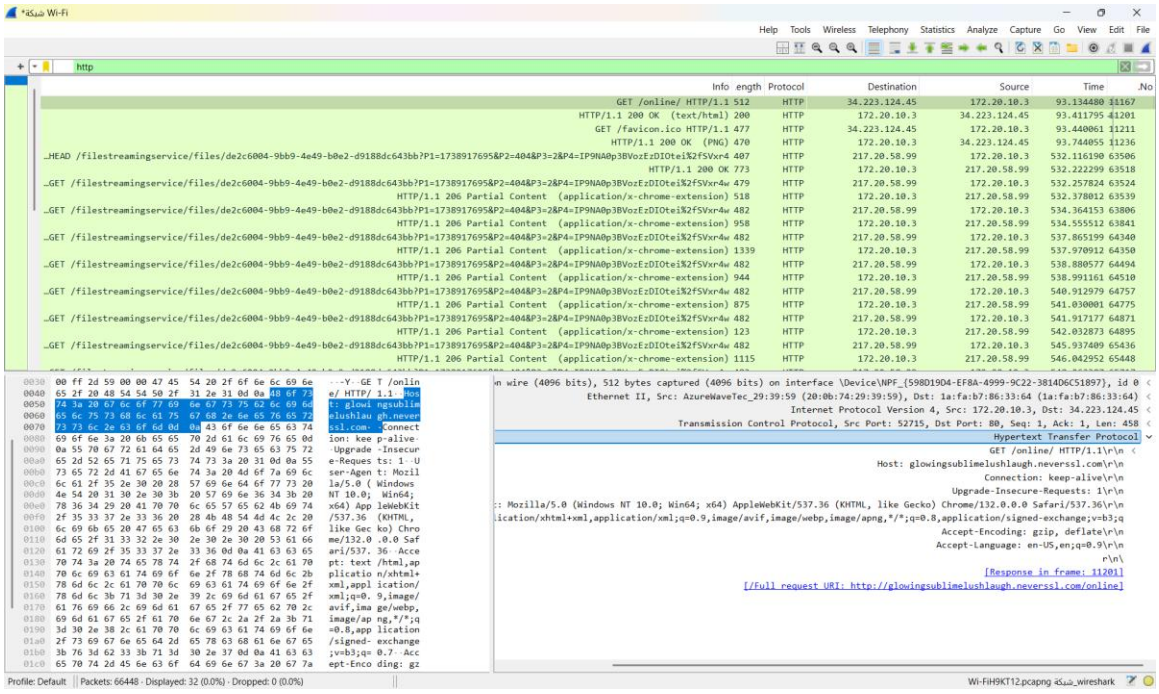
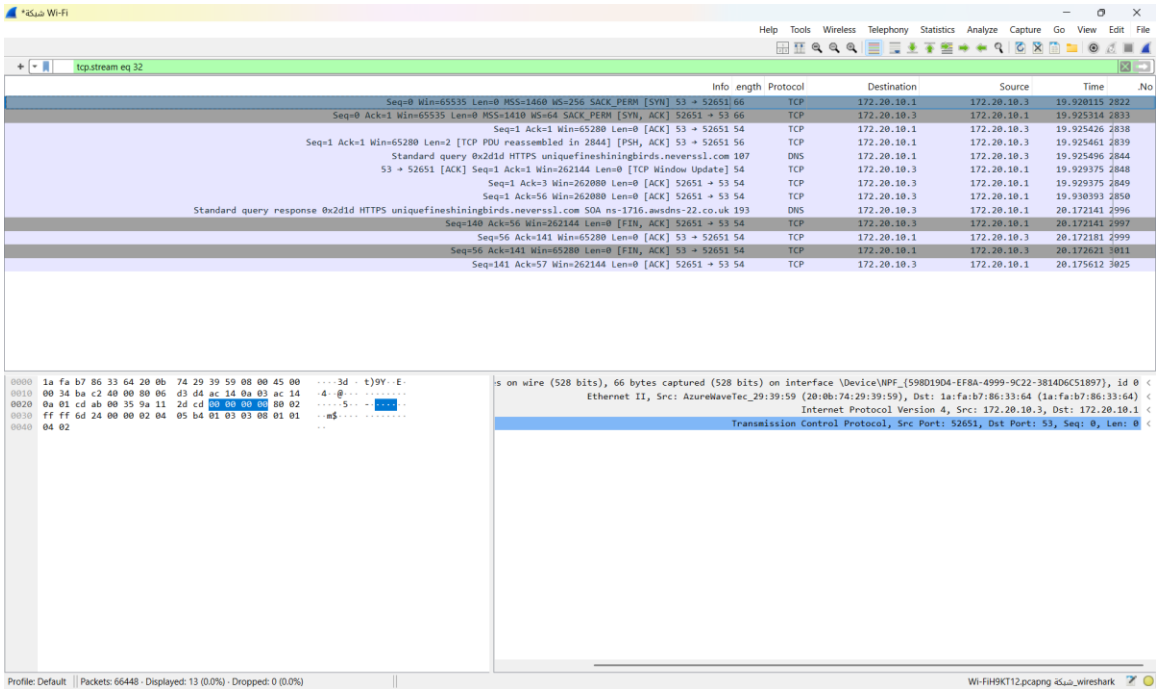
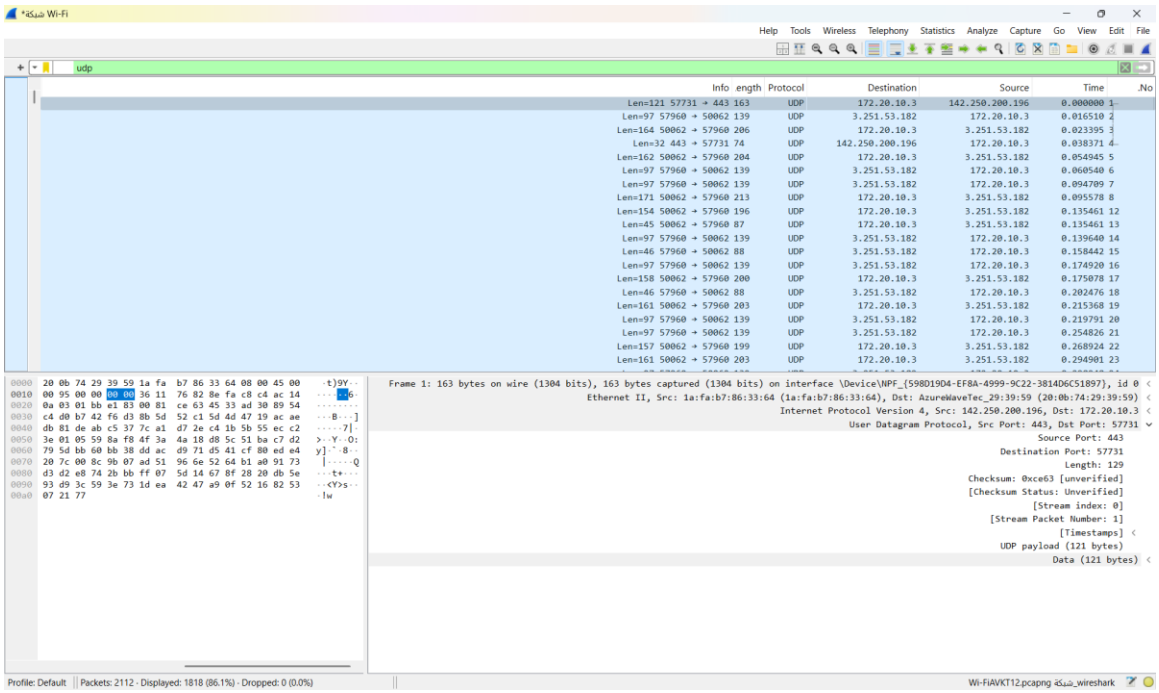
part1


*شبكة Wi-Fi
Help Tools Wireless Telephony Statistics Analyze Capture Go View Edit File
http
Info ength Protocol Destination Source Time .No
GET /online/ HTTP/1.1 512 HTTP 34.223.124.45 172.20.10.3 93.134480 11167
HTTP/1.1 200 OK (text/html) 200 HTTP 172.20.10.3 34.223.124.45 93.411795 11201
GET /favicon.ico HTTP/1.1 477 HTTP 34.223.124.45 172.20.10.3 93.440061 11211
HTTP/1.1 200 OK (PNG) 470 HTTP 172.20.10.3 34.223.124.45 93.744055 11236
HEAD /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4 407 HTTP 217.20.58.99 172.20.10.3 532.116190 63506
HTTP/1.1 200 OK 773 HTTP 172.20.10.3 217.20.58.99 532.222299 63518
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 479 HTTP 217.20.58.99 172.20.10.3 532.257824 63524
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 518 HTTP 172.20.10.3 217.20.58.99 532.378012 63539
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 482 HTTP 217.20.58.99 172.20.10.3 534.364153 63806
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 958 HTTP 172.20.10.3 217.20.58.99 534.555512 63841
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 482 HTTP 217.20.58.99 172.20.10.3 537.865199 64340
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 1339 HTTP 172.20.10.3 217.20.58.99 537.970912 64350
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 482 HTTP 217.20.58.99 172.20.10.3 538.880577 64494
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 944 HTTP 172.20.10.3 217.20.58.99 538.991161 64510
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 482 HTTP 217.20.58.99 172.20.10.3 540.912979 64757
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 875 HTTP 172.20.10.3 217.20.58.99 541.030001 64775
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 482 HTTP 217.20.58.99 172.20.10.3 541.917177 64871
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 123 HTTP 172.20.10.3 217.20.58.99 542.032873 64895
GET /filestreamingservice/files/de2c6004-9bb9-4e49-b0e2-d9188dc643bb?P1=1738917695&P2=404&P3=2&P4=IP9NA0p3BVozEzDIOtei%2fSVxr4w 482 HTTP 217.20.58.99 172.20.10.3 545.937409 65436
HTTP/1.1 206 Partial Content (application/x-chrome-extension) 1115 HTTP 172.20.10.3 217.20.58.99 546.042952 65448
0030 00 ff 2d 59 00 00 47 45 54 20 2f 6f 6e 6c 69 6e ··-Y··GE T /onlin
0040 65 2f 20 48 54 54 50 2f 31 2e 31 0d 0a 48 6f 73 e/ HTTP/ 1.1··Hos
0050 74 3a 20 67 6c 6f 77 69 6e 67 73 75 62 6c 69 6d t: glowi ngsublim
0060 65 6c 75 73 68 6c 61 75 67 68 2e 6e 65 76 65 72 elushlau gh.never
0070 73 73 6c 2e 63 6f 6d 0d 0a 43 6f 6e 6e 65 63 74 ssl.com· ·Connect
0080 69 6f 6e 3a 20 6b 65 65 70 2d 61 6c 69 76 65 0d ion: kee p-alive·
0090 0a 55 70 67 72 61 64 65 2d 49 6e 73 65 63 75 72 ·Upgrade -Insecur
00a0 65 2d 52 65 71 75 65 73 74 73 3a 20 31 0d 0a 55 e-Reques ts: 1··U
00b0 73 65 72 2d 41 67 65 6e 74 3a 20 4d 6f 7a 69 6c ser-Agen t: Mozil
00c0 6c 61 2f 35 2e 30 20 28 57 69 6e 64 6f 77 73 20 la/5.0 (Windows
00d0 4e 54 20 31 30 2e 30 3b 20 57 69 6e 36 34 3b 20 NT 10.0; Win64;
00e0 78 36 34 29 20 41 70 70 6c 65 57 65 62 4b 69 74 x64) App leWebKit
00f0 2f 35 33 37 2e 33 36 20 28 4b 48 54 4d 4c 2c 20 /537.36 (KHTML,
0100 6c 69 6b 65 20 47 65 63 6b 6f 29 20 43 68 72 6f like Gec ko) Chro
0110 6d 65 2f 31 33 32 2e 30 2e 30 2e 30 20 53 61 66 me/132.0 .0.0 Saf
0120 61 72 69 2f 35 33 37 2e 33 36 0d 0a 41 63 63 65 ari/537. 36··Acce
0130 70 74 3a 20 74 65 78 74 2f 68 74 6d 6c 2c 61 70 pt: text /html,ap
0140 70 6c 69 63 61 74 69 6f 6e 2f 78 68 74 6d 6c 2b plicatio n/xhtml+
0150 78 6d 6c 2c 61 70 70 6c 69 63 61 74 69 6f 6e 2f xml,appl ication/
0160 78 6d 6c 3b 71 3d 30 2e 39 2c 69 6d 61 67 65 2f xml;q=0. 9,image/
0170 61 76 69 66 2c 69 6d 61 67 65 2f 77 65 62 70 2c avif,ima ge/webp,
0180 69 6d 61 67 65 2f 61 70 6e 67 2c 2a 2f 2a 3b 71 image/ap ng,*/*;q
0190 3d 30 2e 38 2c 61 70 70 6c 69 63 61 74 69 6f 6e =0.8,app lication
01a0 2f 73 69 67 6e 65 64 2d 65 78 63 68 61 6e 67 65 /signed- exchange
01b0 3b 76 3d 62 33 3b 71 3d 30 2e 37 0d 0a 41 63 63 ;v=b3;q= 0.7··Acc
01c0 65 70 74 2d 45 6e 63 6f 64 69 6e 67 3a 20 67 7a ept-Enco ding: gz
on wire (4096 bits), 512 bytes captured (4096 bits) on interface \Device\NPF_{598D19D4-EF8A-4999-9C22-3814D6C51897}, id 0
Ethernet II, Src: AzureWaveTec_29:39:59 (20:0b:74:29:39:59), Dst: 1a:fa:b7:86:33:64 (1a:fa:b7:86:33:64)
Internet Protocol Version 4, Src: 172.20.10.3, Dst: 34.223.124.45
Transmission Control Protocol, Src Port: 52715, Dst Port: 80, Seq: 1, Ack: 1, Len: 458
Hypertext Transfer Protocol
GET /online/ HTTP/1.1\r\n
Host: glowingsublimelushlaugh.neverssl.com\r\n
Connection: keep-alive\r\n
Upgrade-Insecure-Requests: 1\r\n
: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/132.0.0.0 Safari/537.36\r\n
lication/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q
Accept-Encoding: gzip, deflate\r\n
Accept-Language: en-US,en;q=0.9\r\n
r\n\
[Response in frame: 11201]
[Full request URI: http://glowingsublimelushlaugh.neverssl.com/online]
Profile: Default
Packets: 66448 · Displayed: 32 (0.0%) · Dropped: 0 (0.0%)
Wi-FiH9KT12.pcapng شبكة_wireshark

Part2


*شبكة Wi-Fi
Help Tools Wireless Telephony Statistics Analyze Capture Go View Edit File
tcp.stream eq 32
Info ength Protocol Destination Source Time .No
Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM [SYN] 53 → 52651 66 TCP 172.20.10.1 172.20.10.3 19.920115 2822
Seq=0 Ack=1 Win=65535 Len=0 MSS=1410 WS=64 SACK_PERM [SYN, ACK] 52651 → 53 66 TCP 172.20.10.3 172.20.10.1 19.925314 2833
Seq=1 Ack=1 Win=65280 Len=0 [ACK] 53 → 52651 54 TCP 172.20.10.1 172.20.10.3 19.925426 2838
Seq=1 Ack=1 Win=65280 Len=2 [TCP PDU reassembled in 2844] [PSH, ACK] 53 → 52651 56 TCP 172.20.10.1 172.20.10.3 19.925461 2839
Standard query 0x2d1d HTTPS uniquefineshiningbirds.neverssl.com 107 DNS 172.20.10.1 172.20.10.3 19.925496 2844
53 → 52651 [ACK] Seq=1 Ack=1 Win=262144 Len=0 [TCP Window Update] 54 TCP 172.20.10.3 172.20.10.1 19.929375 2848
Seq=1 Ack=3 Win=262080 Len=0 [ACK] 52651 → 53 54 TCP 172.20.10.3 172.20.10.1 19.929375 2849
Seq=1 Ack=56 Win=262080 Len=0 [ACK] 52651 → 53 54 TCP 172.20.10.3 172.20.10.1 19.930393 2850
Standard query response 0x2d1d HTTPS uniquefineshiningbirds.neverssl.com SOA ns-1716.awsdns-22.co.uk 193 DNS 172.20.10.3 172.20.10.1 20.172141 2996
Seq=140 Ack=56 Win=262144 Len=0 [FIN, ACK] 52651 → 53 54 TCP 172.20.10.3 172.20.10.1 20.172141 2997
Seq=56 Ack=141 Win=65280 Len=0 [ACK] 53 → 52651 54 TCP 172.20.10.1 172.20.10.3 20.172181 2999
Seq=56 Ack=141 Win=65280 Len=0 [FIN, ACK] 53 → 52651 54 TCP 172.20.10.1 172.20.10.3 20.172621 3011
Seq=141 Ack=57 Win=262144 Len=0 [ACK] 52651 → 53 54 TCP 172.20.10.3 172.20.10.1 20.175612 3025
0000 1a fa b7 86 33 64 20 0b 74 29 39 59 08 00 45 00 ····3d ·· t)9Y··E·
0010 00 34 ba c2 40 00 80 06 d3 d4 ac 14 0a 03 ac 14 ·4··@··· ········
0020 0a 01 cd ab 00 35 9a 11 2d cd 00 00 00 00 80 02 ·····5·· -·····
0030 ff ff 6d 24 00 00 02 04 05 b4 01 03 03 08 01 01 ··m$···· ········
0040 04 02 ··
s on wire (528 bits), 66 bytes captured (528 bits) on interface \Device\NPF_{598D19D4-EF8A-4999-9C22-3814D6C51897}, id 0
Ethernet II, Src: AzureWaveTec_29:39:59 (20:0b:74:29:39:59), Dst: 1a:fa:b7:86:33:64 (1a:fa:b7:86:33:64)
Internet Protocol Version 4, Src: 172.20.10.3, Dst: 172.20.10.1
Transmission Control Protocol, Src Port: 52651, Dst Port: 53, Seq: 0, Len: 0
Profile: Default
Packets: 66448 · Displayed: 13 (0.0%) · Dropped: 0 (0.0%)
Wi-FiH9KT12.pcapng شبكة_wireshark

Part3



Part4

Part 4: Comparing TCP and UDP by filling in the following tables. Save your work (e.g., in an MS Word document), and upload it to your online git repo.

Task 1: Fill in the following table and provide reasons.

	TCP or UDP	Reasons
Reliability and Connection Establishment	TCP	TCP uses a **three-way handshake (SYN, SYN-ACK, ACK)** to establish a reliable connection before data transmission. It also provides **error recovery** and **acknowledgments (ACKs)** to ensure data delivery.
Data Integrity and Ordering	TCP	TCP assigns **sequence numbers** to packets, ensuring they are **received in order**. It also retransmits lost packets, guaranteeing data integrity.

Task 2: Identify the use Cases and Performance of TCP and UDP.

	TCP	UDP
Use cases	- **Web browsing** (HTTP/HTTPS) - **Email transmission** (SMTP, IMAP, POP3) - **File transfers** (FTP, SFTP)	- **Live streaming** (YouTube, Twitch) - **VoIP calls** (Skype, Zoom, WhatsApp) - **Online gaming**
Performance	- **Reliable but slower** - **Higher overhead** - Ensures **ordered data delivery**.	- **Faster but less reliable**, - **Lower overhead** - No guarantee of **ordered delivery** or **data integrity**.