

Case study

Temasek Polytechnic, Singapore

»FUJITSU'S EXPERIENCE AND KNOWLEDGE IN LARGE-SCALE VIRTUALIZATION PROJECTS PROVED TO BE AN ASSET FOR US IN THE VDI DEPLOYMENT FOR THE SCHOOL«

Mr Lai Garluck, Manager, Infrastructure Systems & Technology, Temasek Polytechnic School of Informatics & IT



The customer

Temasek Polytechnic (TP) was established in April 1990. The six schools within the institution currently offer 53 full-time diploma courses to its 15,000 students, in the areas of applied sciences, business, design, engineering, humanities and social sciences, and informatics & IT. It also offers over 40 part-time courses, up to Advanced Diploma level.

Specifically, the School of Informatics & IT (IIT) provides industry-relevant courses to nurture its students into IT professionals. The school focuses on providing students with ample opportunities to develop their hard and soft skills through various programs.

The challenge

IIT had 53 labs operating a total estimated 1,650 desktops and notebooks. Each station was configured with a specific application and students needing to access a particular application had to go to the designated lab. However, some of these front-end devices were unable to handle new Operating Systems (OS) and applications. This also meant that the IT team had to perform system updates and patching to each work station individually.

The school was seeking innovative ways for effective curriculum delivery as well as to enhance the students' experience and learning process.

The solution

IIT wanted to provide unified academic computing services for its students and staff. A key design consideration was the need for scalability to be able to cater to future growth in user base.

Virtual Desktop Infrastructure (VDI) technology enables individual desktops to run as virtual machines from a centrally managed data center. The key characteristic of VDI was the ability to support a large number of virtual machines in a compact footprint, while maintaining high scalability.

IIT partnered Fujitsu as the lead system integrator in this transformation journey. Fujitsu had extensive knowledge in VDI and experience in large-scale virtualization implementation projects, as well as a good understanding of the education industry.

The customer

Country: Singapore
Industry: Education
Founded: 1990
Employees: 1,200 (as at April 2012)
Website: www.tp.edu.sg

The challenge

The Temasek Polytechnic School of Informatics & IT managed 53 labs and about 1,650 desktops and notebooks, some of which were unable to support new operating systems and applications. The School was experiencing low efficiency and high maintenance costs as each work station had to be managed individually.

The school wanted to provide unified academic computing services for its students and staff. In addition, with an IT-savvy student group, the school was seeking innovative ways to provide easy access to its IT environment remotely and securely.

The solution

Using VDI technology, individual desktops run as virtual machines from a centrally managed data center. With a centrally managed data center, users can access the IT environment remotely and securely from any device. Fujitsu provided professional services and took charge of managing the project to deploy VDI for the School of Informatics & IT.

The benefit

- Improved efficiency and lowered operational costs with centrally-managed system updates and patching
- Lowered hardware maintenance costs as fewer hardware was required
- Improved security with data stored centrally at the data center
- Delivering world-class education with enhanced user experience – access to data anytime, anywhere on any device

The VDI deployment took about a year to complete and was rolled out to 1,500 users in 2 phases. The VDI solution provided IIT with the following capabilities:

Scalability and Flexibility – Stateless hardware were used to create an environment where an OS or application can be moved from one server to another easily. The file and block storage architecture adopted a modular design, allowing storage to be added easily when required.

Optimized Storage – Auto-tiering of data was built into the system, enabling cache for hot data to be automatically extended and dynamic tiering of data storage based on activity levels. Storage requirements at the desktop level were further reduced with linked clone, and this allowed multiple virtual machines to use the same software installation.

Integrated Management – VDI enabled central management of the individual machines, allowing OS and applications updates, and security patches to be performed centrally. With the integrated View Manager console, the IT team had full visibility of virtual and physical resources. This made the seamless storage provision, replication, integration and access, as well as offload of storage functions possible.

Robust Architecture – The architecture for IIT's VDI is built upon multi-core Intel Xeon processors and 6Gb/sec SAS to provide high performance. More importantly, it formed the foundation for more advanced software functionality.

The benefit

VDI provided IIT with greater efficiency as they are able to setup or turnaround classes and labs through online provisioning of desktops. This also translated to lower operation costs with the ease of a centrally-managed desktop administration.

From a maintenance perspective, hardware maintenance cost was lowered as less hardware was required, and there was no longer a need to maintain the hardware individually. Resources required for

Products and services

- Fujitsu Professional Services and Project Management
- VMware vSphere 5 and View 5 platform
- Cisco Unified Computing System, Nexus 1000v and Multilayer Directional Switches
- EMC VNX Unified Storage System and Datadomain

patching and upgrading was also minimized as only a one-time update to the data center was required.

With the proliferation of mobile devices and highly IT-savvy students, VDI caters to the need for high availability to information without compromising on data security. All desktop security management and data protection were centrally managed - no data was stored locally in machines, minimizing the risks of theft or data loss.

- Greater efficiency with system updates and patching performed centrally instead of individually to each work station
- Faster turn-around for classroom setup with online provisioning
- Lower hardware maintenance costs with fewer hardware as any desktop can be provisioned to run the required OS and application
- Minimized risks of data theft or loss as data is not stored locally
- Enhanced user experience with access to resources anytime, anywhere on any device
- Ability to provide a world-class education with curriculum delivered via the latest technology, giving students hands-on experience in working with VDI technology

Conclusion

IIT is better positioned to meet future demands with the flexibility and scalability that VDI provided. With IIT being the first school to have successfully deployed VDI, TP is exploring the option to offer this institute-wide to approximately 17,000 users.

"The robustness of the architecture which the VDI is built upon not only helps us meet today's demands but future requirements too."

- Mr Lai Garluck, Manager, Infrastructure and Systems Technology, Temasek Polytechnic School of Informatics & IT

About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Over 170,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers.

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