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Tactical Advice //

Boosting Energy Efficiency in the Network

School districts roll out green switches and Power over Ethernet.

Karen D. Schwartz

posted April 13, 2012

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Ashton Potter has big plans for the network that supports Alhambra Unified School District's 18 buildings. Potter,

director of technology and information services for the California district, is upgrading the network to make it more efficient.

By the time the project is finished, the network will include 23 Cisco Catalyst 3560 Layer 3 Fast Ethernet core switches and about 125 Cisco Catalyst 2960 Series Layer 2 edge switches with Fast Ethernet and Power over Ethernet (PoE) capabilities. All of the new switches support Cisco EnergyWise technology, which helps organizations manage the power consumption of the network infrastructure and network-attached devices.

Many school districts 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.”

Making a Switch

The effects of green networks are magnified significantly for the Hamilton/Clermont Cooperative Association (HCCA), which provides data and Internet access for 38 public school districts in the greater Cincinnati metropolitan area.

The IT team deployed Cisco energy-efficient Nexus switches to connect 250 school buildings to its two data centers. With the new switches in place, delivery of Internet access and applications to schools is faster and more efficient, making use of the technology’s PoE capabilities, says Executive Director Al Porter.

Porter also replaced 80 aging servers with eight high-end Cisco blade servers (which draw less energy) and rented space in a collocation facility to house the data center.

“We knew we were going to continue expanding our services for our 250 school buildings, including hosting virtualized desktops, and that would take a lot of space and energy,” Porter says. “After weighing the options, we determined that we get the benefit of Tier 1 providers, as well as the use of a facility that puts environmental concerns first.”

31%

Percentage of organizations that have implemented power-efficient networking equipment

SOURCE: “Energy Efficient IT Report” (CDW•G, April 2012)

With the new data center and networking topology in place, HCCA is poised to do what it has intended to do all along: give schools the option of renting space in its collocation facility instead of running their own data centers.

Conscious Consumption

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*](#).

Green IT Grows Like Trees

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

For example, the Alhambra Unified School District in California last year finished a two-year project to monitor energy consumption in all areas of the 18-building district. The resulting recommendations for the IT department – simple things like automating computer shut-offs – spurred the department to make further changes. One of those was consolidating the department's 25 servers into one virtualized VMware server.

About the Author

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Karen D. Schwartz is a freelance technology writer based in the Washington, D.C., area.

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