VECTOR DATA™

Vault A-Series

All-Flash Data Storage Appliance

Product Overview

Vector Data Vault A-Series systems are designed to help organizations accelerate their infrastructure transformation and fuel data-driven strategies. Powered by NetApp ONTAP® data management software, Vault A-Series systems deliver the industry's highest performance, superior flexibility, and best-in-class data services and cloud integration to help you accelerate, manage, and protect your business-critical data in the hybrid cloud.

Vault A-Series systems support end-to-end NVMe technologies, from NVMe-attached SSDs to front-end NVMe over Fibre Channel (NVMe/FC) host connectivity. These systems deliver the industry's lowest latency for an enterprise all-flash array, making them a superior choice for driving the most demanding workloads and AI/DL applications. With a simple software upgrade to the modern NVMe/FC SAN infrastructure, you can drive more workloads with faster response times, without disruption or data migration.

Some Vault A-Series systems can be optionally configured for rugged environments, including NEBS Level 3 and ETSI certification and MIL-STD-810 F/G compliance. Vector Data continues to provide network operators with a consistent storage product across their entire infrastructure, including AC and DC power options for telecom, military, and other rugged installations.

Perfect for NFV (network function virtualization), the Vault A-Series offers full support for VMware, Linux KVM, OpenStack, and other leading virtualization platforms, letting you combine the performance and security of Netapp Data ONTAP® with the flexibility and unified management of cloud deployments. Vault A-Series is the perfect foundation for SDN and the network of the future.

Keep Important Data Available, Protected, and Secure

As organizations become more data driven, the business impact of data loss can be increasingly dramatic—and costly. IT must protect data from both internal and external threats, ensure data availability, eliminate maintenance disruptions, and quickly recover from failures

Integrated data protection

AFF systems come with a full suite of acclaimed NetApp integrated and application-consistent data protection software. Key capabilities include:

- Native space efficiency with cloning and Snapshot copies reduce storage costs and minimize performance impact. Up to 1,023 copies are supported
- SnapMirror® technology replicates to any Vector Data Vault system on the premises or in the cloud, reducing overall system costs
- SnapCenter® software provides application-consistent data protection and clone management to simplify application management

Key Features and Benefits

- Speed up your critical applications with the industry's fastest end-to-end NVMe enterprise all-flash array
- Support 2 times more workloads and cut application response time in half with a modern NVMe-based SAN infrastructure.
- Minimize your data center footprint by storing up to 2PB of data in a 4U compact system
- Save SSD storage by 5 to 10 times with inline data reduction technologies
- Reduce power and cooling, rack space, and support costs dramatically
- Unify data services across SAN and NAS environments, both on the premises and in the cloud
- Set up and configure a complete system and serve data within 10 minutes
- Safeguard your data with best-in-class integrated data protection and seamless cloud backup and recovery
- AC and DC power options
- Optional NEBS Level 3 and ETSI certifcation for some systems

VECTOR DATA™

Vault A-Series Technical Specifications

	A800	A700s	A700	A320	A300	A220
Maximum scale-out	2–24 nodes (12 HA pairs)	2–24 nodes (12 HA pairs)	2–24 nodes (12 HA pairs)	2–24 nodes (12 HA pairs)	2–24 nodes (12 HA pairs)	2–24 nodes (12 HA pairs)
Maximum SSDs	2,880	2,529	5,760	576	4,608	1,728
Maximum effective capacity	316.3PB	316.3PB	702.7PB	35PB	562.2PB	193.3PB

Per-System Specifications (Active-Active Dual Controller)						
	A800	A700s	A700	A320	A300	A220
Controller form factor	4U with 48 SSDs	4U with 24 SSDs	8U	2U	3U	2U with 24 SSDs
PCIe expansion slots	8	8	20	4	4	n/a
FC target ports (32Gb autoranging)	32	8	64	16	8	n/a
FC target ports (16Gb autoranging)	32	16	64	16	24	8
FCoE target ports, UTA2	n/a	n/a	64	n/a	24	8
100GbE ports (40GbE autoranging)	20	n/a	n/a	24	n/a	n/a
40GbE ports (10GbE autoranging)	n/a	16	32	n/a	8	n/a
10GbE ports	32	n/a	64	16	20	12
10Gbase-T (1GbE autoranging)	n/a	n/a	64	16	12	n/a
12Gb/6Gb SAS ports	n/a	16	64	n/a	24	4
Storage networking supported	NVMe/FC, FC, iSCSI, NFS, pNFS, CIFS/SMB	NVMe/FC, FC, iSCSI, NFS, pNFS, CIFS/SMB	NVMe/FC, FC, FCoE, iSCSI, NFS, pNFS, SMB	NVMe/FC, FC, iSCSI, NFS, pNFS, CIFS/SMB	NVMe/FC, FC, FCoE, NFS, pNFS, CIFS/SMB	FC, FCoE, iSCSI, NFS, NFS, pNFS, CIFS/SMB
OS version	ONTAP 9.4 RC1 or later	ONTAP 9.1 GA or later	ONTAP 9.1 RC1 or later	ONTAP 9.6 or later	ONTAP 9.1 RC1 or later	ONTAP 9.4 RC1 or later
Shelves and media	NVMe drive packs DS224C (2U; 24 drives, 2.5″ SFF); DS2246 (2U; 24 drives, 2.5″ SFF)	DS224C (2U; 24 drives, 2.5″ SFF); DS2246 (2U; 24 drives, 2.5″ SFF)		NS224 (2U; 24 drives 2.5″ SFF NVMe)	DS224C (2U; 24 drives, 2.5″ SFF); DS2246 (2U; 24 drives, 2.5″ SFF)	
Host/client OS supported	Microsoft Windows 2000, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows Server 2016, Linux, Oracle, Solaris, AIX, HP-UX, Mac OS, VMware, ESX					

VECTOR DATA™

Vault A-Series Software

Features and software Included with ONTAP software	**Efficiency**: NetApp FlexVol® technology, inline deduplication, inline compression, inline compaction, and thin provisioning **Availability**: active-active HA pair and multipath I/O **Data protection**: NetApp RAID DP®, RAID-TEC™, and Snapshot technology **Whole cluster synchronous replication**: NetApp MetroCluster **Performance control**: adaptive QoS and balanced placement **Management**: NetApp OnCommand Workflow Automation, ONTAP System Manager, and Active IQ Unified Manager (formerly OnCommand Unified Manager) **Scalable NAS container**: NetApp ONTAP FlexGroup **Storage protocols supported**: NVMe/FC, FC, FCoE, iSCSI, NFS, pNFS, and SMB
Flash bundle	**NetApp SnapRestore®** software: restoration of entire Snapshot copies in seconds **NetApp SnapMirror** software: simple, flexible backup and replication for disaster recovery **NetApp FlexClone®** technology: instant virtual copies of files, LUNs, and volumes **NetApp SnapCenter®**: unified, scalable platform and plug-in suite for application-consistent data protection and clone management **NetApp SnapManager®** software: application-consistent backup and recovery for enterprise applications
Extended-value software (optional)	**NetApp OnCommand Insight:** Flexible, efficient resource management for heterogeneous environments **NetApp SnapLock®** software: compliance software for WORM protected data **NetApp Volume Encryption (free license)**: granular, volume-level, data-at-rest encryption **FabricPool**: automatic data tiering to the cloud (free when tiering to NetApp StorageGRID® object-based storage) **NetApp SnapMirror Synchronous**: synchronous data replication with zero recovery point objective **NetApp Data Availability Services:** cloud-native backup solution for NetApp ONTAP storage **NetApp FlexCache**: acceleration for data access for single or multisite deployment

Power

		A700s	A700	A300	A220/A200
Thermal Rating	Typical Worst Case	4,253 BTU/hr 5,205 BTU/hr Unified 40GbE-32Gb FC dual-controller configura-tion with 24x 3.8TB SSD 949 BTU/hr (worst case) DS224C shelf with 24x 3.8TB SSD	5,151 BTU/hr 5,430 BTU/hr Dual-controller chassis with 40GbE, 32GbE FC 424 BTU/hr (typical) 949 BTU/hr (worst case) DS224C shelf with 24x 3.8TB SSD	1,987 BTU/hr 2,263 BTU/hr Dual-controller chassis with 10GbE PCIe cards 424 BTU/hr (typical)	1,209 BTU/hr 1,676 BTU/hr Dual-controller chassis with 24x 3.8TB
Power Supply		Two, hot-swap power supplies	Four, hot-swap power supplies	Two, hot-swap power supplies	Two, hot-swap, integrated power supply/fan assemblies
Power Input Options		200-240V AC	200-240V AC	100-120V AC, 200-240V AC, 48V DC	100-120V AC, 200-240V AC, 48V DC

VECTOR DATA™

Vault A-Series Environmental Specifications

	A700s	A700	A300	A220/A200
Weight	114.8 lb (52.1 kg) Unified 40GbE-32Gb FC dual-controller configura -tion with 24x 3.8TB SSD	183.0 lb (83.0 kg) Dual-controller chassis with 10GbE PCIe cards 53.8 lb (24.4 kg) DS224C shelf with 24x 3.8TB SSD	76.1 lb (34.5 kg) Dual-controller chassis with 10GbE PCIe cards 53.8 lb (24.4 kg) DS224C shelf with 24x 3.8TB SSD	60.8 lb (27.6 kg) DS224C shelf with 24x 3.8TB SSD
Height	4U	10U (8U + 2U shelf)	5U (3U + 2U shelf)	2U
Width	19″ IEC rack-compliant (17.6″, 44.7 cm)			
Depth	32.6″ (34.7″ with cable management bracket)	30.8″ (36.8″ with cable management bracket)	23.9″ (28.9″ with cable management bracket)	19″ (without cable management bracket)
Operating Temperature, Altitude, and Relative Humidity	0° C to 40° C (32° F to 104° F); at <= 3,000 m (at <= 10,000′ feet) elevation; 20% to 80% relative humidity, noncondensing*			
Nonoperating Temperature and Relative Humidity	-40° C to 70° C (-40° F to 158° F); at </= 12,192 m (at</= 40,000′) typical of unconditioned airplane cargo bay, 8% to 80% relative humidity, noncondensing, in original container*			
Operating Acoustic Noise	• Declared sound power (LwAd) per ISO 9296: 6.2 Bel • Sound pressure (LpAm) (bystander positions): 49.6 dB			

Safety Agency Approval

CAN/CSA C22.2 N0. 60950-1	
UL 60950-1	
IEC 60950-1	
EN 60950-1	**Safety of Information Technology Equipment**

Telco NEBS/ETSI Certifications

Telcordia GR-63-CORE NEBS Requirements: Physical Protection
Telcordia GR-1089-CORE EMC and Electrical Safety
Telcordia SR-3580 Level 3
ETSI ETS 300-019 Physical Protection and ETSI ETS 300-753 Acoutic Noise

Military Specifications

Optional MIL-STD-810 F/G compliance

Electromagnetic Emission and Immunity

FCC Part 15 and Class A	
VCCI	**Japan**
KCC	**Korea**
Electromagnetic Interference	**ATT-TP-76200 GR1089-CORE Section 3**
ESD - Electrostatic Discharge	**IEC 61000-4-2**
EFT - Electrical Fast Transient	**ATT-TP-76200 GR-1089-CORE Section 2.2**
Lightning and Power Fault	**ATT-TP-76200 GR-1089-CORE Section 4**
DC Power - Telecommunication	**ATT-TP-76200 GR-1089-CORE Section 10**

Electrical Safety/Bonding and Grounding

Electrical Safety	**ATT-TP-76200 GR-1089-CORE Section 7**
Bonding and Grounding	**ATT-TP-76200 GR-1089-CORE Section 9**

System Physical Environmental

Airborne Contaminants	**ATT-TP-76200 GR-63-CORE Section 4**
Earthquake, Shock and Vibration	**Zone - 4, ATT-TP-76200 GR-63-CORE Section 4**
Fire Resistance	**ATT-TP-76200 GR-63-CORE Section 4**

Physical Design and Mounting

Rackmount	**19-inch rack mount supporting racks compliant:** - ANSI/EIA-310-D - ETS 300 119 - GR-63-CORE Seismic Zone 4

For more information, please contact your Vector Data account manager.