

Date: January 19, 2025

- a) The following indicate the CNAME, “www.yahoo.akadns.net”. In the below screenshot, there are multiple IP addresses listed for this website.

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Class: IN (0x0001)
Answers
> www.yahoo.com: type CNAME, class IN, cname www.yahoo.akadns.net
> www.yahoo.akadns.net: type A, class IN, addr 216.109.117.106
> www.yahoo.akadns.net: type A, class IN, addr 216.109.117.109
> www.yahoo.akadns.net: type A, class IN, addr 216.109.117.110
> www.yahoo.akadns.net: type A, class IN, addr 216.109.117.204
> www.yahoo.akadns.net: type A, class IN, addr 216.109.117.206
> www.yahoo.akadns.net: type A, class IN, addr 216.109.118.70
> www.yahoo.akadns.net: type A, class IN, addr 216.109.118.76
> www.yahoo.akadns.net: type A, class IN, addr 216.109.118.79
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- b) On the 6th packet/frame is when the web pages is received.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	131.247.95.216	131.247.92.200	DNS	73	Standard query 0x159b A www.yahoo.com
2	0.001630	131.247.92.200	131.247.95.216	DNS	542	Standard query response 0x159b A www.yahoo.com CNAME www.ya
3	0.003754	131.247.95.216	216.109.117.106	TCP	62	1221 → 80 [SYN] Seq=0 Win=16384 Len=0 MSS=1460 SACK_PERM
4	0.028756	216.109.117.106	131.247.95.216	TCP	60	80 → 1221 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1460
5	0.028873	131.247.95.216	216.109.117.106	TCP	54	1221 → 80 [ACK] Seq=1 Ack=1 Win=17520 Len=0
6	0.032252	131.247.95.216	216.109.117.106	HTTP	492	GET / HTTP/1.1

- c) Packet 22, proves the website uses gzip to compress its data for sending. It also writes cookies.

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Wireshark · Packet 22 · Lab1.pcap
> Frame 22: 1115 bytes on wire (8920 bits), 1115 bytes captured (8920 bits)
> Ethernet II, Src: FerranScient_9b:84:0a (00:d0:00:9b:84:0a), Dst: Dell_92:e7:92 (00:b0:d0:92:e7:92)
> Internet Protocol Version 4, Src: 216.109.117.106, Dst: 131.247.95.216
> Transmission Control Protocol, Src Port: 80, Dst Port: 1221, Seq: 14601, Ack: 439, Len: 1061
> [11 Reassembled TCP Segments (15661 bytes): #7(1460), #8(1460), #10(1460), #11(1460), #12(1460), #14(1460), #16(1460), #17(1460), #19(1460), #20(1460), #21(1460), #22(1460), #23(1460), #24(1460), #25(1460), #26(1460), #27(1460), #28(1460), #29(1460), #30(1460), #31(1460), #32(1460), #33(1460), #34(1460), #35(1460), #36(1460), #37(1460), #38(1460), #39(1460), #40(1460), #41(1460), #42(1460), #43(1460), #44(1460), #45(1460), #46(1460), #47(1460), #48(1460), #49(1460), #50(1460), #51(1460), #52(1460), #53(1460), #54(1460), #55(1460), #56(1460), #57(1460), #58(1460), #59(1460), #60(1460), #61(1460), #62(1460), #63(1460), #64(1460), #65(1460), #66(1460), #67(1460), #68(1460), #69(1460), #70(1460), #71(1460), #72(1460), #73(1460), #74(1460), #75(1460), #76(1460), #77(1460), #78(1460), #79(1460), #80(1460), #81(1460), #82(1460), #83(1460), #84(1460), #85(1460), #86(1460), #87(1460), #88(1460), #89(1460), #90(1460), #91(1460), #92(1460), #93(1460), #94(1460), #95(1460), #96(1460), #97(1460), 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#1087(1460),
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> Internet Protocol Version 4, Src: 131.247.95.216, Dst: 131.247.92.200
> User Datagram Protocol, Src Port: 1222, Dst Port: 53
√ Domain Name System (query)
  Transaction ID: 0x409b
  √ Flags: 0x0100 Standard query
    0... .. = Response: Message is a query
    .000 0... .. = Opcode: Standard query (0)
    .... ..0. .... = Truncated: Message is not truncated
    .... ..1 .... = Recursion desired: Do query recursively
    .... .... .0.. .... = Z: reserved (0)
    .... .... ...0 .... = Non-authenticated data: Unacceptable
  Questions: 1
  Answer RRs: 0
  Authority RRs: 0
  Additional RRs: 0
  √ Queries
    √ us.js2.yimg.com: type A, class IN
      Name: us.js2.yimg.com
      [Name Length: 15]
      [Label Count: 4]
      Type: A (1) (Host Address)
      Class: IN (0x0001)
\[Response In: 27\]

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> Internet Protocol Version 4, Src: 131.247.92.200, Dst: 131.247.95.216
> User Datagram Protocol, Src Port: 53, Dst Port: 1222
√ Domain Name System (response)
  Transaction ID: 0x409b
  > Flags: 0x8180 Standard query response, No error
  Questions: 1
  Answer RRs: 5
  Authority RRs: 0
  Additional RRs: 0
  √ Queries
    √ us.js2.yimg.com: type A, class IN
      Name: us.js2.yimg.com
      [Name Length: 15]
      [Label Count: 4]
      Type: A (1) (Host Address)
      Class: IN (0x0001)
  √ Answers
    > us.js2.yimg.com: type CNAME, class IN, cname a321.yimg.com.georedirector.akadns.net
    > a321.yimg.com.georedirector.akadns.net: type CNAME, class IN, cname a321.x.a.yimg.com
    > a321.x.a.yimg.com: type A, class IN, addr 64.21.46.151
    > a321.x.a.yimg.com: type A, class IN, addr 64.21.46.134
    > a321.x.a.yimg.com: type A, class IN, addr 64.21.46.150
\[Request In: 26\]
[Time: 0.002442000 seconds]

```

e)

This DNS request is for image

The address in frame 37, “us.i1.yimg.com” was not listed in frame 26. The address listed in frame 26 was “us.js2.yimg.com”.

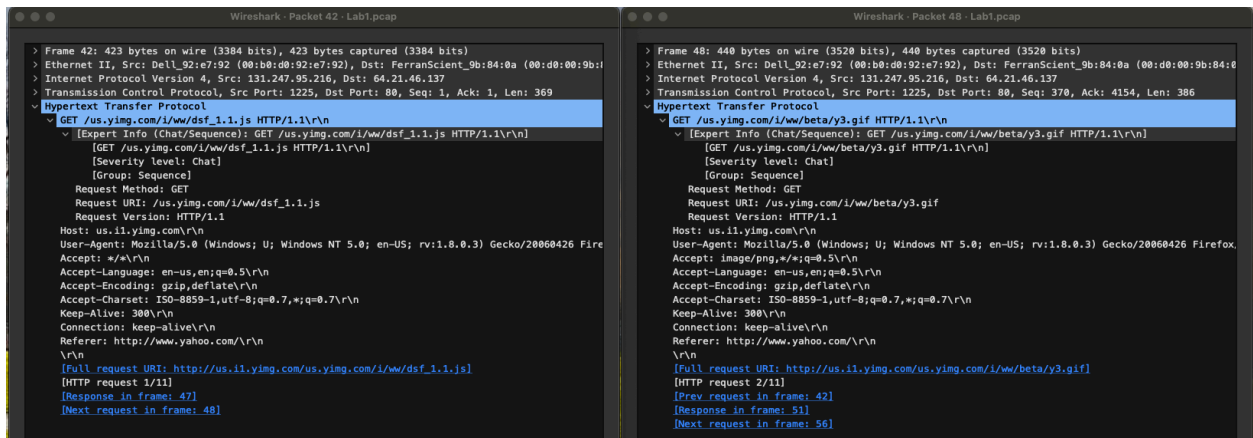
Frame 37

```
> Internet Protocol Version 4, Src: 131.247.95.216, Dst: 131.247.92.200
> User Datagram Protocol, Src Port: 1224, Dst Port: 53
< Domain Name System (query)
  Transaction ID: 0xf099
  > Flags: 0x0100 Standard query
    Questions: 1
    Answer RRs: 0
    Authority RRs: 0
    Additional RRs: 0
  < Queries
    < us.i1.yimg.com: type A, class IN
      Name: us.i1.yimg.com
      [Name Length: 14]
      [Label Count: 4]
      Type: A (1) (Host Address)
      Class: IN (0x0001)
      [Response In: 38]
```

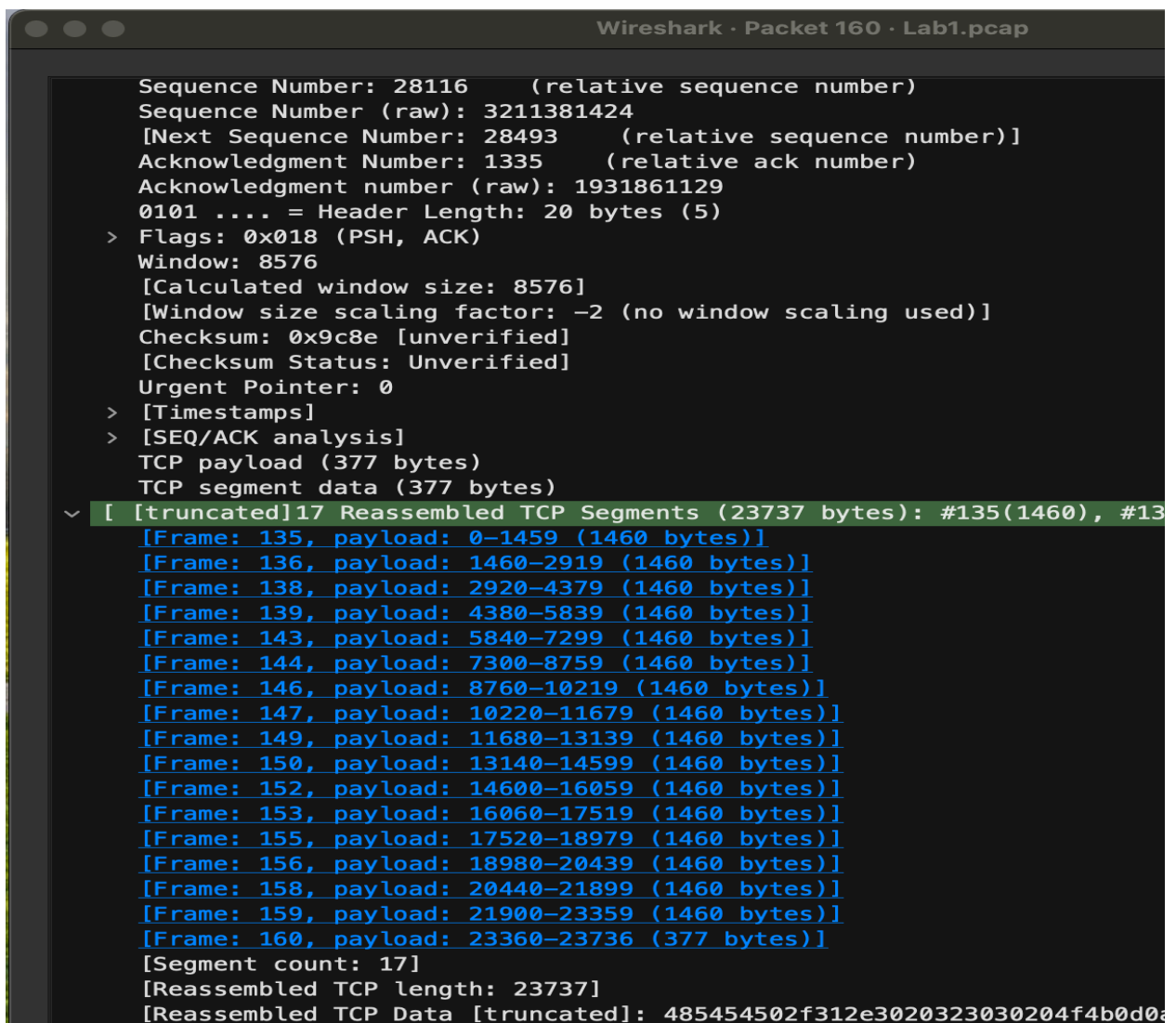
Frame 26

```
> Internet Protocol Version 4, Src: 131.247.95.216, Dst: 131.247.92.200
> User Datagram Protocol, Src Port: 1222, Dst Port: 53
< Domain Name System (query)
  Transaction ID: 0x409b
  > Flags: 0x0100 Standard query
    Questions: 1
    Answer RRs: 0
    Authority RRs: 0
    Additional RRs: 0
  < Queries
    < us.js2.yimg.com: type A, class IN
      Name: us.js2.yimg.com
      [Name Length: 15]
      [Label Count: 4]
      Type: A (1) (Host Address)
      Class: IN (0x0001)
      [Response In: 27]
```

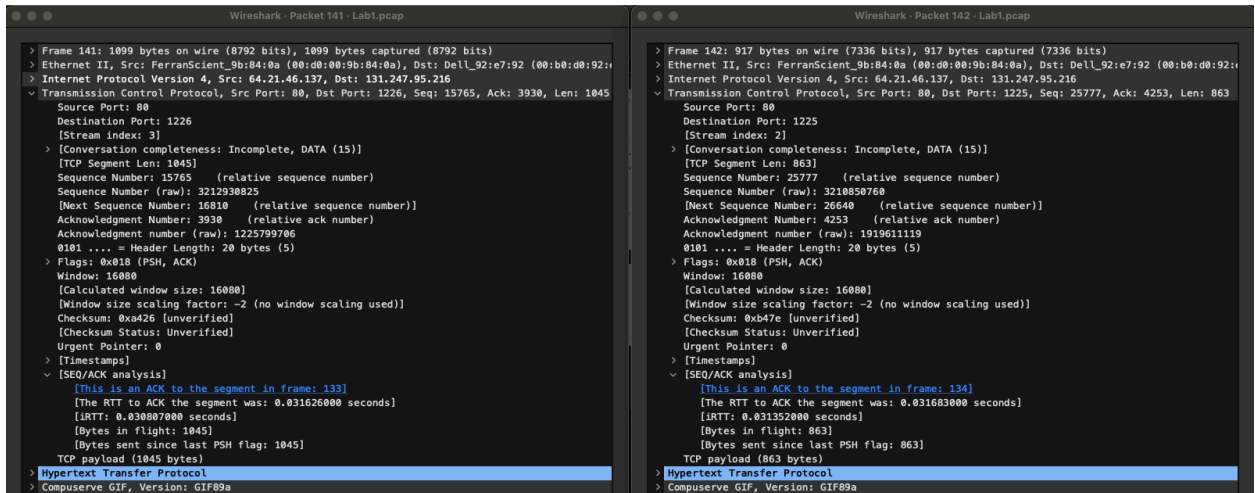
f) I would think, that the reason for this was because the IPs were the same. In addition, the Host value were the same “us.i1.yimg.com”.



- g) Below is frame 160. The screen shot shows a summary of the segmentation of frames. Here, frames 139 and 143 are shown but NOT frames 141 and 142.



- h) Frame 141 is ACK to segment in frame 133. Frame 142 is an ACK to the segment in frame 134.



133	1.036937	131.247.95.216	64.21.46.137	HTTP	442	GET /us.yimg.com/i/ww/trfc_bckt.gif HTTP/1.1
134	1.037005	131.247.95.216	64.21.46.137	HTTP	440	GET /us.yimg.com/i/ww/answers.gif HTTP/1.1