Datasheet

NetApp FAS8080 EX

Reach new levels of performance, availability, and scalability for business-critical applications

The Challenge

Organizations depend on enterprise applications to keep their operations running. Any interruption in these business-critical workloads will lead to a certain loss of revenue, disruption in service, or missed opportunity. Companies are also facing challenges with shorter product lifecycles, stringent service-level objectives (SLOs), and continued demands for high availability. To increase competitive advantage in this fast-moving environment, organizations must process thousands of terabytes of data quickly, efficiently, and reliably to accomplish business objectives without incurring costly downtime.

IT leaders need a storage infrastructure that transparently scales in performance and capacity and an architecture that offers leading high availability from both the platform and data management software so business operations have continual access to the resources needed to make business-critical decisions in an extremely competitive market.

The Solution

Support for business-critical require-ments in financial modeling, engineering analysis, and data warehousing thought impossible only five years ago is now realizable with the NetApp® FAS8080 EX.

Designed to deliver superior levels of performance, availability, and scalability, the FAS8080 EX transforms storage into a strategic operational resource for generating revenue more quickly.

Powered by NetApp Data ONTAP®, the FAS8080 EX is optimized at every level for enterprise applications. Forty processor cores, 256GB of high-speed DRAM, capacity for 1,440 drives, and 36TB of flash acceleration are balanced together in a high-availability (HA) pair to reliably process the massive amounts of data in a modern enterprise. With 16 onboard I/O ports as well as 24 PCIe 3.0 expansion slots, serving data to applications has never been easier. Combine this with world-class data management from Data ONTAP, and you have a system that can reduce the time it takes to complete critical operations, increase your organization's competitive advantage, and keep your enterprise applications running at top speed 24/7/365.

Performance for Extraordinary Throughput

Our leading Intel® multiprocessor archi-tecture with its high-bandwidth DDR3 memory system maximizes throughput for business-critical workloads such as SAP®, SQL Server®, and Oracle® databases as well as computational modeling and logistics management
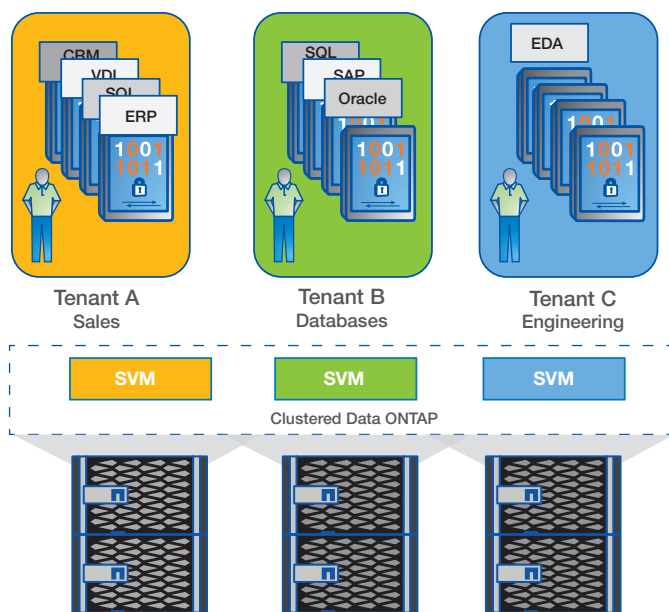
Figure 1) Multi-tenant virtual infrastructure.

applications. Building on a decade of multicore optimizations, Data ONTAP takes advantage of the FAS8080 EX's 40 processor cores to keep pace with growth in storage I/O demands for your most intensive SAN and NAS applications. Integrated unified target adapter (UTA2) ports support 16Gb FC and 10GbE (FCoE, iSCSI, SMB, NFS) so you're ready for whatever the future holds. Twenty-four I/O-tuned PCIe gen3 slots support Flash Cache™ cards or up to 48 extra 10GbE or 16Gb FC ports for demanding data-processing installations.

Flash-Accelerated Productivity

The response times of OLTP and other business-critical workloads can be significantly improved with a FAS8080 EX hybrid storage array. Proven examples demonstrate that shifting an OLTP database workload from an all-SAS to a hybrid array with flash and SATA can lower cost per TB by more than 40%, lower cost per IOPS by almost 20%, and reduce power consumption by over 25%. With the capability to scale to almost half a PB of flash, the FAS8080 EX offers flexibility to configure a system for optimal productivity and predictability to keep operations running smoothly.

All-flash configurations of the FAS8080 EX are available for customers requiring the high performance and low latency of flash with the enterprise reliability and extensive data management capabilities of Data ONTAP. Hybrid FAS8080 EX systems boost performance and lower latency for your IT operations, so they are more predictable to meet stringent service-level objectives. Flash functions as a self-managing virtual storage tier with up to 36TB of flash per HA pair and 432TB per cluster. All-flash volumes and completely all-flash FAS8080 EX configurations can be leveraged to support critical workloads that must continually run at high speed.

Capacity to Harness the Data Explosion

Storage scale-out to more than 17,000 drives and 4M IOPS of performance combined with the industry-leading management capabilities of Data ONTAP enables the FAS8080 EX to process petabytes of data for complex resource exploration, faster semiconductor chip design, or optimally managing logistics for billion-dollar-plus product operations. Nearly 70 PB of data in a 24-node cluster can be managed from a single console to reduce the cost of operations and simplify warehousing years of business-critical data.

Identify Problems Before They Happen to Achieve Unparalleled Availability and Stringent SLOs

As with other business-critical arrays, the FAS8080 EX is designed to deliver 99.999% or greater availability through a comprehensive approach that combines highly reliable hardware, innovative software, and sophisticated service analytics. Advanced hardware features, including alternate control path (ACP), persistent NVRAM write logs, and an integrated service processor, provide the utmost reliability to protect your investment. All I/O devices, including embedded ports, can be independently reset, allowing the FAS8080 EX to detect, contain, and recover from faults.

NetApp builds upon the resilient hardware platform with advanced software capabilities that further improve uptime. Meet the most demanding SLOs with Data ONTAP nondisruptive operations (NDO), quality of service (QoS), and integrated data protection capabilities. NDO enables software and firmware updates, hardware repair and replacement, load balancing, and tech refresh to happen without planned downtime. QoS makes sure that applications have access to the resources they need. NetApp Integrated

Figure 2) FAS8080 EX controllers.

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

At NetApp, we use advanced service analytics to identify patterns in billions of rows of log data gathered from thousands of deployed NetApp systems. Risk signatures are constantly monitored, and your administrators and/or NetApp service staff are alerted to proactively address issues that might affect operations.

Get More from Existing Storage Investments

Extend the capabilities of the FAS8080 EX to include EMC, Hitachi, and NetApp E-Series arrays with FlexArray virtualization software. Consolidate management of your existing storage to simplify operations, while increasing efficiency and providing superior functionality with FlexArray, the only unified storage virtualization solution.

With FlexArray, create a single storage management architecture that supports both SAN and NAS while simplifying management and cloud integration.

Optimize Hybrid Cloud Deployment

The FAS8080 EX is optimized for cloud with modular, flash-accelerated building blocks, native multi-tenancy, QoS,

nondisruptive operations, and easily defined tiers of service. Leveraging NetApp OnCommand®, OpenStack, CloudStack, and other resource management tools, storage can be quickly provisioned to meet specific service levels. 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 business while storing and managing your data with technologies you trust.

Global Services

NetApp employs the world's foremost experts in storage networking, with the proven expertise to build a partnership with your company so we can understand your unique needs and help you plan your next-generation IT environment or optimize the operational efficiency of your existing infrastructure.

Let NetApp Services help you to maximize the business value from your NetApp investment and achieve the highest availability for your enterprise

data environment. NetApp delivers innovative high-touch, personalized services across your IT lifecycle with:

- **Strategy services.** Align IT with your business goals
- **Design services.** Architect the optimal storage environment
- **Deploy and transition services.** Implement validated architectures and prepare your storage environment
- **Operations services.** Attain continuous operations while driving operational excellence and efficiency

In addition, NetApp Services provides in-depth knowledge transfer and educational services that give you unprecedented access to our global technical resources and intellectual property. Learn more at *www.netapp.com/services.*

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*.

Go further, faster®

FAS8080 EX TECHNICAL SPECIFICATIONS: HYBRID AND DISK-ONLY CONFIGURATIONS

See the All-Flash FAS datasheet for information about all-flash configurations

Scale-Out

	FAS8080 EX
NAS scale-out	1-24 nodes (12 HA pairs)
Maximum drives	17,280
Maximum raw capacity	69PB
Maximum flash	432TB
Maximum memory	3072GB
SAN scale-out	1–8 nodes (4 HA pairs)
Maximum drives	5,760
Maximum raw capacity	23PB
Maximum flash	144TB
Maximum memory	1024GB
Cluster interconnect	2, 4, or 6 10GbE

Per HA Pair

	FAS8080 EX
Maximum raw capacity	5760TB
Maximum drives	1,440
Controller form factor	12U (2 enclosures)
ECC memory	256GB
Flash for Hybrid Storage Configurations	
Maximum Flash Cache™	24TB
Maximum Flash Pool™	36TB
Combined flash total	36TB
NVRAM	32GB
PCIe expansion slots	24
Onboard I/O: UTA 2 (16Gb FC/FCoE/10GbE)	8
Onboard I/O: GbE	8
Onboard I/O: 10GbE	8
Onboard I/O: 6Gb SAS	8
OS version	Data ONTAP 8.2.2 and later
Shelves and media	See the Shelves and Media page* on NetApp.com for the most current information
Storage protocols supported	FC, FCoE, iSCSI, NFS, pNFS, CIFS/SMB, HTTP, FTP
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®

*http://www.netapp.com/us/products/storage-systems/disk-shelves-and-storage-media/index.aspx

NETAPP FAS8000 SERIES SOFTWARE

Features and software included with Data ONTAP	**Efficiency:** FlexVol®, deduplication, compression, and thin provisioning **Availability:** MetroCluster*, multipath I/O, and MultiStore®* **Data protection:** RAID-DP®, Snapshot, and Open Systems SnapVault® **Performance:** FlexCache®, storage QoS, and FlexShare®* **Management:** Workflow Automation, System Manager, and Unified Manager *Supported in 7-Mode only.
Extended value software (optional)	• FlexArray storage virtualization software • OnCommand® Balance • 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, flexible disaster recovery • FlexClone®: Instant virtual copies of files, LUNs, and volumes • SnapManager® Software: Backup/recovery for enterprise applications • SnapVault: Disk-based backup See *NetApp.com* for information on additional software available from NetApp.

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