



ACTIVESTOR 6000 PARALLEL STORAGE CLUSTER

High-Performance Parallel Storage for Design, Modeling and Visualization Environments



Businesses and organizations that generate and visualize large quantities of data must have storage systems that can keep up with their exponentially growing data sets. The incredible growth of clusters and multi-core processors being used to tackle large-scale computing challenges has led to the need for data storage systems capable of servicing fully-parallel compute systems.

The object-based Panasas® ActiveStor® parallel storage cluster is the only storage system specifically designed to accelerate the performance of applications deployed on medium-to large-scale clusters.

Panasas ActiveStor 6000 Parallel Storage Cluster

Unsurpassed interactive performance and unlimited capacity

The ActiveStor 6000 Parallel Storage cluster delivers industry-leading storage performance and ease-of-management for all data intensive and high-performance computing applications. Simulation and analysis applications typically access very large files in a sequential fashion while design, modeling and visualization applications mostly require more random access patterns with smaller file sizes. The ActiveStor 6000 uniquely delivers a unified storage solution that provides excellent results for both of these workloads.

The ActiveStor 6200 parallel storage cluster packs 20 TB of raw storage capacity and 20 GB of RAM into a 4U shelf. It delivers optimal throughput from its integrated 10 Gigabit Ethernet switch. With linear scalability of capacity and throughput, the AS6200 provides up to 200 TB of raw storage, 200 GB of RAM 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 6150 and 6100 storage clusters deliver the same outstanding performance at lower capacities.

ActiveStor 6000 storage clusters 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:

- **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

ActiveScale Failover HA Software:

- **Maximizes Availability**
Ensures constant data access

ActiveImage Snapshots:

- **Maximizes Manageability**
Easy, instant backup and restore

Panasas ActiveScale Operating Environment

Maximum application performance and data reliability

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 transfer operations 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 OS 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.

Many new proactive self-management features 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.

Panasas Tiered Parity™ data protection delivers the most comprehensive data reliability and integrity available 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. ActiveScale also includes an NDMP agent for automatically integrating with 3rd party backup and recovery solutions.

The ActiveStor 6000 also includes ActiveScale Failover high availability software and ActiveImage snapshots as standard features. ActiveScale Failover enables seamless failover of metadata services and the storage network to ensure continuous performance and access to data. ActiveImage delivers easy, instant backup and instantaneous restore through an efficient snapshot implementation that only records incremental differences between snapshots.

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 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
6100	10 TB	20 GB	100 TB
6150	15 TB	20 GB	150 TB
6200	20 TB	20 GB	200 TB

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Drive Specifications

- 7200 RPM SATA

Network Interface

- 4-port Gigabit Ethernet
- 10 Gigabit Ethernet
 - 1 CX4 copper
 - 1 SFP + optical

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