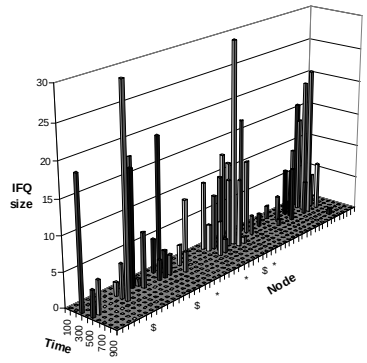
Homework #3

- Goal: Want to know that nodes undertake the role of packet forwarding uniformly – packet queue size distribution.
- Setup: 50 nodes in 300x1500 m^2 network based on random waypoint mobility with the maximum speed of 5m/s and the pause time is 0, 500 and 900 seconds. Simulation time is 900 seconds. 20 CBR sources send 4 512-byte packets per second. AODV is used. Use RTS/CTS.
- Output: Show IFQ sizes of all nodes at 100 second-interval. Throughput and delay curve. Explain what's happening.

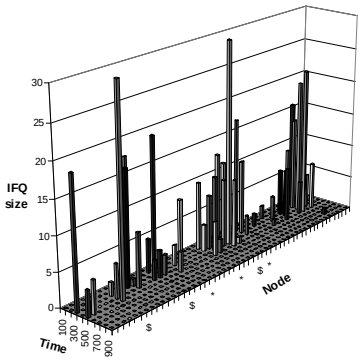
23

c.yu91@csuohio.edu

Homework #3



Pause = 0



Pause = 500

24

c.yu91@csuohio.edu

Command Method

- ~queue/priqueue.cc

```
int PriQueue::command(int argc, const char*const* argv)
{
  if (argc == 2 && strcasecmp(argv[1], "reset") == 0)
    {
      Terminate();
     //FALL-THROUGH to give parents a chance to reset
    }

/******************** ********************/
        static int              len = 0 ;
        if ( argc == 3   &&   strcmp( argv[1], "ifq-len" ) == 0 ) {
            len = length() ;
            FILE*               fp = fopen( argv[2], "a" ) ;
            fprintf( fp, "%d\t", len ) ;
            fclose( fp ) ;
            return (TCL_OK);
        }
        if ( argc == 3   &&   strcmp( argv[1], "ifq-len2" ) == 0 ) {
            FILE*               fp = fopen( argv[2], "a" ) ;
            fprintf( fp, "\n", len ) ;
            fclose( fp ) ;
            return (TCL_OK);
        }
/******************** ********************/

  return DropTail::command(argc, argv);
}
```

Don't forget to "Make"

c.yu91@csuohio.edu

Command Method

- **In the TCL script**

```
for {set i 0} {$i < $val(nn) } {incr i} {
        set node_($i) [$ns_ node]
        $node_($i) random-motion 0                ;# disable random motion
        set priQ_($i) [$node_($i) set ifq_(0)]
      }

$ns_ at 100.0  "getQLen $val(nn)"

proc getQLen { num } {
      global ns_ priQ_
      set interval 100.0
      for {set i 0} {$i < $num } {incr i} {
         $priQ_($i) ifq-len ifq-sz.tr
      }
      $priQ_(0) ifq-len2 ifq-sz.tr
       set now [$ns_ now]
       $ns_ at [expr $now+$interval] "getQLen $num"
}
```


c.yu91@csuohio.edu