

# DTS4500 - High Performance, High Reliability Appliance



## Features

**High data throughput:** Up to 6.2 GB/sec per Object Store Server pair, linearly scalable.

**High performance metadata:** Up to 25,000 file creates per second.

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

**High capacity:** Up to 60 drives per 4U Storage module. Scalable to petabytes of total storage.

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

**Simplicity:** Delivered fully configured and ready to go to minimize setup time. Includes complete lights out management, monitoring and real-time storage optimization tools.

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

Terascale's scalable storage appliances are the single best choice for organizations who demand the highest levels of file-based storage throughput performance. Our cost-effective appliances leverage Lustre™, the very highest throughput parallel file system, and are easy to deploy, easy to manage, and highly reliable.

All our appliances leverage the Terascale Integrated Storage Information System (TISIS™), including the software, monitoring / management agents, file system, and user interface that maximizes system up-time and provides real-time storage optimization. With its data collection capabilities, TISIS combines different views enabling administrators to track metrics including bandwidth usage, capacity consumption, client node access, and specific job resource usage. With TISIS organizations are able to understand and optimize their storage infrastructure and perform data driven capacity, throughput, and utilization analysis, scheduling optimization and complete system management.

The Terascale DTS4500 storage appliance is scalable to multiple petabytes and delivers maximum performance with unprecedented levels of reliability, system availability and data integrity. The DTS4500 combines Terascale's expertise in parallel file systems and storage appliance development with advanced storage technology from NetApp to deliver the highest levels of scalability and application performance. Built using a modular approach, the DTS4500 includes a Redundant Metadata Solution, multiple Performance Object Store Servers, and high performance Storage modules. Designed as an integrated whole, these modules are managed through the TISIS solution.

The Redundant Metadata Solution is an integrated, active-standby architecture with rapid failover technology to ensure highly available metadata. Configured as RAID 10, it uses advanced monitoring and management to enable complete failover with no spurious writes. Delivering up to 25,000 file creates/sec, the Redundant Metadata Solution provides the performance necessary to maximize overall system throughput.

The Performance Object Store Servers (OSS) deliver up to 6.2 read and 5.6 write GB/sec of throughput per pair in an active-active configuration insuring continuous availability. Additional OSS can be easily added to the existing namespace through the TISIS Solution.

Each high performance Storage Module combines redundant storage controllers, an optimized data path, and high density disk arrays supporting 60 drives, all within a single 4U enclosure. The controllers provide extensive data integrity and availability features, including Parity on Read, controller cache mirroring and built in battery backup. Additional Storage modules and expansion units can be easily added to grow performance and / or capacity.

The DTS4500 is delivered with all software installed and tuned to deliver performance, reliability and simplicity



## Terascale DTS4500 Storage Solution Specifications

File System:	Standard Lustre parallel file system
Client Networking Options:	10 Gigabit Ethernet InfiniBand (QDR, DDR, SDR)
<b>Redundant Metadata Server:</b>	
Processing:	Up to 25,000 file creates/sec Two independent processing units with complete failover capabilities
Redundancy	Raid 10, hardware based
<b>Performance Object Store Servers:</b>	
Processing	Active-active pairs of redundant OSS servers
Performance:	6.2 GB/sec per OSS pair Linearly scalable
<b>Storage module:</b>	
Capacity:	60 drives (up to 180 TB) per base module Supports up to 720TB per module with expansion arrays Scalable to petabytes
Controllers:	Redundant storage controllers Controller cache mirroring Parity on read support Battery backup
<b>Terascale Management:</b>	
Key Features	Fully integrated management Extensive storage experience not required Rapid Failover technology Automated system notifications 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>	
Minimum Configuration	H: 24U – 42" (106.7 cm), D: 32.5" (82.55cm), W: Standard 19" (48.3 cm)
Redundant Metadata Solution	H: 6U – 10.5" (26.7 cm), D: 32.5" (82.55cm), W: Standard 19" (48.3 cm)
Performance Object Servers	H: 2U – 3.5" (8.89cm), D: 32.5" (82.55cm), W: Standard 19" (48.3 cm)
Storage Module	H: 4U – 7.0" (17.8 cm), D: 32.5" (82.55cm), W: Standard 19" (48.3 cm)



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