Capacity Planning Document

TABLE OF CONTENTS

Revision History 3
1. INTRODUCTION 4
1.1. OBJECTIVES 4
1.2. DOCUMENT MAINTENANCE 4
2. CAPACITY MANAGEMENT 5
3. CAPACITY MANAGEMENT PROCESS 6
4. STORAGE CAPACITY FOCUS AREAS 7
5. CAPACITY AND PERFORMANCE BEST PRACTICES 7
6. CAPACITY PLANNING ANALYSIS 7
7. CAPACITY PLANNING SUMMARY 26

Revision History

Name & Designation	Date	Description of Change	Version
Emmanuel Tobias, Database Administration Unit Head	03/07/2022	Original	1.0
Edwin Diamzon, DBA			
Information Technology and Communications Steering Committee (ITCSC)	11/09/2022	Approval	
Board of Directors (BOD)	11/23/2022	Approval	
Emmanuel Anthony O. Tobias, Database Administration Unit Head	11/05/2025	Amendment	1.1
Information Technology and Communications Steering Committee (ITCSC)	11/20/2025	Approval	
Board of Directors (BOD)	12/16/2025	Approval	

1. INTRODUCTION

Capacity Planning ensures that the Information Technology (IT) processing and storage capacity is adequate to evolving and changing requirements of the Bank as a whole in a timely and cost justifiable. Also, it establishes current and future processing needs. The important thing about Capacity Planning is that infrastructure is flexible to meet changing demands. It is sometimes used synonymously with Capacity Management. Like a lot of things in IT, the line for where one ends and the other begins depends on Bank's infrastructure framework, resources, and preferences.

The goal of Capacity Planning is to minimize the risk of problem occurring. Inadequate Capacity Planning can lead to the loss of customers and business. Excess capacity can drain the company's resources and limit future investments. Both can result in a customer's inability to compete effectively in a rapidly changing and growing environment. Therefore, Capacity Planning is an important activity as well as a long-term and cyclical activity.

Capacity planning is a complex task and, if not performed correctly, it results in an underutilized network or unfulfilled customers.

1.1. OBJECTIVES

The following are the objectives of Capacity Planning:

1. Identify IT capacity requirements to meet current and future projected workloads.
2. Develop and maintain a Capacity Management Plan.
3. Ensure performance goals are met on time and within budget.
4. Monitor capacity continuously to support the Service Level Management.
5. Assist in diagnosing and resolving incidents.
6. Analyze the impact of variances on capacity and take proactive measures to improve performance where it is most cost-effective.

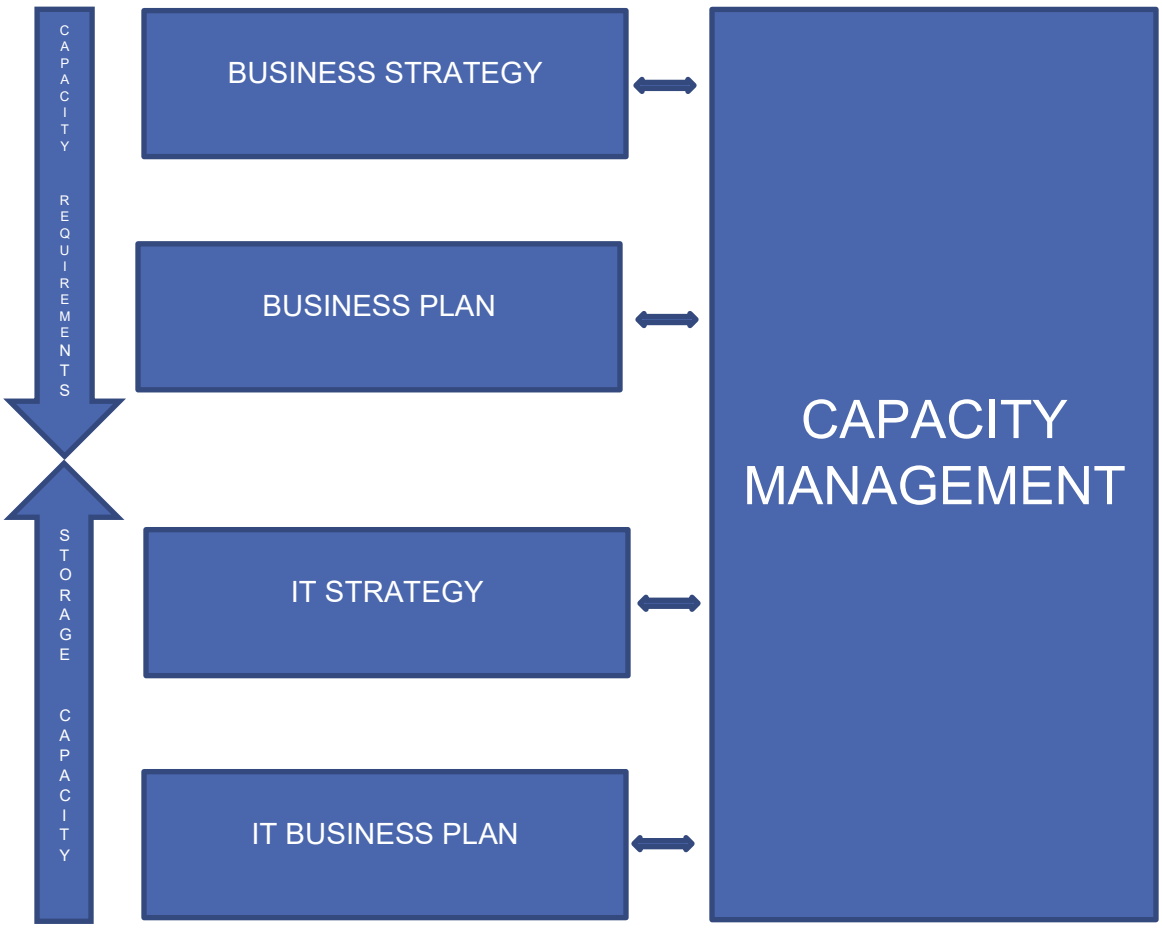
1.2. DOCUMENT MAINTENANCE

To ensure that this document is aligned with the current business process the Bank wants to achieve, review and update will be done annually and as deemed necessary by the Information Technology and Communication Department (ITCD), Senior Management, and Information Technology and Communication Steering Committee (ITCSC) based on new issuances of standard practices and policies either by internal or other regulatory bodies. Refer to Policy Review Process of ITCD Operations Policy Manual.

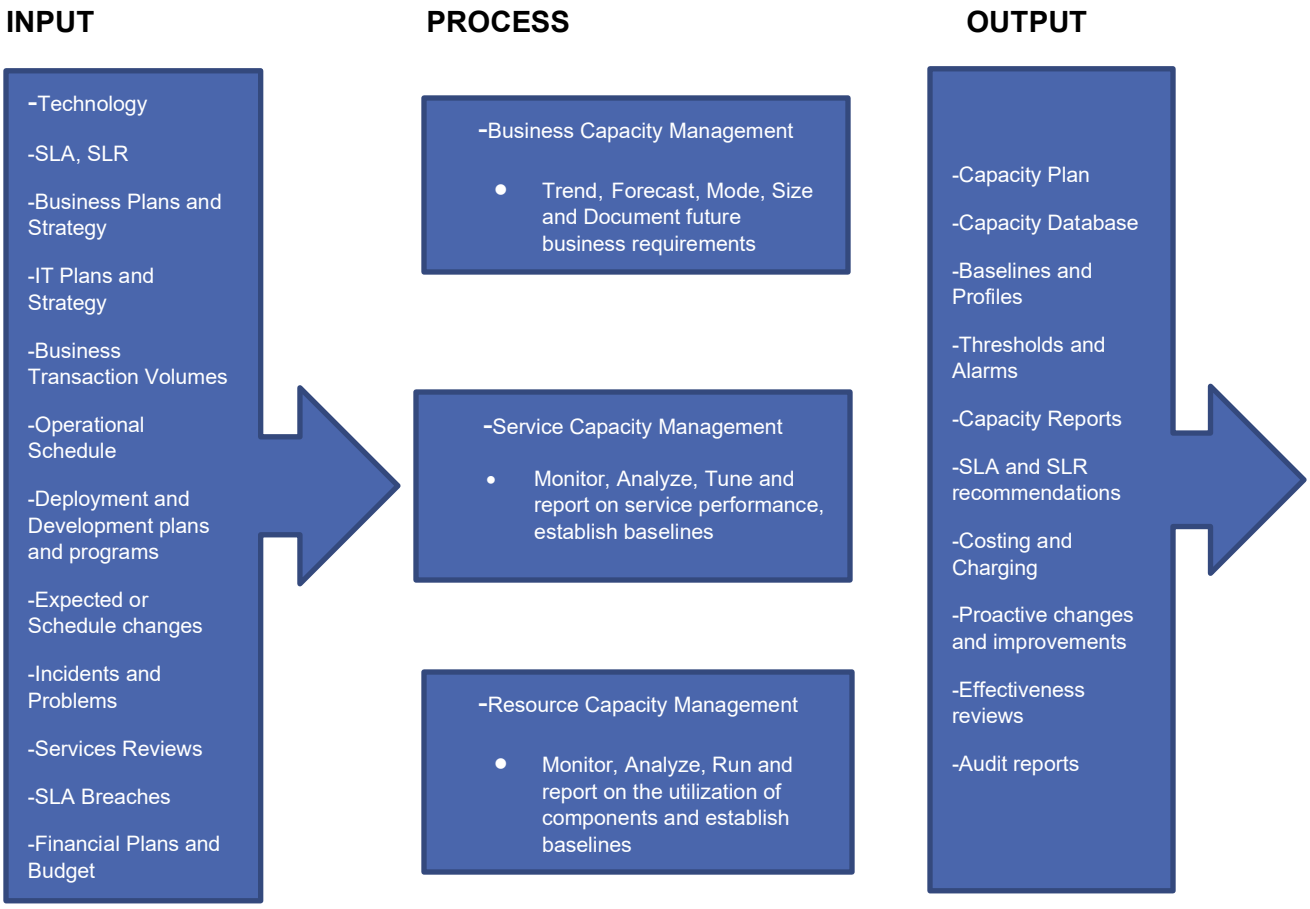
2. CAPACITY MANAGEMENT

Capacity Management consists of the planning, IT monitoring, and administration actions undertaken to ensure that Information Technology resources have the capacity to handle data processing requirements across the entire service lifecycle.

The goal of Capacity Planning Management is to ultimately balance costs incurred against resources required, and balance supply against demand. The Capacity Management procedure concerns performance, memory, and physical space, and should cover both the operational and development environment, including hardware, human resources, networking equipment, peripherals, and software.



3. CAPACITY MANAGEMENT PROCESS



Legend:

SLA – Service Level Agreement
SLR – Service Level Requirements

4. STORAGE CAPACITY FOCUS AREAS

The following are focus areas of Storage Capacity:

- Produce and maintain storage capacity plan.
- Monitor storage service levels.
- Recommend storage tuning.
- Managed storage demand.
- Recommend storage capacity enhancements.
- Account for workload changes in storage service level targets.

5. CAPACITY AND PERFORMANCE BEST PRACTICES

- Develop a comprehensive view of available resources in order to ensure that resources are distributed to the appropriate people and projects.
- Run a variety of test scenarios with different variables and analyze the impact of the changes in order to identify project risks proactively.
- Derive insights from historical data with the predictive Capacity Management process in order to predict the likelihood of success.
- Prioritize tasks and assign resources effectively with continuous planning and monitoring.
- Avoid overestimating or underestimating resource utilization needs by generating accurate capacity versus demand Capacity Management ratios.

6. CAPACITY PLANNING ANALYSIS

A. Finacle WEB Server

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data, however MEDIA directory (external storage) is high in terms of utilization. 2. CPU is still within the benchmark while the Memory usage is high on a daily basis.	1. In 3 years' time the disk will be eventually populated. Logs should be archived and deleted to avoid filling up the disk capacity. 2. CPU is still manageable but the Memory should be upgraded or put additional Memory to cater heavy transactions and prevent clogging.

```
Last login: Mon Mar 14 08:25:00 2022 from 192.168.2.71
[webadm@webserver ~]$
[webadm@webserver ~]$
[webadm@webserver ~]$ df -h
Filesystem                    Size  Used Avail Use% Mounted on
/dev/mapper/vg_prodj2ee-lv_root
                               50G  9.5G   38G  21% /
tmpfs                         5.8G   88K  5.8G   1% /dev/shm
/dev/sda2                     485M   36M  424M   8% /boot
/dev/sda1                     200M  256K  200M   1% /boot/efi
/dev/mapper/vg_prodj2ee-lv_home
                              211G   25G  177G  13% /home
/dev/sdb1                     294G   70G  209G  25% /media
```

Figure 1 (Disk Usage Capacity - Web)

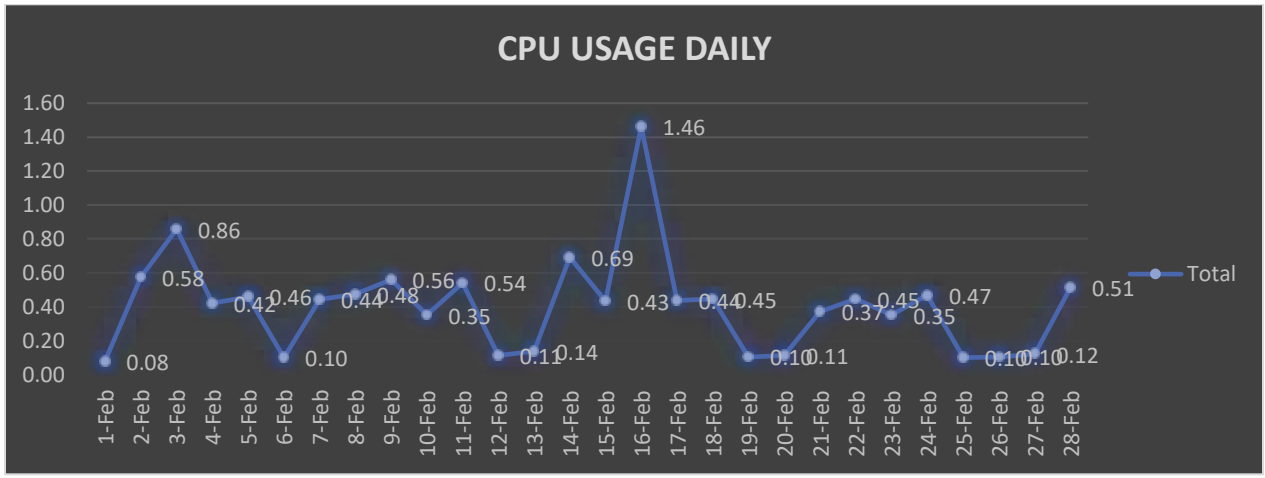


Figure 2 (CPU Usage Daily - Web)

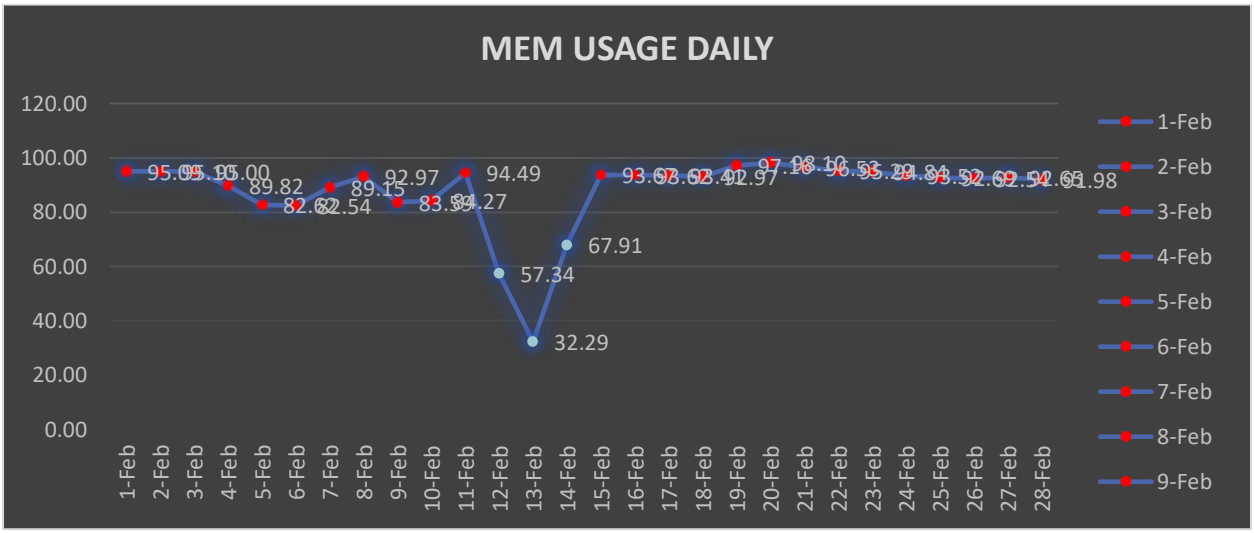


Figure 3 (Memory Usage daily – Web)

B. Finacle APP Server

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data, however MEDIA directory (external storage) is high in terms of utilization. 2. CPU is still within the benchmark while the Memory usage is high on a daily basis.	1. In 3 years' time the disk will be eventually populated. Logs should be archived and deleted to avoid filling up the disk capacity. 2. CPU is still manageable but the Memory should be upgraded or put additional Memory to cater heavy transactions and prevent clogging.

```
[appadm@appserver ~]$ df -h
Filesystem                      Size  Used Avail Use% Mounted on
/dev/mapper/vg_prodappssvr-lv_root
                                 50G   28G   20G  59% /
tmpfs                           7.7G   88K  7.7G   1% /dev/shm
/dev/sda2                       485M   36M  424M   8% /boot
/dev/sda1                       200M  256K  200M   1% /boot/efi
/dev/mapper/vg_prodappssvr-lv_home
                                207G   37G  160G  19% /home
/dev/sdb1                       294G   70G  209G  25% /media
```

Figure 1 (Disk Usage Capacity - APPS)

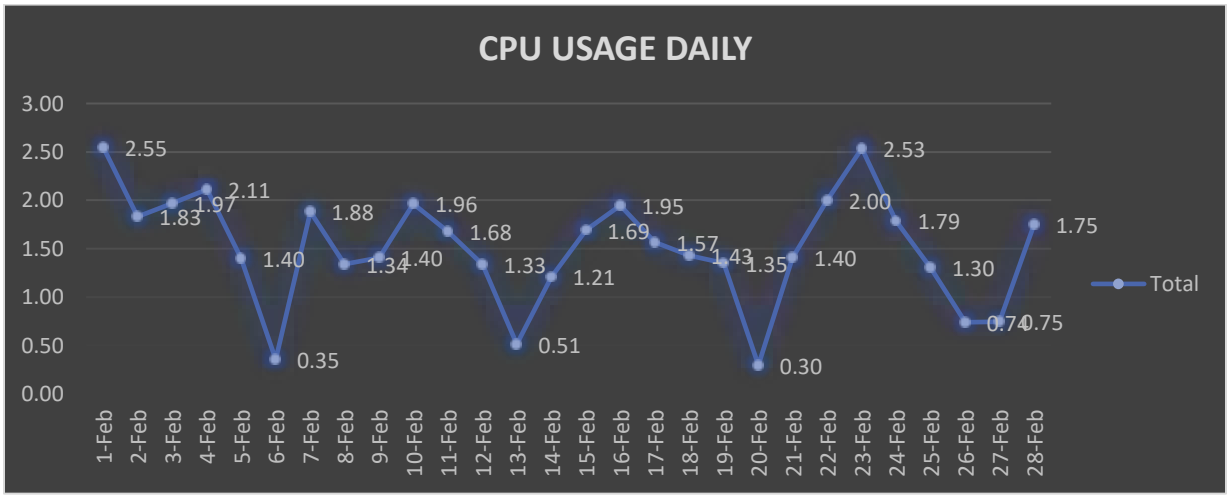


Figure 2 (CPU Usage Daily – APPS)

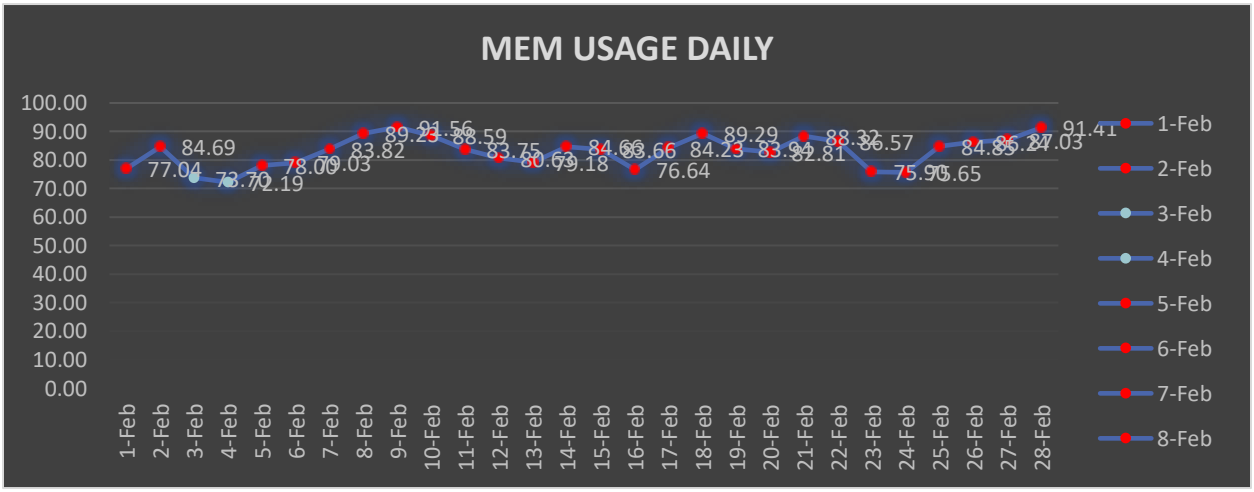


Figure 3 (Memory Usage Daily – APPS)

C. Finacle Database Server

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data, however ROOT directory is high in terms of utilization.	1. In 3 years' time the disk will be eventually populated. Logs should be archived and deleted to avoid filling up the disk capacity

	2. CPU is still within the benchmark while the Memory usage is high on several occasions.	2. CPU is still manageable but the Memory should be upgraded or put additional Memory to cater heavy transactions and prevent clogging.

```
[oracle@dbserver ~]$ df -h
Filesystem                      Size  Used Avail Use% Mounted on
/dev/mapper/vg_prodprimarysrv-lv_root
                                 50G   35G   13G  74% /
tmpfs                           7.7G   88K  7.7G   1% /dev/shm
/dev/sda2                       485M   37M  423M   9% /boot
/dev/sda1                       200M  260K  200M   1% /boot/efi
/dev/mapper/vg_prodprimarysrv-lv_home
                                482G  195G  263G  43% /home
/dev/sdb1                       985G  240G  696G  26% /data
/dev/sdb2                       660G   13G  614G   2% /archivelog
```

Figure 1

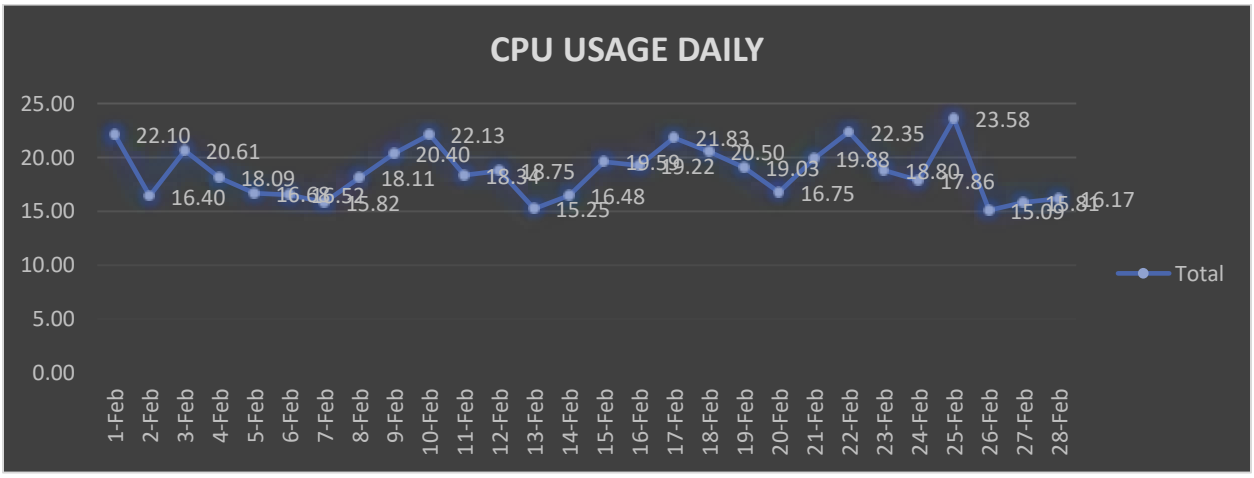


Figure 2 (CPU Usage daily – DB)

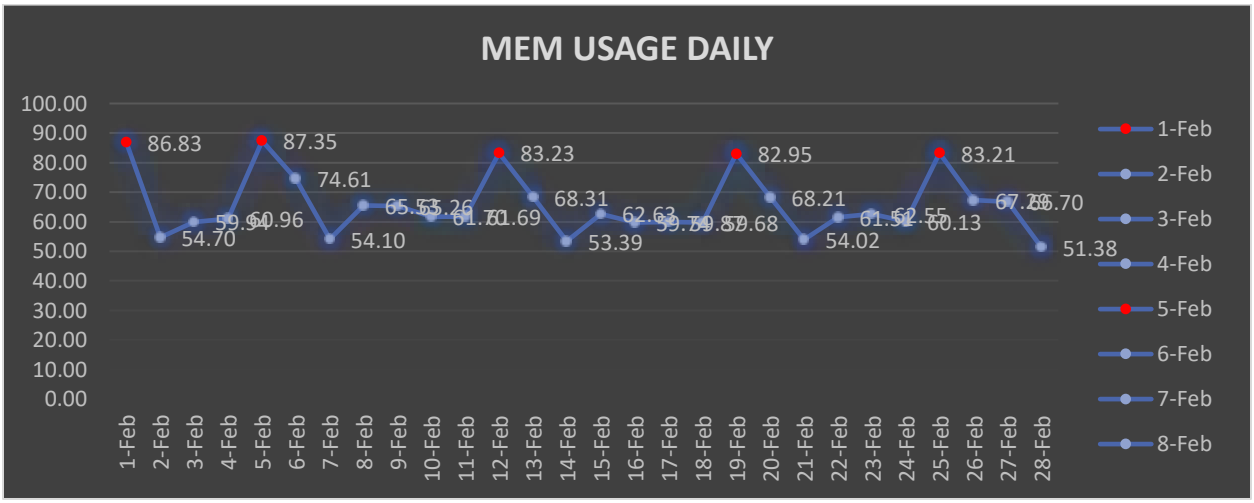


Figure 3 (Memory Usage Daily – DB)

D. ATM DB Switch

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data, however drive F:\ is high in terms of utilization. 2. CPU and Memory usage are still within the benchmark thus, it is still sufficient to meet the required capacity.	1. Disk storage is still manageable and can cater large objects, however it needs to upgrade if the Bank decided to upgrade its infrastructure. 2. CPU and Memory are still manageable but the Memory needs to be upgraded to prevent clogging.

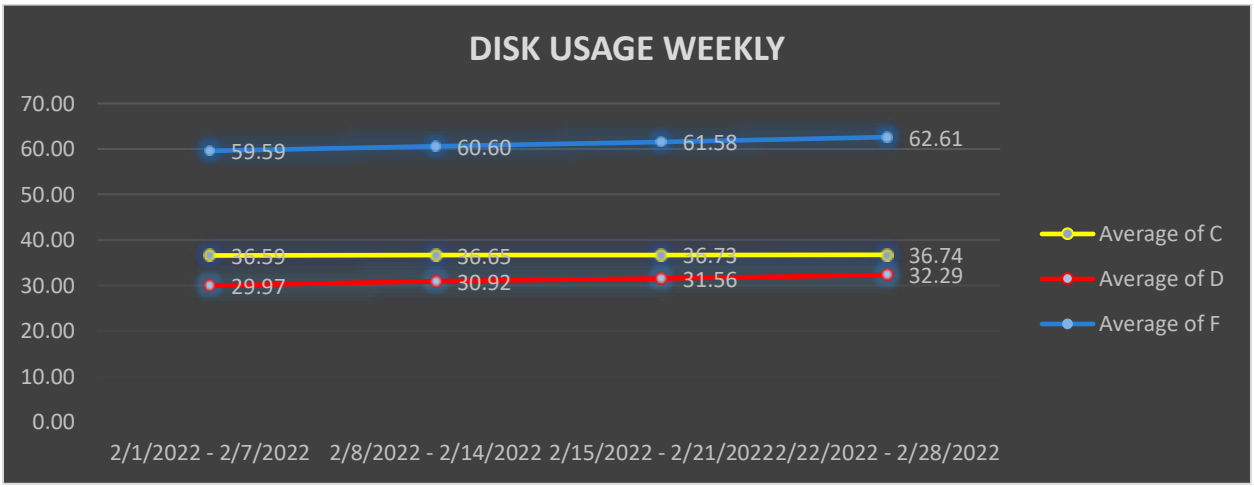


Figure 1 (Disk Usage weekly – ATM DB)

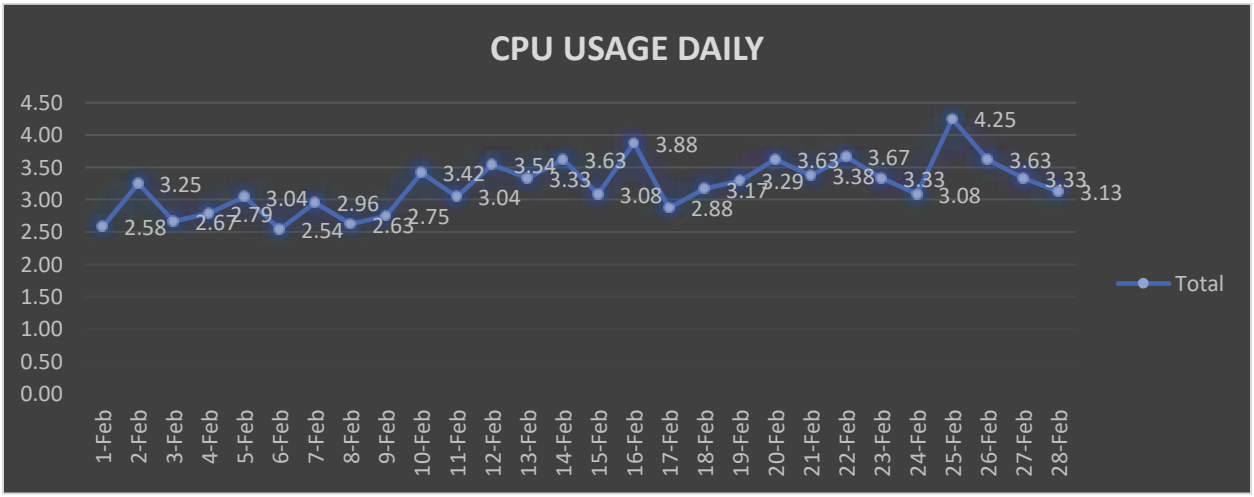


Figure 2 (CPU Usage daily – ATM DB)

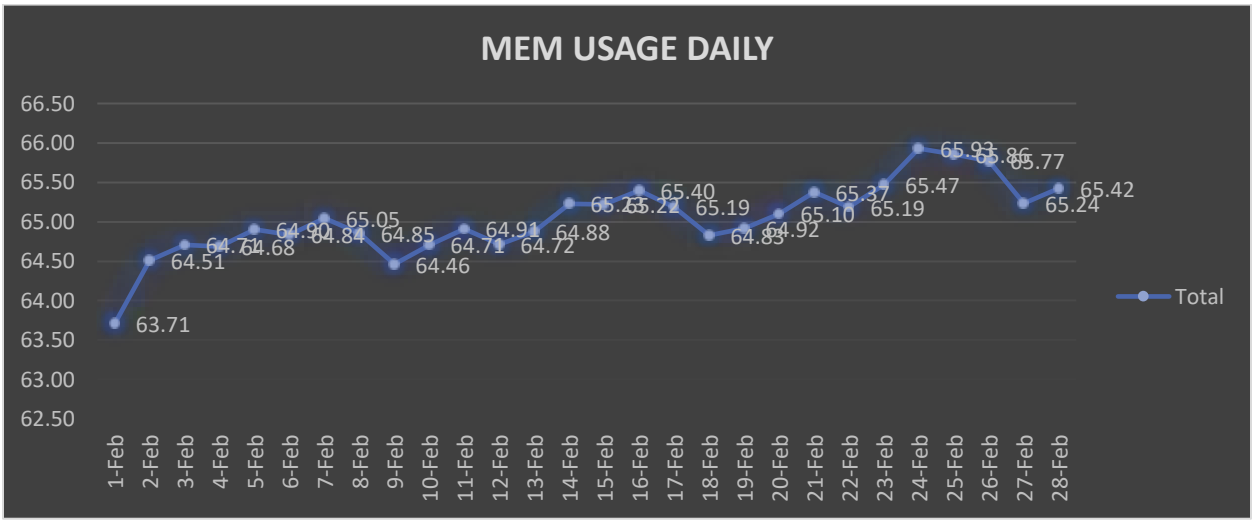


Figure 3 (Memory Usage daily – ATM DB)

E. Aperta CICS DB

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data, however drive D:\ is high in terms of utilization. 2. CPU and Memory are within the benchmark, thus it is still sufficient to meet the required capacity.	1. Disk storage is still manageable and can cater large objects, however it needs to be upgraded to accommodate large data in the future 2. CPU and Memory are still manageable but need to be upgraded if the Bank needs to upgrade its infrastructure

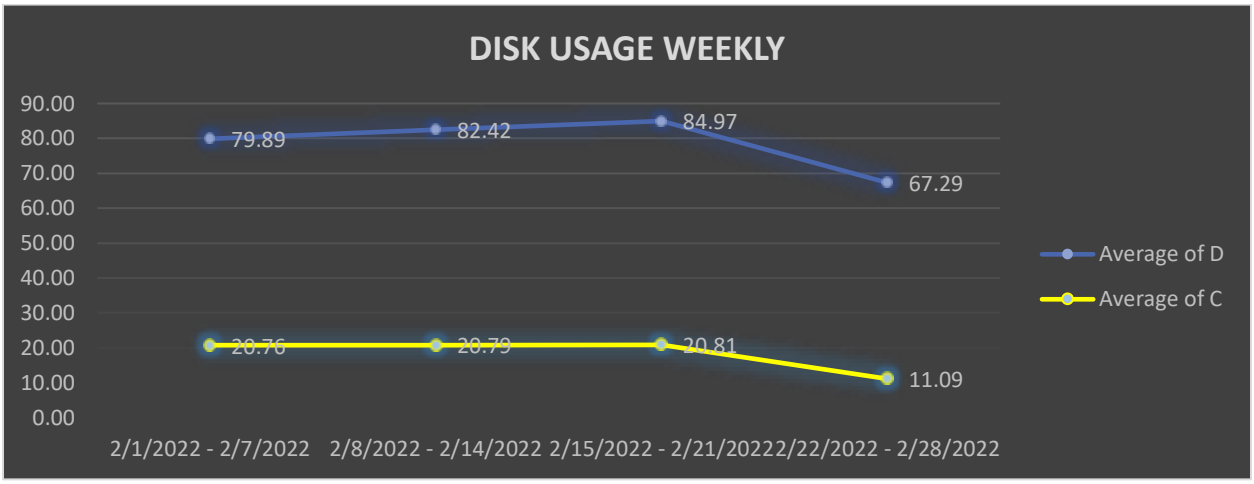


Figure 1 (Disk Usage weekly – CICS DB)

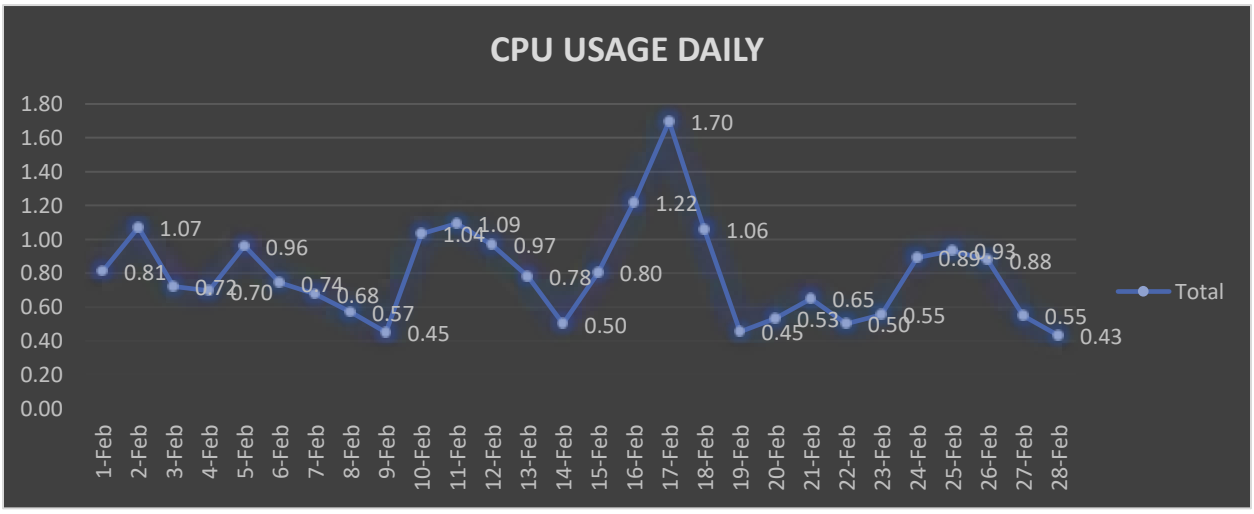


Figure 2 (CPU Usage daily – CICS DB)

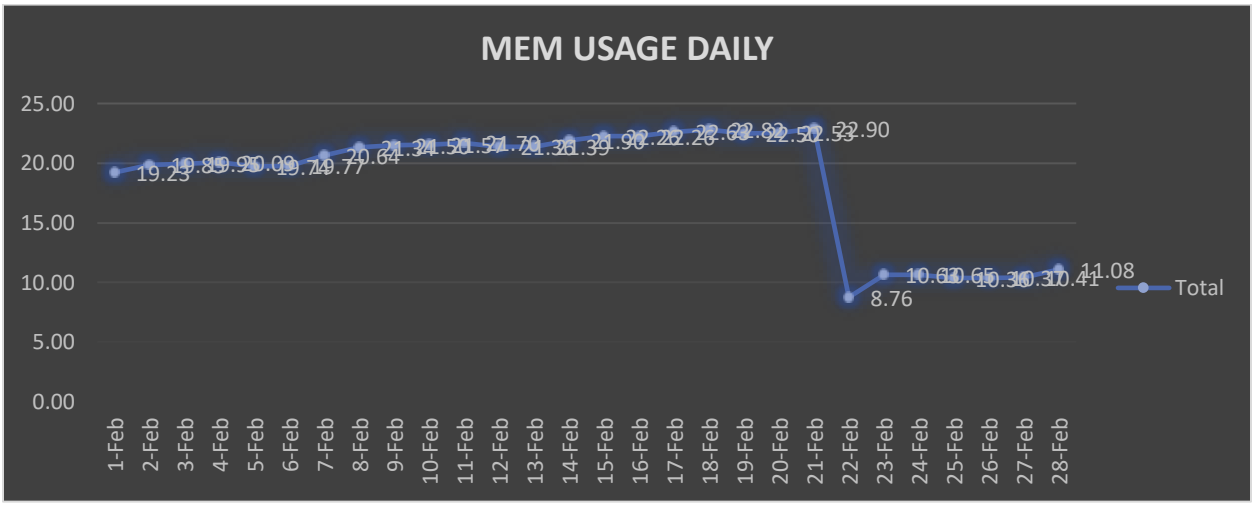


Figure 3 (Memory Usage daily – CICS DB)

F. Aperta PBM

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data, however drive C:\ is high in terms of utilization. 2. CPU and Memory are within the benchmark, thus it is still sufficient to meet the required capacity.	1. Disk storage is still manageable and can cater large objects, however it needs to be upgraded to accommodate large data in the future. 2. CPU and Memory are still manageable but need to upgrade if the Bank decided to upgrade its infrastructure.

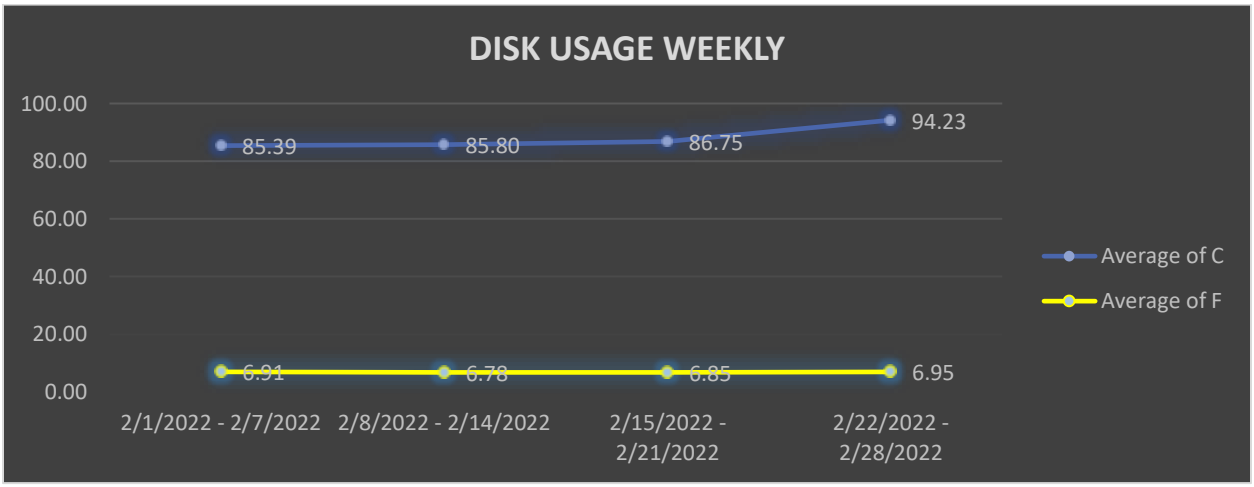


Figure 1 (Disk Usage weekly – PBM)

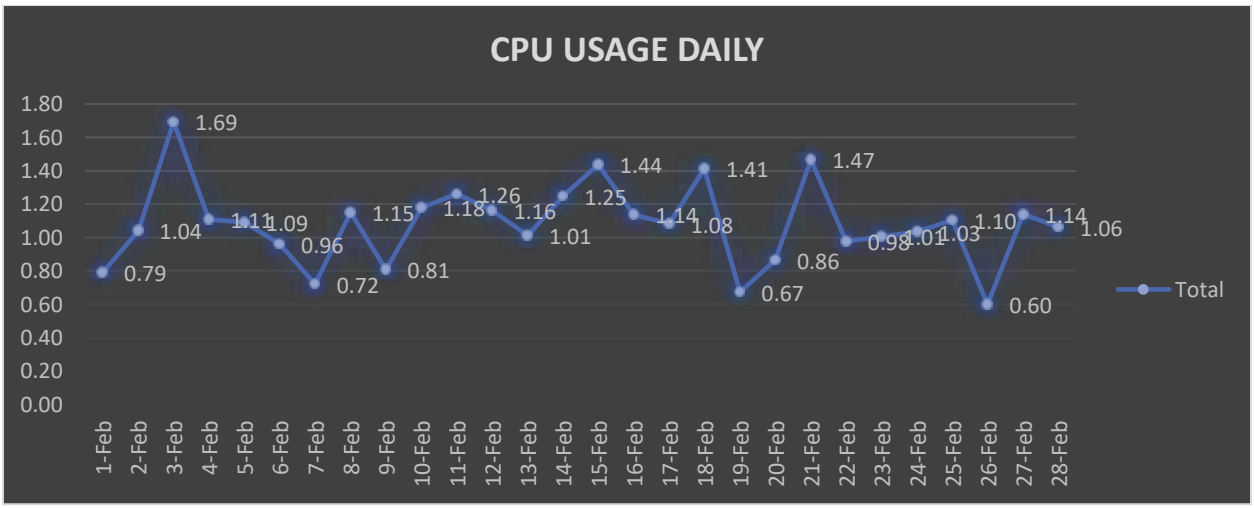


Figure 2 (CPU Usage daily – PBM)

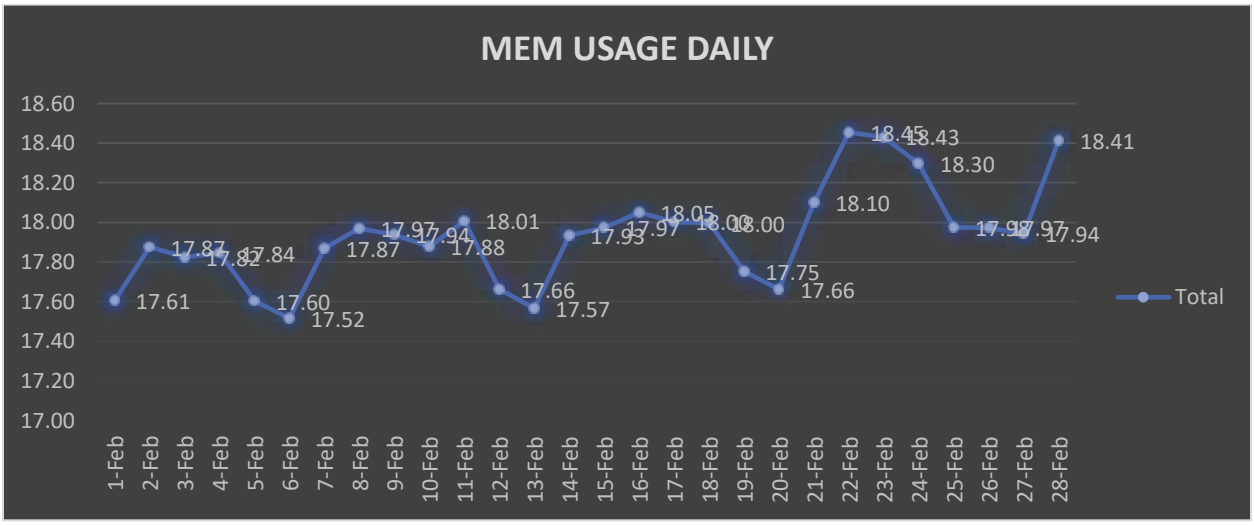


Figure 3 (Memory Usage daily – PBM)

G. APDS DB

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Drive C:\ is within the benchmark 2. CPU is within the benchmark, while the Memory exceeds due to high transactions volume	1. Disk storage is still manageable; however, it needs to be upgraded to accommodate large data in the future. 2. CPU is still manageable but the Memory exceeded, need to monitor the usage for future allocations and add Memory if needed.

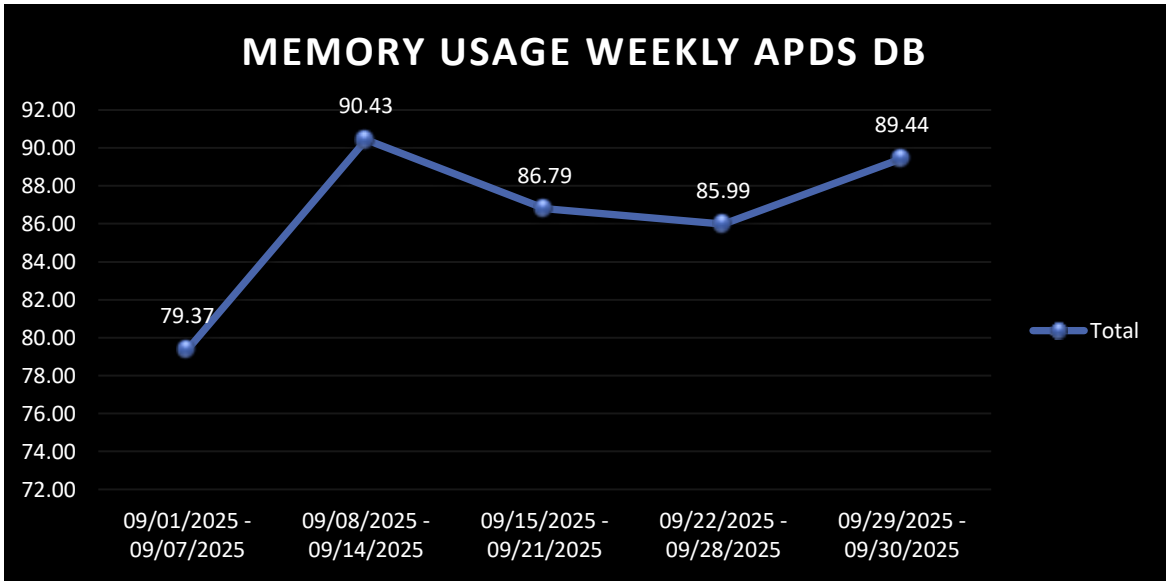


Figure 1 (Memory Usage weekly – APDS DB)

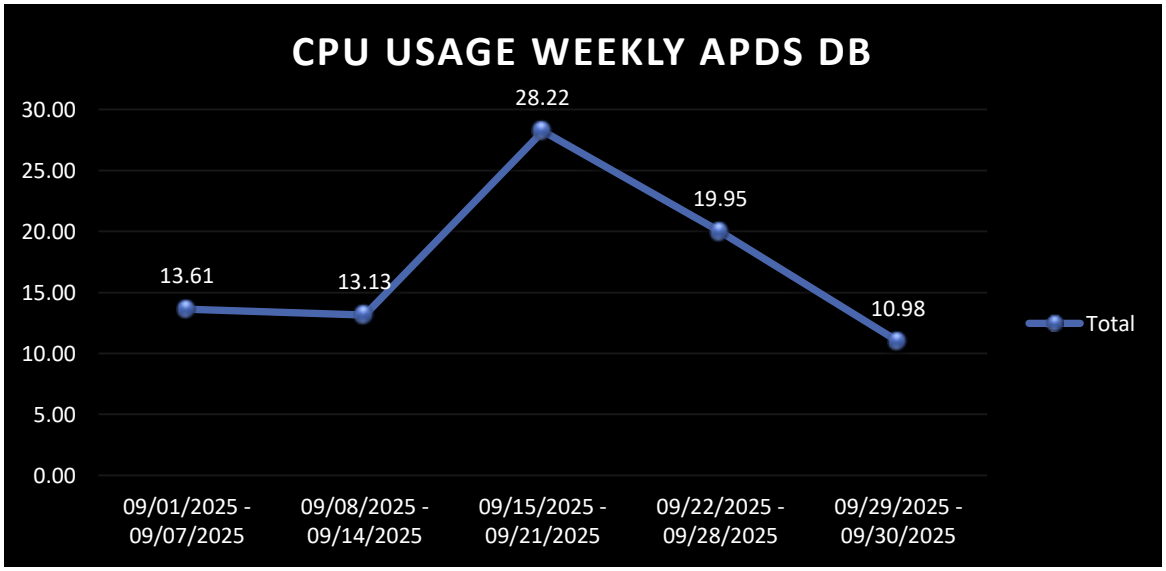


Figure 2 (CPU Usage weekly – APDS DB)

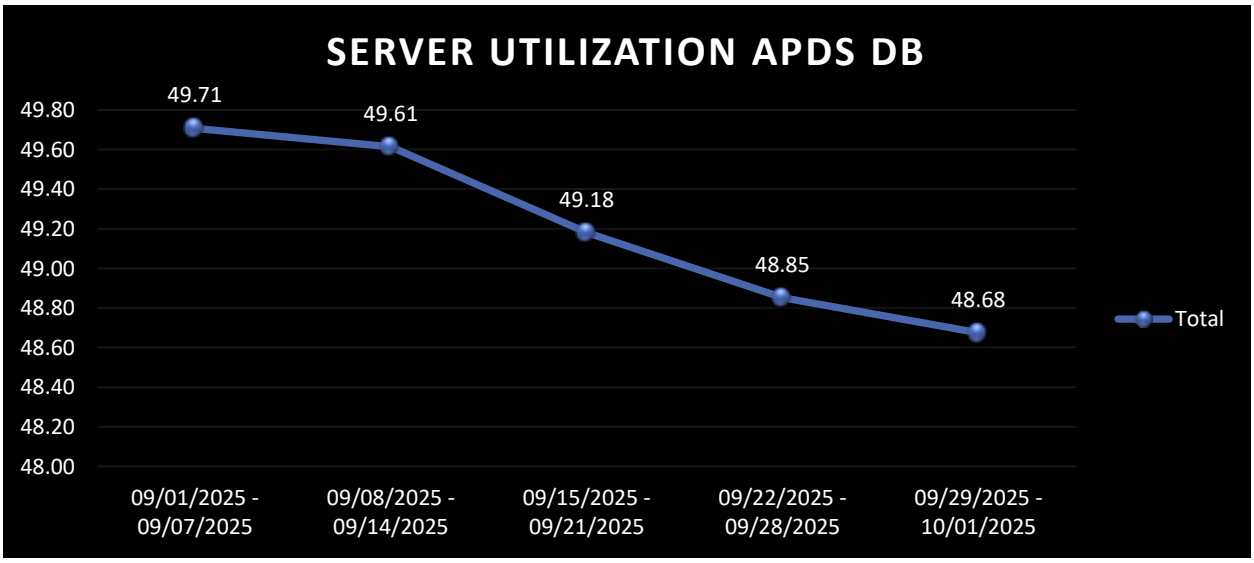


Figure 3 (Disk Usage weekly – APDS DB)

H. BOS CASA DB

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data 2. CPU is within the benchmark, while the Memory sometimes exceed due to high transactions volume	1. Disks storage are still manageable, need to monitor the usage for future allocations 2. CPU and Memory are still manageable but need to monitor the usage for future allocations.

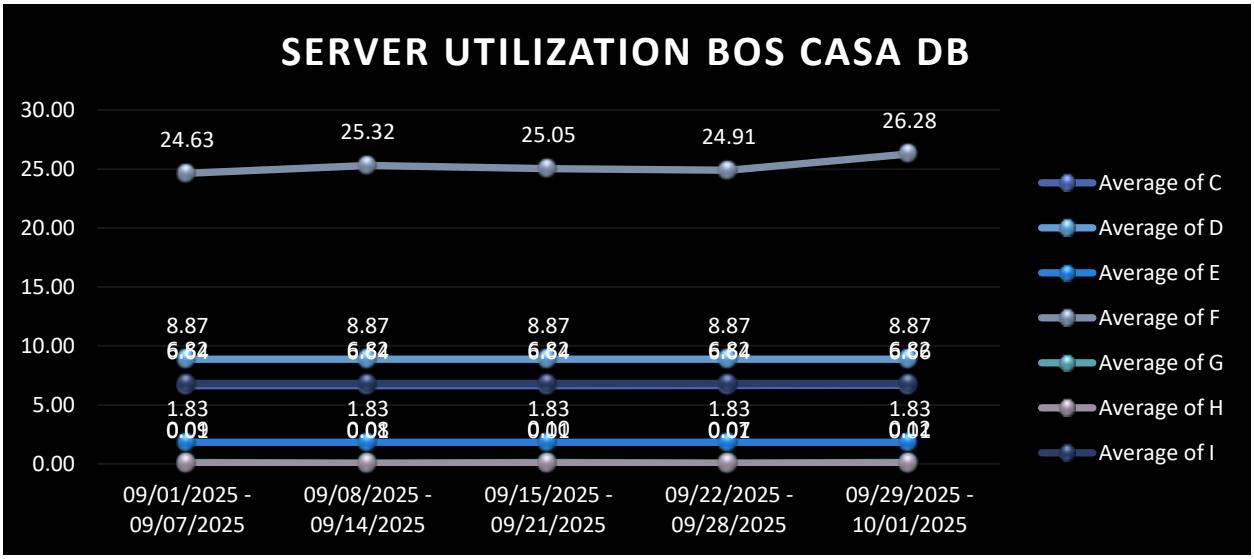


Figure 1 (Disk Usage weekly – BOS CASA DB)

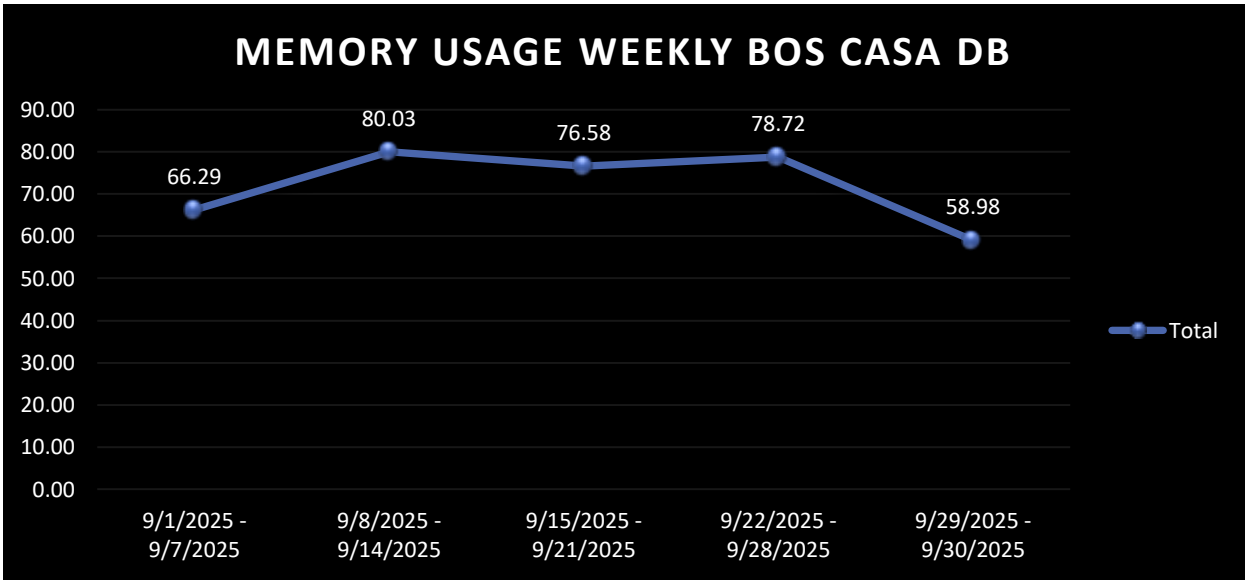


Figure 2 (Memory Usage weekly – BOS CASA DB)

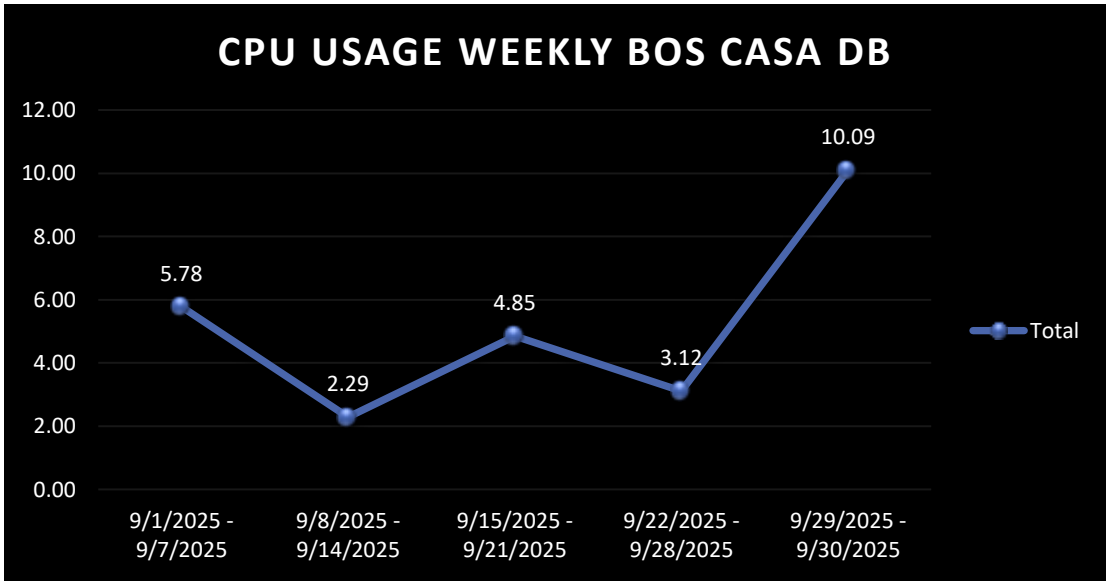


Figure 3 (CPU Usage weekly – BOS CASA DB)

I. Document Management System

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Partition disk is still sufficient to store data except for Drive D: exceed the benchmark due to its high transaction usage 2. CPU is within the benchmark, while the Memory exceed due to high transactions volume	1. Disks storage are still manageable, need to monitor the usage and allocate disk if needed for future allocations 2. CPU is still manageable but the Memory exceeded, need to monitor the usage for future allocations. Add Memory to avoid slowdown of server.

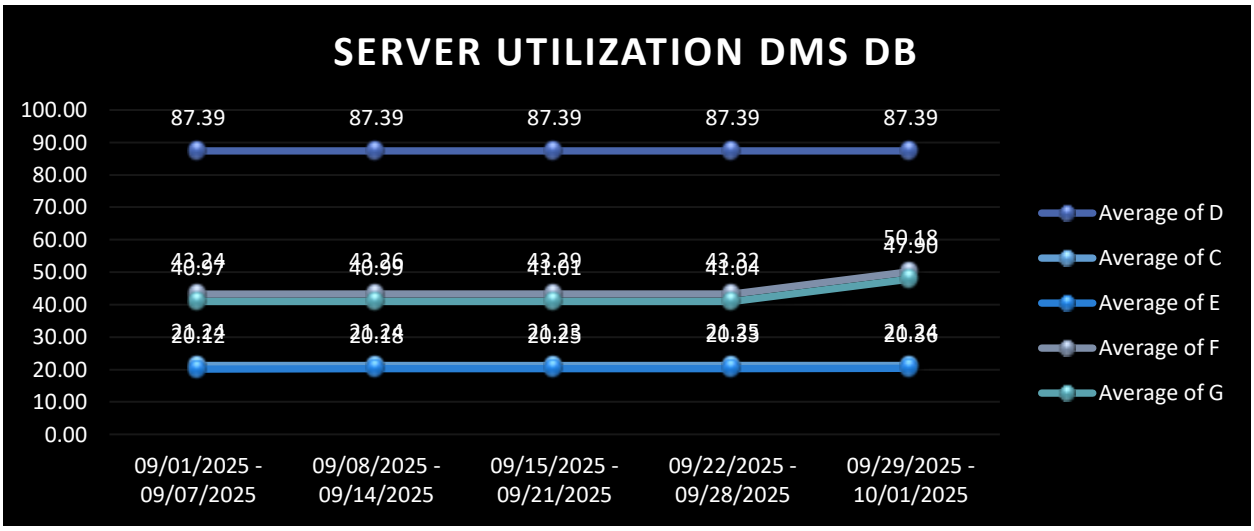


Figure 1 (Disk Usage weekly – DMS DB)

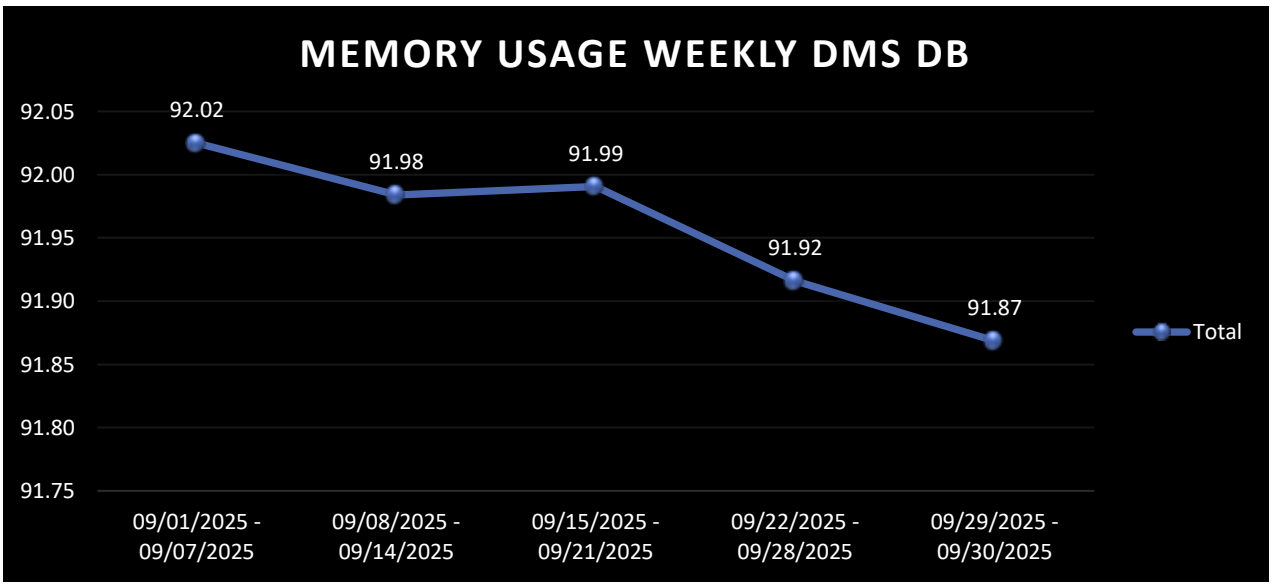


Figure 2 (Memory Usage weekly – DMS DB)

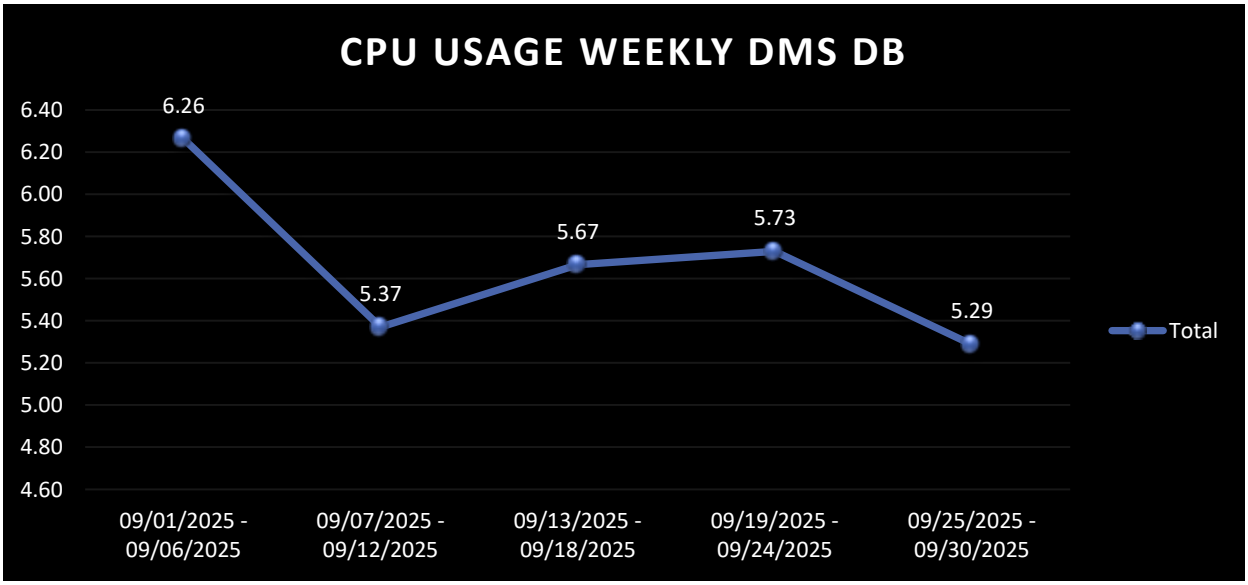


Figure 3 (CPU Usage weekly – DMS DB)

J. AMLA DB

Capacity Type	Current Capacity Analysis	Planned/Expected Growth and Recommendations
1.Storage Disk 2.CPU and Memory	1. Disk is still within the benchmark 2. CPU and Memory are within the benchmark	1. Disks storage are still manageable, need to monitor the usage and add disk if needed for future allocations 2. CPU and Memory are still manageable but need to monitor the usage for future allocations. Upgrade of Server is necessary.

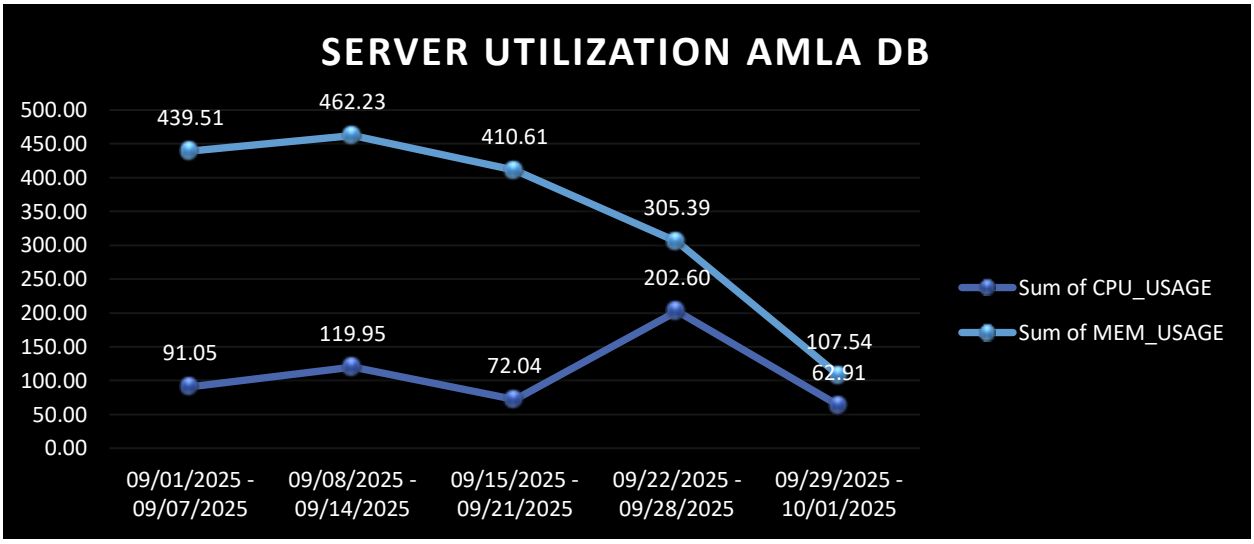


Figure 1 (Disk Usage weekly – AMLA DB)

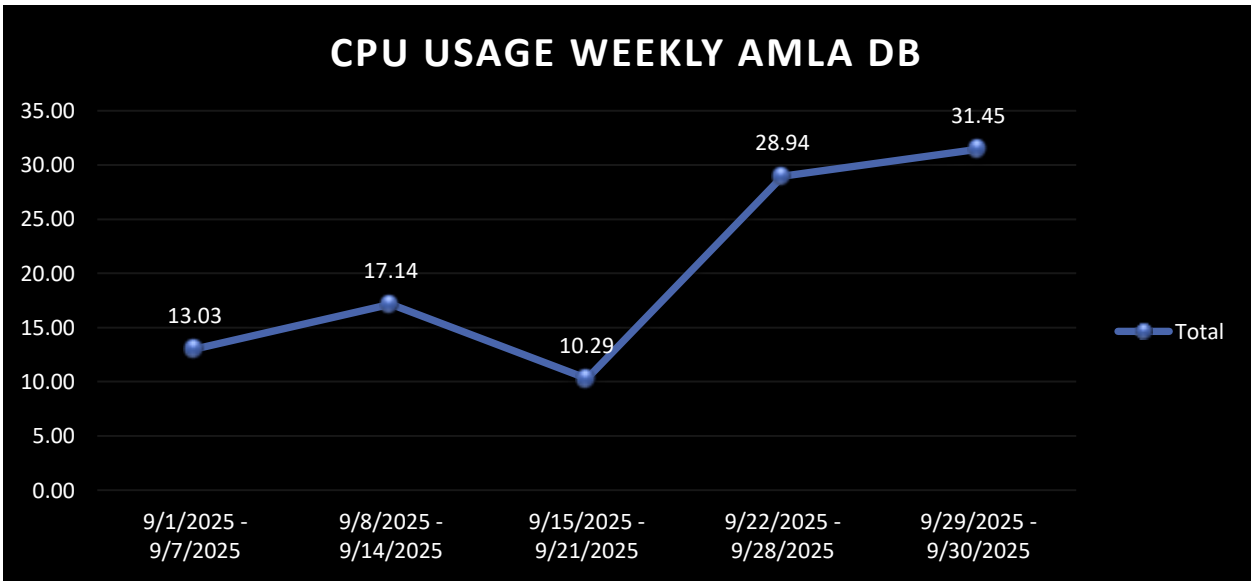


Figure 2 (CPU Usage weekly – AMLA DB)

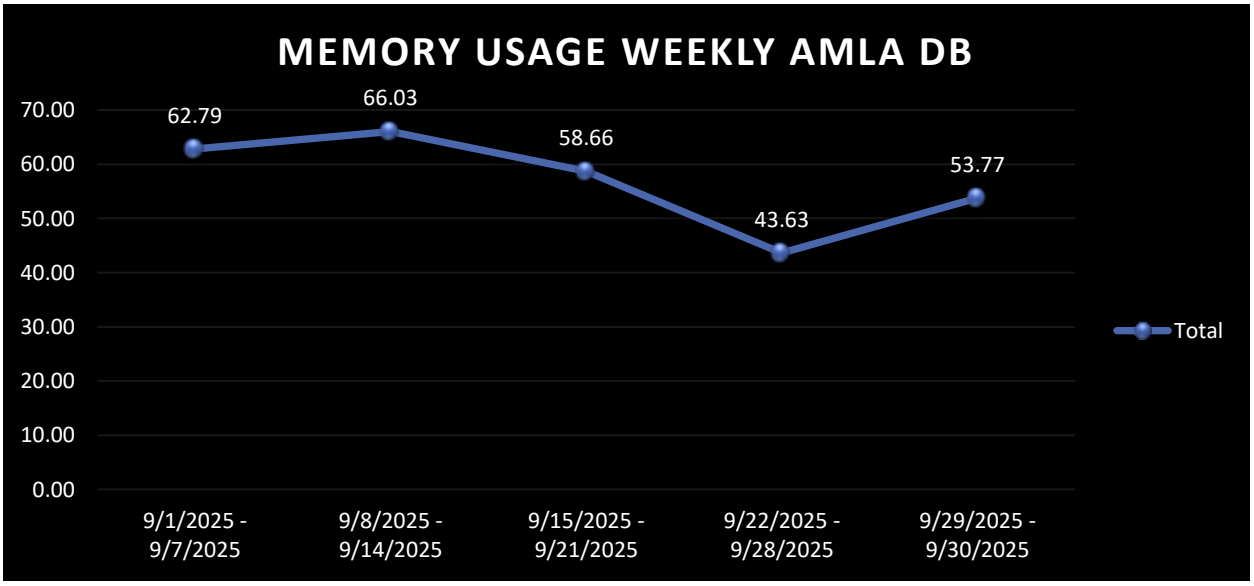


Figure 3 (Memory Usage weekly – AMLA DB)

7. CAPACITY PLANNING SUMMARY

- Below are items that need to be monitored and statistics to be collected to monitor the growth and forecast the future needs of the infrastructure and likewise to strategize the recommendation depending on the level of needs.

Area/Item Monitored	Capacity Requirements	%Increase needed per year	Capacity Thresholds	Response Plan/Strategy
Web, Apps, DB (Finacle Disk)	2TB of HDD partitioned in different directories based on the level of needs.	At least 10% increase per year needed or it depends on the usage and how the transactions will increase on a yearly basis.	75% (See Figures for Web, Apps and DB)	If the threshold reaches its benchmark, do archiving and delete old logs and files to free up space. It's also possible to add disk space if budget permits.
ATM Switch DB (Disk)	1TB of HDD partitioned in different directories based	At least 10% increase per year needed or it depends on the	75% (See Figures for ATM DB)	If the threshold reaches its benchmark, do archiving and

	on the level of needs.	usage and how the transactions will increase on a yearly basis.		delete old logs and files to free up space. It's also possible to add disk space if budget permits.
Aperta CICS DB (Disk)	1TB of HDD partitioned in different directories based on the level of needs.	At least 10% increase per year needed or it depends on the usage and how the transactions will increase on a yearly basis.	75%(See Figures for CICS DB)	If the threshold reaches its benchmark, do archiving and delete old logs and files to free up space. It's also possible to add disk space if budget permits.
Aperta PBM(Disk)	1TB of HDD partitioned in different directories based on the level of needs.	At least 10% increase per year needed or it depends on the usage and how the transactions will increase on a yearly basis.	75%(See Figure for PBM)	If the threshold reaches its benchmark, do archiving and delete old logs and files to free up space. It's also possible to add disk space if budget permits.
Web, Apps and DB (Finacle CPU and Memory)	For CPU at least 8 cores and 64GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis	75% (See Figures for Web, Apps and DB)	If Threshold reaches its benchmark, try to investigate what the cause of high usage of CPU and RAM and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
ATM Switch DB (CPU and Memory)	For CPU at least 8 cores and 64GB of RAM per server.	Depends on the usage and how the transactions	75% (See Figures for ATM DB)	If Threshold reaches its benchmark, try to

		will increase on a yearly basis.		investigate what the cause of high usage of CPU and RAM and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
Aperta CICS DB	For CPU at least 6 cores and 32GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis.	75%(See Figures for CICS DB)	If Threshold reaches its benchmark, try to investigate what the cause of high usage of CPU and RAM and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
Aperta PBM	For CPU at least 6 cores and 32GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis.	75%(See Figures for PBM)	If Threshold reaches its benchmark, try to investigate what the cause of high usage of CPU,RAM and Disk and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
APDS DB	For CPU at least 6 cores and 32GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis.	75% (See Figures for APDS DB)	If Threshold reaches its benchmark, try to investigate what the cause of high

				usage of CPU and RAM and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
BOS CASA DB	For CPU at least 6 cores and 32GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis.	75% (See Figures for BOS CASA DB)	If Threshold reaches its benchmark, try to investigate what the cause of high usage of CPU,RAM and Disk and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
Document Management System DB	For CPU at least 6 cores and 32GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis.	75% (See Figures for DMS DB)	If Threshold reaches its benchmark, try to investigate what the cause of high usage of CPU,RAM and Disk and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.
AMLA DB	For CPU at least 6 cores and 32GB of RAM per server.	Depends on the usage and how the transactions will increase on a yearly basis.	75% (See Figures for AMLA DB)	If Threshold reaches its benchmark, try to investigate what the cause of high usage of

				CPU,RAM and Disk and do fine tuning. If high statistics show on consistently basis then, try to make an upgrade if budget permits.