



Academia Sinica Leverages PROMISE Technology to Build the Largest Research Data Center in Taiwan

Challenges

- A demanding and dynamic computing environment
- Sharing computing and data resources for numerous workloads
- Increasing storage capacity, reliability and computing power with limited rack space

Solution

- PROMISE VTrak E830fD and J830fD, providing 2.3 PB of storage space

Results

- Provided four times the performance than ASGC's original architecture
- Optimized ASGC's datacenter rack space
- Saved up to 18,100 KW of power
- Provided up to 2.3 GB/s sequential write and 5.0 GB/s sequential read throughput

Academia Sinica Grid Computing Centre

The Academia Sinica Grid Computing Centre (ASGC) hosts a Tier-1 center in Taiwan where performance is critical for day-to-day operations. ASGC also demands low latency, reliability and optimized storage capacity, yet has limited rack space to expand. By using PROMISE Technology VTrak x30 series data storage, ASGC scaled up to approximately 2.3 petabytes (PB) of hard-disk-based storage in its datacenter. By properly tuning the computing grid, ASGC enabled the grid to respond dynamically, efficiently and responsively to user demands. Additionally, the Centre significantly enhanced the overall grid system computing performance as well as data storage reliability.

Improved performance and reliable data storage formed the solid foundation for the entire grid computing system. PROMISE VTrak x30 series RAID subsystem drives up to 2.3 GB/s sequential write and 5.0 GB/s sequential read throughput. In grid computing, the data request size varies dramatically from a few kilobytes up to multiple gigabytes. PROMISE storage can accommodate simultaneous requests for data in various sizes while offering outstanding performance. With an industry proven PerfectRAID™ technology and fully redundant system design, PROMISE VTrak x30 series offers no single point of failure and exceptional reliability.

“After using PROMISE VTrak x30 storage, we were able to achieve significant savings in rack space, and save 18,100 KW of power.”

*Dr. Shi-chang Lee
CEO, ASGC*

According to Dr. Shi-chang Lee, speaking for data center operation management, the most important factor is rack space, followed by power consumption and cooling. By using PROMISE storage, ASGC was able to continuously increase the storage capacity within the limited rack space, as well as improve performance and reliability of the overall infrastructure, thereby increasing overall grid data center efficiency.

“In the past, four storage subsystems were connected to four blade servers. Now, one PROMISE VTrak x30 storage subsystem can provide four times the storage capacity as well as the computing power. It only requires one blade server to connect to it, and the capacity adds up to 200TB per server. In other words, it achieved significant savings in rack space,” said Dr. Lee. In the meantime, with fewer blade servers, fewer storage enclosures and energy saving design in VTrak x30, ASGC not only reduces its initial acquisition cost, but also achieved significant savings on power and cooling by 18,100 KW.

About PROMISE VTrak x30 Series

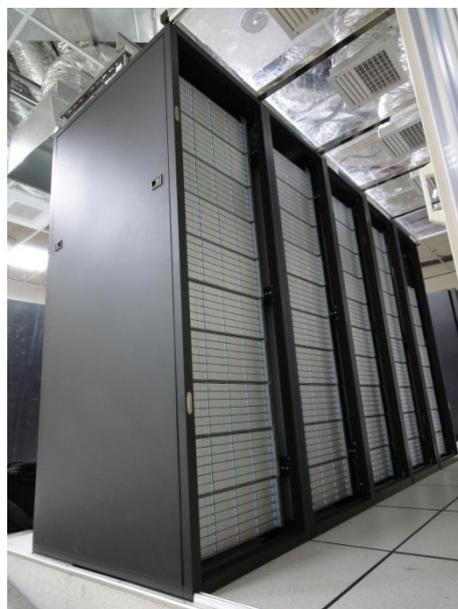
The VTrak x30 Series RAID storage subsystems set a new standard for high availability storage, offering unmatched performance, reliability and value. The x30's elegant streamlined appearance is only surpassed by the exceptional performance and robust RAID technology. Reliable factory integrated drives make installing VTrak easier than ever.

About Academia Sinica

Academia Sinica is the national academy of Taiwan. It supports research activities in a wide variety of disciplines, ranging from mathematical and physical sciences, to life sciences, and to humanities and social sciences. Academia Sinica's list of academicians includes seven Nobel laureates. For more information about Academia Sinica, please visit www.sinica.edu.tw/main_e.shtml.

About the Grid Computing Center

The Academia Sinica Grid Computing Center (ASGC) hosts a Tier-1 center of the Worldwide LHC Computing Grid (WLCG), a distributed network designed by CERN to handle the massive amounts of data produced by the Large Hadron Collider (LHC), the largest particle accelerator in the world. Tier-1 institutions receive specific subsets of the raw data. They serve as a backup repository for CERN and they perform reprocessing when recalibration is necessary. ASGC is one of the eleven Tier 1 centers around the globe, and the only Tier-1 center in Asia. ASGC is responsible for long term retention of around one seventh of the WLCG data, and provides the storage and computing resources for Asian high energy physics research institutions. For more information about ASGC, please visit www.twgrid.org.



These 48 PROMISE VTrak x30 RAID storage subsystems store up to 2.3 PB of data in ASGC

About PROMISE Technology

With a long history of innovation, PROMISE Technology develops and manufactures sophisticated RAID solutions recognized worldwide, ranging from a complete line of RAID controller cards to Fibre Channel, iSCSI and SAS RAID subsystems, supporting SAS and SATA drives. Catering to enterprise, mid-range and entry-level consumer data protection needs. Headquartered in Milpitas, California, USA, PROMISE has operations throughout Asia and Europe. For more information, please visit PROMISE Technology's website at www.PROMISE.com.