

CS607 : Advanced Computer Networks

Assignment 3 – Software Defined Networking

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# 1 Part 1

```
Mininet-VM [Running]
mininet@mininet-vm:~$ ls
mininet oflops oftest openflow pox project-1 project-1.zip
mininet@mininet-vm:~$ sudo python pro
procan      project-1/      project-1.zip  prove
mininet@mininet-vm:~$ sudo python project-1/topos/part1.py
mininet> iperf h1 h4
*** Iperf: testing TCP bandwidth between h1 and h4
*** Results: ['18.3 Gbits/sec', '18.4 Gbits/sec']
mininet> dump
<Host h1: h1-eth0:10.0.0.1 pid=1170>
<Host h2: h2-eth0:10.0.0.2 pid=1174>
<Host h3: h3-eth0:10.0.0.3 pid=1176>
<Host h4: h4-eth0:10.0.0.4 pid=1178>
<OVSSwitch s1: lo:127.0.0.1,s1-eth1:None,s1-eth2:None,s1-eth3:None,s1-eth4:None pid=1183>
<Controller c0: 127.0.0.1:6653 pid=1163>
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>
```

## 2 Part 2

```
Mininet-VM [Running]
mininet@mininet-vm:~$ ln -s ~/project-1/pox/* ~/pox/pox/misc/
mininet@mininet-vm:~$ sudo ~/pox/pox.py misc.alpart2controller & sudo python ~/project-1/topos/part2
.py
[3] 1859
Unable to contact the remote controller at 127.0.0.1:6653
POX 0.7.0 (gar) / Copyright 2011-2020 James McCauley, et al.
WARNING:version:Support for Python 3 is experimental.
INFO:core:POX 0.7.0 (gar) is up.
ERROR:openflow.of_01:Error 98 while binding 0.0.0.0:6633: Address already in use
ERROR:openflow.of_01: You may have another controller running.
ERROR:openflow.of_01: Use openflow.of_01 --port=<port> to run POX on another port.
INFO:openflow.of_01:[00-00-00-00-00-01 4] connected
mininet> pingall
*** Ping: testing ping reachability
h1 -> X X h4
h2 -> X h3 X
h3 -> X h2 X
h4 -> h1 X X
*** Results: 66% dropped (4/12 received)
mininet> iperf h1 h4
*** Iperf: testing TCP bandwidth between h1 and h4
^C
Interrupt
mininet> dpctl dump-flows
*** s1 -----
cookie=0x0, duration=63.543s, table=0, n_packets=8, n_bytes=784, priority=10,icmp actions=FLOOD
cookie=0x0, duration=63.542s, table=0, n_packets=10, n_bytes=420, priority=9,arp actions=FLOOD
cookie=0x0, duration=63.541s, table=0, n_packets=4, n_bytes=296, priority=0 actions=drop
mininet> _
```