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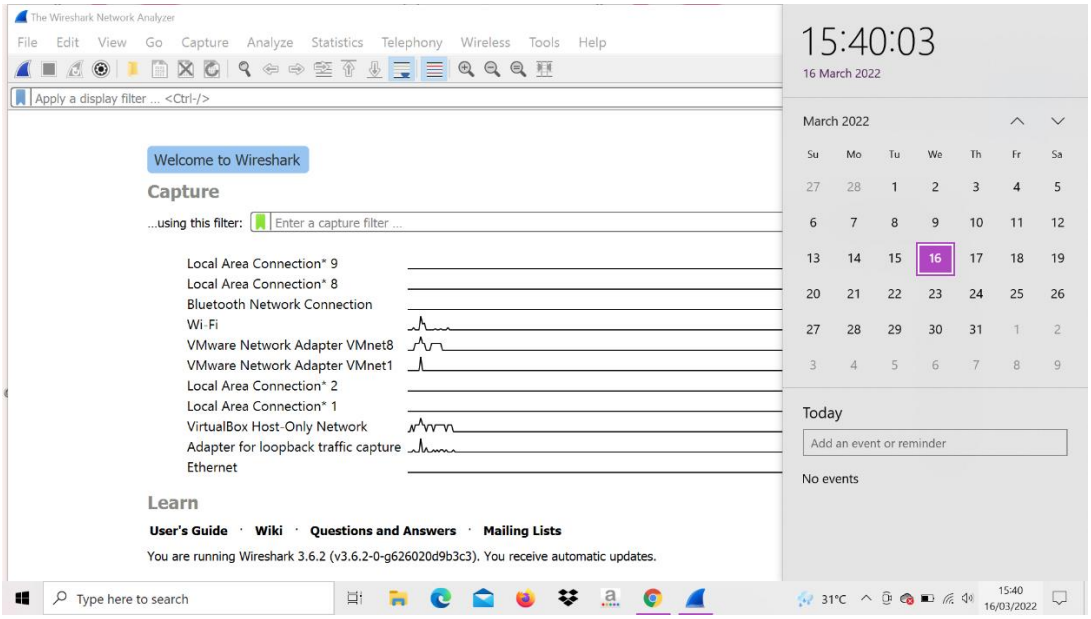
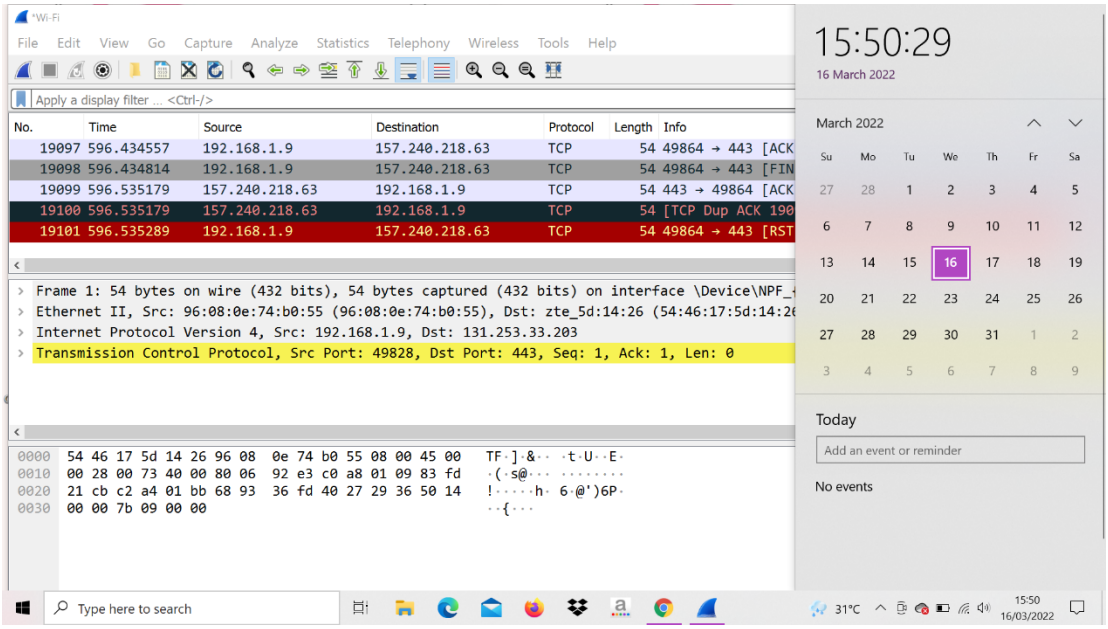
MK : Komunikasi Data

QUALITY OF SERVICE, TRAFFIC JARINGAN DENGAN WIRESHARK

Saya menggunakan interface “Wi-fi” dimana semua aktifitas internet saya berjalan, saya melakukan capture pada setiap paket yang keluar dan juga masuk pada traffic menggunakan Wireshark.

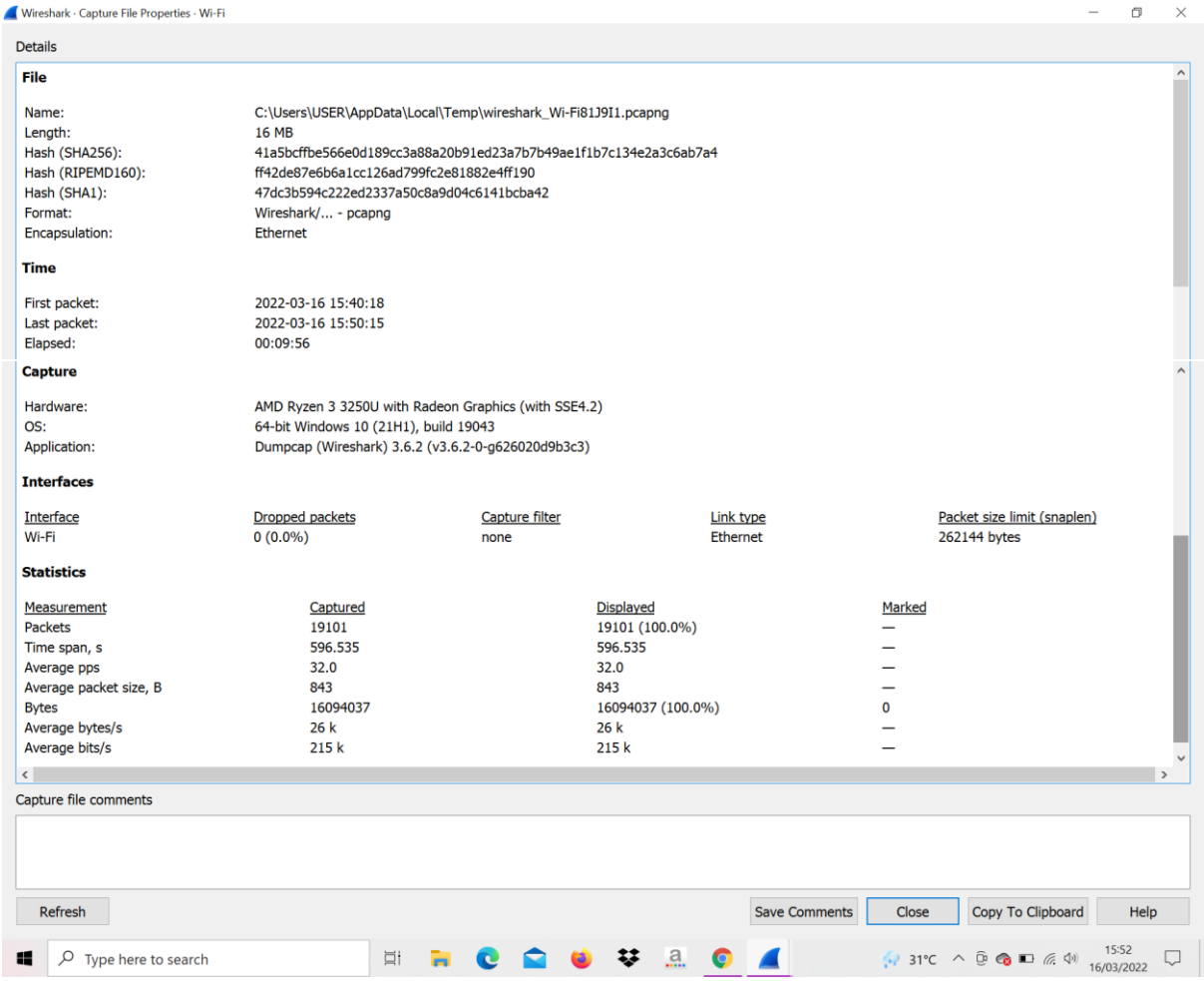
Waktu yang saya gunakan untuk mengcapture traffic packet pada wireshark ini berlangsung selama 10 menit, dan dari total 10 menit tersebut saya mendapatkan 19101 packet yang terjadi dalam rentang waktu tersebut.





THROUGHPUT:

Berikut adalah informasi data yang didapat.



Analisis nya :

Jumlah Bytes : Time Span = 16094037 Bytes : 596,535 s

= 26979,20 Bytes/s

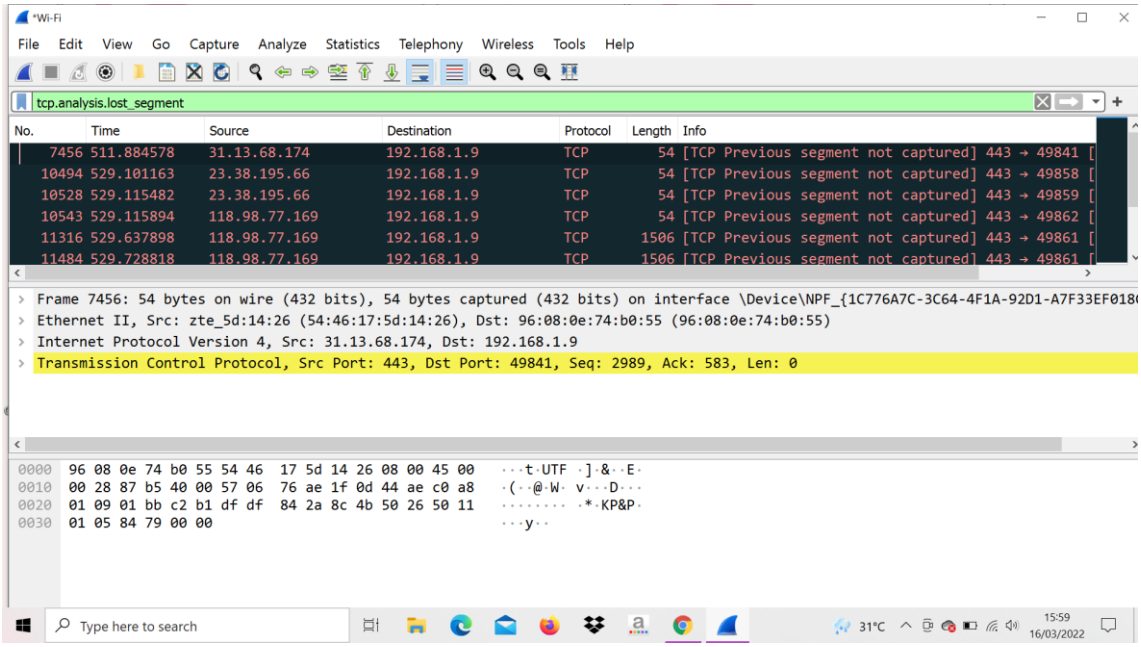
= 26,9792 KB/s (Converted to KB)

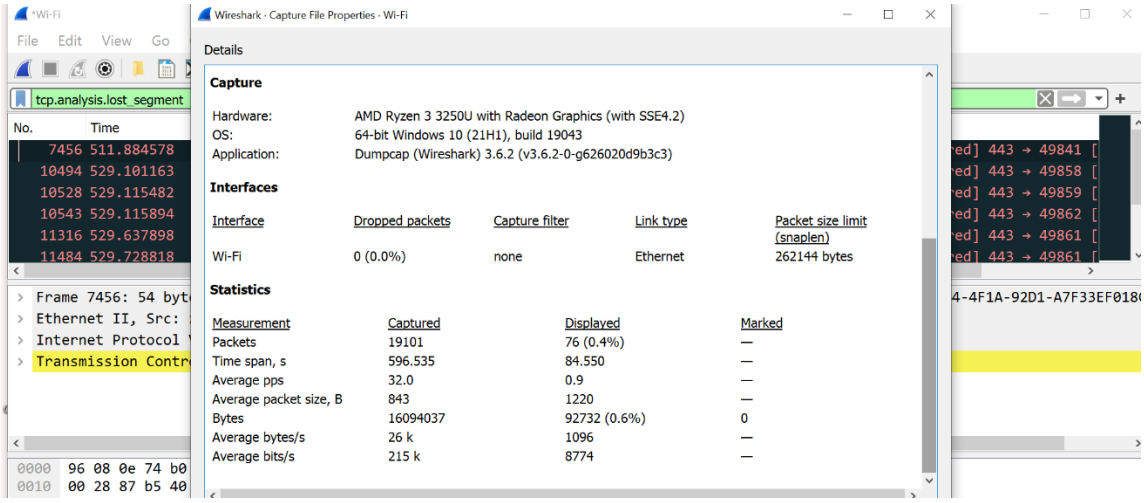
= 26,9792 x 8 (Converting to bits)

= 215,8336 Kb/s

PACKET LOSS

Dengan melakukan filtering data seperti gambar di bawah, didapatlah beberapa data paket yang tidak terkirim, dengan total jumlah **76** atau 0.4% dari total paket yang berlangsung.





Analisis nya:

Paket Diterima = Paket Dikirim - Paket Tidak Terkirim

= 19101 - 76

= 19025

$$\frac{(\text{Paket Dikirim} - \text{Paket Diterima})}{\text{Paket Dikirim}} \times 100 = ((19101 - 19025) / 19025) \times 100$$

= 0,00399 x 100

= 0,399

DELAY

No.	Time		Time 1	Time 2	Delay
1	0		0	2,327012	2,327012
30	2,327012		2,327012	2,352596	0,025584
43	2,352596		2,352596	2,352802	0,000206
44	2,352802		2,352802	2,353545	0,000743
45	2,353545		2,353545	2,379087	0,025542
50	2,379087		2,379087	2,379087	0,000000
51	2,379087		2,379087	2,379087	0,000000
52	2,379087		2,379087	2,379087	0,000000
53	2,379087		2,379087	2,379221	0,000134
54	2,379221		2,379221	2,382408	0,003187
55	2,382408		2,382408	2,407675	0,025267
56	2,407675		2,407675	2,408192	0,000517
57	2,408192		2,408192	2,408192	0,000000
58	2,408192		2,408192	2,433778	0,025586
59	2,433778		2,433778	2,435785	0,002007
60	2,435785		2,435785	2,435906	0,000121
61	2,435906		2,435906	2,436152	0,000246
62	2,436152		2,436152	2,436278	0,000126
63	2,436278		2,436278	2,461022	0,024744
64	2,461022		2,461022	2,461022	0,000000
65	2,461022		2,461022	8,150440	5,689418

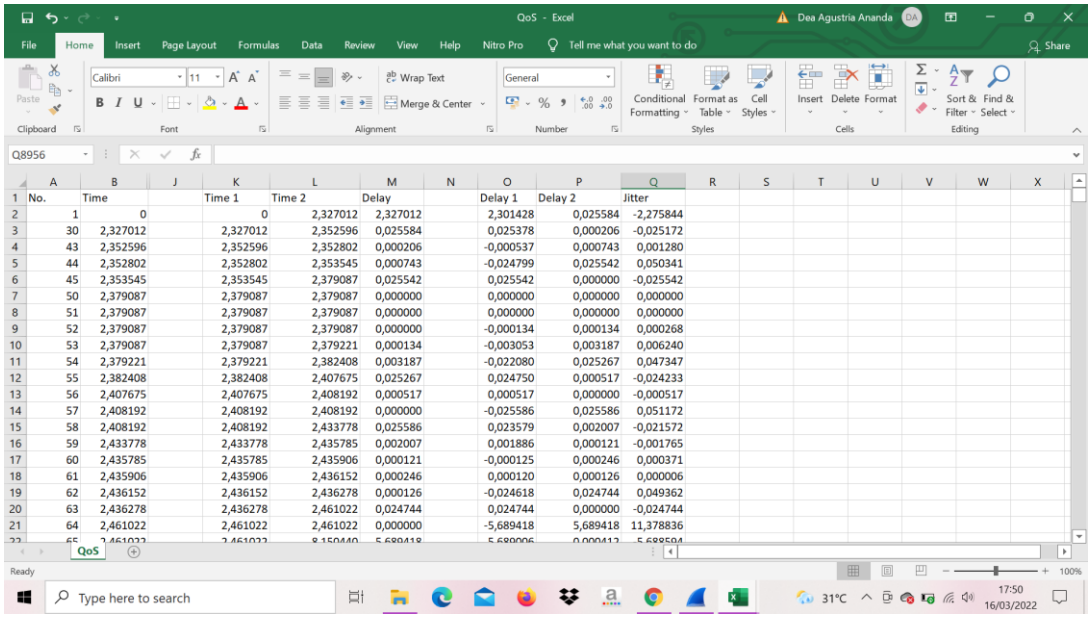
Time 1 = Waktu awal
Time 2 = Waktu awal yang dimulai setelah 0
Delay = TIME 2 – TIME 1

Berikut total delay dan rata – ratanya :

8938	19087	596,035523		596,035523	596,035522	-0,000001
8939	19088	596,035522		596,035522	596,099497	0,063975
8940	19089	596,099497		596,099497	596,099497	0,000000
8941	19090	596,099497		596,099497	596,099497	0,000000
8942	19091	596,099497		596,099497	596,118587	0,019090
8943	19092	596,118587		596,118587	596,169307	0,050720
8944	19093	596,169307		596,169307	596,434376	0,265069
8945	19094	596,434376		596,434376	596,434376	0,000000
8946	19095	596,434376		596,434376	596,434464	0,000088
8947	19096	596,434464		596,434464	596,434557	0,000093
8948	19097	596,434557		596,434557	596,434814	0,000257
8949	19098	596,434814		596,434814	596,535179	0,100365
8950	19099	596,535179		596,535179	596,535179	0,000000
8951	19100	596,535179		596,535179	596,535289	0,000110
8952	19101	596,535289				
8953					Total Delay	596,535289
8954					Rata-rata delay	0,0312306
8955						

Total delay = 596,535289
Rata – Rata Delay = Total Delay / Jumlah Paket
= 596,535289 / 19101
= 0,0312305789749228

JITTER



No.	Time		Time 1	Time 2	Delay	Delay 1	Delay 2	Jitter
1	0		0	2,327012	2,327012	2,301428	0,025584	-2,275844
30	2,327012		2,327012	2,352596	0,025584	0,025378	0,000206	-0,025172
43	2,352596		2,352596	2,352802	0,000206	-0,000537	0,000743	0,001280
44	2,352802		2,352802	2,353545	0,000743	-0,024799	0,025542	0,050341
45	2,353545		2,353545	2,379087	0,025542	0,025542	0,000000	-0,025542
50	2,379087		2,379087	2,379087	0,000000	0,000000	0,000000	0,000000
51	2,379087		2,379087	2,379087	0,000000	0,000000	0,000000	0,000000
52	2,379087		2,379087	2,379087	0,000000	-0,000134	0,000134	0,000268
53	2,379087		2,379087	2,379221	0,000134	-0,003053	0,003187	0,006240
54	2,379221		2,379221	2,382408	0,003187	-0,022080	0,025267	0,047347
55	2,382408		2,382408	2,407675	0,025267	0,024750	0,000517	-0,024233
56	2,407675		2,407675	2,408192	0,000517	0,000517	0,000000	-0,000517
57	2,408192		2,408192	2,408192	0,000000	-0,025586	0,025586	0,051172
58	2,408192		2,408192	2,433778	0,025586	0,023579	0,002007	-0,021572
59	2,433778		2,433778	2,435785	0,002007	0,001886	0,000121	-0,001765
60	2,435785		2,435785	2,435906	0,000121	-0,000125	0,000246	0,000371
61	2,435906		2,435906	2,436152	0,000246	0,000120	0,000126	0,000006
62	2,436152		2,436152	2,436278	0,000126	-0,024618	0,024744	0,049362
63	2,436278		2,436278	2,461022	0,024744	0,024744	0,000000	-0,024744
64	2,461022		2,461022	2,461022	0,000000	-5,689418	5,689418	11,378836

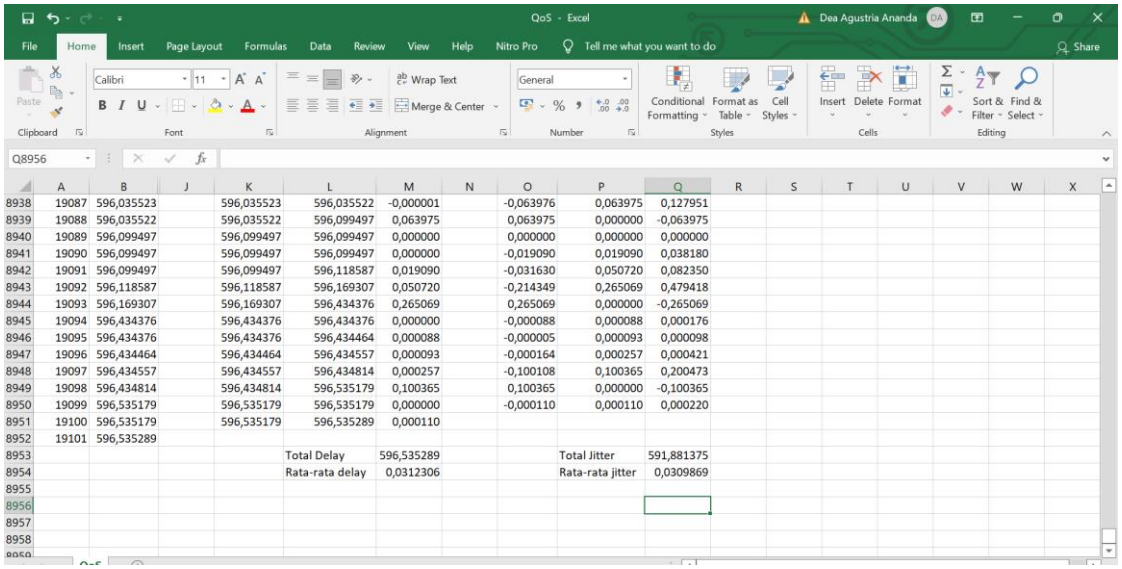
Analisis :

Delay 1 = Nilai Delay – Nilai Delay setelahnya

Delay 2 = Semua nilai delay, kecuali nilai delay pertama.

Jitter = Delay 2 – Delay 1

Berikut total jitter dan nilai rata – ratanya :



19087	596,035523		596,035523	596,035522	-0,000001		-0,063976	0,063975	0,127951
19088	596,035522		596,035522	596,099497	0,063975		0,063975	0,000000	-0,063975
19089	596,099497		596,099497	596,099497	0,000000		0,000000	0,000000	0,000000
19090	596,099497		596,099497	596,099497	0,000000		-0,019090	0,019090	0,038180
19091	596,099497		596,099497	596,118587	0,019090		-0,031630	0,050720	0,082350
19092	596,118587		596,118587	596,169307	0,050720		-0,214349	0,265069	0,479418
19093	596,169307		596,169307	596,434376	0,265069		0,265069	0,000000	-0,265069
19094	596,434376		596,434376	596,434376	0,000000		-0,000088	0,000088	0,000176
19095	596,434376		596,434376	596,434464	0,000088		-0,000005	0,000093	0,000098
19096	596,434464		596,434464	596,434557	0,000093		-0,000164	0,000257	0,000421
19097	596,434557		596,434557	596,434814	0,000257		-0,100108	0,100365	0,200473
19098	596,434814		596,434814	596,535179	0,100365		0,100365	0,000000	-0,100365
19099	596,535179		596,535179	596,535179	0,000000		-0,000110	0,000110	0,000220
19100	596,535179		596,535179	596,535289	0,000110				
19101	596,535289								
				Total Delay	596,535289			Total Jitter	591,881375
				Rata-rata delay	0,0312306			Rata-rata jitter	0,0309869

Total Jitter = 591,881375

Rata - Rata Jitter = Total Jitter / Jumlah Paket

= 591,881375 / 19101

= 0,0309869313124967

Link github =