



AXUS Announces the YOTTA B 4Gb FC – SATA II RAID Subsystems

Feb. 15th, 2007

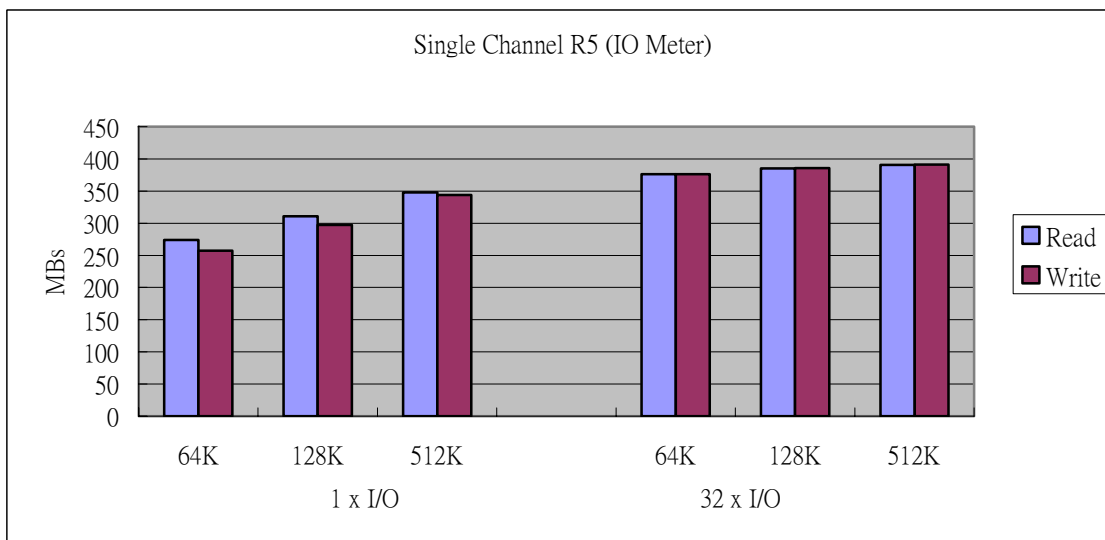
AXUS Microsystems Inc., today announced its newly technological Yotta B 4Gb FC to SATA II RAID Subsystems. The new product comes with dual high performance 4Gbit Fibre Channel host connections, 16/12 SATA-II hard drives interface, and built with advanced technology RAID controller based on AMCC 440SP CPU 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.

Extremely Performance

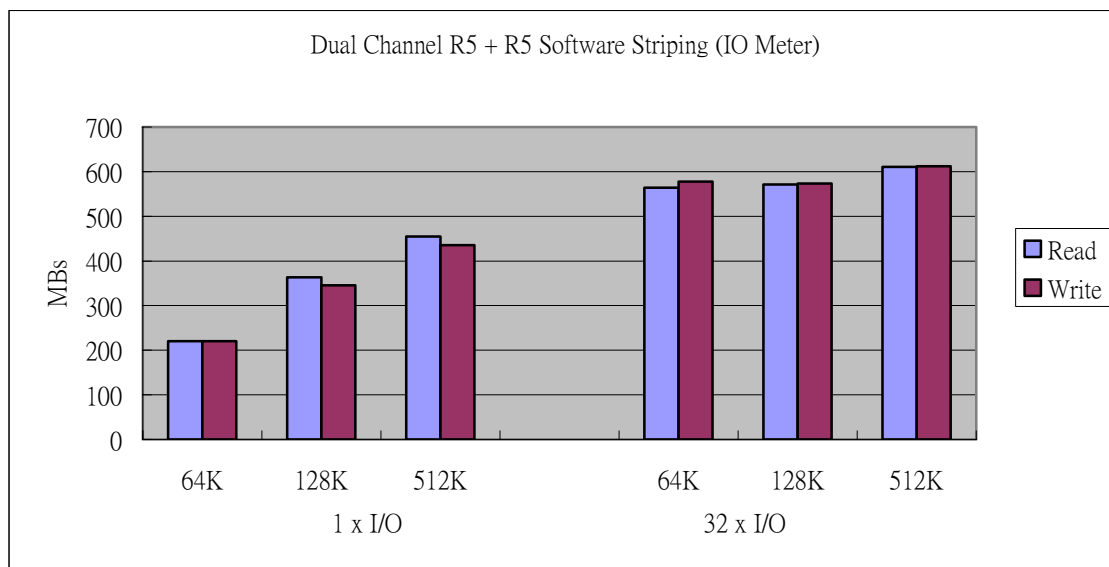
- ◆ AMCC processor, adopting the Supper Scalars structure (multi-task handling), effectively improving the MIPS and the system running speed.
- ◆ The level 2 cache is integrated inside the CPU which has shortened the time between the CPU and cache.
- ◆ Advanced PCI-E and 133Mhz/64-bit PCI-X Bus Architecture
- ◆ Up to 4GB DDR-2 667 SDRAM on DIMM socket with ECC protection.
- ◆ Dual channel 4Gb FC host ports allow multiple connections to a single host or multiple hosts for sharing and clustering.

Initial tests with performance benchmark utilities IO Meter and AJA KONA as below have shown its outstanding performance especially in large block sizes.

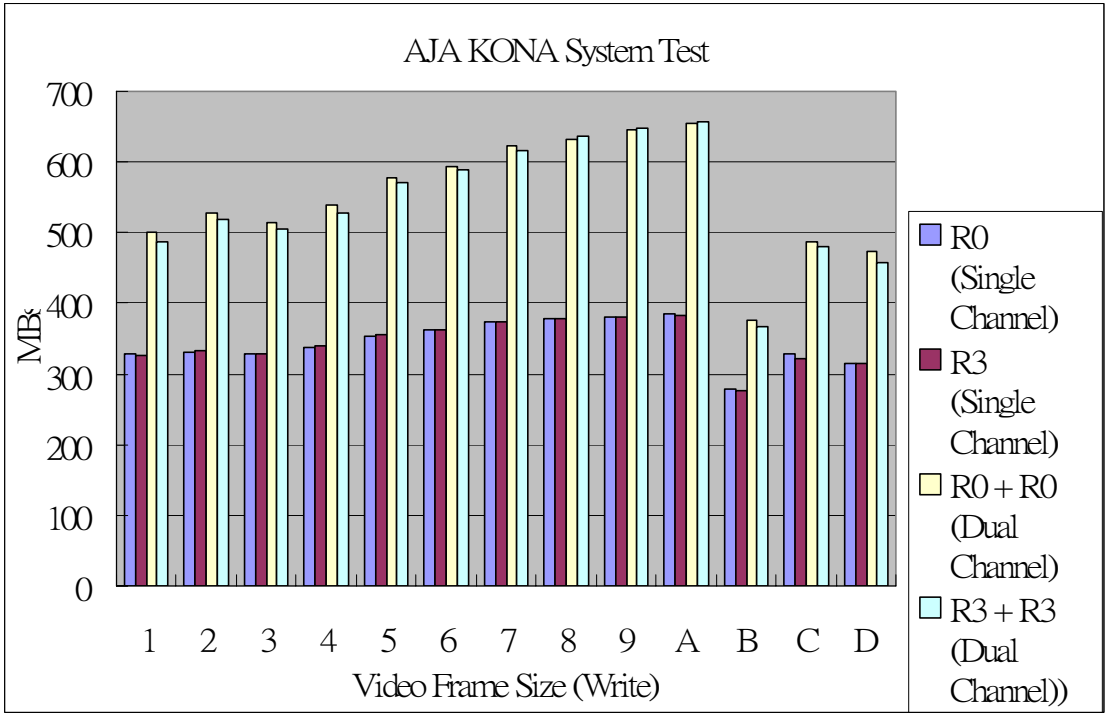
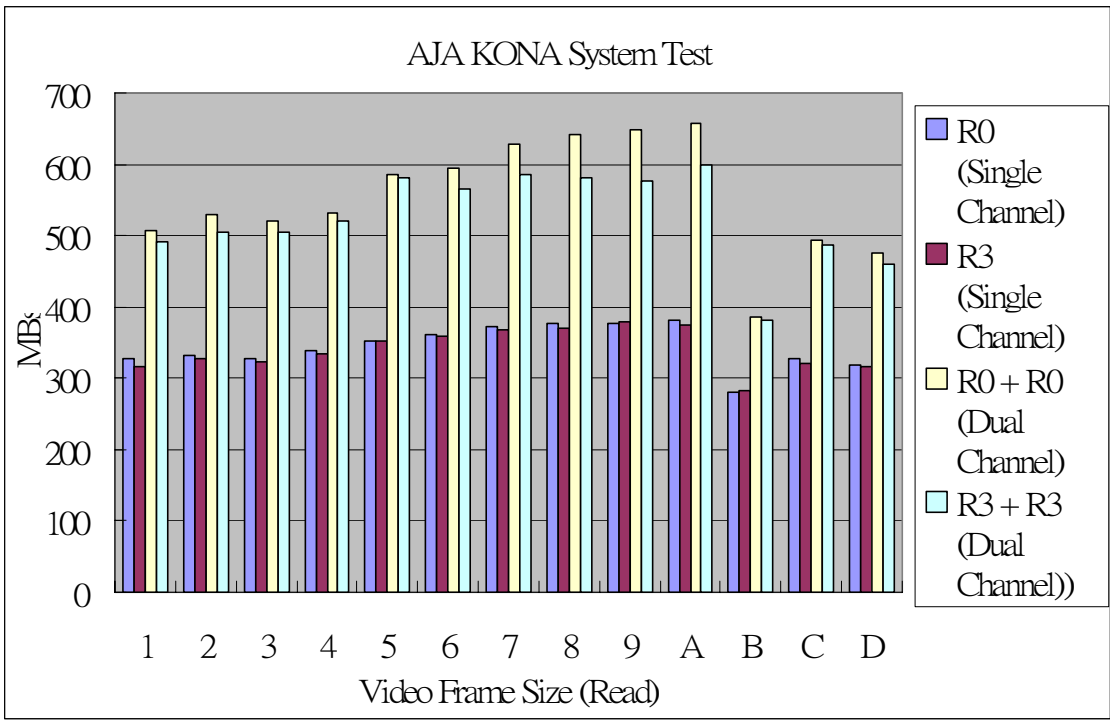
Single Channel (IO Meter)		
Raid Set	R5	
Transfer request Size	1 x I/O	32 x I/O
64K, Read: 100 Write: 0	274.18	376.25
128K, Read: 100 Write: 0	310.56	385.21
512K, Read: 100 Write: 0	347.88	390.72
64K, Read: 0 Write: 100	257.37	376.28
128K, Read: 0 Write: 100	297.6	385.4
512K, Read: 0 Write: 100	344.13	391.07



Dual Channel (IO Meter)		
Raid Set	R5 + R5 (Software Striping)	
Transfer request Size	1 x I/O	32 x I/O
64K, Read: 100 Write: 0	220.32	563.95
128K, Read: 100 Write: 0	363.38	571.24
512K, Read: 100 Write: 0	455.03	610.41
64K, Read: 0 Write: 100	220.32	577.95
128K, Read: 0 Write: 100	345.15	573.38
512K, Read: 0 Write: 100	435.39	612.26



YB-16SAEF4 AJA KONA System Test (Single Controller)								
Raid Set	R0		R3		R0 + R0		R3 + R3	
File size : 1GB	(Single Channel)		(Single Channel)		(Dual Channel)		(Dual Channel)	
Video Frame Size	Read	Write	Read	Write	Read	Write	Read	Write
(1)720x486 8-bit	327.4	328.5	315.7	327.1	506.4	501.6	490.9	486.9
(2)720x486 10-bit	332.4	331	328.5	333.3	529.6	528.2	505	518.6
(3)720x576 8-bit	327.8	328.5	323.7	327.9	521.4	514.4	505.6	504.1
(4)720x576 10-bit	338.6	338	333.3	339.1	532	539	520.7	526.8
(5)1280x720 8-bit	352.2	354.1	352.5	355.5	585.6	576.8	580.4	570.8
(6)1280x720 10-bit	362	362	359.6	362.1	595.1	594	566.5	588.1
(7)1920x1080 8-bit	371.8	374	367.7	372.7	628.6	623.8	584.6	617.3
(8)1920x1080 10-bit	376.3	377.2	369.8	377.4	640.8	632.7	580.4	637.7
(9)1920x1080 10-bit RGB	378	381.5	378.3	381.4	649.5	645.9	576.4	647.7
(A)2048x1556 10-bit RGB	381.6	384	374.1	383.7	658	655.1	600.1	656.4
(B)DVCPProHD 720p60	281.4	277.6	281.6	277	385.1	376.9	380.6	367.1
(C)DVCPProHD 1080i50	328.1	327.7	321.4	321.9	492.8	487.8	486.4	479.8
(D)DVCPProHD 1080i60	319.3	314.1	317.1	314.6	476	472.9	460.8	458.2



Product Application

Offering high performance, flexible expansion, and extensive application to data storage solutions.

Common Applications:

Non-linear editing storage system

In the media editing application, there's a great demand for high I/O performance and extensive availability. The powerful Yotta B FC to SATA-II Series can easily fulfill the requirement on such dedicated application.

Medical image system (PACS)

With the rapid technological improvement on medical information application, the high performance and reliable RAID subsystems will be critical behind the SAN. Yotta B FC to SATA-II Series FC RAID will be no doubt the best choice for the application.

Other Applications:

- ◆ SAN structure, cross platforms, central storage backup solution;
- ◆ DAS/SAN structure, the clustering solution
- ◆ The media streaming solution
- ◆ VOD - video on demand solution
- ◆ Digitization of library data
- ◆ Central data center for financial institutions.
- ◆ Data center for telecommunications;
- ◆ The geological analysis of petroleum samples data system
- ◆ Backup centers of the super computers
- ◆ Meteorological data center
- ◆ Networking data centers

Advanced Feature Highlights

Instant Availability/Background Initialization

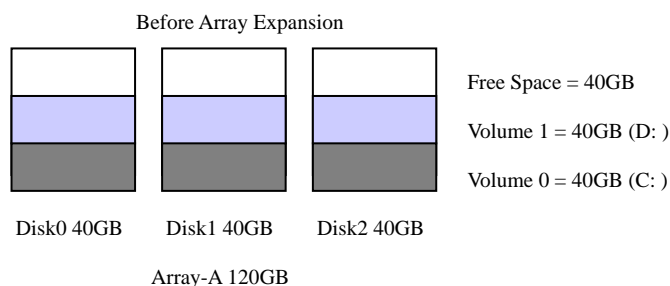
RAID 0 and RAID 1 volume set can be used immediately after the creation. And for RAID 3, 5 and 6 volume sets, the initialization can proceed as a background task, the volume set is fully accessible for system reads and writes. The operating system can instantly access to the newly created arrays without 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 proceeds to be completed before the volume set is ready for system accesses.

Array Roaming

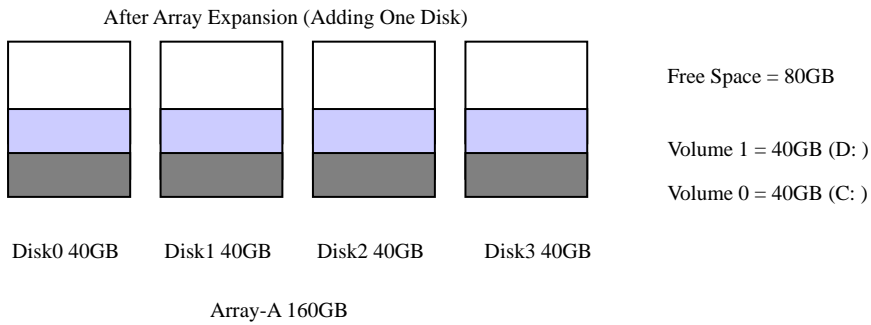
The configuration settings of a RAID will be restored in both NVRAM and the disk drives, providing the maximum protection in case of a disk drive or controller failure. Array roaming allows the administrators the ability to move a complete raid set to another system without losing RAID configuration 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 create additional volume set. The expansion process is illustrated as following figure.



The RAID subsystem controller redistributes the original volume set over the original and 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.

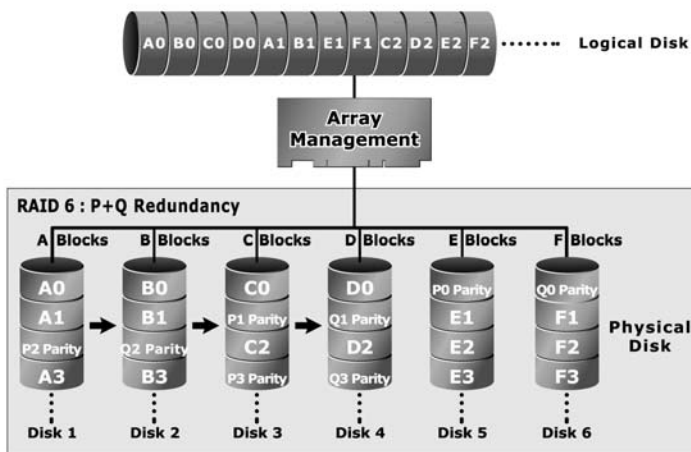


Online RAID Level and Stripe Size Migration

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 changing easier during performance tuning and adding extra physical disks. In the past, any adjustment on RAID level and stripe size of a RAID system will take a complicated process like backing 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 makes it much easier, for example, 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 A RAID subsystem firmware-embedded Simple Network Management Protocol (SNMP). An SNMP-based management application (also known as an 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

The power supply units and cooling fans modules are both redundant and hot-swappable design.

EZSecure Lock

The user-friendly design with keyless and secure 2 steps safety measurement to prevent accidental removal of hard drive.

Specifications

	 
Model number	YB-12SAEF4 / YB-16SAEF4
RAID Architecture	AMCC 64 bits processor Proprietary PCI-X 2.0 Polynomial ASIC to support high performance RAID 6 function
RAID Features	RAID levels 0, 1, 3, 5, 0+1, 6, & JBOD Multiple RAID selections Online RAID level / stripe size migration Online Array roaming Online capacity expansion and RAID level migration simultaneously Online volume set expansion
System Type	3U Rack-Mounts
Host Interface	Dual 4Gb FC channels
Disk Interface	12 or 16 of SATA-II channels
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 manger via RS-232 port Firmware embedded manager through LCD control panel Field-upgradeable firmware from flash ROM
Monitoring Indicators	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 alerts via emails Firmware embedded SNMP agent allows remote to monitor events through LAN with no SNMP agent required
Operating System	OS independent and transparent
Power Supply	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	446.5mm (W) x 520mm (D) x 3U
Weight	20kgs (W/O HDD)

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

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

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.

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