

Assignment 3 : System Testing Tools

Date: 17-Mar-2024

Student ID: 8993413

Student Name: Urvi Surti

Subject: Software Testing Tools (SENG8031)

Part 1:
Summary Report for each test
CPU & Memory plots for each test

Test 1:

→ Number of users: 1, Loop Count: 1000000

The screenshot shows the Apache JMeter interface with the following details:

- File Path:** Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx)
- Thread Group Settings:**
 - Name:** Thread Group_Assignment_3
 - Comments:** (empty)
 - Action to be taken after a Sampler error:** Continue (radio button selected)
 - Thread Properties:**
 - Number of Threads (users):** 1
 - Ramp-up period (seconds):** 1
 - Loop Count:** Infinite **1000000**
 - Checkboxes:** Same user on each iteration, Delay Thread creation until needed, Specify Thread lifetime
 - Duration (seconds):** (empty input field)
 - Startup delay (seconds):** (empty input field)

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

02:02:13 ⚠ 0 0/1 ⚽ 🔍

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	1000000	7	4	176	3.31	0.00%	136.4/sec	617.00	100.94	4633.4
TOTAL	1000000	7	4	176	3.31	0.00%	136.4/sec	617.00	100.94	4633.4

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

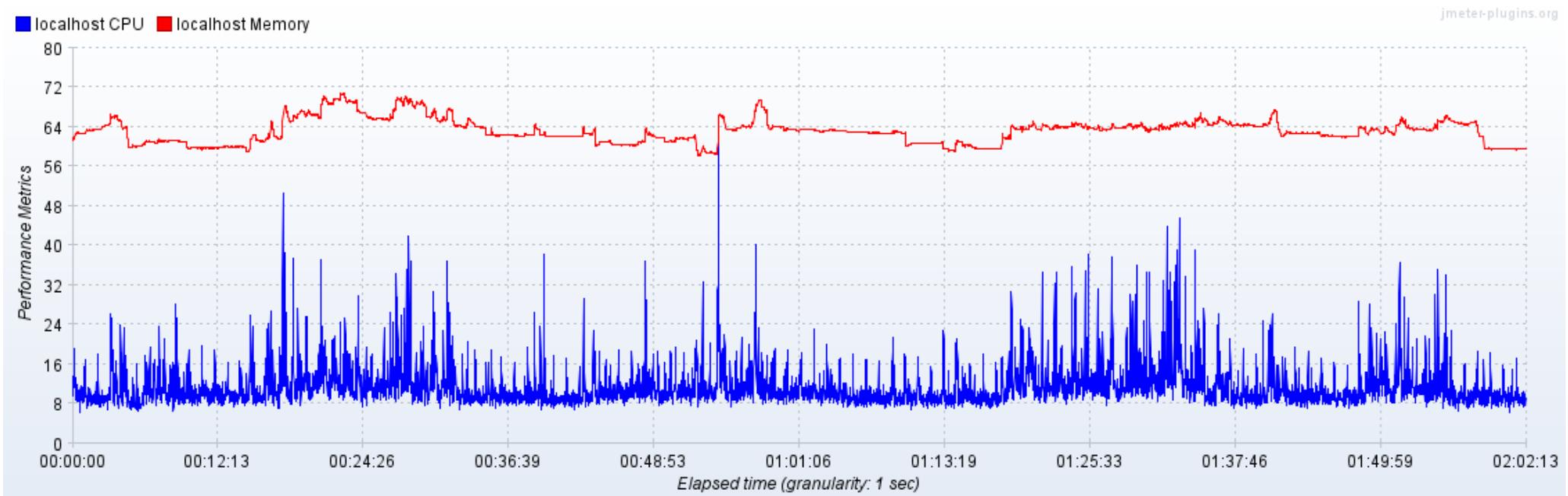
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

➔ Graph:



Test 2:

→ Number of users: 2, Loop Count: 100000

The screenshot shows the Apache JMeter interface with the test plan titled "Test Plan_Assignment_Three.jmx". The "Thread Group Assignment_3" is selected in the tree view on the left. The main panel displays the configuration for this thread group.

Thread Group

- Name:** Thread Group_Assignment_3
- Comments:** [Empty]
- Action to be taken after a Sampler error:** Continue (radio button selected)

Thread Properties

- Number of Threads (users):** 2
- Ramp-up period (seconds):** 1
- Loop Count:** Infinite 100000
- Checkboxes:**
 - Same user on each iteration
 - Delay Thread creation until needed
 - Specify Thread lifetime
- Duration (seconds):** [Empty input field]
- Startup delay (seconds):** [Empty input field]

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:12:51 0 0/2 0/2

Summary Report

Name: Summary Report_Assignment_3

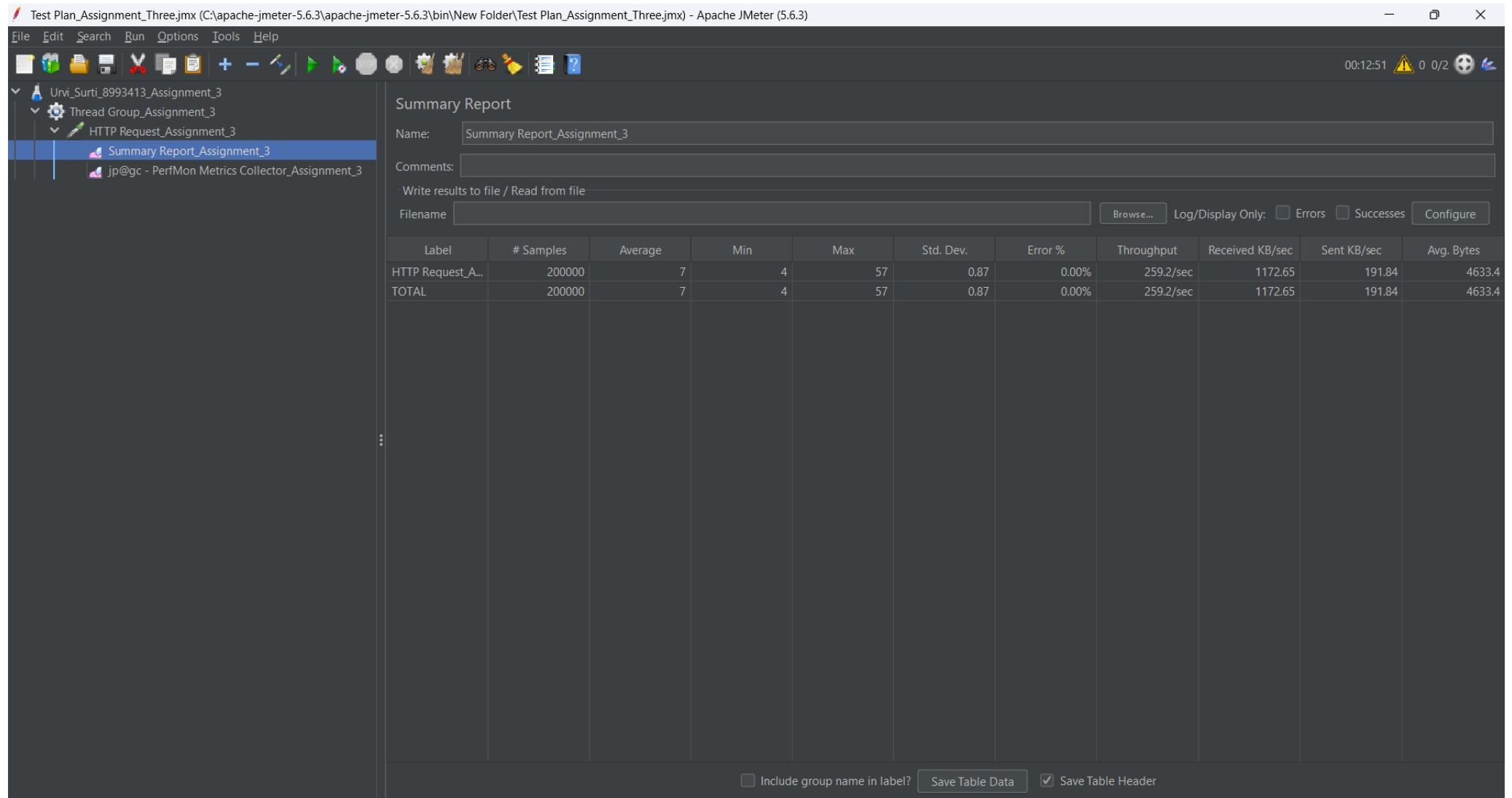
Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	200000	7	4	57	0.87	0.00%	259.2/sec	1172.65	191.84	4633.4
TOTAL	200000	7	4	57	0.87	0.00%	259.2/sec	1172.65	191.84	4633.4

Include group name in label? Save Table Header



→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:12:51 ⚠ 0 0/2 ⚽

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

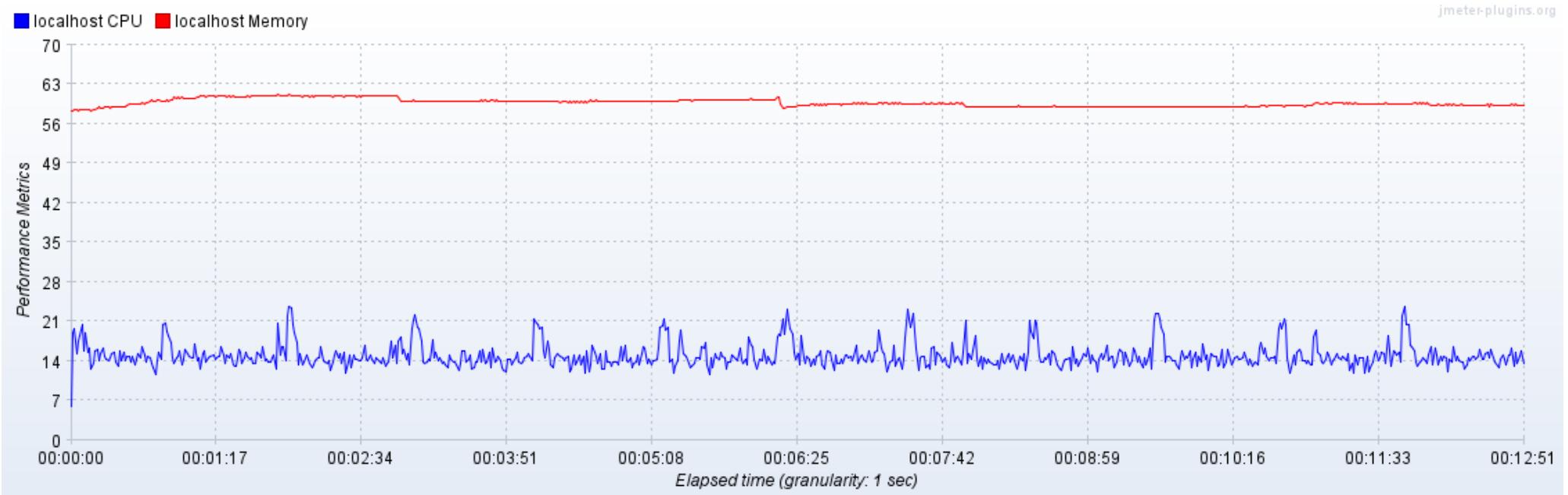
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 3:

→ Number of users: 3, Loop Count: 100000

The screenshot shows the Apache JMeter interface with the following details:

- Test Plan:** Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx)
- Thread Group:** Thread Group_Assignment_3
 - Name: Thread Group_Assignment_3
 - Comments:
 - Action to be taken after a Sampler error:
 - Continue (radio button selected)
 - Start Next Thread Loop
 - Stop Thread
 - Stop Test
 - Stop Test Now
 - Thread Properties:
 - Number of Threads (users): 3
 - Ramp-up period (seconds): 1
 - Loop Count: Infinite 100000
 - Same user on each iteration
 - Delay Thread creation until needed
 - Specify Thread lifetime
 - Duration (seconds):
 - Startup delay (seconds):

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:20:53 ⚠ 0 0/3 ⚽ 🔍

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	300000	12	6	120	4.35	0.00%	239.3/sec	1082.69	177.12	4633.4
TOTAL	300000	12	6	120	4.35	0.00%	239.3/sec	1082.69	177.12	4633.4

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:20:53 ⚠ 0 0/3 ⚽

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

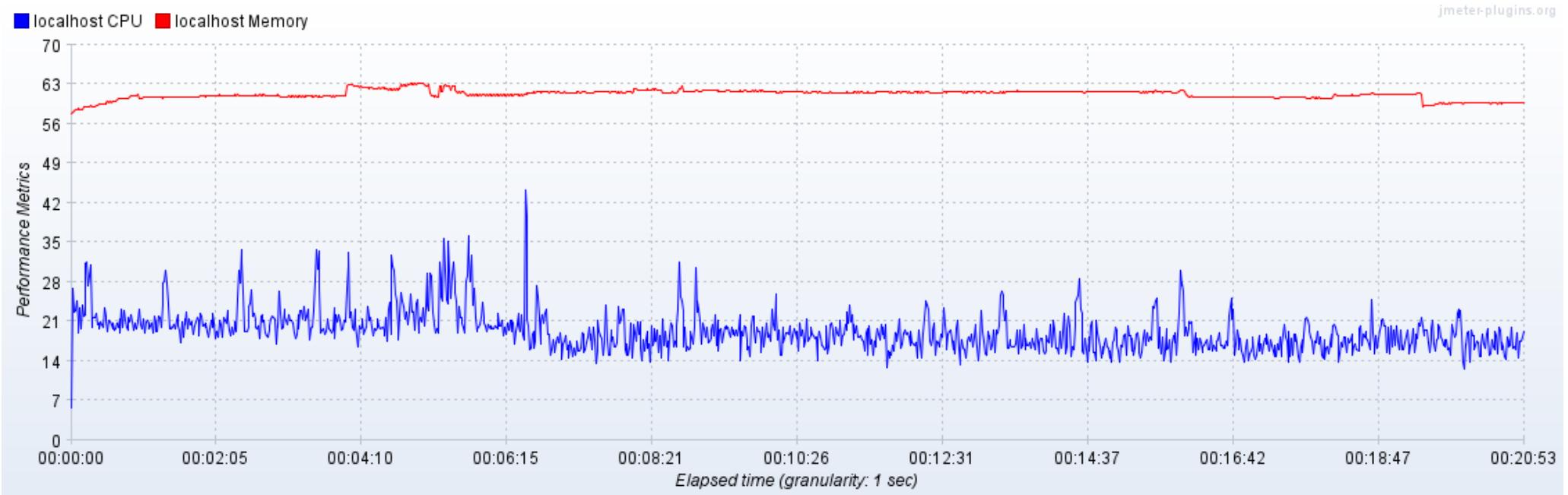
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 4:

→ Number of users: 4, Loop Count: 100000

The screenshot shows the Apache JMeter interface with the following details:

- File Path:** Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx)
- Thread Group Settings:**
 - Name:** Thread Group_Assignment_3
 - Comments:** (empty)
 - Action to be taken after a Sampler error:** Continue (radio button selected)
 - Thread Properties:**
 - Number of Threads (users):** 4
 - Ramp-up period (seconds):** 1
 - Loop Count:** Infinite 100000 (checkbox selected)
 - Checkboxes:** Same user on each iteration (checked), Delay Thread creation until needed (unchecked), Specify Thread lifetime (unchecked)
 - Duration (seconds):** (empty input field)
 - Startup delay (seconds):** (empty input field)

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:35:07 ⚠ 0 0/4 ⚽ 🎮

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

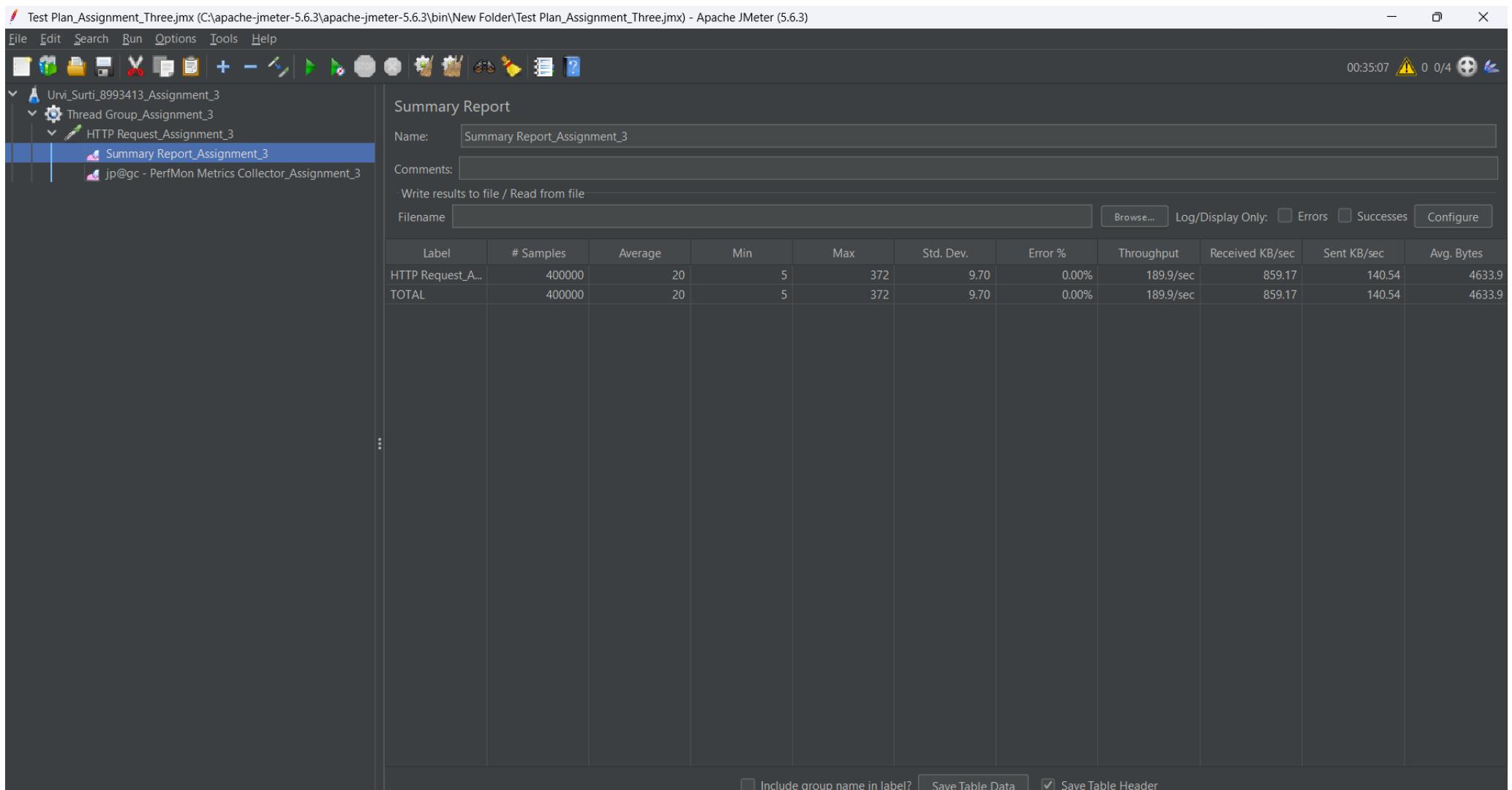
Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	400000	20	5	372	9.70	0.00%	189.9/sec	859.17	140.54	4633.9
TOTAL	400000	20	5	372	9.70	0.00%	189.9/sec	859.17	140.54	4633.9

Include group name in label? Save Table Header



→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:35:07 ⚠ 0 0/4 ⚽

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

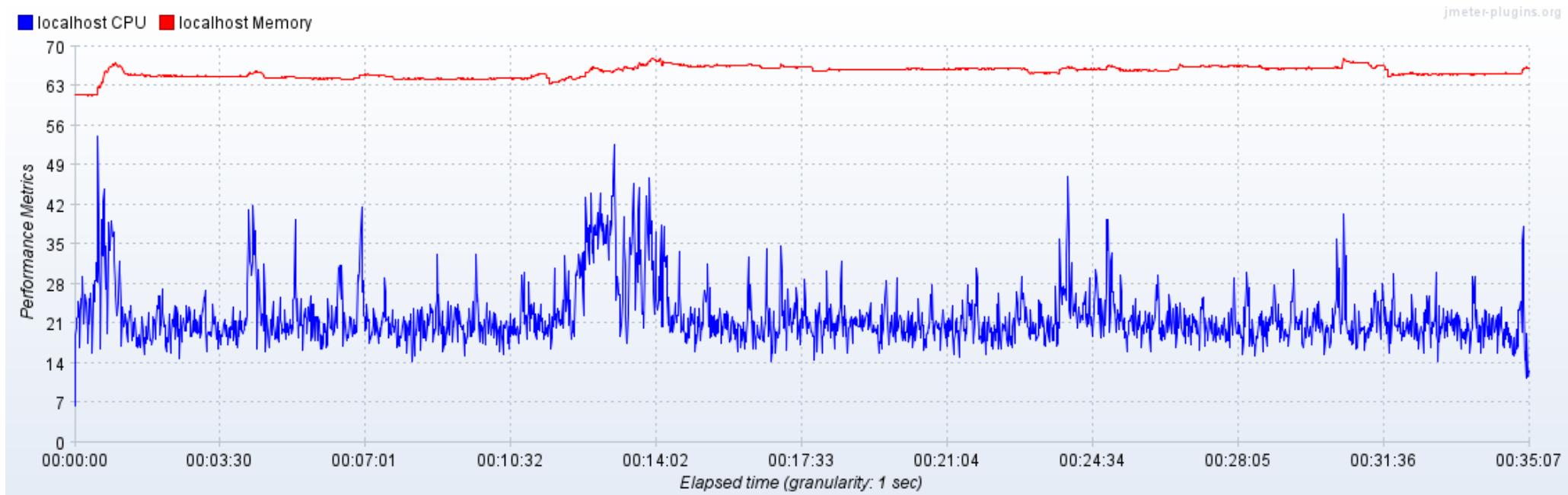
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 5:

→ Number of users: 5, Loop Count: 100000

The screenshot shows the Apache JMeter interface with the test plan titled "Test Plan_Assignment_Three.jmx". The "Thread Group Assignment_3" is selected in the tree view on the left. The main panel displays the configuration for this thread group.

Thread Group

- Name:** Thread Group_Assignment_3
- Comments:** [Empty]
- Action to be taken after a Sampler error:** Continue (radio button selected)

Thread Properties

- Number of Threads (users):** 5
- Ramp-up period (seconds):** 1
- Loop Count:** Infinite 100000 (checkbox selected)
- Checkboxes (unchecked):** Same user on each iteration, Delay Thread creation until needed, Specify Thread lifetime
- Duration (seconds):** [Empty]
- Startup delay (seconds):** [Empty]

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:23:35 0 0/5 0/5

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	500000	14	5	59	1.57	0.00%	353.3/sec	1598.73	261.54	4633.4
TOTAL	500000	14	5	59	1.57	0.00%	353.3/sec	1598.73	261.54	4633.4

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:23:35 ⚠ 0 / 0 / 0 ⚽

Urv_Suri_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

Help on this plugin

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

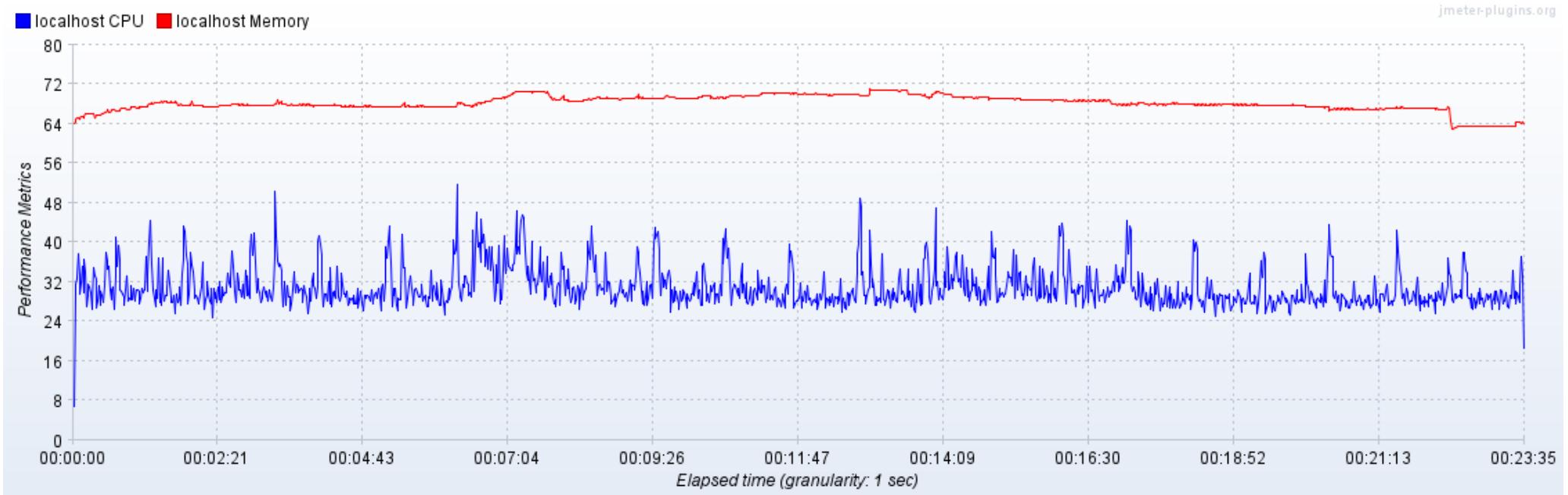
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 6:

→ Number of users: 10, Loop Count: 100000

The screenshot shows the Apache JMeter interface with the following details:

- Test Plan:** Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx)
- Thread Group:** Thread Group_Assignment_3
 - Name:** Thread Group_Assignment_3
 - Comments:**
 - Action to be taken after a Sampler error:** Continue (radio button selected)
 - Thread Properties:**
 - Number of Threads (users):** 10
 - Ramp-up period (seconds):** 1
 - Loop Count:** Infinite **100000**
 - Checkboxes:** Same user on each iteration, Delay Thread creation until needed, Specify Thread lifetime
 - Duration (seconds):**
 - Startup delay (seconds):**

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:48:15 ⚠ 0 0/10 ⚽

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	1000000	28	4	61	2.68	0.00%	345.4/sec	1562.74	255.66	4633.4
TOTAL	1000000	28	4	61	2.68	0.00%	345.4/sec	1562.74	255.66	4633.4

⋮

Include group name in label? Save Table Data Save Table Header

The screenshot shows the Apache JMeter interface with the 'Summary Report' configuration open. The 'Name' field is set to 'Summary Report_Assignment_3'. The results table displays two rows: one for 'HTTP Request_A...' and one for 'TOTAL'. Both rows show 1,000,000 samples, an average response time of 28 seconds, and an error rate of 0.00%. The throughput is listed as 345.4/sec, and the average bytes transferred per request is 4633.4. At the bottom, there are checkboxes for 'Include group name in label?' and 'Save Table Data', with 'Save Table Header' being checked.

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:48:15 ⚠ 0 0/10 ⚡

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

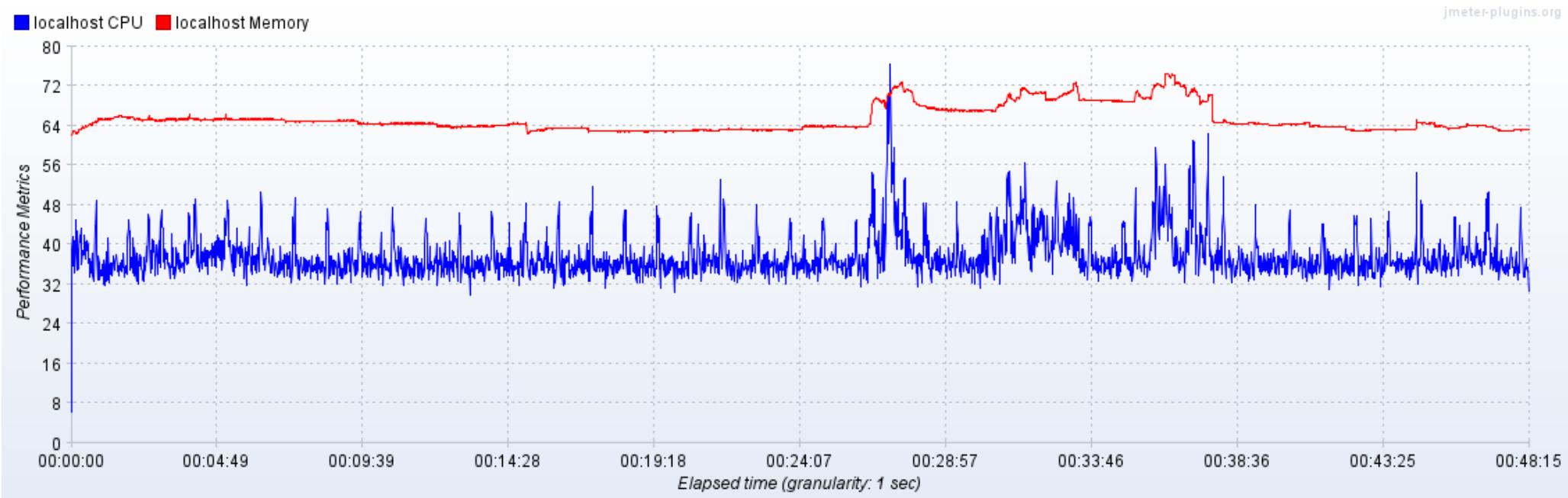
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 7:

→ Number of users: 15, Loop Count: 100000

The screenshot shows the Apache JMeter interface with the following details:

- Test Plan:** Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx)
- Thread Group:** Thread Group_Assignment_3
 - Name:** Thread Group_Assignment_3
 - Comments:** (empty)
 - Action to be taken after a Sampler error:** Continue (radio button selected)
 - Thread Properties:**
 - Number of Threads (users):** 15
 - Ramp-up period (seconds):** 1
 - Loop Count:** Infinite **100000**
 - Checkboxes:** Same user on each iteration, Delay Thread creation until needed, Specify Thread lifetime
 - Duration (seconds):** (empty input field)
 - Startup delay (seconds):** (empty input field)

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

01:33:10 ⚠ 0 0/15 ⚽ 🔍

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	1500000	55	5	1100	13.70	0.00%	268.3/sec	1214.22	198.64	4633.5
TOTAL	1500000	55	5	1100	13.70	0.00%	268.3/sec	1214.22	198.64	4633.5

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

01:33:10 ⚠ 0 0/15 ⚽ 🎮

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

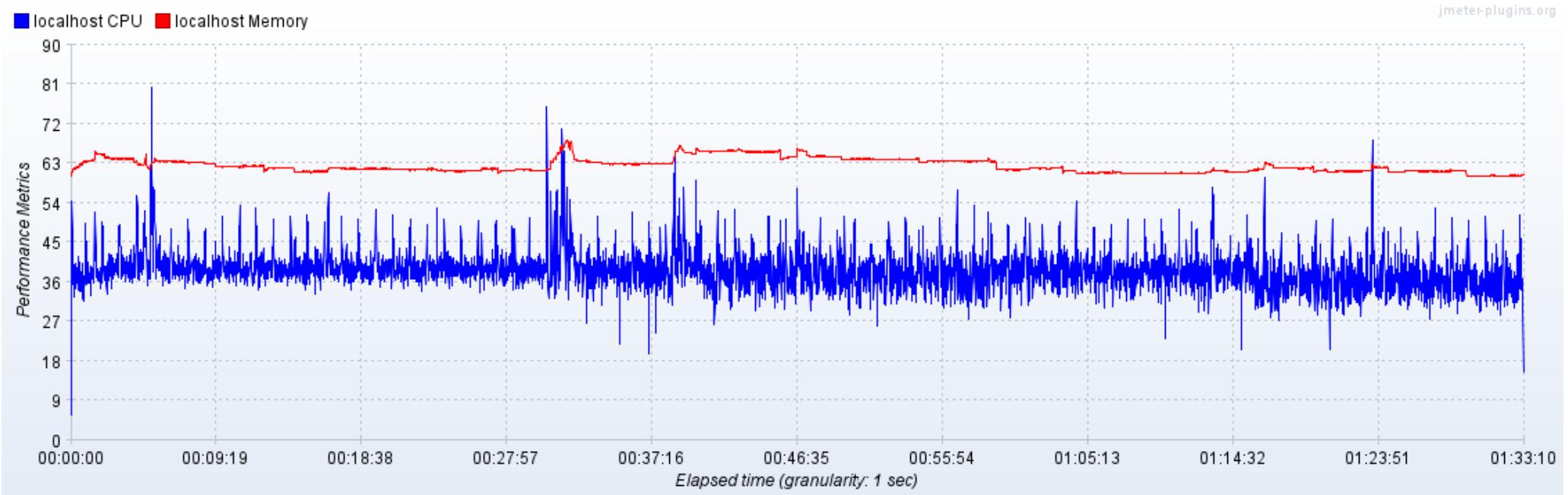
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 8:

→ Number of users: 20, Loop Count: 10000

The screenshot shows the Apache JMeter interface with the test plan titled "Test Plan_Assignment_Three.jmx". The "Thread Group Assignment_3" is selected in the tree view on the left. The main panel displays the configuration for this thread group.

Thread Group

- Name:** Thread Group_Assignment_3
- Comments:** [Empty]
- Action to be taken after a Sampler error:** Continue (radio button selected)

Thread Properties

- Number of Threads (users):** 20
- Ramp-up period (seconds):** 1
- Loop Count:** Infinite 10000
- Same user on each iteration
- Delay Thread creation until needed
- Specify Thread lifetime
- Duration (seconds):** [Empty]
- Startup delay (seconds):** [Empty]

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:09:59 ⚠ 0 0/20 ⚽ 🎮

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Log/Display Only: Errors Successes

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	200000	59	6	340	12.78	0.00%	333.8/sec	1510.26	247.07	4633.4
TOTAL	200000	59	6	340	12.78	0.00%	333.8/sec	1510.26	247.07	4633.4

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:09:59 ⚠ 0 0/20 ⚡

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

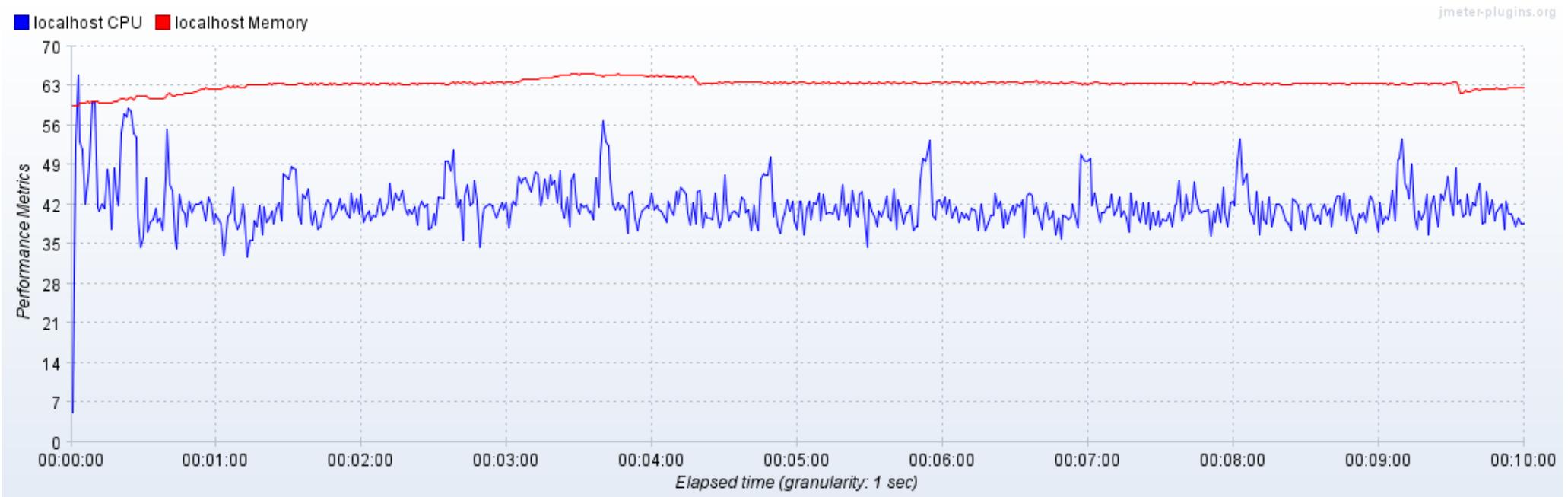
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 9:

→ Number of users: 25, Loop Count: 10000

The screenshot shows the Apache JMeter interface with the test plan titled "Test Plan_Assignment_Three.jmx". The "Thread Group Assignment_3" is selected in the tree view on the left. The main panel displays the configuration for this thread group.

Thread Group

- Name:** Thread Group_Assignment_3
- Comments:** [Empty]
- Action to be taken after a Sampler error:** Continue (radio button selected)

Thread Properties

- Number of Threads (users):** 25
- Ramp-up period (seconds):** 1
- Loop Count:** Infinite 10000
- Checkboxes:**
 - Same user on each iteration
 - Delay Thread creation until needed
 - Specify Thread lifetime
- Duration (seconds):** [Empty input field]
- Startup delay (seconds):** [Empty input field]

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:14:25 ⚠ 0 0/25 ⚽ 🔍

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	250000	84	2	2421	58.26	37.61%	288.7/sec	1496.50	164.30	5307.2
TOTAL	250000	84	2	2421	58.26	37.61%	288.7/sec	1496.50	164.30	5307.2

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

00:14:25 ⚠ 0 0/25 ⚡

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Chart Rows Settings

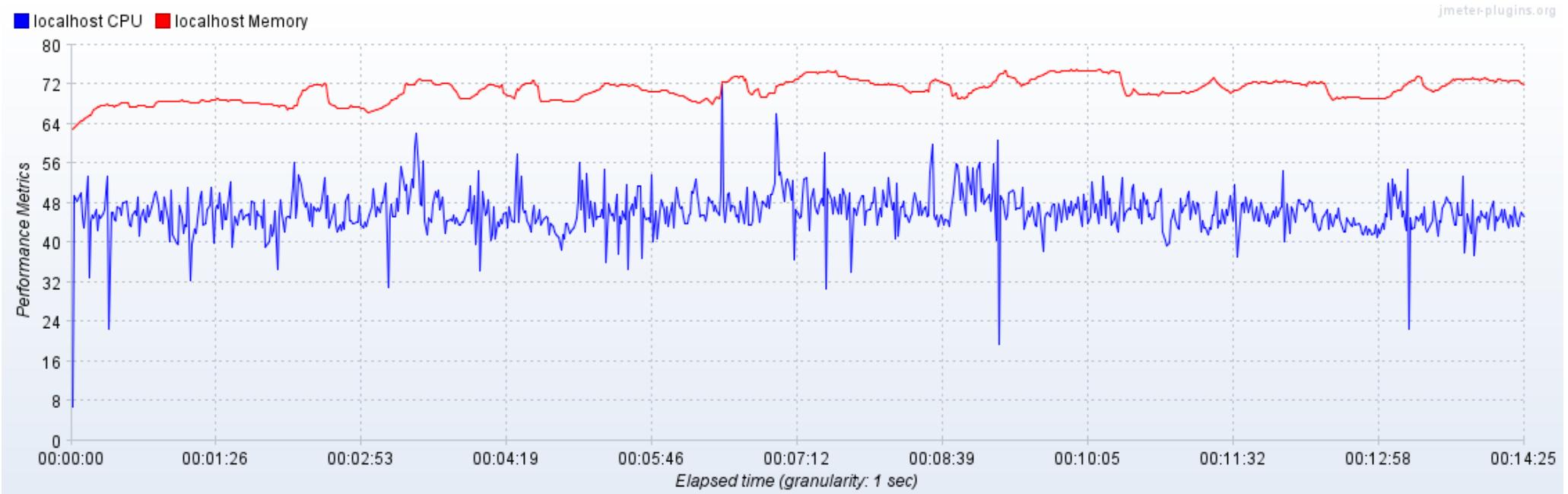
localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

jmeter-plugins.org

→ Graph:



Test 10:

→ Number of users: 50, Loop Count: 10000

The screenshot shows the Apache JMeter interface with the following details:

- File Path:** Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx)
- Thread Group Configuration:**
 - Name:** Thread Group_Assignment_3
 - Comments:** (empty)
 - Action to be taken after a Sampler error:** Continue (radio button selected)
 - Thread Properties:**
 - Number of Threads (users):** 50
 - Ramp-up period (seconds):** 1
 - Loop Count:** Infinite 10000 (checkbox selected)
 - Checkboxes:** Same user on each iteration (checked), Delay Thread creation until needed (unchecked), Specify Thread lifetime (unchecked)
 - Duration (seconds):** (empty input field)
 - Startup delay (seconds):** (empty input field)

→ Summary Report:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

01:33:27 ⚠ 0 0/50 ⚽ 🔍

Urvi_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector_Assignment_3

Summary Report

Name: Summary Report_Assignment_3

Comments:

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
HTTP Request_A...	500000	554	5	14590	1616.96	0.01%	89.2/sec	403.64	66.00	4635.3
TOTAL	500000	554	5	14590	1616.96	0.01%	89.2/sec	403.64	66.00	4635.3

Include group name in label? Save Table Header

→ Perform Server Agent:

Test Plan_Assignment_Three.jmx (C:\apache-jmeter-5.6.3\apache-jmeter-5.6.3\bin\New Folder\Test Plan_Assignment_Three.jmx) - Apache JMeter (5.6.3)

File Edit Search Run Options Tools Help

01:33:27 ⚠ 0 0/50 ⚡

Urv_Surti_8993413_Assignment_3

Thread Group_Assignment_3

HTTP Request_Assignment_3

Summary Report_Assignment_3

jp@gc - PerfMon Metrics Collector

Name: jp@gc - PerfMon Metrics Collector_Assignment_3

Comments:

[Help on this plugin](#)

Servers to Monitor (ServerAgent must be started, see help)

Host / IP	Port	Metric to collect	Metric parameter (see help)
localhost	4444	CPU	
localhost	4444	Memory	

Add Row Copy Row Delete Row

Write results to file / Read from file

Filename Browse... Log/Display Only: Errors Successes Configure

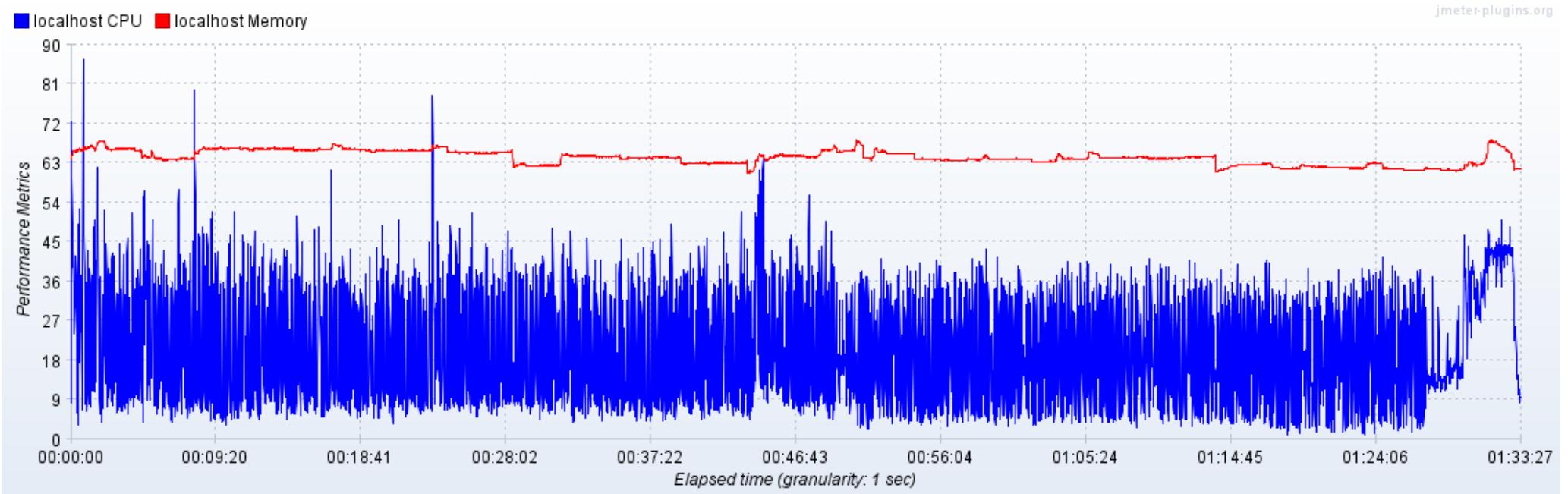
Chart Rows Settings

localhost CPU localhost Memory

Performance Metrics

Elapsed time (granularity: 1 sec)

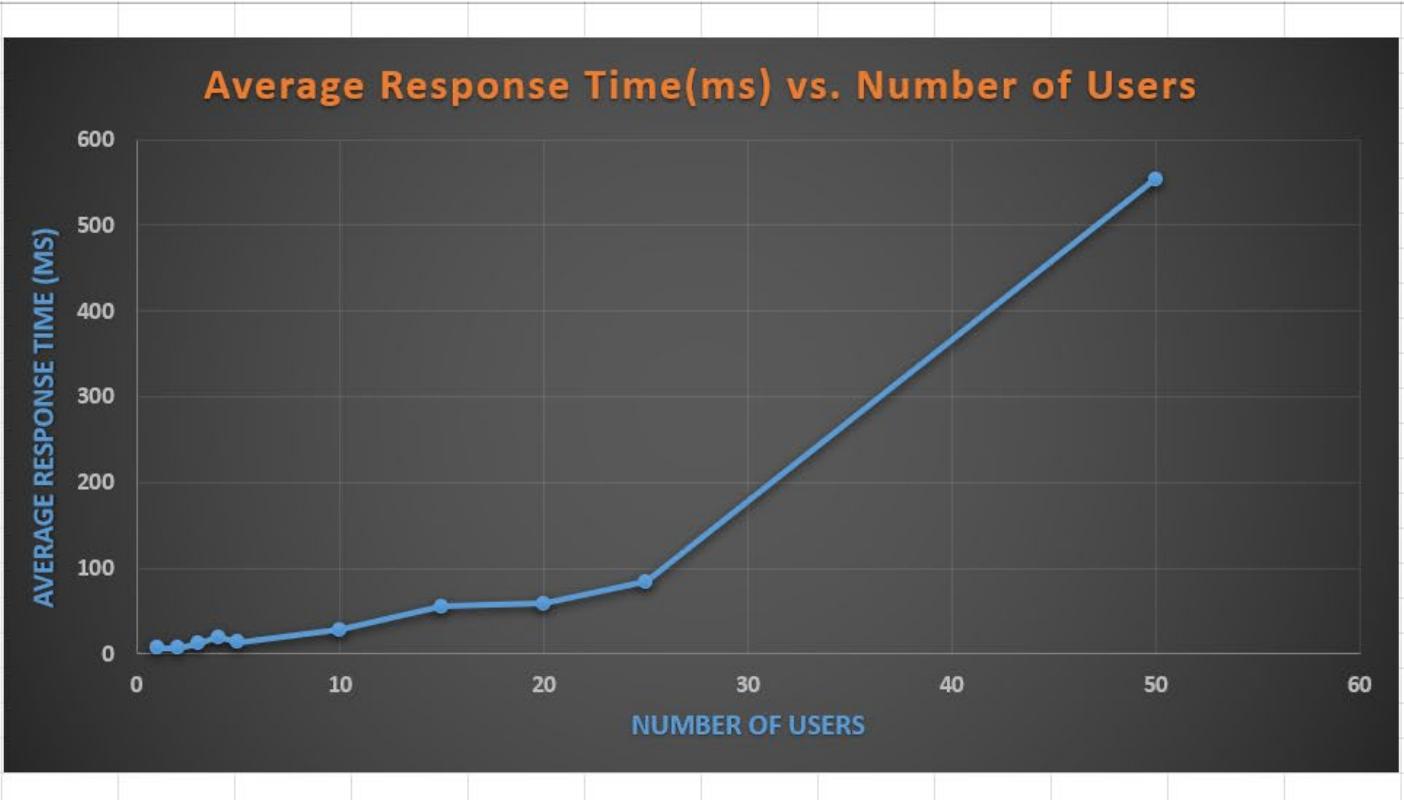
→ Graph:



Part 2:

MS Excel Chart Copy

Numbers of Users	Average Response Time (ms)
1	7
2	7
3	12
4	20
5	14
10	28
15	55
20	59
25	84
50	554



Part 3:

Explanation of Results

Performance Analysis Report

1. Overview of Results and Performance Bottlenecks:

The performance tests were carried out on the website with various numbers of users and loops to track how various loads can be handled. Here's the observation:

- **Response Time Trends:** The website takes longer to respond when more users are online and uses website at the same time.
- **System Resource Usage:** CPU and memory usage rises with a greater number of users. This means that the system is faces difficulty with processing power and memory.
- **Scalability Problems:** The website's performance drops when there are 15 or more users that indicates high traffic.
- **Performance Bottlenecks:**
 - **Database Performance:** Slow or inefficient database queries could cause more response time.
 - **Server Processing:** More CPU usage indicates that the application may not be efficient to handle multiple requests at same time.
 - **Network Latency:** Due to high load, there are delays in processing requests that affects performance.

2. Analysis of Test Data

The performance test was carried out by using various numbers of users and repeated request for specified loop count. Here's the observation:

- **1 User, 1,000,000 Requests:** Response time wad quick and performed well.
- **2 to 5 Users, 100,000 Requests Each:** Response times slightly increased but performance remained consistent.
- **10 to 15 Users, 100,000 Requests Each:** Response times grew notably, and CPU usage increased significantly.
- **20 to 25 Users, 10,000 Requests Each:** The system start facing difficulty when response time rise.
- **50 Users, 10,000 Requests:** Performance drops significantly, with slow and inconsistent response times.

Average Response Time Trends:

- **1 to 5 users:** Response times were within an acceptable range.
- **10 to 15 users:** Response times increased by 30-50%.
- **20 to 50 users:** Response times were too high which confirmed that the website faced difficulty with a large number of users.

3. Validity of Results and Production Considerations

While the test results provide useful information about system performance, various things might affect how the website works and useful in real-life situations.

- **Test vs. Real Environment:** The test conditions might not completely reflect real-world usage, where caching and user behavior also affect performance.
- **Server Configuration:** The actual production server might have hardware that handles traffic on the website.
- **Code Efficiency:** When the application code is not rectified for various users, system might slow down under high demand.
- **Load Balancing & Caching:** Production environments usually utilize caching and load balancers to improve performance that were not included in test.
- **Database Optimization:** Utilize indexing and optimizing database queries that helps to prevent slow response times in real-life scenarios.