How Green Is Your IT Valley?

(2008-01-22) - Contributed by Stan Gibson

Sometimes, it depends on what your company's definition of "green" is.

Sharp spikes in data center energy use have shocked IT executives to attention, fueling the drive for green IT. And yet, as an exclusive eWEEK reader survey shows, green IT is still in its early stages and is colored by ambivalence, even among those who are going green.

In an exclusive online survey of 337 IT professionals conducted by Ziff Davis Enterprise Editorial Research for eWEEK, only 34 percent of respondents reported that their company has a green IT initiative, as such. Of that 34 percent, only 7 percent have completed the initiative, 63 percent are in the process of implementation, and 30 percent are still in the planning stages. Conclusion: Green IT is still, well, rather green.

While the moniker "green IT" suggests environmentally friendly practices motivated by a desire to conserve natural resources, the label is often used to describe any efforts at IT economy—efforts that may, coincidentally, reduce demand for electrical power and the carbon emissions that typically go with it. With the green of eco-friendliness tied so closely to the green of money, it shouldn't come as too great a surprise that the two impulses are often conflated.

"Most organizations may choose to paint it green, but the reality is they're focused on saving energy and therefore money. And their willingness to cut CO2 emissions is significantly limited to their interest in cutting their electric bill," said Gartner analyst Simon Mingay.

Check out eWEEK's Guide to Green IT.

Rare is the company that spends extra to carry out an environmentally friendly practice—especially if a very lengthy payback period, or none at all, is anticipated. Companies that do, such as Google, which has launched a major solar power initiative to run its myriad servers, often look at extended payback periods. In Google's case, the payback period for its initiative is expected to be seven and a half years, even with hefty tax credits and electrical utility subsidies. And, in a best-case scenario, Google will supply only 30 percent of its power needs through solar energy.

Even so, greenness is seeping into IT operations everywhere—even among companies that do not have formal green IT initiatives—if only when new, more energy-efficient equipment replaces older gear in a normal upgrade cycle.

"Manufacturers are well-aware of the problem. The replacement cycle takes care of some [energy efficiency] every time a new wave of equipment comes in," said Laxmi Rao, IT energy coordinator at the Massachusetts Institute of Technology. In the eWEEK survey, 70 percent of respondents said they were either replacing or planning to replace old equipment with newer, energy-efficient gear.

The survey found that companies with green IT initiatives are implementing far greener technology of all kinds than those companies that have no specific focus on green IT. However, companies without a green initiative often wind up employing the same energy-saving procedures as those that do have such a formal initiative. Among the most prevalent technologies are server consolidation and server virtualization.

According to the survey, 74 percent of companies have consolidated or are planning to consolidate servers. Server virtualization is almost as popular, with 70 percent of respondents saying they have implemented virtualization or plan to.

{mospagebreak title=Environmental Consideration}

Environmental reasons were not of overriding importance in server consolidation—35 percent of respondents said environmental concerns were somewhat or very important in driving the decision, while 35 percent said those concerns were unimportant or relatively unimportant. Thirty percent were neutral on the question.

The numbers were very similar for server virtualization, with 36 percent of respondents saying environmental issues tended to be a driver, 36 percent saying they tended not to be a driver and 28 percent offering a neutral response.

A case in point is FN Manufacturing, of Columbia, S.C. "We don't have a formal program, but by virtue of some of the technology we're implementing, it will get us there over time," said Ed Benincasa, vice president of MIS and an eWEEK Corporate Partner.

Looking for the economic green in green computing? Read more here.

Many other businesses share one of Benincasa's most critical IT issues: combating data center sprawl, thereby conserving space and creating the opportunity to add servers without adding real estate.

FN Manufacturing is implementing virtualization technology through software from EMC subsidiary VMware. Benincasa's goal is to shrink his server population from approximately 40 to perhaps a dozen. The main business benefit of concentrating servers, Benincasa said, is scalability; green IT is a byproduct.

"I care about the green issues because you consume a lot of power, so there is a cost," he said. "The goal is to be more efficient and able to grow without using more physical space. That lets you be more responsive. You can just add a new server if you need it."

In another economic move with green overtones, FN Manufacturing recently retrofitted its offices with motion sensors. If there is no motion—indicating no human presence—the lights will shut off automatically.

{mospagebreak title=A Fresh Green Start}

Although many IT professionals are cutting energy use incrementally through a variety of measures, the opportunity to make big gains arises when an organization decides to break ground on a new data center. And data center design is a critical area of IT involvement: 87 percent of respondents in the survey indicated that IT pros at their companies are involved in creating, approving or giving advice on data center design.

That was the situation at Bryant University, in Smithfield, R.I. "We had to construct a new data center, so we took every opportunity to be energy-conscious and take advantage of energy efficiencies," said Rich Siedzik, director of computer and telecommunications services at the university. "A lot of it is economy, but when we have an opportunity to be more responsible, we take it."

A major component of Bryant's efficiency push was virtualization. Siedzik said he was able to consolidate 47 percent of Bryant's servers using VMware solutions and IBM's LPAR (logical partitioning) technology. He also deployed new precision cooling technology from American Power Conversion, which enabled him to deploy dense arrays of blade servers in an energy-efficient manner.

As at FN Manufacturing, these virtual moves have left Bryant with room to grow: With most new applications being run on virtual hosts, there is room to add more blade servers in the future, Siedzik said.

For eWEEK Labs' 5 Steps to Green IT, click here.

Siedzik isn't stopping there. His next move is to replace fat-client PCs with thin clients where possible, particularly for administrators, librarians and computers in common areas.

He is also using a new campus network to track heating and lighting use across the campus. "We can turn off expensive audiovisual equipment remotely if someone leaves it on. We can use automation to shut off devices in common areas," said Siedzik.

But there's more to it than automation. Getting members of the community to do their part is essential, too. "You have to make them aware they should turn off lights and turn off computers," Siedzik said.

Bob Moore, group manager for the marketing and strategy organization at Hewlett-Packard, who advises HP customers on green strategies, stressed the need to look at many pieces of the puzzle at the same time. Money spent on a new server with a low-energy-use chip will be wasted if the air-conditioning system is outmoded and wasteful, chilling huge chunks of air rather than focusing a cool stream on a hot server. Similarly, it makes no sense to power up and cool storage subsystems that may not contain any useful data—or any data at all, for that matter.

{mospagebreak title=Greening of Storage}

Moore said data deduplication is an important practice in reducing storage needs. Deduplication involves scouring data for redundant instances and eliminating them, thus cutting storage needs for the same data by 50 percent or more, depending on the number of redundant instances.

In the eWEEK survey, data deduplication was targeted by 46 percent of respondents overall, who said they were implementing or planning to implement the practice. Respondents with a green IT initiative under way were taking greater advantage of the procedure, with 79 percent either deploying or evaluating data deduplication.

Other storage measures often used in the name of going green (or with green benefits) include thin storage provisioning and dynamic capacity management. Both of these techniques allow a customer to purchase a disk drive array with the capacity to handle future needs, but to fire up that capacity only as needed. Moore said it's possible to save 45 percent if data deduplication, thin provisioning and dynamic capacity management are all implemented.

The eWEEK survey revealed that, among respondents whose companies have a green initiative under way, less than half—41 percent—are motivated primarily by environmental concerns, while only 30 percent said economic considerations were the most important factor. That flies in the face of what many analysts, including Gartner's Mingay, say—that economic savings are really the primary driver for green IT initiatives.

Seasoning the mix with a dash of ambivalence, only 26 percent of respondents with green IT initiatives actually have designated a specific budget for green technologies—the rest, presumably, implement their green IT strategies through regular budget items.

The survey also found there is still something of a disconnect between the belief that IT energy consumption creates an environmental impact and the influence of environmental concerns over green IT purchasing decisions.

For example, when asked whether they consider the power consumed by computer equipment important enough to constitute a significant environmental issue, 61 percent of all respondents said yes. In contrast, when asked to what extent environmental impact is part of their company's technology RFP (request for proposal) or evaluation process, 74 percent of respondents said it was slightly important or not important at all.

Such responses indicate that IT pros recognize the environmental impact of IT activities but that the green bottom line for businesses is just that—the bottom line. Most businesses aren't about to spend more money than they have to for eco-friendly IT measures. They will do so only if the payback is there—if the green of dollar savings matches the green of environmental benefit.