



“Today our users are able to use their business applications at LAN speed even in the most remote areas. If needed, a fully functional mobile office is available even in the middle of the desert.”

Axel Daiber,
Director IT,
ND SatCom GmbH

Business applications from space

With more than 25 years of experience, ND SatCom is among the most well-established global providers of satellite-supported telecommunications. Today the company's technologies and services are used in 130 countries for a wide range of tasks in a variety of industries: television and radio stations, telecommunications companies, governmental agencies, corporate networks, fire departments and rescue services. ND SatCom has its headquarters in Immenstaad at the Lake Constance, four production locations in Beijing, Dallas, Dubai and Istanbul, and branch offices in 11 countries. It employs more than 400 employees worldwide.

Challenge – Make a new SAP release available worldwide

ND SatCom's distributed infrastructure has been a challenge for the IT department, most recently regarding the planned upgrade of the ERP system from SAP® 4.6 to SAP ECC 6.0.

“The primary question in that regard was how we could execute the rollout of the new software version as efficiently as possible,” said Axel Daiber, director IT at ND SatCom. “Due to the great distances that were involved, it was intended that on-site deployments be avoided to the greatest extent possible, but we were also unable to draw upon local IT employees at most of the branch offices. In addition to that, the heterogeneous client hardware was giving us headaches. A large part of the existing end devices did not meet the minimum system requirements of the new SAP front end.”

ND SatCom decided to not install the SAP GUI for the new ERP version locally on the endpoint devices but, instead, to make it available for all users worldwide via a central server farm with Citrix® XenApp™. In this way, the company was able to achieve the two major goals of the worldwide SAP rollout. First, ND SatCom was able to execute the upgrade simultaneously for all users because the SAP GUI had to be set up only once on the servers in Immenstaad. Second, ND SatCom was able to keep the existing endpoint devices for the new ERP release. Since the application processing power in the XenApp architecture is provided by the central servers, the requirements for the client hardware is minimal.



Key benefits

- Makes it simpler to make applications available for worldwide locations
- Enables high-performance use of CAD applications via the WAN
- Increases the security of sensitive company data through centralized data storage
- Reduces the number of physical servers that are needed
- Enables access to business-critical applications via satellite

Applications delivered

- Microsoft® Office and Exchange
- SAP GUI
- Autodesk® AutoCAD®
- OneFinance
- Microsoft Dynamics CRM

Networking environment

- Citrix XenApp, Citrix XenDesktop and Citrix XenServer running on 16 dual quad-core HP blade servers
- Windows Server 2008
- Gigabit LAN, connection from external locations via 1-2 Mbit WAN connections
- About 600 endpoint devices, including about 250 notebooks and 30 thin clients
- Satellite connections via ND SatCom XWARP

Annual savings of EUR 70,000

Making the application available to the external locations was substantially simplified by using XenApp. For this reason, ND SatCom quickly shifted additional applications to the XenApp server farm. Today, the planning tool OneFinance and Microsoft Dynamics® CRM are made available to the employees via XenApp. Centralization will ease the IT budget on a lasting basis. According to its own estimate, ND SatCom will save about EUR 70,000 a year in the future as a result of reduced travel costs, faster software rollouts, extended usage times of endpoint devices and the use of low-maintenance thin clients.

To keep server hardware requirements as low as possible for the XenApp farm, the IT department implemented Citrix® XenServer™ server virtualization.

“We oriented ourselves to a reference project that SAP AG had previously implemented within its own company,” the IT director said. “This showed that it is possible to substantially increase the maximum user density per physical server by means of a combination of XenApp and XenServer. On each of our physical blade servers, about 60 XenApp users are working today in four virtual machines—that is about three times more than would have been possible in the case of a classical XenApp installation under Windows Server® 2008 (32-bit).”

Convinced by the high degree of consolidation and the favorable price-performance ratio of the solution, the IT department later virtualized additional server systems with XenServer. The existing virtualization infrastructure, in part on VMware® ESX, was completely replaced. Now, about 35 different workloads are running as virtual machines on XenServer hosts, including Microsoft® Exchange Server, File Server, Print Server and other infrastructure services. All host servers use a NetApp system as shared storage.

Following application and server virtualization, ND SatCom introduced Citrix® XenDesktop™ desktop virtualization for a select group of engineers working on CAD workstations in the branch offices. “Here as well, our goal was to minimize the administrative expense for the distributed clients,” said Daiber “At the same time, centralized data storage was intended to ensure the consistency and confidentiality of the design data.”

Since the CAD workstations have particularly high hardware requirements, the IT department implemented the approximately 20 virtual desktops on dedicated blade PCs in the computer center. The AutoCAD client is brought to the virtual user interface on-demand via application streaming technology as soon as a user logs in to his or her desktop. The Citrix® HDX™ technologies of XenDesktop provide good performance for remote computing. Special optimization processes enable smooth work with graphics-intensive applications even over great distances and connections with high latency.

Making applications available via satellite

Not all regions in which ND SatCom had employees had a stable high-performance telecommunications network. “Even today there are still specific branch offices that we are only able to connect via lines with extremely low bandwidths,” Daiber explains. “As a result, the employees often experienced long waiting times in their everyday work. When a delay of five to seven seconds arises with each SAP transaction, this is quite frustrating over time.”

The company responded by developing a solution that combines its own satellite communications technologies with its centralized application model. Business applications such as the SAP GUI run on central XenApp servers, but communication between the computer center and the endpoint devices is carried out via satellite connections. These connections are steered and optimized by a compact solution that ND SatCom itself developed. In addition to a satellite router, it includes high-performance WAN optimization technology. This so-called Zero Latency engine minimizes the processing latency to less than a millisecond in the case of application access. The response times for the users are correspondingly short—in spite of the distance of 36,000 kilometers between the Earth’s surface and the communications satellites.

The solution has been in productive use at ND SatCom for three months. The company’s IT director is impressed by the performance. “Today our users are able to use their business applications at LAN speed even in the most remote areas. At the same time, we have become completely independent of local Internet providers. The entire package can be installed together with a satellite antenna in any automobile or SUV. Thus, if needed, a fully functional mobile office is available even in the middle of the desert.”

ND SatCom sees great market potential

There are many possible deployment scenarios for making applications available on a satellite-supported basis. In addition to the IT delivery to locations without a network connection, the subject of business continuity is intriguing to companies. The operation of IT systems can be maintained even in the case of total failures of the communication network resulting from technical disruptions or natural catastrophes.

ND SatCom is now offering the solution, XWARP™, which was originally conceived for its own needs, to other companies as well. The product was announced in September 2009 and will be available to the market in the spring of 2010. “Up to now, the latency problem has kept many of our clients from making IT applications available via satellite,” said Christian Adolph, marketing director of ND SatCom. “Now we are able to demonstrate to them live that this is not only possible, but functions wonderfully on an everyday basis.”

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