

IBM System Storage N3000 Express Modular Disk Systems

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



Highlights

- High availability (HA) – Takes advantage of proven features including a high performing and scalable operating system, data management software and redundancy features
 - Simple replication, backup and recovery – Designed to support disk-based backup, with file or application-level recovery with SnapMirror, Snapshot and SnapRestore software features
 - Management simplicity – Self-diagnosing systems designed to enable simultaneous provisioning
 - Versatile – Single, integrated architecture designed to support concurrent block input/output (I/O) and file serving over Ethernet and Fibre Channel (FC) Storage Area Network (SAN) infrastructures.
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The promise of scaling out a data centre 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 (DR) solutions and not overwhelm their IT staff – often on a shoestring budget.

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 Serial Advanced Technology Attachment (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 N3300 series squeezes 12 TBs of internal raw capacity into a 2U enclosure and optional external expansion that can increase total system raw capacity to 68 TBs. The new N3400 series can scale up to 12 TBs of internal raw capacity and increase total raw capacity to 136 TBs. The N3600 series 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 – Common Internet File System (CIFS), Network File System (NFS), SCSI over IP (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 virtualisation projects. With Data ONTAP, the N3000 Express systems offer the ability to use storage efficiently by helping increase utilisation 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 HA for business continuity and intelligent data protection and DR 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 FC disks for production applications and utilise 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 FC environments, enabling economical Network Attached Storage (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 organisations, including distributed enterprises and data centres for midrange enterprises. The N3000 Express also supports sites with computer-intensive and data-intensive enterprise applications such as database, data warehousing, workgroup 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 organisations 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 centre. N3000 Express systems can help improve data availability and simplify backup and restore operations by implementing centralised 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 total cost of ownership (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. Standardisation on the IBM System Storage N series unified storage architecture can help your organisation 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 centres 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 series	N3300 series	N3400 series	N3400 series	N3600 series
Machine type model	2859-A10	2859-A20	2859-A11	2859-A21	2862-A20
Controller configuration	Single	Dual (active/active)	Single	Dual (active/active)	Dual (active/active)
Random access memory (RAM)	1 GB	1 GB	4 GB	8 GB	4 GB
FC ports (speed)	Two (4 Gigabits per second (Gbps))	Four (4 Gbps)	Two (4 Gbps)	Four (4 Gbps)	Four (4 Gbps)
Ethernet ports (speed)	Two (1 Gbps)	Four (1 Gbps)	Four (1 Gbps)	Eight (1 Gbps)	Four (1 Gbps)
Maximum raw capacity	68 TB	68 TB	136 TB	136 TB	104 TB
Maximum number of disk drives	68	68	136	136	104
Maximum volume size	8 TB	8 TB	16 TB	16 TB	16 TB
Maximum size of volumes/Logical Unit Numbers (LUNs)	1024	1024	1024	1024	1024
Disk drives supported in controller (size, type, speed)	SAS: 300 GB, 450 GB, 600 GB, 15,000 revolutions per minute (rpm) SATA: 500 GB, 7,200 rpm; 1 TB		SAS: 300 GB, 450 GB, 600 GB, 15,000 rpm SATA: 500 GB, 7,200 rpm; 1 TB		SAS: 300 GB, 450 GB, 600 GB, 15,000 rpm SATA: 1 TB
Disk expansion units supported	EXN4000 - FC Disk Storage Expansion Unit: 4 Gbps FC: 300 GB, 450 GB, 600 GB, 15,000 rpm 2 Gbps FC: 300 GB, 450 GB, 600 GB, 15,000 rpm EXN1000 - SATA Disk Storage Expansion Unit: SATA: 500 GB, 7,200 rpm; 1 TB		EXN4000 - FC Disk Storage Expansion Unit: 4 Gbps FC: 300 GB, 450 GB, 600 GB, 15,000 rpm 2 Gbps FC: 300 GB, 450 GB, 600 GB, 15,000 rpm EXN3000 - SAS Disk Storage Expansion Unit: SAS: 300 GB, 450 GB, 600 GB, 15,000 rpm SATA: 500 GB, 7,200 rpm; 1 TB EXN1000 - SATA Disk Storage Expansion Unit: SATA: 500 GB, 7,200 rpm; 1 TB		EXN4000 - FC Disk Storage Expansion Unit: 4 Gbps, 2 Gbps FC: 300 GB, 450 GB, 600 GB, 15,000 rpm EXN3000 - SAS Disk Storage Expansion Unit: SAS: 300 GB, 450 GB, 600 GB, 15,000 rpm SATA: 1 TB EXN1000 - SATA Disk Storage Expansion Unit: SATA: 1TB

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	<p>Standard</p> <ul style="list-style-type: none"> Integrated Redundant Array of Independent Disk (RAID) manager, including RAID-DP Snapshot Fast Boot NIS DNS FilerView FlexVol FlexShare Network Data Management Protocol (NDMP) 	<p>Licensed</p> <ul style="list-style-type: none"> CIFS NFS HyperText Transfer Protocol (HTTP) iSCSI FC Protocol (FCP) File Transfer Protocol (FTP) FlexCache FlexClone MultiStore Clustered Failover SnapLock SnapMirror SyncMirror SnapRestore Single Mailbox Recovery SnapVault SnapMover NearStore Advanced Single Instance Storage (A-SIS) SnapValidator Manageability Software Application Suite <ul style="list-style-type: none"> SnapManager for Microsoft® Exchange SnapManager for Microsoft SQL Server SnapManager for Microsoft Office SharePoint® SnapManager for Oracle SnapManager for SAP SnapManager for Virtual Infrastructure SnapManager for Hyper-V™ Server Suite <ul style="list-style-type: none"> SnapDrive Storage Suite <ul style="list-style-type: none"> Protection Manager Provisioning Manager File Storage Resource Manager Operations Manager System 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

To learn more about the [IBM N3000 Express systems](#), please contact your IBM representative or IBM Business Partner, or visit: ibm.com/systems/uk/storage/network/

For N3000 Express series modular disk storage system technical specifications and optional adapters available, please visit: ibm.com/systems/uk/storage/network/n3000/appliance

For N3000 Express series interoperability, visit: ibm.com/systems/storage/network/interophome.html

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