Performance Test Report

For

Execution of

Kernel email notification service API – 1000 users

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Author: Anand Babaleshwar

Summary

This report presents the observations and findings of the load test conducted for a load of 1000 concurrent users on kernel email notification service

The objective of this load test was to observe and record the behavior of the application when users are calling kernel email notification API

Below are the scenario details:

Script/Report Name	Kernel email notification
Run Date	27-Apr-2019
Period	08:14 to 09:15 AM (UTC)
Number of concurrent users	0 to 100 to 1000
Ramp up	Refer pic of **Concurrent users Ramp up pattern shown below**
Run Duration	1.1 hours
Ramp down	1 min

Concurrent users Ramp up pattern:

Proprietary and Confidential © MindTree Limited
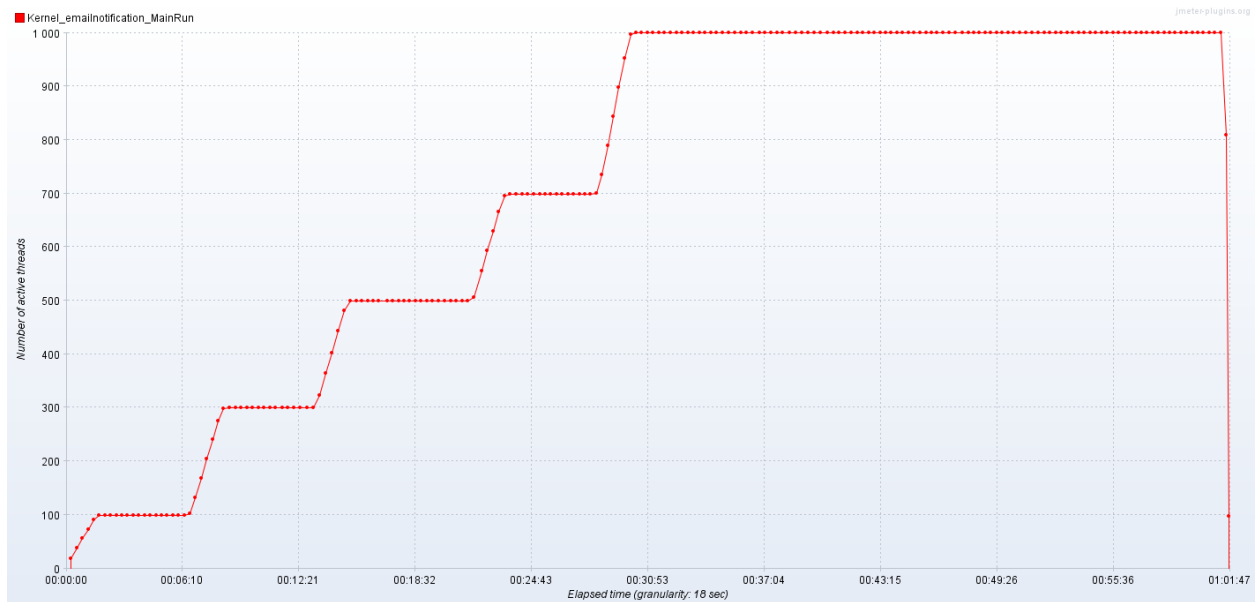
The transaction response times observed were as below:

Label	# Samples	Average (ms)	90% Line (ms)	Min (ms)	Max (ms)	Error %	Throughput (sec)
TR_kernel_emailnotification	400731	3543	7025	10	30209	14.76%	108.0857

Performance Test Execution Details
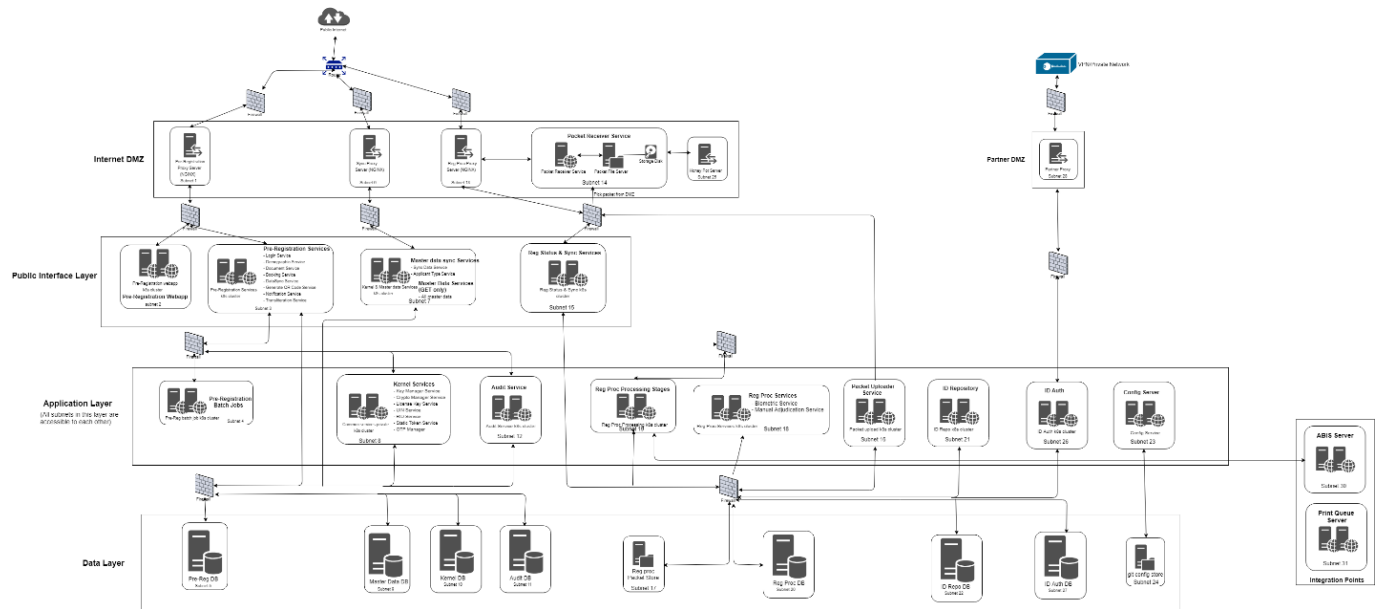
Both APIs transactions average response times were more than 3sec mentioned below:
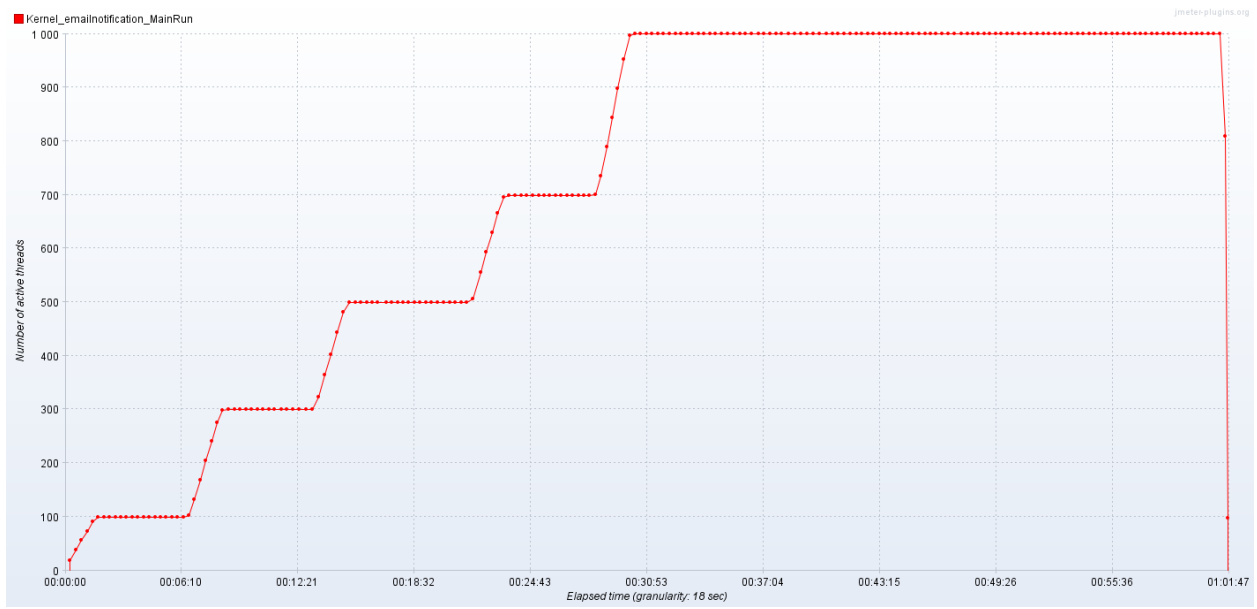
1. TR_kernel_emailnotification -3.543 sec

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

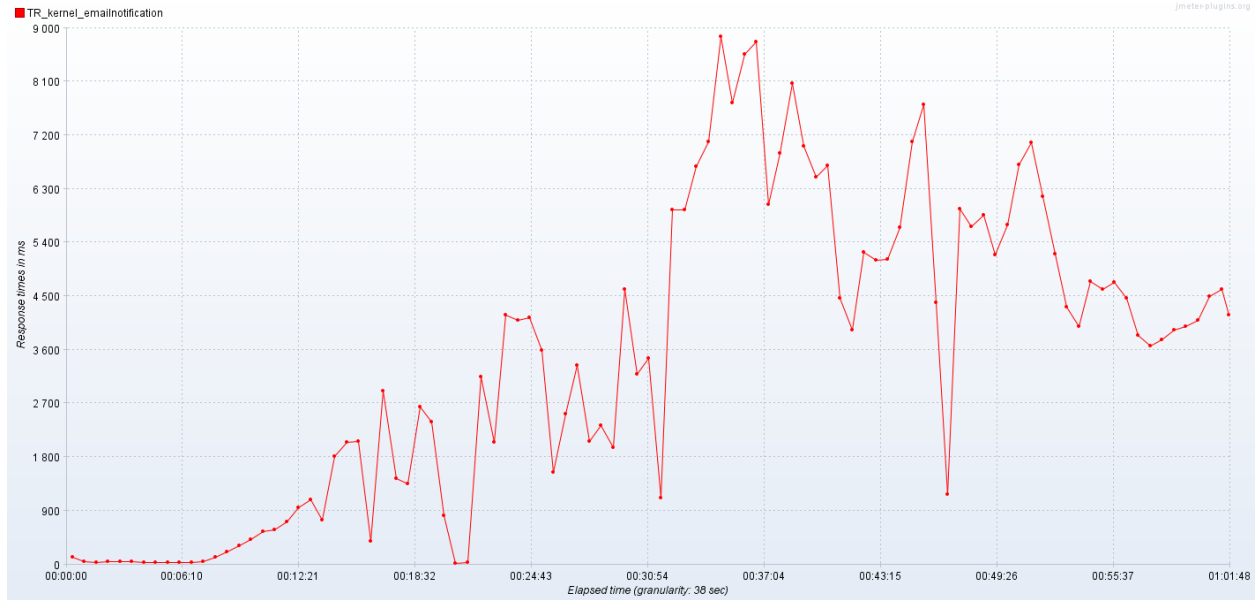| Transactions	Error %
TR_kernel_emailnotification	14.76%

Test Environment : we are using scale-down version of below Architecture
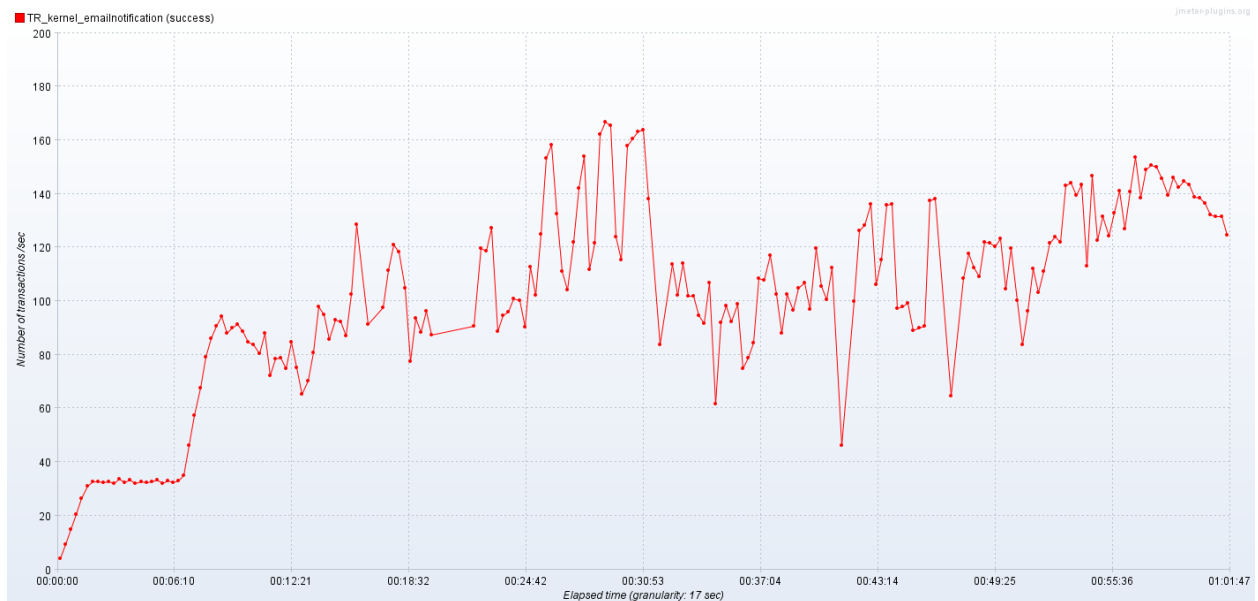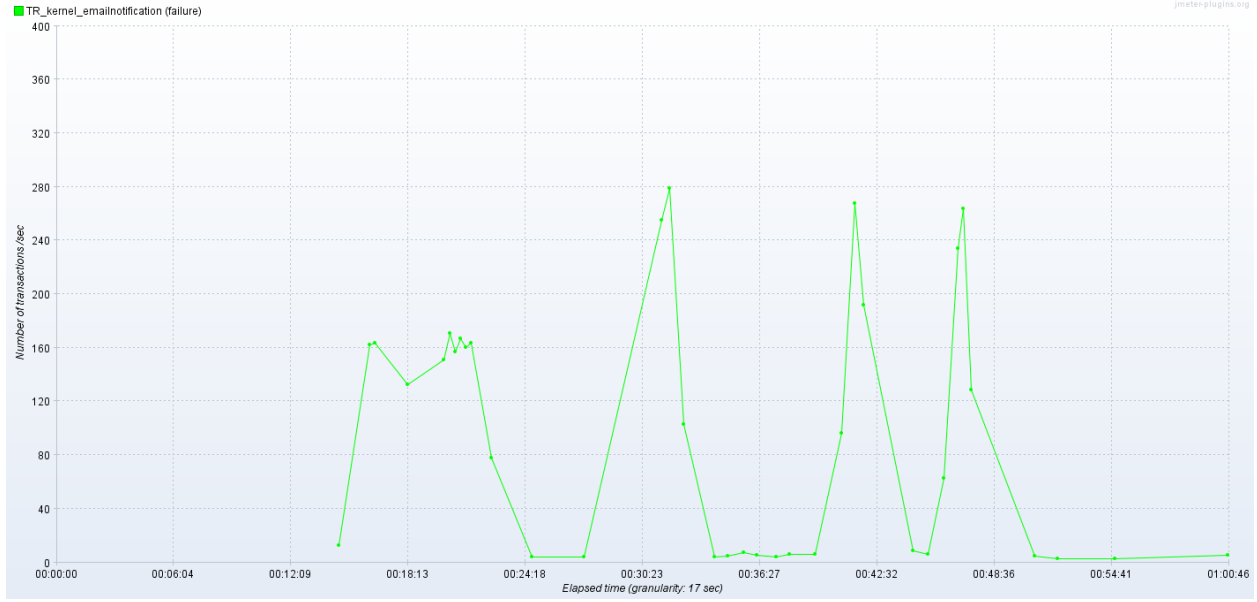
Active threads over Time:
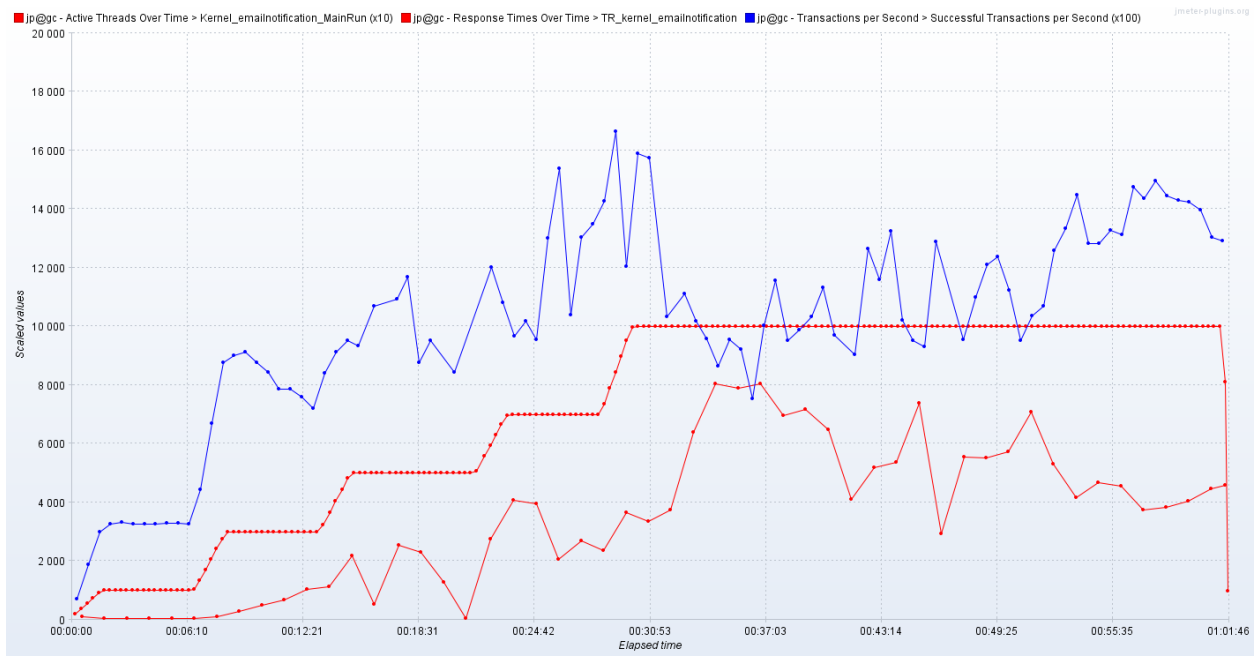

Response Time Graph
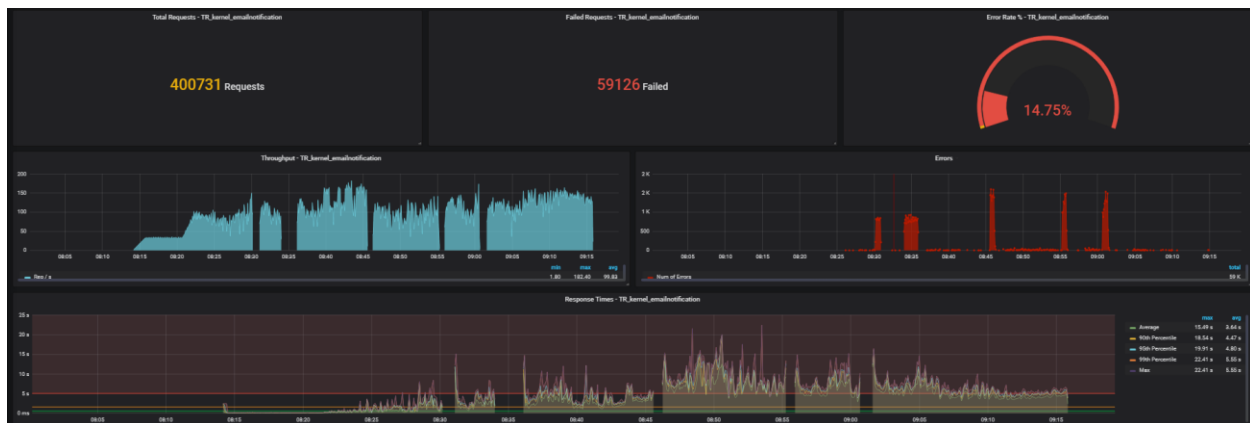
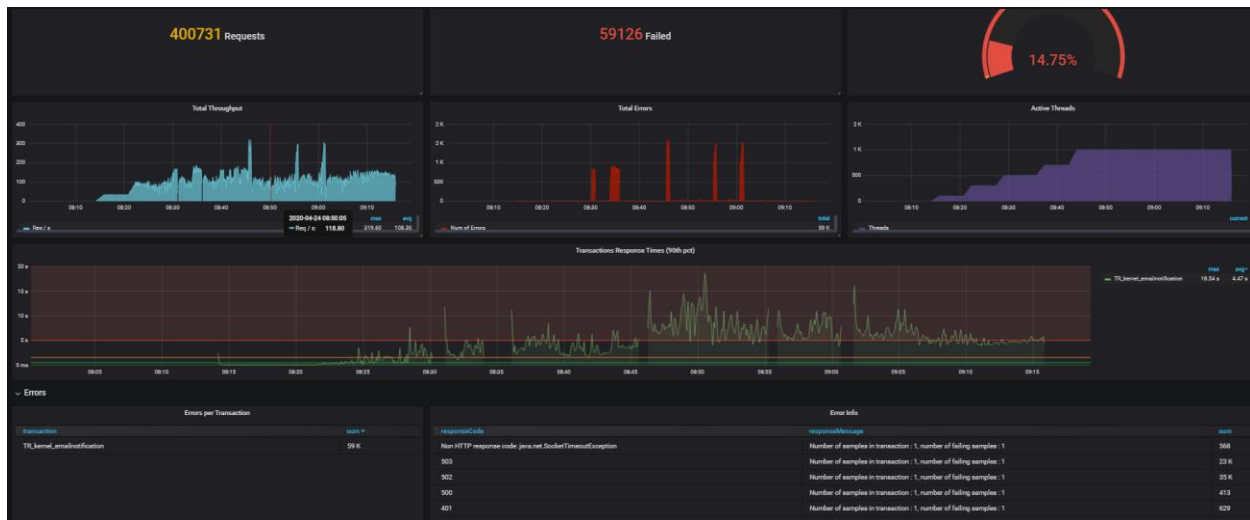**Transactions per second**: (success)

Transactions per second: (failure)

Active threads vs response times over time vs transactions per sec:

JMeter graph:

Kernel cluster node 0 monitoring: (4 core vcpu 15.64Gib RAM)

Observations:

- Max Total CPU basic is 42.17% and Avg is 11.50%
- Max used memory is 4.57 Gib out of 15.64 Gib
- Max Avg system load (1m)is 1.93 and Avg (1m) is 0.51
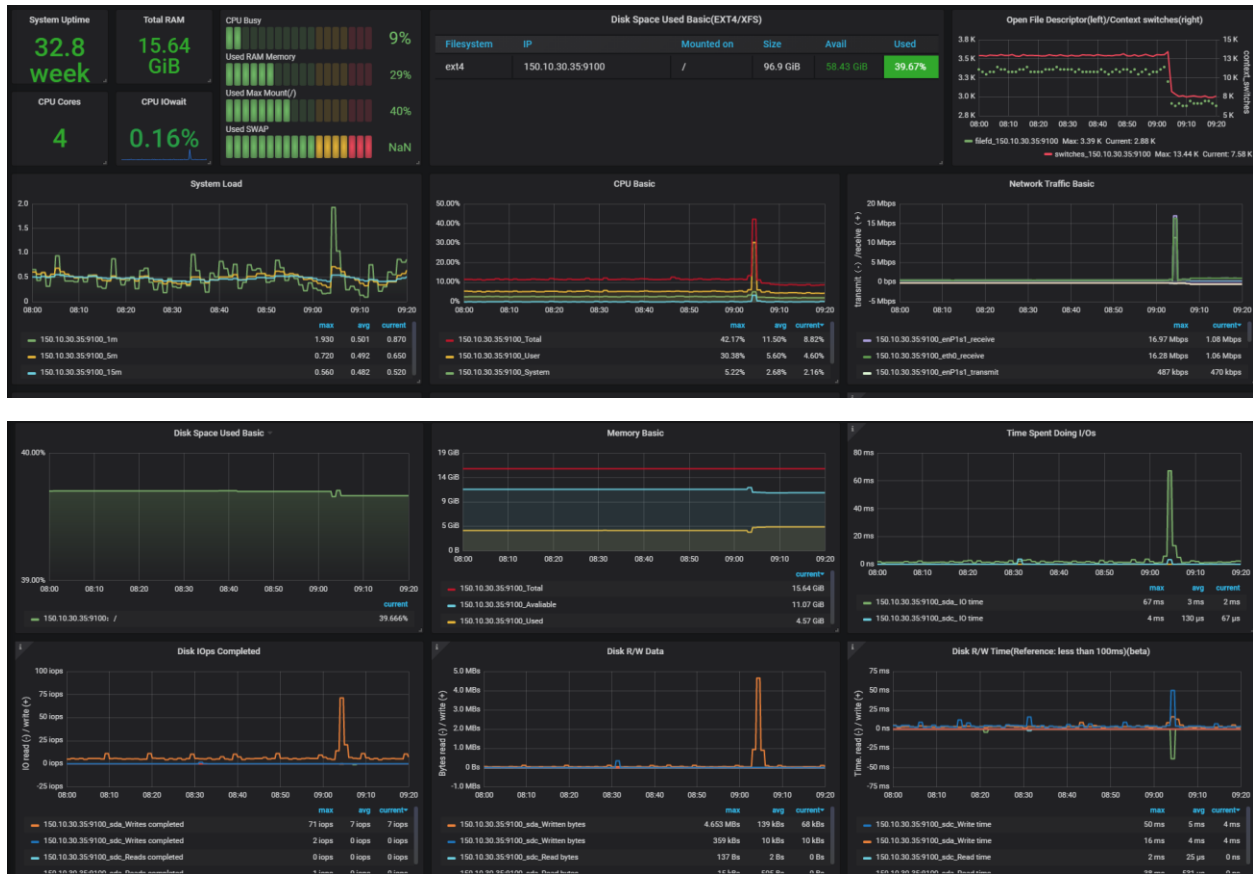
Kernel cluster node 1 monitoring: 4-core vcpu 15.64Gib RAM

Observations:

- ➢ Max Total CPU basic is 93.22 % and Avg is 11.73%
- ➢ Max used memory is 5.34 Gib out of 15.64 Gib
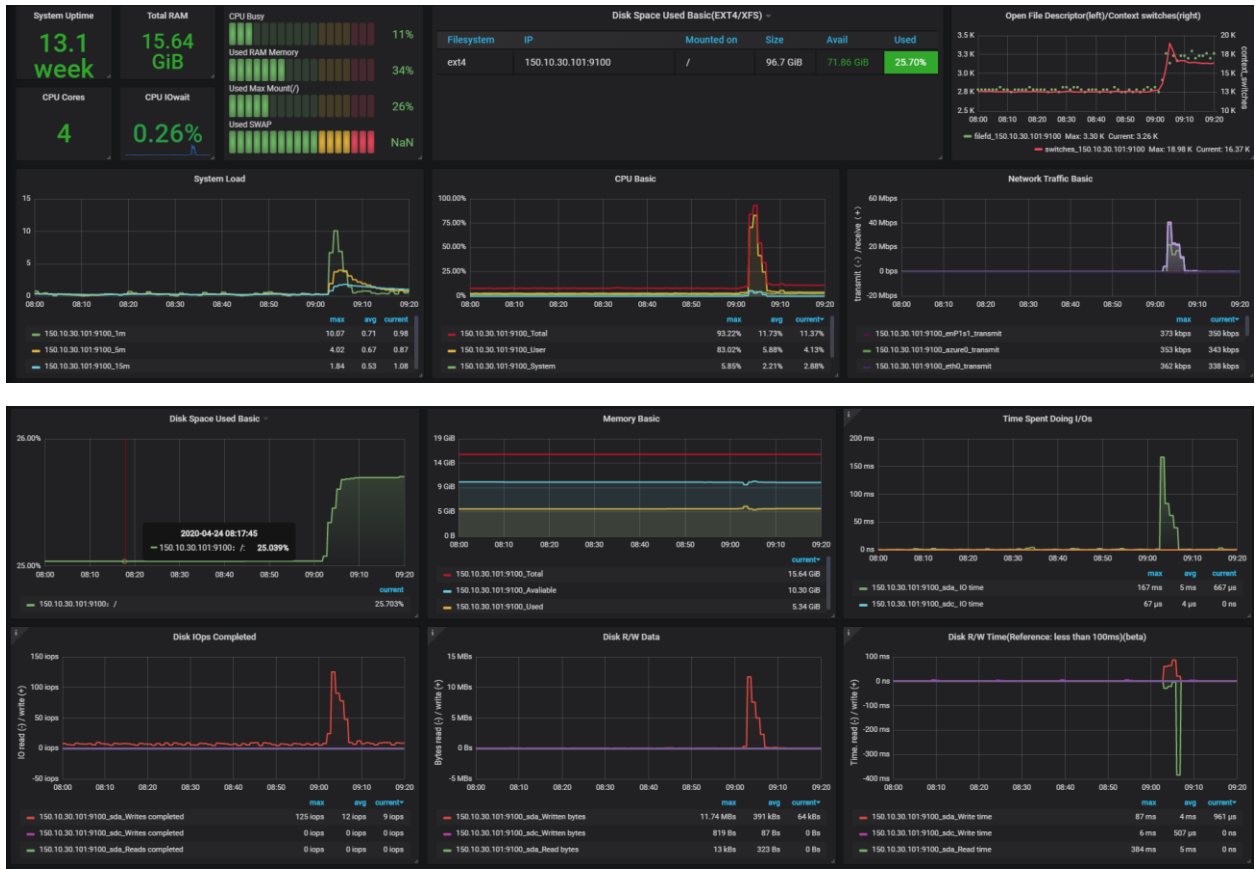- ➢ Max avg system load (1m) is 10.14 and avg (1m) is 0.31

Kernel DB node monitoring: (2 core 7.78 Gib)

Observations:

➢ Max Total CPU basic is 19.20% and Avg is 1.37%
➢ Max used memory is 955 Mib out of 7.78 Gib
➢ Max avg system load (1m)is 0.12 and avg (1m) is 3.98

Glow Root Graphs:

/v1/emailnotifier/email/send ☁

PARTIAL
kernel-emailnotification-service
Transaction type: Web
Transaction name: /v1/emailnotifier/email/send
Start: 2020-04-24 8:48:13.369 am (+00:00)
Duration: 420,452.8.. milliseconds
Request http method: POST
Request parameters:
   mailSubject: perftest-emailnotifier
   mailContent: Perf testing of kernel email notifier
   mailTo: kernelperftoc197488@mail.com
   mailCc: kernelperfccd197488@mail.com

Breakdown: **total (ms)** **count**   **switch to tree view**
  http request   420.477.4..   1
  http client   420.437.2..   1

JVM Thread Stats
  CPU time: 6.2 milliseconds
  Blocked time: 34.0 milliseconds
  Waited time: 0.0 milliseconds
  Allocated memory: 3.8 MB

Trace entries (1)

               http client request: GET https://preprod.mosip.io/v1/authmanager/authorize/admin/validateToken

Profile (276)   View flame graph ☑

/v1/emailnotifier/email/send ⬇

kernel-emailnotification-service
Transaction type: Web
Transaction name: /v1/emailnotifier/email/send
Start: 2020-04-24 9:07:03.848 am (+00:00)
Duration: 130,365.7 milliseconds
Request http method: POST
Request parameters:
    mailSubject: perftest-emailnotifier
    mailContent: Perf testing of kernel email notifier
    mailTo: kernelperftoc327774@mail.com
    mailCc: kernelperfccd327774@mail.com
Response code: 401

Breakdown:	total (ms)	count	
http request	130,365.7	1	switch to tree view
http client	129,333.5	1	

JVM Thread Stats
    CPU time: 12.6 milliseconds
    Blocked time: 587.0 milliseconds
    Waited time: 0.0 milliseconds
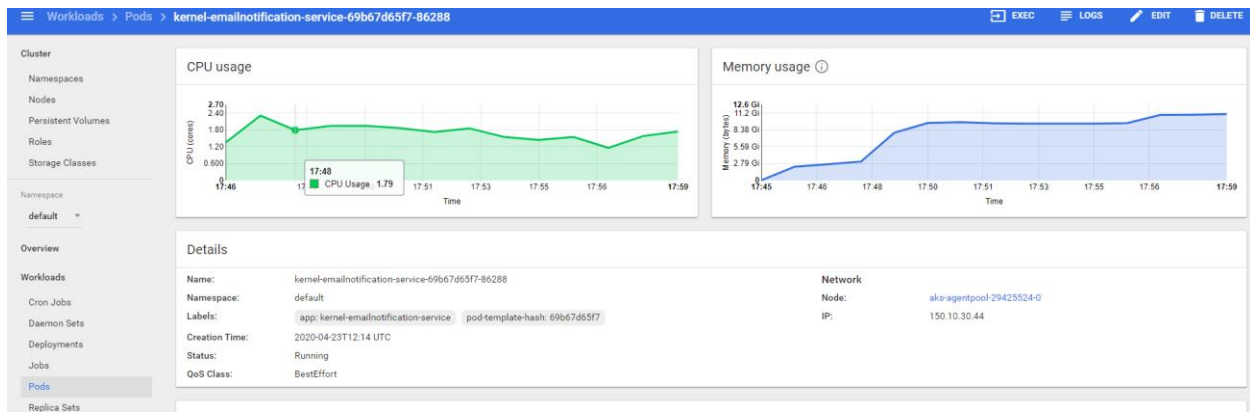   Allocated memory: 3.7 MB
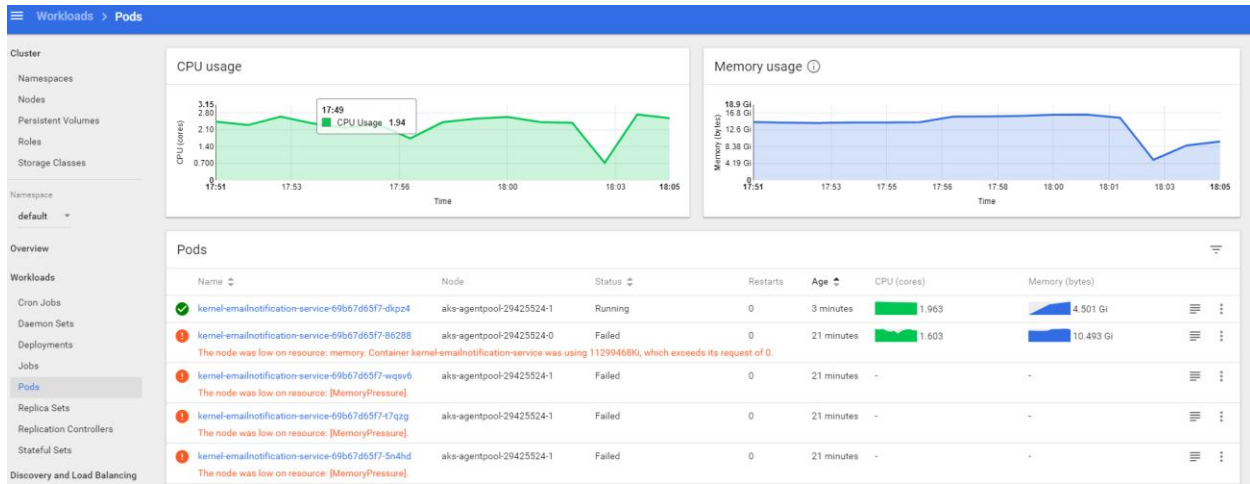
Trace entries (1)

```
        http client request: GET https://preprod.mosip.io/v1/authmanager/authorize/admin/validateToken
            java.net.ConnectException: Connection timed out (Connection timed out)
            exception
```

Profile (52)   View flame graph 🔗

Kernel email pod status:

Conclusion and Next Steps:

When concurrent users reached 500 we have observed high response times as well intermittent read timeout errors for kernel email notification API ,kernel-email-notification server pod got failed due to memory pressure error message is "The node was low on resource:memory.container kernel-emailnotification-service was using 11299468ki ,which exceeds its request of 0 "

"The node was low on resource :[memory pressure]"

Raised defect https://mosip.atlassian.net/browse/MOSIP-1044 for the kernel email notification service pod restarting ,Follow up with dev team and execute performance run after fix deployed