

EonStor DS - SAS Series

High-Availability Solutions Delivering Excellent Storage Performance

Highlights

Reliability and Availability

- Snapshot and volume copy/ mirror functionality enables quick data recovery after logical and physical errors
- Redundant and hot-swappable hardware components eliminate single point of failure
- Multiple hardware RAID levels protect data against drive failure
- CacheSafe technology protects cached data during a power outage

Performance

- Leverage 2.5-inch drives to achieve optimal performance density
- Hybrid SAS/iSCSI connectivity models offer remote replication and DAS/SAN consolidation
- EonStor DS G7 solutions deliver superior performance ideal for mission-critical apps

Optimized Utilization

- Thin provisioning optimizes capacity utilization and simplifies storage planning and monitoring

Scalability

- Scale capacity (up to 240 drives) through expansion enclosures

Management

- User-friendly and intuitive SANWatch interface allows for simple storage management

Green

- Energy efficient power supplies
- Dynamic cooling
- Intelligent multi-level drive spin-down

Downtime can have serious consequences for enterprises and SMBs. The challenge for SMBs is to pro-actively prevent downtime within a limited budget. With today's price points in mind, EonStor DS provides comprehensive data protection to ensure the highest data availability for Fibre Channel and iSCSI-host systems in storage area networks (SAN) and SAS-host systems in direct attached storage (DAS) environments. Coupled with advanced hardware, modular architecture, easy and intuitive management and exceptional price-performance, EonStor DS brings price-conscious companies a decisive competitive edge by making IT efficiency keep up with growing storage needs.

High-Availability Solutions

Data availability is critical to any business operation. Infotrend's EonStor DS storage solution features high-availability hardware designs with redundant, hot-swappable hardware components, such as RAID controllers, power supplies and cooling fans, to eliminate single point of failure. Hardware RAID protection ensures data accessibility during drive failure. In the event of a power outage, CacheSafe technology will automatically leverage power of the Battery Backup Unit (BBU) to safeguard cached data by writing it to a flash module for permanent retention. To protect valuable data sets against more critical threats, EonStor DS also supports snapshot and volume copy/mirror features. Data availability can be achieved with minimal downtime in case of human errors or data volume failure by employing these features. Leveraging Infotrend's world-class RAID engine, the EonStor DS SAS-series delivers excellent performance for demanding business applications. The models supporting Small Form Factor (SFF) drives can further increase performance density to support highly IO-intensive applications.

Flexible Scalability

The EonStor DS storage solution supports dynamic scaling to aid in the planning for future storage growth while satisfying current storage needs. Flexible drive type and capacity support (2.5-inch or 3.5-inch SAS drives and various drive sizes) satisfies current applications and enables you to accommodate future needs. A single EonStor DS SAS-series storage system can be expanded up to 240 drives to meet the proliferation of storage growth. The "scale as you grow" flexibility of the EonStor DS

storage solution minimizes upfront investments and provides the best overall Total Cost of Acquisition (TCA).

Intuitive and Easy Management

Storage management should be simple. The EonStor DS storage solution includes a comprehensive management software suite, SANWatch, to centrally manage multiple EonStor DS subsystems over a standard TCP/IP network. EonStor DS status and event information summary can be viewed on the portal window. Necessary functions to configure, manage and monitor the EonStor DS are only a few clicks away. Besides providing all firmware features through a user-friendly GUI, SANWatch also supports script-based configuration of multiple EonStor DS subsystems simultaneously. Automatic critical event notifications can be customized to suit the most critical storage environment. SANWatch will guide users through initializing, configuring and maintaining the EonStor DS every step of the way.

High Energy Efficiency

Contributing to environmental sustainability, the EonStor DS storage solution enables energy cost savings while maintaining performance. It is equipped with power saving designs such as high-efficiency power supplies, dynamic cooling mechanism and intelligent multi-level drive spin-down technology.

Superior Performance Levels

EonStor DS G7 systems offer superior performance levels that are ideal for mission-critical applications. Featuring advanced hardware platforms, EonStor DS G7 SAS solutions provide superior throughput of up to 5,200 MB/s Read and 3,100 MB/s Write and support up to 400K IOPS.

Technical Specifications

EonStor DS: 6Gb/s SAS to 6Gb/s SAS

	ESDS S24S-G2240	ESDS S16S-R2240 ESDS S16S-G2240	ESDS S12S-R2240 ESDS S12S-G2240	ESDS S04S-G2240
Hardware Configurations				
Storage Controller	Single	Dual redundant or single	Dual redundant or single	Single
Host Connectivity (per controller)	Two (2) 6Gb/s SAS 4x wide ports			
Cache Memory (per controller)	Default 1GB ¹ , up to 4GB	Default 1GB ¹ , up to 4GB	Default 1GB ¹ , up to 4GB	1GB, 2GB or 4GB ¹
Drive Connectivity	6Gb/s SAS			
Max. Drives (per system)	24	16	12	4
Max. Drives (via JBOD)	104	112	84	-
Expansion Enclosure (JBOD)	ESDS S16S-J2000-S	ESDS S16S-J2000-R ESDS S16S-J2000-S	ESDS S12S-J2000-R ESDS S12S-J2000-G	-
SAS Expansion Port (per controller)	1 x 6Gb/s SAS 4x wide port	1 x 6Gb/s SAS 4x wide port	1 x 6Gb/s SAS 4x wide port	-
Supported Drives ²	2.5" 10K RPM SAS drives – 300GB, 450GB, 600GB, 900GB, 1.2TB 3.5" 15K RPM SAS drives – 300GB, 450GB, 600GB 3.5" 7,200 RPM Nearline SAS drives – 1TB, 2TB, 3TB or 4TB 3.5" 7,200 RPM SATA drives – 2TB, 3TB, 4TB ³			
Power Supplies	Three redundant 405W	Two redundant 530W	Two redundant 530W Two redundant 350W	Single 200W
Form Factor ⁴	4U, 19-inch rackmount	3U, 19-inch rackmount	2U, 19-inch rackmount	1U, 19-inch rackmount
Green	80 PLUS-certified power supplies ⁵ delivering more than 80% energy efficiency Intelligent multi-level drive spin-down			
RAID Configurations	RAID level 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60 Up to 32 logical drives and 64 partitions per logical volume Up to 1024 LUNs			
Data Services				
Local Replication ⁶	Snapshot	Snapshot images per source volume Snapshot images per system	Standard License: 64 / Advanced License: 256 Standard License: 1,024 / Advanced License: 4,096	
	Volume Mirror/Copy	Source volumes per system Replication pairs per source volume Replication pairs per system	Standard License: 16 / Advanced License: 32 Standard License: 4 / Advanced License: 8 Standard License: 64 / Advanced License: 256	
Thin Provisioning ⁷	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.			
Availability and Reliability	Redundant, hot-swappable hardware modules Multi-pathing support (EonPath); Device mapper support CacheSafe technology: protects cached data during power outage by flushing data into flash memory			
Management	SANWatch management suite; Embedded RAIDWatch; Terminal via RS-232C; Telnet/SSH; LCD keypad panel			
Notification	Email, Fax, LAN broadcast, SNMP traps, SMS, Skype			
OS Support ²	Windows Server 2003, Windows Server 2008 / 2008 R2 / 2012 (including Hyper-V), Red Hat Enterprise Linux, VMware			
Service and Support ⁸				
Standard Service	3-year limited hardware/software warranty and 8x5 phone, web and email support			
Upgrade/Extension Options ⁹	Replacement part dispatch on the next business day (up to 5 years) Advanced Service: 24x7 phone, web and email support + on-site diagnostics on the next business day (up to 5 years) Premium Service: 24x7 phone, web and email support + on-site diagnostics in 4 hours (up to 5 years) Extended Standard Service up to 5 years			

1. Default capacity may vary by region.

2. For the latest compatibility details, please contact our sales representatives.

3. MUX board required when using SATA drives in dual-controller systems.

4. For detailed dimensions, please check the Infortrend website.

5. On the ESDS S16S-R2240, ESDS S16S-G2240 and ESDS S12S-R2240.

6. Available with optional license on the ESDS S24S-G2240, ESDS S16S-R2240, ESDS S16S-G2240, ESDS S12S-R2240, ESDS S12S-G2240.

7. Not available on ESDS S04S-G2240.

8. All EonStor DS systems are shipped with Standard Service. Software maintenance covers the software licenses for EonStor DS systems.

9. Options may vary by region.

Technical Specifications

EonStor DS: 6Gb/s SAS to 6Gb/s SAS

	ESDS B24S-R2240 ESDS B24S-G2240	ESDS B12S-R2240 ESDS B12S-G2240	ESDS S12S-R2240-4 ESDS S12S-G2240-4
Hardware Configurations			
Storage Controller	Dual redundant or single		
Host Connectivity (per controller)	Two (2) 6Gb/s SAS 4x wide ports		
Cache Memory (per controller)	Default 1GB ¹ , up to 4GB		
Drive Connectivity	6Gb/s SAS		
Max. Drives (per system)	24	12	12
Max. Drives (via JBOD)	144 ²	108 ³	84
Expansion Enclosure (JBOD)	ESDS B24S-J2000-R ESDS S16S-J2000-R ⁴ ESDS S12S-J2000-R ⁴ ESDS B24S-J2000-S ESDS S16S-J2000-S ⁴ ESDS S12S-J2000-G ⁴	ESDS B12S-J2000-R ESDS S16S-J2000-R ⁴ ESDS S12S-J2000-R ⁴ ESDS B12S-J2000-G ESDS S16S-J2000-S ⁴ ESDS S12S-J2000-G ⁴	ESDS S12S-J2000-R ESDS S12S-J2000-G
SAS Expansion Port (per controller)	1 x 6Gb/s SAS 4x wide port		
Supported Drives ⁵	2.5" SAS SSDs – 200GB, 400GB, 800GB 2.5" SATA SSDs – 100GB, 200GB, 300GB, 400GB, 800GB 2.5" 10K RPM SAS drives – 300GB, 450GB, 600GB, 900GB, 1.2TB 2.5" 15K RPM SAS drives – 147GB, 300GB 2.5" 7,200 RPM SATA drives – 250GB, 500GB, 1TB ⁶		2.5" 10K RPM SAS drives – 300GB, 450GB, 600GB, 900GB, 1.2TB 3.5" 15K RPM SAS drives – 300GB, 450GB, 600GB 3.5" 7,200 RPM Nearline SAS drives – 1TB, 2TB, 3TB or 4TB 3.5" 7,200 RPM SATA drives – 2TB, 3TB, 4TB ⁶
Power Supplies	Two redundant 530W	Two redundant 380W Two redundant 250W	Two redundant 530W Two redundant 350W
Form Factor ⁷	2U, 19-inch rackmount	1U, 19-inch rackmount	2U, 19-inch rackmount
Green	80 PLUS-certified power supplies ⁸ delivering more than 80% energy efficiency Intelligent multi-level drive spin-down Dynamic cooling		
RAID Configurations	RAID level 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60 Up to 32 logical drives and 64 partitions per logical volume Up to 1024 LUNs		
Data Services			
Local Replication ⁹	Snapshot	Snapshot images per source volume Snapshot images per system	Standard License: 64 / Advanced License: 256 Standard License: 1,024 / Advanced License: 4,096
	Volume Mirror/Copy	Source volumes per system Replication pairs per source volume Replication pairs per system	Standard License: 16 / Advanced License: 32 Standard License: 4 / Advanced License: 8 Standard License: 64 / Advanced License: 256
Thin Provisioning	"Just-in-time" capacity allocation optimizes storage utilization and eliminates allocated but unused storage space.		
Availability and Reliability	Redundant, hot-swappable hardware modules Multi-pathing support (EonPath); Device mapper support CacheSafe technology: protects cached data during power outage by flushing data into flash memory		
Management	SANWatch management suite; Embedded RAIDWatch; Terminal via RS-232C; Telnet/SSH; LCD keypad panel		
Notification	Email, Fax, LAN broadcast, SNMP traps, SMS, Skype		
OS Support⁵	Windows Server 2003, Windows Server 2008 / 2008 R2 / 2012, Red Hat Enterprise Linux, VMware		
Service and Support¹⁰			
Standard Service	3-year limited hardware/software warranty and 8x5 phone, web and email support		
Upgrade/Extension Options ¹¹	Replacement part dispatch on the next business day (up to 5 years) Advanced Service: 24x7 phone, web and email support + on-site diagnostics on the next business day (up to 5 years) Premium Service: 24x7 phone, web and email support + on-site diagnostics in 4 hours (up to 5 years) Extended Standard Service up to 5 years		

1. Default capacity may vary by region.

2. Using five ESDS B24S expansion enclosures.

3. Using six ESDS S16S expansion enclosures.

4. The ESDS S16S/S12S expansion enclosures support 300GB, 450GB, 600GB 3.5" 15,000 RPM SAS drives, 500GB, 1TB, 2TB or 3TB 3.5" 7,200 RPM Nearline SAS drives and 1TB, 2TB, 3TB or 4TB 3.5" 7,200 RPM SATA drives.

5. For the latest compatibility details, please contact our sales representatives.

6. MUX board required when using SATA drives in dual-controller systems.

7. For detailed dimensions, please check the Infortrend website.

8. On the ESDS B24S-R2240 and ESDS B24S-G2240 and S12S-R2240-4

9. Standard functions come default with EonStor DS systems. Advanced functions are available with optional license.

10. All EonStor DS systems are shipped with Standard Service. Software maintenance covers the software licenses for EonStor DS systems.

11. Options may vary by region.



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