

[2CEIT503 COMPUTER NETWORKS]

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AIM: Define a ring topology of ten nodes for a dynamic network where the routing adjusts to a link failure.

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```
#Create a simulator object
set ns [new Simulator]

#Tell the simulator to use dynamic routing
$ns rtproto DV

#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 seven nodes
for {set i 0} {$i < 10} {incr i} {
    set n($i) [$ns node]
}

#Create links between the nodes
for {set i 0} {$i < 10} {incr i} {
    $ns duplex-link $n($i) $n([expr ($i+1)%10]) 1Mb 10ms DropTail
}

#Create a UDP agent and attach it to node n(0)
set udp0 [new Agent/UDP]
$ns attach-agent $n(0) $udp0

# Create a CBR traffic source and attach it to udp0
set cbr0 [new Application/Traffic/CBR]
$cbr0 set packetSize_ 500
```

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```
$cbr0 set interval_ 0.005
```

```
$cbr0 attach-agent $udp0
```

```
#Create a Null agent (a traffic sink) and attach it to node n(3)
```

```
set null0 [new Agent/Null]
```

```
$ns attach-agent $n(3) $null0
```

```
#Connect the traffic source with the traffic sink
```

```
$ns connect $udp0 $null0
```

```
#Schedule events for the CBR agent and the network dynamics
```

```
$ns at 0.5 "$cbr0 start"
```

```
$ns rtmodel-at 1.0 down $n(1) $n(2)
```

```
$ns rtmodel-at 2.0 up $n(1) $n(2)
```

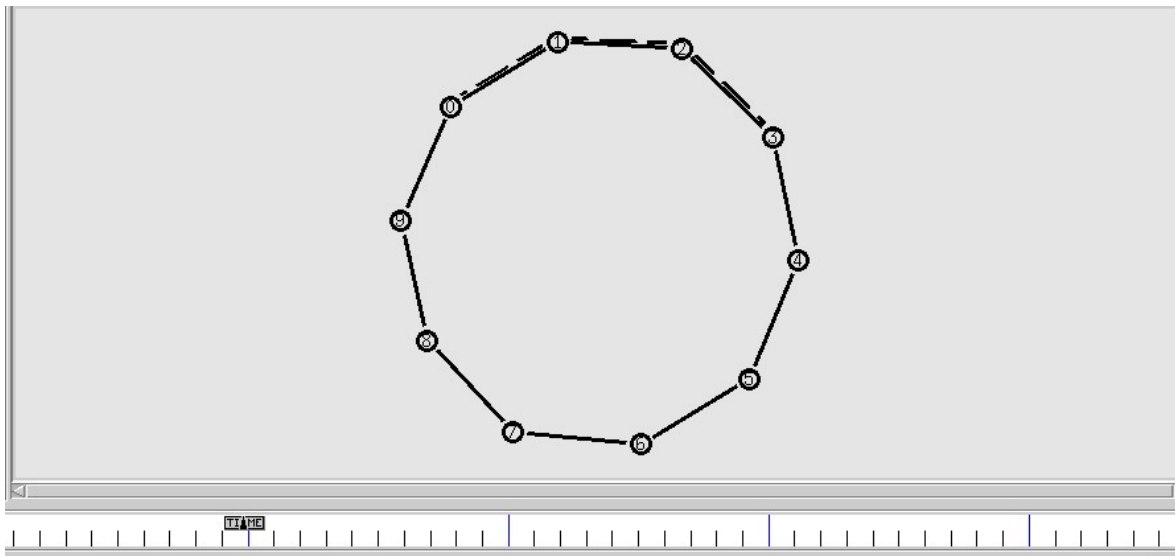
```
$ns at 4.5 "$cbr0 stop"
```

```
#Call the finish procedure after 5 seconds of simulation time
```

```
$ns at 5.0 "finish"
```

```
#Run the simulation
```

```
$ns run
```



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