

CSC 361 Assignment 3 Part 2

This part is done based on the following files:

1. group1-trace1.pcap
2. group1-trace2.pcap
3. group1-trace3.pcap
4. group1-trace4.pcap
5. group1-trace5.pcap

Question 1: Probes per ttl used in each trace file?

Ans 1: The probes per ttl for this file is 3 for the range of ttls from 1-17 but for ttl 18 its 1.

Question 2: Determine whether or not the sequence of intermediate routers is the same in different trace files?

Ans 2: The sequence of intermediate routers for all five files is inconsistent.

Question 3: List the difference and explain why?

Ans: The routers that change are as follows:

1. 74.125.37.91
2. 72.14.237.123
3. 209.85.249.155
4. 209.85.250.121
5. 209.85.249.153

Essentially, only last 4-5 routers change with every trace file in this group.

Using multiple probes adds a level of randomness to the packet going from source to destination and so, because routing isn't fixed, the packet can be forwarded to different routers each time when being sent from source to ultimate destination which results in a different sequence of intermediate routers.

This part is done based on the following files:

1. group2-trace1.pcap
2. group2-trace2.pcap
3. group2-trace3.pcap
4. group2-trace4.pcap
5. group2-trace5.pcap

Question 1: Probes per ttl used in each trace file?

Ans 1: The probes used per ttl is 3 for this set of five files

Question 2: Determine whether or not the sequence of intermediate routers is the same in different trace files?

Ans 2: The sequence of intermediate routers for all five files is the same.

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Question 3:

Ans 3:

TTL	Average RTT in trace1 (ms)	Average RTT in trace2 (ms)	Average RTT in trace3 (ms)	Average RTT in trace4 (ms)	Average RTT in trace5 (ms)
1	3.329754	2.71066	7.853985	3.415346	1.745621
2	15.811682	17.118295	11.835416	13.245026	16.153574
3	18.869321	20.09662	22.579352	21.672249	21.601677
4	22.843043	19.420067	19.460201	19.754648	18.558343
5	26.502053	21.555344	20.321369	35.77129	20.717065
6	24.2637	19.982338	21.849712	22.67464	43.472052
7	18.407901	51.657995	22.763332	18.337329	26.921272
8	22.970756	108.737628	20.591974	24.57428	25.623401
9	18.099705	21.911065	23.139954	19.942602	21.441936

The hop which is most likely to incur the maximum delay is ttl 8 as it is the furthest away from the source and required more transmissions.