Fujitsu wirelessly monitors power and environmental parameters in their London data centre

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In Fujitsu's Data Centre in London, it is not just the company's own data that is managed but also that of hosted customers. The requirements for computing capacity and data volume are different from customer to customer, which means, of course, that the underlying energy costs of the services also vary. To be able to provide every customer with an accurate itemised bill of power consumption, Fujitsu relies on a wire-free monitoring system called Packet Power supplied by Daxten. This system wirelessly records all power parameters such as volts, amps, watts, frequency, power factor, apparent power and, of course, consumption data and breaks it down from the room-based distribution level to rack, PDU and device level. Another key goal of the Fujitsu data centre specialists was to improve load management of the existing power and cooling resources and boost efficiency even more. One of the main reasons they opted for the Packer Power solution was that, in addition to monitoring power, it also tracks environmental parameters like temperature, differential pressure and humidity. Extensive recording of this data makes it possible for consumption, capacity utilisation and environmental conditions to be calculated, analysed and ultimately continuously optimised.

Specialists wowed

"When Daxten showed us the wire-free monitoring solution in a testing environment for the first time, it certainly wowed me," said Simon Levey, Data Centre Development Specialist at Fujitsu UK, summarising his impressions of how the monitoring system's metering and sensor modules were activated, automatically configured themselves, began taking measurements and sharing the data automatically in a wireless network.

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Wire-free Packet Power monitoring solutions allow to centrally control and manage several hundred environmental sensors (e.g. for temperature, humidity and differential pressure) and energy parameters like Volts, Amperes, kW, kWh, kVA, phase angle und total current for any server room, cabinet, PDU or single IT device. All monitoring devices instantly begin to share information via a self-configuring wire-free network as soon as they are plugged in. Energy usage information is then gathered for use by intuitive applications or for distribution to a wide variety of energy monitoring, DCIM or building management systems.

▸ The gateway uses the SNMP and/or Modbus over ethernet protocol to transmit power consumption and temperature data to the monitoring GUI.

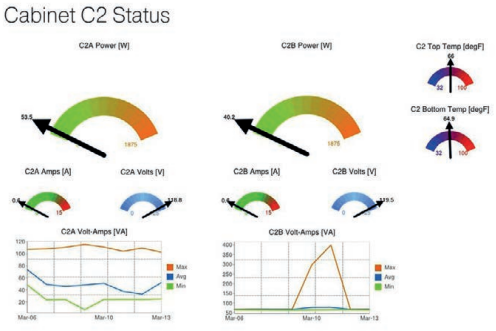
Unlike conventional monitoring solutions, the individual modules in the Packet Power system are not physically connected to one another by cables or a bus system, but can be placed anywhere in relation to one another with no need for cabling. The power and environmental data collected by the power metering and sensor modules is recorded and transmitted to one or more gateways wirelessly. The gateways convert the data and transfer it via SNMP or Modbus to a dedicated user interface or, if necessary, to an overarching Data Centre Infrastructure Management (DCIM) or Building Management System (BMS) application.

Low-cost implementation and “on-demand” scalability

“What really won us over was the manufacturer’s idea of integrating the metering module for recording the power data right into the power cable. It simply replaces the cable for our active hardware and the rack PDUs and is ready for operation as a monitoring unit,” according to Simon Levey. Fujitsu’s London Data Centre currently has 284 monitoring units and gateways in operation. More modules are continuously being added in collaboration with Daxten the data centre specialist – the goal is to retrofit all of the racks with the Packet Power solution to make it the standard. For Simon Levey and his team, it is important that the retrofit and future enhancements can take place step-by-step and exactly in line with needs. This reduces pressure on the budget and lowers follow-up costs. The technicians like the fact that installation mainly involves positioning the environmental sensors or replacing the power supply cables for the Packet Power wireless devices.

The Packet Power Environmental Monitor wirelessly records the data measured at the various measurement points in the data centre.

The wireless measurement technology is simply integrated into the power cables.



The system's management tool creates reports on power usage at building, room, branch circuit, rack or device level on the basis of the readings and tracks environmental parameters.

The dashboard to monitor and analyse power use and environmental conditions

An administration tool integrated in the system reduces the workload of system operators: it processes the measurements of the monitoring modules to create actual and trend reports on power usage and environmental parameters. System operators control consumption and distribution loads as well as temperature, pressure and humidity values in the room and at every rack level via graphical dashboard displays or in table format.

Everything visible and under control thanks to early warning system

The Fujitsu data centre specialists really appreciate that the monitoring solution also functions as a proactive early warning system, for example, in the event of a problematic temperature change in the rack or fluctuating power supply via a PDU strip. If limits defined ahead of time with the administration tool are even slightly exceeded, the monitoring system reacts immediately and automatically triggers warnings. Countermeasures can then be initiated before heat-related or power-related system disruptions can even occur. This means that Fujitsu is ideally equipped to handle any situation.

Optimised use of existing power and cooling resources

"We don't just use the solution as a metering and monitoring tool or early warning system, we also use it to identify where power reserves still exist or if power and cooling resources are limited in the individual racks. This way, we know exactly how much active hardware we can install in the cabinets and are able to distribute the loads appropriately – and this creates efficiency," sums up Simon.

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About Fujitsu

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Fujitsu UK & Ireland

Fujitsu UK & Ireland is a leading IT systems, services and products company employing 12,000 people with an annual revenue of £1.67 billion. Additionally, Fujitsu's other operations in the UK bring its total employee numbers to over 14,000 and its total revenues to £1.8 billion. Its business is in enabling its customers to realise their objectives by exploiting information technology through its integrated product and service portfolio. This includes consulting, applications, systems integration, managed services and product for customers in the private and public sectors including retail, financial services, telecoms, government, defence and consumer sectors. For more information, please see: www.fujitsu.com/uk/.

Company profile Daxten

Daxten was founded in 1994 as Dakota Computer Solutions. As a manufacturer and distributor of innovative solutions, Daxten is at the forefront of promoting energy efficiency within the data centre. The company offers cutting edge cooling optimisation (CoolControl), power distribution and monitoring solutions which improve the resource efficiency and reliability of the data centre. Daxten is headquartered in London and Berlin. For further information please visit www.daxten.com

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