

1-

filter icmp.type==8

There are 28 ICMP echo requests traceroute sent. TTL fields of the first 27 of them start from 1 and increase consecutively to 27; the TTL field of the last ICMP echo request is 64 since it is the response of the ping we sent to hboostann.com.

2-

Wireshark NO	23	24	26	28	29	30	31	32	52	54	56
Source IP address	144.122.84.1	144.122.2.1	193.140.85.137	213.194.75.25	46.234.28.57	31.145.74.162	144.122.1.21	195.2.2.3.129	195.2.2.7.149	23.235.41.164	195.2.16.1
Traceroute No	1	2	4	5	7	6	3	8	9	11	10

Only the last traceroute(traceroute no 12, address 151.101.130.167) has no correspondence with any of the TTL-exceeded responses' source IP addresses.

3-

The router checks the destination address of the packet, and forwards the packet to its respective out-link depending on the value of forwarding table that corresponds with a portion of the destination address. If the address is 'cached'(i.e. the router already knows where that address leads to) the router will route directly to there, possibly bypassing some of the intermediate routers. So no the output is not always the same

4-

Wireshark no 88. In internet protocol version 4->Header length: 20 bytes, total length 74 bytes.

5-

In any standard query response->Internet Protocol Version 4->Protocol: UDP (17)
In any ICMP echo reply>Internet Protocol Version 4->Protocol: ICMP(1)

6-

Wireshark no 92. internet protocol version 4-> 4 IPv4 packets. So yeah it has been fragmented. There are 4 fragments. The data is fragmented since the size of data exceeded the packet size(which is 1500 including header length, you can find it if you look at any of the fragments' wireshark entry).