

Fiber optic cold splice connected to router



Overview

Learn how to perform mechanical fiber cable splicing inside fiber enclosures using fiber splice trays.

Key Takeaways

A fiber optic cold splice connects two fibers mechanically, which can then be linked to a router via an ONT for network access.

Step 1: Prepare the Fiber for Cold Splicing

Before performing a cold splice, the fiber-optic cables must be prepared:

- Strip the outer jacket of the fiber cable carefully to expose the glass fiber.
- Clean the fiber using alcohol wipes to remove dust, oils, or debris.
- Cut the fiber ends precisely using a fiber cleaver to ensure smooth, flat surfaces for alignment ().

Step 2: Perform the Cold Splice

Cold splicing, also called mechanical splicing, joins fibers without heat:

- Insert the fiber into a mechanical splice connector, which typically consists of a ferrule and a body. The ferrule holds the fiber in precise alignment.

- Secure the ferrule in the connector body, ensuring the fibers are aligned end-to-end. Some cold splices use a gel or adhesive to reduce signal loss ().
- Test the splice using an optical power meter or OTDR to verify low attenuation and proper alignment. Typical attenuation for cold splices ranges from 0.1 to 0.3 dB per point ().

Step 3: Connect the Spliced Fiber to the Router

Most home or business fiber connections require an Optical Network Terminal (ONT):

- Locate the fiber wall outlet where the ISP's fiber line enters.
- Plug the spliced fiber into the ONT's fiber input port. Ensure the connector type matches (SC/APC or SC/UPC).
- Power on the ONT and wait for the status lights to stabilize.
- Connect the ONT to the router using an Ethernet cable from the ONT's LAN port to the router's WAN port. Power on the router and confirm connectivity ().

Step 4: Verify the Connection

- Check the router's admin panel or indicator lights to ensure the fiber connection is active.
- Optionally, run a speed test to confirm proper data transmission.

Advantages and Considerations

- Cold splicing is cost-effective and does not require fusion splicing equipment ().
- Quick installation and suitable for field work, especially in remote locations.
- Temporary or emergency use: Cold splices may be less durable than fusion splices over long-term deployments ().
- Ensure proper handling to avoid fiber breakage or signal loss.

By following these steps, a fiber optic cold splice can be successfully connected to a router, providing reliable high-speed network access.

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