



SATA Intermix
Option for Hitachi
Thunder 9500™ V Series
Modular Storage Systems

Partner Beyond Technology





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The SATA Intermix Option optimizes Thunder 9500 V Series systems for applications requiring a lower duty cycle, medium performance, and high-capacity data access, complementing its best-in-class support for high-availability, data-intensive applications.

SATA Intermix Option—Optimal for Fixed Content Storage and Access

Organizations are increasingly reliant on fixed content for doing business. For example, as much as 60 percent of mission-critical operational data is stored in messaging systems. And while business e-mail is growing fast (from 10 billion to 35 billion messages daily between 2003 and 2005 according to IDC), the total volume of fixed content is growing even faster, at 90 percent compounded annually, according to Enterprise Storage Group.

Availability Matters More Than Ever

Common business sense says you must protect this enterprise content simply because it is now an essential part of doing business. But in many cases it is not a matter of discretion. This data must be retained for a number of years under strict governmental regulation. Both to avoid liabilities associated with compliance and in order to leverage essential content without interruption, fixed content must be available quickly when needed. Putting it on a specialized archival platform from which it must be restored before use is rarely a viable option.

Despite the resultant surge in demand for mainstream data storage, organizations are not seeing commensurate increases in IT budget. Many are looking for ways to provide more fixed content capacity in the same floor space without increasing expenditures.

The answer may be Serial ATA (SATA). After more than a decade of dominating the desktop, a new generation of Advanced Technology Attachment (ATA) storage is moving into the enterprise. Archival ATA storage is an increasingly attractive commodity to enterprises faced with a rising global tide of data. Some vendors have been shipping

traditional parallel ATA storage for nearline and reference data use despite its limited reliability. Enter SATA.

Once this new ATA technology matured, Hitachi Data Systems determined how to improve its reliability and optimize it for a range of appropriate applications without requiring a second storage infrastructure and additional storage management processes.

Seamless Integration of SATA and Fibre Channel Storage

The previously Fibre Channel-only Hitachi Thunder 9570V™, Thunder 9580V™, and Thunder 9585V™ systems now take trays of SATA drives for archival storage. To achieve sufficient reliability, Thunder 9500 V Series controllers enhance SATA functionality with features that safeguard data integrity, enhance data protection, and reduce drive failure rates. This SATA functionality is administered by the same management software used on all Hitachi storage systems.

As a part of our Application Optimized Storage™ solutions, SATA storage helps bridge the gap between business application needs and IT's ability to precisely deliver service levels. SATA storage installed in Thunder 9500 V Series systems is optimized for disk-to-disk backup, tape elimination, virtual tape, nearline storage, e-mail archiving and other applications that require lower-duty-cycle, medium-performance, high-capacity storage. Other usage examples include oil and gas exploration, video surveillance, and engineering design content. Hitachi Data Retention Utility provides tamperproof data retention management capabilities to satisfy regulatory requirements.

Fibre Channel storage intermixed with SATA storage in the same Thunder 9500 V Series systems remains the best in the business for high-performance, continual-access, high-availability application requirements.

Business Benefits

Simplify Management of Tiered Storage

- :: Manage all three tiers of Hitachi storage including SATA through a “single pane of glass” with HiCommand® Storage Area Management Suite software
- :: Combine Hitachi co-branded enterprise content archival solutions with SATA storage and automate data movement for less-frequently accessed, lower-duty-cycle data to lower storage cost
- :: Use the same storage management and replication software; no need to learn new interfaces or retrain users

Improve Archival Information Access and Business Performance

- :: Provide SATA storage with all application functionality of Fibre Channel storage; competitive archival solutions require data to be restored to primary storage before access
- :: Enable improved productivity, lower total cost of ownership, and investment protection, which adds up to improved business performance

Enhance Protection of Mission-critical Fixed Content

- :: Reduce the likelihood of drive failures; Hitachi SATA drives significantly improve drive reliability over typical ATA drive rates
- :: Avoid scenarios in which SATA drive failure would mean catastrophic data loss
- :: Ensure tamperproof archives with Hitachi Data Retention Utility

Obtain Best Price-to-performance Ratio

- :: Match business application needs with storage attributes; optimize storage usage and reduce costs
- :: Choose Fibre Channel storage for operational data applications demanding high performance, 24/7 access, and high availability
- :: Intermix SATA storage for lower-duty-cycle, medium-performance, high-capacity fixed content applications

Protect Investments; Lower Operational Costs

- :: Upgrade existing Thunder 9570V, Thunder 9580V, and Thunder 9585V footprints to include SATA drive trays—optimize for archival applications and enable tiered storage “in a box”
- :: Extend the range of applications supported by the superior capabilities of the Thunder 9500 V Series systems

Feature Highlights

Unique Data Protection Features

- :: Only Thunder 9500 V Series storage safeguards data integrity, enhances data protection, and reduces drive failure rates dramatically with:

Read-after-write

- :: Controller rereads written data and uses “Verify” logic: Competing platforms that do not overcome the ATA interface’s lack of “Verify” can corrupt data for an extended period of time before the corruption is discovered.

Increased sparing

- :: Global hot sparing enables a pool of spare drives to replace any failed drive in the subsystem: Given the higher failure rate of SATA drives, limited spares in competitive systems put data at risk. Rebuilding a failed drive requires continuous head movement for extended periods, activity for which SATA is not intended, increasing the likelihood of failure. A second failure in a single-spare tray could lead to catastrophic data loss.

Fast Rich Copy and prioritized rebuild

- :: Further protect against the strain of rebuilding a failed disk; newly enhanced microcode reduces the time required for rebuild.
- :: Prioritizing the rebuild function over host I/O for SATA storage further reduces risk of failure.

Hi-Track® “call-home” service and remote maintenance tool

- :: The Hi-Track “call-home” feature automatically and conservatively schedules a maintenance call when a set number of SATA drive failures have occurred.

Best Performance in Class

- :: Rewritten microcode optimizes serial reads and writes typical of high-data volume applications
- :: Much faster than competitors’ parallel ATA offerings

Highest Capacity in Small Footprint

- :: Maximum capacity of a Thunder 9585V system fully configured with SATA is more than twice that of any competing system—up to 104TB raw capacity
- :: 2 to 420 disk drives
- :: Hitachi Global Storage Technologies 250GB 7200RPM disk drives intermixed on a storage tray basis with Fibre Channel

Complementary Solutions

Message Archive for Compliance

Message Archive for Compliance tightly integrates Hitachi Data Retention Utility (formerly LDEV Guard) for open systems with our powered-by-IXOS e-mail archiving solution, allowing you to maintain tamperproof e-mail archives.

Message Archive for E-mail

Message Archive for E-mail, powered by IXOS, supports limitless user mailboxes by seamlessly offloading messages and attachments to archival storage. It reduces e-mail infrastructure costs and management needs and improves e-mail server performance and recovery time.

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