

# When IT becomes a matter of life or death



Ja zur Menschenwürde.

*“VMware is the only provider of virtualization solutions that meets our requirements. As the data center for a hospital, we depend on the absolute reliability of our systems. This must not be compromised in any way regardless of savings measures.”*

– Hans Peter Klaus, System Service Divisional Director, GFO IT Service

## KEY HIGHLIGHTS

### Challenges

- Cost savings on hardware, electricity, cooling
- Development of a simple, high-availability server landscape
- Reduction in administrative complexity

### Solution

- 66% of servers were virtualized
- Savings of €13,000 per year on electricity and cooling costs
- High availability of systems guaranteed by VMware HA
- VMware applications used
- ESX Virtual Infrastructure 3/ESX 3.5
- Virtual Center 2.5
- VMware Update Manager
- VMware HA
- VMware DRS
- VMware vMotion
- VMware Storage vMotion

### IT environment

- Hardware basis: HP Proliant Blade Server, HP Proliant DL Server, HP Enterprise Virtual Array 4400
- Operating systems: MS Windows Server 2003/2008, Windows XP
- Applications: Oracle databases, Microsoft SQL Server 2005, Terminal Services, Microsoft Exchange 2007, Microsoft Office Sharepoint Server 2007
- vRanger: Backup, recovery, and backup management for virtual environments
- vReplicator: DR in virtual environments

## GFO

### Virtualization in the GFO Data Center

The GFO ('Gemeinnützige Gesellschaft der Franziskanerinnen zu Olpe', Non-profit organization of the Franciscan Sisters at Olpe) is an association of social and charitable institutions in North Rhine Westphalia and Rhineland-Palatinate, Germany. It encompasses over 30 organizations (currently twelve hospitals, retirement homes, and child and youth care institutions) with more than 6,000 employees. The GFO data center situated in St. Marien Hospital in Bonn is responsible for overall systems operation of St. Marien Hospital and all retirement home facilities of GFO. One particular challenge for the IT staff of GFO is that an operational IT infrastructure can be absolutely critical in the healthcare and nursing sector. The people who receive care in the hospitals and nursing homes of GFO are dependent on the uninterrupted operation of the medical equipment and IT. The GFO data center must ensure absolute system reliability and high availability of all applications.

### No compromises: Reliability can not be sacrificed to reduce costs

In times when funds for the most important asset of all – our health – are rather scarce, even GFO is driven to reduce costs. As a result, at the end of 2008 the data center was instructed to significantly reduce its expenditure, particularly on hardware, maintenance and electricity. The servicing and maintenance of the existing, outdated hardware – first- to third-generation HP Proliant servers – swallowed up around €10,000 each year. In addition, management of the physical servers also took up a huge amount of the IT staff's time. Space was becoming increasingly scarce in the data center, and annual electricity costs were around €13,000, approximately 40 percent of which was spent solely to cool the servers.

Despite the need for cost savings, the reliability and high availability of the systems could not be compromised at any time. The GFO IT service team led by Hans Peter Klaus therefore quickly agreed on the only possible solution: virtualization. This was the only option offering a solution to the problems outlined, and also addressed several issues in one go: apart from a considerable reduction in actual hardware and the resulting minimization of electricity and cooling costs, IT management is now also centralized, making it simpler and more cost-efficient.

### Clear decision for VMware

After evaluating several providers, a clear decision was reached in favor of VMware's virtualization environment ESX Virtual Infrastructure 3 with VMware ESX 3.5. VMware ESX is a bare metal hypervisor that runs directly on the physical server. It partitions this into multiple virtual machines that can be executed simultaneously and share the physical resources of the underlying servers.

„When comparing different virtualization platforms, it quickly became evident that only the VMware solution met our requirements,“ says Hans Peter Klaus, System Service Divisional Director of the GFO data center. The fact that the company had previous positive experience with the VMware ESX single host designed as the „emergency concept“ was also a crucial factor. In the past, various servers had been

*“We are thoroughly impressed with the virtualization in the data center. We will modernize the server landscape in the other GFO hospitals using VMware ESX as quickly as possible and reduce operating costs at the same time.”*

– Hans Peter Klaus, System Service Divisional Director, GFO IT Service

kept on standby in order to maintain emergency operation with the most important servers in the event of failure of the primary data center. „VMware’s ESX technology is widely used, and it is tried and tested – security and high availability is essential for our sector,” explains Klaus.

### Seamless project from the start

The go-ahead was finally given in 2009: Cancom Deutschland, VMware’s VIP Enterprise Premier Partner, monitored the virtualization project on-site, supplied hardware and licenses, and implemented the Virtual Center infrastructure together with the ESX hosts. Most of the old hardware was discarded, so three HP ProLiant BL460c blade servers were purchased and the Enterprise Virtual Array (EVA) 4400 was expanded. The existing HP ProLiant DL580 server was also upgraded. In addition to ESX Server 3.5, VMware High Availability (HA), Distributed Resource Scheduler (DRS), vMotion, and the Update Manager were implemented to guarantee high availability and currency of the systems. In addition, VMware Virtual Center (now vCenter) with its Infrastructure Client permits easy management of the virtual environment.

„The cooperation with Cancom was flawless, the project was finished within four weeks. We always felt very well supported and professionally advised,” praises the Divisional Director Klaus. The results exceeded expectations: not only massive savings in electricity and cooling costs of €13,000 per year, but also no further expenditure was required on new servers. Instead of having to allow for €5,000 per new server, a virtual server is simply added. This eases budgetary pressure enormously. The HP ProLiant blade system also leads to further electricity and cooling savings, and reduces the costs of network components. 30m<sup>2</sup> of space was gained in the data center by removing obsolete hardware.

Positive side effect: By introducing virtualization in the GFO data center, the IT infrastructure was simplified and can now be managed much more efficiently.

In the near future, the IT service team is also planning to use a virtual infrastructure in the other GFO hospitals to replace old servers or server clients.

### Results

- High availability of systems
- Massive savings in operational costs of the data center: €13,000 saving in overall operational costs per year, with an upward tendency
- Savings on the deployment of new servers: instead of spending €5,000 on new hardware, just one virtual server has to be provided.
- Significant time saving, as little interaction is needed from the administrator
- Immediate ROI
- 66 percent virtualized:
- €10,000 savings through hardware replacement
- €8,000 savings on electricity costs per year
- €5,000 savings on cooling costs per year
- 30m<sup>2</sup> of space regained in data center

