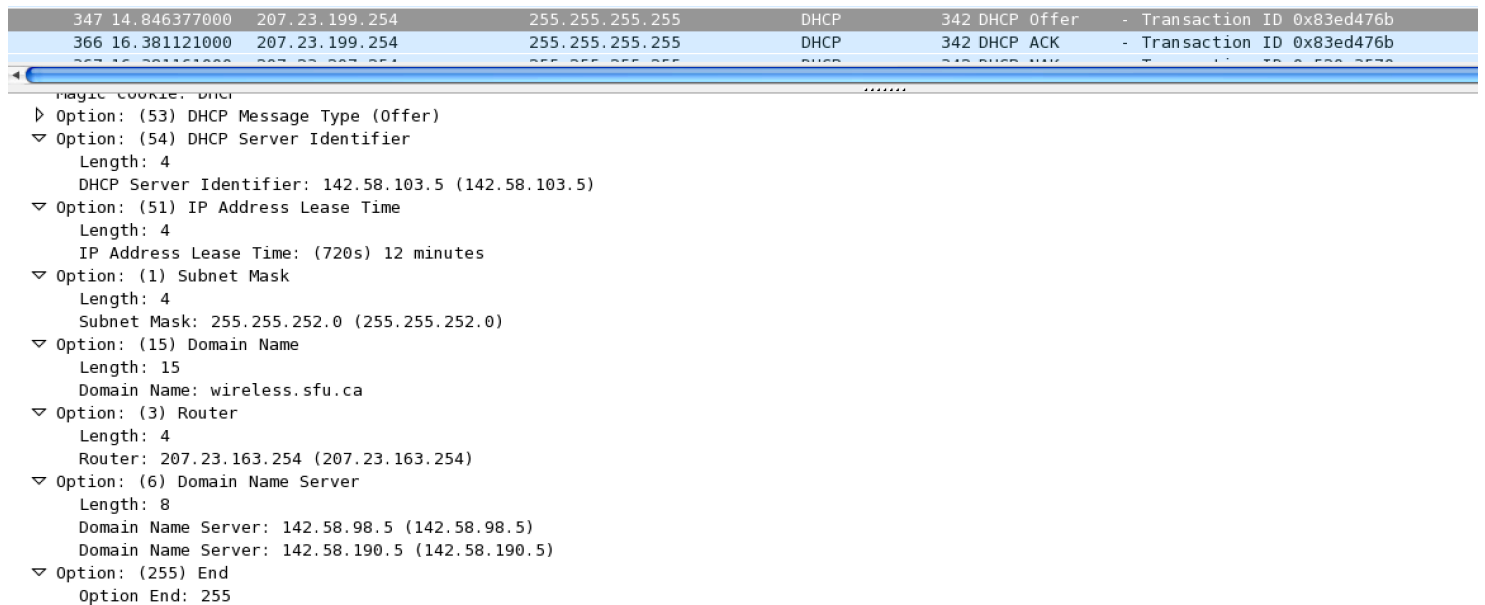


CMPT371 Project 2 Lab

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4. (10%) Try to identify the network topology of the SFU campus network. We're not expecting a perfect answer for it; just try your best using the knowledge you've learnt so far. For example, you can Traceroute to different servers and then identify a rendezvous and branches.



This is the screenshot of DHCP offer packet when I was in SFU campus. I was offered the IP of 207.23.161.9. And the DHCP server has IP of 142.58.103.5. And there are two domain name servers, one 142.58.98.5, the other 142.58.190.5. And there is an option telling me "Router" is 207.23.163.254. When I was in CSIL lab, my computer had an IP address of 142.58.35.17. Based on information above, the subnet of SFU has the IP prefix of 142.58.0.0/16. There is two domain name servers and a DHCP server. SFU also has a subnet of wireless network, and the subnet mask is 255.255.252.0. And 207.23.163.254 is the IP address of a router which connects the subnet of wireless network and wired network of SFU campus.

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2015-FALL-CMPT300-lyrebird/lyrebird/lyrebird master • traceroute www.sfu.ca
traceroute to www.sfu.ca (142.58.102.68), 64 hops max, 52 byte packets
 1 * * *
 2 rd3bb-tge0-12-0-14-1.vc.shawcable.net (64.59.150.9) 14.382 ms 24.097 ms 11.687 ms
 3 66.163.74.85 (66.163.74.85) 13.536 ms
   rd3st-tge0-1-2-0.vc.shawcable.net (66.163.69.246) 26.225 ms
   66.163.72.229 (66.163.72.229) 15.125 ms
 4 rc3no-be11.cg.shawcable.net (66.163.72.69) 28.359 ms 29.999 ms 36.628 ms
 5 rc3sc-be10.wp.shawcable.net (66.163.78.2) 50.218 ms
   rd1so-ge1-0-0.cg.shawcable.net (66.163.71.118) 25.320 ms
   rc2so-tge0-6-2-0.cg.shawcable.net (66.163.71.90) 24.304 ms
 6 rc2nr-be10.wp.shawcable.net (66.163.64.90) 43.877 ms 44.483 ms
   rc3sc-tge0-11-0-8.wp.shawcable.net (66.163.73.146) 55.098 ms
 7 66.163.76.22 (66.163.76.22) 64.495 ms 65.790 ms
   66.163.73.177 (66.163.73.177) 59.947 ms
 8 66.163.66.58 (66.163.66.58) 63.015 ms 80.477 ms 68.059 ms
 9 10gigabitethernet9-9.core1.tor1.he.net (198.32.181.52) 94.202 ms 71.846 ms 74.633
ms
10 10ge1-4.core2.tor1.he.net (184.105.223.130) 58.500 ms 65.498 ms 64.757 ms
11 10ge3-1.core1.ywg1.he.net (184.105.223.221) 109.757 ms 87.504 ms 86.087 ms
12 10ge1-1.core1.yyc1.he.net (184.105.223.214) 68.401 ms 73.793 ms 80.863 ms
13 10ge2-2.core1.yvr1.he.net (184.105.223.218) 66.800 ms 64.089 ms 71.457 ms
14 bcnet.10gigabitethernet1-4.core1.yvr1.he.net (184.105.148.150) 68.238 ms 76.581 ms
   70.943 ms
15 cr1-tx3920.vantx2.bc.net (207.23.253.34) 61.463 ms 70.556 ms 64.523 ms
16 134.87.30.241 (134.87.30.241) 64.720 ms 64.408 ms 99.394 ms
17 142.58.254.129 (142.58.254.129) 75.305 ms 72.615 ms 62.704 ms
18 bby-sh1125-x-1-1g-van-hcc1360-x-1-1g.net.sfu.ca (142.58.29.17) 80.144 ms 65.607 ms
   69.526 ms
19 bby-sh1125-ex4500-1-bby-sh1125-x-1.net.sfu.ca (142.58.29.193) 64.821 ms 91.516 ms
   76.149 ms
20 buntzenf.sfu.ca (142.58.102.68) 65.686 ms 62.277 ms *

```

This is the screenshot of my terminal when I was tracerouting www.sfu.ca at home.

```

iykon@Weidas-MacBook-Pro ~/Documents/iykon/sfu/2015Fall/CMPT371-Networking/project2/w
ireshark lab > master > traceroute aircanada.ca
traceroute to aircanada.ca (82.150.226.198), 64 hops max, 52 byte packets
 1 bby-gate183.net.sfu.ca (207.23.183.254) 23.204 ms 31.037 ms 31.889 ms
 2 bby-sh1125-x-1-bby-sh1125-qfx5100-3.net.sfu.ca (142.58.29.134) 1.916 ms 1.370 ms
1.172 ms
 3 van-hcc1360-x-1-1g-bby-sh1125-x-1-1g.net.sfu.ca (142.58.29.18) 1.735 ms 2.938 ms
1.520 ms
 4 van-hcc1360-j-1.net.sfu.ca (142.58.254.130) 1.510 ms 1.699 ms 2.216 ms
 5 134.87.30.240 (134.87.30.240) 30.301 ms 30.958 ms 26.017 ms
 6 ra2wh-ge4-2-1.vc.bigpipeinc.com.87.251.64.in-addr.arpa (64.251.87.209) 23.337 ms 2
0.016 ms 21.000 ms
 7 rc1st-tge0-0-0-1.vc.shawcable.net (66.163.68.221) 25.088 ms 26.657 ms 29.516 ms
 8 rc3no-be11.cg.shawcable.net (66.163.72.69) 40.881 ms 43.981 ms 40.636 ms
 9 66.163.75.66 (66.163.75.66) 199.639 ms 85.755 ms 85.898 ms
10 xe-0-0-0-21.r05.chcgil09.us.bb.gin.ntt.net (129.250.197.5) 89.868 ms
   xe-0-4-0-11.r05.chcgil09.us.bb.gin.ntt.net (128.242.180.41) 95.805 ms 88.690 ms
11 ae-6.r21.chcgil09.us.bb.gin.ntt.net (129.250.2.26) 83.229 ms 78.159 ms 77.939 ms
12 ae-1.r23.asbnva02.us.bb.gin.ntt.net (129.250.2.138) 113.511 ms 123.289 ms 111.233
ms
13 ae-0.r22.asbnva02.us.bb.gin.ntt.net (129.250.3.84) 115.178 ms 115.467 ms 111.541
ms
14 ae-4.r20.frnkge04.de.bb.gin.ntt.net (129.250.3.21) 193.329 ms 202.225 ms 200.709
ms
15 ae-2.r02.frnkge04.de.bb.gin.ntt.net (129.250.3.94) 192.024 ms 181.175 ms 188.409
ms
16 212.119.15.86 (212.119.15.86) 207.340 ms 195.633 ms 190.041 ms
17 * * *
18 82.150.226.212 (82.150.226.212) 192.196 ms 176.974 ms 222.784 ms
19 * * *
20 * 82.150.226.212 (82.150.226.212) 174.703 ms !H 184.624 ms !H

```

This is the screenshot of my terminal on my laptop when I was tracerouting aircanada.ca at SFU campus. So I guess the 17th host with IP 142.58.254.129 might be the router to which the subnet of SFU network connected. And 142.58.254.130 might be the router to which the network out of SFU campus is connected. When a host wants to send packet inside SFU network it should pass router 142.58.254.129 and when host inside SFU network wants to send packet outside SFU network it should pass router 142.58.254.130. I guess they are two different interfaces of a router.