NEXSAN
by imation

E-SERIES STORAGE SYSTEMS DATA SHEET

Storage efficiency just made a big leap forward with a 240TB solution so small, so efficient, so reliable... so surprisingly affordable.

OVERVIEW

The Nexsan E-Series™ represents the next generation of SAN storage systems delivering dramatic enhancements in efficiency and ease-of-use to help mid-market organizations, and the mid-tier of the enterprise, add more capacity while lowering overall power, space and cost requirements. Innovative ease-of-use functionality makes deploying and managing storage as simple as possible for the resource constrained IT administrator.

The E-Series is comprised of the E60 storage system (60 drives in 4U), the E48 storage system (48 drives in 4U), and the E18 storage system (18 drives in 2U), as well as the E60X, E48X and E18X expansion units. The E-Series delivers industry leading density and power efficiency for the smallest storage footprint by consuming less than one third the power in one third the rack space as typical arrays.

FLEXIBILITY

Further enhancing storage efficiency and ease-of-use, the E-Series flexibly supports SATA/SAS/SSD drives in the same chassis along with a choice of I/O ports including 8Gb FC, or 10Gb iSCSI, or 24Gb SASX4; included with two 1Gb iSCSI ports. This level of flexibility and control is designed for organizations that need a single solution to handle the requirements of all their applications, whether capacity or performance driven. The E-Series uses dual raid engines per controller to deliver blazing wire-speed read/write throughput and high IOPS performance for varying workloads. The active/active dual controller configuration provides twice the I/O ports and increases system performance.

RELIABILITY

As much as the Nexsan E-Series boasts new levels of storage efficiency, efficiency is only measured during uptime. The E-Series meets and exceeds the most stringent reliability demands with a top-tier mechanical design that removes heat and vibration from the chassis via Cool Drive Technology™ and Anti-vibration Design™. In addition, extensive drive stress testing qualifies E-Series system reliability before shipment. Array-based snapshots and asynchronous replication further the E-Series data protection capabilities[1].

The E-Series features high availability architecture ensuring no single point-of-failure with multipathing support and dual redundant, hot-swappable active components. SNMP alerts or email notifications are sent to the administrator in the event of a component or drive failure, and a spare drive is automatically rebuilt into the RAID set. With 4GB of battery-backed and flash-protected cache per controller, the E-Series mirrors cache between controllers in a dual controller configuration. The Nexsan Active Drawer Technology™ overcomes the challenges of other high density offerings by allowing a single drawer of drives to be easily pulled out and serviced by one person while keeping the system online.

imation

HIGHLIGHTS

- **Extreme Density** – E60/E60X contains 60 3.5" disks in 4U; E48/E48X contains 48 3.5" disks in 4U; E18/E18X contain 18 3.5" disks in 2U
- **High Performance** – utilizes Nexsan's latest dual RAID engine controller technology
- **Capacity or Performance** – mix and match SATA, SAS and SSD drives
- **Active Drawer Technology™** – active drawers allow for easy, hot-swappable management of extreme density
- **High Availability** – all active components are redundant and hot-swappable to ensure fault tolerance
- **Energy Efficient** – AutoMAID delivers up to 85% reduction in power consumption
- **Anti-Vibration Design** – maximizes disk life and reduces component wear
- **Cool Drive Technology™** – optimizes airflow and cooling
- **Flexible Connectivity** – connect via SAS, Fibre Channel or iSCSI
- **Easy to Manage** – browser-based management interface is OS independent. Remotely manage one or many systems within a single, intuitive GUI

TECHNICAL SPECIFICATIONS

- Single or dual active/active RAID controllers
- I/O includes 1Gb iSCSI per controller (optional 8Gb FC, 24Gb SASx4, 10Gb iSCSI)
- Supports RAID 0, 1, 1+0, 4, 5 and 6
- 4GB battery and flash protected cache
- Supports multiple RAID sets and multiple volumes per set; up to 254 LUNS
- Supports email alerts and SNMP traps
- Includes RS-232 management port

Note: a 1200mm rack is recommended for mounting the E60/E60X

MANAGEMENT

The E-Series comes pre-configured and is up and running in 10 minutes or less using the QuickStart wizard. No professional services required. The Nexsan Storage Manager resides on the storage system and is simply accessed via an IP address over a Web browser – no drivers or host applications required. The Nexsan Storage Manager makes management easy with a single pane-of-glass interface to manage and monitor all local and remote Nexsan storage systems from disk provisioning, RAID hardware management, LUN masking and binding, host data path services, failover/failback, data migration, RAID set builds and power management. By leveraging the E-Series' VDS compliance, Windows users can utilize the storage management tools that are built into Windows Server to perform common administrative tasks. For non-windows environments like Linux and Unix, we offer the Nexsan management protocol to easily manage and configure your E-Series.

POWER EFFICIENCY

The exclusive Nexsan AutoMAID® technology delivers up to 87% energy savings. When a disk group has not been accessed for a specified time period, it can be placed into progressively lower states of power consumption. On all AutoMAID levels, once the first I/O request has been served, the spindles continue at full speed until enough time has lapsed to progress back into sleep mode, based on the policies established. This is beneficial in instances of long-term bulk storage, archive and backup-to-disk applications that don't need to spin at full speed 24 hours a day.

CAPACITY EXPANSION

Each of the E-Series systems with dual controllers can be expanded with double the amount of capacity by adding an expansion unit. For instance, the E18 can be expanded with the E18X expansion unit. Likewise, the E48 is expanded with the E48X expansion unit, and the E60 is expanded with the E60X expansion unit via up to four 24Gb/s SASx4 connectors for uncompromising performance and resilience against any single point-of-failure.

SOLUTIONS

E-Series storage systems can be deployed for primary storage, secondary storage and backup-to-disk storage for physical servers or virtual servers as Imation is tightly integrated with VMware, Hyper-V and Xen. Popular industries and use cases include financial, transportation, cloud storage, video and entertainment, scientific and research, local and national government, digital surveillance, medical and law enforcement. The E-Series storage systems are certified as "VMware Ready," the highest level of certification by VMware for Fibre Channel and iSCSI storage and are fully certified for use with Windows Server 2003/2008.

Imation Corp. 1 Imation Way, Oakdale, MN 55128-3414 | p. 651.704.4000 f. 651.537.4675 | www.imation.com/nexsan

(Rev. 07/12/13)

ENTERPRISE-CLASS	
Modular Expansion	Expand E60 with up to two E60X; E48 with up to two E48X; E18 with up to two E18X to accommodate the ever-increasing need for additional capacity.
Mix & Match Drive Types	Mix and match SSD, SAS and SATA drives to meet varying storage needs.
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.
Anti-Vibration Design	State-of-the-art vibration dampening maximizes reliability and performance.
Cool Drive Technology™	Push/pull fans modules and specially designed air channels optimize drive cooling and reliability.
Dual Active/Active Storage Controllers	Dual controllers provide additional horsepower and add additional I/O ports for Fibre Channel, iSCSI or SASx4 access. All LUNs may be made visible on any or all FC, iSCSI or SAS connections.
Battery and Flash Protected Cache	Cache memory is protected via a battery built into the storage system. The battery has sufficient power to push all data from cache RAM into flash where it will be preserved indefinitely. Cache data is synchronously mirrored between controllers to protect uncommitted writes in the event of controller failure.
Two RAID Engines per controller	Two RAID engines reside on each E-Series controller to accelerate RAID operations, resulting in blazing fast sequential and random I/O performance.
Snapshot and Replication	Provides application-consistent snapshots and asynchronous replication to support the most demanding data protection requirements, eliminating the cost of an external server or 3rd party software to support these functions. Includes the Microsoft VSS Hardware Provider to enable SAN-based backups of Exchange, SQL Server, SharePoint or any business-critical Windows Server-based application. For UNIX/Linux environments, snapshots can be created manually or via the snapshot scheduler. One-to-one and many-to-one replication protects or distributes data to one or multiple sites.
High Availability	All active components are redundant and hot-swappable including power supplies, fans, disks and controllers.
Host Data Path Services	Utilize multiple paths from a server to a LUN for increased bandwidth, as well as ensuring no single point-of-failure between the servers and storage.
Fibre Channel and iSCSI Multi-protocol Access	Both the Fibre Channel and iSCSI host ports can be utilized at the same time.
Disk Provisioning	Place hard drives into RAID sets; determine the RAID type; establish hot spares and the RAID set auto-rebuild policies; expose RAID sets as one or more logical address units (LUNs).
RAID Hardware Management	Sets RAID levels and manages the caches in single or dual active/active controller configurations.
LUN Masking and Binding	Ensures that only the hosts that are supposed to have access to a virtual disk get it. Hosts must authenticate before being granted access.
EFFICIENT	
Industry-leading Storage Density	The E60 and E60X provide up to 60 drives in just 4U, or 15 drives per U; E48 provides 48 drives in 4U, or 12 drives per U; and the E18 provides 18 drives in 2U, or 9 drives per U.
AutoMAID® Power Management	Each RAID set can have its drives progressed into deeper levels of sleep when they have not been accessed for a specified period of time, saving power. There are 5 levels of power management to balance power savings and responsiveness to first I/O request for varying applications. No changes need to be made to applications to get the advantages of AutoMAID. E-Series delivers up to 87% reduction in power and cooling with AutoMAID level 5.

Imation Corp. 1 Imation Way, Oakdale, MN 55128-3414 | p. 651.704.4000 f. 651.537.4675 | www.imation.com/nexsan

(Rev. 07/12/13)

EASY	
QuickStart wizard	Get the storage system up and running in 10 minutes or less without professional services.
Web-based Management	A Web server residing in the storage system presents the management GUI in any Web browser. Administer storage systems remotely. There is no need to install management software on a client computer and keep it updated.
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.
Alerts	Alerts are sent via SNMP or email and are logged in the storage system as well as transmitted to the browser-based management console.
VDS-compliance	Many Microsoft storage management tools can be used to perform administrative functions on the storage system as information is exchanged via the VDS protocol.
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.
Turn-key System	Includes all cables, active drawers, mounting kit and management software.

ABOUT IMATION

Imation is a global scalable storage and data security company. The company's portfolio includes tiered storage and security offerings for business, and products designed to manage audio and video information in the home. Imation reaches customers in more than 100 countries through a powerful global distribution network and well recognized brands. Additional information about Imation is available at www.imation.com/nexsan.

Imation Corp. 1 Imation Way, Oakdale, MN 55128-3414 | p. 651.704.4000 f. 651.537.4675 | www.imation.com/nexsan

(Rev. 07/12/13)