

Gigabit optical port for 10 Gigabit module



Overview

Cisco Transceiver Modules - Learn product details such as features and benefits, as well as hardware and software specifications.

Key Takeaways

A standard Gigabit SFP port cannot natively support a 10 Gigabit SFP+ module; 10G connectivity requires a dedicated SFP+ or 10G-capable port.

Compatibility Overview
Gigabit SFP ports are designed for 1 Gbps speeds and support SFP modules such as 1000BASE-SX, 1000BASE-LX, or 1000BASE-T. In contrast, 10 Gigabit SFP+ modules (e.g., 10GBASE-SR, 10GBASE-LR) operate at 10 Gbps and require SFP+ ports that are specifically rated for 10G speeds. Attempting to insert a 10G SFP+ module into a 1G SFP port will generally fail because the port cannot negotiate the higher data rate.

Module Types and Fiber Considerations

- 10GBASE-SR (Short Range): Multimode fiber, OM3/OM4, distances up to 300–400 meters.
- 10GBASE-LR (Long Range): Single-mode fiber, distances up to 10 km.

- 10GBASE-ER/ZR: Single-mode fiber, extended distances up to 40–80 km . Gigabit SFP ports typically support 1000BASE-SX/LX modules with shorter reach (up to 550 m for multimode or 10 km for single-mode) and cannot handle the higher bandwidth of 10G modules .

Practical Deployment Options

- Upgrade the port: Use a switch or network interface card (NIC) with SFP+ or 10G-capable ports to support 10G SFP+ modules.
- Use media converters: If the existing Gigabit port must remain, a 10G-to-1G media converter can bridge 10G fiber to a 1G port, but the link will be limited to 1 Gbps.
- Check vendor compatibility: Some SFP+ modules are backward-compatible with 1G SFP ports, but this is rare and usually limited to certain multi-rate modules . Always verify with the switch or module datasheet.

Key Takeaways

- Gigabit SFP ports cannot natively run 10G SFP+ modules.
- 10G connectivity requires SFP+ or 10G-capable ports.
- Fiber type and distance must match the module specifications (SR for short-range multimode, LR for long-range single-mode).
- Multi-rate SFP+ modules may offer limited backward compatibility, but performance is constrained to the port's maximum speed. For reliable 10G deployment, ensure both the port and module are rated for 10 Gigabit Ethernet and that the fiber infrastructure supports the required distance and type .

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10-GB X2 Transceiver Modules Installation note

Table 3 lists the port cabling specifications for the 10-Gigabit Ethernet X2 transceiver modules. Table 4 lists the X2 transceiver

SFP-10GERLC-T

10 Gigabit Ethernet SFP+ Modules Moxa's small form-factor pluggable transceiver (SFP) Ethernet fiber modules for 10 Gigabit

Cisco Catalyst 6500 Series 10 Gigabit Ethernet Interface Modules

16-Port 10 Gigabit Ethernet Fiber Module The 16-port 10 Gigabit Ethernet fiber module (Figure 2) provides up to 130 10 Gigabit

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