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NEXSAN E5000™ STORAGE SYSTEMS

NAS just got faster, easier and more affordable.

DATA SHEET

OVERVIEW

The Nexsan E5000™, a part of Nexsan's Flexible Storage Platform™, is Nexsan's family of NAS storage systems that have been purpose-built for mid-sized organizations looking for high performance and all the enterprise-class features they need at a price they can afford. The E5000 boasts a robust set of features like snapshots, replication, quotas/thin provisioning and much more.

Whereas competitive NAS offerings are either too pricey or deliver too few features, the Nexsan E5000 uniquely delivers a NAS that is faster, easier, more affordable and fits in a smaller space. A revolutionary GUI streamlines setup and management for the time-constrained IT generalist and has been designed to deploy in under 15 minutes! In addition, the E5000 utilizes all drive types, an SSD cache to deliver blazing-fast I/O, boasts industry-leading storage density and power management, and offers a no single-point-of-failure architecture.

INTRODUCING FASTier™: SSD CACHE

For the ultimate in performance, the Nexsan E5000 features FASTier™, a high performance SSD-based cache that works transparently to boost performance for random I/O workloads demanded by applications such as databases or virtualized computing environments (VMware, Xen, Hyper-V). The E5110 accommodates an optional 100GB SSD to operate as the FASTier cache, while the E5310 and E5510 FASTier caches are comprised of an 8GB dedicated write cache and up to 15 100GB or 200GB SSDs respectively. FASTier caches read and write I/O requests to dramatically increase the performance of the storage system. Each storage pool is supported by its own dedicated FASTier cache.

NEXSAN E5000 PRODUCT FAMILY

All Nexsan E5000 storage systems utilize SSD, NL-SAS, SATA or SAS drives; high performance multi-core Xeon-based storage controllers; and high speed I/O subsystems. The E5110 delivers up to 15 drives and one optional FASTier SSD in a 3U fault-tolerant chassis, and up to 16 more drives in a 3U drive expansion chassis, for a total raw capacity of up to 62TB. For larger capacity needs, the E5310 houses dual redundant storage controllers and FASTier SSDs in a 3U chassis while leveraging Nexsan E-Series disk arrays on the backend, which deliver up to 240 drives in just 19U, while the E5510 delivers up to 360 drives in just 27U.

FEATURES, PERFORMANCE AND RELIABILITY

The Nexsan E5000 storage systems provide CIFS and NFS shared folders to NAS clients. The E5000 delivers up to 2048 snapshots per share without performance penalty. Snapshots do not require the pre-reservation of storage capacity, and they may be scheduled and managed easily from the E-Centre management console.

HIGHLIGHTS

- NFS/CIFS shared folders
- Snapshots
- Asynchronous Replication
- Synchronous Replication
- Quotas and thin provisioning
- FASTier™ SSD-based cache delivers blazing-fast I/O
- Enterprise-class reliability and fault tolerance
- Utilize SSD, NL-SAS, SAS and SATA drives
- Active Directory and LDAP integration
- Online capacity expansion
- Industry-leading efficiencies with 60 disks in 4U storage arrays and up to 85% energy savings

TECHNICAL SPECIFICATIONS

- Dual redundant storage controllers
- 62TB Maximum capacity for Nexsan E5110
- 720TB Maximum capacity for Nexsan E5310
- 1080TB Maximum capacity for Nexsan E5510
- RAID 5, 6 and 10
- 1 / 2 / 3 TB NL-SAS or SATA drives
- 450 / 600 GB SAS 15K RPM drives
- Ethernet ports: two to six 1Gb plus optional dual 10Gb per controller

For a full listing of Technical Specifications, www.nexsan.com

Individual shares or entire storage pools may be replicated asynchronously to a second E5000 storage system, with snapshots intact for use on the target side for backups, testing or data mining. Synchronous replication utilizes two separate E-Series storage systems connected via Fibre Channel to the E5000 head for the ultimate in business continuity. Active Directory and LDAP integration make it easy to manage user identities and access rights on the E5000 shares. Quotas limit storage consumption by share, and oversubscription is permitted for thin-provisioning storage, along with alarms which notify when additional storage is needed. Capacity can be expanded by adding additional storage to a running system, so future needs can be met without incurring downtime. Moreover, link aggregation combines Ethernet ports for faster throughput.

With blazing read/write throughput and high random IOPS performance, the Nexsan E5000 storage systems are the perfect choice for performance sensitive applications. All E5000 models utilize up to two redundant controllers with multi-core Xeon CPUs to provide high performance with no single point-of-failure configurations. All active components are redundant and hot-swappable including power supplies, disks and controllers. FASTier SSD-based read and write caches complement up to 96GB of RAM per controller to significantly accelerate IOPS and MB/s of throughput.

INDUSTRY-LEADING EFFICIENCIES

The Nexsan E5000 family delivers on the same industry leading storage density and energy efficiency that Nexsan storage systems are known for. The E5310 and E5510 models leverage Nexsan E-Series disk arrays that provide up to 85% energy savings by progressing drives in to deeper levels of sleep after specified periods of inactivity. Applications that benefit from Nexsan's AutoMAID® energy-saving technology include shared folders used for long-term archive, bulk storage, specific projects or shares used for backup-to-disk.

EASY TO MANAGE

Designed with the IT generalist in mind, the Nexsan E5000 Family comes with Nexsan E-Centre™ manager, a web-based management GUI providing revolutionary ease-of-use for a sub-15 minute initial set-up time. Wizards guide the administrator through pool creation, management, snapshots, volume management, asynchronous replication and clustering for high availability. Management is easy with a single, intuitive browser-based interface so that all local and remote E5000 storage systems can be easily managed and monitored from a single pane-of-glass.

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KEY FEATURES

The Nexsan E5000 NAS storage system, a member of Nexsan's Flexible Storage Platform, is a robust, turn-key solution providing best-in-class hardware and software features suited for the needs of the mid-market. Key features include NFS/CIFS shared folders, snapshots, replication, quotas and thin provisioning, Active Directory and LDAP integration, online capacity expansion and more.

ENTERPRISE-CLASS FEATURE SET	
NAS (CIFS and NFS) Services	Shared Folders can be accessed through CIFS, NFS or both. FTP services are also provided.
FASTier™ Cache	SSD technology is used to accelerate read and write IOPS and throughput. FASTier works transparently so there is no administration burden to turbo-charge I/O performance. FASTier is especially useful for random I/O workloads such as databases or for VMware, Xen or Hyper-V environments.
Online Capacity Expansion	Add additional LUNs to the any storage pool to increase its capacity on the fly without impacting active clients. I/O will automatically be balanced across all LUNs by the E5000.
Snapshots	There is no performance penalty for taking snapshots. Up to 2048 snapshots per share are supported. Storage does not need to be reserved to hold snapshot data. The management GUI makes it easy to setup and manage snapshot creation and deletion schedules. Snapshots are mountable as CIFS or NFS shares. A full copy of a snapshot can be created for testing or other purposes. Granularity is per pool or per share.
Asynchronous Replication	Asynchronous replication is WAN efficient because it only transmits delta blocks to the destination side. All snapshots taken on the source side are available on the destination side for backups, data mining or testing purposes. Granularity of replication is a storage pool or a share.
Synchronous Replication	Synchronous replication places two Nexsan E-Series storage systems under the Nexsan E5000 head, each connected via Fibre Channel. Writes are acknowledged after they are placed onto both E-Series, so they are always identical. Together with failover/failback support, synchronous replication provides the utmost in business continuity.
Quotas / Thin Provisioning	Similar to thin provisioning in the SAN block world, more storage can be allocated to shares than actually exists in the system – referred to as oversubscription. Alarms warn of limits reached, so storage can be added.
Link Aggregation	IEEE 802.3ad link aggregation allows multiple Ethernet ports to be combined for faster throughput.
Data Protection Suite	Provides Nexsan E5000 with snapshot and replication capabilities.
Performance Enhancement Packages	Increase the memory in a Nexsan E5310 to 48GB per controller or increase the memory in the E5510 to 96GB per controller, and add a second Xeon multi-core processor to the controller.

ENTERPRISE-CLASS PERFORMANCE AND RELIABILITY	
Drive Types	The Nexsan E5110 utilizes SSD, SAS 15K RPM or NL-SAS 7200 RPM drives to meet varying storage needs. The Nexsan E5310 and E5510 models store their data on Nexsan E-Series disk arrays, which support mixing and matching SSD, SAS 15K RPM and SATA drives.
Drive Stress Tests	Stringent drive stress tests ensure that only the best quality drives go into Nexsan storage systems.
System Drive Tests	Drives are tested in the storage system prior to being shipped to a customer, to ensure top quality and ongoing reliability.
Anti-Vibration Design	State-of-the-art anti-vibration dampening maximizes reliability and performance in the high density Nexsan E-Series disk arrays that are utilized by the Nexsan E5310 and E5510.
Cool Drive Technology™	Push/pull fans modules and specially designed air channels optimize drive cooling and reliability of the high density Nexsan E-Series disk arrays that are utilized by the Nexsan E5310 and E5510.

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ENTERPRISE-CLASS PERFORMANCE AND RELIABILITY (Cont.)

Dual Storage Controllers	Dual controllers provide a no single point-of-failure solution. Should one controller fail, the second will perform all of the I/O operations for NAS clients as well as utilize its I/O ports for connection to external storage.
RAID	RAID 10/5/6 are provided to protect against a single drive failure or two drives failing at the same time.
High Availability	All active components are redundant and hot-swappable including power supplies, disks and controllers.
Nexsan E5510 and E5310 Controller I/O Ports	Each Nexsan E5310 or E5510 storage controller provides two to six 1Gb Ethernet ports, two optional 10Gb Ethernet ports; as well as two to six 8Gb Fibre Channel ports for connection to the E-Series disk arrays.
Nexsan E5110 Controller I/O Ports	Each Nexsan E5110 storage controller provides two to six 1Gb Ethernet ports, two optional 10Gb Ethernet ports, as well as a SASx4 port (24Gb/s) connection to the E5100X expansion chassis.

POWER AND SPACE EFFICIENCY

Industry-leading Storage Density	The Nexsan E5110 delivers up to 32 drives in 6U of rack space, providing an industry-standard 5 drives per U of storage density. The Nexsan E5310 delivers up to 240 drives in 19U of rack space, while the E5510 delivers up to 360 drives in 27U, providing an industry-leading 13 drives per U of storage density..
AutoMAID® Power Management	In the Nexsan E5310 and E5510, each RAID set can have its drives progressed into deeper power saving levels when they have not been accessed for a specified period of time, saving up to 85% in power in the disk array. No changes need to be made to applications to get the advantages of AutoMAID.

EASY TO MANAGE

Quick Start wizard	Get the storage system up and running in 15 minutes or less.
Easy to Manage	A revolutionary GUI design makes it easy to set-up, manage and monitor the storage system. Wizards guide the IT generalist through setup, share creation and management, snapshots, volume management, replication, clustering, user management and security, and setting up alerts.
Web-based Management	A Web server residing in the storage system presents the management GUI in a Web browser. Administer storage systems remotely. There is no need to install management software on a client computer and keep it updated. Use Windows Computer Manager to manage Share/Folder/File permissions for users and groups.
Single Pane-of-Glass Management	Remotely manage one or many systems. Nexsan storage systems find each other, and appear in the management console, which displays their health using red/yellow/green indicators. Easily move between systems to administer them.
Automatic RAID Set Maintenance	In the event of a drive failure, spare drives are automatically added to a RAID set and a RAID set rebuild is run – all without any manual intervention being required.

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EASY TO MANAGE (Cont.)	
Alerts	Alerts are sent via SNMP or email and are stored in system log files. They are transmitted to the Web browser-based management console.
NTP client	Network Time Protocol client relieves the administrator from having to set, adjust and synchronize clocks across systems.
NDMP V4	Backup with popular backup and restore solutions through the industry-standard NDMP V4 interface. NDMP V4 preserves all access rights for CIFS and NFS shares, and uses background snapshots for fast backups.
Role-based Administration	Storage system administrator can grant limited rights administrators per storage pools. These administrators can create, manage and delete shares, perform snapshots and replication, and manage share-level access permissions.
Data Migration Tools	Helps to move data between storage systems.
Active Drawer Technology™	Active drawers hold the drives to enable easy, hot-swappable management of extreme density without heavy lifting or having to power down the Nexsan E5310 or E5510 storage system. On the Nexsan E5110, the drives are front-accessible.

ABOUT NEXSAN

Nexsan® is a leading independent provider of disk-based storage systems purpose-built and priced for the mid-market, offering industry-leading reliability, space and power efficiency. Nexsan storage systems provide scalability, integrity and security for growing volumes of unstructured data and are ideal for virtual storage, data protection, secure online archiving, bulk and cloud storage applications. Overcoming the challenges of traditional storage, Nexsan delivers a different kind of storage experience with easy-to-use, efficient and enterprise-class solutions that reduce the complexity and cost of storage. Nexsan delivers its storage systems through a select global partner ecosystem of solution providers, OEMs and system integrators. Nexsan is based in Thousand Oaks, Calif.

For more information, visit the company's website at **www.nexsan.com.**

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