



Bank Systems & Technology

Solutions for Cooling the Datacenter

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By Nancy Feig

How about this inconvenient truth: Over the past five years, server energy use has doubled. Before banks could even understand what was happening, data centers began generating huge amounts of heat -- some even as much as a small city, according to Bill Clifford, CEO and chairman of Stamford, Conn.-based Aperture, a data center software solutions provider. As a result, power bills are becoming the No. 1 line item in an IT organization's budget, he asserts.

"Heat dissipation and cooling in data centers used to be a straightforward issue," Clifford says. Cooling systems used to be embedded in the floor of the data center and cool air would rise through slits in the raised floor tiles, he explains. "It used to cool mainframes quite nicely."

The energy problem came about as data center equipment became much more dense. "With the advent of high-density computer equipment, such as blade servers, many data centers have maxed out their power and cooling capacity," according to Michael A. Bell, research VP for Stamford-based Gartner. "It's now possible to pack racks with equipment requiring 30,000 watts per rack or more in connected load. This compares to only 2,000 to 3,000 watts per rack a few years ago."

According to a new study by Lawrence Berkeley National Laboratories -- a U.S. Department of Energy National Laboratory managed by the University of California, Berkeley -- in the United States alone, data centers consumed 5 million kilowatts of energy, resulting in utility bills amounting to \$2.7 billion. The study, which was supported by a grant from Advanced Micro Devices (AMD), the Sunnyvale, Calif.-based provider of microprocessor solutions, estimates that total data center power and electricity consumption worldwide in 2005 cost \$7.2 billion.

"This study demonstrates that unchecked demand for data center energy use can constrain growth and present real business challenges," said Randy Allen, corporate VP, server and workstation division, AMD, in a keynote address at the LinuxWorld OpenSolutions Summit in New York in February. Allen acknowledged that ongoing work among industry leaders and government agencies is helping to identify meaningful steps to reduce IT energy consumption.

Green Solutions

Several vendors are offering solutions to help banks keep their energy usage under control. For example, Aperture's VISTA, a data center infrastructure resource management system, helps data center managers control the physical aspects of a data center, including space, power and cooling. In November, New York-based JPMorgan Chase (\$1.4 trillion in assets) announced that it was using Vista in 22 of its North American facilities.

The HP Dynamic Smart Cooling system, which will be released in the third quarter of 2007, according to a company spokesman, is designed to cut energy costs by 20 percent to 45 percent. It runs on software that continuously adjusts air conditioning based on real-time air temperature measurements. HP (Palo Alto, Calif.) currently is beta testing the system in several financial institutions.

And Santa Clara, Calif.-based Sun Microsystems, which is taking a different approach to energy issues, has designed a virtualized datacenter that is built in a shipping container. Sun's Project Blackbox is designed to address the needs of organizations that are running out of space, power and cooling for their data centers, the company notes. The Blackboxes, which go into production this year, will be easily transported using common shipping methods, cutting transportation costs, Sun adds. * --Nancy Feig