

BEHAVIORAL MODEL

[?https://github.com/p4lang/behavioral-model](https://github.com/p4lang/behavioral-model)

[?http://p4.org/wp-content/uploads/2015/12/Nov-2015-P4-Bootcamp-Labs-Guide.pdf](http://p4.org/wp-content/uploads/2015/12/Nov-2015-P4-Bootcamp-Labs-Guide.pdf)

Linux virtual Interface

[?http://unix.stackexchange.com/questions/152331/how-can-i-create-a-virtual-ethernet-interface-on-a-machine-without-a-phys](http://unix.stackexchange.com/questions/152331/how-can-i-create-a-virtual-ethernet-interface-on-a-machine-without-a-phys)

Setup configured at al40-119 192.168.40.119

Setup

Ubuntu 14.04.4 LTS

```
sudo apt-get install automake cmake libjudy-dev libgmp-dev libpcap-dev libboost-dev libboost-test-dev
```

```
sudo apt-get install automake bison flex g++ git libevent-dev libssl-dev libtool make pkg-config libbo
```

```
sudo apt-get install libffi*
```

```
sudo echo "deb http://us.archive.ubuntu.com/ubuntu vivid main universe" >> /etc/apt/sources.list
```

```
sudo apt-get update
```

```
sudo apt-get install libnanomsg-dev libnanomsg0
```

```
sudo pip install Thrift
```

```
sudo apt-get install python-software-properties
```

```
sudo apt-get install software-properties-common
```

```
sudo add-apt-repository ppa:webupd8team/java
```

```
sudo apt-get update
```

```
sudo apt-get install oracle-java8-installer
```

```
export JAVA_HOME=/usr/lib/jvm/java-8-oracle
```

```
cd ~
```

```
curl http://archive.apache.org/dist/thrift/0.9.3/thrift-0.9.3.tar.gz | tar zx
```

```
cd thrift-0.9.3/
```

```
./configure
```

```
make
```

```
sudo make install
```

```
cd ~
```

```
git clone https://github.com/p4lang/behavioral-model.git
```

```
cd behavioral-model
```

```
./autogen.sh
```

```
./configure
```

```
make
```

```
sudo make install
```

```
cd ~
git clone https://github.com/p4lang/p4c-bm.git
cd p4c-bm
```

```
sudo pip install -r requirements.txt
sudo python setup.py install
```

Start bmv2

```
p4c-bmv2 --json sw_programm.json test.p4
```

```
/root/behavioral-model/targets/simple_switch/simple_switch --log-console -i 0@p3p1 -i 1@p2p1
/root/sw_programm.json
```

Run L2 Switch

```
cd ~/behavioral-model/targets/l2_switch
```

```
vi run.sh
  ./l2_switch --log-console -i 1@p2p1 -i 2@p3p1 ./l2_switch.json
```

```
./run.sh
```

```
#IN NEUEM FENSTER
#-----
cd ~/behavioral-model/tools
```

```
./runtime_CLI.py
```

```
table_set_default smac mac_learn
table_set_default dmac broadcast
mc_mgrp_create 1
mc_node_create 0 1
mc_node_create 1 2
mc_node_associate 1 0
mc_node_associate 1 1
```

```
# Live Logs
./nanomsg_client.py
```

Run L3 Simple Router

```
cd ~/behavioral-model/targets/simple_router
```

```
vi run.sh
  sudo ./simple_router --log-console --nanolog ipc:///tmp/bm-1-log.ipc -i 1@p2p1 -i 2@p3p1 ./simple_
./run.sh
```

```

#IN NEUEM FENSTER
#-----
cd ~/behavioral-model/tools

./runtime_CLI.py

table_set_default send_frame _drop
table_set_default forward _drop
table_set_default ipv4_lpm _drop
table_add send_frame rewrite_mac 1 => 00:aa:bb:00:00:00
table_add send_frame rewrite_mac 2 => 00:aa:bb:00:00:01
table_add forward set_dmac 10.0.0.10 => 00:04:75:c7:8c:5b
table_add forward set_dmac 10.0.1.10 => 00:13:3b:10:3e:85
table_add ipv4_lpm set_nhop 10.0.0.10/24 => 10.0.0.10 1
table_add ipv4_lpm set_nhop 10.0.1.10/24 => 10.0.1.10 2

# Live Logs
./nanomsg_client.py

```

Run L3 Mininet

```

cd ~/behavioral-model/mininet

python ./lsw_demo.py --num-hosts 2 --mode l3 --behavioral-exe /root/behavioral-model/targets/simple_router

```

```

#IN NEUEM FENSTER
#-----
cd ~/behavioral-model/tools

./runtime_CLI.py

table_set_default send_frame _drop
table_set_default forward _drop
table_set_default ipv4_lpm _drop
table_add send_frame rewrite_mac 1 => 00:aa:bb:00:00:00
table_add send_frame rewrite_mac 2 => 00:aa:bb:00:00:01
table_add forward set_dmac 10.0.0.10 => 00:04:00:00:00:00
table_add forward set_dmac 10.0.1.10 => 00:04:00:00:00:01
table_add ipv4_lpm set_nhop 10.0.0.10/32 => 10.0.0.10 1
table_add ipv4_lpm set_nhop 10.0.1.10/32 => 10.0.1.10 2

# Live Logs
./nanomsg_client.py

```