

Vault A-Series

All Flash Data Storage Appliance

Product Overview

Vector Data Vault A-Series systems address enterprise storage requirements with high performance, superior flexibility, and best-in-class data management. Built on ONTAP® data management software, A-Series systems speed up your business without compromising on the efficiency, reliability, or flexibility of your IT operations. As an enterprise-grade all-flash array, it accelerates, manages, and protects your business-critical data and enables an easy and risk-free transition to flash for your data center.

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 OpenStack, VMware, Linux KVM, 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.

Designed Specifically for Flash

Vault A-Series all-flash systems deliver industry leading performance, capacity density, scalability, security, and network connectivity in dense form factors. With the addition of a new entry-level system, the new Vault A-Series family extends enterprise-grade flash to midsize businesses and to fit any budget. At up to 7M IOPS per cluster with submillisecond latency, they are the fastest all-flash arrays built on a true unified scale-out architecture. The AFF A series allows customers to complete twice the work at half the latency as compared with the previous generation of AFF systems. As the industry's first all-flash arrays to provide both 40 Gigabit Ethernet (40GbE) and 32Gb Fibre Channel connectivity, AFF A series systems eliminate the bandwidth bottlenecks that are increasingly moved to network from storage as flash gets faster and faster.



Increased operational efficiency

Built on the flash-optimized NetApp WAFL® (Write Anywhere File Layout) system, ONTAP FlashEssentials enables consistent high performance to meet the demands of a multitude of workloads in a shared environment. Consolidate all your workloads on the AFF systems, which deliver up to 600,000 IOPS at 1ms latency. You can manage a massively scalable NAS container of up to 20PB and 400 billion files with a single namespace using FlexGroup volumes, while maintaining consistent high performance and resiliency.

Key Features and Benefits

- Accelerate applications with the fastest unified scale-out all-flash array of up to 7M IOPS at submillisecond latency and over 360PB effective capacity
- Transform your data center economics with best-in-class flash density: a complete flash system in a compact enclosure
- Reduce power use by 11 times and rack space by 19 times and cut support costs by 67%
- Unify data management for both SAN and NAS environments, from flash to disk to cloud
- Provision storage system and serve data within 10 minutes
- Reduce SSD storage by 5 to 10 times on average with inline data reduction technologies
- Remove network bottlenecks with high-speed connectivity of 32Gb FC and 40Gb Ethernet
- Safeguard your data with the best-in-class integrated data protection suite
- AC and DC power options
- Optional NEBS Level 3 and ETSI certification for some systems

Vault A-Series Technical Specifications

	A700s	A700	A300	A200
NAS scale-out	1–24 nodes (12 HA pairs)	1–24 nodes (12 HA pairs)	1–24 nodes) (12 HA pairs)	1–8 nodes (4 HA pairs)
Maximum SSD	2,529	5,760	4,608	576
Maximum raw capacity: all flash	39PB/35.2PiB	88.1PB/78.3PiB	70.5PB/62.6PiB	8.8PB/7.8PiB
Effective capacity	155.5PB/ 138.1PiB	356.3PB/ 316.4PiB	285.0PB/ 253.1PiB	34.7PB/ 30.8PiB
Maximum memory	12288GB	12288GB	3072GB	256GB
SAN scale-out	1–12 nodes (6 HA pairs)	1–12 nodes (6 HA pairs)	1–12 nodes (6 HA pairs)	1–8 nodes (4 HA pairs)
Maximum SSD	1,296	2,880	2,304	576
Maximum raw capacity	19.8PB/17.6PiB	44.1PB/39.1PiB	35.3PB/31.3PiB	8.8PB/7.8PiB
Effective capacity	77.8PB/69.0PiB	178.1PB/159.2PiB	142.5PB/126.6PiB	34.7PB/30.8PiB
Maximum memory	6144GB	6144GB	1536GB	256GB
Cluster interconnect	2 x 40GbE or 4 x 10GbE	2 x 40GbE or 8 x 10GbE	2 x 10GbE	2 x 10GbE
Per HA Pair Specifications (Active-Active Dual Controller)				
	A700s	A700	A300	A200
Maximum SSD	216	480	384	144
Maximum raw capacity: all flash	3.3PB/2.9PiB	7.3PB/6.5PiB	5.9PB/5.2PiB	2.2PB/2.0PiB
Effective capacity	13.0PB/11.5PiB	29.7PB/26.4PiB	23.8PB/21.1PiB	8.8PB/7.8PiB
Controller form factor	4U chassis with two HA controllers and 24 SSD slots	8U chassis with two HA controllers	3U chassis with two HA controllers	2U chassis with two HA controllers and 24 SSD slots
Memory	1024GB	1024GB	256GB	64GB
NVRAM	32GB	64GB	16GB	8GB
PCIe expansion slots	8	20	4	N/A
FC target ports (32Gb autoranging)	8	32	8	N/A
FC target ports (16Gb autoranging)	16	64	24	8
FCoE target ports, UTA2	N/A	64	24	8
40GbE ports	12	32	8	N/A
10GbE ports	24	64	32	8
10GbE Base-T ports (1GbE autoranging)	N/A	64	12	N/A
12Gb/6Gb SAS ports	8	64	24	4
Storage networking supported	FC iSCSI, NFS, pNFS, CIFS/SMB	FC, FCoE, iSCSI, NFS, pNFS, SMB	FC, FCoE, iSCSI, NFS, pNFS, SMB	FC, FCoE, iSCSI, NFS, pNFS, SMB

Vault A-Series Technical Specifications

	A700s	A700	A300	A200
OS version	ONTAP 9.1 GA or later	ONTAP 9.1 RC1 or later	ONTAP 9.1 RC1 or later	ONTAP 9.1 RC2 or later
Shelves and media	DS224C (2U; 24 drives, 2.5" SFF); DS2246 (2U; 24 drives, 2.5" SFF) Contact Vector Data for more details about supported drive types			
Host/client OSs supported	Windows 2000, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows Server 2016, Linux, Oracle Solaris, AIX, HP-UX, Mac OS, VMware, ESX			

Vault A-Series Software

Features and software Included with ONTAP software	<p>Efficiency: FlexVol®, deduplication, compression, compaction, and thin provisioning</p> <p>Availability: MetroCluster and multipath I/O</p> <p>Data protection: RAID DP® and Snapshot</p> <p>Performance: storage quality of service (QoS)</p> <p>Management: OnCommand Workflow Automation, System Manager, Performance Manager, and Unified Manager</p> <p>Scalable NAS container: FlexGroup</p>
Flash bundle	<ul style="list-style-type: none"> • All storage protocols supported (FC, FCoE, iSCSI, NFS, pNFS, SMB) • NetApp SnapRestore® software: restore 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® Standard: 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

Power

	A700s	A700	A300	A200
Thermal Rating	<p>Typical Worst Case</p> <p>4,253 BTU/hr 5,205 BTU/hr</p> <p>Unified 40GbE-32Gb FC dual-controller configuration with 24x 3.8TB SSD 949 BTU/hr (worst case) DS224C shelf with 24x 3.8TB SSD</p>	<p>5,151 BTU/hr 5,430 BTU/hr</p> <p>Dual-controller chassis with 40GbE, 32GbE FC 424 BTU/hr (typical) 949 BTU/hr (worst case) DS224C shelf with 24x 3.8TB SSD</p>	<p>1,987 BTU/hr 2,263 BTU/hr</p> <p>Dual-controller chassis with 10GbE PCIe cards 424 BTU/hr (typical)</p>	<p>1,209 BTU/hr 1,676 BTU/hr</p> <p>Dual-controller chassis with 24x 3.8TB</p>
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

Vault A-Series Environmental Specifications

	A700s	A700	A300	A200
Weight	114.8 lb (52.1 kg) Unified 40GbE-32Gb FC dual-controller configuration 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	<ul style="list-style-type: none"> * 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 NO. 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 Acoustic 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
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