

EonStor[®] A16F-G2430

3U Profile, 16-bay, Single-controller
FC-4G to SATA-II RAID Subsystem



Employing Infortrend's new generation ASIC400 as an XOR and P, Q engine for RAID5 and RAID6, the ES A16F-G2430 is designed to satisfy the speed, capacity, and reliability demands of medium- to large-sized enterprises.

The subsystem combines the high performance, and scalability of 4G Fibre host interfaces with the low cost and high capacity benefits of 3Gbit per second (3Gbps) Serial ATA (SATA) drive technology. The 4Gbps Fibre Channel (FC-4G) doubles the storage network's performance speed while maintaining backward-compatibility with 1G and 2G systems.

Infortrend[®]

Solution

OVERVIEW

The A16F-G2430 comes in an enhanced, cableless, high-density 3U chassis. The single RAID controller provides two 4Gbps Fibre host channels and sixteen 3Gb SATA II drive channels. Its high performance and full bandwidth assure the highest level of data availability in a safe environment.

WHY BUY FC-4G TECHNOLOGY?

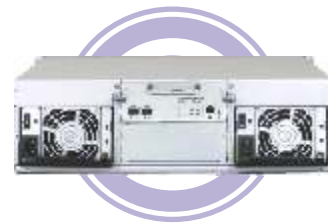
FC-4G technology provides faster communication between servers and storage systems, more rapid data transfer, and higher reliability. Benefits of FC-4G interface include doubled throughput, backward compatibility, and less SAN infrastructure (fewer switches with fewer ports, fewer host bus adapters)

HIGHLIGHTS

- **Market leading I/O performance**
 - Sustained RAID5 Read/write: 610/450 MB/s
 - Sustained RAID6 Read/write: 590/410 MB/s
- **Two (2) FC-4G host channels; transfer rate up to 400Mbps per channel**
- **Accommodates sixteen (16) the latest 3Gbps, SATA-II disk drives; backward compatible with SATA-I drives**
- **ASIC 400 architecture with hardware RAID5/6**
- **Supports up to 2GB DDR RAM DIMM modules**
- **Highest density in a 3U chassis supporting up to 12TB storage capacity**
- **RoHS compliant**
- **Windows Server 2003 certified**
- **Browser-based RAIDWatch management tool**

Reliability

The A16F-G2430 fully supports advanced, enterprise-class RAID features. Any logical drives, logical volumes, and logical partitions existing within the A16F-G2430 can be configured using any RAID level including RAID6, a proprietary extension of RAID5 that improves fault tolerance with the ability to handle the failure of any two drives in the array.



The subsystem further guarantees data safety by supporting an optional battery backup unit (BBU) and the installation of an uninterruptible power supply (UPS). The BBU provides power to cache memory during a power failure, while the UPS extends the operating time for the entire subsystem if a power shortage occurs. Combined with Infortrend's seamless firmware features such as DrvSmart and SysSmart, the ES A16F-G2430 delivers reliable, consolidated storage for today's enterprise environments.

Availability

The A16F-G2430 provides quiet operation with unsurpassed reliability for even the most extreme storage environments. To ensure a high level of system availability, the unique cableless chassis design allows all critical components such as disk drives, and power supplies to be redundant and hot-swappable. These modules are integrated into the passive backplane via board-to-board connectors to increase availability and eliminate single points of failure, thus making this subsystem an excellent choice for mission-critical applications.

Serviceability

This reliable, SAN-ready subsystem features a cableless, backplane-based design to eliminate problems associated with cable connections and offer a higher level of serviceability and hot-swappability. The subsystem's modular nature and the easy accessibility to all field replaceable units (FRUs) through its front and rear panels ensure easy subsystem maintenance.

Manageability

Managed by the LCD keypad panel, the A16F-G2430 provides a convenient way to monitor and be notified of the subsystem status. The LCD keypad panel is a simple management interface allowing users to configure and monitor the subsystem. All modules on the subsystem have LED indicators so that subsystem status can be determined in seconds.

The subsystem can also be accessed through the RS-232C terminal, telnet, or remotely through the browser- or Java-based RAIDWatch Manager. By setting up RAIDWatch Manager, users can be constantly aware and automatically notified of array status using any or all of the following notification methods: email, fax, LAN broadcast, SNMP traps, MSN Messenger, SMS messages, and the configuration utility screen.



INFOTREND SMART TECHNOLOGIES

Derived from more than ten years experience in RAID storage design, Infortrend's innovative firmware delivers Smart Technologies that provide enhanced storage solutions for every customer environment, from small organizations to large enterprises. These technologies enhance I/O processing, drive handling, and system management.



MAJOR MARKETS AND USES

Infortrend products are used in server-attached and networked data storage environments in major industries such as medical imaging, multi-media on demand (MOD), and digital media including video-on-demand, stream editing and many others.

IOSmart

The IO Smart technologies consist of specific functions and configuration options that control various I/O characteristics in order to meet the rapidly increasing requirements of today's applications. The functions include adaptable strip size, adaptive write policy and guaranteed latency I/O which improve sequential write performance and ensure the fast and continuous flow of data.

DrvSmart

The DrvSmart utility provides an easy way to store data while keeping it safe. One of the main DrvSmart functions, Media Scan, retrieves data from degraded or damaged hard drives and handles low quality drives in both the degraded mode and during the rebuild process. Other DrvSmart features include disk cloning, drive roaming, SMART, transparent resetting of non-responsive hard drives, and RAID parity update tracking and recovery.

SysSmart

SysSmart combines enclosure monitoring and firmware management capabilities to minimize the chance of downtime caused by hardware failures. The auto data protection mechanisms were developed to ensure data safety. Other SysSmart functions include event-triggered as well as other monitoring utilities and approaches combined with the powerful RAIDWatch manager. Component status, voltage and temperature readings, and system events are instantly revealed through the manager's graphical interface.



SPECIFICATIONS

Subsystem Characteristics

- Power PC RISC CPU
- ASIC400 RAID engine
- DDR cache memory 256MB
- FC-4G host channels 2
- BBU Option
- LCD keypad panel 1
- COM ports 2
- 10/100 Ethernet port 1
- Diagnostic LEDs on all FRUs
- PSU 2
- Cooling Module 2

Drive Interface

- Number of disk trays 16
- SATA-II/SATA-I

Host Connection Ports

- SFP ports to optical fiber 2
- Data single channel bandwidth 400MBps
- F_port, FL_port
- Tag command queuing
- Multiple target IDs

RAID Configurations

- RAID levels 0, 1(0+1), 3, 5, 6, 10, 30, 50, 60, JBOD
- Max. 32 LDs (varied by memory size)
- Max. 1024 LUNs (varied by memory size)
- Multiple array configurations
- Automatic background rebuild
- Infortrend Smart Technologies

High Availability

- Redundant, hot-swappable FRUs
- Subsystem self-diagnostics
- Optional battery backup unit
- UPS status detection
- Local, global, enclosure spare drives

Management Software

- RAIDWatch GUI software
- Terminal via RS-232C
- Telnet over Ethernet
- LCD keypad panel
- Event notification methods:
 - Email
 - Fax
 - LAN broadcast
 - SNMP traps
 - Cell phone message SMS
 - Instant messages MSN

OS Support

- Microsoft Windows NT
- Microsoft Windows 2000 Server
- Microsoft Windows 2003 Server 32 bit/ 64 bit
- Sun Solaris ver. 9/10
- Red Hat Linux ver. 8/9, Enterprise ver. 3
- SuSe: Linux ver. 8/9/64-bit

Requirements

- AC Input: 100VAC ~ 240VAC with 530W PFC (auto-switching)
- DC Output: 12V-32A; 5V-32A; 3.3V-30A
- Relative Humidity: 5% to 95% non-condensing
- Operating Temperature: 0°C to 40°C (without BBU) 0°C to 35°C (with BBU)

Dimensions

- 3U, 19-inch rackmount chassis
- Chassis without handles: 445(W) x 130(H) x 488.2(D) mm (17.5 x 5.1 x 19.2 inches)
- Chassis with handles: 482.6(W) x 131(H) x 504.3(D) mm (19 x 5.2 x 19.9 inches)



SPARE PARTS & ACCESSORIES



Spare Parts

Description	Part Number
Fibre to SATA RAID controller module, for ES A16F-G2430 subsystem, 2 x FC-4G SFP host connectors, RAID 6	IFT-83AF24GE16
Drive tray, Type-III bezel and Type-II LED lightpipe	IFT-9273CDTray
Power supply module, enhanced EonStor 16-bay subsystems, 530W capacity	IFT-9273ECPSU
Cooling fan module for enhanced EonStor 16-bay subsystems	IFT-9273ECFanMod
Left-side forearm handle for 3U RAID subsystems, LCD panel included	IFT-9273HandLLCD
Right-side forearm handle for 3U subsystems; for the left or right side of JBOD subsystems	IFT-9270CHandR

Accessories

Description	Part Number
Null modem, DB-9-female-to-DB-9-male, wires swapped	IFT-9011
RS-232C serial cable, audio-jack-to-DB-9	IFT-9270ASCab
UPS cable, audio-jack-to-DB-9	IFT-9270CUPSCab
Agilent Fibre Channel 4.25/ 2.125 / 1.0625 GbD Small Form Pluggable Optical Transceiver, LC, wave-length 850nm, multi-mode	IFT-9270CSFP4GA01
Optical FC cable, LC-LC, MM-62.5/125, Duplex, LSZH, O.D.=1.8mmx2, 1 Meter	IFT-9270CFCCab01
Optical FC cable, LC-LC, MM-62.5/125, Duplex, LSZH, O.D.=1.8mmx2, 5 Meters	IFT-9270CFCCab02
Optical FC cable, LC-LC, MM-62.5/125, Duplex, LSZH, O.D.=1.8mmx2, 10 Meters	IFT-9270CFCCab03
Dummy Drive tray, Type-II bezel	IFT-9272CDTrayDmy
Battery cell pack, Li-ION, enhanced EonStor 16-bay subsystems	IFT-9273CBTE
Slide rail assembly for Enhanced EonStor 3U enclosures, 23"~32" rack depth	IFT-9273Cslider32
Slide rail assembly for Enhanced EonStor 3U enclosures, 23"~36" rack depth	IFT-9273Cslider36



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