



Bobst Group Stacks Up Savings with VMware Virtual Infrastructure for Scalability and Server Containment

Many-Fold Benefits Include \$500,000 Hardware Savings and Successful operations of most of the Key Enterprise Applications on the Virtual Infrastructure.

RESULTS

- Saved \$500,000 in hardware costs
- Achieved 70 percent cost savings with virtual machines instead of physical servers
- Increased CPU utilization to 50-80 percent from less than 5 percent on standalone servers
- Decreased server provisioning time from 3-4 weeks to one day
- Increased use of different operating systems, including Linux
- Streamlined development and testing
- Achieved faster backup
- Set up reliable disaster recovery solution

A Flexible Product Line and Business

Bobst Group - with its tradenames BOBST, CHAMPLAIN, APOLLO, STEUER, ASITRADE, MARTIN, RAPIDEX, ATLAS, GENERAL, MIDI, ROTOMECH, SCHIAVI and TITAN, is a leading supplier of equipment and services for the folding carton, corrugated board and flexible materials industries. The company markets its products and services in more than 100 countries.

At company headquarters in Lausanne, Switzerland, the IT department supports about 1,800 people with software running on more than 200 servers. In 2003, the IT department sought to speed up its ability to respond to new projects and requests for new servers. "We wanted to be able to set up new servers for pilot projects quickly, without the problem of provisioning them, which could take up to four weeks" says Christian Rieder, system engineer/architect for Bobst Group.

Also, as requests for new servers were increasing, Rieder needed a server containment solution to utilize the company's servers better, instead of buying more hardware. "We wanted to stop the proliferation of new servers," Rieder says.

After researching possible solutions, Rieder proposed VMware® software — particularly VMware GSX Server and VMware ESX Server — to reduce the need for more physical hardware. With VMware software, instead of buying hardware to accommodate new projects, the IT group could provision virtual machines, each with its own software and virtual hardware, on its already-existing servers.

Thinking Outside the Folded Box

Instead of obtaining a free evaluation copy to test the VMware software, Rieder and the IT staff purchased ESX Server for an imminent project: CRM migration from Siebel 99 to Siebel 7.5.3. "Our CRM project needed 15 test and development servers," says Rieder. "We completed a TCO and ROI worksheet to calculate the benefits of using VMware software. While some developers were reluctant to try the new technology, the great ROI made it easy to convince management to buy one server instead of fifteen."

The IT group performed a standard ESX Server installation, following VMware guidelines, with Microsoft Windows 2000 as the guest operating environment on virtual machines running different versions of Siebel — Siebel 7.04, 7.5.2 and 7.5.3 — and Oracle — Oracle 8.1.7.4 and 9.2.03. "The users were never aware that the servers were virtual," Rieder says.

The CRM migration proved the value of the VMware software. "In early 2004, after the successful migration of our CRM system gave us a proof of concept for virtualization, I proposed the implementation of a full-size ESX Server production and test environment for 60 production and 60 test virtual machines," says Rieder. "Given the results of the CRM migration, the project was accepted and implemented."

"In 24-36 months, we plan to have all sites in Bobst Group use a virtual platform for core business functions."

*Christian Rieder
System Engineer/Architect
Bobst Group*



VMWARE VIRTUAL INFRASTRUCTURE AT WORK

- VMware Workstation on Dell PCs
- VMware GSX Server on 4-CPU Fujitsu Siemens N400s with 4GB RAM
- VMware ESX Server, VirtualCenter and VMotion on 8-CPU Fujitsu Siemens RX 800s and T850s, 32GB RAM
- EMC Symmetrix SAN
- Host operating systems: Microsoft® Windows® 2003 Server on GSX Server; Windows 2000 Professional on Workstation
- Guest operating systems: Windows 2000 Server, Windows 2003 Server, SuSe Linux Enterprise Server 8 and Red Hat Linux 9 on ESX Server; Windows 2000 Server on GSX Server; Windows XP and Red Hat Linux 9 on Workstation
- Production applications running in virtual machines include: Siebel, Oracle, Trend Micro, Sybase, MS Share Point and MS Exchange

Results Across The Board

To phase VMware software into the IT infrastructure, Bobst Group management issued a statement requiring employees to first consider using VMware virtual machines instead of buying a new physical server. "New physical servers can only be purchased in the case of a proven incompatibility," says Rieder. "Now, we have about 65 virtual machines instead of 65 standalone servers, fulfilling our original objectives and more."

With a VMware virtual infrastructure, the company has built a platform for software development and quality assurance, legacy and custom applications, network and Web infrastructure servers and collaboration servers, bringing multiple benefits, including:

- **Cost savings.** Rieder estimates a 70 percent cost savings – about \$600,000CHF (about \$500,000USD) per year using virtual machines instead of physical servers.
- **Server containment.** Bobst Group has been able to add 65 virtual machines to its IT infrastructure without buying any more physical servers.
- **Time savings.** Using virtual machine templates, the IT group can provision new servers in less than a day. Before using VMware software, it would take three or four weeks to order and set up a new server.
- **Faster response.** With faster server provisioning, the IT team can rapidly respond to business needs. "This is clearly demonstrated and proven every time there is an unexpected project and we are able to provide a server right away," Rieder says.
- **Increased CPU utilization.** Whereas standalone servers were less than five percent utilized, with VMware software, servers are 30-50 percent utilized.
- **Increased pilot programs.** Before using VMware software, it was difficult to gain approval for pilot programs because they would require approval for a new hardware purchase. Now that VMware software makes it easy to provision new servers without buying hardware, Bobst Group is able to take on more projects. "We are able to create pilot projects which just could not have been launched before using VMware software," Rieder says. "Now it is easy to implement a pilot."
- **Increased ability to install non-Windows operating systems.** Before VMware software, Bobst Group only used Microsoft® Windows® operating systems. Now, the company has brought in Red Hat Linux and SuSE Linux. "The company policy used to be to use Windows only for the Intel platform," Rieder says. "Introducing ESX Server allowed us to install — without cost — new operating systems. We can evaluate them, benchmark them, and finally, decide to use new operating systems."
- **Streamlined development and testing.** VMware software allows developers quickly and easily to set up different configurations for development and testing on a single piece of hardware. Also, features like "undoable mode" save time. "Undoable mode is perfect for testing new configurations and installations because developers can accept or reject changes," Rieder says. "This is just not possible with physical servers."
- **Faster backup.** With virtual machines, servers can be backed up and restored more quickly than physical servers. Rieder explains that he introduced a virtual machine "offline backup" by stopping the virtual machine, setting it to undoable mode, performing a backup of the VMware ESX Server File System (VMFS) disk files and applying the changes at the end of the backup. "The VMFS files are in one big chunk of data, so backup is much faster than a traditional file system backup," Rieder says. "The backup speed is only limited by the tape record speed."



- **Disaster Recovery.** With a second server room and its virtual infrastructure connected to an EMC Symmetrix SAN, Bobst Group can quickly recover environments in the event of a disaster. "All virtual machines have a validated disaster recovery plan from the day of their creation, without needing any reconfiguration, in contrast to physical servers, which need to have individual disaster recovery procedures that have to be tested individually as well," Rieder says. "All of our critical data is located on our EMC Symmetrix SAN, which is configured in SRDF disks, so recovery servers can access the data of any failed server and restart the affected service. For example, we have our ESX Server systems set up to run 30 virtual machines each, but either of them can run all 60 virtual machines in the event of a disaster."

Expanding the Virtual Infrastructure

With the cost savings and efficiencies gained from having a VMware virtual infrastructure in place, Bobst Group plans to continue to virtualize its IT environment. "Within the next 12 months, we hope to have 50 percent of our infrastructure become virtual," Rieder says. "In 24-36 months, we plan to have all sites in Bobst Group use a virtual platform for core business functions."

Rieder advises other companies to embrace virtual infrastructure based on the benefits it has brought to Bobst Group. "We would tell other companies considering VMware virtual infrastructure to trust the products," he says. "Do not hesitate to use it for production purposes. It has helped us save money and time, optimizing our IT infrastructure for maximized responsiveness."

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