Load & Stress tests

a. **Expected Stress**

The following rates are expected normal use of the system:

1. Connection – 100 connections/sec
2. Register – 20 new users/sec
3. Login – 80 login actions/sec (80% of connections made, we expect to see mostly returning-users/store-managers)
4. New Stores – 5 new stores/sec
5. Purchases – 10 successful purchase/sec

b. **Stress Test – Plan of Attack**

In order to test the expected rates we will overload the system with a much higher rate of action.

This will help us see the actual limits of the system and allow us to see which areas are in need of improvement and optimization.

For each test we detail the initial state of the system, and how many actions of different types we perform:

1. Connection:
    i. Initial active connections – 0
    ii. Concurrent connections – 500

2. Register:
    i. Initial registered users – 0
    ii. Concurrent registrations – 150

3. Login:
    i. Initial registered users - 1000
    ii. Initial Login users – 0
    iii. Concurrent login actions – 300

4. New Stores:
    i. Initial logged in users – 20
    ii. Number of new stores per user – 2
    iii. Concurrent requests – 20
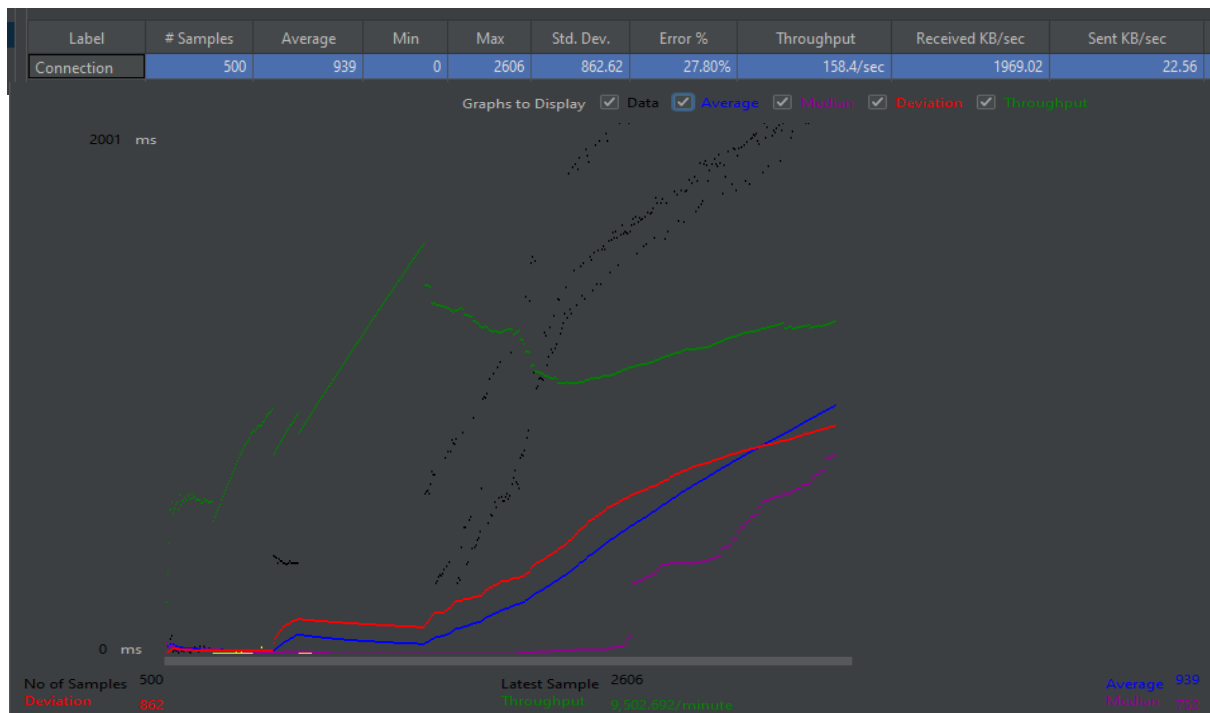
5. Purchase:
    i. number of stores – 5
    ii. number products per store – 5
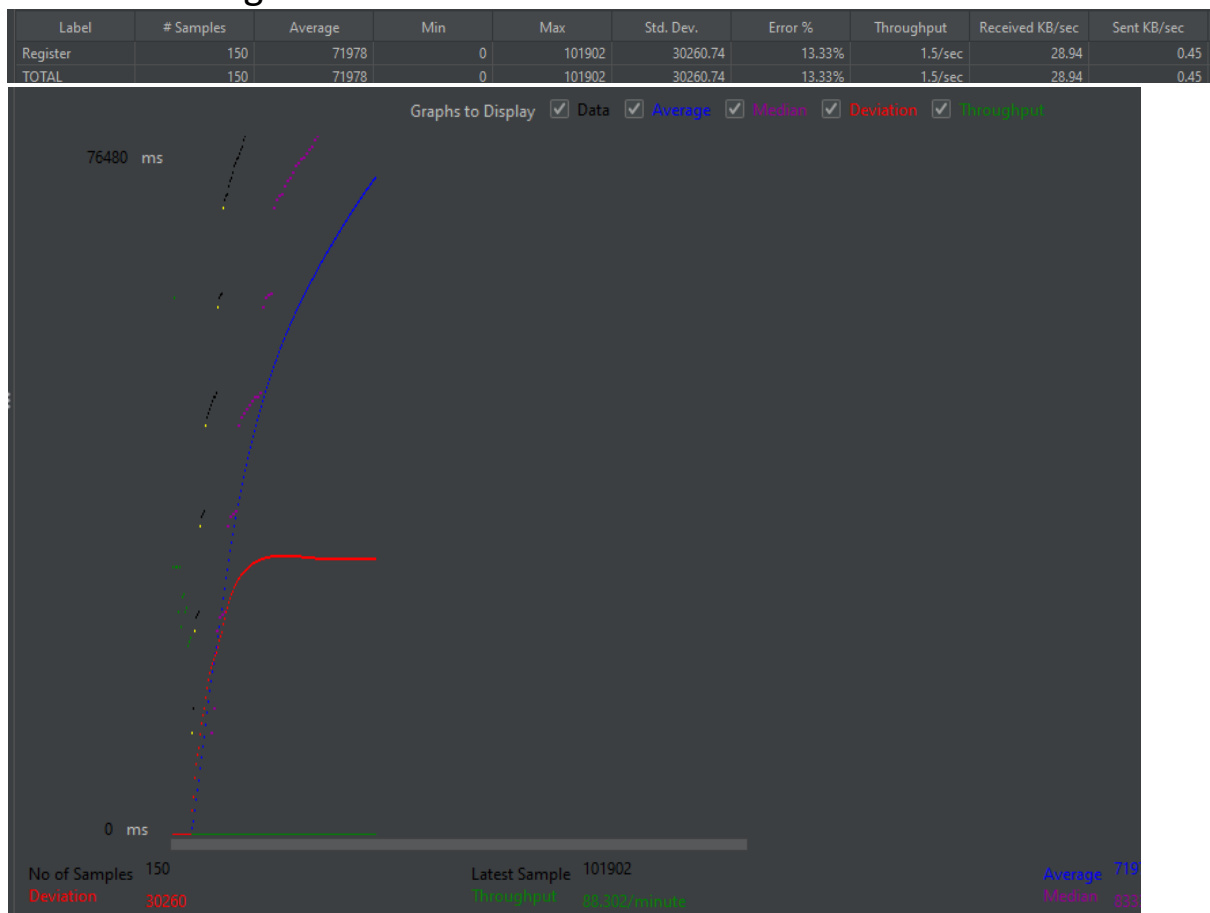   iii. number of concurrent users trying to purchase 1 item per store – 20
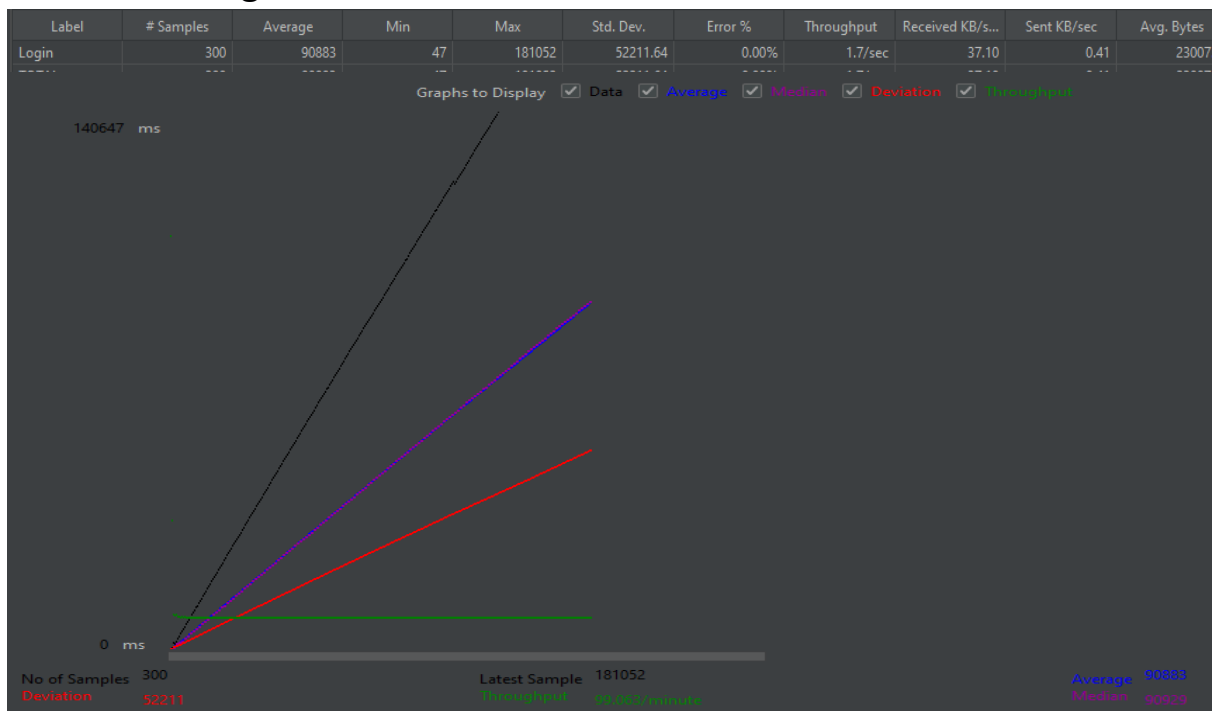   Thus the expected success rate of purchase should be around 25%

c. **Test results**

1. Connection:

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec
Connection	500	939	0	2606	862.62	27.80%	158.4/sec	1969.02	22.56

Graphs to Display ☑ Data ☑ Average ☑ Median ☑ Deviation ☑ Throughput

2001 ms

0 ms

No of Samples 500   Latest Sample 2606   Average 939

Deviation 862   Throughput 9,502,692/minute   Median

2. Register:

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec
Register	150	71978	0	101902	30260.74	13.33%	1.5/sec	28.94	0.45
TOTAL	150	71978	0	101902	30260.74	13.33%	1.5/sec	28.94	0.45

Graphs to Display ☑ Data ☑ Average ☑ Median ☑ Deviation ☑ Throughput

76480 ms

0 ms

No of Samples 150   Latest Sample 101902   Average 719

Deviation 30260   Throughput 88,393/minute   Median

3. Login:

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/s...	Sent KB/sec	Avg. Bytes
Login	300	90883	47	181052	52211.64	0.00%	1.7/sec	37.10	0.41	23007

Graphs to Display ☑ Data ☑ Average ☑ Median ☑ Deviation ☑ Throughput

140647 ms

0 ms

No of Samples 300   Latest Sample 181052   Average 90883
Deviation 52211   Throughput 99.983/minute   Median 90930

4. New Store:

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput
Login	20	4682	331	10042	3499.94	0.00%	1.9/sec
Open Store1	20	7364	1171	17826	4726.05	0.00%	51.0/min
Open Store2	20	9811	1448	19977	5461.73	0.00%	39.4/min

Graphs to Display ☑ Data ☑ Average ☑ Median ☑ Deviation ☑ Throughput

14849 ms

0 ms

No of Samples 60   Latest Sample 10629   Average
Deviation 5085   Throughput 93.517/minute   Median
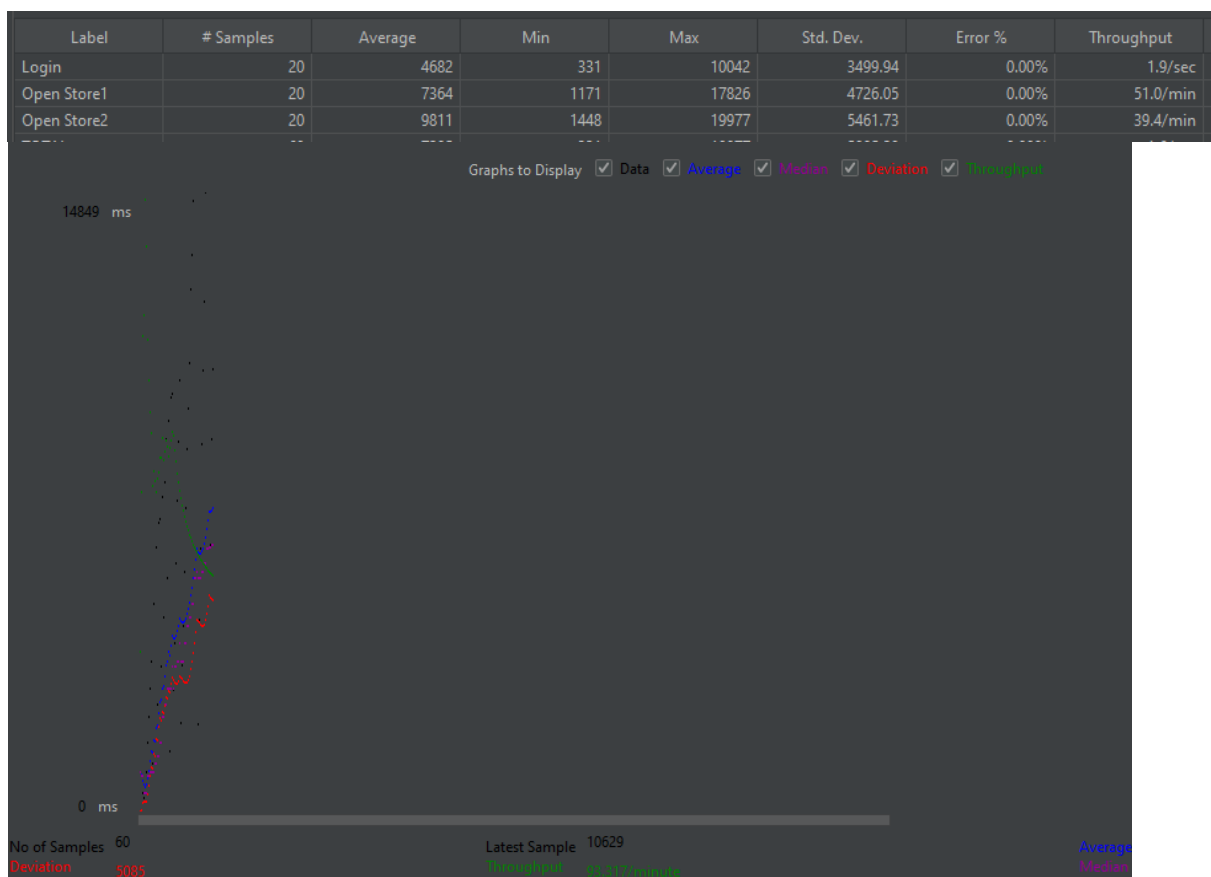
5. Purchase

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput ↑	Received K...	Sent K...	Avg. B...
Add To Basket Store1	22	164	5	427	165.51	0.00%	4.2/min	1.59	0.02	23231.8
Connection	22	4943	327	11034	3599.76	0.00%	4.2/min	2.14	0.01	31212.0
Add address	22	703	286	8359	1671.60	0.00%	4.2/min	2.13	0.03	31009.0
checkout	102	6171	5	12379	5004.97	0.98%	16.6/min	7.64	0.12	28260.8
Add To Basket Store5	20	291	5	512	82.51	0.00%	26.7/min	13.17	0.14	30329.7
Add To Basket Store4	20	299	5	595	147.64	0.00%	34.7/min	16.30	0.18	28897.1
Add To Basket Store3	20	187	5	416	151.78	0.00%	48.8/min	20.12	0.25	25315.6
Add To Basket Store2	20	173	4	500	174.19	0.00%	1.1/sec	25.22	0.34	23883.0
TOTAL	248	3130	4	12379	4450.56	0.40%	40.1/min	18.25	0.24	27947.9