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The “Green” Factor In Data Center Cabling

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Data centers draw a substantial amount of power to run their servers, switches, directors, storage devices and other equipment. In addition, even more power is needed to cool all of these components. Current studies show that power alone represents from 30-50% of the overall data center budget.

In order to achieve the benefits of a “Green” data center, engineers are designing new products that perform at greater rates yet are more energy efficient. The development of these products are only a part of what makes a greener data center.

Structured cabling is imperative when designing a green data center or reconfiguring your data center to be more energy efficient and environmentally friendly.

Cabling can be difficult to manage and can impede hot air pathways meant to disperse heat. As a result data center managers have to consider minimizing cable density and maximizing cable management as way of improving efficiency of hot and cold air distribution.

With this in mind here are a few simple steps that can be taken to “green up” your data center.

6 Simple steps to a “Green” Data Center

1. Cable Dam Removal:

A common problem of unmanaged cable is “cable dams” blocking airflow within the cabinet. Cable dams can block cold air intakes on equipment causing them to overheat and potentially fail. These dams can also block hot air from exiting the cabinets into hot isles or they can cause the hot air to disperse into cold isles causing cooling systems to work harder and be less efficient. According to IBM, cabling infrastructure improvements, such as removing cable dams, can result in a 15% to 40% savings in energy costs.

2. Smaller Density Cable:

Data Center Systems uses Adventum multi-fiber cables that have a 19% reduction in overall diameter and up to 38% reduction in weight. We have also worked with Berk-Tek to incorporate their new, even smaller diameter, Micro Data Center Plenum (MDP) loose tube cable that is designed specifically to relieve congestion in the data center and SAN. In data center applications these cables can help prevent cabinet congestion, enhance air flow, and facilitate more efficient cooling. These cables are much lighter and more flexible than anything else available and offer 50% or better performance in bend radius over traditional high-fiber ribbon cable constructions. The new DCS pre-terminated cables are offered in multi-mode and single-mode fiber constructions including the industries highest performing laser optimized 50 micron fiber.

3. Custom Director Cables:

DCS’s Director Trunks are made from Adventum or MDP 50 micron multi-fiber laser optimized 10 Gb cable. These trunks are pre-terminated to insure superior performance and custom made for each fiber channel switching module in today’s most popular director class switches. Each leg of the trunk is staggered to fit each port and eliminate slack in the cable preventing cabinet

congestion and enhancing air flow.

4. Cable Management:

Horizontal and Vertical cable managers play a very important role in keeping your data center green. Cable managers are key to cabinet cable organization. Cable managers:

- Prevent blocking any airways to equipment
- Ease installation and connectivity to new equipment
- Contain slack from longer cables
- Clearly define cable routing paths
- Save time during MAC'S (Moves, Adds and Changes)

5. Blank Panels:

By filling your extra cabinet space with blank panels, you insure that hot isles are separate from cold isles. This eliminates hot air from mixing with cold and causing a less efficient environment. DCS offers a full line of blank/filler panels in various unit heights.

6. Limiting Equipment in your Cabinets:

It is important to minimize the amount of fiber channel devices and patch panels in a single cabinet so that you limit the amount of terminations. This allows for less cabling into and around the cabinet that can potentially block air flow.

Overview

Environmental responsibility has become key in data center design and your cabling infrastructure plays an important roll in accomplishing this goal. By using these simple steps to improve your SAN environment, you should not only achieve a more efficient data center, your ROI and TCO will greatly improve.

DCS is a world leader in the design, manufacture and installation of innovative fiber optic structured cabling solutions. Our solutions to the fiber optic physical layer are more than a collection of parts, they are a structured fiber management system.

For more information on DCS's products and solutions, go to our website at: www.datacentersys.com.



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