

Computer Networks Lab - 6

UDP

Yasaswini Tiramdas, 18mcme22

1. There are 4 fields in the UDP header. They are:
 - a. Source port
 - b. Destination Port
 - c. Length and
 - d. Checksum

```
▼ User Datagram Protocol, Src Port: 443, Dst Port: 64665
  Source Port: 443
  Destination Port: 64665
  Length: 1358
  Checksum: 0xee09 [unverified]
  [Checksum Status: Unverified]
  [Stream index: 2]
  > [Timestamps]
  UDP payload (1350 bytes)
```

2. The length (in bytes) of each of the UDP header fields is 2 bytes.
3. The length field specifies the number of bytes in the UDP segment (header plus data). An explicit length value is needed since the size of the data field may differ from one UDP segment to the next. In the above image, the Length is 1358 bytes where data is 1350 bytes and the header is 8 bytes. As we can see the length field is different in both images.

```
User Datagram Protocol, Src Port: 443, Dst Port: 64665
  Source Port: 443
  Destination Port: 64665
  Length: 70
  Checksum: 0x9af3 [unverified]
  [Checksum Status: Unverified]
  [Stream index: 2]
  > [Timestamps]
  UDP payload (62 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 $65535 \text{ bytes} - 8 \text{ bytes} = 65527 \text{ bytes}$.
5. The largest possible source port number is $(2^{16} - 1) = 65535$.

6. The IP protocol number for UDP is 0x11 hex, which is 17 in decimal value.
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.

✓	User Datagram Protocol, Src Port: 49903, Dst Port: 443
	Source Port: 49903
	Destination Port: 443
	Length: 42
	Checksum: 0x1597 [unverified]
	[Checksum Status: Unverified]
	[Stream index: 0]
	> [Timestamps]
	UDP payload (34 bytes)
✓	User Datagram Protocol, Src Port: 443, Dst Port: 49903
	Source Port: 443
	Destination Port: 49903
	Length: 38
	Checksum: 0xe672 [unverified]
	[Checksum Status: Unverified]
	[Stream index: 0]
	> [Timestamps]
	UDP payload (30 bytes)