



Datasheet

NetApp FAS8200 Hybrid Flash System

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 50% higher performance than that of previous generation.

Maximize Uptime

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

Consolidate Infrastructure

Scale up to 57PB, 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 with leading cloud integration.

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; leading cloud connectivity; 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.

FAS8200 hybrid storage systems are engineered specifically to address these needs. Powered by NetApp® ONTAP® data management software, the FAS8200 unifies your SAN and NAS storage infrastructure. When FAS8200 systems 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 FAS8200 has the flexibility to keep up with changing business needs while delivering on core IT requirements.

Unlock the power of flash

Flash-accelerated FAS8200 hybrid storage systems deliver up to 50% more performance than our previous generation FAS storage, boosting throughput, lowering latency, and meeting stringent service levels. The base configuration of each HA pair includes 2TB of onboard Flash Cache™ based on NVMe technology, which can be expanded up to 4TB of integrated Flash Cache and up to 72TB of total flash per HA pair when leveraging Flash Pool™ intelligent data caching. Hot data is automatically promoted to flash in real time, so you get the full benefit of flash performance.

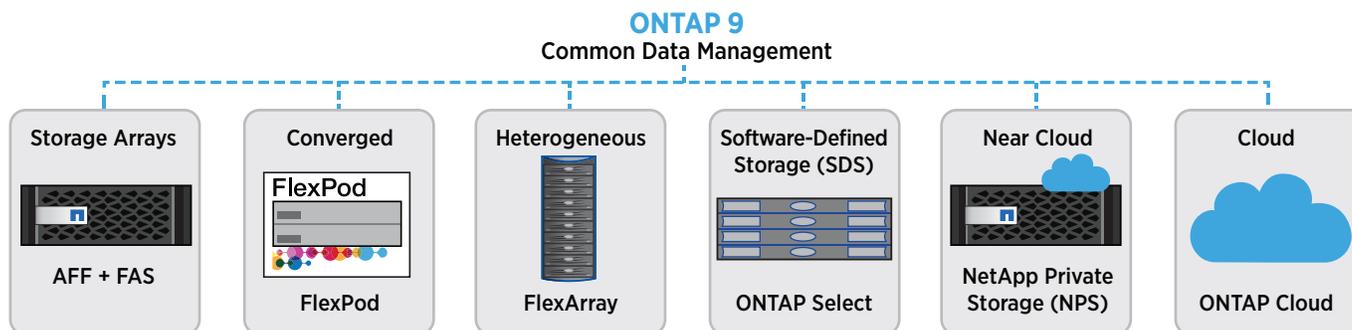


Figure 1) Standardize data management across architectures with a rich set of enterprise data services.

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 more flash acceleration, and upgrading controllers. Scale out by growing from 2 nodes up to a 24-node cluster with 57PB of capacity, including combinations of different FAS and AFF models.

FAS8200 systems also support massive NAS containers, which are easy to manage. With the NetApp FlexGroup feature of ONTAP 9, a single namespace can grow to 20PB and 400 billion files while maintaining consistent high performance and resiliency.

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

FAS8200 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. Plus, NetApp Integrated Data Protection technologies protect your data, accelerate recovery, and integrate with leading backup applications for easier management.

Optimize your data infrastructure with the cloud-based predictive analytics and proactive support of NetApp Active IQ®. Prevent problems, save time, and gain insight by leveraging machine learning to get real-time predictions and recommendations based on community wisdom from NetApp's massive user base.

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. Plus, MetroCluster solutions

based on the FAS8200 offer enhanced configuration flexibility from the new controller architecture, which moves Flash Cache intelligent data caching from the PCIe slots to the motherboard and adds FCVI connectivity to the onboard UTA2 ports.

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 FAS8200 systems. FlexArray® virtualization software running on the FAS8200 extends ONTAP to include storage capacity from EMC, Hitachi, HPE, 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. The FAS8200 running ONTAP is optimized for private and hybrid cloud with secure multitenancy, adaptive quality of service (QoS), nondisruptive operations, and easily defined tiers of service.

Easily burst analytics and DevOps workloads to the cloud by connecting your FAS8200 to NetApp Cloud Volumes, the first enterprise-class native file service available in major hyperscalers.

For advanced data services that are common between your on-premises and cloud environments, leverage ONTAP Cloud, a version of ONTAP software that runs in Amazon Web Services (AWS) and Azure. Providing the storage efficiency, availability, and scalability of ONTAP, it allows easy movement of data between your on-premises FAS8200 and AWS or Azure environment with NetApp SnapMirror® data replication software.

For organizations that need an enterprise-class hybrid cloud with data governance and security, the FAS8200 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 AWS, Microsoft Azure, or IBM Cloud and switch between them at any time, all while maintaining complete control of your data on your dedicated, private FAS8200.

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 requirements, simplification of your storage environment, and total cost of ownership. The FAS8200 provides a significant price-performance benefit. Plus it delivers industry-leading storage efficiency technologies such as inline deduplication, inline compression, inline compaction, thin provisioning, and space-efficient Snapshot™ copies to reduce your cost per effective gigabyte of storage.

It is also critical to look at the security of your data environment. With the NetApp Volume Encryption feature of ONTAP, you can easily and efficiently protect your at-rest data by encrypting any volume on FAS (and AFF) systems. No special encrypting disks required. Plus, optional external key management can further increase security.

In a data-driven business, you also need the ability to leverage data for competitive advantage and to assign resources dynamically for more effective operations. The NetApp OnCommand® suite of management and optimization software is composed of a range of products for use with the FAS8200, including automation, integration, device-level management, and enterprise storage resource management.

Table 1) FAS8200 technical specifications

Scale-Out	
	FAS8200
NAS Scale-Out: 1-24 Nodes (12 HA Pairs)	
Maximum drives (HDD/SSD)	5,760/2,880
Maximum raw capacity	57PB
Maximum onboard Flash Cache based on NVMe technology	48TB
Maximum Flash Pool	864TB
Maximum memory	3072GB
SAN Scale-Out: 1-12 Nodes (6 HA Pairs)	
Maximum drives (HDD/SSD)	2,880/1,440
Maximum raw capacity	28PB
Maximum onboard Flash Cache based on NVMe technology	24TB
Maximum Flash Pool	288TB
Maximum memory	1536GB
Cluster interconnect	2 10GbE

Get It Right from the Start Using NetApp Expertise

Whether you're planning your next-generation data center, need specialized know-how for a hybrid cloud environment, or want to optimize the operational efficiency of your existing infrastructure, we have the expertise. NetApp Services and our certified partners can help you navigate your digital transformation to successfully create, deliver, and consume data services that power your business. [Learn more at netapp.com/services](http://netapp.com/services).

About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit www.netapp.com. #DataDriven

Per HA Pair Specifications (Active-Active Dual Controller)

	FAS8200
Maximum drives (HDD/SSD)	480/480
Maximum raw capacity	4800TB
Maximum onboard Flash Cache based on NVMe technology	4TB
Maximum Flash Pool	72TB
Controller form factor	3U
ECC memory	256GB
NVRAM	16GB
PCIe expansion slots	4
Onboard I/O: UTA 2 (8Gb/16Gb FC, GbE/10GbE, or FCVI ports [MetroCluster only])	8
Onboard I/O: 10GbE	4
Onboard I/O: 10GbE Base-T	4
Onboard I/O: 12Gb SAS	8

OS Version: ONTAP 9.1 RC1 and Later

Shelves and media	See the Shelves and Media page1 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 Server 2016, 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.

Table 2) NetApp FAS8200 series software

	<p>The ONTAP 9 Base Bundle includes a set of software products that deliver leading data management, storage efficiency, data protection, and high performance. The optional Premium Bundle and extended value software products provide advanced capabilities, including instant cloning, data replication, application-aware backup and recovery, volume encryption, and data retention.</p>
Software included in ONTAP 9 Base Bundle	<p>The Base Bundle includes the following NetApp technologies:</p> <ul style="list-style-type: none">• Storage protocols: all supported data protocol licenses (FC, FCoE, iSCSI, NFS, pNFS, CIFS/SMB)• Efficiency: NetApp FlexVol®, deduplication, compression, compaction, and thin provisioning• Availability: multipath I/O• Data protection: RAID-TEC™, RAID DP®, and Snapshot• Performance: adaptive QoS• Scalable NAS container: FlexGroup• Management: OnCommand System Manager and OnCommand Unified Manager
Software included in ONTAP 9 Premium Bundle (optional)	<p>To add capabilities to the Base Bundle, the optional Premium Bundle includes the following NetApp technologies:</p> <ul style="list-style-type: none">• FlexClone®: instant virtual copies with file and volume granularity• SnapMirror®: integrated data replication technology for simple, efficient, flexible disaster recovery and backup use cases• SnapRestore®: restore entire Snapshot copies in seconds• SnapCenter®: unified, scalable software and plug-in suite for application-consistent data protection and clone management• SnapManager® suite: application- and virtual machine-aware backup and cloning <p>See NetApp.com for information about additional software available from NetApp.</p>
Extended value software (optional)	<p>Separate optional software, beyond the Base Bundle and Premium Bundle, is also available:</p> <ul style="list-style-type: none">• OnCommand Insight: infrastructure analytics platform that provides optimization, troubleshooting, monitoring, and cost analysis of your IT infrastructure• SnapLock®: compliance software for write once, read many (WORM)-protected file data• Volume Encryption: granular, volume-level data-at-rest encryption• FlexArray: virtualization of existing third-party storage arrays into an ONTAP environment to leverage the array storage capacity behind a NetApp FAS