Datasheet

NetApp FAS8000 Series

Quickly respond to changing storage needs across flash, disk, and cloud with industry-leading data management

Key Benefits

Simplify Your Storage Environment
Run SAN and NAS workloads with unified scale-out storage.

Accelerate Enterprise Applications
Reduce latency and speed operations with up to 1.7PB of hybrid flash.

Maximize Uptime
Eliminate planned downtime to add, upgrade, or retire storage with no disruptions.

Consolidate Infrastructure
Scale up to 138PB, cluster with AFF all-flash systems, and integrate existing third-party storage arrays.

Optimize for the Hybrid Cloud
Easily implement a service-oriented IT architecture that spans on-premises and cloud resources.

The Challenge
Enabling the data-driven business

As the role of technology has expanded to cover key business operations as well as back-office functions, IT leaders have had to rethink the way they architect storage. Traditional requirements such as storage uptime, scalability, and cost efficiency are still critical, but so are factors such as flash acceleration, cloud integration, unified support for SAN and NAS, and simplified data mining for competitive advantage.

Many enterprises struggle, held back by structural limitations in legacy storage and data architectures. Traditional storage arrays might deliver on basic needs, but are divided into separate silos or are incapable of meeting advanced service requirements and leveraging the cloud.

The Solution
Accelerate business operations with unified scale-out storage

The demands of a data-driven business require a new approach to storage with an integrated combination of high-performance hardware and adaptive, scalable storage software. It needs to support existing workloads as well as adapt and scale quickly to address new applications and evolving IT models.

FAS8000 hybrid storage systems are engineered specifically to address these needs. Powered by NetApp® ONTAP® data management software, the FAS8000 series unifies your SAN and NAS storage infrastructure. When FAS8000 are clustered with NetApp AFF all-flash arrays and integrated with the cloud, you have the control to easily move your data to where it's needed for your business and place it in the storage environment that delivers the best combination of flash performance, storage capacity, and cost efficiency. With proven agility and data management capabilities, the FAS8000 has the flexibility to keep up with changing business needs while delivering on core IT requirements.

Unlock the power of flash

Flash-accelerated FAS8000 hybrid storage systems deliver twice the performance of our previous generation FAS storage, boosting throughput, lowering latency, and meeting stringent service levels.

■ NetApp®

Figure 1) NetApp FAS8000 controllers.

In hybrid FAS8000 configurations, flash functions as a self-managing virtual storage tier with up to 144TB of flash per HA pair and 1.7PB per cluster. Hot data is automatically promoted to flash in real time, so you get the full benefit of flash performance. ONTAP software on the FAS8000 simplifies flash management, resulting in more powerful hybrid storage.

The AFF family of all-flash arrays is optimized for applications that require rich data management as well as high performance and consistent low latency. See the AFF datasheet for details.

Scale and adapt to meet changing needs
Optimize and accelerate your storage environment as performance and capacity requirements change. Scale up by adding capacity, adding flash acceleration, and upgrading controllers. Scale out by growing from two nodes up to a 24 node cluster with 138PB of capacity, including combinations of different FAS and AFF models.

With nondisruptive addition and replacement of storage systems and components, scaling occurs without maintenance windows or the challenge of coordinating downtime across teams. Perform your updates during regular work hours.

Achieve unparalleled availability and nondisruptive operations
FAS8000 enterprise storage is engineered to meet demanding availability requirements. All models are designed to deliver 99.9999% availability or greater through a comprehensive approach that combines highly reliable hardware, innovative software, and sophisticated service analytics.

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.

NetApp MetroCluster™ expands data protection to eliminate risk of data loss by synchronously mirroring data between locations for continuous availability of information. A MetroCluster storage array can exist in a single data center or in two different data centers that are located across a campus, across a metropolitan area, or in different cities. No matter what happens, your data can be protected from loss and is continuously available to meet the most business-critical needs.

Get more from existing storage array investments
Simplify your IT operations and deliver more value from existing third-party arrays by using them as additional storage capacity behind FAS8000 systems. FlexArray virtualization software running on FAS8000 extends ONTAP to include storage capacity from EMC, Hitachi, HP, IBM, and NetApp E-Series arrays. Consolidate management of your existing storage to increase efficiency, add support for SAN and NAS workloads, and provide superior data management functionality.

Optimize hybrid cloud deployment
Organizations today are focusing on service-oriented IT architectures where cloud IT models are leveraged to enhance return on investment and assets. FAS8000 running ONTAP is optimized for private and hybrid cloud with secure multitenancy, QoS, nondisruptive operations, and easily defined tiers of service.

A FAS8000 tightly integrated with the industry standard OpenStack cloud infrastructure enables an organization to build a private cloud that delivers a leading service-oriented IT architecture and meets the demanding needs of enterprise applications.

For organizations that need an enterprise-class hybrid cloud with predictable performance and availability, the FAS8000 can be used in a NetApp Private Storage (NPS) for Cloud solution. With NPS for Cloud you can directly connect to multiple clouds using a private, high-bandwidth, low-latency connection. Connect to industry-leading clouds such as Amazon Web Services (AWS), Microsoft Azure, or SoftLayer and switch between them at any time, all while maintaining complete control of your data on your dedicated, private FAS8000. You get the elasticity of the public cloud and protect your data with NetApp technologies that you understand and trust.

Figure 2) FAS8080 EX controllers.

For maximum flexibility, ONTAP Cloud provides data portability in a software-defined storage version of ONTAP that runs in AWS. Providing the storage efficiency, availability, and scalability of ONTAP, it allows quick and easy movement of data between your on-premises FAS8000 and AWS environments with NetApp SnapMirror® data replication software.

Build the right long-term platform

When it comes to long-term storage infrastructure investments, it is critical to focus on flexibility for adapting to future require-ments, simplification of your storage environment, and total cost of ownership. FAS8000 provides a significant price/performance benefit—up to two times that of the previous generation. Plus it delivers industry-leading storage efficiency technologies such as deduplication, compression, compaction, thin provisioning, and space-efficient Snapshot® copies to reduce your cost per effective gigabyte of storage.

In a data-driven business, you also need the ability to leverage data for competitive advantage and to assign resources dynam-ically for more effective operations. The NetApp OnCommand® storage management software portfolio is composed of a range of products for use with the FAS8000, including automation, integration, device-level management, and enterprise storage resource management.

Get it Right from the Start using NetApp Expertise and Tools

Realize the most out of your investment by engaging profes-sional services experts from NetApp or our Services Certified partners. When moving data into your new environment, smooth the transition and mitigate risks by using proven NetApp methodologies, tools, and best practices.

Learn more at netapp.com/services.

About NetApp

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future.
www.netapp.com

FAS8000 Technical Specifications

Scale-Out

	FAS8080 EX	FAS8060	FAS8040	FAS8020
NAS scale-out	1–24 nodes (12 HA pairs)			
Maximum drives (HDD/SSD)	17,280/2,880	14,400/2,880	8,640/2,880	5,760/2,880
Maximum raw capacity	138PB	115PB	69PB	46PB
Maximum Flash Cache™	576TB	192TB	32TB	24TB
Maximum Flash Pool™	1728TB	864TB	576TB	288TB
Maximum memory	3072GB	1536GB	768GB	576GB
SAN scale-out	1–8 nodes (4 HA pairs)			
Maximum drives (HDD/SSD)	5,760/960	4,800/960	2,880/960	1,920/960
Maximum raw capacity	46PB	38PB	23PB	15PB
Maximum Flash Cache	192TB	64TB	32TB	24TB
Maximum Flash Pool	576TB	288TB	192TB	96TB
Maximum memory	1024GB	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)

	FAS8080 EX	FAS8060	FAS8040	FAS8020
Maximum drives (HDD/SSD)	1,440/240	1,200/240	720/240	480/240
Maximum raw capacity	11520TB	9600TB	5760TB	3840TB
Maximum Flash Cache	24TB	8TB	4TB	3TB
Maximum Flash Pool	144TB	72TB	48TB	24TB
Controller form factor	12U (2 enclosures)	6/12U[2]	6U	3U
ECC memory	256GB	128GB	64GB	48GB
NVRAM	32GB	16GB	16GB	8GB
PCIe expansion slots	24	8/24[3]	8	4
Onboard I/O: UTA 2 (16Gb FC/FCoE/10GbE)	8	8	8	4
Onboard I/O: GbE	8	8	8	4
Onboard I/O: 10GbE	8	8	8	4
Onboard I/O: 6Gb SAS	8	8	8	4
OS version	ONTAP 8.2.2 and later		ONTAP 8.2.1 and later	
Shelves and media	See the Shelves and Media page[1] on NetApp.com for the most current information.			
Storage protocols supported	FC, FCoE, iSCSI, NFS, pNFS, CIFS/SMB			
Host/client operating systems supported	Windows 2000, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows XP, Linux, Sun Solaris, AIX, HP-UX, Mac OS, VMware, ESX			

1. netapp.com/us/products/storage-systems/disk-shelves-and-storage-media/index.aspx.
2. 6U with two controllers in a single enclosure. 12U with two controllers in two separate enclosures (and a PCIe expansion module in each enclosure).
3. 24 PCIe slots with the PCIe expansion module.

NetApp FAS8000 Series Software

Features and software included with ONTAP	**Efficiency:** FlexVol®, deduplication, compression, compaction, and thin provisioning **Availability:** MetroCluster and multipath I/O **Data protection:** RAID TEC™, RAID DP® and Snapshot **Performance:** Storage quality of service (QoS) **Management:** OnCommand Unified Manager, OnCommand Performance Manager, Workflow Automation, OnCommand API Services. OnCommand System Manager is bundled with ONTAP.
Extended value software (optional)	• FlexArray storage virtualization software • OnCommand Insight • SnapLock®: Compliance software for write once, read many (WORM) protected data • Storage protocols (purchase each storage protocol you require) A Premium Bundle is available for purchase with FAS8000 systems that includes: • SnapRestore®: restore entire Snapshot copies in seconds • SnapMirror: simple, efficient, flexible disaster recovery • FlexClone®: instant virtual copies of databases or virtual machines • SnapManager® and SnapCenter® software: application- and virtual machine–aware backup, recovery, and cloning • SnapVault®: disk-based backup software for complete backups and online archives to primary or secondary storage in minutes See NetApp.com for information about additional software available from NetApp.