

CS3205: Introduction to Computer Networks

Assignment 1

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1 Part 2: tcpdump

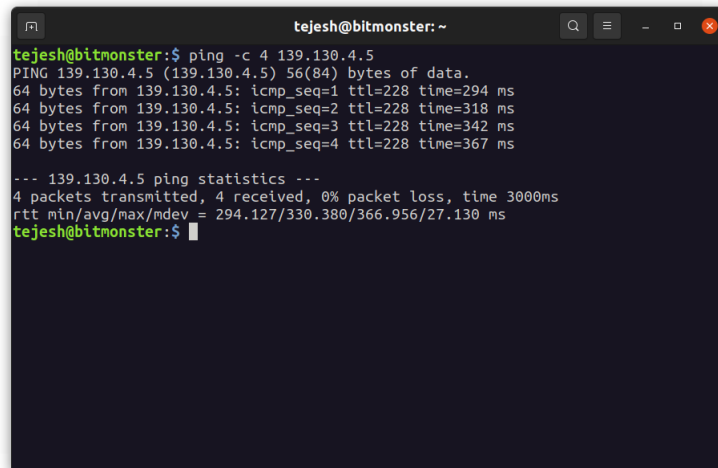
(a) ping 139.130.4.5

While recording the network activity in Wireshark, 4 ping requests were sent to 139.130.4.5.

- 8 packets were exchanged in total, 4 requests were sent and 4 replies were received.

Ping count	request time stamp	reply time stamp	time elapsed	RTT
1	0.000 s	0.294 s	0.294 s	294 ms
2	1.000 s	1.318 s	0.318 s	318 ms
3	2.000 s	2.342 s	0.342 s	342 ms
4	3.000 s	3.367 s	0.367 s	367 ms

It can be observed that the time elapsed between request and reply agrees with RTT.



```
tejesh@bitmonster: ~  
tejesh@bitmonster:~$ ping -c 4 139.130.4.5  
PING 139.130.4.5 (139.130.4.5) 56(84) bytes of data.  
64 bytes from 139.130.4.5: icmp_seq=1 ttl=228 time=294 ms  
64 bytes from 139.130.4.5: icmp_seq=2 ttl=228 time=318 ms  
64 bytes from 139.130.4.5: icmp_seq=3 ttl=228 time=342 ms  
64 bytes from 139.130.4.5: icmp_seq=4 ttl=228 time=367 ms  
--- 139.130.4.5 ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3000ms  
rtt min/avg/max/mdev = 294.127/330.380/366.956/27.130 ms  
tejesh@bitmonster:~$
```

Figure 1: Ping results

(b) load the url https://www.w3.org/TR/PNG/iso_8859-1.txt

1. The number of packets exchanged in various time intervals is presented below:

time interval (s)	0-1	1-2	2-3	4-5	5-6
packets exchanged	8	47	30	18	0

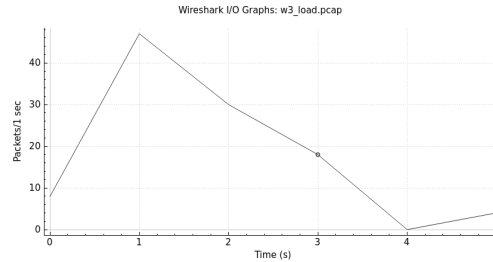


Figure 2: packets/sec

In total 103 packets are exchanged in the first 5 seconds.

2. Using a filter, the number of incoming and outgoing packets are also analysed, the following results are obtained.

The number of outgoing packets are recorded as follows, in total : 55 packets are sent.

time interval (s)	0-1	1-2	2-3	4-5	5-6
packets exchanged	5	28	14	8	0

The number of incoming packets are recorded as follows, in total : 48 packets are received.

time interval (s)	0-1	1-2	2-3	4-5	5-6
packets exchanged	3	19	16	10	0

3. From the pcap file, the total size of incoming data is found out to be 24085 Bytes and total size of outgoing data is found out to be 5957 Bytes. pcap file is attached along with the submission.

(c) watch a youtube video and record throughput

The following throughput graph is obtained.

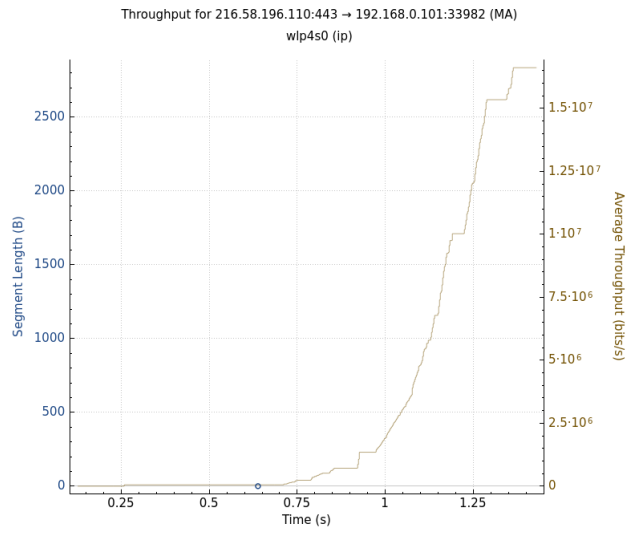


Figure 3: throughput