RimatriX5 goes to RIO

HUK-COBURG: always improving - for tradition's sake

HUK-COBURG is one of the largest insurance companies in Germany. Consequently, there is a large amount of IT behind the many services it offers. Insurance companies are technology-driven and define their business processes largely by means of IT. Anyone receiving up to 35,000 items of post a day has to use high-tech to process it quickly. Information from the incoming post has to be scanned, prepared and archived. HUK-COBURG decided on a new, second data centre, in which the computer and network environment was completely based on Rittal's universal RimatriX5 infrastructure solution. This data centre was built together with an input and an output centre. The initials of the project's German designation spell out the word "RIO". But this RIO is in Coburg, Germany.

It hardly seems imaginable, but an insurer like HUK-COBURG receives about 35,000 mails every day. For reasons of space alone, archiving all this would hardly be possible in the long term. So the company scans all the documents and passes them on to administrative staff in electronic form (in which they are also archived). The original documents are destroyed after a specified time. Since there are legal stipulations about how long correspondence must be archived, the IT solution is granted the same priority as conventional paper archiving.

HUK-COBURG installed a total of 75 new, closed IT racks from Rittal in the new "RIO" data centre

"To safeguard our IT enterprise optimally, we decided to re-develop one of the two mirrored data centres and increase the distance to the other for security reasons", explained Horst Sonnenberg, the IT department's group head of installation management. He added: "we did not only want to replace the older hardware solutions, but intended to do justice to the increased requirements in terms of liability risks. In an insurance company, anyone who does not protect their IT in the best possible way will have big problems (personal problems, too) in the event of damage.

The decision to transfer a data centre from downtown Coburg to the outskirts of the city was made as early as late 2004. Not only does all outgoing post leave from here, but this is where information media are stored, too. At the same time, other functional departments are also based at the site.

Which rack solution meets the requirements?

The order of magnitude of the new data centre makes it clear why the question of which rack to use is not an insignificant one. More than 70 racks were necessary for the new data centre building alone. The roughly 280 HP 19" servers used by HUK-COBURG need to be inserted as flexibly as possible, so that future technological changes do not call for any alteration to the rack environment itself. Horst Sonnenberg from the IT department explained: The original racks from the hardware suppliers were suitable only to a limited extent because we needed more space, as well as redundancy in the rack, and openness to permit a future increase in air conditioning requirements.“

Climate control and power supply are special requirements of any large-scale IT installation. At the current stage of development, the HUK-COBURG decided on a conventional room climate control system, because the existing space is large enough to dissipate the heat loads for current systems. However, the structure differs from many similar data centres in one special way: at HUK-COBURG, the cooled air is not injected into the so-called "cold passage" and sucked into the servers via perforated rack doors. Instead, the IT managers favour closed racks into which cold air is injected from below at pressure and then expelled, heated, top rear.

Horst Sonnenberg describes the individual solution: "One needs to be able to regulate the air supply depending on the energy dissipation in the rack. In the base area of a rack that has as large a volume as possible, it was necessary to achieve an adjustable supply air opening by using cover plates. An additional requirement was to integrate two independent current feeds in the rack in a way that was as safe and easy-to-manage as possible".

After consulting with the planning company, Rittal (as a well-known market player) was given the order to present a sample enclosure on the basis of requirements.

A solution to meet all requirements

With conventional air cooling, a maximum heat loss of around 5 KW can be dissipated from a rack if the air circulation is not subjected to any obstacles. For this reason, HUK-COBURG uses large-volume racks and does not fill them up to the limit with servers. With racks that are 800 mm wide and 1200 mm deep and with 47 U, it is possible to create enough space in front of and behind the 19" servers (which increasing extend in terms of depth) so that the air reaches all the systems without any hot-spots arising. The fronts are closed by double-winged doors. So the cooling air can be blown, under pressure, directly to the 19" level. The modular air flaps near the floor allow the amount of air to be controlled, depending on the requirements of the servers. The heated air is also subjected to forced extraction at the rear of the rack via fans in the cover plate so that no hot spots arise. "This solution has been working satisfactorily since it was started up in the summer of 2006 ", said Sylvio Ludwig. We supervise the server temperatures via the system management - and they are always within spec."

For optimum air circulation, it is a precondition that no paths are blocked. This was a further reason for HUK-COBURG to go for the largest possible depth of 1200 mm, which represents yet another first in the marketplace. Good flow conditions at the rear are also ensured. As a result of the 800-mm width, the power supply and mains cables could be moved to the sides. Since the new data centre building has two independent uninterrupted power supplies, it was clear that both circuits should extend right into the racks to ensure maximum availability. The IT managers decided on the modular solution within the Rittal RimatriX5 infrastructure. A PSM busbar takes the Rittal Power System Module. Depending upon the orientation of the installed socket modules, they contact one of the two independent, redundant power supplies.

Security and openness for the future

Once put into practice, the solution chosen also worked immediately. "Thanks not least to Rittal's know-how and support, and together with the planners VZM (Von Zur Mühlen´sche GmbH) of Bonn, and Raible and Partner, of Reutlingen, we were able to complete the entire project within the time and cost limits", added Horst Sonnenberg. "However, like so often in life, it is the little unnoticed details that so often make the difference. We decided on Rittal, because our solution now also offers future security in terms of climate control. If cooling needs should continue to rise then our installation, with its small five-rack groups of enclosures, will benefit from the fact that Rittal's LCP air-water heat exchangers can be retrofitted alongside the racks at any time. "There is a further reason that makes this option so simple. It was deliberately decided at HUK-COBURG not to separate active from passive components. On the one hand, according to the IT managers, the number of the cables in the raised access floor can be reduced - and thus also the expenditure that arises if a new cable is needed or during troubleshooting, which cannot be excluded in practice. On the other hand; the integration of the network components within the groups of five racks means that less cooling air is needed for the entire block – hot spots are thus largely excluded. If server powers continue to rise, it will be sufficient to flange-mount Rittal LCPs to the block on the right and left, without the entire infrastructure having to be changed.

The IT crew also counts the innovative anti-scuffing protection in the rack as a desirable little feature. A small sheet of metal was designed quickly by Rittal in order to prevent the power supply of the PSM rail being inadvertently trodden on. "We discussed the idea with Rittal and a short time later they had the perfect solution, which we now use in all our racks. The double-doors are also an advantage, because they make it possible for a mechanic to grasp the opened door, in order to connect a patch cable from one rack to the other hand during test installation, for example. In addition, this means escape routes are easier to keep unobstructed than when an 800-mm wide door in the corridor is open."

Conclusion

HUK-COBURG's new RIO data centre includes 40 server racks and 35 network racks from the RimatriX5 programme. Thanks to its flexible and innovative solutions, Rittal has replaced the racks of the old computing centre and has also scored points over the simple racks provided by the server manufacturers. Another decisive point: apart from the greater depth and individual adjustments made to meet customer requests (air inlet and outlet, power supply) it is also possible to retrofit a liquid cooling system. "Our contacts were always open for specific requests and suggestions", Horst Sonnenberg explained with satisfaction. "If advances in servers mean that we need to assemble our racks more closely in the future, we will still be able to continue using the available Rittal infrastructure. That is a good protection of investments for such an extensive installation, and this has also helped convince us - along with the overall RimatriX5 concept."

Components: Rack, PSM