Makent

Introduction:

Load testing for the Makent product has been done by using the tool Jmeter. The below cases describes the hit response time from the server for **Login** based on the number of users. The detailed report for each case can be derived below.

AWS Server configuration:

- Instance type - T2 small
- 1 CPU - 2GB ram
- 8GB storage

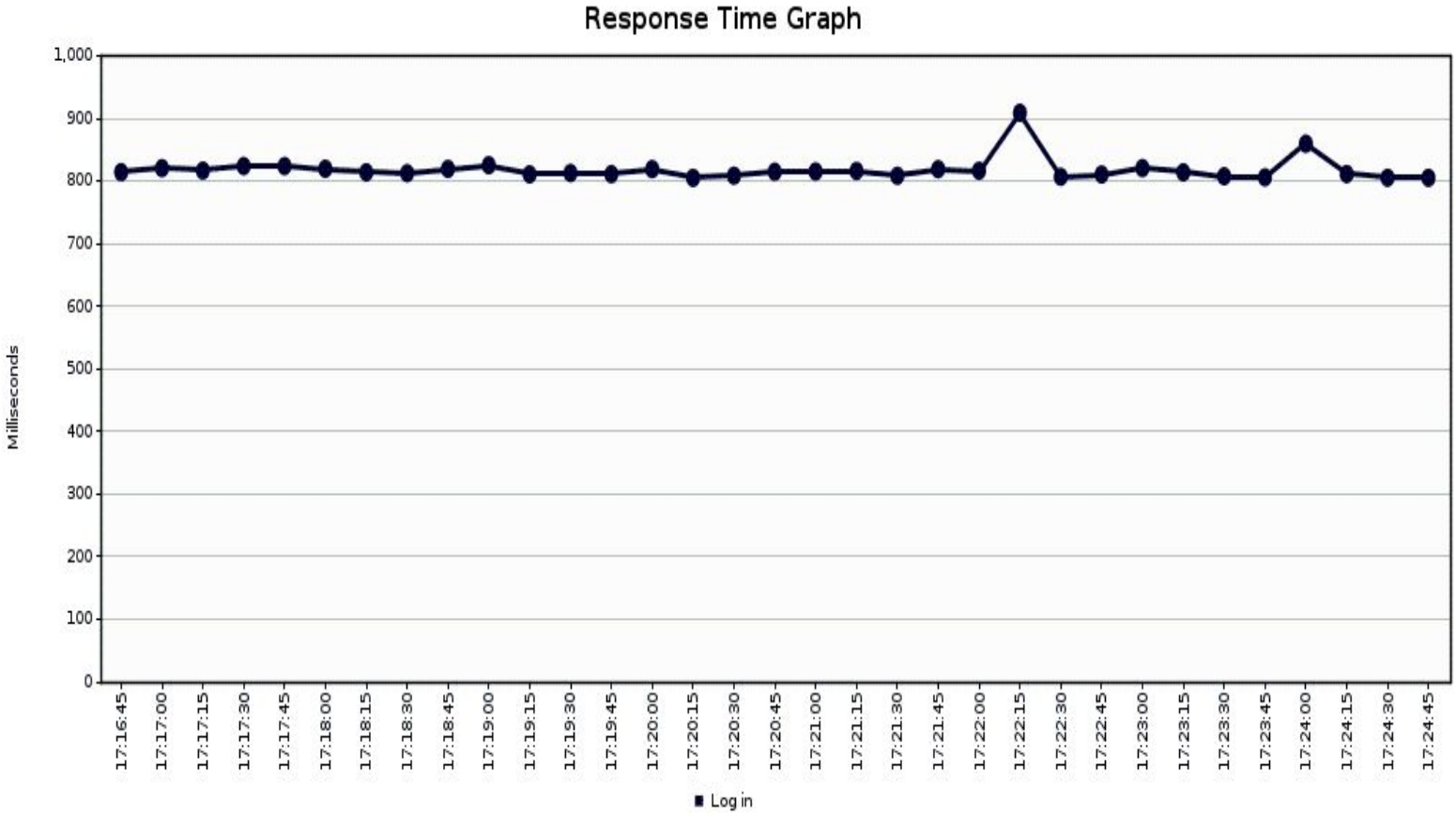
Load testing Results:

Case: 1 - Total number of Users - 1000, Ramp up Period - 500

- Each thread will start at 0.5 (500/1000) seconds after the previous thread was begun.

Response Time Graph:

- The response for Login has been mentioned in Milliseconds - Y-axis
- The number of users is mentioned in the X-axis


Response Time Graph
Milliseconds
1,000
900
800
700
600
500
400
300
200
100
0
17:16:45
17:17:00
17:17:15
17:17:30
17:17:45
17:18:00
17:18:15
17:18:30
17:18:45
17:19:00
17:19:15
17:19:30
17:19:45
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17:21:45
17:22:00
17:22:15
17:22:30
17:22:45
17:23:00
17:23:15
17:23:30
17:23:45
17:24:00
17:24:15
17:24:30
17:24:45
Log in

Summary Report

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
Log in	1000	818	689	2206	73.3753255529 4116	0.0	1.99926 8267813 9801	2.73037 7634910 6226	0.3260 52539 77044 4	1398.465
TOTAL	1000	818	689	2206	73.3753255529 4116	0.0	1.99926 8267813 9801	2.73037 7634910 6226	0.3260 52539 77044 4	1398.465

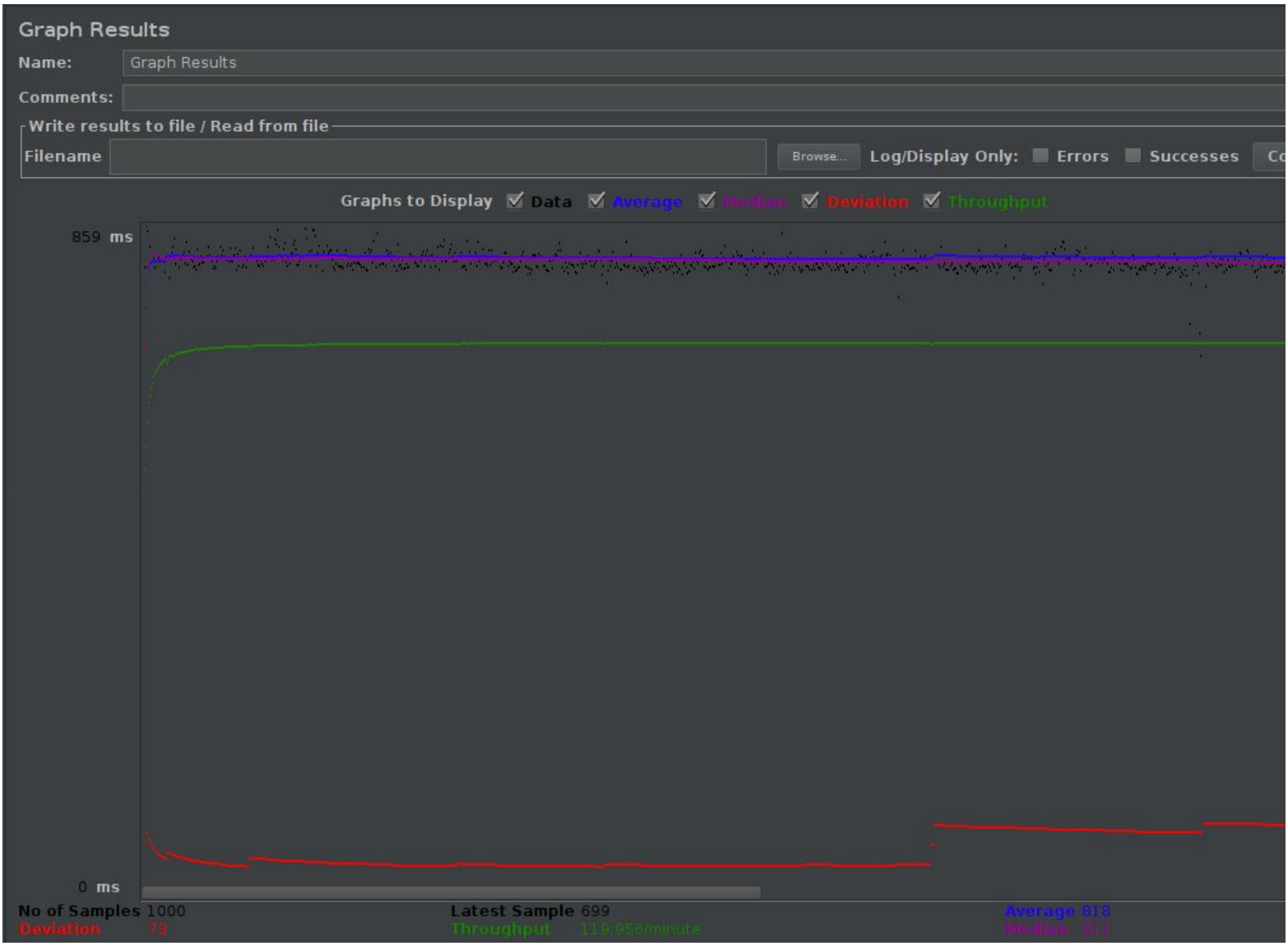
- `Label` - The label of the sample. If "`Include group name in label?`" is selected, then the name of the thread group is added as a prefix. This allows identical labels from different thread groups to be collated separately if required.
- `# Samples` - The number of samples with the same label
- `Average` - The average elapsed time of a set of results
- `Min` - The lowest elapsed time for the samples with the same label
- `Max` - The longest elapsed time for the samples with the same label
- `Std. Dev.` - the Standard Deviation of the sample elapsed time
- `Error %` - Percent of requests with errors
- `Throughput` - the Throughput is measured in requests per second/minute/hour. The time unit is chosen so that the displayed rate is at least `1.0`. When the throughput is saved to a CSV file, it is expressed in requests/second, i.e. 30.0 requests/minute is saved as `0.5`.
- `Received KB/sec` - The throughput measured in Kilobytes per second
- `Sent KB/sec` - The throughput measured in Kilobytes per second
- `Avg. Bytes` - the average size of the sample response in bytes.

Aggregate report

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	Received KB/sec	Sent KB/sec
Log in	1000	818	811	826	837	1002	689	2206	0.0	1.9992682678139 8	2.7303776349106226	0.3260525397704 44
TOTAL	1000	818	811	826	837	1002	689	2206	0.0	1.9992682678139 8	2.7303776349106226	0.3260525397704 44

- **`Label`** - The label of the sample. If "**`Include group name in label?`**" is selected, then the name of the thread group is added as a prefix. This allows identical labels from different thread groups to be collated separately if required.
- **`# Samples`** - The number of samples with the same label
- **`Average`** - The average time of a set of results
- **`Median`** - The median is the time in the middle of a set of results. 50% of the samples took no more than this time; the remainder took at least as long.
- **`90% Line`** - 90% of the samples took no more than this time. The remaining samples took at least as long as this. (90th percentile)
- **`95% Line`** - 95% of the samples took no more than this time. The remaining samples took at least as long as this. (95th percentile)
- **`99% Line`** - 99% of the samples took no more than this time. The remaining samples took at least as long as this. (99th percentile)
- **`Min`** - The shortest time for the samples with the same label
- Max - The longest time for the samples with the same label
- **`Error %`** - Percent of requests with errors
- **`Throughput`** - the Throughput is measured in requests per second/minute/hour. The time unit is chosen so that the displayed rate is at least 1.0. When the throughput is saved to a CSV file, it is expressed in requests/second, i.e. 30.0 requests/minute is saved as 0.5.
- **`Received KB/sec`** - The throughput measured in received Kilobytes per second
- **`Sent KB/sec`** - The throughput measured in sent Kilobytes per second

Graph Results

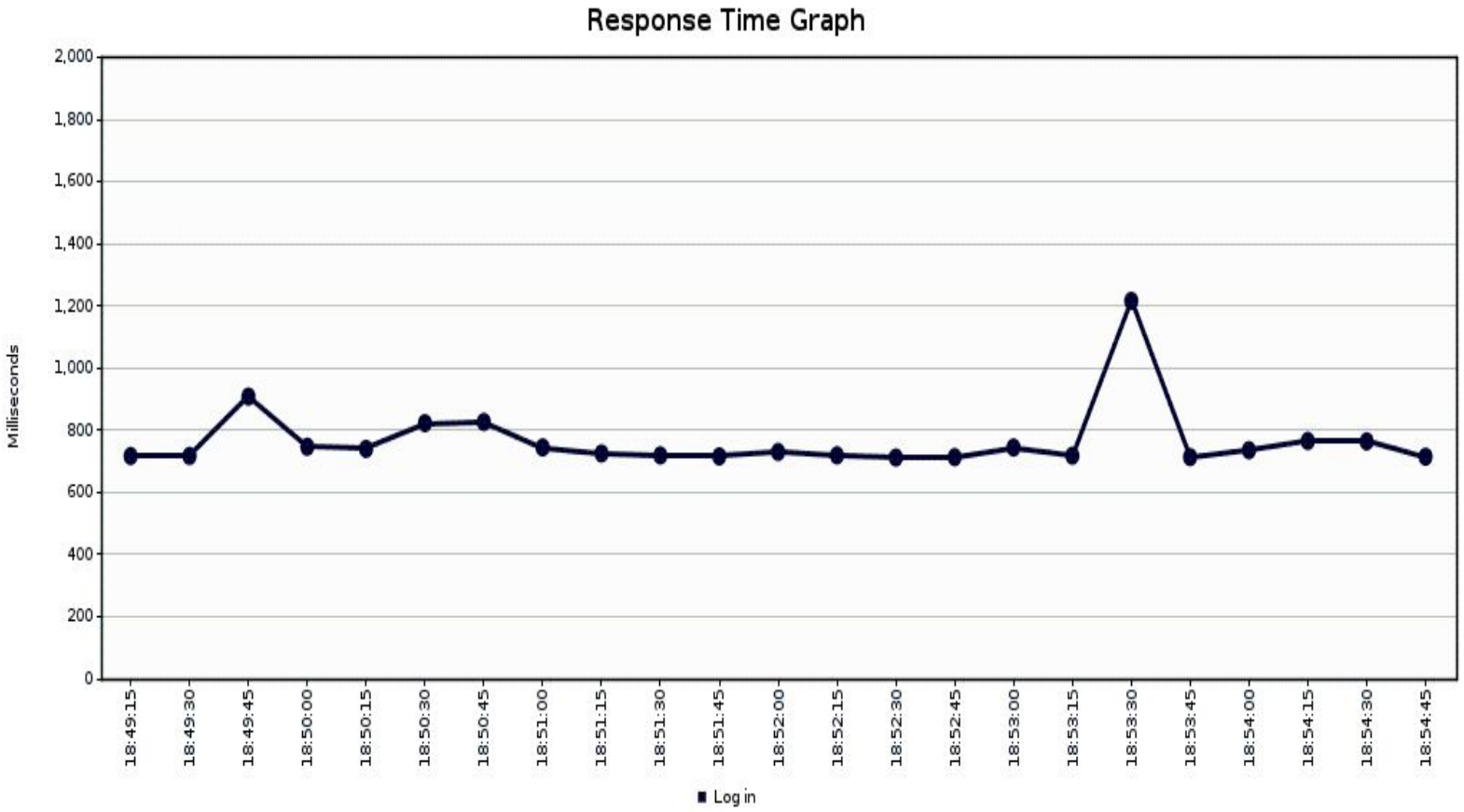


Case: 2
Users - 1000 , Ramp up Period - 350

- Each thread will start at 0.35 (350/1000) seconds after the previous thread was begun.

Response Time Graph:

- The response for Login has been mentioned in Milliseconds - Y-axis
- The number of users is mentioned in the X-axis



Summary Report

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
Log in	1000	766	611	3074	218.0245974655143	0.0	2.8546715272207 2	3.896793900566 0814	0.465556782 27134 795	1397.82
TOTAL	1000	766	611	3074	218.0245974655143	0.0	2.8546715272207 2	3.896793900566 0814	0.465556782 27134 795	1397.82

Aggregate report

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	Received KB/sec	Sent KB/sec
Log in	1000	766	715	788	1032	1985	611	3074	0.0	2.854671527 22072	3.896793900 5660814	0.4655567822713 4795
TOTAL	1000	766	715	788	1032	1985	611	3074	0.0	2.854671527 22072	3.896793900 5660814	0.4655567822713 4795

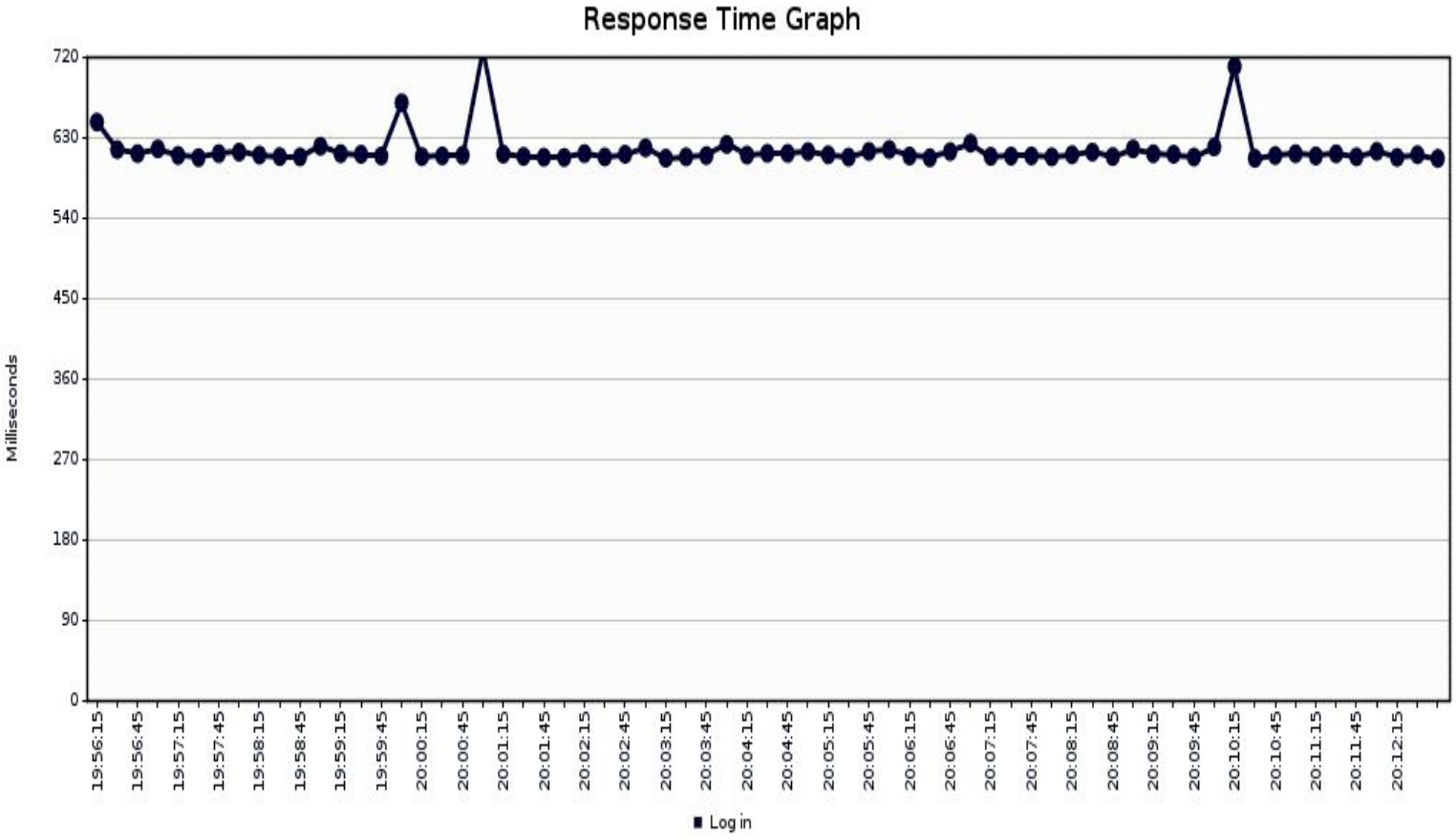
Graph Results

Case: 3
Users - 1000 , Ramp up Period - 1000

- Each thread will start at 1 (1000/1000) second after the previous thread was begun.

Response Time Graph:

- The response for Login has been mentioned in Milliseconds - Y-axis
- The number of users is mentioned in the X-axis



Summary Report

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
Log in	1000	615	595	1902	64.86226156248283	0.0	1.000403162474 4771	1.369692611222822	0.163151687 63011 495	1402.0
TOTAL	1000	615	595	1902	64.86226156248283	0.0	1.000403162474 4771	1.369692611222822	0.163151687 63011 495	1402.0

Aggregate report

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Max	Error %	Throughput	Received KB/sec	Sent KB/sec
Log in	1000	615	610	622	627	778	595	1902	0.0	1.000403162 4744771	1.369692611 1222822	0.163151 6876301 1495
TOTAL	1000	615	610	622	627	778	595	1902	0.0	1.000403162 4744771	1.369692611 1222822	0.163151 6876301 1495

Graph Results

Conclusion:

The above load testing results are taken in the minimal configuration in Jmeter. The average elapsed time can be reduced by setting up a high configuration instance in the AWS.