



Stoll Knitting Machine Factory Gathers IT Threads With VMware

High Availability Virtual Infrastructure Streamlines IT Systems

RESULTS

- High availability & greater flexibility of IT systems
- Hardware consolidation ratio of 7:1
- Provisioning in the shortest possible time
- Migration from obsolete applications
- "Switching" production machines
- Extensive test scenarios
- Reduction in overall operating costs

Looking for Tight-Knit Solution for Consolidation, High Availability and Migration

Stoll, based in Reutlingen, Germany has not only built an outstanding reputation as a manufacturer of innovative knitting machines in its 125-year history, but has also established itself as an influential force in the fashion industry. Stoll machines are used in over 70 countries, and the company is represented internationally by subsidiaries, sales and service centers. Stoll has approximately 1,100 employees worldwide, concentrates its production of flat-bed knitting machines and pattern production systems in Germany, and also has its own collections and an integrated service program.

Just as Stoll has been successful with a combination of top-quality technologies, Sandro Grohe, manager of the IT department, has achieved great success in server consolidation with a virtual IT infrastructure. With the desire not to exceed the limits of the computer room with ever-expanding hardware structures, he has built up a flexible IT infrastructure trimmed to a high degree of availability together with VMware Enterprise VIP Partner, Bürotex GmbH Systemhaus, in Nürtingen. Now, over 40 virtual machines perform server functions on six physical computers using a wide range of applications.

Server Consolidation and More

The Stoll IT management team was faced with a very specific problem at the start of 2004. The computer room at the Stoll headquarters in Reutlingen had hardly enough space left for the growing quantity of hardware. At the same time, costs were increasing at almost the same rate as spatial expansion options were decreasing. Any solution to the problem also had to take into account the fact that Stoll required high-availability IT systems with a SAN link and a high degree of efficiency.

Stoll considered a number of options, including switching from conventional hardware to blade servers. However, this solution would have had the disadvantage of having to get back in the "hardware game". The quantity of hardware would have continued to grow proportionally with the addition of new applications, even if on a smaller scale than before. The implementation of new systems would also have continued to follow the never-ending cycle of hardware procurement.

As the IT managers at Stoll had just gained new experience with the VMware Workstation™ at this time and found a VMware Enterprise VIP Partner in Bürotex to help them with the planning and implementation of the new systems, they decided to leave the well-trodden hardware paths and consolidate the existing systems into a VMware infrastructure.

"Use the VMware Workstation trial or complete version. Install server systems as a test lab and gain basic experience with the virtualization of server systems. You'll want to learn more."

Sandro Grohe
IT Department Manager, H. Stoll GmbH & Co. KG



VMWARE VIRTUAL INFRASTRUCTURE AT WORK

- 6 ESX Server licences and 2.1 & Virtual SMP
- Virtual Center with VMotion
- Guest operating systems: Microsoft® Windows® NT, Windows 2000, Windows2003, Windows XP, Red Hat Enterprise Linux 3 ES
- Six HP ProLiant DL580 G2 computers with four CPUs
- Applications include Citrix, ADS, Microsoft Exchange Server, Microsoft SQL-Server, Apache Web Server
- SAN: HP Enterprise Virtual Array 5000

VirtualCenter & VMotion create new freedom & high availability

As Stoll was looking for a virtualization solution for production use in the data center, it soon became clear that VMware was the only suitable option. In order to take advantage of maximized performance and dedicated resource allocation, and be able to switch virtual machines in production use with VMotion™, the company decided to use the VMware flagship product, ESX Server™.

When selecting the hardware, Stoll attached great importance to uniformity, in order to make maintenance as effective as possible. On six HP ProLiant DL580 G2 computers, each with four processors and 16 GB core memories, Stoll installed a complete virtual infrastructure that is centrally monitored and controlled with VirtualCenter. The administrators in particular are enthusiastic about the possibility of moving virtual machines with production applications across different physical servers without service shutdowns, thanks to VMotion. With VMotion, they can maintain a high level of availability throughout the entire infrastructure by keeping a physical computer in reserve. In the event of bottlenecks, they can move virtual machines to hardware with free resources, or free up the hardware concerned for maintenance work, without having to shut down user services.

At present, six HP ProLiant DL580 G2 computers are linked into the virtual infrastructure, accommodating 40 virtual machines with server functions that are available to more than 750 users. The ESX server provides its own operating system, specially designed for efficiency and low resource consumption. Overheads are therefore reduced to a minimum by the level of virtualization, and VMware Virtual SMP is used to optimize hardware efficiency. This add-on enables a virtual machine to use two physical processors in parallel.

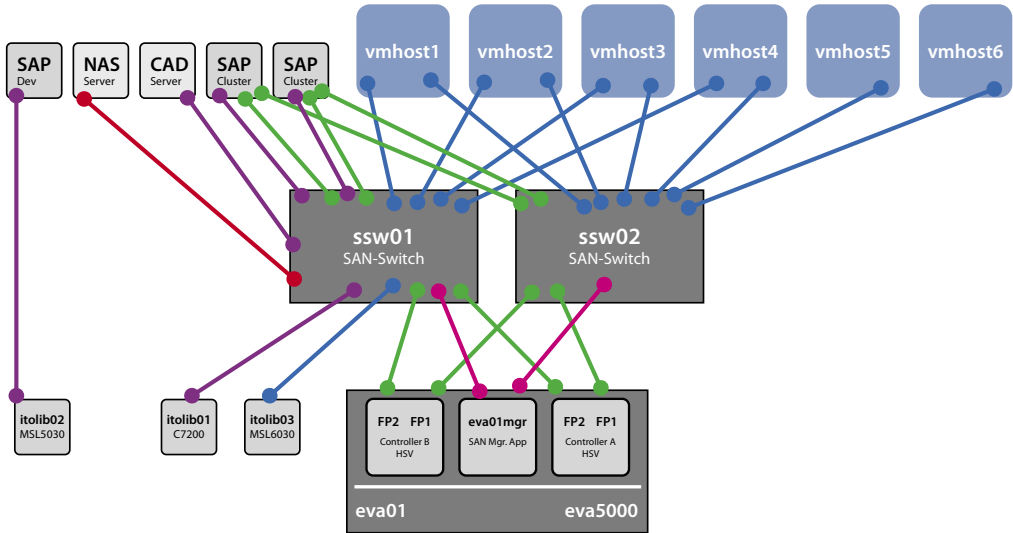
Stoll uses a large number of standard server software packages as guest operating systems in virtual machines: Windows NT, Windows 2000 and 2003 plus Windows XP and Red Hat Enterprise Linux 3 ES. Because each of the virtual machines acts as a separate, physical computer, there are no obstacles to using a variety of operating systems on the same hardware, and applications can run on the most suitable operating systems. Applications that handle production services at Stoll include Windows Exchange Server, Citrix Metaframe, ADS, Microsoft SQL Server and Apache Web Server.

Besides production use, Stoll also uses virtual machines as a test environment or for the migration of obsolete applications. For example, the company ported from NT4 and Exchange Server 5.5 to Active Directory and Exchange Server 2003, because NT4 does not run on the new ProLiant hardware. With each system upgrade, tests are carried out initially at Stoll on a clone of the virtual machine to be updated. If the test on the clone is successful, the upgrade can easily be incorporated into production with VirtualCenter and VMotion.



Overall, the VMware virtual infrastructure provides Stoll with a high degree of flexibility and hardware independence. It has proven to be as successful in a test environment and as a migration aid as in production. Grohe therefore finds it difficult to imagine there could be support problems from a software provider when using virtual machines.

"Using VMware has been a success for us up and down the line," he says. "The implementation of a virtual infrastructure was a strategic decision for us and, so, anything but trivial. I'm all the more satisfied that the results have fulfilled our expectations, with regard to system availability in particular, and that we're on the right track with our IT strategy."



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