



STRUCTURED CABLING SYSTEM SOLUTIONS

SM VADD has been Designing and Executing Structured Cabling solutions for Data Centers and Telecom Networks. Our solutions work for Every Cisco, Juniper, Arista, Huawei, IBM and HP switches/Routers.

We have 40G and 100G ready cabling Solutions for the future migrations and quick installations.

SM VADD Designs and manufactures high-performance optical connectivity products. We've provided cabling infrastructure technologies for more than three years to Data Center and Telecom Infrastructure providers. We help our customers design cable infrastructures according to industry specifications, providing structured cabling systems that are manageable and will last through generations of hardware upgrades. This design allows for maximum performance, conditioned space savings and increased ROI. Our Cabling systems improve performance in data center cabling.

Structured cabling uses fiber termination connector panels that are connected through permanent links of optical cabling, typically configured in a star topology. All cabling in the data center server areas are consolidated in a central location near the core switch in the network. The permanent pre-terminated trunk cables branch to the zones in the data center, which contain servers, storage, or network devices. Note that with structured cabling, you still need some device-to-device connections at the access layer.

As networking equipment becomes denser and port counts in the data center increase to hundreds and thousands of ports, managing cables connected to these devices becomes a difficult challenge. Traditionally, connecting cables directly to individual ports on low port-count equipment was considered manageable. Applying the same principles to high port-count equipment made the task more tedious, eventually becoming nearly impossible to add or remove cables connected directly to the equipment ports.

Structured cabling uses optical fiber connector housings that are connected through permanent links of optical cabling, typically configured in a physical star topology from the various areas within the data center (Storage, Servers, SAN and Network). Utilizing pre-terminated MTP cabling from each of these areas to a central patching area provides an infrastructure where any port from any device can be connected to any other port.

We have 40G and 100G ready cabling Solutions for the future migrations and quick installations.

SM VADD follows International -- ISO/IEC 24764 Information Technology- Generic Cabling for Data Centre Premises. International -- CSA ISO/IEC 11801:2009 Information Technology: Generic Cabling for Customer Premises.

Our High Density Fiber Patch Panels and enclosure solutions are available in both vertical and horizontal mounting configurations, allowing users to choose port orientation to high-density switches/Routers. Their condensed design can accommodate up to 400 duplex LC ports in one 8U enclosure, while addressing cable management issues that come with high-density designs. The 8U, 6U, 4U and 1U enclosures also use the same module footprint to maximize design flexibility.

1U



2U

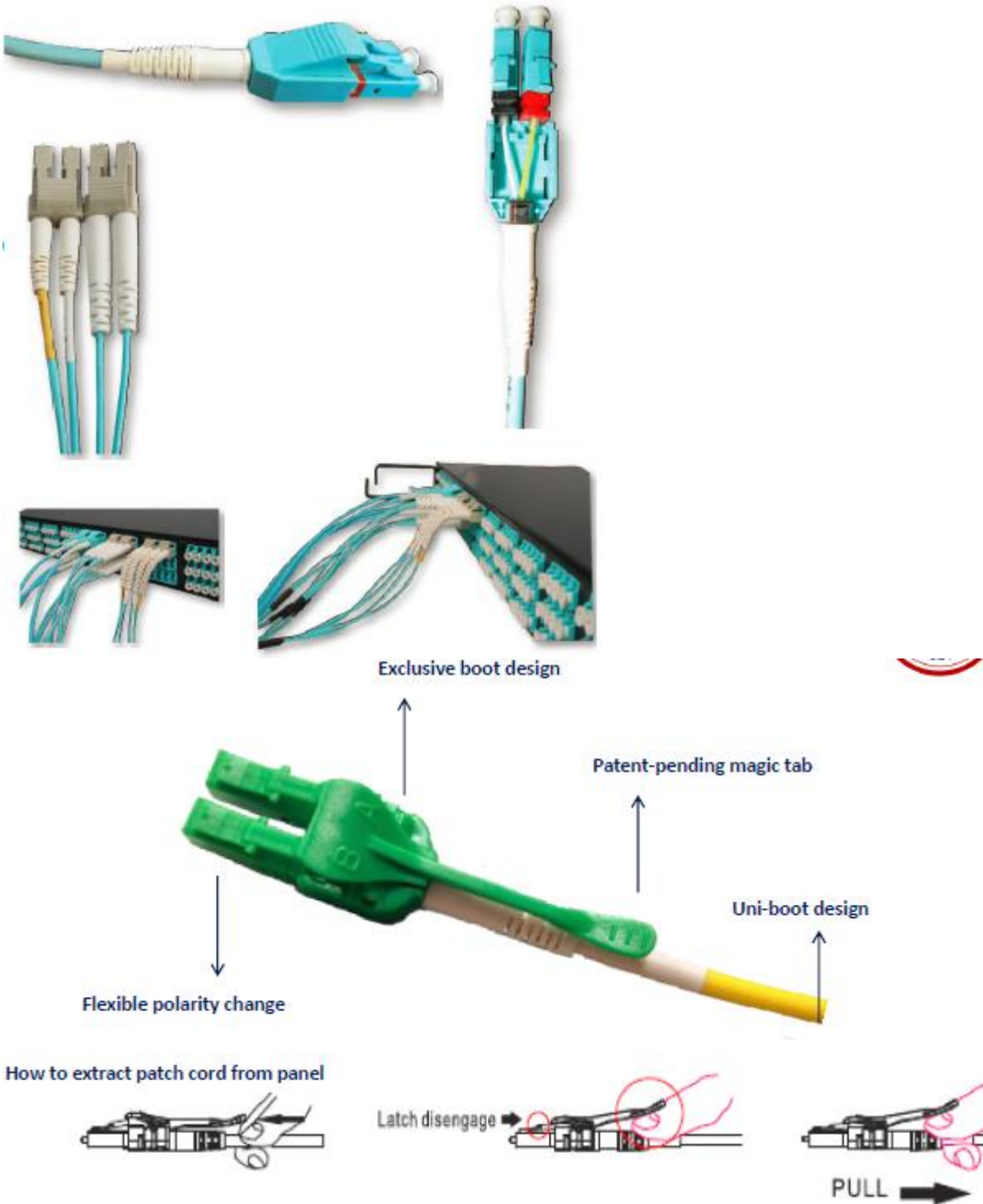


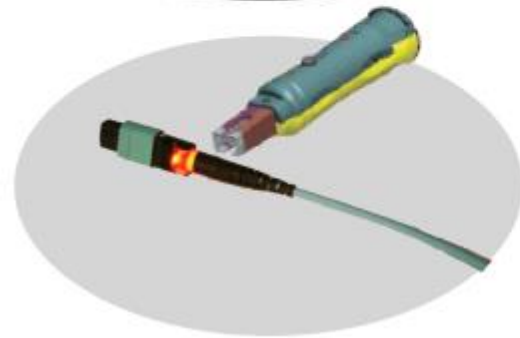
SMART RACK SPACE



The key to achieving maximum performance in a high-quality structured data center cabling system is through fiber jumpers. Our jumpers meet the industry's most stringent requirements for data center solutions, designed specifically for the mainframe and high-end SAN switching environments. Ideal for high-speed, mission-critical data center environments. Available in a variety of multi-mode and single-mode lengths and connector styles.

Our Unique uniboot construction, allowing easier plug-in and unplugging. Designed for high performance rigorously tested for repeatability and loss.





Guide you through a labyrinth of the most messy data room....

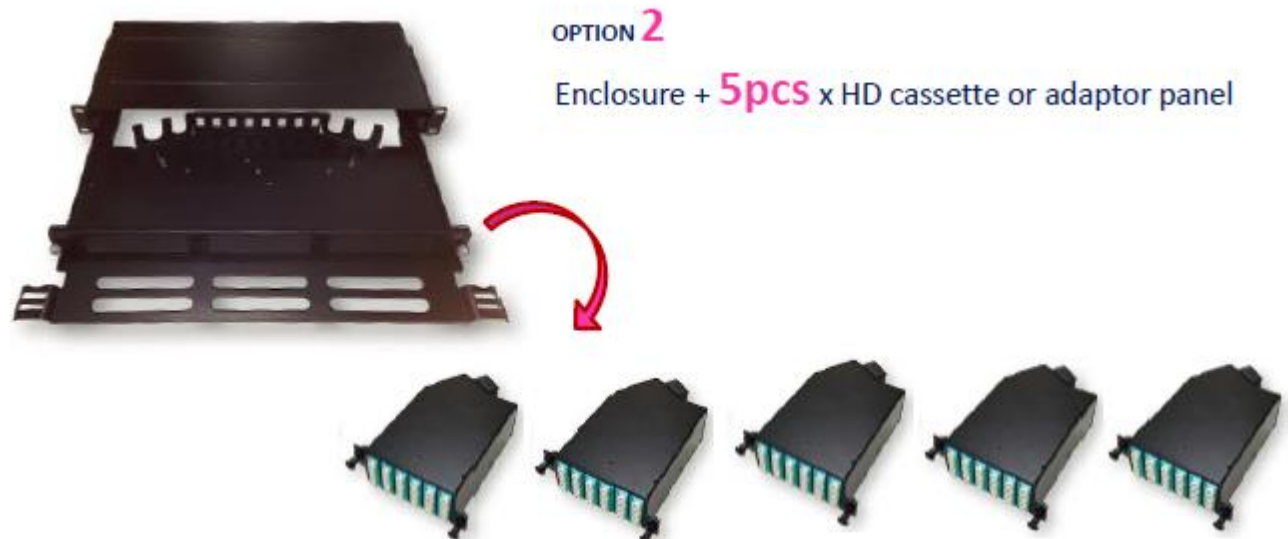
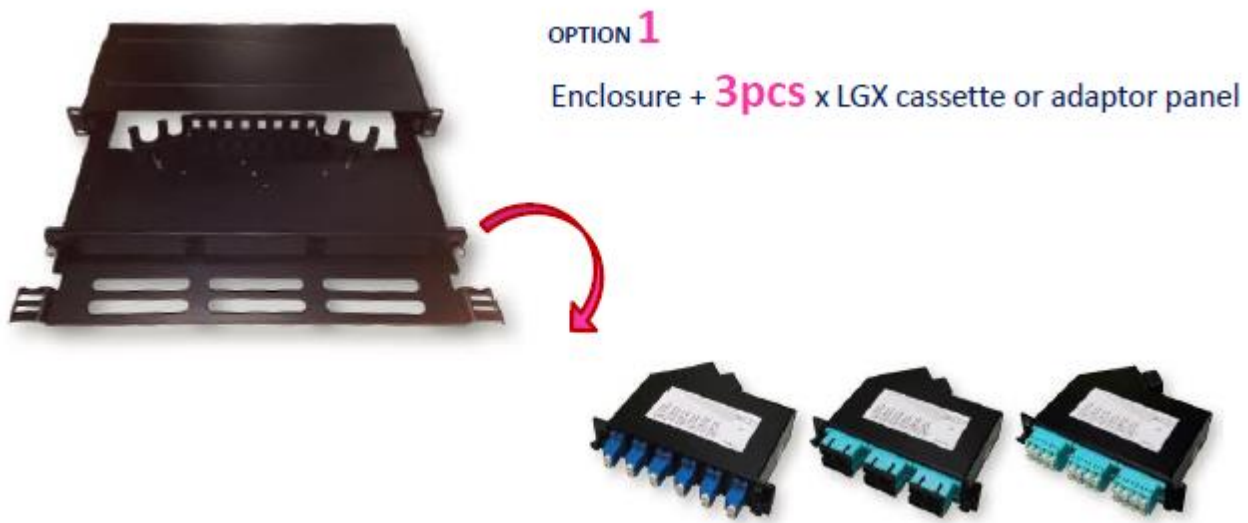
The Owl-Eyed[®] tracing tester plugged at one end activated both boots and enables immediate identification of the other of the cord

Our harness solves the problem of cable management in high-density fiber switches. Pre-engineered and customizable staggering provides neat and clean installation into your switches for optimum cable management. Performance far exceeds industry dB loss performance standards. Comes in 4 X LC DX to MTP/MPO and 6 X LC DX to MTP/MPO, MTP/MPO to LC saves valuable install time. And also Customized Harness Cables 12 X LC DX to 12 LC DX, 24XIC DX to 24 X LC DX, OM3/OM4 and SM /OS2 to reduce the installation time, cost and improves the performance by minimizing no of channel inter connects.



MTP/MPO fiber trunk cables are typically 12-144 fibers and create the permanent fiber links between patch panels in a structured environment. They are pre-terminated with MTP Connectors at a specified length and have a pulling grip for easy installation.

We have Different patch Panel Options for Every need for the Data Center and Lab Environments.



OPTION 3

Enclosure + Flush mount adaptor bulkhead for ST, FC, SC and LC



Up to Bottom

- * FC 24 port
- * SC simplex x 12 port or LC duplex x 24port
- * SC simplex x 24 port or LC duplex x 24 port
- * SC duplex x 12 port or LC quad 12 port
- * SC Duplex x 24 port or LC quad 24 port

96 & 144 port



Structured cabling using an MTP/MPO cabling infrastructure can be used with current 10-Gbps environments while maintaining investment protection for 40-Gbps/100 - Gbps environments in the future. The permanent MTP based trunk cables remain unchanged during the conversion, with only minor changes at the connector patch panel, allowing a transparent transition. New data center switching platforms from different switch manufacturers are now using the cost-effective, lower-power optics at 40 Gbps to deploy innovative and flexible networking solutions. These solutions allow easy integration into existing environments and deployment of new options regardless of your zone deployment needs.

SM VADD's pre-terminated structured cabling solutions for the most common networking architectures in data centers using the Cisco/Juniper/Arista data center switches. It covers the structured cabling within and between switching layers (core, aggregation and access) and highlights several cabling options and migration paths for Ethernet applications from 1 Gb/s to 100 Gb/s

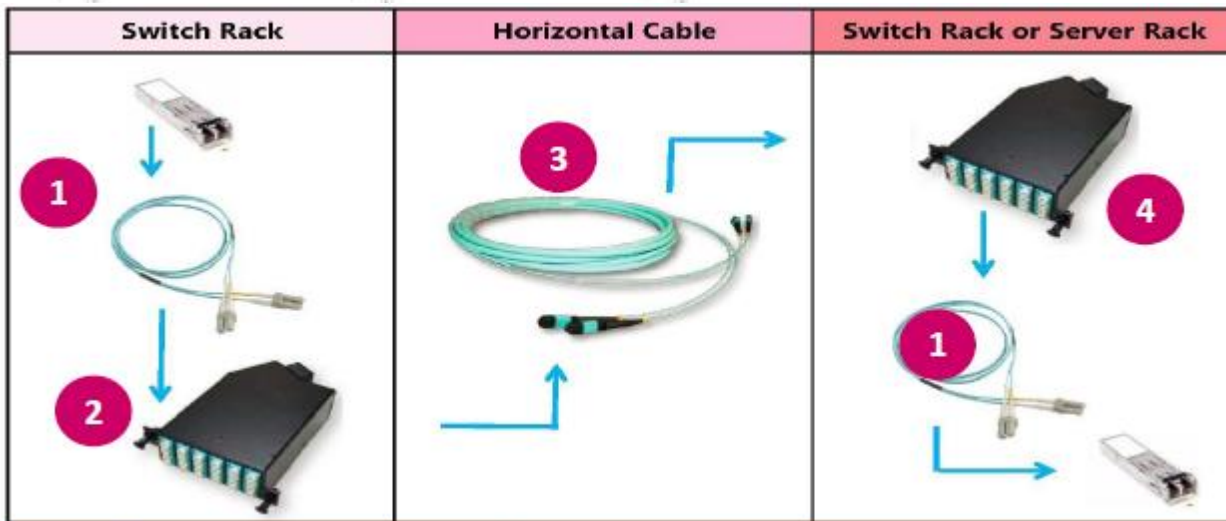
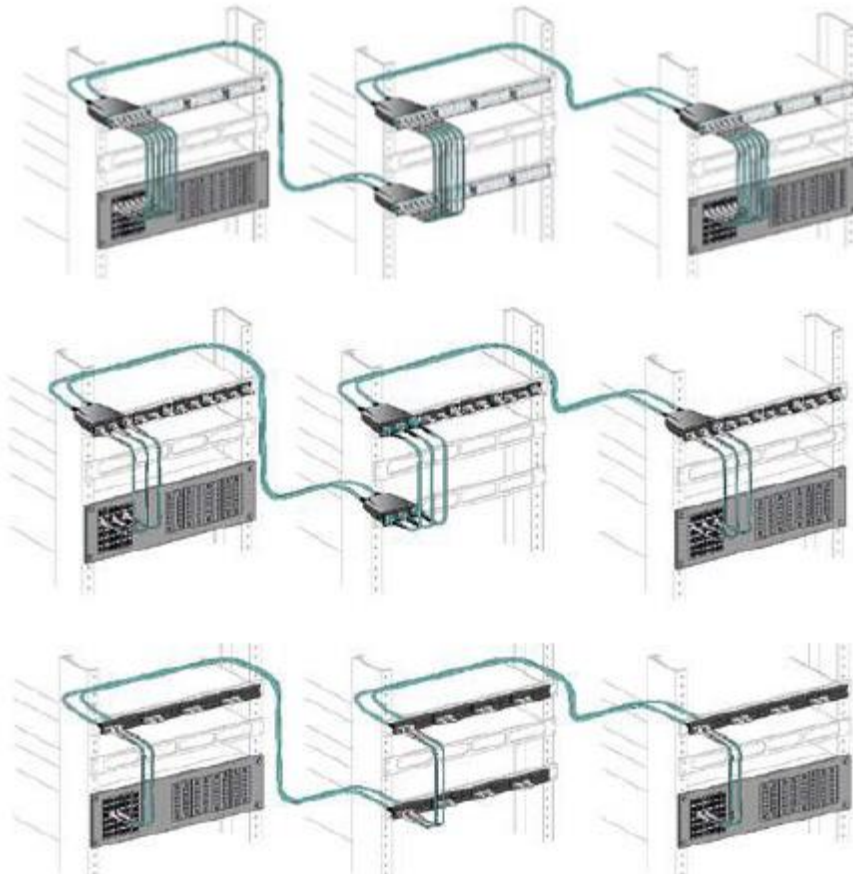
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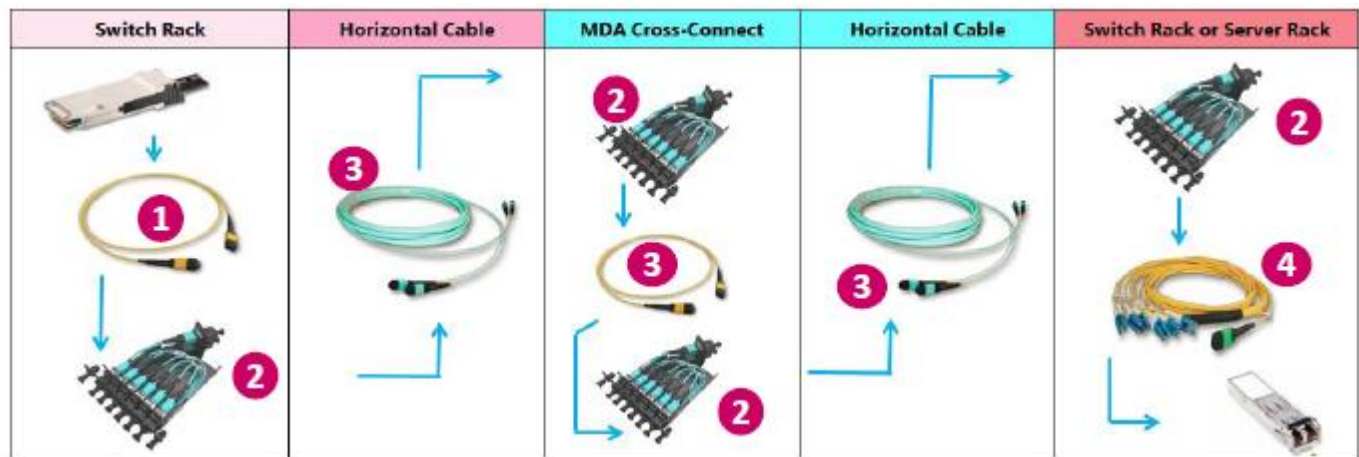
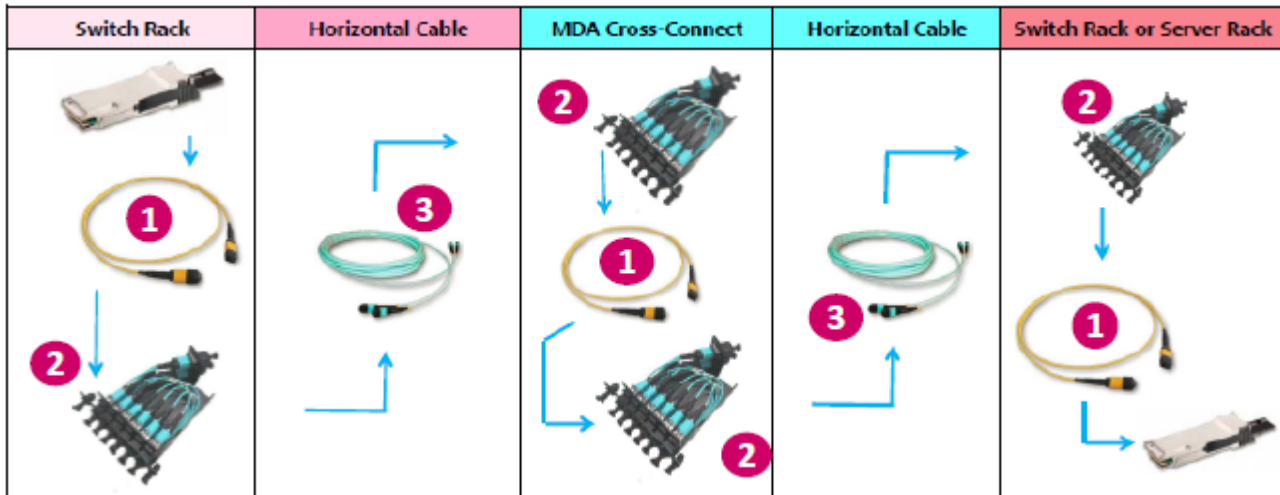
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MPO/MTP 24-fiber offers an ideal upgrade path from 10 Gb/s up to 100 Gb/s and is a real infrastructure for next 3 generations of data center applications ,MPO/MTP 24-fiber upgrade will make sure the future Generations data centers will be well organized to do changes in quick time without any down time. The modularity of the system offers an unknown design flexibility allowing even 3 ethernet applications (10/40/100 Gb/s) to be installed in just one





Trunk cables remain permanent						
10GbE ENABLING MIGRATION TO 40GbE	<p>LC Duplex Patch</p>	<p>10Gb/s Cassette</p>	<p>24 Fiber Trunk</p>	<p>10Gb/s Cassette</p>	<p>LC Duplex Patch</p>	10GbE ENABLING MIGRATION TO 40GbE
40GbE ENABLING MIGRATION TO 100GbE	<p>3 x 12 Fiber Patch Cable</p>	<p>40Gb/s Cassette</p>	<p>24 Fiber Trunk</p>	<p>40Gb/s Cassette</p>	<p>3 x 12 Fiber Patch Cable</p>	40GbE ENABLING MIGRATION TO 100GbE
100GbE	<p>1 x 24 Fiber Patch Cable</p>	<p>100Gb/s Cassette</p>	<p>24 Fiber Trunk</p>	<p>100Gb/s Cassette</p>	<p>1 x 24 Fiber Patch Cable</p>	100GbE

SM VADD Best Practices for the Cables Installation

Avoid over-bundling the cables or placing multiple bundles on top of each other, which can degrade performance of the cables underneath.

Keep fiber and copper runs separated. The weight of the copper cables can crush fiber cables that are placed underneath.

Consider using cables that are resistant to bend loss.

Avoid mounting cabling components in locations that block access to other equipment (power strip or fans) inside and outside the racks.

Keep all cable runs under 90 percent of the maximum distance supported for each media type as specified in the relevant standard. This extra headroom is for the additional patch cables that will be included in the end-to-end connection.

Install higher cable types (OM3 or OM4 only) that will meet current and future application requirements. Cabling installations and components should be compliant with industry standards.

Don't stress the cable by doing any of the following:

Applying additional twists - Pulling or stretching beyond its specified pulling load rating.

Bending it beyond its specified bend radius and certainly not beyond 90 ° Creating tension in suspended runs.

Stapling or applying pressure with cable ties

Avoid routing cables through pipes and holes. This may limit additional future cable runs.

Label cables with their destination at every termination point (this means labeling both ends of the cable).

Test every cable as it is installed and terminated. It will be difficult to identify problem cables later.

Locate the main cabling distribution area nearer the center of the data center to minimize cable distances.

Do not route cables such that they block equipment cooling fans and restrict airflow.

Use thin and high-density cables wherever possible, allowing more cable runs in tight spaces. Ensure the selected cables meet standard specifications.

Dedicate outlets for terminating horizontal cables, that is, allocate a port in the patch panel for each horizontal run. Include sufficient vertical and horizontal managers in your design, future changes may involve downtime as cables are removed during the changes.

Avoid leaving loose cables on the floor that create a major safety hazard.

Use the horizontal, vertical, or overhead cable managers.

Avoid exposing cables to direct sunlight and areas of condensation.

Do not mix different cable types within a bundled group.

Remove abandoned cables that can restrict air flow and contribute to possible increases in operational temperatures that can affect the longevity of the system.

Keep some spare patch cables. The types and quantity can be determined from the installation and projected growth.

Try to keep all unused cables bagged and capped when not in use.

Use horizontal and vertical cable guides to route cables within and between racks.

Document all cabling components and their linkage between components and make sure that this information is updated on a regular basis.

The installation, labeling, and documentation should always match.

Use the correct length patch cable, leaving some slack at each end for end device movements.

Bundle cables together in groups of relevance (for example, ISL cables and uplinks to core devices), as this will ease management and troubleshooting.

When bundling or securing cables, use Velcro-based cable wraps every 1 to 2 meters.

Avoid using zip ties as these apply pressure on the cables.

Avoid routing cables over equipment and other patch panel ports.

Route below or above and into the horizontal cable manager for every cable.

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Maintain the cabling documentation, labeling, and logical/physical cabling diagrams.

Summary

Although cabling represents less than 10 percent of the overall data center network investment, it can be expected to outlive most network components and be the most difficult and potentially costly component to replace. When purchasing the cabling infrastructure, consider not only the initial implementation costs, but subsequent costs as well. Understand the full lifecycle and study local industry trends to arrive at the right decision for your environment. Choose the strongest foundation to support present and future network technology needs—comply with TIA/ISO cabling standards. Build in additional capacity, as it is much easier to install now than later. Use higher bandwidth grades of cabling to postpone having to re-cable as technologies advance. The cabling itself calls for the right knowledge, the right tools, patience, a structured approach, and most of all, discipline. Without discipline, it is common to see complex cabling “masterpieces” quickly get out of control, leading to increased support costs and increased down time. Since each environment is different, there is no single solution that will meet all of your cable management needs. Following the guidelines and best practices highlighted in this paper will help to provide you with the information required for the successful deployment of a cabling infrastructure in your data center