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Jaringan Komputer dan Komunikasi Data

Untuk melakukan analisis ini saya menggunakan 2 website internasional, yaitu www.twitter.com dan www.instagram.com kemudian 2 website nasional, yaitu www.rcti.tv dan www.globaltv.co.id

1. www.twitter.com

Analisis IP address

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Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . . : fe80::f8b0:1b6f:c67f:bae5%6
IPv4 Address. . . . . : 192.168.43.81
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.43.1

1287 28.637857 192.168.43.81    74.125.130.94    QUIC   305 Payload (Encrypted), PKN: 194, CID: 17145640863031176040
1288 28.660857 192.168.43.81    192.168.43.81    DNS    103 Standard query response 0x3509 A twitter.com A 104.244.42.193 A 104.244.42.65
1289 28.662470 192.168.43.81    104.244.42.65    TCP    66 59291 - 443 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
1290 28.662832 192.168.43.81    104.244.42.65    TCP    66 59292 - 443 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1
1291 28.759141 104.244.42.65    192.168.43.81    TCP    66 443 - 59291 [SYN, ACK] Seq=0 Ack=1 Win=29200 Len=0 MSS=1400 SACK_PERM=1 WS=256
1292 28.759251 192.168.43.81    104.244.42.65    TCP    54 59291 - 443 [ACK] Seq=1 Ack=1 Win=65792 Len=0
1293 28.759522 192.168.43.81    104.244.42.65    TLSV1.2 257 Client Hello
1294 28.826893 74.125.130.94    192.168.43.81    QUIC   511 Payload (Encrypted), PKN: 338
1295 28.826894 74.125.130.94    192.168.43.81    QUIC   71 Payload (Encrypted), PKN: 339
1296 28.826894 104.244.42.65    192.168.43.81    TCP    66 443 - 59292 [SYN, ACK] Seq=0 Ack=1 Win=29200 Len=0 MSS=1400 SACK_PERM=1 WS=256

0100 .... = version: 4
.... 0101 = Header Length: 20 bytes (5)
④ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 52
Identification: 0x3143 (12611)
④ Flags: 0x02 (Don't Fragment)
Fragment offset: 0
Time to live: 128
Protocol: TCP (6)
Header checksum: 0x4a52 [validation disabled]
[Header checksum status: unverified]
Source: 192.168.43.81
Destination: 104.244.42.65
[Source GeoIP: unknown]
[Destination GeoIP: unknown]
④ Transmission Control Protocol, Src Port: 59291, Dst Port: 443, Seq: 0, Len: 0
```

Pada gambar diatas tertera bahwa IP address source ialah 192.168.43.81 dan IP address destinationnya ialah 104.244.42.65 yang menunjukkan bahwa destinationnya sudah ke www.twitter.com. Kemudian untuk port dari source ialah 59291 dan port dari destinationnya ialah 443.

Analisis handshake www.twitter.com

28307 473.043541 117.18.237.70	192.168.43.81	TCP	66 [TCP Dup ACK 28002#1] 59604 - 443 [ACK] Seq=3612 Ack=204 Win=30464 Len=0 SLE=1 SRE=1
28309 473.043542 117.18.237.70	192.168.43.81	TCP	54 443 - 59599 [ACK] Seq=5501 Ack=644 Win=147456 Len=0
28310 473.043543 117.18.237.70	192.168.43.81	TLSv1.2	296 New Session Ticket, Change Cipher Spec, Encrypted Handshake Message
28311 473.043626 192.168.43.81	104.244.46.199	TCP	66 [TCP Dup ACK 28002#1] 59604 - 443 [ACK] Seq=206 Ack=1 Win=65792 Len=0 SLE=0 SRE=1
28312 473.055941 117.18.237.70	192.168.43.81	TCP	1454 [TCP segment of a reassembled PDU]
28313 473.061574 117.18.237.70	192.168.43.81	TCP	1454 [TCP segment of a reassembled PDU]
28314 473.064651 117.18.237.70	192.168.43.81	TLSv1.2	131 Application Data
28315 473.064740 192.168.43.81	117.18.237.70	TCP	54 59596 - 443 [ACK] Seq=1092 Ack=24264 Win=65792 Len=0
28316 473.065046 117.18.237.70	192.168.43.81	TCP	1454 [TCP segment of a reassembled PDU]

Internet Protocol Version 4, Src: 117.18.237.70, Dst: 192.168.43.81

- 0100 = version: 4
- 0101 = Header Length: 20 bytes (5)
- ⊕ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
- Total Length: 282
- Identification: 0x9998 (39320)
- ⊕ Flags: 0x02 (Don't Fragment)
- Fragment offset: 0
- Time to live: 58
- Protocol: TCP (6)
- Header checksum: 0x57f3 [validation disabled]
- [Header checksum status: unverified]
- Source: 117.18.237.70
- Destination: 192.168.43.81
- [Source GeoIP: Unknown]
- [Destination GeoIP: unknown]

Pada gambar diatas tertera bahwa IP Source nya ialah 117.18.237.70 dan Port sourcenya 443, kemudian IP Destination nya 192.168.43.81 dan Port Destinationnya 59616

2. www.instagram.com

Analisis IP Address www.instagram.com

Wireless LAN adapter Wi-Fi:
Connection-specific DNS Suffix . . . :
Link-local IPv6 Address : fe80::f8b0:1b6f:c67f:bae5%6
IPv4 Address. : 192.168.43.81
Subnet Mask : 255.255.255.0
Default Gateway : 192.168.43.1

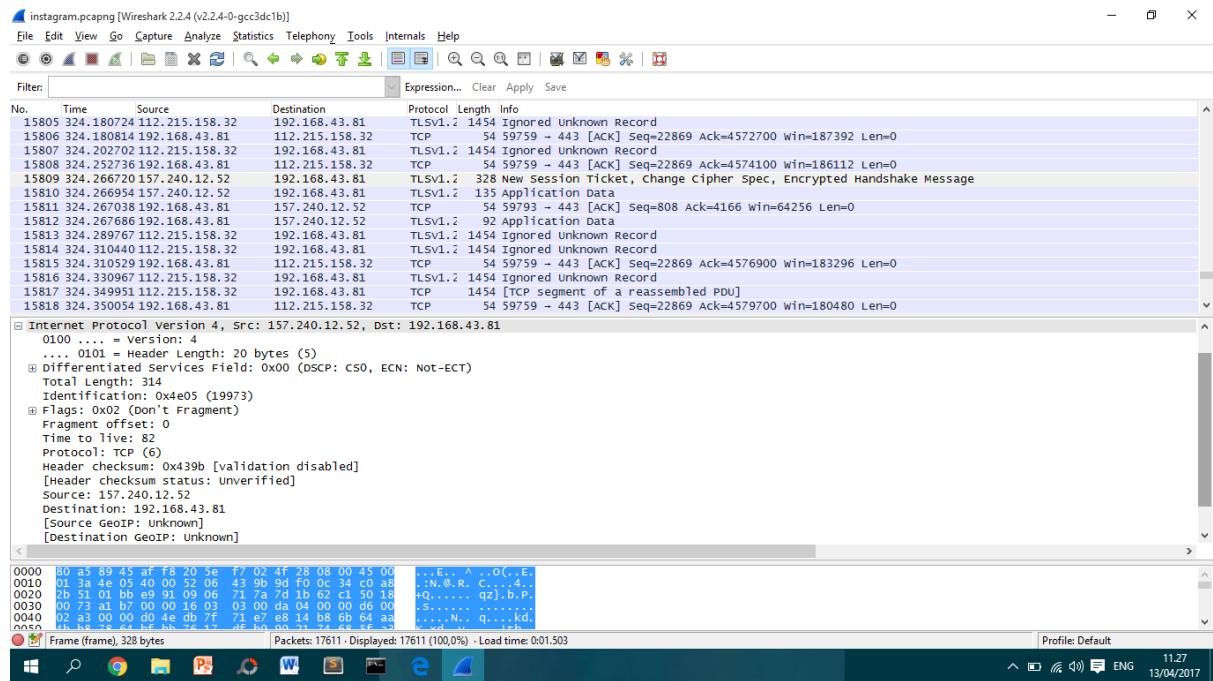
No.	Time	Source	Destination	Protocol	Length	Info
2113 39.929881	112.215.101.165	192.168.43.81	QUIC	86 Payload (Encrypted), PKN: 18, CID: 11284053984511839461		
2114 39.930123	112.215.184.46	192.168.43.81	QUIC	77 Payload (Encrypted), PKN: 26, CID: 14782572892700242045		
2115 39.930123	112.215.101.165	192.168.43.81	TCP	349 [TCP Spurious Retransmission] 443 - 59677 [PSH, ACK] Seq=3449 Ack=208 Win=30336 Len=295[reassembly]		
2116 39.930256	192.168.43.81	112.215.101.165	TCP	66 [TCP dup ACK 2091#1] 59677 - 443 [ACK] Seq=617 Ack=3744 Win=65792 Len=0 SLE=3449 SRE=3744		
2117 39.933270	192.168.43.1	192.168.43.81	DNS	155 standard query response 0xf0e2 A www.instagram.com CNAME black.ish.instagram.com CNAME instagram.c1		
2118 39.934325	192.168.43.81	157.240.7.52	TCP	66 59679 - 443 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1		
2119 39.975014	112.215.101.165	192.168.43.81	TCP	54 443 - 59677 [ACK] Seq=3744 Ack=519 Win=3136 Len=0		
2120 39.975017	112.215.101.165	192.168.43.81	TCP	54 443 - 59677 [ACK] Seq=3744 Ack=617 Win=3136 Len=0		
2121 39.987803	192.168.43.81	157.240.7.52	TCP	66 59680 - 443 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=256 SACK_PERM=1		
2122 39.989802	112.215.101.165	192.168.43.81	TLSv1.2	348 New Session Ticket, Change Cipher Spec, Hello Request, Hello Request		
2123 39.990003	112.215.101.165	192.168.43.81	TLSv1.2	152 Application Data, Application Data		
2124 39.990078	192.168.43.81	112.215.101.165	TCP	54 59677 - 443 [ACK] Seq=617 Ack=4136 win=65280 Len=0		
2125 39.990783	192.168.43.81	112.215.101.165	TLSv1.2	92 Application Data		
2126 39.997703	112.215.101.165	192.168.43.81	TLSv1.2	92 Application Data		

0100 = version: 4
 ... 0101 = Header Length: 20 bytes (5)
 ⊕ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
 Total Length: 52
 Identification: 0x4275 (17013)
 ⊕ Flags: 0x02 (Don't Fragment)
 Fragment offset: 0
 Time to live: 128
 Protocol: TCP (6)
 Header checksum: 0x2731 [validation disabled]
 [Header checksum status: unverified]
 Source: 192.168.43.81
 Destination: 157.240.7.52
 [Source GeoIP: Unknown]
 [Destination GeoIP: unknown]

⊕ Transmission Control Protocol, Src Port: 59679, Dst Port: 443, Seq: 0, Len: 0

Pada gambar diatas tertera bahwa IP address source ialah 192.168.43.81 dan IP address destinationnya ialah 157.240.7.52 yang menunjukkan bahwa destinationnya sudah ke www.instagram.com. Kemudian untuk port dari source ialah 59679 dan port dari destinationnya ialah 443.

Analisis Handshake www.instagram.com



Pada gambar diatas tertera bahwa IP Source nya ialah **157.240.12.52** dan Port sourcennya 443, kemudian IP Destination nya **192.168.43.81** dan Port Destinationnya 59793

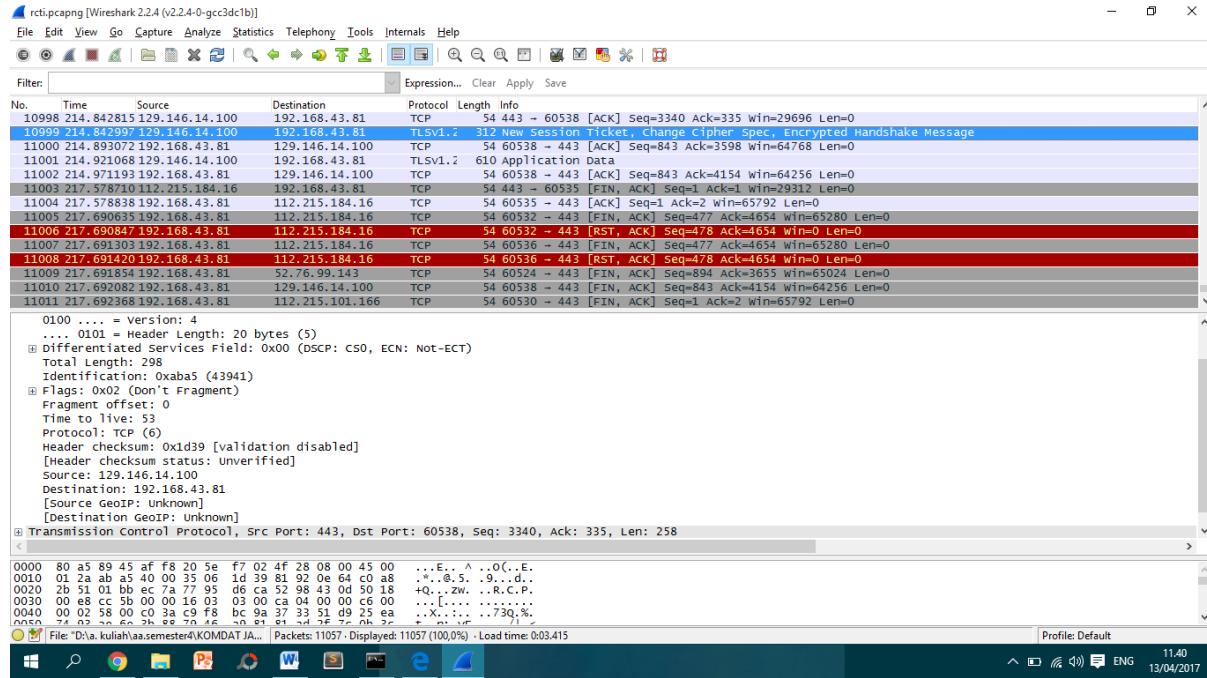
3. www.rcti.tv

Analisis IP Address

```
Wireless LAN adapter Wi-Fi:  
  
  Connection-specific DNS Suffix  . :  
  Link-local IPv6 Address  . . . . . : fe80::f8b0:1b6f:c67f:bae%6  
  IPv4 Address . . . . . : 192.168.43.81  
  Subnet Mask . . . . . : 255.255.255.0  
  Default Gateway . . . . . : 192.168.43.1
```

Pada gambar diatas tertera bahwa IP address source ialah **192.168.43.81** dan IP address destinationnya ialah **202.80.220.250** yang menunjukkan bahwa destinationnya sudah ke www.rcti.tv. Kemudian untuk port dari source ialah 60377 dan port dari destinationnya ialah 80

Analisis Handshake www.rcti.tv



Pada gambar diatas tertera bahwa IP Source nya ialah **129.146.43.81** dan Port sourceny 443, kemudian IP Destination nya **192.168.43.81** dan Port Destinationnya 60538

4. www.globaltv.co.id

Analisis IP Address www.globaltv.co.id

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Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . : hotspot-idl.ilkom.unsri.ac.id
Link-local IPv6 Address . . . . . : fe80::f8b0:1b6f:c67f:bae5%6
IPv4 Address . . . . . : 10.100.226.162
Subnet Mask . . . . . : 255.255.240.0
Default Gateway . . . . . : 10.100.224.1
```

No.	Time	Source	Destination	Protocol	Length	Info
4	0.022847	fe80::f98b:d99d:e1:ff02::c	10.102.239.255	UDP	686	50437 → 3702 Len=624
5	0.022850	10.102.226.3	10.102.239.255	BROWSER	216	Get Backup List Request
6	0.022851	10.102.226.3	10.102.239.255	NBNS	92	Name query NB WORKGROUP<1b>
7	0.022852	10.102.226.3	10.102.239.255	NBNS	92	Name query NB WORKGROUP<1c>
8	0.023610	fe80::f98b:d99d:e1:ff02::c	10.102.226.3	UDP	686	50437 → 3702 Len=624
9	0.024541	10.102.226.3	239.255.255.250	UDP	666	50436 → 3702 Len=624
10	0.049470	202.80.220.28	10.102.224.182	TCP	1514	[TCP segment of a reassembled PDU]
11	0.049565	10.102.224.182	202.80.220.28	TCP	66	61818 → 80 [ACK] Seq=1 Ack=1461 Win=256 Len=0 SLE=2921 SRE=11681
12	0.109890	202.80.220.28	10.102.224.182	TCP	1514	80 → 61798 [ACK] Seq=1 Ack=1 Win=126 Len=1460
13	0.109994	10.102.224.182	202.80.220.28	TCP	74	61798 → 80 [ACK] Seq=1 Ack=1461 Win=256 Len=0 SLE=10221 SRE=13141 SLE=5841 SRE=7301
14	0.120485	Guangdong_6d:db:d8	Broadcast	ARP	42	who has 10.100.224.1? Tell 10.100.225.115
15	0.165560	202.80.220.28	10.102.224.182	TCP	1514	80 → 61798 [ACK] Seq=1461 Ack=1 Win=126 Len=1460
16	0.165568	10.102.224.182	202.80.220.28	TCP	74	61798 → 80 [ACK] Seq=1 Ack=2921 Win=256 Len=0 SLE=10221 SRE=13141 SLE=5841 SRE=7301
17	0.220120	202.80.220.28	10.102.224.182	TCP	1514	80 → 61798 [ACK] Seq=2921 Ack=1 Win=126 Len=1460
0100 = version: 4						
.... 0101 = Header Length: 20 bytes (5)						
▣ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)						
Total Length: 52						
Identification: 0x294e (10574)						
▣ Flags: 0x02 (Don't Fragment)						
Fragment offset: 0						
Time to live: 128						
Protocol: TCP (6)						
Header checksum: 0x3fec [validation disabled]						
[Header checksum status: unverified]						
Source: 10.102.224.182						
Destination: 202.80.220.28						
[Source GeoIP: Unknown]						
[Destination GeoIP: Unknown]						
▣ Transmission Control Protocol, Src Port: 61818, Dst Port: 80, Seq: 1, Ack: 1461, Len: 0						

Pada gambar diatas tertera bahwa IP address source ialah **10.102.224.182** dan IP address destinationnya ialah **202.80.220.28** yang menunjukkan bahwa destinationnya sudah ke www.globaltv.co.id. Kemudian untuk port dari source ialah 61818 dan port dari destinationnya ialah 80.

Handshake www.globaltv.co.id

No.	Time	Source	Destination	Protocol	Length	Info
13769	172.365679	fe80::claa:948:te2ff02::fb		MDNS	74	Standard query response 0x0000
13770	172.367353	Xiaomico_52:26:a6	Broadcast	ARP	60	Who has 10.102.225.238? Tell 10.102.225.103
13771	172.367357	fe80::1db4:ce09:ed3ff02::1:3		LLMNR	90	Standard query 0xe02a A ANGGINA-PC
13772	172.367358	10.102.226.16	224.0.0.252	LLMNR	70	Standard query 0xe02a A ANGGINA-PC
13773	172.435150	104.244.42.72	10.102.224.182	TLSv1.2	296	New Session Ticket, Change Cipher Spec, Encrypted Handshake Message
13774	172.440467	10.102.224.182	74.125.24.155	QUIC	1392	Client Hello, PKN: 1, CID: 16608210003507106074
13775	172.442466	10.102.224.182	74.125.24.155	QUIC	437	Payload (Encrypted), PKN: 2, CID: 16608210003507106074
13776	172.445606	10.102.224.182	216.58.196.110	TLSv1.2	505	Application Data
13777	172.463464	Xiaomico_52:26:a6	Broadcast	ARP	60	Who has 10.102.225.204? Tell 10.102.225.103
13778	172.463466	Xiaomico_52:26:a6	Broadcast	ARP	60	Who has 10.102.225.203? Tell 10.102.225.103
13779	172.464670	Xiaomico_52:26:a6	Broadcast	ARP	60	Who has 10.102.225.202? Tell 10.102.225.103
13780	172.464671	Xiaomico_52:26:a6	Broadcast	ARP	60	Who has 10.102.225.135? Tell 10.102.225.103
13781	172.464677	10.102.224.50	224.0.0.251	MDNS	54	Standard query response 0x0000
13782	172.465796	fe80::2976:65f8:f5bff02::fb		MDNS	74	Standard query response 0x0000
.... 0101 = Header Length: 20 bytes (5)						
▣ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)						
Total Length: 282						
Identification: 0xbc72 (48242)						
▣ Flags: 0x02 (Don't Fragment)						
Fragment offset: 0						
Time to live: 48						
Protocol: TCP (6)						
Header checksum: 0x0f13 [validation disabled]						
[Header checksum status: unverified]						
Source: 104.244.42.72						
Destination: 10.102.224.182						
[Source GeoIP: Unknown]						
[Destination GeoIP: Unknown]						
▣ Transmission Control Protocol, Src Port: 443, Dst Port: 61911, Seq: 3142, Ack: 342, Len: 242						
▣ Secure Sockets Layer						

Pada gambar diatas tertera bahwa IP Source nya ialah **104.244.42.72** dan Port sourcenya 443, kemudian IP Destination nya **10.102.224.182** dan Port Destinationnya 61911.