

Disaster Recovery Storage Implementation - Official Technical Overview & Hardware Datasheet

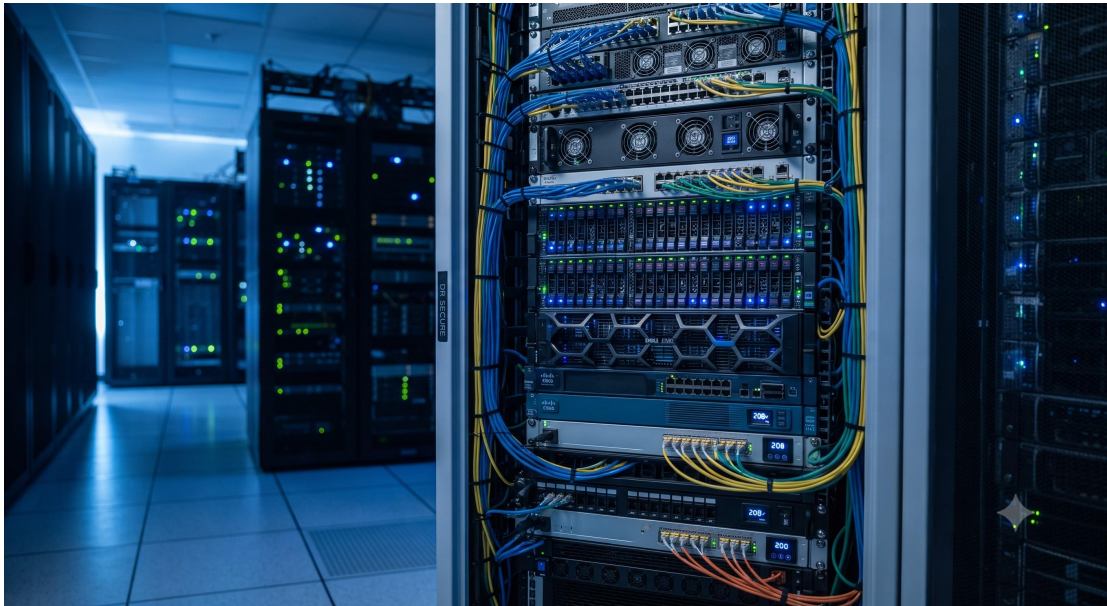
DISASTER RECOVERY STORAGE IMPLEMENTATION - OFFICIAL TECHNICAL OVERVIEW & HARDWARE DATASHEET

EXECUTIVE SUMMARY

In an era where data is the lifeblood of enterprise and carrier-grade operations, the resilience of storage infrastructure is paramount. The Disaster Recovery Storage Implementation (DRSI) platform is a purpose-built, high-availability storage solution designed to deliver zero data loss and near-zero recovery time objectives (RTOs) for mission-critical environments. This document provides a comprehensive technical overview of the DRSI hardware, detailing its robust architecture, advanced data protection features, and stringent compliance standards.

Leveraging a fully redundant, active-active controller design and a high-speed internal backplane, the DRSI platform ensures continuous data availability even in the event of multiple component failures. It integrates seamlessly into existing data center fabrics, supporting a wide range of connectivity options, from 10GbE to 100GbE and Fibre Channel, making it an ideal foundation for synchronous and asynchronous replication strategies. This datasheet serves as

the definitive reference for system architects and infrastructure engineers, detailing the hardware's capabilities, specifications, and deployment considerations.



ARCHITECTURE & CHASSIS DESIGN

The DRSI system is engineered with a modular, scalable chassis architecture that prioritizes serviceability and future-proofing. The base chassis is a 4RU form factor that houses up to 24 hot-swappable NVMe SSD drives, providing a raw capacity of up to 368TB per shelf. The core of the system is its dual, redundant storage controllers, each powered by a multi-core x86 processor and a dedicated hardware-based RAID engine.

The system's internal architecture is built around a high-bandwidth, low-latency

PCIe 4.0 backplane that facilitates direct memory access (DMA) between controllers, drives, and network interfaces. A key design feature is the Separation of Control and Data Planes. The control plane manages system configuration, replication logs, and health monitoring, while the data plane is responsible for the high-speed movement and processing of I/O requests. This decoupling ensures that heavy I/O loads do not impact the system's ability to manage its own configuration or replication state.

HARDWARE FEATURES

Redundant, hot-swappable power supply units (PSUs) and cooling fans are standard, supporting an N+N or N+1 configuration to ensure uninterrupted operation. The system employs a sophisticated thermal management algorithm that dynamically adjusts fan speeds based on component temperatures, optimizing energy efficiency and acoustic performance.

For data protection, the DRSI platform integrates multiple layers of redundancy. In addition to the RAID-6 data protection at the drive level, the system supports advanced features such as double-parity protection, and real-time checksum validation for data integrity. The platform includes two dedicated 10GbE management ports that provide secure, out-of-band access to the system's management interface.

COMPLIANCE & STANDARDS

The DRSI platform has been rigorously tested and certified to meet the highest industry standards for safety, electromagnetic compatibility (EMC), and environmental sustainability. It complies with UL, CSA, and CE safety directives, ensuring it can be deployed in data centers globally. The system also meets FCC and VCCI EMC standards for Class A digital devices.

TECHNICAL SPECIFICATIONS

The following section details the comprehensive technical specifications for the DRSI platform. These metrics define the physical, environmental, and performance capabilities of the hardware.

Parameter	Specification
Form Factor	4RU Rack-Mountable Chassis
Drive Bays	24 x Hot-Swappable NVMe SSD Bays
Raw Capacity	Up to 368TB (using 15.36TB drives)
Controllers	2 x Active-Active Redundant Controllers
Processor per Controller	16-Core Intel Xeon Scalable Processor

Cache per Controller	128GB DDR4 ECC (with battery backup)
Host Interface Options	10/25/40/100 GbE, 16/32Gb Fibre Channel
Max IOPS (4K Random Write)	Up to 1,500,000
Max Throughput (Sequential Read)	Up to 48 GB/s
Management Ports	2 x 1/10 GbE (Dedicated)
Power Supply	2 x 1600W Platinum (1+1 Redundant, Hot-Swappable)
Voltage	100-240V AC, 50/60Hz
Cooling	4 x Hot-Swappable Fan Modules (N+1 Redundancy)
Operating Temperature	5°C to 35°C
Operating Humidity	20% to 80% (Non-condensing)
Dimensions (HxWxD)	177mm x 482mm x 750mm
Weight (Fully Loaded)	Approximately 35kg
Mean Time Between Failures (MTBF)	> 2,500,000 Hours

ORDERING OPTIONS

Configuration flexibility is central to the DRSI platform. Each unit includes the

base chassis, dual redundant controllers, and a backplane. Storage media, power supply types, and network interface modules are ordered separately to allow for tailored configuration. All SKUs include a 1-year standard hardware warranty with advanced replacement, with options to extend to 3-year or 5-year next-business-day or 4-hour on-site support.

