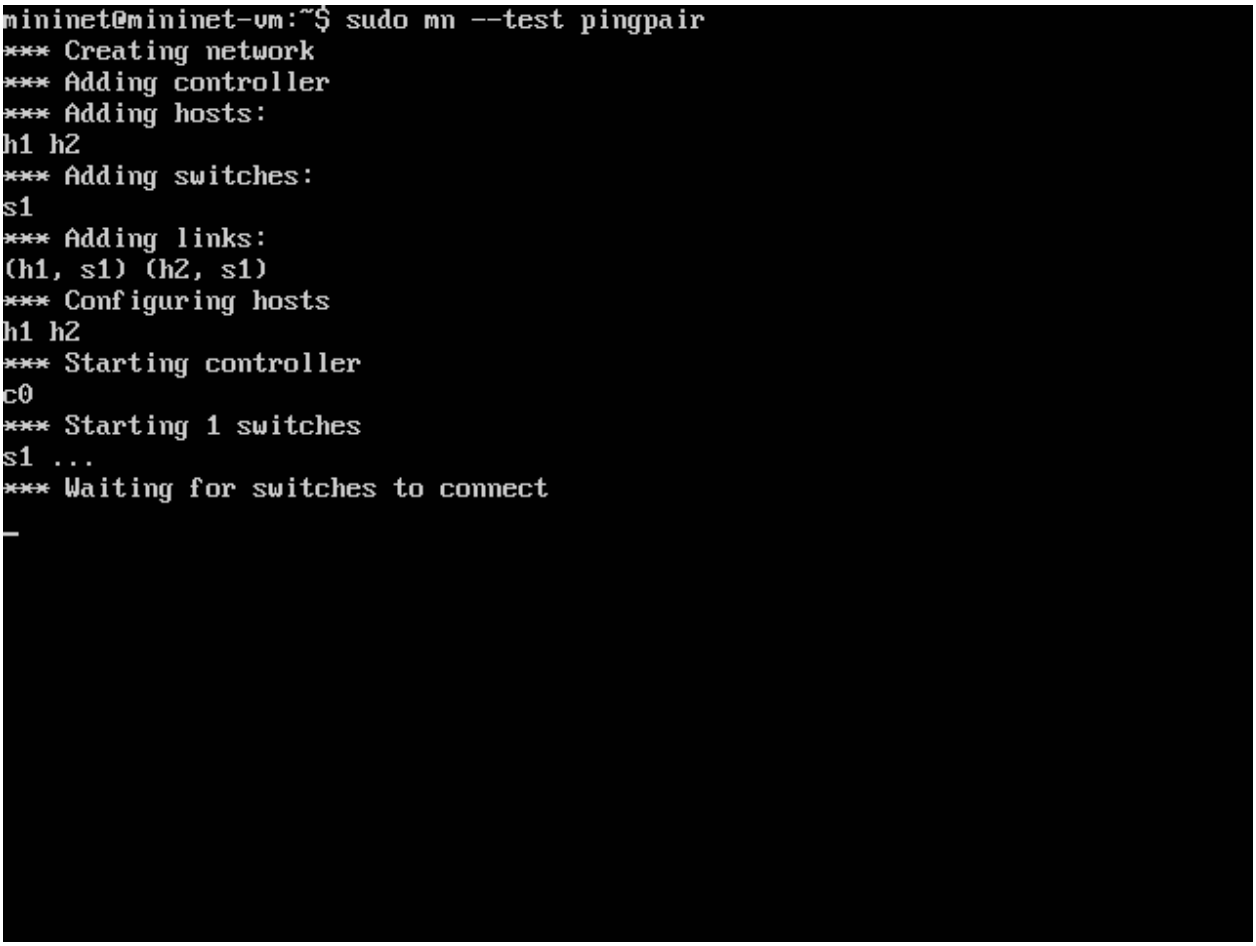
MININET WALKTHROUGH

$ sudo mn –test pingpair



$ sudo mn –test iperf

```
mininet@mininet-vm:~$ sudo mn --test iperf
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Waiting for switches to connect
s1
*** Iperf: testing TCP bandwidth between h1 and h2
.*** Results: ['18.4 Gbits/sec', '18.4 Gbits/sec']
*** Stopping 1 controllers
c0
*** Stopping 2 links
..
*** Stopping 1 switches
s1
*** Stopping 2 hosts
h1 h2
*** Done
completed in 11.049 seconds
mininet@mininet-vm:~$
```

$ sudo mn –link tc,bw=10,delay=10ms

```
mininet@mininet-vm:~$ sudo mn --link tc,bw=10,delay=10ms
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(10.00Mbit 10ms delay) (10.00Mbit 10ms delay) (h1, s1) (10.00Mbit 10ms delay) (1
0.00Mbit 10ms delay) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 1 switches
s1 ...(10.00Mbit 10ms delay) (10.00Mbit 10ms delay)
*** Starting CLI:
mininet> h1 ping -c10 h2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=85.7 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=41.5 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=41.6 ms
64 bytes from 10.0.0.2: icmp_seq=4 ttl=64 time=41.6 ms
64 bytes from 10.0.0.2: icmp_seq=5 ttl=64 time=41.3 ms
64 bytes from 10.0.0.2: icmp_seq=6 ttl=64 time=41.0 ms
```

$ sudo mn –test pingall –topo single, 3

```
mininet@mininet-vm:~$ sudo mn --test pingall --topo single,3
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1) (h3, s1)
*** Configuring hosts
h1 h2 h3
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Waiting for switches to connect
```

```
*** Adding hosts:
h1 h2 h3
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1) (h3, s1)
*** Configuring hosts
h1 h2 h3
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Waiting for switches to connect
s1
*** Ping: testing ping reachability
h1 -> h2 h3
h2 -> h1 h3
h3 -> h1 h2
*** Results: 0% dropped (6/6 received)
*** Stopping 1 controllers
c0
*** Stopping 3 links
...
*** Stopping 1 switches
s1
*** Stopping 3 hosts
h1 h2 h3
*** Done
completed in 5.519 seconds
mininet@mininet-vm:~$
```

$ sudo mn –test pingall –topo mytopo –custom ~/mininet/custom/topo-2sw-2host.py

```
mininet@mininet-vm:~$ sudo mn --test pingall --topo mytopo --custom ~/mininet/cu
stom/topo-2sw-2host.py
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s3 s4
*** Adding links:
(h1, s3) (s3, s4) (s4, h2)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 2 switches
s3 s4 ...
*** Waiting for switches to connect
_
```

```
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s3 s4
*** Adding links:
(h1, s3) (s3, s4) (s4, h2)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 2 switches
s3 s4 ...
*** Waiting for switches to connect
s3 s4
*** Ping: testing ping reachability
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
*** Stopping 1 controllers
c0
*** Stopping 3 links
...
*** Stopping 2 switches
s3 s4
*** Stopping 2 hosts
h1 h2
*** Done
completed in 5.698 seconds
mininet@mininet-vm:~$
```

$ sudo mn –mac

```
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
*** Stopping 1 controllers
c0
*** Stopping 3 links
...
*** Stopping 2 switches
s3 s4
*** Stopping 2 hosts
h1 h2
*** Done
completed in 5.698 seconds
mininet@mininet-vm:~$ sudo mn --mac
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Starting CLI:
mininet>
```

mininet>h1 ping –c10 h2
mininet>pingall
mininet>h1 python –m SimpleHTTPServer 80 &

```
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Starting CLI:
mininet> h1 ping -c10 h2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=2.63 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=0.908 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=0.077 ms
64 bytes from 10.0.0.2: icmp_seq=4 ttl=64 time=0.078 ms
64 bytes from 10.0.0.2: icmp_seq=5 ttl=64 time=0.082 ms
64 bytes from 10.0.0.2: icmp_seq=6 ttl=64 time=0.082 ms
64 bytes from 10.0.0.2: icmp_seq=7 ttl=64 time=0.687 ms
64 bytes from 10.0.0.2: icmp_seq=8 ttl=64 time=0.083 ms
64 bytes from 10.0.0.2: icmp_seq=9 ttl=64 time=0.082 ms
64 bytes from 10.0.0.2: icmp_seq=10 ttl=64 time=0.081 ms

--- 10.0.0.2 ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9003ms
rtt min/avg/max/mdev = 0.077/0.479/2.639/0.775 ms
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
mininet> h1 python -m SimpleHTTPServer 80 &
mininet> _
```

mininet>h2 wget –O – h1

```
mininet@mininet-vm:~$ sudo mn --mac
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Starting CLI:
mininet> h1 python -m SimpleHTTPServer 80 &
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2
h2 -> h1
*** Results: 0% dropped (2/2 received)
mininet> iperf
*** Iperf: testing TCP bandwidth between h1 and h2
*** Results: ['19.5 Gbits/sec', '19.5 Gbits/sec']
mininet> h2 wget -O - h1
```

```
<body>
<h2>Directory listing for /</h2>
<hr>
<ul>
<li><a href=".bash_history">.bash_history</a>
<li><a href=".bash_logout">.bash_logout</a>
<li><a href=".bashrc">.bashrc</a>
<li><a href=".cache/">.cache/</a>
<li><a href=".gitconfig">.gitconfig</a>
<li><a href=".mininet_history">.mininet_history</a>
<li><a href=".profile">.profile</a>
<li><a href=".rnd">.rnd</a>
<li><a href=".wireshark/">.wireshark/</a>
<li><a href="install-mininet-vm.sh">install-mininet-vm.sh</a>
<li><a href="loxigen/">loxigen/</a>
<li><a href="MiniNAM/">MiniNAM/</a>
<li><a href="mininet/">mininet/</a>
<li><a href="oflops/">oflops/</a>
<li><a href="oftest/">oftest/</a>
<li><a href="openflow/">openflow/</a>
<li><a href="pox/">pox/</a>
</ul>
<hr>
</body>
</html>
100%[======================================>] 838         --.-K/s   in 0s

2018-04-09 00:00:42 (84.1 MB/s) - written to stdout [838/838]

mininet>
```

mininet>iperf
mininet>link s1 h1 down
mininet>link s1 h1 up

```
<li><a href=".bash_logout">.bash_logout</a>
<li><a href=".bashrc">.bashrc</a>
<li><a href=".cache/">.cache/</a>
<li><a href=".gitconfig">.gitconfig</a>
<li><a href=".mininet_history">.mininet_history</a>
<li><a href=".profile">.profile</a>
<li><a href=".rnd">.rnd</a>
<li><a href=".wireshark/">.wireshark/</a>
<li><a href="install-mininet-vm.sh">install-mininet-vm.sh</a>
<li><a href="loxigen/">loxigen/</a>
<li><a href="MiniNAM/">MiniNAM/</a>
<li><a href="mininet/">mininet/</a>
<li><a href="oflops/">oflops/</a>
<li><a href="oftest/">oftest/</a>
<li><a href="openflow/">openflow/</a>
<li><a href="pox/">pox/</a>
</ul>
<hr>
</body>
</html>
100%[======================================>] 838         --.-K/s   in 0s

2018-04-09 00:00:42 (84.1 MB/s) - written to stdout [838/838]

mininet> iperf
*** Iperf: testing TCP bandwidth between h1 and h2
*** Results: ['18.8 Gbits/sec', '18.8 Gbits/sec']
mininet> link s1 h1 down
mininet> link s1 h1 up
mininet>
```

$ sudo ~/mininet/examples/sshd.py
mininet>h1 ping h3

```
mininet@mininet-vm:~$ sudo ~/mininet/examples/sshd.py
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4
*** Adding switches:
s1
*** Adding links:
(s1, h1) (s1, h2) (s1, h3) (s1, h4)
*** Configuring hosts
h1 h2 h3 h4
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Waiting for ssh daemons to start

*** Hosts are running sshd at the following addresses:

h1 10.0.0.1
h2 10.0.0.2
h3 10.0.0.3
h4 10.0.0.4

*** Type 'exit' or control-D to shut down network
*** Starting CLI:
mininet>
```

```
*** Adding hosts:
h1 h2 h3 h4
*** Adding switches:
s1
*** Adding links:
(s1, h1) (s1, h2) (s1, h3) (s1, h4)
*** Configuring hosts
h1 h2 h3 h4
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Waiting for ssh daemons to start

*** Hosts are running sshd at the following addresses:

h1 10.0.0.1
h2 10.0.0.2
h3 10.0.0.3
h4 10.0.0.4

*** Type 'exit' or control-D to shut down network
*** Starting CLI:
mininet> h1 ping h3
PING 10.0.0.3 (10.0.0.3) 56(84) bytes of data.
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=2.61 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=0.863 ms
64 bytes from 10.0.0.3: icmp_seq=3 ttl=64 time=0.109 ms
64 bytes from 10.0.0.3: icmp_seq=4 ttl=64 time=0.080 ms
```