

Lab2

1.

```
kirp@kirp-VirtualBox:~/Desktop/lab2/mininet/custom$ sudo python hw1.py
[sudo] password for kirp:
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4 h5 h6
*** Adding switches:
s1 s2 s3
*** Adding links:
(h1, s3) (h2, s1) (h4, s1) (h6, s2) (10.00Mbit 0.00000% loss) (10.00Mbit 0.0000
0% loss) (s1, s2) (10.00Mbit 0.00000% loss) (10.00Mbit 0.00000% loss) (s1, s3)
(s2, h5) (s3, h3)
*** Configuring hosts
h1 (cfs -1/100000us) h2 (cfs -1/100000us) h3 (cfs -1/100000us) h4 (cfs -1/10000
0us) h5 (cfs -1/100000us) h6 (cfs -1/100000us)
*** Starting controller
c0
*** Starting 3 switches
s1 s2 s3 ... (10.00Mbit 0.00000% loss) (10.00Mbit 0.00000% loss) (10.00Mbit 0.00
000% loss) (10.00Mbit 0.00000% loss)
*** Iperf: testing TCP bandwidth between h1 and h2
*** Results: ['9.57 Mbits/sec', '9.83 Mbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h3
*** Results: ['23.1 Gbits/sec', '23.1 Gbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h4
*** Results: ['9.57 Mbits/sec', '9.75 Mbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h5
*** Results: ['9.55 Mbits/sec', '9.65 Mbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h6
*** Results: ['9.58 Mbits/sec', '10.1 Mbits/sec']
*** Stopping 1 controllers
c0
*** Stopping 8 links
.....
```

2.

```
kirp@kirp-VirtualBox:~/Desktop/lab2/mininet/custom$ sudo python hw2.py
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4 h5 h6
*** Adding switches:
s1 s2 s3
*** Adding links:
(h1, s3) (h2, s1) (h4, s1) (h6, s2) (10.00000% loss) (10.00000% loss) (s1, s2)
(10.00000% loss) (10.00000% loss) (s1, s3) (s2, h5) (s3, h3)
*** Configuring hosts
h1 (cfs -1/100000us) h2 (cfs -1/100000us) h3 (cfs -1/100000us) h4 (cfs -1/10000
0us) h5 (cfs -1/100000us) h6 (cfs -1/100000us)
*** Starting controller
c0
*** Starting 3 switches
s1 s2 s3 ... (10.00000% loss) (10.00000% loss) (10.00000% loss) (10.00000% loss)

*** Iperf: testing TCP bandwidth between h1 and h2
*** Results: ['5.16 Mbits/sec', '5.82 Mbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h3
*** Results: ['22.1 Gbits/sec', '22.1 Gbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h4
*** Results: ['6.06 Mbits/sec', '7.04 Mbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h5
*** Results: ['246 Kbits/sec', '566 Kbits/sec']
*** Iperf: testing TCP bandwidth between h1 and h6
*** Results: ['82.1 Kbits/sec', '415 Kbits/sec']
*** Stopping 1 controllers
c0
*** Stopping 8 links
```

3. If we connect s2 and s3, h1 will fail to ping other hosts.

```
Activities Terminal 六 15:39 kirp@kirp-VirtualBox: ~/Desktop/lab2/mininet/custom
File Edit View Search Terminal Help
*** Done
kirp@kirp-VirtualBox:~/Desktop/lab2/mininet/custom$ sudo python hw3.py
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4 h5 h6
*** Adding switches:
s1 s2 s3
*** Adding links:
(h1, s3) (h2, s1) (h4, s1) (h6, s2) (s1, s2) (s1, s3) (s2, h5) (s3, h3) (s3, s2)
*** Configuring hosts
h1 h2 h3 h4 h5 h6
*** Starting controller
c0
*** Starting 3 switches
s1 s2 s3 ...
*** Starting CLI:
mininet> pingall
*** Ping: testing ping reachability
h1 -> X X X X X
h2 -> X X X X X
h3 -> X X X X X
h4 -> X X X X X
h5 -> X X X X X
h6 -> X X X X X
*** Results: 100% dropped (0/30 received)
mininet>
```

I break the loop by cutting the flow between s1 and s2.

```
Activities Terminal 六 15:46 kirp@kirp-VirtualBox: ~/Desktop/lab2/mininet/custom
File Edit View Search Terminal Help
h1 -> X X X X X
h2 -> X X X X X
h3 -> X X X X X
h4 -> X X X X X
h5 -> X X X X X
h6 -> X X X X X
*** Results: 100% dropped (0/30 received)
mininet> source hw3.sh
*** s1 -----
ovs-ofctl: unknown command 'del-overflows'; use --help for help
*** s2 -----
ovs-ofctl: unknown command 'del-overflows'; use --help for help
*** s3 -----
ovs-ofctl: unknown command 'del-overflows'; use --help for help
mininet> source hw3.sh
*** s1 -----
*** s2 -----
*** s3 -----
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 h4 h5 h6
h2 -> h1 h3 h4 h5 h6
h3 -> h1 h2 h4 h5 h6
h4 -> h1 h2 h3 h5 h6
h5 -> h1 h2 h3 h4 h6
h6 -> h1 h2 h3 h4 h5
*** Results: 0% dropped (30/30 received)
mininet>
```