

LAPORAN KOMUNIKASI DATA

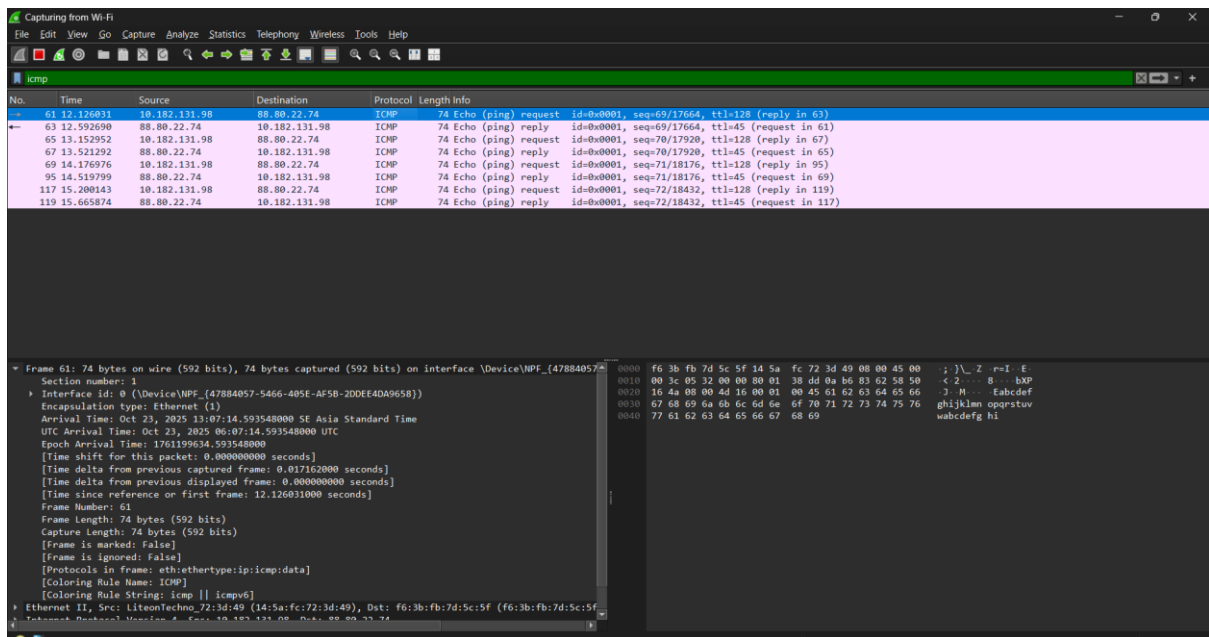
Nama : Muhammad Nabil Prama

Kelas : 1CB

NPM : 062530701406

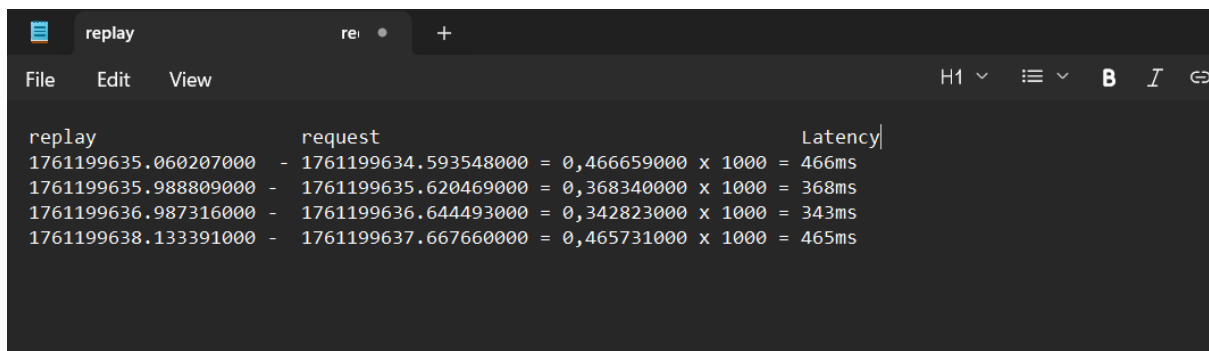
Tugas Praktikum

1. Menghitung Latency Dan Throughput (Download Data>5MB)

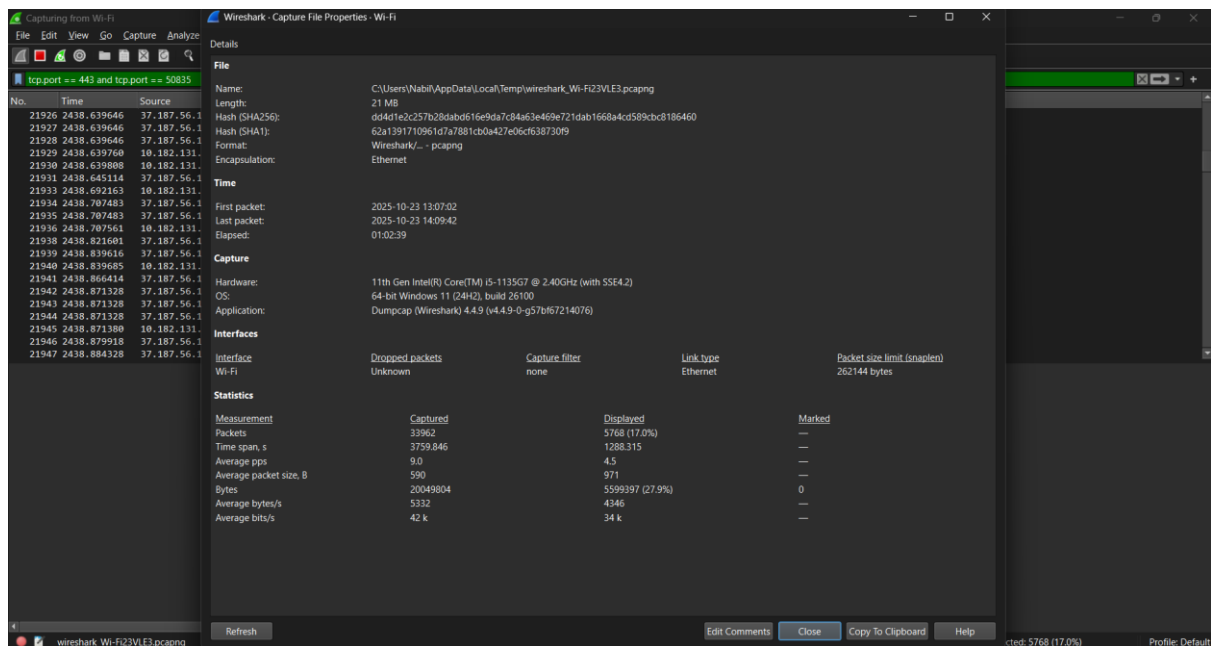


Menghitung Latency :

Melakukan ping pada web y2mate.nu lalu menggunakan Epoch arrival time (Replay) – Epoch Arrival time (Request) = Latency



Menghitung Throughput (Download Data>5MB) :



Menghitung throughput dengan byte :

Dengan Nilai Hasil Throughput = Total Paket / waktu

Throughput (AVR) = Nilai Hasil Throughput / 10^6

Menghitung Throughput :

Bytes/Time Span

Nilai Hasil Throughput : $20049804 / 3759.846 = 426609,0$

Throughput (average) = $426609 / 10^6 = 426Kbps$

2. Ambil 3 sample web masing masing 10x pengujian dan dapatkan jitternya.

Melakukan ping pada web Youtube.com.

```
C:\WINDOWS\system32\cmd. x + v
Microsoft Windows [Version 10.0.26100.6899]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Nabil>ping -n 10 youtube.com

Pinging youtube.com [74.125.24.136] with 32 bytes of data:
Reply from 74.125.24.136: bytes=32 time=54ms TTL=104
Reply from 74.125.24.136: bytes=32 time=50ms TTL=104
Reply from 74.125.24.136: bytes=32 time=60ms TTL=104
Reply from 74.125.24.136: bytes=32 time=50ms TTL=104
Reply from 74.125.24.136: bytes=32 time=42ms TTL=104
Reply from 74.125.24.136: bytes=32 time=47ms TTL=104
Reply from 74.125.24.136: bytes=32 time=50ms TTL=104
Reply from 74.125.24.136: bytes=32 time=56ms TTL=104
Reply from 74.125.24.136: bytes=32 time=43ms TTL=104
Reply from 74.125.24.136: bytes=32 time=52ms TTL=104

Ping statistics for 74.125.24.136:
    Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 42ms, Maximum = 60ms, Average = 50ms

C:\Users\Nabil>
```

Menghitung Jitter :

```
Latency          Jitter
50-54 = -4       2:10 = 0,2ms|
60-50 = 10
50-60 = -10
42-50 = -8
47-42 = 5
50-47 = 3
56-50 = 6
43-56 = -13
52-43 = 9
```

Melakukan ping pada web Instagram.com

```
C:\Users\Nabil>ping -n 10 instagram.com

Pinging instagram.com [57.144.192.34] with 32 bytes of data:
Reply from 57.144.192.34: bytes=32 time=58ms TTL=52
Reply from 57.144.192.34: bytes=32 time=28ms TTL=52
Reply from 57.144.192.34: bytes=32 time=42ms TTL=52
Reply from 57.144.192.34: bytes=32 time=42ms TTL=52
Reply from 57.144.192.34: bytes=32 time=45ms TTL=52
Reply from 57.144.192.34: bytes=32 time=31ms TTL=52
Reply from 57.144.192.34: bytes=32 time=38ms TTL=52
Reply from 57.144.192.34: bytes=32 time=46ms TTL=52
Reply from 57.144.192.34: bytes=32 time=31ms TTL=52
Reply from 57.144.192.34: bytes=32 time=44ms TTL=52

Ping statistics for 57.144.192.34:
    Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 28ms, Maximum = 58ms, Average = 40ms

C:\Users\Nabil>
```

Menghitung Jitter :

Latency	jitter
28-58 = -30	14/10 = 1.4ms
42-28 = 14	
42-42 = 0	
45-42 = 3	
31-45 = -14	
38-31 = 7	
46-38 = 8	
31-46 = -15	
44-31 = 13	

Melakukan ping id.pinterest.com

```
Pinging prod.pinterest.global.map.fastly.net [146.75.44.84] with 32 bytes of data:
Reply from 146.75.44.84: bytes=32 time=54ms TTL=54
Reply from 146.75.44.84: bytes=32 time=80ms TTL=54
Reply from 146.75.44.84: bytes=32 time=64ms TTL=54
Reply from 146.75.44.84: bytes=32 time=66ms TTL=54
Reply from 146.75.44.84: bytes=32 time=42ms TTL=54
Reply from 146.75.44.84: bytes=32 time=61ms TTL=54
Reply from 146.75.44.84: bytes=32 time=61ms TTL=54
Reply from 146.75.44.84: bytes=32 time=41ms TTL=54
Reply from 146.75.44.84: bytes=32 time=40ms TTL=54
Reply from 146.75.44.84: bytes=32 time=56ms TTL=54

Ping statistics for 146.75.44.84:
    Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 40ms, Maximum = 80ms, Average = 56ms

C:\Users\Nabil>
```

Menghitung Jitter :

Latency	jitter
80-54 = 26	12:10 = 1.2ms
64-80 = -16	
66-64 = 2	
42-66 = -24	
61-42 = 19	
61-61 = 0	
41-61 = -10	
40-41 = -1	
56-40 = 16	