Nominee: EnergySwitch PDU - by Racktivity

Nomination title: EnergySwitch PDUs help protect business continuity and reduce OPEX.

One of the major data centre challenges today is the increasing cost of electricity. Over the past decade the cost of electricity has increased significantly and this trend is not expected to fade away. Industry data and studies mention power costs can account for over 50% of the total data centre operational cost. In addition to controlling operational expenses the need to achieve close to 100% uptime is shifting from service to pure necessity, one may even say a commodity. For companies, data centre downtime can translate in a hit on credibility, lost revenues, lowered stock value and/or lost customers. So data centres are faced with the challenge to ensure maximum of uptime and service whilst keeping energy cost under control. To overcome these challenges, data centres have in general three choices:

- expand power & cooling capacity
- build new data centres
- deploy a power management solution that analyses, maximizes and improves usage of existing capacity

As the first two options require major investments and other resources, data centres should invest in the third. According to the Uptime Institute's survey regarding DC priorities for 2013 (http://bit.ly/YqmVEv), 52% of data centre owners cite the need to improve metrics for power-usage effectiveness and uninterruptible power supply, as well as those related to network and rack operations. 32% of all participants said capacity planning for critical resources such as power and rack space are increasingly of strategic important. In order to truly drive data centre performance with maximized availability and energy efficiency, the DC requires detailed insights and control of the various electrical power metrics.

Racktivity PDUs equip data centers with the industry's most advanced metering and switching capability. Racktivity PDUs are built upon Racktivity's real-time operating system, to provide the highest degree of granular real-time PowerQuality type metrics. It provides real-time remote PDU-level and outlet-level true RMS monitoring of current, voltage, power, power factor and energy consumption with +99% accuracy.

* REDUCE OPEX

Knowing what devices are consuming the most energy, detecting idle, underutilized or power ineffective servers and finding out where they can save on energy has a direct impact on the bottom line and carbon footprint of any data centre. With the IT equipment, the most significant savings are normally found in what is the biggest source of waste: poor server utilization. By linking the PDU data with Racktivity software, or a third party software solution, you can see what the correlation of the server power load with cpu/memory load of the applications thereon is. Based on this correlation the system indicates which servers are underutilized or even idle. It furthermore informs the user what applications can be moved safely in terms of power and cpu/memory load and at the same time it indicates the yearly saving when doing so. Thus offering a prescriptive analysis tool in

order to improve data center efficiency without increasing the risk for downtime. Successful consolidation initiatives can reclaim a considerable amount of rack space and stranded power. But the PDUs also pull their weight to help carbon footprint go down. Thanks to the use of bi-stable relays, energy efficient power supply and 80Mhz chip (vs 500 Mhz - 1.000 Mhz as industry standard), the PDUs feature an ultra-low power consumption. Thanks to in-house developed firmware, installed on the PDUs, no additional operating system is required, therefor significantly reducing start-up time. EnergySwitch PDUs are operational in < 3 seconds.

* MAXIMIZE UPTIME

As downtime can result in a hit on credibility, lost revenues, lowered stock value and/or lost customers, one of the data centers major priorities is uptime. In order to maximize uptime, Racktivity PDUs are equipped with unique features such as Electronic Fast Fuse Protection, zero crossing switching and inrush current protected relays.

-   Zero crossing switching: In alternating current, the zero-crossing is the instantaneous point at which there is no voltage present. When electrical power is switched, Racktivity PDU outlets will only switch at an instant when there is no current (zero-crossing) so no electrical interference is generated. Thereby, there is no risk of sparks and sticking relays. Both aspects are disaster prevention features and will heavily impact the MTBF, causing the PDUs to have a longer lifespan than others.
-   Control of inrush current: The outlets of the PDUs switch on one after the other, dividing the inrush current over a certain time lapse to prevent servers going down due to an overload of power. Users can define themselves how long the delay of start-up is. Control of inrush current offers a protection against starting racks to drop.
-   Electronic Fast Fuse Protection: This unique feature offers data centers an additional security. A near-short circuit in server up to 200A can result in one or several racks going down. Thanks to the Electronic Fast Fuse Protection, the PDU isolates the responsible server. This results in only one server going down instead of a full rack (or more) and immediately identifies the faulty server, allowing an easy and swift disaster recovery. The devices also provide data centers with back-up access to servers in case they lose their prime management connection.

* INCREASE CUSTOMER LOYALTY

The numbers tell the tale. The better and more detailed you measure, the better you are informed and consequently take the most appropriate decisions. EnergySwitch PDUs measure 25.000 samples per second per individual outlet (V and A). Having the capability to measure power usage and power quality this accurately, from source down to mouth: individual power outlet or sensor & everything in between, giving users the right tools at hand to provide correct billing information to their customers.

* PLAN CAPACITY Enterprises rely on data centres to meet their continuous growth objectives, therefor rigorous and well-thought capacity planning and management is critical to each data centre allowing them to accommodate both the expected and unexpected needs of their customers business. Thanks to detailed metrics, provided by Racktivity PDUs, data centres can manage capacity planning for both contingencies and planned growth, bringing significant cost and space saving.

Why nominee should win

Maximizes uptime

- Prevents racks to go down in case of short circuit thanks to electronic fast fuse and inrush current protected relays
- Prevents downtime by creating customized alarms
- Gives right data to identify and eliminate idle servers and identify failing power supplies
- -Offers the right data to plan capacity and avoid inefficient power usage
- -Provides the most accurate and detailed metrics to know exactly how much energy each customer consumes, enabling them to provide correct billing information to their customers. Very low energy consumption. Measures 25.000 samples per second per individual outlet.