



SAS and SATA Performance

ES-6600 SAS RAID support SATA (only single controller) and SAS (or Nearline) disks as well as SSD.

This makes ES-6600 SAS RAID a perfect RAID system as well for databases and other I/O critical applications as for inexpensive archiving and backup solutions.

To offer still higher redundancy these systems can also be offered with two redundant controllers.

Mixing SAS und SATA

RAID sets consisting of SAS disks can be combined with RAID sets of SATA disks – even within the same enclosure.

This allows assigning capacity to different applications according to their special needs. Software that requires mostly i/o throughput will store data on the most performant SAS RAID set. Other applications that just need high capacity can use inexpensive SATA disks.

RAID6

A special feature of ES-6600 RAID is the support of RAID level 6 which allows, that two disks may fail in a RAID set without loss of data. This means a higher level of data security compared to RAID 5, as for a certain time, until parity information is completely reconstructed on the hot spare disk, data will not be redundant on a RAID 5. RAID 6 avoids this, and is able to repair also single block errors during a rebuild time.

Mixed RAID Level

As in all ES-6600 RAID systems, within the same RAID set several partitions can be defined with different RAID levels. This allows for a more efficient use of existing disk capacity.

ES-6600SAS RAID can be shipped either with two or four 16 Gbit Fibre Channel interface (for SAN environments) or with two 4x 12 Gbit SAS interface ports per controller (for direct attached storage systems). Like all systems with Fibre Channel or SAS interface they require a host adapter on the server. For dual controller systems local MPIO of the operating system is required to handle controller failover.

ES-6600 SAS:

- 12, 16 or 24 SAS or SATA disks or SSDs
- expandable via SAS port to up to 240 disks
- single or dual controller
- host connection (per controller):
2/4 x 16 Gbit FC port or
2 x SAS port (4x12 Gbit)
- OS independent
- 2 GB cache standard (optional up to 8 GByte)
- optional: battery cache backup up to 72 h
- RAID level 0, 1, 0+1, 3, 5, 6, 30, 50, 60, JBOD
- **RAID 6 on ASIC**
- volumes with different RAID levels in the same RAID set
- hot-spare disks
- redundant PSUs and fans
- monitoring of fan rotation, temperature and voltage
- easy RAID management over integrated web server (Ethernet port)

Service:

- **3 years warranty**
- **free support via telephone or email**
- **optional: 3 years Advance Replacement Service**
- **optional: 3 years On Site Service**
- **optional: Installation**

Model	ES-6600 3.5"			ES-6600 2.5"
FC Host Interface	ES-6612EXF ES-6612EXFQ	ES-6616EXF ES-6616EXFQ	ES-6624EXF ES-6624EXFQ	ES-6624U2EXF ES-6624U2EXFQ
SAS Host Interface	ES-6612EXS	ES-6616EXS	ES-6624EXS	ES-6624U2EXS
Number of Disks	12 x 3.5"	16 x 3.5"	24 x 3.5"	24 x 2.5"
Max. Disks	up to 240 with expansion enclosures			
Rackmount 19"	2 U	3 U	4 U	2 U
RAID Controller	single controller, optional dual redundant controller (also upgradable at later time)			
RAID Architecture	<ul style="list-style-type: none"> • Intel dual core processor • single or dual active controller • RAID 6 support with extremely high performance • up to 8 GB on one DIMM socket with ECC protection 			
RAID Features	<ul style="list-style-type: none"> • RAID level 0, 1, 0+1, 3, 5, 6, 30, 50, 60, JBOD • multiple RAID selection • online RAID level / stripe size modification • online capacity expansion with RAID Level migration • direct availability of capacity – background initialization • hot spare disks - automatic disk integration and automatic rebuild 			
Host Interface (per Contr.)	4 x 16 Gbit Fibre Channel (...FQ) or 2 x 16 Gbit Fibre Channel (...F) or 2 x 16 Gbit Fibre (...S)			
Disk Interface	<ul style="list-style-type: none"> • SATA, Nearline and SAS mixable, SSD (dual controller only SAS interface) • 1 SAS expansion port (4x 12 Gbit) per controller, up to 240 disks 			
Battery Backup	optional up to 72 h			
RAID Management	<ul style="list-style-type: none"> • integrated web browser based RAID manager over 10/100 Mbit port • integrated manager over serial RS-232 port • integrated manager over LCD display • firmware upgradeable in flash ROM 			
Monitoring	<ul style="list-style-type: none"> • over integrated web browser based RAID manager • system status over LCD, LED and acoustic • all system events can be sent via email • SNMP agent for remote management over LAN 			
OS	OS independent (MPIO required for dual controller configuration)			
PSU Type	<ul style="list-style-type: none"> • Redundant 595W / 80 PLUS energy-efficient power modules • PFC feature • load sharing • cable-less 			
Electrical	110-230 V AC, 50-60 Hz			
Temperature	operating: 5 – 35° C, non-operating: -40° – +60° C			
Rel. Humidity	20% - 80% non condensing			
Size	W: 446mm D: 545mm H: 2-4 U (cf. above)			