

3U Profile, 16-bay
Single-controller
SCSI-320 to SCSI-320 RAID Subsystem

EonStor[®] U16U-G4020



The EonStor U16U-G4020 subsystem comes in an enhanced, cableless, backplane-based, high-density 3U chassis with a full-featured RAID controller. It is built around Infortrend's next-generation, custom ASIC266 with XOR engine. With its online expansion capability, the ES U16U-G4020 is the ideal solution for your growing storage needs.

Infortrend[®]

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Reliable Storage Networking Solution Provider



Utilizing the latest RAID processing technology and the newest high-performance SCSI-320 disk drives, the EonStor U16U-G4020 delivers unprecedented performance and reliability. Featuring two SCSI-320 host channels that are routed to two dual-stacked VHDCI SCSI connectors, the embedded SCSI-320 controller ensures superior performance, extreme reliability, and exceptional data availability for today's most data-intensive storage environments. This RAID subsystem is ideal for mission-critical applications where high capacity and high availability are required.

■ Highlights

- The best end-to-end I/O performance in RAID5 configuration:
Sequential Read: 512 MB/sec
Sequential Write: 326 MB/sec
- Two (2) SCSI-320 host channels; transfer rates up to 320MBps
- Two (2) SCSI-320 drive channels; each channel attaches to eight (8) drives
- Ultra-high-density, 3U, 16-bay enclosure with full-featured single controller architecture
- DDR cache memory up to 2GB
- Redundant hot-swappable components
- Storage capacity is easily increased by daisy chaining additional U16U-G4020 subsystems
- Dual-speed cooling fans to reduce system noise
- Optional, hot-swappable battery backup unit (BBU)
- Effortless management through the LCD keypad, RS-232C terminal, or Java-based RAIDWatch® manager over the Internet

■ Reliability

The ES U16U-G4020 leverages the reliability of SCSI-320 technology to provide rock solid data integrity. The subsystem offers full-featured data protection and support for RAID levels 0, 1(0+1), 3, 5, 10, 30, 50, NRAID and JBOD. Its flexible design allows

the U16U-G4020 to be connected to single or dual hosts. Data safety can be further guaranteed by installing an optional battery backup unit (BBU) and uninterruptible power supply (UPS) which can extend the operating time for the entire subsystem during a power failure.

■ Availability

The ES U16U-G4020 subsystem comes with fully featured RAID capabilities, and special care has also been taken to ensure that all possible causes of data loss have been eliminated. All critical components, including the drive trays, power supply units and cooling modules, are hot-swappable within the cableless, modular chassis.

This highly flexible design features two (2) dual-stacked VHDCI SCSI-320 connectors for host connections and storage expansion by daisy chaining additional U16U-G4020 subsystems.

The ES U16U-G4020 is your best choice to satisfy your organization's need for 24/7 data availability and increasing storage demands.

■ Serviceability

The completely cableless, backplane-based design eliminates problems associated with cable connections and offers a higher level of serviceability and hot-swappability. All field replaceable units (FRUs) are conveniently accessible from the front or rear of the subsystem to ensure easy system maintenance. Each module has its own set of LEDs that immediately indicate the health and status of the subsystem.

■ Manageability

The ES U16U-G4020 is extremely easy to deploy, configure, manage, and monitor via its variety of management interfaces. The subsystem comes standard with an Ethernet port for local or remote management using simple telnet protocol or the feature-rich RAIDWatch Java-based GUI. RAIDWatch® Manager provides graphical presentations of array components, monitoring windows, and configuration options. Best of all, system administrators can be constantly aware and automatically notified of array status via email, fax, LAN broadcast, SNMP traps, MSN Messenger, ICQ, and SMS messages.

Reliable Storage Networking Solution Provider

Infotrend Smart Technologies

Derived from more than ten years experience in RAID storage design, Infotrend'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.

IOSmart

IOSmart allows for the flexible configuration of logical drives, logical volumes and logical partitions and ensures instant RAID availability via background logical drive initialization. Fibre loops' load balancing is provided within the subsystem. The firmware's embedded intelligent algorithms, such as Adaptive Write Policy and Guaranteed Latency I/O, 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

SusSmart combines enclosure monitoring and firmware management capabilities in order to minimize the chance of down time caused by hardware failures. The Auto data protection mechanism is developed to ensure data safety. Other SysSmart functions include the event-triggered and the various monitoring utilities and monitoring 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

- 600MHz RISC CPU, 512KB L2 cache
- ASIC266 RAID engine
- DDR cache memory 256MB
- Dual-stacked VHDCI SCSI ports 2
- LCD keypad panel 1
- COM ports 2
- 10/100 Ethernet port 1
- Diagnostic LEDs on all FRUs Yes

Drive Interface

- Number of disk trays 16
- SCSI-320/160 supported Yes

Host Interface

- Dual-stacked VHDCI SCSI connectors 2
- Transfer rate 320MBps
- Tag command queuing
- Multiple target IDs

RAID Configurations

- RAID levels 0, 1(0+1), 3, 5, 10, 30, 50, JBOD
- Max. 128 logical drives
- Max. 1024 LUNs
- Multiple array configurations
- Automatic background rebuild
- Infotrend Smart Technologies

High Availability

- Redundant, hot-swappable FRUs
- Subsystem self-diagnostics
- Optional battery backup unit
- UPS status detection
- Hot-spare disk drives
- Cluster ready

Management Software

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

OS Support

- Microsoft Windows NT
- Microsoft Windows 2000 Server
- Microsoft Windows 2003 Server
- Sun Solaris ver. 8/9
- Red Hat Linux ver. 8/9, Enterprise ver. 3
- SuSE Linux ver. 8/9

Requirements

- AC Input: 100VAC at 10A; 240VAC at 5A with 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

Dimensions

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



Major Markets and Uses

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



Spare Parts

Description	Part Number
SCSI-to- SCSI RAID controller module, 2 x SCSI-320 host channels, 2 x SCSI-320 drive channels	IFT-83U40GD4
Drive tray, type-III bezel and type-II LED lightpipe	IFT-9273CDTray
Power supply module, Enhanced EonStor 16-bay subsystems, 460W capacity	IFT-9273CPSU
Cooling fan module for enhanced EonStor 16-bay subsystems	IFT-9273CFanMod
Right-side forearm handle for 3U subsystems, applicable to the Left or Right-side of JBOD subsystems	IFT-9270CHandR
Left-side forearm handle for 3U RAID subsystems, LCD panel included	IFT-9273HandLLCD

Accessories

Description	Part Number
Dummy drive tray, Type-II bezel	IFT-9272CDTrayDmy
External SCSI round cable, VHDCI to VHDCI	IFT-9270UJBODCab
RS-232C serial cable, audio-jack to DB9	IFT-9270ASCab
Null modem, DB9 female to DB9 male, wires swapped	IFT-9011
SCSI external round cable, DB68 to VHDCI	IFT-9270UHstCab
UPS cable, audio-jack to DB-9	IFT-9270CUPSCab
Battery cell pack, Li-ION battery cells	IFT-9273CBT-C
Slide rail assembly for Enhanced EonStor 3U enclosures, 23" to 32" rack depth	IFT-9273Cslider32
Slide rail assembly for Enhanced EonStor 3U enclosures, 23" to 36" rack depth	IFT-9273Cslider36



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