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What fiber optic pigtail should be used with an SFP optical module



Overview

SFP Fiber Optic Connector Types: LC, SC, MPO ExplainedSFP fiber optic connector types determine physical compatibility and cabling efficiency, not optical.

Key Takeaways

Use a fiber optic pigtail with an LC connector that matches the SFP module's fiber type (single-mode or multimode) and polish type.Connector Compatibility

Most modern SFP modules use LC connectors, while older networks may use SC connectors, and MPO/MTP connectors are typically reserved for high-density backbone applications . Ensure the pigtail's connector matches the SFP module to avoid adapters, insertion loss, or operational issues . For standard SFP modules, an LC-to-LC pigtail is the default choice.

Fiber Type

Select the pigtail based on the SFP module's fiber type:

• Single-mode (OS1/OS2): Ideal for long-distance transmission and most 1G/10G/25G SFP modules .

• Multimode (OM1/OM3/OM4): Suitable for shorter distances, typically within data centers or rack-to-rack connections .
Polish Type

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Fiber pigtails come with different polish types, such as UPC (Ultra Physical Contact) or APC (Angled Physical Contact). Match the pigtail's polish to the SFP module's requirements:

• UPC: Standard for most SFP modules.

• APC: Required for modules operating at wavelengths where back reflection must be minimized, such as 1310nm or 1550nm single-mode links .
Installation Considerations
• The pigtail's bare fiber end is designed for fusion or mechanical splicing to the incoming fiber cable, ensuring low-loss connections .

• Typical pigtail lengths range from 1 to 3 meters, providing flexibility for routing and splicing .

• Ensure proper cleaning and inspection of connectors before insertion into the SFP module to maintain signal integrity .
Summary

To connect a fiber optic pigtail to an SFP module:

• Match the connector type (usually LC).

• Select the correct fiber type (single-mode or multimode) according to the SFP module specifications.

• Choose the appropriate polish type (UPC or APC) based on the module's optical requirements.

• Splice the bare fiber end to the network cable using proper techniques to minimize loss and reflection. Following these guidelines ensures reliable optical performance and compatibility with your SFP transceiver .

Article Content

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An SFP connector is part of a Small Form-factor Pluggable (SFP) module used to link fiber optic or copper cables to

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