

Advanced system designed to enable outstanding, cost-effective deployment versatility



IBM System Storage N3000 Express series Modular Disk Storage Systems



Highlights

- **High availability**—Takes advantage of proven features including a high performing and scalable operating system, data management software and redundancy features
- **Simple replication and disaster recovery**—Designed to provide easy-to-deploy mirroring solution that is highly tolerant of WAN interruptions
- **Management simplicity**—Self-diagnosing systems designed to enable on-the-fly provisioning
- **Backup and recovery features**—Designed to support disk-based backup, with file or application-level recovery with Snapshot™ and SnapRestore® software features
- **Versatile**—Single, integrated architecture designed to support concurrent block I/O and file serving over Ethernet and Fibre Channel SAN infrastructures

THE CHALLENGE:

Easy data management in a “scale-out” data center

The promise of scaling out a data center with small, low-cost servers has led to an unintended consequence—“stranded storage” from internal disks or directly attached storage (DAS) solutions. IT professionals today are overwhelmed by the amount of data they have to manage. They are challenged by the need to keep pace with their companies’ growing business, improve backup and restore effectiveness, implement disaster recovery solutions and not overwhelm their IT staff—often on a shoestring budget.

THE SOLUTION:

IBM System Storage N3000 Express series modular disk storage system helps simplify data management

The IBM N3000 Express systems are designed to provide primary and secondary storage for midsize enterprises. Consolidating all of their fragmented

application-based storage and unstructured data into one unified, easily managed and expandable platform can help IT generalists increase their effectiveness. N3000 Express systems offer integrated block-level and file-level data access, intelligent management software and data protection capabilities—such as higher-end N series systems—in a cost-effective package. IBM N3000 Express series innovations include internal controller support for Serial-Attached SCSI (SAS) or SATA drives, expandable I/O connectivity and onboard remote management.

The IBM N3000 Express is compatible with the entire family of N series unified storage systems, which feature a comprehensive line-up from top-to-bottom of hardware and software designed to address a variety of possible deployment environments.

The N3000 Express squeezes 12 TBs of physical capacity into a 2U enclosure and optional external expansion that can increase total system raw capacity to 68 TBs. The N3600 Express scales up to 20 TBs of internal raw capacity and can scale up to 104 TBs by supporting up to 104 disk drives. Whether



for primary or secondary storage use, the N3000 Express systems are intended to provide outstanding deployment versatility and connectivity to help satisfy your data protection and recovery needs.

Easy to use

IBM N3000 Express systems offer versatility via unified file and block storage—CIFS, NFS, iSCSI and FC protocols are supported—and can be used as primary or secondary storage. These systems are designed to address storage consolidation challenges as well as application server virtualization projects. With Data ONTAP®, the N3000 Express systems offer the ability to use storage efficiently by helping increase utilization through thin provisioning (FlexVol® and FlexClone®) and reduce storage space requirements with Snapshot technology.

Higher business uptime

The N3000 Express systems support dual-controller configuration with automated active-active failover. Using the IBM N series SnapSuite™ of manageability software, multipath high availability for business continuity, and intelligent data protection and disaster recovery software, the N3000 Express systems are intended to help keep your business running smoothly.

Designed to help keep costs low

The N3000 Express systems are designed as the entry point to the entire N series family. The systems provide multiple I/O connectivity options, a small footprint to hold high density SAS or SATA drives, and external expansion using low-cost SATA drives and Fibre Channel disks for production applications, and utilize Data ONTAP Snapshot

technology. The systems are truly versatile products that can be deployed to address some of the most demanding application environments. For further systems administration time and cost advantages, the N3000 Express systems come standard with Remote Onboard Management capabilities to help simplify remote system monitoring, cycle power, execute firmware upgrades, enter console commands and run diagnostics to help maintain the reliability of the system and your business-critical data.

Highly flexible, unified storage solution

The IBM System Storage™ N3000 Express series is designed for a broad range of deployment scenarios. The N3000 Express supports Ethernet and Fibre Channel environments, enabling economical NAS, FC and iSCSI deployments. The N3000 Express system functions as a “unification engine,” which is designed to enable you to simultaneously serve both file-level and block-level data across a single or multiple networks—demanding procedures

that for some solutions require multiple separately managed systems. The flexibility of the N3000 Express allows it to address the storage needs of a wide range of organizations, including distributed enterprises and data centers for midrange enterprises. The N3000 Express also supports sites with computer-intensive and data-intensive enterprise applications such as database, data warehousing, work-group collaboration and messaging.

Affordable data protection for distributed enterprises

N3000 Express storage systems can offer significant advantages for distributed enterprises with remote and branch office sites. These organizations and others can use the SnapVault® and SnapMirror® software functions to implement a cost-effective data protection strategy by mirroring data back to a corporate data center. N3000 Express 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 N3000 Express systems can be faster than recovering from tape.

Support for low TCO and long-term investment protection

N3000 Express 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 N series unified storage architecture can help your organization take advantage of staff IT skills and reduce complexity. The innovative design of the N3000 Express results in a small 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 enables you to make the most of your current network investment while deploying a long-term, highly scalable and easily upgradeable storage solution.

Specifications				
	N3300 Express	N3300 Express	N3600 Express	N3600 Express
	2859-A10	2859-A20	2862-A10	2862-A20
Machine type model				
Controller configuration	Single	Dual (active/active)	Single	Dual (active/active)
Random access memory	1 GB	2 GB	2 GB	4 GB
I/O Ports (Standard/Maximum)				
Fibre Channel ports (speed)	2/2 (4 Gbps)	4/4 (4 Gbps)	2/6 (4 Gbps)	4/12 (4 Gbps)
Ethernet ports (speed)	2/2 (1 GbE)	4/4 (1 GbE)	2/4 (1 GbE)	4/8 (1 GbE)
Storage Scalability				
Maximum raw capacity	68 TB	68 TB	104 TB	104 TB
Maximum number of disk drives	68	68	104	104
Maximum volume size	8 TB	8 TB	16 TB	16 TB
Maximum number of volumes/LUNs	1024	1024	1024	1024
Disk drives supported in controller (size, type, speed)	SAS: 450 GB, 144 GB, 300 GB; 15,000 rpm SATA: 500 GB, 750 GB, 1 TB; 7,200 rpm	SAS: 450 GB, 144 GB, 300 GB; 15,000 rpm SATA: 500 GB, 750 GB, 1 TB; 7,200 rpm	SAS: 450 GB, 144 GB, 300 GB; 15,000 rpm SATA: 500 GB, 750 GB, 1 TB; 7,200 rpm	SAS: 450 GB, 144 GB, 300 GB; 15,000 rpm SATA: 500 GB, 750 GB, 1 TB; 7,200 rpm
Disk expansion units supported	EXN4000 - 4 Gbps Fibre Channel disk storage expansion unit EXN1000 - SATA Disk Storage Expansion	EXN4000 - 4 Gbps Fibre Channel Disk storage Expansion Unit EXN1000 - SATA Disk Storage Expansion	EXN4000 - 4 Gbps Fibre Channel Disk Storage Expansion Unit EXN1000 - SATA Disk Storage Expansion	EXN4000 - 4 Gbps Fibre Channel Disk Storage Expansion Unit EXN1000 - SATA Disk Storage Expansion

Software

Operating System Data ONTAP

Operating Systems Supported Windows 2000, Windows Server® 2003, Windows XP, Linux, Sun Solaris, IBM AIX®, HP-UX, Mac OS, VMware ESX

Software Features

Standard

Integrated RAID manager, including RAID-DP
Snapshot
Fast Boot
NIS
DNS
FileView®
FlexVol
FlexShare
Network Data Management Protocol (NDMP)

Licensed

CIFS
NFS
HTTP
iSCSI
FCP
FlexCache™
FlexClone
MultiStore
Clustered Failover
SnapLock®
SnapMirror
SyncMirror®
SnapRestore
Single Mailbox Recovery
SnapVault
SnapMover
NearStore
Advanced Single Instance Storage
SnapValidator
Manageability Software
Application Suite
 SnapManager for Microsoft Exchange
 SnapManager for Microsoft SQL Server®
 SnapManager for Microsoft Office SharePoint®
 SnapManager for Oracle
 SnapManager for SAP®
 SnapManager for Virtual Infrastructure
Server Suite
 SnapDrive
 Virtual File Manager – Enterprise Edition
 Virtual File Manager – Migration Edition
Storage Suite
 Protection Manager
 Provisioning Manager
 File Storage Resource Manager
 Operations Manager

See ibm.com/systems/storage/network/n3000/appliance/features.html for an overview of the N3000 Express series software features, functions and benefits



For more information

Contact your IBM representative or IBM Business Partner or visit:

ibm.com/systems/storage/network/

For N3000 Express series modular disk storage system technical specifications and optional adapters available, please visit:

ibm.com/systems/storage/network/n3000/appliance

For N3000 Express series interoperability visit:

ibm.com/systems/storage/network/interophome.html

This document could include technical inaccuracies or typographical errors. IBM may not offer the products, services or features discussed in this document in other countries, and the product information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. The information contained in this document is current as of the initial date of publication only and is subject to change without notice. All performance information was determined in a controlled environment. Actual results may vary. Performance information is provided "AS IS" and no warranties or guarantees are expressed or implied by IBM. Information concerning non-IBM products was obtained from the suppliers of their products, their published announcements or other publicly available sources. Questions on the capabilities of the non-IBM products should be addressed with the suppliers. IBM does not warrant that the information offered herein will meet your requirements or those of your distributors or customers. IBM provides this information "AS IS" without warranty. IBM disclaims all warranties, express or implied, including the implied warranties of noninfringement, merchantability and fitness for a particular purpose or noninfringement. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

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.

IBM's customer is responsible for ensuring its own compliance with legal requirements. It is the customer's sole responsibility to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer is in compliance with any law.

© Copyright IBM Corporation 2008

IBM Corporation
Systems and Technology Group
Route 100
Somers, NY 10589
U.S.A.

Produced in the United States
October 2008
All Rights Reserved

IBM, the IBM logo, ibm.com and System Storage are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries or both. These and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at ibm.com/legal/copytrade.shtml.

Data ONTAP, FileView, FlexCache, FlexClone, FlexShare, FlexVol, MultiStore, NearStore, RAID-DP, SnapDrive, SnapLock, SnapManager, SnapMirror, SnapMover, SnapRestore, Snapshot, SnapSuite, SnapValidator, SnapVault SyncMirror and VFM are trademarks or registered trademarks of NetApp, Inc., in the U.S. and other countries.

Intel and Celeron are registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries or both.

Microsoft, SQL Server, SharePoint, Windows, Windows Server and the Windows logo are trademarks or registered trademarks of Microsoft Corporation in the United States, other countries or both.

Sun and Solaris are trademarks of Sun Microsystems, Inc. in the United States, other countries or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product and service names may be trademarks or service marks of others.