The RAID controller MegaRAID SAS 8880EM2 is released in the current PRIMERGY server for connection of the FibreCAT SX40 and PRIMERGY SX650 systems. It offers several notable advantages vis-à-vis the predecessor model MegaRAID SAS8344ELP:

- it supports up to 6 x FibreCAT SX40 (up to 72 SAS and SATA hard disks)
- notable performance increase and doubling of the controller cache to 512 MB
- RAID 6 support for maximum security requirements (downtime of 2 disks for each array without data loss)

The RAID stack is based on the LSI MegaRAID® and offers a high data throughput performance, comprehensive error tolerance function and user-friendly management options. Management of the controller is integrated seamlessly into the FSC Management concept. All controller functions are supported by the FSC ServerView RAID Manager.

Main features:

- Industry-proven MegaRAID® data protection
- Flexibility for SAS and SATA
- Sophisticated management and configuration suite
- Supports RAID 0, 1, 5, 6, 10, 50 and 60
- 512 MB cache with optional BBU back up for up to 72 hours
- offers sophisticated MegaRAID functions for extension of the server disk capacity
- 100% compatible with the modular RAID controller for server internal hard disks

SAS/SATA RAID for external housing

Today’s newest external enclosure designs are based on architectures that support both SATA and SAS hard drives. The MegaRAID SAS 8880EM2, with eight external SAS/SATA ports, is the ideal solution for configuring these external enclosures with either high-performance SAS drives or high-capacity SATA drives. This second-generation MegaRAID adapter features an LSISAS1078 storage processor, the fastest DDR2 memory available today, and an 8x PCI-Express host interface to provide the ultimate performance for external applications. Since system builders can use the MegaRAID SAS 8880EM2 to support one enclosure design that can be populated with either SAS or SATA hard drives, they can ultimately reduce the total cost of ownership, maximize the overall value of the investment, and reduce the number of supported versions.

RAID 6, modern data protection

The RAID controller supports all of the important RAID levels including RAID 6 and 60. RAID 6 tolerates up to two simultaneous drive failures and thus also the option of managing non-recoverable media errors during rebuilds. This is especially advantageous if a large number of low-priced SATA high-capacity hard disk drives are used for each RAID array.

RAID performance

The RAID controller offers maximum I/O performance and the highest data throughput because it profits from a stable and tried-and-tested RAID firmware on the basis of LSI MegaRAID®.

Due to the support of 64-bit addressing, a robust set of RAID features and demanding error tolerance functions this controller provides high RAID performance and data availability. Powerful online management service programs (FSC’s ServerView RAID Manager), which are simple to operate and quick to install, provide the administrator with unparalleled flexibility and access to the arrays.

Support for optional BBUs

The optional battery backup module guarantees the integrity of the data stored in the cache on the RAID controller because it provides a back-up power supply during a complete or short-term failure of the power supply. Battery backup units (BBU) provide a low-priced alternative to an uninterruptible power supply (UPS).
### Controller specifications

| Processor       | RoC (RAID on Chip)  
| LSI SAS1078     |                |
| PCI             | PCI Express x8 (8 lanes) |
| Cache           | 512MB DDR II SDRAM with ECC |
| Battery Backup Unit | Optional BBU for max. 72 hours data management (different versions, depends on system) |
| Drives per controller | max. 72 disks released |

### Technical specifications

#### Dimensions
- card: low profile, half length (MD2) (16.8 cm x 6.5 cm)
- bracket available in high and low-profile version

#### PCI
- Controller without BBU
  - +3.3 V (0.33 A type, 0.33 A max.)
  - +12 V (1.55 A type, 1.85 A max.)
  - +3.3V Aux (0.03 A typ, 0.03 A max)
- Controller with BBU
  - +3.3 V (0.33 A typ, 0.33 A max.)
  - +12 V (1.55 A typ, 2.1 A max.)
  - +3.3V Aux (0.03 A typ, 0.03 A max)

#### SAS specification
- two SAS SFF8088 external SAS connectors (mini SAS) each with 4 SAS ports: x4 SAS wide port
- SAS 1.0 (3 Gbit/s throughput per SAS port, 1,200 Mbit/s with x4 wide connector)
- max. capacity per array: 64 TB
- max. capacity per LUN: 64 TB

#### RAID Fault Tolerance and Flexibility Features
- RAID levels 0, 1, 5 and 6
- RAID spans 10, 50 and 60
- Online Capacity Expansion (OCE) (only supported with one logical drive per RAID array)
- Online RAID level migration (RLM)
- Variable Stripe Size for all logical drives
- Fast initialization for quick array setup
- Advanced error recognition of drives (Patrol Read)
- Background initialization for RAID 1, 5, 10, 50, 6 and 60
- Hot spare drives configurable
- Independent cache administration method per logical drive
  - Write-Back/Write-Through
  - Read-Ahead: Normal / Enabled
  - Cached I/O / Direct I/O
- Up to 64 logical drives per controller

### Fault Tolerance
- DDF – Configuration on disk
- Auto detection of failed drives
- Automatic rebuild of hot-plug drives
- Optional battery backup cache memory
- Support for SES enclosure management
- S.M.A.R.T. monitoring

### Supported operating systems
- Microsoft Windows 2003 Server
- Microsoft Windows 2008 Server
- Novell SUSE Linux SLES9 / 10
- Red Hat Enterprise Linux 4 / 5
- VMware ESX 3.5

### Compliance with Norms and Standards

#### Product safety
- Global: IEC 60950-1
- Europe: EN 60950-1
- USA / Canada: UL/CSA 60950-1

#### Electro magnetic compatibility
- Europe: EN55022, EN55024
- Taiwan: BSMI class A
- Japan: VCCI
- Australia: C-tick
- USA / Canada: FCC part 15 class A, ICES-003

#### Conformity procedure
- Europe (CE): EN Class A
- North America: FCC Class A verification

There is general compliance with the security requirements of all European countries and North America. National approvals required in order to satisfy statutory or for other reasons (e.g. for Canada, Eastern European countries, Norway), can be applied for on request.