Industry

Education

Location

Hong Kong

Key Challenges

- As students bring various devices to school, not only do the school need centralized management, but also need to ensure various platforms with different configurations have the same ability to run the applications and learning softwares smoothly

- Ensuring all the computers on campus can provide students and teachers with applications and softwares they need within limited budget

Solution

By deploying a Virtual Desktop Infrastructure (VDI), students can access the same virtual environment on campus using their own PCs and mobile devices. Meanwhile, they are able to run applications and learning software just as smoothly as on campus.

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VMware Help Hong Kong La Salle Primary School Succeed in Mobile Virtualization Teaching

La Salle Primary School is leading the way for integrating IT with teaching in Hongkong, they are now enabling every student to use mobile learning on different devices and platforms with the help of VMware virtualization solutions.

Background

Founded in September 1957 by Brother Henry Pang, La Salle Primary School (the school), in its half-a-century of existence, has nurtured many talents for the Hong Kong society. There are approximately 1,200 students at school now. These years, with the rapid development of information technology, we should all pay attention to the growing importance of IT. The school, which has always worked to "promote and entrench the use of IT" among its students, has been a keen player in integrating IT with teaching. On the official website of the school, there is a section introducing IT-based learning, including the in campus e-learning system, after-school learning websites, and online learning resources, all aim to encourage students using Internet to enable self-driven learning. The school is also working on a pioneer "paperless learning" program among its Grade Six pupils.

Challenges

La Salle Primary School has two computer laboratories, with about 100 computers for students. In addition, each teacher has a desktop for class preparation and other teaching tasks. However, due to the rapid development of IT and quick update of systems, software and hardware, how to make the best use of limited budget to deliver best technological support to its students and teachers has become a key challenge for the school. In addition, as BYOD (Bring Your Own Device) becomes more popular, the school also encourages the students to engage in mobile learning using devices on various platforms. However, due to various devices, it is hard to realize centralize management. Moreover, the learning software used by the school are not necessarily compatible with all devices. Therefore, technical support staff have difficulty in dealing with various software installation problems. All these issues present obstacles to the school's "paperless learning" project.

Mr. Tang Mun Hon, the head of La Salle's Information Technology Development Unit, said: "Today, a PC

costs about HKD4,000 to HKD6,000. Continuous update of our computers would causing huge expenses. Although we encourage 'BYOD', it is also a challenge for us to ensure student devices in various platforms can all support our applications smoothly, and all with centralized management."

Solution

To deal with these challenges, La Salle Primary chose VMware Horizon 6 solution to deploy their Virtual Desktop Infrastructure (VDI). Now, the school just need to deploy its software and application resources inside the VDI, and users running various devices can access these resources via a virtual interface. Also, La Salle Primary leveraged the latest VMware Virtual SAN technology on their server storages, and used VMware vSphere with Operations Management (vSOM) solution to perform centralized manage on all applications and softwares. And in order to deal with the resulting server stability and support issues, La Salle Primary School also adopted VMware's vSphere Data Protection (vDP) solution.

"The school always encourages students to engage in classroom and extracurricular learning using their personal electronic devices. After the deployment of the virtual environment, students can now use their tablets to review math problems. They can also use the school's Smart Apps Creator at home to create innovative and interesting applications though a computer installed with other OS. They are no longer facing location restrictions, and they can truly engage in mobile learning now."

Tang Mun Hon, head of La Salle Primary's Information Technology Development Unit

VMware products

- VMware Horizon 6
- VMware Virtual SAN
- VMware vSphere with Operations Management
- VMware vSphere Data Protection

Benefits & Results

The most significant benefit brought by the VDI deployment is students and teachers are freed from platform and device restrictions now. Once the students have VMware VDI log-in app installed, they can have interfaces that look exactly like the one used in the campus and use exactly the same applications and learning software smoothly too, no matter their devices run on the Windows, Apple (Mac/iPad) or Android platforms. Mr. Tang said: "The school always encourages students to engage in classroom and extracurricular learning using their personal electronic devices. After the deployment of the virtual environment, students can now use their tablets to review math problems. They can also use the school's Smart Apps Creator at home to create innovative and interesting applications though a computer installed with other OS. They are no longer facing location restrictions, and they can truly engage in mobile learning now."

Mr Tang continued, "We have developed some videos showing how to solve math problems and then uploaded them into campus resources. After the deployment of the virtual environment, students can access these videos at any time, anywhere on their personal devices. As a result, many students who failed in mathematics have seen a significant improvement in their performance."

Meanwhile, the VDI deployment has significantly reduced the hardware pressure at school. All applications and software have been moved to the virtual platform, with strong server support and managed centrally via vSOM. Mr. Tang said: "We are no longer need to install required software or applications on each computer. This has in turn reduced memory and storage consumption, significantly reducing the burden on the school in terms of hardware. Equally important is that it has reduced the workload of our technical support staff and set a positive example in energy-saving and sustainable development for our students."

According to Mr. Tang, "not only has virtualization provided a unified teaching platform that can be accessed on the go, it has also reduced hardware consumption and saved costs."

However, the mobility brought by the VDI deployment has also raised concerns on the security of teaching resources. The school often employs interns and substitute teachers. Information security is absolutely necessary when it comes to sensitive materials such as exam papers and teaching materials. Mr. Tang explained: "After deployed VMware virtual platform, we can ensure the security of all sensitive materials and avoid incidents like leaking of exam paper content. We can now track where every document on the server goes. Even if it has been sent out in the form of an email attachment, we can identify the sender and the recipient too."

At the same time, virtualization requires stable server support. La Salle Primary School is using the latest VMware Virtual SAN technology to centrally manage storages for their 13 servers. In addition, VMware leverages its vDP data protection solution to help the school tackle its data recovery problem with ease. "Compared with traditional server storage methods, VMware's Virtual SAN technology can bring us higher cost efficiency, stability and ease of management. Also, when a server problem occurred in the past, we usually had to spend several days waiting for the vendor's engineer to fix the problem. However, with the VMware vDP solution, we are now able to recover all our data in about 15 minutes. We can save a lot in time, manpower and material resources."

"Through VMware's VDI technology, students can run Microsoft Windows on their tablets now, taking full advantage from this mobile learning practice."

Looking Ahead

La Salle Primary School will continue to apply information technology in their teaching and administration activities. In the future, the school will provide even more students and teachers with virtual services so that teachers will not have to worry about information security as they use campus resources and software on their personal devices. This in turn will help to boost work efficiency among teachers. The school also plans to deploy a more powerful wireless network to support its virtualization deployment, so that students can access their mobile classrooms anywhere on campus.