Creating a Unified HPC and Storage Solution

Panasas ActiveStor Storage Provides Parallel Data Storage for Microsoft® Windows® Compute Cluster Server 2003

Windows Compute Cluster Server 2003

panasas®

Accelerating Time to Results™

Customer Profile

Panasas, Inc. is one of the industry leaders in unified storage clusters for the high-performance computing (HPC) market. Panasas' parallel storage products, ActiveStor 3000 and ActiveStor 5000, can provide unprecedented storage capacity and throughput for applications in the Oil and Gas, Sciences, Financial Services, and Media and Entertainment industries.

The Challenge

Today's businesses, universities, and various government agencies, are leveraging more sophisticated applications to drive new levels of innovation and growth. Whether it's mapping the human genome, simulating a car crash, or imaging the earth's substructure to find new energy reserves, these data-intensive applications require both HPC and high-capacity data storage solutions. However, traditional HPC infrastructures can be difficult to use, often requiring specialized IT skills to set-up, administer, and maintain. Similarly, traditional storage systems require significant administrator involvement - copying data from silos of attached storage for cluster processing and then back again. This type of system is not only time-consuming from an administrative standpoint, it introduces risk into a project lifecycle by impeding the workflow - adding to the potential for higher development costs.

Solution

Panasas ActiveStor 3000 and ActiveStor 5000 combine with Microsoft® Windows® Compute Cluster Server 2003 to create a high-performance storage and compute cluster solution, with fast access to data storage from the supercomputing infrastructure. The combination can provide an efficient, easy to use, and highly scalable solution for client-to-storage access. And by using industry-standard ethernet networks and 64-bit processors, this solution offers an attractive ROI that can help minimize hardware costs and maximize your investment in the existing network infrastructure.

Benefits

Combined, Panasas ActiveStore storage and WCCS can help:

- Simplify HPC and storage administration.
- Provide unsurpassed capacity and performance.
- Improve cross-discipline collaboration.
- Drive faster time to results.

Overview

In today's competitive marketplace, increasing productivity and speeding time to market are essential for reducing the cost of innovation. Implementing an HPC solution to reduce the runtime of data-intensive calculation is essential, but traditional open-source HPC systems are known to be complex, often amassing large IT overhead costs. Windows Compute Cluster Server (WCCS) 2003 can provide an HPC platform that helps to remove cost and complexity barriers from HPC.

Another way to achieve dramatic improvement in the run time for data-intensive application processing is through the storage system. Panasas ActiveStor storage can greatly enhance the performance and productivity of your HPC infrastructure by reducing data duplication, enhancing collaboration, and speeding the overall workflow process.

Panasas ActiveStor Storage Clusters

Panasas ActiveStor storage combines a parallel file system with object-based storage to create a single unified namespace for data storage and retrieval. This can help to dramatically reduce IT overhead and simplify management of the storage infrastructure. With support for both Network File Systems (NFS) and Common Internet File System (CIFS) protocols, ActiveStor storage can integrate seamlessly into existing datacenter environments.

ActiveStor storage high bandwidth and enhanced random I/O performance can provide greatly accelerated throughput and processing speeds. With terabyte to petabyte capacity, ActiveStor storage can grow with your business needs, automatically incorporating storage capacity as it is added.

Windows Compute Cluster Server 2003

WCCS is a high-performance computing platform that is easy to deploy, operate, and integrate with your existing infrastructure. WCCS is deployed on industry-standard 64-bit computers. With its familiar user-interface and cost-effective scale-out capabilities, WCCS is removing the cost and complexity barrier from HPC, leveraging your existing Windows infrastructure and administrator's skill-set for managing the HPC system. WCCS also includes an integrated Job Scheduler, which helps increase your computer utilization rate by managing job queues and scheduling runs according to priority.

The Combination

At the heart of building a high-performance, scalable storage and data processing solution is its ability to scale linearly as disk capacity is added. Panasas ActiveStor storage and WCCS can help maximize scalability and availability, while providing the processing speed and random I/O performance that today's data-intensive applications require to run quickly.

By integrating Panasas ActiveStor storage and WCCS into your organization, you can establish a high-performance solution that requires minimal administrator involvement. It uses industry-standard hardware for cost savings, and helps to capitalize on your existing administrator skill set for managing the system. It helps streamline the workflow process, which can save both time and money, and ultimately enables you to deliver better products to market, faster.

Panasas ActiveStor storage and WCCS can help speed your project development life-cycle, and deliver your products to market ahead of the competition.

Microsoft®

Creating a Unified HPC and Storage Solution

Panasas ActiveStor Storage Provides Parallel Data Storage for Microsoft® Windows® Compute Cluster Server 2003

Windows Compute Cluster Server 2003

panasas®

Accelerating Time to Results™

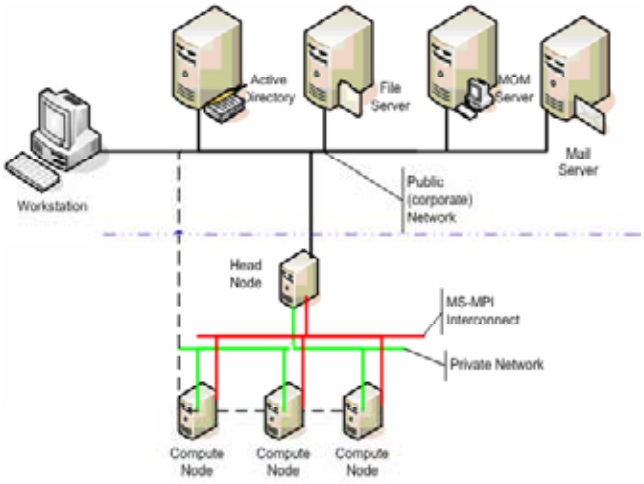
WCCS Architecture

The Windows Compute Cluster Server 2003 head node:

- Controls and mediates all access to the cluster resources.
- Is the single point of management, deployment, and job scheduling for the compute cluster.

Windows Compute Cluster Server 2003 uses the existing corporate infrastructure and Active Directory for:

- Security features
- Account management
- Operations management



WCCS System Requirements

CPU Requirement:	**64-bit architecture computer Intel Pentium, or Xeon family with Intel Extended Memory 64 Technology (EM64T) processor architecture, or AMD Opteron family, AMD Athlon family, or compatible processor(s).**
Minimum RAM:	**512 MB**
Maximum RAM:	**32 GB**
Multiprocessor Support :	**Up to 4 processors**
Disk Space for Setup:	**4 GB**
Disk Volumes:	**Head node requires a minimum of two volumes (C:\ and D:\). For additional roles, additional partitions are recommended. Compute node requires a single volume. RAID 0/1/5 may be used, but is not required.**
Network Interface Cards:	**All nodes require at least one. Each node may require additional network interface cards as appropriate for the network topology, for public network access or in support of an MPI network.**

More Information

For more information about Windows Compute Cluster Server 2003, please visit http://www.microsoft.com/hpc

For more information about Panasas ActiveStor Storage Clusters, please visit http://www.panasas.com

For information about purchasing Microsoft Windows Compute Cluster Server 2003, please email hpcinfo@microsoft.com

To join the HPC Community, please visit http://www.windowshpc.net

Microsoft Corporation • One Microsoft Way • Redmond, WA 98052-6399 • USA

Microsoft®