Introduction

Network Simulator or NS is a name for a series of discrete event network simulators, specifically NS-1, NS-2, and NS-3. All are discrete-event computer network simulators, primarily used in research and teaching.

Ns-2 began as a revision of NS-1. From 1997-2000, NS development was supported by DARPA through the VINT project at LBL, Xerox PARC, UCB, and USC/ISI. In 2000, NS-2 development was supported through DARPA with SAMAN and through NSF with CONSER, both at USC/ISI, in collaboration with other researchers including ACIRI.

Ns-2 incorporates substantial contributions from third parties, including wireless code from the UCB Daedelus and CMU Monarch projects and Sun Microsystems.

NS-2 is designed to run from on most UNIX based operating systems. It is possible to run NS-2 on Windows machines using Cygwin. If you don't have a UNIX install, you can also use a virtual linux machine and run that under Windows. VMWare has a free VMWare Player that allows you to download linux systems like Ubuntu and run them on your computer. You will need to make sure you have standard development packages like 'make' and 'gcc'.

Pre-requisites

1) First, we need to download a copy of ns-allinone-2.34.tar.gz.

2) Next in-order to install NS-2 in a separate user account, we must create a new user account in linux.

3) We go to the system settings and then into user accounts.

4) We press the unlock button and then add a new user using the ‘+’ sign.

5) I create an administrator type account and add my name ‘anirbanac’ and add a password in order to activate my account. (otherwise it stays disabled)

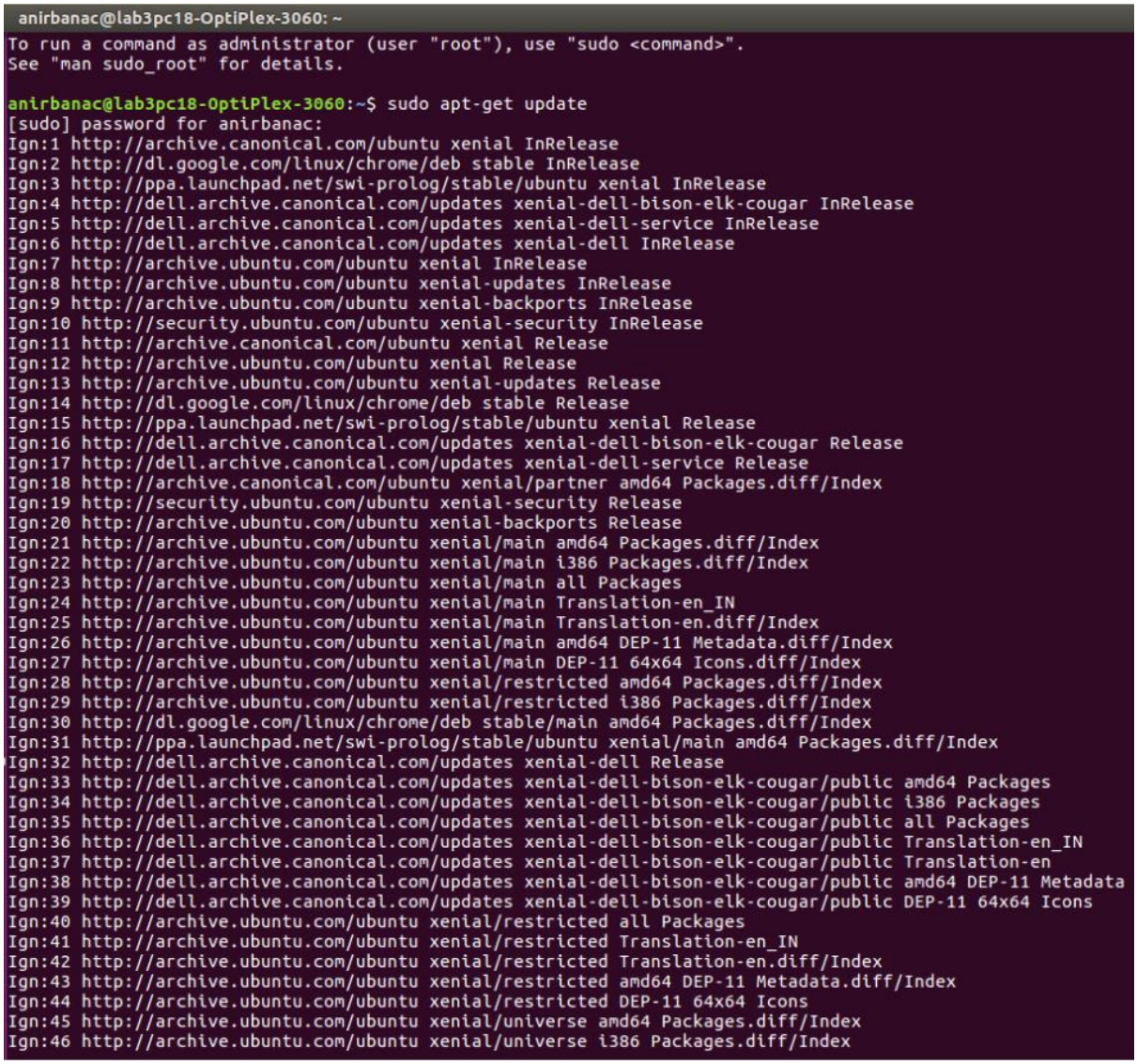
6) Then I log out of current session and other user accounts if logged in.

7) I log into my account (anirbanac) and open the terminal to begin the process of installing NS-2.

Steps

1) Update package information:

First we update package information with ‘sudo apt-get update’ command, which is used to download package information from all configured sources.



2) Install gcc (if not present, it usually is), autoconf automake, tcl8.5 and tk8.5:

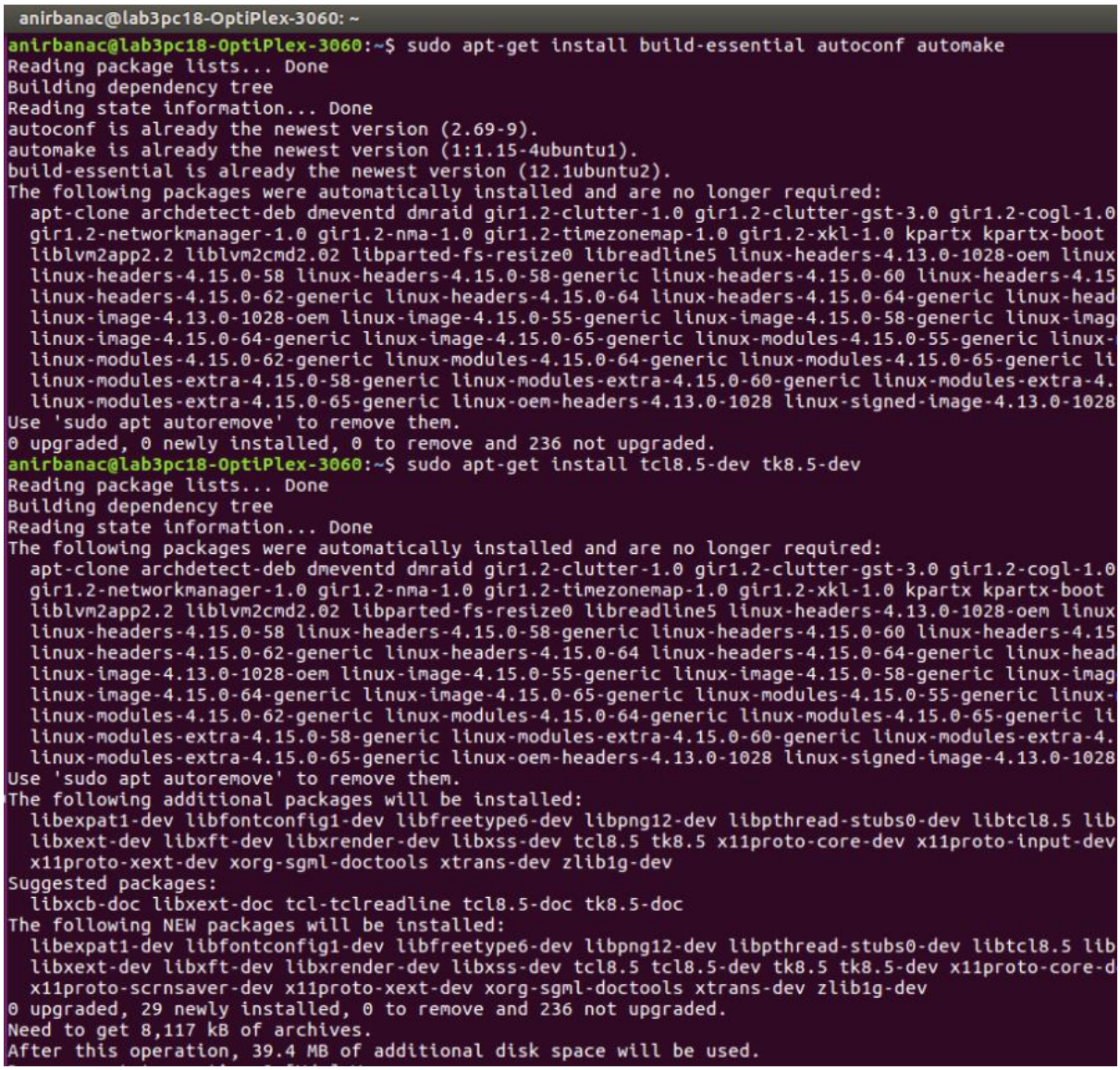
If gcc is not installed, we install it next using ‘sudo apt-get install gcc’.

If installed but needs updation (for old versions) we can use ‘sudo apt-get update gcc’.

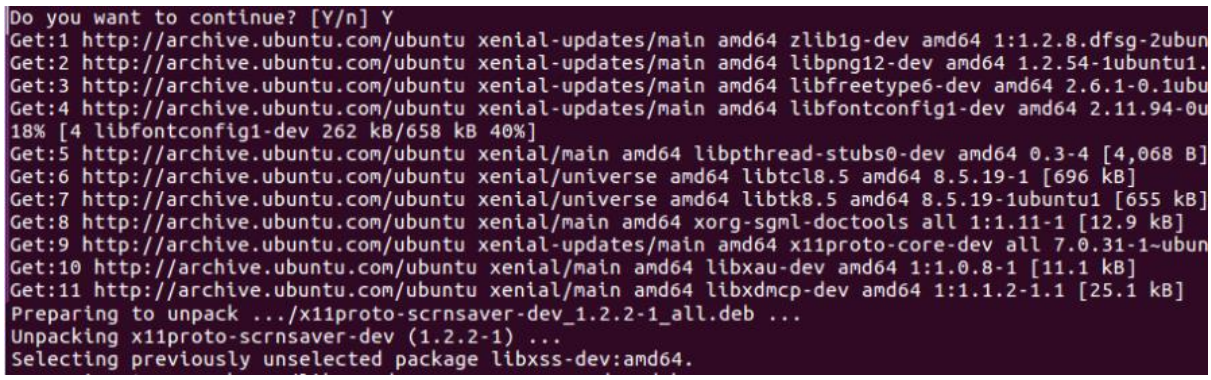
In my case its already installed and updated before-hand so I’ll move onto installation of autoconf automake package.

Install it using ‘sudo apt-get install build-essential autoconf automake ‘.

Next Install tcl8.5 and tk8.5 packages using ‘sudo apt-get install tcl8.5-dev tk8.5-dev’.



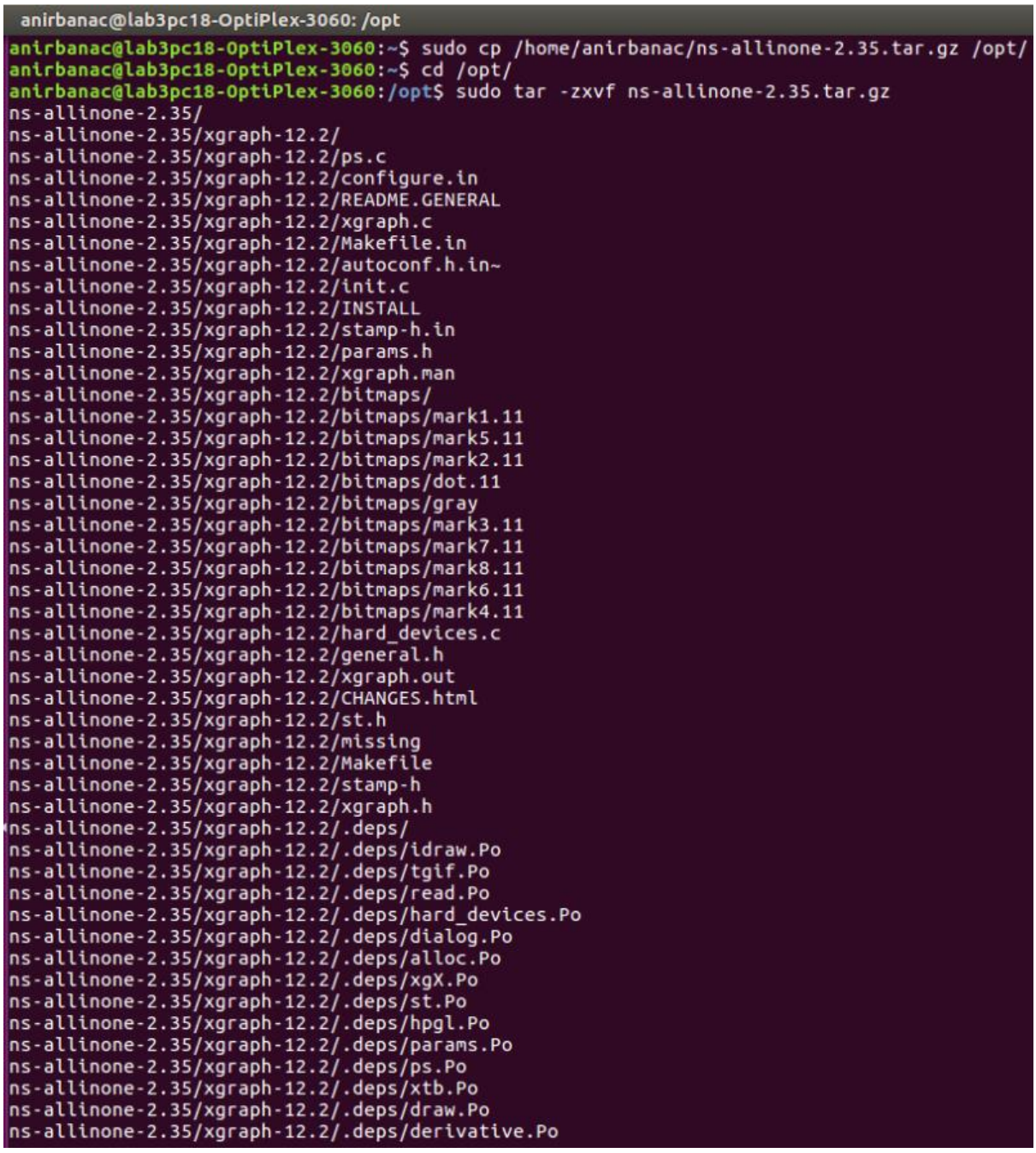
Press Y to continue when prompted:



(We can install other optional packages such as perl xgraph libxt libxll and libx, but they are not required. If needed we can install them using ‘sudo apt-get install perl xgraph libxt-dev libxll-dev libxmu-dev’.)

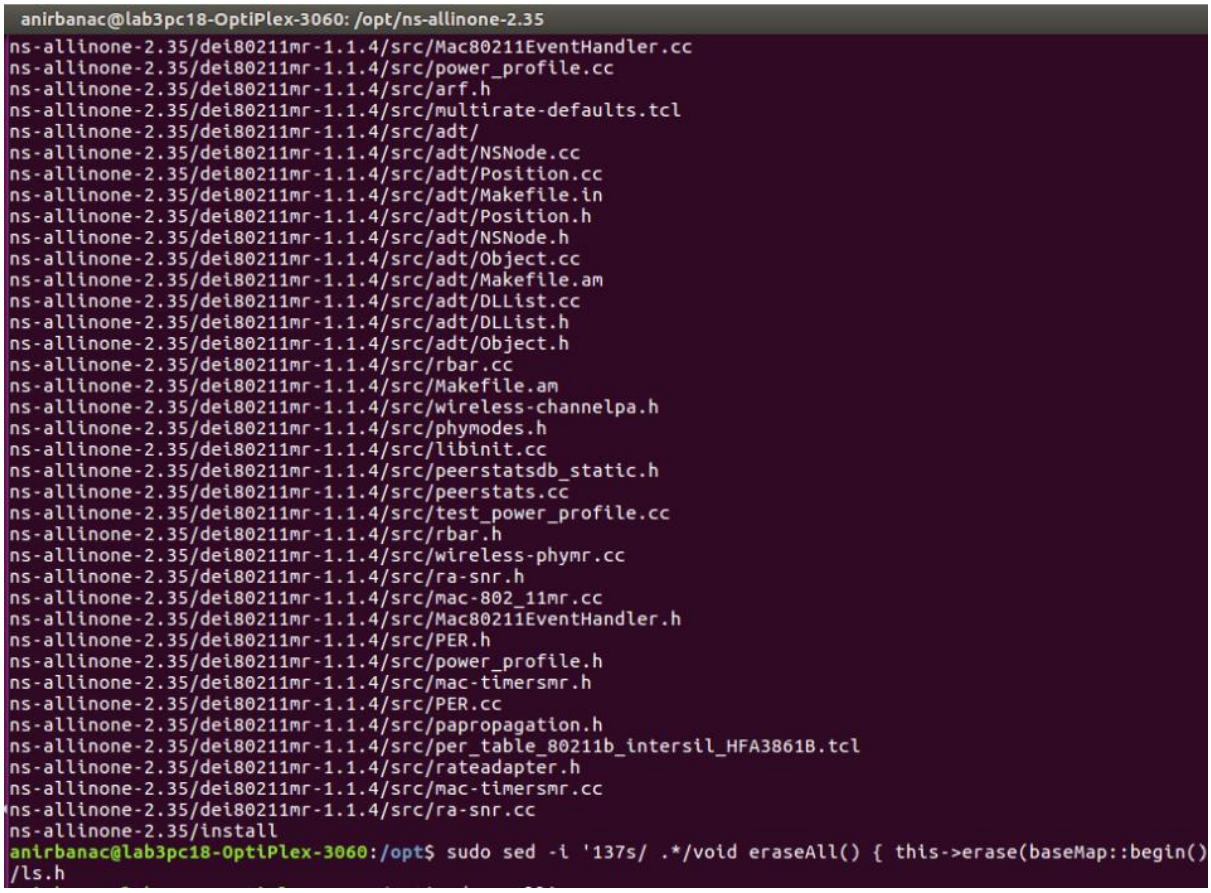
3) Copy NS-2 package (tar.gz) into a folder (say ‘opt’) from home directory and then move to that directory in terminal using cd /folder/ command.

Now extract NS-2 using ‘sudo tar -zxvf ns-allinone-2.35.tar.gz’.



4) After successful extraction, we use command ‘sudo sed -i '137s/ .*/void eraseAll() { this->erase(baseMap::begin(), baseMap::end()); }/' /opt/ns-allinone-2.35/ns-2.35/linkstate/ls.h’.

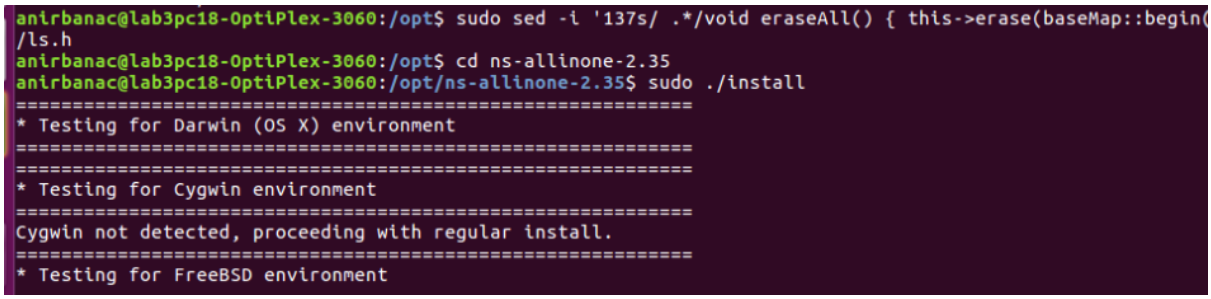
If it does not throw an error everything went fine.



5) Move to extracted directory using ‘cd ns-allinone-2.35’.

Now we install NS-2 using ‘sudo ./install’.

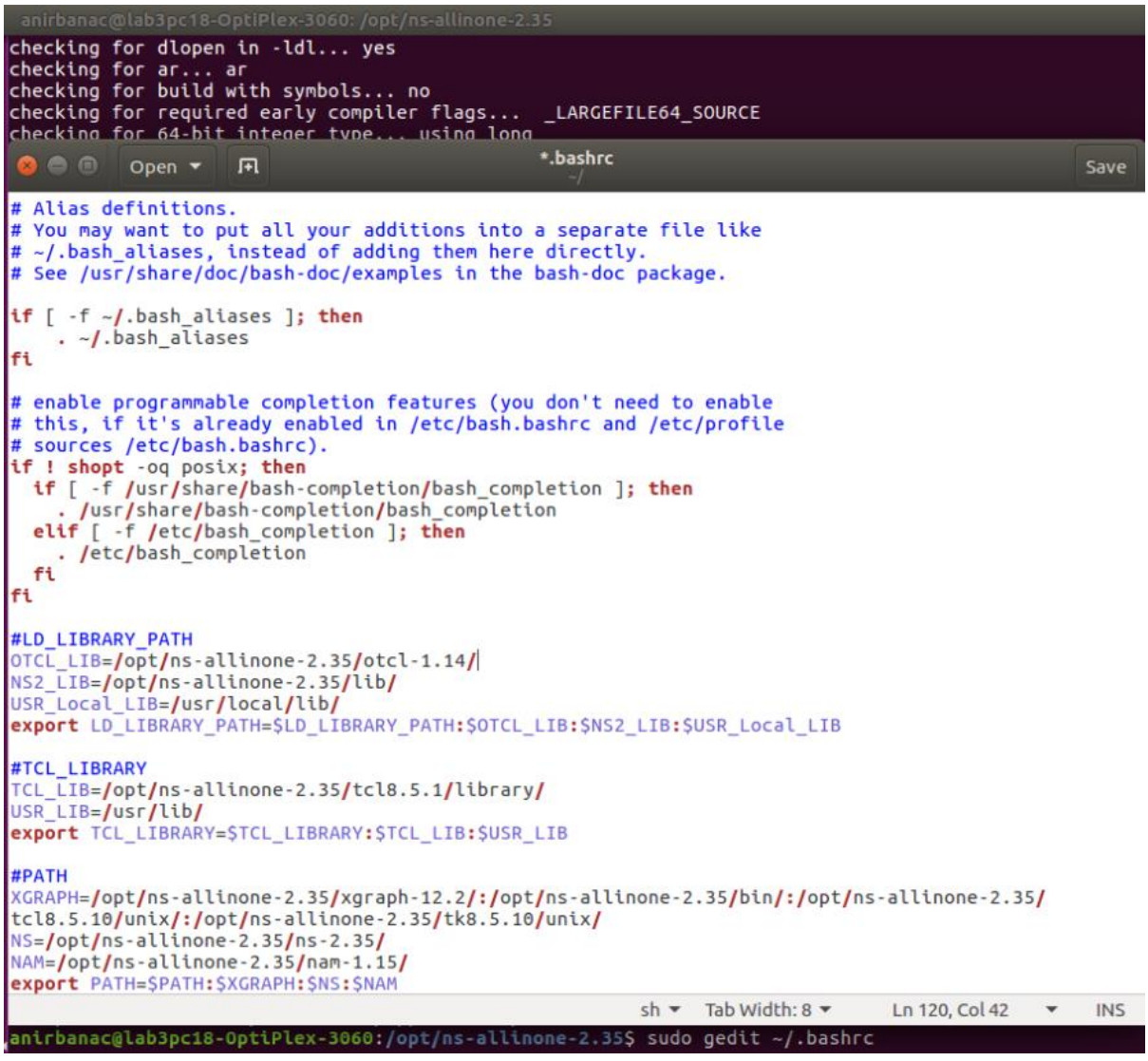
Everything will work fine if above steps are followed like I did.



6) We need to make some changes in the bash file after installation so we edit the bash file using ‘sudo gedit ~/.bashrc‘.

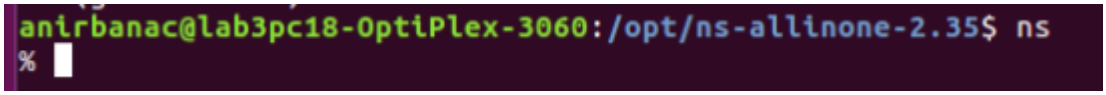
We paste the following code after line 137 (last line of the file):

```
#LD_LIBRARY_PATH
OTCL_LIB=/opt/ns-allinone-2.35/otcl-1.14/
NS2_LIB=/opt/ns-allinone-2.35/lib/
USR_Local_LIB=/usr/local/lib/
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$OTCL_LIB:$NS2_LIB:$USR_Local_LIB

#TCL_LIBRARY
TCL_LIB=/opt/ns-allinone-2.35/tcl8.5.1/library/
USR_LIB=/usr/lib/
export TCL_LIBRARY=$TCL_LIBRARY:$TCL_LIB:$USR_LIB

#PATH
XGRAPH=/opt/ns-allinone-2.35/xgraph-12.2/:/opt/ns-allinone-2.35/bin/:/opt/ns-allinone-2.35/
tcl8.5.10/unix/:/opt/ns-allinone-2.35/tk8.5.10/unix/
NS=/opt/ns-allinone-2.35/ns-2.35/
NAM=/opt/ns-allinone-2.35/nam-1.15/
export PATH=$PATH:$XGRAPH:$NS:$NAM
```



After writing/pasting the code we save the file.

7) All steps are completed and now we run NS-2 using ‘ns’ and we will see a ‘%’ symbol if it is successfully installed.



That’s it, we are done!

➔ Made by Anirban

References : https://digitalpadm.com/steps-to-install-ns2-network-simulator-on-ubuntu-16-04/

https://en.wikipedia.org/wiki/Ns_(simulator)