Performance Test Report

For

Execution of

Kernel Generate and validate token APIs – 1200 users

Date: 2 Apr 2020

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Summary

This report presents the observations and findings of the load test conducted for a load of 1500 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	2-Apr-2019
Period	06:50 to 08:22 AM (UTC)
Number of concurrent users	0 to 1200
Ramp up	500 users ramp up in 8 min and steady for 8 min,500 ramped up in 8min steady for 8 min,250 ramp up in 4 min steady for 18 min,250 ramp up in 5min ,steady for 30 min
Run Duration	1.30 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	399998	8659	30390	9	38021	31.05%	73.56175
TR_kernel_validate_token	275813	1392	3728	5	30229	0.73%	114.63578

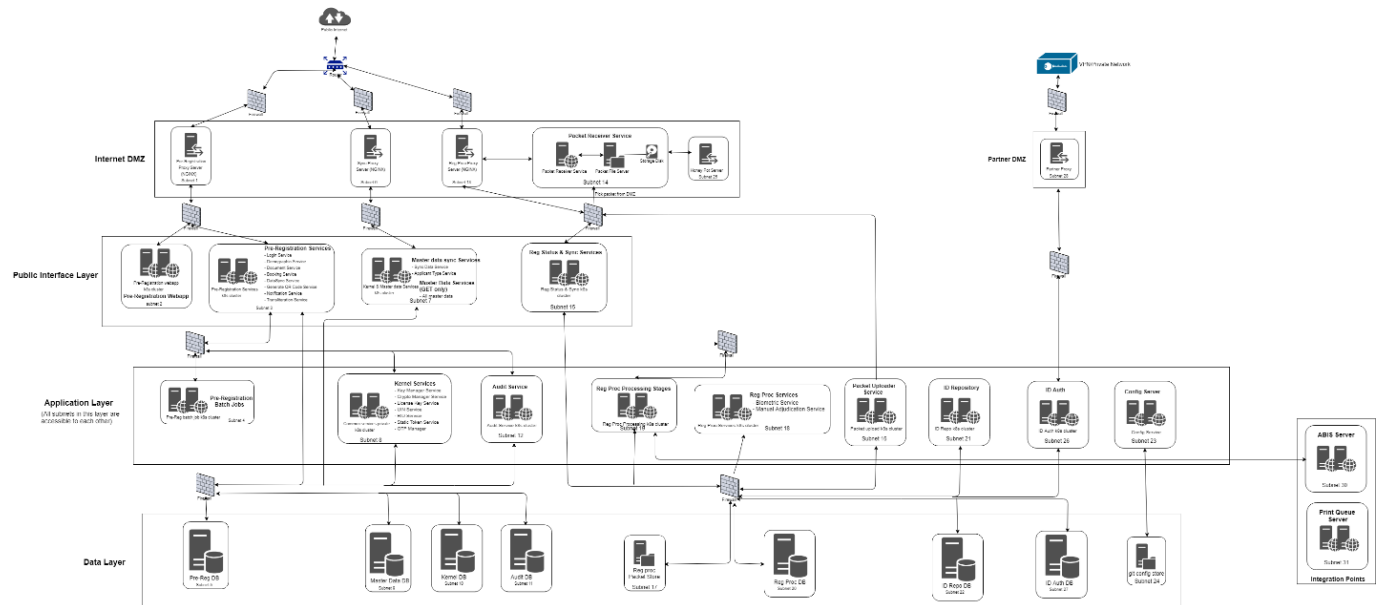## **Performance Test Execution Details**

Both APIs transactions average response times were more than 3sec mentioned below:
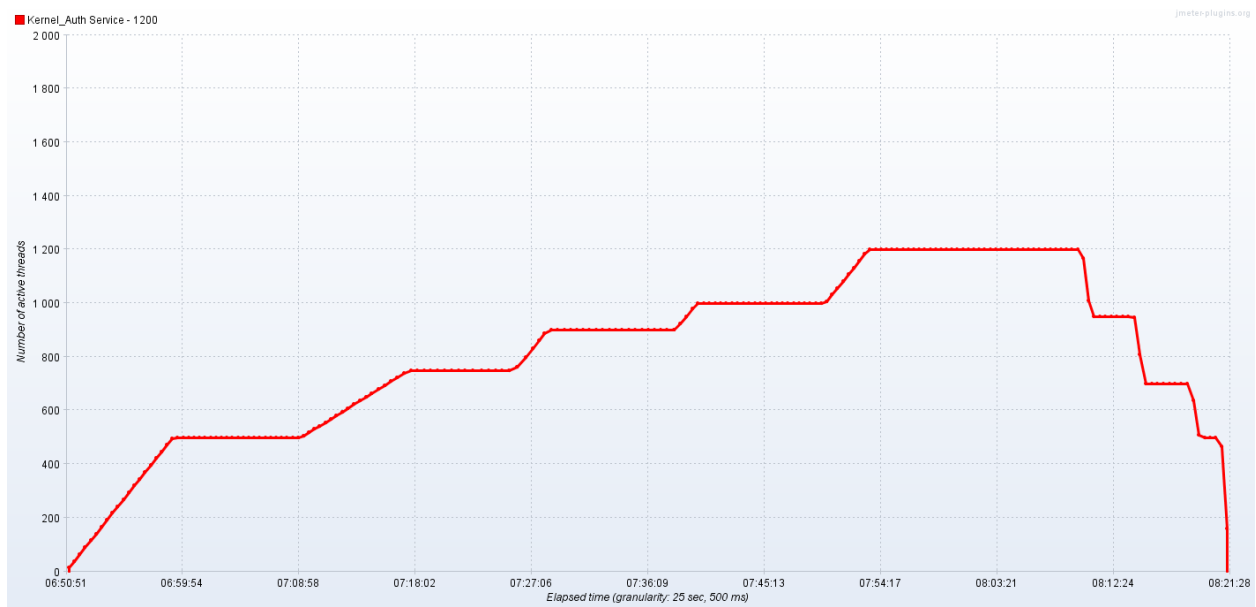
1. TR_kernel_authenticate_secretKey -8.659 sec

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

Transactions	Error %
TR_kernel_authenticate_secretKey	46.09%

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

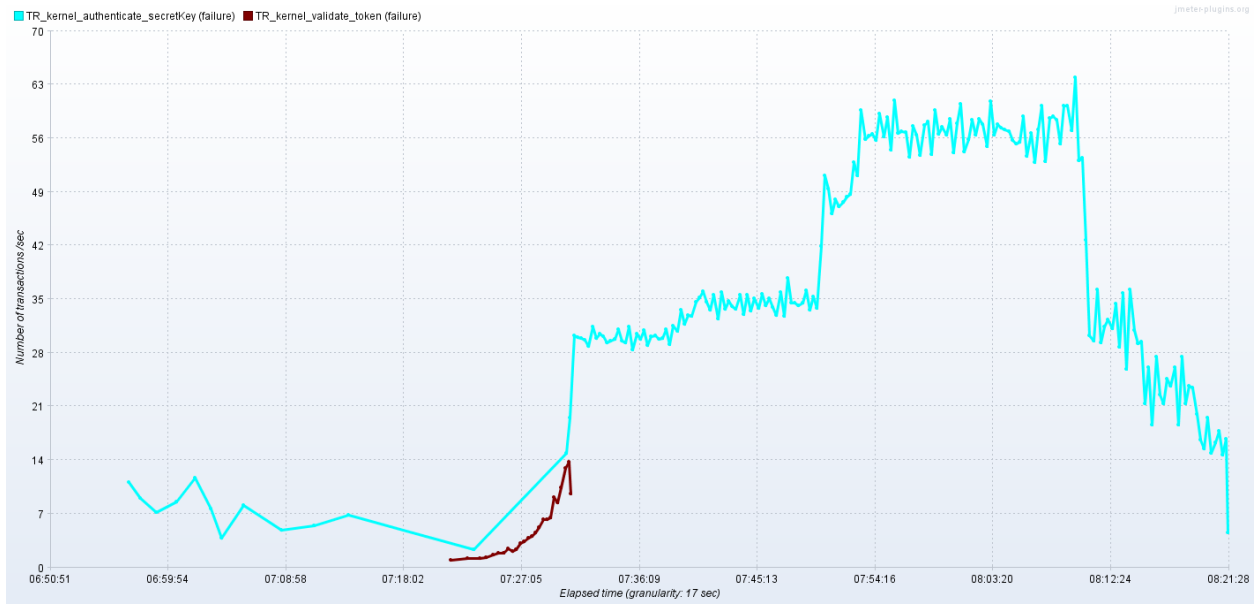## Active threads over Time:

Response Time Graph
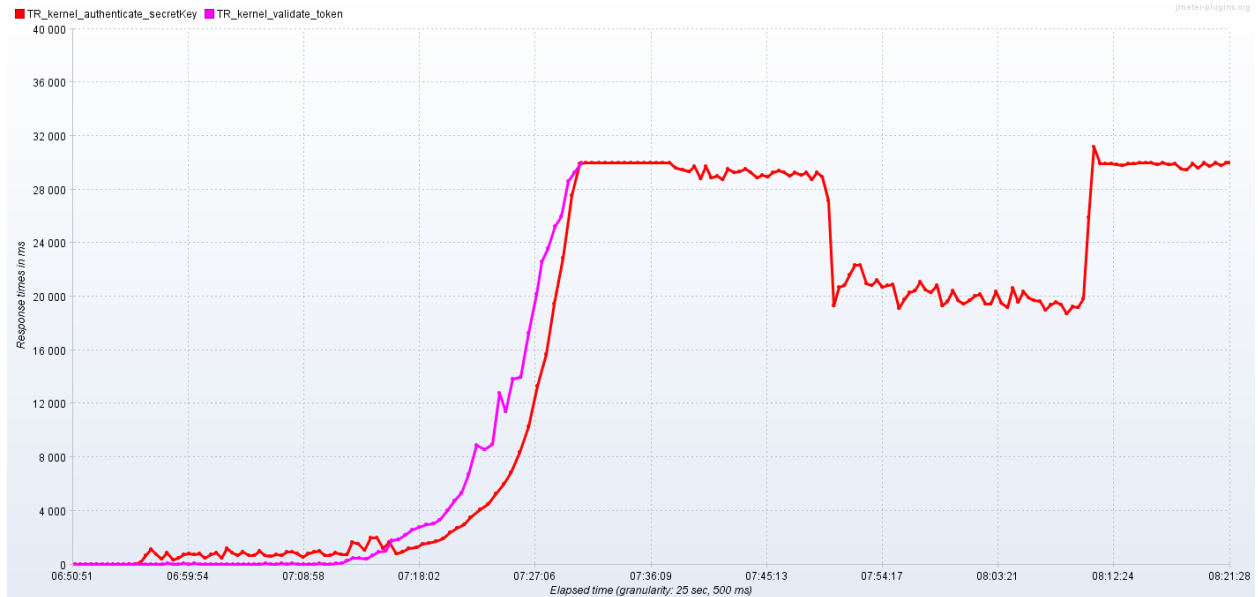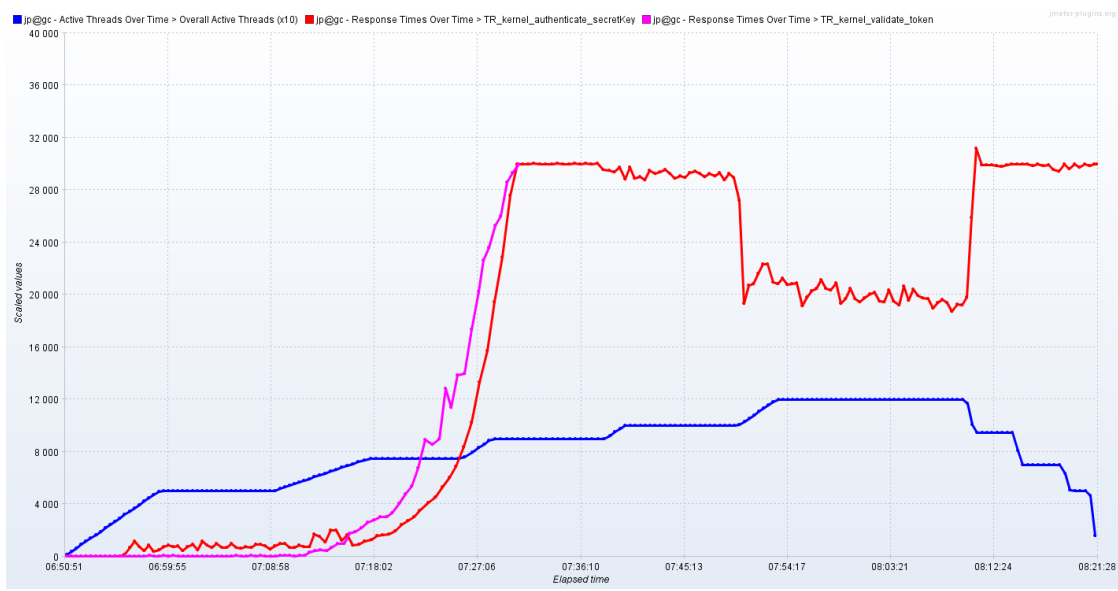

Transactions per second: (success)

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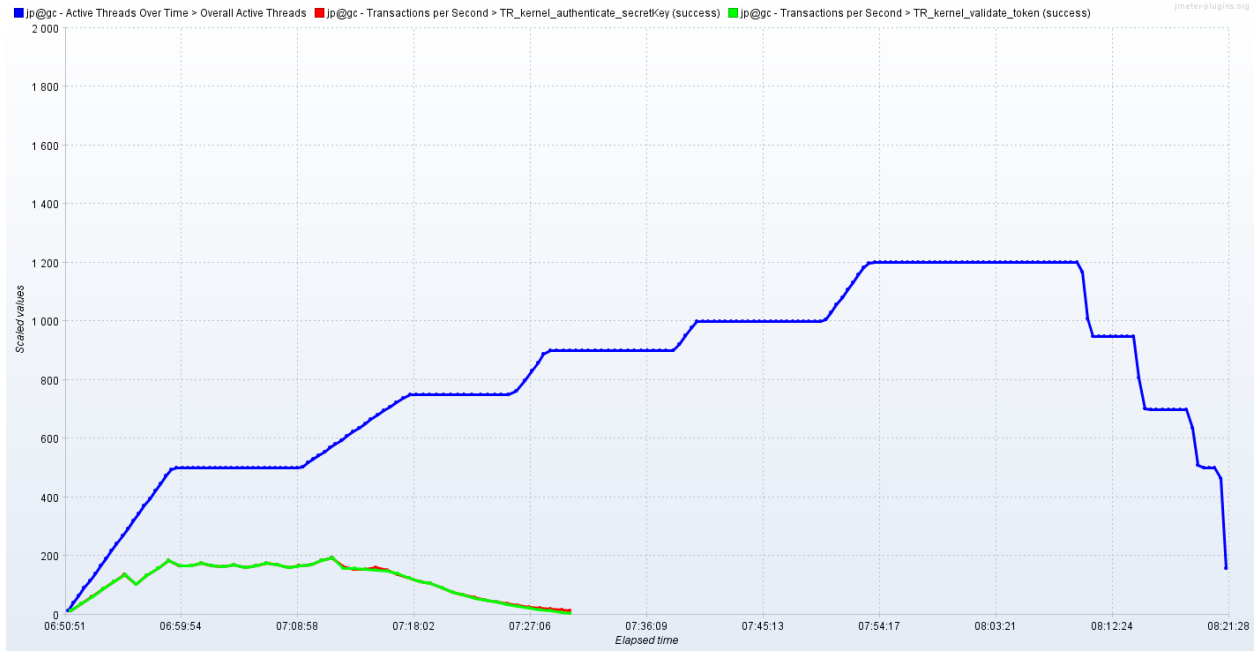
Transactions per second: (failure)

Active threads vs response times over time:

Active threads vs transactions per second:

JMeter graph:

Proprietary and Confidential © MindTree Limited
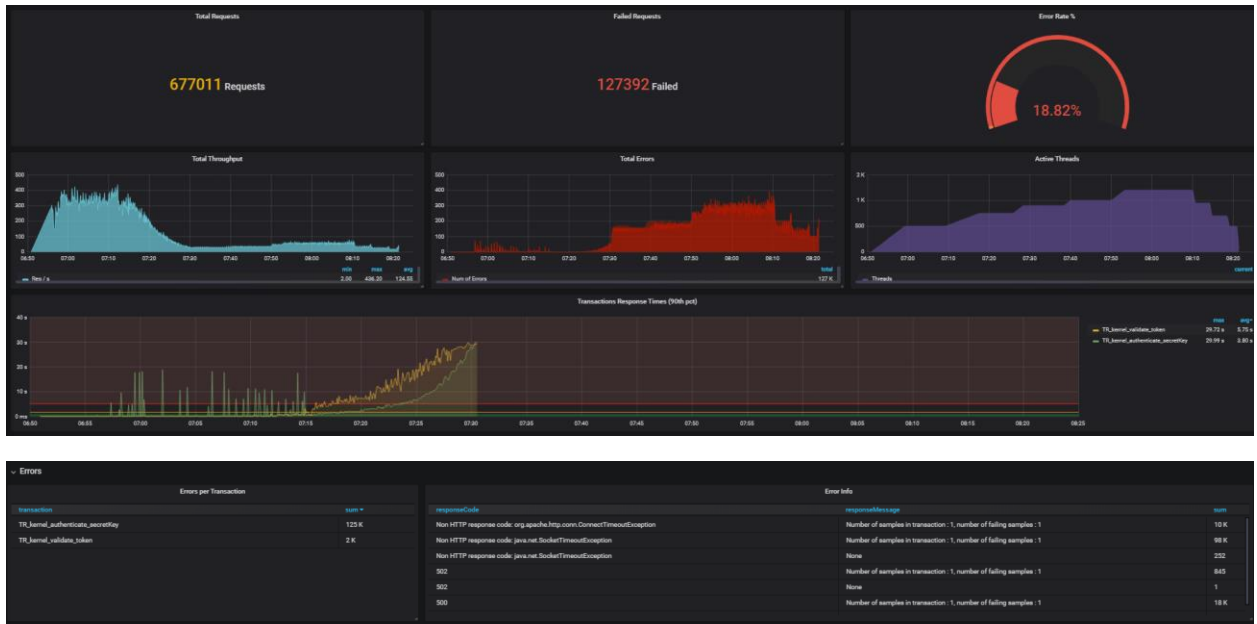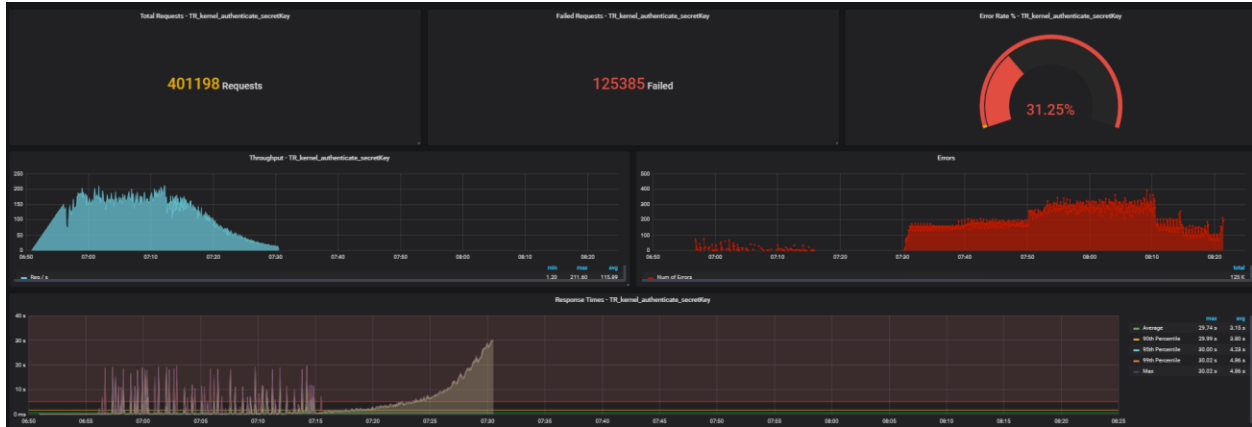
Kernel cluster node 0 monitoring:

Observations:

➢ Max Total CPU basic is **12.93%** and Avg is **8.83%**
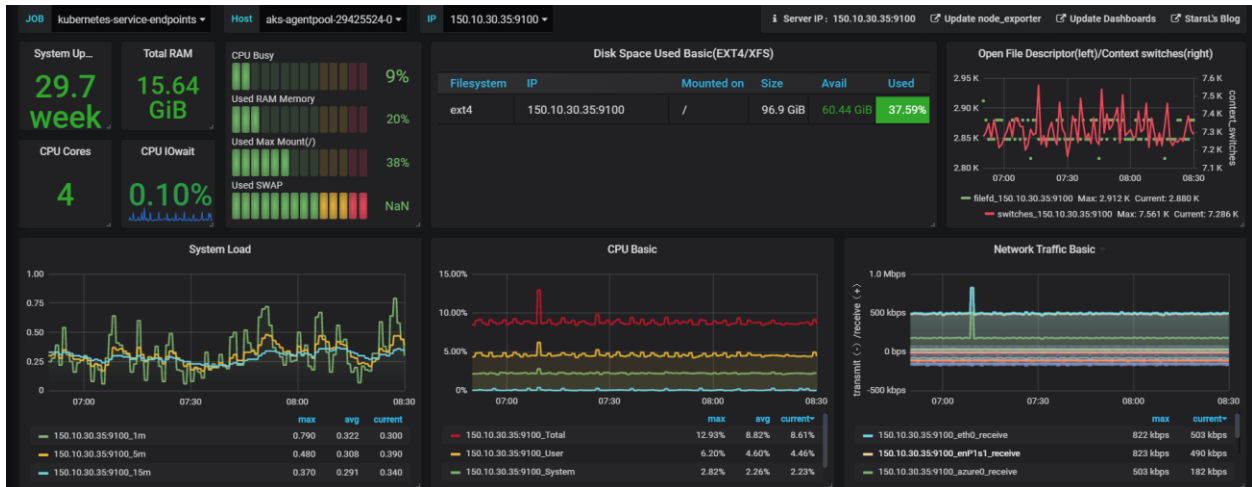➢ Max used memory is 3.18 Gib out of 15.64 Gib

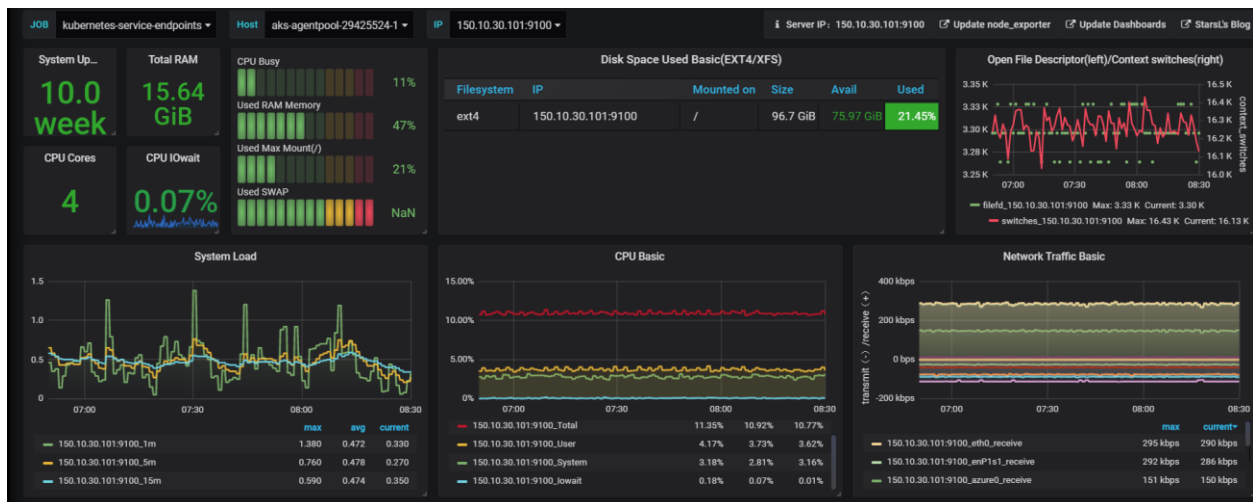Proprietary and Confidential © MindTree Limited

Kernel cluster node 1 monitoring:

Observations:

- ➢ Max Total CPU basic is **11.35%** and Avg is 10.92%
- ➢ Max used memory is 7.38 Gib out of 15.64 Gib

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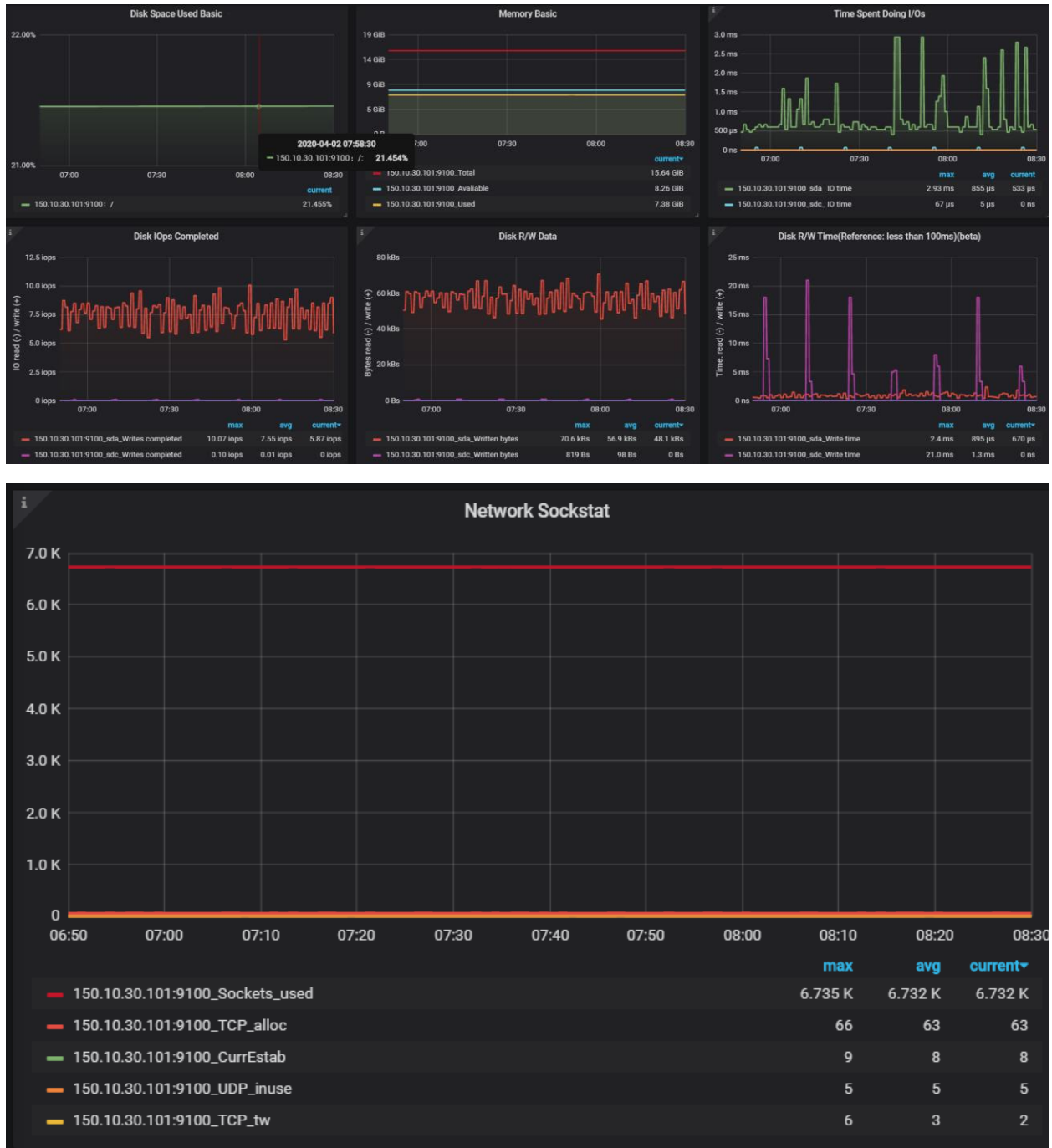
Kernel DB node monitoring:

Observations:

- Max Total CPU basic is 2.50% and Avg is 01.29%
- Max used memory is 833 Mib out of 7.78 Gib

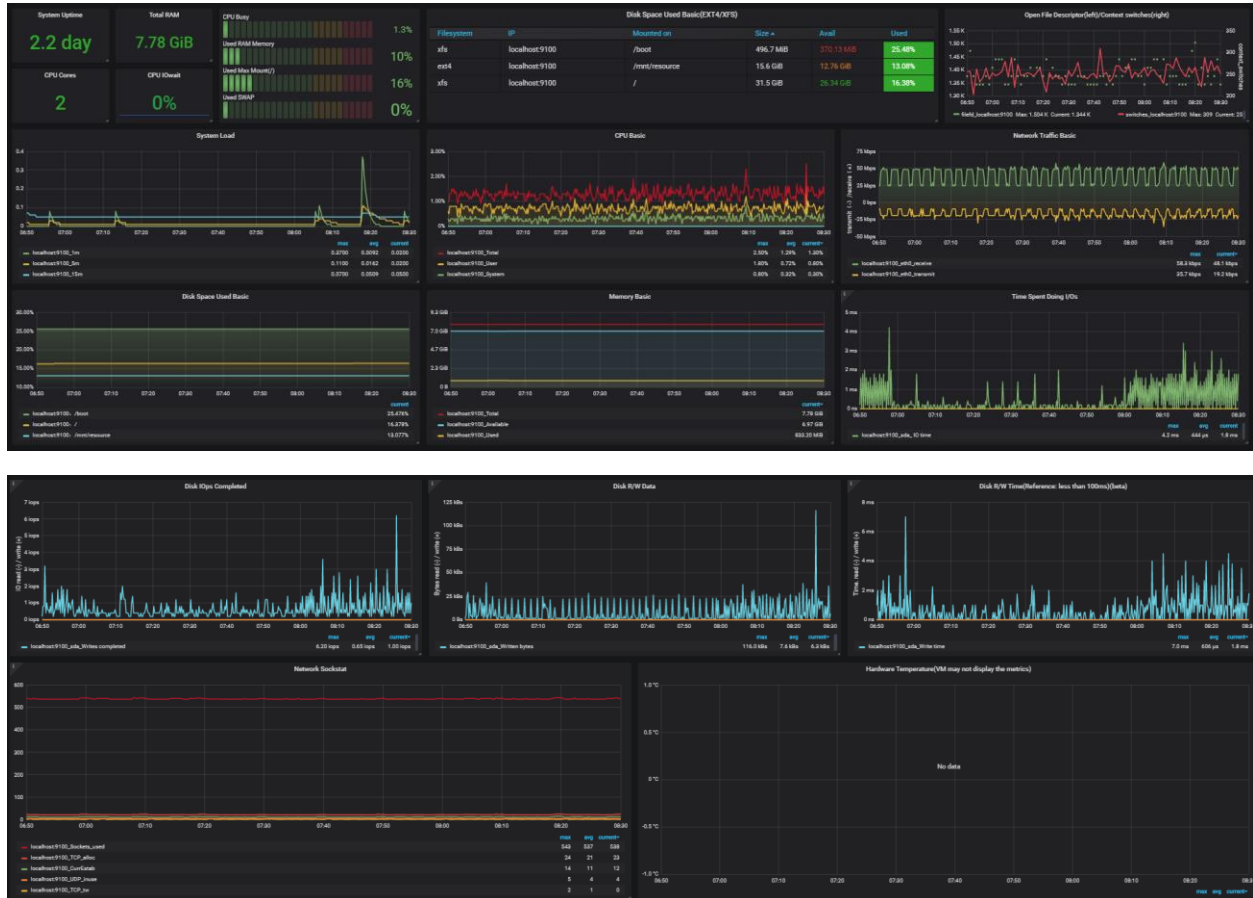## KeyCloak node monitoring:

Observations:

- Max Total CPU basic is 96.61% and Avg is 76.95%
- Max used memory is 1.67 Gib out of 3.84 Gib

Glow Root Graphs:
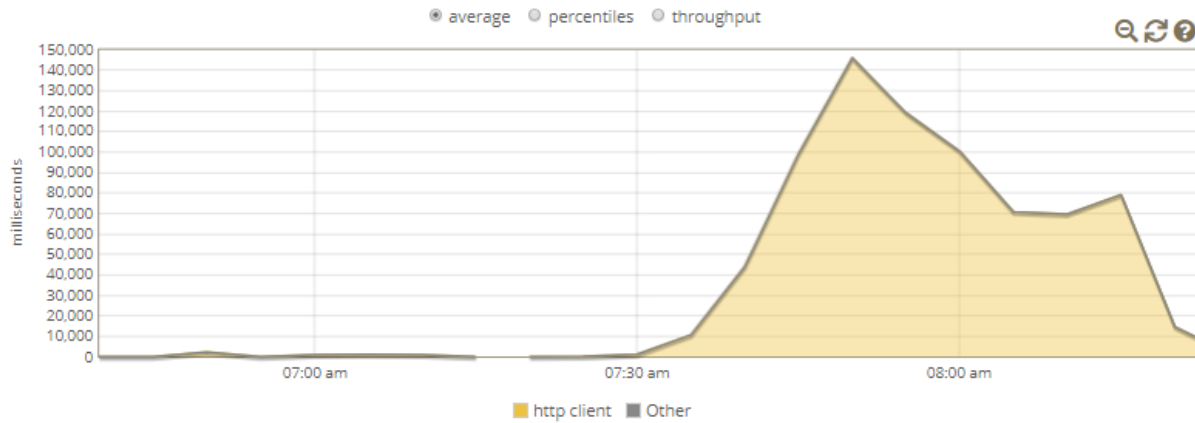
/v1/authmanager/authenticate/clientidsecretkey

Response time   Slow traces (11,323)   Queries   Service calls   Thread profile

○ average   ○ percentiles   ○ throughput

■ http client   ■ Other

Breakdown (Main Thread):	total (ms)	count	
http request	1,480.2	1.0	**switch to tree view**
http client	1,473.2	2.0	

Breakdown (Auxiliary Thread):	total (ms)	count	
auxiliary thread	1.3	0.09	**switch to tree view**

JVM Thread Stats (Main Thread):
CPU time: 2.2 ms
Blocked time: 3.0 ms
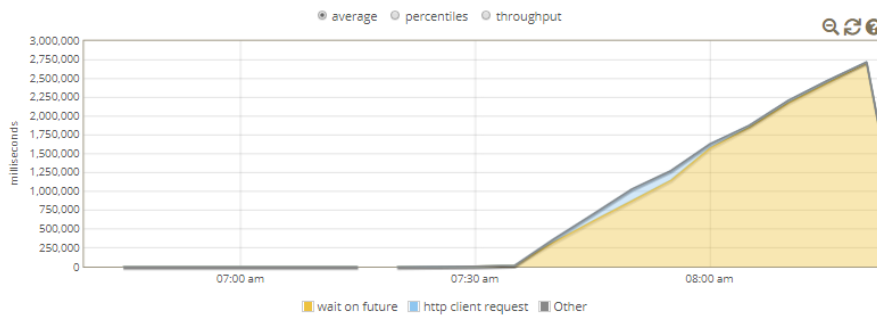Waited time: 0.058 ms
Allocated memory: 433.9 KB

JVM Thread Stats (Auxiliary Threads):
CPU time: 0.0024 ms
Blocked time: 0.0033 ms
Waited time: 0.020 ms
Allocated memory: 38 bytes

/v1/authmanager/authorize/admin/validateToken

Response time   Slow traces (9,205)   Queries   Service calls   Thread profile

○ average   ○ percentiles   ○ throughput

■ wait on future   ■ http client request   ■ Other

Breakdown:	total (ms)	count	
http request	1,381.1	1.0	switch to tree view
http client request	1,375.0	1.0	
wait on future	1,343.3	1.0	

JVM Thread Stats:
CPU time: 1.8 ms
Blocked time: 2.2 ms
Waited time: 1,343.2 ms
Allocated memory: 429.3 KB

/v1/authmanager/authenticate/clientidsecretkey ⬇

ERROR
kernel-auth-service
Transaction type: Web
Transaction name: /v1/authmanager/authenticate/clientidsecretkey
Error: java.io.IOException: Broken pipe
    exception
Start: 2020-04-02 7:15:06.237 am (+00:00)
Duration: 1,052,132.3 milliseconds
Request http method: POST
Response code: 500

Breakdown:	total (ms)	count	
http request	1,052,132.3	1	switch to tree view
http client	1,052,127.9	1	

JVM Thread Stats
CPU time: 5.3 milliseconds
Blocked time: 0.0 milliseconds
Waited time: 0.0 milliseconds
Allocated memory: 908.0 KB

Trace entries (2)

```
http client request: POST https://mosipkeycloakpp.southindia.cloudapp.azure.com/auth/realms/mosip/protocol/openid-connect/token
    java.net.SocketException: Connection timed out (Read failed)
        exception
setStatus, HTTP status code 500
```

Profile (965)   View flame graph 🔗

Conclusion and Next Steps:

When concurrent users reached 900 and @07:30 AM BST we started observed huge count of read time out errors are observed

We can see high CPU utilization for the KeyCloak VM from 07:16 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