



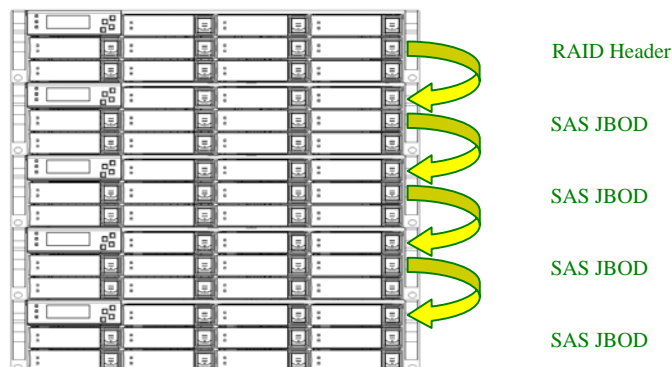
AXUS Reveals First SAS Storage Product YOTTA B SAS Series RAID

May 10th, 2007

AXUS Microsystems Inc., today announced its newly technological Yotta B SAS series RAID Subsystems. The new product comes with dual high performance SAS or 4Gbit Fibre Channel host connections, 16/12 SAS/SATA-II hard drives interface, and built with advanced technology RAID controller based on Intel IOP341 which delivers the extremely performance. The utmost cost effectiveness solution is ideal for data transaction and throughput intensive applications such as media editing, video streaming and in the environment where highest levels of performance and reliability are required.

SAS for Maximum Flexibility and Scalability

SAS builds on parallel SCSI by providing higher performance improving data availability, and simplifying system design. The SAS interface supports both SAS and SATA II disk drives, you decide how the 16/12 bays are populated either with SATA hard drives or SAS hard drives depending on your exact needs. For example, populate with SAS HDDS for data-intensive applications, and Serial ATA (SATA) drives for low-cost bulk storage of reference data. The system support up to 16/12 SAS/SATA II HDDs and one external Mini SAS 4x connector for easy expansion. When used with SAS expanders, the system can provide up to 128 devices through one or more SAS JBODs, making it an ideal solution for enterprise-class storage applications that call for maximum configuration flexibility and scalability.



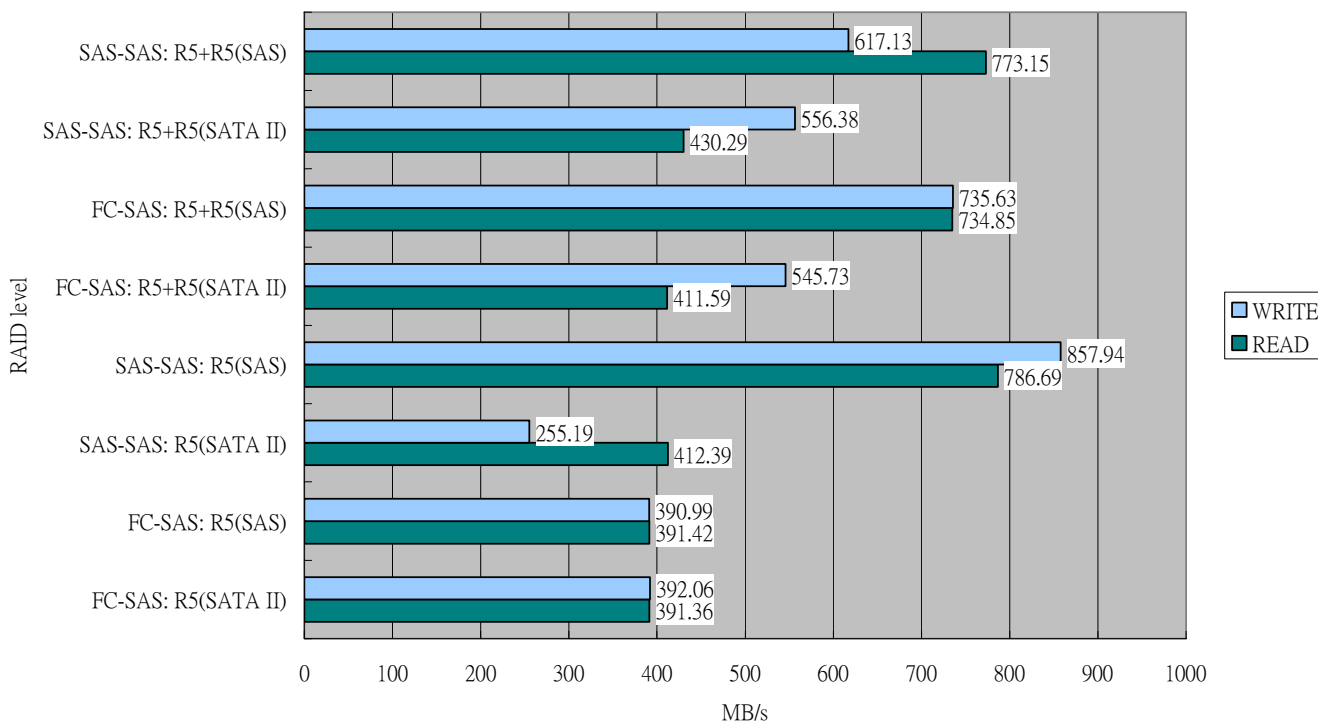
Yotta B SAS RAID series has a SAS JBOD Expansion Port
can be attached to SAS JBOD to expand capacity.

Extremely Performance

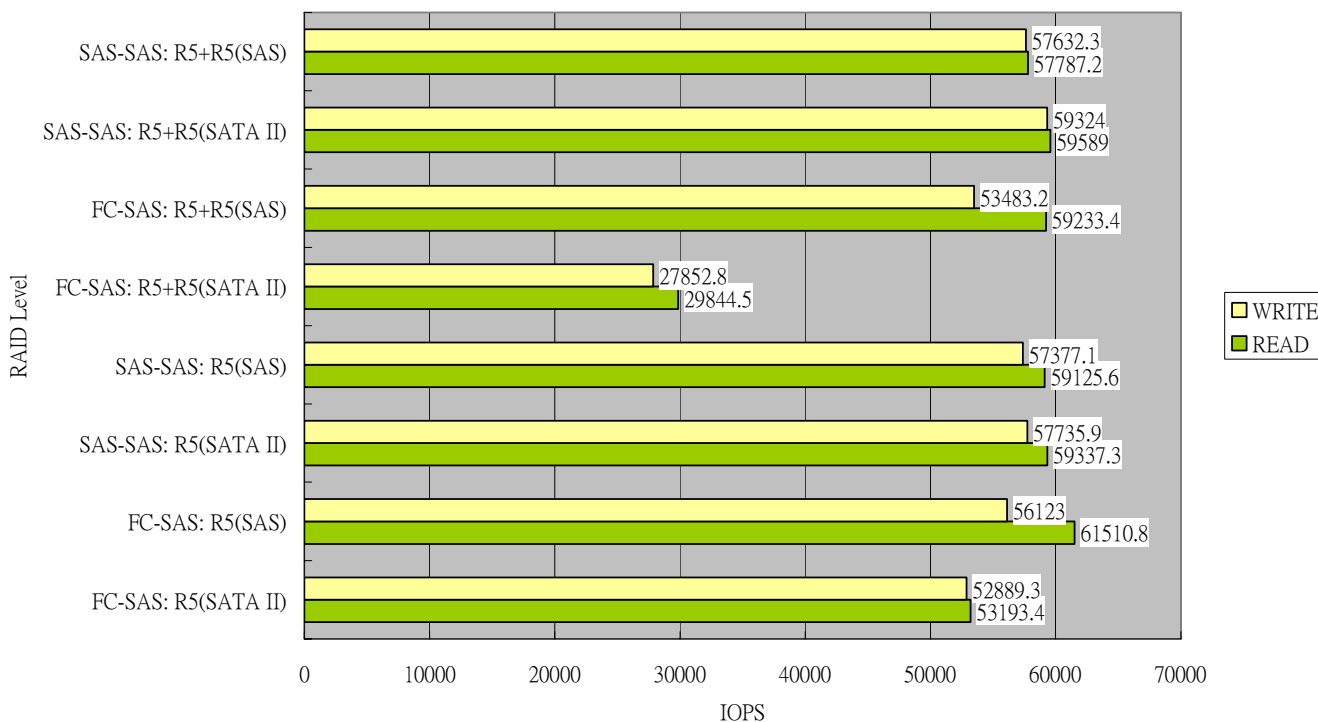
New high-performance architecture of Yotta B SAS series RAID sub-system comes from New Intel® IOP341 I/O Processor providing IOP-based RAID 5 and RAID 6 hardware acceleration, 1 MB embedded SRAM on-chip, PCI-X and eight lane PCI-Express bus architecture, up to 2 GB 64-bit 533MHz ECC DDR2 SDRAM, Dual 128-bit/400 MHz internal buses, and over 12 GB/s internal bandwidth makes its high data throughput exceeding any existing RAID controller with SAS drive.

The test results with performance benchmark utilities IO Meter shown below demonstrate its outstanding performance.

Yotta B SAS series Throughput per second - I/O Meter Measurement



Yotta B SAS series IO per second - I/O Meter Measurement



Convenient Modularized Designs

Yotta RAID series has a fully modularized design that replaced all the cables with connectors. RAID controller, cooling fans, disk drives, and power supplies can be easily swapped to eliminate the down time of the RAID services. The modular design also minimizes headaches should you choose to stick a cold spare parts on the shelf for emergencies, all swappable modular are interchangeable between all models within series.

Advanced Feature Highlights

Instant Availability/Background Initialization

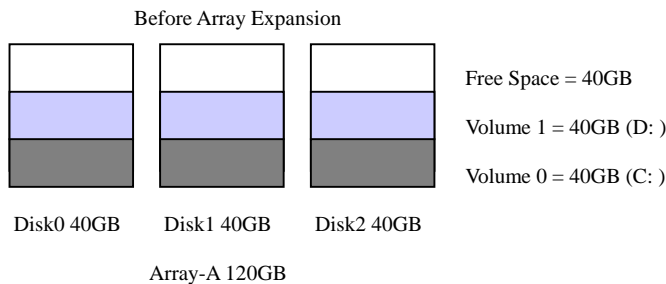
RAID 0 and RAID 1 volume set can be utilized immediately after the RAID creation. And for RAID 3, 5 and 6 volume sets, the initialization can proceed as a background task, the volume set is fully accessible for system reads and writes. The operating system can instantly access to the newly created arrays without requiring a reboot and waiting for the initialization to be completed. Furthermore, the RAID volume set is also protected against a single disk failure while initialing. However, in the Fast Initialization mode, it requires the initialization procedures to be completed before the volume set is ready for system accesses.

Array Roaming

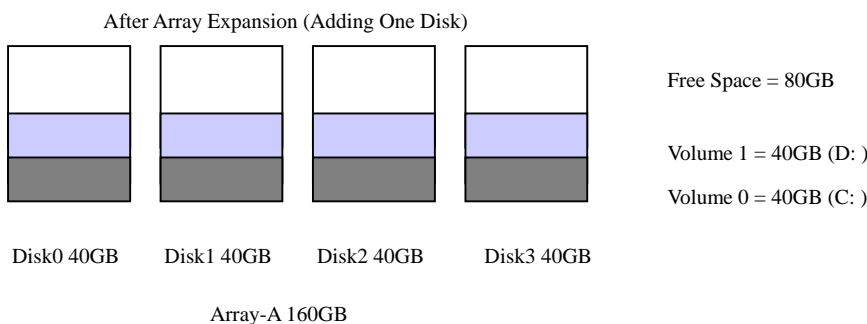
The configuration settings of a RAID will be restored in both NVRAM and the disk drives, providing the maximum protection in case of a disk drive or controller failure. Array roaming allows the administrators to move a complete raid set to another system without losing RAID configuration and data on that raid set. If a RAID subsystem fails to work, the raid set disk drives can be moved to another server and inserted in any order.

Online Capacity Expansion

Online Capacity Expansion makes it possible to add one or more physical drive to a volume set while the server is in operation, eliminating the need to store and restore after reconfiguring the raid set. When disks are added to a raid set, unused capacity is added to the end of the raid set. And the data on the existing volume is redistributed evenly across all the disks. A contiguous block of unused capacity is made available on the raid set. The unused capacity can be created as additional volume set. The expansion process is illustrated as the following figure.



The RAID subsystem controller redistributes the original volume set over the original and the newly added disks, using the same fault-tolerance configuration. An additional volume sets can also be created on the unused capacity with a different fault tolerance setting.



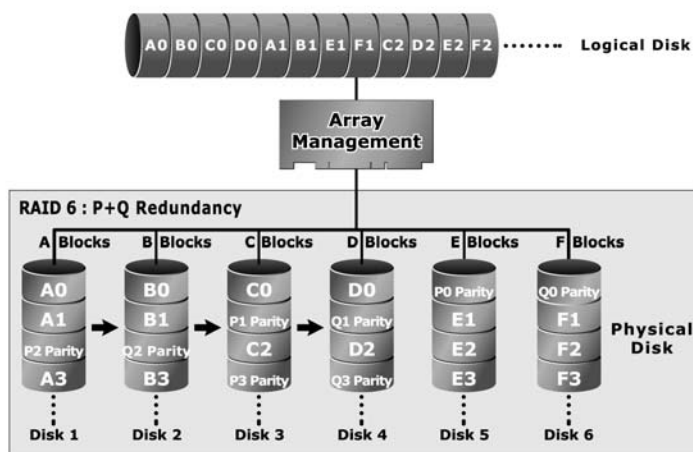
Online RAID Level and Stripe Size Migration

Both the RAID level and stripe size of an existing volume set can be migrated while the server is online and the volume set is in use. The feature makes the RAID configuration change easier during performance tuning or adding extra physical disks. In the past, any adjustment on RAID level and stripe size of a RAID system demanding a complicated process such as back up all data in the disk array, re-creating disk array configuration with new RAID level and stripe size, and then restoring data back

into RAID system. Now, we've made it much easier, for instance, when adding a hard disk in a system that is using two drives in RAID level 1, you have the option of adding this disk to your existing RAID logical drive and migrating from RAID level 1 to 5. The result would be parity fault tolerance and double the available capacity without taking the system off.

RAID 6

A RAID 6 array is essentially an extension of a RAID 5 array with a second independent distributed parity scheme. Data and parity are striped on a block level across multiple array members, just like in RAID 5, and a second set of parity is calculated and written across all the drives. As larger disk arrays are considered, it is desirable to use stronger codes that can tolerate multiple disk failure. When a disk fails in a parity protected disk array, recovering the contents of the failed disk requires successfully reading the contents of all no-failed disks. RAID 6 provides an extremely high fault tolerance, and can sustain two simultaneous drive failures without downtime or data loss. This is a perfect solution when data is mission-critical.



SNMP

Yotta B RAID subsystem firmware-embedded Simple Network Management Protocol (SNMP). SNMP-based management application (also known as a SNMP manager) can monitor the disk array. An example of An SNMP management application is Hewlett-Packard's Open View. The firmware-embedded SNMP agent can be used to augment the RAID controller if you are already running an SNMP management application at your site.

MPIO

Multipathing solutions are designed to provide failover through the use of redundant physical path components—adapters, cables, and switches—between the server and storage device under Microsoft environments.

S.M.A.R.T

Self-Monitoring Analysis and Reporting Technology) is an “early warning system” that the disk manufacturers incorporate logic into their drives. AXUS S.M.A.R.T. function detects and reports status of hard drives, thus enriches the data availability.

Easy Management

Users can easily configure or maintain the RAID via the RS232 port, LCD control panel, or Web browser-based manager. RAID array configuration, system hardware monitoring, error alert can be all done at your finger tips.

Hot-Swappable design

Power supply units, cooling fans modules and hard drives are both redundant and hot-swappable design.

EZSecure Lock

AXUS disk cartridges come with user-friendly, keyless and secure 2 steps safety measurement design to prevent accidental removal of the hard drives.

Specification

RAID Type	SAS – SAS Series	FC- SAS series
Model number	YB-16/12S3ES3	YB-16/12S3EF4
RAID CPU Engine	Intel® IOP341 I/O Processor @800Mhz	
Cache Memory	Up to 2GB DDR2-533 SDRAM on one DIMM socket with ECC protection	
RAID Features	RAID levels 0, 1, 1E, 3, 5, 6, 30, 50, 60 & JBOD Multiple RAID selections Instant availability and background initialization Online RAID level / stripe size migration Online Array roaming Online capacity expansion and RAID level migration simultaneously Online volume set expansion S.M.A.R.T. Bad block auto-remapping Hot spare and automatic hot drive rebuild	
Hot Swap Components	Power Supply, FAN, Disk Drive	
System Type	3U / 2U Rack-Mounts	
Host Interface	Dual Mini SAS channels	Dual 4Gb FC channels
Disk Interface	16/12 SAS channels	
JBOD Expansion Port	One SAS JBOD Expansion Port can be attached to SAS JBOD to expand capacity	
Battery Backup Module	Optional, supporting 72 hours battery backup time	
RAID Management	Firmware embedded Web browser-based RAID manager via built-in 10/100 Ethernet port Firmware embedded manager via RS-232 port Firmware embedded manager through LCD control panel Field-upgradeable firmware from flash ROM	
Monitors & Notifications	All system status can be monitored via Firmware-embedded Web browser-based RAID manager System status indication through LCD, LED and alarm buzzer All system events can be sent to multiple user via emails alerts SNMP agent already embedded in the firmware allows remote to monitor events through LAN	
Operating System	OS independent and transparent	
Power Supply	12 bays system: Redundant by dual 375W power modules with PFC feature, loading sharing type and cableless design 16 bays systems: Redundant by dual 460W power modules with PFC feature, loading sharing type and cableless design	
Electrical	AC Voltage 110-230 VAC/AC frequency 50-60Hz	
Temperature	Operating temperature: 5 ~ 35 degree Celsius. Non-Operating temperature: -40 ~ 60 degree Celsius	
Relative Humidity	20% ~ 80% non-condensing	
Dimension	12 bays system: 446.4mm (W) x 545mm (D) x 2U 16 bays system: 446.4mm (W) x 520mm (D) x 3U	
Weight	12 bays system: 17kgs (W/O HDD) 16 bays system: 24kgs (W/O HDD)	

Specifications are subjects to change without notification. All trademarks or registered trademarks are properties of their respective owners.

Availability of the Yotta B 4Gb FC – SAS RAID Sub-systems

The model is available from now, please contact with our sales for further information.

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About AXUS Microsystems Inc.

AXUS Microsystems Inc is the professional storage products manufacturer. The company specializes in RAID storage & SAN(storage area networking) solution at an affordable cost, while offering superior customer service and responsive technical support. Please visit the company's website www.axus.com.tw for further details.

