

The LNM Institute of Information Technology, Jaipur
Computer Networks Lab
Lab Assignment 1

Objective: Introduction to Network Simulator - OMNeT++

Tasks 1: Installation of OMNeT++

1. Download the OMNeT++ from below given link or from computer lab website
<https://www.omnetpp.org/omnetpp>
2. Install of the simulator in your home directory as specified in install guide
<https://omnetpp.org/doc/omnetpp/InstallGuide.pdf> (refer page 13)

Tasks 2:

1. Start OMNeT++ IDE by “omnetpp” command
2. Create your workspace (name “workspace”) in your home directory
3. Switch to your workspace (don’t install “INET framework” and “sample”)
4. Create new “OMNeT++ project” with name “lab1”

Task 3: Network Simulation

1. Network Design:

- a. Create a computing node (name “node”)
- b. Create a network (name “twoNode”) with two instances of computing nodes

[Node1] <--> [Node2]

- c. Create message (“packet” type) with four fields: Id, Type of message (Data or Ack), Source Address and Destination Address

2. Behavioural Design: (Data Transfer)

- a. Node1 sends a “Data” messages to Node2. Node2 receives this message and sends back “Ack” message to the Node1.

e.g.

| | [Node1] | <--> | [Node2] |
|----|-------------------|-------------------|------------------|
| t1 | “Data” --> (send) | | |
| t2 | | | “Data” (receive) |
| t3 | | | <---“Ack” (send) |
| t4 | “Ack” (receive) | | |

- b. Node1 sends 10 “Data” messages with id 1 to 10 to Node2. Node2 receives each “Data” message and send back “Ack” message with same id as received “Data” message id to the Node1. After receiving “Ack” message Node1 sends the next message.