# Lab 7-C IP

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Section - 001

Total in points (Maximum 100 points)–

Professors Comments –

Affirmation of Independent Effort – Ankit Sati

Answers are provided on the basis of the file ip-ethereal-trace-1 in the given zip folder.

1. IP address of my computer is 172.31.16.1
2. The value of the upper layer protocol field is ICMP.
3. Text

   Description automatically generatedThe number of bytes in IP header is 20. The number of bytes in the payload of the IP datagram is 64. This is because the total length of a packet is 84.
4. No, the IP datagram has not been fragmented. This can be observed by the Fragment offset field which is 0.
5. The fields that change from one datagram to the next are header checksum and identification.
6. The fields that stay constant are: IPv4, Length of header, source IP, destination IP.

The fields that vary are header checksum and identification.

1. The value of the identification field always increases by 1 with each successive echo request.
2. Value in identification field - 0x32d5 (13013) Value in the TTL field - 1
3. The value of the identification field changes with every reply since it is required for this field to have a unique value. However, the TTL field

will not change since this value in a router must stay consistent throughout.

1. Text

   Description automatically generatedYes, the message has been fragmented across multiple IP datagrams. This is indicated by the flags field.
2. The flags field which includes the statement - more fragments, indicates that the datagram has been fragmented.

The fragment offset that has the value of 0 implies that this is the first fragment of the datagram.

This datagram has a total length of 1500.

1. The fact that the fragment offset now indicates 1480 means that this is the second fragment of the datagram. There are no more fragments since the flag field is not set to indicate more fragments.
2. The fields that change in the first and second fragments are length, flag set, fragment offset, and header checksum.
3. 2 fragments were created from the original datagram.
4. The fragment offset and checksum change in the IP header among the fragments.