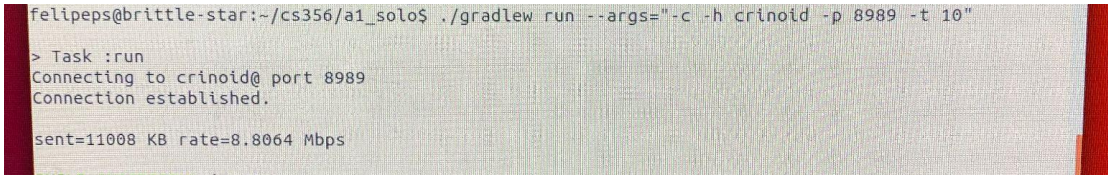
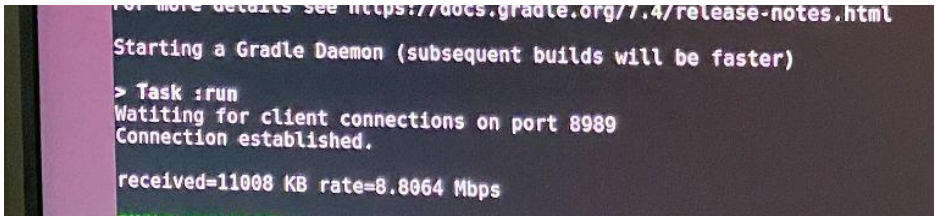
Assignment 1

Part 1 - iperfer on Wired Environment

Client:



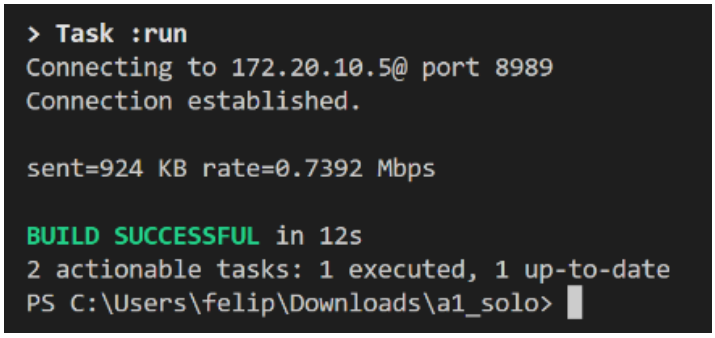
Server:



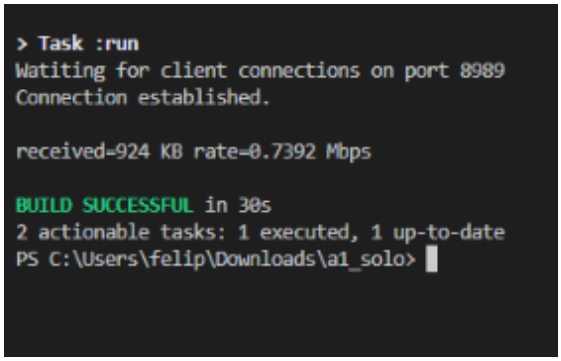
Part 1 - iperfer on Wireless Environment

I would think that the wired connection is way faster than the wireless given that the machines communicate with each other through a physical connection and not by frequencies in the air. I would think that the wired connection is more reliable, easier to code/decode, less “crowded” and therefore faster.

Client:



Server:



The wireless connection was definitely lower throughput than the wired connection, meaning that my prediction was accurate.

Part 3 - Q2

What is the expected latency and throughput of the path between the hosts?
I would assume that the le=atency and throughput of the connection would be slower, but not by much, since there is no other traffic on the net at the same time.
h1 - h4 avg RTT: 140.493
h1 - h4 throughput: sent=30624 KB rate=8.1664 Mbps

The latency is significantly bigger than just one link between switches. However the throughput is not that different.

Part 3 - Q3

What is the expected latency and throughput when two pairs of hosts are communicating simultaneously? Three pairs?
I would assume that the throughput decreases a lot while doing two pairs at the same time and even more with three pairs. Also I would think that the latency does not change much since the amount of switches it goes through is the same as before.

Two pairs avr RTT:
h1 - h4: 140.507
h7 - h9 :140.292

Two pairs throughput:
h1 - h4: sent=30386 KB rate=8.102933 Mbp
h7 - h9: sent=31945 KB rate=8.518666 Mbp

Three pairs avr RTT:
h1 - h4: 140.265
h7 - h9 : 140.482
h8 - h 10: 140.522

Three pairs throughput:
h1 - h4: sent=31446 KB rate=8.3856 Mbp
h7 - h9: sent=27678 KB rate=7.3808 Mbp
h8 - h10: sent=23222 KB rate=6.1925335 Mbps

As we can see, the throughput decreased a lot, especially with three pairs of hosts trying to communicate. However, we see that latency does not change much between one, two, or three pairs.

Part 4 - Q4

What is the expected latency and throughput for each pair?
I would assume that the latency of h1 to h4 stays pretty similar to what we have seen before, but the latency of h5 to h6 should be lower since they are “closer.” Also I would assume that the throughput is not affected by this scenario.

h1 - h4 throughput: received=30388 KB rate=8.103467 Mbps
h5 - h6 throughput: received=34896 KB rate=9.3056 Mbps

h1 - h4 avg RTT: 140.379
h5 - h6 avg RTT: 80.572

As we can see, there is a difference in latency between the two connections but they are very reasonable to what we have seen before. As for the throughout, we can see the difference in the connections but we do not see much difference with the links alones in question 1.