

Switch Single-Fiber Optic Module Configuration



Overview

Cisco SFP and SFP+ Transceiver Module Installation These transceiver modules are hot-swappable input/output (I/O) devices that plug into 100BASE, 1000BASE.

Key Takeaways

Single-fiber optic modules enable unidirectional communication over a single fiber, enhancing security and simplifying cabling, and can be configured using specific switch commands.

Overview of Single-

Fiber Modules

A single-fiber optic module allows two optical devices to communicate using only one fiber strand. Unlike standard bidirectional modules, single-fiber modules support unidirectional traffic, meaning one device can transmit while the other only receives. This is particularly useful for analysis servers or monitoring setups, where you want to prevent the server from sending traffic back into the network, ensuring data security ().

Enabling Single-



Fiber Communication

On switches that support this feature, such as Huawei CX320 series, the configuration is straightforward: Enable single-fiber mode: single-fiber enableDisable single-fiber mode: undo single-fiber enable By default, single-fiber communication is disabled. After enabling, the interface will transition to the Up state if a compatible optical module is installed ().

Important Considerations

Only interfaces with pre-configured optical modules or non-single-fiber bidirectional modules support this command. Certain high-speed interfaces, such as 40GE QSFP modules, may not support single-fiber mode depending on the module type (). If no compatible module is installed, the interface status will show Down.

Installation and Safety Guidelines

Proper handling of SFP modules is critical to avoid damage: ESD Protection: Always wear a grounded wrist strap and work on an ESD-safe mat. Handling: Hold modules by the sides, never touch the card-edge connectors. Insertion: Slide the module into the port until it clicks; use the handle if available.

Laser Safety: Avoid direct eye exposure to optical lasers, even if Class 1 ().

Verifying Module and Interface Status

After installation and configuration: Use commands like display interface transceiver (Huawei) or show idprom interface (Cisco) to check module type, compatibility, and operational status (). Ensure the module is Cisco- or vendor-compatible to avoid unpredictable behavior and link instability ().

Summary

Configuring a single-fiber optic module involves: Installing a compatible SFP module safely. Enabling single-fiber mode on the switch interface. Verifying interface and module status.

Observing vendor-specific limitations for high-speed or split interfaces. This setup provides secure, unidirectional communication over a single fiber, reduces cabling complexity, and is ideal for monitoring or analysis applications.

Frequently Asked Questions

Installing SFP and SFP+ Transceiver Modules

SFP transceiver modules can have three types of latching devices to secure an SFP transceiver module in a port socket: •Figure 4 shows an SFP trans...

Removing SFP and SFP+ Transceiver Modules

If you are removing an SFP or SFP+ transceiver module, follow these steps: Step 1 Attach an ESD-preventive wrist strap to your wrist and to the ESD...

Obtaining Documentation and Submitting A Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly What's New in Cisco...

Article Content

Cisco SFP and SFP+ Transceiver Module Installation

These transceiver modules are hot-swappable input/output (I/O) devices that plug into 100BASE, 1000BASE and 10GBASE ports (for SFP+),

Configuring Unidirectional Single-Fiber Communication

This document describes the interface management configuration, including basic interface configuration, Ethernet interface configuration, and logical interface configuration.

Troubleshoot Fiber Links on Catalyst 9000 Series Switches

This document describes how to troubleshoot fiber optic interfaces by addressing some of the fiber optic module and cabling specifications.

The Ultimate Guide to SFP Modules (2026): Types, Speeds

Confused by SFP vs SFP+? Read the definitive 2026 guide on SFP modules. We explain Single Mode vs Multimode, DDM diagnostics, and how to choose the right transceiver for Cisco, Juniper, and more.

How to Install and Remove Optical Modules Safely

Install optical modules safely with ESD protection, proper handling, and dust control. Follow these steps to avoid damage and ensure network reliability.

How to use Ubiquiti SFP ports for fiber optic connections

This guide breaks down exactly how to use SFP ports on UniFi switches and gateways for fiber connections, what modules you'll need, and a few real-world tips that'll save you time and money.

SFP Transceivers in Action: Configure, Connect, and Monitor

This quick yet practical demonstration dives into the installation, configuration, and traffic monitoring of SFP optical and twisted-pair transceivers. Using an HP 24-port switch and a MikroTik ...

How to Match SFP Modules With Your Switch or Media Converter

Learn how to match SFP modules with your switch or media converter by checking compatibility, speed, fiber type, wavelength, and distance. A clear and practical guide.

Extreme Networks SFP Modules

The type of switch, router, or other component determines the compatible type of SFP module. Use only Extreme Networks-certified SFP, SFP+, and SFP28 modules in the SFP port on the hardware.

Cisco 40GBASE QSFP Modules Data Sheet

Cisco QSFP-40G-CSR-S (S-Class) The QSFP-40G-CSR-S is a pluggable optical transceiver with a duplex LC connector interface used for connectivity using MultiMode Fiber (MMF).

Cisco SFP and SFP+ Transceiver Module Installation Notes

This installation note provides the installation instructions for the Cisco small form-factor pluggable (SFP) and SFP+ transceiver modules. These transceiver modules are hot-swappable

Fibre Channel

Fibre Channel director with SFP+ modules and LC optical fiber connectors with Optical Multimode 3 (OM3) fiber (aqua) Fibre Channel switches can be divided into two classes.

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`gpt4_vocab_list/o200k_base_vocab_list.txt` at main

Vocabulary list of GPT-4o (o200k_base) and GPT-4/GPT-3.5 (cl100k_base) tokenizers. Special tokens are excluded. - kaisugi/gpt4_vocab_list

Ethernet

Fiber optic variants of Ethernet (that commonly use SFP modules) are also very popular in larger networks, offering high performance, better electrical isolation and longer distance (tens of kilometers)

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