SIEMENS PLM SOFTWARE Enhances Product Design with Faster Simulations

Panasas ActiveStor System Speeds Modeling Computation While Minimizing Downtime and Drain on IT Staff

SUMMARY

CUSTOMER
Digital Factory Division of Siemens PLM Software, Inc. (formerly CD-adapco, Inc.)

SIZE
10,001+ employees

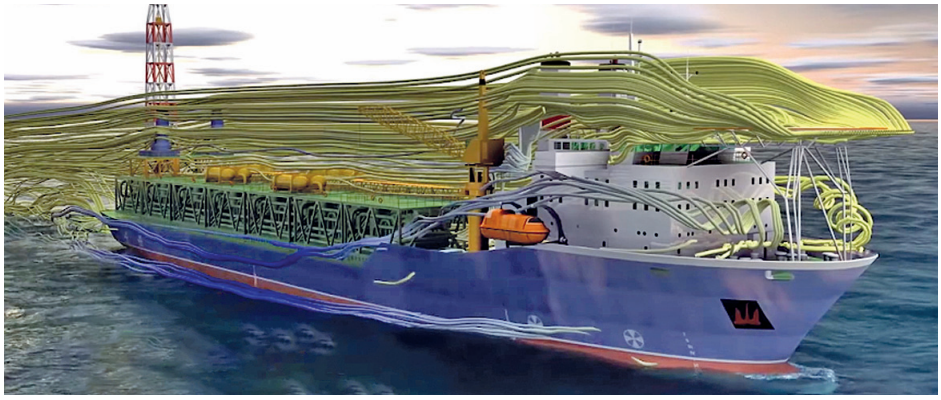
LOCATION
Melville, New York

INDUSTRY
Manufacturing

CHALLENGE
- Remove storage bottlenecks to improve system performance.
- Minimize the administration and maintenance time storage requires.
- Provide high reliability for mission-critical systems.

SOLUTION
- Benchmarked Panasas storage to identify desired level of performance
- Replaced legacy network-attached storage with Panasas solution
- Deployed more than 3 petabytes of Panasas storage to date

RESULTS
- Enabled multiple CFD simulation runs without affecting other users
- Minimized overhead of storage administration
- Achieved high reliability for mission-critical systems



"Once Panasas is up and running, you just forget about it, which is exactly what we need."

Steven Feldman
Program Vice President
Siemens PLM Software

If you carry a smartphone, go to the doctor, turn on a light, or drive a car, your life is affected by engineering simulation. Simulation allows engineers to test new ideas using software models that mimic the behavior of real-world objects, which greatly simplifies the process of trying out alternatives.

Models are only approximations of the real world. As designers need more accurate simulations, they push the

limits of technology. That's where Siemens PLM Software comes in. The company is pioneering an approach

known as multidisciplinary design exploration (MDX). MDX analysis involves multiple physics domain simulations, all within a single software tool, each addressing a specific part of the problem, which together allow an engineer to simulate the entire system as a whole.

Not surprisingly, MDX demands much higher performance from technical infrastructure. Steven Feldman, Siemens PLM Software's Program Vice President, explains, "When we first started doing just CFD [computational fluid dynamics] analysis by itself a few years ago, a single simulation would stop everything else running on the system." His staff traced the problem to legacy network-attached storage, which could not keep up with the input/output (I/O) requirements of the highly data-intensive CFD calculations. Systems that can't keep up with CFD-only analyses have no chance of performing MDX calculations well.

Feldman's team began its search for a storage system that would eliminate the I/O bottleneck of the existing storage. To avoid overtaxing the company's thin information technology (IT) staff, the new system had to be easy to use, highly reliable, and backed by great support.

Panasas Storage Eliminates I/O Bottlenecks, Improves Performance for System Users

A search of commercial storage vendors led Feldman's team to develop a short list that included Panasas. Now it was time to put the vendors through their paces. "The Panasas engineers worked together with us on benchmarks that showed the kind of speed improvements we could expect," says Feldman. Impressed by the benchmark results, Feldman's team installed a Panasas® ActiveStor® system to perform a real-world test.

No Bottlenecks

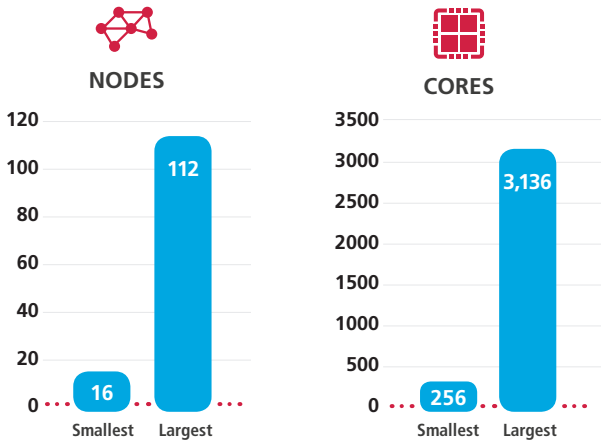
The result? "When we turned on the Panasas system, the bottleneck disappeared," says Feldman. "We were able to run a complex MDX simulation without significantly impacting other system users." The reason is performance: The Panasas PanFS® storage operating system for the ActiveStor appliance uses parallel data paths to substantially increase data throughput to and from storage.

Reliability So Good, You Just Set It and Forget It

One of Siemens PLM Software's requirements was high reliability, both to ensure that the company could meet its commitments to customers and to avoid overloading busy IT technicians. By this measure, the Panasas solution has exceeded expectations. "The new storage system is something we just don't worry about," Feldman says. "Once Panasas is up and running, you can just forget about it, which is exactly what we need."

Easy-to-Use GUI and Great Support

No system can run without any manual intervention, but the Panasas system comes close. "Administration for the Panasas storage is almost nonexistent," Feldman explains. "The graphical user interface is easy to understand, so on those rare occasions when we do have to go into the system, it takes very little time away from our other IT assignments." The Siemens PLM Software team also benefits from exceptional support from Panasas. "When something does break, Panasas fixes it quickly and the system comes right back up," says Feldman. "Data loss is not something we worry about now."



Siemens PLM Software uses Panasas storage on a wide range of cluster sizes, from 16 to 112 nodes.

Siemens PLM Software Leverages Panasas Storage to Move into New Markets

Panasas storage may be "forgettable" in operation, but it's top of mind when Siemens PLM Software needs more storage. "Panasas is deployed on all mission-critical systems," Feldman says. "We have more than a petabyte of Panasas ActiveStor deployed, with more to come."

Siemens PLM Software is moving ahead aggressively on a number of fronts, including the design of Formula One race cars. "Formula One pushes automotive technology to its ragged edge," says Feldman. "Their designers optimize the car's aerodynamic design for every race track." Don't be surprised to see Siemens PLM Software's racing customers continue to get more than their share of checkered flags in the future.

More Information

To learn more about Panasas ActiveStor platforms that bring plug-and-play simplicity to large-scale storage deployments, visit www.panasas.com/products.

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