1.

No.   Time   Source   Destination   Protocol Info

 12 15:29:18.893919 192.168.1.1   239.255.255.250   UDP   Source port: ssdp Destination port: ssdp

Frame 12 (375 bytes on wire, 375 bytes captured)

Ethernet II, Src: 58:6d:8f:3d:3b:ca (58:6d:8f:3d:3b:ca), Dst: IPv4mcast_7f:ff:fa (01:00:5e:7f:ff:fa)

Internet Protocol, Src: 192.168.1.1 (192.168.1.1), Dst: 239.255.255.250 (239.255.255.250)

User Datagram Protocol, Src Port: ssdp (1900), Dst Port: ssdp (1900)
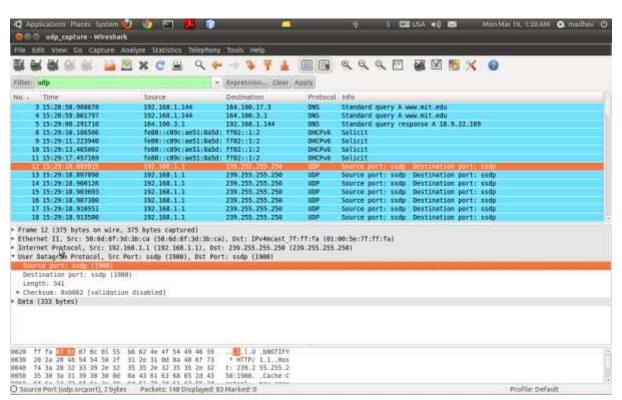
   Source port: ssdp (1900)

   Destination port: ssdp (1900)

   Length: 341

   Checksum: 0xb662 [validation disabled]

UDP header contains 4 fields: source port,destination port,length,checksum

2.

Each header is 2 bytes long

3.

Length is the sum of data length and length of headers

4.

The maximum number of bytes that can be included in a UDP payload is 2^16 – 1 - header

bytes = 65535 – 8 = 65527 bytes.

5.

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

6.

Internet Protocol, Src: 192.168.1.1 (192.168.1.1), Dst: 239.255.255.250 (239.255.255.250)

   Version: 4

   Header length: 20 bytes

   Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00)

   Total Length: 361

   Identification: 0x0000 (0)

   Flags: 0x02 (Don't Fragment)

   Fragment offset: 0

   Time to live: 1

   Protocol: UDP (0x11)

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

7.

Checksum is the 16-bit one's complement of the one's complement sum of a pseudo header of
information from the IP header, the UDP header, and the data, padded with zero octets at the end
(if necessary) to make a multiple of two octets.

In other words, all 16-bit words are summed using one's complement arithmetic. The sum is then
one's complemented to yield the value of the UDP checksum field.

8.

No.   Time   Source   Destination   Protocol Info

   1 19:38:44.221178 192.168.1.101   68.87.71.226   UDP   Source port: 4372 Destination port: domain

Frame 1 (85 bytes on wire, 85 bytes captured)

Ethernet II, Src: DellComp_4f:36:23 (00:08:74:4f:36:23), Dst: Cisco-Li_f4:eb:a8 (00:16:b6:f4:eb:a8)

Internet Protocol, Src: 192.168.1.101 (192.168.1.101), Dst: 68.87.71.226 (68.87.71.226)

User Datagram Protocol, Src Port: 4372 (4372), Dst Port: domain (53)

Data (43 bytes)

No.   Time   Source   Destination   Protocol Info

 2 19:38:44.233659 68.87.71.226   192.168.1.101   UDP   Source port: domain Destination port: 4372

Frame 2 (137 bytes on wire, 137 bytes captured)

Ethernet II, Src: Cisco-Li_f4:eb:a8 (00:16:b6:f4:eb:a8), Dst: DellComp_4f:36:23 (00:08:74:4f:36:23)

Internet Protocol, Src: 68.87.71.226 (68.87.71.226), Dst: 192.168.1.101 (192.168.1.101)

User Datagram Protocol, Src Port: domain (53), Dst Port: 4372 (4372)

Data (95 bytes)

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.