

9.0 - Report: As-Built Report Generator

Report Example (Mock Data): VAST Data As-Built Report Generator

Customer Deployment Documentation

Report Generated: September 12, 2025

Cluster PSNT: VST-2025-AC-001234

Report Version: 1.0

Generated By: VAST As-Built Report Generator v1.0

Executive Summary

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

Cluster Overview

- **Cluster Name:** ACME-PROD-01
- **Cluster PSNT:** VST-2025-AC-001234
- **VAST OS Version:** 5.3.0-build-123456
- **Cluster GUID:** 12345678-abcd-1234-5678-123456789abc
- **Deployment Date:** September 10, 2025
- **Total Usable Capacity:** 1.17 PB
- **Licensed Capacity:** 1.20 PB
- **Performance Rating:** 264 GB/s throughput, 1.3M IOPS
- **High Availability:** 99.9989% Uptime

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://<VMS_VIP_API_output>>
- **Default VMS Username/Password:** admin/123456
- **Cluster API Access:** <https://<VMS_VIP_API_output>/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.

VAST Data 4x4 Cluster Architecture

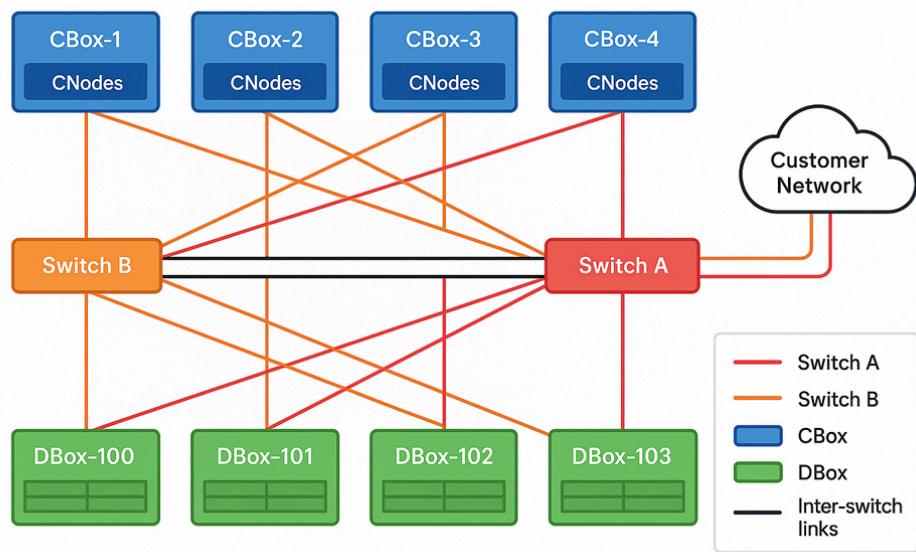


Figure 1: VAST 4x4 cluster architecture showing DASE connectivity model

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	VST24090 1001	U25-24	4	192.168.1.11
CBox-2	VAST-CX4000	VST24090 1002	U27-26	4	192.168.1.12
CBox-3	VAST-CX4000	VST24090 1003	U29-28	4	192.168.1.13
CBox-4	VAST-CX4000	VST24090 1004	U31-30	4	192.168.1.14

Total CNodes: 16

CNode Cable Type: Splitter

Required Ports per Switch: 8

DBoxes (Data)

Component	Model	Serial Number	Rack Position	DNodes	Management IP
DBox-100	VAST-DX8000	VST24090 1100	U18	4	192.168.1.21
DBox-101	VAST-DX8000	VST24090 1101	U17	4	192.168.1.22
DBox-102	VAST-DX8000	VST24090 1102	U16	4	192.168.1.23
DBox-103	VAST-DX8000	VST24090 1103	U15	4	192.168.1.24

Total DNodes: 16

DNode Cable Type: Straight

Required Ports per Switch: 16

Network Switches

Component	Model	Serial Number	Rack Position	Ports	Firmware
Switch A	Mellanox SN3700	MT2113X1 2345	U20	32x100Gb E	3.10.1000
Switch B	Mellanox SN3700	MT2113X1 2346	U22	32x100Gb E	3.10.1000

Switch Fabric: 100GbE with 200GbE capability

Switch IPL Links: 2x200GbE per Switch

Northbound Uplinks: 4x100GbE per Switch

Port Utilization: 30/32 ports per Switch used, 2 ports per Switch free

VAST 4x4 Cluster Rack Layout

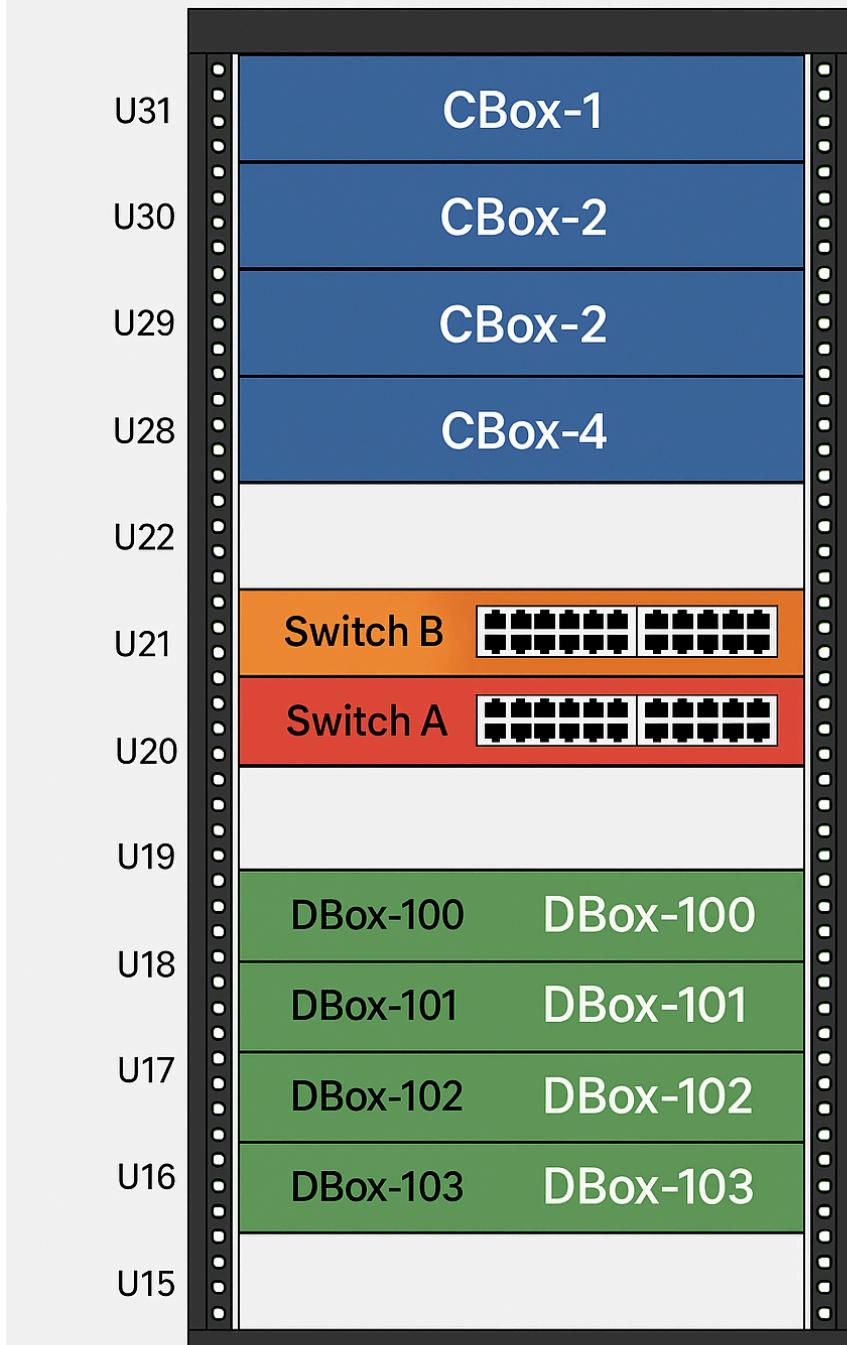


Figure 2: Physical rack layout showing component positioning and rack space utilization

Rack Space Utilization

- **Total Rack Units Used:** 16U
- **Available Rack Space:** 25U (for future expansion)

- **Power Consumption:** 8.5kW (estimated)
 - **Cooling Requirements:** 29,000 BTU/hr
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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

Example (1): Switch Port Map



32-port NVMe switch configuration

Switch A (Bottom/Red)



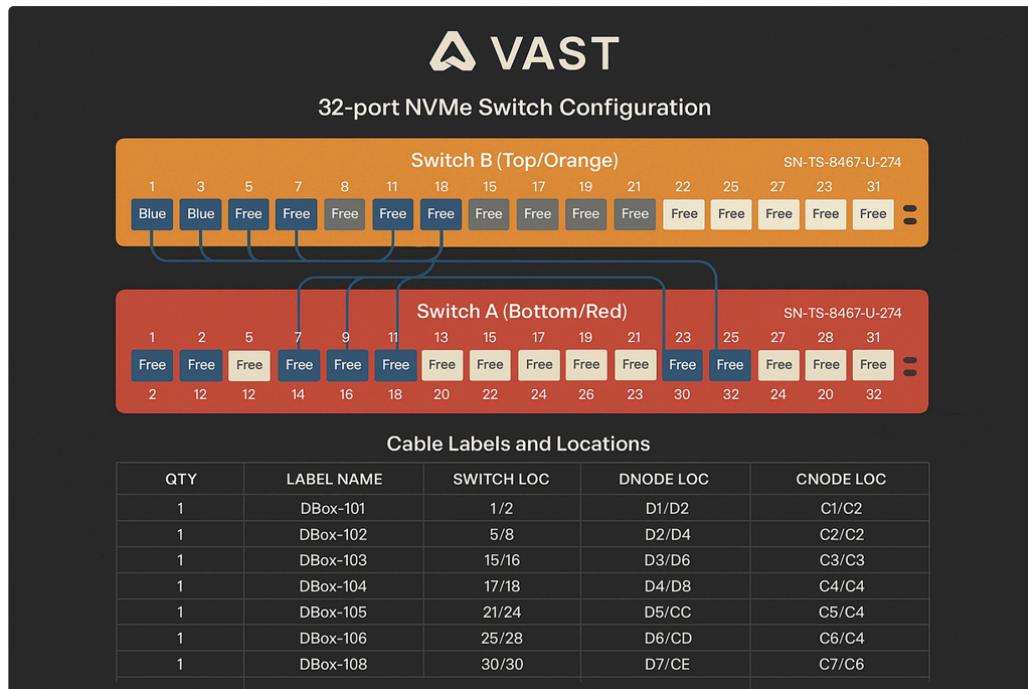
Switch B (Top/Orange)



Cable Labels and Locations

QTY	LABEL NAME	SWITCH LOC	DNODE LOC	DDOE	CNODE LOC
4	DBox-101	1, 5, 9, 13	D1	D1	C1
4	DBox-102	3, 7, 11, 15	D2	D3	C2
4	DBox-100	1, 5, 9, 13	D3	D3	C3
4	DBox-100	1, 5, 9, 13	D4	D4	C4

Example (2): Switch Port Map



Example (3): Switch Port Map

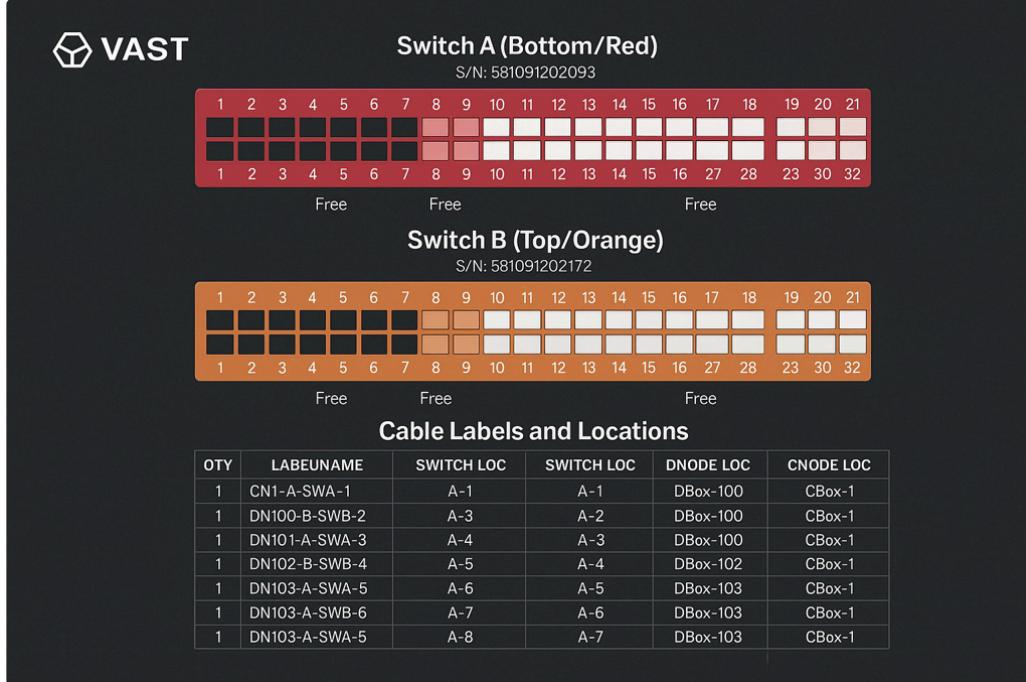


Figure 3: Switch port map showing cable labels, port assignments, and A/B orientation

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
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Deployment Configuration

Cluster Services

- **DNS Servers:** 8.8.8.8, 8.8.4.4
- **NTP Servers:**  pool.ntp.org: the internet cluster of ntp servers
- **Active Directory:** acme.local (integrated)
- **LDAP Server:** ldap.acme.local:389

Data Protection

- **Snapshot Retention:** 30 days (hourly), 90 days (daily)
- **Replication:** Not configured (future enhancement)
- **Backup Integration:** Veeam Backup & Replication (configured)
- **Data Encryption (Native or EKM):** 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
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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
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Support Information

Cluster Identification

- **Cluster PSNT:** VST-2025-AC-001234
- **Support Contract:** Premium 24x7 (Contract #: SUP-2025-001234)
- **Technical Account Manager:** John Smith (jsmith@vastdata.com)
- **Support Portal:**  [Vast Support Portal](#)

Emergency Contacts

- **VAST Support:** +1-800-VAST-DATA
- **Customer IT Contact:** Jane Doe (jane.doe@acme.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**
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Appendices

Appendix A: Configuration Files

- Cluster configuration backup: `cluster-config-20250910.json`
- Network configuration: `network-config-20250910.yaml`
- Security policies: `security-policies-20250910.json`

Appendix C: Maintenance Schedule

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

Report Generation Details:

- **Automated Data Collection:** 80% via VAST API v7
 - **Manual Data Entry:** 20% (physical attributes, business information)
 - **Generation Time:** 3 minutes 42 seconds
 - **API Access:** Read-only credentials (security compliant)
 - **Report Format:** PDF with embedded JSON metadata
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This report was generated automatically by the VAST As-Built Report Generator v1.0

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