Performance Engineering

*[Subtitle]*

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# Introduction

This report shows the results of the mathematical representation of the behaviour from the system proposed, a model created with JMT and the results got by it.

# Calculations

|  |  |  |  |
| --- | --- | --- | --- |
| **Server** | **S** | **X** | **U** |
| System | 0.003 | 0.3956 |  |
| Authentication Server | 0.003 |  | 0.008 |
| ContentDelivery Server | 0.3 |  |  |
| User Reading | 300 |  |  |
| ContentWriting Server | 0.4 | 0.4747 | 0.189888 |
| Logging Server | 0.09995 | 0.3958 | 0.03956 |

## Authentication Server

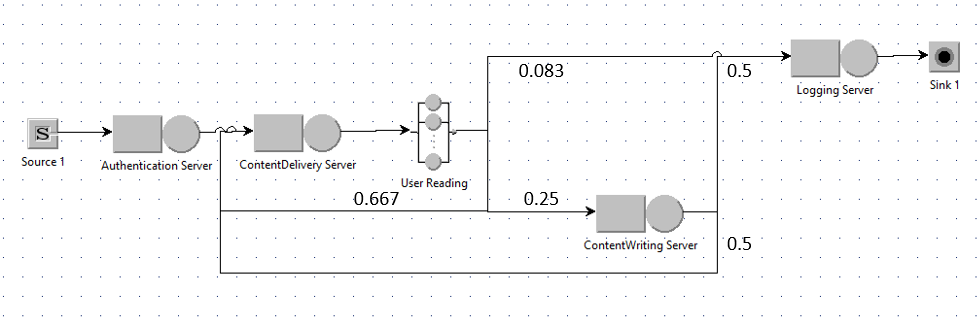
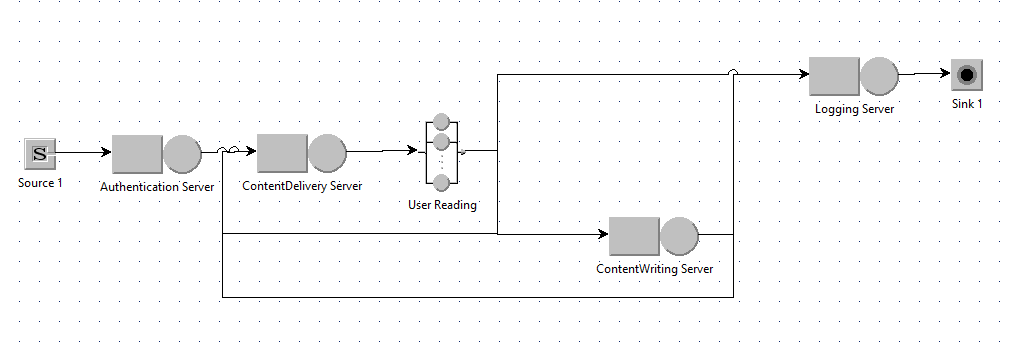
## ContentDelivery Server

## User Reading

## ContentWriting Server

## Logging Server

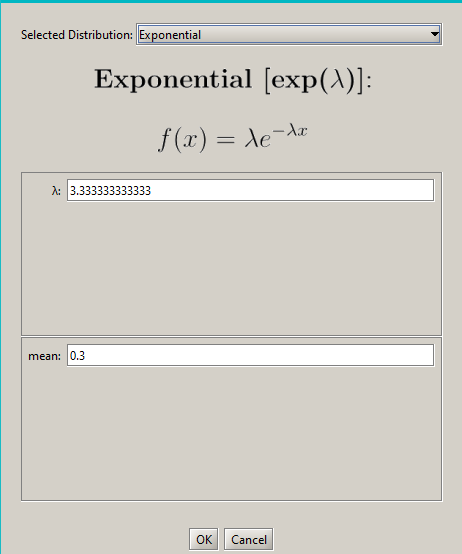
# Model

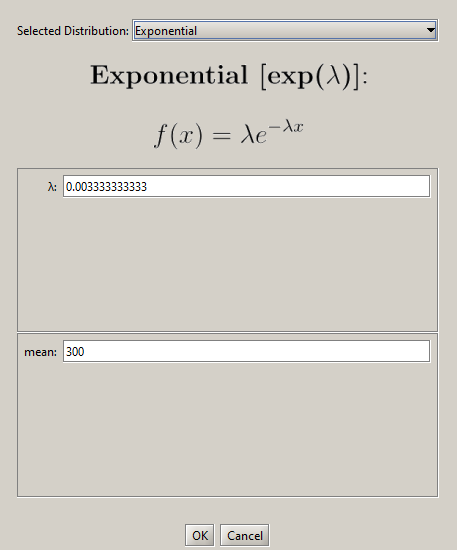
## Service Time

### Authentication Server

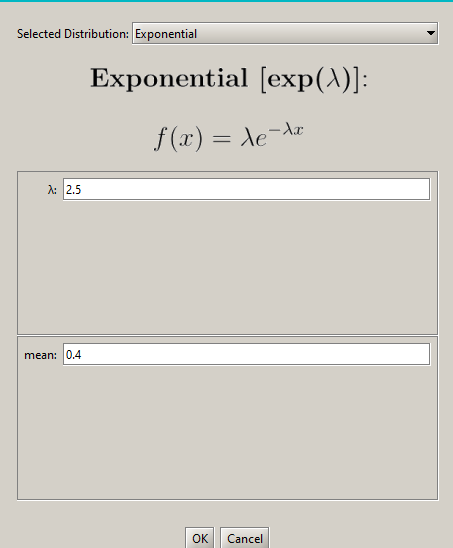
### ContentDelivery Server



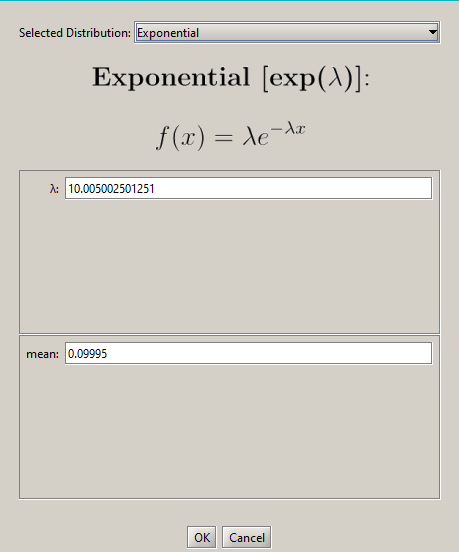
### User Reading



### ContentWriting Server

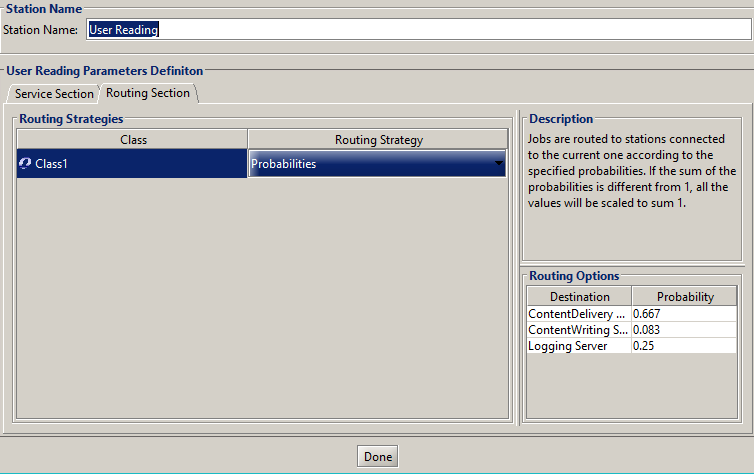


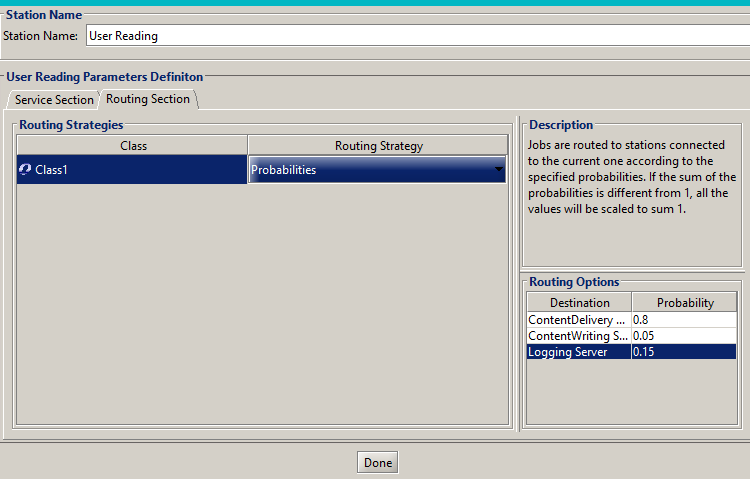
### Logging Server



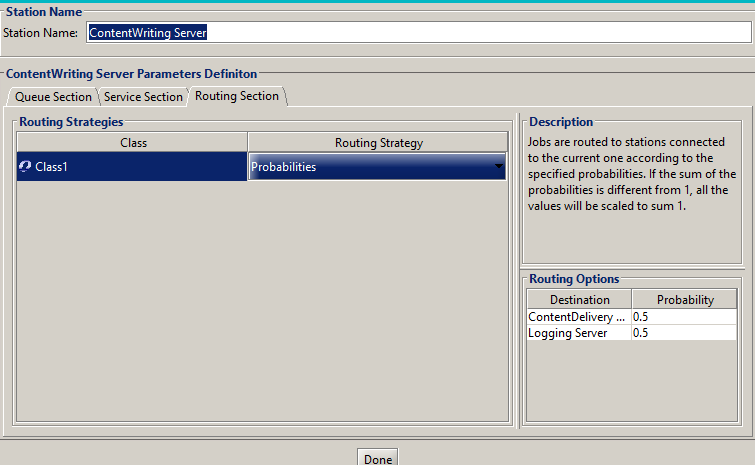
## Routing Probabilities

### User Reading





### ContentWriting Server



|  |  |  |  |
| --- | --- | --- | --- |
| Name of service center | Utilization | Throughput | Residence |
| *Authentication Server* | **0.1898** | **3.1533** | **0.1276** |
| *ContentDelivery Server* | **0.7814** | **3.1449** | **1.9991** |
| *User Reading* | **0.1107** | **3.1449** | **0.0688** |
| *ContentWriting Server* | **0.3510** | **1.7599** | **0.3039** |
| *Logging Server* | **0.0565** | **0.7521** | **0.0332** |

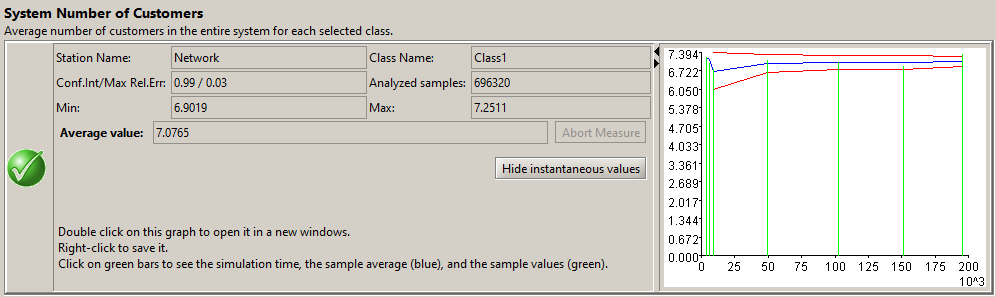
Average System Reponse Time (3.68E4~3.85E4): 3.8914

Average System Number of Customer (2.6172~2.7389): 7.0765

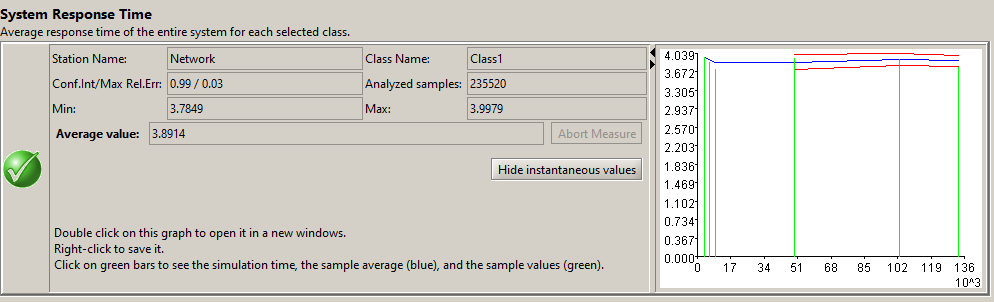
Average System Throughput (0.9801~1.0365): 1.8013

Average time that a user is waiting for a reply from the system:

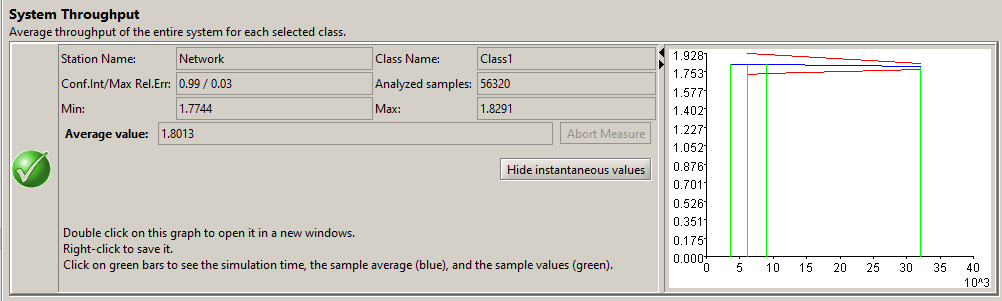
## System Number of Customers



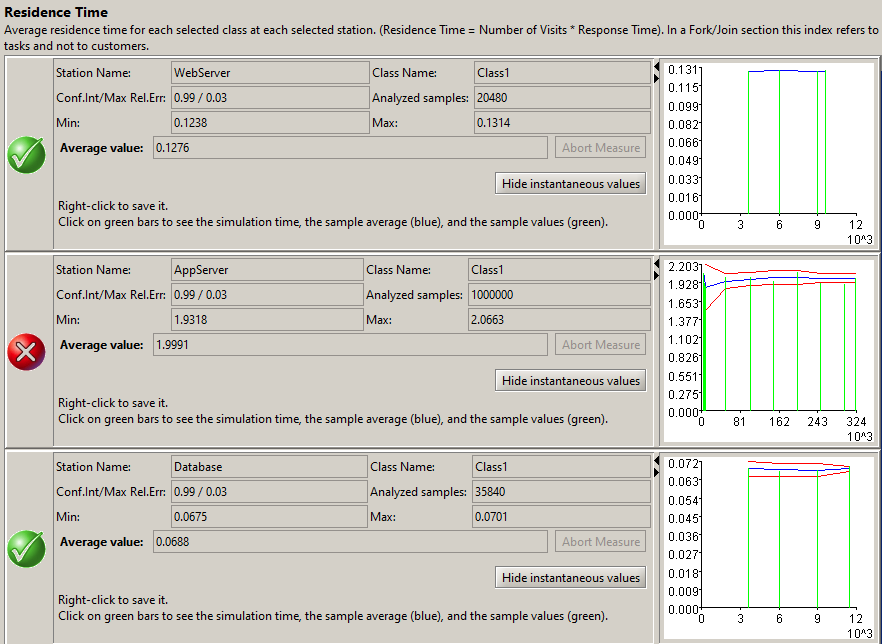
## System Response Time

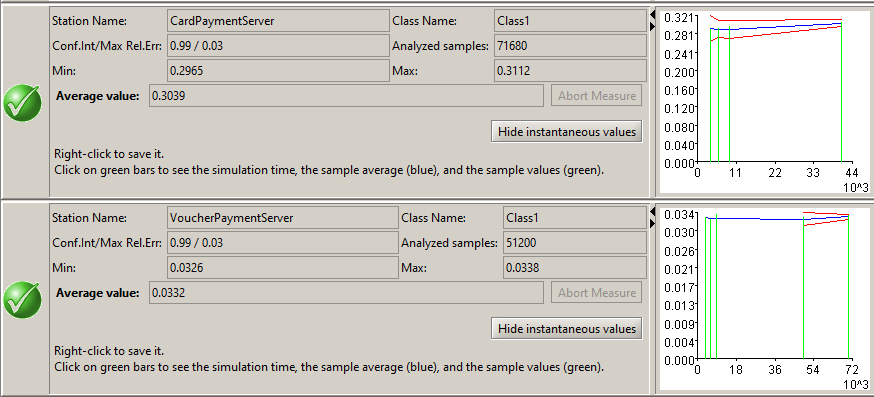


## System Throughput

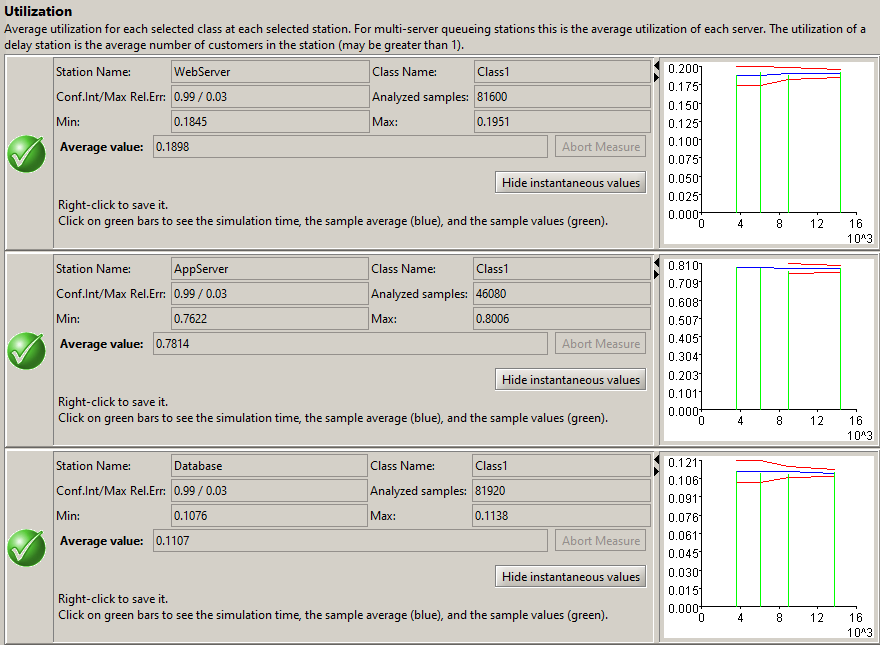
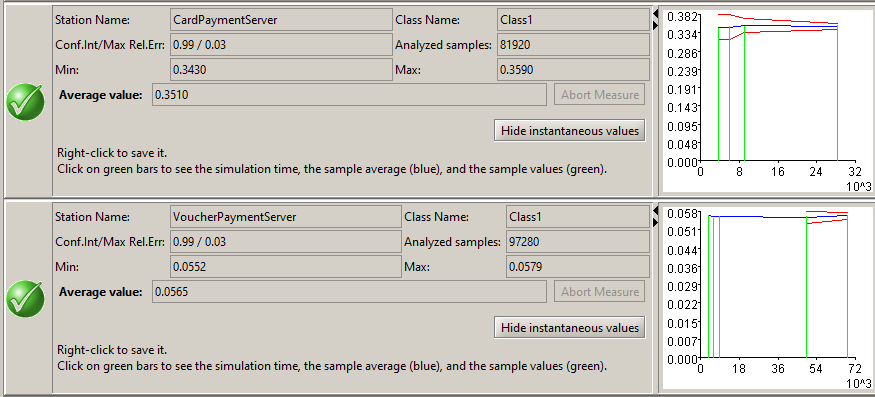


## Residence Time

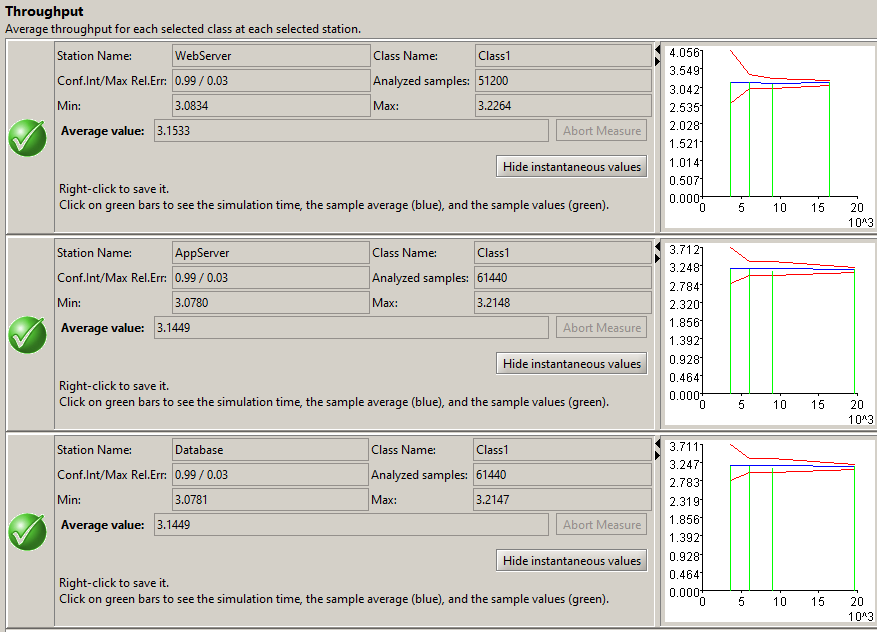
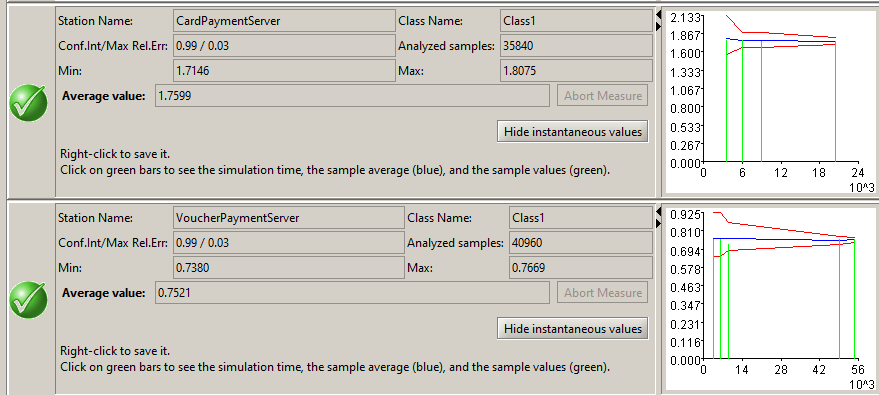




## Utilization

## Throughput

## Response Time

