

## PROG 02

```
set ns [new Simulator]

$ns color 1 Blue

$ns color 2 Red

set ntrace [open prog3.tr w]

$ns trace-all $ntrace

set namfile [open prog3.nam w]

$ns namtrace-all $namfile

proc Finish {} {

    global ns ntrace namfile

    $ns flush-trace

    close $ntrace

    close $namfile

    exec nam prog3.nam &

    puts "The number of ping packets dropped are "

    exec grep "^d" prog3.tr | cut -d " " -f 5 | grep -c "ping" &

    exit 0

}

for {set i 0} {$i < 6} {incr i} {

    set n($i) [$ns node]

}

for {set j 0} {$j < 5} {incr j} {

    $ns duplex-link $n($j) $n([expr {$j+1}]) 0.1Mb 10ms DropTail

}

Agent/Ping instproc recv {from rtt} {

    set node [$self set node_]

    puts "Node [$node id] received ping reply from $from with round trip time $rtt ms"

}
```

```
set p0 [new Agent/Ping]
$p0 set class_ 1
$ns attach-agent $n(0) $p0
set p1 [new Agent/Ping]
$p1 set class_ 1
$ns attach-agent $n(5) $p1
$ns connect $p0 $p1
$ns queue-limit $n(2) $n(3) 2
$ns duplex-link-op $n(2) $n(3) queuePos 0.5
set tcp0 [new Agent/TCP]
$tcp0 set class_ 2
$ns attach-agent $n(2) $tcp0
set sink0 [new Agent/TCPSink]
$ns attach-agent $n(4) $sink0
$ns connect $tcp0 $sink0
set cbr0 [new Application/Traffic/CBR]
$cbr0 set packetSize_ 500
$cbr0 set rate_ 1Mb
$cbr0 attach-agent $tcp0
$ns at 0.2 "$p0 send"
$ns at 0.4 "$p1 send"
$ns at 0.4 "$cbr0 start"
$ns at 0.8 "$p0 send"
$ns at 1.0 "$p1 send"
$ns at 1.2 "$cbr0 stop"
$ns at 1.4 "$p0 send"
$ns at 1.6 "$p1 send"
$ns at 1.8 "Finish"
```

\$ns run