Mawlana Bhashani Science and Technology University

Lab-Report

Report No: 01

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Course title: Computer Network Lab

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Experiment No: 01

Experiment Name : Basic mininet commands

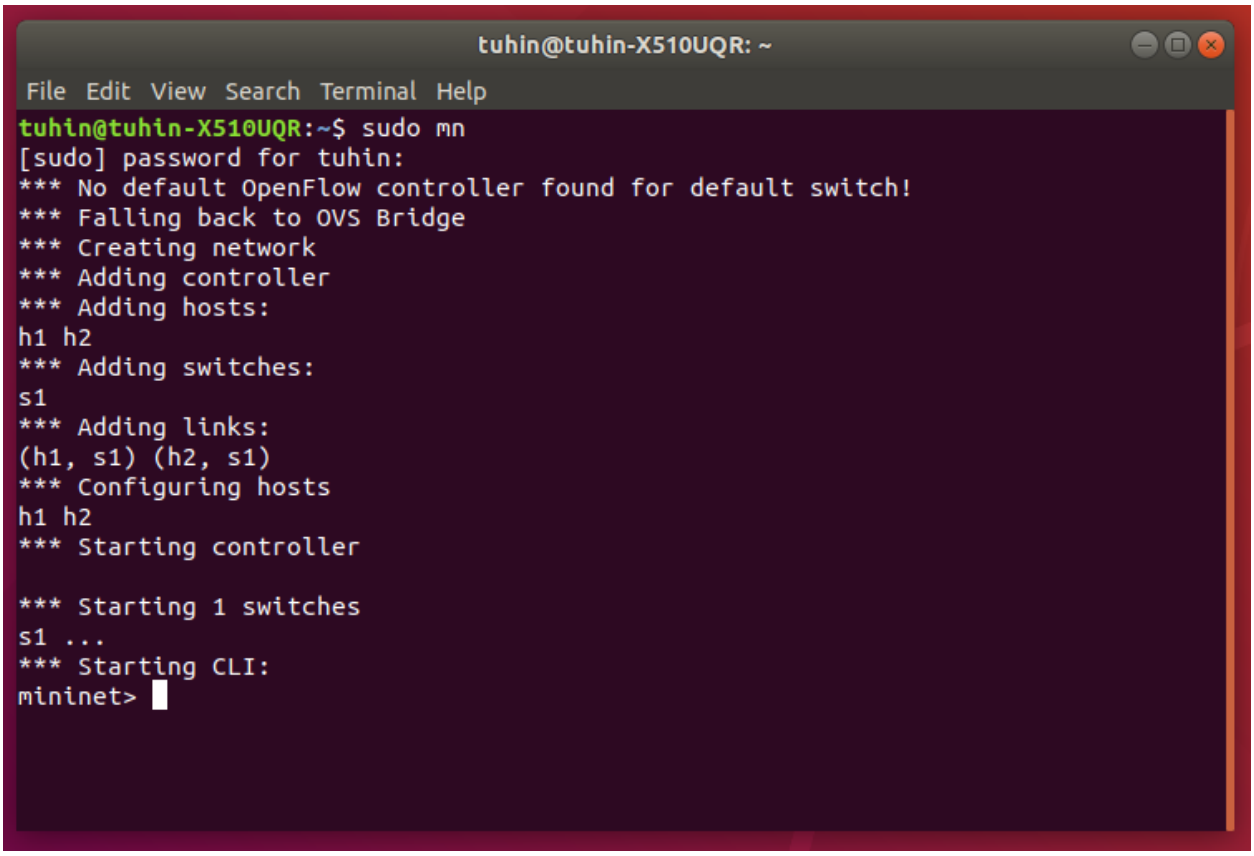
Create Virtual Network :

We will be using CLI (sudo mn command) to manage our virtual network. The default topology includes two hosts (h1,h2), OpenFlow Switch(s1) and OpenFlow controller(c0).

Interact with Hosts and Switches :

Start a minimal topology and enter the CLI :

$ sudo mn

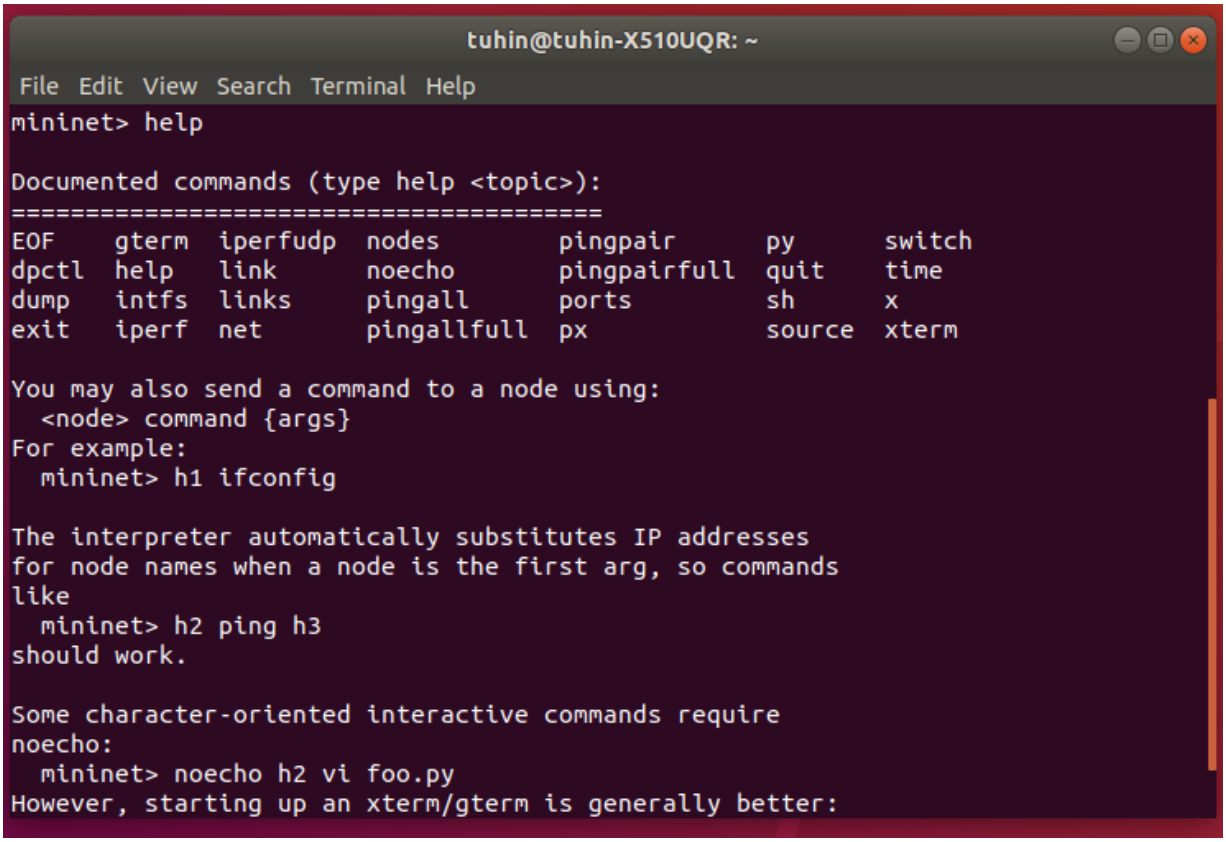


When issuing the sudo mn command, Mininet initializes the topology and launches its command line interface which looks like this:

mininet >

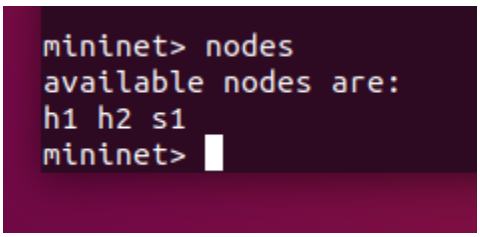
Again Display Mininet CLI commands:

mininet> help



To display the available nodes, type the following command:

mininet> nodes



Display links:

mininet> net

```
mininet> net
h1 h1-eth0:s1-eth1
h2 h2-eth0:s1-eth2
s1 lo:  s1-eth1:h1-eth0 s1-eth2:h2-eth0
mininet>
```

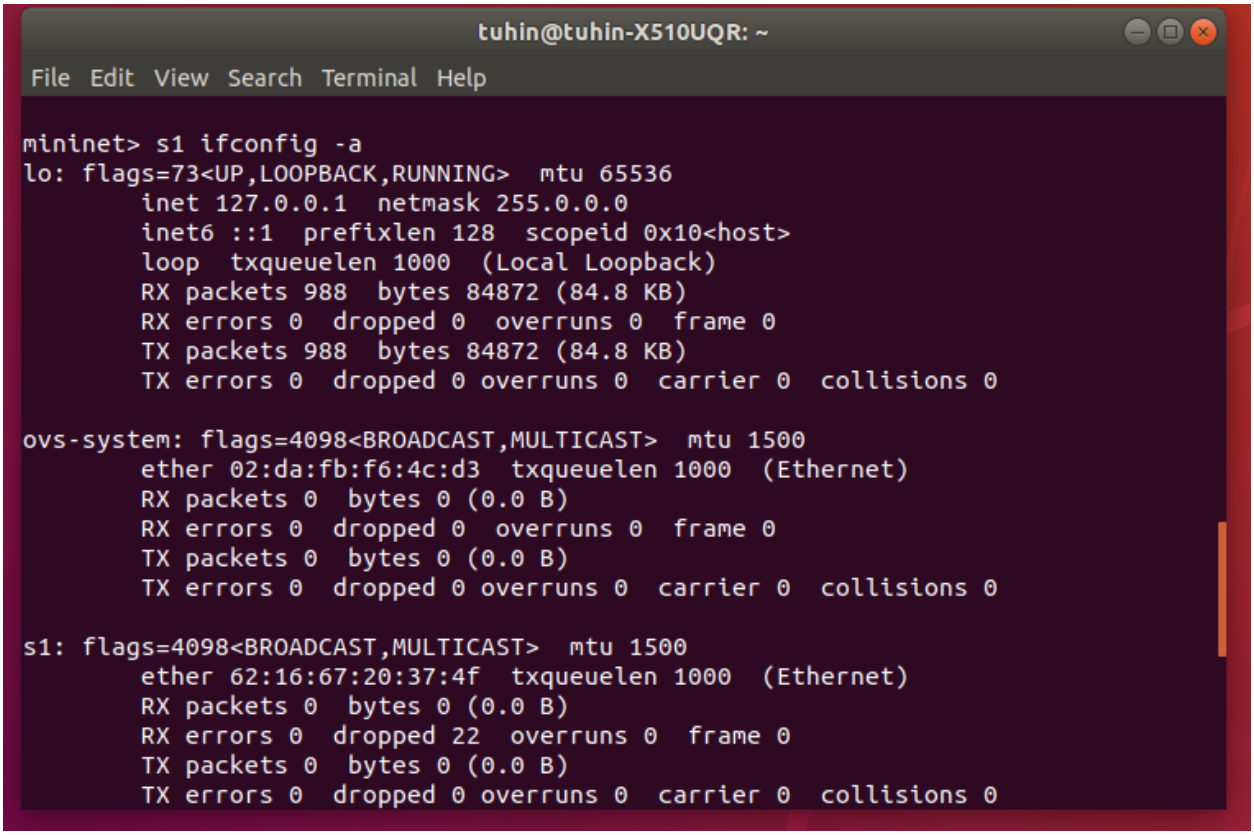
Dump information about all nodes:

mininet> dump

```
mininet> dump
<Host h1: h1-eth0:10.0.0.1 pid=5181>
<Host h2: h2-eth0:10.0.0.2 pid=5183>
<OVSBridge s1: lo:127.0.0.1,s1-eth1:None,s1-eth2:None pid=5188>
mininet>
```

If the first string typed into the Mininet CLI is a host, switch or controller name, the command is executed on that node. Run a command on a host process:

mininet> h1 ifconfig -a



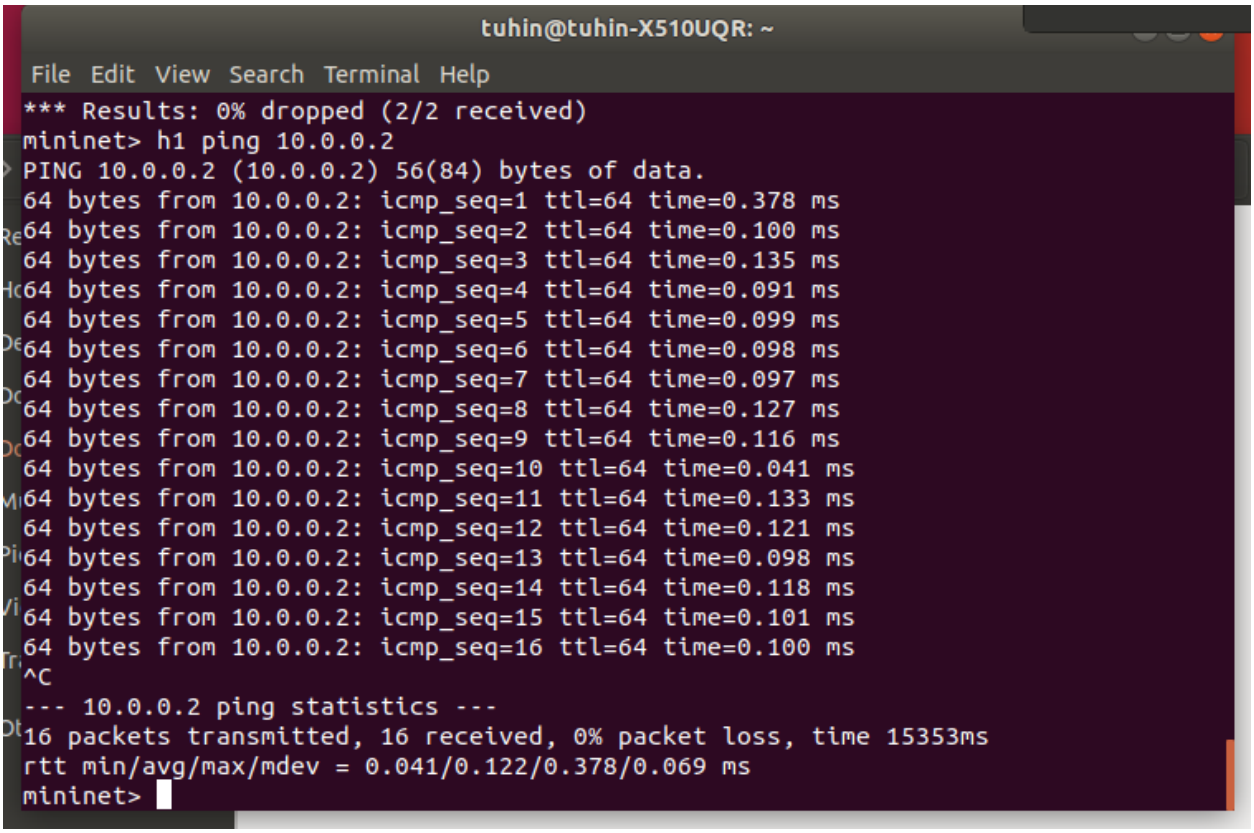
This command executes the ifconfig Linux command on host h1. The command shows host h1's interfaces. The display indicates that host h1 has an interface h1-eth0 configured with IP address 10.0.0.1, and another interface lo configured with IP address 127.0.0.1

Test connectivity :

Mininet's default topology assigns the IP addresses 10.0.0.1/8 and 10.0.0.2/8 to host h1 and host h2 respectively. To test connectivity between them, you can use the command ping.

The command shown below.

mininet> h1 ping 10.0.0.2



This command tests the connectivity between host h1 and host h2. To stop the test, press Ctrl+c .

Stop the emulation by typing the following command:

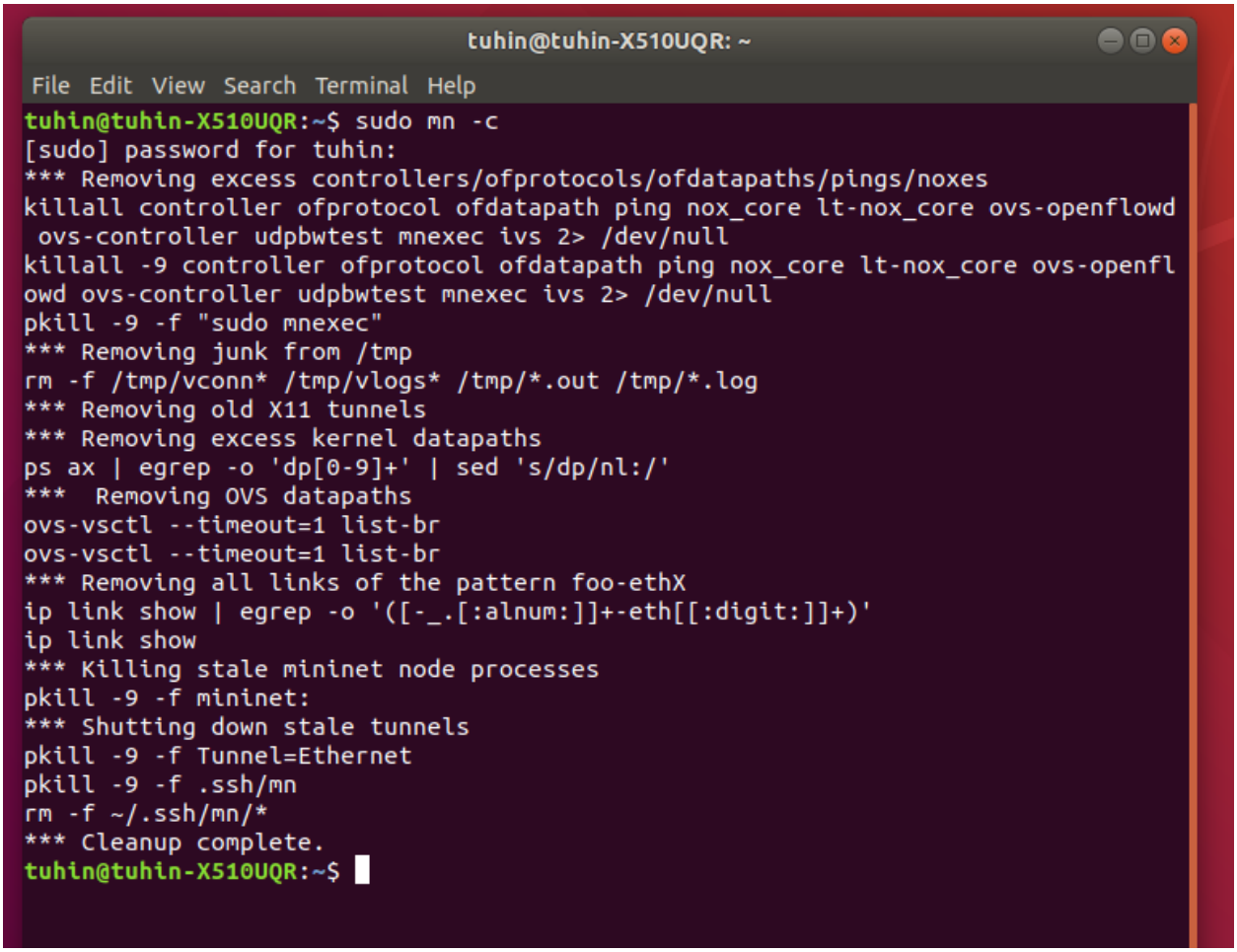
mininet> exit

```
mininet> exit
*** Stopping 0 controllers

*** Stopping 2 links
..
*** Stopping 1 switches
s1
*** Stopping 2 hosts
h1 h2
*** Done
completed in 697.464 seconds
tuhin@tuhin-X510UQR:~$
```

Mininet crashes for some reason, clean it up by the following command:

$ sudo mn -c



Discussion :

Mininet is a network emulator which creates realistic virtual network . From this lab how to install mininet successfully . And I have also learn the basic command and procedure of mininet from this lab.