

**NATIONAL INSTITUTE FOR SMART GOVERNMENT
ON BEHALF OF
THE GOVERNMENT OF THE DEMOCRATIC SOCIALIST REPUBLIC OF
SRI LANKA**

Ministry of Digital Economy

BIDDING DOCUMENT – SCHEDULE OF REQUIREMENTS

Volume 02 of 03 - Annexure 1A: As-Is Functional System

Two Stage Bidding Procedure

FOR THE

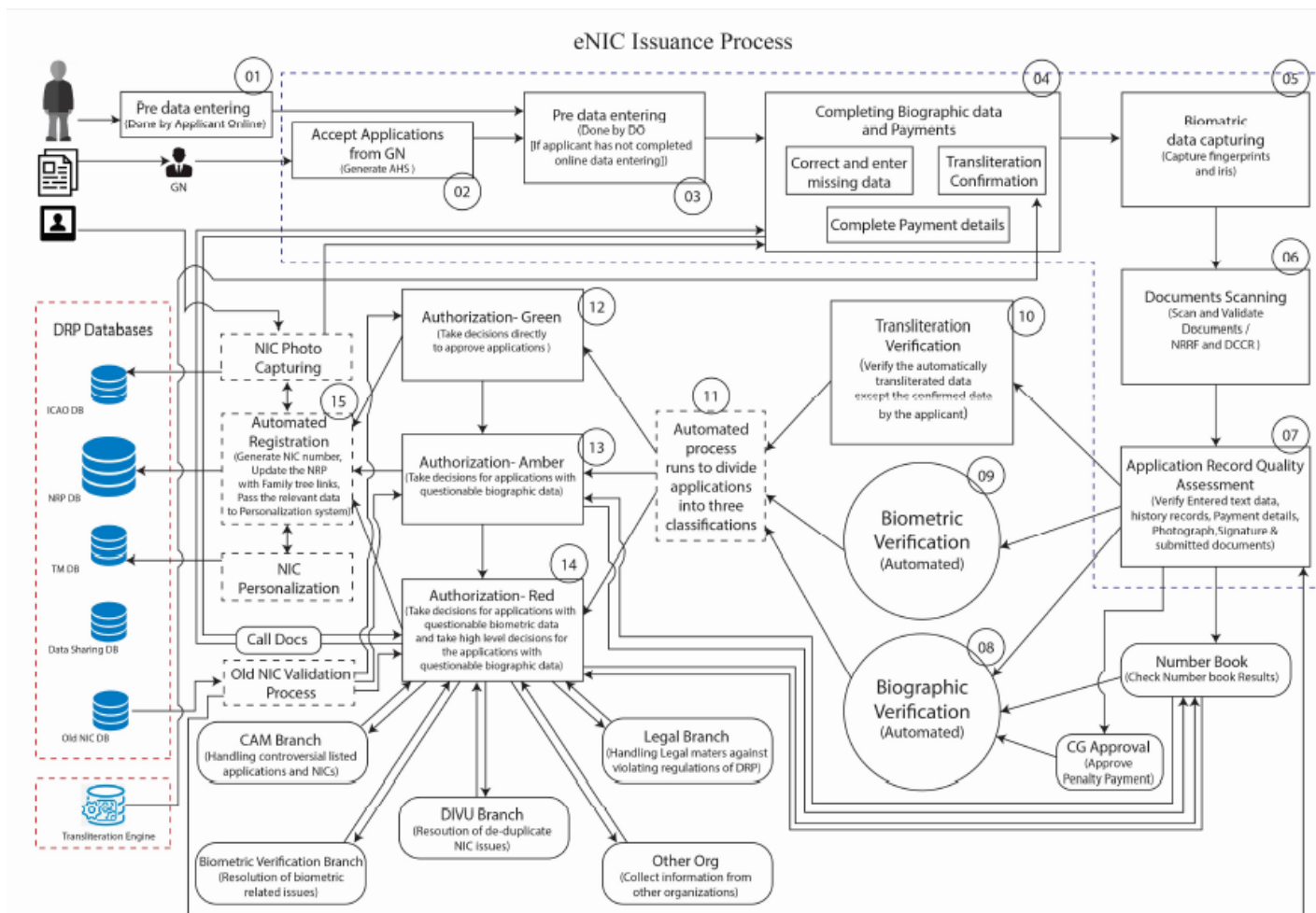
**APPOINTMENT OF A MASTER SYSTEM INTEGRATOR (MSI) FOR
DEVELOPMENT, IMPLEMENTATION AND MAINTENANCE OF THE “UNIQUE
DIGITAL IDENTITY (SL-UDI) PROJECT” OF GOVERNMENT OF SRI LANKA**

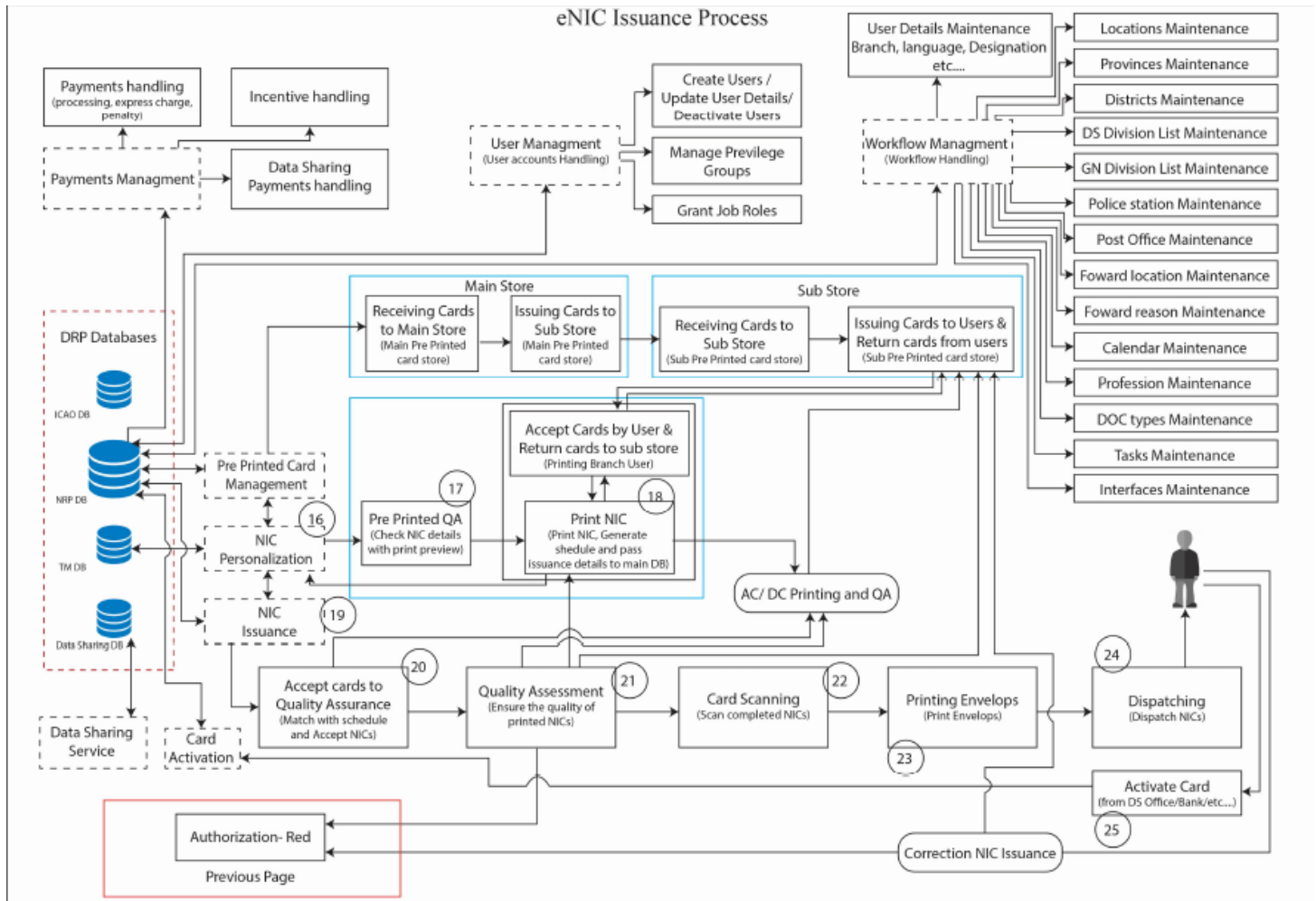
INVITATION FOR BIDS No: NISG/SLUDI-2025

June, 2025

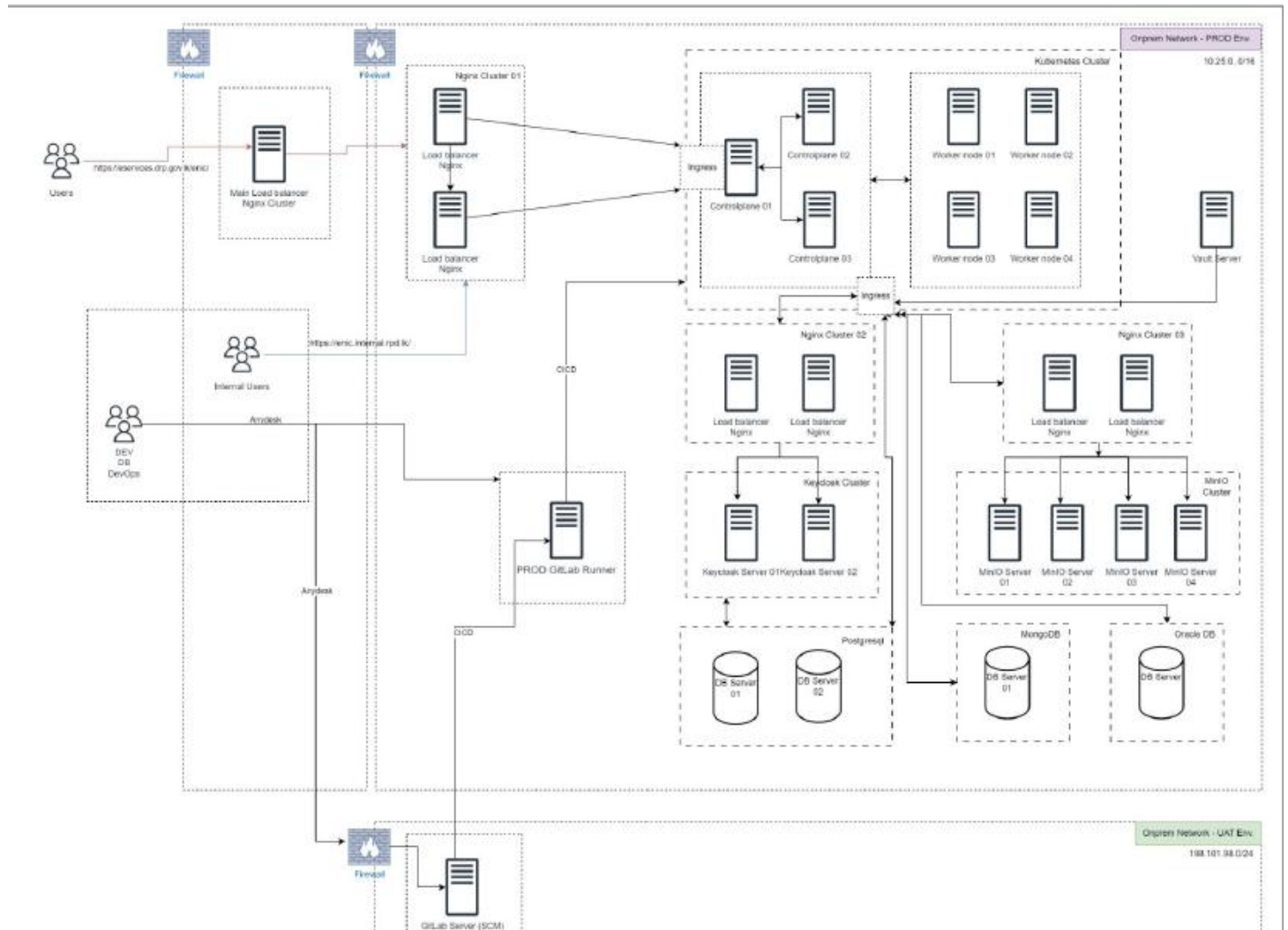
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1.2 Architecture Design of Application, DC and DR



DRP-DS unit carries out following activities with respect to the Enrolment of citizens prior to Registration of a citizen in National Register of Persons (NRP).

1. Capturing applicant's biographic data,
2. Capturing biometric data (inclusive of all finger impressions of both hands, Iris of both eyes and the facial image in digital form),
3. Scanning and digitization of the supporting documents,
4. Printing of relevant receipts and acknowledgement letters.



To facilitate citizens' enrolment process activities, several ICT related equipment/devices have been deployed at every Enrolment Cluster.

	Equipment / Device	No. of Units
1	Computer System	02
2	Touch Display Monitor	02
3	Document Scanner	02
4	QR Reader	02
5	Document Printer	02
6	Live Scanner - Finger capturing	02
7	Iris Scanner (proposed)	02
8	Camera - Face capturing	02
9	Signature Pad	02
10	USB Hub	02
11	Power Distribution Unit	02
12	POS Device – Card Payment	01
13	Thermal Printer – Receipt Printing	01
14	IP Phone	01
15	PoE Network Switch	01
16	Backup Network Switch	01
17	VPN Router	01
	Total No. of Devices	28

1.5 System Software and COTS Products

1.5.1 Existing System Software and COTS Products

- ICAO Photo Capturing System (e-photo studio)
- IC Personalization System (Track Master)
- Citizens Registration System (e-REGS)
- Online Payment System (e-Payments)
- Automatic Biometric Identification System (ABIS)
- Call Center Solution

1.5.2 Integrated H/W Devices

- Fingerprint Scanner
- Document Scanner
- Web / IP Camera
- Signature Pad
- ABIS
- Touch Screen Monitor

1.5.3 Technology Stack Overview

- Leveraging Open-Source Community Technologies
- Programming Languages
 - Java / Python / JavaScript
- Databases & Storages including encryption facility
 - PostgreSQL / MongoDB / Minio (Similar to AWS S3)
- Framework & Libraries
 - Spring Boot / React / JPA
- Integration
 - RESTful API Integration
- Redis
 - Speed up the application frequently access data in memory reduce the load on the backend database to improving performances
- Kafka
 - Enables seamless flow of data in real time manner to get live updates to dashboards and data updates instantly

1.5.4 Data Protection & Security

- Token based Authentication & Authorization with Keycloak
- Role based Access Control
- Hypertext Transfer Protocols (HTTPS)
- Mutual Transport Layer Security (mTLS)
- PostgreSQL TDE enable (Transparent Data Encryption)

1.5.5 DevOps & Infrastructure

- Kubernetes
- Gitlab
- HashiCorp
- Nginx
- Grafana

1.6 Capacity Utilization Report

1.6.1 Capacity Utilization Report of Hardware Infrastructure

- **Production Environment**

- VMware vSphere Cluster
- All-Flash Storage
- DR Environment
 - VMware vSphere Cluster
 - Hybrid Storage

1. Production - Active

a. VMware vSphere Environment

Utilization shown below from a 3-node cluster level.

Total CPU allocated: 402.19 GHz (Values taken from a total of 288 vCPUs in a the 3-node cluster). Average utilization shown at the time these values were recorded,

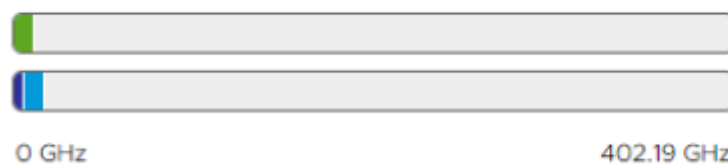
Capacity and Usage

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CPU

14.57 GHz used **402.19 GHz** allocated

Cluster CPU



Active 11.83 GHz

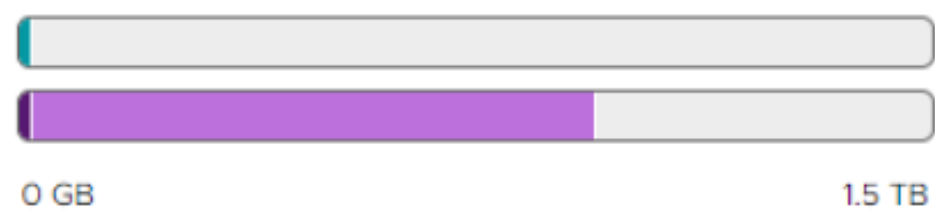
Consumed by vCLS 300 MHz

Consumed by other 11.77 GHz

Capacity 402.19 GHz

RAM Utilization taken from the 3-node cluster. Each node has 512 GB of RAM and a total of 1.5 TB available. Following chart refers to current utilization,

Cluster Memory

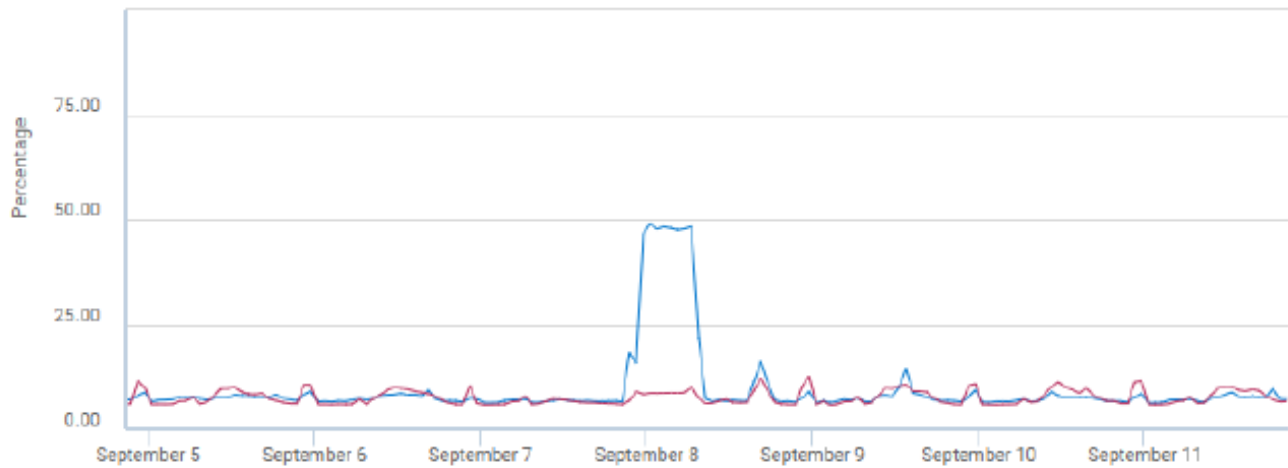


Overhead	6.63 GB
Consumed by vCLS	300 MB
Consumed by other	965.29 GB
Capacity	1.5 TB

- b. Capacity shown below for the All-Flash storage appliance connected to the VMware vSphere cluster.

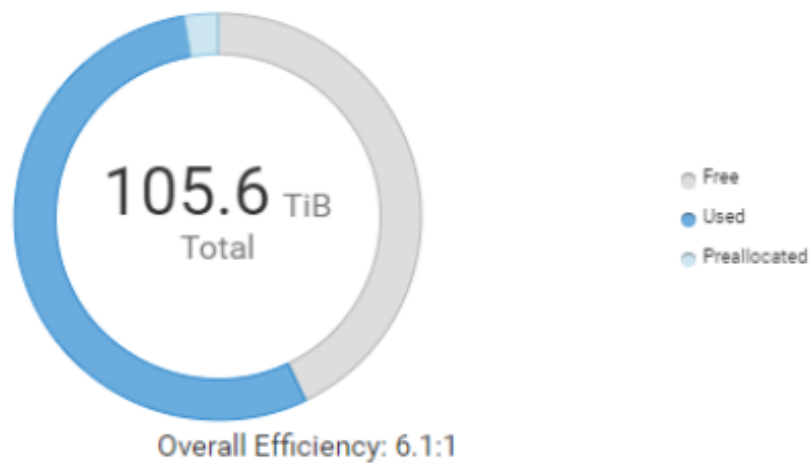
- i. Average CPU utilization shown below for the past 7 Days for both controllers.

SYSTEM - CPU UTILIZATION



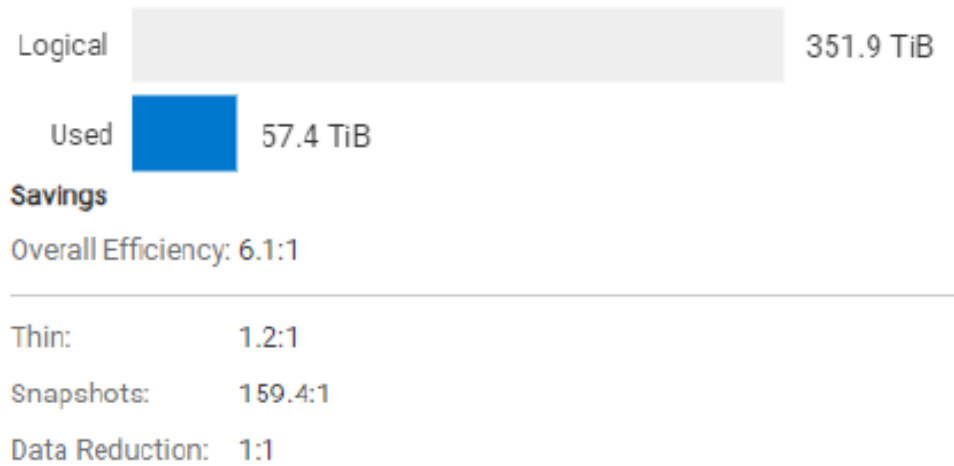
- ii. Currently available capacity utilization

SYSTEM CAPACITY



iii. Storage efficiency values shown applying data de-duplication and compression.

SYSTEM EFFICIENCY



2. DR – Passive

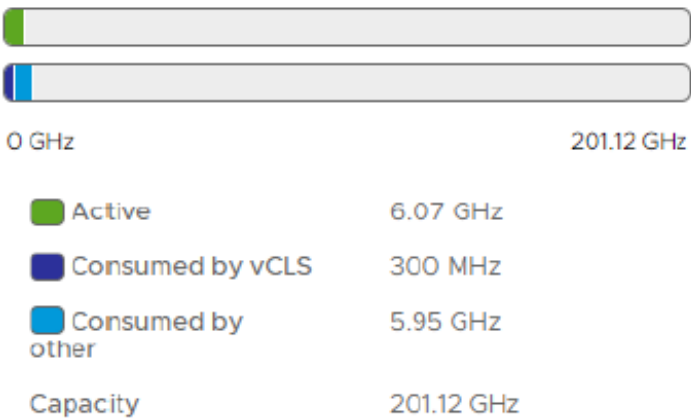
a. VMware vSphere Environment

Utilization shown below from a 3-node cluster.

Total CPU allocated: 201.12 GHz (Values taken from a total of 192 vCPUs in a the 3-node cluster). Average utilization shown at the time these values were recorded,

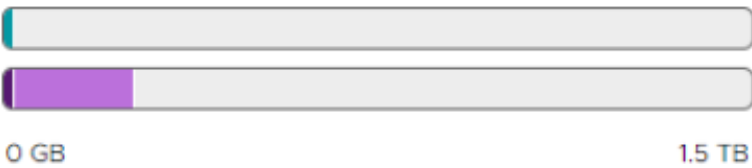


Cluster CPU



RAM Utilization taken from the 3-node cluster. Each node has 512 GB of RAM and a total of 1.5 TB available. Following chart refers to current utilization,

Cluster Memory

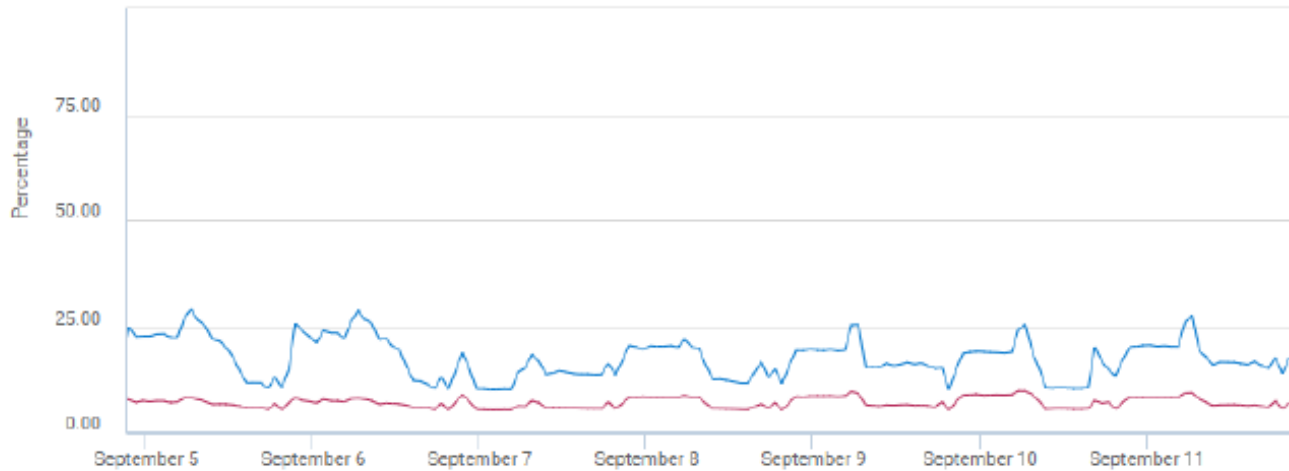


Overhead	1.87 GB
Consumed by vCLS	300 MB
Consumed by other	251.31 GB
Capacity	1.5 TB

b. Capacity shown below for the hybrid storage appliance connected to the DR VMware vSphere cluster.

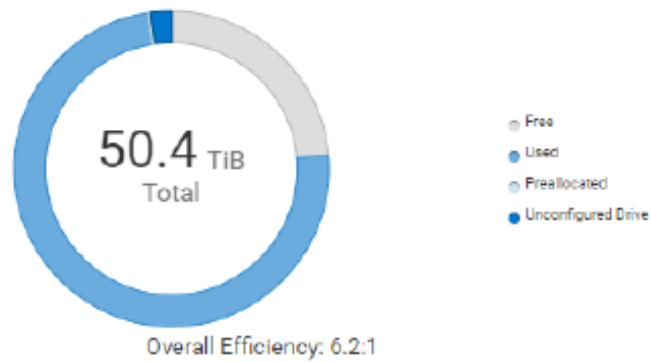
i. Average CPU utilization shown below for the past 7 Days for both controllers.

SYSTEM - CPU UTILIZATION



ii. Currently available capacity utilization

SYSTEM CAPACITY



iii. Storage efficiency values shown applying data de-duplication and compression.

SYSTEM EFFICIENCY

