

CS 485/ECE 440/CS 585 Fall 2017 Lab 2

Lab 2 is due by 11:59pm on Monday, October 2nd, 2017.

You'll submit a single packet capture (PCAP) as a an attachment in an email to crandall@cs.unm.edu. Failure to follow these instructions will result in a zero on the assignment. Send real email attachments, when you send "SharePoint" or Google Drive links or whatever, I won't click on those links.

Lab 2 is worth 100 points, and it's not really possible to give partial credit because either your network is working properly or it isn't.

You are expected to do your own work. From setting up the VMs to capturing the PCAP, for all phases of this project you should do your own work. Any instance of not doing your own work will be considered cheating. If you're not sure whether something will be considered cheating or not, ask me before you do it. You are encouraged to discuss the assignment with your classmates at a any level of abstraction you like, so long as two things are true: 1) nobody else but you is typing on the keyboard or doing anything to configure your VMs; 2) you're not typing anything or making any changes that you don't understand. As long as those two things are true, feel free to explain to each other how the subnetting is working, look at each other's configurations, share ideas for troubleshooting, or anything to help each other get your networks operating correctly. Exchanging tools, source code that existed before the assignment was assigned, and general thoughts about approaches to specific problems is okay. As a reminder of the course policy, if you cheat on any assignment in this class including this assignment (cheating includes, but is not limited to, representing somebody else's work as your own or having someone else do the assignment for you) you will receive an F in the class. If you want to share source code written for the assignment with a classmate, you should get my permission first and share it with the whole class.

Lab 2 is very simple, you'll configure your five virtual machines into a local network following some instructions that will be provided separately. Then you'll create a PCAP at your middle router to prove that the machines on the end can talk to each other. Even though it may be possible to create such a PCAP without following all of the instruction, please do follow all of the instructions to make sure your virtual machines are ready for Lab 3 and beyond.

As a reminder, my machines in the Student 2 example are connected in this way:

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groucho----harpo----chico----zeppo----gummo
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To create a PCAP to prove that my network works and turn it in, I would start by using tshark to capture packets on either of chico's interfaces (doesn't matter which one). Then I would log into gummo, and then from gummo I would ssh into groucho, type one simple command (like 'ls') and then log out. Then I would stop the packet capture on chico and use scp or sftp to get it off of chico. Then simply confirm that the PCAP is less than 1MB (it should be much less) and has the entire SSH connection (including three-way handshake and FINs at the end) between gummo and groucho, and submit the PCAP. You'll do the same for Lab 2, but you machines will simply have different names. Be sure you don't use any IP addresses that don't belong to you, I'll send out an email about student numbers and which /24s belong to you.