



# SANbloc 2Gb RAID

## Features

- Dual active, failover, failback controllers provide up to 100,000 I/Os and 350 MByte/sec
- Auto-negotiate enables each port to operate at the maximum speed
- LUN masking functionality increases productivity, reduces cost of ownership
- No single point of failure with redundant, hot-swappable components
- Intuitive, comprehensive management with Sphas Storage Director Sphas PATHpilot software and cluster support provide transparent failover
- Dual optical host connections, serial port, Ethernet port per controller
- Industry-standard 19-inch rackmount or deskside, scalable to 112 drives (16.4 TByte)



The SANbloc 2Gb RAID provides high performance and maximum data availability to SAN and clustered environments. The SANbloc RAID can be scaled in multiple dimensions, enabling flexible configuration of capacity, performance, and functionality to match and grow with virtually any application from throughput intensive video and prepress or transaction hungry databases to OLTP. Delivering cost-effective storage to Windows® and UNIX environments, SANbloc RAID provides dual Fibre interfaces to loop, fabric, or point-to-point topologies and redundant loops for continuous access to large data storage pools. Based on a modular, “building block” design, SANbloc offers exceptional scalability in capacity and performance. The SANbloc RAID is designed for maximum availability with redundant, hot-swappable, dual host port RAID controllers, power supplies, power connections, advanced cooling modules, port bypass circuitry, environmental monitoring, and battery-protected mirrored write cache. Features such as multiple target ID support, dual loops with independent paths to all drives, active-active, transparent failover/failback, LUN masking, cache coherency, and parity protected data buses and ECC-protected memory provide maximum data availability and continuous access to data.

## Innovative Modular Architecture

The SANbloc RAID is part of a family of network storage solutions, based on an advanced Flexible Storage Architecture (FSA). A modular, state-of-the-art design, FSA enables users to quickly and cost-effectively optimize individual storage solutions to their changing needs, applications, and network environments by adding component “building blocks.” The result is a truly universal solution for enterprises seeking flexible storage systems that address current and future needs, as well as unexpected changes.

## Comprehensive Storage Management and High Availability Software

Sphas Storage Director enables easy local or remote management of SANbloc solutions in heterogeneous, network-centric computing environments. An intuitive console user interface allows administrators to centrally monitor and tune all storage resources across the network as well as configure the system to meet server and applications goals. A comprehensive suite of notification utilities alerts administrators to system irregularities. Sphas PATHpilot high availability software provides failover, keeping applications running through fault detection, automatic path failover and I/O rerouting, and ensuring availability of critical information resources. In the event of a path failure, PATHpilot automatically redirects I/O to a redundant path without interrupting data transfer. Balancing I/O over multiple paths enhances resource utilization and data throughput.

## Worldwide Service and Interoperability Testing

Adaptec helps ensure the performance and availability of your storage network through our Globalrespond support program. Adaptec offers a complete range of support services – from 24x7 telephone assistance to on-site maintenance – enabling you to tailor a program to meet your needs. Adaptec also works closely with leading manufacturers, testing a variety of storage network technologies and products to ensure seamless interoperability for complete SAN configurations.

## Caen Engineering, Inc.

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# SANbloc 2Gb RAID

## RAID Controller Specifications

### Host interface

One or two Fibre Channel controllers with dual optical (LC) connections, 200 MB/s each (400 MB/s total)

- 3-pin Serial (RS232) port
- Optional Ethernet port
- Copper (HSSDC) expansion port

### Disk drive interface

Dual, independent FC loops, 200 MB/s each (400 MB/s total) Failover by each controller to both FC loops

### Measured performance (dual controllers, RAID 5)

Up to 350 MB/s (sustained reads), 270 MB/s (sustained writes), 100,000 I/Os

### RAID controller specifications

- Intel Xscale 600 MHz RISC processor
- Hardware XOR
- Up to 512 MB memory per controller
- 4 MB flash memory
- ECC memory support

### Controller Features

- Dual active with automatic, transparent failover/failback
- Auto-negotiate speeds
- In-band and out-of-band management
- Replacement controller reflashes firmware to match peer controller
- Selective LUN deletion
- LUN masking - up to 32 LUNs and 256 host ports supported
- F\_port and FL\_port support
- Cache coherency
- Battery protected mirrored write cache
- Write through, write back, or read-ahead cache support per logical device
- Variable cache line size
- Controller-to-controller communications across back-end loops
- Disk scrubbing and soft disk addressing

### RAID Level support - 0, 1, 0/1, 3, 5, 10, 30, 50

- Any combination of RAID levels can exist within the same FC loop
- Up to 16 drives per RAID group
- On-line RAID group expansion/partitioning
- Up to 32 MB I/O request sizes
- Variable stripe size
- Global hot spare drives

### System

Up to a maximum of 14 drives (2 TB) capacity per subsystem, with a total maximum of 112 drives (16.4 TB) capacity

### Redundant, hot-swappable components

- Up to 2 RAID controllers
- 2 power supply modules
- 2 independent AC power inlets
- 2 advanced cooling modules
- 2 loop resiliency and SES (SCSI Enclosure Services) modules
- Up to 14 drives

### Maximum cable lengths

Host ports (optical): Up to 150 meters  
Expansion port (copper): Up to 6 meters

### Deskside cabinet dimensions

20in H x 9in W x 20in D  
(50.8cm H x 22.9cm W x 50.8cm D)  
Weight with drives: 60lbs (29.5 kg) max

### Rackmount enclosure dimensions

5.22in H x 17.5in W x 20in D  
(13.3cm H x 44.5cm W x 50.8cm D)  
Weight with drives: 60lbs (29.5 kg) max

### 3 year warranty (5 year disk drive warranty)

### Monitoring

Temperature, advanced cooling modules, and speed control, power supply modules including analog voltage and current, disk drives, loop resiliency, and SES modules including loop status and speed, I/O modules, 14 drive ESI (enclosure services interface)

### Failure notification

Enclosure services via in-band SES adhering to SFF-8067, LEDs, audible alarms, FRU (field replaceable unit) revision and serial number reporting, events reported to Spheras Storage Director

### Disk Drives

**Capacity:** 18.4 GB, 36.7 GB, 73.4 GB, 146.8 GB  
**Rotational velocity:** 10K RPM, 15K RPM  
3.5-inch form factor, 1.0-inch height

### AC Power

**Input voltage:** Autoranging, 85-264 VAC  
**Input frequency:** 47-63Hz  
**Power factor correction:** Per EN61000-3-2  
**Input current:** 100-240 VAC @ 10-5 A  
**Output power:** 853 W peak, 673 W average

### Operating Environment

**Temperature:** 5° to 40° C  
**Temperature gradient:** 20° C per hour  
**Relative humidity:** 5 to 95 percent (non-condensing)  
**Altitude:** -50 to 10,000 feet  
**Shock:** 5G @ 11ms, 1/2 sine wave pulse  
**Vibration:** 0.2G @ 5Hz to 400Hz  
**Electromagnetic emissions standards**  
CE Mark, EN55022 Class A, EN61000 Class A, FCC Class A, Canadian DOC Class A, VCCI Class A, BSMI Class A

### Safety standards

UL 1950, CSA 22.2-950, EN 60950

### Quality standards

Manufactured under an ISO 9002 registered quality system

### Operating system

Designed for Microsoft® Windows 2000 Professional, Server, and Advanced Server

### Software

#### Spheras Storage Director

Local or remote management, monitoring and configuration for Microsoft Windows, Sun Solaris Sparc, LINUX Redhat (Kernel 2.4)

#### Spheras PATHpilot high availability

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