Two switches connected directly via optical ports

Overview

In cases where the distance between switches exceeds the total cable length, you can use the LC-LC coupler to connect two fiber optic cables together.

Key Takeaways

Two switches can be connected directly through fiber-optic ports using compatible SFP modules and proper cabling, ensuring full-duplex, high-speed communication. Key Considerations for Fiber ConnectionsSFP Module Compatibility: Ensure both switches use compatible SFP transceivers. Check whether they are single-mode or multi-mode, single-fiber or dual-fiber, and that the wavelengths match for single-fiber modules.

Optical Power and Distance: The optical power output and sensitivity of the modules should be within the same range, and the fiber cable should support the required transmission distance. Port Speed and Duplex: Both optical ports should operate at the same speed (e.g., 1 Gbps or 10 Gbps) and duplex mode to avoid connectivity issues. Cabling: Use the correct fiber type (single-mode or multi-mode) and connector type (LC, SC, ST, etc.).

For bidirectional communication over a single strand, BiDi SFP modules can be used. Dual-strand fiber allows full-duplex communication and reduces crosstalk.

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Network Topology

Star Topology: Connect each switch to a central core switch using dedicated fiber links. This reduces collisions and improves performance. Daisy Chain / Cascade: Switches can be cascaded directly, but it is recommended to limit to no more than four layers to maintain performance.

Configuration Steps

Insert compatible SFP modules into the fiber ports of both switches. Connect the fiber cable between the SFP ports. Verify the interface status.

On Cisco switches, you may need to issue no shutdown on the VLAN interface associated with the SFP port if it is administratively down.

Ensure VLA

Ns are configured correctly so that devices on one switch can communicate with devices on the other.

Troubleshooting Tips

If the SFP port lights remain off, check module compatibility, fiber type, and cable integrity. Clean the fiber connectors to remove dust or debris, which can degrade signal quality. Use optical power meters or visual fault locators to verify signal transmission.

By following these guidelines, two switches can be reliably connected via optical ports, providing high-speed, long-distance, and interference-free communication.

Article Content

3 FAQs of Connecting Switches by Fiber Optical Ports

Can two switches with optical ports be directly connected by optical fiber? Yes, the main line of the optical fiber LAN is a direct switch, followed by a

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In cases where the distance between switches exceeds the total cable length, you can use the LC-LC coupler to connect two fiber optic cables together. For example, insert the connector

Connecting two switches through a fiber cable

If there is no link light when you connect the fiber port, you have most likely a physical layer issue. So, check to see if your SFPs are multimode or single mode. once you find what type of

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How to Connect two PoE switch with fiber optical cable

In order to extend long distance network, it''s common practical operation to use fiber optical cable to link two PoE switch. PoE switch, Fiber optical cable, SFP module, media convertor are all the required

Two switches connected. Can I route over these?

I have two switches, that are connected via a port channel, two 1Gb ports, in trunk mode. I have them set to only allow VLAN 66 traffic over the port channel. This is set in the port channel. on

Choosing the Right Fiber Optic to Connect Two Switches

If you want to achieve the highest speed and distance in the cabling between two or more switches, without a doubt, the best option is the fiber optic connection and using the SFP or SFP +

Fiber connection between 2 switches in 2 seperate buildings

At this point, I have a seperate "dumb" switch to do this and separate cabling, but at our new location, this isn''t easy to do, as I have to deal with 2 separate buildings, so I would need to pull

Connecting Network Switches via Fiber

When connecting terminated duplex fiber optic cable between two network switches, ensure the connections are reversed between the SFP transceiver ports (connection A to B and B to A). SFP

Application Guide: Connecting Fiber-ready Network Switches

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

Connect Multiple Switches with Fiber Optic Cables

In this video, we''ll delve into the world of fiber optics, exploring the reasons behind their necessity, introducing Fiber Switches and Fiber PoE Switches, g...

How to Connect Two Switches Together: A Comprehensive Guide

To perform cascading, simply connect the ports of the two switches using twisted-pair cables. The switches remain independent devices, utilizing the port redundancy provided by the

Connect 2 switches together through Access port or Trunk

Hi Everyone, We need to connect 2 switches together and have 2 options for them:- 1. Use access port on both sides 2. Use trunk port on both

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Connecting Two Network Switches Together

In this video we take a look at the different ways of connect 2 switches together. There are many different ways of connecting two or more switches together but we take a look at a few different ways.

Interconnection Options for Gigabit Switches with SFP Ports

When you connect two 1000BASE-T switches with SFP ports to achieve Gigabit Ethernet, there are two methods: through standard Ethernet cable plugged into the built-in Ethernet

Connecting two HP switch with fiber in same building

We are moving couple floors up in the same office building. There is a fibre connection available and I would like to know what equipment I need to

Best Way to Connect Multiple Switches

How to connect multiple switches in a network with clear steps and tips for effective setup and configuration.

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connecting multiple switches together

Assuming these are two unmanaged switches you should connect them together via one cable preferably a cross-over (x-over) cable.

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