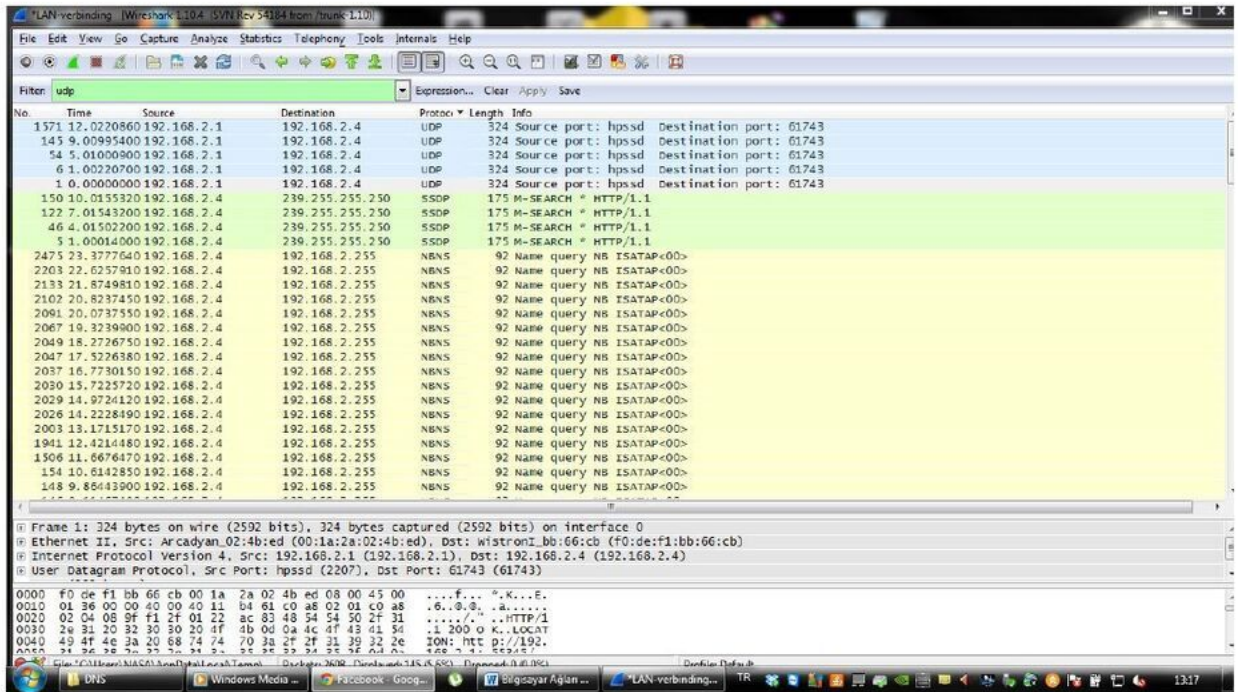


NOT: Genel olarak internete bağlanıp kısa bir gezinti yapıldığında UDP transmit ve receiving işlemlerini gerçekleştirdik ve böyle bir screen shot oluştu.



EEM-413 Bilgisayar Ağları Lab4 (UDP)

1) UDP aşağıda da görüldüğü gibi 4 parçadan oluşmaktadır. Bunlar

- Source port
- Destination Port
- Length
- Checksum

The image displays a Wireshark network traffic capture. The top pane shows a list of packets, including several UDP packets from 192.168.2.1 to 192.168.2.4. The middle pane shows the details of a selected UDP packet (No. 1571), indicating it is a hpsdd packet from source port 2207 to destination port 61743. The bottom pane shows the raw data of the packet in hexadecimal and ASCII.

Frame 1571: 324 bytes on wire (2592 bits), 324 bytes captured (2592 bits) on interface 0

Ethernet II, Src: Arcadyan_02:4b:ed (00:1a:2a:02:4b:ed), Dst: WistronI_bb:66:cb (f0:de:f1:bb:66:cb)

Internet Protocol Version 4, Src: 192.168.2.1 (192.168.2.1), Dst: 192.168.2.4 (192.168.2.4)

User Datagram Protocol, Src Port: hpsdd (2207), Dst Port: 61743 (61743)

Source port: hpsdd (2207)

Destination port: 61743 (61743)

Length: 290

Checksum: 0xacc3 [validation disabled]

Data (282 bytes)

0000 f0 de f1 bb 66 cb 00 1a 2a 02 4b ed 08 00 45 00 5

0010 01 36 00 00 40 00 00 11 b4 61 c0 a8 02 01 c0 a8

0020 02 04 08 9f f1 2f 01 22 ac 83 48 54 54 50 2f 31

0030 2e 31 20 32 30 20 4f 4b 0d 0a 4c 47 43 41 54

0040 19 4f 4e 3a 20 68 74 74 70 3a 2f 2f 31 39 32 2e

0050 28 36 92 31 38 2f 4b 0d 0a 4c 47 43 41 54 54

2) Yukarıda da görüldüğü gibi UDP length 290'dır. Ancak Data 282 byte'dır. Yani tüm UDP 8 byte ve her headers file 2 byte'dır.

EEM-413 Bilgisayar Ağları Lab4 (UDP)

3) Bu sorunun cevabıda yukarıdaki soruda verilmiş bulunmaktadır.

4)

$2^{16} - 1$ headers ı çıkarttık.

Bu bize $65535 - 8 = 65527$ byte verir.

5) Mümkün olan en büyük source port numarası $2^{16} - 1 = 65535$ dir.

6)

Wireshark 1.10.4 (SVN Rev 54184 from /trunk-1.10.)

Filter: udp

No.	Time	Source	Destination	Protocol	Length	Info
1571	12.0220860	192.168.2.1	192.168.2.4	UDP	324	Source port: hpssd Destination port: 61743
145	9.00995400	192.168.2.1	192.168.2.4	UDP	324	Source port: hpssd Destination port: 61743
54	5.01009000	192.168.2.1	192.168.2.4	UDP	324	Source port: hpssd Destination port: 61743
6	1.00207000	192.168.2.1	192.168.2.4	UDP	324	Source port: hpssd Destination port: 61743
1	0.00000000	192.168.2.1	192.168.2.4	UDP	324	Source port: hpssd Destination port: 61743
150	10.0155320	192.168.2.4	239.255.255.250	SSDP	175	M-SEARCH * HTTP/1.1
122	7.01543200	192.168.2.4	239.255.255.250	SSDP	175	M-SEARCH * HTTP/1.1
46	4.01502000	192.168.2.4	239.255.255.250	SSDP	175	M-SEARCH * HTTP/1.1
5	1.00014000	192.168.2.4	239.255.255.250	SSDP	175	M-SEARCH * HTTP/1.1
2475	23.3777600	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>
2203	22.6257910	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>
2133	21.8749810	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>
2102	20.8237450	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>
2091	20.0737550	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>
2067	19.3239900	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>
2040	18.7236750	192.168.2.4	192.168.2.255	NBNS	92	Name query NB ISATAP<00>

Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-Capable Transport))

Total Length: 310

Identification: 0x0000 (0)

Flags: 0x02 (Don't Fragment)

Fragment offset: 0

Time to live: 64

Protocol: 17 (UDP)

Header checksum: 0xb461 [correct]

[Good: True]

[Bad: False]

Source: 192.168.2.1 (192.168.2.1)

Destination: 192.168.2.4 (192.168.2.4)

[Source GeoIP: Unknown]

[Destination GeoIP: Unknown]

User Datagram Protocol, Src Port: hpssd (2207), Dst Port: 61743 (61743)

0010 01 26 00 00 40 00 40 b4 61 c0 a8 02 01 c0 a8 .S..Q..a.....
0020 02 04 08 9f f1 2f 01 22 ac 83 48 54 50 2f 31 HTTP/1
0030 2e 31 20 32 30 30 4f 4b 0d 0a 4c 4f 43 41 54 .1.200.0.K..LOCAT
0040 49 4f 4c 3a 20 68 74 74 70 3a 2f 2f 31 30 32 2e ION: htt p://192.
0050 31 26 38 2e 32 2e 31 3a 35 35 33 34 35 2f 0d 0a 168.2.1: 55345/..
0060 44 48 44 95 0d 0a 43 44 45 48 45 45 50 46 2f 44 48 44 95 0d 0a 43 44 45 48 45 45 50 46 2f 44 48 44 95 0d 0a 43 44 45 48 45 45 50 46 2f

Yukarıda da gösterildiği gibi UDP için IP protocol numarası 17 yani yine screen shottada mavi ile görüldüğü gibi 0x11 hex dir.

7) Google'da UDP aratıldığında checksum hesabı için su sonucu buldum;

The UDP checksum is calculated as 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. This is padded as needed with zero bytes at the end to make a multiple of two bytes. If the checksum is computed to be 0, it must be set to 0xFFFF

EEM-413 Bilgisayar Ağları Lab4 (UDP)

8) UDP isteği benim tarafımdan yollanıyor.

The screenshot shows a Wireshark capture of a network packet. The filter is set to 'udp'. The packet list shows a packet from 192.168.2.1 to 192.168.2.4, protocol UDP, length 324. The packet details pane shows the following information:

- Frame 1571: 324 bytes on wire (2592 bits), 324 bytes captured (2592 bits) on interface 0
- Ethernet II, Src: Arcadyan_02:14:b:ed (00:1a:2a:02:14:b:ed), Dst: WistronI_bb:66:cb (f0:de:f1:bb:66:cb)
- Internet Protocol Version 4, Src: 192.168.2.1 (192.168.2.1), Dst: 192.168.2.4 (192.168.2.4)
- Version: 4
- Header length: 20 bytes
- Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-capable transport))
- Total Length: 310
- Identification: 0x0000 (0)
- Flags: 0x02 (Don't Fragment)
- Fragment offset: 0
- Time to live: 64
- Protocol: UDP (17)
- Header checksum: 0xb461 [correct]
- [Good: true]
- [Bad: false]
- Source: 192.168.2.1 (192.168.2.1)
- Destination: 192.168.2.4 (192.168.2.4)
- [Source GeoIP: unknown]
- [Destination GeoIP: unknown]
- User Datagram Protocol, Src Port: hpsdd (2207), Dst Port: 61743 (61743)
- Source port: hpsdd (2207)
- Destination port: 61743 (61743)
- Length: 290
- Checksum: 0xac83 [validation disabled]

The packet data pane shows the raw data of the packet, which is a search request for HTTP/1.1.

UDP cevabı dönüyor.

The screenshot shows a Wireshark capture of a network packet. The filter is set to 'udp'. The packet list shows a packet from 192.168.2.1 to 192.168.2.4, protocol UDP, length 324. The packet details pane shows the following information:

- Frame 143: 324 bytes on wire (2592 bits), 324 bytes captured (2592 bits) on interface 0
- Ethernet II, Src: Arcadyan_02:14:b:ed (00:1a:2a:02:14:b:ed), Dst: WistronI_bb:66:cb (f0:de:f1:bb:66:cb)
- Internet Protocol Version 4, Src: 192.168.2.1 (192.168.2.1), Dst: 192.168.2.4 (192.168.2.4)
- Version: 4
- Header length: 20 bytes
- Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-capable transport))
- Total Length: 310
- Identification: 0x0000 (0)
- Flags: 0x02 (Don't Fragment)
- Fragment offset: 0
- Time to live: 64
- Protocol: UDP (17)
- Header checksum: 0xb461 [correct]
- [Good: true]
- [Bad: false]
- Source: 192.168.2.1 (192.168.2.1)
- Destination: 192.168.2.4 (192.168.2.4)
- [Source GeoIP: unknown]
- [Destination GeoIP: unknown]
- User Datagram Protocol, Src Port: hpsdd (2207), Dst Port: 61743 (61743)
- Source port: hpsdd (2207)
- Destination port: 61743 (61743)
- Length: 290
- Checksum: 0xac83 [validation disabled]

The packet data pane shows the raw data of the packet, which is a search request for HTTP/1.1.