Assurity APITMSandbox – Performance Test Report

Table of Contents

1. Executive Summary

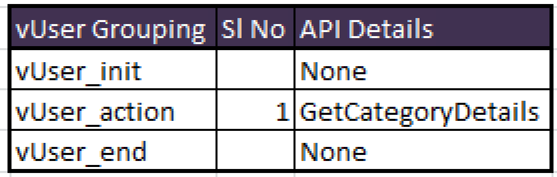
1.1 Project Overview

AssurityApiTms (AAT) is both Web and Mobile based application that caters to various categories of eCommerce application.

The Scope of the testing is to validate if “AAT” is able to handle up to maximum of 5 concurrent users (half the count of Category IDs) at any given point in time on their APIs.

Tests were executed on a dedicated load testing environment for the In Scope API Scenarios.

The API details are provided below:



vUser Grouping	Sl No	API Details
vUser_init		None
vUser_action	1	GetCategoryDetails
vUser_end		None

Only one API was to be performance tested which is placed in the vUser_action section and no APIs in init and end vUser Section.

The total test duration was 70 seconds with ramp-up of 1 vUser per second (5vUsers in 5 seconds) and steady state of 60 seconds (1 minute) and ramp-down of 1 vUser per second (5vUsers in 5 seconds).

The test shall achieve 10 API calls in the steady state period and the response time of the API to be less than 500ms (millisecond)

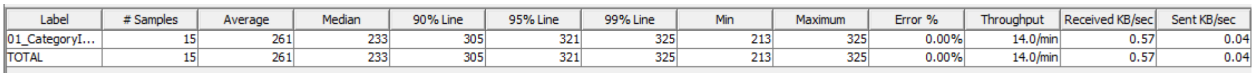
2. Load Test Tool Selection

- **Apache JMeter** is a 100% pure Java desktop application designed to load test web application. It may be used to test performance both on static and dynamic resources such as static files, Java Servlets, CGI scripts, Java objects and many more. The current version of JMeter5.5 was used for recording and executing the API Scenarios

3. Load Test API

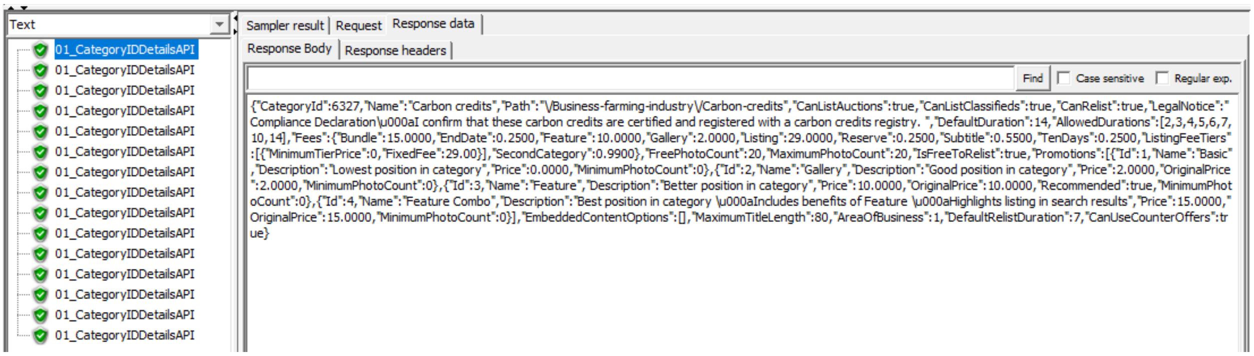
Frontend or Client side metrics as collated from JMeter.

Table below shows the snapshot for the test executed against 5vUsers. The 5 samples are from the ramp-up period and the rest 10 sample of API executed is based on the throughput timer placed in the JMeter Script to ensure that only 10 samples are executed per minute during the steady state period.



Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughput	Received KB/sec	Sent KB/sec
01_CategoryI...	15	261	233	305	321	325	213	325	0.00%	14.0/min	0.57	0.04
TOTAL	15	261	233	305	321	325	213	325	0.00%	14.0/min	0.57	0.04

90% of the time the API executes with response time around 305ms (less than 500ms).



01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI
01_CategoryIDDetailsAPI

```
{"CategoryId":6327,"Name":"Carbon credits","Path":"\/Business-farming-industry\/Carbon-credits","CanListAuctions":true,"CanListClassifieds":true,"CanRelist":true,"LegalNotice":"
Compliance Declaration\u000aI confirm that these carbon credits are certified and registered with a carbon credits registry. ","DefaultDuration":14,"AllowedDurations":[2,3,4,5,6,7,
10,14],"Fees":{"Bundle":15.0000,"EndDate":0.2500,"Feature":10.0000,"Gallery":2.0000,"Listing":29.0000,"Reserve":0.2500,"Subtitle":0.5500,"TenDays":0.2500,"ListingFeeTiers"
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,"Description":"Lowest position in category","Price":0.0000,"MinimumPhotoCount":0},{"Id":2,"Name":"Gallery","Description":"Good position in category","Price":2.0000,"OriginalPrice
":2.0000,"MinimumPhotoCount":0},{"Id":3,"Name":"Feature","Description":"Better position in category","Price":10.0000,"OriginalPrice":10.0000,"Recommended":true,"MinimumPhot
oCount":0},{"Id":4,"Name":"Feature Combo","Description":"Best position in category \u000aIncludes benefits of Feature \u000aHighlights listing in search results","Price":15.0000,"
OriginalPrice":15.0000,"MinimumPhotoCount":0}],"EmbeddedContentOptions":[],"MaximumTitleLength":80,"AreaOfBusiness":1,"DefaultRelistDuration":7,"CanUseCounterOffers":tr
ue}
```

Fig - 1

In the Figure (Fig – 1) above it is observed all the samples executed in that test execution window passed and there were no errors.

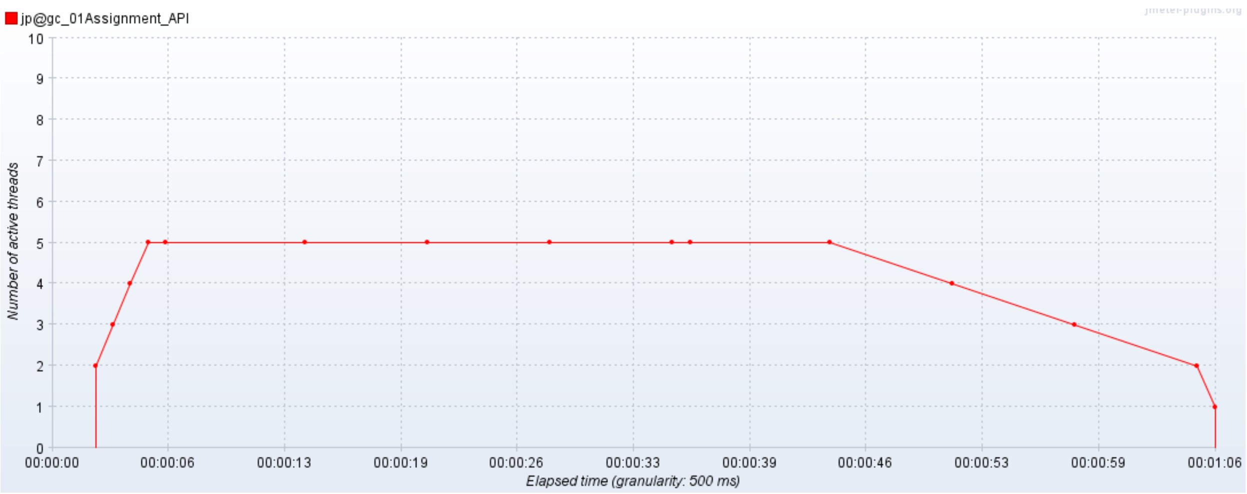


Fig – 2

The behaviour of the user load is shown in the Fig – 2 above.

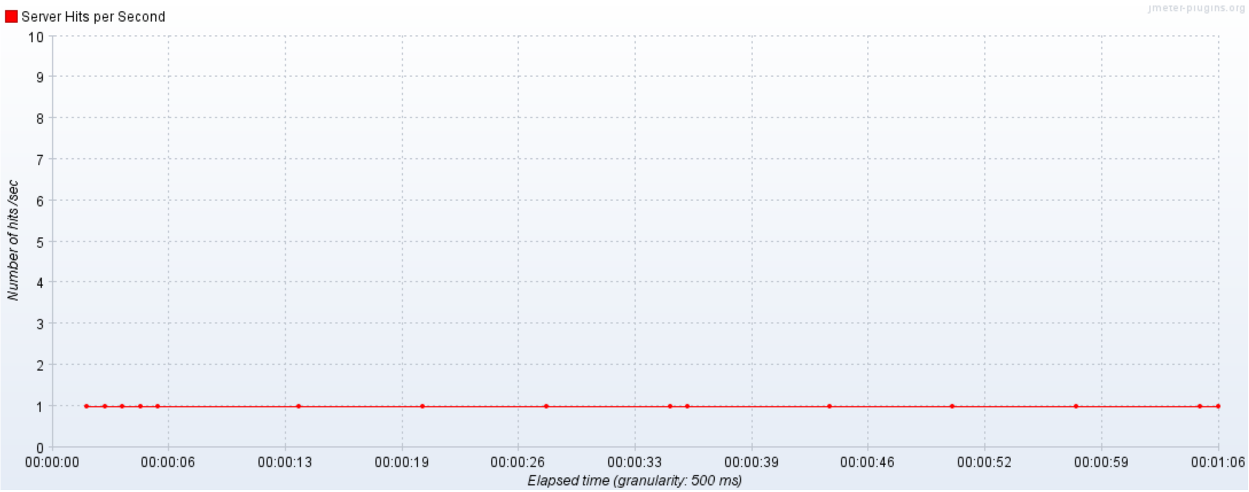


Fig – 3

Figure – 3 shows as 1 Hits/sec for the entire test duration.

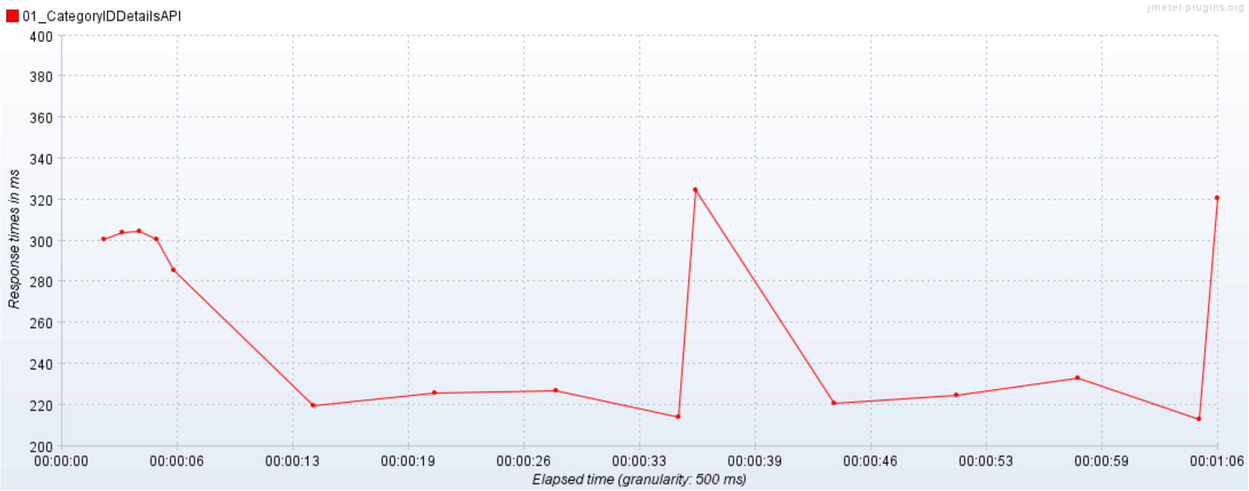


Fig – 4

The response time varied from 215ms to 325msas shown the Fig – 4 above.

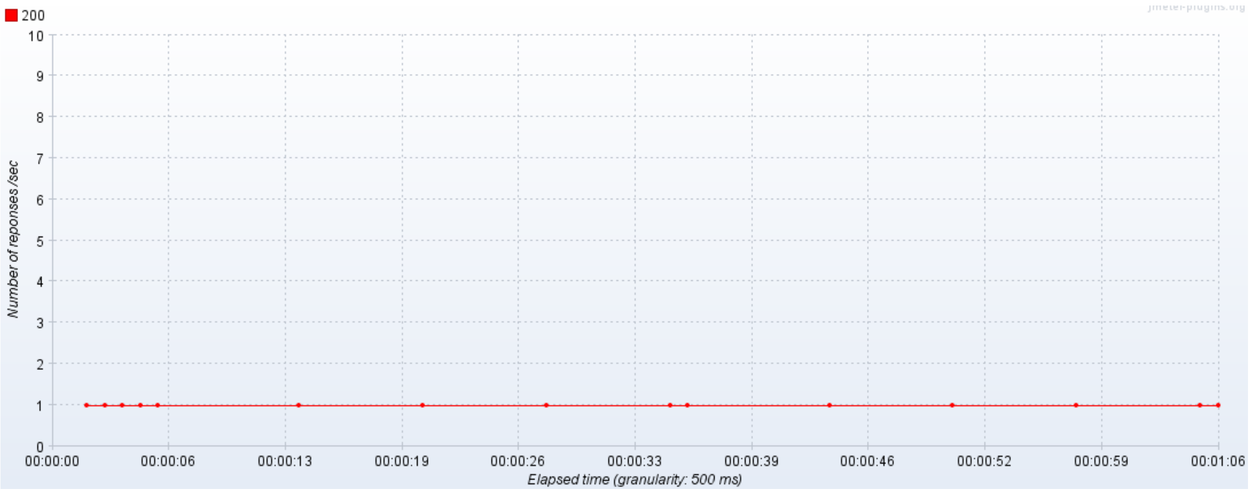
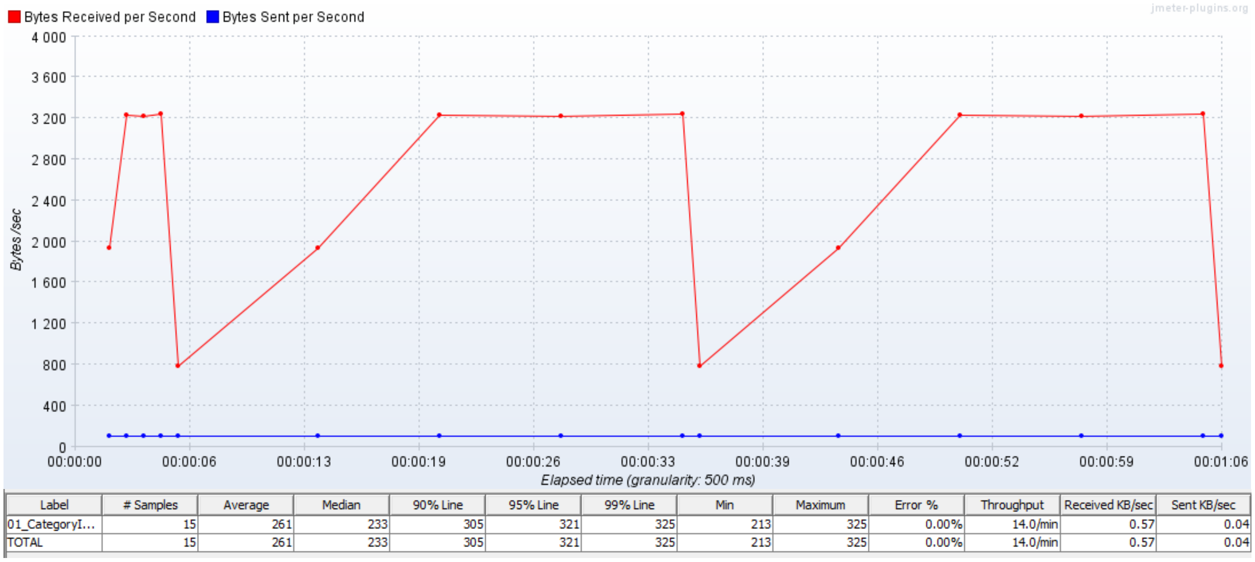


Fig – 5

Figure – 5 shows there were only 200 type of http server response which was success and no errors of type either 400 or 500 series observed.



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TOTAL	15	261	233	305	321	325	213	325	0.00%	14.0/min	0.57	0.04

Fig – 6

Around .57KB/sec were received during the entire test duration as shown in the Fig – 6

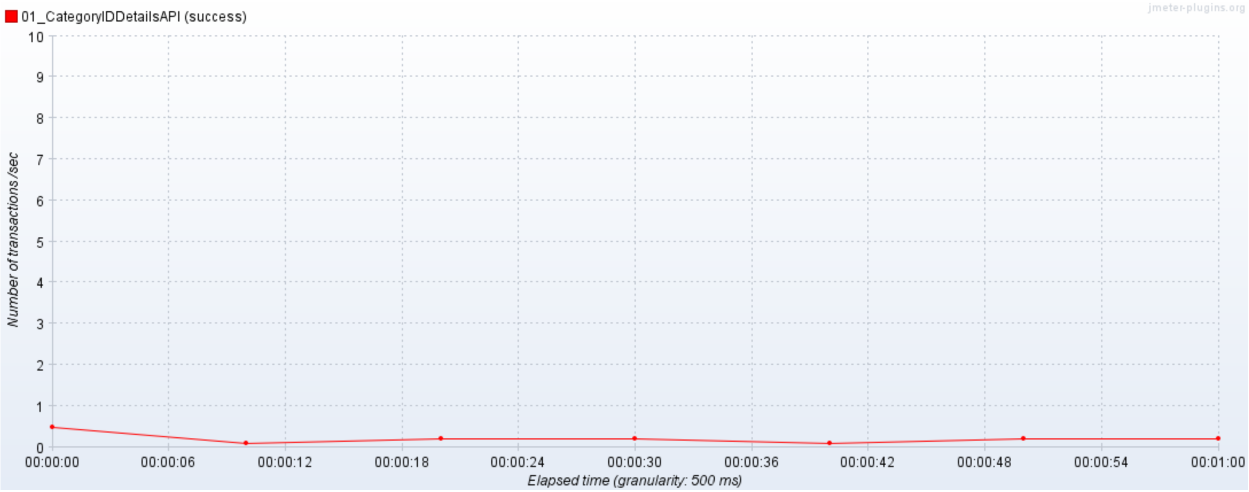

Fig – 7

There were no errors and only success for the API GetCategoryDetails as shown in the above Fig – 7

4. Observations and Recommendations

4.1 API Test Executions 5vUsers Load Observations

APIs were subjected to Load based on the percentage mix identified wherein 100% activity was on the single API executed to loads of 5vUsers.

The test duration was able to cater for 10APIs during the 1 minute (60 seconds) steady state window period.

The response time of the GetCategoryIDDetails was around average of 261ms and 90% of the time the response time displayed 325ms which is less than 500ms.

There were no errors observed

As the server metrics are not available, information about the same could not be analysed.

4.2 Recommendations

By and large AAT is able to handle the load of 5vUsers (normal load). The application need to be tested for twice the normal load so that this API do not cause bottleneck in the application when tested with other APIs. It is also recommended to execute a soak test or reliability test for a specified duration of more than 8 hours to verify and validate that there no memory leaks in the application when this API is accessed.