



## **Report for Lab Tasks- Load Testing with Apache JMeter:**

Course Code: CSE430

Course Title: Software Testing & Quality Assurance

Section: 01

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# Lab Task-01: ( Load Test a Public Website )

## Solution:

### Steps to be done:

- Method: get
- Path: /
- Protocol: https
- Port: 443
- Virtual user 25, Ramp-up period 15 second, Loop count 3.
- URL: <https://httpbin.org/>

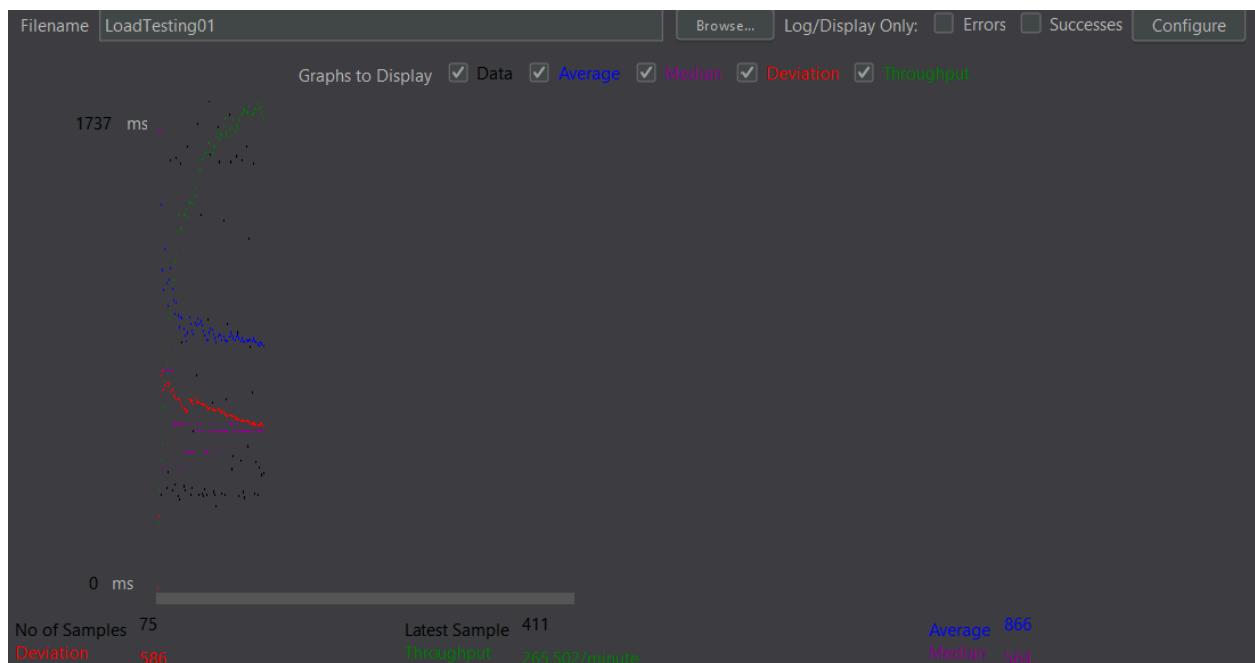
→ View Result Tree

The screenshot shows the JMeter Results Tree viewer. The left pane displays a tree structure with multiple 'HTTP Request' nodes, all of which are expanded. The right pane shows the details for the first expanded node. The details include:  
Thread Name: Thread Group 1-2  
Sample Start: 2025-12-28 12:40:08 GMT+06:00  
Load time: 1629  
Connect Time: 1220  
Latency: 1623  
Size in bytes: 9832  
Sent bytes: 117  
Headers size in bytes: 239  
Body size in bytes: 9593  
Sample Count: 1  
Error Count: 0  
Data type ("text"|"bin"|""): text  
Response code: 200  
Response message: OK  
  
HTTPSampleResult fields:  
ContentType: text/html; charset=utf-8  
DataEncoding: utf-8

## → Summary Report

LoadTesting01							Browse...	Log/Display Only:	<input type="checkbox"/> Errors	<input type="checkbox"/> Successes	Configure
Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received K...	Sent KB/sec	Avg. Bytes	
HTTP Reque...	75	866	294	2219	586.93	0.00%	4.4/sec	42.49	0.51	9832.0	
TOTAL	75	866	294	2219	586.93	0.00%	4.4/sec	42.49	0.51	9832.0	

## → Graph Results



## → Aggregate Report

LoadTesting01							Browse...	Log/Display Only:	<input type="checkbox"/> Errors	<input type="checkbox"/> Successes	Configure	
Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughp...	Received ...	Sent KB/s...
HTTP Reque...	75	866	564	1657	1832	2154	294	2219	0.00%	4.4/sec	42.49	0.51
TOTAL	75	866	564	1657	1832	2154	294	2219	0.00%	4.4/sec	42.49	0.51

Using the Aggregate Report it has been observed that,

- The average response time was observed to be **866 ms** under moderate load. Which means 90% of requests were served within **866 ms**.
- The error percentage was **0.00%**, indicating no errors were observed during the test, indicating stable system behavior. The system maintained a throughput of **X requests per second**, demonstrating its ability to handle concurrent user requests efficiently.

## **Lab Task-02: ( Simulate Login using Fake Store API )**

**Solution:**

**Steps to be done:**

- Method: get
- Path: /get
- Protocol: http
- Port: 80
- Virtual user 5, Ramp-up period 1 second, Loop count 2.
- URL: <https://fakestoreapi.com/>

## → View Result Tree

The screenshot shows the JMeter interface with the 'View Results Tree' listener selected. The left panel displays a tree view with 16 'HTTP Request' nodes under a 'Text' category. The right panel shows detailed results for the first sampler:

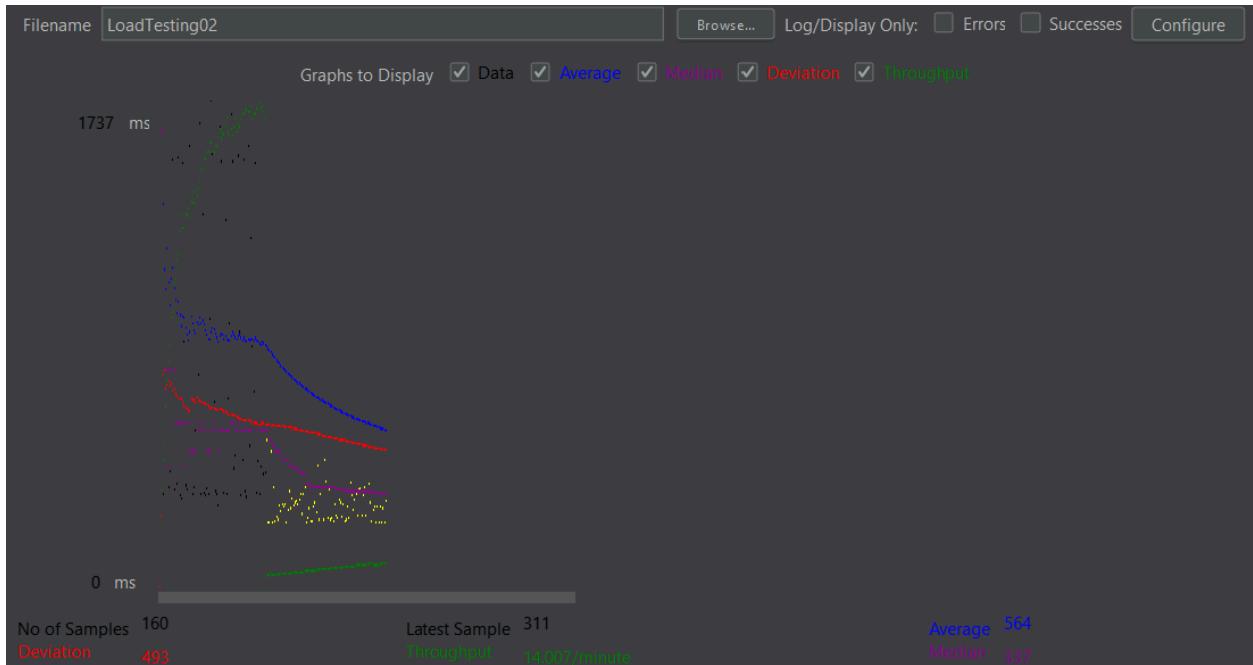
- Thread Name: Thread Group 1-2
- Sample Start: 2025-12-28 12:40:08 GMT+06:00
- Load time: 1629
- Connect Time: 1220
- Latency: 1623
- Size in bytes: 9832
- Sent bytes: 117
- Headers size in bytes: 239
- Body size in bytes: 9593
- Sample Count: 1
- Error Count: 0
- Data type ("text"|"bin"|""): text
- Response code: 200
- Response message: OK

Below this, it lists 'HTTPSampleResult fields':  
Content-Type: text/html; charset=utf-8  
DataEncoding: utf-8

## → Summary Report

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received K...	Sent KB/sec	Avg. Bytes
HTTP Request	160	564	234	2219	493.77	53.12%	14.0/min	1.14	0.03	4980.3
TOTAL	160	564	234	2219	493.77	53.12%	14.0/min	1.14	0.03	4980.3

## → Graph Report



## → Aggregate Report

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughp...	Received ...	Sent KB/s...
HTTP Req...	160	564	337	1529	1657	1994	234	2219	53.12%	14.0/min	1.14	0.03
TOTAL	160	564	337	1529	1657	1994	234	2219	53.12%	14.0/min	1.14	0.03

Since the given URL (<https://fakestoreapi.com/>) has **no login page** so we can not validate login success & token response.

But if we load test it then the result would be:

Using the Aggregate Report it has been observed that,

- The average response time was observed to be **564 ms** under moderate load.
- The error percentage was **53.12%**, indicating errors were observed during the test.

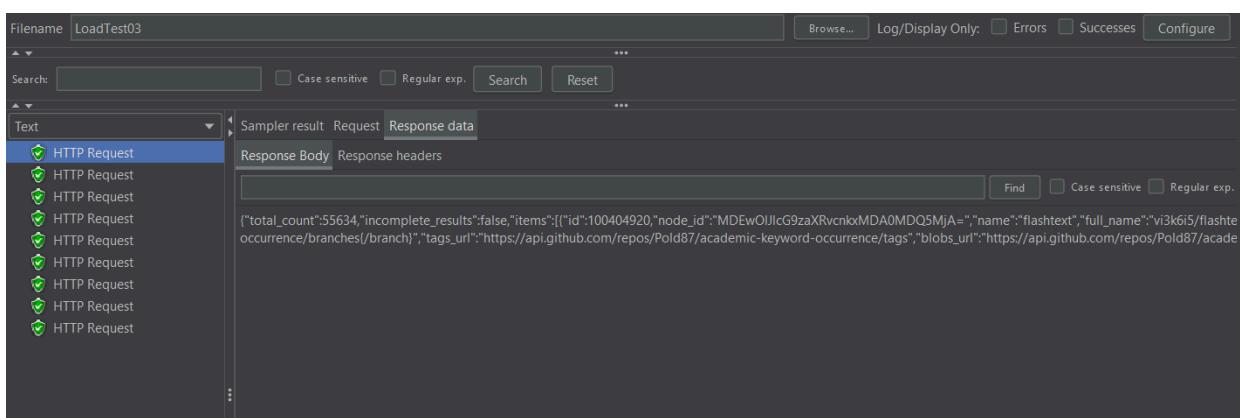
## Lab Task-03: ( Search Feature Parameterized Test )

**Solution:**

**Steps to be done:**

- Method: get
- Path: /search/repositories?q=\${keyword}
- CSV file name: keywords.csv
- Protocol: https
- Virtual user 3, Ramp-up period 3, Loop count 3.
- URL: api.github.com

→ View Result Tree



Filename LoadTest03

Search:  Case sensitive Regular exp. Search Reset

Text

Sampler result Request Response data

Response Body Response headers  Find Case sensitive Regular exp.

```

3 Content-Type: application/json; charset=utf-8
4 Cache-Control: no-cache
5 Vary: Accept,Accept-Encoding, Accept, X-Requested-With
6 X-GitHub-Media-Type: github.v3; format=json
7 Link: <https://api.github.com/search/repositories?q=keyword&page=2>; rel="next", <https://api.github.com/search/repositories?q=keyword&page=3>; rel="last"
8 x-github-api-version-selected: 2022-11-28
9 Access-Control-Expose-Headers: ETag, Link, Location, Retry-After, X-GitHub-OTP, X-RateLimit-Limit, X-RateLimit-Remaining, X-RateLimit-Used, X-RateLimit-Resource, X-Ratelimit-Reset, X-OAuth-Scopes, X-Accepted-OAuth-Scopes, X-Poll-Interval, X-GitHub-Media-Type, X-GitHub-SSO, X-GitHub-Request-Id, Deprecation, Sunset
10 Access-Control-Allow-Origin: *
11 Strict-Transport-Security: max-age=31536000; includeSubdomains; preload
12 X-Frame-Options: deny
13 X-Content-Type-Options: nosniff
14 X-XSS-Protection: 0
15 Referrer-Policy: origin-when-cross-origin, strict-origin-when-cross-origin
16 Content-Security-Policy: default-src 'none'
17 Server: github.com
18 Accept-Ranges: bytes
19 X-RateLimit-Limit: 10
20 X-RateLimit-Remaining: 9
21 X-RateLimit-Reset: 1766929856
22 X-RateLimit-Resource: search
23 X-RateLimit-Used: 1
24 Transfer-Encoding: chunked
25 X-GitHub-Request-Id: E70D:394862:3057360:49EC9CD:69513584
26

```

Scroll automatically?

## → View Results in Table

Filename LoadTest03

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

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes	Latency	Connect Time(ms)
1	19:49:56.401	Thread Group 1-1	HTTP Request	1232	✓	164760	145	1048	253
2	19:49:57.634	Thread Group 1-1	HTTP Request	909	✓	158984	142	881	0
3	19:49:58.546	Thread Group 1-1	HTTP Request	110	✓	164711	145	59	0
4	19:49:57.401	Thread Group 1-2	HTTP Request	1290	✓	168028	144	1033	113
5	19:49:58.691	Thread Group 1-2	HTTP Request	163	✓	167979	144	65	0
6	19:49:58.855	Thread Group 1-2	HTTP Request	114	✓	158942	142	57	0
7	19:49:58.401	Thread Group 1-3	HTTP Request	1362	✓	172147	145	1018	195
8	19:49:59.763	Thread Group 1-3	HTTP Request	138	✓	172098	145	60	0
9	19:49:59.902	Thread Group 1-3	HTTP Request	130	✓	164711	145	62	0

The GitHub API search was performed using **keywords.csv** & the results were validated for **correctness** across all parameterized inputs.

## Lab Task-04: ( Stress Test with High Load )

### Solution:

### Steps to be done:

- Method: get
- Path: /
- Protocol: http
- Port: 80
- Virtual user 100, Ramp-up period 30, Loop count Infinite(120).
- URL: www.example.com

### → View Result Tree

The screenshot shows the JMeter Result Tree viewer. The left pane displays a list of 15 failed HTTP requests, each marked with a red error icon. One specific request is selected and highlighted with a blue selection bar at the bottom. The right pane shows detailed information for this selected request:  
Thread Name: Thread Group 1-58  
Sample Start: 2025-12-28 20:18:47 GMT+06:00  
Load time: 100  
Connect Time: 45  
Latency: 98  
Size in bytes: 4925  
Sent bytes: 117  
Headers size in bytes: 398  
Body size in bytes: 4527  
Sample Count: 1  
Error Count: 1  
Data type ("text"|"bin"|""): text  
Response code: 403  
Response message: Forbidden

### → Aggregate Report

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughp...	Received ...	Sent KB/s...
HTTP Req...	55799	188	128	195	667	1244	47	9407	88.46%	250.0/sec	1087.02	28.57
TOTAL	55799	188	128	195	667	1244	47	9407	88.46%	250.0/sec	1087.02	28.57

## → View Results in Table

Sample #	Start Time	Thread Name	Label	Sample Time(...)	Status	Bytes	Sent Bytes	Latency	Connect Time...
1	20:15:05.471	Thread Group ...	HTTP Request	255	✓	825	117	245	170
2	20:15:05.671	Thread Group ...	HTTP Request	139	✓	825	117	139	63
3	20:15:05.970	Thread Group ...	HTTP Request	137	✓	825	117	137	64
4	20:15:06.271	Thread Group ...	HTTP Request	203	✓	825	117	203	46
5	20:15:06.570	Thread Group ...	HTTP Request	232	✓	825	117	137	72
6	20:15:06.870	Thread Group ...	HTTP Request	262	✓	825	117	139	54
7	20:15:07.171	Thread Group ...	HTTP Request	146	✓	830	117	146	69
8	20:15:07.471	Thread Group ...	HTTP Request	143	✓	825	117	143	70
9	20:15:07.770	Thread Group ...	HTTP Request	500	✓	825	117	500	71
10	20:15:08.069	Thread Group ...	HTTP Request	271	✓	825	117	147	72
11	20:15:08.360	Thread Group ...	HTTP Request	147	✓	830	117	146	72
12	20:15:08.369	Thread Group ...	HTTP Request	537	✓	825	117	537	73
13	20:15:08.970	Thread Group ...	HTTP Request	148	✓	825	117	148	71
14	20:15:09.568	Thread Group ...	HTTP Request	149	✓	825	117	149	70
15	20:15:09.869	Thread Group ...	HTTP Request	155	✓	825	117	155	70
16	20:15:09.271	Thread Group ...	HTTP Request	1159	✓	825	117	1159	1076
17	20:15:10.470	Thread Group ...	HTTP Request	150	✓	825	117	150	73
18	20:15:10.170	Thread Group ...	HTTP Request	483	✓	825	117	483	70
19	20:15:10.771	Thread Group ...	HTTP Request	276	✓	825	117	276	72
20	20:15:11.069	Thread Group ...	HTTP Request	147	✓	825	117	147	71

Using the Aggregate Report it has been observed that,

The average response time was **188 ms**, **throughput** reached **255 requests/sec** & high **error rate (~88.46%)** was observed. This indicates that while the server responded quickly for successful requests, it **could not handle the full load**, resulting in many failed requests under peak traffic.

## **Lab Task-05: ( Analyze Test Results )**

### **Solution:**

We have taken **Lab Task-04** which is “**Stress Test with High Load**” for analyzing the test results.

After analyzing the previous test scenario it has been shown that the average response time remained low at 188 ms but the high error percentage (~88.46%) reveals that the server experienced severe bottlenecks under high concurrency. Throughput peaked at 255 requests/sec but the large number of errors suggests the system requires optimization to handle stress conditions reliably.