

Case Study

Enterprise Network Cabling

FS FHD® Cabling Solution Enables
Scalable MDF-IDF Connectivity

Discover how a Germany-based ISP modernized its network with FS FHD® structured cabling, achieving efficient MDF-IDF connectivity.

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Country

 Germany

Industry

 ISP

Network Type

 Small Campus Network

Solutions

 Enterprise Network Cabling

Highlights

- The upgrade enabled the customer to adopt a solution fully compatible with their existing equipment, ensuring reliable connectivity from the MDF to the IDF.
- Throughout the inquiry-to-delivery process, cross-team coordination ensured smooth, efficient communication at every stage, enabling rapid deployment.
- With the FS Install service, the deployment was completed quickly under the guidance of a professional team, significantly reducing installation time and downtime risks.

Key Stats

- Upgraded 12 network racks from 10G to 40G using high-density MTP® & FHD® cabling solutions.
- Each 1U space in the two main racks accommodates 4 fiber cassettes, capable of housing up to 96 fibers.
- Delivered prompt online tech support within 24 hours to address fiber polarity and connectivity compatibility challenges.
- All products, including custom cassettes, were delivered within 30 days, 25% faster than the lead time of other suppliers.

Overview

The rapid growth of the IT services and consulting industry has driven a rising demand for scalable, high-performance, and flexible IT infrastructure. Many companies are striving to simplify operations, enable digital transformation, and support data-driven business models.

Our customer is a Germany-based IT services and consulting company with 5,001 to 10,000 employees. As part of its digital transformation, the company sought to modernize its network infrastructure to support office operations.

They planned to achieve efficient data transmission between the main distribution frame (MDF) and the intermediate distribution frame (IDF) through a high-density cabling solution. Because the network operated within a mixed-vendor topology, the focus was on ensuring proper polarity alignment of the high-density cabling system to guarantee link compatibility and long-term network stability.

Challenges

When building high-density fiber cabling between the main distribution frame (MDF) and the intermediate distribution frame (IDF), one of the biggest challenges the customer faced was ensuring system compatibility within a multi-vendor topology. At the

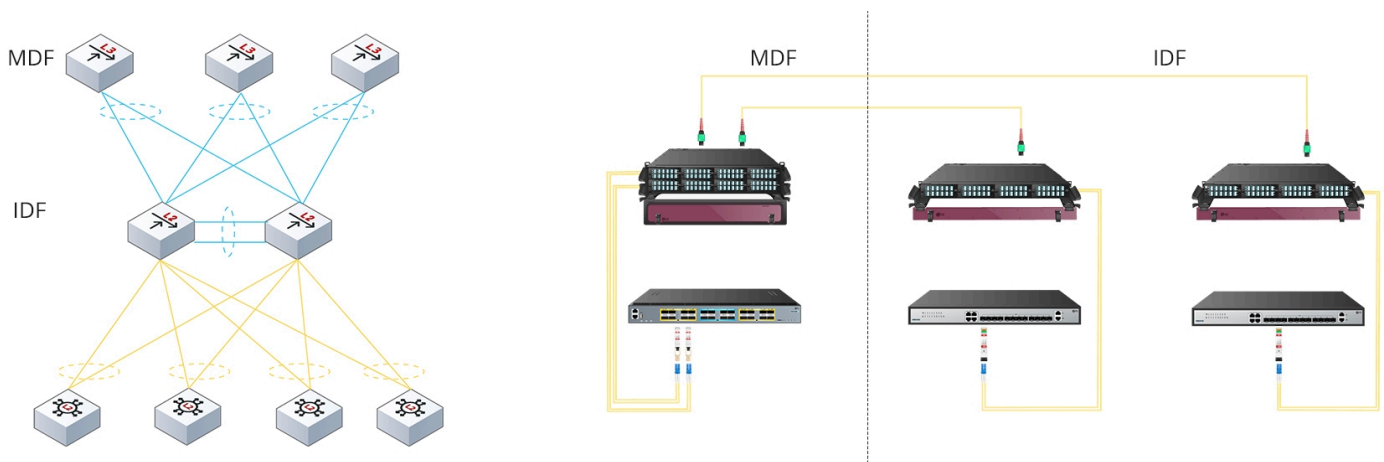
same time, due to limited technical expertise and experience, the customer struggled to ensure correct end-to-end polarity alignment. Polarity mismatches could result in signal loss, degraded performance, and additional maintenance costs.

In addition, the large number of fiber connections between high-density racks placed extra pressure on cable management and maintenance. Without an efficient documentation and tracking system, engineers had to rely heavily on manual work for cable recording, link troubleshooting, and maintenance. This not only made operations time-consuming and error-prone but also reduced overall network visibility and scalability.

Solutions

By collaborating with FS's Germany-based project team, which comprises experts in solution design, testing, delivery, and installation, the customer ensured steady progress throughout each stage of the project implementation.

The customer's high-density connectivity scenario required efficient transmission between the Main Distribution Frame (MDF) and Intermediate Distribution Frame (IDF). The entire architecture adopts the FS FHD® high-density cabling system, utilizing standardized MTP®/MPO fiber components and an expandable



modular design to achieve reliable, flexible, and easy-to-maintain connections. The MDF, serving as the core layer, utilizes 1U FHD® rack mount enclosures with MTP® trunk cables to provide high-speed interconnection to each IDF cabinet. On the IDF side, high-density fiber enclosures and fiber optic panels are deployed to ensure organized end-to-end fiber management. The FHD® fiber enclosures support various fiber modules, such as MTP®-LC breakout cassettes or optic panels, offering flexibility to accommodate different equipment interface types.

Addressing the customer's concerns regarding MTP® high-density cabling polarity, our solution focused on ensuring stability in a mixed-vendor environment. Prioritizing deployment efficiency and operational ease, the customer selected the A-A-AF scheme. This "plug-and-play" solution eliminates the need for complex port mapping, significantly accelerating their network deployment.

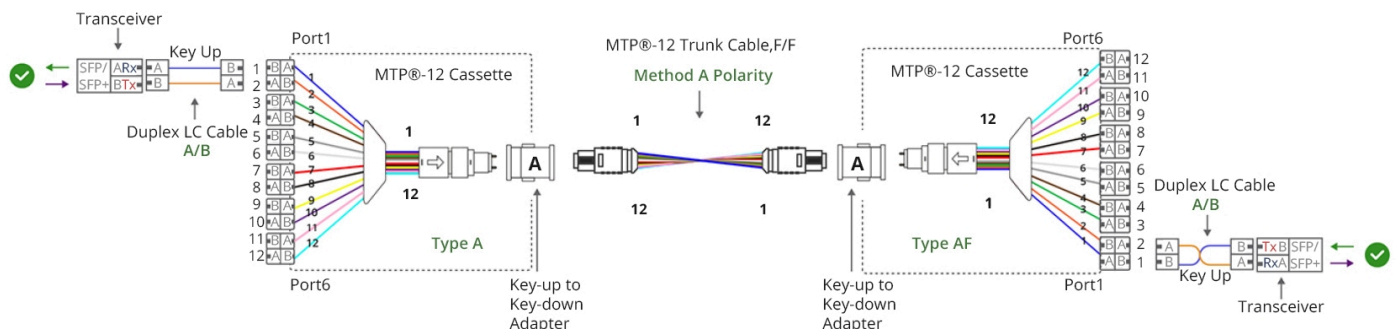
The project benefited from a highly professional and localized service experience. By conducting technical discussions in German, all solution details were communicated with absolute clarity, eliminating any language barriers. The entire logistics process remained transparent and manageable thanks to coordinated delivery from a local warehouse in Germany. Following a smooth implementation

supported by on-site expertise, the adoption of FS WireNet management software further optimized operations, reducing fiber documentation time and costs by 60% while ensuring long-term maintenance efficiency.

Results

The perfect combination of FHD® fiber enclosures and MTP®-LC fiber cassettes helps the customer improve fiber density management within limited rack space. Up to 96 LC fibers can be neatly organized, making future operation and maintenance more efficient. In addition, the customer can flexibly add or replace cassette types as needed – for example, switching to higher-density MTP®-24 fiber cassettes – to further increase cable density within the rack. This high-density and flexible deployment approach simplifies cabling workflows and adapts easily to evolving connectivity requirements.

The project delivered a cabling solution that is easier to manage, flexible for future adjustments, and scalable for higher-speed upgrades, helping the customer support current and future data transmission cost-effectively.





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