**CMPE 150** 

```
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 h4
h2 -> h1 h3 h4
h3 -> h1 h2 h4
h4 -> h1 h2 h3
*** Results: 0% dropped (12/12 received)
mininet> dump
<Host h1: h1-eth0:10.0.0.1 pid=4872>
<Host h2: h2-eth0:10.0.0.2 pid=4876>
<Host h3: h3-eth0:10.0.0.3 pid=4878>
<Host h4: h4-eth0:10.0.0.4 pid=4880>
<OVSSwitch s1: lo:127.0.0.1,s1-eth1:None,s1-eth2:None,s1-eth3:None pid=4885>
<OVSSwitch s2: lo:127.0.0.1,s2-eth1:None,s2-eth2:None,s2-eth3:None pid=4888>
<Controller c0: 127.0.0.1:6633 pid=4865>
mininet>
```

1. The pingall command shows that there is a valid connection between the 4 different hosts where each host can ping to the other 3 hosts. Out of the 12 pings sent, 12 of them were received meaning there is a stable connection. The dump command shows all the information about the nodes, which produces information about the 4 hosts, the 2 switches, and the controller which is typically outside of the VM. It also shows the IP address for each of the hosts.

```
mininet> iperf
*** Iperf: testing TCP bandwidth between h1 and h4
*** Results: ['30.4 Gbits/sec', '30.5 Gbits/sec']
```

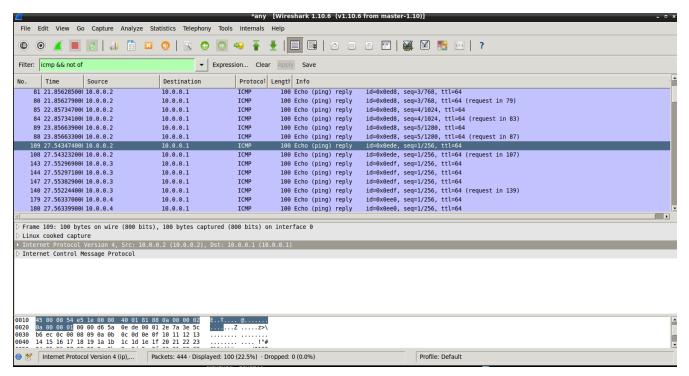
2. Running the iperf command on our given topography gives the bandwidth speed, which is 30.4 Gbits/sec and 30.5 Gbits/sec, respectively.

```
60 25.01806700(06:f8:dc:e9:b3:4a
                                                                       128 of packet in
                                     Broadcast
                                                           OF 1.0
68 25.019060000 06:f8:dc:e9:b3:4a
                                     Broadcast
                                                           OF 1.0
                                                                       128 of packet in
69 25.01907500( le:72:90:a2:f0:63
                                     06:f8:dc:e9:b3:4a
                                                          OF 1.0
                                                                       128 of packet in
78 25.020808000 1 0.0.1
                                     10.0.0.2
                                                          OF 1.0
                                                                       184 of packet in
82 25.02170200(1 ...0.2
                                                          OF 1.0
                                                                       184 of packet in
                                     10.0.0.1
                                                                       128 of packet in
109 30.03805600( le:72:90:a2:f0:63
                                     06:f8:dc:e9:b3:4a
                                                          OF 1.0
114 30.04120000@06:f8:dc:e9:b3:4a
                                     1e:72:90:a2:f0:63
                                                                       128 of packet in
                                                          OF 1.0
```

3. After running the ping command between host1 and host2, we see that we have 7 messages regarding of\_packet\_in.

70 25.01873900( 127.0.0.1	127.0.0.1	0F 1.0	92 of_packet_out
70 25.01958800( 127.0.0.1	127.0.0.1	OF 1.0	92 of packet out

4. You'll notice that the source and destination IP addresses of the packets coming in are relative to the IP addresses of the host1 and host2 which are 10.0.0.1 and 10.0.0.2, and you will also notice that the rest have MAC addresses that match up with source and destination. From this, we have 2 out packets, one from each host, which are host1 and host2 that have the same destination IP address as the source IP address.



5. Out of 444 packets, only 100 were displayed while using the filter. 50 of these packets were replies and 50 were requests. This showed the pingall results along with the h1 ping -c 5 h2 results.