

# COMP1047 – Computer Networks – Lab 1.3

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## Installing NS-2.35 on Ubuntu 14.04

This post will tell you how to install NS-2.35 in Ubuntu 14.04 64-bit operating system.

NS-2 is a discrete event simulator targeted at networking research. NS-2 provides substantial support for simulation of TCP, routing, and multicast protocols over wired and wireless (local and satellite) networks.

**Step 1** : Download NS-2.35 from [here](#) or [here](#) or from the web using any search engine.

**Step 2** : Copy the downloaded file from the Download folder to your home directory  
/home/username folder ( your username )

**Step 3** : Open your Terminal and execute these commands one by one. If you have already issued these commands in Ubuntu configuration phase then skip it.

```
sudo apt-get update
```

```
sudo apt-get install build-essential automake autoconf libxmu-dev
```

**Step 4** : untar ns-allinone-2.35.tar.gz using the command below

```
tar zxvf ns-allinone-2.35.tar.gz
```

**Step 5** : Once the file is unzipped, here you need to make a small change in the source file . Go to the folder ns-2.35/linkstate/ and open **ls.h** using any editor (gedit or nano or vi). Now go to line number 137 and make the following changes

Just add **this->** before erase

```
void eraseAll() { this->erase(baseMap::begin(), baseMap::end()); }
```

**Or**

```
void eraseAll() { erase(baseMap::begin(), baseMap::end()); }
```

with

```
void eraseAll() { baseMap::erase(baseMap::begin(), baseMap::end()); }
```

Once this is done save your ls.h file and close the editor

Now you can install NS-2.35 in your system

**Step 6** : Go inside ns-allinone-2.35 by using the command `cd ns-allinone-2.35` from your terminal and enter the command `./install`

Your installation will start and it will take some time for complete installation

```
sai@ubuntu: ~/ns-allinone-2.35
make[1]: Leaving directory '/home/sai/ns-allinone-2.35/dei80211mr-1.1.4'

Ns-allinone package has been installed successfully.
Here are the installation places:
tk8.5.10:      /home/sai/ns-allinone-2.35/{bin,include,lib}
tk8.5.10:      /home/sai/ns-allinone-2.35/{bin,include,lib}
otcl:         /home/sai/ns-allinone-2.35/otcl-1.14
tclcl:        /home/sai/ns-allinone-2.35/tclcl-1.20
ns:           /home/sai/ns-allinone-2.35/ns-2.35/ns
nam:          /home/sai/ns-allinone-2.35/nam-1.15/nam
xgraph:       /home/sai/ns-allinone-2.35/xgraph-12.2
gt-itn:       /home/sai/ns-allinone-2.35/itn, edriver, sgb2alt, sgb2ns, sgb2comns, sgb2hierns

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Please put /home/sai/ns-allinone-2.35/bin:/home/sai/ns-allinone-2.35/tcl8.5.10/unix:/home/sai/ns-allinone-2.35/tk8.5.10/unix
into your PATH environment; so that you'll be able to run itn/tclsh/wish/xgraph.

IMPORTANT NOTICES:

(1) You MUST put /home/sai/ns-allinone-2.35/otcl-1.14, /home/sai/ns-allinone-2.35/lib,
into your LD_LIBRARY_PATH environment variable.
If it complains about X libraries, add path to your X libraries
into LD_LIBRARY_PATH.
If you are using csh, you can set it like:
    setenv LD_LIBRARY_PATH <paths>
If you are using sh, you can set it like:
    export LD_LIBRARY_PATH=<paths>

(2) You MUST put /home/sai/ns-allinone-2.35/tcl8.5.10/library into your TCL_LIBRARY environmental
variable. Otherwise ns/nam will complain during startup.

After these steps, you can now run the ns validation suite with
cd ns-2.35; ./validate

For trouble shooting, please first read ns problems page
http://www.isi.edu/nsnam/ns/ns-problems.html. Also search the ns mailing list archive
for related posts.

sai@ubuntu: ~/ns-allinone-2.35
```

Once the installation is over, you need to set the path for NS-2.35

**Step 7** : As we are using Ubuntu, we need to paste the path in `.bashrc` file. Open `.bashrc` by entering the following command from your terminal

```
gedit .bashrc
```

Once the file is opened, you need to paste your path /home/unnc/comp1047/ is my path

```
#LD_LIBRARY_PATH
OTCL_LIB=/home/unnc/comp1047/ns-allinone-2.35/otcl-1.14
NS2_LIB=/home/unnc/comp1047/ns-allinone-2.35/lib
X11_LIB=/usr/X11R6/lib
USR_LOCAL_LIB=/usr/local/lib
export
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$OTCL_LIB:$NS2_LIB:$X11_LIB:$USR_LOCAL_LIB
# TCL_LIBRARY
TCL_LIB=/home/unnc/comp1047/ns-allinone-2.35/tcl8.5.10/library
USR_LIB=/usr/lib
export TCL_LIBRARY=$TCL_LIB:$USR_LIB
# PATH
XGRAPH=/home/unnc/comp1047/ns-allinone-2.35/bin:/home/unnc/comp1047/ns-
allinone-2.35/tcl8.5.10/unix:/home/unnc/comp1047/ns-allinone-
2.35/tk8.5.10/unix
```

```
# Note: the above two lines starting from XGRAPH should come in the same line
NS=/home/unnc/comp1047/ns-allinone-2.35/ns-2.35/
NAM=/home/unnc/comp1047/ns-allinone-2.35/nam-1.15/
PATH=$PATH:$XGRAPH:$NS:$NAM
```

Now save your file and close it

From your terminal run the following command to save your changes in the file

```
source .bashrc
```

The installation is over, now you need to check whether NS2 is working or not. In order to check type the following commands in your terminal

Enter `ns` in your terminal, if `%` symbol comes after you press enter, your installation is successful.

Enter `nam` in your terminal, if a Nam window pops out, Nam is installed successfully.

**Step 8** : Go inside `ns-allinone-2.35/ns-2.35` by using the command `cd ns-allinone-2.35/ns-2.35` from your terminal and enter the command `./validate`

This command will validate your `ns` installation.