PRACTICAL-1

AIM:

Installation and introduction of Mininet tool. Explore various features of Mininet tool.

THEORY:

- Mininet is a virtual testbed used for testing network tools and protocols.

- We will see how to use mininet from CLI (Command Line Interface) and also about the Miniedit, which is GUI version.

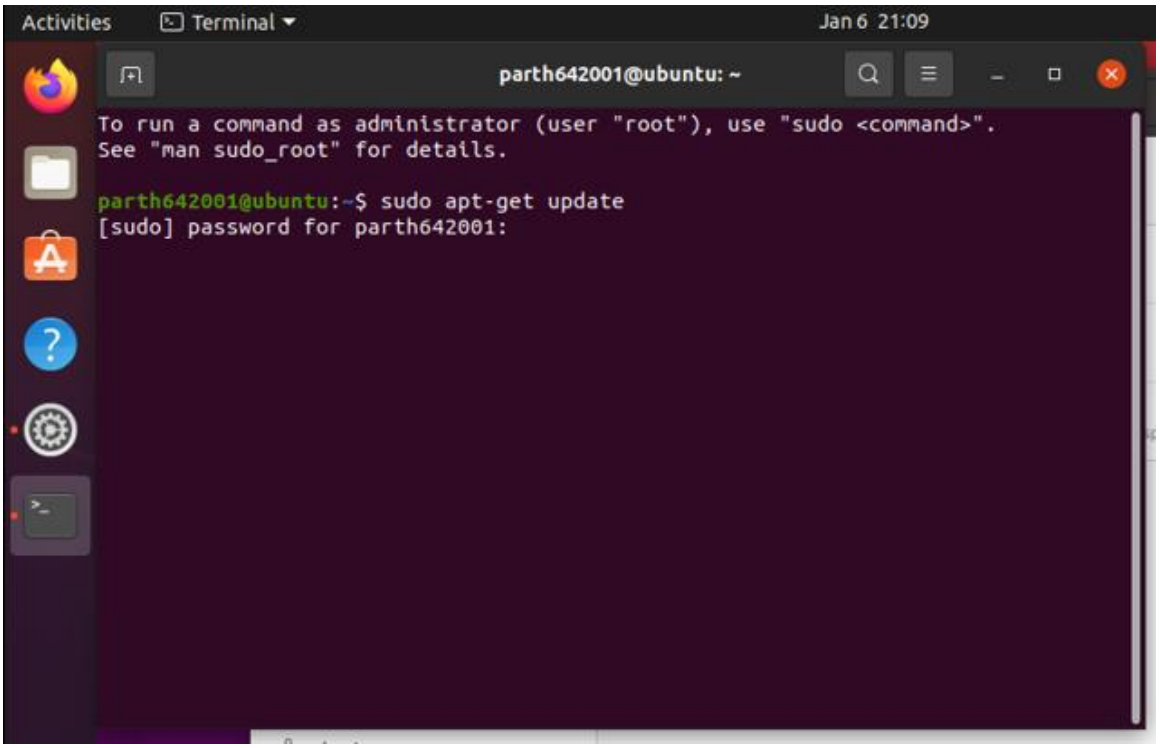
- Mininet can create a realistic virtual network on any type of machine

- Mininet offers the following features:
  - Fast prototyping for new networking protocols.
  - Simplified testing for complex topologies without the need of buying expensive hardware.
  - Realistic execution as it runs real code on the Unix and Linux kernels.
  - Open source environment backed by a large community contributing extensive documentation.

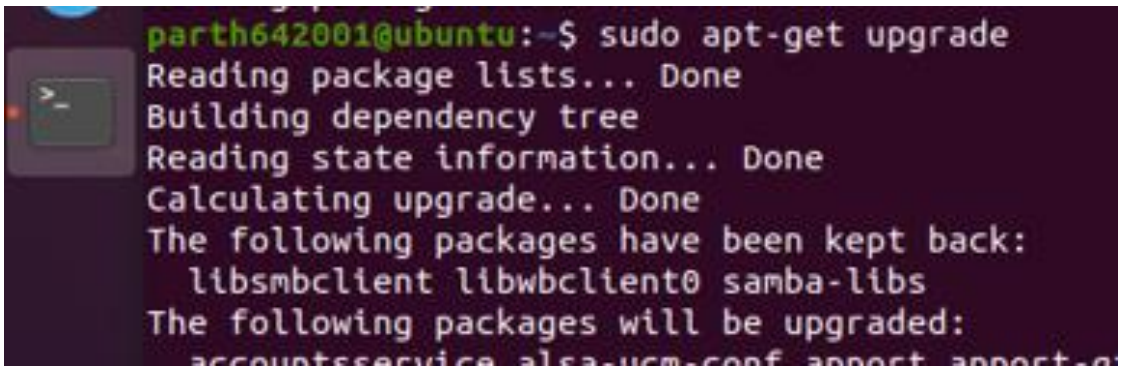
- Mininet was originally designed to experiment with OpenFlow2 and Software-Defined Networking (SDN)

INSTALLATION STEPS:

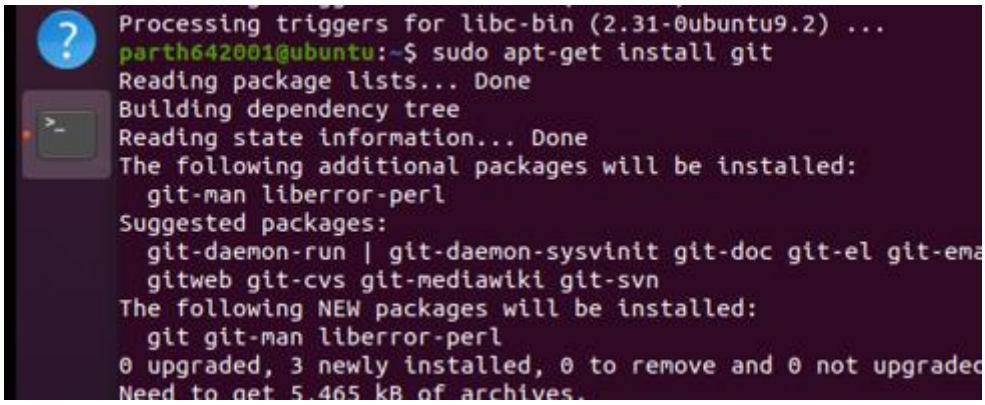
- To install the mininet, follow the below steps



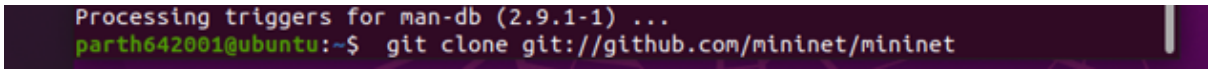
- Then follow the second step



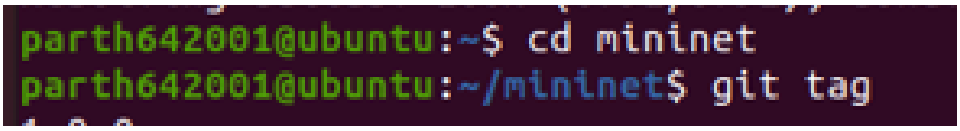
- Then install GIT



- Then enter the following command



- Then traverse to the mininet folder and enter the below command



- Then select and the version of the mininet and enter the below commands

- Enter the following command to start the mininet in the terminal

```
parth642001@ubuntu:~$ sudo mn
[sudo] password for parth642001:
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
```

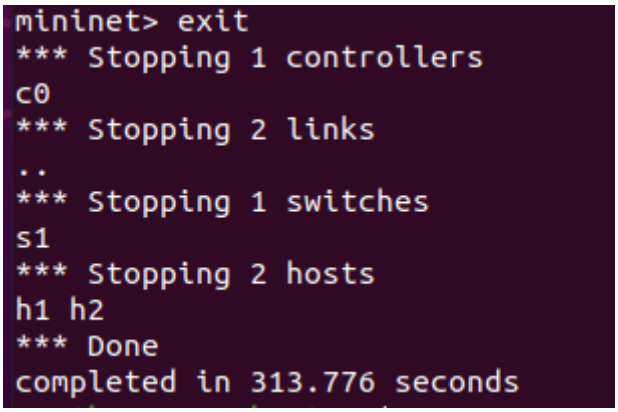
- To display the list of Mininet CLI commands and examples on their usage, type the following command

```
mininet> help

Documented commands (type help <topic>):
========================================
EOF    gterm  iperfudp  nodes        pingpair      py      switch  xterm
dpctl  help   link      noecho       pingpairfull  quit    time
dump   intfs  links     pingall      ports         sh      wait
exit   iperf  net       pingallfull  px            source  x

You may also send a command to a node using:
  <node> command {args}
For example:
  mininet> h1 ifconfig

The interpreter automatically substitutes IP addresses
for node names when a node is the first arg, so commands
like
  mininet> h2 ping h3
should work.
```

- To display the available nodes, type the following command

```
mininet> nodes
available nodes are:
c0 h1 h2 s1
```

- Stop the emulation by typing the following command



CONCLUSION:

By performing the above practical, I learnt how to install mininet in the Ubuntu Linux OS and its basic functionalities and commands.