Antwerp World Diamond Centre puts an end to computer concerns

Thanks to a new and advanced data centre, computer users at the Antwerp World Diamond Centre (AWDC) and the Diamond High Council (Hoge Raad voor Diamant - HRD) can sleep easy: the availability of their ICT systems has been massively increased. ICT partner Simac has modernised the data centre and installed innovative water-cooled server racks, to control the temperature better. In the old data centre the temperature sometimes got as high as 50°, which prevented expensive servers from working properly.

The emergency power supply also didn't work optimally in the event of power failures. It served both the equipment for diamond control and the data centre. There was no separation. So in the event of a power failure, it wasn't only the data centre that lost power. The expensive control equipment was also affected, with an inherent risk of damage.

Simac installed an extra emergency power supply and took care of the infrastructure works for the new data centre. This enabled the AWDC to consolidate its ICT architecture and stabilise the temperature in the computer room, as well as giving it greater control over its ICT systems.

simac

Profile

The Antwerp World Diamond Centre (AWDC) is the official representative of the Belgian diamond sector. It takes care of the official contacts between the diamond sector and the government, and promotes the diamond trade and industry at home and abroad. AWDC's commercial subsidiary company – HRD Antwerp – certifies polished diamonds and precious gemstones, provides training courses, and produces and sells diamond products, amongst other things.

Challenge

When its commercial and non-commercial activities were divided up, the AWDC took the opportunity to take a close look at its ICT infrastructure. The availability of its ICT systems did not appear to be high enough. A new, extended and more stable infrastructure was needed. This increased capacity and enabled a broader service provision.

Solution

Simac built a new computer room and provisioned the data centre with a power supply, cabling, fire-resistant materials and ten water-cooled server racks from Saifor.

Advantages

· Water-cooling ensures a constant temperature and more stable server infrastructure
· Sensors in the racks measure temperature and humidity, and detect fire and smoke
· Test environment and telephony server now included in the data centre
· Increased availability
· Simpler data centre management with automatic updates for process control
· Remote management possible
· Data centre can be expanded
· Cost-saving thanks to hosting own websites
· Better emergency power supply

"We looked to see how much it would cost to run our applications elsewhere. It worked out more expensive. "

Benny Jacobs, Senior Manager ICT at the Antwerp World Diamond Centre

Diamonds are forever, but the same can't be said for the equipment used by the Antwerp Diamond High Council to check the precious stones. "If there is a power failure in our laboratory, there is a good chance that the equipment we use for checking diamonds will become damaged. And these appliances can easily cost 250,000 euro", explains Benny Jacobs, Senior ICT Manager at the Antwerp World Diamond Centre. "Thanks to the more stable ICT infrastructure in our new data centre and the revamped emergency power supply, this concern is a thing of the past. Our systems can now receive sufficient power while the emergency generator takes over."

AWDC's data centre partner Simac installed an extra UPS power supply machine to separate the emergency power supplies for the diamond laboratory and the data centre. In the past, a power failure could lead to both departments losing power. When the non-profit organisation AWDC and the limited company HRD Antwerp (Hoge Raad voor Diamant) separated their commercial and non-commercial activities in 2008, the ICT department took the opportunity to have the collective installations audited.

"The audit report recommended modernising our infrastructure so as to not endanger the availability of our systems and applications ", explains Jacobs. "There are three critical applications in the data centre that have to keep running around the clock. Cooling problems and electricity failures sometime resulted in our diamond laboratory being technically idle in the past. After all, without our ICT systems, our colleagues cannot access the database with all the diamond measurements, which is their main work tool. After the audit we therefore decided to update our data centre to guarantee the availability of our applications."

AWDC decides against hosting

Even though cloud computing and application hosting are becoming increasingly popular, the AWDC decided to host their own systems. "We looked to see how much it would cost to run our applications elsewhere. But because we already have an extensive server infrastructure, it worked out more expensive. We just had to provision the infrastructure work correctly in the new data centre ", says Jacobs.

The organisation set sail with Simac. "I knew Simac from previous projects in my professional career, which were all completed very successfully. As well as these good past experiences, Simac also offered me very competitive rates."

Constant temperature ensures better stability

Simac provisioned the computer room with a power supply, fire-resistant materials, cabling, fire protection and cooling systems. Above all, Jacobs is proud of the new water-cooled server racks from the Spanish manufacturer Saifor. "Simac proposed the new Saifor systems for the racks. Because this manufacturer didn't yet have any users in Belgium, I went to their headquarters in Barcelona to look at the systems together with Simac. The racks have internal sensors. They detect fire and smoke, but also mainly measure the humidity and cooling capacity. Using this internal monitoring technology, you can keep the temperature under control and anticipate any possible fluctuations. Without sensors you have to rely on fire alarms, and then it's usually too late", jokes Jacobs cynically.

Before the arrival of the new computer room, the cooling failed a further three times. This resulted in the room temperature getting as high as 50 degrees. At 45 degrees the systems switch themselves off automatically, resulting in an interruption to work. As a temporary solution the AWDC placed extra ventilators in the data centre, but that was just plastering over the cracks. Simac has now arranged the cooling perfectly so the temperature remains stable. Each rack is connected to a central ice-water cooling system with compressors on the roof. These heat exchangers provide green energy for a large part of the year because it is cold enough outside. With the water-cooled racks the AWDC can easily put in extra servers without having to renew the air-conditioning installation for the whole room.

Data centre customised for possible foreign expansion

The AWDC also considered including its various foreign branches' applications in the data centre. Using central Citrix technology, they can then connect directly to the applications in the data centre. "We have already expanded our infrastructure to 70 servers anyway, but the computer room still has more space for extra machines", says Jacobs. "And the racks are also very modular. You can change the interior dimensions of the racks so that they can also accommodate other machines with different dimensions. The Saifor systems are easy to extend: we are ready for a further possible international expansion of our commercial subsidiary HRD Antwerp."

The ICT technicians at the AWDC have a lot more time to spend on internal ICT support, amongst other things, thanks to the new installations. The automatic process control in the data centre means the systems no longer need to be checked manually in the mornings to see if there have been any problems during the night. The management systems in the data centre give an update every day. Jacobs can also ask a third party to check the systems remotely, for example outside office hours or if the organisation starts to grow exponentially. Remote access was not possible before. Now the organisation also has a powerful data con-

nection (100 Mbit) with its office in Lier. This offers possibilities for having a second disaster recovery site.

Telephony and test servers now included in the data centre

The telephony servers now also run in the computer room. The eighteen offices in the diamond quarter are linked to the data centre via a fibre-optic cable and make telephone calls to external lines via the AWDC. The general telephony server used to be in the facilities department, and wasn't cooled in the dusty room in the cellar. The larger data centre was also able to accommodate the business-critical telephony application.

Jacobs also added a number of test servers to the data centre. "We now have a separate test environment with eight servers so we can quickly and safely test any changes, for example for our ERP application. We used to test directly on the production environment, with all the risks and consequences that came with it. We can also host our own websites now, which saves us quite a bit of money."

With these new systems, the AWDC once again has an infrastructure that is designed to meet its needs. "No changes were made to the old data centre for over ten years. But information and data continue to grow exponentially. With our new infrastructure we can carry on for at least another decade and a half. But mainly we can enjoy greater stability of our systems thanks to the constant temperature, we have been able to consolidate our ICT by including business-critical systems in the data centre and we now have our ICT better under control", concludes Jacobs.

"Saifor racks have internal sensors. Using this internal monitoring technology, you can keep the temperature under control and anticipate any possible fluctuations. Without sensors you have to rely on fire alarms, and then it's usually too late!"

Benny Jacobs, Senior Manager ICT at the Antwerp World Diamond Centre