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LAB 9 TASK

Submitted to Miss Hurmat hidayat

TASK

1.

```
<
> Frame 1: 78 bytes on wire (624 bits), 78 bytes captured (624 bits)
> Ethernet II, Src: Apple_ac:6c:26 (10:9a:dd:ac:6c:26), Dst: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)
> Internet Protocol Version 4, Src: 192.168.1.122, Dst: 64.238.147.113
v Transmission Control Protocol, Src Port: 60643, Dst Port: 80, Seq: 0, Len: 0
    Source Port: 60643
    Destination Port: 80
    [Stream index: 0]
    [Conversation completeness: Complete, WITH_DATA (31)]
    [TCP Segment Len: 0]
    Sequence Number: 0 (relative sequence number)
    Sequence Number (raw): 2682012317
    [Next Sequence Number: 1 (relative sequence number)]
    Acknowledgment Number: 0
    Acknowledgment number (raw): 0
    1011 .... = Header Length: 44 bytes (11)
> Flags: 0x002 (SYN)
    Window: 65535
    [Calculated window size: 65535]
    Checksum: 0x2212 [unverified]
    [Checksum Status: Unverified]
    Urgent Pointer: 0
> Options: (24 bytes), Maximum segment size, No-Operation (NOP), Window scale, No-Operation (NOP), No-Operation (NOP),
> [Timestamps]
```

Descriptions:

The source port number is 60643 and destination port number is 80 this is mention above the first highlighted line.

2.

Wireshark · Packet 1 · trace-tcp (1).pcap

```
> Ethernet II, Src: Apple_ac:6c:26 (10:9a:dd:ac:6c:26), Dst: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)
> Internet Protocol Version 4, Src: 192.168.1.122, Dst: 64.238.147.113
▼ Transmission Control Protocol, Src Port: 60643, Dst Port: 80, Seq: 0, Len: 0
  Source Port: 60643
  Destination Port: 80
  [Stream index: 0]
  [Conversation completeness: Complete, WITH_DATA (31)]
  [TCP Segment Len: 0]
  Sequence Number: 0 (relative sequence number)
  Sequence Number (raw): 2682012317
  [Next Sequence Number: 1 (relative sequence number)]
  Acknowledgment Number: 0
  Acknowledgment number (raw): 0
  1011 .... = Header Length: 44 bytes (11)
  ▼ Flags: 0x002 (SYN)
    000. .... = Reserved: Not set
    ...0 .... = Accurate ECN: Not set
    .... 0... = Congestion Window Reduced: Not set
    .... .0.. = ECN-Echo: Not set
    .... ..0. = Urgent: Not set
    .... ...0 = Acknowledgment: Not set
    .... .... 0... = Push: Not set
    .... .... .0.. = Reset: Not set
    > .... .... ..1. = Syn: Set
    .... .... ...0 = Fin: Not set
    [TCP Flags: .....S.]
  Window: 65535
  [Calculated window size: 65535]
```

0020 93 71 ec e3 00 50 9f dc 42 9d 00 00 00 00 b0 02 .q...P..B.....

☒ Show packet bytes

Descriptions:

The sequence number of TCP is 2682012317 and segment is not reserved and syn segment is set this is mention above the first highlighted line.

3.

Wireshark · Packet 2 · trace-tcp (1).pcap

```
....0.... = IG bit: Individual address (unicast)
> Source: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)
Type: IPv4 (0x0800)
> Internet Protocol Version 4, Src: 64.238.147.113, Dst: 192.168.1.122
▼ Transmission Control Protocol, Src Port: 80, Dst Port: 60643, Seq: 0, Ack: 1, Len: 0
  Source Port: 80
  Destination Port: 60643
  [Stream index: 0]
  [Conversation completeness: Complete, WITH_DATA (31)]
  [TCP Segment Len: 0]
  Sequence Number: 0 (relative sequence number)
  Sequence Number (raw): 349487776
  [Next Sequence Number: 1 (relative sequence number)]
  Acknowledgment Number: 1 (relative ack number)
  Acknowledgment number (raw): 2682012318
  1010 .... = Header Length: 40 bytes (10)
  ▼ Flags: 0x012 (SYN, ACK)
    000. .... = Reserved: Not set
    ...0 .... = Accurate ECN: Not set
    ....0... = Congestion Window Reduced: Not set
    ....0... = ECN-Echo: Not set
    ....0... = Urgent: Not set
    ....1... = Acknowledgment: Set
    ....0... = Push: Not set
    ....0... = Reset: Not set
    > ....1. = Syn: Set
    ....0... = Fin: Not set
    [TCP Flags: .....A..S.]
  Window: 5702
0000 10 9a dd ac 6c 26 00 16 b6 e3 e9 8d 08 00 45 20 ....18... .....
```

Descriptions:

The sequence number of TCP is 349487776 and the value of acknowledgement is 2682012318 and acknowledge is set this is mention above the first highlighted line.

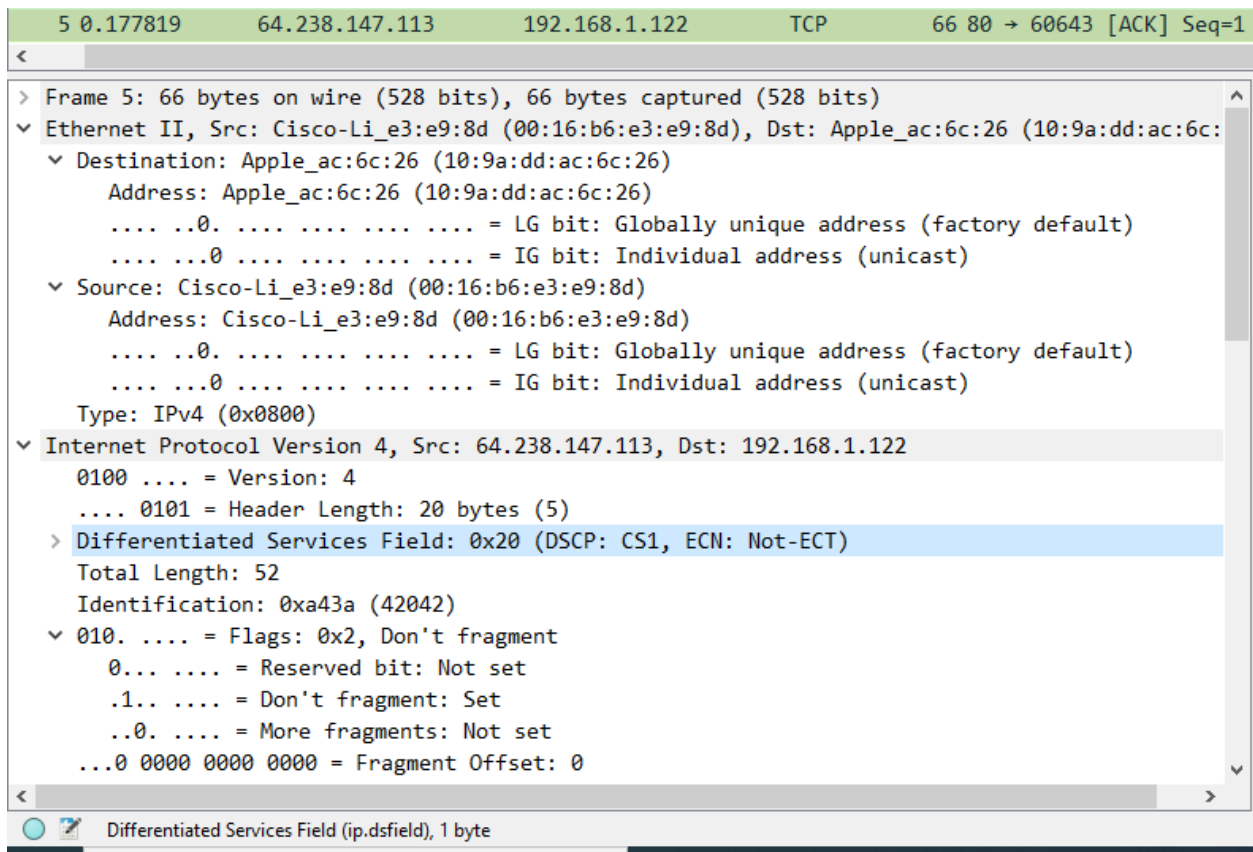
4.

```
4 0.088579 192.168.1.122 64.238.147.113 HTTP 257 GET /sigcomm/2011/papers/s
<
> Frame 4: 257 bytes on wire (2056 bits), 257 bytes captured (2056 bits)
v Ethernet II, Src: Apple_ac:6c:26 (10:9a:dd:ac:6c:26), Dst: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)
  v Destination: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)
    Address: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)
    .... 0. .... = LG bit: Globally unique address (factory default)
    .... 0. .... = IG bit: Individual address (unicast)
  v Source: Apple_ac:6c:26 (10:9a:dd:ac:6c:26)
    Address: Apple_ac:6c:26 (10:9a:dd:ac:6c:26)
    .... 0. .... = LG bit: Globally unique address (factory default)
    .... 0. .... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
v Internet Protocol Version 4, Src: 192.168.1.122, Dst: 64.238.147.113
  0100 .... = Version: 4
  .... 0101 = Header Length: 20 bytes (5)
  v Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    0000 00.. = Differentiated Services Codepoint: Default (0)
    .... 00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
  Total Length: 243
  Identification: 0x3cd9 (15577)
  v 010. .... = Flags: 0x2, Don't fragment
    0... .... = Reserved bit: Not set
    .1.. .... = Don't fragment: Set
    ..0. .... = More fragments: Not set
  >
```

Descriptions:

The length of HTTP segment is 243

4.1



Descriptions:

The length of First TCP segment is 52

4.2

6	0.178321	64.238.147.113	192.168.1.122	TCP	311 80 → 60643 [PSH, ACK] Seq=1
<					
▼	Source: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)				
	Address: Cisco-Li_e3:e9:8d (00:16:b6:e3:e9:8d)				
0. = LG bit: Globally unique address (factory default)				
0. = IG bit: Individual address (unicast)				
	Type: IPv4 (0x0800)				
▼	Internet Protocol Version 4, Src: 64.238.147.113, Dst: 192.168.1.122				
	0100 = Version: 4				
 0101 = Header Length: 20 bytes (5)				
>	Differentiated Services Field: 0x20 (DSCP: CS1, ECN: Not-ECT)				
	Total Length: 297				
	Identification: 0xa43b (42043)				
▼	010. = Flags: 0x2, Don't fragment				
	0... = Reserved bit: Not set				
	.1.. = Don't fragment: Set				
	..0. = More fragments: Not set				
	...0 0000 0000 0000 = Fragment Offset: 0				
	Time to Live: 45				
	Protocol: TCP (6)				
	Header Checksum: 0x11f2 [validation disabled]				
	[Header checksum status: Unverified]				
	Source Address: 64.238.147.113				
<					

Descriptions:

The length of Second TCP segment is 297

4.3

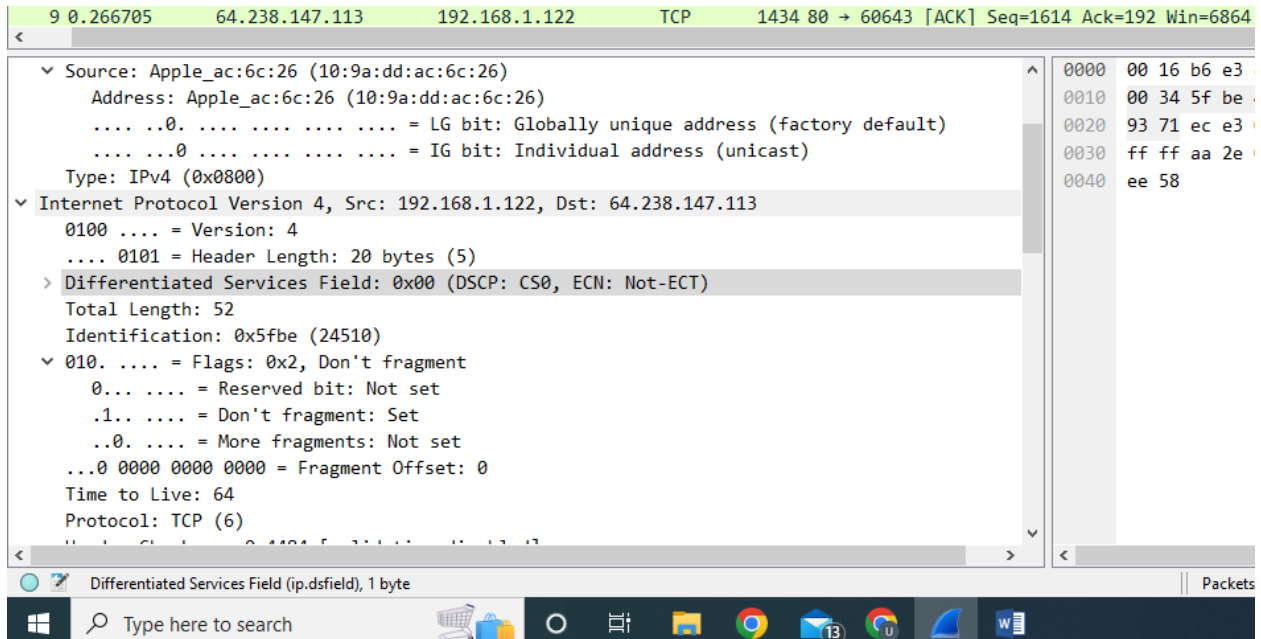
7	0.178388	192.168.1.122	64.238.147.113	TCP	66	60643 → 80 [ACK]	Seq=192	Ack=246
<								
▼	Source:	Apple_ac:6c:26 (10:9a:dd:ac:6c:26)						
	Address:	Apple_ac:6c:26 (10:9a:dd:ac:6c:26)						
0. = LG bit: Globally unique address (factory default)						
0 = IG bit: Individual address (unicast)						
	Type:	IPv4 (0x0800)						
▼	Internet Protocol Version 4, Src:	192.168.1.122, Dst:	64.238.147.113					
	0100	= Version: 4						
 0101	= Header Length: 20 bytes (5)						
>	Differentiated Services Field:	0x00 (DSCP: CS0, ECN: Not-ECT)						
	Total Length:	52						
	Identification:	0x5fbc (24510)						
▼	010.	= Flags: 0x2, Don't fragment						
	0...	= Reserved bit: Not set						
	.1..	= Don't fragment: Set						
	..0.	= More fragments: Not set						
	...0 0000 0000 0000	= Fragment Offset: 0						
	Time to Live:	64						
	Protocol:	TCP (6)						
	Header Checksum:	0x4484 [validation disabled]						
	[Header checksum status:	Unverified]						
<								

Descriptions:

The length of Third TCP segment is 52

4.4

4.5



Descriptions:

The length of Fifth TCP segment is 52

4.6

10	0.266787	192.168.1.122	64.238.147.113	TCP	66 60643 → 80 [ACK] Seq=192 Ack=2
<					
Source: Apple_ac:6c:26 (10:9a:dd:ac:6c:26)					
Address: Apple_ac:6c:26 (10:9a:dd:ac:6c:26)					
.... ..0. = LG bit: Globally unique address (factory default)					
.... ..0 = IG bit: Individual address (unicast)					
Type: IPv4 (0x0800)					
Internet Protocol Version 4, Src: 192.168.1.122, Dst: 64.238.147.113					
0100 = Version: 4					
.... 0101 = Header Length: 20 bytes (5)					
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)					
Total Length: 52					
Identification: 0x5fbe (24510)					
010. = Flags: 0x2, Don't fragment					
0... = Reserved bit: Not set					
.1.. = Don't fragment: Set					
..0. = More fragments: Not set					
...0 0000 0000 0000 = Fragment Offset: 0					
Time to Live: 64					

Descriptions:

The length of Six TCP segment is 52

5.

192.168.1.122	64.238.147.113	TCP	66 60643 → 80 [ACK] Seq=192 Ack=15294 Win=523944 Len=0 TSval=256680233 TSec
64.238.147.113	192.168.1.122	TCP	1434 80 → 60643 [ACK] Seq=15294 Ack=192 Win=6864 Len=1368 TSval=4016893793 TS
64.238.147.113	192.168.1.122	TCP	1434 80 → 60643 [ACK] Seq=16662 Ack=192 Win=6864 Len=1368 TSval=4016893885 TS
192.168.1.122	64.238.147.113	TCP	66 60643 → 80 [ACK] Seq=192 Ack=18030 Win=523944 Len=0 TSval=256680322 TSec
64.238.147.113	192.168.1.122	TCP	1434 80 → 60643 [PSH, ACK] Seq=18030 Ack=192 Win=6864 Len=1368 TSval=40168938
192.168.1.122	64.238.147.113	TCP	66 60643 → 80 [ACK] Seq=192 Ack=19398 Win=523944 Len=0 TSval=256680323 TSec

Descriptions:

The transmitted file are available in the above trace file. This segment shows transmission as PSH Flag is used.