LAB 3b

1/

There are 4 fields Source Port, Destination Port, Length, Checksum

2/

The length (in bytes) of each of the UDP header fields: 2 bytes.

3/

The length (in bytes) of each of the UDP header fields. An explicit length value is needed since the size of the data field may differ from one UDP segment to the next.

The length of UDP payload for selected packet is 50 bytes. 58 bytes - 8 bytes = 50 bytes.

4/

The maximum number of bytes that can be included in a UDP payload is (2^16 – 1) bytes plus the header bytes. This gives 65535 bytes – 8 bytes = 65527 bytes.

5/

The largest possible source port number is (2^16 – 1) = 65535.

6/

the protocol number for UDP is 0x11 in hexadecimal and 17 in decimal

```
> Ethernet II, Src: Dell_4f:36:23 (00:08:74:4f:36:23), Dst: HewlettP_61:eb:ed (00:30:c1:61:eb:ed)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 192.168.1.104
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
   > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 78
     Identification: 0x02fd (765)
   > Flags: 0x00
     Fragment Offset: 0
     Time to Live: 128
     Protocol: UDP (17)
     Header Checksum: 0x0000 [validation disabled]
0000   00 30 c1 61 eb ed 00 08   74 4f 36 23 08 00 45 00    ·0·a···· tO6#··E·
0010   00 4e 02 fd 00 00 80 11   00 00 c0 a8 01 66 c0 a8    ·N·····[·] ·····f··
0020   01 68 10 ee 00 a1 00 3a   65 f8 30 30 02 01 00 04    ·h·····: e·00····
0030   06 70 75 62 6c 69 63 a0   23 02 02 18 fb 02 01 00    ·public· #·······
0040   02 01 00 30 17 30 15 06   11 2b 06 01 04 01 0b 02    ···0·0·· ·+······
0050   03 09 04 02 01 02 02 02   01 00 05 00                ········ ····
```

7/

The source port of the UDP packet sent by the host is the same as the destination port of the reply packet, and conversely the destination port of the UDP packet sent by the host is the same as the source port of the reply packet.

```
> Ethernet II, Src: Dell_4f:36:23 (00:08:74:4f:36:23), Dst: HewlettP_61:eb:ed (00:30:c1:61:eb:ed)
> Internet Protocol Version 4, Src: 192.168.1.102, Dst: 192.168.1.104
∨ User Datagram Protocol, Src Port: 4334, Dst Port: 161
     Source Port: 4334
     Destination Port: 161
     Length: 58
     Checksum: 0x65f8 [unverified]
     [Checksum Status: Unverified]
     [Stream index: 1]
   > [Timestamps]
     UDP payload (50 bytes)
> Simple Network Management Protocol
0000   00 30 c1 61 eb ed 00 08   74 4f 36 23 08 00 45 00    ·0·a···· tO6#··E·
0010   00 4e 02 fd 00 00 80 11   00 00 c0 a8 01 66 c0 a8    ·N······ ·····f··
0020   01 68 10 ee 00 a1 00 3a   65 f8 30 30 02 01 00 04    ·h·····: e·00····
0030   06 70 75 62 6c 69 63 a0   23 02 02 18 fb 02 01 00    ·public· #·······
0040   02 01 00 30 17 30 15 06   11 2b 06 01 04 01 0b 02    ···0·0·· ·+······
0050   03 09 04 02 01 02 02 02   01 00 05 00                ········ ····
```

```
> Ethernet II, Src: HewlettP_61:eb:ed (00:30:c1:61:eb:ed), Dst: Dell_4f:36:23 (00:08:74:4f:36:23)
> Internet Protocol Version 4, Src: 192.168.1.104, Dst: 192.168.1.102
∨ User Datagram Protocol, Src Port: 161, Dst Port: 4334
     Source Port: 161
     Destination Port: 4334
     Length: 59
     Checksum: 0x53f2 [unverified]
     [Checksum Status: Unverified]
     [Stream index: 1]
   > [Timestamps]
     UDP payload (51 bytes)
> Simple Network Management Protocol
0000   00 08 74 4f 36 23 00 30   c1 61 eb ed 08 00 45 00    ··tO6#·0 ·a····E·
0010   00 4f ed a2 00 00 3c 11   0c dd c0 a8 01 68 c0 a8    ·O····<· ·····h··
0020   01 66 00 a1 10 ee 00 3b   53 f2 30 31 02 01 00 04    ·f·····; S·01····
0030   06 70 75 62 6c 69 63 a2   24 02 02 18 fb 02 01 00    ·public· $·······
0040   02 01 00 30 18 30 16 06   11 2b 06 01 04 01 0b 02    ···0·0·· ·+······
0050   03 09 04 02 01 02 02 02   01 00 04 01 10             ········ ·····
```