Datasheet

NetApp FAS6200 Series

Flexibility meets performance, scalability, and availability to satisfy the most demanding needs of your applications and virtualization workloads

Challenges

Today's data centers have large physical and virtual server deployments that won't tolerate storage performance bottlenecks. They support extensive virtualized environments and enterprise applications with varied workloads. Your enterprise storage systems must meet the rigors of these demanding compute environments, keep pace with data growth and future expansion, while containing capacity and management costs.

Solution

The NetApp FAS6200 series is an enterprise-class storage system combining powerful scalability, availability, and flexibility. These systems help you confidently meet service levels, drive operational excellence, and respond to future growth.

The FAS6200 series includes three performance points to tailor-fit a solution that's right for today and tomorrow: FAS6210, FAS6240, and FAS6280. They are adaptable and ideal for business and technical applications, as well as rapidly changing virtualized environments.

These highly resilient systems deliver industry-leading storage efficiency through the NetApp Unified Storage Architecture running Data ONTAP®,

helping lower your costs. Plus, you can maximize productivity with our integrated suite of manageability software while saving on power, cooling, and floor space with the latest generation of energy efficient disk shelves.

Satisfy Your Most Demanding Workloads

Enterprise-class storage on a petabyte scale with high performance and availability makes the FAS6200 series capable of satisfying your most demanding business and technical applications as well as consolidated virtualized environments. The FAS6200 series architecture is designed for high performance with 24 cores and 192GB of memory in the FAS6280 system to take full advantage of the 64-bit Data ONTAP 8 operating system. These storage systems support end-to-end high-speed connectivity, including 10GbE and 8Gb FC to hosts and 6Gb SAS on the storage side.

In addition, 1TB of Flash Cache comes standard with FAS6280 and FAS6240 configurations to further boost system performance. Flash Cache intelligent caching modules can automatically increase read rates and reduce average latency without adding more high performance disk drives. The combination of intelligent caching with NetApp's storage efficiency features enable the NetApp Virtual Storage Tier (VST),

The FAS6200 series enables you to build a flexible and efficient shared infrastructure today as your foundation for future-ready IT.

Figure 1) NetApp FAS6200 controller.

which optimizes performance and reduces costs. You can add up to 16TB of Flash Cache to the FAS6200 family.

Increase Your Availability

The FAS6200 series is designed to meet the most demanding data center HA requirements. Frame-array-class features such as Alternate Control Path (ACP) and persistent NVRAM write logs enhance our already highly available architecture. Add to that a service processor for diagnostics that helps you address impending issues well before affecting availability, and you have an enterprise-class storage infrastructure that you can rely on.

Further extend availability by combining the FAS6200 series with our MetroCluster™ solution. Designed for continuous data availability across distances of up to 100km, it delivers transparent failover with protection from hardware plus power, network, and environmental faults. MetroCluster also reduces planned downtime by enabling you to perform hardware and software maintenance and upgrades nondisruptively so access to data remains available.

Expand Your Flexibility

Scaling to over 4PB, the FAS6200 series has the flexibility to meet your diverse and evolving storage challenges. What's more, you'll get extensive amounts of integrated, high-bandwidth connectivity for 10GbE, 8Gb FC, and 6Gb SAS.

Extending NetApp's Ethernet leadership, the FAS6200 series supports the unified target adapter with NetApp Unified Connect. This enables flexible, efficient storage infrastructure through multiprotocol data access over a shared network port.

Plus, FAS6200 systems support Data ONTAP in both standard and cluster modes, enabling you to expand up to 24 nodes. Our robust systems are cluster-ready with integrated 10GbE connectivity paving the way for I/O consolidation.

Moreover, the NetApp Unified Storage Architecture can handle your diverse workloads and growing virtualized environments. We provide you with multiprotocol storage networking, which increases flexibility and reduces business risk. With support for high-capacity disk shelves with SATA drives, high-density disk shelves with small-form factor SAS drives, high performance disk shelves with 3.5" SAS drives, and lightning fast SSDs and Flash Cache, the FAS6200 family is ready to be tailored to your data requirements and budget.

Industry-Leading Storage Efficiency

The FAS6200 series provides advanced storage efficiency, data protection, and data management features across the NetApp Unified Storage Architecture.

- Thin provisioning helps keep costs in check by largely eliminating the need to preallocate storage based on forecasted demand and improving the utilization of your existing storage.
- NetApp deduplication is the industry's best answer to ever-increasing storage capacity demands, while data compression adds another efficiency dimension, helping to further reduce data and network bandwidth usage.
- Our low-overhead double-parity RAID-DP® offers better data protection and capacity utilization than traditional RAID implementations.
- High-efficiency NetApp Integrated Data Protection includes Snapshot™ technology, which enables you to create point-in-time copies of file systems using very little space.
- Additionally, thin replication enables backup and recovery, disaster recovery, and archival using minimal storage capacity and network resources.
- FlexClone® technology instantly creates virtual copies, enabling development and test for your most demanding enterprise applications and databases at a lower cost.

FAS6200 SERIES TECHNICAL SPECIFICATIONS

All data in this table applies to active-active dual controller configurations.

	FAS6280	FAS6240	FAS6210
Maximum Raw Capacity	4320TB	4320TB	3600TB
Maximum Disk Drives	1440	1440	1200
Controller Form Factor	Dual enclosure HA; 2 controllers in two 6U chassis, total of 12U	Dual enclosure HA; 2 controllers in two 6U chassis, total of 12U	Single enclosure HA; 2 controllers in single 6U chassis
Memory	192GB[1]	96GB	48GB
Flash Cache	16TB maximum 1TB standard in base systems	6TB maximum 1TB standard in base systems	3TB maximum
PCIe Expansion Slots	24	24	8
Onboard I/O: 10GbE	8	8	8
Onboard I/O: 8Gb FC	8–32	8–32	8–16
Onboard I/O: 6Gb SAS	0–24	0–24	0–8
Storage Networking Supported	FC; FCoE; IP SAN (iSCSI); NFS; CIFS; HTTP; FTP		
OS Version	Data ONTAP 8		

Supported Configurations	Highly available controller configurations
	    Active-active controller with controller failover and multi-path HA storage
	    Active-active controller with stretch (nonswitch) and fabric-attached MetroCluster
	V-Series
	Storage Acceleration Appliance SA620		

Disk Shelves Supported	DS2246 (2U; 24 drives, 2.5" SAS SFF) DS4243 (4U; 24 drives, 3.5" SATA/SAS/SSD) DS14mk2 and DS14mk4 (3U; 14 drives, 3.5" FC/SATA)		

Maximum RAID Group Sizes	RAID 6 (RAID-DP): FC – 28 (26 data disks plus 2 parity disks)
	                              SATA – 20 (18 data disks plus 2 parity disks)
	RAID 4: FC – 14 (13 data disks plus 1 parity disk)
	              SATA – 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 XP, Linux®, Sun Solaris, AIX, HP-UX, Mac® OS, VMware®, ESX		
Max Number of LUNs	4096		
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 500 per controller		
Snapshot Copies	Up to 127,000		
Maximum Volume/Aggregate Size	100TB	100TB	70TB
Maximum Port Count Includes Integrated Ports and PCIe Expansion Slots			
FC Target ports (8Gb/4Gb) (max)	48/48	48/48	32/48
FCoE Target ports, UTA (max)	40[2]	40[2]	32
10GbE Ports (max)	40	40	24
GbE Ports (max)	44[2]	44[2]	36
6Gb SAS Ports (max)	72	72	40
FC Initiator Ports (max)	128	128	48
Maximum Adapters			
Dual 10GbE (optical or copper)	16	16	8
Quad GbE (copper)	10[2]	10[2]	8
Dual 10GbE FCoE SAN Unified Target Adapter (optical or copper)	20[2]	20[2]	8
8Gb FC Target	24	24	8
Dual 8Gb VI FC for SnapMirror®	8	8	6
Flash Cache (1TB/512GB)	16/16	6/12	2/6
Quad 6Gb SAS Storage HBA	12	12	8
Quad 4Gb FC Storage/Tape HBA (fiber)	24/16	24/16	8/8

[1] 192GB of physical memory; actual memory allocated depends on the Data ONTAP release in use   [2] Maximum number of Ethernet ports on all network adapter cards depends on the Data ONTAP release in use

FAS6200 Series Software

The FAS6200 includes a simplified software structure that offers more value and enhanced simplicity while maintaining a flexible foundation for building custom solutions.

As reflected below, enhancements include:

- More software value is now included standard with every system via Data ONTAP Essentials
- A-la-carte structure of add-on software simplified to five key software products

- Customers have the flexibility to select one protocol of their choice to be included with the base system (other protocols can be added separately)
- A Complete Bundle of all NetApp Extended Value software is available for all-inclusive functionality and convenience

DATA ONTAP ESSENTIALS

The following software is included with every FAS/V6200 system, delivering unmatched value through greater flexibility, availability, and automation:

Capability	Product/Feature	Description
OnCommand™ Management Software	System Manager	Windows OS–based management tool for single system deployment.
	OnCommand	Unified Manager to deploy, automate, provision, protect, monitor and manage all your NetApp storage systems from a single console.
High Availability	MultiPath I/O	Load balancing and multipath capabilities for failover.
	SyncMirror	Maintains two local, online copies of data. Protects against all types of hardware outages.
	MetroCluster	Combines array-based clustering with synchronous mirroring; provides continuous availability at a low cost.
Storage Efficiency	Deduplication	Transparently removes duplicate data at the block level, for all storage tiers.
	Thin provisioning	Enables on-demand storage provisioning to achieve maximum utilization across multiple applications.
	FlexVol	Enables virtual volumes that you can manage and move independently from physical storage.
Data Protection	RAID-DP	Safeguards your data from double disk failure, with no performance penalty.
	Snapshot	Enables quick point-in-time copies of file systems or LUNs; NetApp Snapshot uniquely carries no performance penalty.
	Open Systems SnapVault	Backup of DAS connected to Windows or UNIX servers; maintains online archive of backup copies.
Secure Mult-tenancy	MultiStore®	Secure partitioning of network and storage resources enables consolidation of multiple domains on a single system.
Performance	FlexCache®	Enables NetApp systems to be used as caches.
	FlexShare®	Automatically allocates storage resources to higher priority workloads.
Storage Protocols	Included SAN or NAS protocol	One SAN or NAS protocol of your choice (iSCSI, FC, NFS, CIFS) is included with your system.

Extended-Value Software:

Affordable, easy to buy add-on software modules are available to enhance base system functionality.
These can be purchased individually, or all of these products can be purchased together via the NetApp Complete Bundle.

Capability	Product/Feature	Description
Application Integration	SnapManager® Suite	Enables application aware and virtual machine aware backup, recovery, and cloning (for Oracle, Exchange, SharePoint, SQL, SAP, Virtual Infrastructure, and Hyper-V).
System Recovery	SnapRestore®	Restore LUNs and file systems from previously backed-up snapshot copies in seconds, irrespective of size or number of files.
Disaster Recovery	SnapMirror®	Synchronous, semi-synchronous, and asynchronous data replication software that delivers simple, efficient, and flexible disaster recovery for business-critical applications.
Virtual Cloning	FlexClone®	Instantly create transparent virtual copies of production databases or virtual machines, without needing any additional storage capacity or compromising performance.
Disk-to-disk Backup	SnapVault®	Disk-to-disk backup software for complete back-ups and online archives to primary or secondary storage in minutes instead of hours or days.
Storage Protocols	Optional SAN and NAS protocols	Native support for all key SAN/NAS protocols (iSCSI, FC, NFS, CIFS), makes NetApp systems ideal for consolidating your mixed IT environment. One protocol of your choice is included standard with your system; others can be added as desired.
All Extended Value Software	Complete Bundle	All of the Extended Value software above, together in a single bundle for all-inclusive convenience.

FAS6200 SERIES QUICK CHECKLIST FOR ORDERING

Models	FAS6280 FAS6240 FAS6210
Flash Cache	1TB and 512GB modules
I/O Options	Configurable onboard ports (FC or SAS) Optional NICs and HBAs
Disk Shelves	DS2246 (24 drives – 2.5" SAS SFF) DS4243 (24 drives – 3.5" SATA/SAS/SSD) DS14mk2 and DS14mk4 (for MetroCluster configurations; 14 drives – 3.5" FC/SATA)
Storage Protocols	FC, IP SAN (iSCSI), NFS, CIFS
Optional Software	Refer to FAS6200 series software tables
Professional Services	Storage System Installation Service, RDS+ Implementation Services, Storage Controller Upgrade Service, Assessment Services, Consulting Services, Deployment/Implementation Services, Managed Services, Solution Suites
Support	SupportEdge Services

Professional Services
Modular offerings customized for you

NetApp Professional Services can assist you in any and every phase of the storage lifecycle. Whether you need help planning your next-generation storage system, need an extra set of hands for a major storage deployment, or want to upgrade your existing infrastructure, NetApp Professional Services personnel have the skills and expertise. NetApp offers a complete portfolio of services. In summary, NetApp Professional Services offerings include:

- **Solution suites:** These customized solutions are designed to address your business-level challenges holistically.
- **Assessment services:** Enlist NetApp to identify and document business, storage, and infrastructure requirements and receive recommendations for improvements.
- **Consulting services:** Reduce the complexity of your networked storage implementation when you enlist our experts to design, document, and implement a range of applications and solutions.

- **Deployment/implementation services:** Reduce risk as we prepare your site, install and connect systems, set up your software, and perform complete verification.
- **Managed services:** Have NetApp experts on site to perform storage management services so you can focus on core business initiatives.

Global Support
SupportEdge services

NetApp Global Support delivers the highest availability for your enterprise data environment and helps you optimize your storage investments. Let NetApp mitigate support issues and drive operational best practices. NetApp's innovative, proactive support means you'll have fewer and less-severe support cases. But if a problem arises, our award-winning technical centers and field support staff—delivering in over 100 countries—won't rest until it's solved.

As an industry leader in innovation, NetApp Global Support provides tools and technology to enable business continuity. AutoSupport™, NetApp's

suite of automation tools, is delivered as a service to help you proactively manage your systems and quickly resolve issues. AutoSupport functions as a "virtual staff" to protect critical data, save time, and reduce impact on your IT resources.

About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at *www.netapp.com*.

For more information go to:

- FAS6200 system: *www.netapp.com/ us/products/storage-systems/fas6200/*
- Additional products and software: *www.netapp.com/us/products/*
- Professional Services: *www.netapp. com/us/services/professional/*
- Support: *www.netapp.com/us/support/*

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