

Configure the connection between two switch optical ports



Overview

This port may be connected to another E port to create an Inter-Switch Link (ISL) between two switches.

Key Takeaways

To connect two switches via optical ports, ensure compatible SFP modules, matching fiber types, correct TX/RX alignment, and proper port configuration including speed, duplex, and VLAN settings.

Step 1: Verify Hardware Compatibility

- SFP/SFP+ Modules: Check that both switches support the same type of optical module (SFP for 1Gbps, SFP+ for 10Gbps) and that the modules are compatible with the switch brand (Cisco, Huawei, H3C, etc.).
- Fiber Type: Ensure both switches use the same fiber mode: single-mode (OS2, long distance) or multi-mode (OM3/OM4, short distance) and that the fiber patch cords match the module type.
- Wavelengths: For dual-fiber modules, both ends must use the same wavelength (e.g., 1310nm or 1550nm). For single-fiber BiDi modules, TX/RX wavelengths must be paired correctly (e.g., TX1310/RX1550 on one end and TX1550/RX1310 on the other).

- Distance and Power: Confirm that the optical power and sensitivity of the modules are within the supported range for the fiber length .

Step 2: Physical Connection

- Insert the SFP modules into the optical ports of both switches.
- Connect the fiber patch cord, ensuring TX of one module connects to RX of the other.
- Avoid bending the fiber cable sharply and ensure connectors are clean .

Step 3: Switch Configuration

- Enable the Port: Access the switch CLI via Console, Telnet, or SSH and enter the interface view. Use no shutdown (Cisco) or equivalent to activate the port .
- Speed and Duplex: Set both ends to the same speed and full-duplex mode if auto-negotiation fails.
- VLAN Assignment: Add the fiber port to the appropriate VLAN according to your network plan.
- Save Configuration: Use write memory or save to preserve settings after reboot .

Step 4: Testing and Troubleshooting

- Check the link status with commands like show interface status or sh ip interface brief.
- If the link does not come up, verify:
 - SFP module compatibility and brand support
 - Fiber type and wavelength match
 - TX/RX alignment
 - Port speed and duplex settings
 - Clean and properly seated connectors

Step 5: Network Considerations

- When cascading multiple switches, limit to no more than four layers to avoid performance issues .
- Choose an appropriate topology (star, bus, or tree) based on network size and traffic requirements . By following these steps, you can establish a reliable fiber connection between two switches, ensuring proper communication and network performance.

Article Content

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