Enterprise MAID Quick Reference Guide

What is MAID?

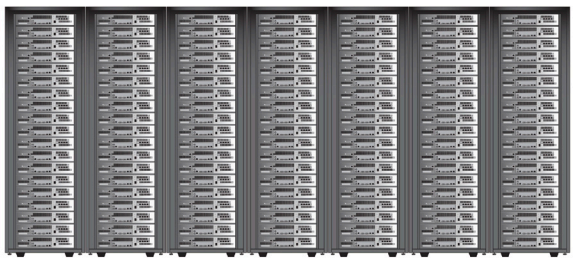
MAID (Massive Array of Idle Disks) is a storage technology that employs a large group of disk drives in which only those drives in active use are spinning at any given time. This reduces power consumption and prolongs the life of the drives. MAID is designed for Write Once Read Occasionally (WORO) applications.

COPAN Enterprise MAID improves upon standard MAID with features that are purpose built for storing long-term, persistent data .

COPAN MAID Solution

896TB
10 ft²

Competing Solution



896TB

Why Enterprise MAID?

COPAN technology simplifies your persistent data storage while drastically lowering your utility costs, and freeing up valuable data center floor space.

Massive Scalability
From 28TB to 896TB raw capacity

Simple Management
GUI-based

Unprecedented Reliability
Six times more reliable than traditional SATA drives

High Density
89.6TB per ft²

High Performance
Fast restores from 5.2TB/hour

Energy Efficiency
Up to 85% more efficient than traditional, always spinning disk solutions

MAID		Not MAID
MAID	**COPAN Enterprise MAID**	**Transactional Storage with "Spin Down"**
SNIA Definition MAID (Massive Array of Idle Disks) • Drives are powered on only when data is requested • More than 50% of the drives are powered off at any one time • Large number of densely packaged, power managed disks • Lower management and environmental costs with longer drive life	An architecture specifically designed for storing persistent data, with Enterprise class attributes, that enhances the MAID feature set • Maximum of 25% if the drives are powered on at any one time • At least 75% of the drives are powered off at any one time • Patented, high-density packaging • Save at least 75% in power and cooling costs • POWER MANAGED RAID® software • DISC AEROBICS® software	Transactional storage with "Spin Down" or "Sleepy Drive" functionality • Enabling of spin down or sleepy drives is a manual process • Only 20% of disks are powered off at any one time

Disaster Recover Replication Protection:

Three-Tier System Architecture

- Simplifies system management of persistent data
- Scales performance with capacity
- Enables industry-leading, high density, storage capacity in a single footprint
- Enhances drive reliability with unique disk packaging, cooling and vibration management
- Enhances drive reliability with unique disk packaging, cooling, and vibration management

Patented POWER MANAGED RAID® Software

- Lowers energy costs as drives spin only when needed and are powered down when not in use
- Extends the service life of the disk drives by more than six times
- Provides RAID protection for all of your data

Patented DISC AEROBICS® Software

- Pro-actively monitors and manages drive health by periodically exercising all disks and detecting potential drive failures, before they occur
- Copies data from a "suspect", potentially failing drive to a new, "healthy" spare drive, avoiding lengthy RAID rebuild times and data loss
- Provides continuous data integrity checks

Patented Canister Technology

- Patented (patent # 7145770) mounting scheme eliminates "rotational vibration" within a storage shelf
- Canister technology enables efficient and quick servicing of the 14 disk drives
- Data is striped across canisters with a shelf in 3+1 RAID sets

A Comparison of Storage Technologies for Backup, Recovery and Archiving

Storage Environment Factors	Tape	Traditional Disk-Based Storage	COPAN Enterprise MAID
Quick Data Recovery		✓	✓
Cost per GB	✓		✓
Operating Expense			✓
Scalability	✓		✓
Small Footprint	✓		✓
Power & Cooling Efficiency	✓		✓
Ease of Management		✓	✓
Built for Long-Term Data Storage			✓

Solving Today's Storage Challenges

Problems with Disk

- Spinning disk solutions do not handle persistent data efficiently
- Expensive (both in capital and operating expenses)
- Large footprint and uses excessive amounts of costly data center tile space

Problems with Tape

- Shrinking Backup windows/failed backups
- Growing amount of data to recover
- Unrecoverable data due to media degradation
- Lost tapes and/or incomplete backups

The Enterprise MAID Solution

- High performance backup with up to 5.2TB/sec throughput
- Scales performance with capacity
- Reliable, quick data access with greater reliability and continuous data integrity checks
- Offsite replication option and better reliability than tape or traditional, spinning disk, storage solutions

General Storage Problems

- Growing amount of persistent data is creating storage scalability issues and is difficult to manage
- Data center power and cooling costs increasing exponentially
- 80% of data in enterprise storage systems is persistent data

The Enterprise MAID Solution

- Scalable from 28TB to 896TB within a single rack and management interface
- Up to 85% savings on power and cooling costs
- The only platform specifically designed for storing persistent data

The Enterprise MAID Solution

- Purpose-built architecture for handling persistent data
- Saves in both capital and operating expenses
- Store up to 896TB in 10 ft.2 of floor space

Corporate Office
46600 Landing Parkway
Fremont, CA 94538
tel 510.933.8300
fax 408.321.0293
www.sgi.com

North America +1 800.800.7441
Latin America +55 11.5185.2860
Europe +44 118.912.7500
Asia Pacific +61 2.9448.1463