Infortrend®

The University of Tokyo Decodes the Mysteries of the Universe Using Infortrend RAID Storage

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Dr. Tetsuro Mashimo
Associate Professor
The University of Tokyo

Business:	*Sharing and analyzing vast amounts of scientific data*
Challenge:	*Economically increase storage capacity and improve data transfer efficiency for a growing research database.*
Solution:	*EonStor® RAID subsystems met the challenge for:* *- high capacity* *- high availability* *- excellent price/performance*

THE UNIVERSITY OF TOKYO INTERNATIONAL CENTER FOR ELEMENTARY PARTICLE PHYSICS is striving to solve the various puzzles of the universe by using the most advanced particle accelerator in the world to study elementary particles. The Center is also a participant in the international ATLAS experiment research project which involves over 1,800 scientists worldwide.

The ATLAS experiment uses the Large Hadron Collider (LHC) particle accelerator currently being constructed by CERN (European Organization for Nuclear Research). Once the LHC is completed in 2007, it will start generating several petabytes of data per year for ATLAS alone. This huge amount of data will be analyzed by patching and distributing the data to research institutions worldwide using grid computing.

COSMIC STORAGE ON A MICROSCOPIC BUDGET

To manage this vast amount of data, the University of Tokyo needed to construct a system that incorporated a powerful CPU with high processing capability and a high capacity disk array. Although financial constraints caused the budget to be cut, there was no room for compromise on the capacity, durability, and performance of the data storage device. Installation of this large-scale system was scheduled for the end of 2006; however, research and development activities started five years earlier using an experimental version of the system with a smaller CPU. During testing, the University found that Infortrend's disk array was more reliable and durable than other RAID systems they tried.

Data transfer performance was another concern as one job required a maximum transfer speed of several tens of megabytes per second. Again, the Infortrend product proved itself superior by easily clearing accesses from multiple jobs.

The final criterion was price. Their analysis showed that the cost/performance of the Infortrend array was also better than competitive products. In the end, the University of Tokyo installed 140 EonStor A16F-G2422 SATA-to-Fibre Channel RAID subsystems housing 16 SATA drives each for a total storage capacity of 1.1 petabytes.

Dependable Data Storage is No Mystery

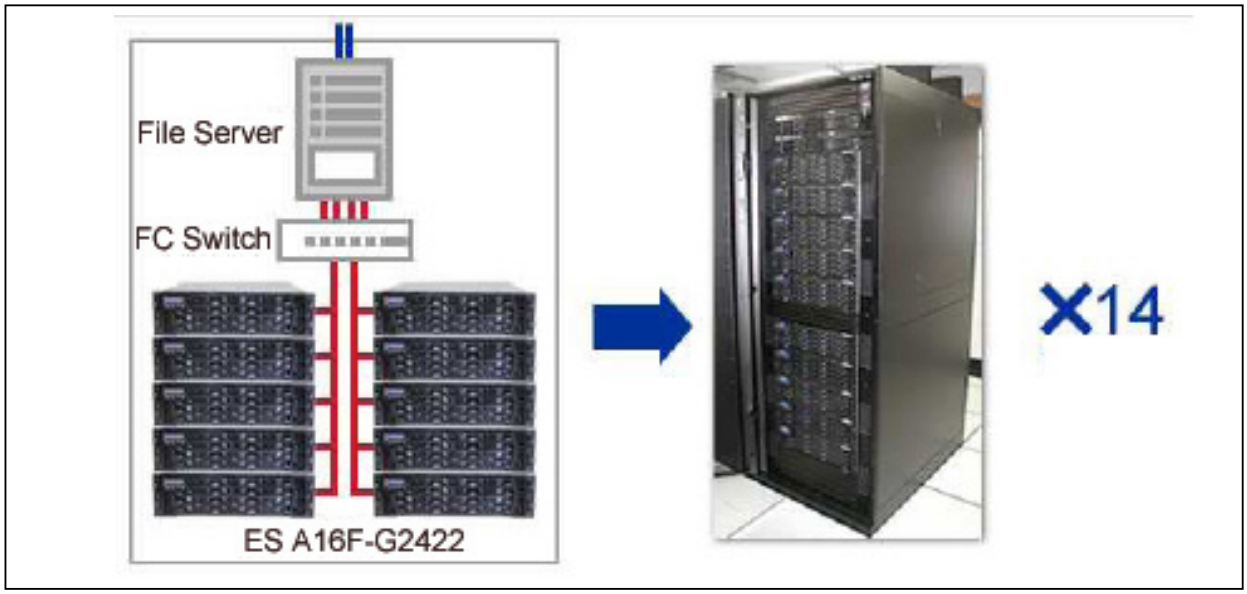
"I have been using Infortrend RAID products for the last ten years for data storage. The products do not have issues of unknown malfunction and are extremely durable," commented Dr. Tetsuro Mashimo, Associate Professor at the University of Tokyo. "We use RAID6 in our system because it considerably reduces the chance of data loss and doesn't require media scan operations. There is no drop in performance due to our switch from RAID5 to RAID6, which is extremely satisfying."

Unlocking the mysteries of the universe requires the dedicated efforts of many people to gather and interpret the data—and massive data storage to safely and efficiently house the information. Infortrend is proud to be part of this fascinating endeavor by providing high quality RAID systems that fulfill the University of Tokyo's stringent data storage requirements.

About the University of Tokyo

The University of Tokyo was established in 1877 as the first national university in Japan. As a leading research university, the University of Tokyo offers courses in essentially all academic disciplines at both undergraduate and graduate levels and conducts research across the full spectrum of academic activity. The university aims to provide its students with a rich and varied academic environment that ensures opportunities for both intellectual development and the acquisition of professional knowledge and skills. The University of Tokyo is known for the excellence of its faculty and students and ever since its foundation many of its graduates have gone on to become leaders in government, business, and the academic world.

Dr. Tetsuro Mashimo and Infortrend RAID



Storage Infrastructure of International Center for Elementary Particle Physics

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