

# DTS 4000 High Reliability Storage Appliance



## Features

**High data throughput:** 2.4 GB/sec per Object Store pair over InfiniBand or 10GB Ethernet, linearly scalable

**High performance metadata:** Up to 15,000 file creates per second.

**Data Integrity:** Parity on read, controller cache mirroring with disk caching disabled.

**High reliability:** No single points of failure. Active-standby metadata. Active-active object stores. Redundant storage controllers. Battery backup. Rapid failover technologies.

**High capacity:** Up to 480 drives per Performance Object Module. Scalable to petabytes of total storage.

**Simplicity:** Designed and delivered as a fully configured appliance. Setup, deployment, and ongoing management administered through a common set of tools.

## High performance, reliability, and simplicity in a large scale, parallel file system appliance

The Terascale DTS 4000 storage appliance delivers maximum performance with unprecedented levels of scalability, reliability, system availability, and data integrity. The DTS 4000 combines Terascale's expertise in parallel file systems and storage appliance development, and highly scalable, reliable storage technology from LSI Corporation to deliver the highest levels of data integrity and application performance.

The DTS 4000 is a unique, large scale parallel file system solution. Deployed with the production proven, open source, Lustre file system and designed to maximize server utilization, increase application performance, and simplify the user experience, the DTS 4000 is the first solution to bring appliance simplicity to large scale, high performance, parallel storage systems.

Built using an exclusive, modular approach, the DTS 4000 is architected for the highest levels of performance, capacity, and flexibility. It includes a Redundant Metadata module, a Performance Object module, a Reliable Capacity module, and the Terascale Management Module. Designed as an integrated whole, these modules are managed through a simple, easy to use management suite.

The Redundant Metadata module, based on an integrated, active – standby architecture with rapid failover technology insures that metadata is highly available. Configured as RAID 10, it uses advanced monitoring and management to enable complete failover with no spurious writes. Delivering up to 15,000 file creates / sec and storing up to 12 TB of data, the Redundant Metadata modules insures the rapid availability of all metadata.

Each Performance Object Module delivers up to 4.8 GB/sec per module by combining two active-active Object Store pairs, redundant storage controllers, and an optimized data path. It provides extensive data integrity and availability features including Parity on Read, controller cache mirroring, and built in battery backup. Performance Object modules are linearly scalable enabling the creation very high performance file based solutions.

With up to 480 drives per module, the Reliable Capacity module leverages a unique, high density storage array architecture placing 60 drives in 4U of rack space. Supporting hardware assisted RAID 6, it maintains performance levels without disk caching enabled to insure data reliability. Designed for the highest levels of availability, the Reliable Capacity module has no single point of failure, fully redundant data paths, and smart battery backup.

Leveraging the Terascale Management Module, a unique, redundant hardware based, out of band management technology, enables the system to be remotely operated and managed by system administrators without extensive storage experience. The DTS 4000 is delivered with all software installed and tuned to deliver performance, reliability and simplicity.



## Terascale DTS 4000 Storage Solution Specifications

File System:	Standard Lustre parallel file system
Client Networking Options:	1 Gigabit Ethernet 10 Gigabit Ethernet InfiniBand
<b>Redundant Metadata Module:</b>	
Processing:	Up to 15,000 file creates /sec Two independent processing units with complete failover capabilities
Capacity:	Up to 12 TB
RAID:	Configured as RAID 10
<b>Performance Object Modules:</b>	
Performance:	2.4 GB/sec per OSS pair Linearly scalable
Reliability / Data Integrity:	Active-active architecture with rapid failover Redundant storage controllers Controller cache mirroring Parity on read support Battery backup
<b>Reliable Capacity Modules:</b>	
Capacity:	Up to 480 drives per Performance Object Module, scalable to Petabytes
RAID:	Configured as RAID 6
<b>Terascale Management Module:</b>	
Key Features	Dedicated, out of band, redundant management controllers and networks Complete remote control including system on, reset, and shutdown SNMP support for both commands and reporting Comprehensive status/error reporting and alerts
<b>Environmental:</b>	
Redundant Metadata Module	H: 7U – 15.75" (40 cm), D: 32.5" (82.55 cm), W: Standard 19" (48.3 cm)
Performance Object Module	OSS Pair: H: 4U – 7" (17.78cm), D: 21.5" (54.6 cm), W: Standard 19" (48.3 cm) Controller: H: 4U – 7" (17.78cm), D: 32.5" (82.55 cm), W: Standard 19" (48.3 cm) Per Array: H: 4U – 7" (17.78cm), D: 32.5" (82.55 cm), W: Standard 19" (48.3 cm)
Reliable Capacity Module	



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