Quadrant Test

Load Testing Using K6

Load Testing to Quadrant.io

** Disclaimer: I change the website from tokopedia to quadrant is because when I hit tokopedia URL return error 403 (Forbidden).*

A. Introduction

Load Testing is a non-functional software testing process in which the performance of software application is tested under a specific expected load. On this load testing we use K6 as a framework and Visual Studio Code as a platform editor.

B. Test Process and Result Description

For the testing I use test script like screenshot below,

```
JS get_test.js ×
JS get_test.js > [o] options
1  import { sleep, check, group } from 'k6';
2  import http from 'k6/http';
3
4  export let options = {
5      stages: [
6          { target: 30, duration: '20s' },
7          { target: 50, duration: '30s' },
8          { target: 3, duration: '10s' }
9      ],
10     thresholds: {
11         http_req_duration: ['avg < 15000'],
12     },
13 };
14
15 export default () => {
16     group('Quadrant Test', function() {
17
18         group("Hit Home", function() {
19             let res = http.get('https://www.quadrant.io/');
20             check(res, {
21                 'status is 200': () => res.status === 200,
22             });
23         });
24
25         group("Hit About Us", function() {
26             let res = http.get('https://www.quadrant.io/team');
27             check(res, {
28                 'status is 200': () => res.status === 200,
29             });
30         });
31
32     });
33     sleep(1);
34 };
```

The Objective:

This case is want to check how the web can handle load from user with 3 stages option in 1 minutes.

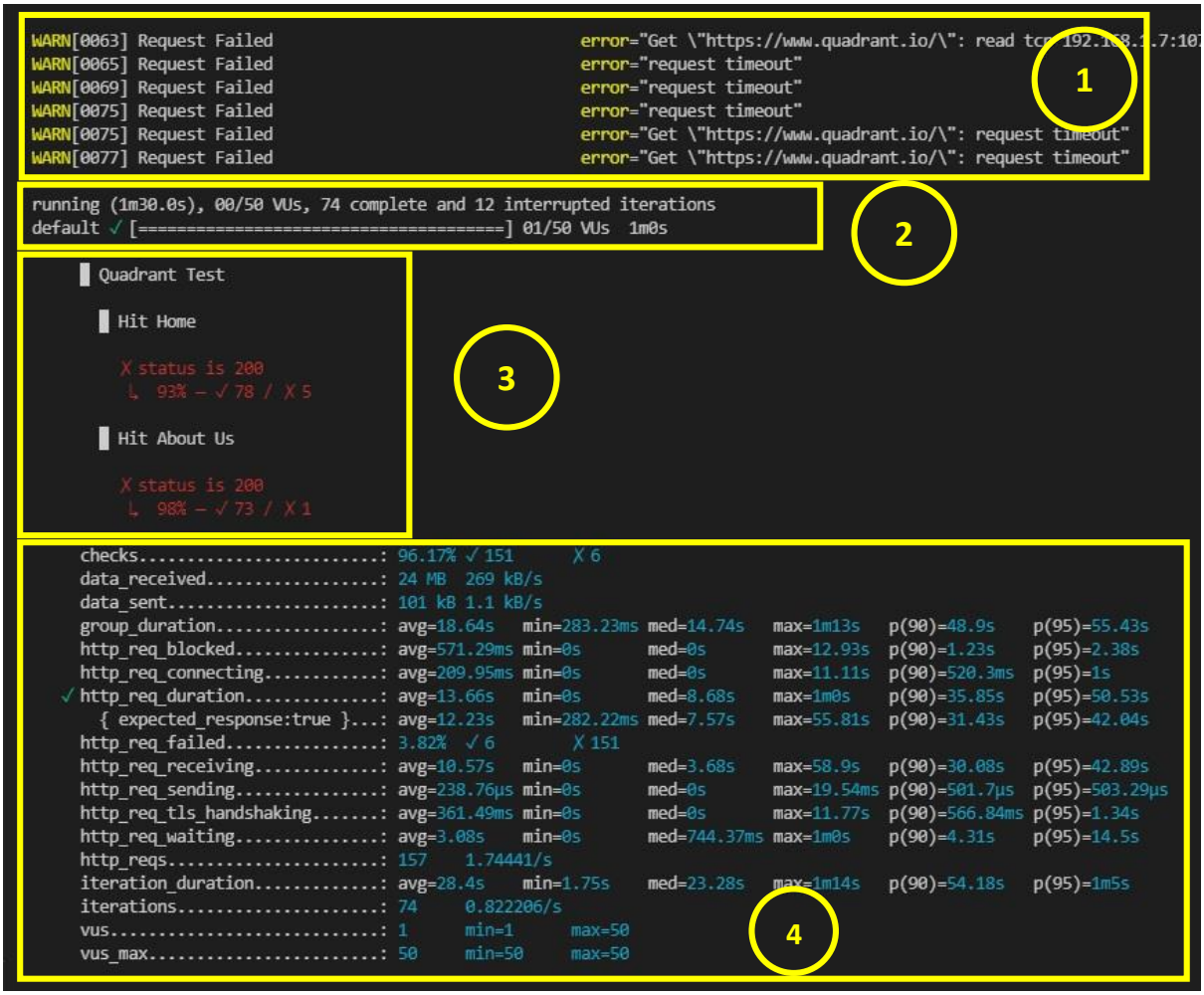
- Target: 30 users in duration 20 seconds then
- Target: 50 users in duration 30 seconds then

- Target: 3 users in duration 10 seconds.

The result of this load testing have expected test average http_req_duration is less than 15s or 15000ms. If this expected is not reach then the test is failed have failed result. From this test load we want to know how many percentage that the website can give a response ok (200) using. In this scripts we test on two URL, we try to GET the home page (https://www.quadrant.io/) and the team page (https://www.quadrant.io/team). This 2 page we check the result using check() method, is that the web give status 200, it means the web it's ok and otherwise the web is failed to response.

The Result

We will discuss the results of the load test by looking at the screenshot of the test results as below:



Result Summary:

We give point in this picture to make easy to explain the result,

1. **Point 1**: this section is the explanation of request failed on the process of load testing, this section is mention about causes of request failed. On this test result the error is because Request Time Out (RTO)

2. **Point 2**: this section explain the summary result, Running test took 1m30s with max 50 virtual users (VUs) with 74 iterations.
3. **Point 3**: this section is the result of our checking method.
    a. From the home page the web is successful return 78 response and 5 failed (93%)
    b. From the teams page the web is successful return 73 response with 1 failed (98%)

    But our expected is 100% success from this result we know that the website is not power full yet.

4. **Point 4:** In this section there are green icon checks, it means our expected threshold is fulfilled. So the website average to response each of request is below 15s or 13.66s.

Load testing proses is should be have expected values based on product specification it means we need to know the expectation from the product team. This test is based on my personal expectation.