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# Implement three nodes point – to – point network with duplex
# links between them. Set the queue size, vary the bandwidth and find
# the number of packets dropped.

#Create Simulator set ns [new Simulator]
#Open Trace file and NAM file
set ntrace [open 10a.tr w]
$ns trace-all $ntrace
set namfile [open 10a.nam w]
$ns namtrace-all $namfile

#Finish Procedure
proc Finish {} {
global ns ntrace namfile
#Dump all the trace data and close the files
$ns flush-trace
close $ntrace
close $namfile
#Execute the nam animation file
exec nam 10a.nam &
#Show the number of packets dropped
exec echo "The number of packet dropped is " &
exec grep -c "^d" 10a.tr &
exit 0
}
#Create 3 nodes
set n0 [$ns node]
set n1 [$ns node]
set n2 [$ns node]


#Label the nodes
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$n0 label "TCP Source"
$n2 label "Sink"

#Set the color
$ns color 1 blue

#Create Links between nodes
#You need to modify the bandwidth to observe the variation in packet drop
$ns duplex-link $n0 $n1 1Mb 10ms DropTail
$ns duplex-link $n1 $n2 1Mb 10ms DropTail

#Make the Link Orientation
$ns duplex-link-op $n0 $n1 orient right
$ns duplex-link-op $n1 $n2 orient right

#Set Queue Size
#You can modify the queue length as well to observe the variation in packet drop
$ns queue-limit $n0 $n1 10
$ns queue-limit $n1 $n2 10

#Set up a Transport layer connection.
set tcp0 [new Agent/TCP]
$ns attach-agent $n0 $tcp0
set sink0 [new Agent/TCPSink]
$ns attach-agent $n2 $sink0
$ns connect $tcp0 $sink0

#Set up an Application layer Traffic
set cbr0 [new Application/Traffic/CBR]
$cbr0 set type_ CBR
$cbr0 set packetSize_ 100
$cbr0 set rate_ 1Mb
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$cbr0 set random_ false
$cbr0 attach-agent $tcp0
$tcp0 set class_ 1

#Schedule Events
$ns at 0.0 "$cbr0 start"
$ns at 5.0 "Finish"

#Run the Simulation
$ns run

#output:-
#The number of packet dropped is 8
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