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### Target the Network for Energy Efficiency

**Deploying new gear and reducing the number of connections decreases the power draw.**

Karen D. Schwartz

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Perhaps no other state takes energy efficiency as seriously as California — just ask Orange County Public Works. The organization, which manages facilities, environmental controls and card access for the county's properties, is going green wherever and whenever possible.

The IT staff has spent the past few years simplifying the organization's network design and implementing AT&T's OPT-E-MAN switched Ethernet service. "Our network used to have slow links, which required more switches and caching units between locations," says IT Manager Bob Berg. "By eliminating some of that equipment and installing higher-speed links, we use less power and are more efficient."

Many state and local governments are working toward a greener network, says Eric Woods, a research director at Pike Research. "Traditionally, the network has been a relatively small piece of the effort to increase energy efficiency in the data center. But as we virtualize networks, servers and storage — creating more complex data traffic and dependencies — the network becomes a bottleneck in terms of performance and energy consumption," he says. "Considering the networking aspects of energy efficiency will become increasingly important."

## Switching Out

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The Orange County Public Works department replaced aging, energy-hungry distribution and access layer switches with new HP ProCurve 5400zl-series switches. Berg's research uncovered an independent report that noted the 5400-series switches would draw 20 percent to 30 percent less power than the network's existing gear. After a pilot test confirmed a power reduction of more than 30 percent, the team deployed the switches and finished the upgrade in early 2011.

"We also found that the new switches helped us a lot with our IP phones," Berg says. Orange County Public Works previously lacked sufficient power for all of its IP phones, and the new switches solved that problem.

Next up is a plan to replace switches in the server room with greener HP A7510 core switches and A5800 top-of-rack switches. The goal, Berg says, is to reduce the number of network connections, which in turn will reduce the power draw. Berg forecasts at least a 24 percent savings.

Energy efficiency also goes hand in hand with the mission of the Nebraska Public Power District, which owns and operates 13 electric generating facilities in the state. The district, which sells power to 52 communities and 25 public power districts or rural cooperatives, is the main steward of power in the state.

The NPPD's IT department recently replaced older switches with about a dozen energy-efficient Cisco Nexus models, says CIO Dave Webb. The utility swapped out aging Alcatel 1648 series SONET multiplexers on its fiber-optic network with more efficient units from Alcatel-Lucent's 1850 TSS line. It also has abandoned a 10-year-old microwave system for smaller one-rack units from NEC's NLite series, along with EX 2.4i-16 and EX 5i-16 digital

microwave radios from Exalt Communications. In addition, the organization is rolling out Voice over IP phones based on Cisco's 7800 Series Media Convergence servers.

**31%**

Percentage of organizations that have implemented power-efficient networking equipment

**SOURCE:** "Energy Efficient IT Report" (CDW•G, April 2012)

## Conscious Consumption

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To get the most out of green infrastructure initiatives, it's important to understand exactly how the network and the components and processes it supports are operating. "These monitoring tools, which are still evolving, help clarify where the energy is being used and where the hot spots are," says Pike Research's Woods. That information can shed light on which network switches and other gear are most worthy of replacement.

To learn more about boosting energy efficiency, consult [\*CDW•G's Energy Efficient IT Report\*](#).

## Utilities Deploy Server Virtualization and Power Management

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Greening the network isn't the only thing utilities are doing. In fact, energy efficiency and green factors are considerations in most IT upgrades these days.

The Nebraska Public Power District, for example, considers green technology a core mission. "Because we are a public power utility, we have two missions: keeping rates as low as possible for our customers, and environmental stewardship," says CIO Dave Webb. "It's a balancing act."

So far, the balancing act is working well. In the data center, the IT department virtualized its servers. The group also instituted a campaign to encourage employees to power down their PCs on nights and weekends, and has implemented an automated system to update PCs remotely, and then power them down, explains Curt Goebel, the organization's IT infrastructure supervisor.

The focus on green IT is just as strong at Orange County Public Works in California. The IT staff makes sure to procure green-certified energy-efficient equipment at all times, and makes a concerted effort to exercise power management for its IT telephony equipment, PCs and servers.

### About the Author

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