Name :-Pratham Asnani

RollNo:-63

Batch:-S13

LO Mapping:-LO2

2.Assignment 2

Aim-Installation and configuration of NS2 and implementation of TCL Hello Program

Simulator

Simulation is the process of learning by doing. Whenever there is something new in the world, we try to analyze it first by examining it and in the process get to learn a lot of things. This entire course is called Simulation. Correlating to this process, in order to understand all the complexities one needs to model the entire role-play in form of computer simulation, the need is to build artificial objects and assign them roles dynamically.

Network Simulator(NS2)?

Network simulation (NS) is one of the types of simulation, which is used to simulate the networks such as in MANETs, VANETs, etc. It provides simulation for routing and multicast protocols for both wired and wireless networks. NS is licensed for use under version 2 of the GNU (General Public License) and is popularly known as NS2. It is an object-oriented, discrete event-driven simulator written in C++ and Otcl/Tcl.

NS-2 can be used to implement network protocols such as TCP and UDP, traffic source behavior such as FTP, Telnet, Web, CBR, and VBR, router queues management mechanism such as Drop Tail, RED, and CBQ, routing algorithms, and many more. In ns2, C++ is used for detailed protocol implementation and Otcl is used for the setup. The compiled C++ objects are made available to the Otcl interpreter and in this way, the ready-made C++ objects can be controlled from the OTcl level.

NA File

A NAP file typically refers to a file used in specialized applications or contexts. The specific meaning of a NAP file depends on the software or domain in which it is used. Below are some possible explanations:

Network Access Protection (NAP) File

Context: Used in Windows environments.

Description: In Microsoft's Network Access Protection (NAP), these files may relate to configuration or policies that manage access control for networked devices. They define security compliance rules for devices attempting to connect to a network.

Napster File

Context: Associated with the Napster music-sharing platform.

Description: In the early days of Napster, NAP files could refer to metadata or configuration files used by the Napster application.

TCL Script

Tcl is a general purpose multi-paradigm system programming language. It is a scripting language that aims at providing the ability for applications to communicate with each other. On the other hand, Tk is a cross platform widget toolkit used for building GUI in many languages. This tutorial covers various topics ranging from the basics of the Tcl/Tk to its scope in various applications.

Installation

Steps is to install NS2

1. Download NS2 from following link: https://www.isi.edu/nsnam/dist/ns-allinone-2.28.tar.gz

2. Decompress the file use winrar. Copy the decompressed folder the Cygwin installation directory under the subdirectory home. It will be C:\cygwin\home\system_name : where system_name is name of your system in above Cygwin installation this path will be C: \Cygwin\home\sys27

3. Run Cygwin from desktop and change the directory to folder you copied just now in step 2 command to change directory:cd /home/sys27/ns-allinone-2.28

4. To start installation type following command:"./install"(WITHOUT qoutes)

This will began the installation process if any Cygwin package is missing it will be reported to you if so the run Cygwin setu.exe and install the missing package and start again from step 2.

5. Add following lines to the .bashrc

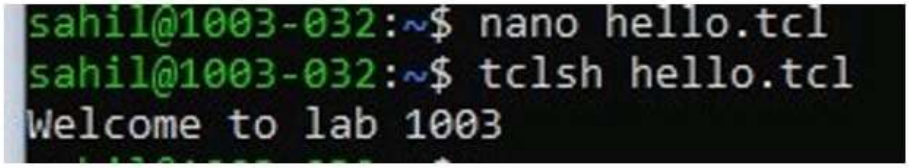
export NS_HOME=/home/sys27/ns-allinone-2.28

export PATH=$NS_HOME/nam-1.11:$NS_HOME/tcl8.4.5/unix:$NS_HOME/tk8.4.5/unix: $NS_HOME/bin:$PATH

export LD_LIBRARY_PATH=$NS_HOME/tcl8.4.5/unix:$NS_HOME/tk8.4.5/unix:$NS_HOME/otcl-1.9:$NS_HOME/lib:$LD_LIBRARY_PATH

export TCL_LIBRARY=$NS_HOME/tcl8.4.5/library

ns example2.tcl



Conclusion:-Installing and learning all steps for TCL and NS2 can be a rewarding process for anyone looking to dive into the world of network simulation. By following the step-by-step procedures, you gain not only technical expertise in setting up tools like NS2 and its dependencies but also foundational knowledge in scripting with TCL, a powerful language integral to NS2 simulations.