Mindtree

Performance Test Report

For

Execution of

Kernel Generate and validate token APIs – 2300 users

Date: 30 Mar 2020

Author: Anand Babaleshwar

Summary

This report presents the observations and findings of the load test conducted for a load of 2300 concurrent users on generating token and validate token APIs of Kernel Auth Manager

The objective of this load test was to observe and record the behavior of the application when users are calling generate token and validate token API's

Below are the scenario details:

Script/Report Name	Kernel Auth Manager
Run Date	30-Mar-2019
Period	07:18 to 08:40 AM (UTC)
Number of concurrent users	0 to 1500 to 2300
Ramp up	1500 users ramp up in 12 min and steady for 6 min,250 ramped up in 4min steady for 6 min,250 ramp up in 4 min steady for 6 min,300 ramp up in 5 min ,steady for 30 min
Run Duration	1.40 hours
Ramp down	20 min

The transaction response times observed were as below:

Label	# Samples	Average (ms)	90% Line (ms)	Min (ms)	Max (ms)	Error %	Throughput (sec)
TR_kernel_authenticate_secretKey	222609	15696	30012	8	30157	46.09%	53.67281
TR_kernel_validate_token	221570	15162	30080	9	31752	46.88%	53.44672

Performance Test Execution Details

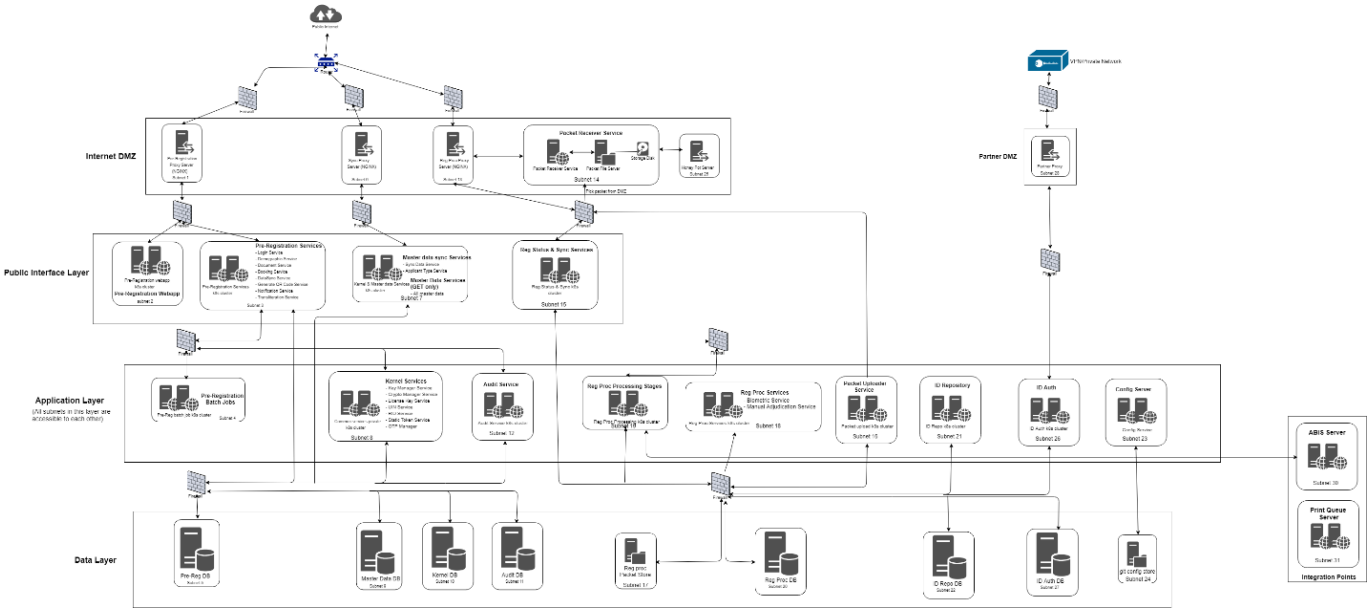
Both APIs transactions average response times were more than 3sec mentioned below:

1. TR_kernel_authenticate_secretKey -15.696 sec
2. TR_kernel_validate_token -15.162 sec

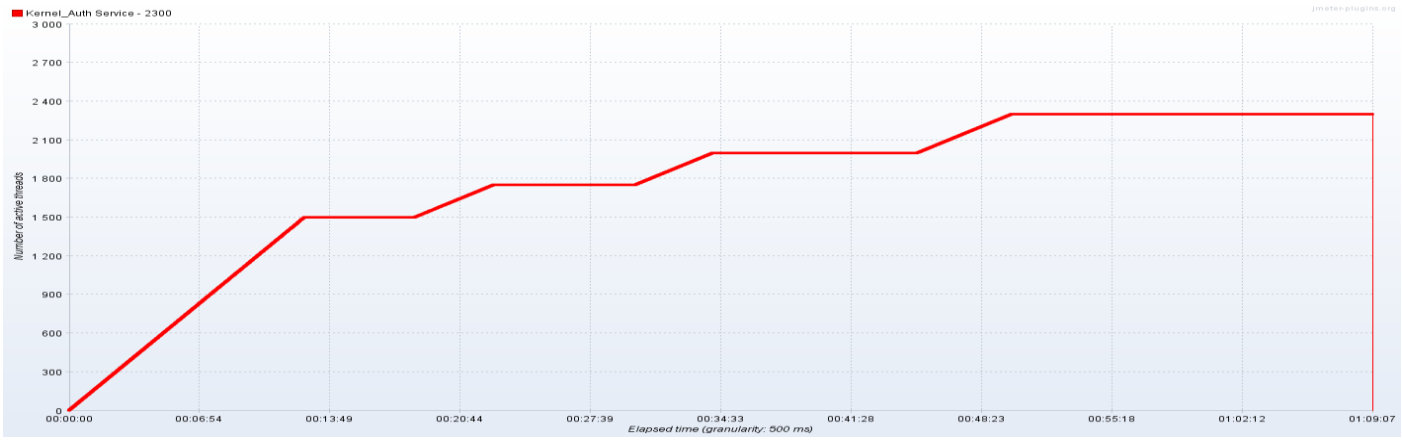
The error rate for below transactions are more than 1%:

Transactions	Error %
TR_kernel_authenticate_secretKey	46.09%
TR_kernel_validate_token	46.88%

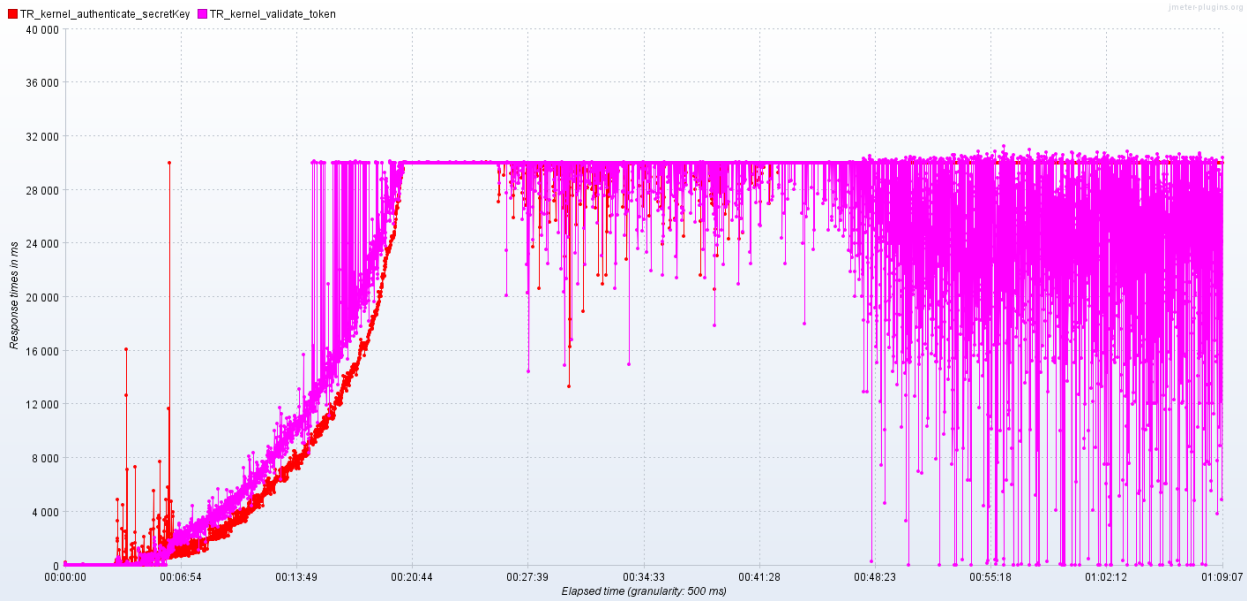
Test Environment : we are using scale-down version of below Architecture



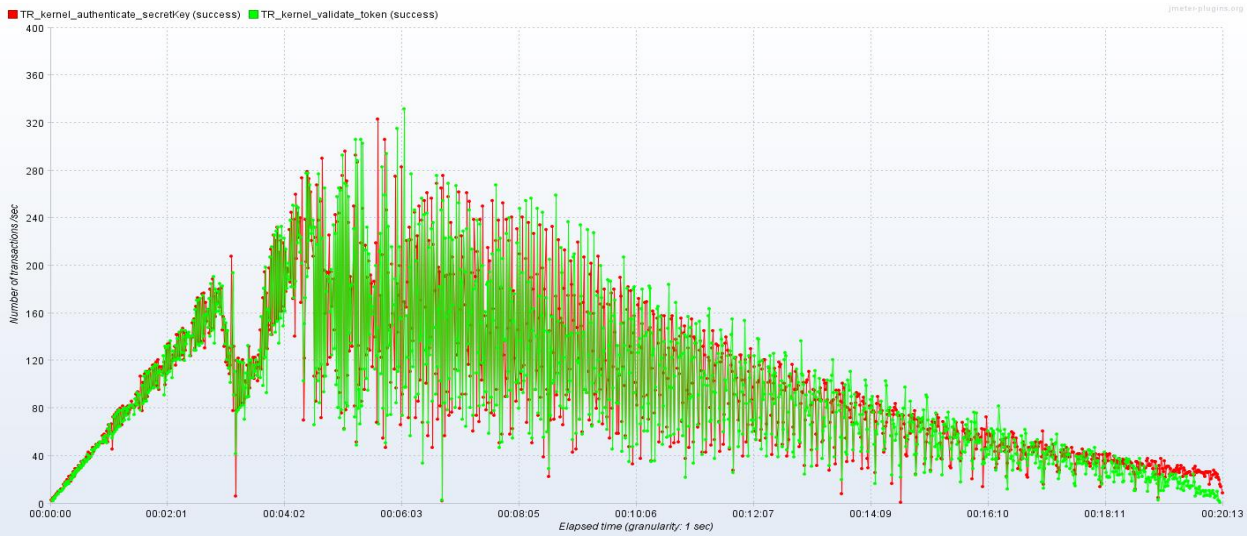
Active threads over Time:



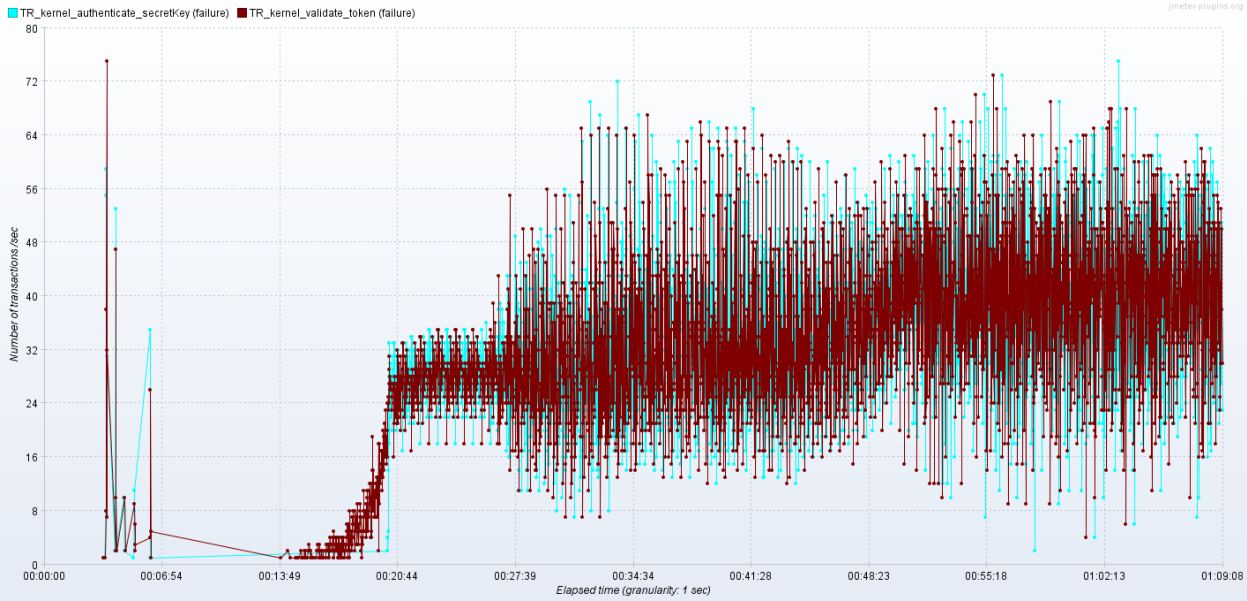
Response Time Graph



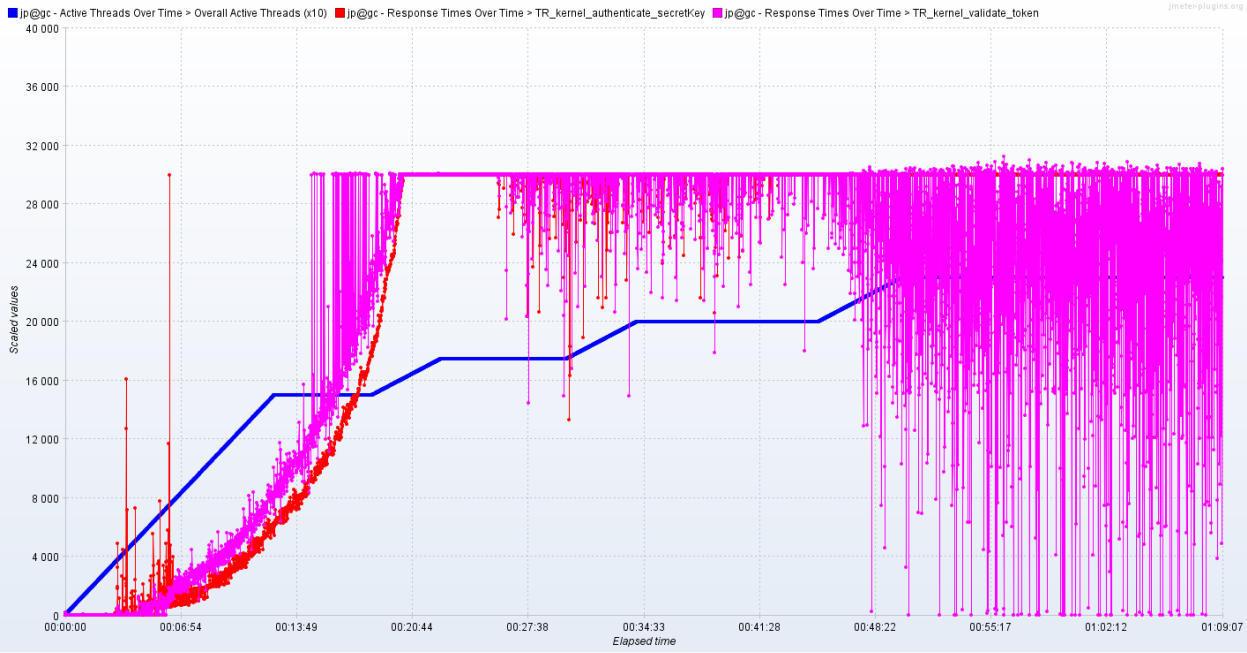
Transactions per second: (success)



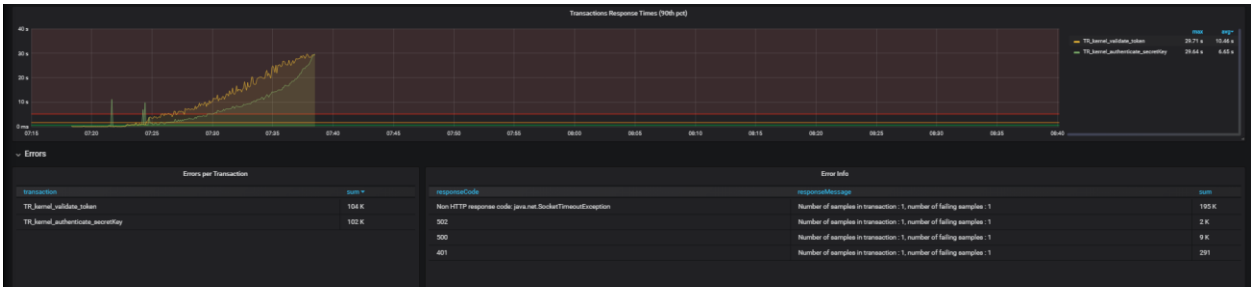
Transactions per second: (failure)

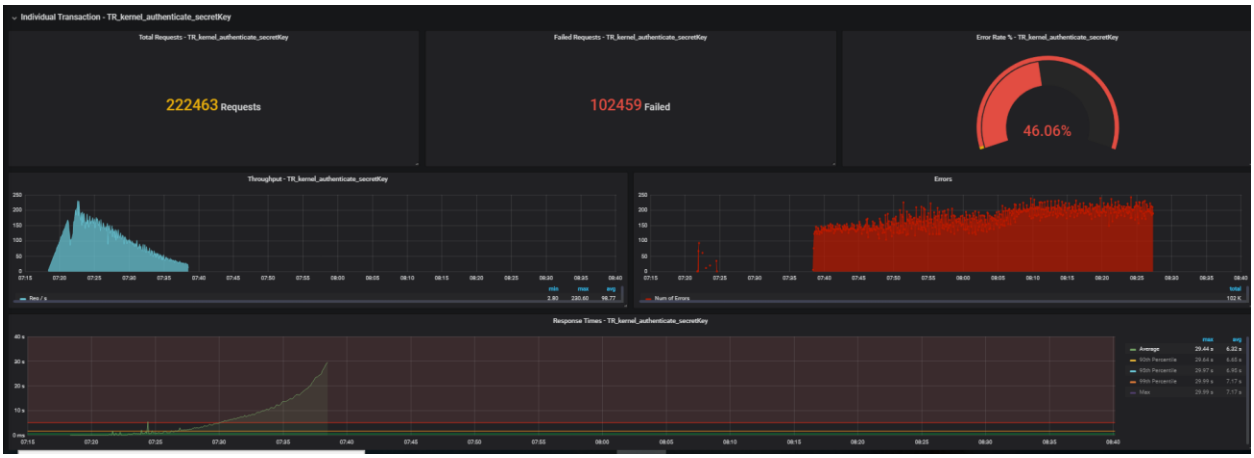


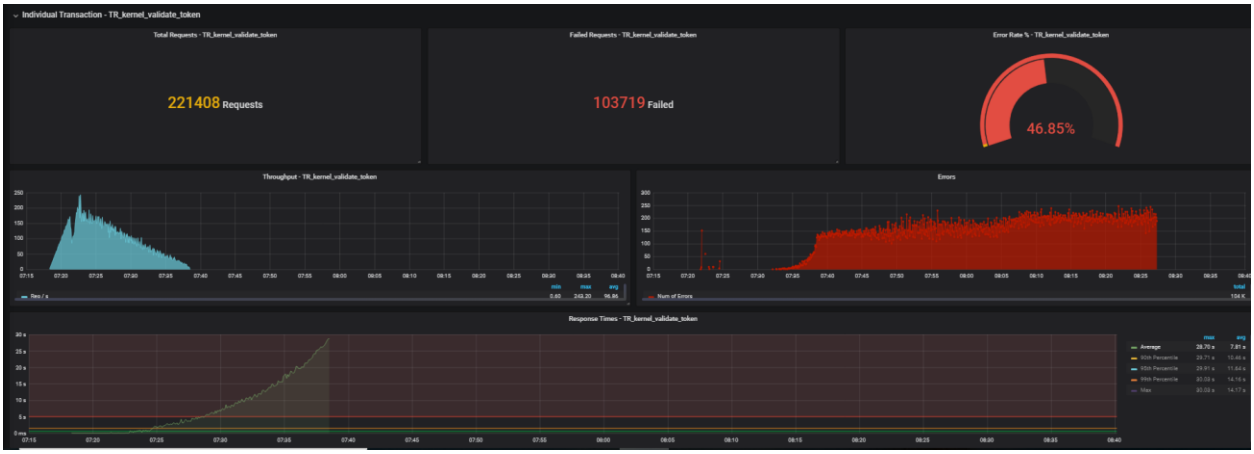
Active threads vs response times over time:



JMeter graph:



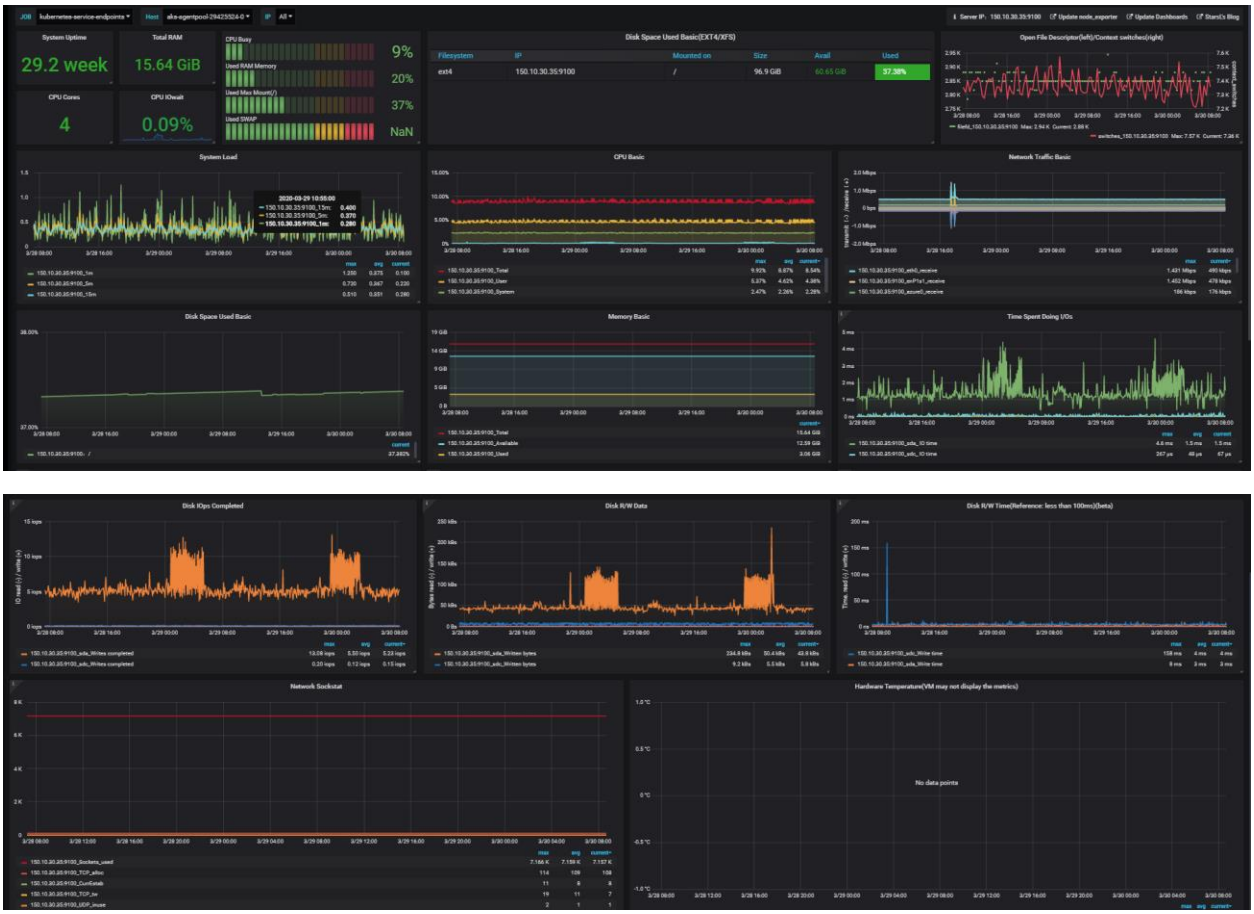




Kernel cluster node 0 monitoring:

Observations:

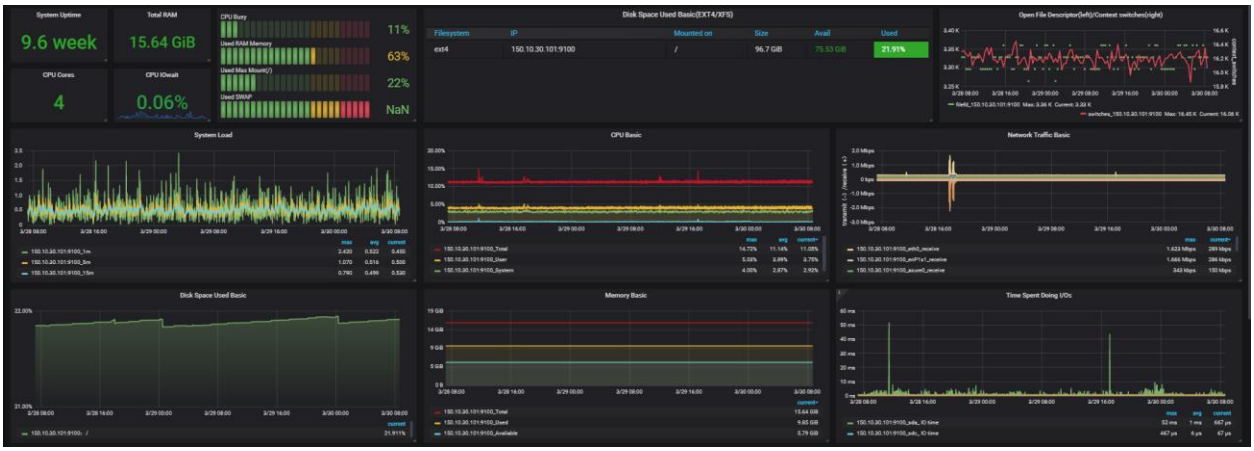
- Max Total CPU basic is 9.92% and Avg is 8.87%
- Max used memory is 3.06 Gib out of 15.64 Gib



Kernel cluster node 1 monitoring:

Observations:

- Max Total CPU basic is 14.72% and Avg is 11.14%
- Max used memory is 5.79 Gib out of 15.64 Gib



Kernel DB node monitoring:

Observations:

- Max Total CPU basic is 2.10% and Avg is 01.34%
- Max used memory is 718 Mib out of 7.78 Gib

KeyCloak node monitoring:

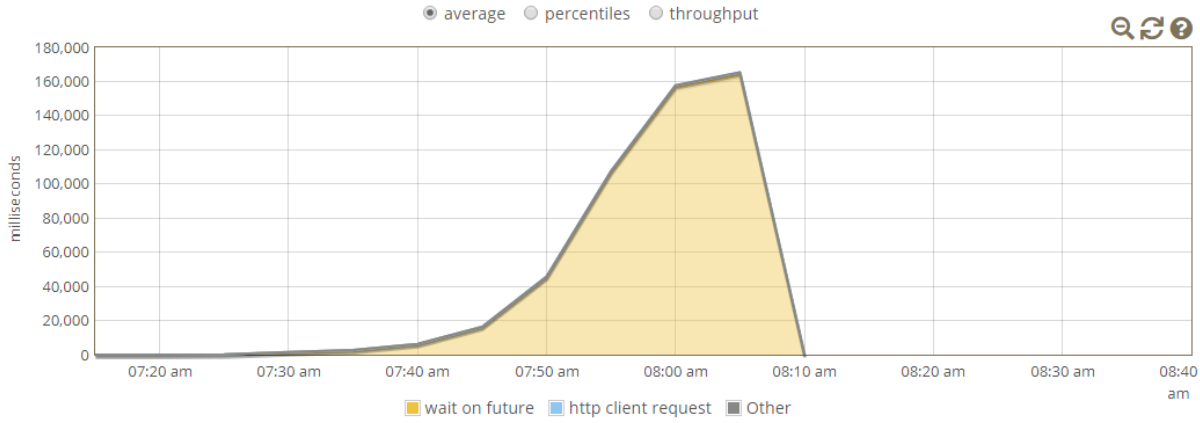
Observations:

- Max Total CPU basic is 95.80% and Avg is 67.40%
- Max used memory is 1.67 Gib out of 3.84 Gib

Glow Root Graphs:

/v1/authmanager/authorize/admin/validateToken

Response time | Slow traces (29,274) | Queries | Service calls | Thread profile



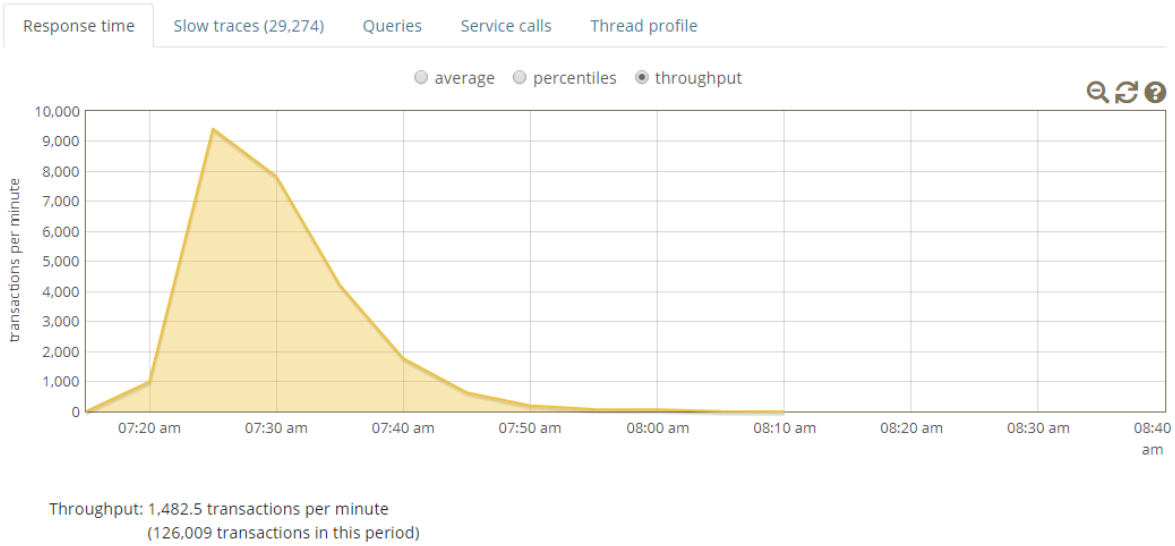
Breakdown:	total (ms)	count
http request	2,937.7	1.0
http client request	2,935.1	1.0
wait on future	2,916.9	1.0

switch to tree view

JVM Thread Stats:

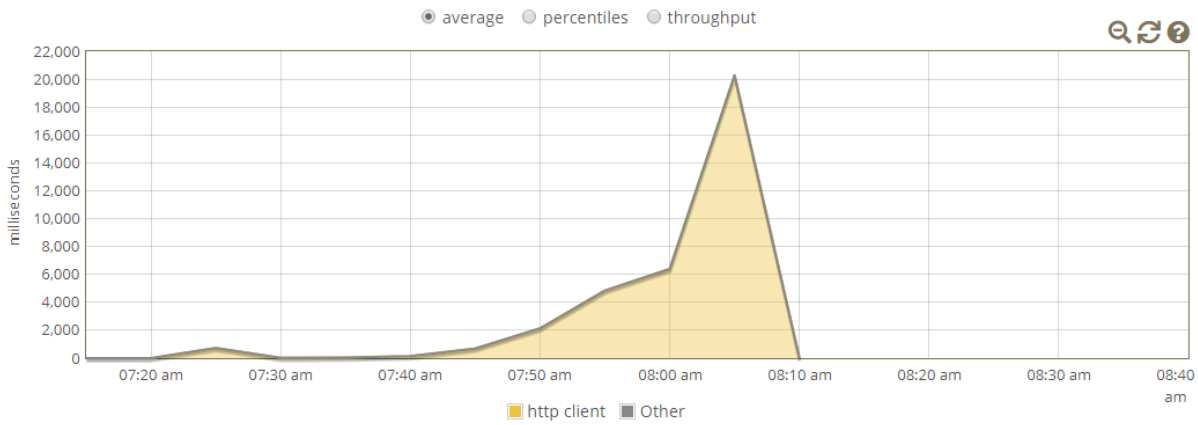
CPU time: 2.8 ms
Blocked time: 0.40 ms
Waited time: 2,916.1 ms
Allocated memory: 436.6 KB

/v1/authmanager/authorize/admin/validateToken



/v1/authmanager/authenticate/clientidsecretkey

Response time | Slow traces (2,342) | Queries | Service calls | Thread profile



Breakdown (Main Thread):	total (ms)	count
http request	368.0	1.0
http client	365.1	2.0

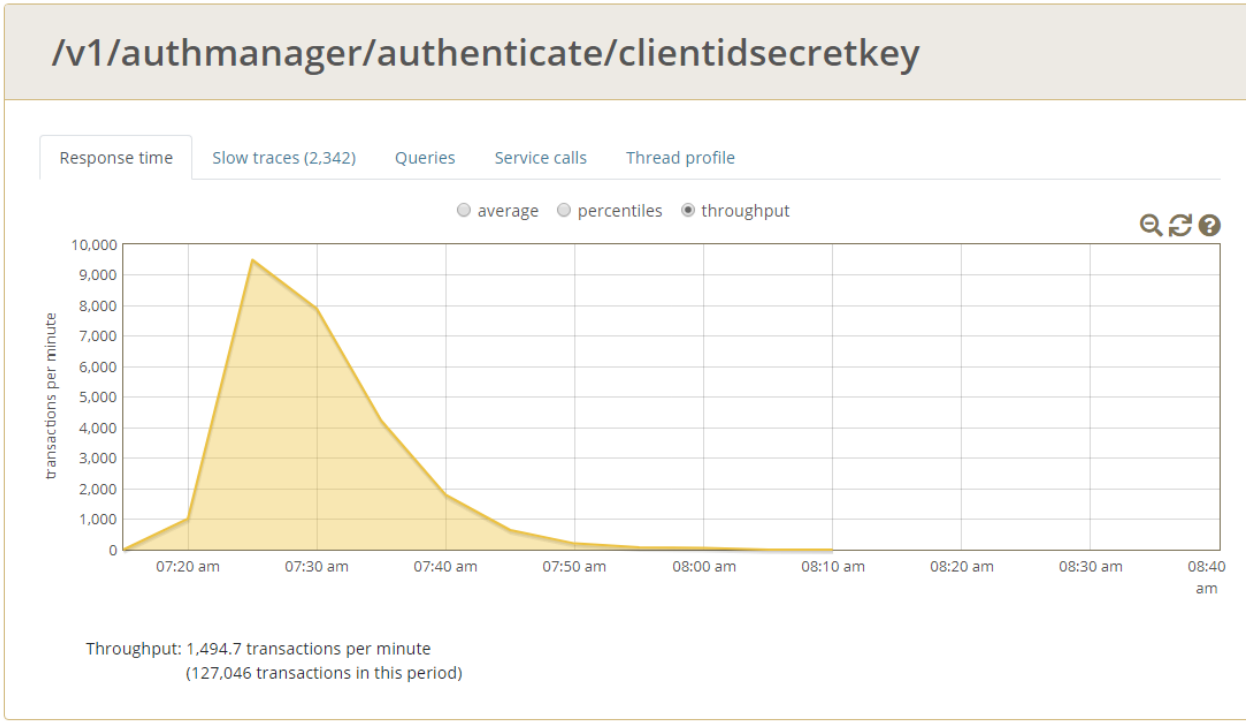
switch to tree view

Breakdown (Auxiliary Thread):	total (ms)	count
auxiliary thread	0.054	0.05

switch to tree view

JVM Thread Stats (Main Thread):

CPU time: 1.9 ms
Blocked time: 0.58 ms
Waited time: 0.059 ms



Conclusion and Next Steps:

When concurrent users reached 1500 and @07:36 AM BST we started observed huge count of read time out errors as well below errors are observed:

{"id": null,"version": null,"responsetime":"2020-03-30T07:21:54.147Z","metadata": null,"response":null,"errors":[{"errorCode":"KER-ATH-401","message":"Authentication Failed : Invalid Token :Token invalid: Failed to parse JWT"}]}

We can see high CPU utilization for the KeyCloak VM from 07:30 AM to till 08:40 AM UTC, since we have received huge count of errors, so has to abort the performance run

Below are the 3 issues raised as part of today's performance run, I will follow up with dev team

1. https://mosip.atlassian.net/browse/MOSIP-499
2. https://mosip.atlassian.net/browse/MOSIP-501
3. https://mosip.atlassian.net/browse/MOSIP-510