



Your Render Farm Just Met its Match.

A transformation is occurring in digital media production. Linux clusters are expanding the capabilities of high-performance rendering by providing a more scalable, easy-to-manage and cost-effective platform to crunch through data-intensive tasks. This architecture delivers higher throughput and better accessibility at lower cost, allowing production houses to keep pace with artists' imagination and consumers' appreciation for enhanced realism. Unfortunately, storage systems have not kept pace with the demands for increased bandwidth required of these clusters - until now.

INTRODUCING CLUSTERED STORAGE

The Panasas ActiveScale Storage Cluster™ represents the next major evolution in networked storage. Designed from the ground up to radically boost performance and enhance manageability, it is the premier high-performance, shared storage system for digital animation. The groundbreaking Panasas ActiveScale File System™ heralds a next-generation, object-based architecture. This, combined with cost-effective intelligent components - Panasas StorageBlades™ and Panasas DirectorBlades™ - delivers record-breaking performance in both throughput and random I/O. All of this is managed within a single, seamless namespace that can easily grow from gigabytes to petabytes.

The Panasas Storage Cluster uniquely complements the scale-out architecture of cluster computing systems, delivering a balanced growth model that adds I/O throughput in step with capacity increments to ensure scalability for the most aggressive digital animation needs.

Panasas is championing an industry-wide move to an object-based storage architecture. Instead of saving information in standard data blocks or files, our architecture enables information to be organized into smart data objects. These are higher-level abstractions that can be more easily managed and dynamically distributed across physical disks. This establishes the foundation for designing a clustered storage architecture tuned for record-breaking scalability and appliance-like agility.

GROUNDBREAKING SOFTWARE ORCHESTRATES CLUSTER ACTIVITY

With our object-based architecture serving as the foundation, the Panasas ActiveScale File System dynamically orchestrates file activity across the cluster, manages system performance, and enables our unique direct disk to client access for your most demanding media applications. To meet the varied needs of media environments, Panasas offers two ways to effectively transfer data between clients and storage: the DirectFLOW™ data path and the NFS/CIFS data path.

DirectFLOW - a powerful "out-of-band" solution, DirectFLOW enables direct and highly parallel data access between client applications and the storage system. This results in up to 30X increase in data throughput for the most demanding high bandwidth applications.

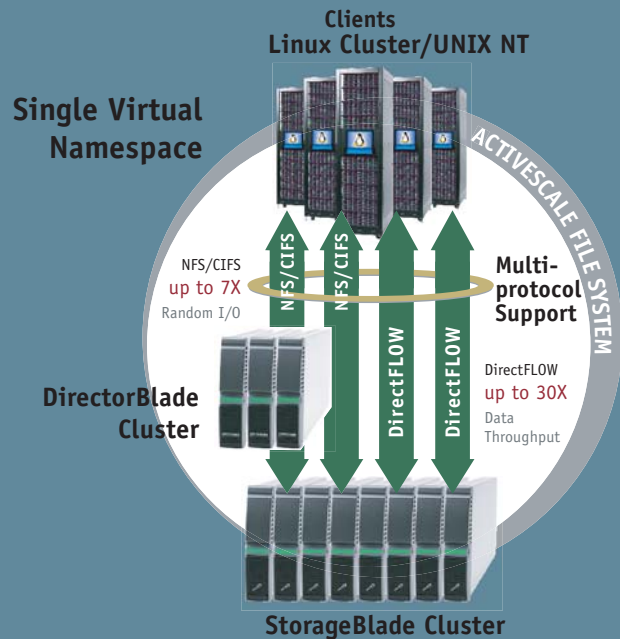
NFS/CIFS - the file system also uses clustering technology to create a virtual NFS/CIFS server that accesses data within a single namespace, avoiding the high cost of managing multiple NFS/CIFS servers. Customers can access data without making any changes to their infrastructure, and can scale performance in a near linear fashion.

RECORD-SETTING PERFORMANCE

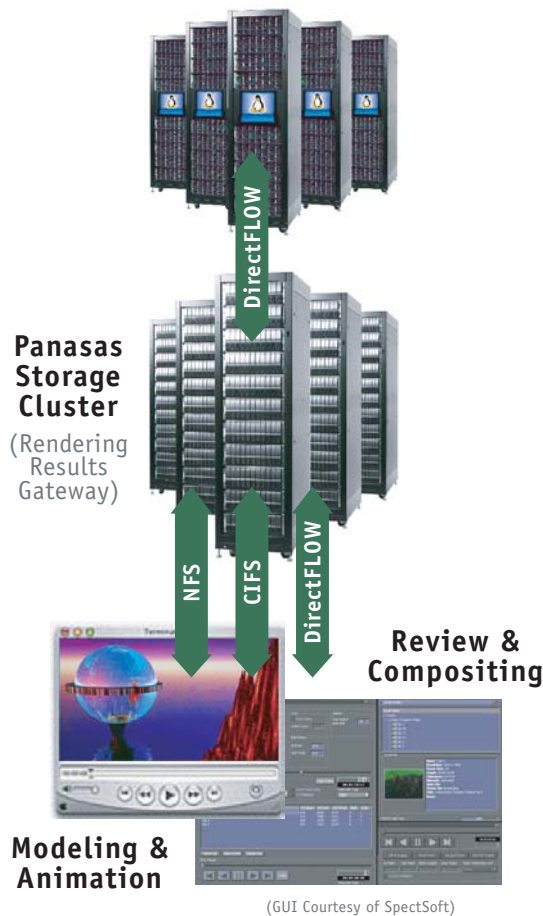
The Panasas Storage Cluster is the first storage system that delivers record-breaking performance in both raw throughput and random I/O. By avoiding the single data path bottleneck of traditional storage networks, the Panasas Storage Cluster has the ability to deliver in excess of 10 gigabytes per second of data throughput, a 30X improvement over competitive solutions!¹

But Panasas is not just optimized for data bandwidth. The Panasas Storage Cluster has set records in random I/O with the ability to scale beyond 305,000 SFS random I/O operations/second, delivering the fastest random I/O performance on the market.²

Only Panasas offers world-class performance in a low cost industry-standard hardware package. This means the Panasas Storage Cluster can provide superior performance at attractive prices, making it the best value available.



Rendering Cluster



SETTING NEW STANDARDS FOR SIMPLICITY

The Panasas Storage Cluster is designed from the ground up to break through the physical and logical barriers of existing storage networks. By using an object-based architecture, the Panasas Storage Cluster virtualizes files across the entire system. As files grow in size, data objects grow seamlessly. This approach creates a single virtual namespace and eliminates the fixed physical and logical boundaries of today's network storage solutions. The Panasas design eliminates time consuming tasks such as taking volumes offline to re-stripe to new higher capacity volumes or deleting and contracting volumes. All of these features help deliver up to a \$70,000 greater return on investment for every terabyte installed over the life of its use.

A TAILORED SOLUTION FOR MEDIA RENDERING

In render farms, model files drive the rendering of individual frames and sequences. While individual jobs may have modest bandwidth requirements of 10 to 20 megabytes per second, these rendering clusters demand high aggregate bandwidth, often in excess of 1 gigabyte per second. The bandwidth is essential to efficiently utilize valuable content production resources. The Panasas Storage Cluster delivers exceptional data throughput performance for rendering, compositing, and "digital daily" review activities.

¹ The 32 shelf bandwidth performance test was conducted using a 1 DirectorBlade, 299 StorageBlade configuration running a standard sequential read/write test. The system achieved 10.1 GB/sec.
² The SFS performance achieved is in accordance with the Standard Performance Evaluation Corporation System File Server (SPEC SFS_R1 V3.0) test for NAS server performance. The 30 shelf test was conducted using a 2 DirectorBlade, 9 StorageBlade configuration and achieved 305,805 SFS ops/sec with an overall response time (ORT) of 1.76 msec



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