

Article Overview

Huawei switches support optical port aggregation through link aggregation (LAG) and QSFP interface breakout, enabling higher bandwidth, redundancy, and flexible network deployment.

Optical Port Aggregation Overview

Huawei switches, including the S5700, S5732, and CloudEngine S5735-S-V2 series, allow multiple optical ports to be aggregated to form a single logical link. This aggregation increases bandwidth, provides redundancy, and simplifies network management. Aggregation can be implemented using Link Aggregation Groups (LAGs) or by breaking out high-speed QSFP ports into multiple lower-speed interfaces for flexible connectivity .

Link Aggregation (LAG)

- o Purpose: Combines multiple physical optical ports into a single logical interface to increase throughput and provide failover protection.
- o Configuration: On Huawei switches, LAGs can be configured in static mode or LACP (Link Aggregation Control Protocol) mode.
- o Use Case: Ideal for connecting aggregation switches to core switches or high-capacity servers, ensuring load balancing and redundancy.

QSFP Port Breakout

- o Functionality: A single 40G QSFP port can be split into four 10G interfaces, or a 100G QSFP28 port can be split into multiple 25G interfaces.
- o Configuration Example: On Huawei CloudEngine 6800 series, the command `port split dimension interface 40GE 2/0/1 split-type 4*10GE` breaks a 40G port into four 10G ports. After breakout, each sub-interface behaves like a standard 10G port .
- o Benefits: Improves port utilization, reduces deployment costs, and allows flexible connection to multiple devices.

Passive Optical Aggregation Modules

For all-optical campus networks, Huawei provides PEN passive aggregation modules that split and multiplex optical signals without requiring power or ELV rooms. These modules:

- o Split uplink optical signals proportionally to multiple downlink ports.
- o Multiplex signals from remote devices into a single uplink channel.



Huawei Optical Port Aggregation Switch

- o Support 2:8 passive optical splitting and uplink backup.
- o Can be installed in subracks for flexible deployment .

Best Practices for Optical Port Aggregation

- o Ensure Compatibility: Use matching optical modules and fiber types (single-mode vs. multi-mode) to avoid connectivity issues .
- o Check Port Status: Verify that ports are administratively up and within normal optical power ranges using commands like `display transceiver interface xgigabitethernet 0/0/2 verbose` .
- o Stacking Considerations: When stacking switches, configure logical stack ports correctly to maintain redundancy and high-speed interconnects .
- o Monitor Performance: After aggregation, monitor traffic distribution and link health to ensure optimal load balancing.

Huawei Switch Models Supporting Optical Aggregation

- o S5700/S5720 Series: Supports 10G/1G optical ports, stacking, and passive optical modules for campus aggregation .
- o S5732 Series: Multi-GE access with hybrid optical-electrical ports, PoE++, and aggregation capabilities for Wi-Fi 6 campus networks .
- o CloudEngine S5735-S-V2: All-optical switches with 10GE uplinks, stack ports, and Layer 3 features suitable for access or aggregation layers .

Summary

Huawei optical port aggregation combines LAG, QSFP breakout, and passive optical modules to provide scalable, high-bandwidth, and resilient network connections. Proper configuration, compatible optical modules, and monitoring are essential to maximize performance and reliability in campus or aggregation networks.

PEN Passive Aggregation Module Overview For dense-room scenarios such as education and healthcare, Huawei launched the high

Thunder link offers various models of Huawei Ethernet switches and network switches, including the S5720, S6720, S6730, CE6800

CloudEngine S8700 series switches are designed for future-proof cloud campus networks to improve user experience and reduce

Huawei SmartAX MA5683T GPON OLT VLAN PORT Link-Aggregation Configuration |

Huawei Optical Port Aggregation Switch

Uplink direction: The PEN passive aggregation module multiplexes the eight channels of optical signals sent by remote optical

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Based on the next-generation high-performance hardware and Huawei's Versatile Routing Platform (VRP), the CloudEngine S5735

Example for Configuring Link Aggregation in Manual Mode When Switches Are Directly Connected
Overview Ethernet link

In This Video, We'll Be Setting Up Our Huawei Smartax Ma5683t Gpon Olt For Vlan And

It can work as aggregation switch for medium- and large-sized campus networks, access switch in small- and micro-sized data

S2700, S3700, S5700, and S6700 Series Switches Product Use Precautions This document provides the use

Featuring 24 Gigabit PoE+ ports and 4 high-speed 10GE uplink interfaces, this intelligent Layer 3 switch delivers

Provides data switching equipment with a standard negotiation mode. Specifically, an LACP-enabled system automatically

This section describes the hardware of the PEN passive aggregation module. The PEN passive aggregation module, also known as

Discover Huawei's S5731 family: L, S, and H variants for remote access, campus aggregation, and VXLAN cores.

Overview Huawei SmartAX MA5600T is the global first OLT which integrates the functionality of aggregation switch and edge router.

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