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** |
| Web Server | 0.06 |  |  |
| Application Server | 0.25 | 3.125 | 0.7812 |
| Database | 0.035 |  |  |
| User Thinking |  |  |  |
| Card Payment Server | 0.2 |  |  |
| Voucher Payment Server | 0.075 | 3 | 0.225 |

## Web Server

## Application Server

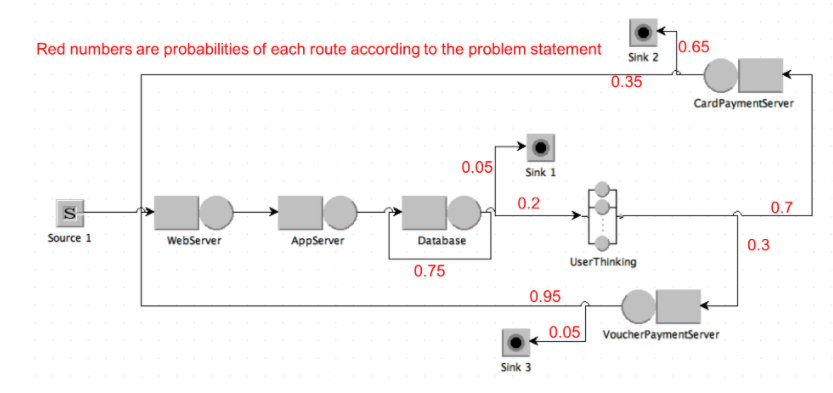
## Database

## User Thinking

## Card Payment Server

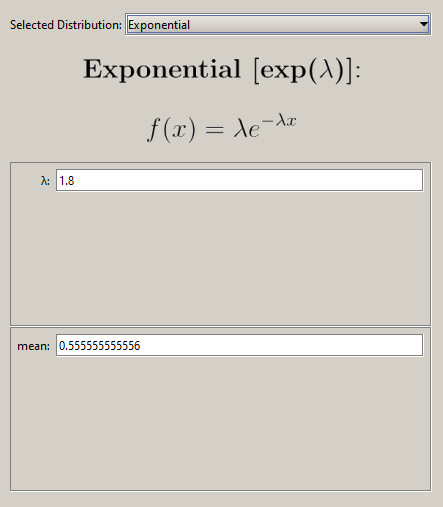
## Voucher Payment Server

# Model

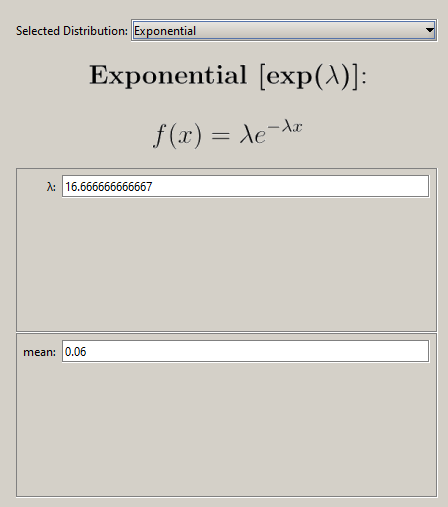


## Service Time

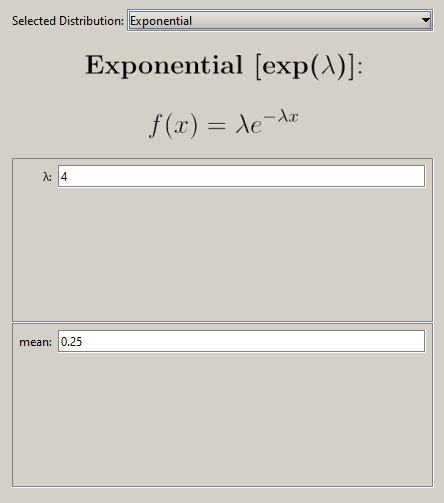
### Source 1



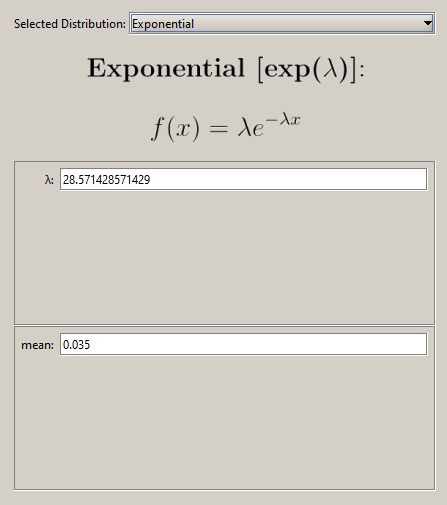
### Web Server



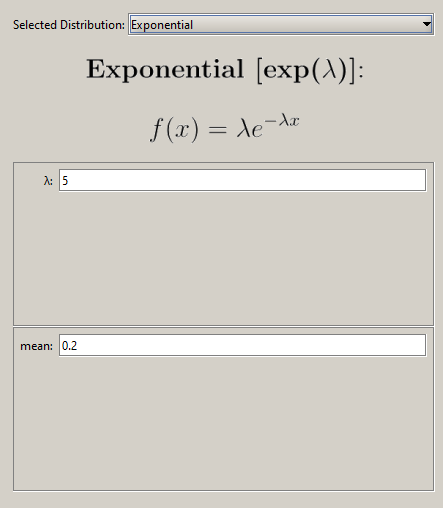
### Application Server



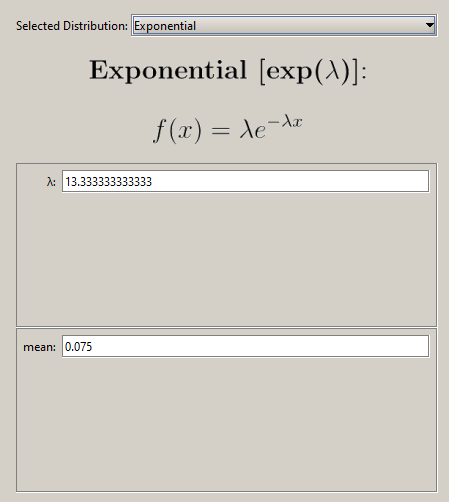
### Database



### CardPayment Server

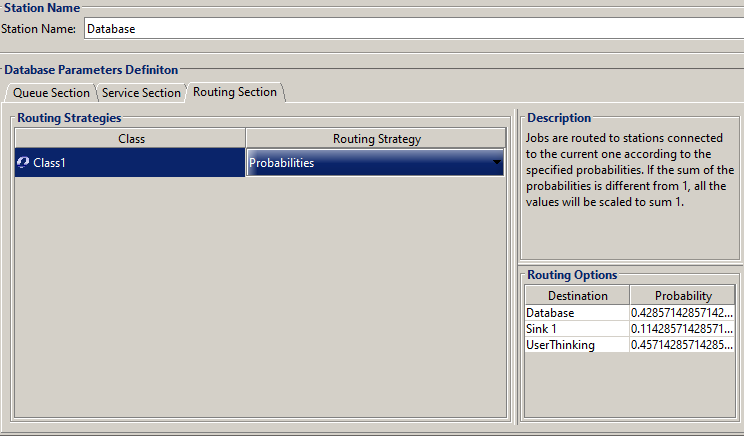


### VoucherPayment Server

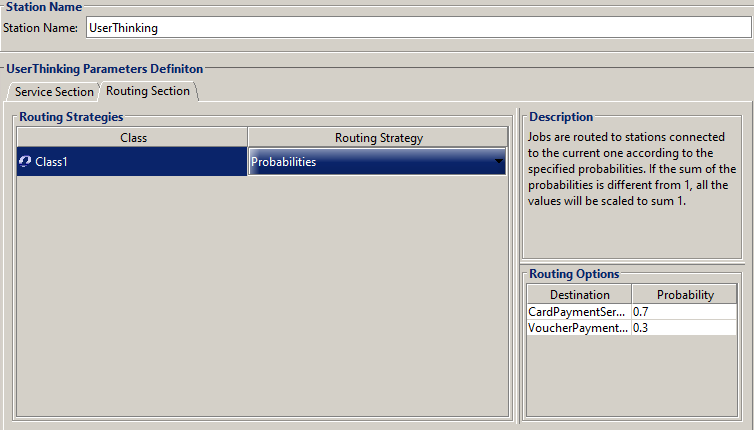


## Routing Probabilities

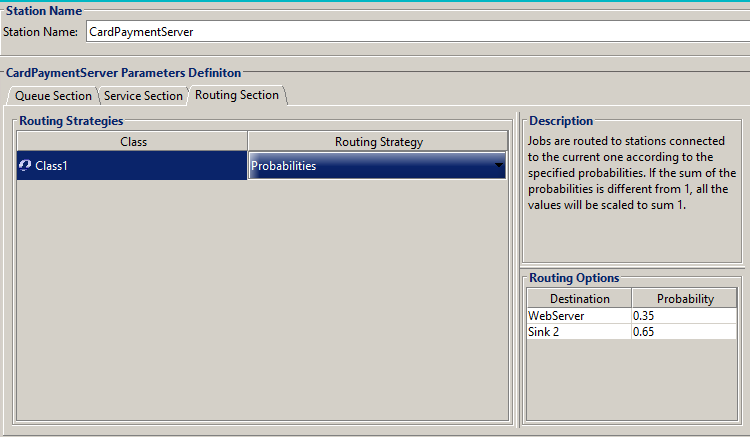
### Database



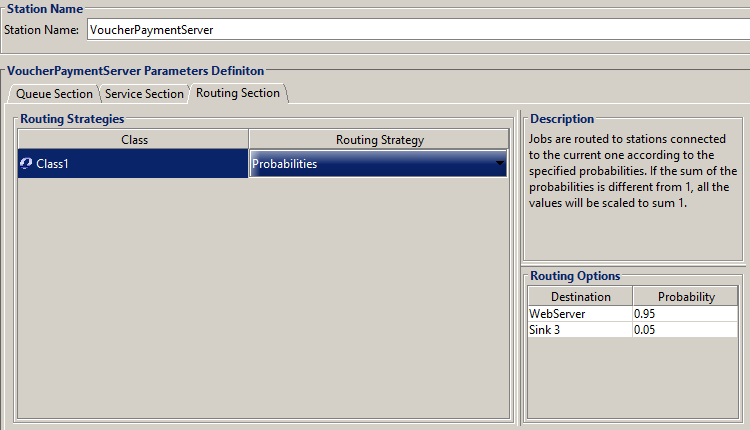
### User Thinking



### CardPayment Server



### VoucherPayment Server



|  |  |  |  |
| --- | --- | --- | --- |
| Name of service center | Utilization | Throughput | Residence |
| *WebServer* | **0.1898** | **3.1533** | **0.1276** |
| *ApplicationServer* | **0.7814** | **3.1449** | **1.9991** |
| *Database* | **0.1107** | **3.1449** | **0.0688** |
| *CardPaymentServer* | **0.3510** | **1.7599** | **0.3039** |
| *VoucherPaymentServer* | **0.0565** | **0.7521** | **0.0332** |

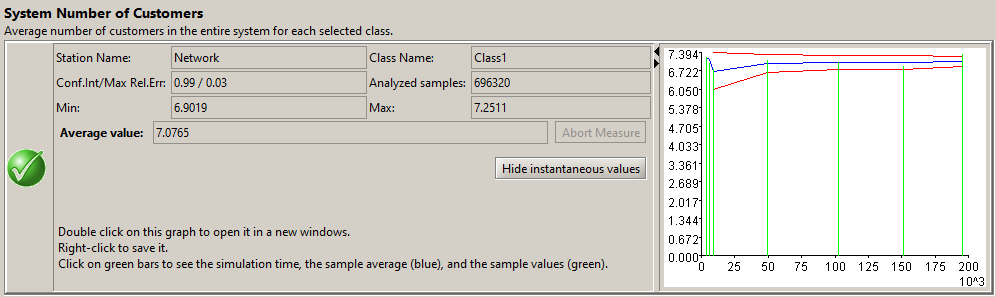
Average System Reponse Time (3.68E4~3.85E4): 3.8914

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

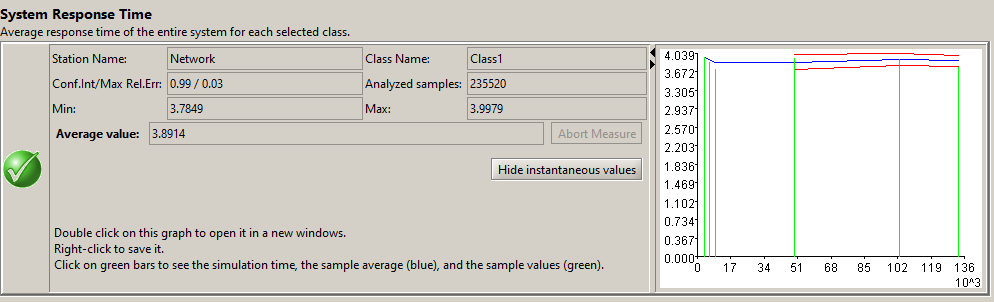
Average System Throughput (0.9801~1.0365): 1.8013

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

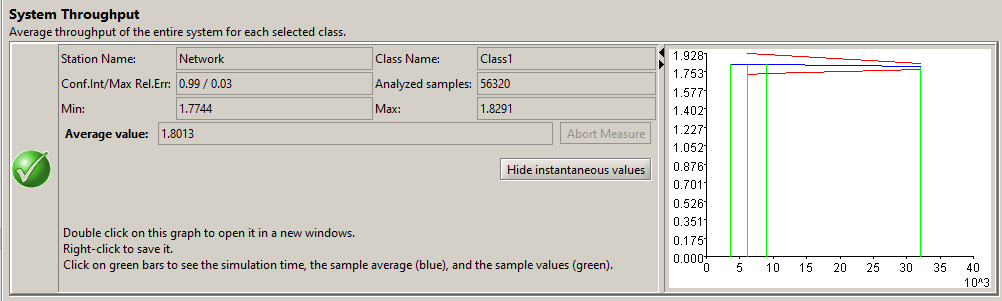
## System Number of Customers



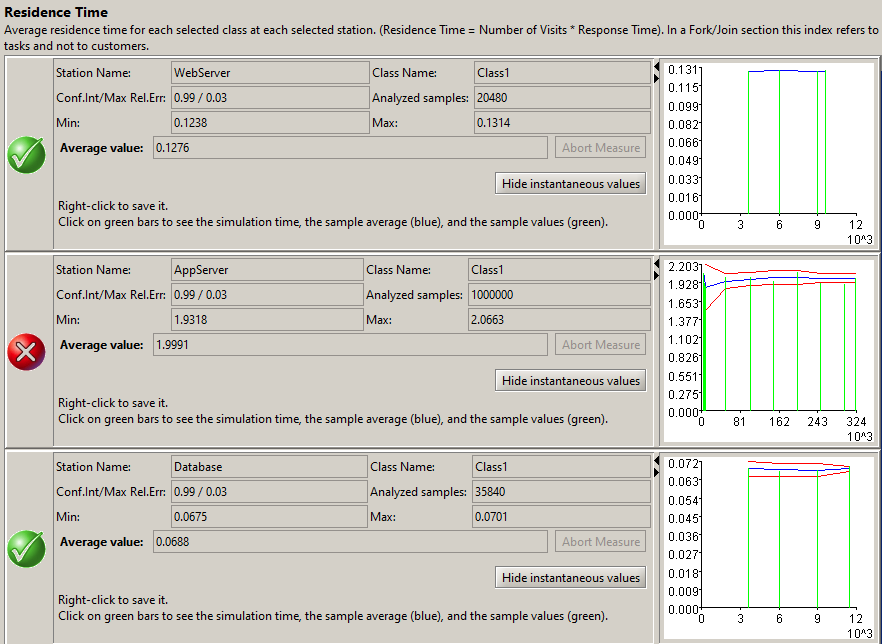
## System Response Time

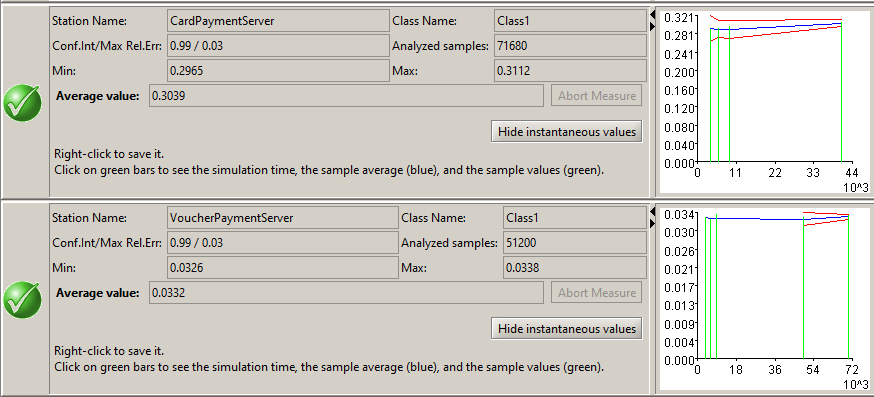


## System Throughput

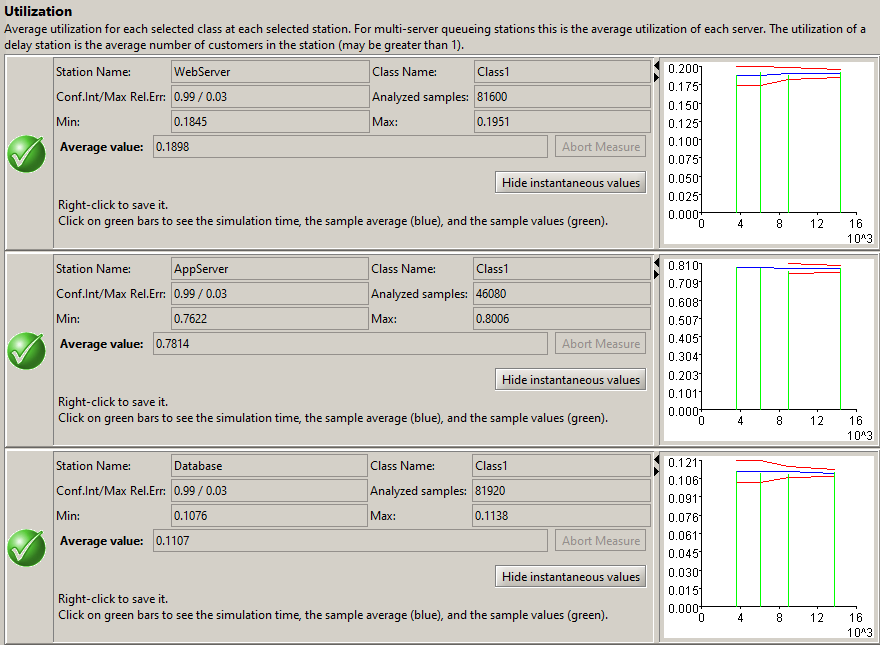
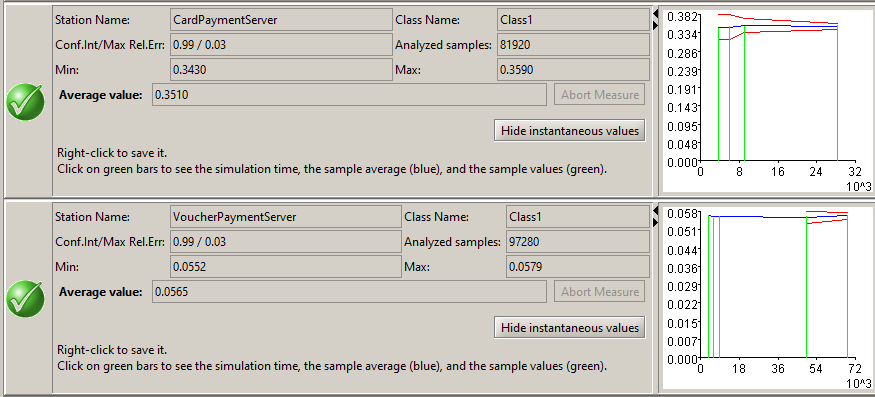


## Residence Time

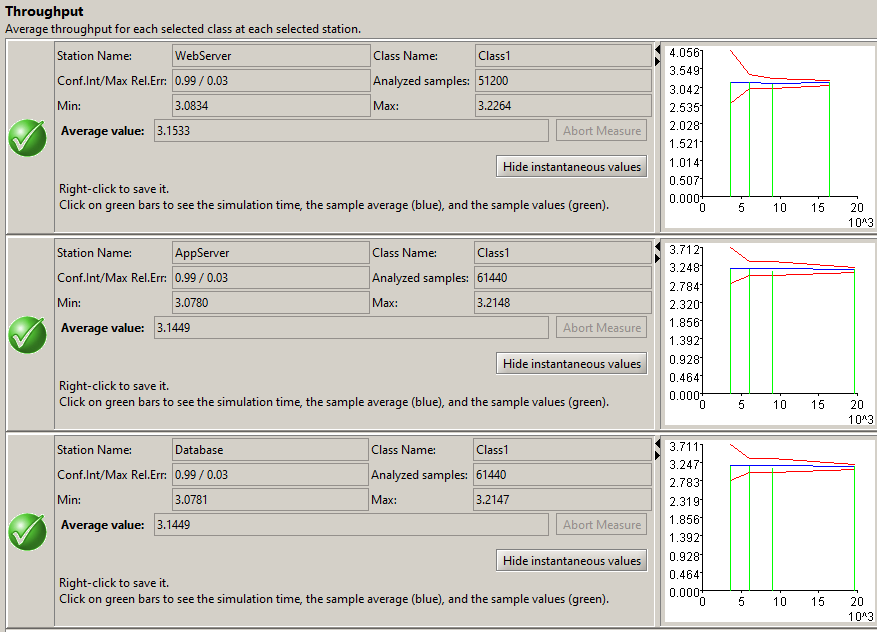
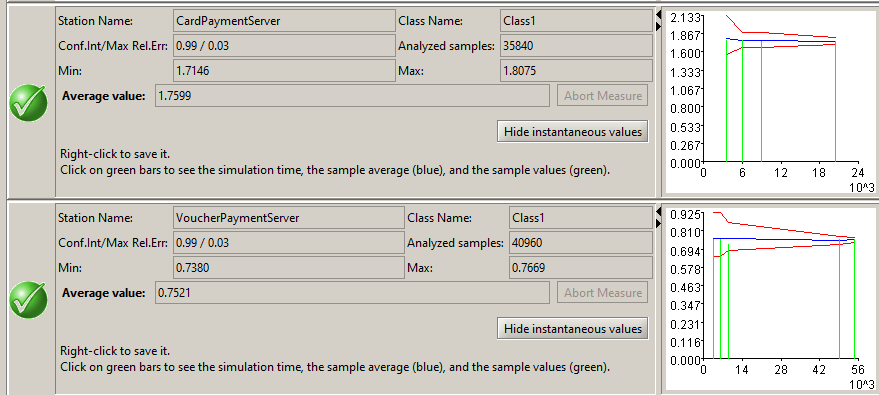




## Utilization

## Throughput

## Response Time

