Assignment 5
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Link to my l3switch p4 code and other code used (on github):
https://github.com/morodrigu/CWM-ProgNets/tree/main/assignment5

Updated state of 'commands.txt':

```
1 table_add MyIngress.ipv4_lpm MyIngress.ipv4_forward 169.254.21.80/32 => 0c:37:96:5f:8a:24 0
2 table_add MyIngress.ipv4_lpm MyIngress.ipv4_forward 169.254.46.161/32 => 0c:37:96:5f:8a:1d 1
```

Updated state of 'cwm':

```bash
1 #!/bin/bash
2
3 INPUT="$1"
4
5 # Server side
6 # IP address of source host with CIDR (netmask)
7 SRC_IP="169.254.21.80/16"
8 # IP address of destination host
9 DST_IP="169.254.46.161"
10 # MAC address of destination host
11 DST_MAC="0c:37:96:5f:8a:1d"
12 # Interface name (USB-Ethernet) of the host
13 ETH="enx0c37965f8a24"
14
15 # Switch side (Raspberry Pi)
16 # The directory to your P4 program
17 DIR="/home/pi/CWM-ProgNets/assignment5"
18 # Modify the name of P4 program here
19 P4_NAME="l3switch"
20 # The name of the first interface on Raspberry Pi
21 INT1="eth0"
22 # The name of the second interface on Raspberry Pi
23 # Note: you may need to change the run/exec command if a single interface is used
24 INT2="eth1"
25
```

Screenshot of ping results (client screen):

```
ubuntu@ubuntu:~/cwm-prognets/scripts$ ping 169.254.21.80
PING 169.254.21.80 (169.254.21.80) 56(84) bytes of data.
64 bytes from 169.254.21.80: icmp_seq=1 ttl=63 time=3.36 ms
64 bytes from 169.254.21.80: icmp_seq=2 ttl=63 time=3.08 ms
64 bytes from 169.254.21.80: icmp_seq=3 ttl=63 time=3.29 ms
64 bytes from 169.254.21.80: icmp_seq=4 ttl=63 time=3.26 ms
64 bytes from 169.254.21.80: icmp_seq=5 ttl=63 time=3.29 ms
64 bytes from 169.254.21.80: icmp_seq=6 ttl=63 time=3.42 ms
64 bytes from 169.254.21.80: icmp_seq=7 ttl=63 time=3.35 ms
64 bytes from 169.254.21.80: icmp_seq=8 ttl=63 time=3.26 ms
64 bytes from 169.254.21.80: icmp_seq=9 ttl=63 time=3.27 ms
64 bytes from 169.254.21.80: icmp_seq=10 ttl=63 time=3.03 ms
64 bytes from 169.254.21.80: icmp_seq=11 ttl=63 time=3.16 ms
64 bytes from 169.254.21.80: icmp_seq=12 ttl=63 time=3.43 ms
64 bytes from 169.254.21.80: icmp_seq=13 ttl=63 time=3.11 ms
64 bytes from 169.254.21.80: icmp_seq=14 ttl=63 time=3.37 ms
64 bytes from 169.254.21.80: icmp_seq=15 ttl=63 time=3.31 ms
64 bytes from 169.254.21.80: icmp_seq=16 ttl=63 time=3.20 ms
64 bytes from 169.254.21.80: icmp_seq=17 ttl=63 time=3.35 ms
64 bytes from 169.254.21.80: icmp_seq=18 ttl=63 time=3.18 ms
64 bytes from 169.254.21.80: icmp_seq=19 ttl=63 time=3.11 ms
64 bytes from 169.254.21.80: icmp_seq=20 ttl=63 time=3.34 ms
64 bytes from 169.254.21.80: icmp_seq=21 ttl=63 time=3.17 ms
64 bytes from 169.254.21.80: icmp_seq=22 ttl=63 time=3.36 ms
64 bytes from 169.254.21.80: icmp_seq=23 ttl=63 time=3.47 ms
64 bytes from 169.254.21.80: icmp_seq=24 ttl=63 time=3.30 ms
64 bytes from 169.254.21.80: icmp_seq=25 ttl=63 time=3.36 ms
64 bytes from 169.254.21.80: icmp_seq=26 ttl=63 time=3.45 ms
64 bytes from 169.254.21.80: icmp_seq=27 ttl=63 time=3.34 ms
64 bytes from 169.254.21.80: icmp_seq=28 ttl=63 time=3.26 ms
64 bytes from 169.254.21.80: icmp_seq=29 ttl=63 time=3.15 ms
64 bytes from 169.254.21.80: icmp_seq=30 ttl=63 time=3.28 ms
64 bytes from 169.254.21.80: icmp_seq=31 ttl=63 time=3.16 ms
64 bytes from 169.254.21.80: icmp_seq=32 ttl=63 time=3.17 ms
64 bytes from 169.254.21.80: icmp_seq=33 ttl=63 time=3.16 ms
64 bytes from 169.254.21.80: icmp_seq=34 ttl=63 time=3.30 ms
64 bytes from 169.254.21.80: icmp_seq=35 ttl=63 time=3.06 ms
64 bytes from 169.254.21.80: icmp_seq=36 ttl=63 time=3.20 ms
64 bytes from 169.254.21.80: icmp_seq=37 ttl=63 time=3.25 ms
64 bytes from 169.254.21.80: icmp_seq=38 ttl=63 time=3.14 ms
64 bytes from 169.254.21.80: icmp_seq=39 ttl=63 time=3.24 ms
64 bytes from 169.254.21.80: icmp_seq=40 ttl=63 time=3.30 ms
64 bytes from 169.254.21.80: icmp_seq=41 ttl=63 time=2.95 ms
^C
--- 169.254.21.80 ping statistics ---
41 packets transmitted, 41 received, 0% packet loss, time 40057ms
rtt min/avg/max/mdev = 2.954/3.248/3.470/0.116 ms
```

Screenshot of iperf results (client screen):

```
ubuntu@ubuntu:~/cwm-prognets/scripts$ iperf -c 169.254.21.80
------------------------------------------------------------
Client connecting to 169.254.21.80, TCP port 5001
TCP window size: 85.0 KByte (default)
------------------------------------------------------------
[  1] local 169.254.46.161 port 47676 connected with 169.254.21.80 port 5001
[ ID] Interval       Transfer     Bandwidth
[  1] 0.0000-10.4727 sec  3.00 MBytes  2.40 Mbits/sec
```

Screenshot of iperf results (server screen):

```
ubuntu@ubuntu:~/CWM-ProgNets/scripts$ iperf -s -B 169.254.21.80
------------------------------------------------------------
Server listening on TCP port 5001
TCP window size:  128 KByte (default)
------------------------------------------------------------
[  1] local 169.254.21.80 port 5001 connected with 169.254.46.161 port 47676
[ ID] Interval       Transfer     Bandwidth
[  1] 0.0000-10.4650 sec  3.00 MBytes  2.40 Mbits/sec
```