The Evolution of Power Distribution, Part 2

In the first part of this blog, I discussed the evolution of power distribution to the rack, and how the Zonit Z-PDS can either support or even replace traditional power distribution. In this post I will talk about the evolution of monitoring and control at the rack, and how new server, storage and network technologies such as DRAC, ILO, and RSA provide monitoring at the device level, displacing the intelligent power strip.

In the burgeoning data center industry of the late 1990's, the intelligence for rack-level infrastructure was concentrated in the UPS. At this time, the uninterruptible power supply was a small but heavy rack-mounted device outfitted with the standard "toaster plug", or for the bigger players, "dryer plug," inputs. That UPS, through a network card, provided power monitoring information to the data center manager.

Soon after that, the market demanded proactive control, and the power infrastructure responded. For a short time, a few UPS manufacturers had outlets that could be turned on and off, and thus the idea of switching power at the rack level was introduced. But power density in the racks was now growing fast enough to require more outlets than the UPS could provide. The solution to the problem was the rack-mounted power strip. It was much easier, and less expensive, to power a whole row of racks fed by a single UPS via multiple rack mounted power strips having 20-30 outlets each. However, valuable environmental and power data at the rack level was still needed, so the intelligent rack-mounted power strip was developed.

Since then, the need to grow power density while adding more control and data-gathering capabilities continued. The computer rack has had to grow in width and depth to allow the space for these ever-larger cabinet distribution units. At one point, the intelligent power strip surpassed the cost of not only the rack, but also of the rack-mounted UPS units themselves. These new intelligent power strips provided outlet-level switching capabilities, and metered variables like watts, amps, and more. They provided data at the outlet level and monitored environmental conditions.

Recently, a technological shift has jeopardized the role of the average intelligent power strip. Server, storage and network manufacturers have moved the intelligence to the IT device itself. Operating with new systems like DRAC, ILO and RSA, today's servers replace the intelligence once provided at the power strip.

After 20 years, the industry is now using the most capable device in the rack to gather information: the server itself. Power down/up and environmental monitoring functions are now on board, so today's servers can report directly to the facility's BMS or DCIM packages. The financial case is simple for eliminating smart PDUs and moving back to basic rack PDUs, but what is the next step in the evolution of power distribution?

Zonit believes that the next logical step is the elimination of rack power strips altogether. The Zonit Z-PDS allows a more flexible and cost-effective method of power distribution to the rack. Combined with Zonit locking power cords, the functions of the RPP, power whip and intelligent rack-mounted power strip can be condensed into two simple and flexible power distribution elements. Using the Z-PDS reduces installation cost, maximizes white space, and improves the safety and reliability of your system.

For more information about the Zonit Z-PDS go to http://zonit.com/products/zpds/