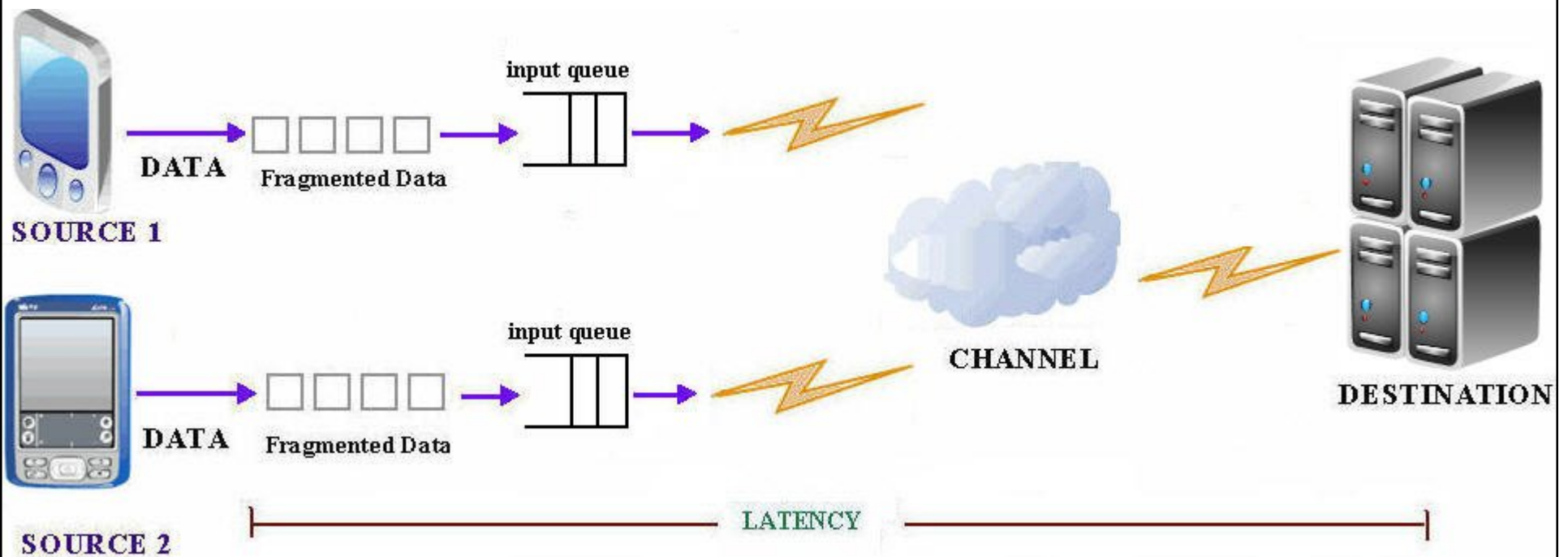


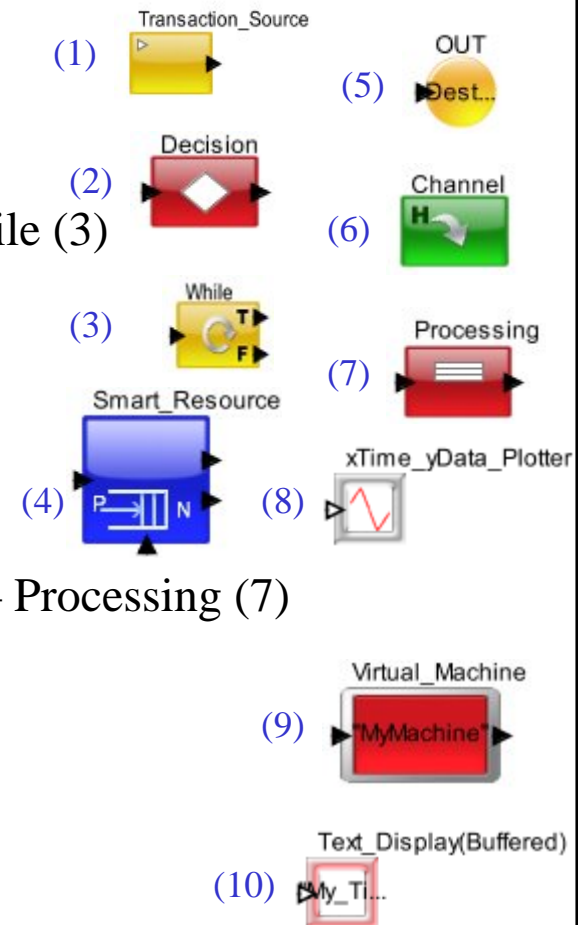
OPTIMIZING FLOW CONTROL ALGORITHM FOR MAXIMUM QoS



MAPPING BLOCK DIAGRAM TO VISUALSIM LIBRARY

Below you will find the ideas and how does the idea reflect in the block diagram

- Source Traffic Generator – Transaction_Source (1)
- Setting Source Attributes – Decision (2)
- Fragmenting the Data to transfer across the network – While (3)
- Egress Queue - Smart_Resource (4)
- Check for the Channel Status– Decision
- Send the fragments virtually to a channel – Out (5)
- Transfer the fragments to destination – Channel (6)
- Calculate the channel capacity and latency in destination – Processing (7)
- View the result - xTime_yData_Plotter (8)
- Compute Channel Statistics – Virtual_Machine (9)
- Display statistics for channel – Text_Display (10)

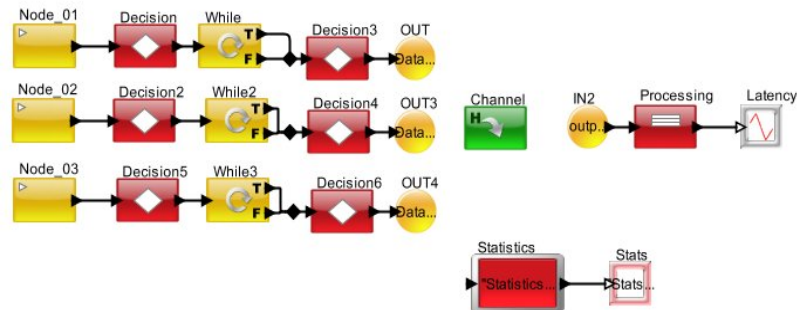


MODEL PARAMETERS

Simple Switched Ethernet

Parameter:

- Sim_Time: 10.0
- Burst_Size: 32
- Channel_Speed_Mhz: 500.0
- Channel_Width: 8

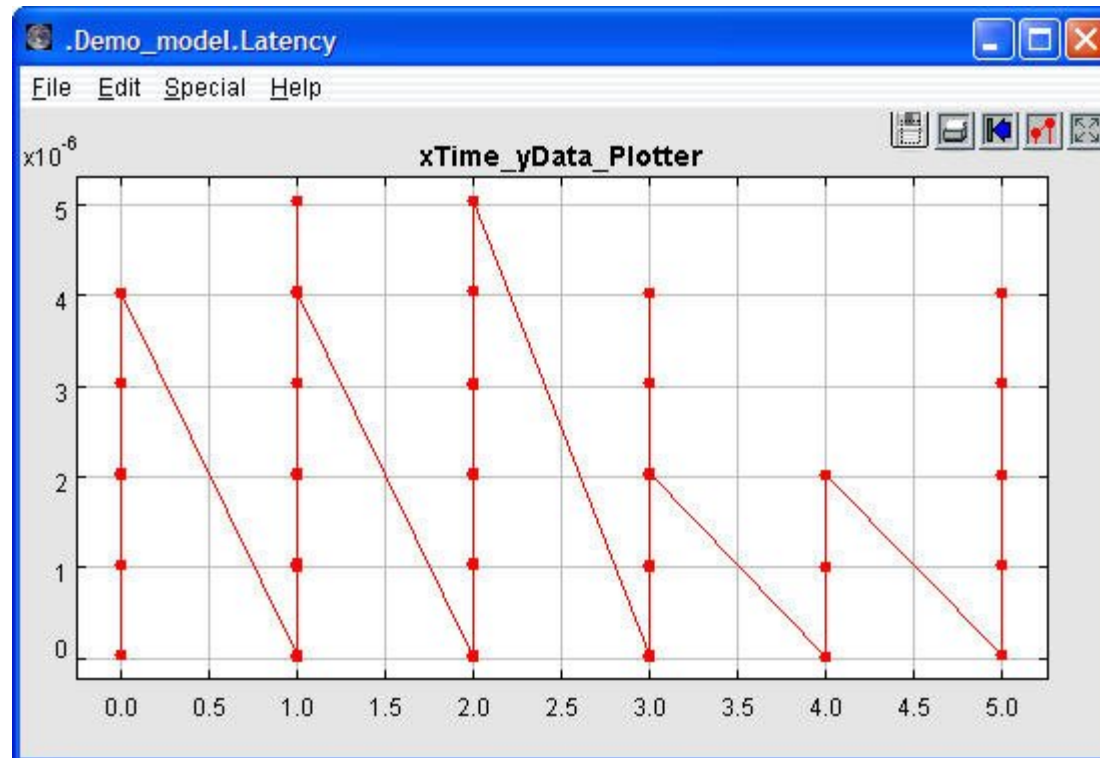


Parameter:

- Sim_Time: 10.0
- Burst_Size: 32
- Channel_Speed_Mhz: 500.0
- Channel_Width: 8

- **Sim Time** – The stop time for the Digital Simulator
- **Burst Size** – The burst size for While loop
- **Channel Speed** – The speed of the Channel
- **Channel Width** – The Channel Width

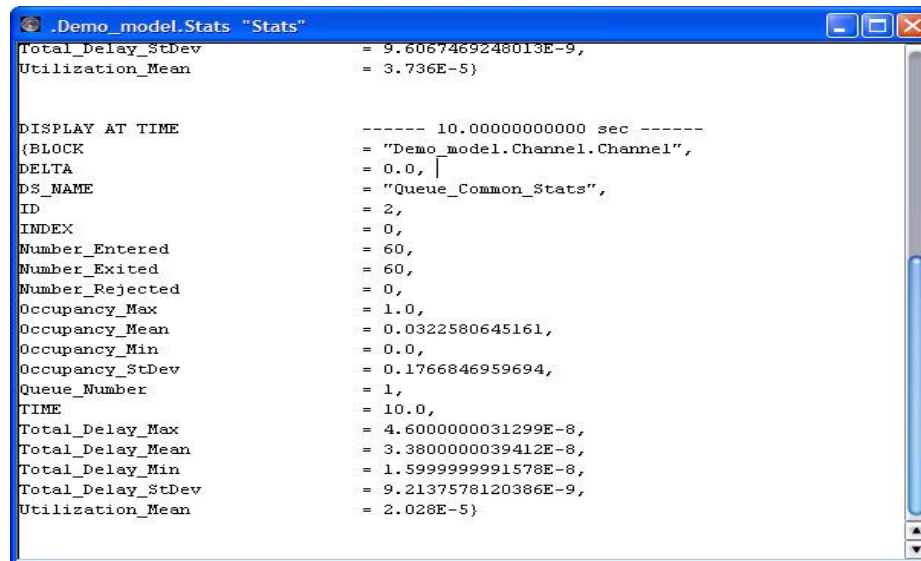
CHECKOUT THE RESULT



LATENCY

Latency - Current Time - Data Start time

STATISTICS



```
.Demo_model.Stats "Stats"
Total_Delay_StDev      = 9.6067469248013E-9,
Utilization_Mean      = 3.736E-5}

DISPLAY AT TIME      ----- 10.000000000000 sec -----
{BLOCK                = "Demo_model.Channel.Channel",
DELTA                 = 0.0,
DS_NAME               = "Queue_Common_Stats",
ID                    = 2,
INDEX                 = 0,
Number_Entered        = 60,
Number_Exited         = 60,
Number_Rejected       = 0,
Occupancy_Max         = 1.0,
Occupancy_Mean        = 0.0322580645161,
Occupancy_Min         = 0.0,
Occupancy_StDev       = 0.1766846959694,
Queue_Number         = 1,
TIME                  = 10.0,
Total_Delay_Max       = 4.6000000031299E-8,
Total_Delay_Mean      = 3.3800000039412E-8,
Total_Delay_Min       = 1.5999999991578E-8,
Total_Delay_StDev     = 9.2137578120386E-9,
Utilization_Mean      = 2.028E-5}
```

- **Number_Entered** - Number of transactions entering the queue.
- **Number_Exited** - Number of transactions that left the queue.
- **Number_Rejected** - Number of transactions rejected and output to reject port.
- **Occupancy_Max** - Maximum queue usage consumed during the simulation.
- **Occupancy_Mean** - Mean/ Average queue usage during the simulation.

STATISTICS

- **Queue_Number** - Queue Number. Queue number start at 1.
- **Total_Delay_Max** - In seconds. Maximum time through the queue+server among all transactions.
- **Total_Delay_Mean** - In seconds. Mean/Average time through the queue+server among all transactions.
- **Total_Delay_Min** - In seconds. Least time through the queue+server among all transactions.
- **Total_Delay_StDev** - In seconds. Standard Deviation from the Mean time through the queue+server among all transactions.
- **Utilization_Mean** - Mean/Average utilization of the server portion only. Queue utilization not considered.