Student Loan Available As Needed

“Using VMware’s virtualization solution, we have set up a server environment with high-availability and load balancing to serve our Student Loan Direct portal. So our customers can rely on our services around the clock, 7 days a week.”
— István Gál, IT Manager, Student Loan Center Plc.

### Objectives to be achieved with virtualization

- Highly available server infrastructure
- Ability to set up test environments cost-efficiently
- Faster rollout of new services
- Enabling 7x24 electronic administration

### Results achieved with VMware’s solution

- High availability for 7x24 electronic administration
- Monthly peak load periods managed easily through dynamic resource scalability
- Test environments set up immediately without extra investment
- New services rolled out without lead times of several months caused by public procurement procedures
- Lower operating costs of loan operation
- Lower cooling requirements and energy consumption in the server room
- Tripled efficiency of managing the server environment

### Student Loan Center Plc.

Pursuant to the loan agreement concluded with the EBRD, the Government of the Hungarian Republic agreed to roll out the student loan system within the framework of the Development Program of Higher Education. The purpose of the student loan system is to provide equal opportunities for all young people to receive higher education regardless of their or their families’ financial capabilities, and to ensure the conditions for the long-term sustainability of generally accessible high quality mass education at institutes of higher education.

Founded in 2001, Student Loan Center Plc. has provided credit to 318 thousand students by December 2011; part of these loans have already been repaid, and there are currently about 230 thousand active agreements. Operating with a staff of 100 within the organization of MFB Hungarian Development Bank Plc., the Center marked its tenth anniversary by changing its image and launching Student Loan Direct portal.

Student Loan Direct is an easy-to-use, user-friendly portal that also provides help and information functions. It enables users to create correct and properly completed documents required for the loan process. They can complete their loan applications and data update forms, view their loan agreements, balances, and repayment history, exchange messages with the Student Loan Center, and communicate using this channel instead of postal mail. The launch of the Student Loan Direct is a success story: 50 percent of all new loan applications already arrived through the portal started in September 2011.

### Special loans, a broadening range of services

The Student Loan Center set up a VMware-based virtual environment for the infrastructure components that serve the portal. This project meant extending the Center’s existing virtualized environment set up already back in 2009.

“Changes in government decrees and other regulations have significantly broadened the student loan initiative over the past decade with new components like interest subsidy, takeover by the state of loan amortization for people on maternity benefit, and the option to decrease the amortization amount,” explained István Gál, IT Manager, Student Loan Center Plc. “These changes necessitated the extension and further development of the IT systems that support student loans.

The Student Loan Center is a financial institution that provides a special financial service using a unique ERP system maintained and extended to keep pace with the growing range of services. The ERP system and its test environments are major consumers of the IT resources of the Student Loan Center.

“The continuous development and extension resulted in a rather crowded and heterogeneous server room by 2009,” remembered Gergely Pilisi, system administrator, Student Loan Center. “Although we had already installed some blade servers by that time, most applications still ran on 15 standalone servers, which caused multiple problems. Our infrastructure wasn’t sufficiently redundant, and we
faced performance issues time and again despite having unused capacities on our blade servers.”

Multiple standalone servers needed hardware upgrades, but instead of hardware replacements, the Center opted for virtualizing its server environment to improve services and increase operational reliability.

“We chose VMware’s mature and field-proven virtualization solution,” explained the system administrator. “At the time, Microsoft was also offering a new virtualization software, but after testing it we found that its resource utilization was less efficient, and was also missing some management functions that we considered important for fault-tolerant operation.”

In preparation for its first virtualization project, Student Loan Center tested the free version of VMware vSphere, and found that it provided the expected convincing performance.

As Gergely Pilisi explained: “It became clear that VMware-based virtualization would provide much better hardware resource utilization, scalability and fault tolerance, and virtual machines are much easier to manage than standalone servers. While we needed a staff to operate our earlier server pool, I am now managing the virtualized environment alone, and my colleagues have more time for performing other tasks.”

Fault tolerance and scalability

Student Loan Center’s first virtualization project set the goal to replace its standalone physical computers with a solution that provides centralized management, better hardware utilization, flexible load balancing for optimal performance, and fault tolerance.

“Based on our test results, we planned to roll out the Student Loan Direct portal in a virtual environment,” said István Gáli. “Providing the additional capacities was extremely easy using VMware technology that enabled us to install three new blade servers in a matter of a few hours.”

After the second virtualization project, the server room of Student Loan Center is now running over 30 virtual machines on six blade servers. Two blade servers are shared among the four servers of the Student Loan Direct portal while the other four blade servers run a further 26 virtual machines. The hosts are running at a hardware utilization of 60 percent and use a virtualized NAS storage solution.

“The two major project objectives were high reliability and dynamic scalability to support the operation of Student Loan Direct,” explained the IT manager. “Trying to solve this with standalone physical servers would have been much more difficult and expensive. Our portal solution as well as its database, and back-office systems are running in a virtual environment on two blade servers, in case if either fails, the other one will continue to provide the services. This ensures high availability, and new resources to meet growing performance requirements can be added easily. The same applies to setting up test environments. At the beginning of the project when the purchasing of the blade servers was underway and we were still working on physical computers, work was hampered by the need to install the appropriate software versions and drivers.”

The VMware-based virtual environment enabled rolling out new services at unmatched speed. Earlier, this was preceded by a lengthy purchasing procedure: once the parent company gave its approval, Student Loan Center had to issue a public procurement tender that usually had a lead time of 60–90 days.

“You had to know your upgrade requirements at least six months ahead of time to avoid a protracted implementation,” explained István Gáli. “In a VMware-based virtual environment, we can set up the necessary test environments at any time, so

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**VMWARE VIRTUAL INFRASTRUCTURE AT WORK**

Components of the VMware-based solution
- VMware ESX 4.1
- VMware vCenter 4.1

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— István Gáli, IT Manager, Student Loan Center Plc.
Electronic administration on a virtual platform

In the 2010/2011 school year, Student Loan Center made 10,000 new agreements (the first loan application deadline was 15 September), over 2,000 of which were received through the Student Loan Direct portal that went live also in September. In the remaining part of the year, half of all loan applications were received by the Center’s portal, and even the 4,000 pre-existing loan customers signed an agreement with Student Loan Direct to be able to use the portal for communicating with the company.

“We reached this growth without any separate campaign, which clearly shows the high student demand for electronic administration,” said the IT manager. “In three months, our 6,000 customers submitted about 5,000 documents through the Student Loan Direct portal, which we consider a high level of acceptance. Our goal is to receive all applications electronically in the new loan application period of the 2012/2013 school year.”

Electronic administration offers a raft of usability features to our customers and also enables more efficient work at Student Loan Center. Signed contracts can still only be submitted to the Center at appointed acceptance locations, but the portal makes all data available electronically, and all that is needed is to assign them to the paper-based documents identified by a bar code. This solution supersedes the time-consuming digitization provided through partners.

Using VMware’s virtualization solution, we have set up a server environment with high-availability and load balancing to serve our portal,” stated István Gáli. “Our customers can access Student Loan Direct around the clock, seven days a week, even at peak times like loan disbursement days on the 15th of every month from October till July, or semi-annual application submission deadlines of 15 September and 15 February. Virtualizing our server environment was an important precondition to starting the Student Loan Direct portal implemented to meet our customers’ clear demand for electronic administration, a step that also speeded up the contract closure process and significantly decreased the operating costs of providing student loans.

Since the virtualization of Student Loan Center, there were no unplanned server downtimes, and the server room requires less cooling and energy. The fault tolerance of the VMware-based environment, tested before implementing the Student Loan Direct portal, showed that operation continuity can be ensured if combined with regular data backups. The introduction of 7x24 service availability requires setting up a backup data center that Student Loan Center will implement using VMware’s disaster recovery solution.

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Founded in 2001, Student Loan Center Plc. has, to date, provided credit to 318 thousand students; part of these loans have already been repaid, and there are currently about 230 thousand active agreements. Operating with a staff of 100 within the organization of MFB Hungarian Development Bank Plc., the Center observed its tenth anniversary by changing its image and starting the Student Loan Direct portal.