L3 100G Data Center Switch with 100G uplink
32-Port 100G QSFP28

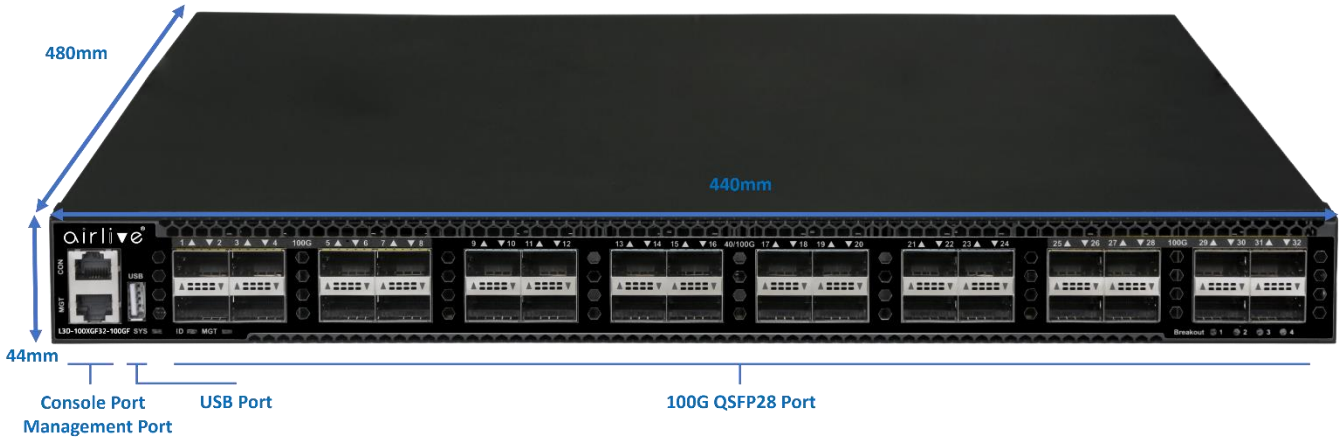
L3D-100XGF32-100GF

Rich L3 Features	L3 DHCP Server/Relay	MLAG	6.4Tbps High Bandwidth
32 Port QSFP28 100G	Redundant Power input	Datacenter	VxLAN EVPN

Overview

Data Center Switch with L3 Features and Super High Speed

The AirLive L3D-100XGF32-100GF offers high performance full 32 port 100G QSFP28 in a compact 1U form factor. The AirLive L3D-100XGF32-100GF is ideal for Data Centers, and large network users like campus. Combining advantages of zero packet loss, low latency, and non-blocking performance for lossless Ethernet. The layer 3 switch incorporates rich features, including EVPN-VXLAN, MLAG, VRRP, OSFP etc. for scalable and flexible data center designs, redundant hot-swappable power supplies and fans for high availability and security.



Features

- Rich Layer 3 Features
- SNMP, Console, SSH and Telnet
- Interconnect across Datacenters based on VxLAN
- VXLAN Layer 2 switching and Layer 3 gateway EVPN VXLAN
- Support Guest VLAN, Voice VLAN
- IPv4/IPv6 L3 static routes, GRE tunnel
- Support IPv6 dynamic routing OSPFv3, ISISv6, and BGP4+
- Support IPv4 dynamic routing OSPF, ISIS, and BGP
- NETCONF network management protocol supported
- Support Neighbor Discovery (ND) and PMTU
- CLI and Command Script for advance setting; SNMP used for popular network tools management.

Major Specifications

- 32 x 100G QSFP28 Ports (Breakout Cable 4x 25G Supported)
- High Bandwidth 6.4Tbps
- 1 x RJ-45 Console and Management port
- 2 x 550W AC Redundant power input
- 5 x Hot-swappable Fan Module
- Support ACL, RADIUS, TACACS+, DHCP Snooping, for Security
- MLAG Virtualization Technology
- Optional DC or HVDC power input

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High Availability And Multi-Service Support

- Support MLAG/Stacking
- Support Virtual Router Redundancy Protocol (VRRP)
- Support BFD fast forwarding detection and other mechanisms
- Support IPv4/IPv6 Dual Protocol Stack
- Support Unicast Routing
- Support Hot swap without affecting normal operation of other devices
- Support QinQ

Error-Free Network Configuration

- Support EVPN-VXLAN
- Support NETCONF, etc. Configuration and Automation Tools
- Support DHCP snooping
- Support hardware-based IPv6 ACLs

Secure And Simplified Access for Users

- Support SNMP (SNMPv1,v2c,v3)
- Support the Secure Shell (SSH) and SNMPv3
- Support the source IP-based Telnet device access control
- Support Console
- Support hardware CPU protection mechanism

Usage Applications

Data Centers: The L3D-100XGF32-100GF switch can be used as the backbone and core of a Data center with its ability to handle massive data flows with low latency. Offering speed and efficiency.
Metro Networks: The AirLive switch can be placed in metropolitan area networks (MANs), where it can serve as a central hub managing high-speed traffic across the city.
Campus Networks: The Data Center switch can support a campus network, providing reliable connectivity for educational institutions or corporate campuses.
Enterprise Networks: The switch's utility in enterprise environments, offers great scalability and robustness. With connected devices like computers, VoIP phones, and conferencing systems.
High-Tech Facilities: For facilities requiring high power integrity, such as research labs or production studios, The AirLive Data Center switch comes with power redundancy for more reliable networking.

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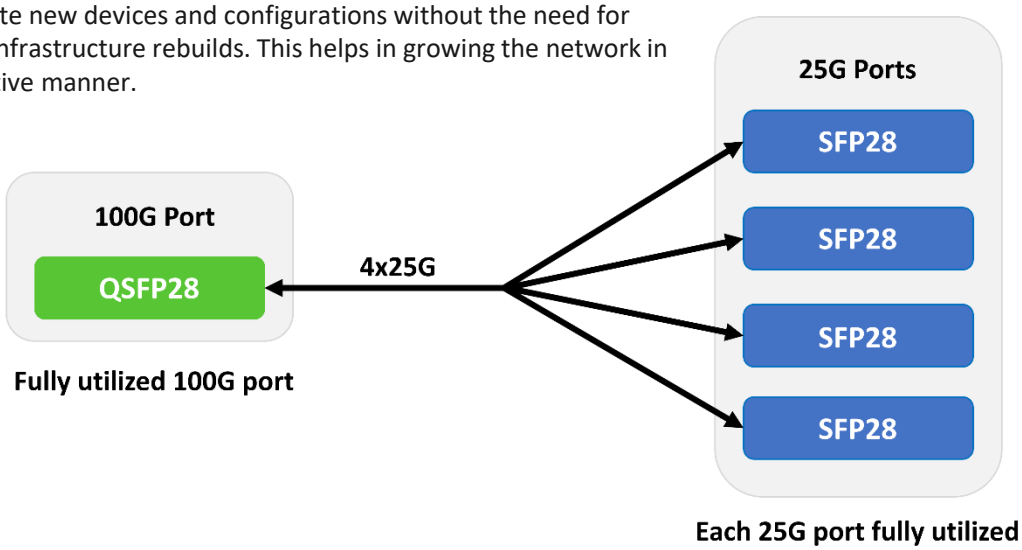
Advantages of Using Breakout

The L3D-100XGF32-100GF supports Breakout cable for the 100G port. This feature is particularly significant as networks demand more flexibility and higher bandwidth capabilities.
Breakout is a configuration that used the benefit of a high-bandwidth interface and "breaks it out" into multiple lower-bandwidth interfaces. Normally, this configuration applies to Ethernet switches where a high-speed port, such as a 100G QSFP28, is divided into multiple smaller connections, like 4x25G. This subdivision allows network engineers to connect to devices that require lower bandwidth connections while still fully and efficiently using the switch port resources.
Breakout mode is an invaluable feature for data centers transitioning from 10G/25G to 40G/100G networks, as it provides backward compatibility and a smoother migration path.
•**Flexibility:** Breakout allows network builders a varied connectivity for there needs within their network. For example, they can connect switches with 10Gbps ports to a 100Gbps switch without needing to upgrade all equipment to support 100Gbps interfaces.
•**Improved Port Utilization:** Instead of leaving a high-speed port underutilized because there aren't enough devices that work at that speed, breakout mode allows the connection of more devices at lower speeds, thereby utilizing the port's full capacity more effectively.
•**Scalability:** As network needs grow or change, breakout mode can help accommodate new devices and configurations without the need for immediate infrastructure rebuilds. This helps in growing the network in a cost-effective manner.



Strong L3 Multicast and Rich Multi-layer networking protocols

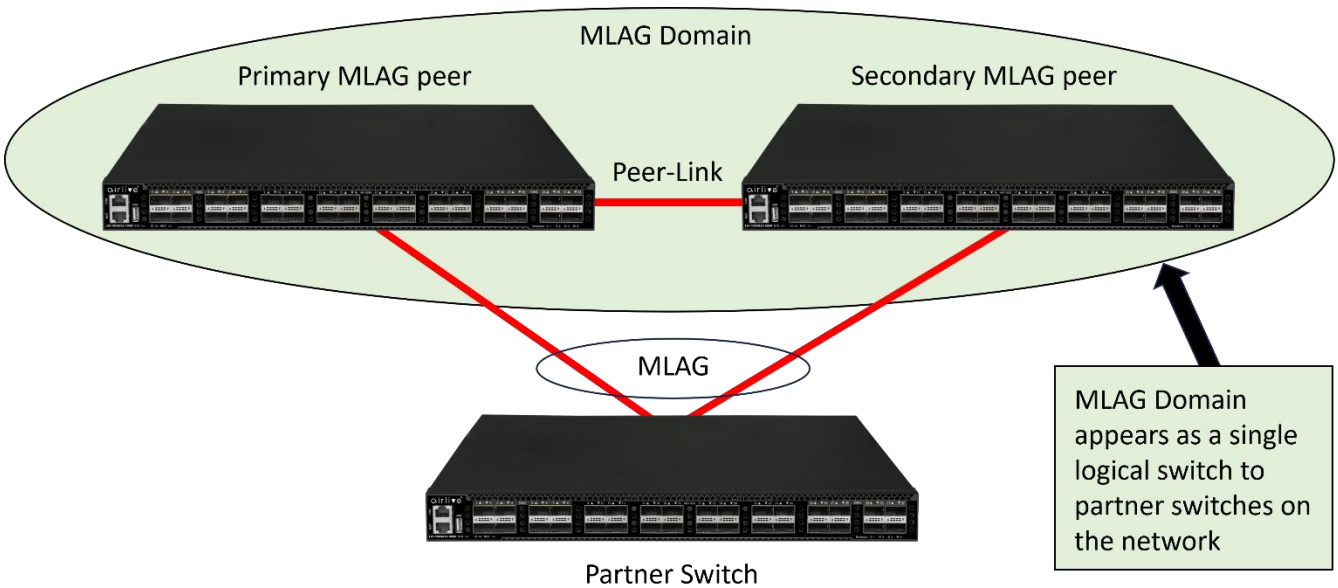
The L3D-100XGF32-100GF supports abundant multicast features. It features IPv4 IGMP, IGMP snooping and MLD snooping. great for any robust networking as well as IPv4 and IPv6 dynamic routing protocols like OSPF, IS-IS, BGP as well as OSPFv3, ISISv6 and BGP4+

The L3D-100XGF32-100GF comes with the complete Layer 3 managed function with comprehensive protocols and applications to facilitate the rapid service deployment and management for both the traditional L2 and L3 networks. With support for advanced features, including RIP, OSPFv3, BGP, BGP4+, etc., this switch is ideal for the traditional or fully-virtualized data center.

MLAG (Multi-chassis Link Aggregation Group)

The AirLive L3D-100XGF32-100GF supports MLAG (multi-chassis link aggregation group). MLAG is a non-standard protocol that implements link aggregation among multiple devices. The devices at both ends of the MLAG send MLAG negotiation packets through the peer-link. The main purpose of MLAG is to deliver system-level redundancy in the event one of the chassis fails. MLAG also a strong scalability as the capacity is not limited to a single device. This is very useful in those application were a network needs to be extended to accommodate more clients. MLAG networks can be expended without any downtime to the current existing network. Making it a very good solution for those location where downtime is not wanted.
MLAG can be used at various places in the network to eliminate bottlenecks and provide resiliency.

MLAGs provide an active-active split aggregation deployment across two switches acting as one. MLAG creates a more resilient network with higher bandwidth capabilities. The below image shows a basic example of a MLAG Domain. In the example the peer switches are linked together with a special LAG (one or more cables as shown by the “Peer-Link” line in the picture, the peer link’s primary purpose is exchanging MLAG control information between peer switches. Any non-management port on the switch can be used in the Peer-Link. With the Peer-Link configured, the two switches appear as a single switch to partner switches upstream and downstream. Each partner switch contains MLAGs that are simply LAGs (link aggregation groups) whose cables are split between the two peers. Primary and secondary peer roles are chosen automatically by the program when MLAG is enabled.



L3 OSPF Routes Management

Open shortest path first (OSPF) is a link-state routing protocol that is used to find the best path between the source, which is generally used in the same routing domain. Here, routing domain refers to an autonomous system (as), which refers to a group of networks that exchange routing information through a unified routing policy or routing protocol. In this as, all OSPF routers maintain the same database describing the as structure, which stores the state information of the corresponding links in the routing domain. It is through this database that OSPF routers calculate their OSPF routing tables.
As a link state routing protocol, OSPF transmits link state multicast data LSA (link state advertisement) to all routers in a certain area, which is different from distance vector routing protocol. The router running distance vector routing protocol passes part or all of the routing tables to its neighboring routers.
The L3D-100XGF32-100GF supports OSFP and OSPFv3.

VXLAN and EVPN virtualize your network

The L3D-100XGF32-100GF comes with Virtual eXtensible Local-Area Network, or VXLAN (network virtualization technology standard). It allows a single physical network to be shared by multiple different organizations, or “clients,” without any one client being able to see the network traffic of any other.
In this way, VXLANs are a discrete, private network segment within a shared physical network.

a VXLAN allows a physical network to be segmented into as many as 16 million virtual, or logical, networks. It works by encapsulating Layer 2 Ethernet frames into a Layer 4 UDP packet alongside a VXLAN header. When combined with an Ethernet virtual private network (EVPN)—which transports Ethernet traffic in virtualized networks using WAN protocols—VXLAN allows Layer 2 networks to be extended across a Layer 3 IP or MPLS network.

Because VXLANs are encapsulated inside a UDP packet, they can run on any network able to transmit UDP packets. The physical layout and geographic distance between nodes of the underlying network doesn’t matter, as long as the UDP data is forwarded from the encapsulating VXLAN Tunnel Endpoint to the decapsulating VXLAN Tunnel Endpoint .

When VXLAN is combined with EVPN, administrator can create virtual networks out of physical network ports on any physical network switches that support the VXLAN/EVPN standard and are part of the same Layer 3 network. For example, you could take a port from switch A, two ports from switch B, and another port from switch C and build a virtual network that appears to all the connected devices as a single physical network. Devices participating in this virtual network would be unable to see traffic in any other VXLANs or the underlying network layout.

L3 VLAN IP Routing Interface Management

The L3D-100XGF32-100GF provides 3 layers of VLAN interface, which is used to communicate with network layer devices. VLAN interface is a network layer interface, which can be configured with IP address. Before creating VLAN interface, the corresponding VLAN should be created first. With the help of VLAN interface, switches can communicate with other network layer devices. The ideal solution for enterprises, offers greater security, control and bandwidth conservation, and high-speed uplink.
The L3D-100XGF32-100GF supports Guest VLAN, Voice VLAN and QinQ among others.

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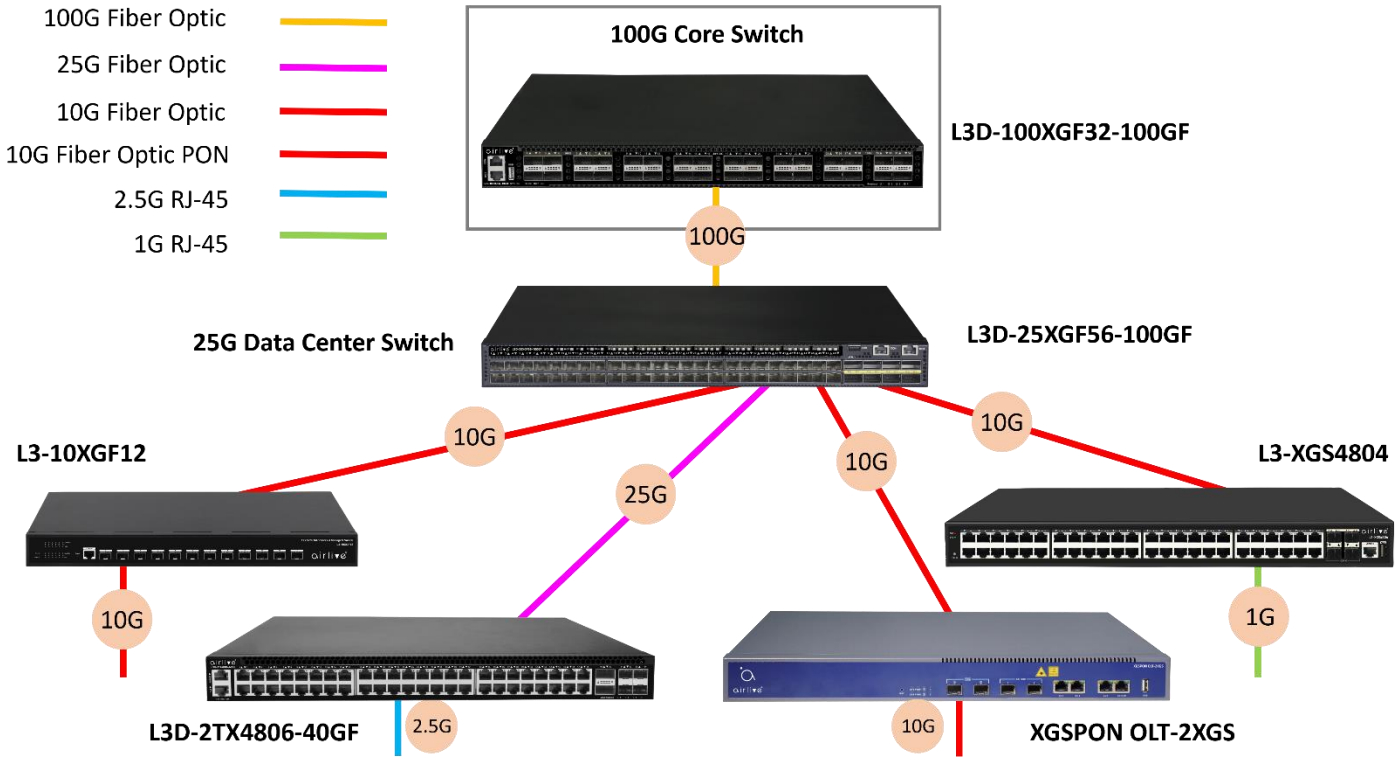
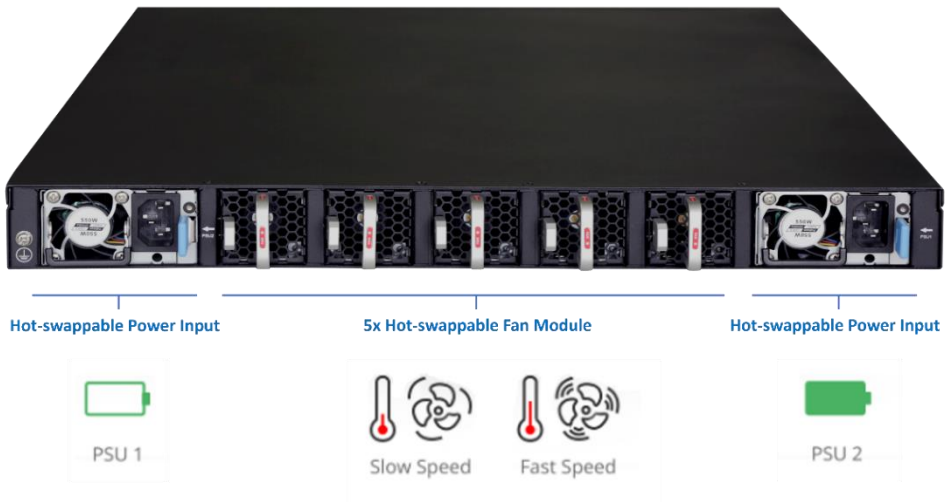
Super High-Speed Connectivity with 100G QSFP28

Use the AirLive L3D-100XGF32-100GF as the core link between all other switches in the network. Using its 100G Fiber ports to transfer large data fast and reliable.



Dual Redundant Power Supplies and Smart Fans

The AirLive L3D-100XGF32-100GF comes with dual power supplies and smart fans by default, providing high availability and longevity.
1+1 Dual AC PSU 550W, PSUs can be removed/replaced without shutting down the system (Hot-swappable).
5 Hot-swappable Fan Modules, Variable-speed fans for superior cooling, noise and power reduction.
Support automatic fan temperature control, temperature monitoring, and fan alarm.
Optional DC: -40V~-57V Power module is also available when DC voltage is used at the install location.
Optional HVDC: 190~400V Power module is also available when a higher voltage is used at the install location.



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Specification

Model	AirLive L3D-100XGF32-100GF

Hardware

- **Device Interface:**
  32 x 100G QSFP28 Ports
  1 x USB Port, 1 x RJ-45 Console Port, 1 x RJ-45 External Management Port
  32 Port Total

Standard

IEEE 802.3：Ethernet MAC Protocol
IEEE 802.3ae：10G Ethernet (optical fiber)
IEEE 802.3by：25G Ethernet (optical fiber)
IEEE 802.3ba：40/100G Ethernet (optical fiber)
IEEE 802.3x：Flow Control
IEEE 802.3az：Energy Efficient Ethernet
IEEE 802.3ad：Link aggregation
IEEE 802.1ab：LLDP/LLDP-MED (Link Layer Discovery Protocol)
IEEE 802.1p：LAN Layer QoS/CoS Protocol Traffic Prioritization(Multicast filtering function)
IEEE 802.1q：Virtual VLAN
IEEE 802.1x：User Authentication
IEEE 802.1d：STP
IEEE 802.1s：MSTP
IEEE 802.1w：RSTP

- **LED Indicators**:
  Indicators SYS, ID, MGT,
  ID: Off: The ID indicator is disabled and is in the default state. On: This indicator is used for on-site location. O&M personnel remotely control the ID indicator to turn on or off.
  MGT: On: The ETH Port is link up, Off: The ETH Port is link down
  SYS: On: System normal, Flashing: System startup
  Port indicator: Flashing: The link is being transmitted. Off: The link is down.
- **Mechanical**
  Solid metal 19" 1U rack-mountable
  5 x Hot-swappable Fan Module

Switch Architecture | Performance

- **Switching Performance**
  Bandwidth: 6.4Tbps
  Packet Forwarding Rate: 3571Mpps
  DDR SDRAM: 8GB
  Flash Memory: 2GB
  Package cache: 40Mbit
  MAC Address: 128K
  Jumbo frame: 9216Byte
  VLANs: 4K
  MTBF: 100000 hour

Fiber Medium:

Multi-mode Fiber: 50/125 、 62.5/125 、 100/140um
Single-mode Fiber: 8/125、8.7/125、9/125、10/125um

Software Function

- **VLAN type:**
  Support 4K VLANs; 1:1 and N: 1 802.1p-based VLAN Mapping; VLAN based on MAC, protocol and IP; Guest VLAN, Voice VLAN; QinQ, enhanced flexible QinQ
- **IP Routing:**
  Support IPv4 and IPv6 static routes. GRE tunnel; Equal-cost routing; Policy routing
- **Multicast:**
  Support IPv4 dynamic routing protocols such as OSPF, IS-IS, and BGP
  Support IPv6 dynamic routing protocols such as OSPFv3, ISISv6, and BGP4+
  Support IGMP, IGMP Snooping, MLD Snooping
- **VXLAN:**
  Support VXLAN Layer 2 switching, route switching, and Layer 3 gateway; EVPN VXLAN; IPv6 VXLAN over IPv4
- **xSTP:**
  STP: Spanning-Tree Protocol
  RSTP: Rapid Spanning-Tree Protocol
  MSTP: Multi-instance Spanning-Tree Protocol
  Support BPDU protection, Root protection, loop protection; BDPU Tunnel. Supports cross-device link aggregation
  BFD sessions can be bound to static routes, VRRP, OSPF, IS-IS, BGP, and RIP
- **QoS:**
  Support L2-L4 packet filtering based on MAC, IP, port, protocol, IP ToS, 802.IP priority, VLAN ID, and SVLAN ID
  Support VLAN range filtering; Support time-based ACLs
  Support DLF storm suppression, multicast storm suppression, broadcast storm suppression
  Support port-based bandwidth limiting; stream/VLAN-based bandwidth limiting (single-speed two-color); the flow of single-speed three-color, two-speed three-color; flow-based priority scheduling and priority mapping
  Support SP/PQ, DRR, SP/PQ+DRR and other scheduling algorithms; queue tail drop, WRED and other queue cache management policies
  Each port supports 8* QoS hardware priority queues.
  Support 802.1p, DSCP/ToS priority
- **IPV6:**
  Support Neighbor Discovery (ND) and PMTU
  Support IPv6 Ping and IPv6 Telnet
  Support ACLs based on source IPv6 address, destination IPv6 address, Layer 4 port, and protocol type
  Support IPv4 and IPv6 dual stack; Support a variety of tunnel technologies

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Management and Maintenance

- **Safety feature:**
  Support hierarchical user rights management and hierarchical command line protection. 802.1x, RADIUS, and TACACS+ authentication
  Support user level number limit; user binding (port, source MAC, source IP address access control); SNMP login terminal restrictions; SSH v2.0
  Anti-ARP attacks, DDoS attacks; Support IP Source Guard; Support black hole MAC; Support number of MAC addresses limit
- **Configuration & Maintenance:**
  Support terminal services Console, Telnet, and SSH
  Support SNMPv1/v2/v3 and other network management protocols. Support common feature standard MIB
  Support NETCONF network management protocol
  Support FTP, TFTP upload, download files;
  Support unified management of logs, alarms, and debugging information.
  Support user operation log
  Support RMON
  Support port mirroring, flow mirroring; BootROM upgrade, remote online upgrade, hot patch
- **Green energy saving:**
  Support automatic fan temperature control, temperature monitoring, and fan alarm

Power

- **1+1 Redundant Power Input:** AC100~240VAC
- **Power Supply Max**: 550W
- **Optional**: DC: -40V~-57V, rated voltage -48V
- **Optional**: HVDC: 190~400V, rated voltage 240V/336V

Environment

- **Operating Temperature:** 0°C to +40°C
- **Storage Temperature:** -40°C to +70°C
- **Working Humidity**: 10%~90%, non-condensing
- **Storage Humidity**: 5%~95%, non-condensing

Standard package of switch

- **Product size:** 44.0 x 48.0 x 4.4 cm(L*W*H)
- **Package Dimensions:** 70.0 x 60.0 x 15.0cm(L*W*H)
- **Package Weight:** N.W: 9.2G/ G.W: 11.0KG
- **Package content**: Switch x 1, QIG x 1, Power Supply x 2, Power cord x 2, Serial Cable x 1, Rack ear x 1

Standard carton package

Carton Dimensions: 70.0 x 60.0 x 15.0cm (L*W*H)
Packing QTY: 1 PCS
Packing weight: 11.0KG

Ordering Information

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