

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