

PANASAS® ACTIVESTOR® AND STAR-CCM+



Parallel Storage Solution Delivers Breakthrough Performance for Advanced CFD Applications

CD-adapco is the world's largest independent CFD-focused provider of engineering simulation software, support, and services. The company's STAR-CCM+ provides comprehensive simulation capability for solving problems involving flow of fluids and solids, heat transfer, and stress within a single integrated package. Obtaining results quickly requires extreme processing power matched to a big data storage solution that eliminates I/O bottlenecks.

FEATURES AND BENEFITS

PANASAS® DIRECTFLOW® PROTOCOL

Maximizes Performance

Parallel I/O enables faster CFD solutions from STAR-CCM+

Maximizes Productivity

Drives STAR-CCM+ efficiency with increased job throughput and scalability

UNIFIED STORAGE INFRASTRUCTURE

Empowers Collaboration

Engineers can speed-up collaboration tasks of pre- and post-processing because of shared data and storage for all platforms.

SINGLE GLOBAL NAMESPACE

Reduces IT Overhead

Simplifies storage and data management to streamline storage administration and provide seamless scalability as STAR-CCM+ model sizes and number of jobs grow.

NFS AND CIFS SUPPORT

Easy to Integrate

Supports heterogeneous CAE environments with Linux, Unix, or Windows.

Panasas and CD-adapco worked together to optimize STAR-CCM+ to take full advantage of the performance and scalability features of Panasas ActiveStor storage. Companies who deploy STAR-CCM+ with Panasas storage will dramatically reduce overall processing time—improving user productivity and reducing project time while simplifying storage operations and management.

UNPRECEDENTED PERFORMANCE

Replacing legacy platforms with Panasas parallel storage allows STAR-CCM+ to achieve up to a four times (4X) performance increase. That means reduced idle time spent waiting for results which means shorter project times. As model sizes grow, Panasas storage delivers even higher performance and therefore more value.

UNIFIED STORAGE EMPOWERS COLLABORATION

ActiveStor, with its unified storage architecture, serves all elements of the CAE workflow, avoiding the need for data duplication or migration. Lost productivity due to typically long transfer times of large files over a network can be eliminated to improve collaboration among CAE workgroups.

“Using the Panasas parallel file system dramatically improves the performance of our software,” said Steve Feldman, VP Software Development at CD-adapco. “ActiveStor is robust, simple to maintain, Panasas support is good, and—it just works.”

“We are constantly striving to create an up to date computer environment as a showcase to what can be accomplished with our software in an affordable compute environment. When our customers ask us what we use, we tell them—Panasas storage.”

Steve Feldman

VP Software Development at CD-adapco



ARCHITECTED TO ACCELERATE RESULTS

ActiveStor provides a single namespace of shared storage providing a unified CAE workflow. An object-based storage architecture drives I/O directly between cluster compute nodes and the storage system, eliminating system bottlenecks that impact traditional network attached storage (NAS) architectures. This gives I/O intensive CFD simulations the ability to scale in order to deliver faster overall turn-around times.

SIMPLIFIED MANAGEMENT LOWERS OVERHEAD

Panasas storage systems seamlessly install in minutes and do not require production downtime during installation or upgrades. A single console interface monitors and manages an entire cluster and automatically incorporates storage capacity as it is added reducing IT overhead and improving productivity.

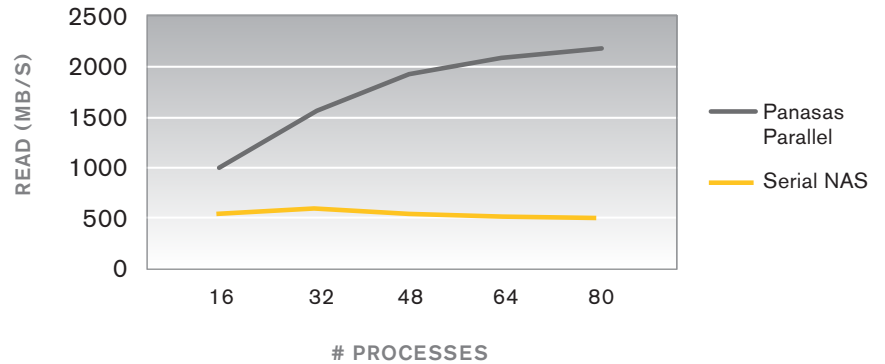
TIME IS MONEY

Panasas storage delivers performance optimized for STAR-CCM+, extreme scalability, and simplified management—reducing time to project completion. The Panasas parallel architecture allows for linear, scale-out growth to easily accommodate customer requirements for big data design applications. When time is money, Panasas delivers.

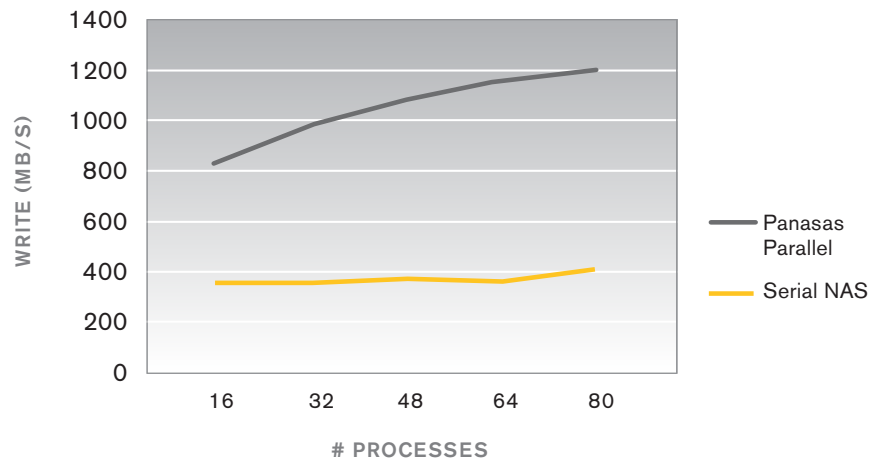
“Panasas ActiveStor dramatically improves the performance and scalability of our CAE and CFD solutions. Our partnership with Panasas makes it easier for our customers to design better products, faster.”

Steve MacDonald
President and Co-Founder of CD-adapco

Read (MB/sec)



Write (MB/sec)



BENCHMARK PLATFORM

STAR-CCM+ Version 6.05.073 | Compute cluster: 16-node Intel Xeon X5650 CPUs | 17M cell Epsilon Euskadi Le Mans car model | InfiniBand and 10GbE network connectivity | Panasas ActiveStor 12 120TB parallel vs. serial access

ActiveStor Accelerates STAR-CCM+ Performance

FASTER SIMULATION RESULTS

REDUCED PROJECT TIME

IMPROVED USER PRODUCTIVITY

ActiveStor dramatically improves throughput, taking full advantage of multi-core processing

OVER 4X PERFORMANCE IMPROVEMENT FOR READS

OVER 3X PERFORMANCE IMPROVEMENT FOR WRITES