

DISK ARRAYS

High Performance



WINCHESTERSYSTEMS®

Storage Without Complexity

Advantages:

In business over 25 years

Scalable SATA solutions

SAN-In-A-Box simplicity

64-bit architecture

Tiered Fibre, SAS & SATA solutions

Customer focused

Ninth generation architecture

Call home reporting

Hardware powered RAID 5 & 6

Nationwide field service

Dedicated to Customers,

Your job as an IT manager is to support your organization's computing and storage needs with the right level of reliability and performance for the right investment. You need to find the right solution and the right supplier...You have come to the right place.

Our job at Winchester Systems is to provide you with superior storage choices to those offered by the typical server vendor and major third party suppliers. We offer only truly open systems that never lock you in to a proprietary architecture. In Winchester Systems, you have a credible alternative to the large and often rigid corporate providers.

As a dedicated, responsive entrepreneurial company, we deliver superior products and more personalized service. You are never a number at Winchester Systems. Your business is important to us. You always will have an account team dedicated to your needs. You will have specific people to call and develop a personal relationship with those people over time.

We believe firmly that as our customer you deserve unfettered access to the top technical expertise and talent in our company. This includes our executive management team. We are here and available to handle the tough issues. You may never need to call, but if you do we are here for you, our customer!

Sincerely,

Joel Leider

Chief Executive Officer

FlashDisk® Products

Product	Disks	Hosts	Rack Height	Max Capacity	Applications/Notes
FC-3400	Fibre	Fibre	3U	38 TB	Database transactions and random I/O
SX-1300	SAS/SATA	Fibre/SAS	1U	65 TB	Random I/O, tiered storage, low power
SX-2300	SAS/SATA	Fibre/SAS	2U	60 TB	Video capture and data or image archive
SX-3400	SAS/SATA	Fibre/SAS	3U	80 TB	Random I/O, file I/O, tiered storage
SX-3400i	SAS/SATA	iSCSI	3U	80 TB	Convenient IP network based storage

What Does Enterprise RAID 6 Mean?

What is Enterprise RAID 6?

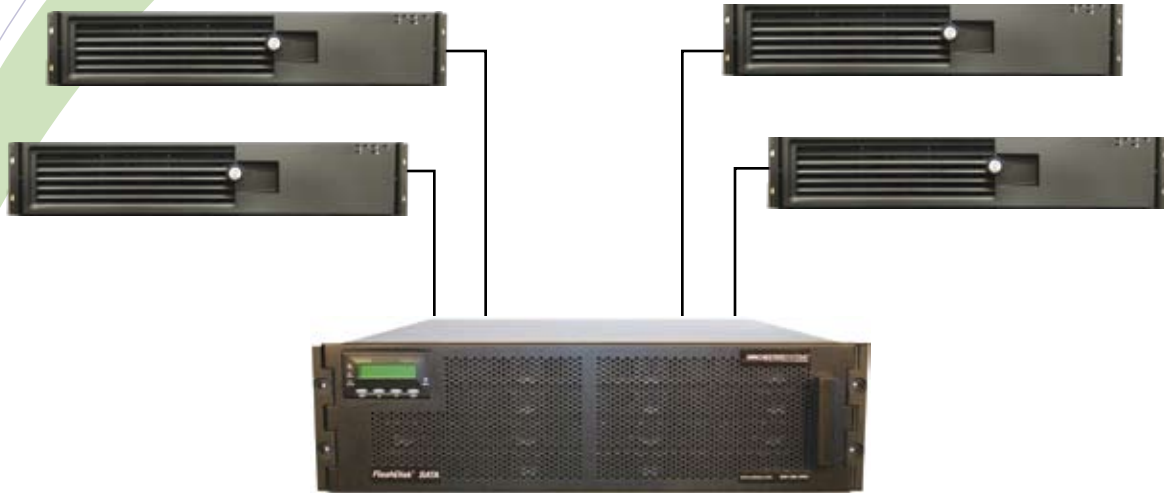
- Powered by hardware ASIC
- Performance at RAID 5 level
- Fast rebuild performance, shorter window of vulnerability
- Protect against human error, wrong drive removal
- Provides RAID protection during critical rebuilds

RAID 6 dual parity protection provides superior Mean-Time-to-Data-Loss (MTDL) and support for two drive failures.



What Does SAN-In-A-Box Mean?

Switchless multi-hosting

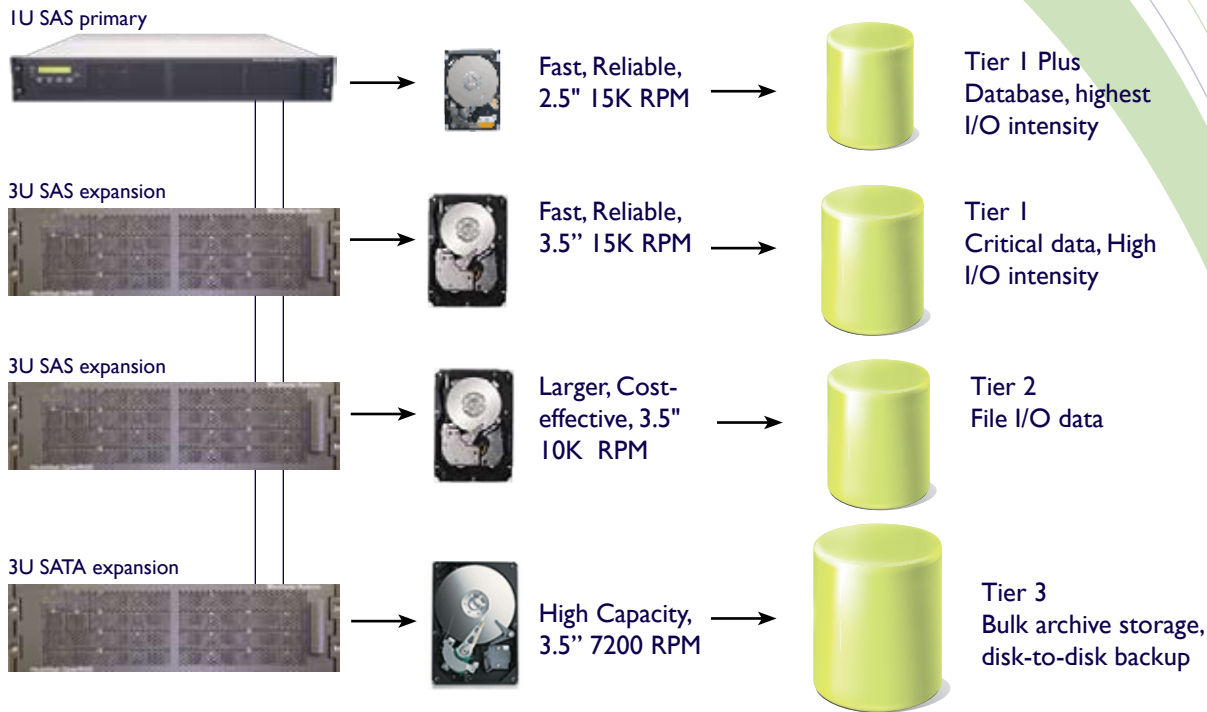


- Multiple host connections without an expensive switch
- Systems with up to eight Fibre Channel or four SAS host ports
- Auto-failover without host software to manage
- No special software drivers
- Host independent runs on most operating systems

Supports native FC multi-pathing, Microsoft MPIO, Linux MPIO, Solaris MPXIO, and Veritas DMP

Build Tiered Storage Solutions

Build tiered storage within a single system



Advantages: Provide multiple service levels within a single system.


FlashView™ Management

- Browser based interface
- Embedded GUI – no added software on your server
- Included with the system – no added cost
- Event logging, SNMP and email event notification
- Communicates to FlashAlert 7x24 Call Center

WINSYS FC3494

system view

Enclosure



PSU0 status	is function normally
PSU1 status	is function normally
Cooling fan0	is function normally
Cooling fan1	is function normally
Cooling fan2	is function normally
Cooling fan3	is function normally
BBU	is present
Battery-Backup Battery	is charging off (fully charged)

Advantages: Built-in storage management.

FC-3400 Family

Disks
Fibre Channel

Host Connectivity
Fibre Channel



High Performance Random I/O



Technical Specifications

Host Interface

- 4 Fibre 4Gb - redundant controller
- 4 Fibre 4Gb - single controller

Connectivity

- Direct Attach
- SAN-In-A-Box
- SAN Fabric

Disk Support

- Fibre Channel 10K & 15K RPM

Architecture

- 3U - 16 Drive - 3.5 inch
- Expandable - SBOD Fibre

Max # of Drives

- 96 - Fibre Channel drives

Max Capacity

- 38.4 TB

Advantages: Enterprise-class reliability and performance.

800-325-3700

SX-2300 Family

Disks
SAS or SATA

Host Connectivity
SAS or Fibre Channel

Tiered Storage - Expandable to 60 TB



Technical Specifications

Host Interface

4 SAS or 4 Fibre* 4Gb - redundant
2 SAS or 2 Fibre* 4Gb - single

Connectivity

Direct Attach
SAN Fabric

Disk Support

SAS or SATA

Architecture

2U - 12 Drive - 3.5 inch
Expandable

Max # of Drives

60 - single controller
48 - redundant controller

Max Capacity

60 TB - single controller
48 TB - redundant controller

Advantages: Low entry cost, higher storage density and low power consumption.

*check availability

SX-3400 Family

Disks
SAS or SATA

Host Connectivity
SAS or Fibre Channel



Tiered Storage - Expandable to 80 TB



Technical Specifications

Host Interface

4 SAS or 8 Fibre 4Gb - redundant

2 SAS or 4 Fibre 4Gb - single

Connectivity

Direct Attach

SAN-In-A-Box

SAN Fabric

Disk Support

SAS or SATA

Architecture

3U - 16 Drive - 3.5 inch

Expandable

Max # of Drives

80 - single controller

64 - redundant controller

Max Capacity

80 TB - single controller

64 TB - redundant controller

Advantages: Low cost per terabyte, larger size arrays.

800-325-3700

SX-3400i Family

Disks
SAS or SATA

Host Connectivity
iSCSI

Shared IP Network Storage



Technical Specifications

Host Interface

- 8 iSCSI GigE Ports - redundant*
- 4 iSCSI GigE Ports - single
- Separate management port

Connectivity

- IP Attach
- SAN-In-A-Box

Disk Support

- SAS or SATA

Architecture

- 3U - 16 Drive - 3.5 inch
- Expandable*

Max # of Drives

- 80 - single controller
- 64 - redundant* controller

Max Capacity

- 80 TB - single controller
- 64 TB - redundant* controller

Advantages: Convenient, easy-to-install, easy-to-manage, shared IP network storage.

*check availability

SX-1300 Family

Disks
SAS or SATA

Host Connectivity
SAS or Fibre Channel

Higher IOPS in half the space



Technical Specifications

Host Interface

- 4 SAS or 4 Fibre 4Gb - redundant
- 2 SAS or 2 Fibre 4Gb - single

Connectivity

- Direct Attach
- SAN Fabric

Disk Support

- SAS 2.5 or 3.5 inch
- SATA 3.5 inch

Architecture

- 1U - 12 Drive - 2.5 inch
- Expandable with 1U, 1U+2U, 1U+3U
- SAS or SATA expansion chassis

Max # of Drives

- 60 - redundant controller
- 76 - single controller

Max Capacity

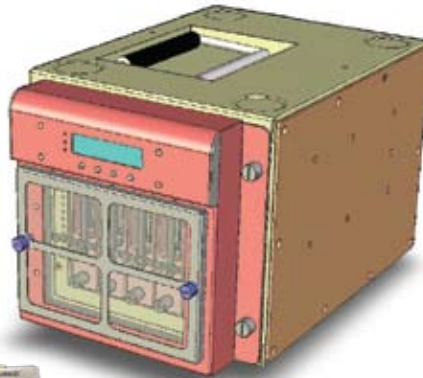
- 49 TB - redundant controller
- 65 TB - single controller

Advantages: Highest IOPS density, low cost, low power.

800-325-3700

Rugged and Custom RAID

Military, Industrial and OEM Applications



Mil-Spec
Portable Rugged



Mil-Spec Mobile Rugged



COTS Mobile Rugged

Specialized cooling, shielding, filtering, and ruggedization

Advantages: Five generations of experience in designing and supplying to military and OEM. Call for a free consultation.

Customer Support

- Comprehensive Call Center with 7x24 coverage
 - Next day on-site service included
 - Optional 7x24 four-hour response on-site support
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FlashAlert™

- FlashDisk RAID management and Call Home reporting
 - 7x24 storage monitoring services included
 - Requires no host drivers or software
 - Remote web browser interface and no penetration of user's firewall
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Winchester Systems Service

- On-site installation and training
 - Advanced parts replacement
 - Instant hands-on help via WebEx
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WINCHESTERSYSTEMS®

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AUTO
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High Performance
DISK ARRAYS