Easy data management in a scale-out environment

NetApp FAS2040

PRODUCT SPECIFICATION

Whether for primary or secondary storage, the FAS2040 accommodates both midsize and distributed enterprises (remote offices/branch offices) by offering integrated block-level and file-level data access, intelligent management software, and data protection capabilities in a cost-effective package.

- **Up to 136 disks (136 TB) storage capacity**
- **FC-SAN, IP-SAN (iSCSI) and NAS (CIFS/NFS) protocol support**
- **Full SAS, full FC, full SATA or FC/SAS/SATA disk mix**
- **Single and dual active-active controller models**
- **2x4Gb FC ports, 4xGbE ports and 1 SAS port per controller**
- **4 GB cache per controller**

The FAS2040 provides departmental and remote-office storage in distributed enterprise environments. Like other NetApp FAS family members, FAS2040 systems offer integrated block-level and file-level data access, intelligent management software, and data-protection capabilities. These cost-effective systems include serial attached SCSI (SAS) drive support, versatile I/O connectivity, and built-in remote management. FAS2040 systems are equally at home as primary or secondary storage, serving block or file data over Fibre Channel or Ethernet networks, providing you with lots of choice—all while delivering the lowest total cost of ownership (TCO) of comparable systems from other providers.

Versatility

FAS2040 systems offer unified file and block storage. That means one solution for CIFS, NFS, iSCSI, and FC SAN storage protocols. In addition, the FAS2000 Data ONTAP operating system bolsters storage efficiency through higher utilization of capacity and through thin provisioning (FlexVol® and FlexClone®) and Snapshot™ technology.

Scalability

Scalability is more than just being able to add more drives to an existing enclosure. It means being able to combine existing and expanded data-management resources in the fastest, most elegant way. For most data-management solutions, the path from entry to midsize to high end is littered with hoops to be jumped through. Scalability to those architects of these solutions means stringing a bunch of point solutions together. The NetApp architecture spans the enterprise environment from entry to high end. The result is no need to “rip, replace, and retrain". A common NetApp upgrade path gets you from 3.6TB (FAS2020) to 504TB (FAS6070), all under the auspices of one operating system and a common set of intelligent management tools, backup and restore capabilities, and disaster recovery solutions.

Value

Every aspect of NetApp data-management solutions is aimed at giving you more choice and more value than alternative solutions. And, as Mercer Management Consulting found in its analysis, you end up with lower TCO because your acquisition costs are lower, your management costs shrink considerably, and NetApp high data availability even slashes the cost of system downtime. Managing server and application sprawl on a shoestring budget is a formidable challenge. With the new FAS2040, NetApp is doing its part to help you meet that challenge.

NetApp FAS2040 *Technical Specifications*

TECHNICAL HIGHLIGHTS

Form Factor	Standard 19-inch rackmount; 2U Controller Enclosure; 3U 14-slot Disk Shelf Expansion DS14; 4U 24-slot Disk Shelf Expansion DS4243
Storage Controller	single or dual active/active controllers
Host Connectivity	2 x 4 Gb FC , 4 x GbE and 1 SAS port per controller
Cache Memory	4 GB ECC memory, 512 MB NVMEM per controller
Supported Protocols	
SAN	Fibre Channel Protocol (FCP) for SCSI; fabric-attached and direct-attached; iSCSI
File	NFSV2/V3/V4 over UDP or TCP, PCNFSD V1/V2 for (PC) NFS client authentication, Microsoft® CIFS
Other	HTTP 1.0, HTTP 1.1 virtual hosts; NDMP
LUNs	up to 1 024
Max. Hosts	Up to 32 SAN connected servers (per controller and per active/active configuration)
Min/Max. Disk Drives	Up to 136 (12 internal + 28 in 2xDS14 + 96 in 4xDS4243)
Max. Capacity (raw/formatted)	136 TB (raw) with 1 TB SATA disks; 61.2 TB (raw) with 450 GB FC & SAS disks
Drives Supported	
SATA II 7200rpm	500 GB, 750 GB and 1 TB in Controller Enclosure; 500 GB & 1 TB in DS4243 Enclosure
SAS 15Krpm	144 GB, 300 GB, 450 GB in Controller Enclosure; 300 GB & 450 GB in DS4243 Enclosure
Fibre Channel 15Krpm	144 GB, 300 GB, 450 GB in DS14 Enclosure
RAID Support	RAID 4, RAID-DP™*
Back-end Connectivity	4 Gb/s Fibre Channel-Arbitrated Loop (FC-AL); 3 Gb/s SAS interface
Management	Full-duplex 10/100/1000 Base-T Ethernet onboard console, diagnostic LED, Maintenance Center, 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 DS4243
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 XP, Linux®, Sun™ Solaris™, IBM AIX, HP-UX, MacOS, VMware ESX; Consult NetApp compatibility matrices for full details.

MANAGEMENT & ADMINISTRATION

Storage Management	Data ONTAP® 8 ready
Multi-path Management	Yes
Snap Shot	Snapshot, SnapManager, FlexClone™, SnapDrive, SnapValidator®
Local Data Replication	SyncMirror®
Remote Data Replication	SnapMirror®
Other	MultiStore®, SnapVault®, SnapMover®, Snaprestore, Clustered failover, NearStore, FilerView®, FlexCache, FlexVol, FlexShare™, Advanced Single Instance Storage, Single Mailbox Recovery, Protection Manager,

MANAGEMENT & ADMINISTRATION

	Operations Manager, Snap look Compliance, Snap lock Entreprise

PHYSICAL SPECIFICATIONS

Dimensions (HxWxD)	
Storage Controller Enclosure	2 EIA U (3.45", 8.76 cm) x 19" IEC rack-compliant (17.6", 44.7 cm) x 24" (61 cm)
Disk Shelf Enclosure	DS14 : 3 EIA U(5.25", 13.3 cm) x 19" IEC rack-compliant (17.6", 44.7 cm) x 20" (50.85 cm); DS4243 : 3 EIA U(7", 17.8 cm) x 19" IEC rack-compliant (19", 48.3 cm) x 24" (61 cm)
Weight	
Storage Controller Enclosure	60 lb (27.2 kg) fully loaded
Disk Shelf Enclosure	DS14 : 77 lb (35kg) fully loaded; DS4243 : 110 lb (49.9 kg) fully loaded

ENVIRONMENT

Temperature	10° C to 40° C (50° F to 104° F); at </= 3,000 m (at </= 10,000') elevation;
Humidity	20% to 80% relative humidity, non-condensing (28° C wet bulb temperature)
Acoustic	Controller Enclosure: <60 dBA sound pressure (LpA) @normal operating conditions (at 23°C and at sea level); Disk Shelf Expansion: 58 dBA sound pressure (LpA) @normal operating conditions (at 23°C and at sea level);

POWER

Power consumption	
Storage Controller Enclosure	88 to 264 VAC, 9 to 4.5 A, 50/60Hz, 675 W
Disk Shelf Enclosure	DS14 : 100 to 120 VAC, 3.95 A; 200 to 240 VAC, 1.9 A; DS4243 : 100 to 120 VAC, 6.3 A; 200 to 240 VAC, 3.2 A
Heat Dissipation	
Storage Controller Enclosure	2 304 BTU/hr (rated), 1 587 BTU/hr (typical);
Disk Shelf Enclosure	DS14 : 1 167 Btu/hr (fully loaded shelf); DS4243 : 2 180 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 CNS14336, CCC GB 4943-2001, SABS, S Resolution 92-98
Electromagnetic Compatibility (EMC)	FCC Part 15 Class A, ICES-03, CE, MIC, VCCI, AS/NZS CISPR 22, EN55022, EN55024, EN61000-3-2, EN61000-3-3, CoC (South Africa), BSMI, KN22, EN61000-4-2 to 6, EN61000-4-11, KN24, CISPR 24

WARRANTY

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

* RAID-DP is a high performance RAID-6 implementation.

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