Greener Systems an Unstoppable Trend

internetnews.com
By David Needle
December 27, 2006
http://www.internetnews.com/ent-news/article.php/3650786

Internetnews.com editors provide an early roadmap for tech's direction in 2007.

IT management isn't the first place you would start looking for environmental activists. But in 2006, the people in charge of buying and deploying computer technology found the concept of green computing extra compelling.

Analysts say the main reason is cost, energy and space savings; if it's also good for the environment, that's icing on the cake.

"Even if a customer is not looking at IT purchasing from an environmental-impact perspective, things like power management and energy efficiency are now a TCO [total cost of ownership] and infrastructure issue," John Frey, manager of corporate environmental strategies at HP, told *internetnews.com*.

The way things are going, Gartner predicts that by 2008, 50 percent of current datacenters will have insufficient power and cooling capacity to meet the demands of high-density equipment.

"With the advent of high-density computer equipment such as blade servers (define), many datacenters have maxed out their power and cooling capacity," said Michael A. Bell, research vice president for Gartner. "It's now possible to pack racks with equipment requiring 30,000 watts per rack or more in a connected load. This compares to only 2,000 to 3,000 watts per rack a few years ago."

And energy costs are rising. HP engineering research estimates that for every dollar spent on information technology, a company can expect to spend the same or more to power and cool it. As companies add more performance, they can expect those costs to continue rising.

There's no single magic bullet to address rising energy costs, but the computer industry is tackling the problem on many fronts and figures to make solid strides in the coming year.

"When energy is free you misuse it; when it costs you pay attention to it," said Greg Blonder, a general partner at venture capital firm Morgenthaler Ventures. "Most energy is saved and most progress is made by stacking up the little percentage improvements. It can be a lot of little things like smart fans that adjust their speed to run more effectively than 'dumb fans' that are always on."

Earlier this year, HP showed an electric ducted fan inspired by those used in some remote-controlled airplanes.

The so-called "Active Cool" fan is designed to provide more efficient air flow and adjust to the changing needs of the datacenter (e.g. spin faster as more server

blades are added). It's also quieter than traditional fans. HP said it has some 20 patents pending on the technology.

HP also previewed a new energy-management system last month that the company said could save corporations as much as $1 million per datacenter per year, or up to 20 percent to 45 percent of the cost to keep those datacenters cool. The Dynamic Smart Cooling system is set for initial release this spring, with wider availability planned for the summer.

Portability and processors

Sun is another company that is taking their productions the energy-efficient route.

One of the company's more unique solutions is Blackbox, a portable storage shipping container, about 20 feet long by eight feet wide, that takes the datacenter off site.

"We sat down and rethought the entire concept of the datacenter," said Sun CEO Jonathan Schwartz. The company showed off an operable Blackbox at an event in October, and some of Sun's customers are evaluating the system. The first commercial shipments are planned for mid-2007.

Schwartz said high-growth companies like Google , eBay (Quote), Exxon Mobil (Quote) and others are increasingly "frustrated that datacenters take up to three years to build and can cost as much as a quarter of a billion dollars."

Sun to think inside the Blackbox in 2007.
Source: Sun

One Blackbox can hold as many as 240 Sun Fire servers with as much as 1.4 petabytes (define) of storage and 15 terabytes (define) of DRAM.

At a more basic level, chip competitors AMD (Quote) and Intel (Quote) are battling tooth and nail to claim leadership for the most energy-efficient processors.

Good old competition like this gives PC vendors, and ultimately buyers, plenty of choices when it comes to picking less power-hungry systems.

Earlier this month, for example, Dell rolled out its first two "Power Smart" servers tuned for greater energy efficiency. Dell said the new models can save as much as $200 in energy costs over the first year of use.

The new models didn't replace any in Dell's server lineup. Jay Parker, director of PowerEdge servers at Dell, conceded that those who want absolute best performance or where power usage isn't a big priority, might prefer Dell's non-Energy Smart servers.

That said, Parker acknowledged there's been strong customer demand for more energy-efficient systems, and he expects Dell to broaden its Energy Smart portfolio of products significantly in the coming year.

As for the datacenter, expect energy efficiency to be a top priority for both manufacturers and buyers in 2007.

In a recent report, the research firm Robert Frances Group (RFG) said that energy efficiency will be a major attribute touted by all datacenter systems vendors for the next two years.

RFG said that most of the large companies it's surveyed said that power and cooling of systems is increasing to between 30 percent to 40 percent of total IT operational costs.

The firm's advice for IT executives for at least the next few years is to focus on efficiency as a key metric for datacenter performance and select products that decrease operational costs while improving the ability to increase resource utilization rates.

The U.S. government also wants to help spur greater efficiency in computer systems.

Earlier this month, Andy Karsner, the U.S. Department of Energy's assistant secretary for Energy Efficiency and Renewable Energy, said the DOE has a legal obligation to help enhance technology efficiency and make the United States a more competitive nation.

The government also has a "moral obligation," he added, to push tech companies beyond bottom-line considerations and look at the energy security needs of the nation. "High tech is an absolute juggernaut," when it comes to power consumption.