Beijing Normal University
Case Study

Nexenta Delivers Storage for Virtual Desktop Infrastructure

Beijing Normal University
Zhuhai, China
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Higher Education

Summary

Challenge: Provide storage to support implementation of a virtual desktop infrastructure

Solution: NexentaStor

Platform: Supermicro Server, VMware vSphere, VMware Horizon 5.2

Use Case: Backend storage for VDI

Benefits:

- High performance, easier management, and lower TCO
- Elimination of local disk performance in VDI environment
- No storage vendor lock-in with Software-Defined Storage

Business Overview

Beijing Normal University, known as 北师大 or Beishida, is a public research university located in Beijing and is one of the oldest and most prestigious universities in China. Founded in 1902, it places strong emphasis on the humanities and sciences and has more than 22,000 full-time students, including 8,900 undergraduates, 11,300 graduates and 1,800 long-term international students. The campus has one education faculty, 22 schools and colleges, two departments, and 36 research institutes. The library boasts more than 4.1 million volumes and some 17,300 GB of digital resources, with 1,400 GBs of e-books. Beijing Normal University Zhuhai (Zhuhai School) is a branch school located in Zhuhai, Guangdong Province, China.

Challenges

Along with the constantly expanded scale of Zhuhai School, its number of students has been increasing, posing great challenges to traditional teaching methods. Most modern teaching work is computer-aided, so the management and response speed of a school's computers directly affect the efficiency of teaching. All universities and colleges need today to be equipped with more computers and computer rooms – and they need those to deliver excellent performance.

With these dynamic and diverse user requirements, Zhuhai School's desktop management was affected by the complex multi-OS environment, limited budget, and the maintenance challenges of mobile devices, software patches, and upgrades. It was facing increased costs due to complex desktop environments, including backup, recovery, remote access, and other services. Management was inconvenient because of incomplete terminal PC control, lack of standardization, increase of management complexity, and problems with patches, updates, and transfers. Finally, like any organization, the Zhuhai School had to deal with increasing security risks, including the difficulty of installing security patches in a timely way and the threats and consequences of security violations offsetting system growth.

Solution and Benefits

Solution

To deploy desktop virtualization in a rational and phased way, the IT team planned to initially create about 120 virtual desktops at the Zhuhai School. IT decided to consider comprehensive desktop virtualization only after teachers and students had become accustomed to the application and management characteristics of virtual desktops.

IT planned to deploy 60 virtual desktops at each of the school's two sites. Each virtual desktop has two-core CPU, 2GB memory, 50GB hard disk, the capability of reading and writing 30 IOPS, server performance and density, and IOPS storage performance provided by Nexenta.

The 60 virtual desktops need two two-way servers and multiple back-end virtual machines to run a complete set of server-supporting component systems for AD domain control, Connection Manager, vCenter Server, thin apps, Stratusphere performance monitoring, and Composer management.

Partial backup is necessary because each system should be equipped with a virtual machine installed with various operating systems and be online, so the Zhuhai School needed about 10TB of storage space.

Benefits

Zhuhai School's virtual desktop environment meets teaching needs, and the desktops are used for more than six hours a day. IT can create 60 desktops at each site in less than ten minutes using a template.

The new environment is a tremendous success in reducing maintenance costs and freeing Zhuhai School's IT experts from the need to constantly solve PC problems and manage updates. With the virtual desktops, it's fast and easy to deploy application software from the data center, rather than having to go to each PC. Plus, with the Nexenta solution and virtualized desktops, Zhuhai School can manage all its critical data centrally, eliminating the danger of losing data or core system functionality due to PC security issues.

System Configuration

- SuperMicro SuperStorage Server 6047R-E1R24L
- Six standard 200GB SSD hard disks (Enterprise) supporting hot-plug
- 18 standard 3.5-inch 600GB 15K SAS hard disks (Enterprise) supporting hot-plug
- Dual-processor control and Active-Active mode, two standard Intel Xeon E5-2620 V2 CPUs
- Eight standard 16GB (128GB) 1600MHz DDR3 enterprise memory

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