IBM System Storage N3700

Highlights

- ***High availability—leverages proven features including a high performing and scalable operating system, data management software and redundancy features***
- ***Heterogeneous storage access—designed to provide networked storage capable of consolidating NAS and iSCSI storage requirements***
- ***FCP support—designed for operation in Fibre Channel SAN environments***
- ***Instant Backup and Instant Recovery—supports disk-based backup, with file or application-level recovery in seconds with SnapShot™ and SnapRestore® software features***
- ***Simple Replication and Disaster Recovery—designed to provide easy-to-deploy mirroring solution that's highly tolerant of WAN interruptions***
- ***Management Simplicity—designed to enable on-the-fly provisioning; self-diagnosing systems with automated replacement parts delivery; self-service file recovery for end users***
- ***Cost Effective—FlexVol® can double storage utilization, and both block and file storage can be consolidated into a single affordable system***

The challenge: Support cost-effective, enterprise-class storage

Corporate workgroups, distributed enterprises and small- to medium-sized companies are increasingly seeking to network and consolidate storage to improve availability, share information, reduce costs and protect and secure information. These organizations require enterprise-class solutions capable of addressing immediate storage needs cost-effectively, while providing an upgrade path for future requirements. Ideally, IT managers would like a maximum degree of flexibility to design the architecture that best supports the requirements of multiple types of data and a broad range of applications.

The solution: IBM System Storage N3700 storage system

IBM System Storage™ N3700 is designed to offer you fast data access with extremely low maintenance requirements for a highly capable data storage solution. The N3700 filer integrates storage and storage processing

into a single unit, facilitating affordable network deployments. These advanced storage systems leverage a proven storage architecture and offer standard IBM System Storage N series elements, including integrated I/O, high availability via clustering and Fibre Channel and/or SATA disk drives. IBM System Storage N3700 models are designed to integrate easily into existing IT environments to deliver unified storage for organizations with NAS, IP SAN via iSCSI protocols, FC SAN via FCP protocols or combined environments, making enterprise-level storage a realistic goal for company sites regardless of size or staffing.

Enterprise-class storage based on standard IBM System Storage N series architecture

N3700 models use Fibre Channel and/or disk drives as their storage media to support enterprise-class reliability. All N3700 systems are configured with Data ONTAP® software. Data ONTAP can facilitate greater efficiency and productivity within your organization, which can help reduce the total cost of ownership (TCO).

Scalability to address evolving storage needs

With a purchase price and a scalability model that can help you protect your storage investment, the IBM System Storage N3700 offers exceptional value for organizations of all sizes. The N3700 supports low-impact scalability. This is designed to allow you to scale your storage infrastructure to keep pace with growing storage needs without taking mission-critical applications and information offline. The N3700 supports up to 16.8 TB of physical capacity, and as storage needs evolve, a simple upgrade process is designed to enable you to easily and quickly upgrade an installed N3700 system.

Highly flexible, unified storage solution

The IBM System Storage N3700 offers an excellent solution for a broad range of deployment scenarios. The N3700 supports Ethernet environments, enabling economical NAS and iSCSI deployments. The N3700 system functions as a "unification engine," which is designed to allow you to simultaneously serve both file and block-level data across a single network—demanding procedures that for some solutions require multiple, separately managed systems. The flexibility of the N3700 allows it to address the storage needs of a wide range of organizations, including distributed enterprises and data centers for midrange enterprises. The N3700 also supports sites with computer and data-intensive enterprise applications such as database, data warehousing, workgroup collaboration and messaging.

Affordable data protection for distributed enterprises

N3700 storage systems can offer significant advantages for distributed enterprises with remote and branch office sites. These organizations and others can leverage the SnapVault® and SnapMirror® software functions to implement a cost-effective data protection strategy by mirroring data back to a corporate data center. N3700 systems can help improve data availability and simplify backup and restore operations by implementing centralized backup via a single methodology. This helps reduce tape management requirements and the need for remote systems administration. Recovering data backed up on IBM System Storage N3700 systems can be faster and more reliable than recovering from tape.

This solution helps reduce the requirement for sophisticated IT infrastructure and local, resident IT support resources at remote sites and leverages the advantages of IBM System Storage N3700 systems installed at corporate headquarters.

Support for low TCO and long-term investment protection

N3700 systems support a low TCO with an affordable price point, easy installation and configuration and ease of ongoing maintenance. Standardization on the IBM System Storage N3700 storage architecture can help your organization leverage staff IT skills and reduce complexity. The innovative design of the N3700 results in a smaller form-factor appliance that conserves scarce and valuable space in data centers or remote office locations. In addition, the ability to support unified storage networks allows you to leverage your current network investment while deploying a long-term, highly scalable and easily upgradeable storage solution.

IBM System Storage N3700 at a glance

Operating system	Data ONTAP 7.2
Standard software features	Integrated automatic RAID manager, Snapshot, Fast Boot, telnet, e-mail alerts, NIS, DNS, SNMP, FilerView®, NDMP, SecureAdmin™, FlexVol, AutoSupport
Network protocol support	NFS V2/V3/V4 over UDP or TCP, PCNFSD V1/V2 for (PC) NFS client authentication, Microsoft® CIFS, VLD, FTP, HTTP 1.0, HTTP 1.1 Virtual Hosts
SAN protocol support	iSCSI, Fibre Channel Protocol (FCP) fabric-attached and direct-attached configurations
Optional licensed functions	NFS, CIFS, HTTP, Fibre Channel Protocol (FCP), iSCSI Protocol, FlexClone™, MultiStore®, Clustered Failover (CFO), SnapMirror, SnapRestore, SnapVault, LockVault™ Compliance, LockVault Enterprise, SnapLock® Compliance, SnapLock Enterprise, SyncMirror®, SnapValidator®, SnapDrive® for Windows®, SnapDrive for UNIX®, Single Mailbox Recovery for Exchange, SnapManager® for Exchange, SnapManager for SQL Server, SnapManager for Oracle, Operations Manager
Hardware features	3U Integrated filer and disk storage available in 19" rack-mount configurations, redundant hot-plug power supplies and cooling, 2 integrated full duplex 10/100/1000 Ethernet ports per NAS controller, 2 integrated FC ports per NAS controller, CompactFlash and diagnostic LEDs/OPS
Default/min./max. RAID group sizes	Default: All N3700 devices shipped with root volume using RAID-DP. Root consists of 3 disks (1 data and 2 parity). System Administrator can change the designated root volume and create any new volumes using: RAID 4 or RAID-DP RAID 4 minimum configuration: 1 data + 1 parity/Maximum: 13 data + 1 parity RAID-DP minimum configuration: 1 data + 2 parity/Maximum: 26 data + 2 parity (FC)
Disk storage expansion units supported	EXN4000 – 4 Gbps Fibre Channel Disk Storage Expansion Unit EXN2000 – Fibre Channel (FC) Disk Storage Expansion Unit EXN1000 – Serial Advanced Technology Attachment (SATA) Disk Storage Expansion Unit
Disk drive capacities supported	EXN4000 – 4 Gbps 15K RPM FC disk drives (144 GB, 300 GB); 2 Gbps 10K RPM FC disk drives (144 GB, 300 GB), 15K RPM 2 Gbps FC disk drives (144 GB) EXN2000 – 10K RPM 2 Gbps FC disk drives (144 GB, 300 GB), 15K RPM 2 Gbps FC disk drives (144 GB) EXN1000 – 7200 RPM SATA disk drives (250 GB, 500 GB)

Filer specifications	N3700 A10	N3700 A20
Max. raw capacity	16.8 TB	16.8 TB
Max. number of disk drives	56	56
Volumes and RAID groups (min./max. of 1 RAID group per volume)	1/7	1/7
Max. volume size (physical capacity)	8 TB	8 TB
ECC memory	1 GB	2 GB
Nonvolatile memory	128 MB	256 MB
Ethernet 10/100/1000 copper	2	4
Copper FC ports for EXN expansion unit attachment	1	2
Optical FC ports for FC SAN and tape attachment	1	2
Clustered failover–capable	No	Yes
Rack Mount (in IBM 2101 Storage Solutions Rack Model 200 or other industry-standard 19-inch rack)	Yes	Yes

Environmental specifications

AC power/max. current	100 to 120VAC, 4 A; 200 to 240VAC, 2 A
Thermal rating	1,215 Btu/hr (fully loaded shelf)
Dimensions (height/width/depth)	3 EIA U (5.25", 13.3 cm)/19" EIA rack compliant (17.6", 44.7 cm)/20" (50.8 cm)
Weight (max.)	78.8 lb (35.8 kg) fully loaded
Operating temperature & relative humidity	10°C to 40°C (50°F to 104°F); 10% to 90% relative humidity, non-condensing
Non-operating temperature & relative humidity	-40°C to 65°C (-40°F to 149°F); 10% to 95% relative humidity, non-condensing
Operating acoustic noise	<49 dBA @ 1m at 23°C
Min. service clearances	9" (23 cm) front; 30" (76.2 cm) rear; 3" (7.6 cm) rear for cable radius
Storage sub-system	
Disk drive storage system	Up to 3 EXN disk expansion units with 14 low-profile slots for FC and/or SATA disk drives (each)
Disk drive storage interface	Fibre-Channel Arbitrated Loop (FC-AL)
Power supply/cooling fans	Dual, redundant, hot-pluggable, integrated power supply/fan assemblies (220V/110V)

Regulations

Filer safety	EN 60950:2000, CE, UL60950-2000, CSA 60950-00, CB IEC 60950 Ed. 3 (all national deviations), EN60825-1:1994+A11, IRAM, GOST-R
Disk shelf safety	UL/C-UL; CE
Emissions	FCC Class A, EN 55022:1998, EN 61000-3-2, EN 61000-3-3, CE, BSMI, AS/NZ 3548, VCCI
Immunity	EN 55024:1998

N3700 Enterprise Filer supported backup methods

Disk-based backup	SnapVault, SnapMirror
Host-based backup	NDMP/NFS/CIFS/iSCSI
GbE-attached tape support	**ibm.com**/storage/nas, refer to System Storage N series interoperability matrix
Direct-attached tape support	**ibm.com**/storage/nas, refer to System Storage N series interoperability matrix
SAN-attached tape support	**ibm.com**/storage/nas, refer to System Storage N series interoperability matrix
iSCSI initiator, IP fabric and host attached support	**ibm.com**/storage/nas, refer to System Storage N series interoperability matrix

For more information

Contact your IBM representative or IBM Business Partner or visit:

ibm.com/storage/nas/

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MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated. Some numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology.

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