



# EXPERIMENT - 9

## Computer Networks Lab

### Aim

Install and configure NetAnim.

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### Aim:

Install and configure NetAnim.

### Theory:

NetAnim is an offline network animator tool that now ships along with the ns-allinone-3.xx package.

It can animate the ns-3 network simulation using an XML trace file that is generated as an output during simulation.

So, the necessary steps for creating this XML trace file and setting its related attributes should be done in the ns-3 simulation code itself.

For a beginner who starts learning ns2, the animation that is created by NetAnim will be a more attractive factor in learning and understanding a simulation. Undoubtfully, each and every beginner of ns-3 will be very happy while seeing the first animator output of their simulation on NetAnim for the very first time. So let us enjoy seeing our first network animation on NetAnim.

### Installation:

NetAnim is an offline animator based on the Qt toolkit. It currently animates the simulation using an XML trace file collected during the simulation.

NetAnim dependencies while installing NS3, install the dependencies given below:

```
$] apt-get install mercurial  
$] apt-get install qttools5-dev-tools
```

```
reeha@Reeha:~$ sudo apt-get install qttools5-dev-tools  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
qttools5-dev-tools is already the newest version (5.11.3-4).  
0 upgraded, 0 newly installed, 0 to remove and 65 not upgraded.  
reeha@Reeha:~$
```

```

reeha@Reeha:~$ su -
Password:
root@Reeha:~# apt-get install mercurial
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  mercurial-common
Suggested packages:
  kdiff3 | kdiff3-qt | kompare | meld | tkcvs | mgdiff qct python-mysqldb python-openssl python-pygments
The following NEW packages will be installed:
  mercurial mercurial-common
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 2830 kB of archives.
After this operation, 14.2 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian buster/main amd64 mercurial-common all 4.8.2-1+deb10u1 [2523 kB]
Get:2 http://deb.debian.org/debian buster/main amd64 mercurial amd64 4.8.2-1+deb10u1 [307 kB]
Fetched 2830 kB in 1s (4016 kB/s)
Selecting previously unselected package mercurial-common.
(Reading database ... 183974 files and directories currently installed.)
Preparing to unpack .../mercurial-common_4.8.2-1+deb10u1_all.deb ...
Unpacking mercurial-common (4.8.2-1+deb10u1) ...
Selecting previously unselected package mercurial.
Preparing to unpack .../mercurial_4.8.2-1+deb10u1_amd64.deb ...
Unpacking mercurial (4.8.2-1+deb10u1) ...
Setting up mercurial-common (4.8.2-1+deb10u1) ...
Setting up mercurial (4.8.2-1+deb10u1) ...

Creating config file /etc/mercurial/hgrc.d/hgext.rc with new version
Processing triggers for man-db (2.8.5-2) ...
root@Reeha:~#

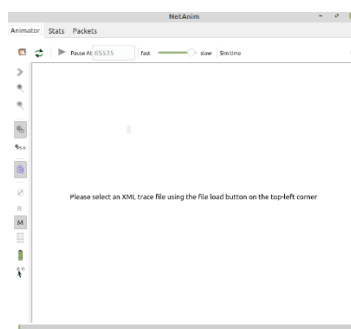
```

After you're done installing, change directories to check if NetAnim program is initiating properly

```

$] cd ns-allinone-3.33
$] cd netanim-3.108
$] make clean
$] make
$] ./NetAnim

```



After successful initiation, we have to make some changes in our pre-existing .cc file so that it could be run successfully

- Ensure that your wscript includes the "netanim" module. Example as in: src/netanim/examples/wscript.
- Also include the header [#include "ns3/netanim-module.h"] in your test program.
- Add the statement "AnimationInterface anim ("animation.xml");" before Simulator::Run().

Finally you can run any ns3 .cc file after making the mentioned changes by the command

```
$] Enter the directory you've saved the file in
```

```
$] ./waf -run file_name
```

## Output:

```
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.460s)
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
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
```

