Edbel Basaldua
CE150
March 4th 2018
Lab3

Lab 3: Simple Firewall using OpenFlow

1. **Pingall command**

```
mininet@mininet-vm:~$ sudo python ~/lab3.py
mininet> pingall
*** Ping: testing ping reachability
h1 -> X X X
h2 -> X X X
h3 -> X X X
h4 -> X X X
*** Results: 100% dropped (0/12 received)
mininet>
```

After setting up the controller and the topology I ran the pingall command. After entering and watching the output it was clear that this command had failed. This was to be expected since our firewall was set up to only allow the passage of ARP and TCP packets. The pingall command elicits the sending of ICMP packets, which by the rules in our firewall is not allowed therefore they are dropped. Hence why the output for the command gives us the result that all 12 packets were dropped.

2. **dpctl dump—flows command**

Note: I know the output for this is incorrect and it is either due to a short time out/ poor timeout choice or not properly installing the rules onto the switch. I believe it is the latter.

```
mininet> dpctl dump-flows
*** s1 ------------------------------------------------------------------------
NXST_FLOW reply (xid=0x4):
mininet>
```

Essentially the idea is that if there are entries within the flow table the dump command will output some of those entries based on the respective timeout. Ie. If its empty then nothing will be dumped and if there is x amount of entries then those x amounts will be dumped. This incorrect output should have shown a few more entries.

3. **Iperf command**

Note: The output of this command is incorrect I know that it should succeed I believe this error is due to improperly setting the out port and rules for the switch. I feel like my logic is correct it just a matter of the syntax error which may be giving me the wrong output.

```
mininet> iperf
*** Iperf: testing TCP bandwidth between h1 and h4
no route to 10.0.1.40:
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
10.0.1.0        *               255.255.255.0   U     0      0        0 h1-eth
Traceback (most recent call last):
  File "/home/mininet/lab3.py", line 34, in <module>
    configure()
  File "/home/mininet/lab3.py", line 28, in configure
    CLI(net)
  File "build/bdist.linux-i686/egg/mininet/cli.py", line 68, in __init__
  File "build/bdist.linux-i686/egg/mininet/cli.py", line 101, in run
  File "/usr/lib/python2.7/cmd.py", line 142, in cmdloop
    stop = self.onecmd(line)
  File "/usr/lib/python2.7/cmd.py", line 221, in onecmd
    return func(arg)
  File "build/bdist.linux-i686/egg/mininet/cli.py", line 216, in do_iperf
  File "build/bdist.linux-i686/egg/mininet/net.py", line 764, in iperf
Exception: Could not connect to iperf on port 5001
```

This command should succeed because the TCP packets are accepted by the rules that were to be placed onto the switch.