Lab 9
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1. We have to find the size of packet for which no fragmentation is needed.
   Search Range would be [0,1500].
   Ofcourse MTU or x <1500 as fragmentation occurs when we send 1500 bytes from h1 to r2.
   So by decreasing 1500 and checking according to binary search type algorithm, I got 383.

   For 384 data bytes and onwards, fragmentation is needed.

```
tc@h1:~$ sudo hping3 --traceroute -y -d 383 192.168.101.2 -V
using eth1, addr: 192.168.1.2, MTU: 1500
HPING 192.168.101.2 (eth1 192.168.101.2): NO FLAGS are set, 40 headers + 383 data bytes
hop=1 TTL 0 during transit from ip=192.168.1.1 name=UNKNOWN
hop=1 hoprtt=0.8 ms
^C
--- 192.168.101.2 hping statistic ---
76 packets tramitted, 8 packets received, 90% packet loss
round-trip min/avg/max = 0.8/0.8/0.8 ms
```

```
tc@h1:~$ sudo hping3 --traceroute -y -d 384 192.168.101.2 -V
using eth1, addr: 192.168.1.2, MTU: 1500
HPING 192.168.101.2 (eth1 192.168.101.2): NO FLAGS are set, 40 headers + 384 data bytes
hop=1 TTL 0 during transit from ip=192.168.1.1 name=UNKNOWN
hop=1 hoprtt=1.3 ms
ICMP Fragmentation Needed/DF set from ip=192.168.1.1 name=UNKNOWN
ICMP Fragmentation Needed/DF set from ip=192.168.1.1 name=UNKNOWN
ICMP Fragmentation Needed/DF set from ip=192.168.1.1 name=UNKNOWN
ICMP Fragmentation Needed/DF set from ip=192.168.1.1 name=UNKNOWN
ICMP Fragmentation Needed/DF set from ip=192.168.1.1 name=UNKNOWN
ICMP Fragmentation Needed/DF set from ip=192.168.1.1 name=UNKNOWN
^C
--- 192.168.101.2 hping statistic ---
26 packets tramitted, 15 packets received, 43% packet loss
round-trip min/avg/max = 1.3/1.3/1.3 ms
```

   So, MTU would be: 40 headers + 383 data bytes + 11 ethernet header = 434 bytes.