VAST Data As-Built Report

Customer Deployment Documentation

Report Generated: October 03, 2025
Cluster PSNT: selab-var-204
Report Version: 1.0
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Executive Summary

This document provides comprehensive as-built documentation for the VAST Data cluster deployment completed for **Customer Name**. The cluster has been successfully installed, configured, and validated according to VAST Data best practices and customer requirements.

Cluster Overview

- **Cluster Name:** selab-var-204
- **Cluster PSNT:** selab-var-204
- **VAST OS Version:** 5.3.1.1.10603406698381149702
- **Cluster GUID:** 127db70c-0197-5f4f-8af8-44bead61cda2
- **Deployment Date:** October 03, 2025
- **Total Usable Capacity:** To be determined
- **Licensed Capacity:** To be determined
- **Performance Rating:** To be determined
- **High Availability:** To be determined

Features in Use

- **Protocols:** NFS v3/v4, SMB 3.x, Object, and Block
- **Data Services:** Snapshots, Quotas, QoS
- **Security:** Active Directory Integration, LDAP Authentication

Cluster Admin Access

- **VMS VIP (GUI Access):** https://selab-var-204.local
- **Default VMS Username/Password:** admin/[password]
- **Cluster API Access:** https://selab-var-204.local/docs

Architecture Overview

The VAST cluster implements a Direct Attached Share Everything (DASE) architecture where frontend CBoxes (compute) connect to backend DBoxes (storage) through a high-speed NVMe/InfiniBand switch fabric. This disaggregated design provides optimal performance and scalability.

Architecture Principles

• **CNodes** (compute nodes) handle all data processing and protocol services
• **DNodes** (storage nodes) provide NVMe flash storage capacity
• **Switch Fabric** enables any CNode to access any DNode (share everything)
• **Customer Network** connectivity via secondary CNode NICs or switch MLAG
• **Management Network** separated from data plane for security

Physical Hardware Inventory

CBoxes (Compute)

Component	Model	Serial Number	Rack Position	CNodes	Management IP
CBox-1	VAST-CX4000	VST251003001	U25	4	192.168.1.11
CBox-2	VAST-CX4000	VST251003002	U24	4	192.168.1.12
CBox-3	VAST-CX4000	VST251003003	U23	4	192.168.1.13

Total CNodes: 3
CNode Cable Type: Splitter
Required Ports per Switch: 1

DBoxes (Data)

Component	Model	Serial Number	Rack Position	DNodes	Management IP
DBox-100	VAST-DX8000	VST251003100	U18	4	192.168.1.120

Total DNodes: 2
DNode Cable Type: Straight
Required Ports per Switch: 2

Physical Layout Diagram

Rack Unit	Component	Type	Status	Serial Number
U25	cnode-6	supermicro_gen5_cbox, two dual-port NICs	ACTIVE	S929986X5306758
U25	CBox-1	VAST-CX4000	Unknown	VST251003001
U24	cnode-2	supermicro_gen5_cbox, two dual-port NICs	ACTIVE	S929986X5306720
U24	CBox-2	VAST-CX4000	Unknown	VST251003002
U23	cnode-3	supermicro_gen5_cbox, two dual-port NICs	ACTIVE	S929986X5306437
U23	CBox-3	VAST-CX4000	Unknown	VST251003003
U18	dnode-1	dbox-515-25042300200055	ACTIVE	C15-25042300200017
U18	dnode-2	dbox-515-25042300200055	ACTIVE	C15-25042300200021
U18	DBox-100	VAST-DX8000	Unknown	VST251003100

Rack Space Utilization:
• Total Rack Units Used: 4U
• Available Rack Space: 4U (for future expansion)
• Power Consumption: 2.0kW (estimated)
• Cooling Requirements: 8000 BTU/hr

Network Configuration

Switch Fabric Network

- **Fabric Type:** NVMe over Fabrics (NVMe-oF)
- **Transport Protocol:** RDMA over Converged Ethernet (RoCE v2)
- **Speed:** 100GbE per port (200GbE capable)
- **Redundancy:** A/B switch design with full mesh connectivity

Customer Network Integration

- **Primary Method:** Switch-to-switch MLAG connections
- **Alternative Method:** Secondary dual-port NICs from CNodes
- **Customer VLAN:** 100 (Production Data)
- **Internal Data VLAN:** 69

IP Address Allocation

Service	VIP Pool	IP Range	VLAN
NFS	nfs-pool	10.100.1.10-10.100.1.17	100
SMB	smb-pool	10.100.1.30-10.100.1.37	100
S3	s3-pool	10.100.1.50-10.100.1.57	100
Management	mgmt-pool	192.168.1.10-192.168.1.17	69

Switch Port Map and Cable Management

Port Assignment Standards

• **A Ports (Right-side):** Connect to Switch A (Bottom/Red)
• **B Ports (Left-side):** Connect to Switch B (Top/Orange)
• **Cable Labeling:** Format: [Node]-[Port]-SW[Switch]-[Port#]
  - Example: CN1-A-SWA-1 (CNode 1, A port, Switch A, Port 1)
  - Example: DN100-B-SWB-2 (DNode 100, B port, Switch B, Port 2)

Switch Configuration

• **Switch A (Bottom):** Serial# MT2113X12345, Ports 1-32
• **Switch B (Top):** Serial# MT2113X12346, Ports 1-32
• **Port Numbering:** Top row odd (1,3,5...31), Bottom row even (2,4,6...32)
• **Switch IPL Links:** 2x200GbE per Switch
• **Northbound Uplinks:** 4x100GbE per Switch to Customer Network

Cable Management

• **Cable Types:** Universal AF 200G & AF 2x100G
• **Connector Type:** QSFP56
• **Cable Length:** Varies by rack position (3 meters or longer)
• **Cable Management:** Professional routing with proper strain relief

Deployment Configuration

Cluster Services

• **DNS Servers:** 8.8.8.8, 8.8.4.4
• **NTP Servers:** pool.ntp.org
• **Active Directory:** Not configured
• **LDAP Server:** Not configured

Data Protection

• **Snapshot Retention:** 30 days (hourly), 90 days (daily)
• **Replication:** Not configured (future enhancement)
• **Backup Integration:** To be configured
• **Data Encryption:** Enabled or Unconfigured

Performance Tuning

• **QoS Policies:** Production (high), Development (medium), Archive (low)
• **Quotas:** Enabled per tenant with soft/hard limits
• **Deduplication:** Enabled 2:1 ratio
• **Compression:** Enabled 1.5:1 ratio

Validation and Testing

Enable Support Features

• **Call Home:** Enabled/Unconfigured
• **Uplink:** Enabled/Unconfigured
• **Remote Support (Teleport):** Enabled/Unconfigured
• **Support Bundle:** Uploaded/Pending

Connectivity Testing

• **All CNode-to-DNode paths:** ■ Verified
• **Customer network connectivity:** ■ Validated
• **Protocol access (NFS/SMB/S3):** ■ Confirmed
• **Management network access:** ■ Operational

Data Services Testing

• **Snapshot creation/deletion:** ■ Functional
• **Quota enforcement:** ■ Working as expected
• **QoS policy application:** ■ Traffic shaping confirmed
• **Active Directory authentication:** ■ User access validated

Support Information

Cluster Identification

- **Cluster PSNT:** selab-var-204
- **Support Contract:** Premium 24x7 (Contract #: SUP-2025-001234)
- **Technical Account Manager:** John Smith (jsmith@vastdata.com)
- **Support Portal:** https://support.vastdata.com

Emergency Contacts

- **VAST Support:** +1-800-VAST-DATA
- **Customer IT Contact:** Jane Doe (jane.doe@customer.com)
- **Professional Services:** Mike Johnson (mike.johnson@vastdata.com)

Documentation References

- **VAST Cluster Administrator Guide v5.3**
- **VAST API Reference Guide v7**
- **Customer Network Integration Guide**
- **Troubleshooting and Maintenance Guide**

Appendices

Appendix A: Configuration Files

• Cluster configuration backup: cluster-config-20251003.json
• Network configuration: network-config-20251003.yaml
• Security policies: security-policies-20251003.json

Appendix C: Maintenance Schedule

• Recommended maintenance windows
• Firmware update procedures
• Health check schedules

Report Generation Details

• **Automated Data Collection:** 5575% via VAST API v7
• **Manual Data Entry:** 44% (physical attributes, business information)
• **Generation Time:** 46 minutes 16 seconds
• **API Access:** Read-only credentials (security compliant)
• **Report Format:** PDF with embedded JSON metadata
• **Enhanced Features:** Enabled

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For questions or updates, contact Professional Services at ps@vastdata.com