TUGAS KOMUNIKASI DATA



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PROGRAM STUDI SISTEM KOMPUTER FAKULTAS ILMU KOMPUTER UNIVERSITAS SRIWIJAYA

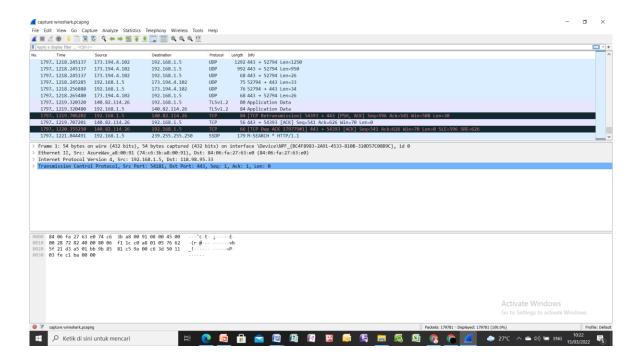
2022

Laporan Hasil Quality Of Service, Traffic Jaringan Dengan Wireshark

1. Pada bagian pertama, saya mencoba menjalankan paket data melalui Wireshark dengan Capturing From Wi-Fi seperti pada gambar dibawah ini. Pada bagian ini saya memerlukan waktu kurang lebih sekitar 20 menit untuk mendapatkan paket data yang sedang berjalan.

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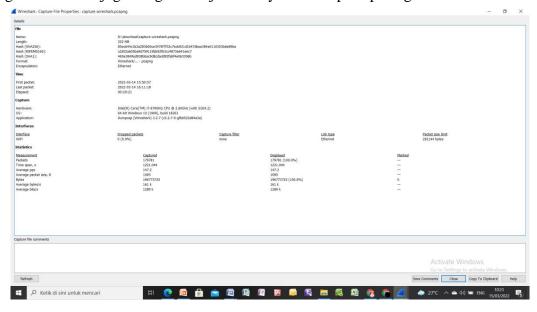
Setelah sekitar kurang lebih 20 menit berjalan, didapatkan paket data seperti gambar dibawah ini



2. Throughput

throughput adalah kecepatan rata-rata data yang diterima oleh suatu suatu node dalam selang waktu pengamatan tertentu.

Berikut merupakan data yang telah di dapatkan dari paket data yang berjalan pada jaringan Wi-Fi dan juga dengan menjalankan youtube seperti pada gambar dibawah ini.



Analisis:

rumus throughput = jumlah data yang dikirim (bytes) /waktu pengiriman (time span) x 8

= 196773725 / 1221.044 x 8

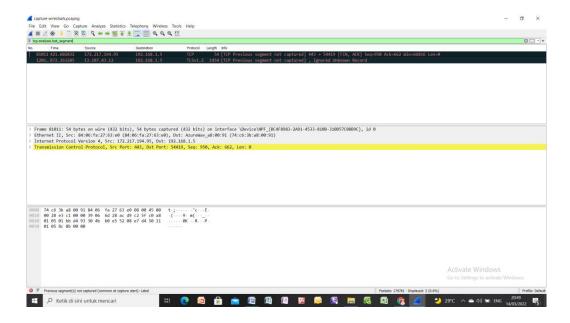
= 161.152,0346523139 (b) $\times 8$

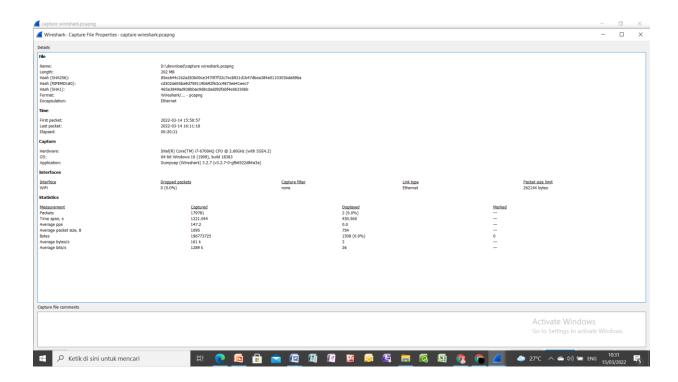
= 1289 Kb/s

3. Packet Loss

Error / packet lost adalah banyaknya paket yang hilang pada suatu jaringan paket yang disebabkan oleh tabrakan (collis) penuhnya paket kapasitas jaringan,dan penurunan paket yang disebabkan oleh habisnya TTL (time to live) paket.dengan melakukan filtering data seperti gambar di bawah, di dapatlah data paket yang tidak terkirim, dengan total jumlah 1 atau 0.0% dari total paket yang berlangsung.

Gambar dibawah ini merupakan data packet loss yang terjadi





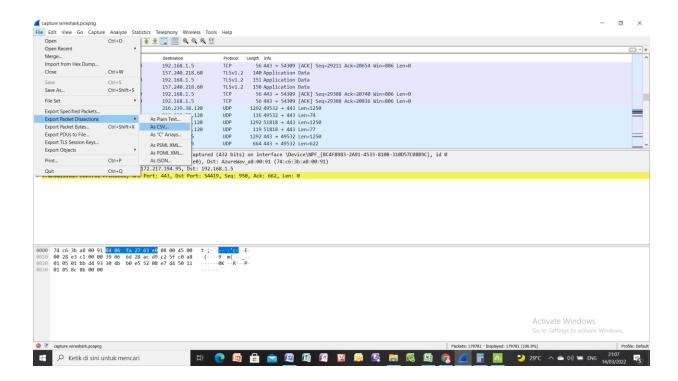
Untuk mencari packet digunakan rumus sebagai berikut :

```
Paket diterima = Paket dikirim - Paket tidak terkirim
= 17981 - 2
= 17979
```

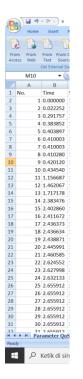
```
Packet Loss = (((Paket dikirim – Paket diterima) : Paket dikirim) x 100) 
= ((179781–179779) / 179781) x 100% 
= (2 / 179781) x 100% 
= 0,0 %
```

4. Delay

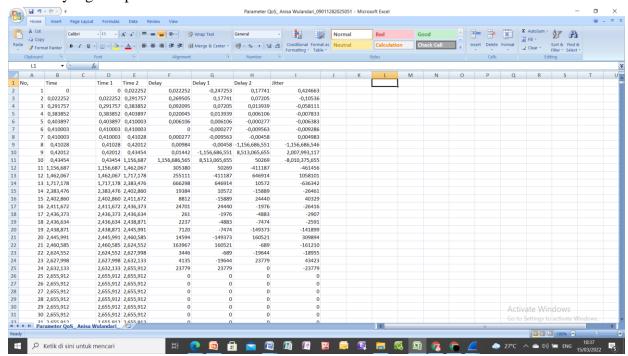
Convert semua packet pada wireshark tadi menjadi format CSV dan lakukan analisis data melalui excel.



Karna yang diperlukan hanya informasi waktu, maka hapus kolom informasi lain pada file csv yang sudah di export.



Analisis yang didapatkan:



Keterangan:

Time 1 = Waktu awal

Time 2 = Waktu awal yang diulai setelah 0

Delay = Time 2 - Time 1

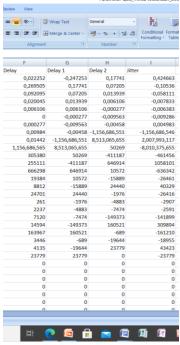
Total Delay = Menambahkan seluruh jumlah data 17981 yaitu: 1221044491

total delay = 1221044491

Rata – rata Delay = Total Delay : Jumlah Paket rata-rata delay = 6791,843916 s x 1000 = 6.791.843,916 ms

5. Jitter

jitter merupakan variasi waktu dari sinyal periodic dalam elektronik dan telekomunikasi Berikut merupakan data yang telah di dapatkan dari nilai delay sebelumnya sehingga di dapatkan nilai beserta total dan rata-rata pada Jitter.



Analisis yang didapatkan sebagai berikut :

Delay 1 = Nilai Delay – Nilai Delay Setelahnya

Delay 2 = Semua Nilai Delay, kecuali Delay Pertama

Jadi didapatkan hasil dari nilai jitter dan rata – rata jitter, didapatkan perhitungan sebagai berikut :

rumus jitter = delay 1 – delay 2 total jiter = 689241,2473

rata-rata jiter = 3,833782476 s x 1000

= 3.833,782476 ms

• Link Github:

 $\underline{https://github.com/anisawulandari1/Komunikasi-Data_Anisa-Wulandari_09011282025051.git}$

Mohon maaf pak dikarenakan file wireshark saya 193 mb, maka tidak bisa di upload ke github.. saya sudah mencoba kompres akan tetapi file github hanya bisa sampai 25mb.. terima kasih atas pengertian nya pak

