2 Days Training on IoT Architecture and Simulation using ns-3

LAB 1

Muhammad Saufy Rohmad
EE, UiTM
CompuThings

Lab 1 – Install and Run ns3

1. Download and install vmplayer

2. Download and install Fedora

3. Download and install ns-3

4. Install Netanim.

5. Run first example

1. Download and install vmplayer

Download and Install vmplayer

https://www.vmware.com/my/ products/workstation-player/ workstation-player- evaluation.html
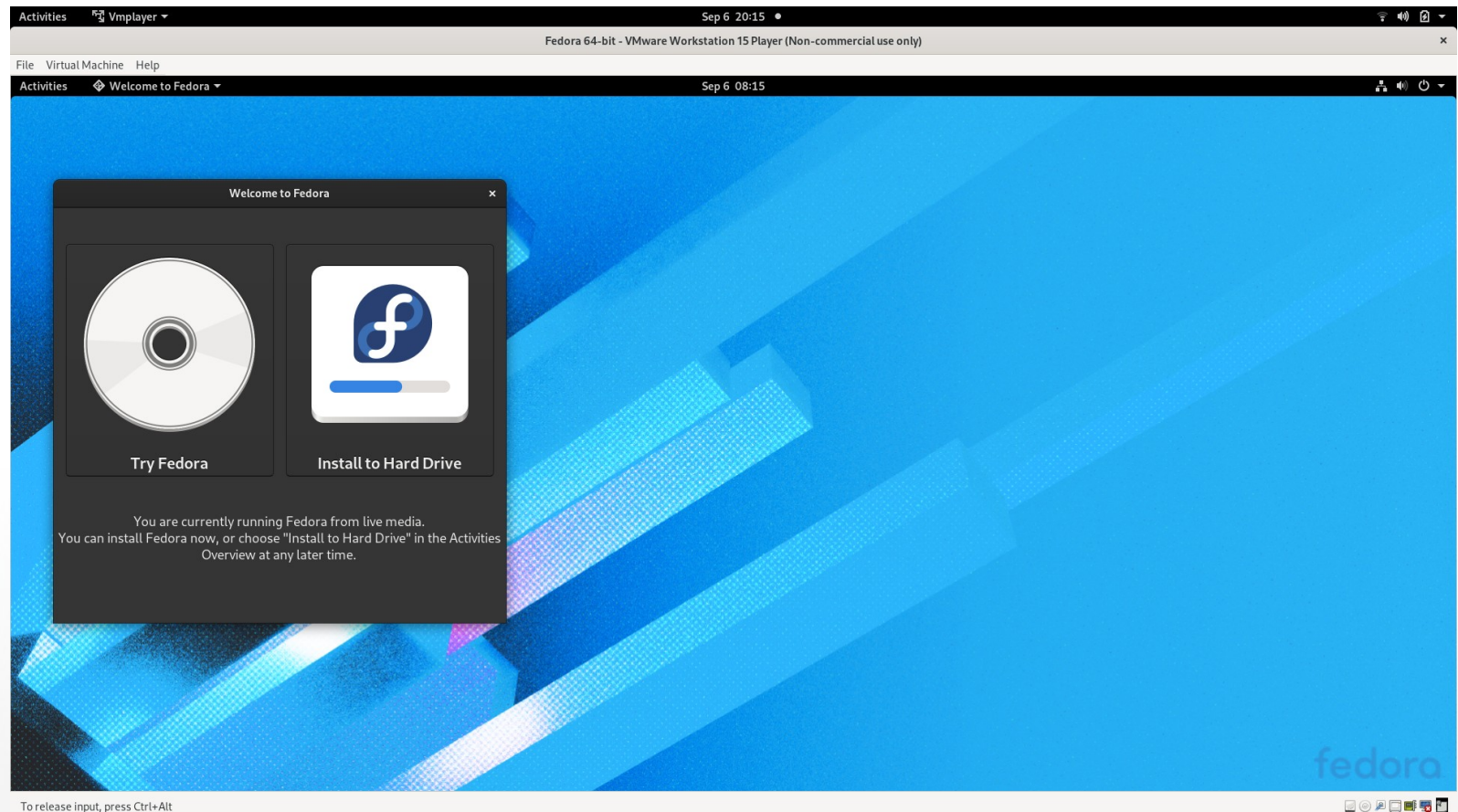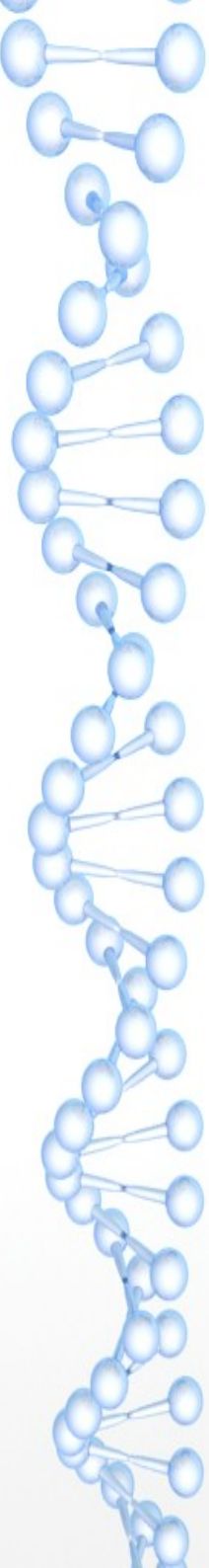
2. Download and install Fedora

Download fedora iso from:

https://
download.fedoraproject.org/pub/
fedora/linux/releases/32/
Workstation/x86_64/iso/Fedora-
Workstation-Live-x86_64-32-
1.6.iso

2. Download and install Fedora
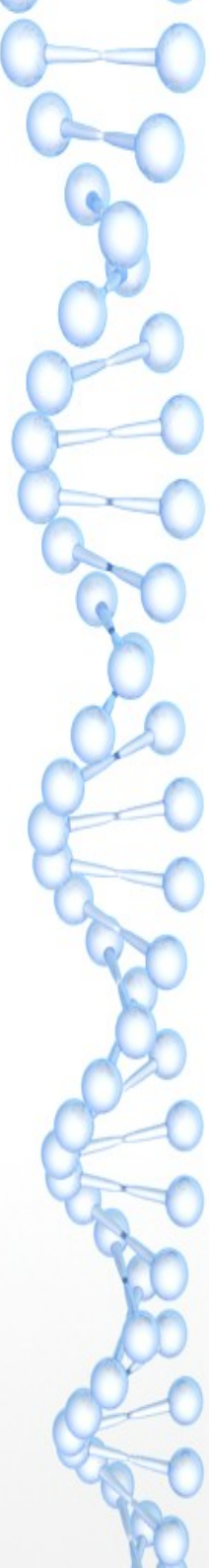
Install Fedora Virtual Machine

3. Download and install ns-3
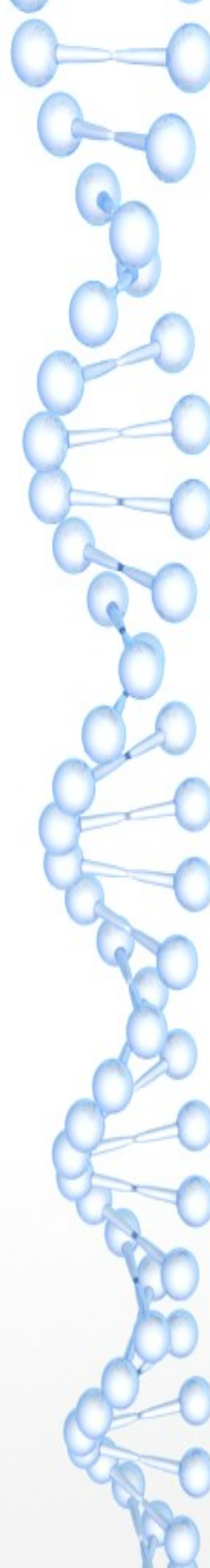
Follow this link:

https://kecsong.wordpress.com/2016/02/24/installing-and-testing-ns-3-with-netanim-on-fedora-23-2/

3. Download and install ns-3

Step 1: Downloading ns-allinone-3.24.1 tarball according to most recent version by using the following link
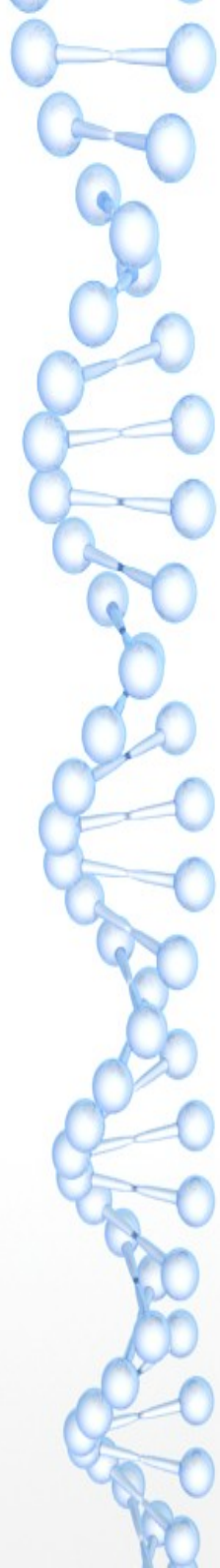
https://www.nsnam.org/release/

3. Download and install ns-3

Step 2: Go to Home Directory via terminal and unzip the ns-allinone-3.24.1.tar.bz2 tarball

[root@localhost ~]# pwd

/home/user

3. Download and install ns-3

Step 3: Go in ns-allinone-3.24.1 folder and give the following command for installation:

[root@localhost ~]# cd ns-allinone-3.24.1/

[root@localhost ~] # ./build.py –enable-examples –enable-tests

After a sometime, if the build is successful you may see the following message

Leaving directory './ns-3.24.1'

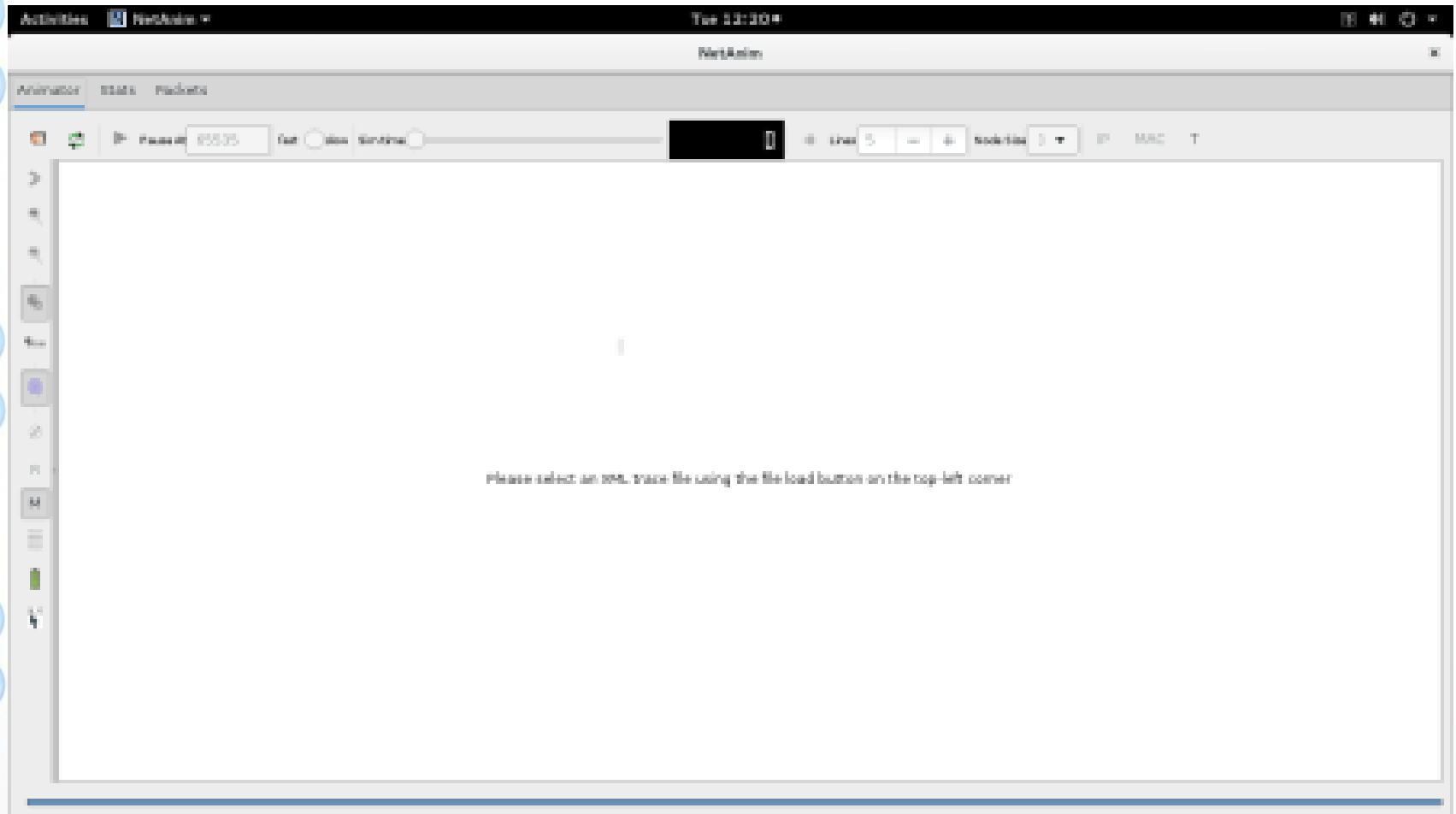# 4. Download and install Netanim.

Installing NetAnim.
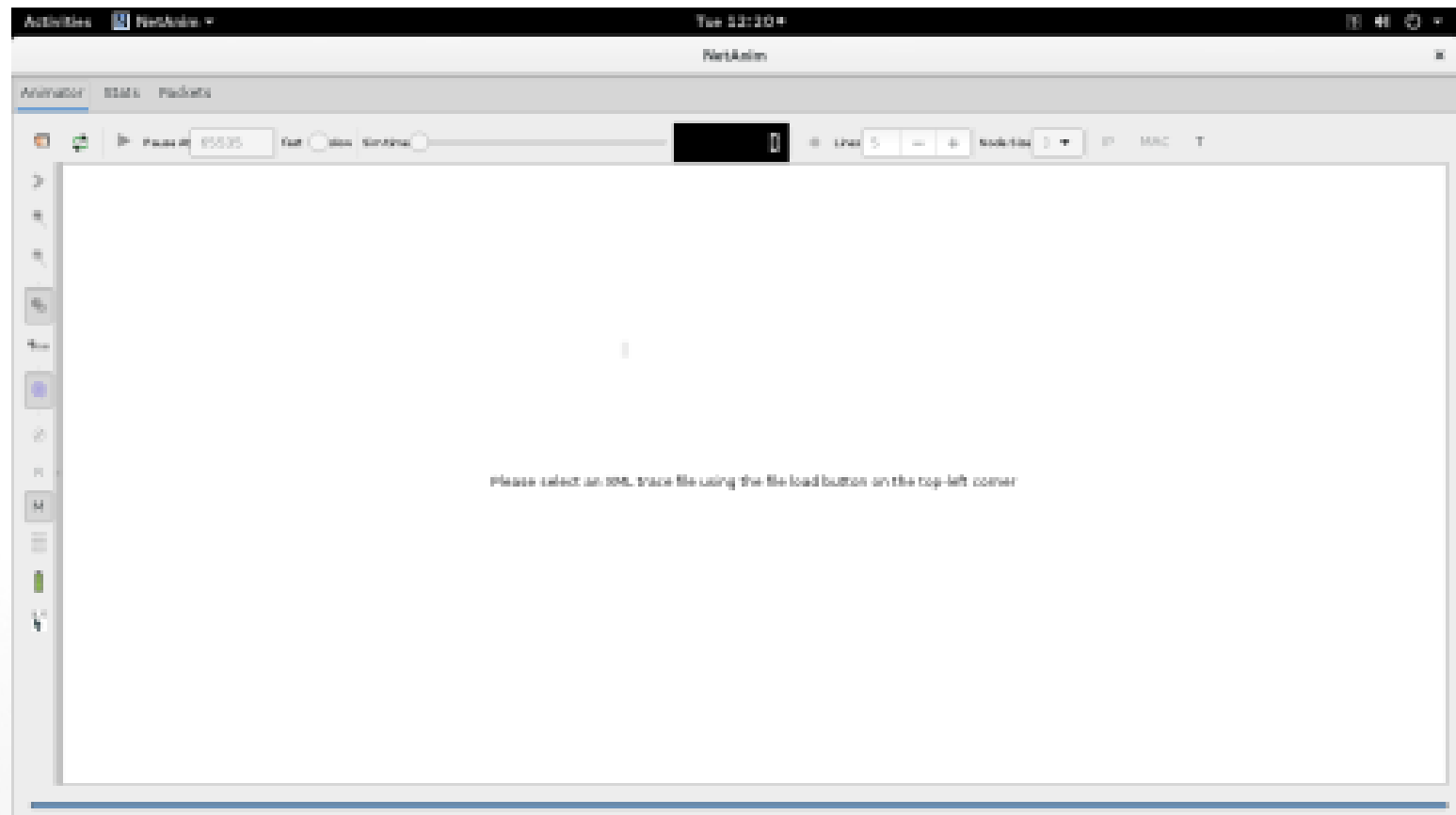
1. cd to NetAnim directory.

2. #make clean

3. #sudo yum install qt5-devel

3. #qmake-qt5 NetAnim.pro

4. #make

5. #./NetAnim

4. Download and install NetAnim.

4. Download and install NetAnim.

This will appear

5. Run First Example (without NetAnim)

1. #cd ns-3.31

2. #cp examples/tutorial/first.cc scratch/

3. #./waf –run scratch/first

5. Run First Example (without NetAnim)

4. Below output appear:

'build' finished successfully (0.939s)

At time 2s client sent 1024 bytes to 10.1.1.2 port 9

At time 2.00369s server received 1024 bytes from 10.1.1.1 port 49153

At time 2.00369s server sent 1024 bytes to 10.1.1.1 port 49153

At time 2.00737s client received 1024 bytes from 10.1.1.2 port 9

[msrohmad@craft ns-3.31]$

6. Run First Example (with NetAnim)

1. #cd ns-3.31

2. #cp examples/tutorial/first.cc scratch/

3. Edit first.cc

6. Run First Example (with NetAnim)

Add below lines (in bold):

20 #include "ns3/point-to-point-module.h"

21 #include "ns3/applications-module.h"

22 #include "ns3/netanim-module.h"

6. Run First Example (with NetAnim)

Add below lines (in bold):

78 // add this

79   AnimationInterface anim("first_anim.xml");

80   anim.SetConstantPosition(nodes.Get(0),1.0,10.0);

81   anim.SetConstantPosition(nodes.Get(1),50.0,10.0);

82

83

84   Simulator::Run ();

85   Simulator::Destroy ();

86   return 0;

87 }

6. Run First Example (with NetAnim)

4. Run againt #./waf –run /script/first
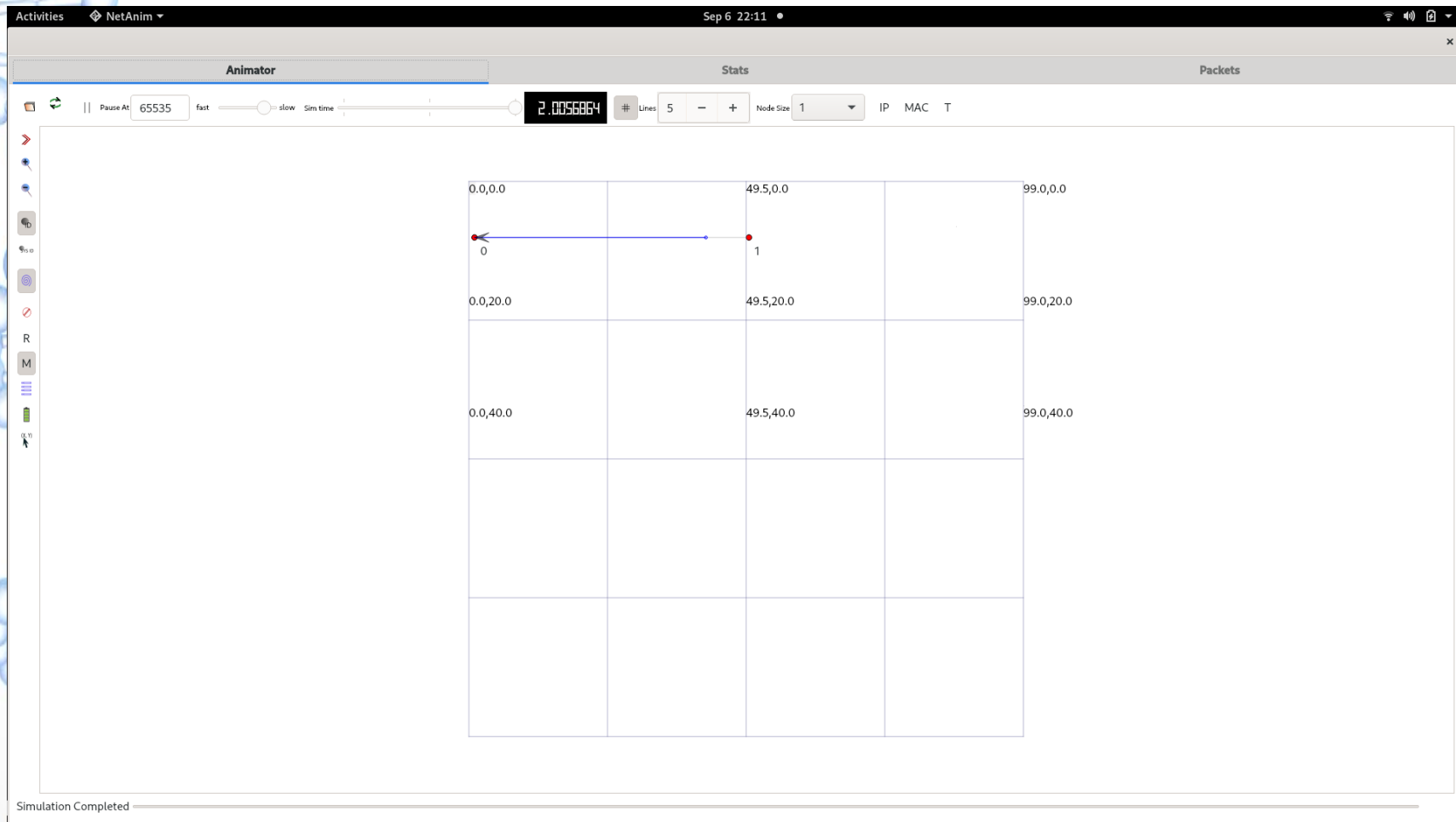
(above command will save info to anim1.xml)

6. Run First Example (with NetAnim)

5. Run ./NetAnim

6. Open File and Choose first_anim.xml

7. Below will appear

6. Run First Example (with NetAnim)

Conclusion

1. Examine source code of .cc files

2. We are ready for ns-3 exploration.

3. You can test other sample in example directory.

4. Copy to scratch and test.