Layer 3 Optical Module Switch



Overview

NSComm Optical Transceiver Selection Learn how to choose the ideal NSComm optical transceiver module based on network speed, fiber type, and distance. Disc.

Key Takeaways

Layer 3 switches with optical modules provide high-speed fiber connectivity, advanced routing, and flexible management for enterprise and data center networks.

Key Features of L3 Optical Switches

Port Configurations and Optical Support: Modern L3 switches often include a mix of 1G, 10G SFP/SFP+, and 100G QSFP28 ports, allowing connection to fiber-based devices such as servers, IP cameras, and wireless access points. For example, the S5710-28SX offers 24 x 1G SFP ports, 4 x 1G combo ports, and 4 x 10G SFP+ uplinks, supporting a wide range of optical modules from different vendors for flexible deployment. High-density switches like the SODOLA 24-port L3 switch provide 24 x 10G SFP+ and 2 x 100G QSFP28 ports, with port splitting capabilities for 25G interfaces.

Layer 3 Routing and Protocols: These switches support IPv4/IPv6 dual-stack routing, static routing, and dynamic protocols such as RIP, OSPF, BGP, and VRRP. They also handle multicast routing (IGMP, MLD, PIM-DM, PIM-SM) and link aggregation, enabling efficient traffic management and redundancy. Management and Security: L3 optical switches provide multi-method management including Web GUI, CLI, Telnet, SSH, and SNMP.

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Security features include ACLs at port, VLAN, and IP levels, integration with RADIUS/TACACS+, DHCP attack protection, and storm suppression. Some models also include Digital Diagnostic Monitoring (DDM) for real-time monitoring of optical module parameters like temperature, voltage, and optical power. High Availability and Redundancy: Enterprise-grade switches often feature hot-swappable power supplies and fans, virtual or physical stacking, and support for STP/RSTP/MSTP/ERPS/LACP, ensuring minimal downtime and network resilience.

Performance and Use Cases: These switches deliver wire-speed forwarding with low latency, suitable for core, aggregation, or access layers in enterprise and data center networks. They are ideal for high-density environments requiring 10G or higher fiber connectivity, supporting both copper and fiber networks seamlessly. Examples of L3 Optical SwitchesS5710-28SX: 24 x 1G SFP, 4 x 1G combo, 4 x 10G SFP+ uplinks, DDM support, ACLs, IPv4/IPv6 routing.

DXS-3400 Series: Stackable 10G fiber switch with modular power/fan design, Standard and Enhanced software images for L3 routing, Data Center Bridging support.

SODOL

A 24-Port 10G L3 Switch: 24 x 10G SFP+, 2 x 100G QSFP28, wire-speed forwarding, rich L3 features, and broad optical module compatibility. DXS-F3400-28SC: 24 x 10G SFP+, 4 x 100G QSFP28, supports BGP, OSPF, RIP, VRRP, L3 multicast, and can serve as core or aggregation switch. These switches provide scalable, high-performance, and secure fiber networking solutions, making them suitable for modern enterprise and data center deployments.

Article Content

NSComm Optical Transceiver Selection

Learn how to choose the ideal NSComm optical transceiver module based on network speed, fiber type, and distance. Discover real-world solutions,

Fast, Gigbit, and 10 Gigbit Ethernet Switches with SFP+ Modules

Managed and unmanaged Layer 2 and Layer 3 fiber optic Ethernet switches. With 10G SFP+ fiber optic transceiver modules, they meet your highest bandwidth demand.

24-Port Layer 3 Stackable 10 Gigabit Fiber Managed

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Layer 3 Managed Switches

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Moxa''s Layer 3 managed switches feature industrial-grade reliability, multicast availability, and security enhancements based on the IEC 62443 standard. We offer toughened industry-specific products with

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The series provides enterprise-class Layer 2 and 3 switching, is designed for DNA Center and SD-Access management and automation, and includes an Enhanced

The difference between switches and routers and

This guide explains Layer 2 vs Layer 3,OSI model roles,and how to choose the right optical module collocation for your network. Learn which optical

RG-S5310-48SFP4XS-E, 48-Port GE Optical Layer 3

Multiple physical switches can be virtualized into one logical unit to simplify network configuration and architecture, eliminating loops, and improving reliability.

Campus Switches RG-S6150-48VS8CQ-X 48-Port

The innovative isolated chip design ensures that the normal operation of other optical ports are not affect by isolating the faulty optical module. The port returns

H3C FS5500V2-EI Series Converged Optical Electrical Switches

H3C FS5500V2-EI series switches implement a hardware-based IPv4/IPv6 dual-stack platform, support multiple tunnel technologies, rich IPv4 and IPv6 Layer 3 routing protocols, multicast technologies and

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Network Switches

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Fibre Channel

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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.

Optical networks

An optical transport network is a high-speed communication system that sends light signals over fiber-optic cables to move large amounts of data across long

Cisco Networking for Service Providers

Cisco Routed Optical Networking Converge IP and optical layers for scalable, efficient, and reliable connectivity—while reducing CapEx, energy costs, and operational complexity.

The difference between switches and routers and optical module ...

What is the difference between a switch and a router? This guide explains Layer 2 vs Layer 3,OSI model roles,and how to choose the right optical module collocation for your network.

RG-S5310-48SFP4XS-E, 48-Port GE Optical Layer 3

Features Layer 3 Access Switch for 10G Uplink RG-S5310-48SFP4XS-E Full-gigabit access switch for large-sized enterprise and campus LANs, with 4 x 1GE/10GE

24-Port Layer 3 Stackable 10G Fiber Managed Switch

24 fixed SFP+ 10G ports with one expansion slotTwo AC/DC hot-swappable power modules for 1+1 power redundancy and load sharingThree hot-swappable fan

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