Software Define Network

Lab 3

Programming Data Plane Using P4

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Behavioral model version 1

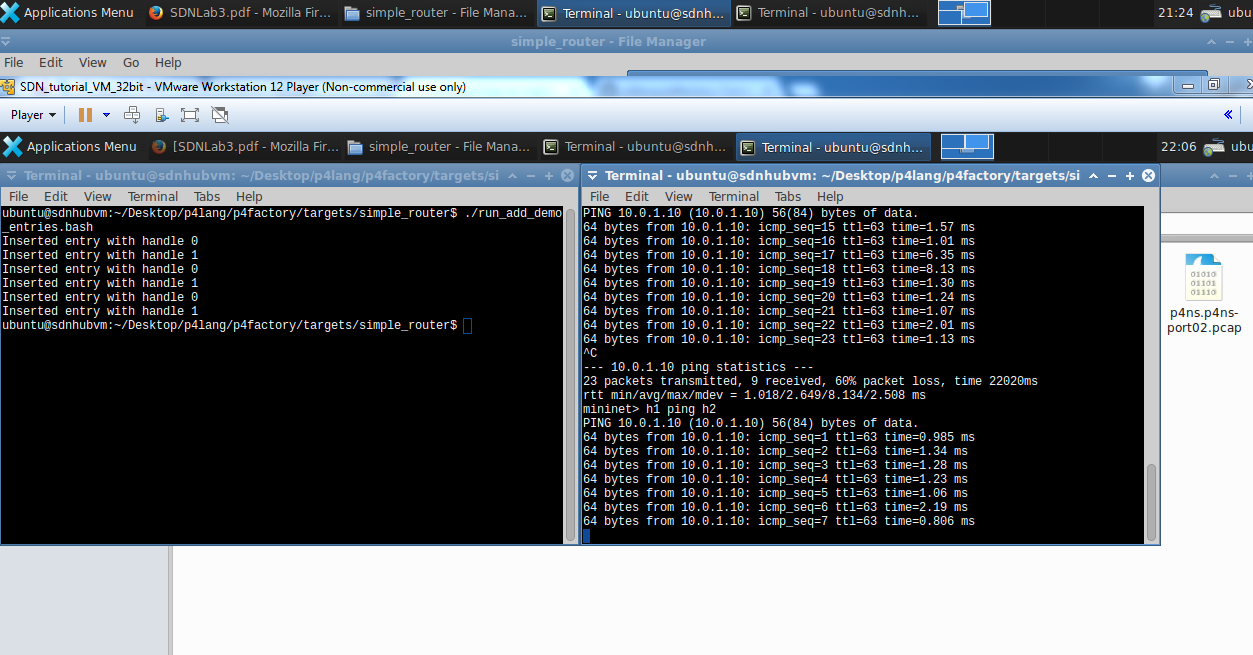
Installing P4 repositories & dependencies for p4factory

* Make directory name “**p4lang**”
* Get file’s from GitHub repository in that directory.
  + - git clone [https://github.com/p4lang/behavioral-model.git bmv2](https://github.com/p4lang/behavioral-model.git%20bmv2)
    - git clone [https://github.com/p4lang/p4c-bm.git p4c-bmv2](https://github.com/p4lang/p4c-bm.git%20p4c-bmv2)
    - git clone <https://github.com/p4lang/p4factory.git>
* Go to “**p4factory**” directory in “**p4lang**” and
  + - git submodule update --init –recursive
    - sudo bash
    - ./install\_deps.sh
    - /tools/veth\_setup.sh
    - ./autogen.sh
    - ./configure
    - cd targets/simple\_router
    - make bm

Now since the behavior model of the simple\_router.p4 is build now run mininet

In a same directory targets/simple\_router run “**./run\_demo.bash**”. This will start the mininet environment with two hosts connected a switch (the one built from the simple\_router.p4). When you do “h1 ping h2”, you will not see the ping going through.

Now in terminal 2 in the same directory run “**./run\_add\_demo\_entries.bash**”



That will start ping going.

Because

Behavioral model version 2

* Go to the “/p4lang/p4c-bmv2” directory and

Sudo bash

pip install -r requirements.txtpip install scapy thrift networkx

* Now go to the “/p4lang/bmv2” directory and

./autogen.sh

./configure

Make

Now you will have the behavioral model version 2 and the compiler for it. To execute the simple\_router P4 example under bmv2, you can do the following

* Cd p4lang/bmv2/mininet
* sudo python 1sw\_demo.py --behavioral-exe ../targets/simple\_router/simple\_router -- json ../targets/simple\_router/simple\_router.json

Type "h1 ping h2" #you will see that the ping fails. Now open another terminal.

* cd p4lang/bmv2/targets/simple\_router
* ./runtime\_CLI < commands.txt

