**`[ 2CEIT503 COMPUTER NETWORKS]**

Practical: 8



**AIM- Define a topology with four nodes in which one node act**

**that forwards the data that two nodes are sending to the fourth**

**node. Also find a way to distinguish the data flows from the two**

**nodes other, and learn how a queue can be monitored to see how**

**full it is and how many packets are being discarded.**

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**Example2.tcl**

#Create a simulator object

set ns [new Simulator]

#Define different colors for data flows

$ns color 1 Blue

$ns color 2 Red

#Open the nam trace file

set nf [open out.nam w]

$ns namtrace-all $nf

#Define a 'finish' procedure

proc finish {} {

global ns nf

$ns flush-trace

#Close the trace file

close $nf

#Execute nam on the trace file

exec nam out.nam &

exit 0

}

#Create four nodes

set n0 [$ns node]

set n1 [$ns node]

set n2 [$ns node]

set n3 [$ns node]

#Create links between the nodes

$ns duplex-link $n0 $n2 1Mb 10ms DropTail

$ns duplex-link $n1 $n2 1Mb 10ms DropTail

$ns duplex-link $n3 $n2 1Mb 10ms SFQ

$ns duplex-link-op $n0 $n2 orient right-down

$ns duplex-link-op $n1 $n2 orient right-up

$ns duplex-link-op $n2 $n3 orient right

#Monitor the queue for the link between node 2 and node 3

$ns duplex-link-op $n2 $n3 queuePos 0.5

#Create a UDP agent and attach it to node n0

set udp0 [new Agent/UDP]

$udp0 set class\_ 1

$ns attach-agent $n0 $udp0

# Create a CBR traffic source and attach it to udp0

set cbr0 [new Application/Traffic/CBR]

$cbr0 set packetSize\_ 500

$cbr0 set interval\_ 0.005

$cbr0 attach-agent $udp0

#Create a UDP agent and attach it to node n1

set udp1 [new Agent/UDP]

$udp1 set class\_ 2

$ns attach-agent $n1 $udp1

# Create a CBR traffic source and attach it to udp1

set cbr1 [new Application/Traffic/CBR]

$cbr1 set packetSize\_ 500

$cbr1 set interval\_ 0.005

$cbr1 attach-agent $udp1

#Create a Null agent (a traffic sink) and attach it to node n3

set null0 [new Agent/Null]

$ns attach-agent $n3 $null0

#Connect the traffic sources with the traffic sink

$ns connect $udp0 $null0

$ns connect $udp1 $null0

#Schedule events for the CBR agents

$ns at 0.5 "$cbr0 start"

$ns at 1.0 "$cbr1 start"

$ns at 4.0 "$cbr1 stop"

$ns at 4.5 "$cbr0 stop"

#Call the finish procedure after 5 seconds of simulation time

$ns at 5.0 "finish"

#Run the simulation

$ns run



