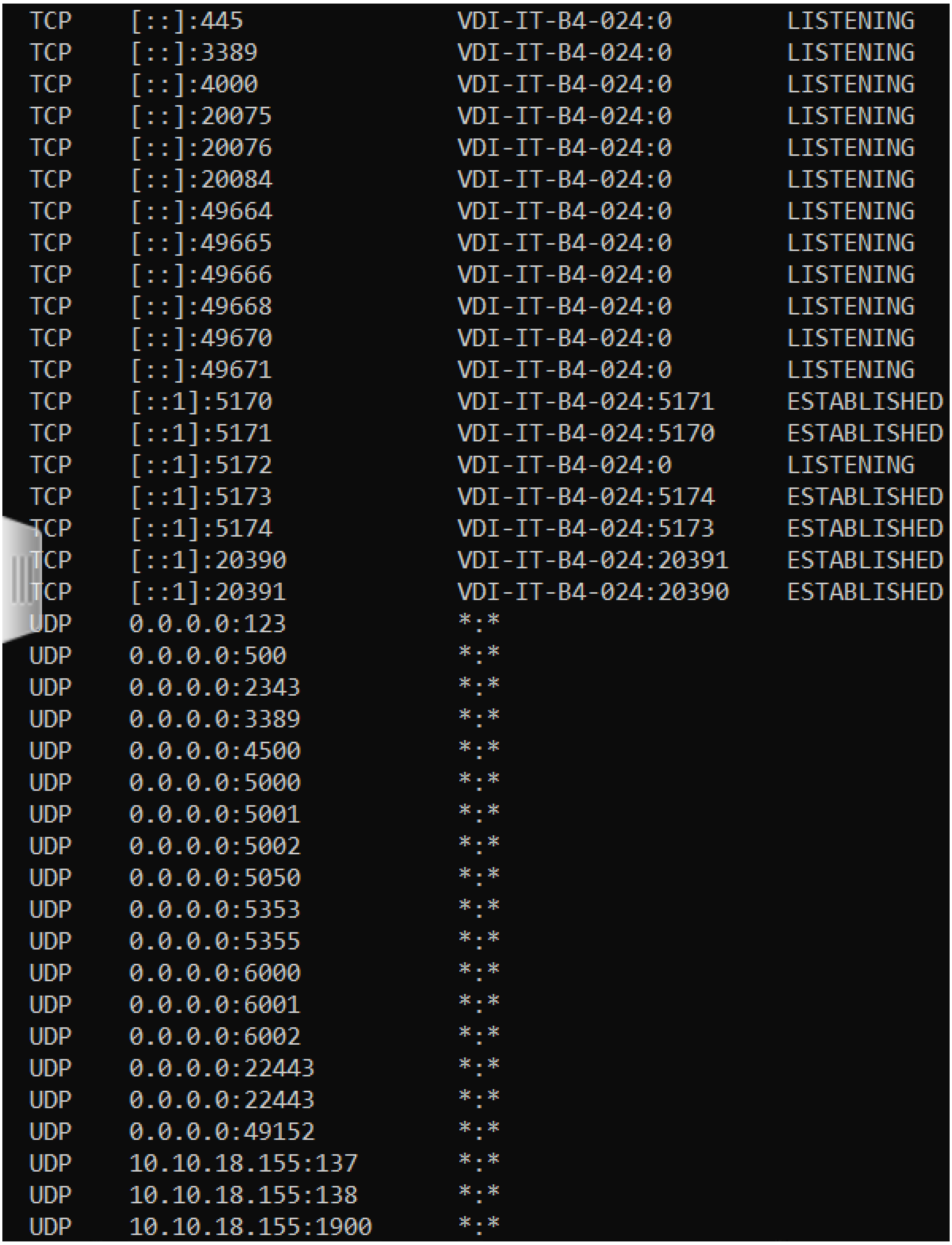
PTO

4. netstat

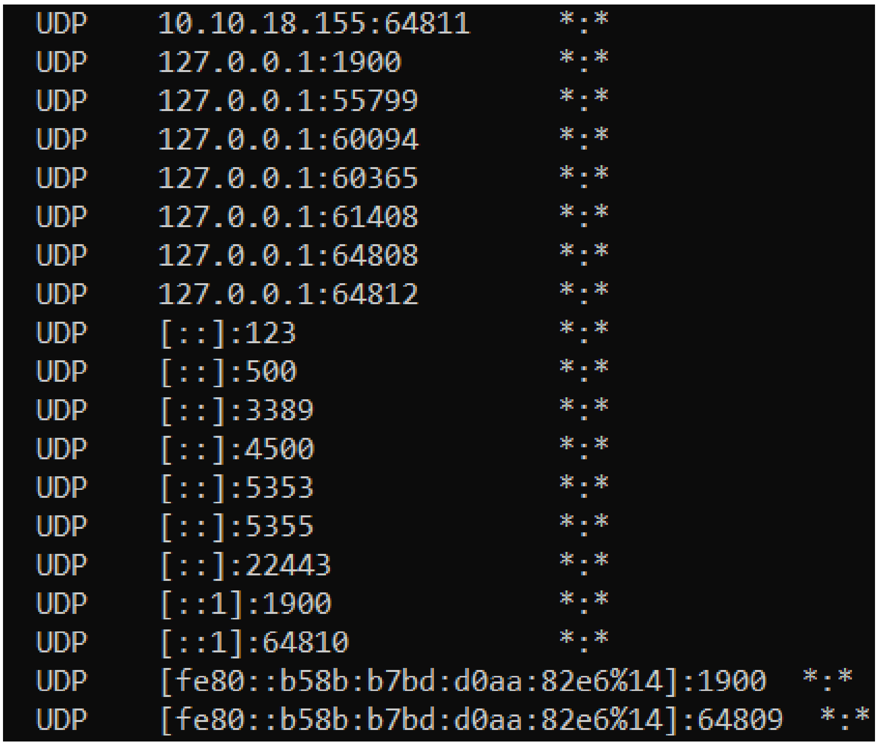
a. List Various Listening Ports.



```
Z:\>netstat -a

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    0.0.0.0:81             VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:135            VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:443            VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:445            VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:3306           VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:3389           VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:3580           VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:4000           VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:5040           VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:9427           VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:20075          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:20076          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:20084          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:22443          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:32111          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:49664          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:49665          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:49666          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:49668          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:49670          VDI-IT-B4-024:0        LISTENING
  TCP    0.0.0.0:49671          VDI-IT-B4-024:0        LISTENING
  TCP    10.10.18.155:139       VDI-IT-B4-024:0        LISTENING
  TCP    10.10.18.155:4449      52.139.250.253:https   ESTABLISHED
  TCP    10.10.18.155:5189      studvol1:microsoft-ds  ESTABLISHED
  TCP    10.10.18.155:20101     vdi-cs02:4002          ESTABLISHED
  TCP    10.10.18.155:22443     vdi-uag-02:9718        CLOSE_WAIT
  TCP    10.10.18.155:22443     vdi-uag-02:10612       CLOSE_WAIT
  TCP    10.10.18.155:22443     vdi-uag-02:58438       ESTABLISHED
  TCP    10.10.18.155:22443     vdiuag03:42708         CLOSE_WAIT
  TCP    127.0.0.1:5172         VDI-IT-B4-024:0        LISTENING
  TCP    127.0.0.1:5172         view-localhost:5283    ESTABLISHED
  TCP    127.0.0.1:5283         view-localhost:5172    ESTABLISHED
  TCP    127.0.0.1:5915         view-localhost:4000    TIME_WAIT
  TCP    127.0.0.1:5916         view-localhost:4000    TIME_WAIT
  TCP    [::]:135               VDI-IT-B4-024:0        LISTENING
  TCP    [::]:443               VDI-IT-B4-024:0        LISTENING
```

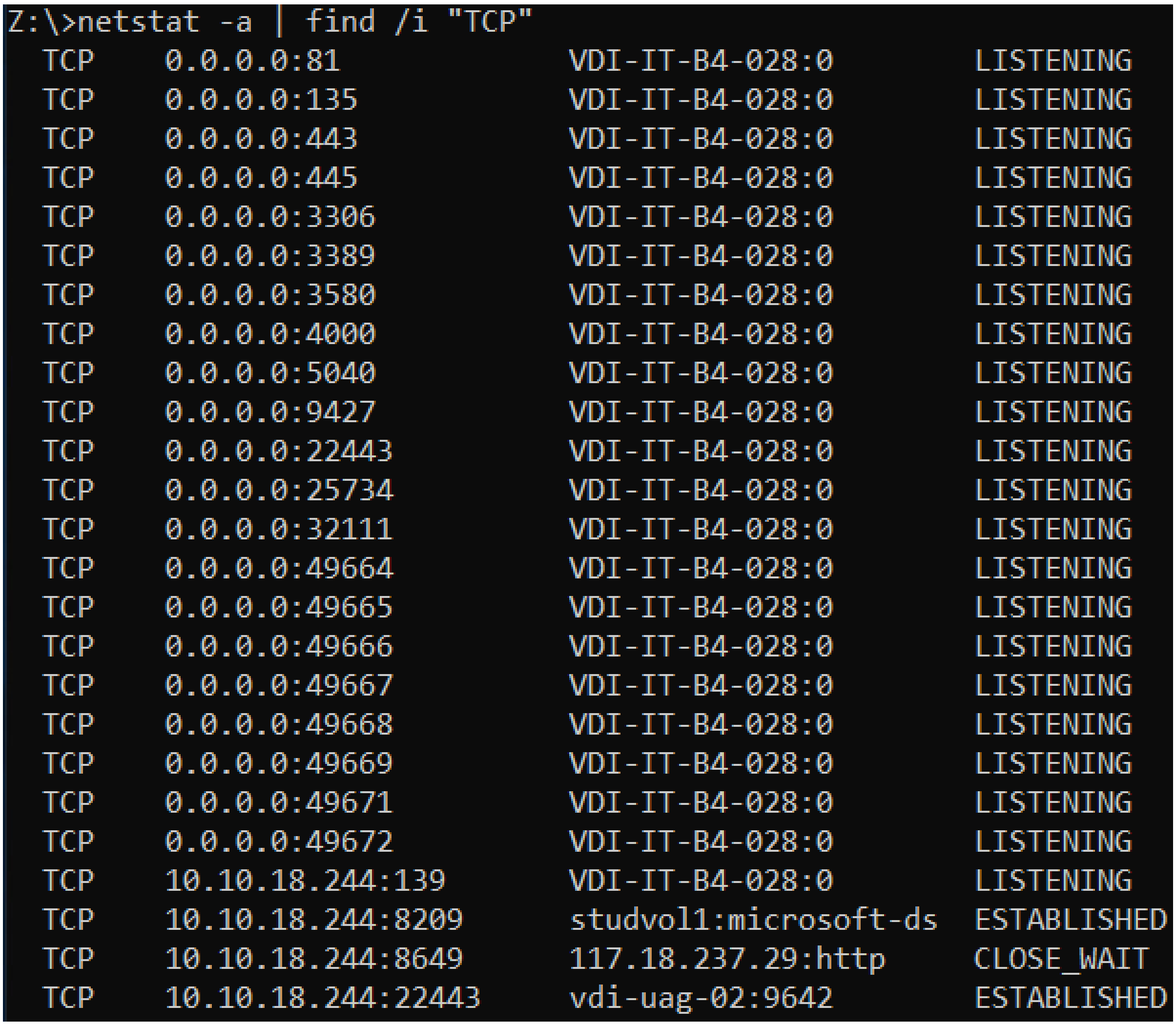


```
  TCP    [::]:445               VDI-IT-B4-024:0        LISTENING
  TCP    [::]:3389              VDI-IT-B4-024:0        LISTENING
  TCP    [::]:4000              VDI-IT-B4-024:0        LISTENING
  TCP    [::]:20075             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:20076             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:20084             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:49664             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:49665             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:49666             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:49668             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:49670             VDI-IT-B4-024:0        LISTENING
  TCP    [::]:49671             VDI-IT-B4-024:0        LISTENING
  TCP    [::1]:5170             VDI-IT-B4-024:5171     ESTABLISHED
  TCP    [::1]:5171             VDI-IT-B4-024:5170     ESTABLISHED
  TCP    [::1]:5172             VDI-IT-B4-024:0        LISTENING
  TCP    [::1]:5173             VDI-IT-B4-024:5174     ESTABLISHED
  TCP    [::1]:5174             VDI-IT-B4-024:5173     ESTABLISHED
  TCP    [::1]:20390            VDI-IT-B4-024:20391    ESTABLISHED
  TCP    [::1]:20391            VDI-IT-B4-024:20390    ESTABLISHED
  UDP    0.0.0.0:123            *:*
  UDP    0.0.0.0:500            *:*
  UDP    0.0.0.0:2343           *:*
  UDP    0.0.0.0:3389           *:*
  UDP    0.0.0.0:4500           *:*
  UDP    0.0.0.0:5000           *:*
  UDP    0.0.0.0:5001           *:*
  UDP    0.0.0.0:5002           *:*
  UDP    0.0.0.0:5050           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5355           *:*
  UDP    0.0.0.0:6000           *:*
  UDP    0.0.0.0:6001           *:*
  UDP    0.0.0.0:6002           *:*
  UDP    0.0.0.0:22443          *:*
  UDP    0.0.0.0:22443          *:*
  UDP    0.0.0.0:49152          *:*
  UDP    10.10.18.155:137       *:*
  UDP    10.10.18.155:138       *:*
  UDP    10.10.18.155:1900      *:*
```

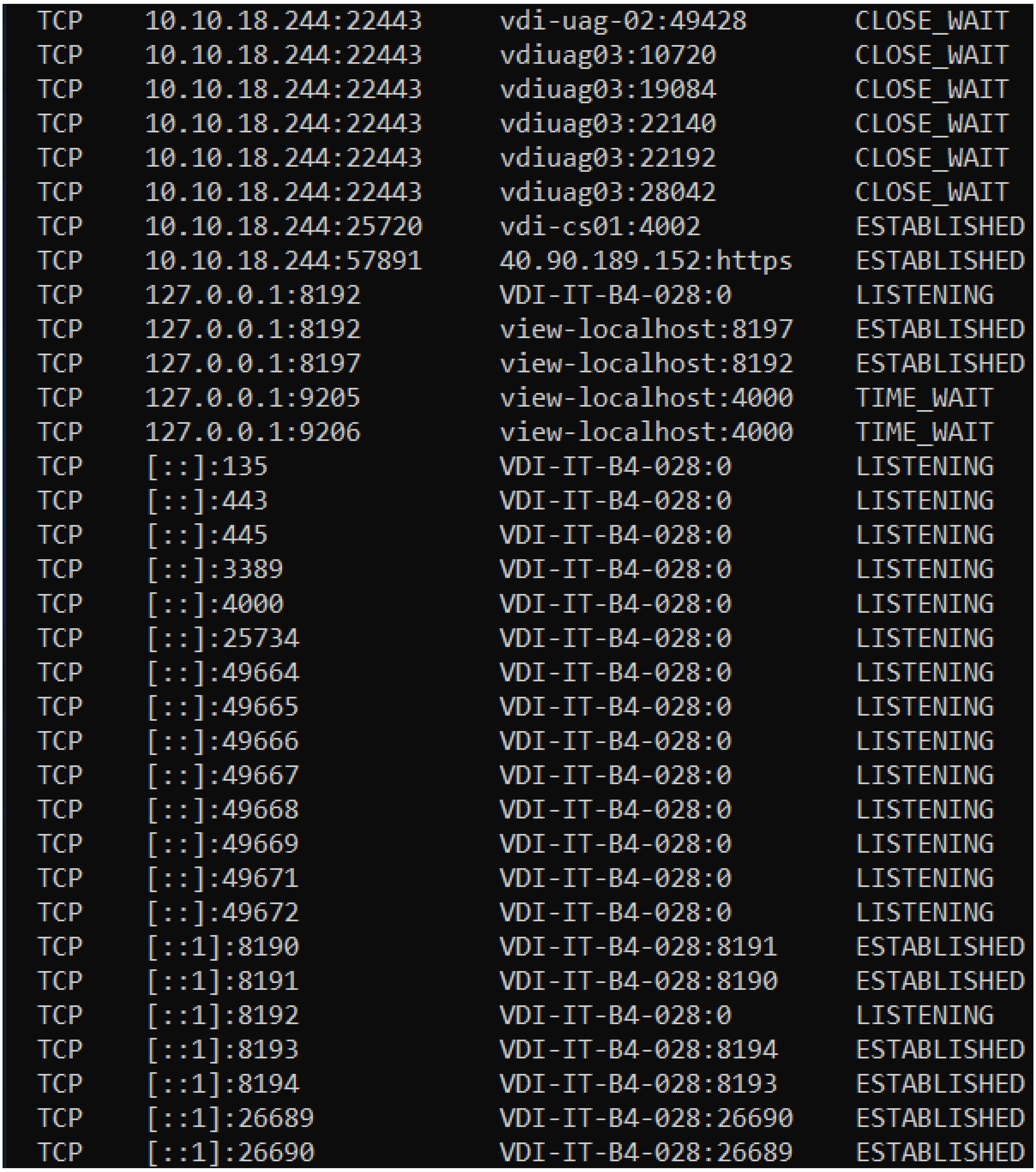


```
  UDP    10.10.18.155:64811     *:*
  UDP    127.0.0.1:1900         *:*
  UDP    127.0.0.1:55799        *:*
  UDP    127.0.0.1:60094        *:*
  UDP    127.0.0.1:60365        *:*
  UDP    127.0.0.1:61408        *:*
  UDP    127.0.0.1:64808        *:*
  UDP    127.0.0.1:64812        *:*
  UDP    [::]:123               *:*
  UDP    [::]:500               *:*
  UDP    [::]:3389              *:*
  UDP    [::]:4500              *:*
  UDP    [::]:5353              *:*
  UDP    [::]:5355              *:*
  UDP    [::]:22443             *:*
  UDP    [::1]:1900             *:*
  UDP    [::1]:64810            *:*
  UDP    [fe80::b58b:b7bd:d0aa:82e6%14]:1900  *:*
  UDP    [fe80::b58b:b7bd:d0aa:82e6%14]:64809  *:*
```

b. List TCP Ports connections



```
Z:\>netstat -a | find /i "TCP"
  TCP    0.0.0.0:81             VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:135            VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:443            VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:445            VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:3306           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:3389           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:3580           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:4000           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:5040           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:9427           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:22443          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:25734          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:32111          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49664          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49665          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49666          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49667          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49668          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49669          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49671          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49672          VDI-IT-B4-028:0        LISTENING
  TCP    10.10.18.244:139       VDI-IT-B4-028:0        LISTENING
  TCP    10.10.18.244:8209      studvol1:microsoft-ds  ESTABLISHED
  TCP    10.10.18.244:8649      117.18.237.29:http     CLOSE_WAIT
  TCP    10.10.18.244:22443     vdi-uag-02:9642        ESTABLISHED
```



```
  TCP    10.10.18.244:22443     vdi-uag-02:49428       CLOSE_WAIT
  TCP    10.10.18.244:22443     vdiuag03:10720         CLOSE_WAIT
  TCP    10.10.18.244:22443     vdiuag03:19084         CLOSE_WAIT
  TCP    10.10.18.244:22443     vdiuag03:22140         CLOSE_WAIT
  TCP    10.10.18.244:22443     vdiuag03:22192         CLOSE_WAIT
  TCP    10.10.18.244:22443     vdiuag03:28042         CLOSE_WAIT
  TCP    10.10.18.244:25720     vdi-cs01:4002          ESTABLISHED
  TCP    10.10.18.244:57891     40.90.189.152:https    ESTABLISHED
  TCP    127.0.0.1:8192         VDI-IT-B4-028:0        LISTENING
  TCP    127.0.0.1:8192         view-localhost:8197    ESTABLISHED
  TCP    127.0.0.1:8197         view-localhost:8192    ESTABLISHED
  TCP    127.0.0.1:9205         view-localhost:4000    TIME_WAIT
  TCP    127.0.0.1:9206         view-localhost:4000    TIME_WAIT
  TCP    [::]:135               VDI-IT-B4-028:0        LISTENING
  TCP    [::]:443               VDI-IT-B4-028:0        LISTENING
  TCP    [::]:445               VDI-IT-B4-028:0        LISTENING
  TCP    [::]:3389              VDI-IT-B4-028:0        LISTENING
  TCP    [::]:4000              VDI-IT-B4-028:0        LISTENING
  TCP    [::]:25734             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49664             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49665             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49666             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49667             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49668             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49669             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49671             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49672             VDI-IT-B4-028:0        LISTENING
  TCP    [::1]:8190             VDI-IT-B4-028:8191     ESTABLISHED
  TCP    [::1]:8191             VDI-IT-B4-028:8190     ESTABLISHED
  TCP    [::1]:8192             VDI-IT-B4-028:0        LISTENING
  TCP    [::1]:8193             VDI-IT-B4-028:8194     ESTABLISHED
  TCP    [::1]:8194             VDI-IT-B4-028:8193     ESTABLISHED
  TCP    [::1]:26689            VDI-IT-B4-028:26690    ESTABLISHED
  TCP    [::1]:26690            VDI-IT-B4-028:26689    ESTABLISHED
```

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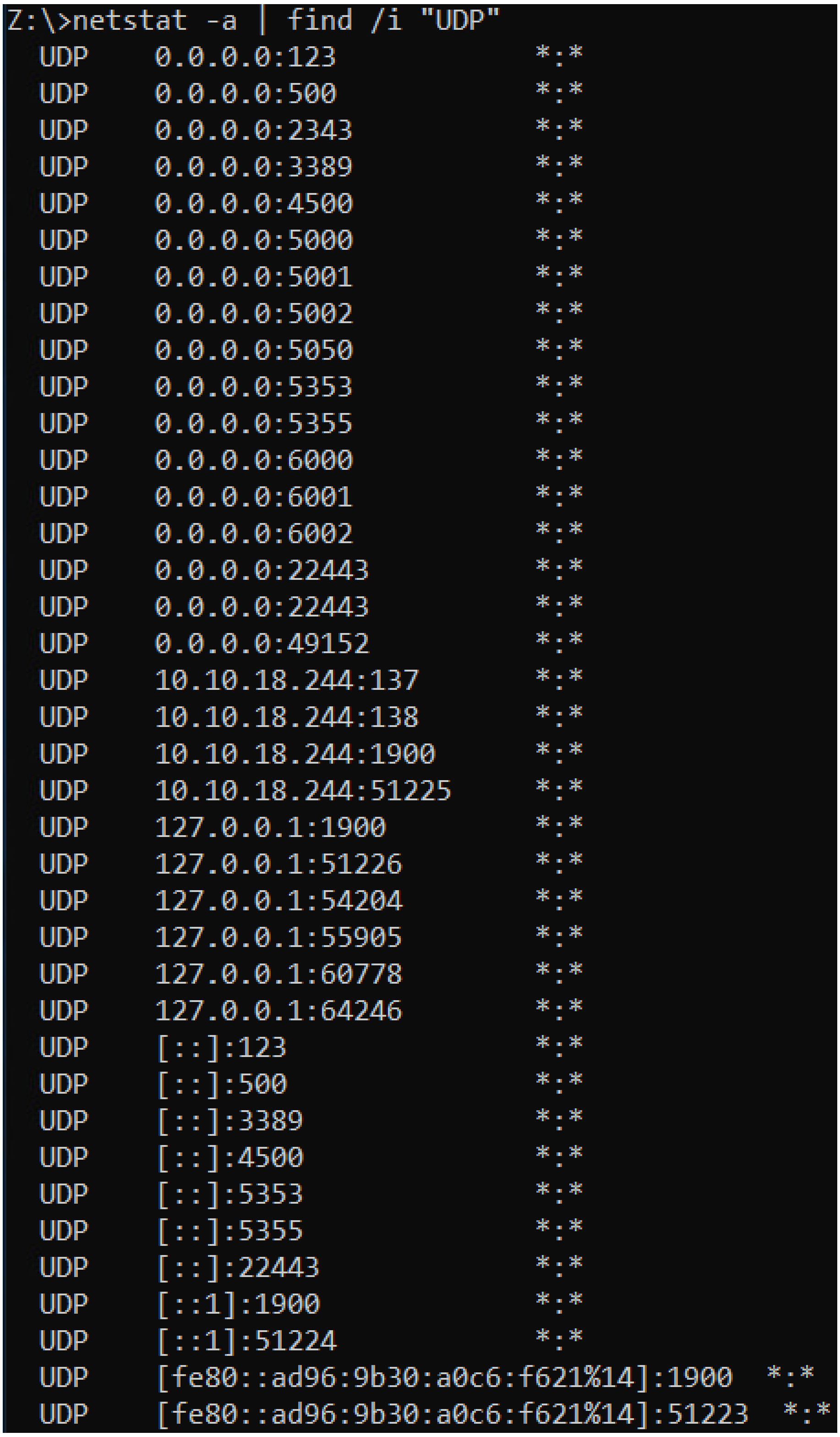
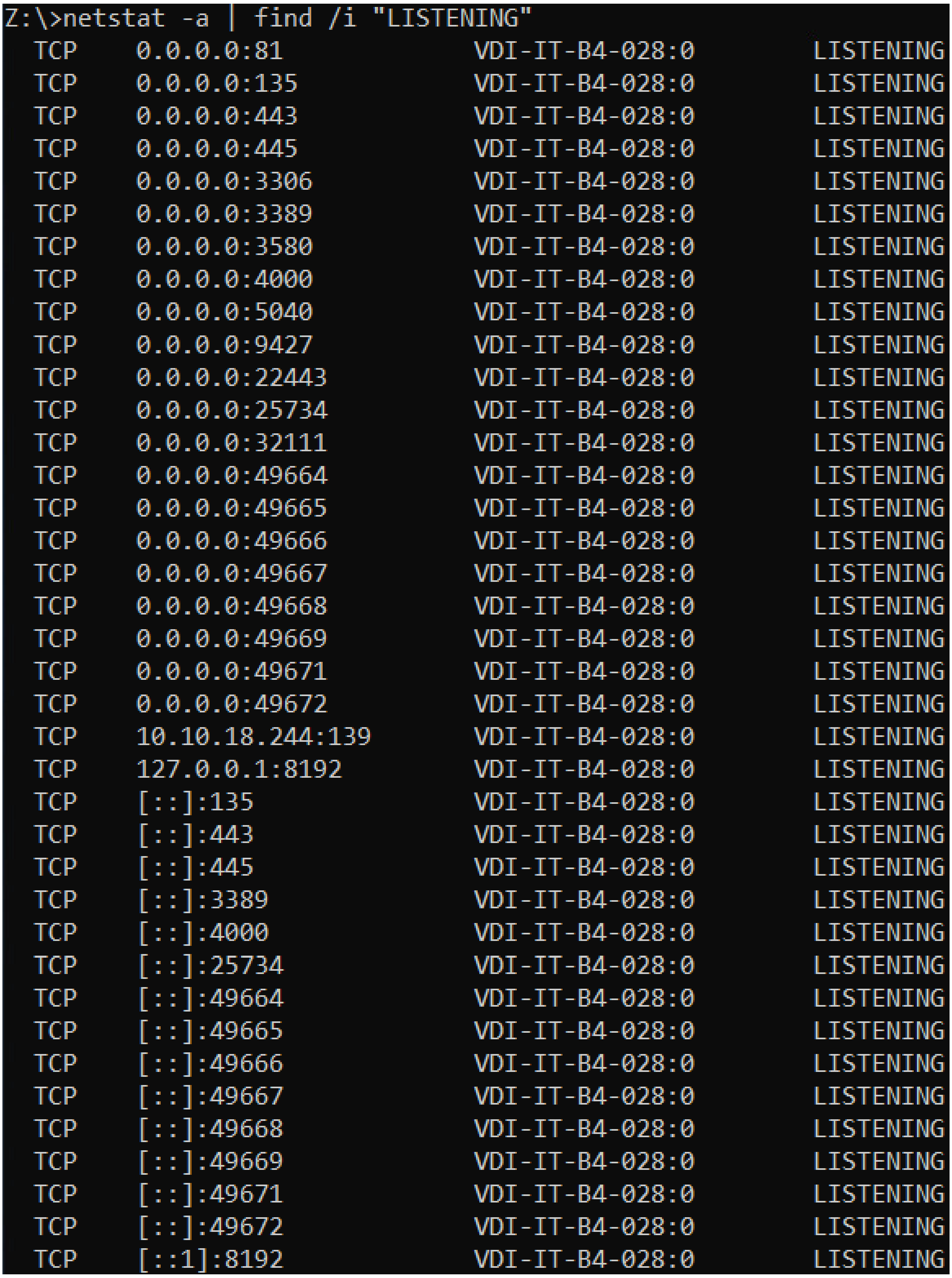
c. List UDP Ports connections



```
Z:\>netstat -a | find /i "UDP"
  UDP    0.0.0.0:123            *:*
  UDP    0.0.0.0:500            *:*
  UDP    0.0.0.0:2343           *:*
  UDP    0.0.0.0:3389           *:*
  UDP    0.0.0.0:4500           *:*
  UDP    0.0.0.0:5000           *:*
  UDP    0.0.0.0:5001           *:*
  UDP    0.0.0.0:5002           *:*
  UDP    0.0.0.0:5050           *:*
  UDP    0.0.0.0:5353           *:*
  UDP    0.0.0.0:5355           *:*
  UDP    0.0.0.0:6000           *:*
  UDP    0.0.0.0:6001           *:*
  UDP    0.0.0.0:6002           *:*
  UDP    0.0.0.0:22443          *:*
  UDP    0.0.0.0:22443          *:*
  UDP    0.0.0.0:49152          *:*
  UDP    10.10.18.244:137       *:*
  UDP    10.10.18.244:138       *:*
  UDP    10.10.18.244:1900      *:*
  UDP    10.10.18.244:51225     *:*
  UDP    127.0.0.1:1900         *:*
  UDP    127.0.0.1:51226        *:*
  UDP    127.0.0.1:54204        *:*
  UDP    127.0.0.1:55905        *:*
  UDP    127.0.0.1:60778        *:*
  UDP    127.0.0.1:64246        *:*
  UDP    [::]:123               *:*
  UDP    [::]:500               *:*
  UDP    [::]:3389              *:*
  UDP    [::]:4500              *:*
  UDP    [::]:5353              *:*
  UDP    [::]:5355              *:*
  UDP    [::]:22443             *:*
  UDP    [::1]:1900             *:*
  UDP    [::1]:51224            *:*
  UDP    [fe80::ad96:9b30:a0c6:f621%14]:1900  *:*
  UDP    [fe80::ad96:9b30:a0c6:f621%14]:51223  *:*
```

PTO

d. List all the LISTENING Connections



```
Z:\>netstat -a | find /i "LISTENING"
  TCP    0.0.0.0:81             VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:135            VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:443            VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:445            VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:3306           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:3389           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:3580           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:4000           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:5040           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:9427           VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:22443          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:25734          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:32111          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49664          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49665          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49666          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49667          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49668          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49669          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49671          VDI-IT-B4-028:0        LISTENING
  TCP    0.0.0.0:49672          VDI-IT-B4-028:0        LISTENING
  TCP    10.10.18.244:139       VDI-IT-B4-028:0        LISTENING
  TCP    127.0.0.1:8192         VDI-IT-B4-028:0        LISTENING
  TCP    [::]:135               VDI-IT-B4-028:0        LISTENING
  TCP    [::]:443               VDI-IT-B4-028:0        LISTENING
  TCP    [::]:445               VDI-IT-B4-028:0        LISTENING
  TCP    [::]:3389              VDI-IT-B4-028:0        LISTENING
  TCP    [::]:4000              VDI-IT-B4-028:0        LISTENING
  TCP    [::]:25734             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49664             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49665             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49666             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49667             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49668             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49669             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49671             VDI-IT-B4-028:0        LISTENING
  TCP    [::]:49672             VDI-IT-B4-028:0        LISTENING
  TCP    [::1]:8192             VDI-IT-B4-028:0        LISTENING
```

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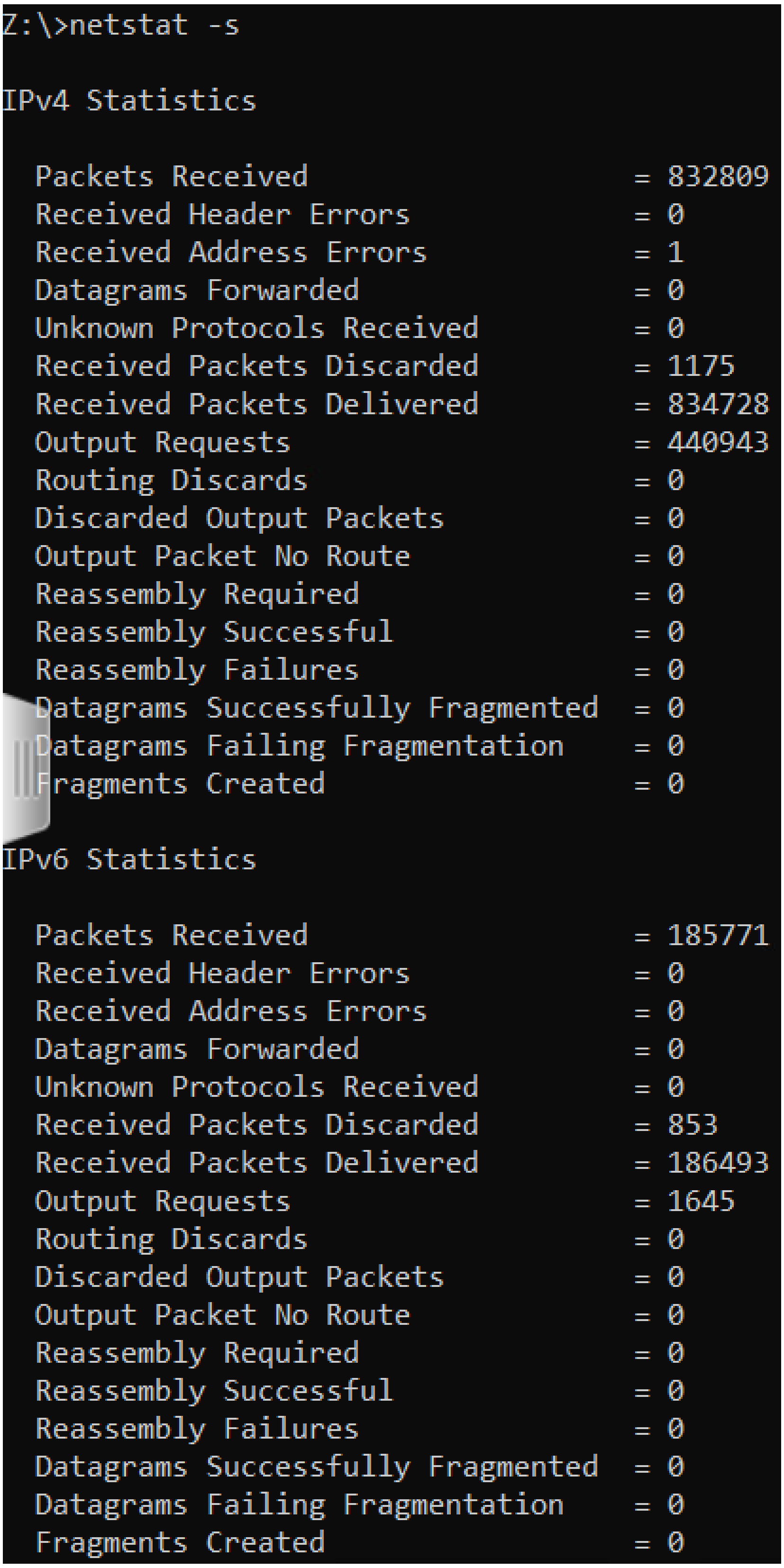
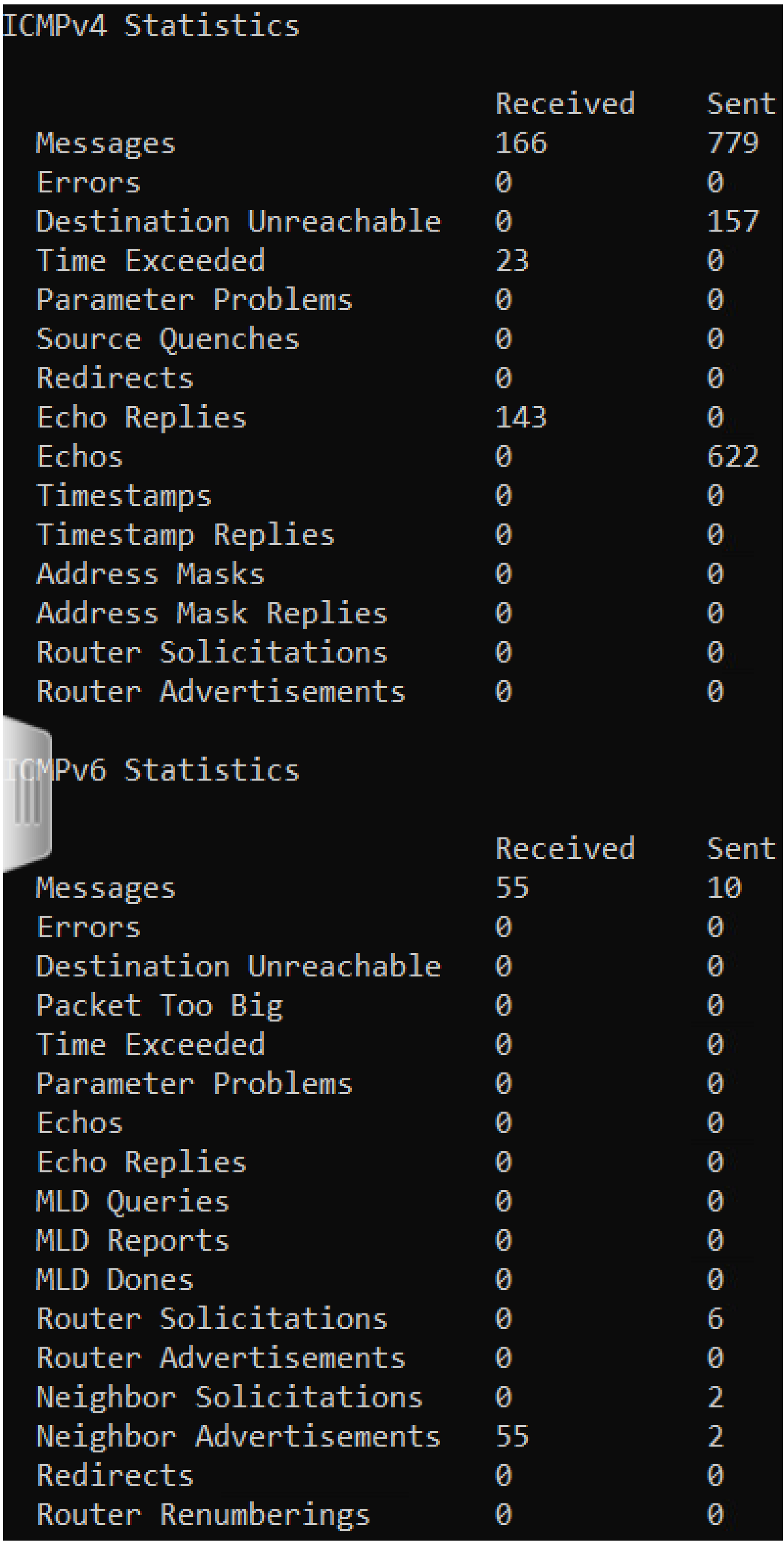
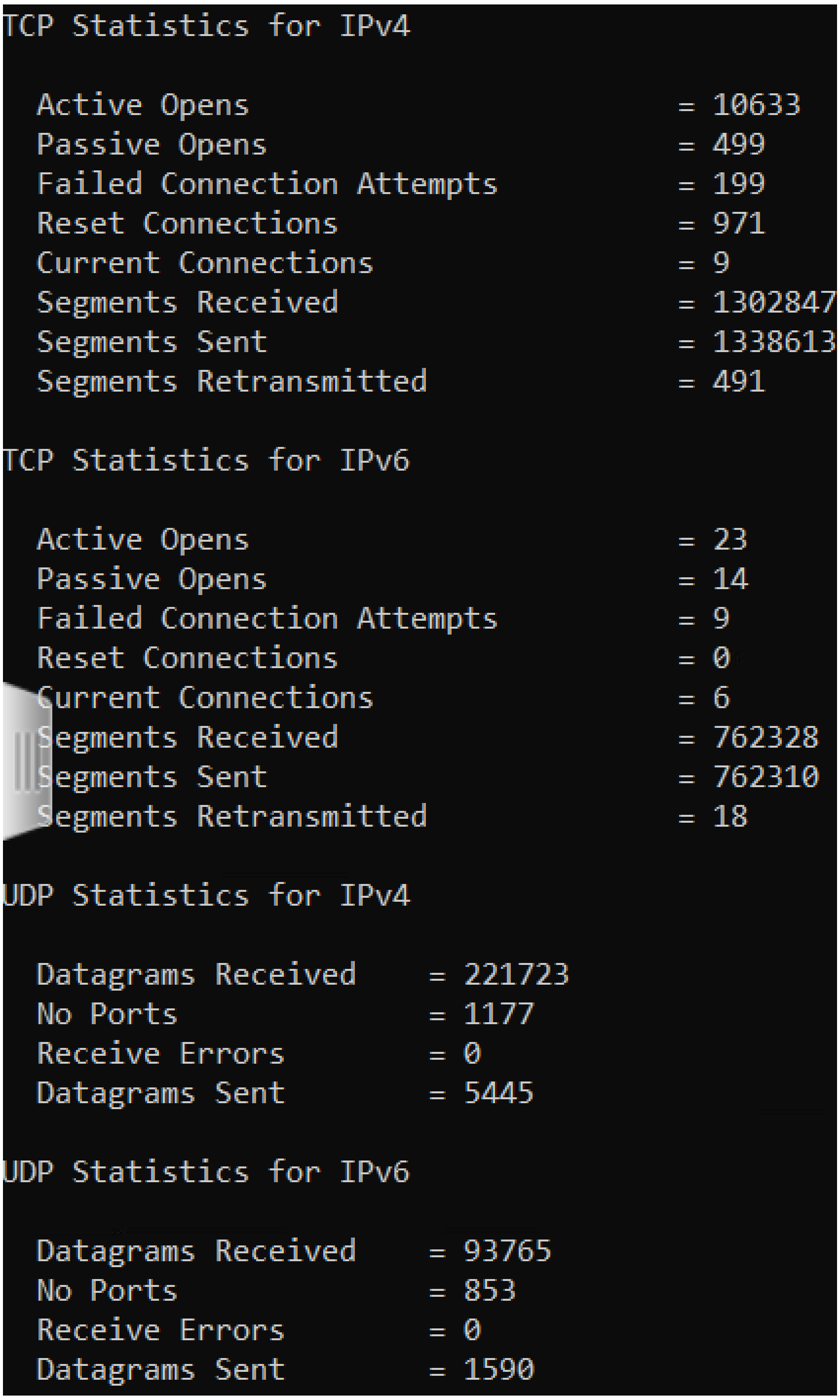
e. Find the statistics of all protocols.



```
Z:\>netstat -s

IPv4 Statistics

  Packets Received                   = 832809
  Received Header Errors             = 0
  Received Address Errors            = 1
  Datagrams Forwarded                = 0
  Unknown Protocols Received         = 0
  Received Packets Discarded         = 1175
  Received Packets Delivered         = 834728
  Output Requests                    = 440943
  Routing Discards                   = 0
  Discarded Output Packets           = 0
  Output Packet No Route             = 0
  Reassembly Required                = 0
  Reassembly Successful              = 0
  Reassembly Failures                = 0
  Datagrams Successfully Fragmented  = 0
  Datagrams Failing Fragmentation    = 0
  Fragments Created                  = 0

IPv6 Statistics

  Packets Received                   = 185771
  Received Header Errors             = 0
  Received Address Errors            = 0
  Datagrams Forwarded                = 0
  Unknown Protocols Received         = 0
  Received Packets Discarded         = 853
  Received Packets Delivered         = 186493
  Output Requests                    = 1645
  Routing Discards                   = 0
  Discarded Output Packets           = 0
  Output Packet No Route             = 0
  Reassembly Required                = 0
  Reassembly Successful              = 0
  Reassembly Failures                = 0
  Datagrams Successfully Fragmented  = 0
  Datagrams Failing Fragmentation    = 0
  Fragments Created                  = 0
```

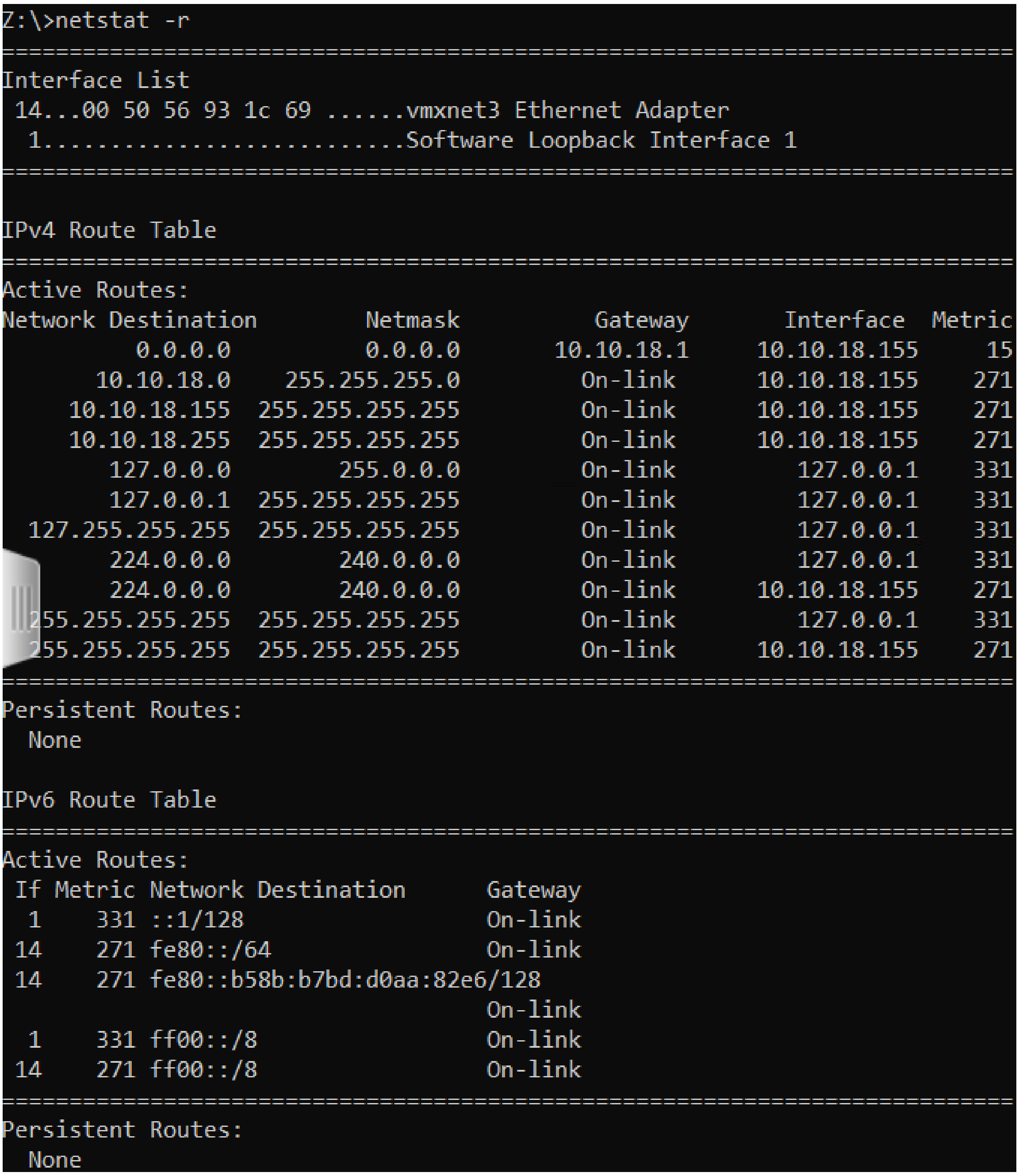


```
ICMPv4 Statistics

                            Received    Sent
  Messages                  166         779
  Errors                    0           0
  Destination Unreachable   0           157
  Time Exceeded             23          0
  Parameter Problems        0           0
  Source Quenches           0           0
  Redirects                 0           0
  Echo Replies              143         0
  Echos                     0           622
  Timestamps                0           0
  Timestamp Replies         0           0
  Address Masks             0           0
  Address Mask Replies      0           0
  Router Solicitations      0           0
  Router Advertisements     0           0

ICMPv6 Statistics

                            Received    Sent
  Messages                  55          10
  Errors                    0           0
  Destination Unreachable   0           0
  Packet Too Big            0           0
  Time Exceeded             0           0
  Parameter Problems        0           0
  Echos                     0           0
  Echo Replies              0           0
  MLD Queries               0           0
  MLD Reports               0           0
  MLD Dones                 0           0
  Router Solicitations      0           6
  Router Advertisements     0           0
  Neighbor Solicitations    0           2
  Neighbor Advertisements   55          2
  Redirects                 0           0
  Router Renumberings       0           0
```



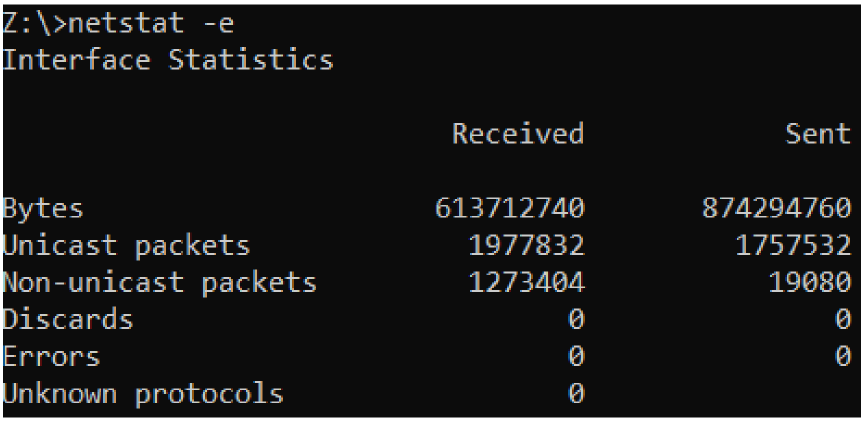
```
TCP Statistics for IPv4

  Active Opens                        = 10633
  Passive Opens                       = 499
  Failed Connection Attempts          = 199
  Reset Connections                   = 971
  Current Connections                 = 9
  Segments Received                   = 1302847
  Segments Sent                       = 1338613
  Segments Retransmitted              = 491

TCP Statistics for IPv6

  Active Opens                        = 23
  Passive Opens                       = 14
  Failed Connection Attempts          = 9
  Reset Connections                   = 0
  Current Connections                 = 6
  Segments Received                   = 762328
  Segments Sent                       = 762310
  Segments Retransmitted              = 18

UDP Statistics for IPv4

  Datagrams Received    = 221723
  No Ports              = 1177
  Receive Errors        = 0
  Datagrams Sent        = 5445

UDP Statistics for IPv6

  Datagrams Received    = 93765
  No Ports              = 853
  Receive Errors        = 0
  Datagrams Sent        = 1590
```

f. Display Kernel IP routing table.



```
Z:\>netstat -r
===========================================================================
Interface List
 14...00 50 56 93 1c 69 ......vmxnet3 Ethernet Adapter
  1...........................Software Loopback Interface 1
===========================================================================

IPv4 Route Table
===========================================================================
Active Routes:
Network Destination        Netmask          Gateway       Interface  Metric
          0.0.0.0          0.0.0.0       10.10.18.1     10.10.18.155     15
       10.10.18.0    255.255.255.0         On-link      10.10.18.155    271
     10.10.18.155  255.255.255.255         On-link      10.10.18.155    271
     10.10.18.255  255.255.255.255         On-link      10.10.18.155    271
        127.0.0.0        255.0.0.0         On-link         127.0.0.1    331
        127.0.0.1  255.255.255.255         On-link         127.0.0.1    331
  127.255.255.255  255.255.255.255         On-link         127.0.0.1    331
        224.0.0.0        240.0.0.0         On-link         127.0.0.1    331
        224.0.0.0        240.0.0.0         On-link      10.10.18.155    271
  255.255.255.255  255.255.255.255         On-link         127.0.0.1    331
  255.255.255.255  255.255.255.255         On-link      10.10.18.155    271
===========================================================================
Persistent Routes:
  None

IPv6 Route Table
===========================================================================
Active Routes:
 If Metric Network Destination      Gateway
  1    331 ::1/128                  On-link
 14    271 fe80::/64                On-link
 14    271 fe80::b58b:b7bd:d0aa:82e6/128
                                    On-link
  1    331 ff00::/8                 On-link
 14    271 ff00::/8                 On-link
===========================================================================
Persistent Routes:
  None
```

g. Show the Kernel interface table, similar to ifconfig command.

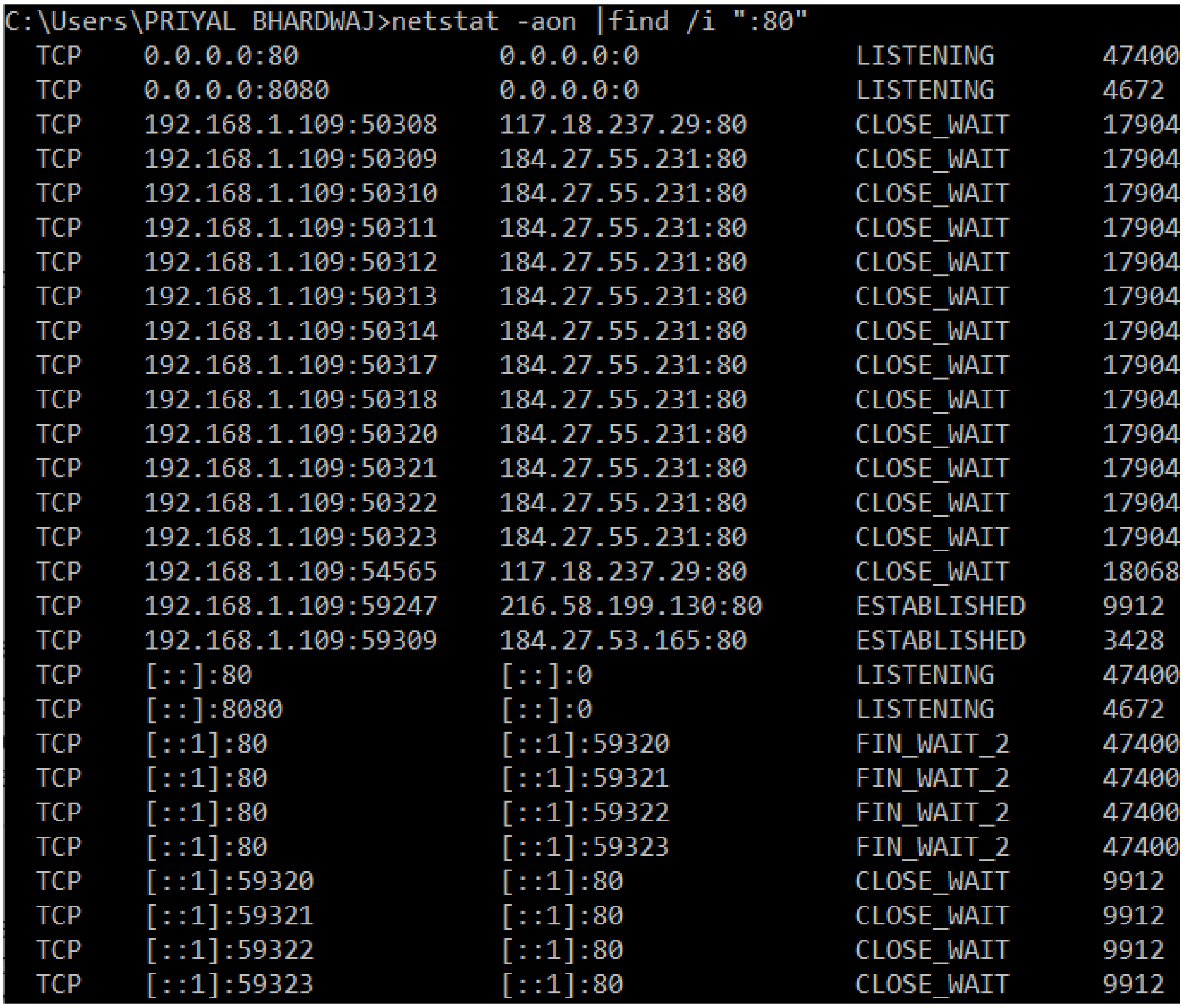


```
Z:\>netstat -e
Interface Statistics

                           Received            Sent

Bytes                     613712740       874294760
Unicast packets             1977832         1757532
Non-unicast packets         1273404           19080
Discards                          0               0
Errors                            0               0
Unknown protocols                 0
```

NOTE: For h. & i. parts of netstat, I am using my desktop's command line because I need WampServer to connect to localhost to access port 80

h. By simply opening a browser connection to HTTP (port 80) server (while still offline!) what will be status of netstat command?

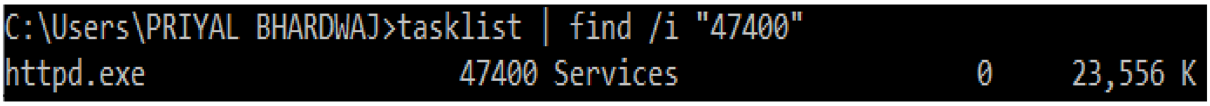
→ Opened "localhost" browser connection to HTTP (port 80) server. Now netstat command shows a process for port 80 with PID: 47400



```
C:\Users\PRIYAL BHARDWAJ>netstat -aon |find /i ":80"
  TCP    0.0.0.0:80             0.0.0.0:0              LISTENING       47400
  TCP    0.0.0.0:8080           0.0.0.0:0              LISTENING       4672
  TCP    192.168.1.109:50308    117.18.237.29:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50309    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50310    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50311    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50312    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50313    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50314    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50317    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50318    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50320    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50321    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50322    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:50323    184.27.55.231:80       CLOSE_WAIT      17904
  TCP    192.168.1.109:54565    117.18.237.29:80       CLOSE_WAIT      18068
  TCP    192.168.1.109:59247    216.58.199.130:80      ESTABLISHED     9912
  TCP    192.168.1.109:59309    184.27.53.165:80       ESTABLISHED     3428
  TCP    [::]:80                [::]:0                 LISTENING       47400
  TCP    [::]:8080              [::]:0                 LISTENING       4672
  TCP    [::1]:80               [::1]:59320            FIN_WAIT_2      47400
  TCP    [::1]:80               [::1]:59321            FIN_WAIT_2      47400
  TCP    [::1]:80               [::1]:59322            FIN_WAIT_2      47400
  TCP    [::1]:80               [::1]:59323            FIN_WAIT_2      47400
  TCP    [::1]:59320            [::1]:80               CLOSE_WAIT      9912
  TCP    [::1]:59321            [::1]:80               CLOSE_WAIT      9912
  TCP    [::1]:59322            [::1]:80               CLOSE_WAIT      9912
  TCP    [::1]:59323            [::1]:80               CLOSE_WAIT      9912
```

i. Display Service name with PID.

Now using the PID obtained in h. part, we can find the process with service name.



```
C:\Users\PRIYAL BHARDWAJ>tasklist | find /i "47400"
httpd.exe                    47400 Services                   0     23,556 K
```

5. traceroute
a. How traceroute works?

→ The TRACERT (also known as traceroute) command literally traces the route from the host PC to the specified URL or IP by displaying the IP and/or URL of each network node that it passes through.

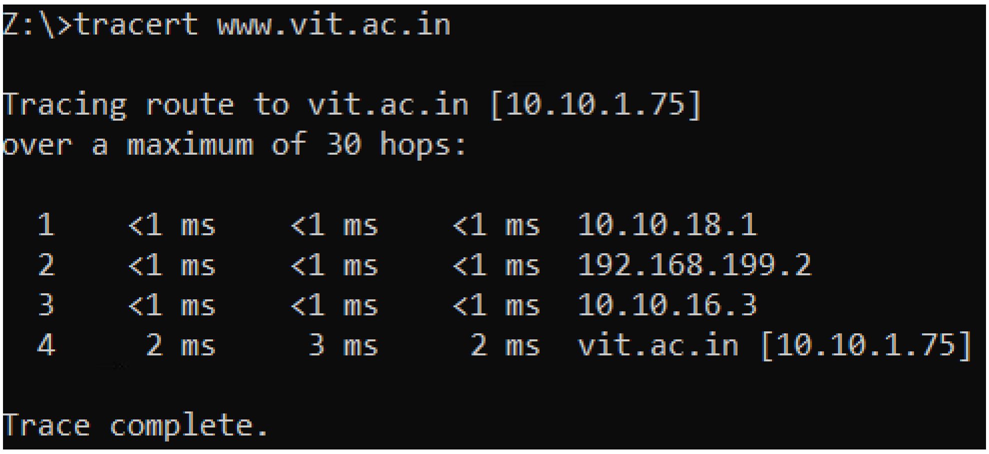
b. What kind of information can be obtained by the traceroute command?

→ The time measured in milliseconds that it takes a packet to travel between network nodes.
→ The IP and URL for each network node it accesses.

→ Which network nodes do not respond to ICMP Ping requests?

c. Perform a traceroute from your machine to www.vit.ac.in. Include a copy of the output and explain what happened including a description of what each of the fields means.

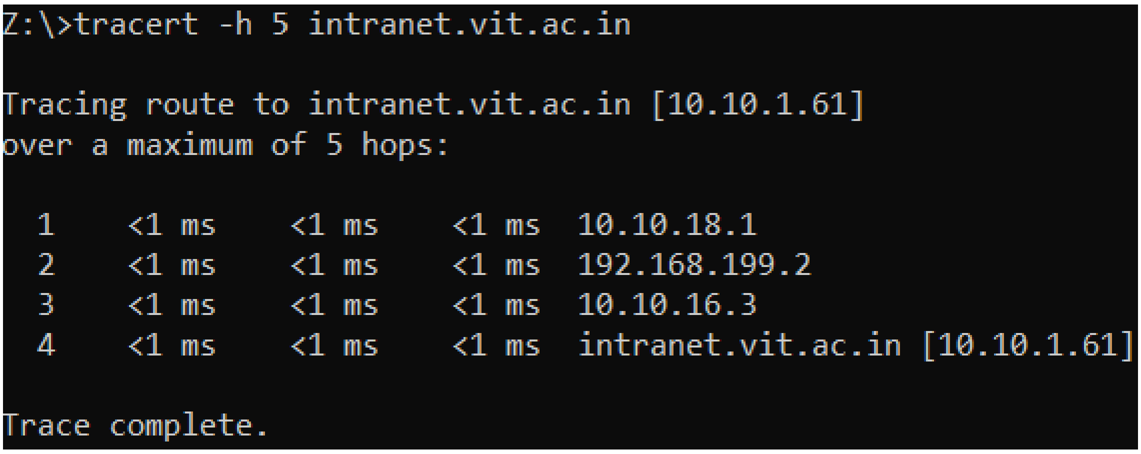
→ The first column is the number of hops to the destination (maximum of 30). The next three columns are the amounts of time to receive the responses. The right-most column shows the router information along the path.



```
Z:\>tracert www.vit.ac.in

Tracing route to vit.ac.in [10.10.1.75]
over a maximum of 30 hops:

  1    <1 ms    <1 ms    <1 ms  10.10.18.1
  2    <1 ms    <1 ms    <1 ms  192.168.199.2
  3    <1 ms    <1 ms    <1 ms  10.10.16.3
  4     2 ms     3 ms     2 ms  vit.ac.in [10.10.1.75]

Trace complete.
```

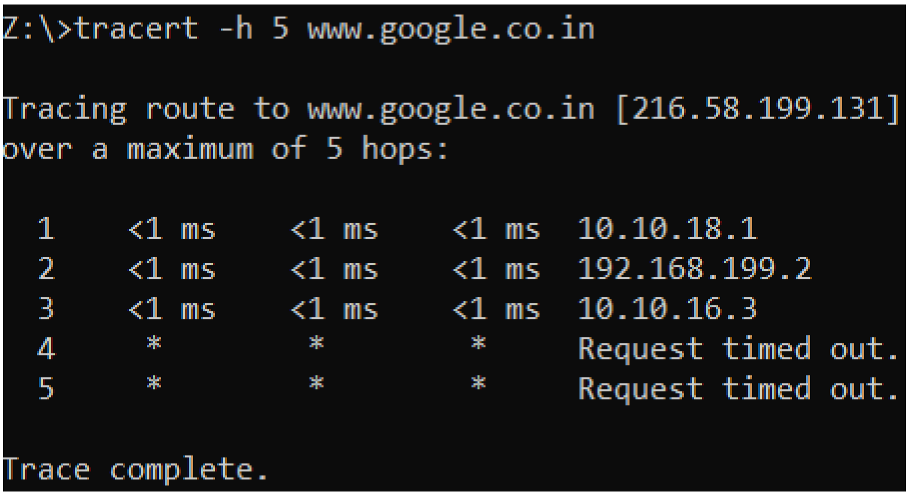
d. Perform a traceroute for the following machines within 5 hops:

intranet.vit.ac.in



```
Z:\>tracert -h 5 intranet.vit.ac.in

Tracing route to intranet.vit.ac.in [10.10.1.61]
over a maximum of 5 hops:

  1    <1 ms    <1 ms    <1 ms  10.10.18.1
  2    <1 ms    <1 ms    <1 ms  192.168.199.2
  3    <1 ms    <1 ms    <1 ms  10.10.16.3
  4    <1 ms    <1 ms    <1 ms  intranet.vit.ac.in [10.10.1.61]

Trace complete.
```

www.google.co.in

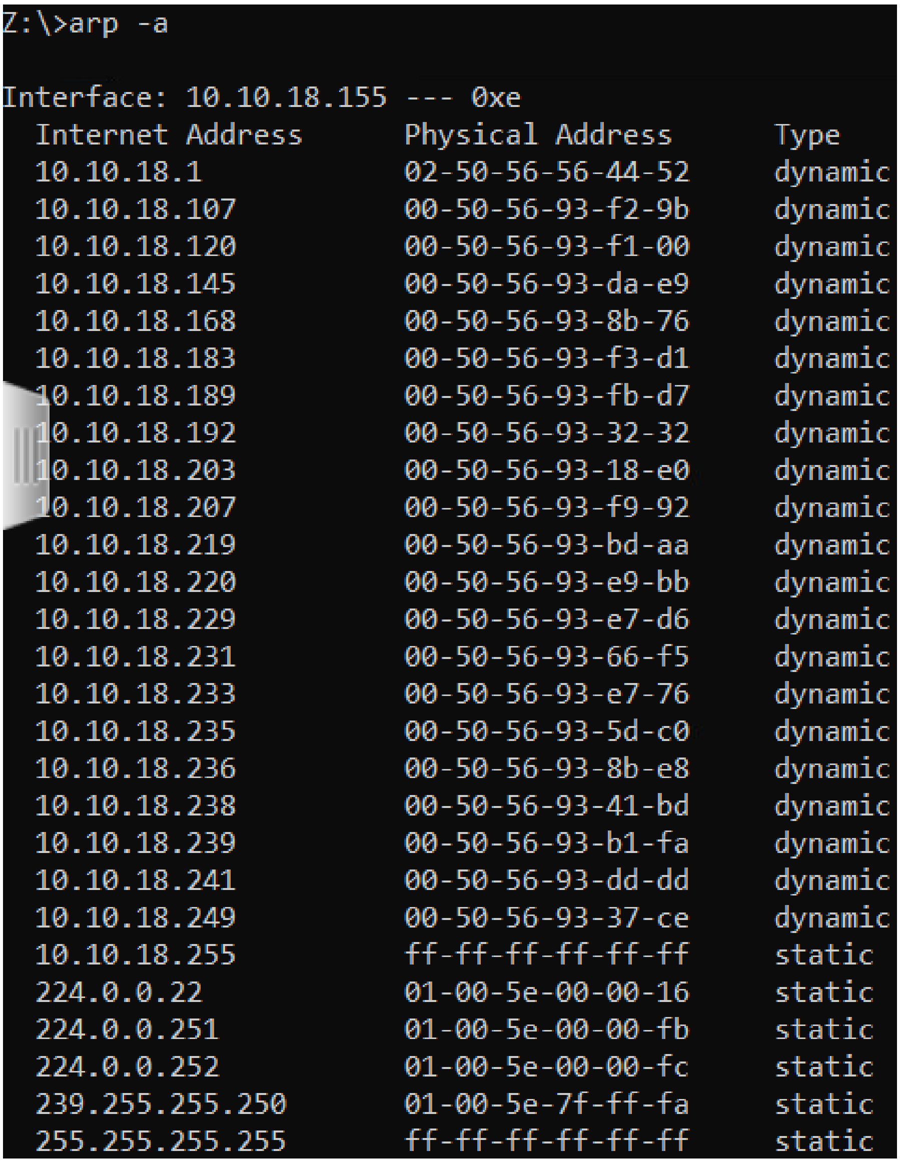


```
Z:\>tracert -h 5 www.google.co.in

Tracing route to www.google.co.in [216.58.199.131]
over a maximum of 5 hops:

  1    <1 ms    <1 ms    <1 ms  10.10.18.1
  2    <1 ms    <1 ms    <1 ms  192.168.199.2
  3    <1 ms    <1 ms    <1 ms  10.10.16.3
  4     *        *        *     Request timed out.
  5     *        *        *     Request timed out.

Trace complete.
```

6. ARP

a. How do you show the full ARP table for your machine? Capture a printout of what it is. Explain each column of what is printed.

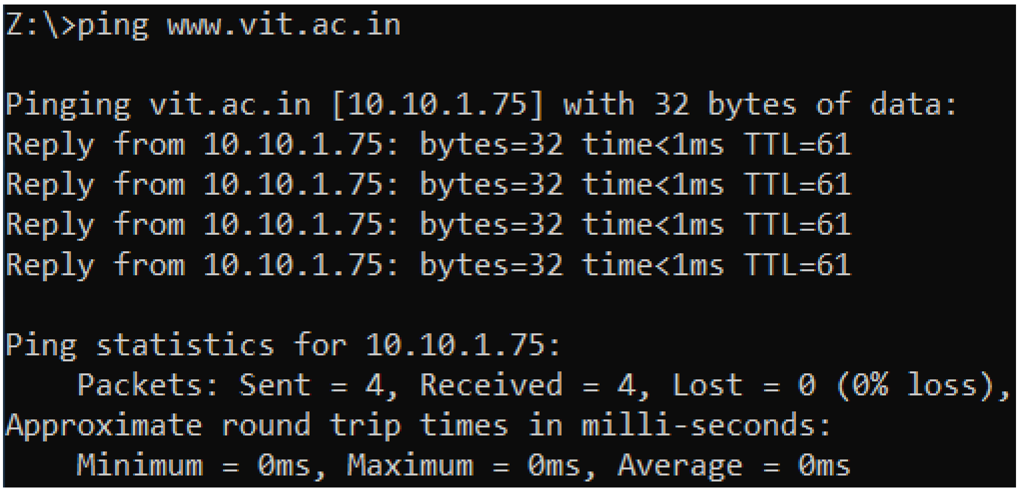
→ The Internet Address column contains the IP address, the Physical Address column contains the MAC address, and the Type indicates the protocol type.



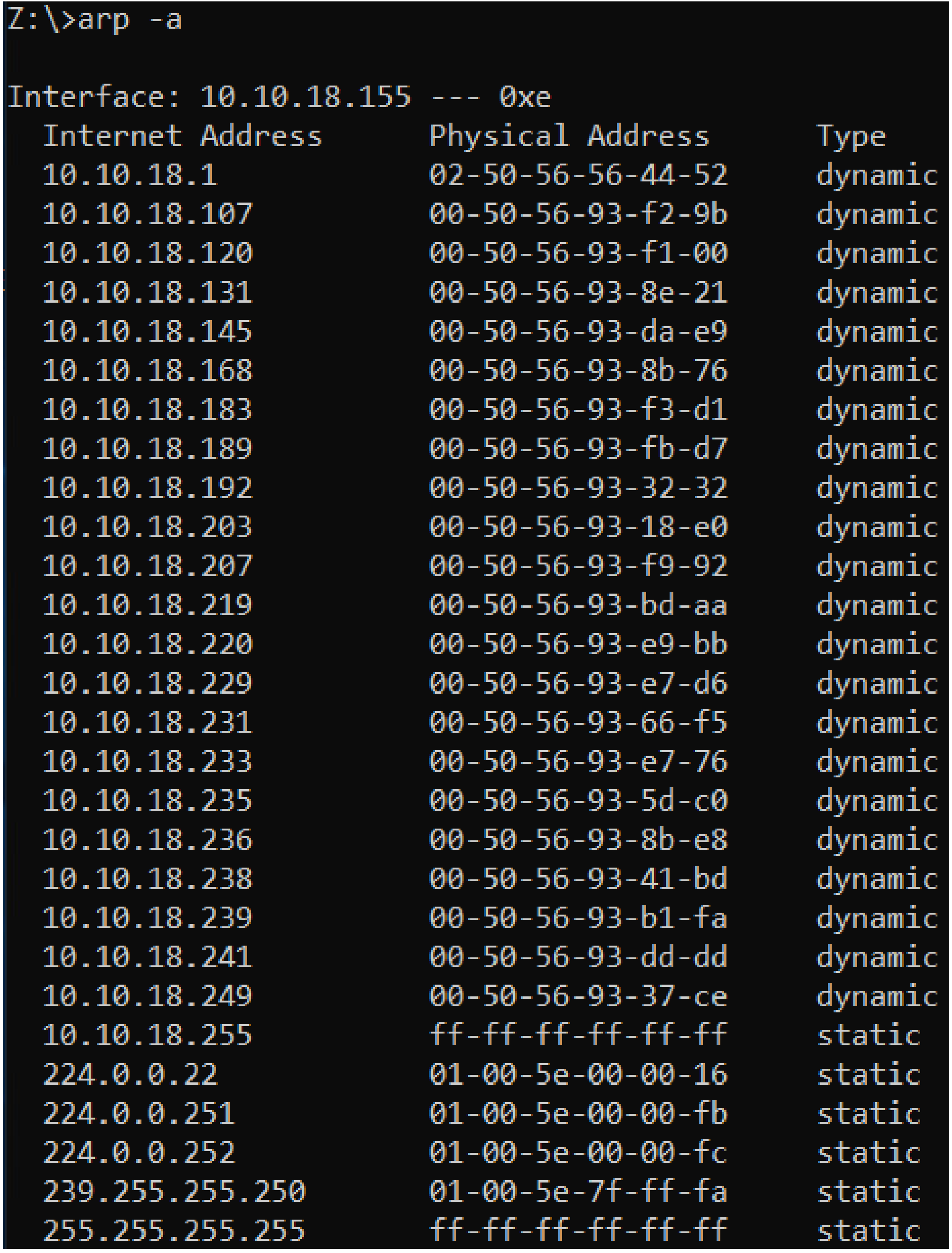
```
Z:\>arp -a

Interface: 10.10.18.155 --- 0xe
  Internet Address      Physical Address      Type
  10.10.18.1            02-50-56-56-44-52     dynamic
  10.10.18.107          00-50-56-93-f2-9b     dynamic
  10.10.18.120          00-50-56-93-f1-00     dynamic
  10.10.18.145          00-50-56-93-da-e9     dynamic
  10.10.18.168          00-50-56-93-8b-76     dynamic
  10.10.18.183          00-50-56-93-f3-d1     dynamic
  10.10.18.189          00-50-56-93-fb-d7     dynamic
  10.10.18.192          00-50-56-93-32-32     dynamic
  10.10.18.203          00-50-56-93-18-e0     dynamic
  10.10.18.207          00-50-56-93-f9-92     dynamic
  10.10.18.219          00-50-56-93-bd-aa     dynamic
  10.10.18.220          00-50-56-93-e9-bb     dynamic
  10.10.18.229          00-50-56-93-e7-d6     dynamic
  10.10.18.231          00-50-56-93-66-f5     dynamic
  10.10.18.233          00-50-56-93-e7-76     dynamic
  10.10.18.235          00-50-56-93-5d-c0     dynamic
  10.10.18.236          00-50-56-93-8b-e8     dynamic
  10.10.18.238          00-50-56-93-41-bd     dynamic
  10.10.18.239          00-50-56-93-b1-fa     dynamic
  10.10.18.241          00-50-56-93-dd-dd     dynamic
  10.10.18.249          00-50-56-93-37-ce     dynamic
  10.10.18.255          ff-ff-ff-ff-ff-ff     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static
```

b. Try ping a couple of local addresses and a website. Then re-run the arp command. Which addresses are listed?

Internet Address: 10.10.18.131, Physical Address: 00-50-56-93-8e-21, Type: dynamic is also present apart from the addresses present before ping.



```
Z:\>ping www.vit.ac.in

Pinging vit.ac.in [10.10.1.75] with 32 bytes of data:
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61
Reply from 10.10.1.75: bytes=32 time<1ms TTL=61

Ping statistics for 10.10.1.75:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```



```
Z:\>arp -a

Interface: 10.10.18.155 --- 0xe
  Internet Address      Physical Address      Type
  10.10.18.1            02-50-56-56-44-52     dynamic
  10.10.18.107          00-50-56-93-f2-9b     dynamic
  10.10.18.120          00-50-56-93-f1-00     dynamic
  10.10.18.131          00-50-56-93-8e-21     dynamic
  10.10.18.145          00-50-56-93-da-e9     dynamic
  10.10.18.168          00-50-56-93-8b-76     dynamic
  10.10.18.183          00-50-56-93-f3-d1     dynamic
  10.10.18.189          00-50-56-93-fb-d7     dynamic
  10.10.18.192          00-50-56-93-32-32     dynamic
  10.10.18.203          00-50-56-93-18-e0     dynamic
  10.10.18.207          00-50-56-93-f9-92     dynamic
  10.10.18.219          00-50-56-93-bd-aa     dynamic
  10.10.18.220          00-50-56-93-e9-bb     dynamic
  10.10.18.229          00-50-56-93-e7-d6     dynamic
  10.10.18.231          00-50-56-93-66-f5     dynamic
  10.10.18.233          00-50-56-93-e7-76     dynamic
  10.10.18.235          00-50-56-93-5d-c0     dynamic
  10.10.18.236          00-50-56-93-8b-e8     dynamic
  10.10.18.238          00-50-56-93-41-bd     dynamic
  10.10.18.239          00-50-56-93-b1-fa     dynamic
  10.10.18.241          00-50-56-93-dd-dd     dynamic
  10.10.18.249          00-50-56-93-37-ce     dynamic
  10.10.18.255          ff-ff-ff-ff-ff-ff     static
  224.0.0.22            01-00-5e-00-00-16     static
  224.0.0.251           01-00-5e-00-00-fb     static
  224.0.0.252           01-00-5e-00-00-fc     static
  239.255.255.250       01-00-5e-7f-ff-fa     static
  255.255.255.255       ff-ff-ff-ff-ff-ff     static
```

7. nslookup

a. What is the IP address and name of the machine:

- acad.intranet.vit.ac.in

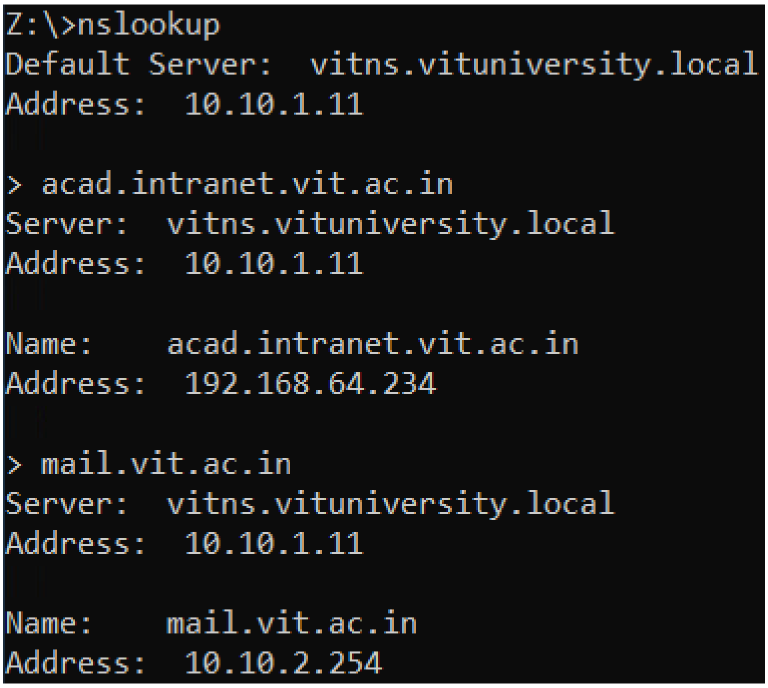
→ Name: acad.intranet.vit.ac.in | IP Address: 192.168.64.234

- mail.vit.ac.in

→ Name: mail.vit.ac.in | IP Address: 10.10.2.254

b. What local machine is this information coming from? Why is it coming from this machine?

→ Information is coming from the “vitns.vituniveristy.local” Server because it is the host system with IP Address: 10.10.1.11



```
Z:\>nslookup
Default Server:  vitns.vituniversity.local
Address:  10.10.1.11

> acad.intranet.vit.ac.in
Server:  vitns.vituniversity.local
Address:  10.10.1.11

Name:    acad.intranet.vit.ac.in
Address:  192.168.64.234

> mail.vit.ac.in
Server:  vitns.vituniversity.local
Address:  10.10.1.11

Name:    mail.vit.ac.in
Address:  10.10.2.254
```

****