VAST As-Built Report

Customer Deployment Documentation

Cluster: selab-var-202
PSNT: selab-var-202
Release: release-5.3.2-sp6-1980891
Management IP: 10.143.11.202

CBox Hardware: supermicro_gen5_cbox, two dual-port NICs
CBox Quantity: 2
DBox Hardware: ceres_v2
DBox Quantity: 1
Switch Hardware: MSN3700-VS2FC
Switch Quantity: 2

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1. Executive Summary

This VAST As-Built Report provides a comprehensive technical documentation of the deployed VAST Data cluster infrastructure, configuration, and operational status. The report serves as a critical reference for system administrators, storage engineers, and technical stakeholders to understand the current state of the cluster deployment, validate configuration compliance, and support ongoing operations and troubleshooting. The Executive Summary consolidates key operational metrics, hardware inventory, and cluster health indicators into high-level overview tables that enable rapid assessment of cluster status and capacity utilization.

Cluster Overview

Description	Value
ID	1
Name	selab-var-202
Management VIP	10.143.11.202
URL	https://10.143.11.202/api/v7/clusters/1
Build	release-5.3.2-sp6-1980891
PSNT	selab-var-202
GUID	c25e594c-cc58-5c4c-abe8-72e8a29873f9
Uptime	13 days, 17:10:59.551257
Online Since	2025-10-07T23:05:33.766226Z
Deployed	2025-08-07T17:27:50.188871Z

Hardware Overview

Description	Value
CBoxes	2
CNodes	2
DBoxes	1
DNodes	2
Switches	2
Leaf	2
Spine	0

2. Cluster Information

The Cluster Information section provides detailed operational status and configuration parameters for the VAST Data cluster. This section captures essential cluster metadata including cluster identification, operational state, management network configuration, and feature flags that define the cluster's capabilities and current operational mode. The information presented here is critical for understanding the cluster's current operational status, validating proper configuration, and supporting troubleshooting activities. This data is collected directly from the cluster's management API and represents the real-time operational state of the system.

Cluster Name: selab-var-202

Function	Status
State	ONLINE
SSD RAID State	HEALTHY
NVRAM RAID State	HEALTHY
Memory RAID State	HEALTHY
Leader State	UP
Leader CNode	cnode-3-5
Management CNode	cnode-3-5
Management Inner VIP	172.16.4.202
Management Inner VIP CNode	cnode-3-5
Enabled	Yes
Similarity Enabled	No
Deduplication Active	Unknown
Write-Back RAID Enabled	Yes
Write-Back RAID Layout	DATA_6_PARITY_2
DBox HA Support	No
Rack Level Resiliency	No
Metrics Disabled	No

3. Hardware Summary

The Hardware Summary section provides comprehensive inventory and operational status of all physical hardware components within the VAST Data cluster. This section includes detailed information about storage capacity utilization, compute nodes (CNodes), data nodes (DNodes), and their respective hardware specifications, operational status, and physical rack positioning. The capacity metrics show both logical and physical storage utilization, enabling capacity planning and performance optimization. Hardware inventory data is essential for understanding cluster scale, identifying hardware failures, planning maintenance windows, and ensuring proper rack organization for optimal cooling and cable management.

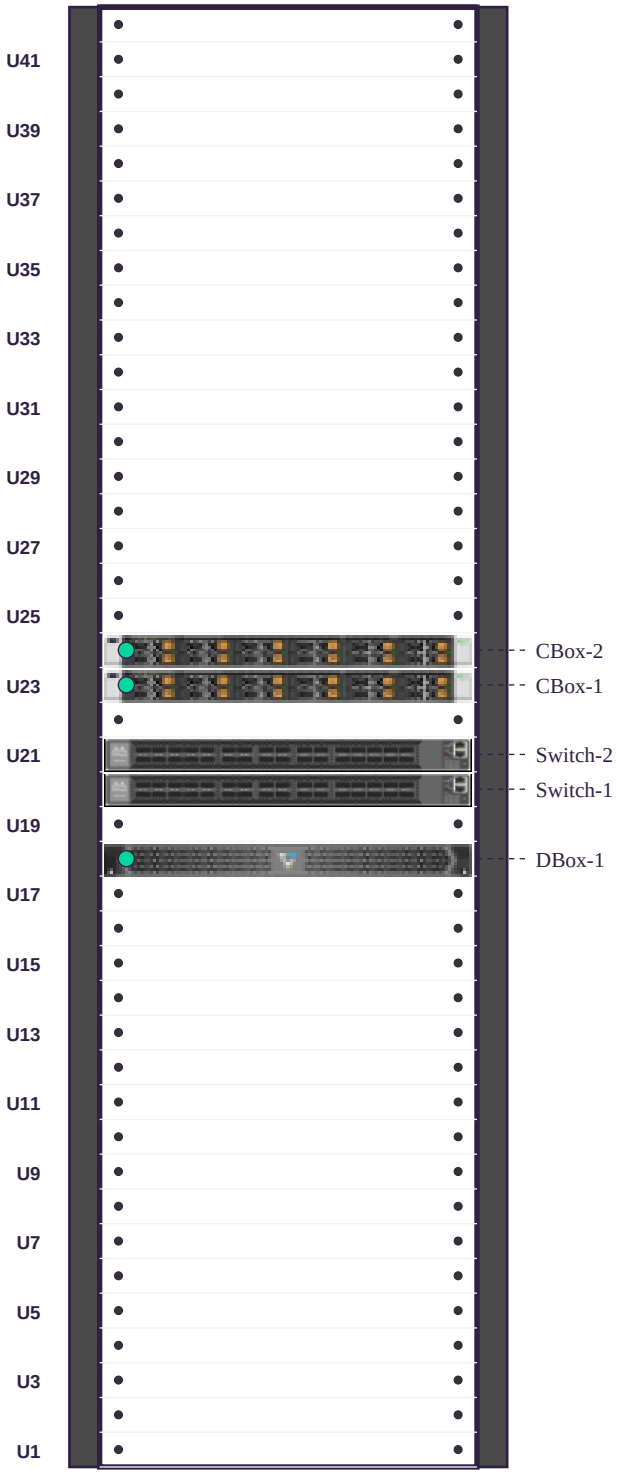
Storage Capacity

Metric	Value
Usable Capacity	223 TB
Free Usable Capacity	88 TB
Data Reduction Ratio (DRR)	1.3:1
Physical Space	282 TB
Physical Space In Use	171 TB
Free Physical Space	111 TB
Physical Space In Use %	61%
Logical Space	297 TB
Logical Space In Use	180 TB
Free Logical Space	117 TB
Logical Space In Use %	61%

Hardware Inventory

ID	Model	Name/Serial Number	Status	Position
CB-1	supermicro_gen5_cbox, two dual-port NICs	cbox-S929986X4A20495	ACTIVE	U23
CB-2	supermicro_gen5_cbox, two dual-port NICs	cbox-S929986X5306345	ACTIVE	U24
DB-1	ceres_v2	dbox-515-25032600200191	ACTIVE	U18
SW-1	MSN3700-VS2FC	MT2450J01JQ7	OK	U20
SW-2	MSN3700-VS2FC	MT2450J01JPY	OK	U21

4. Physical Rack Layout



5. Network Configuration

The Network Configuration section provides comprehensive documentation of all network-related settings and connectivity parameters for the VAST Data cluster. This section includes cluster-wide network configuration, individual node network settings for both compute nodes (CNodes) and data nodes (DNodes), and network service configurations such as DNS and NTP. The network configuration data is essential for understanding cluster connectivity, troubleshooting network issues, validating network security settings, and ensuring proper network segmentation. This information supports network administrators in maintaining optimal network performance and security posture for the storage infrastructure.

Network Configuration

Setting	Value
Management VIPs	10.143.11.202
External Gateways	10.143.254.254
DNS Servers	10.140.3.248
NTP Servers	10.140.0.17
External Netmask	255.255.0.0
Auto Ports Ext Interface	outband
Ethernet MTU	9000
InfiniBand MTU	65520
IPMI Gateway	10.143.254.254
IPMI Netmask	255.255.0.0
B2B IPMI	False

CNode Network Configuration

ID	Hostname	Mgmt IP	IPMI IP	VAST OS	VMS Host
1	se-az-arrow-cb2-cn-1	10.143.11.61	10.143.11.62	12.14.19-1809895	False
2	se-az-arrow-cb2-cn-2	10.143.11.63	10.143.11.64	12.14.19-1809895	True

DNode Network Configuration

ID	Hostname	Mgmt IP	IPMI IP	VAST OS	Position
3	se-az-arrow-db2-dn-1	10.143.11.21	10.143.11.22	12.14.19-1809895	right
4	se-az-arrow-db2-dn-2	10.143.11.23	10.143.11.24	12.14.19-1809895	left

6. Switch Configuration

The Switch Configuration section provides detailed information about the network switches that form the fabric interconnecting the VAST cluster nodes. This section documents switch hardware specifications, port configurations, operational status, and connectivity details. Understanding the switch topology is critical for network troubleshooting, capacity planning, and validating proper network segmentation. The port-level details enable network administrators to trace physical connectivity, identify unused ports, and plan for cluster expansion.

Switch 1 Details

se-var-1-1 Configuration

Description	Value
Hostname	se-var-1-1
Model	MSN3700-VS2FC
Serial Number	MT2450J01JQ7
Firmware Version	5.13.1.1001
Management IP	10.143.11.153
Switch Type	Cumulus Linux
State	OK
Configuration Status	Configured
Role	switch
Total Ports	32
Active Ports	32
Port MTU	9216

se-var-1-1 Port Summary

Port Count	Speed	Port Numbers
18	200G	swp1, swp2, swp5, swp6, swp9, swp10, swp13, swp14, swp17, swp18, swp19, swp20, swp21, swp23, swp24, swp26, swp27, swp28
4	100G	swp29, swp30, swp31, swp32
10	Unconfigured	swp3, swp4, swp7, swp8, swp11, swp12, swp15, swp16, swp22, swp25

Switch 2 Details

se-var-1-2 Configuration

Description	Value
Hostname	se-var-1-2
Model	MSN3700-VS2FC
Serial Number	MT2450J01JPY
Firmware Version	5.13.1.1001
Management IP	10.143.11.154
Switch Type	Cumulus Linux
State	OK
Configuration Status	Not Configured
Role	Not Assigned
Total Ports	32
Active Ports	32
Port MTU	9216

se-var-1-2 Port Summary

Port Count	Speed	Port Numbers
18	200G	swp1, swp2, swp5, swp6, swp9, swp10, swp13, swp14, swp17, swp18, swp19, swp20, swp21, swp23, swp24, swp26, swp27, swp28
4	100G	swp29, swp30, swp31, swp32
10	Unconfigured	swp3, swp4, swp7, swp8, swp11, swp12, swp15, swp16, swp22, swp25

7. Port Mapping

The Port Mapping section provides detailed connectivity information showing which switch ports connect to which cluster nodes. This information is critical for troubleshooting network issues, validating cabling, and planning maintenance activities. The mapping uses standardized designations to clearly identify each connection point on both the switch side and node side.

Switch 1 Port-to-Device Mapping (10.143.11.153)

Switch 1 Port-to-Device Mapping

Switch Port	Node Connection	Network	Speed	Notes
SWA-P5	DB1-DN1-L	B	200G	Primary
SWA-P6	DB1-DN2-L	B	200G	Primary
SWA-P20	CB1-CN1-R	A	200G	Primary
SWA-P21	CB2-CN2-R	A	200G	Primary
SWA-P29	SWB-P29	A/B	100G	IPL/MLAG
SWA-P30	SWB-P30	A/B	100G	IPL/MLAG
SWA-P31	SWB-P31	A/B	100G	IPL/MLAG
SWA-P32	SWB-P32	A/B	100G	IPL/MLAG

Switch 2 Port-to-Device Mapping (10.143.11.154)

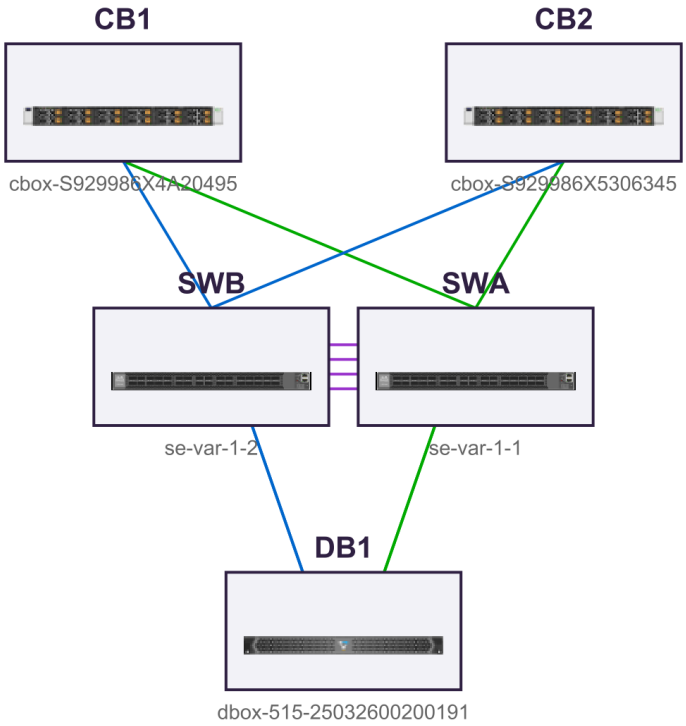
Switch 2 Port-to-Device Mapping

Switch Port	Node Connection	Network	Speed	Notes
SWB-P5	DB1-DN2-R	A	200G	Primary
SWB-P6	DB1-DN1-R	A	200G	Primary
SWB-P20	CB1-CN1-L	B	200G	Primary
SWB-P21	CB2-CN2-L	B	200G	Primary
SWB-P29	SWA-P29	A/B	100G	IPL/MLAG
SWB-P30	SWA-P30	A/B	100G	IPL/MLAG
SWB-P31	SWA-P31	A/B	100G	IPL/MLAG
SWB-P32	SWA-P32	A/B	100G	IPL/MLAG

8. Logical Network Diagram

The Logical Network Diagram provides a visual representation of the cluster's network topology, illustrating the connectivity between compute nodes (CBoxes), data nodes (DBoxes), network switches, and the customer network. This diagram shows the redundant network paths, switch interconnections, and how data flows through the storage infrastructure. Understanding the logical network topology is essential for network planning, troubleshooting connectivity issues, validating redundancy configurations, and ensuring optimal network performance across the storage cluster.

■ Green = Switch A connections | ■ Blue = Switch B connections | ■ Purple = IPL/MLAG connections



9. Logical Configuration

The Logical Configuration section documents the logical organization and data protection policies configured within the VAST Data cluster. This section provides visibility into tenant configurations, data views, access policies, VIP pools, and data protection settings including snapshot programs and protection policies. Understanding the logical configuration is crucial for data governance, access control validation, backup and recovery planning, and ensuring compliance with organizational data protection requirements. This information enables administrators to verify proper data isolation, validate backup schedules, and ensure that data protection policies align with business continuity objectives.

Resource	Value
Tenants	16 tenants configured
Views	236 views configured
View Policies	78 policies configured
VIP Pools	14 pools configured
Data Protection Policies	7 policies configured

10. Security & Authentication

The Security & Authentication section provides comprehensive documentation of all security-related configurations and authentication mechanisms implemented within the VAST Data cluster. This section covers authentication services including Active Directory, LDAP, and NIS integration, as well as security features such as data encryption settings, external key management (EKM) configuration, and security policy enforcement. Understanding the security configuration is essential for compliance auditing, security posture assessment, access control validation, and ensuring that the storage infrastructure meets organizational security requirements and industry best practices. This information supports security administrators in maintaining a robust security framework for the storage environment.

Type	Description	Function	Value
Authentication	Active Directory	Enabled	True
Authentication	Active Directory	Domain	Unknown
Security	Encryption	Enabled	False
Security	Encryption	Type	INTERNAL
Security	Encryption	S3 AES Ciphers Only	Not Configured
Security	EKM	Servers	Not Configured
Security	EKM	Address	Not Configured
Security	EKM	Port	5696
Security	EKM	Auth Domain	Not Configured
Security	Secondary EKM	Address	Not Configured
Security	Secondary EKM	Port	5696