



Case Study  
Intel® Xeon® Processors  
Service Provider

## Virtualization simplifies server operations



### Virtualization on servers with Intel® Xeon® processors helps DDS Dresdner Direktservice GmbH to achieve better performance at lower cost

The DDS Dresdner Direktservice GmbH helps Dresdner Bank and other Allianz Group business units in offering customer sales support and services. Continuous growth pushed some DDS servers to their capacity limits, and maintenance contracts for 39 servers expired. DDS decided to gradually replace its hardware and to deploy virtualization. This decision was prompted by successful trials on two servers with multi-core Intel® Xeon® processors. Virtualization with servers based on multi-core Intel Xeon processors has helped DDS to reduce its IT costs and protect its investments for several years.

„Virtualization based on multi-core Intel Xeon processors greatly facilitates the administration of our server landscape and substantially reduces our IT costs.“

Klaus Hackling,  
Project Manager Virtualization,  
DDS Dresdner Direktservice GmbH

---

#### Challenge

- **The underlying IT must be trouble free** to allow the more than 500 staff at DDS Dresdner Direktservice to provide service and sales support in an effective way
- **Due to obsolete hardware** (maintenance contracts for 39 servers expired) and over loaded servers in part, the DDS IT department decided to take action
- **The aim was to migrate to a high-performance platform** using state-of-art technology that protected DDS's investment while at the same time helping to consolidate the server landscape

---

#### Solution

- **After successful trials** with virtualization on two HP ProLiant DL380 G5 servers featuring multi-core Intel Xeon processors, DDS opted for gradual consolidation of its server landscape
  - **DDS Dresdner Direktservice's production operations** use a mix of Intel Xeon dual- and quad-core processors built into HP ProLiant servers. The first stage of server consolidation at DDS will see the introduction of a dual core system; quad core systems will follow as of mid 2008
  - **The deployment of the VMWare ESX 3.02** virtualization software in cooperation with Intel® virtualization technology
-

# Consolidation frees up space in the server room



## The situation

DDS Dresdner Direktservice GmbH was founded in January 1998, originally as an in-house call center for Dresdner Bank. In January 2001, DDS which has facilities in Duisburg and Dortmund, became an independent Dresdner Bank subsidiary. Over 500 staff at DDS help Dresdner Bank and other Allianz Group business units with customer support sales and services, including call redirection service, Internet banking services and hotlines, ticket and securities business, and sales support. In 2007, DDS Dresdner Direktservice GmbH handled 7.85 million transactions.

The 22 staff in the IT department ensures trouble-free operations at all IT workplaces, thus helping their colleagues to work effectively. Another task is the implementation of new services, for example, the establishment of a voice portal with voice integration for various hotlines. All told, DDS deployed 74 servers including file and print servers, database server, or mail servers. As the hardware was outdated, some servers were affected by capacity problems.

## Spotlight: DDS Dresdner Direktservice GmbH

- DDS Dresdner Direktservice GmbH was founded in January 1998, originally as an in-house call center for Dresdner Bank. In January 2001, DDS, which has over 500 staff at its facilities in Duisburg and Dortmund, became an independent Dresdner Bank subsidiary.
- DDS help Dresdner Bank and other Allianz Group business units in offering customer sales support and services, including call redirection service, Internet banking services, ticket and securities business, or sales.
- In 2007, DDS Dresdner Direktservice GmbH handled 7.85 million transactions, generating a turnover of 25.84 m Euros.

Additionally, maintenance contracts for 39 servers expired. The question was: whether to extend the maintenance contracts or purchase new hardware.

To decide this, DDS tested server virtualization on two HP ProLiant DL380 G5 servers with multi-core Intel Xeon processors in August and September 2007. "In the scope of our tests, we emulated ten of our systems on these two servers. As consolidation worked really well, we decided to purchase new hardware with state-of-art technology, and to go in for virtualization in production operations", says Klaus Hackling, the project manager responsible for virtualization at DDS.

Virtualization technology gives a server operator the ability to split an individual server (host) into multiple virtual systems (partitions). Independent software configurations can be set up on the virtual machines, which share the host server's physical hardware. Reducing the number of physical systems (consolidation) leads to higher sever utilization levels (CPU, memory), while at the same time reducing power consumption and space and cooling requirements.

## The solution

In November 2007, DDS Dresdner Direktservice introduced two HP ProLiant servers with multi-core Intel Xeon processors to its production operations, replacing 14 legacy servers. "The system is not working at full capacity as we are not currently running any complex applications on it", Klaus Hackling explains. The current applications include an access control system, FTP servers, HRM systems, and a small SQL database. A quad core system with an Intel Xeon 5400 quad-core processor will follow mid-2008 to handle virtualization of more substantial, complex applications such as a Microsoft Analysis Server as part of the SQL server.



**„Our energy costs are dropping as we don't need as many servers, and because the multi-core Intel processors we deploy are more energy efficient.“**

Klaus Hackling,  
Project Manager Virtualization,  
DDS Dresdner Direktservice GmbH

VMWare ESX 3.02 has been installed as the virtualization software and it harmonizes perfectly with Intel's virtualization technology. The latter offers advanced hardware functionality to lay the foundations for improved stability compared to a software-only virtualization solution. System performance as a whole benefits from the fact that the server does not need to handle as many software-based translations between the host and guest operating systems.

In combination with a faster processor, DDS has noticed a considerable performance boost importing a 4.5MB encrypted text file into a Microsoft SQL 2000 server. The file is transported daily as a DTS (Microsoft Data Transformation Services) package and transferred to the database via the HRM systems import interface. "This daily import previously took about 60 minutes. After the server virtualization, we now need just 17 minutes", Klaus Hackling emphasizes.

Virtualization helps DDS to reduce the cost of migration and ongoing operations. Migration costs have fallen by about 40 percent. The far lower purchasing price as a result of server consolidation (two servers instead of 14) and less migration overhead were the reasons for this. Klaus Hackling comments: "We didn't need to restage 14 individual servers, but just two. As we can migrate legacy applications and their corresponding operating system version to virtual partitions, we can extend their lifetime at a relatively low cost." Further virtualization will follow in stage two as of mid-2008 with the additional aim of improving utilization levels on the existing servers.

Klaus Hackling also anticipates considerable cost reductions with respect to operating costs. "Our energy costs are dropping as we don't need as many servers, and because Intel multi-core processors are more energy efficient. And because they generate less heat, cooling is far simpler." At the same time, costs for backup tools, which were previously required to install current patches, cease to exist.

"Virtualization greatly facilitates the administration of our server landscape and makes us more flexible all round. Now, we can stage virtual systems, or modify their capacity, within a couple of minutes, to respond to new applications, growing loads, or regular system maintenance", says Klaus Hackling.

### **Key technologies**

- Thanks to their high performance, Intel® Xeon® quad-core processors are the perfect basis for consolidating multiple servers on virtual machines. Their energy efficiency saves money on power and cooling
- Intel®'s hardware-integrated virtualization technology improves virtualization performance by reducing the number of software-based translations servers need to handle between the host and guest operating systems. As the processor needs less resources for this, system performance improves all round

# Intel virtualization technology guarantees best-of-breed system performance

## Conclusions

DDS Dresdner Direktservice GmbH has already achieved a considerable performance boost and cost reductions with the first stage of its virtualization and server consolidation drive based on multi-core Intel Xeon processors. Although the two new servers are not working at full capacity, DDS is already planning stage two of consolidation, which will focus on database servers (Management Information Systems) for data analysis and improved reporting. DDS hopes to reduce the number of servers deployed in this area from 16 to just one or two.

Klaus Hackling comments: "As we need much more performance here, we will be deploying Intel quad core processors as of mid-year. Virtualization makes hardware reliability more important than ever." At the same time, DDS is planning to introduce an isolated, independent staging platform with the aim of improving text and development processes. Thanks to virtualization, individual system platforms can be deployed in parallel to provide different test environments and handle multiple development stages of any software stack.

## Customer benefits at a glance

- DDS Dresdner Direktservice GmbH has considerably simplified the administration of its server landscape by introducing virtualization
- Server consolidation saves 40 percent of migration costs thanks to lower purchasing costs and by reducing installation overheads for the new system
- Operating costs drop significantly thanks to lower power consumption and by reducing the air conditioning requirements in the server room.
- Thanks to high-performance multi-core Intel Xeon processors, tasks such as data import are accelerated by up to 300 percent
- Virtualization gives DDS the ability to respond flexibly to new applications, increasing loads, or scheduled system maintenance, and to control the utilization of the virtual systems in a targeted way



**Find a business solution that is right for your company. Contact your Intel representative or visit the Intel® Business/Enterprise Web site at [intel.com/business](http://intel.com/business)**

Copyright © 2008 Intel Corporation. All rights reserved.

Intel, the Intel logo, Intel. Leap ahead., the Intel. Leap ahead. logo Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

This document is for informational purposes only. INTEL MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.

\*Other names and brands may be claimed as the property of others.

0508/KLO/RLC/XX/PDF

319652-001EN

