FREIBURG UNIVERSITY HOSPITAL

Hardware and software thin clients from IGEL are reducing management, maintenance and support outlay within the Uniklinikum Freiburg's care operations. The environmental footprint is getting smaller, too.

UNIVERSITÄTS KLINIKUM FREIBURG

Medicine, research and teaching: the Universitätsklinikum Freiburg (Freiburg University Hospital) is seeking to break down boundaries between these three domains. As a result, patients are set to benefit, now and in the future, from treatment methods based on the latest scientific findings. The clinic, which is one of the largest teaching hospitals in Germany, is forward-looking when it comes to IT, too, especially in its care operations.

KEY BENEFITS

- Standardization: Standardized remote management for hardware and software thin clients

- 50% reduction in desktop management costs

- Robustness: Hardware in use 24/7 for seven years

- Connectivity: Peripherals, local web browser, etc.

- Mobility: Cost-effective notebook thin clients created quickly using inexpensive IGEL UDC2 software

- High user acceptance, quick device replacement

- Small environmental footprint

SUMMARY

The Customer

- One of the largest university hospitals in Germany with 10,000 employees

- 1,494 beds, plus a further 377 beds in the Freiburg-Bad Krozingen University Cardiac Center

- 97.1% customer satisfaction with 64,655 cases per year

The Challenge

- Establishing a more efficient IT infrastructure and desktop structure in care operations

- Sustained reduction in costs: Computer hardware, IT management, maintenance and support

- Cost-effective mobile thin client solution

The Solution

- Citrix XenApp on Microsoft Windows Server 2008 R2

- Hardware and software thin clients from the IGEL Universal Desktop range: IGEL UD3 LX, IGEL UD5 LX and IGEL Universal Desktop Converter 2 (UDC2)

- IGEL Universal Management Suite (UMS)

Cost-effective IT workstations

The IT department responsible for patient care services serves a total of 3,000 users who work at the site in Freiburg. Because these users are spread across the large clinic campus situated in the middle of this "green city," support meant "hoofing it" a great deal until 1999. Since then, more and more applications have been centralized and the desktop environment gradually streamlined. "The first application we provided from the computer center with the help of Citrix software was the SP-Expert work scheduling program from Interflex Datensysteme," recalled Ursula Krechel-Fennell, IT Coordinator for the care service. "Shortly afterwards, we decided to standardize our workstation hardware with the help of thin clients and thus reduce procurement, management, support and maintenance costs on a permanent basis."

Thin clients performing well for 15 years

Following a detailed evaluation of multiple suppliers, the German thin client market leader IGEL Technology emerged as the winner. The excellent price/performance ratio and, in particular, the robust hardware and extensive remote administration capabilities of the lean end devices played a pivotal role in this decision. In 2005, the second generation of IGEL thin clients followed. The devices were introduced during the migration to Windows Server 2003. Since then, most care staff have been provided with a complete Windows desktop with several programs rather than individual published applications. At the beginning of 2014, the switchover to Windows Server 2008 R2 took place and the third, current generation of models was introduced. "Since we migrated our terminal servers to the 64-bit system, our users have benefited from much better performance. As a result, we can also provide Internet, including Flash and multimedia content," said Krechel-Fennell. "The Citrix HDX-certified IGEL thin clients play a key role, since they can make available part of their own computing power for decoding and playing back video content."

Widespread use of IGEL thin clients

Over 500 IGEL thin clients are now in permanent use, 24 hours a day, seven days a week. Depending on the user scenario, the Universitätsklinikum uses the all-round IGEL UD3 LX thin client or the particularly high-performance flagship IGEL UD5 LX model. The Universal Desktop thin clients are deployed in a variety of ways – from exclusive SAP workstations for requirements management (approx. 10 percent) to shared Windows 7-look desktops offering a number of applications. Certain users also work with two monitors (dualview). Around 100 devices are equipped with serial barcode scanners to order materials. Inwards that admit patients at night and on weekends, a number of thin clients with Cherry keyboards featuring an integrated reading device for the electronic health card (eGK) are used. In order to document wounds, the care staff also connect digital cameras to the devices.

Central and local applications

Further applications, which are provided for thin client users as individual published apps or as part of a shared desktop scheme with the help of Citrix XenApp, include not only Microsoft Office 2010 but also the electronic patient charts for the Meona and Copra normal and intensive care wards as well as the specially developed Clinical Workstation Systems (KAS), the schedule planner and the examination requirements via the Order Entry System (OES). Thunderbird is used as the mail program, while Internet Explorer or Mozilla Firefox is used as the Internet browser. The latter is also integrated into the Universal Desktop firmware of the thin clients, the majority of which run IGEL OS. This allows Citrix-independent kiosk operation for exclusive access to a specific website. Devices like these are given to service providers for monitoring medical equipment, for example.

Notebook thin clients with WLAN

One in five end devices featuring the Linux-based Universal Desktop firmware from IGEL looks like a notebook rather than a thin client. These devices are conventional notebooks equipped with the lean and secure IGEL Linux operating system and operating as software thin clients. In terms of hardware requirements, all that is needed is a small amount of RAM and a small SSD, because the IGEL Universal Desktop firmware based on IGEL Linux takes up just 4GB of hard disk space. Conversion to a software thin client takes place with the help of the IGEL Universal Desktop Converter 2 (UDC2) standardization solution which offers essential features specially for notebooks such as a battery level indicator, extended graphics driver modes and the IGEL Wireless Café WiFi feature. "Thanks to the IGEL UDC2 software, we get a robust, portable end device which operates securely and reliably for around €450 including monitor," said Krechel-Fennell. "These notebook thin clients are very popular among our users."

Standardized remote management

The mobile software thin clients offer a further advantage. Like all thin and zero clients from IGEL, they can be configured, administered and managed in a standardized manner using the IGEL Universal Management Suite (UMS) remote management solution that comes supplied. This means even greater potential for savings. The Uniklinikum Freiburg uses many of the features offered by the IGEL UMS. In addition to the central firmware updates, it makes use of profile-based management in order to quickly set up workstations with dualview, keyboards with eGK readers or specific web applications (kiosk mode). The IT team also appreciates the ability to generate specific views and evaluations with just a few clicks. Team members can see at a glance, for example, which thin clients have obsolete firmware and may need to be updated.

The initial set-up and ongoing development of the thin client environment takes place internally in close consultation with the data center. While the last switchover to Windows Server 2008 R2 and Citrix XenApp 6.5. (including troubleshooting) took four months, the outlay when updating the thin clients was virtually zero. Ursula Krechel-Fennell explained: "Once a year, we buy a batch of 100 devices that can be rolled out very quickly. The same applies to the software thin clients that can be equipped with the thin client firmware using TFTP servers and network boot (PXE) and then assigned their settings profiles via the UMS. The entire procedure takes around ten minutes." Thanks to high-performance remote management, devices can also be exchanged quickly. For 2015, 150 second generation IGEL devices have been earmarked for replacement – after up to ten years in permanent operation, i.e., 87,600 hours.

The economic benefits of central IT with IGEL thin clients are especially obvious when it comes to administration: "If, fifteen years ago, we had not taken the bold step of switching from PCs to IGEL thin clients, our personnel outlay would be twice as high now," explained Krechel-Fennell. "Instead of just one as in the early days, we now have on average six IT workstations in each ward. In spite of this development, two full-time positions are sufficient for overseeing the 525 thin clients. Our hotline receives maybe two calls a week with thin client-related questions." The IT Coordinator mentions yet another argument in favor of thin clients – their environmental footprint. According to a study carried out by the Fraunhofer Institute UMSICHT, an IGEL thin client workstation impacts on the environment only about half as much as a PC does over its entire operating life. This fits in very well in Freiburg which has made a name for itself worldwide as a green city through its ambitious environmental policies and its belief in renewable energy sources.

Going back to PCs inconceivable

Having gained experience with IGEL thin clients over the past fifteen years, Ursula Krechel-Fennell's verdict is a positive one:

> " Our care staff appreciate IGEL thin clients because of their reliability, our IT employees because of the excellent management support offered by the IGEL UMS. At the end of the day, we serve a large number of users with minimal outlay on the part of our IT personnel. Going back to client/server computing with PCs is inconceivable."

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