



## ACTIVESTOR 4000 PARALLEL STORAGE CLUSTER

### High-Performance Parallel Storage for Data Intensive Simulation and Analysis



Businesses and organizations that rely on simulation and analysis to drive competitive advantage are experiencing massive growth in the volumes of data they process as they strive for greater fidelity and accuracy. The incredible growth of clusters and multi-core processors being used to run these models and simulations has led to the need for data storage systems capable of servicing fully-parallel compute systems and handling massive volumes of data.

The object-based Panasas® ActiveScale® operating environment powers the ActiveStor parallel storage cluster and is the only storage architecture that is specifically designed to accelerate the performance of applications deployed on medium-to large-scale clusters.

#### Panasas ActiveStor 4000 Parallel Storage Cluster

*Unsurpassed performance and unlimited capacity*

Panasas ActiveStor 4000 Parallel Storage Clusters deliver industry-leading storage performance and ease-of-management for data intensive simulation and analysis applications. These applications typically run on large clusters and access very large files in a sequential fashion. They demand high capacity and very high bandwidth in order to deliver results as quickly as possible.

Designed specifically for these application workloads, the ActiveStor 4200 packs up to a robust 20 TB of raw storage capacity into a 4U shelf and delivers optimal throughput utilizing an integrated 10 Gigabit Ethernet switch. With linear scalability of capacity and throughput, the AS4200 provides up to 200 TB of raw storage capacity and up to 6 GB/s of throughput from a standard 42U rack. Additional racks can be added to enable multiple Petabytes to be configured in one common global file system. For environments not requiring the maximum available storage capacity, the ActiveStor 4150 and ActiveStor 4100 storage clusters deliver the same outstanding performance at lower capacities. These industry-leading parallel storage solutions all include the ActiveScale® operating environment.



Panasas storage shelves contain 11 blade modules. Shelves can be configured with up to 1-3 DirectorBlade modules (providing metadata services) and 8-10 StorageBlade modules (providing intelligent data storage).

#### FEATURES AND BENEFITS

##### DirectFLOW® Protocol for Parallel I/O:

- **Maximizes Performance**  
Provides faster time-to-results due to faster application runtime
- **Increases Productivity**  
Ensures maximum application utilization as jobs run in parallel therefore more jobs are completed in less time

##### Single Global Namespace:

- **Reduces IT Support**  
Simplifies storage management and provides seamless scalability as the size and number of jobs to be processed increases

##### Scalable NFS and CIFS:

- **Easy to Integrate**  
Supports existing Unix and Windows environments
- **Superior Performance**  
Clustered NFS and CIFS with unlimited scalability

## Panasas ActiveScale Operating Environment

Maximum application performance with PanFS™ parallel file system

At the heart of the third generation ActiveScale OS is the PanFS parallel file system which turns files into smart data objects and then dynamically distributes data activity across Panasas StorageBlade® modules. This object-based storage clustering architecture enables parallel data paths between StorageBlade modules and client nodes, eliminating the inherent performance and capacity bottlenecks of file systems based only on NFS.

The ActiveScale operating environment also dramatically lowers the cost of managing data storage by supporting Terabytes (TBs) to Petabytes (PBs) of data capacity growth all within a single, easily managed namespace.

It also provides many proactive self-management features that make it the most robust, high-performance storage operating environment available today. ActiveScan software ensures continuous system performance by monitoring the data objects, data parity, the disk media and the disk drive attributes. If a potential problem is detected, data can be moved to other StorageBlade modules to eliminate the need for reconstruction.

Data is fully protected with the new award-winning Panasas Tiered Parity™ data protection which delivers the most comprehensive data reliability and integrity available in any storage system today. In addition to incredibly fast reconstruction times, Tiered Parity data protection automatically detects and corrects 'unrecoverable' media errors on the disk drives. This patented sector-level RAID technology solves for media errors and delivers uncompromised reliability that will be maintained independent of future increases in disk density. In addition to Tiered Parity, the ActiveScale OS includes an NDMP agent for automatically integrating with 3rd party backup and recovery solutions.

## The Panasas Promise: Accelerate Time to Results and Maximize Your ROI

Panasas offers comprehensive storage solutions that deliver the highest bandwidth and I/O performance; scalable performance and capacity; and simple unified management. Built on an object-based architecture and optimized for medium-to large-scale clusters, the Panasas integrated hardware and software solution has been deployed in hundreds of installations around the globe, helping organizations accelerate their time to results and maximizing ROI from data intensive and high performance computing environments.

MODEL	RAW CAPACITY PER 4U SHELF	MAX CACHE PER SHELF		RAW CAPACITY PER 42U RACK
		INCLUDED	OPTIONAL	
4100	10 TB	5 GB	20 GB	100 TB
4150	15 TB	5 GB	20 GB	150 TB
4200	20 TB	5 GB	20 GB	200 TB

For more information, contact us today at [www.panasas.com](http://www.panasas.com) or 1-888-PANASAS.



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## Drive Specifications

- 7200 RPM SATA

## Network Interface

- 4-port Gigabit Ethernet or 10 Gigabit Ethernet (CX4 copper + SFP + optical ports)

## Shelf Power Specifications

- Power Rating
  - Output rating 950W
  - Input power rating 1200W
- AC Power
  - Typical operating current 4.4A @208VAC
  - Maximum in rush current 30A
  - Maximum current 7A @208VAC
- Thermal Rating
  - 4000 BTU/max

## Shelf Environmental

- Ambient Temperature
  - Operating temperature +10C to +35C
  - Non-operating temperature -20C to 70C
- Relative Humidity
  - Operating relative humidity 10% to 90%
  - Non-operating relative humidity 5% to 95%
- Altitude
  - 150m to 2440m

## Shelf Physical Specification

- Height 17.78 cm/7 in/4U
- Width 48.26 cm/19 in
- Depth 66.04 cm/26 in
- Weight 150lbs

## Rack System Specifications

- Configuration
  - Supports up to 10 Panasas shelves
  - Can be configured from 1 shelf to 10 shelves
- Power Distribution Units
  - 4 Pre-wired PDU units 208/240 volts
  - Support redundant power grids
- Rack Physical
  - 42U high
  - 1800 lbs