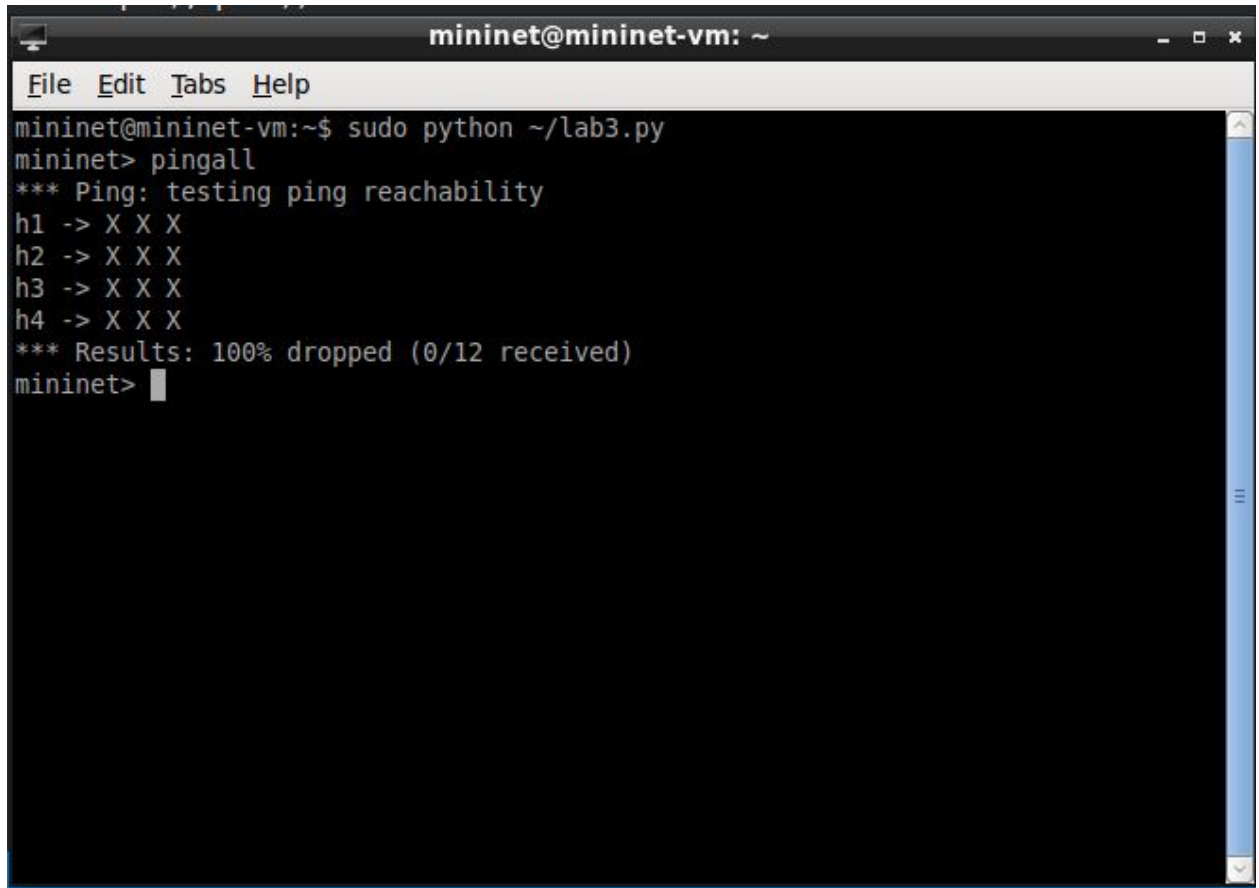


Lab3

1)

A screenshot of a terminal window titled "mininet@mininet-vm: ~". The window has a menu bar with "File", "Edit", "Tabs", and "Help". The terminal shows the following text:

```
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> 
```

- This code shows all 100% of the packets were dropped and 0/12 were received. Meaning whenever the firewall came across an ICMP packet or packet that was NOT of type "arp" or "tcp and ipv4" then the packets would be dropped. When I ran the code "pingall" it took over 2 minutes to test for all 4 hosts which is natural because of all the packets being dropped and the flooding.

2)

```
*** 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> pingall
*** Ping: testing ping reachability
h1 -> X X X
h2 -> X ^C
Interrupt
mininet> dcctl dump-flows
*** Unknown command: dcctl dump-flows
mininet> dpctl dump-flows
*** s1 -----
NXST_FLOW reply (xid=0x4):
  cookie=0x0, duration=5.59s, table=0, n_packets=3, n_bytes=126, idle_timeout=10,
  hard_timeout=30, idle_age=3, priority=65535,arp,in_port=2,vlan_tci=0x0000,dl_sr
c=00:00:00:00:00:02,dl_dst=00:00:00:00:00:03,arp_spa=10.0.1.20,arp_tpa=10.0.1.30
,arp_op=1 actions=drop
mininet> █
```

- The “dpctl dump-flows” command was called after interrupting the pingall test and once I called dump-flows, it returned to me all the entries that were not timed out.

3)

```
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-eth0
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
mininet@mininet-vm:~$
```

- I ran iperf but the terminal said it was not able to connect to port 5001 and failed. I believe the reason it failed was because my code was not good enough and I wasn't able to find the right way to connect the iperf to port 5001.