

S16S-R1030 S12S-R1032
 S16S-G1030 S12S-G1033
 S12S-G1030



EonStor[®] SAS-to-SAS Series RAID Subsystem



S16S



S12S

High Performance SAS RAID
 ASIC400 platform
 Flexibility with SAS or SATA Drives



OVERVIEW

The RAID subsystem provides multi-lane Serial Attached SCSI (SAS) host interface that overcomes the limitations of parallel SCSI to achieve enhanced performance, high availability and reliability. With the SAS wide links, the subsystem can be flexibly expanded with enterprise-class SAS devices or cost-effective SATA drives.

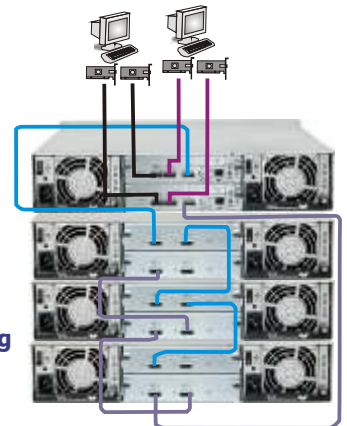
The subsystem is equipped with redundant and hot-swappable components to ensure continuous and reliable operation. The sophisticated firmware functionality, along with the EonPath and RAIDWatch software, offer comprehensive manageability and optimal performance.

APPLICATIONS

Infotrend products are widely applied in disk-to-disk backup, server-attached and network data storage and in major industries such as data-mining, medical imaging, scientific research, security/CCTV, and digital media including video-on-demand, stream editing and more.

HIGHLIGHTS

- Redundant or Single RAID controller configuration
- Fault-tolerant enclosure modules
- 4 or 2 SAS 4x wide host ports
- SAS or SATA-II (3Gbps) disk drives
- Infotrend's 5th-generation ASIC400 RAID engine
- RAID6 to withstand simultaneous drive failures
- SAS SFF-8470 or SFF-8088, SAS interfaces connectors
- Max. 80 drives (1 RAID + 4 JBODs)
- S.M.A.R.T. and NCQ support
- EonPath software for path redundancy & load-balancing
- Expansion: RAID & corresponding JBODs



RAID	→	JBOD	RAID	→	JBOD
S16S-R1030		S16S-J1000-R	S16S-G1030		S16S-J1000-S
S12S-R1032		S12S-J1002-R	S12S-G1033		S12S-J1000-G

High Availability

- * Hot-swappable enclosure modules
- * Component redundancy
- * Intelligent reactive & preventive mechanisms
 - Automated cache flush
 - Automated Media Scan
 - Auto rebuild on hot spares
 - Automated caching mode

Advanced RAID Features

- * RAID levels 0, 1 (0+1), 3, 5, 6, 10, 30, 50, 60
- * RAID Parity regeneration
- * 3 spare disk types: dedicated, global, enclosure-specific
- * Instant array availability
- * Stripe size and caching mode configurable per logical drive
- * Online array expansion by adding drives or copying & replacing drives
- * Online disk cloning

Management

- * Java-based SANWatch software protection
- * LCD keypad panel
- * Terminal console via RS-232C
- * Telnet

Monitoring

- * S.M.A.R.T. status pooling
- * Voltage, module presence, temperature monitoring
- * Automated FRU status pooling

Operation Robustness

- * Intelligent read algorithms
- * Write cache threshold purge
- * Bad sector reassignment
- * Configurable task priority
- * Multiple, co-existing RAID arrays w/ variable stripe sizes
- * RAID level migration
- * Drive roaming

JBOD Characteristics

- * Single or dual expander controllers
- * SAS 4x wide ports (SFF-8470/8088) with RAID systems
- * Path redundancy through separate SAS domains
- * Fault-tolerant hardware
- * Diagnostic LED panel
- * In-band enclosure management service



AVAILABLE MODELS

1 channel = 4 combined PHYs

Model	Controller	Host Channels	Drive Bays	Expansion Port	Disk # Supported	SAS connector
S16S-R1030	Redundant	4	16	2	1 RAID+3 JBOD (64 HDD)	SFF-8470
S16S-G1030	Single	2	16	1	1 RAID+4 JBOD (80 HDD)	SFF-8470
S12S-R1032	Redundant	4	12	2	1 RAID+3 JBOD (48 HDD)	SFF-8088
S12S-G1033	Single	2	12	1	1 RAID+4 JBOD (60 HDD)	SFF-8088

S16S-R1030



S12S-R1032



S12S-G1033



RAID

CHARACTERISTICS (per controller)

- . RISC CPU
- . Default DDR cache memory 512MB
- . SAS host ports 2
- . SAS 4x wide link expansion 1
- . BBU Optional for G models
- . LCD keypad panel 1
- . COM ports 2
- . 10/100 Ethernet port 1
- . PSUs 2
- . Cooling modules 2
- . Diagnostic LEDs on all FRUs

DRIVE INTERFACES

- . Intermixed SAS/ SATA II
- . Number of disk trays 16 or 12
- . Proprietary enclosure service via in-band SAS links

HOST CONNECTION PORTS

- . Data single channel bandwidth 12Gbps
- . Tag command queuing 256

RAID CONFIGURATIONS

- . RAID levels 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60
- . Up to 32 logical drives (varies by memory size)
- . Up to 64 LUNs (varies by memory size)
- . Up to 2GB cache per controller
- . Multiple array configurations
- . Infortrend Smart, proactive fault management technologies

HIGH AVAILABILITY

- . Redundant, hot-swappable FRUs
- . Subsystem self-diagnostics
- . Li-Ion battery backup unit
- . UPS status detection
- . Multiple local, global, and enclosure-specific hot-spares

MANAGEMENT SOFTWARE

- . Java-based SANWatch software
- . Web-based embedded RAIDWatch
- . Terminal console via RS-232C
- . Telnet / SSH
- . Event notification methods: E-mail/ Fax/ LAN broadcast/ SNMP traps/ SMS/MSN

RoHS Compliance

EMC

- . CE
- EN 55022: 1998/A1: 2000/A2: 2003
- EN 61000-3-2: 2000/A1: 2001
- EN 61000-3-3: 1995/A1: 2001
- EN 55024: 1998/A1: 2001/A2: 2003
- . FCC (FCC Part 15, subpart B)
- . BSMI (CNS 13438)

Safety

- . UL (60950-1: 2003)
- . BSMI
- CNS 14336: 1993
- IEC 60950-1, First Edition
- . GOST-R: GOST 60950

OS SUPPORT

- . Microsoft Windows 2003 Server
- . Microsoft Windows 2000 Server
- . Sun Solaris ver. 9/10
- . RedHat Linux ver. 8/9, 64-bit, Enterprise ver.3
- . SuSE: Linux ver. 8/9, 64-bit
- . Fedora 64-bit
- . Mac OS X (For G models)
- * Microsoft WHQL-Windows Server 2003

REQUIREMENTS

	AC input	DC output
3U	530W max. 100V@9A; 240V@4.5A	12V-32A, 5V-32A, 3.3V-30A
2U - R/G1032	530W max. 100V@10A; 240V@5A	12V-43A, 5V-25A
G1030	460W max. 100V@8A; 240V@4A	12V-24A, 5V-36A, 3.3V-32A

- . Relative Humidity: 5% to 95% (non-condensing)
- . Operating Temperature: 0°C to 35°C (40°C w/o BBU)

SPECIFICATIONS

DIMENSIONS

- . 19-inch rackmount chassis

	w/o handles	W/ handles
3U	445W x 130H x 488.2D mm (17.5 x 5.11 x 19.2 inches)	482W x 131H x 504.3 mm (19 x 5.15 x 19.8 inches)
2U	446W x 88H x 498D mm (17.5 x 3.46 x 19.2 inches)	482W x 88H x 516 mm (19 x 3.46 x 20.3 inches)

SHOCK & VIBRATION

Shock - half sine	Vibration
Operating: 5G peak, 11ms duration	operating: 0.5oct/min, 5 to 500Hz, sine wave, 0.2G
Non-operating: 15G, 11ms	non-operating: 0.5oct/min, 5 to 500Hz, sine wave, 1.0G

JBOD

CHARACTERISTICS

- . Redundant or single expander controller
- . SAS 4x wide port per controller 2
- . PSUs 2
- . Cooling modules 2
- . Diagnostic LED panel
- . Path redundancy via separate SAS domains
- . Connectors: SFF-8470: S16S-J1000-R/S, S12S-J1000-G
SFF-8088: S12S-J1002-R/S

DRIVE INTERFACE

- . Intermixed SAS/ SATA II
- . Number of disk trays 16 or 12

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