CASE STUDY
Intel® Xeon® Processor 5600 Series
Education
Desktop Virtualization

Desktop services on cloud provide easy deployment and administration for all kinds of applications

Intel® Xeon® processor 5600 series combined with VMware vSphere* and VMware View 4* virtual desktop system streamlines National Chi Nan University's IT environment and advances them into cloud technology

National Chi Nan University is located in Nantou, Taiwan, Republic of China. Its mission is to fulfill the need for higher education in the region, increase education opportunities for overseas Chinese, bring about balance in regional development, and promote international collaboration and exchange.

"With VMware View 4* cloud desktop system supported by Intel® Xeon® processors, all types of personal computers at Chi Nan University can now be used to run complex software titles. We've also decreased maintenance costs, reduced our utility bills, and managed our software assets centrally, providing increased flexibility. This has added value for our users and helped us realize cost reductions in terms of management."

Hong Zhengxin
Data and Network Center Director
National Chi Nan University

CHALLENGES

- **Make licensed software readily available.** Consolidate software licenses and have them easily accessible for remote users through cloud technology.
- **Improve system accessibility.** Enable faculty members to remotely access the system and maintain work-life balance while maintaining a practical management strategy that would optimize the system's usage and efficiency.

SOLUTIONS

- **Activate the maximum potential of Intel® Xeon® processor through VMware vSphere.** Use the advanced features of Intel® Xeon® processors 5600 series with Intel® Virtualization Technology to create a virtual platform to be used throughout the campus.
- **Install VMware View 4 virtual desktop system.** VMware View 4 enables the consolidation of software licenses, allowing users to run numerous applications regardless of their actual system capabilities through a private cloud hosted on Intel Xeon processor 5600 series-based servers.
- **Deploy Intel – ISV Enabling Program, International Institute for Educational Planning (IIEP).** Optimize the project development cycle with IIEP, enabling the private cloud environment to be up and running in less than five months.

Introduction

It is a great challenge maintaining IT resources on campus—evaluating IT requirements of faculties, procuring assets, configuring them, and providing ongoing support. At National Chi Nan University (NCNU), these requirements include software and hardware assets that are centrally managed and used by 6,500 staff and students. These computers are in classrooms, workstations used by faculty members, and end-user computers.

This challenge is dealt with by a team of 21 engineers at the NCNU's Data and Network Center. They are responsible for developing the university's administrative system, maintaining campus-wide connectivity, ensuring that the network is at its optimal performance, and maintaining all IT resources on campus. The team supports and administers the software the staff uses to support the curriculum and develop programs deployed on the in-house systems.

The team also provides IT support for a large number of integrated services including developing and maintaining distance learning programs for children who live in remote areas, the national high-school placement and registration portal. And since NCNU also serves as a high-speed network center for central Taiwan, the team is also responsible for the backbone connecting the Northern and Southern areas on the national e-learning network.

Assessing the situation

Explaining the University's need for an efficient virtual system that would cut down the requirements of host computers and streamline the system's management process, Center Director Hong Zhengxin says, "Faculty members have a variety of responsibilities that result in different computing requirements. Some faculty members need to use the same suite of software on different computers. To have a variety of application programs installed on different computers is a burden to manage and is not optimum in terms of usage and efficiency."

He adds, "Some staff requested remote access to these systems from their homes. However, we need to keep track of software titles and specific versions installed on end-user machines, and it is not feasible to allow software licensed by the University to be installed on personal machines. We need a practical management strategy and this presented a big challenge for us at the Data and Network Center."

Intel Xeon Processor 5600 series powers VMware View 4 virtual desktop system, transforming National Chi Nam University's system into a cost-effective and more efficient mobile IT environment

Taking things to the next level with cloud technology

During the winter break in February 2011, NCNU began to roll out VMware View 4* for desktops on their virtual private cloud. VMware vSphere* virtualization platform was deployed and after running various compatibility tests and performance benchmarks, the team discovered that servers running on Intel Xeon processor 5600 series delivered the best results. They then started offering cloud computing services hosted on these servers.

Working in collaboration with equipment manufacturers and vendors, the system officially came online in July. The implementation and rollout took less than half a year, and Center Director Hong Zhengxin attributes their success to the earnestness of the team that researched and designed the solution used for their virtual private cloud. With the swift deployment of their virtual cloud, NCNU saved on IT management and licensing costs and boosted their productivity.

Hong points out that when configuring a VMware cloud platform, thorough understanding of the technology is needed. This is why Data and Network Center engineers were sent for VCP training to become VMware Certified Professionals. Adopting methodical approaches, integration issues were minimized, enabling the system to be quickly brought online.

Also, having conducted in-depth research into the area of cloud services, Hong Zhengxin shares that, "Ensuring that users get the most out of resources available on the cloud is a key priority." Hence, at NCNU, more IT services are being moved onto the cloud platform, including services that can be integrated with external clouds. For example, some of the mail services have been moved to Gmail*.

Consolidating licenses, streamlining management processes

With the VMware View 4 virtual desktop system, data and network engineers at NCNU were able to consolidate all software licenses using Microsoft Active Directory* management gateway. They established desktop as a service (DaaS) functions within the campus on the virtual private cloud, resolving problems of managing a variety of application programs installed on different computers.

By transferring software packages used for teaching in labs and classrooms such as AutoCAD* and SPSS* onto the VMware cloud computing desktop platform, faculty members and students now have easy access to these software titles. Furthermore, consolidating these software licenses and offering DaaS allows users to access all the frequently used office and administrative systems via their desktop on the cloud. This means they are no longer tied to using only terminals where their user account has been set up. They are even able to access their accounts via Gigabyte* S1080 tablet PCs, and use centrally-managed software titles residing on the servers. With this set-up, software licenses, configuration, and version control can be more easily administered as well.

Now, 40 virtual machine desktops are hosted on three servers. This greatly reduces the number of host computers required, saving space and reducing electricity costs.

Nurturing work-life balance by increasing system mobility

In the past, Hong also observed that administrative staff working overtime often had to bring their children into the office with them. He would see these children falling asleep on chairs in the office next to parents who were working late into the night. Scenes like these left a deep impression and motivated Hong to devise a solution for them.

Rolling out desktop services using VMware View 4 powered by Intel Xeon processor E5640, working mothers were empowered with mobility since they are now able to take their work home with them. They can remotely access all types of online services through a variety of desktop configurations and are no longer constrained by the system. This freedom from their physical workspace allows users to achieve better work-life balance, which significantly increased staff productivity by 30 percent.

Hong believes implementing the virtual private cloud has allowed the University to allocate and deploy existing resources much more efficiently and better meet user requirements.

Being able to achieve these goals is where the true benefits of virtual cloud platforms lie, and a good way of showing the true value of IT personnel. Once the faculty members discovered the benefits this system offered, they helped in promoting it, and boosted customer satisfaction in IT services.

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