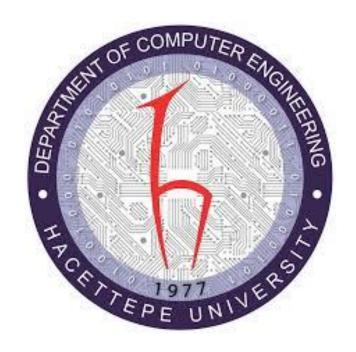
HACETTEPE UNIVERSITY COMPUTER ENGINEERING DEPARTMENT COMPUTER NETWORKS LABORATORY



EXPERIMENT ICMP

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GROUP NUMBER: 12

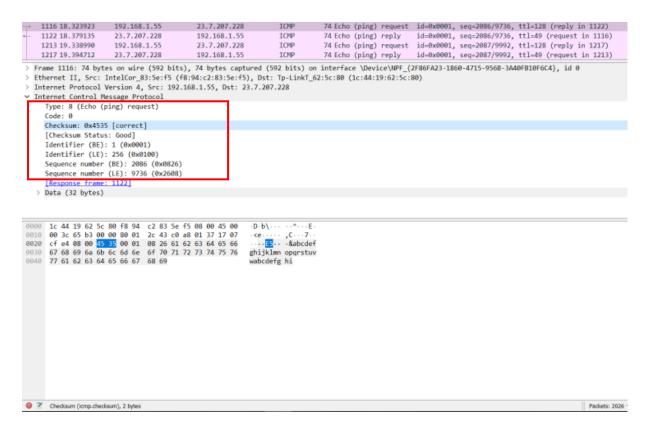
IP address of our computer: 192.168.1.55

1. IP address of our source computer is 192.168.1.55 and IP address of destination is 23.7.207.228 which is www.mit.edu

```
Komut İstemi
                                                                                                                                               Microsoft Windows [Version 10.0.19041.630]
(c) 2020 Microsoft Corporation. Tüm hakları saklıdır.
 :\Users\pc>ping -n 10 www.mit.edu
Pinging e9566.dscb.akamaiedge.net 23.7.207.228] with 32 bytes of data:
Reply from 23.7.207.228: bytes=32 time=55ms TTL=49
Reply from 23.7.207.228: bytes=32 time=55ms TTL=49
 deply from 23.7.207.228: bytes=32 time=55ms TTL=49
Reply from 23.7.207.228: bytes=32 time=56ms TTL=49
 deply from 23.7.207.228: bytes=32 time=55ms TTL=49
 deply from 23.7.207.228: bytes=32 time=55ms TTL=49
 eply from 23.7.207.228: bytes=32 time=55ms TTL=49
 eply from 23.7.207.228: bytes=32 time=55ms TTL=49
 eply from 23.7.207.228: bytes=32 time=55ms TTL=49
 deply from 23.7.207.228: bytes=32 time=55ms TTL=49
Ping statistics for 23.7.207.228:
Packets: Sent = 10, Received = 10, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 55ms, Maximum = 56ms, Average = 55ms
```

2. Each ICMP packet has type and code information. It provides to communicate network layer information between routers and hosts that's why ICMP packet does not have any source and destination port numbers. The Type/Code identifies the particular message being received. Since the network software itself interprets all ICMP messages, no port numbers are needed to direct the ICMP message to an application layer process.

3.



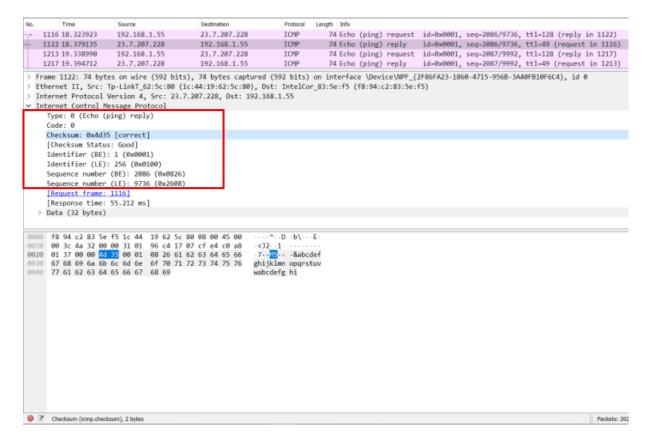
ICMP type: 8 Code: 0

Identifier: BE / LE

Checksum, identifier and sequence number are both 2 bytes. An ICMP packet has these

fields.

4. Ping reply:



ICMP type: 0 Code: 0

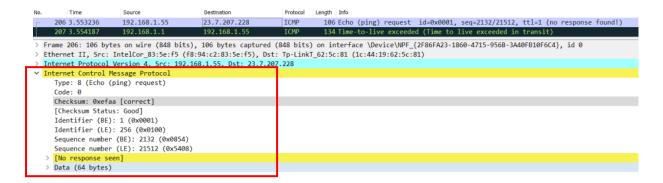
Identifier: BE / LE

Again, all fields are 2 bytes long.

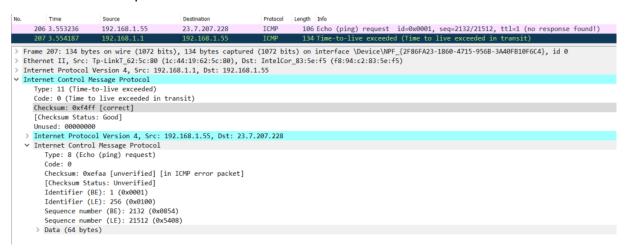
5. IP address of our source computer is 192.168.1.55 and IP address of destination is 23.7.207.228 which is www.mit.edu

```
Komut İstemi
                                                                                         \Users\pc>tracert www.mit.edu
racing route to e9566.dscb.akamaiedge.net
over a maximum of 30 hops:
                                  [23.7.207.228]
                  19 ms
    14 ms
    3 ms
3 ms
            4 ms
            6 ms
            20 ms
8
9
10
    56 ms
61 ms
            54 ms
            56 ms
    62 ms
race complete.
\Users\pc>
```

- 6. No, if ICMP sent UDP packet, IP protocol number should be 0x11
- 7. Ping query message (request) no response seen in this screenshot:



ICMP error packet:



A ping query packet contains type, code and checksum information besides an ICMP error message has more fields like error ping information.

8. According to screenshot below, the delay of Balgat – Ulus link takes long time .

