

Enhanced 2U Profile
Single-controller/12-drive
SCSI-320 to SCSI-320 RAID Subsystem

EonStor[®] U12U-G4020



The EonStor U12U-G4020 subsystem is an enterprise-class RAID storage solution designed to achieve the highest level of data availability, performance, and scalability. It is built around Infortrend's next generation, custom ASIC266 with XOR engine. Featuring two SCSI-320 channels, the subsystem provides ample throughput for wide range of applications.

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Infortrend's RAID functionality is unmatched in the industry in terms of its wide variety of array configuration, maintenance, and monitoring capabilities. The EonStor U12U-G4020 subsystem provides IT professionals with versatile options to meet their needs.

The U12U-G4020 provides two SCSI-320 channels that are routed to two dual-stacked VHDCI SCSI connectors. The 2U enclosure provides the highest density of data storage available on the market. The modular nature of the subsystem and the easy accessibility to all major components ensure the ease of subsystem maintenance.

■ Highlights

- The best end-to-end I/O performance in RAID5 configuration:
Sequential Read: 426 MB/sec
Sequential Write: 248 MB/sec
- Ultra-high-density, 2U, 12-bay enclosure with full-featured single controller architecture
- Two (2) SCSI-320 host channels
- Two (2) SCSI-320 drive channels; each channel attaches to six drives. Transfer rate up to 320MBps for each channel
- Redundant hot-swappable components
- Storage expandable by daisy chaining additional ES U12U-G4020 subsystems
- Dual-speed cooling fans to reduce system noise and power consumption
- 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 EonStor U12U-G4020 is a full-featured data protection subsystem supporting RAID levels 0, 1(0+1), 3, 5, 10, 30, 50, NRAID and JBOD. The flexible design allows the U12U-G4020 to be connected to single or dual hosts.

The subsystem supports the installation of an uninterruptible power supply (UPS) and optional battery backup unit (BBU) to prevent data loss during a power failure.

Combined with Infortrend's comprehensive firmware features, the ES U12U-G4020 ensures extreme reliability and exceptional data availability in today's most data-intensive storage environments.

■ Availability

The ES U12U-G4020 leverages the reliability of SCSI-320 technology to provide rock solid data integrity. The highly flexible design features two dual-stacked VHDCI SCSI-320 connectors for maximum storage connectivity. The subsystem is extremely easy to deploy, configure, manage, and monitor via its variety of management interfaces.

The U12U-G4020 comes with twelve (12) fully hot-swappable drive trays accommodating 3.5" SCSI-320 drives. To further enhance system reliability and uptime, the power supply units (PSUs), and cooling modules are all redundant and hot-swappable.

■ Serviceability

This high-density subsystem provides space efficiency along with simple, cost-effective expandability. You can easily add capacity in single-drive increments or daisy chain another U12U-G4020 to expand storage whenever you need it.

The modular, field replaceable units (FRUs) can be conveniently accessed through the front and rear panels to ensure the ease of the subsystem maintenance.

■ Manageability

The EonStor U12U-G4020 includes a number of interface features to keep users constantly aware and automatically notified of array status. The subsystem comes standard with an Ethernet port for local or remote management using simple telnet protocol or the feature-rich RAIDWatch Manager that provides a convenient "Install Once, Run Anywhere" graphical user interface. Additionally, system administrators can use the event notification function to choose to be notified of any system events via email, fax, LAN broadcast, SNMP traps, MSN Messenger, ICQ, and SMS messages.

Reliable Storage Networking Solution Provider

■ Infortrend Smart Technologies

With over 10 years of RAID firmware development experience, Infortrend's innovative Smart technology that has been applied extensively to our firmware functionalities to provide enhanced storage solutions for every customer environment. The technologies are smart for I/O processing, drive handling, and system management from small organizations to large enterprises.

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. The firmware's embedded intelligent algorithms, such as Adaptive Write Policy and Guaranteed Latency I/O, improve the performance of sequential write applications and guarantee the fast and continuous flow of data.

DrvSmart

The ES U12U-G4020 also includes the DrvSmart technology that 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

In addition to RAID protection for the disk drives, Infortrend has developed a special firmware feature that automatically changes the data cache policy to write-through mode when abnormal conditions are detected, such as a PSU or cooling module failure, low BBU or UPS battery charge, etc.

By using the firmware to control the rotation speed of the enclosure's dual-speed fans, fan speed is raised to a higher level when critical conditions are detected, e.g., a PSU or fan failure. Fan speed returns to the lower setting when normal operating status is restored. Control over caching behaviors, as well as voltage and temperature self-diagnostics, is also related to enclosure conditions.

Specifications

SUBSYSTEM CHARACTERISTICS

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

DRIVE INTERFACE

- Number of disk trays 12
- 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
- Infortrend Smart Technologies

HIGH AVAILABILITY

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

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 messengers MSN/ICQ

OS SUPPORT

- Microsoft Windows NT
- Microsoft Windows 2000 Server
- Microsoft Windows 2003 Server
- Sun Solaris ver. 8/9
- RedHat_Linux ver. 8/9, Enterprise ver.3
- SUSE LINUX ver. 8/9

REQUIREMENTS

- AC input 100VAC at 6A; 240VAC at 3A with PFC (auto-switching)
- DC output 12V-25A; 5V-25A; 3.3V-20A
- Relative humidity 5 to 95% non-condensing
- Operating temperature 0° to 40°C

DIMENSIONS

- 2U, 19-inch rackmount chassis
- Without handles: 446(W) x 88(H) 490(D) mm (17.6 x 3.5 x 19.3 inches)
- With handles: 482(W) x 88(H) x 505(D) mm (19 x 3.5 x 19.9 inch)



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, 4 x SCSI-320 channels, for 2U enclosure	IFT-82U40GD4
Drive tray, type-III bezel and type-II LED lightpipe	IFT-9273CDTray
Power supply module, EonStor 2U DDR-interface subsystems, 350W capacity	IFT-9272CPSU
Intelligent cooling fan module for EonStor 2U DDR-interface subsystems	IFT-9272CFanModE
Right-side forearm handle for 2U subsystems	IFT-9272CHandR
Left-side forearm handle for 2U RAID subsystems, LCD panel included	IFT-9272CHandLLCD

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
Enhanced Slide rail assembly for 2U enclosures, 21"~28.5" rack depth	IFT-9272CEslide28
Enhanced Slide rail assembly for 2U enclosures, 25.5"~36" rack depth	IFT-9272CEslide36



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