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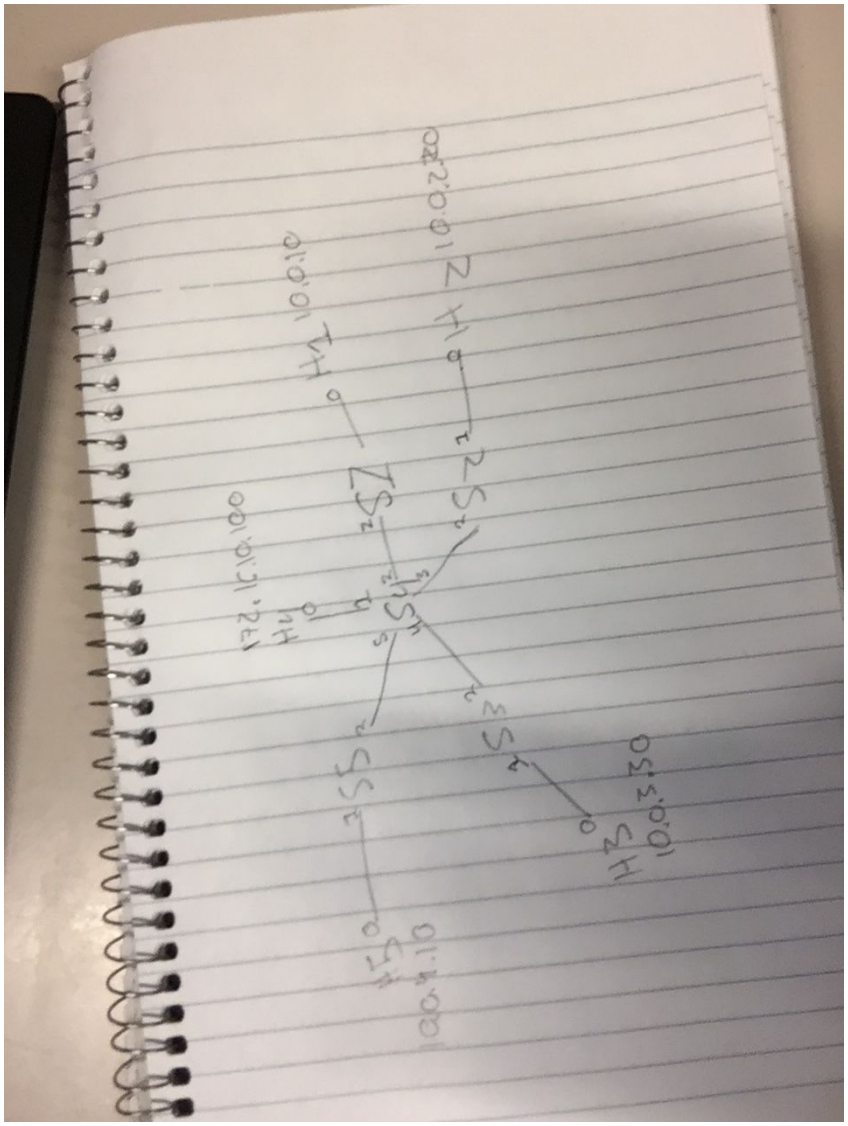
Final-project

Project Report

20 points: Project Report

Explanation:

Drew out the topology with the hosts and corresponding ports. As you can seem command pingall shows what each host can reach to. Took a screenshot of of pings between hosts which should succeed as an example of pings between hosts that should fail. Screen shot of iperf between hosts that should be able to communicate and those that shouldn't. Failed iperf just hangs there. For traffic thats dropped i omit the action and return.



5: Screenshot showing the result of running pingall

```
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 X h5
h2 -> h1 h3 X h5
h3 -> h1 h2 X h5
h4 -> X X X X
h5 -> h1 h2 h3 X
*** Results: 40% dropped (12/20 received)
```

5: Screenshots showing the result of running iperf between two company hosts, between one company host and untrusted host, and between untrusted host and server
Two company hosts:

```
mininet> iperf
*** Iperf: testing TCP bandwidth between h1 and h5
*** Results: ['16.2 Gbits/sec', '16.2 Gbits/sec']
mininet>
```

Company host and untrusted host

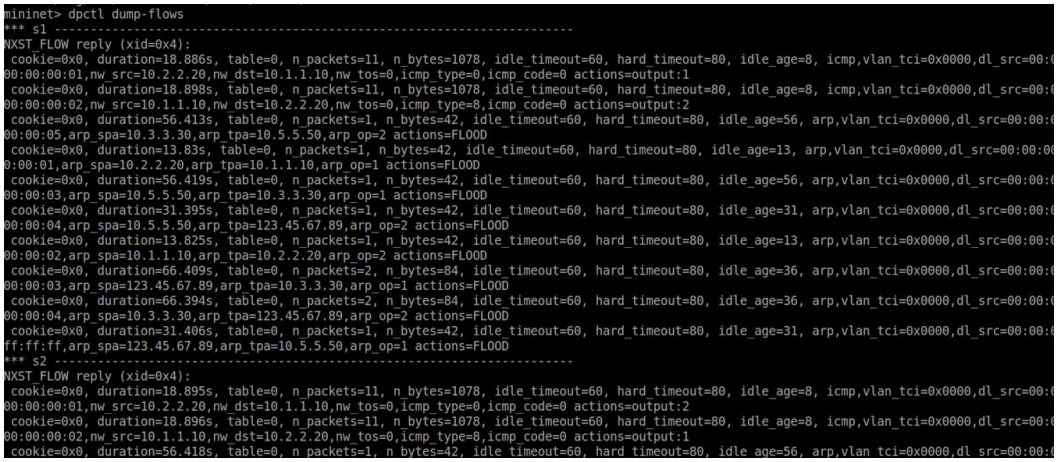
```
mininet> iperf h1 h4
*** Iperf: testing TCP bandwidth between h1 and h4
*** Results: ['20.4 Gbits/sec', '20.5 Gbits/sec']
```

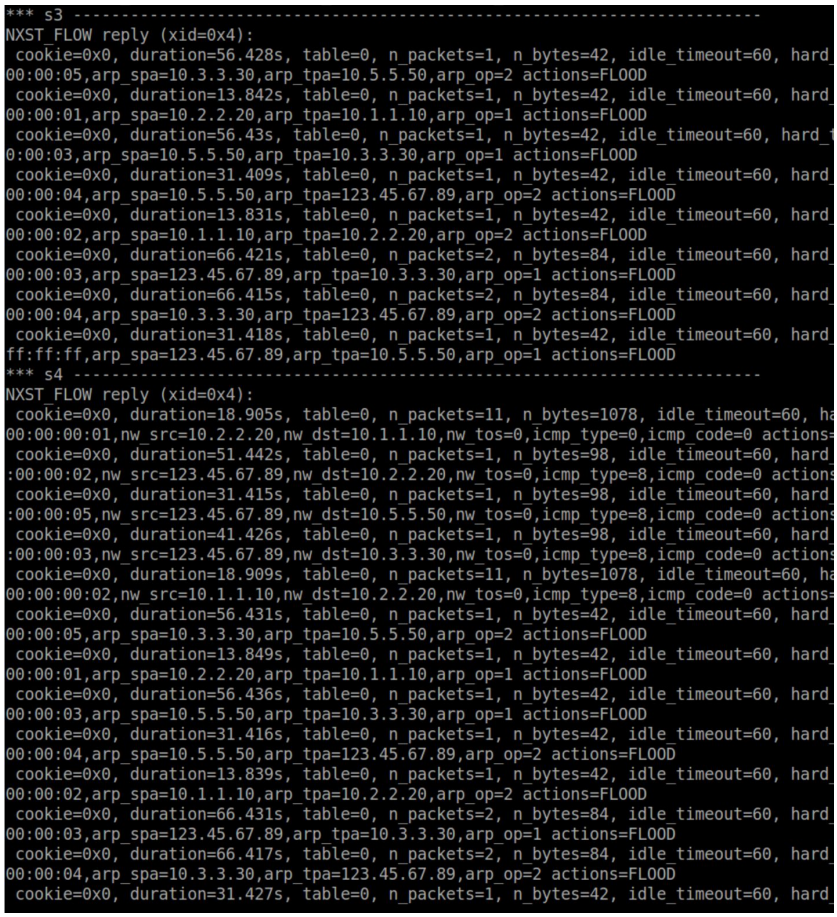
Untrusted host and company server

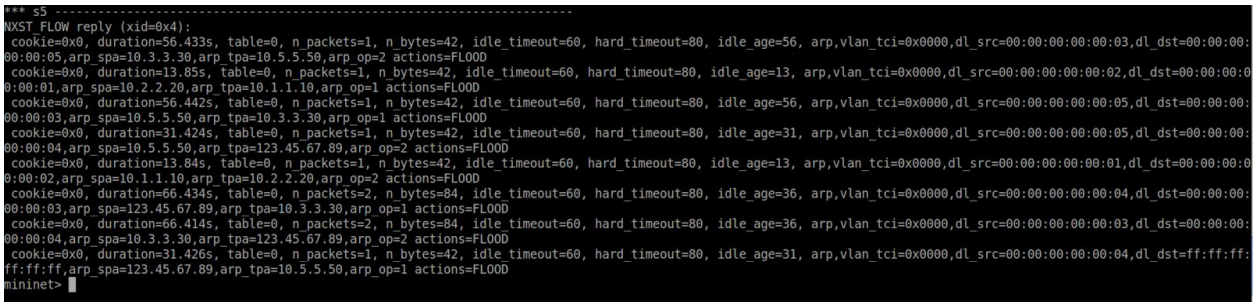
```
mininet> iperf h4 h5
*** Iperf: testing TCP bandwidth between h4 and h5
```

Couldn't compute because of the firewall targeting the untrusted host (h4)

5: Screenshot of running `dpctl dump-flows` after running the above commands






*** s5 ----------
NXST_FLOW reply (xid=0x4):
cookie=0x0, duration=56.433s, table=0, n_packets=1, n_bytes=42, idle_timeout=60, hard_timeout=80, idle_age=56, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:03,dl_dst=00:00:00:00:00:05,arp_spa=10.3.3.30,arp_tpa=10.5.5.50,arp_op=2 actions=FLOOD
cookie=0x0, duration=13.85s, table=0, n_packets=1, n_bytes=42, idle_timeout=60, hard_timeout=80, idle_age=13, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:02,dl_dst=00:00:00:00:01,arp_spa=10.2.2.20,arp_tpa=10.1.1.10,arp_op=1 actions=FLOOD
cookie=0x0, duration=56.442s, table=0, n_packets=1, n_bytes=42, idle_timeout=60, hard_timeout=80, idle_age=56, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:05,dl_dst=00:00:00:00:03,arp_spa=10.5.5.50,arp_tpa=10.3.3.30,arp_op=1 actions=FLOOD
cookie=0x0, duration=31.424s, table=0, n_packets=1, n_bytes=42, idle_timeout=60, hard_timeout=80, idle_age=31, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:05,dl_dst=00:00:00:00:04,arp_spa=10.5.5.50,arp_tpa=123.45.67.89,arp_op=2 actions=FLOOD
cookie=0x0, duration=13.84s, table=0, n_packets=1, n_bytes=42, idle_timeout=60, hard_timeout=80, idle_age=13, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:01,dl_dst=00:00:00:00:02,arp_spa=10.1.1.10,arp_tpa=10.2.2.20,arp_op=2 actions=FLOOD
cookie=0x0, duration=66.434s, table=0, n_packets=2, n_bytes=84, idle_timeout=60, hard_timeout=80, idle_age=36, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:04,dl_dst=00:00:00:00:03,arp_spa=123.45.67.89,arp_tpa=10.3.3.30,arp_op=1 actions=FLOOD
cookie=0x0, duration=66.414s, table=0, n_packets=2, n_bytes=84, idle_timeout=60, hard_timeout=80, idle_age=36, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:03,dl_dst=00:00:00:00:04,arp_spa=10.3.3.30,arp_tpa=123.45.67.89,arp_op=2 actions=FLOOD
cookie=0x0, duration=31.426s, table=0, n_packets=1, n_bytes=42, idle_timeout=60, hard_timeout=80, idle_age=31, arp,vlan_tci=0x0000,dl_src=00:00:00:00:00:04,dl_dst=ff:ff:ff:ff:ff:ff,arp_spa=123.45.67.89,arp_tpa=10.5.5.50,arp_op=1 actions=FLOOD
mininet>