

Respond more quickly to changing IT needs with unified scale-out storage and industry-leading data management.

NetApp FAS8020

FAS8000 scale-out storage systems offer exceptional flexibility and expandability in an extremely dense package. Integrated unified target adapter (UTA2) ports support 16Gb Fibre Channel, 10GbE, or FCoE, so your storage is ready on day one for whatever choices the future holds.

- Up to 480 disks (1920 TB)
- Single enclosure HA; 2 controllers in a single 3U chassis
- Onboard I/O: 4 UTA2 ports (16 Gb FC, FCoE, 10 GbE), 4x 6 Gb SAS, 4x 10 GbE, 4 GbE
- Up to 48 GB memory, 8 GB NVRAM, 3 TB FlashCache
- Up to 4 PCIe Expansion slots
- Supported protocols: FC; FCoE; iSCSI; NFS; pNFS; CIFS/SMB; HTTP; FTP
- 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.
- Choose the Right Long-Term: Future-proof storage with innovative hardware, full cloud integration, and the #1 storage OS.

The demands of a data-driven organization 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. FAS8000 enterprise storage systems are engineered specifically to address these needs. Powered by NetApp® Data ONTAP® and optimized for scale-out, the FAS8000 series unifies your SAN and NAS storage infrastructure. With proven data management capabilities, the FAS8000 has the flexibility to keep up with changing needs while delivering on core IT requirements. The FAS8000 features a multiprocessor Intel® chip set and leverages high-performance memory modules, NVRAM to accelerate and optimize writes, and an I/O-tuned PCIe gen3 architecture that maximizes application throughput. Building on a decade of multicore optimization, Data ONTAP drives the latest cores and increased core counts to keep up with continuous growth in storage demands. The result is a flexible, efficient I/O design capable of supporting large numbers of high-speed network connections and massive capacity scaling.

Get more from existing storage

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 FAS8000 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 organization is constantly changing. Your storage infrastructure should adapt and scale right along with it. With FAS8000 unified scale-out storage, you can optimize and accelerate your storage environment as needed. All FAS8000 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. Because you can nondisruptively add or replace storage systems and components—as well as mix and match different FAS models—scaling occurs without maintenance windows or the challenge of coordinating downtime across teams.

Unlock the full power of flash

Flash-accelerated FAS8000 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 FAS8000 simplifies flash management, resulting in more powerful hybrid storage. In hybrid FAS8000 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.

Enable innovation and empower users

In a data-driven organization, performance and capacity alone are not enough. You need the ability to leverage data strategically and to assign resources dynamically for more effective operations. FAS8000 role-based access control and workflow automation tools simplify provisioning and data protection so you can assign resources faster. Space-efficient cloning capabilities allow almost instantaneous creation of data copies.

Achieve unparalleled availability and nondisruptive operations

FAS8000 enterprise storage is engineered to meet the most demanding availability requirements. All models are designed to deliver 99.999% availability or greater through a comprehensive approach to system resiliency that includes alternate control path (ACP), persistent NVRAM write logs, and integrated service processors. All I/O devices—including embedded ports—can be independently reset, allowing the FAS8000 to detect, contain, and recover from faults. Software and firmware updates, hardware repair and replacement, load balancing, and tech refresh happen without planned downtime. NetApp Integrated Data Protection technologies protect your data, accelerate recovery, and integrate with leading backup applications for easier management. Advanced service analytics software prevents issues from becoming outages. Risk signatures are constantly monitored, and your administrators and/or NetApp service staff are alerted to proactively address issues that might affect operations.

Build the right long-term platform and Optimize hybrid cloud deployment

When it comes to long-term storage infrastructure investments, total cost of ownership and the ability to accommodate new IT initiatives are critical. FAS8000 enterprise storage systems unlock the power of your data and your people. In addition to a significant price/performance benefit—two times that of the previous generation—the FAS8000 platform delivers industry-leading storage efficiency technologies such as deduplication, compression, thin provisioning, and space-efficient Snapshot™ copies. This reduces your cost per effective gigabyte of storage. The FAS8000 is optimized for cloud with modular, flash-accelerated building blocks, native multi-tenancy, QoS, nondisruptive operations, and easily defined tiers of service. Storage can be quickly provisioned to meet specific service levels, and data is portable between FAS and FAS-managed storage from EMC and HDS so that applications are not locked to a specific device. Data ONTAP enables dynamic data portability with seamless connectivity between clouds so you can integrate on-premises storage with cloud service providers and hyperscale providers such as Amazon Web Services to create a hybrid cloud. Data ONTAP serves as a universal data platform, so you can pursue the long-term cloud strategy that makes the most sense for your organization while storing and managing your data with technologies you understand and trust.



TECHNICAL HIGHLIGHTS

Form Factor	Single enclosure HA; 2 controllers in a single 3U chassis; 4U 24-slot Disk Shelf Expansion DS4246; 2U 24-slot Disk Shelf Expansion DS2246; 4U 48-slot Disk Shelf Expansion DS4486
Storage Controller	single or dual active/active controllers (2x6 processing cores)
Host Connectivity	Maximum: 4 UTA2 ports (16 Gb FC, FCoE, 10 GbE), 4x 6 Gb SAS, 4x 10GbE, 4 GbE and 4 PCIe slots
Cache Memory	Maximum: 48 GB memory, 8 GB NVRAM, 3 TB FlashCache
Supported Protocols	
SAN	FC; FCoE; iSCSI;
File	NFS; pNFS; CIFS/SMB;
Other	HTTP; FTP
Min/Max. Disk Drives	Up to 480
Max. Capacity (raw/formatted)	1920 TB
Drives Supported	
SATA II 7200rpm	1 TB, 2 TB, 3 TB and 4 TB
SAS 10Krpm	450 GB, 600 GB, 900 GB and 1.2 TB
SAS 15Krpm	450 GB and 600 GB
Flash Drives	200 GB, 400 GB, 800 GB & 1.6 TB
RAID Support	RAID 4, RAID-DP™, RAID 4+1, RAID-DP™+1, SyncMirror (1)
Back-end Connectivity Management	6 Gb/s SAS interface Onboard serial console, diagnostic LED, full-duplex 10/100Base-T Ethernet remote LAN Management port with RLM and Onboard Management interfaces, SNMP, telnet, SSH, HTTP, Web (SSL), host scripting, e-mail alerts
Reliability	Redundant hot-swappable controllers, cooling fans, power supplies, optics, and RJ-45 ports, ACP for DS424x & DS2246 & DS4486
Availability	multi-path access mirrored cache, battery-backed non-volatile RAM (NVRAM) Remote LAN Management Module (Optional)

HOST ENVIRONMENT

Host Operating System	Windows® 2000, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows XP, Linux®, Sun Solaris, AIX, HP-UX, Mac® OS, VMware®, ESX. Consult NetApp compatibility matrices for full details
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MANAGEMENT & ADMINISTRATION

Storage Management	Data ONTAP® 8.2.1 and later
Multi-path Management	Yes
Snap Shot	Snapshot, SnapDrive®, SnapValidator SnapManager, FlexClone™
Local Data Replication	SyncMirror®
Remote Data Replication	SnapMirror®
Other	MultiStore®, SnapVault®, SnapMover®, SnapRestore, SnapLock® Compliance, SnapLock Enterprise®, MetroCluster, FastBoot, FilerView®, FlexVol, FlexCache™, FlexShare™, Clustered failover, Nearstore, Advanced Single Instance storage, Single Mailbox Recovery, Protection Manager, Operations Manager (OnCommand), Workflow Automation, FlexArray

PHYSICAL SPECIFICATIONS

Dimensions (HxWxD)	
Storage Controller Enclosure	3 EIA U (5.12", 13 cm) x19" IEC rack-compliant (17.6", 44.70 cm) x 23.92" (60.75 cm)
Disk Shelf Enclosure	DS424x : 4 EIA U(7", 17.8 cm) x 19" IEC rack-compliant (19", 48.3 cm) x 24" (61 cm); DS2246 : 2 EIA U(3.4", 8.5 cm) x 19" IEC rack-compliant (19", 48.0 cm) x 19.1" (48.4 cm); DS4486: 4 EIA U (7", 17.8cm) x 19" IEC rack-compliant (19", 48,3cm) x 28" (71cm)

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Bull SAS - rue Jean Jaurès - 78340 Les Clayes-sous-Bois - France
UK : Maxted Road, Hemel Hempstead, Herts HP2 7DZ
USA : 285 Billerica Road, Chelmsford, MA 01824

PHYSICAL SPECIFICATIONS (Cont'd)

Weight	
Storage Controller Enclosure	81 lbs (37 kg) dual controller
Disk Shelf Enclosure	DS424x : 110 lb (49.9 kg) fully loaded; DS2246 : 49 lb (22.2 kg) fully loaded; DS4486 : 160 lb (72.6 kg) fully loaded

ENVIRONMENT

Temperature	Operating : 10° C to 40° C (50° F to 104° F); non-operating : -40° C to 65° C (-40° F to 149° F)
Humidity	Operating : 20% to 80% relative humidity, non-condensing (28° C wet bulb temperature) Non-operating : 5% to 95% relative humidity, non condensing, in original container
Altitude	<= 3,000 m (at <= 10,000' feet) elevation;
Acoustic	< 61 dBA sound pressure (Lpa) @ normal operating conditions (at 22°C and at sea level)

POWER

Input Voltage	110V or 220V
Power consumption	
Storage Controller Enclosure	200VAC = 353 W Typical dual controller
Disk Shelf Enclosure	DS424x : 100 to 120 VAC, 6.3 A; 200 to 240 VAC, 3.2 A; DS2246 : 100 to 120 VAC, 3.6 A; 200 to 240 VAC, 1.9 A; DS4486 : 100 to 120 VAC, 8.71 A; 200 to 240 VAC, 4.59 A
Heat Dissipation	
Storage Controller Enclosure	1450 BTU/hr (max), 1205 BTU/hr (typical) dual controller
Disk Shelf Enclosure	DS424x : 2180 Btu/hr (fully loaded shelf); DS2246 : 1181 Btu/hr (fully loaded shelf); DS4486 : 3137 Btu/hr (fully loaded shelf)

REGULATORY & SAFETY

Safety	EN 60950, CE, CSA 60950, UL 60950, CB IEC60950-1 (all national deviations), EN60825-1, IRAM, GOST-R, BSMI, SONCAP, NRCS LOA
Electromagnetic Compatibility (EMC)	FCC Part 15 Class A, ICES-03, CE, KCC, VCCI, AS/NZS CISPR 22, EN55022, EN55024, EN61000-3-2, EN61000-3-3, SABS COC, BSMI

WARRANTY

Standard warranty	3 years, Parts Exchange - Next Business Day
Extended Warranty	4 hour, 24x7 depending on location

NOTE 1: RAID-DP is a high Performance RAID-6 implementation. SyncMirror is a high resiliency RAID-1 implementation