

Performance Test Report

For

Execution of

Crypto signature service APIs – 1000 users

Date: 27 Apr 2020

Author: Anand Babaleshwar

Summary

This report presents the observations and findings of the load test conducted for a load of 1000 concurrent users on signature sign and signature validate API's of Crypto signature service

The objective of this load test was to observe and record the behavior of the application when users are calling signature sign and signature validate API's of Crypto signature service API's

Below are the scenario details:

Script/Report Name	Kernel Auth Manager
Run Date	27-Apr-2019
Period	12:50 to 13:50 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:



The transaction response times observed were as below:

Label	# Samples	Average (ms)	90% Line (ms)	Min (ms)	Max (ms)	Error %	Throughput (sec)
TR_kernel_sign	100947	12842	21402	9	31052	1.78%	27.1106
TR_kernel_validate_sign	98617	12747	21348	9	30067	2.04%	26.50328

Performance Test Execution Details

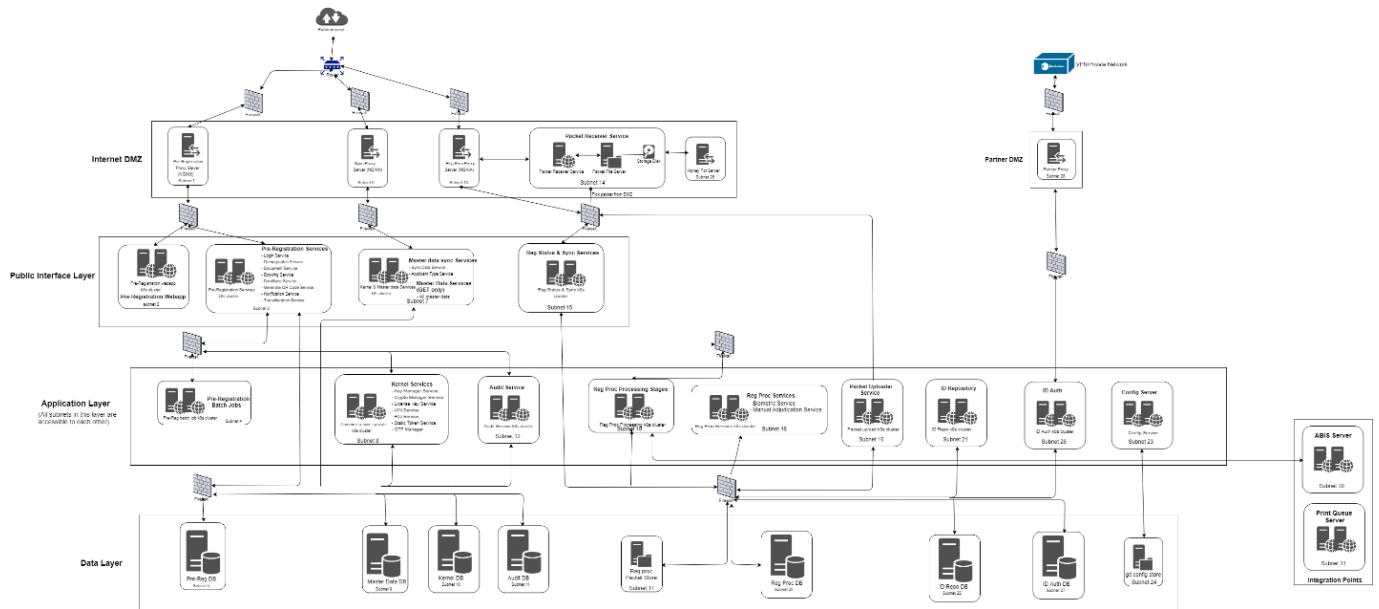
Both APIs transactions average response times were more than 3sec mentioned below:

1. TR_kernel_sign -12.842 sec
2. TR_kernel_validate_sign -12.747 sec

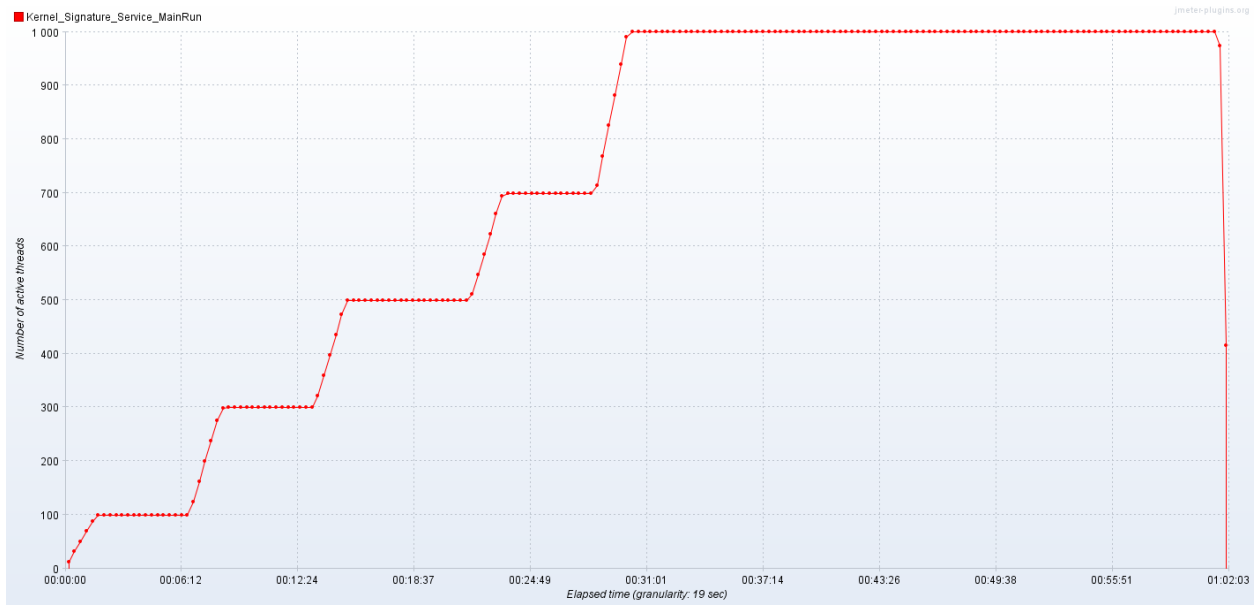
The error rate for below transactions are more than 1%:

Transactions	Error %
TR_kernel_sign	1.78%
TR_kernel_validate_sign	2.04%

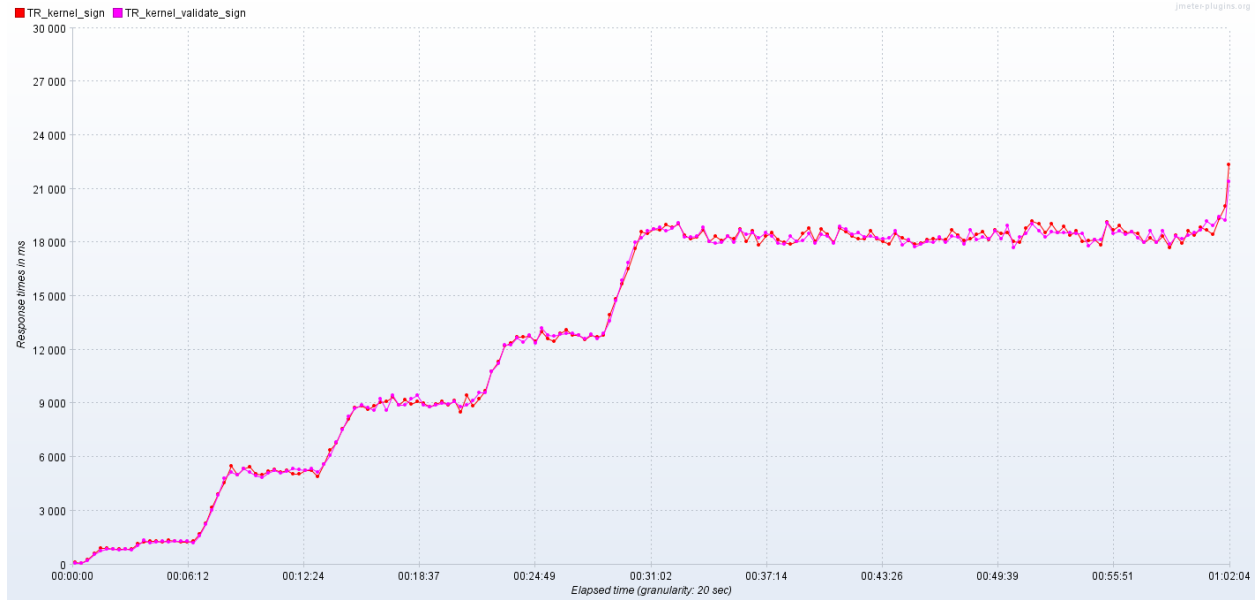
Test Environment : we are using scale-down version of below Architecture



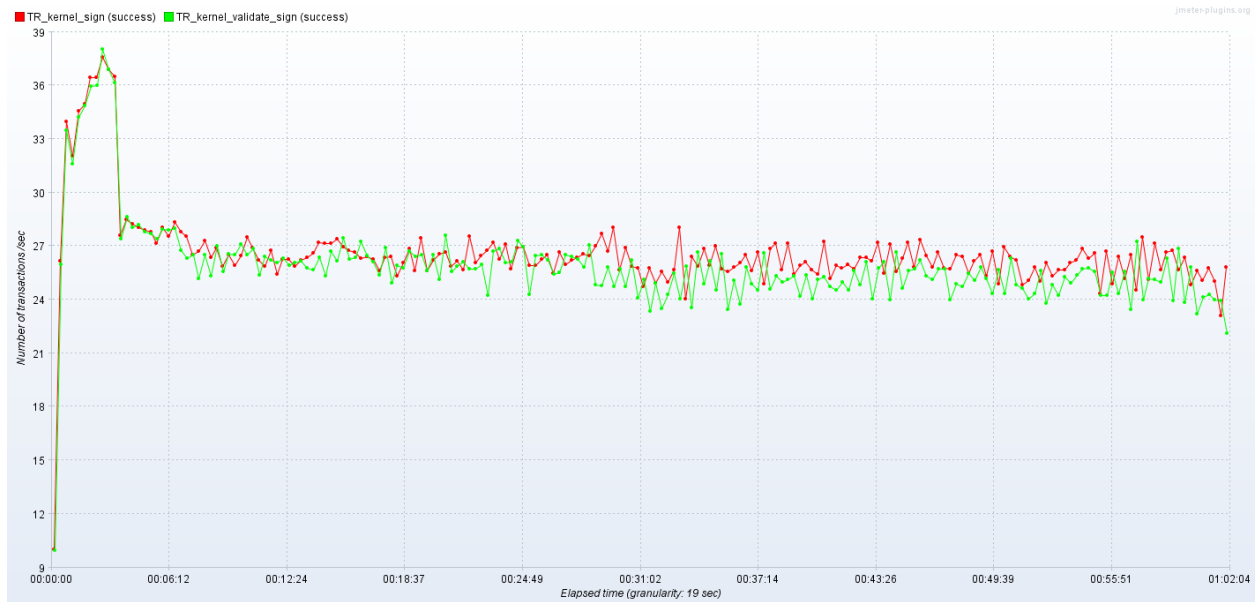
Active threads over Time:



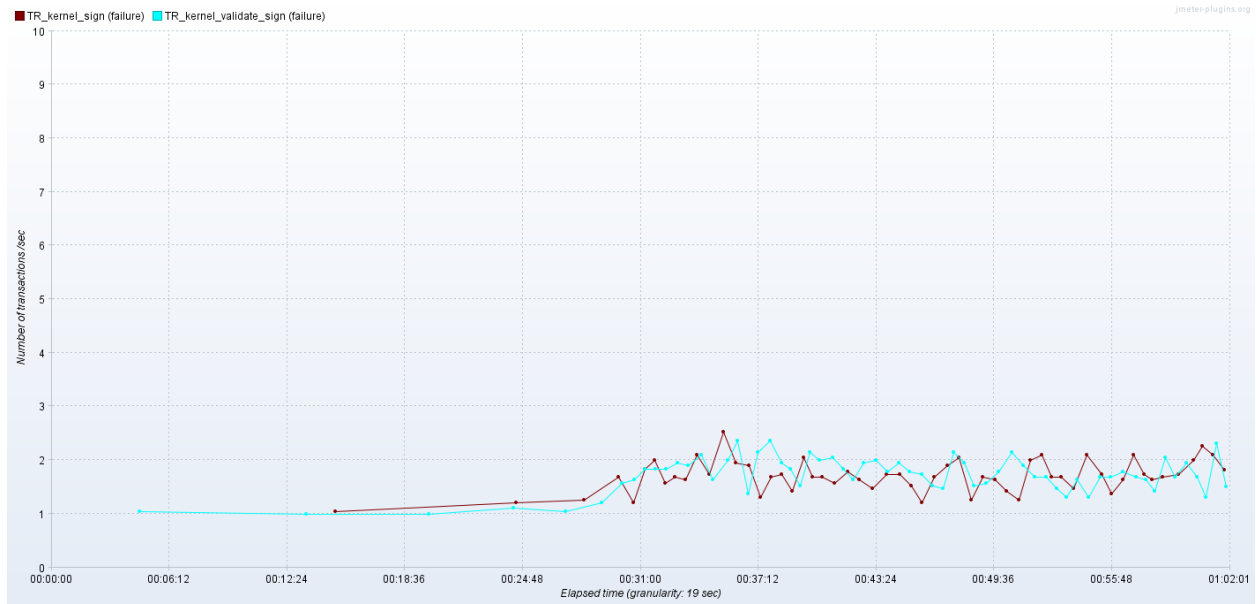
Response Time Graph



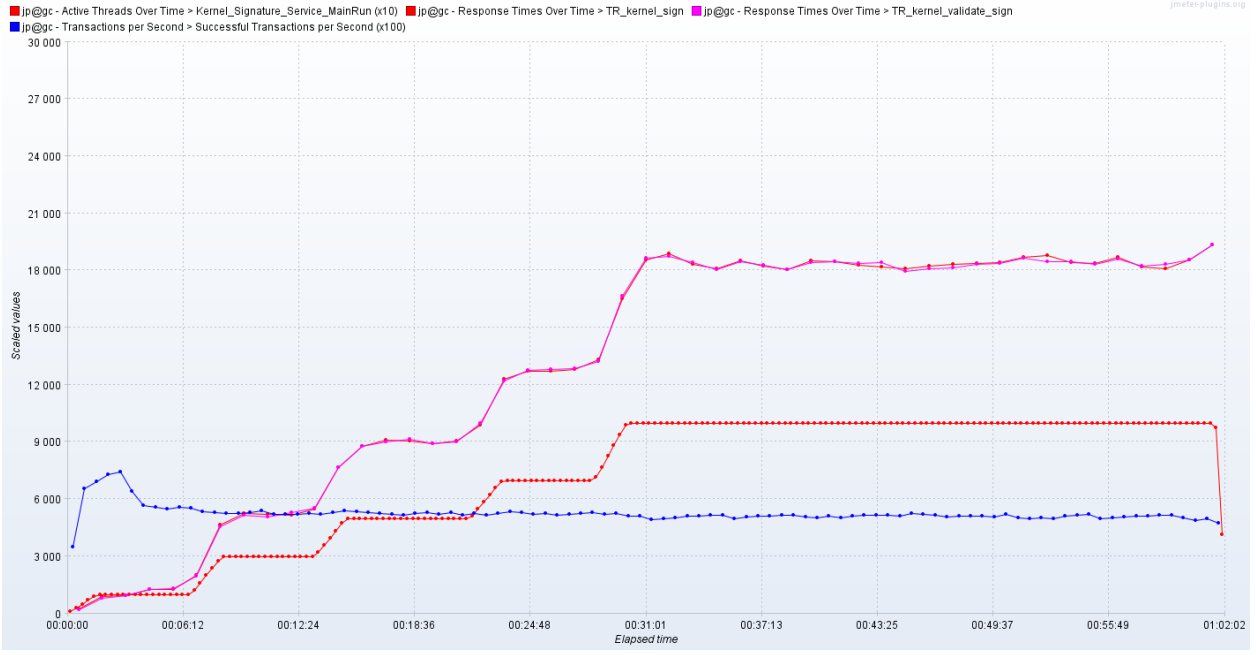
Transactions per second: (success)



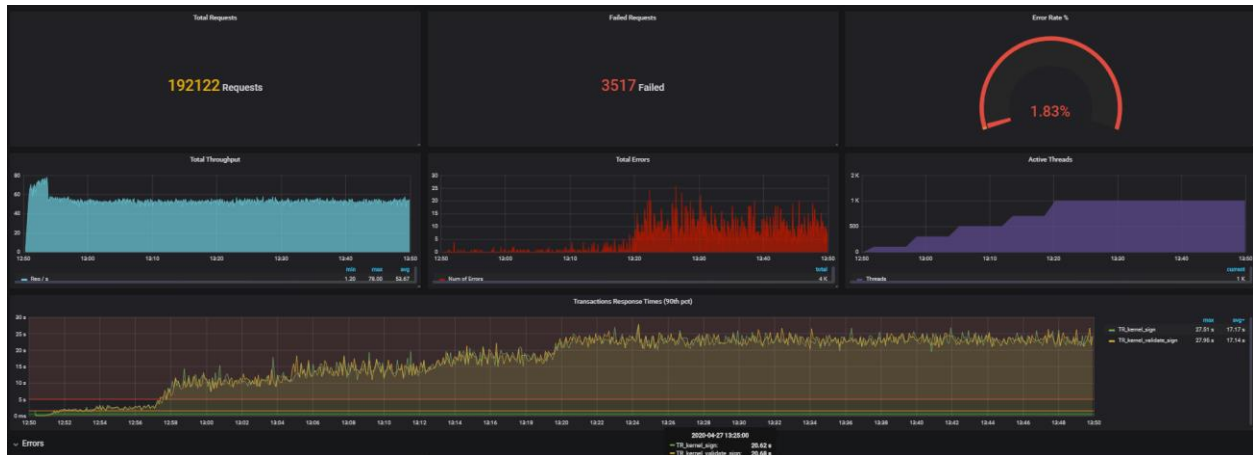
Transactions per second: (failure)



Active threads vs response times over time:



JMeter graph:

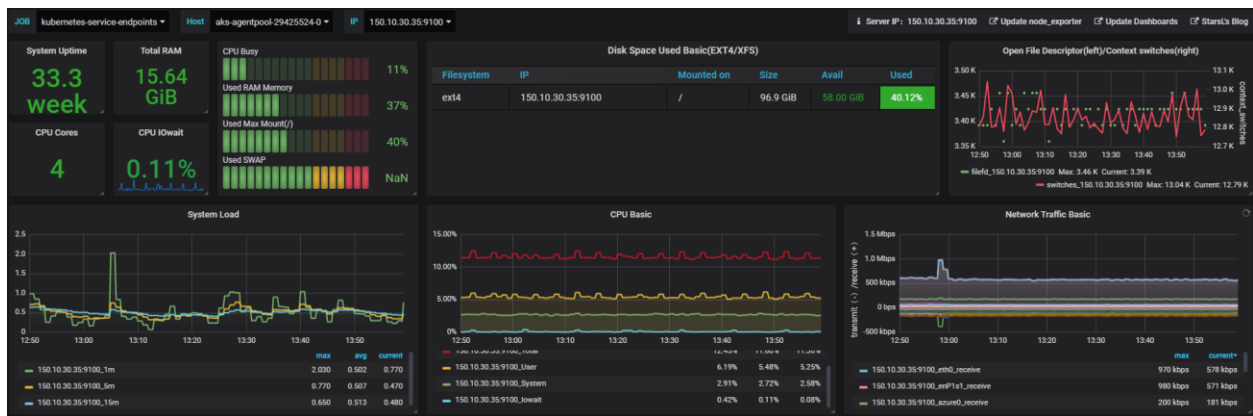


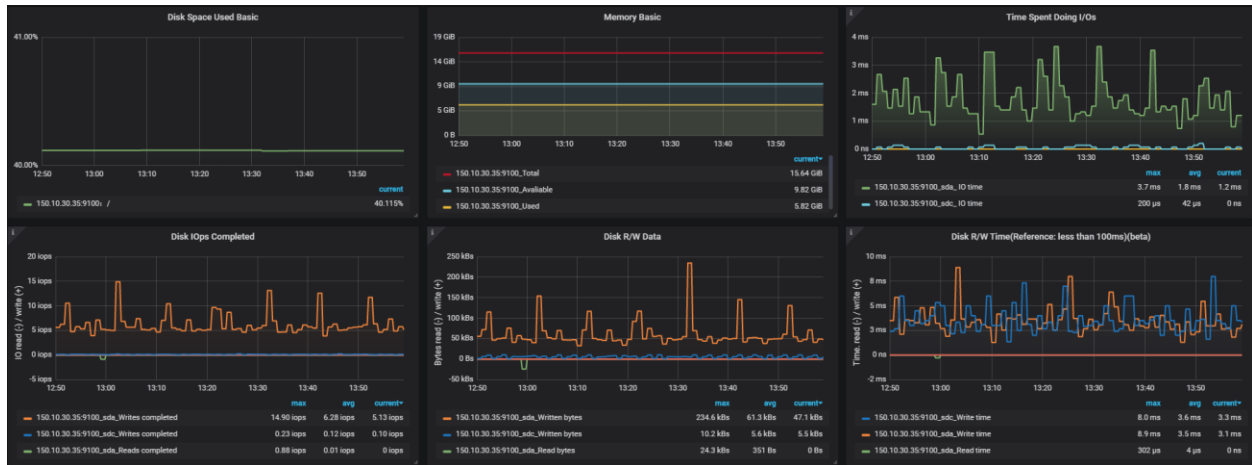


Kernel cluster node 0 monitoring:

Observations:

- Max Total CPU basic is 12.45% and Avg is 11.60%
- Max used memory is 5.82 Gib out of 15.64 Gib
- Max avg system load (1m) is 2.1 and avg (1m) is 0.51



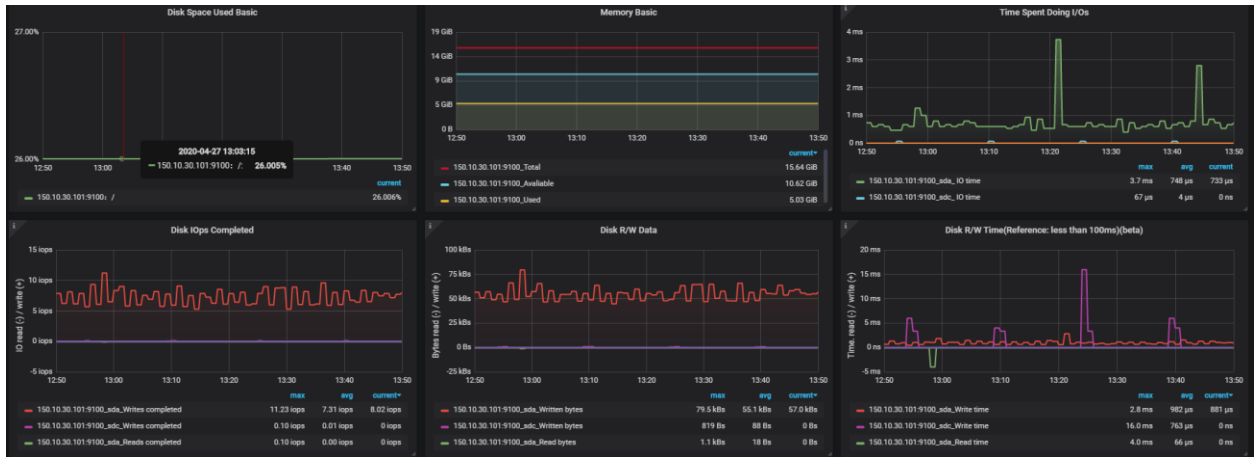


Kernel cluster node 1 monitoring:

Observations:

- Max Total CPU basic is 8.45 % and Avg is 8.02%
- Max used memory is Gib out of 15.64 Gib
- Max avg system load (1m) is 1.14 and avg (1m) is 0.31

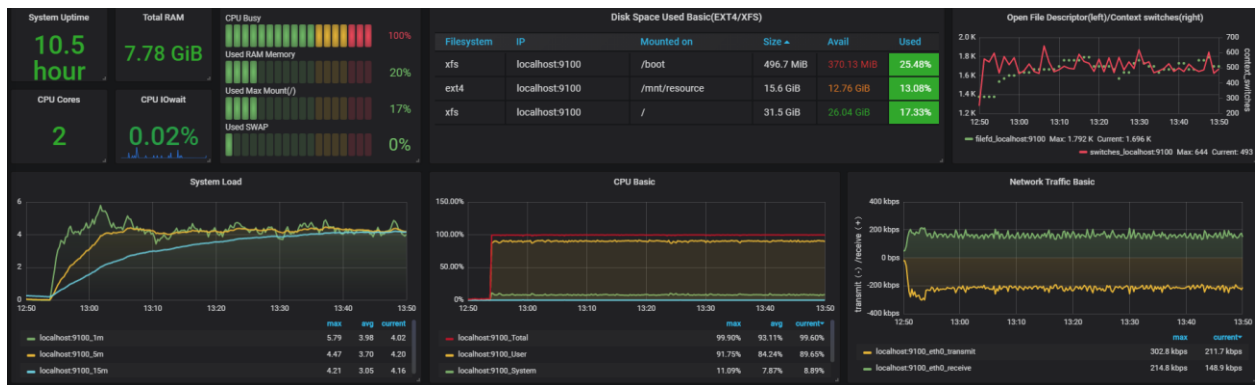




Kernel DB node monitoring: (2 core8 Gib)

Observations:

- Max Total CPU basic is 99.90% and Avg is 93.11%
- Max used memory is 1.53 Gib out of 7.78 Gib
- Max avg system load (1m) is 5.79 and avg (1m) is 3.98





Glow Root Graphs:

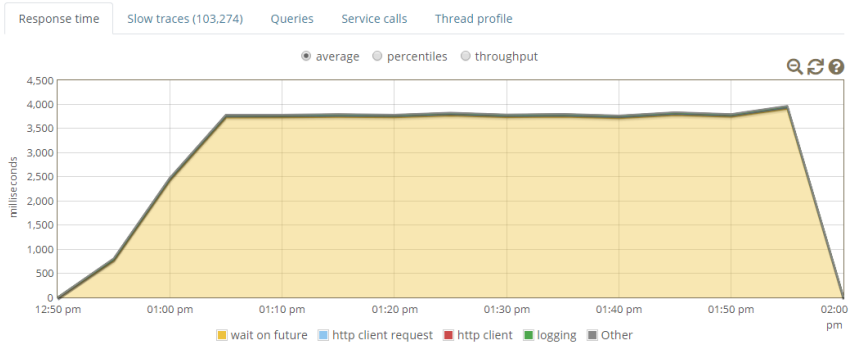
kernel-signature-service ▼

Web ▼

Yesterday, 12:50 PM to 2:00 PM ▼

By percent of total time ▼	
All Web Transactions	100.0 %
/v1/signature/sign	50.7 %
/v1/signature/validate	49.3 %

All Web Transactions



Breakdown (Main Thread):		total (ms)	count	switch to tree view
http request		3.434.2	1.0	
http client request		3.414.4	1.0	
wait on future		3.377.8	1.0	
http client		11.3	2.0	
logging		0.000006	0.00001	
Breakdown (Auxiliary Thread):		total (ms)	count	switch to tree view
auxiliary thread		0.0012	0.01	



kernel-signature-service ▾

Web ▾

Yesterday, 12:50 PM to 2:00 PM ▾

By percent of total time ▾

All Web Transactions	100.0 %
/v1/signature/sign	50.7 %
/v1/signature/validate	49.3 %

All Web Transactions

Response time Slow traces (103,274) Queries Service calls Thread profile

	Total time (ms)	Total count	Avg time (ms)
POST https://preprod.mosip.io/v1/keymanager/sign	343,972,953.6	100,422	3,425.3
GET https://preprod.mosip.io/v1/keymanager/publickey/KERNEL	334,873,357.0	97,906	3,420.4
GET https://preprod.mosip.io/v1/authmanager/authorize/admin/validateToken	2,248,646.2	397,638	5.7

/v1/signature/sign

kernel-signature-service

Transaction type: Web

Transaction name: /v1/signature/sign

Start: 2020-04-27 1:47:31.887 pm (+00:00)

Duration: 40,055.8 milliseconds

User: service-account-registration-processor

Request http method: POST

Response code: 200

Breakdown:	total (ms)	count	switch to tree view
http request	40,055.8	1	
http client request	40,040.9	1	
wait on future	40,005.3	1	
http client	9.1	2	

JVM Thread Stats




CPU time: 53.3 milliseconds

Blocked time: 0.0 milliseconds

Waited time: 39,986.0 milliseconds

Allocated memory: 3.7 MB

Trace entries (3)

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

Profile (37) [View flame graph](#)

filter the profile tree

100% ... sun.misc.Unsafe.park(Native Method)
WAITING

Conclusion and Next Steps:

When concurrent users reached 100 we have observed high response times as well intermittent read timeout errors for kernel signature API calls ,As per Glowroot analysis observed below services took high response times
POST <https://preprod.mosip.io/v1/keymanager/sign> -3.425 sec

GET <https://preprod.mosip.io/v1/keymanager/publickey/KERNEL> -3.420 sec

We will follow up with kernel dev team on issues -<https://mosip.atlassian.net/browse/MOSIP-1031> observed today and we will rerun once fix is available