Kelvin Hughes deploy Schneider Electric StruxureOn for 24/7 monitoring of data centre applications

The application forms part of Schneider Electric's EcoStruxure ™ solution for data centres, and delivers detailed remote monitoring and critical information direct to the users' mobile phone.

Overview

Kelvin Hughes is a developer and manufacturer of navigational and radar systems for civil and military applications, with a manufacturing history dating back over 250 years. The company, which was acquired by German defence contractor Hensoldt in 2017, is based in Enfield in Essex, where its corporate data centre has been located for the past five years.

The data centre and its IT equipment host all of the company's critical applications including its ERP system, development servers and data storage systems. As a Ministry of Defence (MOD) subcontractor, the company has a vital requirement for both physical and cyber security, in addition to strict access control. Business continuity and disaster recovery are also important aspects of the facility's day-to-day operation.

"If the data centre fails, the company essentially stops trading," said Ian Mowbray, Infrastructure Services Manager at Kelvin Hughes. "Reliability, both in terms of the data centre hardware, the IT equipment and the services supplied by Kelvin Hughes is an issue on which the company cannot afford to compromise."

From Inception to Delivery

Kelvin Hughes' original data centre, which was designed and built with the help of Schneider Electric, consists of 12 racks containing a mixture of physical and virtual servers and data storage arrays. However, only eight of the racks are in use today by Kelvin Hughes, with the additional four populated by another company which is collocated on the business premises.

There is scope for considerable expansion in the data centre, which would bring with it a need for additional monitoring and management of the facilities to ensure that it continues to operate effectively.

Mowbray's team comprises six people who are responsible not just for the IT equipment and helpdesk, but also for the entire building management including environmental control, access control and maintaining the water supply for the data centre cooling equipment.

Advanced Insights

In recent months, Kelvin Hughes has deployed Schneider Electric's StruxureOn service, to help maintain its data centre operations whilst providing remote management and monitoring. Ian Mowbray explains that when built, the facility featured a contained hot aisle together with close coupled cooling equipment.

"Schneider Electric's InfraStruxure with Hot Aisle Containment Solution (HACS) has greatly helped the efficiency and effectiveness of our data centre cooling system," says Mowbray. "A number of the servers have been virtualized making the requirement for physical servers unpredictable. The HACS enables a high density load and the flexibility to reliably accommodate, power and cool an additional number of IT devices."

"We used to have a monitoring server in the computer room which looked after all of the infrastructure and sent us email alerts if anything was amiss," said Ian. "But during a recent routine upgrade of the batteries in our UPS systems, we learned about StruxureOn and that we could deploy it as part of our existing maintenance agreement with Schneider Electric."

"Anything that provides additional insights and proactive monitoring or management of our facilities is of great interest because we're a small team and it's essential to know what's happening in the data centre on a daily basis."

StruxureOn enables data-centre managers and operators to both view and control all their equipment from a single central console, more commonly known as the "single pane of glass".

A great benefit of the new system, according to Mowbray is that alerts to any issues that reach a certain threshold of concern can be sent directly to a duty manager via the mobile phone application. "It means we can continue to monitor the computer room remotely at weekends, and should we encounter any issues, they are delivered directly to my Smartphone."

"The app also makes it much easier to communicate with Schneider Electric in cases where external support is required." He continued. "As a customer, we can log a support call directly into the maintenance team via the app, meaning that we don't need to phone the helpdesk any more. We have previously encountered cases where a power supply has malfunctioned over a weekend, we've logged a call and the Schneider engineer has been on site first thing Monday morning with a replacement part."

Resiliency is key

The data centre is designed to be ultra-resilient and as such has a lot of redundancy built into the UPS infrastructure. "Due to the fact that we're running at around 50% of total capacity, we

can get about two and a quarter hours autonomy time from the batteries at our current load. In addition, we can continue to run the water pumps and In-Row cooling units, because we have a 4000 litre water buffer located outside, which gives us substantial cooling redundancy to continue to cool the room even if we experience a power loss."

By utilising Schneider Electric's PowerChute software, which selectively shuts down various servers in the case of a prolonged power outage, the autonomy time of the batteries can be increased even further. "We can actually squeeze about three and a half hours out of the batteries before everything stops," says Mowbray. "In reality, mains power would typically be restored long before then. The longest power cut we have had in five years only lasted for 20 minutes."

Mowbray says that the security of the data centre is adequately provided by the Schneider Electric Symmetra UPS systems, which remove the need for a backup generator. "We considered that option," he says, "but given the level of risk it wasn't worth it. It's more important for us to shut down the kit safely in a controlled way than to have a generator, which may or may not even start!"

Data Centre Lifecycle Services
The service provided by Schneider Electric is essential to the effective management of the data centre's facilities. "The StruxureOn monitoring service has enabled us to extend our virtual team at literally no extra cost," says Mowbray. "In order to deliver detailed insights and reporting at a similar level we'd need a far bigger team in place to monitor the facility 24/7."

"From the point of view of engineering, product maintenance and lifecycle support, Schneider Electric continue to provide an excellent service to Kelvin Hughes," he continued. "Any time we've had an issue with a piece of infrastructure equipment, they've always sent a replacement with an engineer in a timely manner, I cannot fault their service team."