CMPT371 Project 2 Lab

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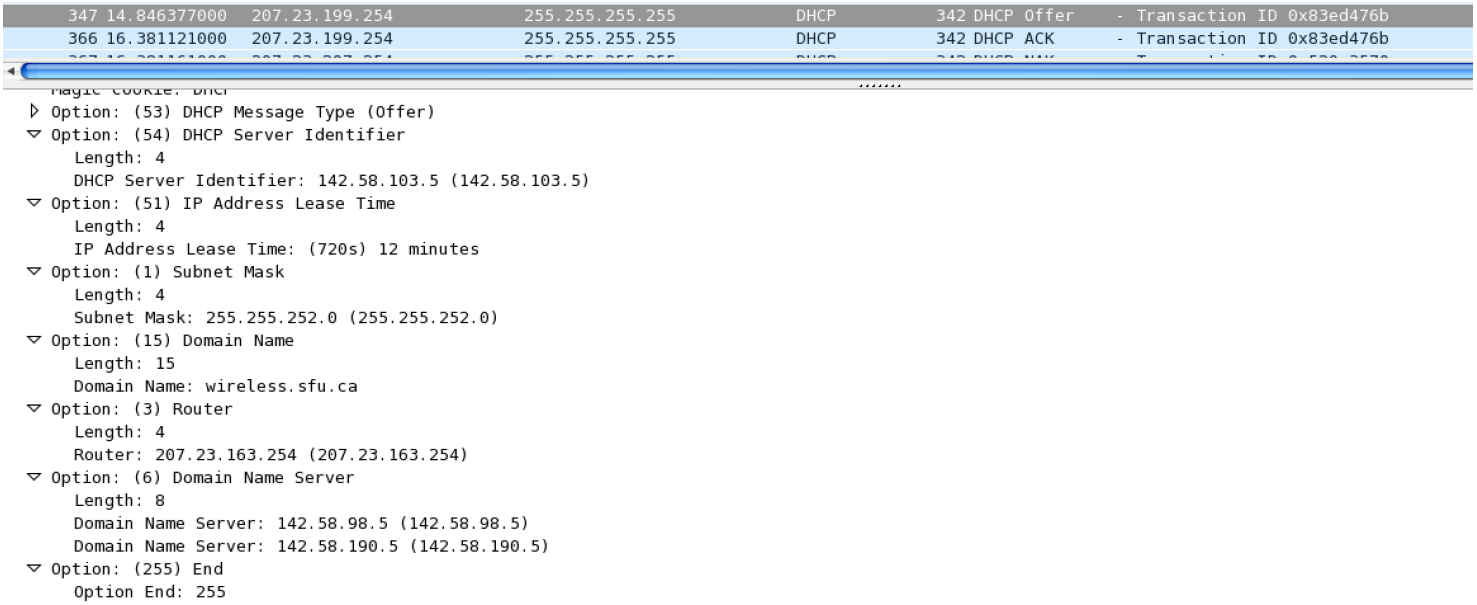
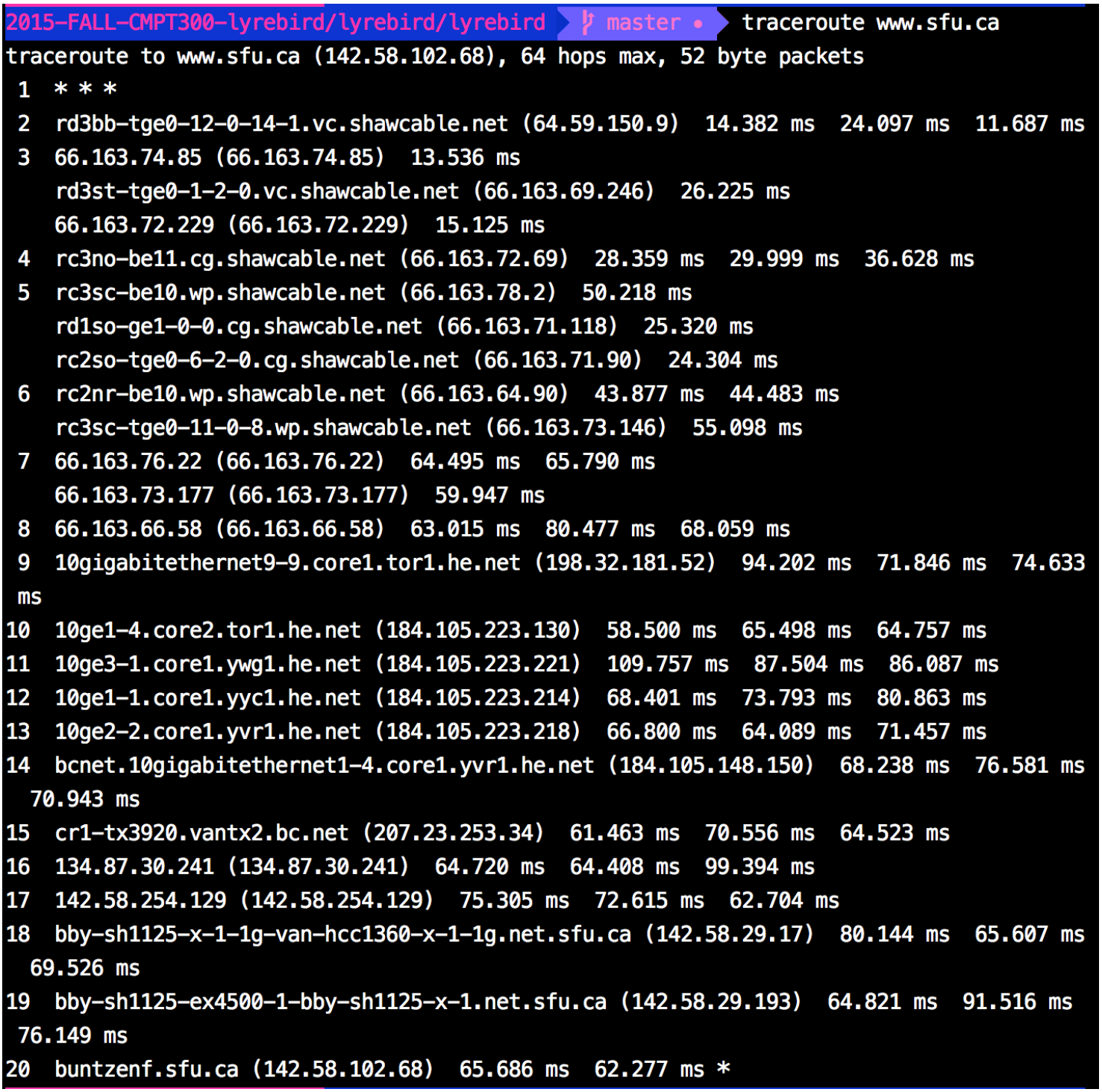
4. (10%) Try to identify the network topology of the SFU campus network. We're not expecting a perfect answer for it; just try your best using the knowledge you've learnt so far. For example, you can Traceroute to different servers and then identify a rendezvous and branches.



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.



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

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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 canmpus is conneted. 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.