

NS Fundamentals (contd..)

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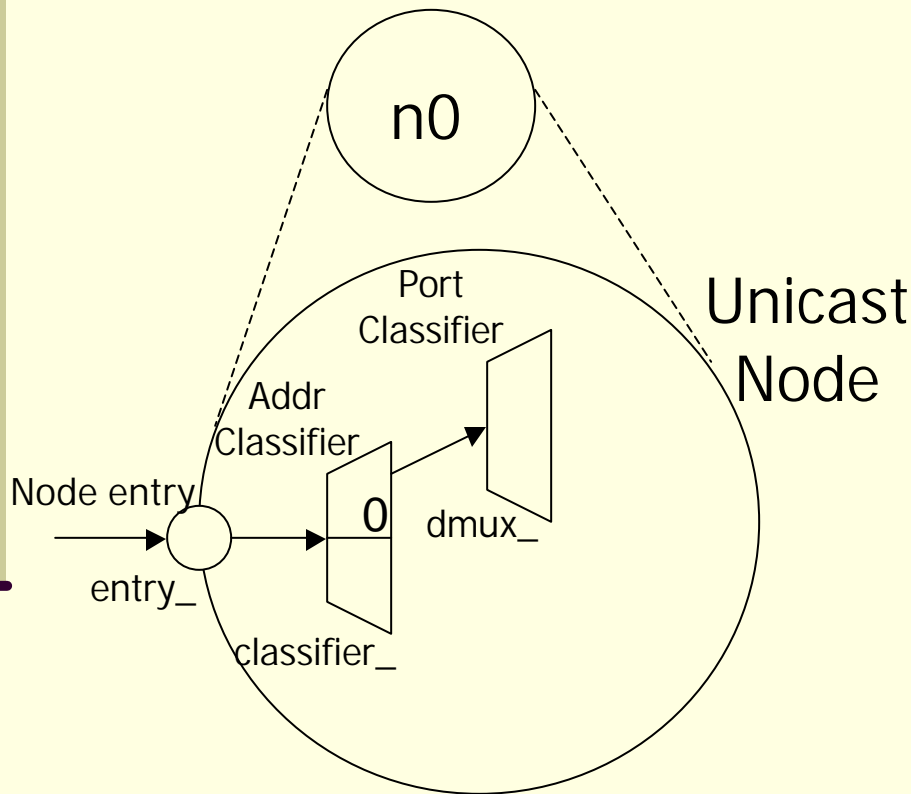
Outline

- Ns fundamentals – Part I (by Chen)
- NS fundamentals –Part II
 - NS Internals

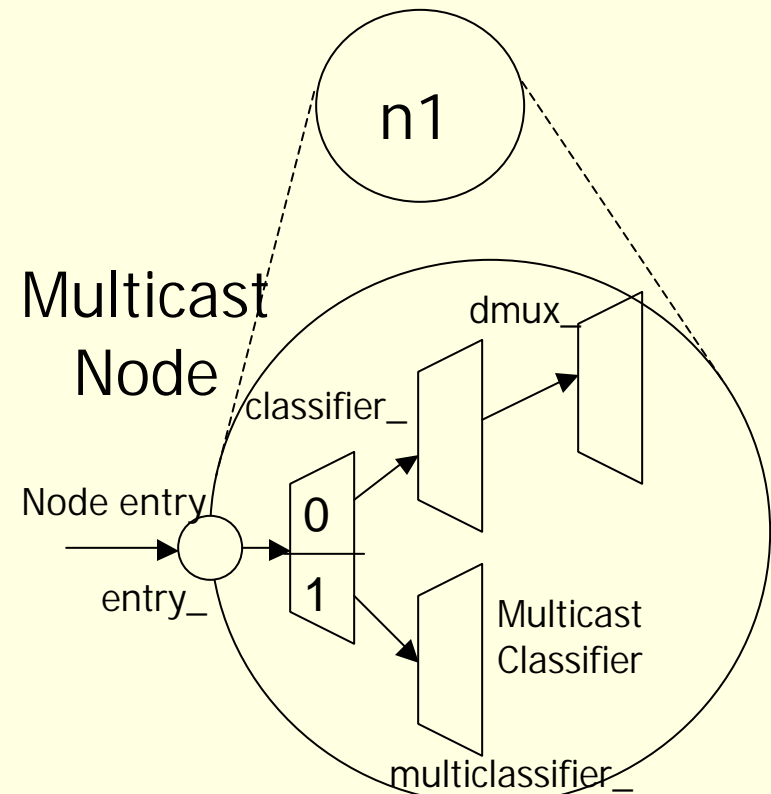
Ns Internals

- Tcl commands translates into
 - series of object creation
 - plumbing of these objects
- Step-by-step review of how each network component gets set up in ns

Network Topology: Node



set n0 [ns_ node]

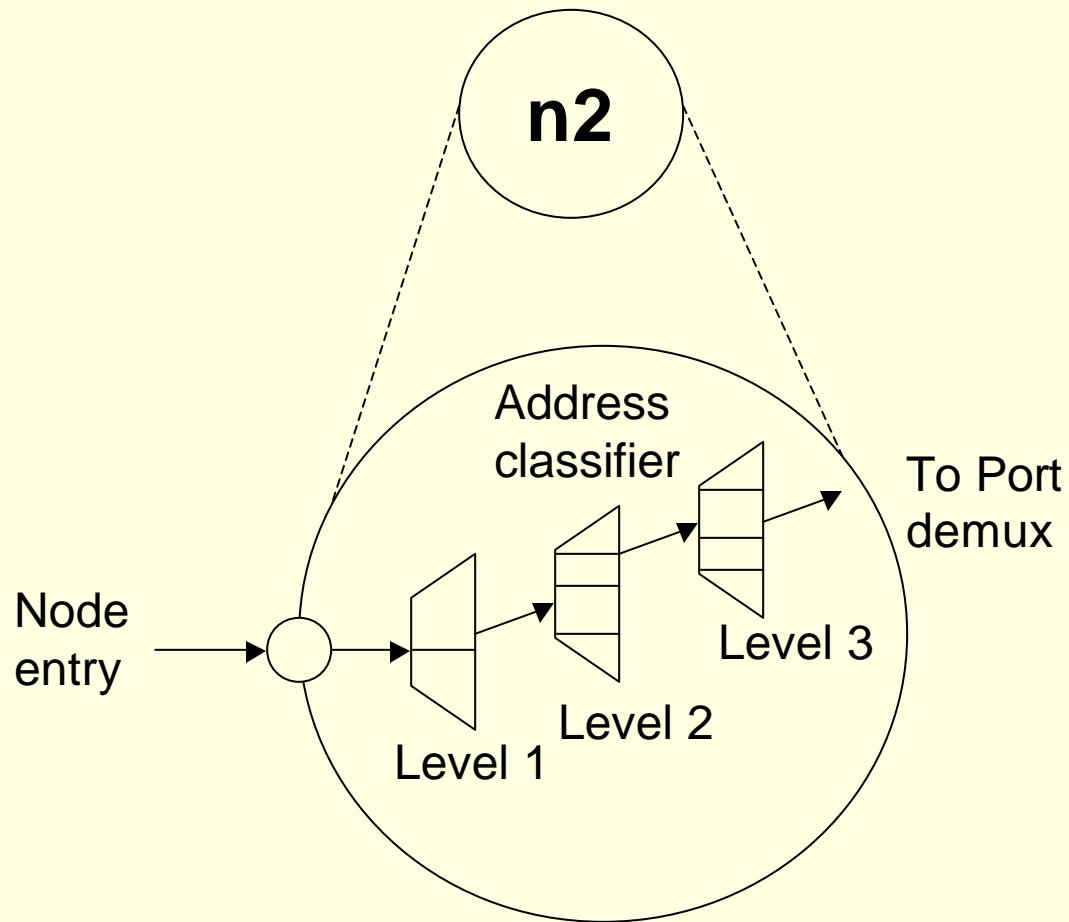


Set ns_ [new Simulator -multicast on]
Set n1 [ns_ node]

Node Addressing

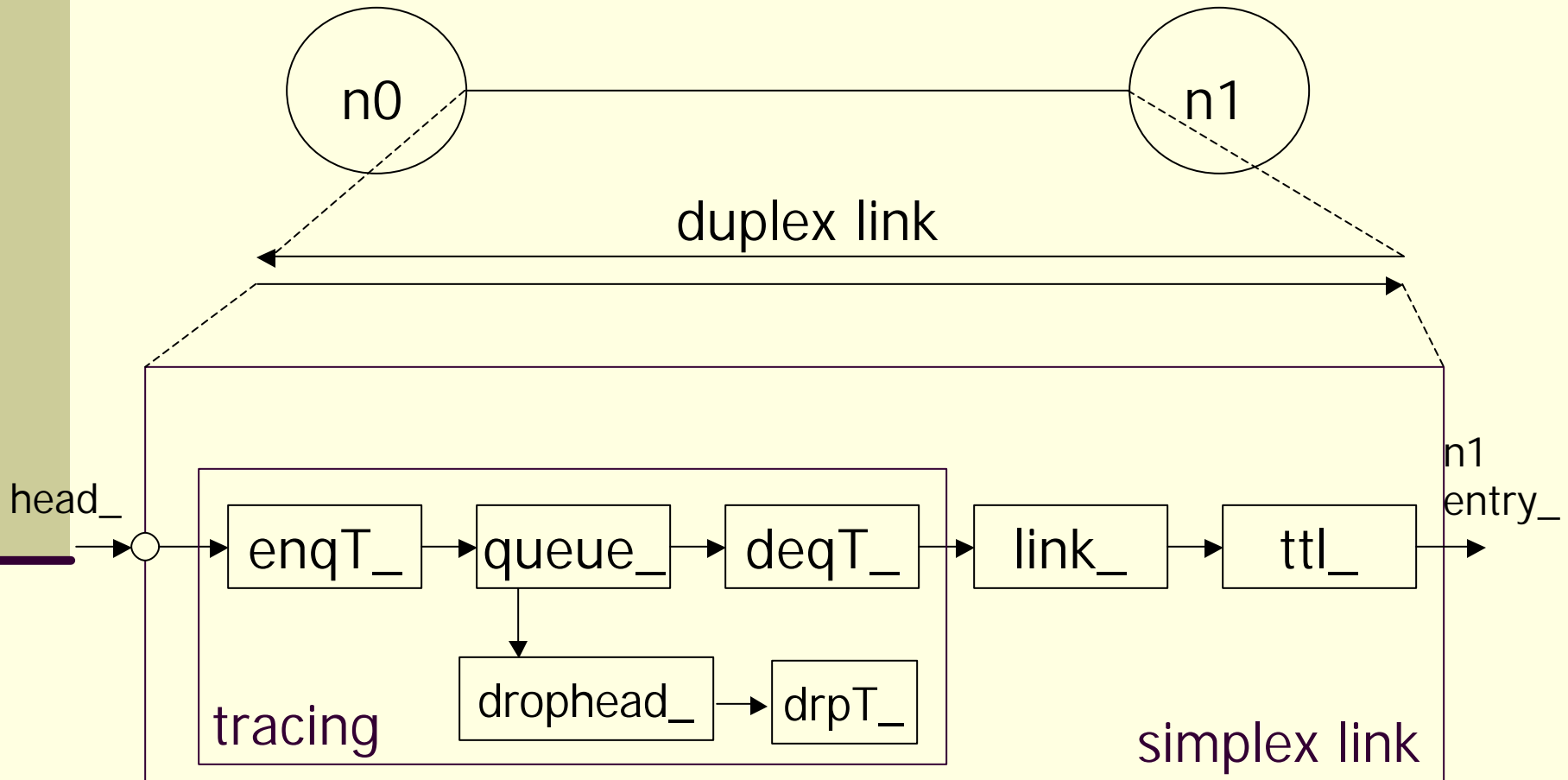
- Two basic address styles available: flat and hierarchical
- Default flat address: 32 bits each for node and port id
- Default hier address:
 - 3 levels of hierarchy
 - 10 11 11 or 1 9 11 11 if mcast specified
- Different bit allocation possible for specific hier addresses

Hierarchical Node



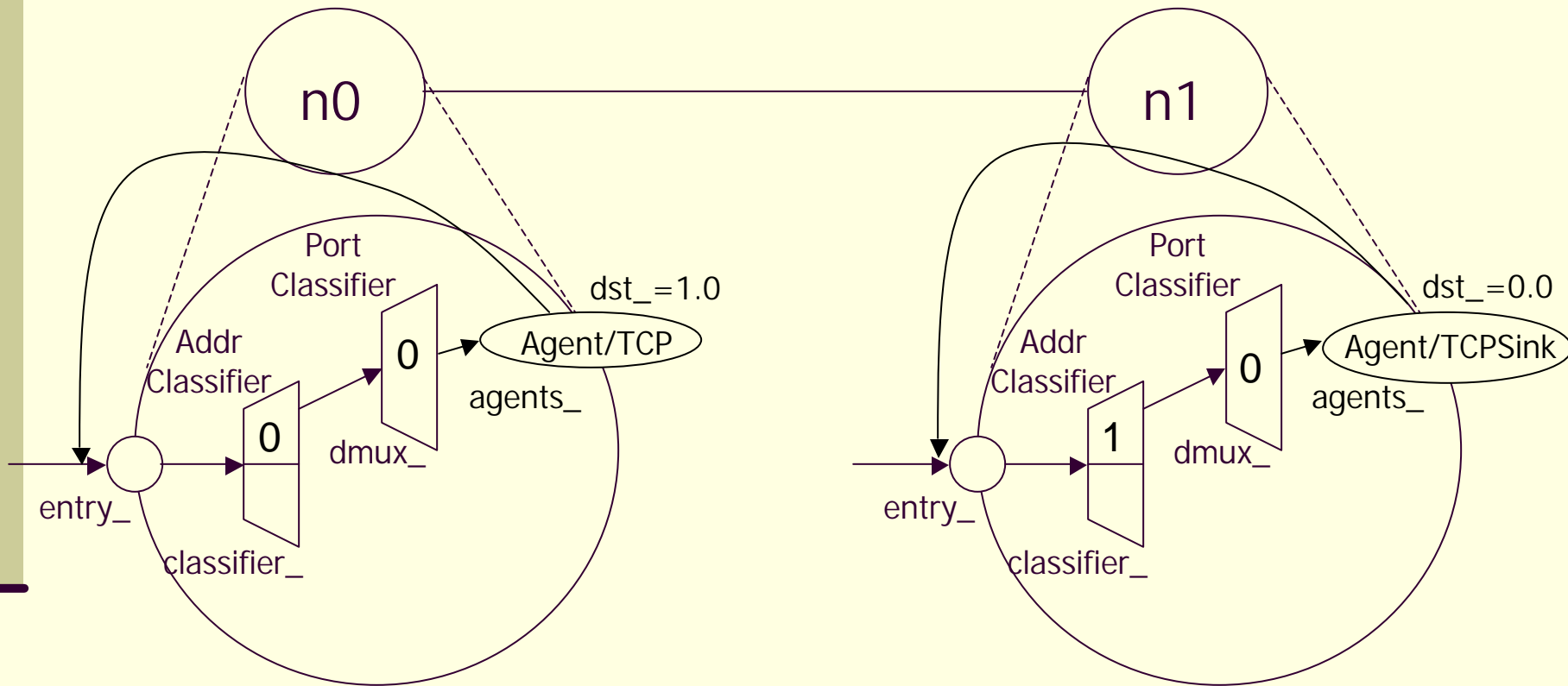
ns_node-config --addressing hier

Network Topology: Link



[ns_ duplex-link \$n0 \$n1 5Mb 2ms drop-tail]

Transport

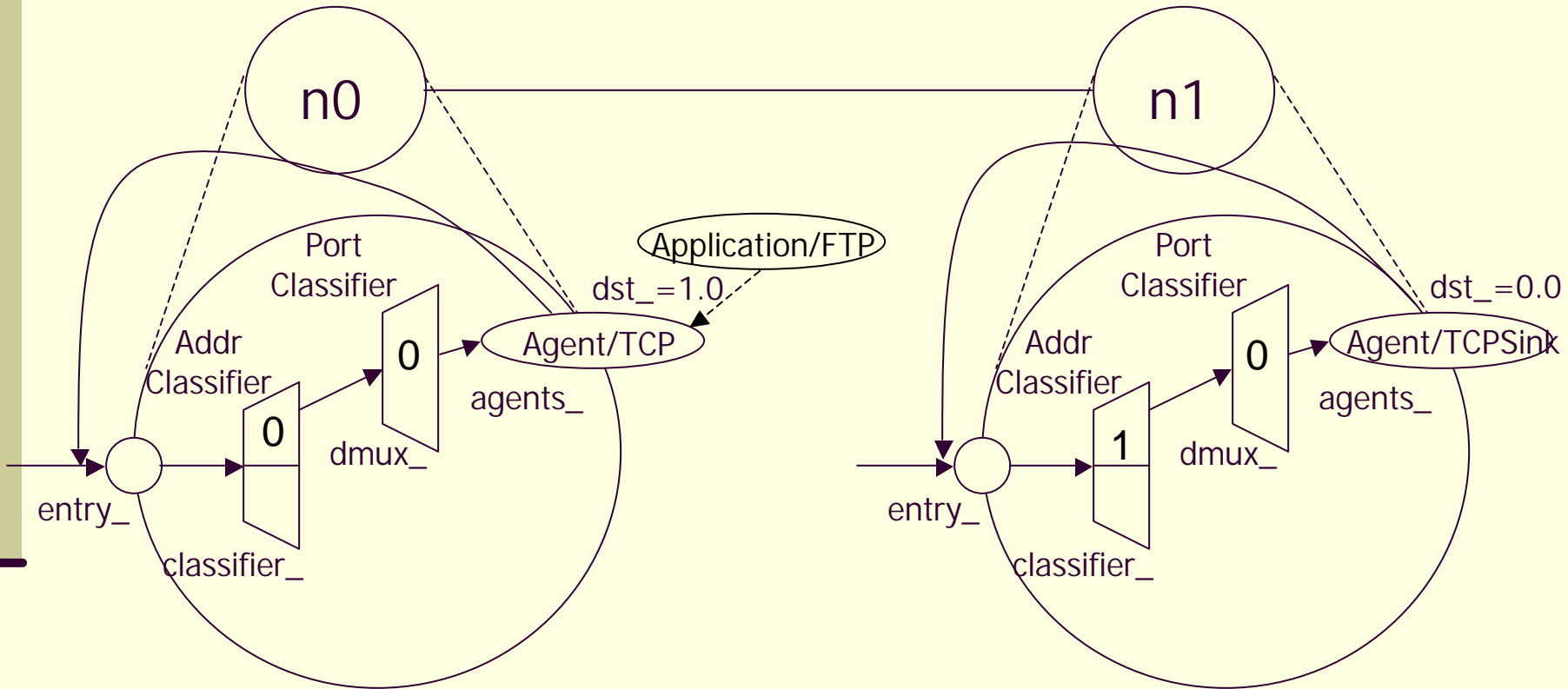


```
set tcp [new Agent/TCP]
ns_ attach-agent $n0 $tcp
```

```
set tcpsink [new Agent/TCPSink]
ns_ attach-agent $n1 $tcpsink
```

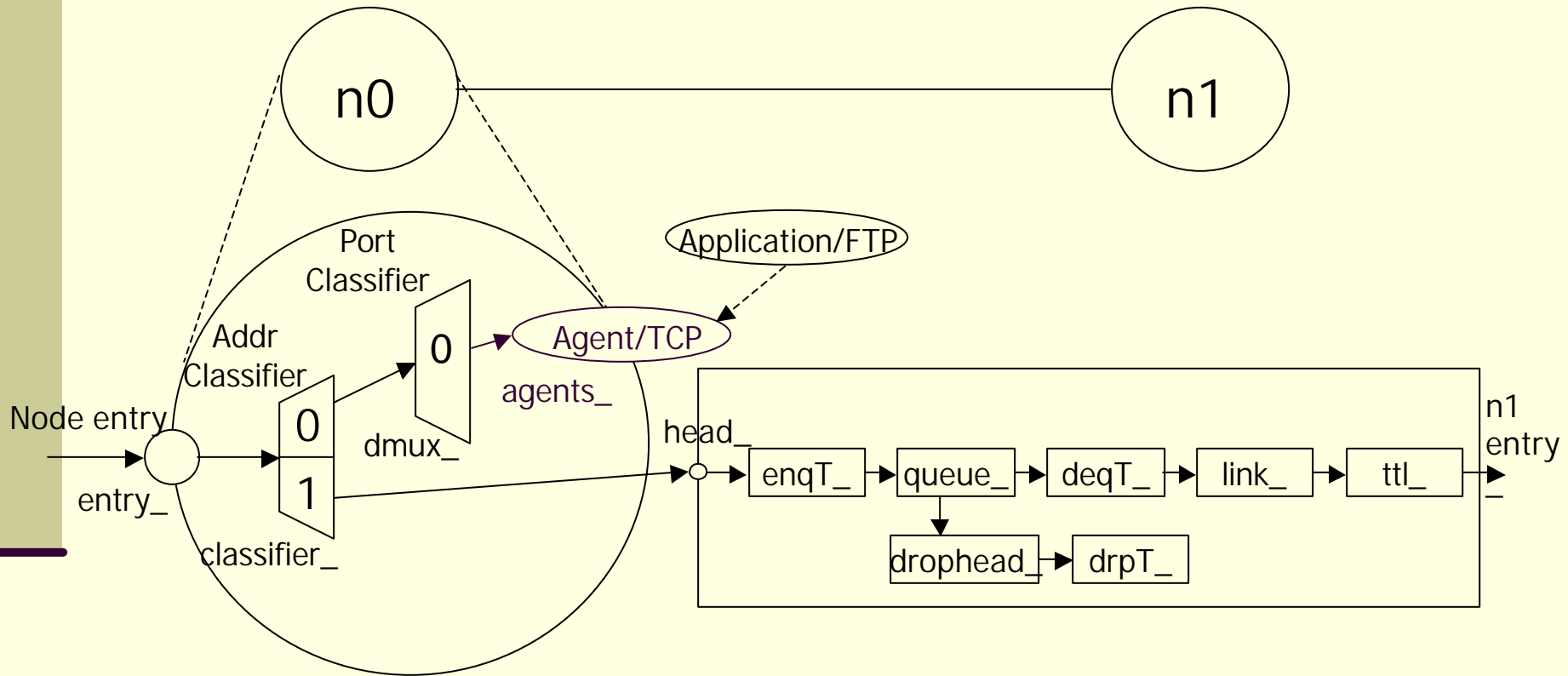
```
ns_ connect $tcp $tcpsink
```


Application: Traffic Generator

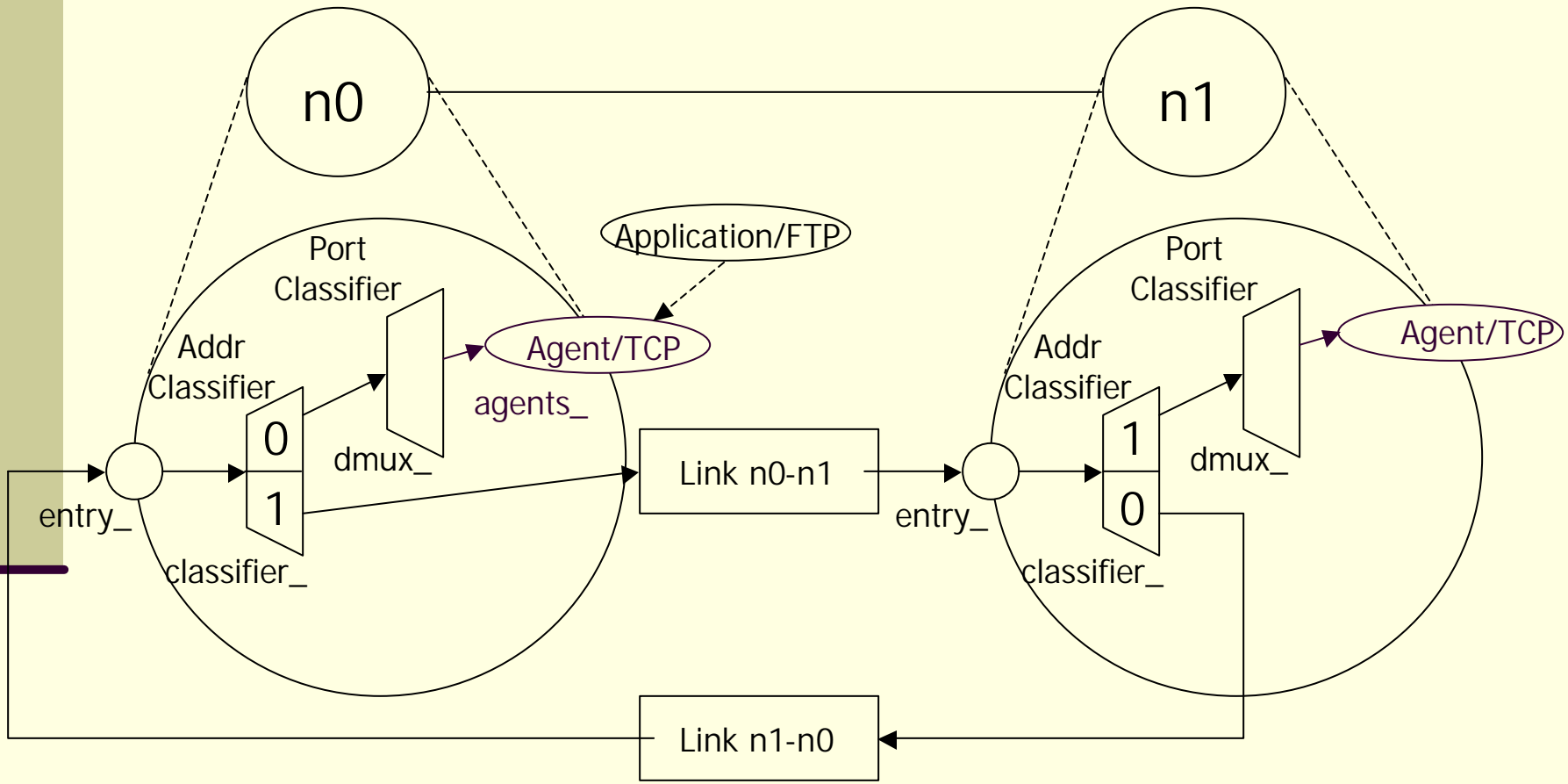


```
set ftp [new Application/FTP]
$ftp attach-agent $tcp
$ns at 1.2 "$ftp start"
```

Routing



Routing (con't)



Plumbing: Packet Flow

