Flexibility is Key to Vertical Cable Management

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From the largest network infrastructure build to the typical desktop computing set, cable management can often appear to be an after thought. With a significant investment in active equipment and other network elements, it's simple to see how routing the associated cabling can be an underestimated portion of the overall deployment.

Pre-planning cable management is critical to post installation servicing and troubleshooting on large network installations. Creating a well-organized installation at the equipment rack itself helps to simplify access to network equipment, streamline tracing of cables within the installation and generally ensure seamless ongoing performance.

Alternatives to cable management include slotted duct components or flexible plastic tubing. However, Telect's CableLinks, provide a solution based on a system of snap-fit flexible and articulated cable management links to allow numerous and significant advantages.

On-Frame Flexibility

One of the most difficult areas for cable management is on the equipment rack itself. Overhead cable management can mount to superstructure; under-floor cable management can be a simple trough or raceway-type solution. But how do you take the cable from horizontal ducts to the equipment and vice-versa?

Vertical cable management must be compact and versatile while still effectively routing cable and creating no impact on access to the equipment in the rack.

Flexible links – specifically small components such as 2-inch sizes – provide a useful platform for routing cable up or down the rails of the rack. Individual components affix to the equipment rack with a single fastener or bracket and can be curved in a chain to fit a variety of environments (see figure 1).

Figure 1: Links rotate both horizontally and vertically

Figure 2: Using flexible links for an overhead drop in a datacenter
Note the curve of the drop

Cable can be guided from racked equipment into the links or from overhead trough and cable drops to equipment in the rack. Simple lift-up "gates" and gaps in the links provide access points for cable to enter and exit the cable management path.

Diverse Routing Paths

On-frame cable management is just one example of a "good fit" for flexible links. Some installations are simple. Others present unique challenges. With a flexible link-based system, you can address all of these.

Using links to curve around obstacles, guide cable into tight spots or direct cable runs to various types of equipment allows system designers to diversify the way they route cable to fit the application. Installation and assembly is similar, but routing paths can vary significantly as needed. Links pivot and rotate both horizontally and vertically to provide optimal flexibility.

A flexible system enables complete configurability of the cable management solution, while using simple, repeatable installation processes for efficiency.

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Figure 3: Close-up of cable entrance and exit points in a flexible link cable management system

Simple Installation and Modification

The best cable management systems are simple to assemble, helping to minimize the time and cost associated with installation. Flexible links that snap together offer the quickest assembly and also enable simple modification if requirements change in the future (see figure 4).

Snap-fit links require no cutting of components to fit space and because of the ability to flexibly curve a chain of links, racks do not have to be perfectly aligned with overhead cable drops for cable management to work. A variety of sizes also helps simplify installation by providing multiple component options to fit the specifics of the application.

Comparable Advantages

Compared to the alternatives, flexible links provide several direct advantages. Put simply, for on-frame cable management, link systems combine the manageability of slotted duct with the flexibility of split tube. In addition, links typically feature rounded (not sharp) edges, thereby eliminating a point of failure that's common with split tube or slotted duct (see figure 3).

Compared to split tube, cable access is improved significantly with a link-based system. Slotted duct, meanwhile, features a rigid design, eliminating the flexibility that is a significant advantage for cable management links.

Durability and Standards

High-grade materials help to ensure long-term performance, while also making installation and assembly go faster. Solid component design typically means that fewer supporting elements are required, helping to reduce overall costs.

The ideal cable management system also meets material industry standards, such as UL 94V-0 ratings for fire-retardant plastic. NEBS and RoHS are other standards to note.

Aesthetic Benefits

It may be a minor concern, but the appearance of the installation can be important. The yellow component color provides alternatives for traditional telecommunications and datacomm/enterprise network installations. Furthermore, the design of link-based cable management creates an orderly working environment by cleanly routing and managing cables.

Conclusion – Cost Analysis

Obviously, there are cheaper ways to approach cable management. Anything from plastic cable ties to wire brackets, slotted duct and split tube can provide some level of cable management.

However, when viewing costs from an overall perspective, installation time, ongoing maintenance and future changes are significant factors. With cable management links, you may pay a little more up front, but the long-term effectiveness and ongoing usability help to mitigate the expense.

A typical rack installation requires six to ten feet of cable management; in this context, the cost difference is relatively minor when comparing links with slotted duct and split tube. What's more, a higher quality solution helps to ensure ongoing performance. One simple troubleshooting issue caused by faulty cable management would basically eliminate any up-front savings achieved through a lesser system.

The simplicity, versatility and effectiveness of flexible cable management links provide many advantages that make them an ideal solution for vertical cable management.

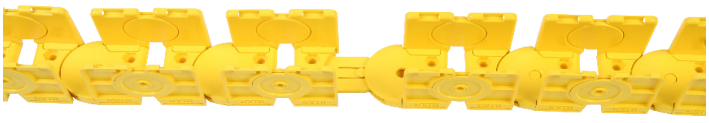

Figure 4: Individual links simply snap together