e2264653-report

by ismail sahin

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Screenshots

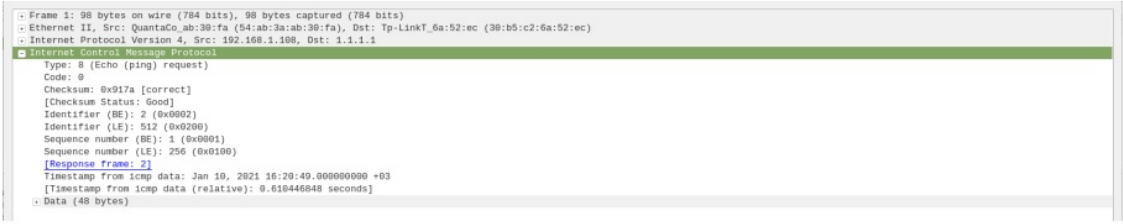

Figure 1: ICMP request

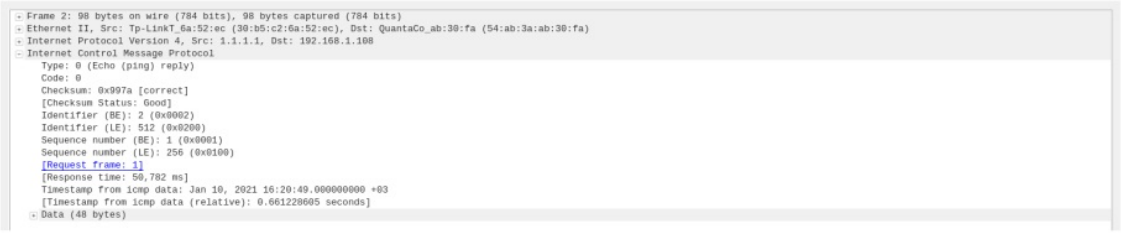

Figure 2: ICMP reply

```
ismail@ismail-laptop:~$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.1.1     0.0.0.0         UG    100    0        0 enp2s0
0.0.0.0         192.168.1.1     0.0.0.0         UG    20600  0        0 wlp3s0
169.254.0.0     0.0.0.0         255.255.0.0     U     1000   0        0 enp2s0
192.168.1.0     0.0.0.0         255.255.255.0   U     100    0        0 enp2s0
192.168.1.0     0.0.0.0         255.255.255.0   U     600    0        0 wlp3s0
```

Figure 3: Routing Table

Answers

1. (10 Points)

For Request Pocket:
IP of the source host: 192.168.1.108
IP of the destination host: 1.1.1.1

For Reply Pocket:
IP of the source host: 1.1.1.1
IP of the destination host: 192.168.1.108

2. (20 Points)

An ICMP pocket does not have a source and destination port because, port numbers are used in transport layer protocols(UDP,TCP,etc.). ICMP is for communication at network layer. ICMP communicate betwwen hosts and routers. It does not communicate between applications or processes.

3a. (15 Points)

"type" and "code" fields are used for to idetify ICMP messages. These gives information about its content. Thanks to these fields these messages can be interpretted.

3b. (15 Points)

For Request Pocket:
Type : 8 (Echo (ping) request)
Code : 0

As we see in the type field it is 8. It means that this pocket is an Echo Request message. Code field is is 0. That means that there is no code. Some other type messages can have code field, this specifies the messages.

For Reply Pocket:
Type : 0 (Echo (ping) reply)
Code : 0

As we see in the type field it is 0. It means that this pocket is an Echo Reply message. Code field is is 0. That means that there is no code.

4. (20 Points)

14 bytes are used for protocol Ethernet's header + 20 bytes are used for protocol IP's header + 1 byte is used for ICMP header's type field + 1 byte is used for ICMP header's code field + 2 bytes is used for ICMP header's checksum field + 4 bytes are used for rest of ICMP header(it can change type and code of packet) + 48 bytes are used for data field of ICMP + 8 bytes are used for timestamp field of ICMP = 98 total bytes

5. (20 Points)

If we remove first rule which destination is 0.0.0.0 and Iface is enp2s0, outgoing pockets will be dropped and we cannot send any ping requests. Because first two rules are default rules of our routing table and becouse of my using enp2s0 interface, I use first rule. When we send our pings, destination address is 1.1.1.1 and this does not match with any other rule out of first one and all packets go through this rule. So, if I remove this rule from table, all outgoing packets dropped and I cannot send any ping request.

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GRADEMARK REPORT

FINAL GRADE

/100

GENERAL COMMENTS

Instructor

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Comment 1

why are they used there?