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GNU nano 4.8 topo.py
from mininet.topo import Topo

class FiveSwitchTopo(Topo):
    def build(self):
        # Create 5 switches
        switches = []
        for i in range(1, 6):
            switch = self.addSwitch('s{}'.format(i))
            switches.append(switch)

        # Create 10 hosts (2 per switch)
        hosts = []
        for i in range(1, 11):
            host = self.addHost('h{}'.format(i))
            hosts.append(host)

        # Attach 2 hosts per switch
        for i in range(5):
            self.addLink(switches[i], hosts[i*2])      # Host 1
            self.addLink(switches[i], hosts[i*2 + 1])  # Host 2

        # Connect switches in a chain (s1-s2-s3-s4-s5)
        for i in range(4):
            self.addLink(switches[i], switches[i + 1])

^G Get Help      ^O Write Out    ^W Where Is    ^K Cut Text    ^J Justify
^X Exit          ^R Read File    ^_ Replace     ^U Paste Text  ^T To Spell
```

```
nkosi-sdnlab@nkosisdnlab-VirtualBox:~$ ryu-manager dynamic_lb.py
loading app dynamic_lb.py
loading app ryu.controller.ofp_handler
instantiating app dynamic_lb.py of DynamicLoadBalancer
instantiating app ryu.controller.ofp_handler of OFPHandler
Switch connected: 4
Switch connected: 5
Switch connected: 3
Switch connected: 2
Switch connected: 1
```

```
nkosi-sdnlab@nkosisdnlab-VirtualBox:~$ sudo mn --custom topo.py --topo fiveswit
chtopo --controller=remote --switch ovsk --mac
*** Creating network
*** Adding controller
Unable to contact the remote controller at 127.0.0.1:6653
Unable to contact the remote controller at 127.0.0.1:6633
Setting remote controller to 127.0.0.1:6653
*** Adding hosts:
h1 h2 h3 h4 h5 h6 h7 h8 h9 h10
*** Adding switches:
s1 s2 s3 s4 s5
*** Adding links:
(s1, h1) (s1, h2) (s1, s2) (s2, h3) (s2, h4) (s2, s3) (s3, h5) (s3, h6) (s3, s4
) (s4, h7) (s4, h8) (s4, s5) (s5, h9) (s5, h10)
*** Configuring hosts
h1 h2 h3 h4 h5 h6 h7 h8 h9 h10
*** Starting controller
c0
*** Starting 5 switches
s1 s2 s3 s4 s5 ...
*** Starting CLI:
mininet>
```

```

mininet> h2 iperf3 -s &
mininet> h1 iperf3 -c 10.0.0.2 -t 30
Connecting to host 10.0.0.2, port 5201
[ 5] local 10.0.0.1 port 36354 connected to 10.0.0.2 port 5201

[ ID] Interval           Transfer     Bitrate      Retr  Cwnd
[ 5]  0.00-1.00    sec   1.27 GBytes   10.9 Gbits/sec    1   5.50 MBytes
[ 5]  1.00-2.00    sec   2.76 GBytes   23.7 Gbits/sec    2   5.50 MBytes
[ 5]  2.00-3.00    sec   2.90 GBytes   24.9 Gbits/sec    2   5.50 MBytes
[ 5]  3.00-4.00    sec   2.84 GBytes   24.4 Gbits/sec    0   5.50 MBytes
[ 5]  4.00-5.00    sec   2.66 GBytes   22.9 Gbits/sec    1   1.38 MBytes
[ 5]  5.00-6.00    sec   2.66 GBytes   22.9 Gbits/sec    1   1.43 MBytes
[ 5]  6.00-7.00    sec   2.01 GBytes   17.2 Gbits/sec    1   4.89 MBytes
[ 5]  7.00-8.00    sec   3.12 GBytes   26.8 Gbits/sec    0   4.89 MBytes
[ 5]  8.00-9.00    sec   3.04 GBytes   26.1 Gbits/sec    1   4.89 MBytes
[ 5]  9.00-10.00   sec   2.68 GBytes   23.0 Gbits/sec    1   5.76 MBytes
[ 5] 10.00-11.00   sec   2.56 GBytes   22.0 Gbits/sec    0   5.46 MBytes
[ 5] 11.00-12.00   sec   3.12 GBytes   26.8 Gbits/sec    1   5.46 MBytes
[ 5] 12.00-13.00   sec   2.72 GBytes   23.2 Gbits/sec    0   5.60 MBytes
[ 5] 13.00-14.00   sec   2.64 GBytes   22.8 Gbits/sec    2   5.60 MBytes
[ 5] 14.00-15.00   sec   2.03 GBytes   17.5 Gbits/sec    6   5.62 MBytes
[ 5] 15.00-16.00   sec   2.24 GBytes   19.2 Gbits/sec    0   5.65 MBytes
[ 5] 16.00-17.00   sec   3.07 GBytes   26.4 Gbits/sec    3   5.67 MBytes
[ 5] 17.00-18.00   sec   3.06 GBytes   26.3 Gbits/sec    1   5.67 MBytes
[ 5] 18.00-19.00   sec   2.57 GBytes   22.1 Gbits/sec    0   5.67 MBytes
[ 5] 19.00-20.00   sec   3.11 GBytes   26.7 Gbits/sec    2   5.67 MBytes
[ 5] 20.00-21.00   sec   2.33 GBytes   20.0 Gbits/sec    8   5.71 MBytes
[ 5] 21.00-22.00   sec   2.47 GBytes   21.2 Gbits/sec    3   5.71 MBytes

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[ 5]  8.00-9.00    sec   3.04 GBytes   26.1 Gbits/sec    1   4.89 MBytes
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[ 5] 10.00-11.00   sec   2.56 GBytes   22.0 Gbits/sec    0   5.46 MBytes
[ 5] 11.00-12.00   sec   3.12 GBytes   26.8 Gbits/sec    1   5.46 MBytes
[ 5] 12.00-13.00   sec   2.72 GBytes   23.2 Gbits/sec    0   5.60 MBytes
[ 5] 13.00-14.00   sec   2.64 GBytes   22.8 Gbits/sec    2   5.60 MBytes
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[ 5] 21.00-22.00   sec   2.47 GBytes   21.2 Gbits/sec    3   5.71 MBytes
[ 5] 22.00-23.00   sec   2.60 GBytes   22.3 Gbits/sec    1   5.71 MBytes
[ 5] 23.00-24.00   sec   1.98 GBytes   17.0 Gbits/sec    0   5.71 MBytes
[ 5] 24.00-25.00   sec   3.03 GBytes   26.0 Gbits/sec    0   5.65 MBytes
[ 5] 25.00-26.00   sec   3.09 GBytes   26.5 Gbits/sec    0   5.73 MBytes
[ 5] 26.00-27.00   sec   2.27 GBytes   19.5 Gbits/sec    3   5.73 MBytes
[ 5] 27.00-28.00   sec   2.83 GBytes   24.3 Gbits/sec    0   5.73 MBytes
[ 5] 28.00-29.00   sec   2.62 GBytes   22.5 Gbits/sec    1   5.74 MBytes
[ 5] 29.00-30.00   sec   2.91 GBytes   25.0 Gbits/sec    2   5.74 MBytes
Terminal
[ ID] Interval           Transfer     Bitrate      Retr  sender receiver
[ 5]  0.00-30.00    sec   79.2 GBytes   22.7 Gbits/sec    43
[ 5]  0.00-34.25   sec   79.2 GBytes   19.9 Gbits/sec

iperf Done.
mininet>

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