

Given the last fragment size is 373 bytes which includes 127 bytes of header. Also, given that the MTU that the network is following is 871. If the fragment offset of the last fragment is 1116 and the initial byte number is 0,

- a. What is the data size of the last fragment?

Ans: Header length = 127 bytes

Fragment size = 373 bytes

Data in last fragment = $373 - 127 = 246$ bytes

- b. What is the data size of the original packet?

Ans: Fragment offset of last fragment = 1116

Starting byte number of last fragment = $1116 * 8 = 8928$

Initial byte number = 0

Data until last fragment = $8928 - 0 = 8928$

Total data in original packet = $8928 + 246 + 127 = 9301$ bytes

- c. How many fragments have been created from the original packet?

Ans: Data in original packet = $9301 - 127 = 9174$ bytes

MTU of the network = 871 bytes

Maximum possible data in a fragment = $871 - 127 = 744$ bytes

Number of fragments = ceil of $(9174 / 744) = 13$

Given the routers starting from R1 to R83 are connected in series. R83 is pinging a remote router and succeeds in getting a reply with TTL value 186. Which router was it pinging if the network system is using a max TTL value of 225?

Ans: Since R1 to R83 are connected in series,

R1-R2-R3-.....-R81-R82-R83

hop passed = $225 - 186 = 39$

Got reply from router = $83 - 39 = 44$

R44