

## Nominee: Schneider Electric

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### **Nomination title: StruxureWare for Data Centers provides integrated Infrastructure Management tools for improved efficiency and reduced costs**

Schneider Electric's StruxureWare for Data Centers is a comprehensive suite of Data Centre Infrastructure Management (DCIM) tools that allows data-centre operators to monitor and manage vital infrastructure assets from a single console. This integrated suite of DCIM applications provides actionable intelligence on the operation of cooling, power supply and environmental management systems for an ideal balance of high availability and peak efficiency throughout the data centre.

Its modular design allows easy integration with other asset-management and systems-management software suites and also enables specialist tools designed to optimise a particular feature, such as energy efficiency or cooling, to be added to the basic system.

A module of Schneider Electric's class-leading DCIM suite, StruxureWare Data Center Operation: Cooling Optimize continuously optimizes airflow in the data centre, delivering improved reliability and availability. Cooling Optimize is a closed-loop system that reacts to real-time data, automatically identifies and eliminates hot spots and helps diagnose potential facility risks. The application balances the need for cooling with the lowest possible energy expenditure, delivering immediate cost savings and the right amount of cooling within the data centre.

The application enables control over desired temperatures together with visibility into thermal conditions. It employs machine learning software which constantly adjusts cooling as environmental conditions change. This real-time response to temperature-affecting events, such as equipment moves, upgrades or IT load swings, stabilizes air flow and solves the complex puzzle of cooling resource allocation.

Using StruxureWare for Data Centers, operators can track, visualise, and manage assets for intelligent analytics. Providing data in real time on energy procurement and carbon



management ensures energy efficiency, power availability and uptime. The software also enables operators to optimise IT asset utilisation and power consumption to help reduce costs

StruxureWare for Data Centers has been recognised by Gartner for two consecutive years as a leader in its Magic Quadrant for DCIM tools, praising its 'completeness of vision' and 'ability to execute.'

StruxureWare for Data Centers suite enables maximum efficiency throughout the data centre lifecycle, from design and build to operation, assessment and planning.

Organisations have successfully used StruxureWare for Data Centers to improve the efficiency of their data centres and save costs.

Cardiff University makes particular use of an Energy Efficiency Module to improve the efficiency and utilisation of its high-performance data centre as well as lowering its PUE rating significantly and reducing its energy costs.

Hugh Beedie, Chief Technology Officer for Cardiff University said, "To put the DCIM upgrade into context, it costs around £250,000 of electricity per year to run the data centre. By having a good PUE changing from 1.7 to 1.2 I'm saving approximately £125,000 worth of electricity every year."

Among the functions supported by the university's data centre is a high-performance computing cluster which is used as part of a collaborative program between several Welsh universities providing computation-intensive support for world-class research projects in areas such as theoretical physics and genomics.

This requires the data centre to be able to provide scalable high-performance computing on demand which in turn caused Cardiff University to upgrade the efficiency of its data-centre infrastructure, particularly in the areas of cooling and power-supply resilience. As well as having a particular interest in green computing, the data centre management put the case that an increase in power efficiency, as measured by reducing PUE from 1.7 to 1.5, would result in payback of the £600k capital investment within ten years.

The upgrade included: replacing old chillers whose efficiency had degraded faster than expected; improvements to water pumps to improve cooling performance and enhance resilience, thereby allowing future replacement of any part of the cooling infrastructure with no downtime; consolidation of general IT equipment from nine to five racks to make space for high-performance clusters;

The data centre's instrumentation was improved with electricity measurements taken at UPS inputs, chiller inputs, and at rack PDU level for IT equipment. With the deployment of the Energy Efficiency Module from Schneider Electric's StruxureWare for Data Centers DCIM software this allows real-time, granular monitoring and analysis of all the elements necessary to ensure high-performance computing with the best possible power efficiency.

The PUE target of 1.5 was exceeded, occasionally reaching as low as 1.17 as measured by Schneider Electric's DCO Energy Efficiency module. The nine-month average between January and September 2015 was 1.21.

This was a result of the combined effects of upgrades to the cooling infrastructure and the improved monitoring, analysis and management provided by the instrumentation and the DCIM software.

The project has radically exceeded expectations and is currently on track to deliver the return on investment in less than five years, nearly twice as quickly as the ten-year payback originally predicted.

Digital TV and communications services provider Sky used StruxureWare for Data Centers to improve the efficiency of its own data centers by consolidating its legacy management tools into a single integrated suite.

With an IT asset base of more than 1000 server racks across a range of in-house and co-located data centres, managed by a variety of non-integrated software tools the company saw the opportunity to improve its services and reduce costs using a more integrated systems-management approach.

Guaranteed uptime was a top priority, followed by maximum utilisation of existing resources, the ability to match capacity to customer demand and the need to meet ambitious environmental targets.

Also, more effective management of existing capacity would reduce energy use and increase efficiency leading to operational cost savings while making the best use of IT resources to guarantee service delivery to Sky's customers.

Tightly integrated with Sky's BMS (Business Management System) StruxureWare for Data Centers was deployed across all sites providing out-of-the-box components including asset management, change management, capacity planning and IT optimisation. A single dashboard displays data from assets, racks and the BMS on a single screen.

A key benefit was to give Sky the ability to identify assets through CPU utilisation which could be candidates for virtualisation, re-provisioning or retirement, leading to more efficient management of resources and more effective matching of capacity to demand.

The project has resulted in maximised efficiency of the existing data centres, allowing increased services to be delivered without building new IT facilities. The centralised management through a single dashboard saves time and provides full visibility of hardware utilisation correlated with power consumption for long-term planning.

The system provides business intelligence through reports showing utilisation, performance and capacity planning. It also improves service availability and operational performance through impact alerts and mobile apps.

The project has also reduced human error and improved workflow through integrated change management, and has engaged users by making them aware of potential improvements in terms of performance and efficiency thanks to better provisioned resources.

### Why nominee should win

- StruxureWare for Data Centers delivers tangible benefits to the financial bottom line by improving the efficiency of all assets in a data centre resulting in greater server utilisation, optimal power consumption and reduced costs
- Modular design and single console view allow customised integration of management tools for specific needs
- Proven track record delivering greater efficiencies to first-class organisations across business and public service
- StruxureWare for Data Centers is recognised by independent observer Gartner as the best in its class in terms of completeness of vision