

1.

IP Host: 192.168.0.101

IP Destination: 143.89.14.34

2.

The ICMP packet does not have source and destination port numbers because it was designed to communicate network-layer information between hosts and routers, not between application layer processes. Each ICMP packet has a "Type" and a "Code". The Type/Code combination identifies the specific 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.

The ICMP type is 8, and the code number is 0. The ICMP packet also has checksum, identifier, sequence number, and data fields. The checksum, sequence number and identifier fields are two bytes each.

4.

The ICMP type is 0, and the code number is 0. The ICMP packet also has checksum, identifier, sequence number, and data fields. The checksum, sequence number and identifier fields are two bytes each.

5.

IP Host: 192.168.0.101

IP Destination: 138.96.146.2

6.

No, if ICMP sent UDP, the IP protocol number should be 0x11.

7.

The ICMP echo packet has the same fields as the ping query packets.

8.

The ICMP error packet is not the same as the ping query packets. It contains both the IP header and the first 8 bytes of the original ICMP packet that the error is for.

9.

The last three ICMP packets are message type 0 (echo reply) rather than 11 (TTL expired). They are different because the datagrams have made it all the way to the destination host before the TTL expired.

10.

There is a link between steps 11 and 12 that has a significantly longer delay. This is a transatlantic link from New York to Aubervilliers, France. In figure 4 from the lab, the link is from New York to Pastourelle, France.