Mininet
And
OpenDayLight
Based
SDN Test-bed

- **REQUIREMENTS**
  - **Ubuntu** **14.04 LTS**
  - **Mininet** **version 2.2.1**
  - **OpenDayLight Controller** **Carbon**

- **INSTALLATION**
  - **Mininet Installation**
    - Command to Download and Install Mininet

      sudo apt-get install mininet

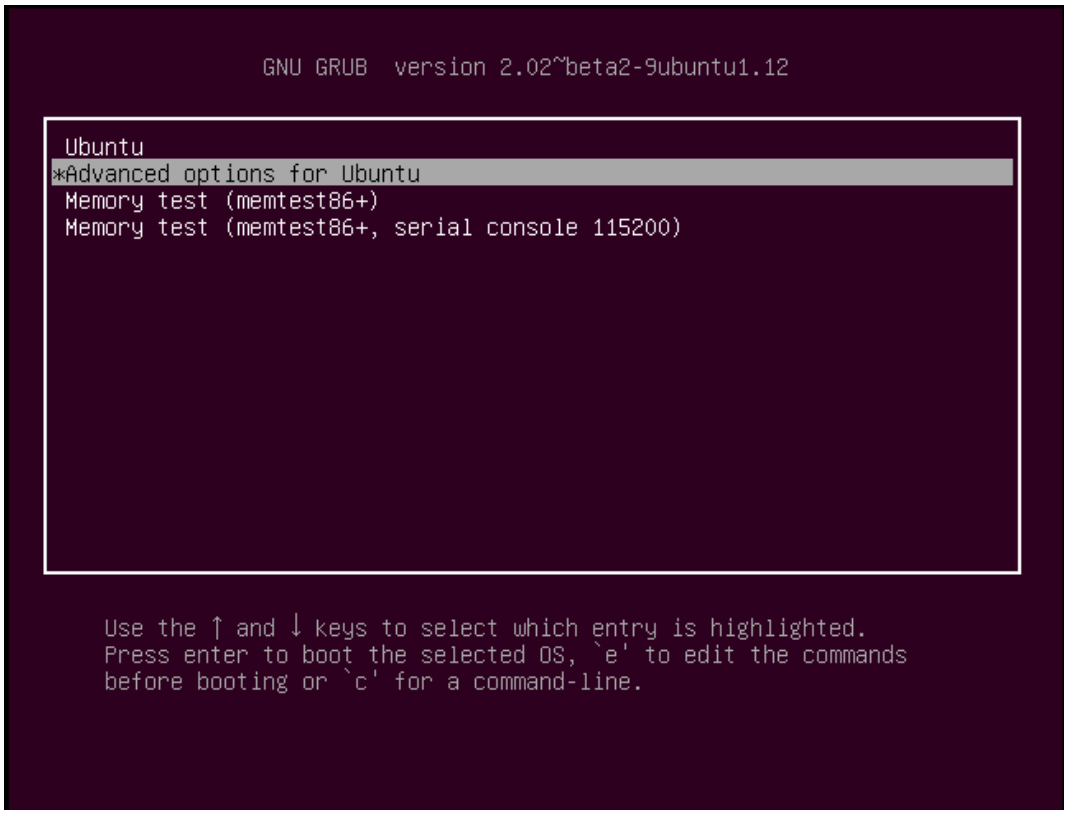
  - **Problems in Mininet Installation**
    - Current release of Mininet has a problem with Linux Kernel 4.2.x of Ubuntu 14.04.
    - We can check the Linux Kernel version using the command

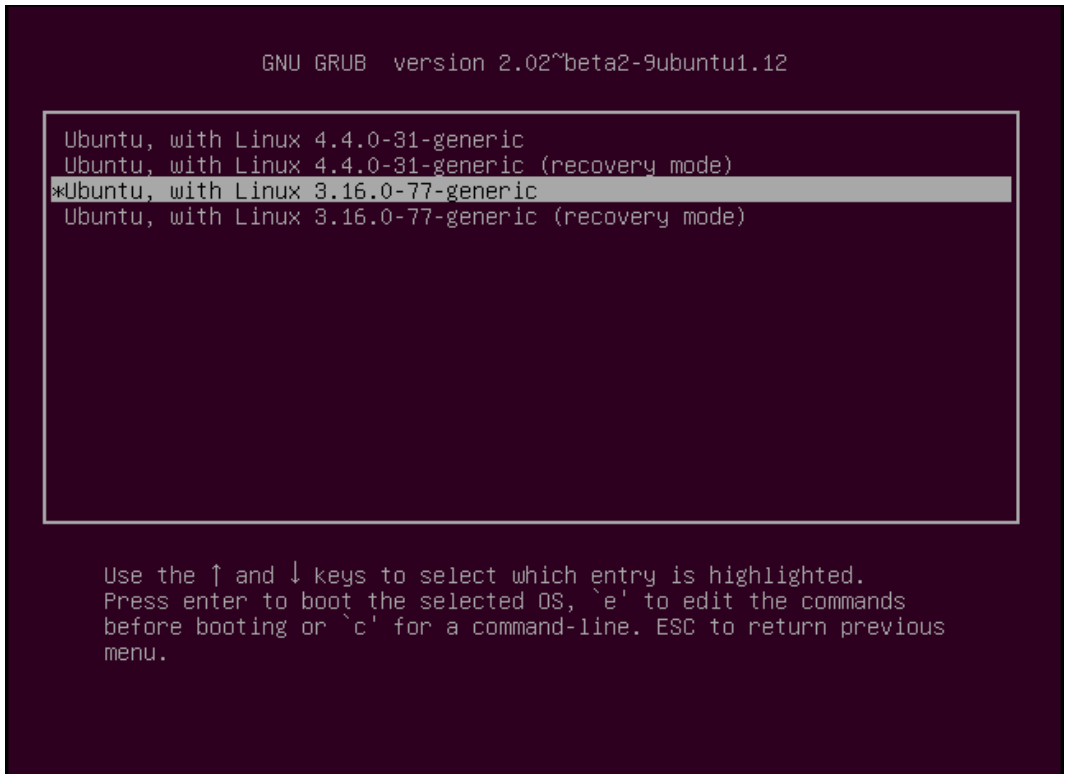
      uname -a

    - We can add Linux Kernel 3.16.x in Ubuntu 14.04 using the following command

      sudo apt-get install linux-image-generic-lts-utopic

    - Restart and press and hold “Shift“ key at boot time and the following screen will appear
      - **Select** -> Advanced Options for Ubuntu
      - **Select** -> Ubuntu, with Linux 3.16.0-77-generic





- **OpenDayLight Installation**
  - **Setting Up the Environment - OpenJDK or Oracle Java**

- The latest release of OpenDayLight – Carbon requires minimum Java 8
- Ubuntu 14.04 does not support Java 8
- To install OpenJDK 8, first use the command:

sudo add-apt-repository ppa:openjdk-r/ppa
sudo apt-get update
sudo apt-get install openjdk-8-jre
sudo apt-get update

- Set JAVA_HOME environment variable
- Open file ".profile" using an editor

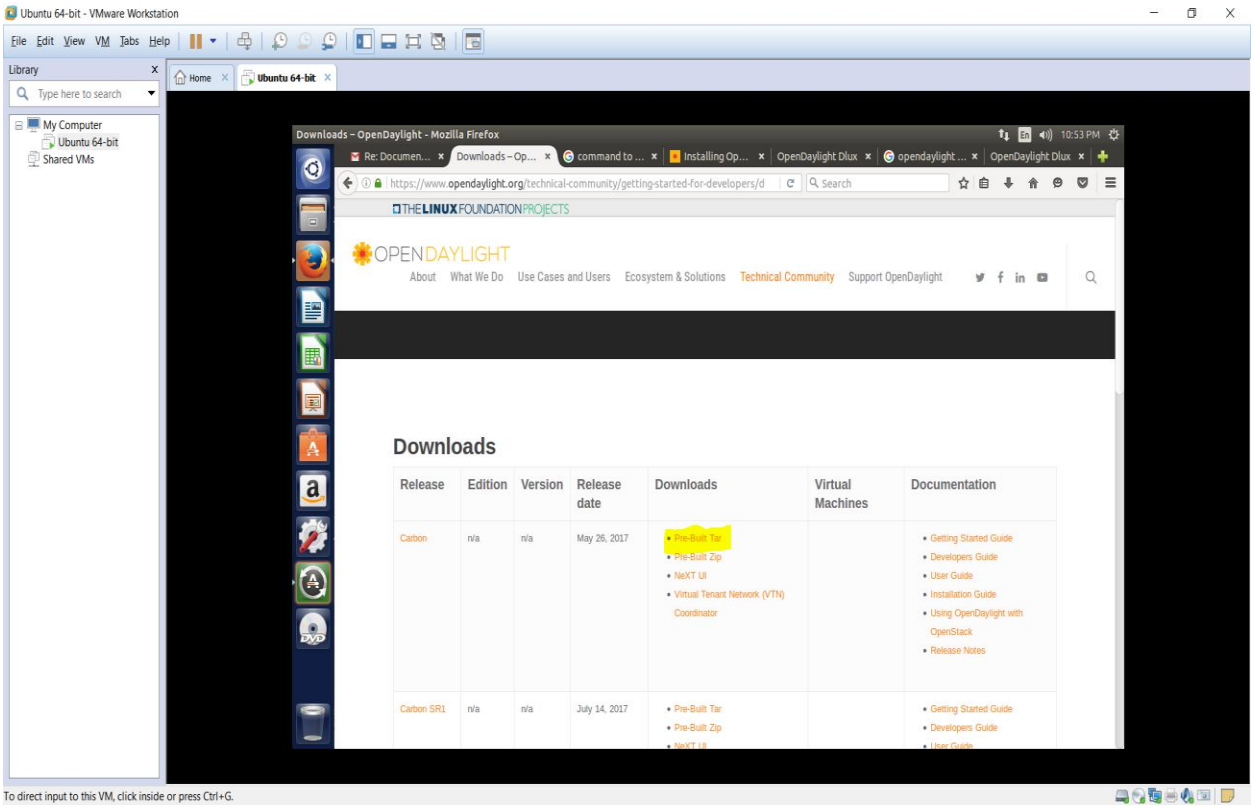
gedit .profile
Or
nano .profile

- Add the following at the end of the file and save

export JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-amd64

- **Downloading OpenDayLight Controller**
  - The latest release of OpenDayLight is - Carbon
  - It can be download from - https://www.opendaylight.org/technical-community/getting-started-for-developers/downloads-and-documentation
  - Unpack the tar file

tar –xvzf distribution-karaf-0.6.1-Carbon.tar.gz



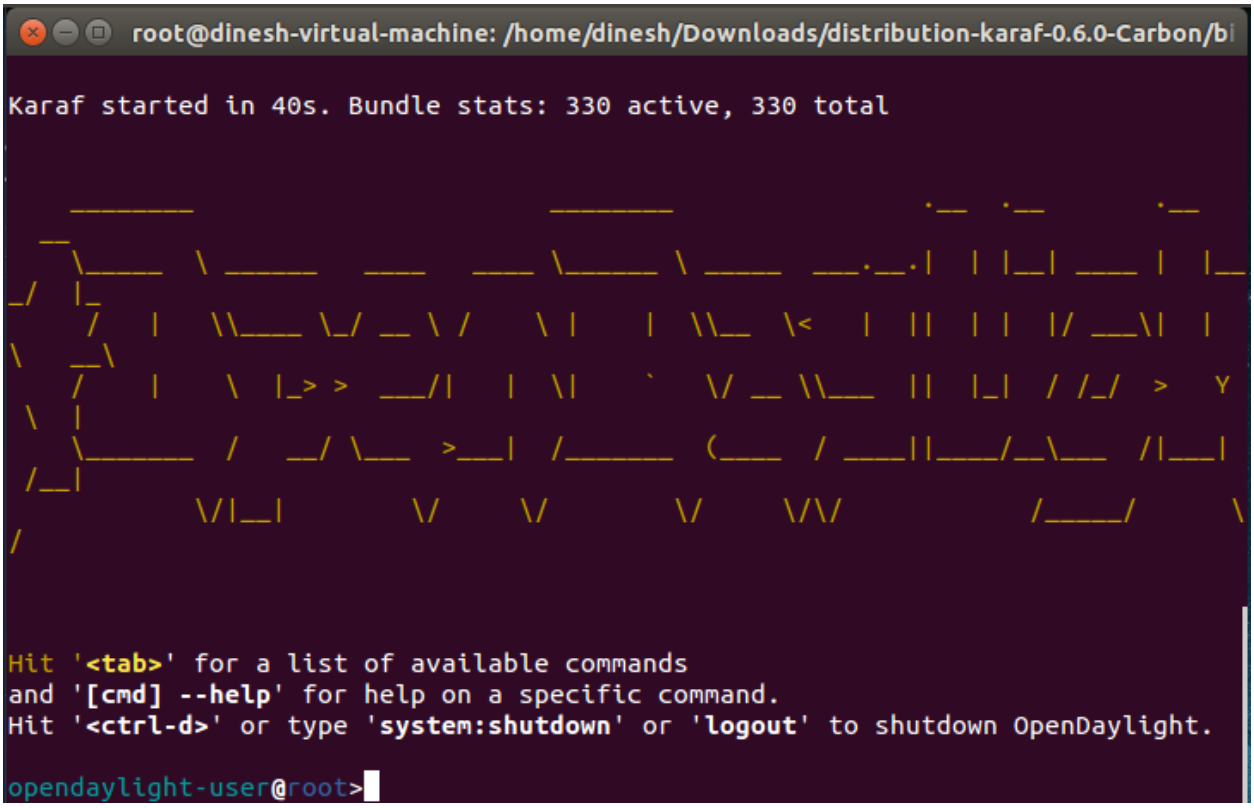
- **Running and Configuring OpenDayLight Controller**
  - Go to the directory

cd distribution-karaf-0.6.1-Carbon.tar.gz/bin

  - run karaf

./karaf

  - OpenDayLight will run as follows



- OpenDaylight's Karaf is now running,
- We have deploy the features that we want
- By default no feature is deployed other than a few karaf-related bundles.
- To see the available list of features use the command

feature:list -i

- Minimum Packages Required:
  - L2switch bundle (L2 Switch)

feature:install odl-l2switch-switch-ui

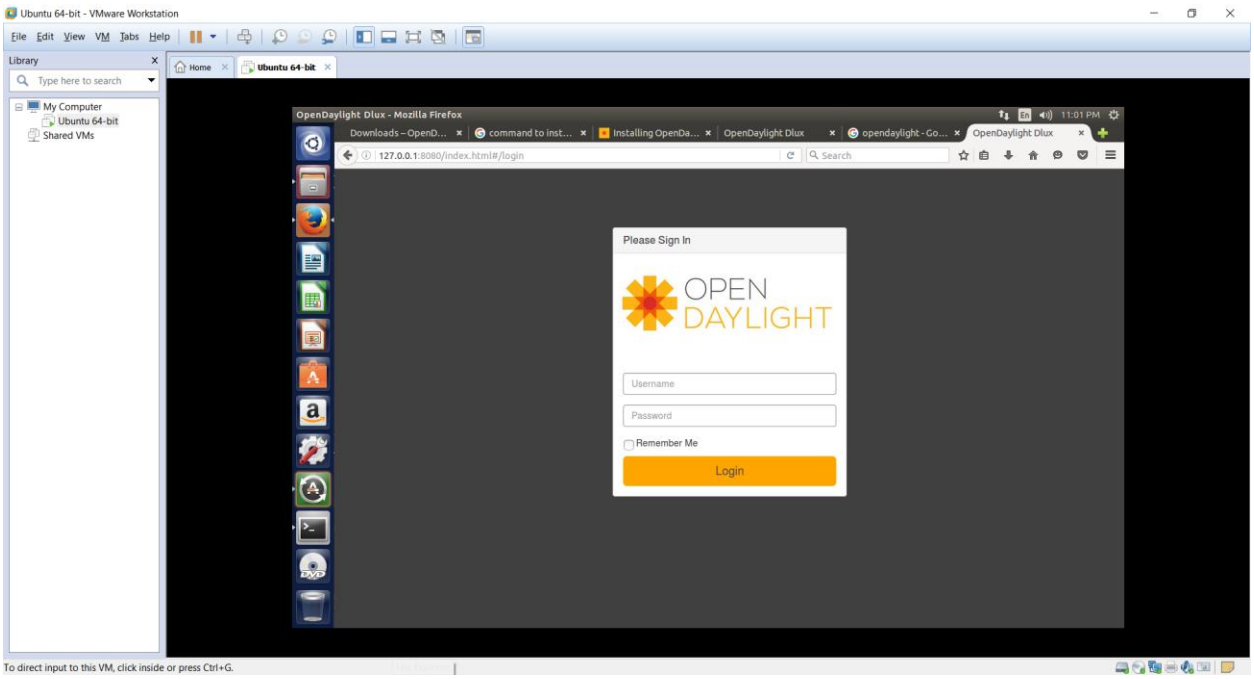
  - DLUX bundle (Web –based GUI application)

feature:install odl-dluxapps-applications

- **Run OpenDayLight Web based GUI**
  - Open a Web Browser and type

http://127.0.0.1:8181/index.html (Localhost)

http://192.168.206.128:8181/index.html (Example: Remote host)



Login using

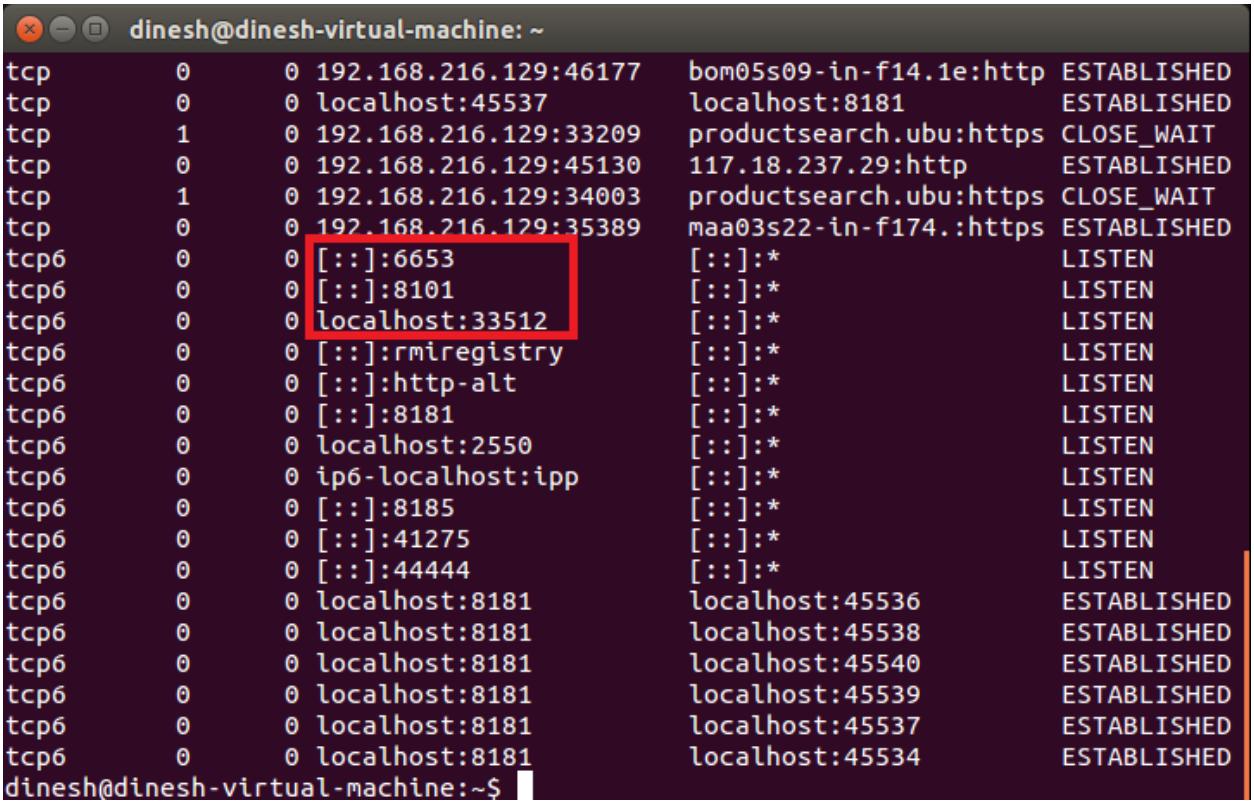
- **Username admin**
- **Password admin**

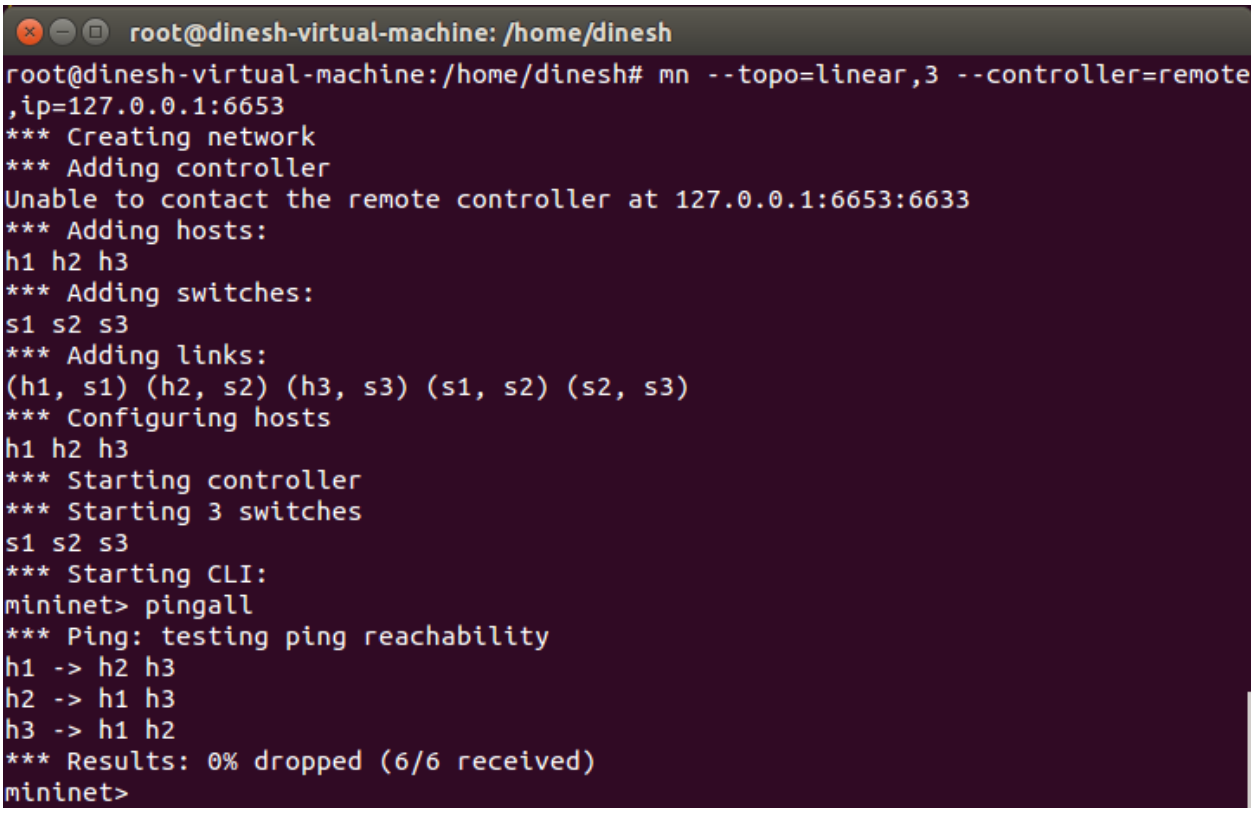
- **<u>RUNNING A SCENARIO WITH MININET AND OPENDAYLIGHT</u>**
  - Example:

sudo mn –topo=linear,3 –controller=remote,ip=127.0.0.1:6653

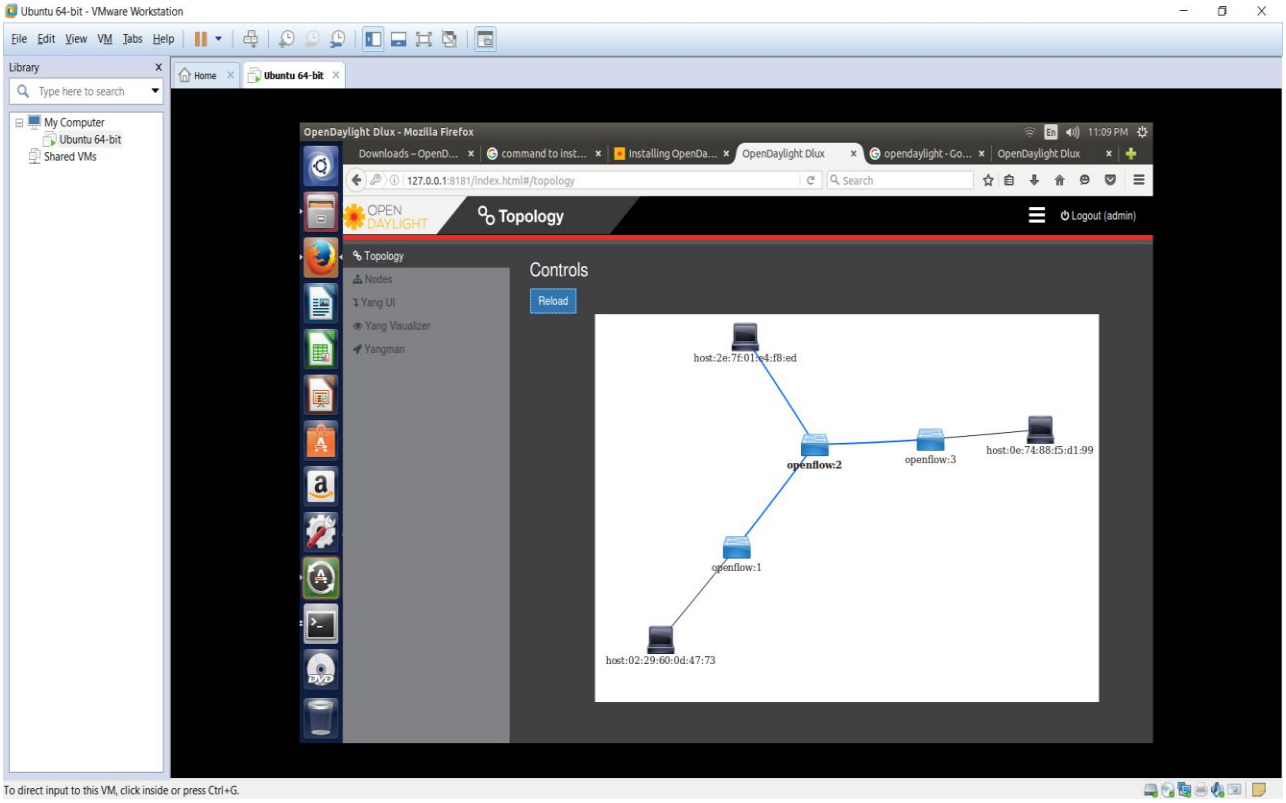
(Check the listening port for the Controller using netstat command otherwise mininet will not be able to connect with ODL Controller)

netstat -at





Now you can check the network topology in ODL Controller


Ubuntu 64-bit - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Ubuntu 64-bit
Shared VMs
Home
Ubuntu 64-bit
OpenDaylight Dlux - Mozilla Firefox
Downloads – OpenD...
command to inst...
Installing OpenDa...
OpenDaylight Dlux
opendaylight - Go...
OpenDaylight Dlux
127.0.0.1:8181/index.html#/topology
Search
OPEN DAYLIGHT
Topology
Logout (admin)
Topology
Nodes
Yang UI
Yang Visualizer
Yangman
Controls
Reload
host:2e:7f:01:e4:f8:ed
openflow:2
openflow:3
host:0e:74:88:f5:d1:99
openflow:1
host:02:29:60:0d:47:73
To direct input to this VM, click inside or press Ctrl+G.