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17

Experiment No 2

Title : Getting Started with simple ns2 scripts
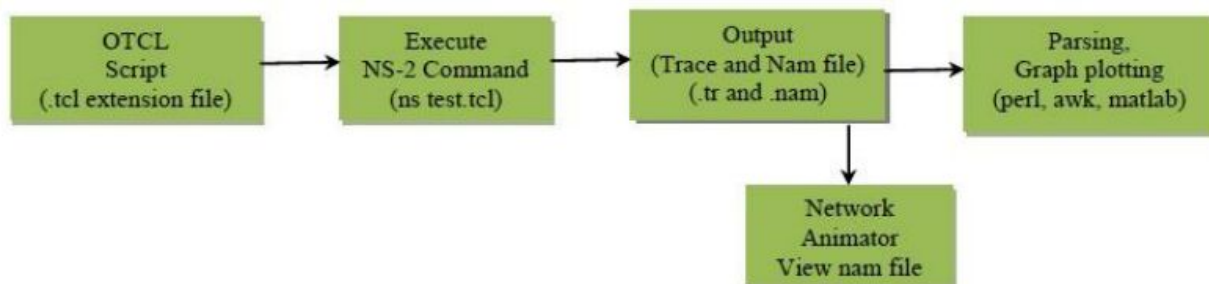
Theory :
Introduction To NS-2

NS is a name for a series of discrete event network simulator, specifically ns-1, ns-2 and ns-3. All of them are discrete-event computer network simulators, primarily used in research and teaching. ns-3 is free software publicly available under the GNU GPLv2 license for research, development, and use.
Ns began as a variant of the real network simulator in 1989 and has evolved substantially over the past few years. In 1995 ns development was supported by DARPA through the VINT project at LBL, Xerox PARC, UCB, and USC/ISI. Currently ns development is support through DARPA with SAMAN and through NSF with CONSER, both in collaboration with other researchers including ACIRI. Ns has always included substantial contributions from other researchers, including wireless code from the UCB Daedelus and CMU Monarch projects .

What is ns2 and its architecture ?

In this Simple ns2 program we will do following

  ➢ Develop a Tcl script for ns which simulates a simple topology.
  ➢ Learn how to set up nodes and links, how to send data from one node to another,
  ➢ How to monitor a queue and
  ➢ How to start nam from your simulation script to visualize your simulation.

Procedure/ Algorithm :
How to start:

cris@cris-VirtualBox:~$ cd ns2/
cris@cris-VirtualBox:~/ns2$ ls
Exp 10 Handoff   Exp 3 Wireless Scripts
Exp 11 TCP Comm   Exp 4 Wired Cum Wireless Mobile
Exp 12 Multicast   Exp 5 Manet
Exp 13 Ping   Exp 6 Satellite
Exp 14 Count Packets   Exp 7 Worm

Exp 15 Ethernet Throughput calculation Exp 8 Wireless flooding
Exp 16 WPAN   Exp 9 TCP UDP Model
Exp 2 NS2 Simple Scripts   Template.odt
cris@cris-VirtualBox:~/ns2$ cd Exp\ 2\ NS2\ Simple\ Scripts/
cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple Scripts$ ls
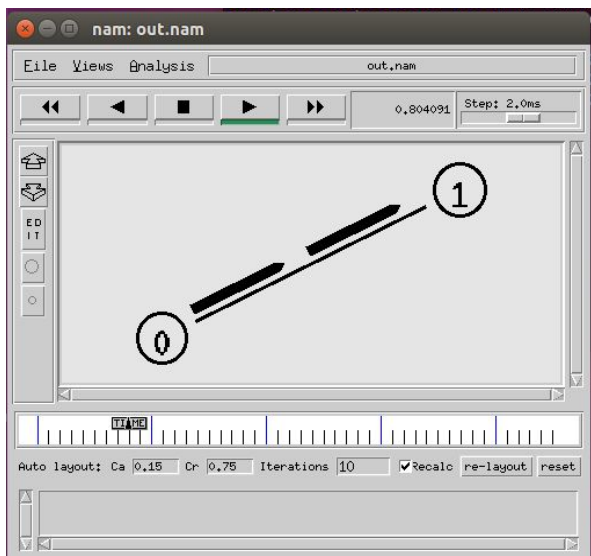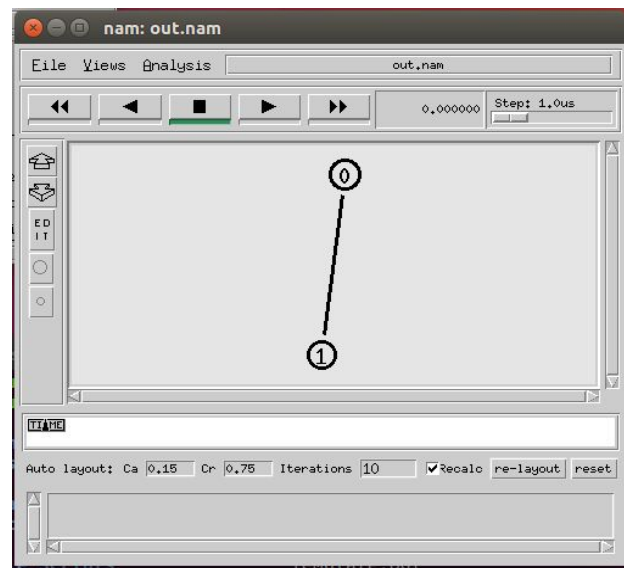example1a.tcl example4.tcl   out2.tr   xgraph_12.1-17_amd64.deb
example1b.tcl ns2 Simple Scripts.odt out.nam
example2.tcl   out0.tr   ping.tcl
example3.tcl   out1.tr   template.tcl

Results :

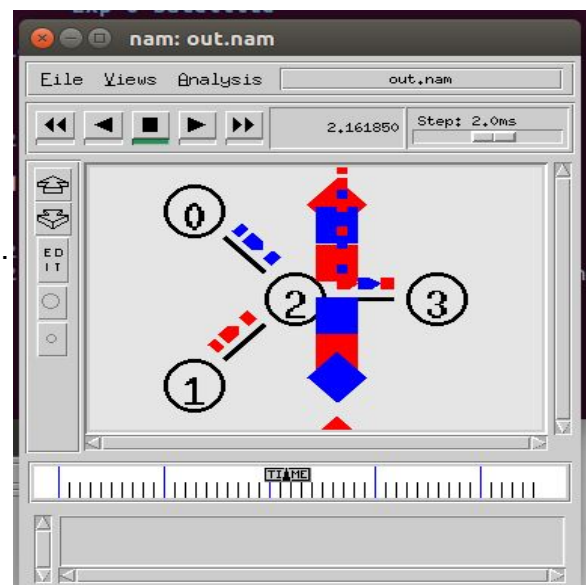cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple
Scripts$ ns example1a.tcl

cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple
Scripts$ ns example1b.tcl

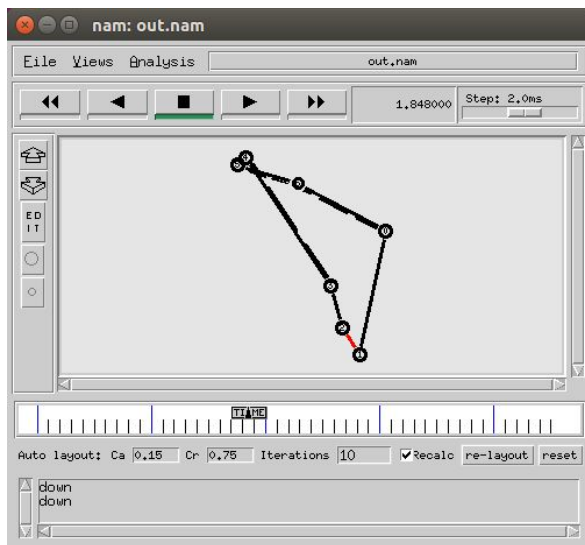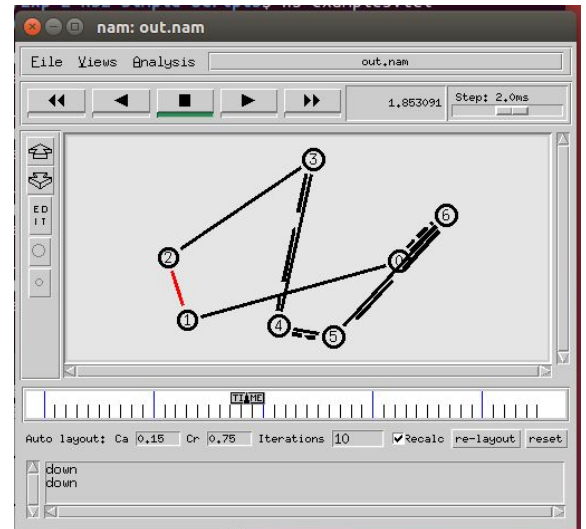cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple
Scripts$ ns example2.tcl
cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple
Scripts$ Cannot connect to existing nam instance.
Starting a new one...

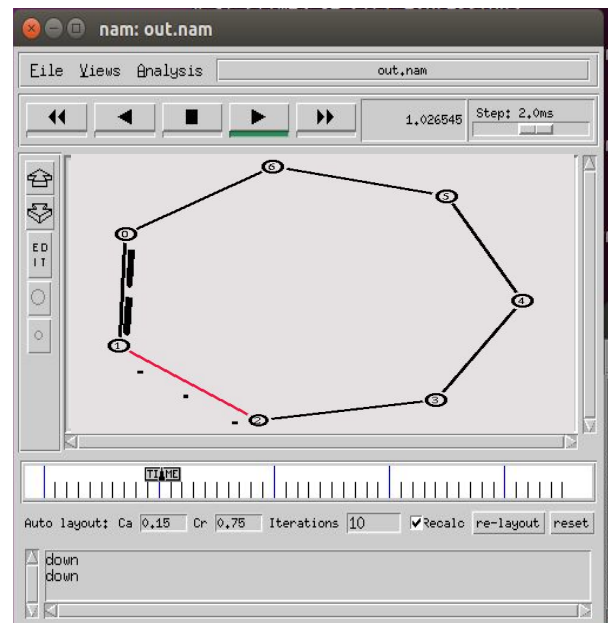cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple
Scripts$ ns example3.tcl

cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple Scripts$ Nam syntax has changed: v -t 1 link-down 1 2 1
Please use this format in the future.
v -t <time> -e <tcl expression>

Nam syntax has changed: v -t 1 link-down 1 2 1
Please use this format in the future.
v -t <time> -e <tcl expression>

cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple Scripts$ ns example4.tcl
cris@cris-VirtualBox:~/ns2/Exp 2 NS2 Simple Scripts$ nam out.nam
Nam syntax has changed: v -t 1 link-down 1 2 1
Please use this format in the future.
v -t <time> -e <tcl expression>

Nam syntax has changed: v -t 1 link-down 1 2 1
Please use this format in the future.
v -t <time> -e <tcl expression>

References :

1. Tutorial for ns2
 https://www.isi.edu/nsnam/ns/tutorial/ns.html