

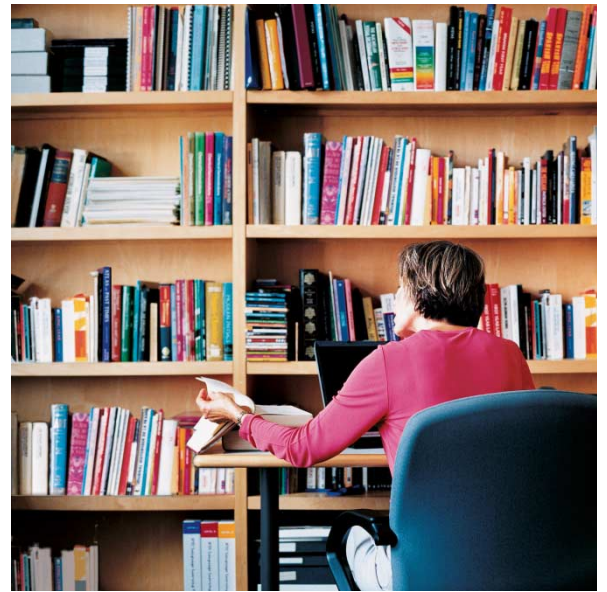
University of Magdeburg: Increased agility, reduced costs with HP virtualization for SAP



University of Magdeburg

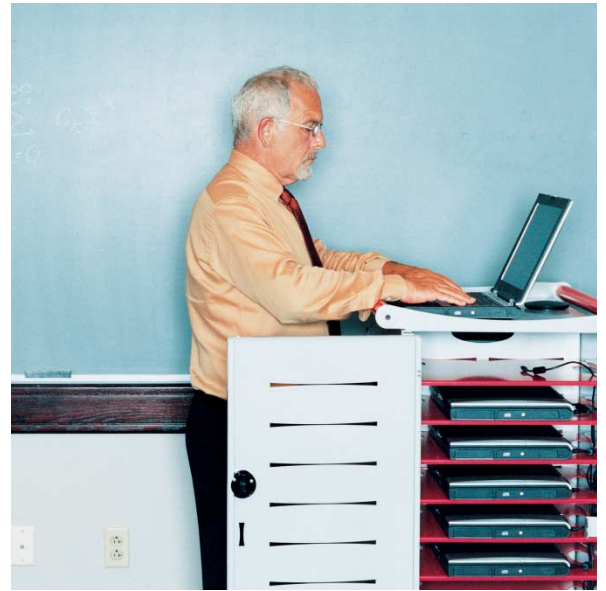
“With the HP Virtualized Infrastructure Solutions for mySAP™ Business Suite we have achieved flexibility in our IT load handling and business agility. It has also cut Total Cost of Ownership: Infrastructure and marginal costs have gone down, which will result in savings of 30 to 40 percent of operating costs.”

Prof. Claus Rautenstrauch
Faculty for Informatics
Director of the Magdeburg HCC



University of Magdeburg: Home of SAP HCC

The SAP University Competence Center in Magdeburg is located in the Otto von Guericke University's Institute for Technical and Operational Information Systems (ITI) headed by Prof. Claus Rautenstrauch. ITI researches the principles of information systems, such as those used in companies and public agencies. The spectrum ranges from product and process modeling and the broad area of databases to various areas of applied informatics such as bioinformatics, economic, medical and engineering informatics.



Supporting over 100 universities, institutes of technology, academies and schools, the University of Magdeburg's SAP Hochschul-Competence-Center (HCC) is one of the largest university data centers in Germany – with extreme load fluctuations and peaks to match. In order to efficiently handle demand while minimizing infrastructure costs, the HCC completed a project to virtualize its entire SAP environment.

Theory meets practice

Industry and academia now demand that graduates demonstrate extensive practical skills in addition to theoretical knowledge. Given the wide distribution of SAP within industry, it makes sense then to train students in this leading software. To assist, SAP has provided free software to German universities and colleges through the HCC at the Otto von Guericke University in Magdeburg since 2000.

As an Application Service Provider (ASP), the HCC provides tertiary institutions with mySAP Business Suite applications for research & teaching. This saves schools from investing in IT infrastructure and personnel. "Our customers don't need to worry about system operation and are free to focus on teaching," explains Prof. Claus Rautenstrauch of the Faculty for Informatics and Director of the Magdeburg HCC. "The cost savings are also significant – an important factor in times of shrinking budgets."

Load fluctuations posed problem

Although the HCC is a non-profit organization, it functions like a commercial ASP and provides comparable levels of professionalism. In addition, the tertiary environment poses several unique challenges. Firstly, there are up to 40,000 users of the system, but more critically, the usage pattern can create unusually large fluctuations and spikes within the IT load. Within a matter of minutes, the number of active users can change from a few individuals to simultaneous access by several classes in multiple institutions.

Prof. Rautenstrauch explains, "We have very clear, highly accurate load profiles, largely the result of semester rhythms and individual courses."

The HCC infrastructure is based on HP servers running HP-UX Operating System and HP StorageWorks. Access is made via the Internet. This is cost-effective for customers as they are already interconnected via the German Research Network. The HCC is linked to the Network by fiber-optic, while internally the servers are connected by HP ProCurve switches – which makes access to SAP via the Internet simple and cost effective.

While this conventional IT infrastructure was efficient, it lacked flexibility. Rigid resource allocation led to load imbalances and required a large number of servers and storage systems to be constantly available. This increased operating costs and complicated the introduction of new applications and IT infrastructure changes.

To improve agility, the HCC opted for HP Virtualized Infrastructure Solutions for mySAP™ Business Suite. This allows additional servers or storage systems to be added to the network or applications to be moved to a different computer environment within minutes.

Adaptive HP solution up close

The HP Virtualized Infrastructure Solutions for mySAP™ Business Suite solved the problem of rigid resource allocation by virtualizing the infrastructure and separating SAP applications from IT resources. All computers at the HCC are now pooled and can be flexibly allocated as demand requires.

The solution is a combination of hardware, software and services that centrally monitors and manages computer, storage and network resources, allocating them dynamically to SAP applications as required. The standard, SAP supported server virtualization within the SAP Adaptive Computing concept was broadly extended with the wide portfolio offered by HP. This includes solutions and technologies, like the HP Virtual

Server Environment (VSE), the HP StorageWorks Enterprise Virtual Array and HP networking capabilities with HP ProCurve and HP Storage Area Network.

HP's evolutionary approach allows for simple integration of new technologies and solutions while ensuring optimal utilization of existing infrastructure. Best Practices and standards-based methods for the introduction and operation of SAP also help keep costs down, while the solution can run under HP-UX, Linux or Windows.

Virtualization followed by consolidation

The HP solution has been in service since March 2005. "With the HP Virtualized Infrastructure Solutions for mySAP™ Business Suite we have achieved manageability and flexibility in terms of our IT load handling," says Professor Rautenstrauch, "It has also cut Total Cost of Ownership: Infrastructure and marginal costs have gone down, which will result in savings of 30 to 40 percent of operating costs." Although the cost of setting up the SAP solution "was substantial", Prof. Rautenstrauch expects it to pay for itself within two to three years.

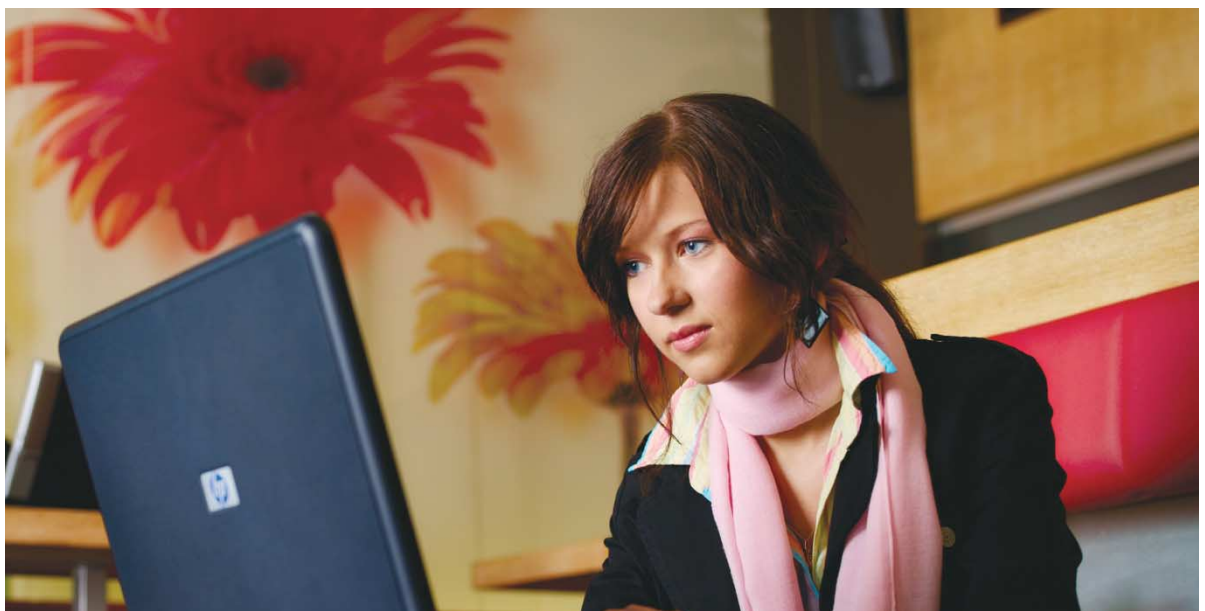
As a consequence of virtualization, the HCC is planning further steps to increase efficiency and cut costs. "We

will consolidate hardware onto a smaller number of more powerful systems. This will result in all systems being fully virtualized," said Prof. Rautenstrauch noting that the preferred servers have already been selected: HP Integrity Superdome servers.

Solution highlights:

HP Virtualized Infrastructure Solutions for mySAP™ Business Suite

- **SAP Software:**
 - SAP R/3, SAP IDES, mySAP Business Intelligence
- **HP software:**
 - HP-UX operating system
 - HP ServiceGuard High Availability solution
 - HP OpenView management components
- **HP hardware:**
 - 74 HP Integrity and HP 9000 Server running HP-UX
 - HP StorageWorks Enterprise Virtual Arrays and Virtual Arrays with approx. 50 TB storage capacity
 - HP StorageWorks tape libraries
 - HP ProCurve switches



Challenge

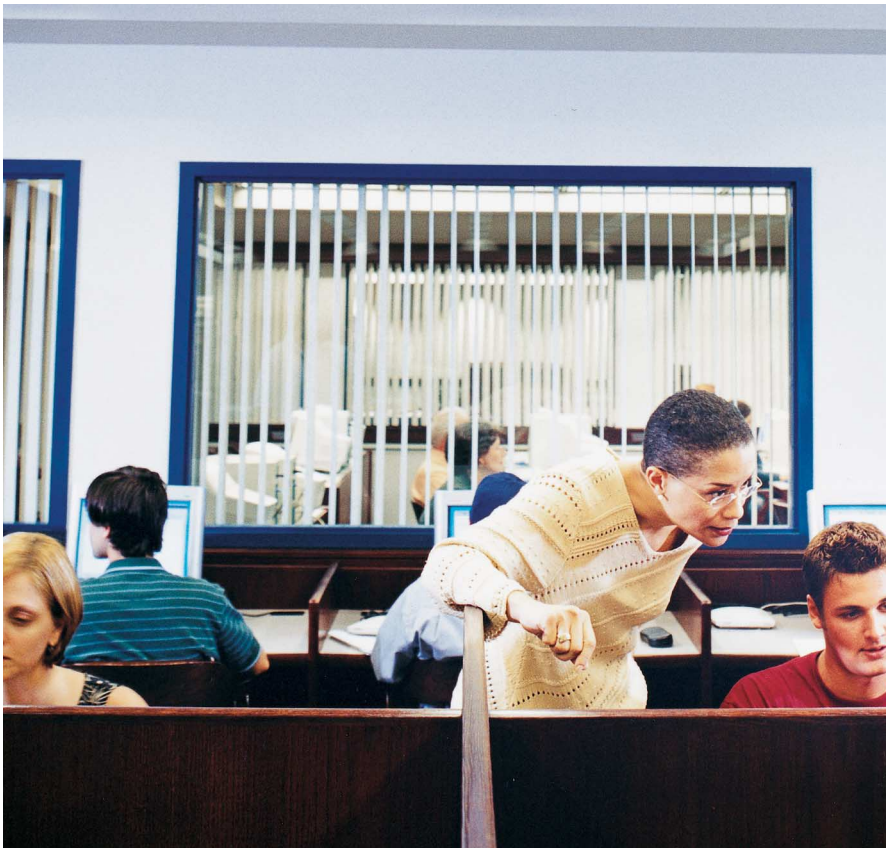
- The University of Magdeburg operates an SAP University Competence Center (HCC) based on the Application Service Provider model.
- Large number of users – some 40,000 students – results in a high IT load.
- Fluctuations in demand result in huge peak loads for the IT infrastructure.

Solution

- HP Virtualized Infrastructure Solutions for mySAP™ Business Suite
- Virtualization and consolidation of HP and SAP system landscape.
- Control of load distribution for SAP applications by SAP Adaptive Computing Controller integrated into HP solution.

Results

- Effective peak load management by distributing SAP applications to various servers.
- Virtualization ensures optimal usage of hardware, which enables consolidation of existing hardware.
- Consolidations helps reduce IT operating costs by some 30 to 40 percent.
- The HCC can continue to provide a professional, educational service at a more cost effective price and with greater agility to meet future demand.



Find out more about the alliance between HP and SAP, visit www.hp.com/go/sap

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5983-2220ENE, 04/2005

