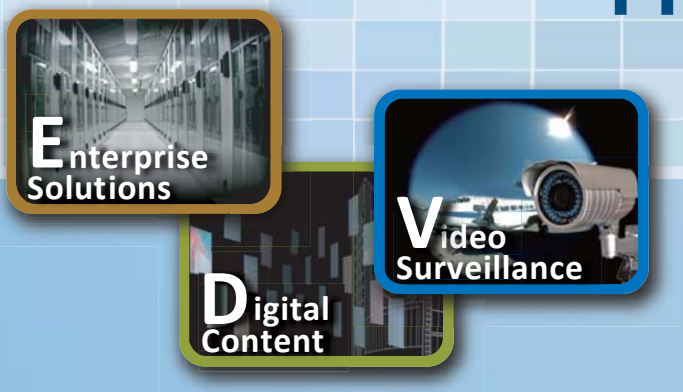
arena
Data · Care

2012
PRODUCT CATALOGUE



Introduction

MaxTronic International is a leading Disk Array product manufacturer established in 1995. We design, manufacture and distribute the Arena brand of high capacity storage devices which feature high performance and exceptional stability. Our key areas of research and development include RAID systems, storage system applications and the integration of storage solutions. We provide high quality products and excellent service through our offices in Taiwan, USA and China - as well as via our worldwide authorized dealer network.

MaxTronic leads the industry trend by

* Release IDE RAID in 1997.
* Implement SED features in 2010.

Company History

2010 TS-4801R won the Jury's Special Award in Best Choice of Computex Taipei 2010

2009 First 2.5" RAID System

2008 Redundant Series products, SS-8801R won the Best Choice of Computex Taipei 2008 Award

2007 FC and SAS interface series products

2003 SATA series products - Premium series RAID system

1997 MaxTronic's first storage product - 6bay SCSI to IDE RAID system

1995 The establishment of MaxTronic International Co., Ltd

Applications

- **Virtual Storage solutions**
- **Digital Content Creation and Distribution**
- **Storage for Broadcast**
- **Video Surveillance Storage**
- **Data Center Storage**
- **Cloud Storage**
- **SMB and Enterprise Data Management**

Competitive Advantage

- Excellent research and development team
- Complete line of products
- Product family look and feel
- Identical operating procedures
- Strict quality control
- Clear marketing strategy
- Customer service focused

Awards

2008 Computex Best Choice: The JanusRAID II series SS-8801Ris our 4Gb Fibre Channel redundant controller system, with rich feature and high performance. The system is well recognized as a high capacity, high redundancy and easy management; help businesses at different scale to protect the valuable data asset.

2010 Computex Best Choice Jury's Special: JanusRAID II series TS-4801R is a product designed for law compliance and friendly to the earth. This product supports the latest disk technology trend, 2.5" form factor, SAS interface and SED (Self-Encrypting Drive).Delivers industry standard data privacy protection as well as efficient power consumption.

Expectation and Prospects

In the future, new RAID storage technology including virtual storage, cloud computing and remote storage will arise. These new RAID storage technologies will aid in the generation of new applications, and allow enterprises to gain more efficiency, stability and protection for their information, as well as lower costs. MaxTronic and the Arena range will remain at the forefront of these developments.

Future Objectives

- Provide storage solutions while reducing related costs.
- Increase the performance and flexibility of storage devices.

Application

High Performance, High Availability and High Scalability

Maxtronic, manufacturer of the Arena RAID storage solution, creates for **Data Management, Digital Content and Video Surveillance** applications. Our expertise is built up from our experience and leverage in both storage technologies and storage applications. With a vision to make innovative, cost effective and easy to manage storage solutions, our company designed and promoted the world's first IDE RAID 16 years ago. This Arena brand name brought an innovation that broke the industry myth that Fibre or SCSI drives are the only choices for RAID Storage Solutions.

We utilize our unique expertise to develop and deliver products which have high performance, high reliability and high flexibility at reasonable cost. With close collaboration of technology and business application partners, we are deeply involved and are well acknowledged in the data storage application areas mentioned above.

Enterprise and Mid-tier Business Data Management

Today's enterprise are facing the growing need to store and secure there critical data long-term and assuring it remains highly available for disaster recovery and in a cost-effective, easily scalable environment. The biggest challenges companies face with storage management today are the complexity of managing different operation systems, how to make full storage utilization, and the need to support storage and data protection requirements at remote and branch offices.

While mid-tier companies and distributed business are concerned about maintaining high availability and disaster recovery with restricted budgets; which would definitely need a storage solution that is scalable and cost-effective and be able to access and manage easily.

Arena products are the best SAN ready storage solution in reacts to the above challenges for modern business.

Digital Content Creation and Distribution

The content creation industry is undergoing a shift to an all digital world in which not only content is created and stored digitally but is also driven for high-bandwidth distribution. This shift is taking place all across the industry of all intermediate facilities. Arena RAID solutions are the best storage solutions tailored for multi-streams, multi-clients, uncompressed SD/HD/2K /4K real time production workflow. Fulfill the needs of unpredictable capacity growth; allow collaborative work-flows, support the stream massive HD content creation without missing frames.

Video Surveillance

The demand for storage capacity to record Video Surveillance image is growing at an unprec-edented rate driven by increasing high resolution cameras and longer data retention polices.

In recent years, video surveillance has shifted from analogue to digital data archiving; which recording streams via digital video recorder (DVR) or network video recorder (NVR) to external storages with RAID features data protection. Furthermore, critical record would request infrastructure like storage area network (SAN) to achieve performance, scalability and reliability. Arena offers a complete range of DAS/SAN solutions to meet the critical requirement of modern video surveillance application; various features are tailored for it and various configurations can fulfill different demand.

Date Care Features

MaxTronic understand how important a company's digital asset are; that's why we strive to deliver the storage solutions with sophisticated features to protect the data stored in our RAID systems.

Various RAID Level

Support RAID levels 1, 3, 5, and 6 to provide redundancy in the event of a failed drive, and sustained read performance even in degraded mode. On some of the products there even have feature which allows 3 disks failure.

On-line Array Roaming

Array member disks have recorded specific identifications, so when a RAID system or controller becomes faulty, this function provides an easy way to get the data back online by just moving the member disks to a same model working RAID system.

SMARTCor. Functions

SMARTCor. is embedded F/W feature which include 3 functions mainly for disks' bad sectors monitoring and correction.

- **DST (Disk Self Test):**

  DST is used to test the health situation of disks which installed in the RAID system. Prior to DST a user would have to remove disks individually and run a vendor proprietary disk utility in a separate host computer. DST predicts the likelihood of near-term HDD degradation of fault condition in advance. DST performs write test, servo analysis and read scan test on the disks.

- **DS (Disk Scrubbing):**

  DS can scan for bad sectors and/or parity errors in a RAID array. Allows the RAID controller to reconstruct bad sectors from other sectors and re-assign it to an undamaged area. At the same time it also detects parity inconsistency; users can decide whether or not to overwrite inconsistent parity. DS is a proactive approach to address data integrity; to maintain the RAID system in a good condition.

- **DC (Disk Clone):**

  This function automatically copy data to spare disk before the faltering disk identified as failed by RAID system. It could be configured to trigger by the following conditions:
  • Over bad block threshold of disk.
  • Detect SMART warning from disk.

  DC helps to prevent a rebuild from ever occurring while disk failures which cause the unit in degraded mode.

LUN Masking

LUN (Logical Unit Number) Masking is an authorization process that makes a LUN available to some hosts and unavailable to other hosts. LUN Masking is implemented primarily at the HBA level. LUN Masking implemented at this level is vulnerable to any attack that compromises the HBA.

LUN Masking support by storage is important because Windows based servers attempt to write volume labels to all available LUN's. This can render the LUN's unusable by other operation systems and can result in data loss.

Snapshot

The snapshot is done by embedded F/W, without the needs to install any application on the server. The array based, block level snapshot function would leverage the computing power of the RAID system; it is host-independent, and application-independent. The shot data could be restored by using snapshot restore function. With the snapshot a data image can be rolled back to a previous snapshot immediately, help user to resume applications without waiting for data restore from backup media.

Array Recovery

The system provides an Array Recovery Utility that can aid a user in the event of multiple drive failures corrupting the RAID array of a Logical Disk and/or volumes. The feature enables users to recover lost disk members of a Disk Group, and will automatically recover Logical Disks and Volumes.

MaxSure

Embedded F/W feature to support SED (Self-Encrypting Drive), the drives are embedded with encryption ASIC and encryption key, to encrypt /decrypt data write/read to the drives automatically. The MaxSure include 2 functions:
• Instant Secure Erase
• Authentication Key Management

The "MaxSure" integrated with SED would prevent unauthorized access while drives are retired, stolen, return for warranty or repurposed.

Enterprise Features

In addition to upgrading our hardware platforms, Maxtronic's key focus for 2012 is the release of exciting new technologies and features to meet the strong demand for disaster management and storage efficiency.

Some of these new for 2012 Maxtronic features are highlighted below:

Remote Replication

Remote Replication deploys snapshot technology with full data copies via volume mirroring. The target volume created through the mirror can be constantly synced with the source volume. If a data volume fatally fails, the constantly synced copy can be rolled back for quick recovery. These functions are ideal for applications needing immediate data availability. There are two approaches for Arena's remote replication:

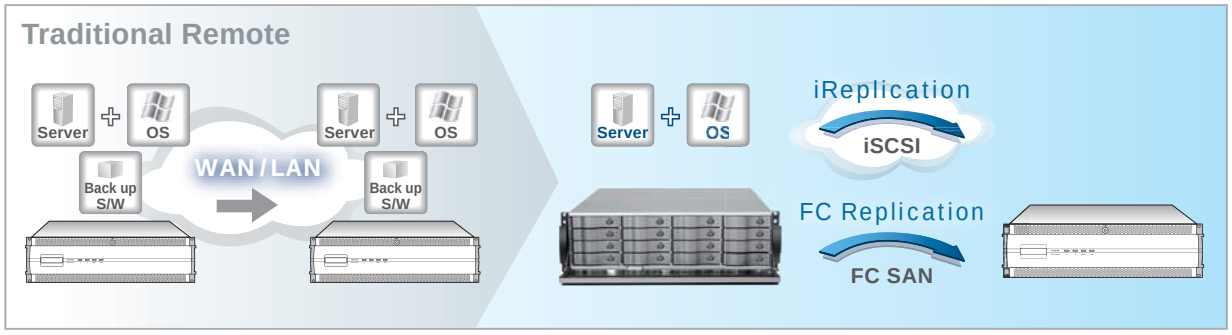
1) iReplication

iReplication deploys via the embedded iSCSI ports to fully synchronize data across to another Arena iSCSI system via WAN/LAN at different site. A user can easily retrieve the source data from the remote site after a failure due to system malfunctions or other factors. The source data can be quickly re-synced with the remote copy when operation of the source site is back to normal.

iReplication is bundled free with the Nova Professional and Maestro series. It is firmware embedded, OS independent, application free and setup is easily through a GUI interface. Unlike the traditional replication strategy of installing backup Software at a remote server, iReplication is cost effective, easily integrated and easy to manage.

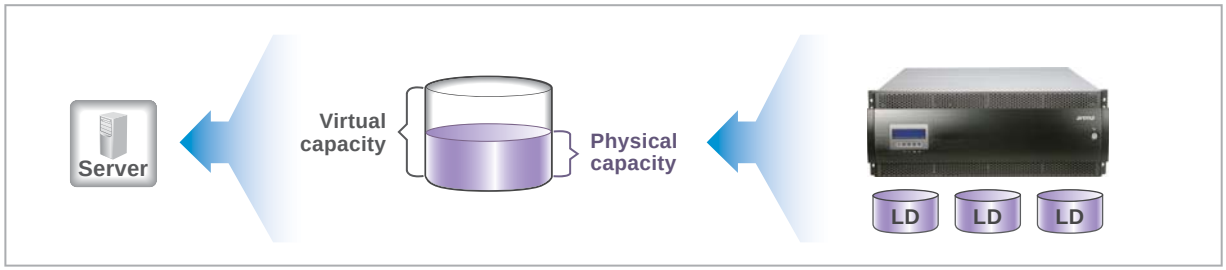
2) FC Replication

FC Replication is an optional data protection service. It's also firmware embedded, OS independent, application free and easy to setup. It is designed to synchronize data through a high bandwidth 8Gb Fibre interface. The FC Remote Replication is high efficiency, cost effective, easily integrated and easy to manage.



Thin Provisioning

Thin provisioning is a technology of optimizing the storage capacity and managing storage resource flexibly. This feature allows allocation of storage space to applications or users in excess of actual physically installed capacity. When the total capacity utilization is approaching the threshold set by the users, the system will automatically issue notification for users to expand the capacity without interrupting operations. Thin provisioning technology can help to maximize storage utilization, minimize the investment on unused storage resources, and reduce power consumption.



Maestro Series

Enterprise-class storage with high performance and availability makes the Maestro series capable of satisfying the most demanding business and technical applications as well as virtualized environments.

High Performance

The Maestro series is designed for high performance with Intel Xeon dual core CPU and DDRIII memory to take full advantage of modern Hardware and Software architecture. These storage systems support latest connectivity interfaces including 10Gb iSCSI and 8Gb FC to hosts and 6Gb SAS disk interface, perfectly meet the requirements of mission-critical operations.

High Availability

High-availability hardware designs with redundant, hot-swappable hardware components including RAID controllers, power supplies and cooling fans to eliminate single point of failure. Featured with high-availability algorithm, firmware-embedded data protection functions, and remote replication (iReplication) feature, innovative cache backup module (CacheGuard) to protect cached data during power outage, Arena Maestro series deliver high-end availability which effectively meet the challenges of modern and future IT and Media environments.

High Scalability and Flexibility

The modular design, simple, easy to use management interface, easily scale up storage capacity to more than 240 drives to accommodate business expansion needs. The Maestro series support flexible drive types (2.5-inch or 3.5-inch, SAS or SATA, various size of hard drives or SSD) meet the needs for various applications requirement. The optional “Thin Provisioning” function helps to optimizes storage utilization and eliminates waste on unused storage space under allocation.

FC 8G iSCSI 10G

Key Benefit

- Active-Active dual controller support Symmetric or ALUA
- Innovative battery free cache backup mechanism
- Free bundle, firmware embedded remote replication through 1Gb iSCSI interface
- Optional Data Service
  - Thin Provisioning
  - Remote Replication through Fibre interface

Maestro Series

Model	Maestro 30S Maestro 30R	Maestro 32S Maestro 32R	Maestro 40S Maestro 40R	Maestro 42S Maestro 42R
RAID Controller	Single / Dual	Single / Dual	Single / Dual	Single / Dual
No. of Host Channels	4 x 8Gb FC	4 x 10Gb iSCSI	4 x 8Gb FC	4 x 10Gb iSCSI
Expansion Enclosure	Nova 34S/34R, 44S/44R JBOD			
Cache Memory	4GB DDR III			
No. of Drives	16 x 2.5”/3.5” (SAS/SATA/SSD) *1		24 x 2.5”/3.5” (SAS/SATA/SSD) *1	
Max. No. of Drives	240		240	
Power Supply	3 x 400W		3 x 400W	
Fan	2		2	
Dimensions	3U 19” Rackmount		4U 19” Rackmount	
	485 x 593 x 132mm (W x D x H)		485 x 593 x 176mm (W x D x H)	
Green	Auto disk standby / Advanced cooling mechanism / 80 PLUS energy-efficient power supplies			
RAID level	0, 1, 3, 5, 6, 10, 30, 50, 60, JBOD, NRAID			

*1. Need AAMux tray board for SATA interface on redundant controller configuration.
*2. Specifications and product offerings may vary without notice.
*3. Various trademarks belong to their respective owners.

Nova Professional series

The Nova professional series can meet the storage needs of business applications in both virtual and traditional environments. High performance and enterprise-class availability of the Nova professional series deliver high-end benefit to midsize environment at affordable cost.

Nova professional series designed to optimize performance and scalability. The eco friendly features including battery free cache backup module, 80% efficient power consumption, smart cooling mechanis-mand disk standby functions. The enterprise level features with remote replication and array based snapshot designing for mission critical environment make it the ideal solution with performance, scalability and availability, at affordable cost of ownership.

High Performance

The high I/O bandwidth deliver high performance make it feasible for applications requiring high I/O workload and allowing more users to work simultaneous, highly improve the efficiency.

High Scalability

Internal SAS expanders enable easy to connect another SAS 6Gb JBOD enclosures without the need for additional RAID units, scalable up to 120 drives at better cost of ownership.

Data Protection

Support RAID levels 1, 3, 5, and 6 to prevent for drive failure. Sustained read performance even in degrade mode.

Easy Configuration and Management

User-friendly, easy management interface with quick setup procedure help non-technical users to configure a RAID 5 or RAID 6, in few steps.

Embedded Snapshot

Block level snapshot embedded at the array F/W to leverage the computing power of the RAID system with less performance impact in comparing to host-based snapshot S/W. The restore function allowing users to restore data by rolling back the previous shot effectively.

Cost-effective Remote Replication

Array based remote replication feature allowing data synchronization via embedded iSCSI ports, through area network or internet.

Perfect for Small Workgroups

Multiple ports 8Gb FC / 6Gb SAS host Channel each controller allowing multiple users to work simultaneously without using the switch, reducing cost and complexity, and deliver direct, speedy access to digital assets.

Nova Professional Series

Model	Nova 20S Nova 20R	Nova 26S Nova 26R	Nova 30S Nova 30R	Nova 36S Nova 36R	Nova 40S Nova 40R	Nova 46S Nova 46R
RAID Controller	Single / Dual		Single / Dual		Single / Dual	
No. of Host Channels	4 / 8 8Gb FC	2 / 4 6Gb SAS	4 / 8 8Gb FC	2 / 4 6Gb SAS	4 / 8 8Gb FC	2 / 4 6Gb SAS
Expansion Enclosure	Nova 34S/34R, 44S/44R JBOD					
Cache Memory	2GB, up to 4GB					
No. of Drives	12 x 2.5"/3.5" (SAS/SATA/SSD) *1		16 x 2.5"/3.5" (SAS/SATA/SSD) *1		24 x 2.5"/3.5" (SAS/SATA/SSD) *1	
Max. No. of Drives	120		120		120	
Power Supply	2 x 400W		2 x 500W		3 x 400W	
Fan	2		2		2	
Dimensions	2U 19" Rackmount		3U 19" Rackmount		4U 19" Rackmount	
	485 x 593 x 88mm (W x D x H)		485 x 593 x 132mm (W x D x H)		485 x 593 x 176mm (W x D x H)	
Green	Auto disk standby / Advanced cooling mechanism / 80 PLUS energy-efficient power supplies					
RAID level	0, 1, 3, 5, 6, 10, 30, 50, 60, JBOD, NRAID					

*1. Need AAMux tray board for SATA interface on redundant controller configuration.
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Nova Entry Series

The Nova Entry series is rich in features and has impressive performance which makes it an ideal solution for video surveillance applications as well as data management for small to medium businesses.

Featuring the same 1.2GHz IOP as the Nova Professional series, the base Nova Entry comes with 6Gb SAS x 2 / 1Gb iSCSI x6 channels, single controller configuration. The friendly Graphic User Interface and quick setup procedure will enable non-technical users to configure a basic storage setup in just 5 simple steps. The storage capacity can be scaled by connecting through a mini SAS expander to a JBOD enclosure.

For customers looking for cost competitive storage solutions, Nova Entry series are the right choice because of their simple yet capable features as well as the high performance and scalable capacity.

Mudular Design

Allows custom configurations tailored for any evironment to meet performance and capacity.

Data Protection

Support RAID levels 1, 3, 5, and 6 to prevent data loss in the event of a drive failure. Sustained read performance even in degrade mode.

Easy Configuration and Management

User-friendly, easy management interface with quick setup procedure help non-technical users to configure a RAID 5 or RAID 6, in few steps.

Central Monitoring

Support multiple platforms, central managed "RAIDGuard Central" monitoring S/W, reporting failure event via SNMP instantly.

Nova Entry Series

Model	Nova 27S	Nova 29S	Nova 37S	Nova 39S	Nova 47S	Nova 49S
RAID Controlle	Single		Single		Single	
No. of Host Channels	2 x 6Gb SAS	(4+2) x 1Gb iSCSI	2 x 6Gb SAS	(4+2) x 1Gb iSCSI	2 x 6Gb SAS	(4+2) x 1Gb iSCSI
Expansion Enclosure	Nova 34S, Nova 44S JBOD					
Cache Memory	2GB, up to 4GB					
No. of Drives	12 x 2.5"/3.5" (SAS/SATA/) *1		16 x 2.5"/3.5" (SAS/SATA) *1		24 x 2.5"/3.5" (SAS/SATA) *1	
Max. No. of Drives	120		120		120	
Power Supply	2 x 400W		2 x 500W		3 x 400W	
Fan	2		2		2	
Dimensions	2U 19" Rackmount		3U 19" Rackmount		4U 19" Rackmount	
	485 x 593 x 88mm (W x D x H)		485 x 593 x 132mm (W x D x H)		485 x 593 x 176mm (W x D x H)	
Green	Auto disk standby / Advanced cooling mechanism / 80 PLUS energy-efficient power supplies					
RAID level	0, 1, 3, 5, 6, 10, 30, 50, 60, JBOD, NRAID					

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2.5” Drives Green Storage

JanusRAID2 The Guard of Data

The Innovative 2.5” Fibre RAID system designed for High performance, Eco-Friendly, and government grade data-at-rest Security.

This new space efficient storage systems fully comply with latest HDD trends of SAS, Small Form Factor and Self-Encrypting Drive (SED). The 4Gb FC host interface and dual active-active controllers enable high performance and full hardware redundancy, best feasible for enterprise level 24x7 operation.

The 2.5” SFF drives consume around 50% less power than 3.5“ drives, generate less thermal and acoustic noise, reducing the power consumption and the ongoing cost.

Ideal Application

- Data Center
- Medical
- Enterprise Storage
- Video/Audio Editing
- Cloud Storage
- Academic
- Military
- Government

Features and Benefits

Energy Efficiency

The 80% high efficiency rating power supply delivers lowest power consumption.

Quiet Operation

Operational noise is lower then 50 dB, best fit for noise sensitive application.

Dynamic Airflow

Special designed fan module improves the cooling efficiency and the energy consumption.

Disk Standby

Support disks spin down option while host inactivity. This function helps to further reduce power usage but depends on drives support capability.

Capacity Expansion

Expandable up to 120 disks by cascading with the external 2.5” or 3.5” JBOD unit, helps reduce the total cost of ownership.

2.5” Fibre RAID

Model	TS-4801E / TS-4801R
Controller	Single / Dual
No. of Host Channels	2/4 x 4Gb FC
Host Channel No.	2 per controller
JBOD Expansion	Yes (*1)
Cache Memory	Up to 4GB DDR II
No. of Drives	24 x 2.5" (SAS/SATA/SSD) (*2)
Hot Swap Power Supply	400W x2 Redundant
AC Input Voltage	100 to 240V (+/-10%), 47 to 63 Hz
RAID Levels	JBOD, 0, 1, 3, 5, 6, 10, 30, 50, 60, NRAID
Advanced Data Protection	SMARTCor. Function (DST, DS, DC)
Configuration	Front Panel LCD and Buttons/RS-232/GUI
Management	PathGuard Software / RAIDGuard Central
Event Notification	Built-in buzzer, e-mail, SNMP trap, downloadable event records (up to 1024)
Humidity	20% to 80% non-condensing
Operating Temperature	5℃ to 40℃ (41℉ to 104℉)
Physical Dimension	485 x 565 x 88mm (W x D x H)
Physical Weight	24 Kgs (without drives)

*1. Support up to 120 disks (include local chassis)
*2. Need AAMux tray board support for SATA interface
*3. Specifications and product offerings may vary without notice.
*4. Various trademarks belong to their respective owners.

JanusRAID II Series

JanusRAID2 The Guard of Data

Arena Janus II Redundant Disk Array systems with active-active redundant controller offers full failover mechanism with 4Gb FC, 3Gb SAS or 1Gb iSCSI interface, deliver high performance with upgraded processor and great flexibility on expansion.

New Array Structure

- Built-in Array Recovery, Array Roaming and Disk Group hot-swappable.
- Centralized management by RAIDGuard Central.
- Capacity can be scalable up to 120 disks

Controller Upgradable

Single controller model is field upgradable to a redundant solution by simply inserting another controller module.

Various configurations like dual independent to double I/O throughput, active/active or active/passive to prevent for operation downtime due to single controller failure.

Easy Configuration and Management

The user friendly interface delivers easy configuration and monitoring through LCD indicator on the front panel and / or web-based GUI management. Active notification will be delivered automatically from configured SNMP / SMTP or through MSN if any special events occurred.

Data Security and Reliability

Data asset are protected through various RAID Level (JBOD, 0, 1, 3, 5, 6, 10, 30, 50, 60, NRAID) to prevent from multiple simultaneous disk failures. Redundant components include power supplies, fans and controllers to insure the 24x7 non-interrupted operations for critical application. Advanced disk maintenance features like Disk Self Test, Disk Scrubbing and Disk Clone could detect and correct disk failure in advance.

Embedded Snapshot

The snapshot is done at the array and block level by leveraging the computing power of the RAID system. It is host independent, application-independent, which is less performance impact comparing to host-based snapshot software solutions. The data can be restored by using snapshot restore function. A data image can be rolled back to a snapshot immediately to resume applications without downtime.

vmware READY

JanusRAID II Series

Model	SS-8801E/R	SS-8802E/R	SS-6601E/R	SS-6602E/R	SS-6603E/R	SS-4501E/R	SS-4502E/R	SS-4503E/R
Form Factor	4U 19” Rackmount		3U 19” Rackmount			2U 19” Rackmount		
No. of Host Channels	2/4 x 4Gb FC	2/4 x 3Gb SAS	2/4 x 4Gb FC	2/4 x 3Gb SAS	4/8 x iSCSI 1Gb	2/4 x 4Gb FC	2/4 x 3Gb SAS	4/8 x iSCSI 1Gb
No. of Drives	24 x 3.5" (SAS/SATA/SSD) (*1)		16 x 3.5" (SAS/SATA/SSD) (*1)			12 x 3.5" (SAS/SATA/SSD) (*1)		
Hot Swap Power Supply	350W, Redundant 2+1		460W x2 Redundant			420W x2 Redundant		
Cache Memory	Up to 4GB DDR II							
AC Input Voltage	100 to 240V (+/-10%), 47 to 63 Hz							
RAID Levels	JBOD, 0, 1, 3, 5, 6, 10, 30, 50, 60, NRAID							
Configuration	Front Panel LCD and Buttons / RS-232 / GUI							
Management	PathGuard Software / RAIDGuard Central							
Event Notification	Built-in buzzer, e-mail, SNMP trap, downloadable event records (up to 1024)							
Humidity	20% to 80% non-condensing							
Operating Temperature	5℃ to 40℃ (41℉ to 104℉)							

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Headquarters

MaxTronic International Co., Ltd.
TEL : +886-2-2218 4875
FAX : +886-2-2218 4896
http://www.maxtronic.com

China

欧骅股份有限公司 上海办事处
TEL : +86-21-6270 8599
FAX : +86-21-6270 8580
http://www.maxtronic.com