

Bits is an opportunity to speak up and share brief items of information having to do with managing the data center. Pass along a best practice, talk about technology, make an observation, or remark on something that is not being done that should be, or what you are seeing from your customers. Items must be less than 175 words and can be forwarded to [rchristensen@afcom.com](mailto:rchristensen@afcom.com).

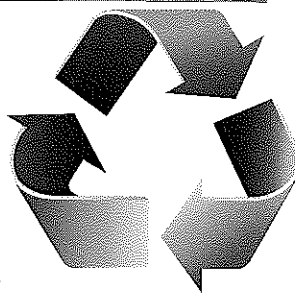
## Green Lite

A survey by the Aperture Research Institute (ARI) of more than 100 data center professionals has shown they lack tools and commitment to deliver on the ambitions of their green initiatives. This follows an earlier ARI report that discovered 70 percent of organizations are adopting green initiatives, although 19 percent of those had omitted the data center from that program. Seventy-four percent refused to activate power saving features on devices if it would require a drop in performance. And 37 percent are concerned that the power/performance ratio does not add up. Fifteen percent worry that they have no way to track whether the power saving setting is on or off. Forty-eight percent blame the enterprise for not using power saving features, saying that users would not tolerate a drop in performance in the interests of saving power.

When it comes to procurement, energy efficiency and ease of disposal are the lowest priorities, rated as less significant than brand and price. Thirty-seven percent of data centers have no plans to measure energy efficiency, and 76 percent do not charge the business for the power used by the IT commissions.

The survey also found that decommissioning processes are not strictly followed. Ghost servers—servers that are no longer needed but are left running—consume electricity, space and other limited resources.

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## Staffing and Automation

What is the biggest cost factor in the data center? According to Enterprise Management Associates it is staffing expenses.

In a survey of 169 IT professionals from organizations with more than \$100 million in annual revenues, 35 percent of respondents believe that staffing expenses are the largest single cost in operating and managing their data center—more than hardware (26 percent), more than software (22 percent) and five times as much as energy costs (seven percent).

What is keeping data center staff busy? Seventy-seven percent of respondents said data center operations staffs spend most of their time on routine operations, maintenance and common break/fix tasks. Only 23 percent of enterprises have their operations staff working on delivering new IT strategies and systems to add business value.

Automating these routine tasks is crucial to opening up staff to work on operations higher up the food chain. When staff is the biggest expense in the data center, it is important to get the most out of them.

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## Transformerless UPS

The influx of new data processing and communications equipment has yielded data centers increased processing power and higher density form factors, yet poses challenges for data center managers whose uninterruptible power supply systems (UPSs) are incompatible with the subsequent change in power loads. Previously, large and expensive components such as input inductors or harmonic filters were needed for a UPS to be effective. As technology has matured to support improved value without sacrificing reliability, the transformer-free UPS has emerged as the leading solution for data centers. It offers reliable power at a lower weight, is easily accessible for everyday use and service and is scalable to meet future demands.

The transformer-free UPS is typically only 25 percent of the weight and occupies 60 percent of the footprint of a legacy UPS design, which can save thousands of dollars in shipping and installation costs. It is also energy efficient, which ultimately saves on power costs. By delivering the same-power quality with a smaller footprint, the new transformer-free topology can bring improved performance and value to an organization.

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## Data Center Automation

While data center automation already plays a significant role in many IT organizations' efforts to link services with business priorities and objectives, the role of automation will become increasingly more significant over the next one to two years. This is the key finding of a recent study conducted by IDG Research. The study surveyed 300 CIOs and other top IT executives at companies with more than \$250 million in annual revenue.

The study found that virtualization, server consolidation and ITIL are the driving factors behind data center automation initiatives. It also found the top three goals companies are hoping to achieve with data center automation efforts are uptime/business continuity, performance management, and the enablement of dynamic response to changes in business demands.

The study's results illustrate the emphasis companies are putting on improving insight and automation to optimize business service delivery and gain a competitive advantage in the marketplace. Data center automation enables IT to move beyond software provisioning and job scheduling to help deliver true enterprise agility—ensuring that the IT infrastructure is responsive and scalable to the dynamics of real-time business. By optimizing the utilization of servers, data center automation enables IT to put green IT initiatives into practice by managing virtualization, server consolidation, power conservation and provisioning.

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## Extinguishing Fires

The 2008 edition of NFPA 12, Standard on Carbon Dioxide Extinguishing systems, places new restrictions on the use of these systems. Carbon dioxide in concentrations used for extinguishing fires is lethal to humans. The changes in NFPA 12 reflect the understanding that alternative gaseous fire suppressants are commercially available that are not lethal. NFPA 12 does not allow new total flooding carbon dioxide systems for the protection of normally occupied enclosures. There is a small list of very specific exceptions; however, they generally do not apply to spaces common to data center operations.

Existing total flooding carbon dioxide systems that protect normally occupied spaces must be equipped with lockout valves, pneumatic pre-discharge alarms and pneumatic time delays. All are precautions against personnel being accidentally exposed to carbon dioxide. Also, new and existing systems and surrounding areas are required to be provided with warning signs that follow a new and specific format in accordance with ANSI Z535. These various requirements are retroactively applicable to existing systems.

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## Future Topics

The Data Center Users' Group, composed of data center, IT and facility managers formed by Emerson Network Power, surveyed 150 of its member companies and nonmember Fortune 500 companies on a variety of data center topics including power management, precision cooling, server virtualization and server consolidation.

Thirty-two percent of survey respondents reported an average of more than 8 kW per rack in their facilities, up from 25 percent at that level in 2006. Looking ahead, 57 percent said their rack power density would exceed that level by 2010. (More than 8 kW points out the need for next-generation, high-density cooling strategies.)

Respondents also showed more interest in monitoring and energy efficiency. In spring 2005, 18 percent said monitoring was important. That number jumped to 43 percent in this survey. The increased emphasis on energy efficiency is even more dramatic. In spring 2005, zero percent said it was important. Now, 40 percent say energy efficiency is important.

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## Risk Management

Physical layer connectivity is more than cables, patch panels and cabinets...the critical component is risk management. The objective is to operate a data center with a best-of-breed infrastructure, meaning it incorporates quality raw materials, functional design and premium manufacturing processes and performs complete testing on it is finished product.

There are many grades of fiber optic and copper cable just as there is a wide range of quality in the ferrules and alignment sleeves used in the fiber optic connectors, couplers and adapters used to manufacture patch cords, trunk cables and patch panels, etc.

Some manufacturers that have entered the data center infrastructure marketplace in recent times have come from the local area network arena and have introduced their products into the data center marketplace without disclosing the true quality and attributes of their products, which do not measure up to ensuring a delivery system that provide optimal utilization and quality. As a car will not run on gasoline, a data center will not run on commodity products or technology. Quality is the data centers operating system.

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