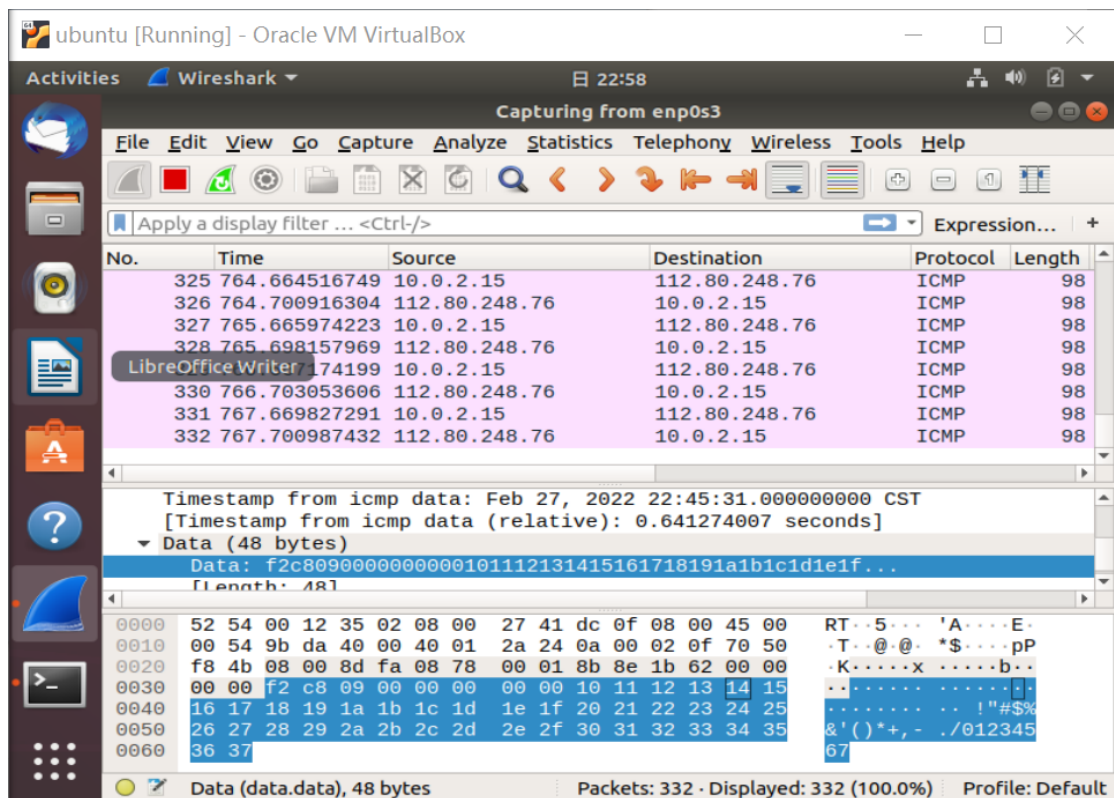
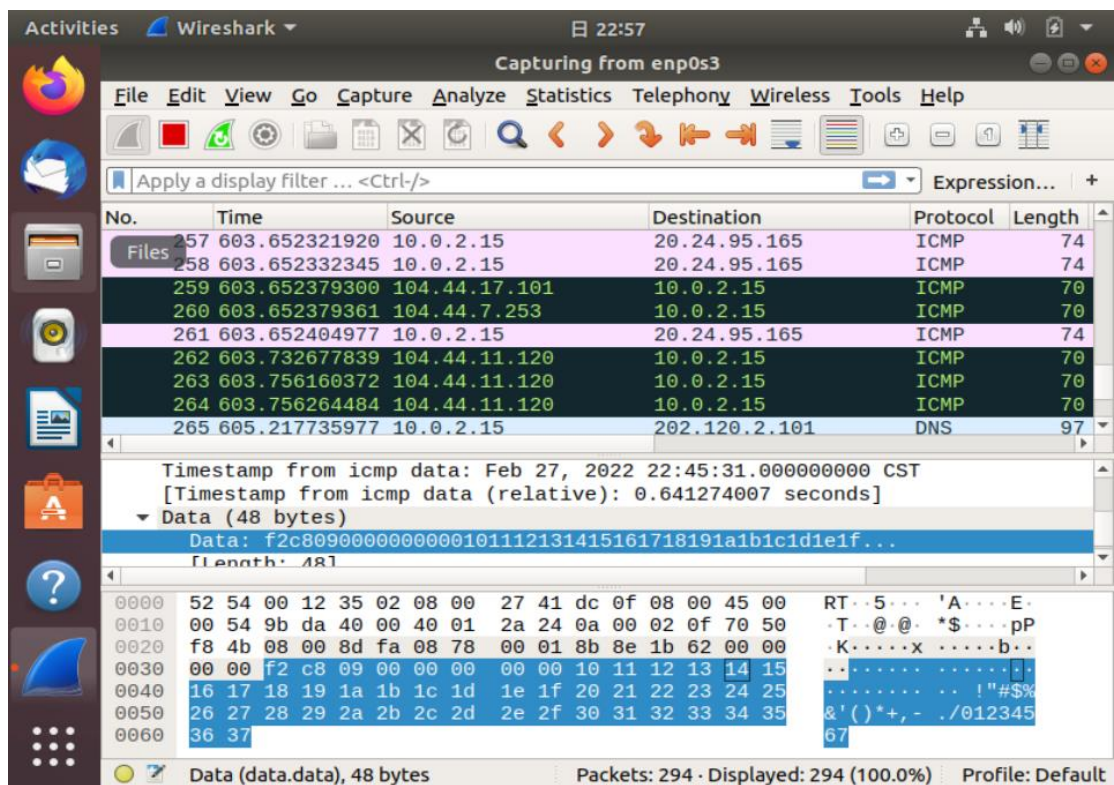


1. Ping uses icmp.



Traceroute uses icmp, dns.



2. Ip :112.80.248.76

```

ubuntu [Running] - Oracle VM VirtualBox
Activities Terminal 22:59
kirp@kirp-VirtualBox: ~
File Edit View Search Terminal Help
.761 ms
27 ae102-0.icr02.hkg31.ntwk.msn.net (104.44.11.120) 222.344 ms 229.004 ms 2
29.095 ms
28 * * *
29 * * *
30 * * *
kirp@kirp-VirtualBox:~$ ping www.baidu.com
PING www.a.shifen.com (112.80.248.76) 56(84) bytes of data.
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=1 ttl=45 time=38.4 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=2 ttl=45 time=31.7 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=3 ttl=45 time=33.4 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=4 ttl=45 time=32.0 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=5 ttl=45 time=32.8 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=6 ttl=45 time=46.5 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=7 ttl=45 time=34.5 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=8 ttl=45 time=31.4 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=9 ttl=45 time=35.2 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=10 ttl=45 time=36.4 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=11 ttl=45 time=32.2 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=12 ttl=45 time=35.8 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=13 ttl=45 time=31.1 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=14 ttl=45 time=32.0 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=15 ttl=45 time=33.9 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=16 ttl=45 time=36.7 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=17 ttl=45 time=32.1 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=18 ttl=45 time=34.0 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=19 ttl=45 time=37.2 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=20 ttl=45 time=31.8 ms
64 bytes from 112.80.248.76 (112.80.248.76): icmp_seq=21 ttl=45 time=31.8 ms

```

3. the average round trip time

Baidu: 31.107

Mit: 256.752

The reason why pinging mit costs more time is that the server of mit.edu is farther from us than baidu. So, it spend more time routing.

```

ubuntu [Running] - Oracle VM VirtualBox
Activities Terminal 23:01
kirp@kirp-VirtualBox: ~
File Edit View Search Terminal Help
kirp@kirp-VirtualBox:~$ ping -c 5 baidu.com
PING baidu.com (220.181.38.251) 56(84) bytes of data.
64 bytes from 220.181.38.251 (220.181.38.251): icmp_seq=1 ttl=43 time=29.9 ms
64 bytes from 220.181.38.251 (220.181.38.251): icmp_seq=2 ttl=43 time=33.3 ms
64 bytes from 220.181.38.251 (220.181.38.251): icmp_seq=3 ttl=43 time=30.3 ms
64 bytes from 220.181.38.251 (220.181.38.251): icmp_seq=4 ttl=43 time=33.3 ms
64 bytes from 220.181.38.251 (220.181.38.251): icmp_seq=5 ttl=43 time=28.4 ms

--- baidu.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 28.491/31.107/33.387/1.950 ms
kirp@kirp-VirtualBox:~$ ping -c 5 mit.edu
PING mit.edu (23.51.129.158) 56(84) bytes of data.
64 bytes from a23-51-129-158.deploy.static.akamaitechnologies.com (23.51.129.158): icmp_seq=1 ttl=43 time=258 ms
64 bytes from a23-51-129-158.deploy.static.akamaitechnologies.com (23.51.129.158): icmp_seq=2 ttl=43 time=252 ms
64 bytes from a23-51-129-158.deploy.static.akamaitechnologies.com (23.51.129.158): icmp_seq=3 ttl=43 time=259 ms
64 bytes from a23-51-129-158.deploy.static.akamaitechnologies.com (23.51.129.158): icmp_seq=4 ttl=43 time=259 ms
64 bytes from a23-51-129-158.deploy.static.akamaitechnologies.com (23.51.129.158): icmp_seq=5 ttl=43 time=252 ms

--- mit.edu ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4055ms
rtt min/avg/max/mdev = 252.622/256.752/259.984/3.300 ms
kirp@kirp-VirtualBox:~$

```

4. 1.77Gb/s



```
ubuntu Clone [Running] - Oracle VM VirtualBox
Activities Terminal 23:36
kirp@kirp-VirtualBox: ~
File Edit View Search Terminal Help
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
kirp@kirp-VirtualBox:~$ iperf3 -s
-----
Server listening on 5201
-----
Accepted connection from 10.0.2.4, port 40882
[ 5] local 10.0.2.5 port 5201 connected to 10.0.2.4 port 40884
[ ID] Interval          Transfer      Bandwidth
[ 5] 0.00-1.00 sec      207 MBytes   1.74 Gbits/sec
[ 5] 1.00-2.00 sec      212 MBytes   1.78 Gbits/sec
[ 5] 2.00-3.00 sec      201 MBytes   1.68 Gbits/sec
[ 5] 3.00-4.00 sec      204 MBytes   1.71 Gbits/sec
[ 5] 4.00-5.00 sec      205 MBytes   1.72 Gbits/sec
[ 5] 5.00-6.00 sec      216 MBytes   1.81 Gbits/sec
[ 5] 6.00-7.00 sec      213 MBytes   1.79 Gbits/sec
[ 5] 7.00-8.00 sec      218 MBytes   1.83 Gbits/sec
[ 5] 8.00-9.00 sec      215 MBytes   1.80 Gbits/sec
[ 5] 9.00-10.00 sec     221 MBytes   1.86 Gbits/sec
[ 5] 10.00-10.01 sec    1.37 MBytes   1.75 Gbits/sec
-----
[ ID] Interval          Transfer      Bandwidth
[ 5] 0.00-10.01 sec     0.00 Bytes    0.00 bits/sec
[ 5] 0.00-10.01 sec     2.06 GBytes   1.77 Gbits/sec
-----
Server listening on 5201
-----
```

```
ubuntu [Running] - Oracle VM VirtualBox
Activities Terminal 10:02
kirp@kirp-VirtualBox: ~
File Edit View Search Terminal Help
kirp@kirp-VirtualBox:~$ ssh kirp@ 10.0.2.5
ssh: Could not resolve hostname : Name or service not known
kirp@kirp-VirtualBox:~$ ssh kirp@10.0.2.5
The authenticity of host '10.0.2.5 (10.0.2.5)' can't be established.
ECDSA key fingerprint is SHA256:aD2gFUamx+ZjUBn3j/OqOC0VZx/E/tW2UfzX6jwEyx0.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.0.2.5' (ECDSA) to the list of known hosts.
kirp@10.0.2.5's password:
Welcome to Ubuntu 18.04.6 LTS (GNU/Linux 5.4.0-84-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

118 updates can be applied immediately.
95 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Your Hardware Enablement Stack (HWE) is supported until April 2023.

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.

kirp@kirp-VirtualBox:~$
```

5.

6.

