4 EASY WAYS TO A GREENER NETWORK

Data centers consume a great deal of power, so one of the most effective things you can do to reduce your data center's costs is to increase its energy efficiency. Building and certifying a green data center can be well worth it if you're embarking upon new construction, but most of us are working with existing networks and are looking for ways to make existing networks more energy efficient. Fortunately, there are ways to make your data network greener with minimal disruptions to its operation.

1. Look for Energy-Efficient Ethernet (EEE) devices.

When you add new equipment, look for Ethernet devices that meet the 802.3az Energy-Efficient Ethernet standard. This new standard can reduce power consumption by 50% or more by scaling down power during periods of low data activity. These new energy-efficient switches, NICs, and routers are totally backwards compatible with older equipment, so they work seamlessly.

2. Take advantage of remote power management.

Remote power managers are devices that enable you to remotely power down unused equipment over your network—for instance, internal company servers during nights and weekends—saving both the power used to run the equipment and the associated cooling costs. Set the power manager to automatically shut down and restart at pre-set intervals or power down manually; either way you save energy.

Most remote power managers also monitor power consumption, alert you when circuit breakers are tripped, and enable you to reboot network devices, making them an invaluable addition to a network manager's arsenal.

3. Choose fiber over copper for building cabling.

Fiber optic cable has a reputation for being more expensive than copper, and it's true that fiber—when used as a direct replacement for copper in horizontal cabling—is usually more expensive when you factor in the price of the fiber infrastructure plus the cost of replacing

copper ports with fiber. However, this calculation doesn't take into consideration that, because it covers longer distances, fiber infrastructure can be designed to eliminate the wiring or telecomm closets required by copper infrastructure, usually replacing them with passive fiber patch panels.

Because no wiring closet means no switches, grounding, backup power, or HVAC, this configuration results in significant savings in energy as well as floor space and equipment costs. One well-known example of this kind of savings is the Getty Center in Los Angeles, which in the late 1990s was designed with what was, at the time, a revolutionary centralized fiber optic network that eliminated wiring closets, saving more than 4 million dollars on a network that spanned six buildings on 124 acres. Not only were the initial savings significant, but the network's energy efficiency also continues to save the museum money year after year.

Heat-Transfer Door. Part of the Cold Front™ data center cooling solution.

4. Use liquid cooling.

Cooling costs are a significant part of any data center's budget. Air cooling using raised-floor systems and hot/cold aisles has long been standard, but it's not always adequate as processors get hotter and server densities increase.

The next time you add hardware that calls for a cooling system upgrade, consider whether it might not be more efficient to supplement your existing cooling system with liquid cooling. Because a small amount of water can remove as much heat as a much larger amount of air, water cooling uses far less energy to provide the same amount of cooling.

Today's modular liquid cooling systems are ideal for spot cooling applications, for instance, cooling individual high-density cabinets. Why expend the energy to cool an entire room when you can cool just the one cabinet that needs additional cooling?

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