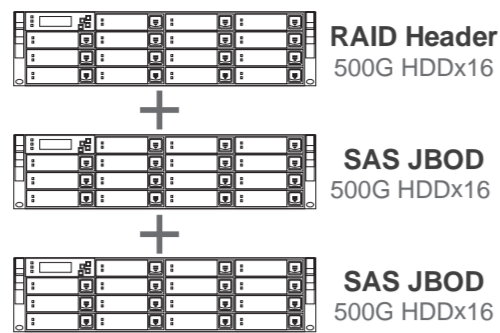


YOTTA B FC/SAS-SAS/SATA II Series

Enterprise Class Storage with Maximum SAS Flexibility and Scalability

YOTTA B series built to meet the highest standard demand in an enterprise environment based on the SAS highly scalable performance with 12 Gb (3 Gb per link with 4 links simultaneous), high reliability (Dual porting of drives for redundancy) and flexibility (SAS expander can support up to 128 SAS/SATA II devices connected). It is the ideal solutions for enterprise-class storage.

Available : HDD Bay: 12/ 16/ 24 ; Host Interface: FC/ SAS ; Disk Interface: SAS/ SATA II



Available : 500G HDDx48 = 24TB

YOTTA B FC-SATA II Series (Raid Engine By AMCC)

Affordable Solution with Superior Performance

YOTTA B FC-SATA II series built by advanced technology RAID controller based on AMCC PPC440SP processor, delivering outstanding data throughput rates over **600MB/s** while utilizing Dual FC Channels. 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.

Available : HDD Bay : 16/ 12 ; Host Interface: FC ; Disk Interface: SATA II

YOTTA MINI Series

Compact Tower Type RAID

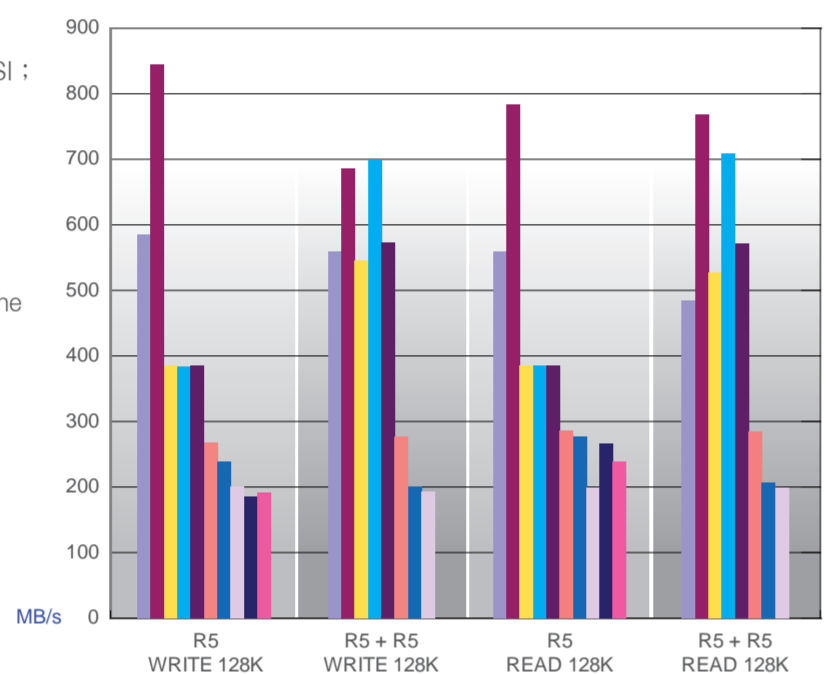
YOTTA Mini series is a family of world's most cost-effective 4Gbit Fibre Channel/Ultra320 SCSI RAID SATA II based RAID Subsystems that are optimized for SMB, SOHO or Professional user. Using compact tower-type enclosure provides user easily to have high transition speed in flexible connection to various desktop. It is ideal for digital content creation, streaming media applications, and who are willing to take the maximum advantage of lower-cost and data security protection.

Available : Tower type: 6Bay ; Host Interface: FC/SCSI ; Disk Interface: SATA II

Performance Comparison

YOTTA RAID family provides diverse models that meet the needs of any application with probably best

Performance/Price rates in its class today. The performance's indicator of each model is shown below gives you an idea which model would be most suitable for your applications.



RAID Series	YOTTA B			YOTTA A	YOTTA Mini
	SAS Expander	SAS Series	SATA II series		
Model number	YB24/16/12S3JS3	YB-24/16/12S3ES3 YB-24/16/12S3EF4	YB-16/12SAEF4	YA-16/12/06SAEU4 YA-16/12/06SAEF4 YA-16/12/06SAES3	YI-06SAPEU4 YI-06SAPEF4
CPU Engine	SAS Expander	Intel® IOP341 @800MHz	AMCC PPC440SP @533MHz	Intel® IOP321 @400MHz	Intel® IOP219 @400MHz
Cache Memory	N/A	Up to 2GB DDR II 533 SDRAM on one DIMM socket with ECC protection	Up to 4GB DDR II 533 SDRAM on one DIMM socket with ECC protection	Up to 1GB DDR 266 SDRAM on one DIMM socket with ECC protection	256MB DDR SDRAM on Board
RAID Levels	N/A	0, 1, 1E, 3, 5, 6, 30, 50, 60 & JBOD		0, 1, 0+1, 3, 5, 6, & JBOD	
RAID Features	The HDDs in SAS Expanders are part of RAID set with main RAID unit	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 hard drives rebuild			
Hot Swap Components	Power Supply, FAN, Disk Drive				
System Type	4U / 3U / 2U Rack-Mounts		3U / 2U Rack-Mounts		Tower
Host Interface	Single Mini SAS (8088 type) channels	Dual Mini SAS (8088 type) or 4Gb FC channels	Dual 4Gb FC channels	Dual Ultra 320 SCSI or 4GB FC channels or Mini SAS (8088 type) channels	Single Ultra 320 SCSI or dual 4Gb FC channels
Disk Interface	24/16/12 SAS/SATA II Disks	24/16/12 SAS/SATA II Disks	16/12 SATA II Disks	16/12/8 SATA II Disks	6 SATA II Disks
JBOD Expansion Port	Dual Mini SAS JBOD Expansion Port can be attached to SAS JBOD to expand capacity	Single Mini SAS JBOD Expansion Port can be attached to SAS JBOD to expand capacity		N/A	
Battery Backup Module	N/A	Optional, supporting 72 hours battery backup time		N/A	
RAID Management	Managed by RAID controller or HBA	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	Monitored & noticed by RAID controller, JBOD, Status LED 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 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	12/8 bays system: Redundant by dual 375W power modules with PFC feature, loading sharing type and cable-less design 16 bays systems: Redundant by dual 460W power modules with PFC feature, loading sharing type and cable-less design 24 bays systems: Redundant by three 460W power modules with PFC feature, loading sharing type and cable-less design 6 bay system: Redundant by dual 290W power modules with PFC feature, loading sharing type and cable-less design or Single ATX 420W Power Supply with PFC feature				
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 (mm) W x D x H	12 bays system: 446.4 x 545 x 2U 16 bays system: 446.4 x 520 x 3U 24 bays system: 446.4 x 562 x 4U		12/8 bays system: 446.4 x 496 x 2U 16 bays system: 446.4 x 477 x 3U		166 x 278 x 346
Weight (kg) (w/o HDD)	12 bays system: 14 16 bays system: 22.7 24 bays system: 29.4		8 bays system: 14.8 12 bays system: 15.6 16 bays system: 20		12
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Version 1.2



YOTTA /A /B /Mini RAID Sub-Systems

Convenient Modularized Designs



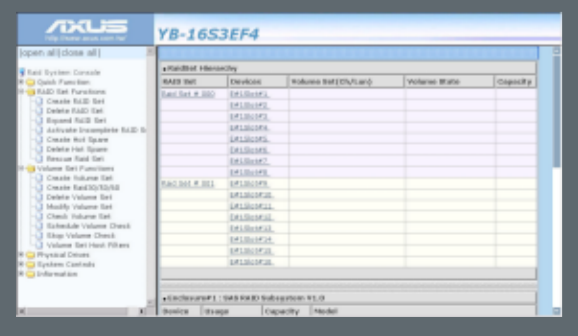
YOTTA RAID series has a fully modularized design that replaced all the cables with connectors. RAID controller, cooling fans, disk drives, and power supplies can be easily hot swapped to eliminate the down time of the RAID services. The modular design also minimizes headaches should you choose to stick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

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.



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, and error alert can be all done at your finger tips.

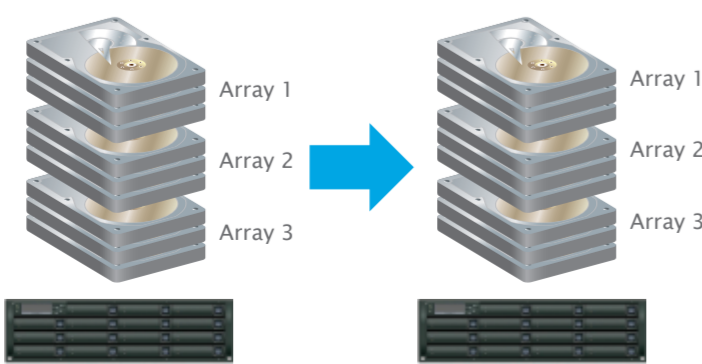
Advanced Feature Highlights

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 be 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 or waiting for the initialization to be completed. Furthermore, the RAID volume set is also protected against a single disk failure while initialing.

Array Roaming

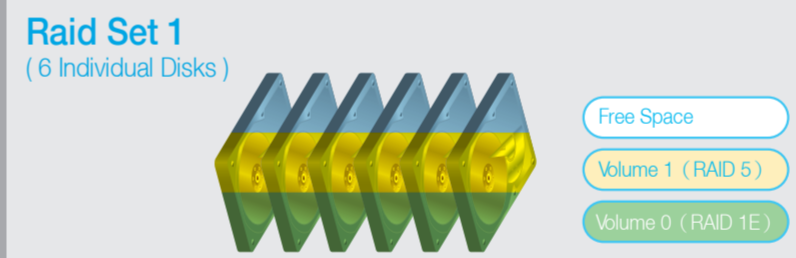
The configuration settings of a RAID will be restored in both NVRAM and the disk drives, providing the maximum protection in case of a disk drive or controller failure. Array roaming allows the administrators to move the complete raid set to another system without losing RAID configuration and data stored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



- Allows to move a completely raid set to another system without losing RAID configuration and data on that raid set
- HDDs don't need to move into the same slots of the target unit

Multiple RAID Selection

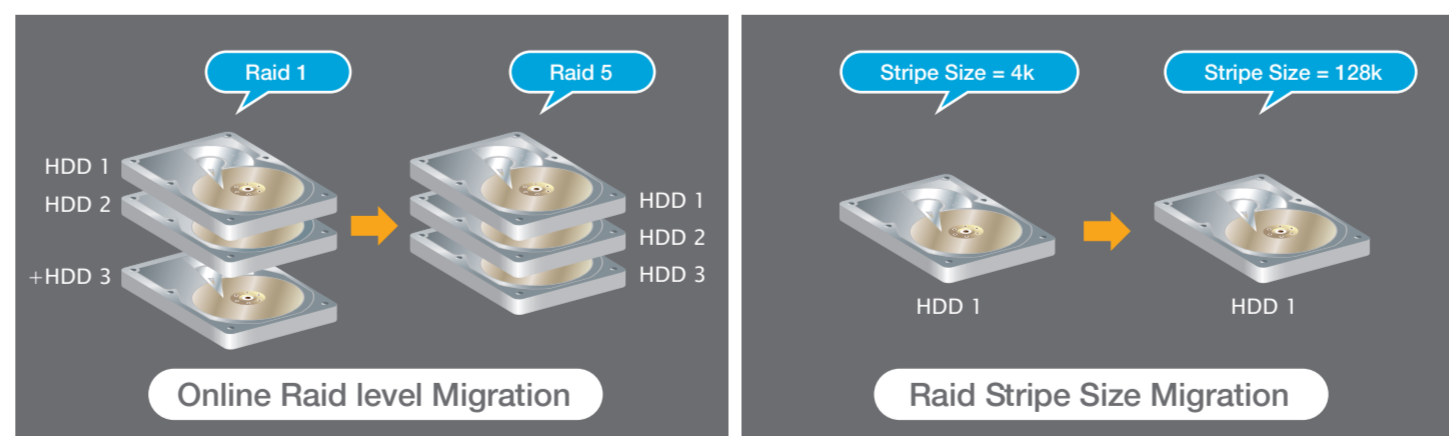
A Volume Set is seen by the host system as a single logical device that is organized in a RAID level with one or more physical disks. RAID level refers to the level of data performance and protection of a Volume Set. A Volume Set capacity can consume all or a portion of the disk capacity available in a Raid Set. Multiple Volume Sets can exist on a group of disks in a Raid Set. Additional Volume Sets created in a specified Raid Set will reside on all the physical disks in the Raid Set. Thus each Volume Set on the Raid Set will have its data spread evenly across all the disks in the Raid Set. In the illustration below, Volume 1 can be assigned a RAID 5 level of operation while Volume 0 might be assigned a RAID 1E level of operation.



- Multiple different RAID Volume attributes co-reside on single Disk Array set
- Performance attributes of each Volume (LUN) can be configured independently
- Selective Storage Presentation facilitates flexible LUN mapping

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.



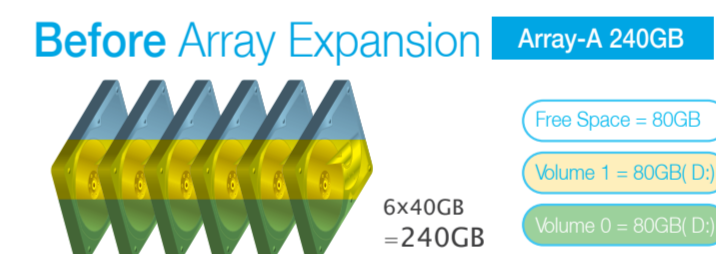
- RAID Level or Stripe Size can be changed online for any single RAID
- RAID configuration changing easier during performance tuning and adding extra physical disks

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 a 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 a SNMP management application at your site.

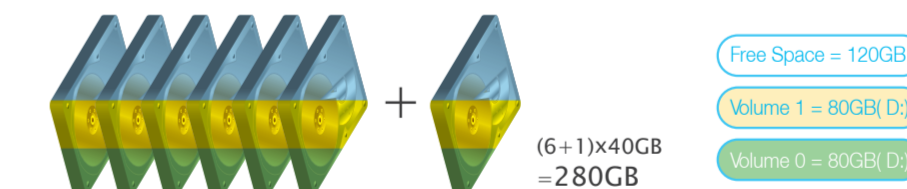
Online Capacity Expansion

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 of store or 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.

After Array Expansion (Adding One Disk)



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.

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.

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.

