CERFACS

The EMC VNX5700 unified array, with more than 170 TB of usable capacity, delivers on-demand volume and access at the Toulouse Centre for Research

THE RESEARCH CENTER

Founded 25 years ago, CERFACS—the European Center for Research and Advanced Training in Scientific Computation—provides advanced digital simulation methods and algorithms to its shareholders: CNES (the French Space Agency), EADS, EDF, ONERA (the French Aerospace Lab), and the SAFRAN and TOTAL Groups. It is therefore a critical component of French and European industry.

THE CHALLENGE: ON-DEMAND VOLUME AND ACCESS

For CERFACS, continuous access to raw data received from its research simulations is critical. In addition to the dynamic growth in standard operating data volumes (from 20 to 30 percent per year), the volume has suddenly doubled from the research campaign run in 2010 on Météo-France computers by the CERFACS climate modeling team in collaboration with the CNRM (National Centre for Meteorological Research).

The relocation of these significant volumes into CERFACS for its local post-processing needs required renewal of the secondary storage made up of two NetApp NAS servers, which had been implemented several years before and were now experiencing limited data storage capacities. CERFACS needed to store 160 TB of data alongside production drives linked to super computers. The tender put NetApp in competition with EMC® VNX® unified storage solutions. The VNX array also faced competition from IBM, HP, Hitachi, Bull, and Data Direct Networks. CERFACS was first attracted to the VNX due to the integrated approach of this next-generation array, providing unified storage technologies. “This aspect was very important for us because internally we have a single system administrator who must simultaneously manage the center’s super computers and storage,” explains Nicolas Monnier, IT manager at CERFACS.

THE SOLUTION: OPTIMIZED TOTAL COST OF OWNERSHIP

A high-availability EMC VNX5700™ array was selected. It offered the best performance potential through SAS interfaces that are twice as fast and integrate latest-generation processors.

The solutions proposed by all the bidding competitors offered redundancy, but only the EMC array was based on three heads instead of two, the third being a backup that is ready to take over the activity of a failing head. With competitive solutions, if one of the heads fails, the other one takes over with an impact on performance. The “three heads” proposal by EMC avoids this issue.

Beyond capacity and constant performance, the EMC VNX solution also provides a better total cost of ownership compared to the previous provider. “The global TCO was 10 percent

ESSENTIALS

Challenge
• To have continuous access to raw data received from its research simulations

Solutions
• EMC VNX system
• EMC Unisphere
• Local Protection Suite

Key benefits
• 172 TB of usable volume
• Two storage classes
• High-availability access to data via three NAS heads
• Improved performance
• Unified administration
• Competitive TCO
below NetApp’s offer, and 20 percent below Bull’s,” says Monnier when comparing the figures.

As of April 2011, CERFACS has deployed a 160 TB capacity VNX array for standard data, plus 8 TB for critical data. The standard data is stored on 7,200 rpm NL-SAS drives, and the critical data on the 15,000 rpm SAS drives.

In practice, the VNX array has been implemented very quickly.

“The migration phase of our data took us three months because our data is live. EMC supported us all the way along and the migration went without a hitch,” Monnier explains, very pleased with his choice. “In terms of performance and ease of administration, we got the result we expected.”

FEATURES

“We wanted a scalable solution, easy to manage with efficient and redundant access. In terms of performance and ease of administration, we have obtained the result we expected. And our EMC VNX5700 array is ready for the 10 Gigabit Ethernet technology.”

NICOLAS MONNIER, IT MANAGER, CERFACS IT GROUP

CERFACS wanted to find features comparable to those it liked in the NetApp equipment and that had become obsolete, for example, snapshots that enable point-in-time backups. To optimize data protection and future-proof its investment, the Center for Research intends to use the file deduplication and compression functionality proposed by EMC.

The physical servers are inter-connected to the drives via the 1 GbE network. CERFACS does not currently use virtualization, but expects to implement it soon. The Center is also going to acquire a new super computer with 10 Gigabit Ethernet interfaces. “Another advantage of our EMC VNX array is that it already integrates the 10 GbE technology.”

UNIFIED ADMINISTRATION VIA UNISHERE

EMC Unisphere™, the unified management and administration solution, is another key benefit of the EMC VNX system. Unisphere offers a “single lens” of consolidated storage information, providing an intuitive, context-based approach to management, quick access to virtual and physical systems, and easy data reallocation.

“No training roadmap was needed here. There was just a simple knowledge transfer session between the EMC engineer and our administrator and then we were operational,” says Monnier. Another nice surprise: the IT group has discovered that the upgrades were included in the maintenance contract, an option Monnier had never experienced before. EMC therefore regularly takes care of upgrading the system, enabling CERFACS to operate a permanently up-to-date storage infrastructure.