

AF SWITCHGEAR LTD

Leading UK switchgear manufacturer keeps customers' power monitoring systems up and running using **Stratus® everRun® Enterprise**

Established in 1974, AF Switchgear Ltd is one of the UK's largest switchgear manufacturers and has set the standard for low voltage (LV) switchgear and power distribution. With more than 40 years of switchgear industry experience, over 250 employees and an annual turnover in excess of £30 million, AF Switchgear Ltd provides flexible and economic solutions to suit all switchgear and control applications including HV Equipment & Package Sub Stations, Main LV Distribution Switchgear, Sub LV Distribution Switchgear and more. In 2011, the company established the Control and Monitoring Systems (CMS) department to provide custom design and integration of highly functional systems for customers. Today, the CMS department continues to grow and increase its contribution to annual turnover.

The Challenge

As a Schneider Electric Authorised StruxureWare™ System Integrator, AF Switchgear Ltd custom designs and integrates state-of-the-art control and monitoring systems using StruxureWare™ Power Monitoring Expert for data centres and large commercial buildings with multiple tenants. The systems collect and organise data from a facility's electrical network into a standard SQL database for full historical event recollection and power usage analysis. AF Switchgear Ltd provides design assistance—from system conception through structure planning to fully working systems—to enable power usage analysis for data centre or building operations staff and delivery of billing reports for end tenants. By providing intelligent insight into the electrical infrastructure, AF Switchgear's systems help customers accurately bill tenants for power usage, minimize energy costs and make the most of current assets to meet their financial and operational goals.



AF Switchgear Ltd deploys its control and monitoring systems in virtual machines running on standard x86 servers at the customer's facilities. Every quarter hour, the systems automatically collect data from meters across the data centre or commercial building. This data is cached in Random Access Memory (RAM) and pushed to a Microsoft® SQL database, where it can be accessed for historical analysis or billing purposes. AF Switchgear Ltd identified that because meters don't always have internal memory, a physical server failure may result in permanent loss of the power usage data currently cached in RAM. This data loss may not only impact a customer's ability to fully counter-charge tenants, but it may create critical intelligence gaps that hinder energy efficiency initiatives.

Given the potential impact of system failures, basic redundancy failover did not offer the RAM-level data protection that many AF Switchgear Ltd customers require. With the power monitoring software running on a single server, a hardware failure would result in a period of downtime as the customer boots up a copy of the hard drive. Therefore, the company saw an opportunity to deliver added value with a continuous availability solution that prevents system downtime and data loss from happening in the first place.

“Many of our customers demand high granularity of data in their energy monitoring and billing reports—in many cases down to the half hour or quarter hour. If a server fails, they could lose a whole segment of critical data. Stratus everRun protects against unplanned downtime so customers can accurately counter-charge tenants for energy consumption. The alternative is inaccurate counter-charging and absorbing costs due to irrecoverable data loss.”

Darren Pearce

Design Manager, Control & Monitoring Systems
AF Switchgear

The Solution

After evaluating a few continuous availability solutions and examining results of Schneider Electric’s system testing, AF Switchgear Ltd selected Stratus everRun Enterprise downtime prevention software to keep its power monitoring systems up and running—all the time—at customer buildings and data centres. The everRun solution operates alongside the customized StruxureWare Power Monitoring Expert software on standard Intel® x86 servers running Microsoft® Windows® or Red Hat® Linux® and Microsoft SQL Server.

At each customer site, two x86 servers are synchronized via a virtualization platform that pairs protected virtual machines together to create a single operating environment with full redundancy of all underlying hardware and data. If one physical machine should fail, the power monitoring software will continue to run on the other physical machine without any interruptions or data loss. If a hardware component fails, everRun simply substitutes the healthy component from the second system until the failed component is repaired or replaced.

The I/O is automatically mirrored to the redundant server to ensure that all in-flight transactions as well as data in memory and cache are preserved, without the need for machine restarts, for optimal protection and peace of mind. In addition, everRun proactively monitors the servers in the background—sending instant alerts when something needs attention—to help AF Switchgear’s customers achieve always-on power monitoring.

The Results

AF Switchgear Ltd is able to install the everRun solution quickly and easily without having to make modifications to the power monitoring software. Once the hardware is connected, it takes very little time to perform the single-disc installation and create a single operating environment with applications co-existing on two virtual machines. The web-based everRun Availability Console makes it simple to set up, manage and view the systems—including virtual machines, networking and storage—in real time. In addition, the Stratus support center continuously monitors the systems remotely, and automatically sends notifications if a fault should occur.

As AF Switchgear Ltd prepares to deploy its first power monitoring system with everRun downtime protection at a customer site, the company has been rigorously testing the solution to ensure high performance and reliability. “Based on the tests we’ve conducted so far, everRun is performing exactly the way we expected,” stated Darren Pearce, Design Manager, Control & Monitoring Systems at AF Switchgear. “We’ve experienced no issues at all; everRun’s downtime prevention capabilities are spot on.”

About Stratus

Stratus Technologies is the leading provider of infrastructure-based solutions that keep applications running continuously in today’s always-on world. Stratus enables rapid deployment of always-on infrastructures—from enterprise servers to clouds—without any changes to applications. Stratus’ flexible solutions—software, platform and services—prevent downtime before it occurs and ensure uninterrupted performance of essential business operations.

To learn more, visit stratus.com

“Stratus everRun Enterprise enables us to provide customers with complete peace of mind with regard to the availability and integrity of their essential billing data.”

Darren Pearce

Design Manager, Control & Monitoring Systems
AF Switchgear



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