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Vault 8000 Series

Product Overview

The demands of a data-driven business require a fundamentally new approach to storage with an integrated combination of high-performance hardware and adaptive, scalable storage software that not only supports existing workloads, but also adapts and scales quickly to address new applications and evolving IT models.

Vault 8000 enterprise storage systems are engineered specifically to address these needs. Optimized for scale-out, the Vault 8000 series unifies your SAN and NAS storage infrastructure. Perfect for NFV (network function virtualization), the Vault 8000 offers full support for OpenStack, VMware 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 8000 is the perfect foundation for SDN and the network of the future.

With the release of the Vault 8000 Series, including the NEBS Level 3 (ATT-TP-76200) and ETSI certified Vault 8060 and 8020, Vector Data continues to provide network operators with a consistent storage product across their entire infrastructure including AC & DC powered and NEBS & non-NEBS facilities.

Get more from existing storage investments

Simplify your IT operations and deliver more value from existing storage with the only unified storage virtualization solution. FlexArray virtualization software extends the capabilities of the Vault 8000 to include EMC, Hitachi, and NetApp E-Series arrays, consolidating management of your existing storage to simplify operations, while increasing efficiency, and providing superior functionality.

This creates a single storage management architecture that supports both SAN and NAS while simplifying management and cloud integration.

Scale and adapt to meet changing needs

Your business is constantly changing. Your storage infrastructure should adapt and scale right along with it. With Vault 8000 unified scale-out storage, you can optimize and accelerate your storage environment as needed. All Vault 8000 storage is designed to scale as performance and capacity requirements change. You can scale up — by adding capacity, adding flash acceleration, and upgrading controllers—and scale out. A single cluster can grow up to 24 nodes and 57PB of capacity with ease.

Unlock the full power of flash

Flash-accelerated Vault 8000 storage systems deliver twice the performance of our previous generation storage— boosting throughput, lowering latency, and meeting stringent service levels with predictable high performance. Data ONTAP on the Vault 8000 simplifies flash management, resulting in more powerful hybrid storage.

In hybrid Vault 8000 configurations, flash functions as a self-managing virtual storage tier with up to 18TB of flash per HA pair and 216TB per cluster. Hot data is automatically promoted to flash in real time, so you get the full benefit of flash performance. Flash integration extends to the host for the lowest possible latency. Flash can also be configured as persistent storage, including all-flash configurations with hundreds of SSDs.

KEY BENEFITS

Support More Workloads   Run SAN and NAS workloads simultaneously with the industry's only unified scale-out storage
Consolidate Infrastructure   Scale to 57PB and leverage existing storage with FlexArray
Accelerate I/O-Intensive Apps   Deploy hybrid storage with 2x the flash-accelerated power
Eliminate Downtime   Experience >99.999% availability plus nondisruptive operations that eliminate planned downtime
Realize Superior Value   Deliver 2x the price/performance of the previous generation
Perfect for NFV (network function virtualization)   Full support for OpenStack, VMware and other leading virtualization platforms

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Technical Specifications

	Vault 8080 EX	Vault 8060	Vault 8040	Vault 8020
NAS scale-out	1-24 Nodes (12 HA pairs)			
Maximum drives	17,280	14,400	8,640	5,760
Maximum raw capacity: Hybrid*	69PB 432TB flash	57PB 216TB flash	34.5PB 144TB flash	23PB 72TB flash
Maximum raw capacity: All-flash	4.6PB	4.6PB	4.6PB	4.6PB
Maximum memory	3,072GB	1,536GB	768GB	576GB
SAN scale-out	1-8 nodes (4 HA Pairs)			
Maximum drives	5,760	4,800	2,880	1,920
Maximum raw capacity: Hybrid*	23PB 144TB flash	19PB 72TB flash	11.5PB 48TB flash	7.7PB 24TB flash
Maximum raw capacity: All-flash	1.5PB	1.5PB	1.5PB	1.5PB
Maximum memory	1,024GB	512GB	256GB	192GB
Cluster Interconnect	2, 4 or 6 10GbE	2 or 4 10GbE	2 or 4 10GbE	2 10GbE

Per HA Pair Specifications (active-active dual controller)

	Vault 8080 EX	Vault 8060	Vault 8040	Vault 8020
Maximum Drives	1,440	1,200	720	480
Hybrid Storage Configurations				
Maximum raw capacity: Hybrid*	5,760TB 36TB flash	4,800TB 18TB flash	2,880TB 12TB flash	1,920TB 6TB flash
Maximum Flash Cache	16TB	8TB	4TB	3TB
Maximum Flash Pool	36TB	18TB	12TB	6TB
SAN scale-out	1-8 nodes (4 HA Pairs)			
All-Flash Storage Configurations				
Maximum raw capacity: All-flash	384TB	384TB	384TB	384TB
Memory	256GB	128GB	64GB	48GB
NVRAM	32GB	16GB	16GB	8GB
PCIe Expansion Slots	24	8	8	4
Onboard I/O: UTA2 (10GbE/FCoE, 16Gb FC)	8	8	8	4
Onboard I/O: 10GbE	8	8	8	4
Onboard I/O: 6Gb SAS	8	8	8	4
Storage Networking Supported	FC; FCoE; iSCSI; NFS; pNFS; CIFS/SMB; HTTP; FTP			

* Hybrid configurations combine HDDs with flash using Flash Cache and/or Flash Pool . You can also create storage configurations that include separate HDD and SSD aggregates. The size limit of the SSD aggregates is the same as the all-flash maximum.

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	Vault 8080 EX	Vault 8060	Vault 8040	Vault 8020
OS Version	Data ONTAP 8.2.2 RC1 or higher	Data ONTAP 8.2.1 RC2 or higher	Data ONTAP 8.2.1 RC2 or higher	Data ONTAP 8.2.1 RC2 or higher
High-Availability Features	Alternate Control Path (ACP); Ethernet-based service processor and Data ONTAP management interface; redundant hot-swappable controllers, cooling fans, power supplies, and optics			
Supported Configurations	**Cluster Configurations** • Single node cluster • Two-node switchless or switched cluster • Clusters of HA pairs **7-Mode Configurations** • Single controller • Active-active controller with controller failover and multipath HA storage **MetroCluster Configurations** • Active-active controller with stretch (non-switch) MetroCluster • Active-active controller with fabric-attached (switched) MetroCluster			
Maximum RAID Group Sizes	RAID 6 (RAID-DP) Performance Disk: 28 (26 data disks plus 2 parity disks) Capacity Disk: 20 (18 data disks plus 2 parity disks) RAID 4 Performance Disk: 14 (13 data disks plus 1 parity disk), Capacity Disk: 7 (6 data disks plus 1 parity disk) RAID 6 + RAID 1 or RAID 4 + RAID 1 (SyncMirror)			
Operating Systems Supported	Windows 2000, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows XP, Linux®, Oracle Solaris, AIX, HP-UX, Mac® OS, VMware®, ESX			
Max. Number of LUNs	8,192			
Number of Supported SAN Hosts	Up to 512 hosts per HA pair Up to 24 directly connected servers per HA pair			
FlexVol Volumes	Up to 1,000 per controller (clustered Data ONTAP) up to 500 per controller (7-Mode)			
Snapshot Copies	Up to 255,000 per controller			
Maximum Volume Size	100TB	100TB	100TB	70TB
Maximum Aggregate Size	400TB	400TB	324TB	324TB

Disk Shelves Supported

AC and DC Power Options	DS2246 DS14 (mk2-AT, mk4)	2U; 24 drives, 2.5"SFF Supported for upgrades only
AC Power Only	DS4246 DS4486 DS4243	4U; 24 drives, 3.5"LFF 4U; 48 drives, 3.5"LFF 4U; 24 drives, 3.5"LFF, supported for upgrades only

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Maximum port count (includes integrated ports and PCIe expansion slots)

	Vault 8080 EX	Vault 8060	Vault 8040	Vault 8020
FC Target Ports (16Gb autoranging)	64	24	24	12
FC Target Ports (4Gb or 8Gb)	64	40	40	20
FCoE Target Ports, UTA (max.)	32	24	24	12
10GbE Ports (max.)	64	32	32	16
GbE Ports (max.)	72	40	40	20
6Gb SAS Ports (max.)	56	40	40	20
FC Initiator Ports (max.)	72	40	40	20

Maximum Adaptors

	Vault 8080 EX	Vault 8060	Vault 8040	Vault 8020
Dual 10GbE (optical or copper)	16	8	8	4
Dual 10Gbase-T (RJ-45,CAT 6A-E)	16	8	8	4
Quad GbE (copper)	16	8	8	4
Dual 10GbE/FCoE 16Gb FC Unified Target Adapter 2 (UTA2, optical or copper for 10GbE/FCoE deployments, optical for 16Gb FC)	24	8	8	4
8Gb FC Target	16	8	8	4
Flash Cache Performance Acceleration Module (2TB)	12	4	2	0
Flash Cache Performance Acceleration Module (1TB)	24	8	4	2
Flash Cache Performance Acceleration Module (512GB)	24	8	8	4
Quad 6Gb SAS Storage HBA	12	8	8	4
Quad 4Gb FC Storage/Tape HBA (fiber)	16	8	8	4

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System Environmental Specifications

	Vault 8080 EX	Vault 8060	Vault 8040	Vault 8020
Thermal Rating (at 200V)	2,880 BTU (typical, per enclosure)	2,031 BTU (typical)	1,495 BTU (typical)	1,205 BTU (typical)
	3,252 BTU (worst case, per enclosure)	2,362 BTU (worst case)	1,843 BTU (worst case)	1,450 BTU (worst case)
Weight	119.8 lb	121 lb	121 lb	78 lb
Height	12U (6U per enclosure)	6U	6U	3U
Width	19" IEC rack-compliant (17.6", 44.7 cm)			
Depth	24.3" (28.9" with cable management)			
Operating Temperature, Altitude, and Relative Humidity	10° C to 40° C (50° F to 104° F); at <= 3,000 m (at <= 10,000' feet) elevation; 20% to 80% relative humidity, noncondensing (28° C wet bulb temperature)			
Nonoperating Temperature and Relative Humidity	-40° C to 65° C (-40° F to 149° F); 5% to 95% relative humidity, noncondensing, in original container			
Operating Acoustic Noise	Vault 8020: • Declared sound power (LwAd) per ISO 9296: 7.8 Bel • Sound pressure (LpAm) (bystander positions): 62.6 dB Vault 8040 / Vault 8060: • Declared sound power (LwAd) per ISO 9296: 7.6 Bel • Sound pressure (LpAm) (bystander positions): 62.9 dB Vault 8080 EX: • Declared sound power (LwAd) per ISO 9296: 7.5 Bel @ normal operating conditions (at 23 °C and at sea level)			
Power Consumption (filer)	1668 W (typical, dual PCM with IXOM)	595 W (typical, dual PCM)	438 W (typical, dual PCM)	595 W (typical, dual PCM)
Power Consumption (DS2246 disk shelf)	-48 VDC Norminal (-40 to -60VDC), 6.04 Amp, 280W typical 100 to 120 VAC/3.6Amp, 200 to 240 VAC/1.46 Amp			
Thermal Rating (filer)	5760 BTU/hr (typical, dual PCM with IOXM) 6504 BTU/hr (worst case)	2031 BTU/hr (typical, dual PCM) 2362 BTU/hr (worst case)	1495 BTU/hr (typical, dual PCM) 1843 BTU/hr (worst case)	1205 BTU/hr (typical, dual PCM) 1450 BTU/hr (worst case)
Thermal Rating (DS2246 disk shelf)	1,157 BTU /hr (typical) 1,557 BTU/hr (worst case)			
DC power option	TBD	Yes	TBD	Yes

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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Certifications and Compliance

Safety Agency Approval	CAN/CSA C22.2 N0. 60950-1 UL 60950-1 IEC 60950-1 EN 60950-1
Telco NEBS/ETSI Certification*	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
Compliance	RoHS-compliant

Electromagnetic Emission and Immunity

U.S.A	FCC Part 15 and Class A
Japan*	VCCI
Korea*	KCC
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

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

System Physical Environmental

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

*Vault 8060 and 8020 only

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