

How to use an external network fiber optic pass-through switch

Article Overview

To configure an external fiber optic switch, ensure proper SFP module selection, match fiber types, configure trunk ports for VLANs, and optionally use media converters with link pass-through for reliable connectivity.

Step 1: Identify Fiber Type and Distance

Determine whether your fiber link is single-mode (SMF) or multimode (MMF) and the distance between buildings. Single-mode is typically used for long distances (kilometers), while multimode is suitable for shorter runs (hundreds of meters). Ensure the SFP or SFP+ modules on both switches match the fiber type and wavelength (e.g., 1310nm or 1550nm for SMF, 850nm for MMF).

Step 2: Prepare Switch Ports

- o Insert the appropriate SFP/SFP+ modules into the fiber-enabled ports on both switches .
- o Verify that the ports are set to fiber mode if the switch supports combo ports (RJ45 + SFP) .
- o For building-to-building links, configure the ports as trunk ports to carry multiple VLANs or at least the VLAN(s) required for the remote network . Example Cisco CLI for trunk port:

```
interface GigabitEthernet1/0/1 switchport mode trunk switchport trunk allowed vlan 10,20 no shutdown
```

Step 3: Configure VLANs

- o Ensure the VLANs allowed on the trunk match on both switches .
- o Configure access ports on the remote switch for the appropriate VLANs for end devices . Example for access port:

```
interface GigabitEthernet1/0/10 switchport mode access switchport access vlan 10 no shutdown
```

Step 4: Optional Media Converters with Link Pass-Through

If the fiber link is mission-critical or involves different fiber types, consider using fiber media converters with Smart Link Pass-Through. This ensures that if the fiber is disconnected or fails, the link state is reflected to both switches, preventing false "up" status .

Step 5: Test and Troubleshoot

- o Verify the link status on both switches. LEDs should indicate a stable connection.



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- o If the link does not establish, check fiber polarity, SFP compatibility, and port configuration .
- o Use switch commands like `show interfaces status` or `show interface transceiver` to confirm the SFP is recognized and operational .

Step 6: Save Configuration

After successful configuration, save the switch settings to ensure persistence after a reboot:

```
copy running-config startup-config
```

Key Considerations

- o Always match fiber type and SFP module on both ends.
- o Use trunk ports for inter-switch links to carry multiple VLANs.
- o For critical links, link pass-through media converters improve reliability.
- o Monitor the link for intermittent drops, which may indicate fiber issues or SFP incompatibility . By following these steps, you can successfully configure an external fiber optic pass-through switch to extend your network across buildings while maintaining VLAN integrity and link reliability.

This guide will walk you through the process of connecting a switch to a fiber optic network, covering the necessary components,

With Link Pass-Through enabled, the FEF signal received on its fiber receiver will cause the media converter to drop the copper link

Fiber optic cabling is increasingly used to connect network switches and other datacom equipment, especially in long-distance and

A practical B2B guide explaining what a fiber optic switch is, how to connect fiber optic cable to Ethernet switches, how

Generally fiber optic connections use either plain fiber-Ethernet or more commonly GPON (which still carries Ethernet

Fiber optic cables are commonly used for core network lines and connections that must span long distances, such as those used by

A quick introduction to fiber optics transceivers and LAN switches. This is an older video if

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You can then place the clients there on a separate L3 network and use a transit VLAN to connect between the new

Today I'm going to explain what you need to run fiber optic networking around your

Connecting a fiber optic switch involves several steps, ensuring compatibility between the switch's ports and the fiber

A fiber optic cable should be tested three separate times during an installation: on the reel, the splicing test, and the final acceptance

Beginner's introduction and guide on how to install and set up a Fiber Optic network

An optical switch is a network device that selectively routes optical signals from one fiber transmission line to another

Outdoor fiber installation in 2025 requires weatherproof methods, FOA standards, and smart planning for reliable,

We have a fiber cable optic cable run to Block B from Block A of the building and want to make a small network using

Discover the Power of PoE Passthrough Switches PoE (Power over Ethernet) passthrough switches are a game

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