pingall

```
vagrant@ubuntu-focal:~$ sudo python ~/461_mininet/topos/part4.py
Unable to contact the remote controller at 127.0.0.1:6653
mininet> pingall .1
*** Ping: testing ping reachability
h10 -> X X X X
h20 -> X X X X
h30 -> X h20 X X
hnotrust1 -> X X X X
serv1 -> X h20 h30 X
*** Results: 85% dropped (3/20 received)
mininet> pingall .1
*** Ping: testing ping reachability
h10 -> h20 h30 X serv1
h20 -> h10 h30 X serv1
h30 -> h10 h20 X serv1
hnotrust1 -> X X X X
serv1 -> h10 h20 h30 X
*** Results: 40% dropped (12/20 received)
mininet>
```

iperf

```
mininet> iperf hnotrust1 h10
*** Iperf: testing TCP bandwidth between hnotrust1 and h10
*** Results: ['33.6 Gbits/sec', '33.6 Gbits/sec']
mininet> iperf h10 serv1
*** Iperf: testing TCP bandwidth between h10 and serv1
*** Results: ['33.3 Gbits/sec', '33.4 Gbits/sec']
mininet>
```

dpctl dump-flows

```
mininet> dpctl dump-flows
*** cores21 ------------------------------------------------------------
 cookie=0x0, duration=75.726s, table=0, n_packets=29, n_bytes=2842, priority=2,icmp,nw_src=172.16.10.100 actions=drop
 cookie=0x0, duration=75.726s, table=0, n_packets=0, n_bytes=0, priority=2,ip,in_port="cores21-eth5",nw_src=172.16.10.100,nw_dst=10.0.4.10 actions=drop
 cookie=0x0, duration=19.166s, table=0, n_packets=4, n_bytes=392, priority=1,ip,nw_dst=172.16.10.100 actions=mod_dl_dst:00:00:00:00:00:05,output:"cores21-eth5"
 cookie=0x0, duration=19.166s, table=0, n_packets=6, n_bytes=588, priority=1,ip,nw_dst=10.0.3.30 actions=mod_dl_dst:00:00:00:00:00:03,output:"cores21-eth3"
 cookie=0x0, duration=19.165s, table=0, n_packets=6, n_bytes=588, priority=1,ip,nw_dst=10.0.1.10 actions=mod_dl_dst:00:00:00:00:00:01,output:"cores21-eth1"
 cookie=0x0, duration=19.164s, table=0, n_packets=6, n_bytes=588, priority=1,ip,nw_dst=10.0.2.20 actions=mod_dl_dst:00:00:00:00:00:02,output:"cores21-eth2"
 cookie=0x0, duration=18.931s, table=0, n_packets=6, n_bytes=588, priority=1,ip,nw_dst=10.0.4.10 actions=mod_dl_dst:00:00:00:00:00:04,output:"cores21-eth4"
 cookie=0x0, duration=19.166s, table=0, n_packets=0, n_bytes=0, priority=1,icmp,nw_dst=172.16.10.100 actions=mod_dl_dst:00:00:00:00:00:05,output:"cores21-eth5"
 cookie=0x0, duration=19.166s, table=0, n_packets=0, n_bytes=0, priority=1,icmp,nw_dst=10.0.3.30 actions=mod_dl_dst:00:00:00:00:00:03,output:"cores21-eth3"
 cookie=0x0, duration=19.165s, table=0, n_packets=0, n_bytes=0, priority=1,icmp,nw_dst=10.0.1.10 actions=mod_dl_dst:00:00:00:00:00:01,output:"cores21-eth1"
 cookie=0x0, duration=19.164s, table=0, n_packets=0, n_bytes=0, priority=1,icmp,nw_dst=10.0.2.20 actions=mod_dl_dst:00:00:00:00:00:02,output:"cores21-eth2"
 cookie=0x0, duration=18.930s, table=0, n_packets=0, n_bytes=0, priority=1,icmp,nw_dst=10.0.4.10 actions=mod_dl_dst:00:00:00:00:00:04,output:"cores21-eth4"
*** dcs31 ------------------------------------------------------------
 cookie=0x0, duration=75.712s, table=0, n_packets=65, n_bytes=5834, actions=FLOOD
*** s1 ------------------------------------------------------------
 cookie=0x0, duration=75.741s, table=0, n_packets=70, n_bytes=6316, actions=FLOOD
*** s2 ------------------------------------------------------------
 cookie=0x0, duration=75.730s, table=0, n_packets=69, n_bytes=6206, actions=FLOOD
*** s3 ------------------------------------------------------------
 cookie=0x0, duration=75.742s, table=0, n_packets=68, n_bytes=6108, actions=FLOOD
mininet>
```