

The LNM Institute of Information Technology, Jaipur

Computer Networks Lab

Lab Assignment 1

Objective: Simulation of Two Node Network using the Network Simulator - OMNeT++

Tasks 1:

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 2: 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 (type “packet” and name “N_PDU”) 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 that of received “Data” message id to the Node1. After receiving “Ack” message Node1 sends the next message.