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SE20UARI020

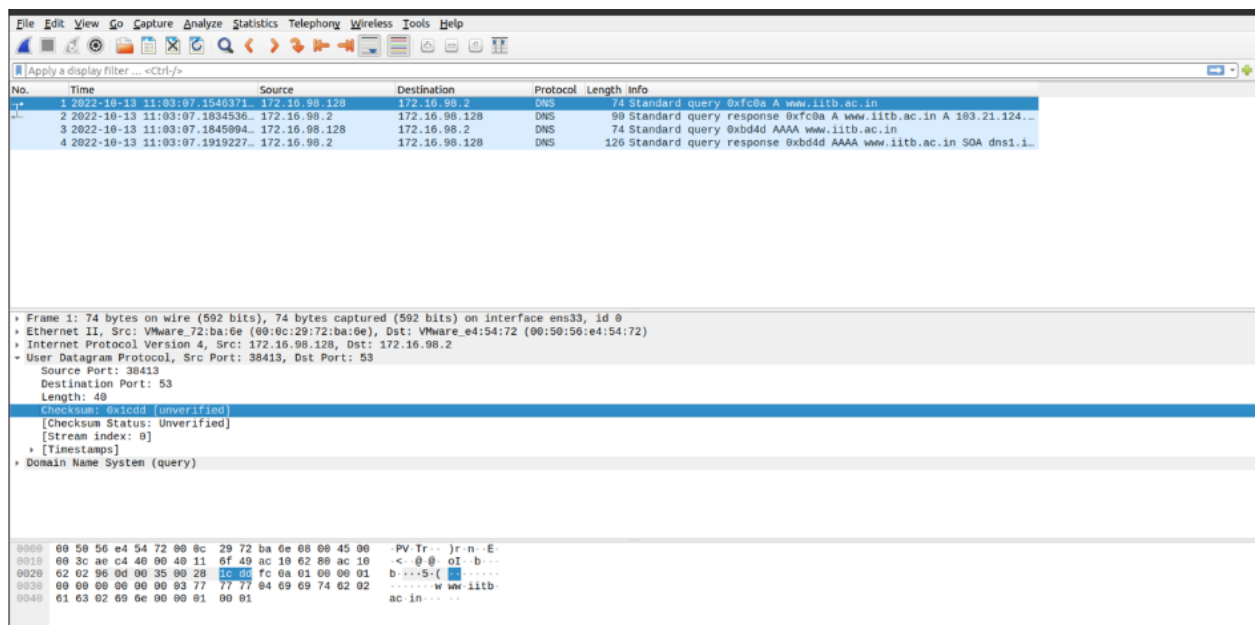
15 October 2022

## LAB 4

### 1. Packet Number – 1

#### UDP Payload

The header contains 4 fields: the source port, destination port, length, and checksum.



No.	Time	Source	Destination	Protocol	Length	Info
1	2022-10-13 11:03:07.1546371	172.16.98.128	172.16.98.2	DNS	74	Standard query 0xfc8a A www.iitb.ac.in
2	2022-10-13 11:03:07.1834536	172.16.98.2	172.16.98.128	DNS	99	Standard query response 0xfc8a A www.iitb.ac.in A 193.21.124...
3	2022-10-13 11:03:07.1845994	172.16.98.128	172.16.98.2	DNS	74	Standard query 0xbdd4 AAAA www.iitb.ac.in
4	2022-10-13 11:03:07.1919227	172.16.98.2	172.16.98.128	DNS	126	Standard query response 0xbdd4 AAAA www.iitb.ac.in SOA dns1.i...

Frame 1: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface ens33, id 0	
Ethernet II, Src: VMware_72:ba:6e (00:0c:29:72:ba:6e), Dst: VMware_e4:54:72 (00:50:56:e4:54:72)	
Internet Protocol Version 4, Src: 172.16.98.128, Dst: 172.16.98.2	
User Datagram Protocol, Src Port: 38413, Dst Port: 53	
Source Port: 38413	
Destination Port: 53	
Length: 40	
Checksum: 0x1cdd [unverified]	
[Checksum Status: Unverified]	
[Stream index: 0]	
[Timestamps]	
Domain Name System (query)	

0000	00 50 56 e4 54 72 00 8c	29 72 ba 6e 00 00 45 00	PV Tr... j r n... E
0010	00 3c ae c4 40 00 00 11	0f 49 8c 10 02 00 ac 10	< 0 0 o i b...
0020	62 02 96 0d 00 35 00 28	1c 8c fc 0a 01 00 00 01	b...5{ 00... ..
0030	00 00 00 00 00 00 93 77	77 77 04 69 69 74 02 02	.....w ww iitb
0040	61 63 02 69 6e 00 00 01	00 01	ac in... ..

### 2. Each UDP is 2 bytes long

### 3. The value in the length field is the sum of the 8 header bytes, plus the 29 encapsulated data bytes (UDP Payload).

### 4. The maximum number of bytes in the payload is $(2^{16} - 1)$ - the header bytes(8). Therefore the maximum payload is $65535 - 8 = 65527$ bytes.

### 5. The largest possible source port number is $2^{16} - 1 = 65,535$ .

6. The IP protocol number for UDP is 17 in decimal value.
7. The packet Number of the 1st UDP segment is 1 The packet Number of the 2nd UDP segment is 2 The source port of the UDP packet sent by the host is the same as the destination port of the reply packet, and the destination port of the UDP packet sent by the host is the same as the source port of the reply packet

No.	Time	Source	Destination	Protocol	Length	Info
1	2022-10-13 11:03:07.1546371..	172.16.98.128	172.16.98.2	DNS	74	Standard query 0xfc8a A www.iitb.ac.in
2	2022-10-13 11:03:07.1815852..	172.16.98.2	172.16.98.128	DNS	126	Standard query response 0x1601 A www.iitb.ac.in A 103.21.124.
3	2022-10-13 11:03:07.1845694..	172.16.98.128	172.16.98.2	DNS	74	Standard query 0xbdd4 AAAA www.iitb.ac.in
4	2022-10-13 11:03:07.1919227..	172.16.98.2	172.16.98.128	DNS	126	Standard query response 0xbdd4 AAAA www.iitb.ac.in SOA dns1.i...

<ul style="list-style-type: none"> <li>Frame 2: 90 bytes on wire (720 bits), 90 bytes captured (720 bits) on interface ens33, id 0</li> <li>Ethernet II, Src: VMware_e4:54:72 (00:50:56:e4:54:72), Dst: VMware_72:ba:6e (00:0c:29:72:ba:6e)</li> <li>Internet Protocol Version 4, Src: 172.16.98.2, Dst: 172.16.98.128</li> <li>User Datagram Protocol, Src Port: 53, Dst Port: 38413 <ul style="list-style-type: none"> <li>Source Port: 53</li> <li>Destination Port: 38413</li> <li>Length: 56</li> <li>Checksum: 0x0f36 [unverified]</li> <li>[Checksum Status: Unverified]</li> <li>[Stream index: 0]</li> <li>[Timestamps]</li> </ul> </li> <li>Domain Name System (response)</li> </ul>
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0000	00 0c 29 72 ba 6e 00 50	56 e4 54 72 00 00 45 00	--> r.n.P.V.Tr. E-
0010	00 4c bc 4b 00 00 80 81	61 b2 ac 10 62 02 ac 10	-L.K... a...b...
0020	62 80 00 35 96 0d 00 38	0f 36 fc 0a 81 80 00 01	b..5...8..6.....
0030	00 01 00 00 00 00 03 77	77 77 04 09 09 74 62 02	.....w ww.iitb
0040	61 63 62 69 6e 00 00 01	00 01 c0 0c 00 01 00 01	ac.in.....
0050	00 00 00 05 00 04 67 35	7c 0a	.....g..