



IT314: Software Engineering

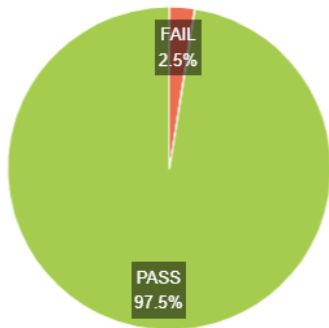
G17: StaffGrid

LOAD TESTING

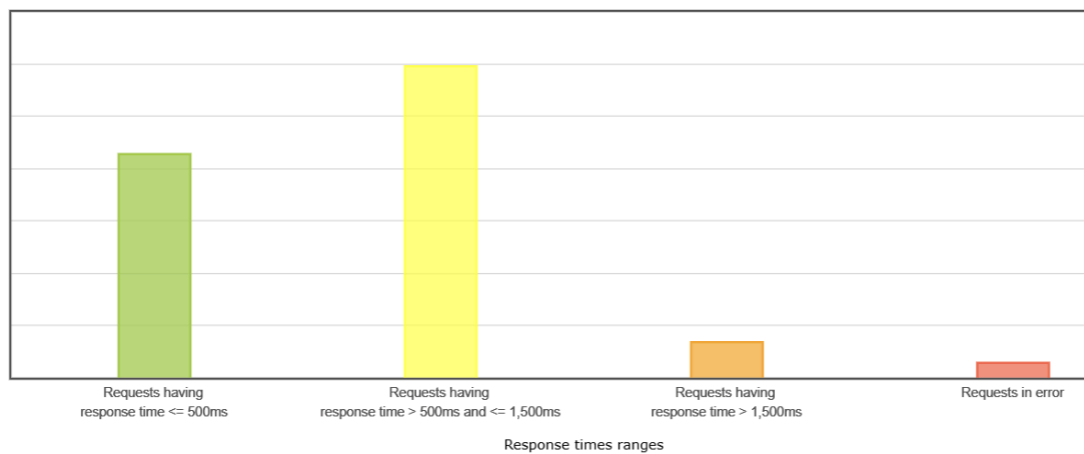
JMETER (Offline):

Trail 1: (10 VUs)

- FAIL- 2.5%, PASS- 97.5%

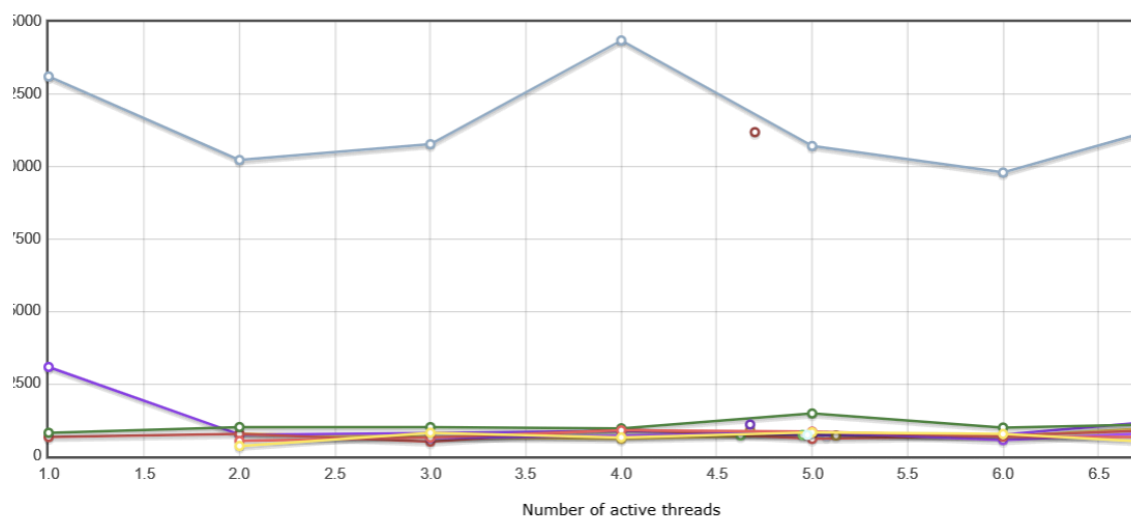


- Response Time Overview



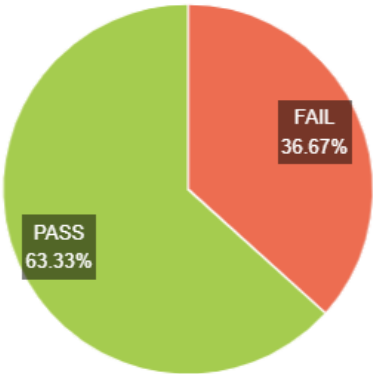
Requests having response time <= 500ms Requests having response time > 1,500ms Requests having response time > 500ms and <= 1,500ms Requests in error

- Time Vs Threads

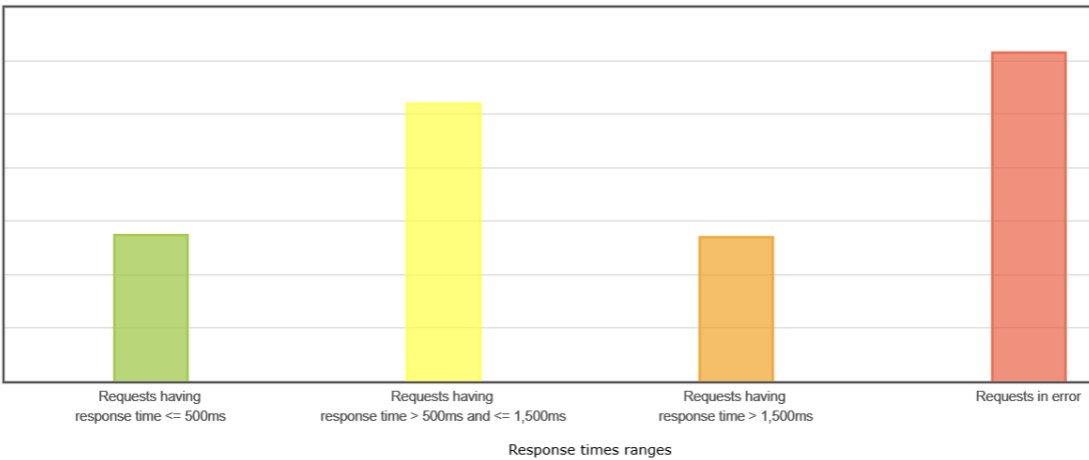


Trail 2: (100 VUs)

- FAIL- 36.67%, PASS- 63.33%

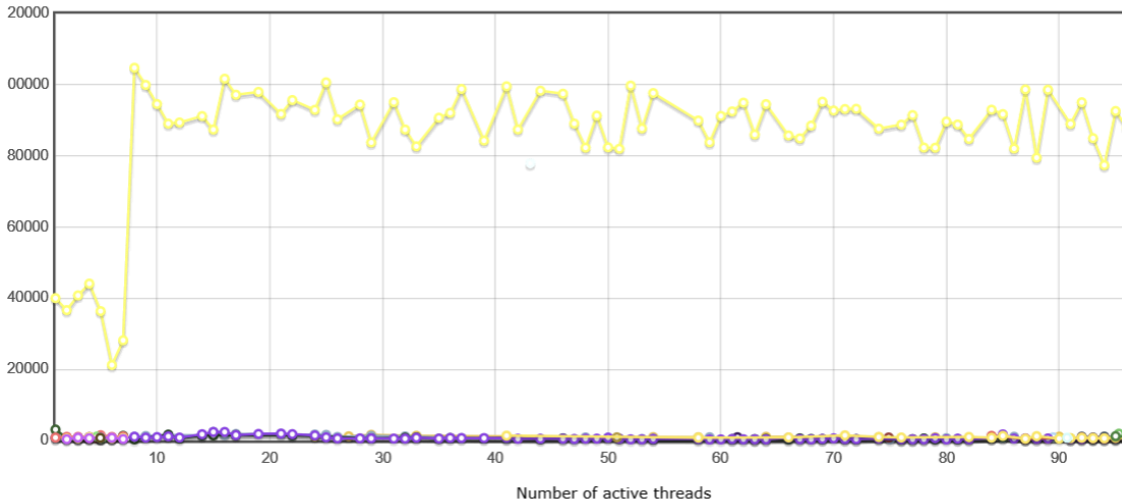


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- Response Time Overview



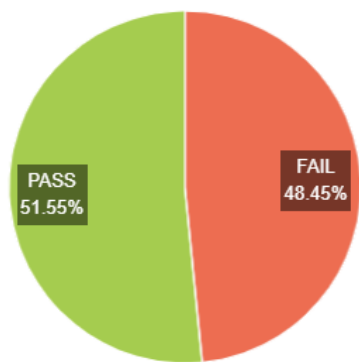
aving response time <= 500ms Requests having response time > 1,500ms Requests having response time > 500ms and <= 1,500ms Requests in error

- Time Vs Threads

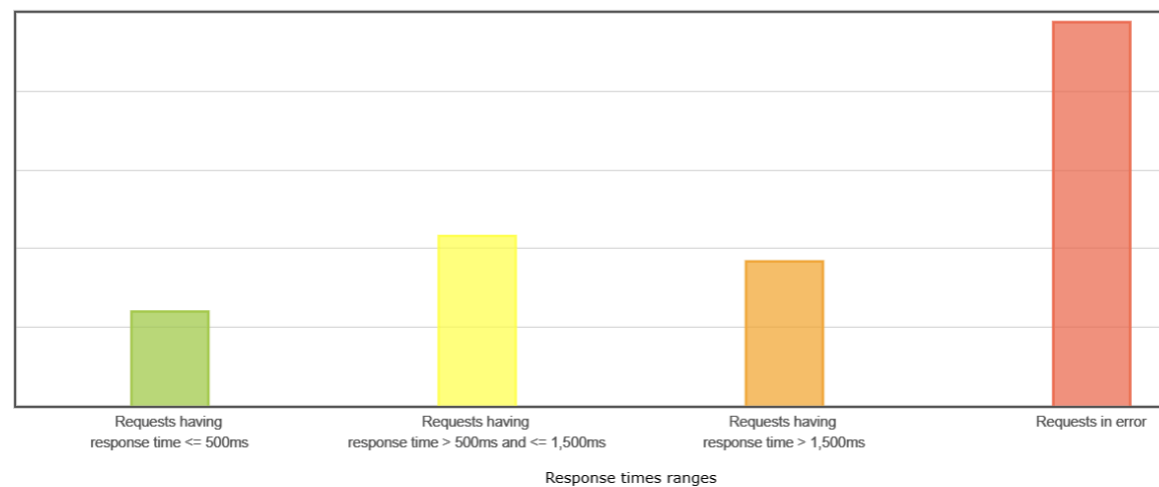


Trail 3: (500 VUs)

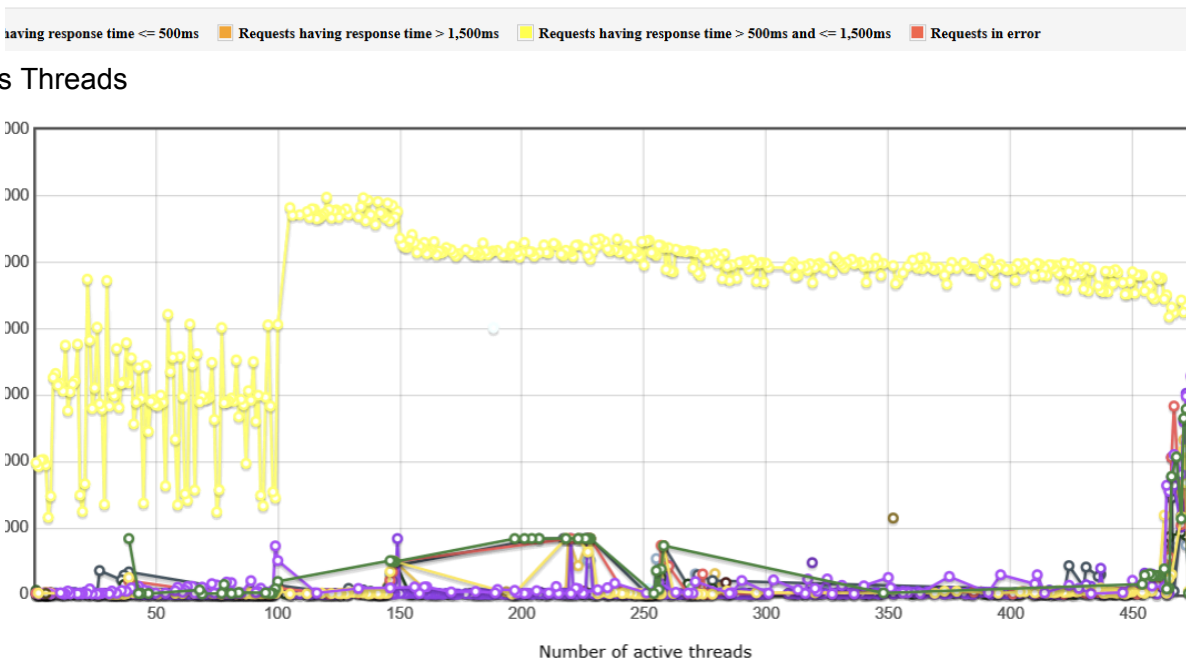
- FAIL- 48.45%, PASS- 51.55%



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- Response Time Overview



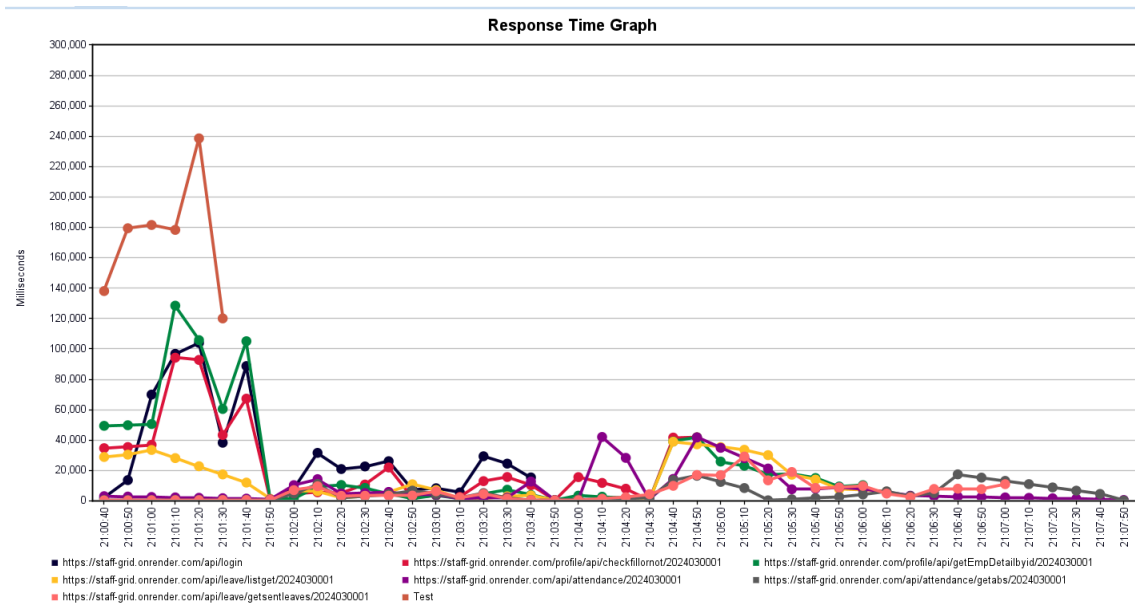
-
- Time Vs Threads



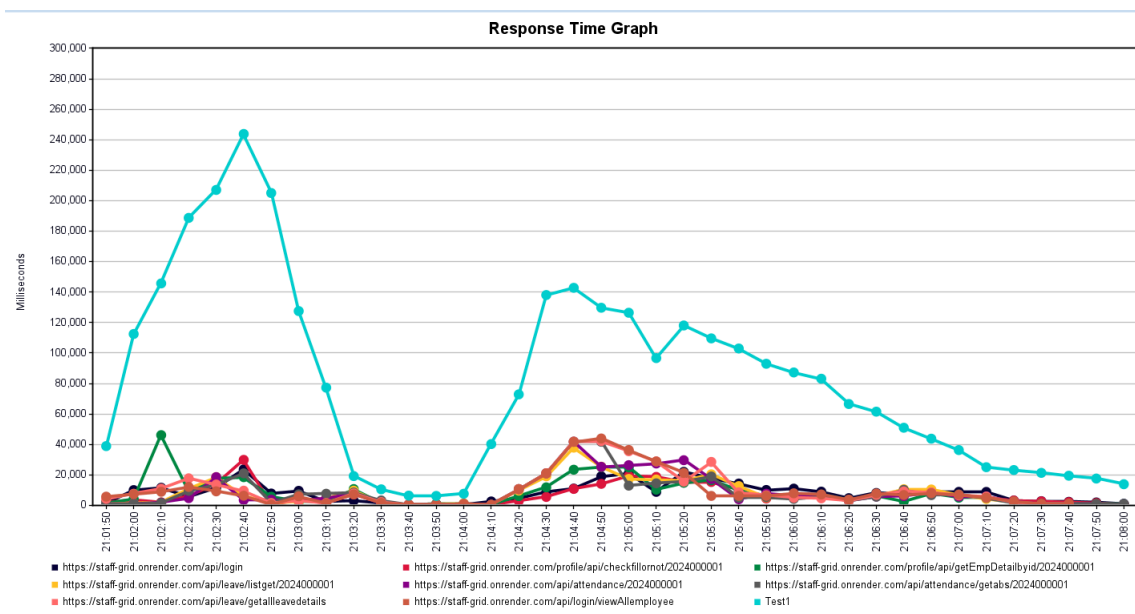
Trail 4: (600 VUs)

A JMeter load test model was created with 2 defined tests. After running the model for 600 threads, the following results were obtained:

- Number of samples: 19200
- Deviation: 41038
- Latest sample: 13922
- Throughput: 2581281/min
- Average: 14720
- Median: 718
- Test case 1:



- Test case 2:



While creating 600 threads, JMeter started with the test case 1 and created some threads, but then used test case 2 to create more threads. The results came early because the test was run offline on a well-configured laptop. If there were limiters like online platforms, this task would have taken a lot longer in a real-world scenario. Still from the response graph we can see when users increase too much response time also gets increased.

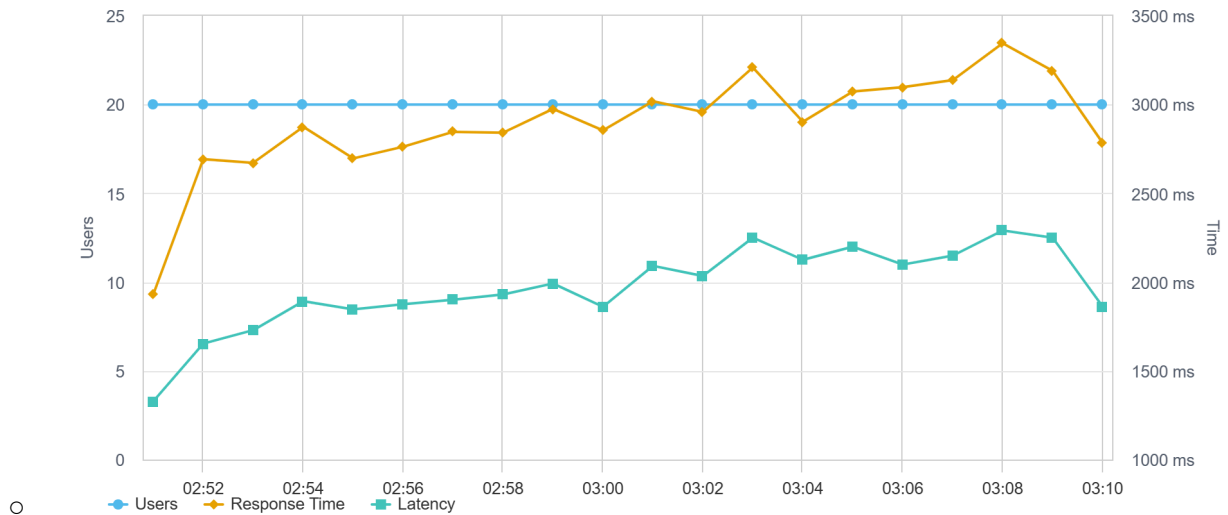
Blazemeter Online Server (for more real world scenario):

Test 1: (20 VUs)

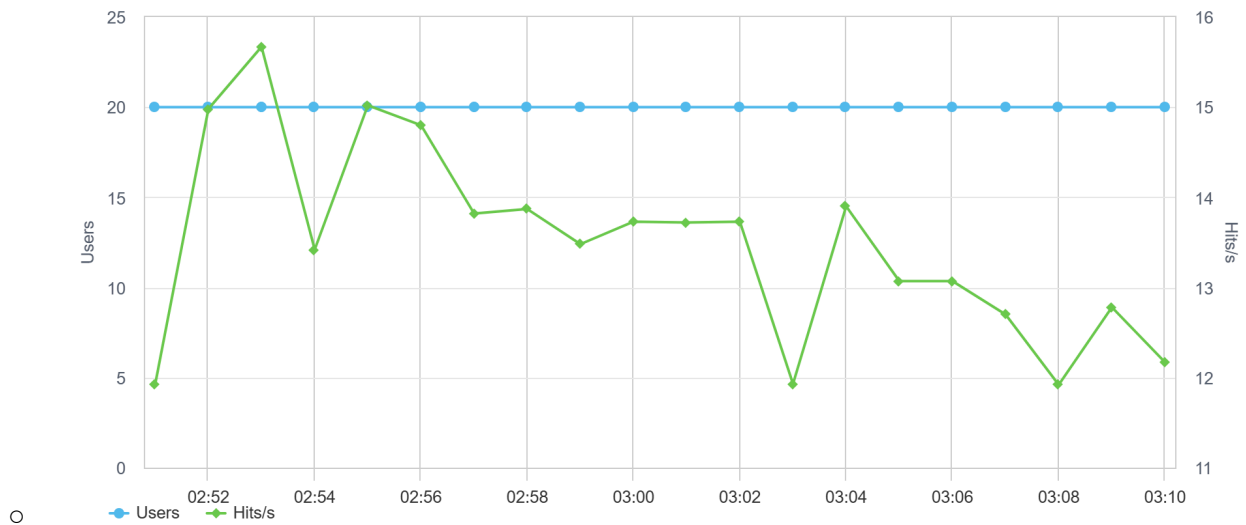
- Parameters:
 - Average Throughput: 13.5 Hits/s
 - Avg. Response Time: 2888 Milliseconds
 - 90% Response Time: 8099 Milliseconds
 - Error Rate: 47.08%

- Charts:

- Concurrent Users and Response Time



- Concurrent Users and Hits/s



- [Link](#) to test report

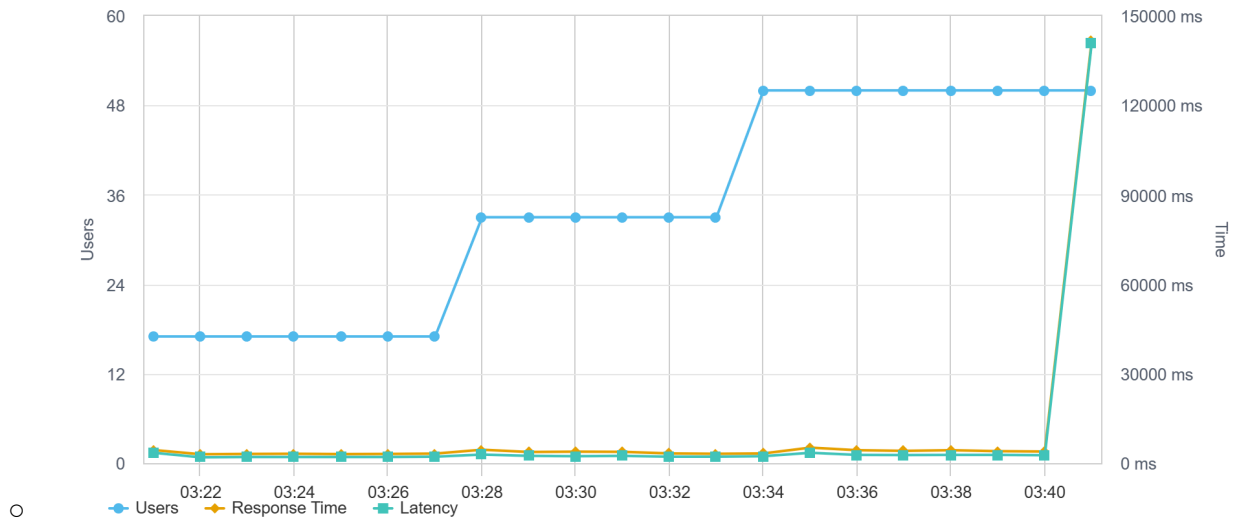
Test 2: Increasing load in ramp first 17 then 33 and then 50 virtual users

- Parameters:

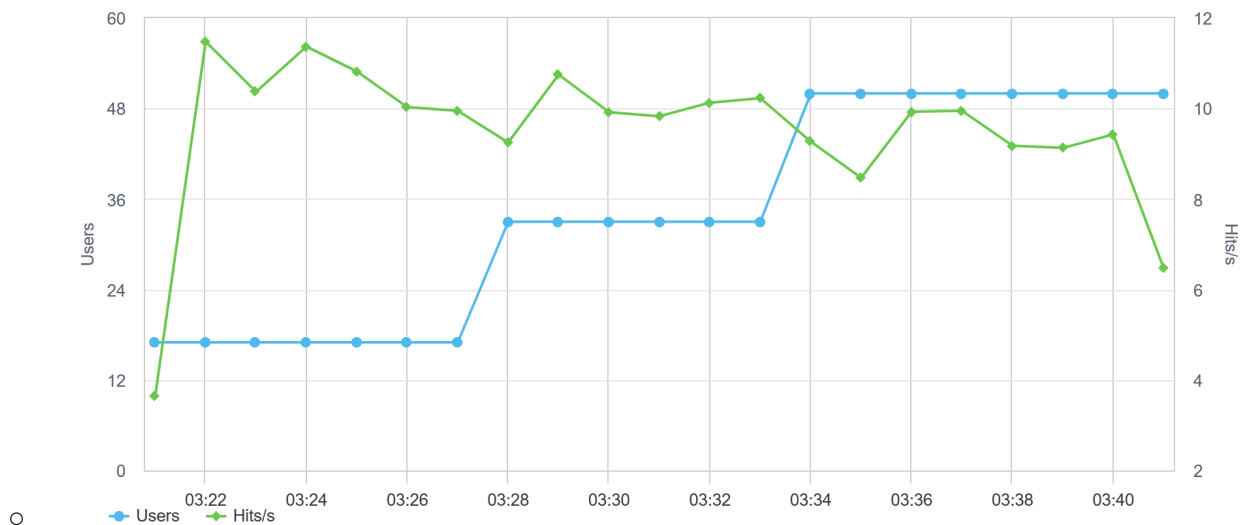
- Average Throughput: 10.0 Hits/s
- Avg. Response Time: 8139 Milliseconds
- 90% Response Time: 9791 Milliseconds
- Error Rate: 46.04%

- Charts

- Concurrent Users and Response Time



- Concurrent Users and Hits/s



- [Link to test report](#)

Conclusion:

From the load testing results, we can observe the following:

- The average throughput decreased from 13.5 Hits/s to 10.0 Hits/s in the second test.
- The average response time increased significantly from 2888 milliseconds to 8139 milliseconds.
- The 90% response time also increased from 8099 milliseconds to 9791 milliseconds.
- The error rate remained relatively stable, with a slight decrease from 47.08% to 46.04%.

These results indicate that the performance of the Staff Grid website degrades under higher load conditions, with increased response times and a high error rate. Further optimization and testing are recommended to improve the performance and reliability of the website under load.