

Security for the investment goods industry

The VDMA invests in a new IT infrastructure

As with many companies, the VDMA trade organisation's collected expertise is largely reflected in its information technology. Each type of 'product' that is made for and with the members is also based on computer systems and mass storage media. Thus the security of data and the infrastructure was granted a special position in the context of a project to centralise the IT function. VDMA decided to install a Lampertz security room with an integrated IT infrastructure from Rittal at its new data centre.

The VDMA – the German association of machinery and industrial equipment manufacturers – is one of the most significant trade associations in Europe and offers the largest trade network covering the European investment goods industry. The backbone of the services provided consists of a network of well over 20,000 decision-makers and specialists from 3,000 member companies, together with 400 committed experts from the VDMA and its service companies. From this, it can be gathered that the VDMA processes, assesses and collates a vast amount of information from many sources. For this reason, the IT environment has developed in a very heterogeneous and decentralised way over the years.

"Just as in other many enterprises, the trend towards IT decentralisation over the course of time at the VDMA has been less than ideal", declared Holger Breiderhoff, managing director of the VDMA's service company and head of the VDMA's Finance, Controlling and internal administration. "It is difficult to ensure the security of systems and data if the hardware is spread over the entire company – and then there are the great maintenance requirements. This is why we decided at the end of 2005 to establish a new central data centre that met these high demands."

"If a modern, secure data centre is to be established in an existing building, then physical protection must be given a high priority – even higher than the hardware", added Jürgen Piranty, the VDMA's Network Manager. "At the same time we have developed a solution that takes into account potential fire, smoke and water hazards as well as the operating infrastructure with racks, climate control components and a secure power supply."

A contact partner for the secure data centre

After examining the possible solutions, the bid from IT Security Specialist Lampertz was accepted. Piranty added: "The fact that Lampertz offered a complete one-source solution was decisive for the VDMA, and made planning and operation significantly easier. There is no pointing of fingers everywhere if something doesn't work quite as well as desired. Lampertz is our contact for the entire infrastructure."

After granting the contract, the Lampertz LSR 9.3 security room was installed in the spring of 2006. The advantage of this solution is that the modular, fireproof room can be integrated in existing ones, without the need for any major construction work. The room offers protection against a great number of physical dangers such as fire, aggressive exhaust gases, water for fire-fighting, break-ins and access by unauthorised persons and other risks. It has been tested as an overall system and meets the limits for temperature and humidity laid down by the EN 1047-2 standard. A vented false floor has been installed within the room, itself built on a construction kit principle. The server, network and telecommunication racks are all situated on top of this false floor. The LSR 9.3 offers an additional benefit for the VDMA data centre - all systems are protected with one device. In contrast, smaller, local solutions can only protect part of the infrastructure.

When it comes to the infrastructure installations, Lampertz and the VDMA have put their trust in the Rittal's RimatriX5 all-round solution. The issues of rack, power supply, air conditioning, security and monitoring are combined in one overall plan. "We were especially convinced by the way that Rittal has solved the subject of air conditioning", continued Jürgen Piranty. "Rack-based air conditioning based on liquid cooling packages (LCPs) is used to cool the hot spots in the racks. We always cool the active components using the lateral, flange-mounted LCPs located between the racks. The room's air-conditioning system cools all the other installations." Modular and extendable cooling systems are indispensable nowadays. Progressively growing processor performances and growing packaging densities are rapidly forcing conventional room air-conditioning systems to their limits and are so increasing the risk of IT failure.

The Rittal LCP is used together with closed racks and so ensures a horizontal air circulation in which cool air is blown in front of the servers and is then returned (heated) to the air-water heat exchanger to cool down. Appropriate recooling systems are installed on a roof to cool down the heated cooling water again.

The power supply for the systems makes use of a modular solution from Rittal. A centrally arranged power distribution rack feeds the power distributor bars in the server racks. Depending on requirements, power outlet strips (Power System Modules) can be easily attached to these and they can then be connected to a modular UPS secure power supply. Each system extension is possible without the need for any specialist staff, so that the costs of electrical installation only occur once (when initially connecting the supply rack).

In its entire commercial and controlling sectors, the VDMA uses the AS/400 successor iSeries from IBM, which it was also possible to install in the racks thanks to its compact dimensions. In addition, a Blade Centre and a large number of other servers and a SAN Volume Controller mass storage system from IBM have also been installed. The telephone system – the VDMA's internal calls make use of VoIP – also takes up additional space in the data centre, as do the active and passive network components.

"The guidelines that nowadays apply for data security and liability are clearly not yet being taken too seriously by every company", added Holger Breiderhoff. "With the new installation we have now taken precautions to cover all eventualities before anything happens. Thanks to the new security room, we have not only been able to improve the quality of our IT through a central entity but also to increase security against various external influences – including access by unauthorised persons, which had previously only been possible to a limited extent on the individual storeys." VDMA stores multiple copies of data at different places in order to further increase security.

The solution also includes a comprehensive, software-based security system. Alongside controlling a fire early warning system as well as a fire extinguisher for the security room, the VDMA uses the same CMC-TC tool to monitor access to the room, the climate in the racks, the availability of the water cooling, as well as the power supply and the UPS. And talking about water cooling: Here too, the highest levels of security are called for. There are two separate circulation systems, a small one in the data centre and a larger one to the recooling systems. The heat energy is transferred via water-water heat exchangers. Should there be a problem with the recooling circulation, this can be switched over to use of the municipal water supply to cool the data centre.

Conclusion

The VDMA is setting a good example, because, like in most enterprises, the IT department together with its central Oracle database is of great relevance. "All the data on more than 3,000 member companies that is of relevance to us is stored here, as is a large part of the knowledge that has been gathered here in the organisation", Holger Breiderhoff concluded. "For this reason we have put our faith in a reliable, central contact, Lampertz. This company, as a result of appropriate contracts, is responsible for the availability of the infrastructure."

Components: Lampertz room, rack, LCP, UPS, CMC-TC