Redes de Computadores 1 – Lab 9 – Daniel Maryna 64611

1.

IP: 192.168.0.110

2.

Protocolo ICMP(1)

3.

Total length = 56 bytes

Bytes IP Header = 20 bytes

Bytes payload of the IP datagram = total – header = 56-20 = 36 bytes.

4.

Fragment bit = 0, data is not fragmented.

5.

Identification, Time to live and header.

6.

Constant:

- Version (since we are using IPv4 for all packets)
- Header length (since these are ICMP packets)
- Source IP (since we are sending from the same source)
- Destination IP (since we are sending to the same dest)
- Differentiated Services (since all packets are ICMP they use the same Type of Service class)
- Upper Layer Protocol (since these are ICMP packets)

Must stay constant:

- Version (since we are using IPv4 for all packets)
- Header length (since these are ICMP packets)

- Source IP (since we are sending from the same source)

- Destination IP (since we are sending to the same dest)

- Differentiated Services (since all packets are ICMP they use the same Type of Service class)

- Upper Layer Protocol (since these are ICMP packets)

Must change:

- Identification(IP packets must have different ids)

- Time to live (traceroute increments each subsequent packet)

- Header checksum (since header changes)

7.

The Identification field of the IP datagram increments with each ICMP Echo (ping) request.

8.

Identification: 29441

TTL: 64

9.

The TTL field remains unchanged because the TTL for the first hop router is always the same.

10.

Yes, has been fragmented.

11.

The Flags bit for more fragments is set, indicating that the datagram has been fragmented. Since the fragment offset is 0, we know that this is the first fragment. This first datagram has a total length of 1500, including the header.

12.

We can tell that this is not the first fragment, since the fragment offset is 1480. It is the last fragment, since the more fragments flag is not set.

13.

The IP header fields that changed between the fragments are: total length, flags, fragment offset, and checksum.

14.

After switching to 3500, there are e packets created from the original datagram.

15.

The IP header fields that changed between all of the packets are: fragment offset, and checksum.