“Hitachi Data Systems (HDS) is a best-in-class IT solutions provider, offering a reliable and efficient private cloud solution for our school. With HDS products, we deploy a reliable and stable campus private cloud storage platform, which becomes more convenient for the teachers and students in daily life.”

Xin Jin
IT Administrator
Shanghai Institute of Technology

Shanghai Institute of Technology

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Hitachi Data Systems Builds Campus Private Cloud Storage Platform for Shanghai Institute of Technology

Established in 2000, Shanghai Institute of Technology is a full-time university with 19 level-2 schools and departments, as well as 44 undergraduate programs. To support 18,000 full-time students, 1,700 faculty members and more than 380 doctoral (mater) supervisors and senior teachers, the university’s IT environment required updating and expansion. Hitachi Data Systems proposed a campus private cloud solution to deliver high performance and reliability as well as unified management and online expansion capabilities.

Applications and Data Volume Demand Improved Storage

Through many years of construction, Shanghai Institute of Technology (SIT) has built a core server room in its Information Building in Fengxian Campus. It has also built a star network structure covering the whole school. The university has built the IT network and platform for its digital campus management platform, campus card business, e-learning, multimedia video on demand, electronic library and mailing application. It has implemented campus-wide information sharing.

However, the IT environment faced many challenges: Applications demand more and more from the back-end data storage system. For example, the university uses Oracle Real Application Clusters (RAC) for campus card and digital campus applications, and Linux MySQL dual-machine system for the mailing application. Total data volume used exceeds 30TB. Existing storage devices are outdated, and the performance and reliability are low. The conflict between actual operational capacity and IT development of the school is increasingly apparent.

More importantly, the VMware host virtualization platform used in SIT’s library system also demands high performance and high capacity from the back-end storage system. Over 30 virtual machines are deployed on 8 physical hosts to provide the load balancing for electronic book management and access. These library activities require the back-end storage system to provide a more stable performance and larger storage space, over 60TB, for online space expansion.

The Challenge: Build Campus “Cloud” with High-Performance Cloud Storage Platform

SIT opted to implement a campus-level unified cloud storage platform to answer these challenges. In addition to meeting performance and reliability requirements, this cloud storage platform was expected to deliver unified management, unified allocation, unified protection and online expansion of the storage resource. SIT identified the following specific objectives:

- Build high-performance, stable and reliable campus-level unified cloud storage based on SAN architecture.
- Consolidate existing storage resources of SIT, facilitating a unified storage management and asset reuse by storage virtualization.
- Migrate data online between different layers of the storage systems to achieve hierarchical data storage and scientific management.
- Provide improved data protection for critical core applications, such as campus card, digital campus, mail and so forth.
- Adjust storage resources online to meet current business data growth and possible new business deployment requirements in the future.

During the implementation, from model selection at the beginning to the services provided in actual operation, SIT was impressed with industry-leading Hitachi cloud storage technology and professional service.
University Chooses Industry-Leading Hitachi Technology

After considering many leading professional storage solution providers, Shanghai Institute of Technology finally chose a unified cloud storage solution from Hitachi Data Systems. SIT chose HDS because:

- The virtualized private cloud storage solution from HDS is the most reliable in the industry and enables 100% data availability.
- The HDS storage solution can fully virtualize the hierarchical storage and data protection. Core applications are deployed in Tier 1 storage with high performance and high reliability, while noncritical applications are deployed in Tier 2 storage.
- The HDS solution fully considers the data protection of core applications. From real-time image of physical layer to scheduled snapshot of logic layer, it provides effective double protection, without the risk of the data loss.
- All storage resources are managed in a unified way through a storage platform and interface, and the capacity can be adjusted online anytime. It is flexible and easy to operate and maintain.

During the implementation, from model selection at the beginning to the services provided in actual operation, SIT was impressed with industry-leading Hitachi cloud storage technology and professional service.

The Solution: Unified Cloud Storage

To meet the actual demand of Shanghai Institute of Technology, HDS provided a unified cloud storage solution. Hitachi Universal Storage Platform® VM (USP VM) and Hitachi Adaptable Modular Storage 2300 (AMS 2300) achieve unified management with Hitachi Universal Volume Manager (UVM) software. The solution topology is shown in Figure 1.

University Benefits from Greater Efficiencies, Readiness for Growth

The campus cloud storage platform from Hitachi Data Systems improves the operating efficiency of Shanghai Institute of Technology IT systems. The university can rely on the solution’s performance and reliability. The storage resource maintenance and allocation are simplified, which increases satisfaction of teachers and students using the system. In addition to meeting existing campus application and IT requirements, the high scalability of the Hitachi solution readies it to meet future data growth requirements of the campus.