Our code determines missed events my keeping count of events served and subtracting that from the MAX\_NUM\_EVENTS per device (*which is 100*). Since the FQS gives priority to the oldest event on each device queue and it ignores newer events if the queue is full. Which reduce the number of processed events, causing the missed percentage to increase. The Control() function will service every queued event since events aren’t overwritten if the queue is full. Once and event is served the queue counter is reduced the tail is redirected to the now oldest event and the head is pointed to the position that will be overwritten with a new “YOUNGEST” event. The Response Time is immediately recorded when an interrupt occurs, so the RT will not get faster.

The Turnaround time gets greater when the device has a low priority, because the Control() services the Highest Priority device first (Device 0) and then if D0 doesn’t have and event it will increment until a device with lower priority needs to be serviced. Once that device is serviced the DeviceCount is reset to start at 0 again. So when a device has low priority it is deeper in the queue.

As the service interval percentage increase the turnaround time increases which prevent new event from being removed from the queue faster, which prevents new events from being added to the queue. Thus increases our missed percentage. To ensure that the Highest priority device is serviced first. The Device Count is reset every time an event is Served and Queued.

**Q =2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NbrDevices | lambda | Mu | A0 (%) | B0 (s) | C0 (s) | AL (%) | BL (s) | CL (s) |
| 2 | 2 | 30 | 12 | 0.002 | 0.713 | 65 | 0.002 | 2.804 |
| 2 | 2 | 90 | 27 | 0.002 | 2.064 | 87 | 0.002 | 3.149 |
| 4 | 2 | 30 | 1 | 0.002 | 0.271 | 2 | 0.002 | 0.387 |
| 4 | 2 | 60 | 5 | 0.002 | .727 | 10 | 0.002 | 1.168 |
| 4 | 2 | 90 | 16 | 0.002 | 1.134 | 23 | 0.002 | 2.327 |
| 8 | 4 | 30 | 0 | 0.004 | 0.195 | 0 | 0.004 | 0.316 |
| 8 | 6 | 60 | 2 | 0.006 | 0.892 | 9 | 0.006 | 1.935 |
| 8 | 6 | 90 | 6 | 0.006 | 1.536 | 32 | 0.006 | 5.123 |

**Q = 8**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NbrDevices | lambda | Mu | A0 (%) | B0 (s) | C0 (s) | AL (%) | BL (s) | CL (s) |
| 2 | 2 | 30 | 1 | 0.002 | 0.908 | 1 | 0.002 | 1.226 |
| 2 | 2 | 90 | 19 | 0.002 | 5.897 | 35 | 0.002 | 9.595 |
| 4 | 2 | 30 | 0 | 0.002 | 0.301 | 1 | 0.002 | 0.372 |
| 4 | 2 | 60 | 0 | 0.002 | .995 | 1 | 0.002 | 2.344 |
| 4 | 2 | 90 | 3 | 0.002 | 2.147 | 36 | 0.002 | 9.820 |
| 8 | 4 | 30 | 0 | 0.004 | 0.195 | 0 | 0.004 | 0.315 |
| 8 | 6 | 60 | 0 | 0.006 | .834 | 0 | 0.006 | 4.221 |
| 8 | 6 | 90 | 0 | 0.006 | 1.800 | 27 | 0.006 | 25.063 |