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Question **1**

Correct

Mark 2.00 out of 2.00

What does TCP use to multiplex/demultiplex between applications?

Penalty regime: 50%, 100%

Select one:

- ☒ a. Src and dst port numbers.
- ☐ b. Src and dst MAC addresses
- ☐ c. Options



[Clear my choice](#)

Check

Your answer is correct.

Correct

Marks for this submission: 2.00/2.00.

Question **2**

Correct

Mark 2.00 out of 2.00

Why does TCP not have a payload length field, like UDP?

Penalty regime: 33%, 66%, 100%

Select one:

- ☐ a. TCP negotiates the size of TCP segments in the handshake.
- ☐ b. The TCP packet size is always four times the header size.
- ☐ c. IP stores the length meaning TCP doesn't need to.
- ☒ d. TCP sends a byte stream and therefore no distinction is made between TCP segments.



[Clear my choice](#)

Check

Your answer is correct.

Correct

Marks for this submission: 2.00/2.00.

Question **3**

Correct

Mark 2.00 out of 2.00

A UDP socket is identified by:

Penalty regime: 33%, 66%, 100%

Select one or more:

- ☐ a. source IP address
- ☒ b. destination IP address
- ☐ c. source port number
- ☒ d. destination port number



Check

Your answer is correct.

You have correctly selected 2.

Correct

Marks for this submission: 2.00/2.00.

Question **4**

Correct

Mark 2.00 out of 2.00

A TCP socket is identified by:

Penalty regime: 33%, 66%, 100%

Select one or more:

- ☒ a. source port number
- ☒ b. source IP address
- ☒ c. destination IP address
- ☒ d. destination port number



Check

Your answer is correct.


You have correctly selected 4.

Correct

Marks for this submission: 2.00/2.00.

Information

A screenshot of a UDP segment captured by Wireshark is given below. Please answer the following questions based on this figure.

 Wireshark · Packet 5 · Wi-Fi

```
> Frame 5: 527 bytes on wire (4216 bits), 527 bytes captured (4216 bits) on interface 0
> Ethernet II, Src: IntelCor_7e:78:72 (dc:fb:48:7e:78:72), Dst: JuniperN_40:05:00 (28:a2:4b:40:05:00)
> Internet Protocol Version 4, Src: 10.34.27.79, Dst: 172.217.25.163
▼ User Datagram Protocol, Src Port: 55039, Dst Port: 443
    Source Port: 55039
    Destination Port: 443
    Length: 493
    Checksum: 0xedeb [unverified]
    [Checksum Status: Unverified]
    [Stream index: 0]
> Data (485 bytes)
```

Question **5**

Correct

Mark 4.00 out of 4.00

The source port number in this UDP segment is

✓ .

Penalty regime: 33%, 66%, 100%

You have correctly selected 1.

Marks for this submission: 4.00/4.00.

Question **6**

Correct

Mark 4.00 out of 4.00

The destination port number of this UDP segment is

✓ .

Penalty regime: 33%, 66%, 100%

You have correctly selected 1.

Marks for this submission: 4.00/4.00.

Question 7

Correct

Mark 4.00 out of 4.00

The length of this UDP segment is

✓ ; the size of its data field is

✓ . Therefore the UDP header occupies

✓ bytes.


Penalty regime: 33%, 66%, 100%

You have correctly selected 3.

Marks for this submission: 4.00/4.00.

Information

A screenshot of a TCP segment (captured by Wireshark) is given below. Please answer the following questions based on this figure.

 Wireshark · Packet 3 · Wi-Fi

```
> Frame 3: 54 bytes on wire (432 bits), 54 bytes captured (432 bits) on interface 0
> Ethernet II, Src: JuniperN_40:05:00 (28:a2:4b:40:05:00), Dst: IntelCor_7e:78:72 (dc:fb:48:7e:78:72)
> Internet Protocol Version 4, Src: 132.181.109.99, Dst: 10.34.27.79
▼ Transmission Control Protocol, Src Port: 443, Dst Port: 50437, Seq: 3220251529, Ack: 190380565, Len: 0
    Source Port: 443
    Destination Port: 50437
    [Stream index: 1]
    [TCP Segment Len: 0]
    Sequence number: 3220251529
    [Next sequence number: 3220251529]
    Acknowledgment number: 190380565
    0101 .... = Header Length: 20 bytes (5)
> Flags: 0x010 (ACK)
    Window size value: 23768
    [Calculated window size: 23768]
    [Window size scaling factor: -1 (unknown)]
    Checksum: 0x8bc9 [unverified]
    [Checksum Status: Unverified]
    Urgent pointer: 0
> [SEQ/ACK analysis]
> [Timestamps]
```

Question **8**

Correct

Mark 2.00 out of 2.00

The source port number and destination port number in this segment are

✓ and

✓ respectively.

Penalty regime: 33%, 66%, 100%

You have correctly selected 2.

Marks for this submission: 2.00/2.00.

Question **9**

Correct

Mark 2.00 out of 2.00

The sequence number and ACK number in this TCP segment are

✓ and

✓ respectively.

Penalty regime: 33%, 66%, 100%

You have correctly selected 2.

Marks for this submission: 2.00/2.00.

Question **10**

Correct

Mark 4.00 out of 4.00

The size of receive window of this TCP segment is

✓ .

Penalty regime: 33%, 66%, 100%

You have correctly selected 1.

Marks for this submission: 4.00/4.00.

Question **11**

Correct

Mark 4.00 out of 4.00

In TCP 3-way handshaking, the client-side TCP first sends a SYN segment to the server-side TCP. Suppose the client randomly chooses an initial sequence number, *client_isn*. What is the ACK number in the corresponding SYNACK segment generated by the server?

Penalty regime: 33%, 66%, 100%

Select one:

- ☒ a. *client_isn + 1*
- ☐ b. Another random number
- ☐ c. *client_isn*
- ☐ d. 0



[Clear my choice](#)

Check

Your answer is correct.

Correct

Marks for this submission: 4.00/4.00.

Question **12**

Correct

Mark 2.67 out of 4.00

Suppose the sequence number of the SYNACK segment (generated by the server) is *server_isn*. After receiving the SYNACK segment, the client sends back another segment acknowledging this reception. What is the sequence number of this segment?

Penalty regime: 33%, 66%, 100%

Select one:

- ☐ a. *server_isn*
- ☒ b. *client_isn + 1*
- ☐ c. *server_isn + 1*
- ☐ d. *client_isn*



[Clear my choice](#)

Check

Your answer is correct.

Correct

Marks for this submission: 4.00/4.00. Accounting for previous tries, this gives **2.67/4.00**.

Question **13**

Correct

Mark 4.00 out of 4.00

Following the last question, what is the ACK number in the segment sent by the client after receiving the SYNACK segment from the server?

Penalty regime: 33%, 66%, 100%

Select one:

- ☐ a. *client_isn +1*
- ☐ b. *server_isn*
- ☐ c. *client_isn*
- ☒ d. *server_isn +1*



[Clear my choice](#)

Check

Your answer is correct.

Correct

Marks for this submission: 4.00/4.00.

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