Simplify Fiber Optic Cabling Migrations with a Multi-Path System

With the speed of information increasing dramatically over the past decade, data center managers are challenged every day to design flexible fiber cabling topologies to handle these higher speeds.

One challenge in particular has been polarity, also known as light path. Polarity is the position of the fiber strands in the channel to ensure data is properly received.

A single solution to handle the transition between both duplex and parallel light paths does not exist in the current set of data center cabling standards. Companies have had to review the benefits and disadvantages of the three standards-approved methods and, more importantly, their effects on ROI:

- Expensive outages and downtime, lost profits, wasted man hours
- Increased product costs and inventory storage needs
- Higher skill set requirements for fiber handlers

Methods featured in the standards

Method A is easy to install as all fibers are run as straight polarity, with 1 pair flip or 4 pair flip at one side. Complications occur when installing the patch cord links because there are two different jumpers each for both duplex and parallel transmission. To avoid polarity issues, this method requires the need to stock four different polarity patch cords and the understanding of their use.

Method B became popular with optics that use 12- or 24-fiber MPO connectors. Increased need for higher speed in the data center will see this option becoming more popular. In theory, this option allows easy transition from duplex to parallel connections. However, the use of gender-defined MPO connectors, different for both duplex and parallel, creates complications that increase the need for multiple stock options, and can result in the need for specific, proprietary products.

Method C is the choice for duplex connections, using standard patch cords and the same cassette module on both ends of the link, and eliminating the need for complicated design. The downside is the high cost of the conversion modules needed for parallel light signals.

Alternative: Multi-Path Solution

The goal of a multi-path solution is to simplify the process and allow for next-generation growth. A multi-path system can also reduce downtime, eliminate the need for multiple transition components, and lower overall cost.

In a multi-path system, just one type of jumper is needed for each kind of optic, one type of MPO trunk, and one type of cassette module. In addition, all genders are taken care of.

The multi-path solution is truly plug-and-play, regardless of transmission topology, and will work for both current cabling solutions and the next generation running 200GE and 400GE.

Advantages of Port Replication

Simply put, port replication mirrors the ports of active fiber optic hardware in a passive patch panel. Combining a multi-path solution with port replication allows for simpler migration and easy user interface, greatly reducing the potential for error.

Read the complete white paper for specifics on how the multi-path system can simplify your cabling migration at www.cablexpress.com/multi-path.

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