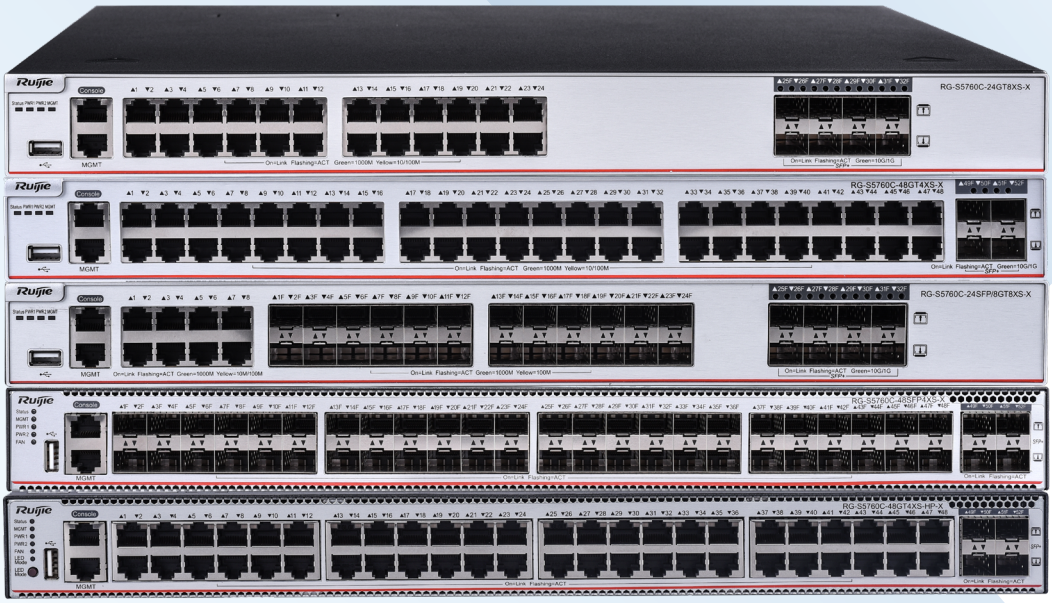


RG-S5760C-X Series

Next-Generation High-Performance GE Switches

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Product Pictures



RG-S5760C-24GT8XS-X



RG-S5760C-48GT4XS-X



RG-S5760C-24SFP/8GT8XS-X



RG-S5760C-48SFP4XS-X



RG-S5760C-48GT4XS-HP-X



M5000X-4XS2CQ

Product Overview

The RG-S5760C-X series switches are high-performance, large-capacity next-generation switches developed by Ruijie Networks. With next-generation switching chips in the industry and Ruijie Networks RGOS12. X modular operating system, they can provide more entries, faster hardware processing, and better operation experience. They lay a foundation for high-performance networks that support IoT service lifecycle management, mobility applications, and cloud applications.

The RG-S5760C-X series switches provide flexible GE access. Each model of the series provides four to eight fixed 10GE optical ports to connect to uplink high-density and high-performance ports, supporting high-density access and high-performance aggregation.

The RG-S5760C-X series switches are cost-effective and provide robust performance, sound end-to-end service quality, and rich security functions for the aggregation layer of large-sized networks, the core layer of small - and medium-sized networks, and servers in data centers. They can meet requirements of enterprise networks for high speed, security, and intelligence.

The RG-S5760C-X series switches adopt next-generation switching chips and components to ensure stable and sound network operations.

The RG-S5760C-X accommodates 48 high-density PoE/PoE+ ports.

With Ruijie's network solution, the RG-S5760C-X can uniformly migrate wired and wireless users, and policies. That is, even if a user location is relocated, the RG-S5760C-X delivers consistent policy and experience.

Product Highlights

- Automatically isolates multiple service networks with Ruijie's network solution, which is independent of interfaces and locations, and simplifies deployment.
- Securely accesses and isolates IoT terminals and users.
- Allows 100GE ports to be extended and supports high bandwidth scalability of a campus backbone network, coping with service development in the future 10 years.

Product Features

High Performance and Scalability

The RG-S5760C-X series switches provide four to eight fixed 10GE optical ports. You can flexibly select switches with different number of 10GE optical ports as needed, meeting requirements of an aggregation device in a large enterprise campus or a core device on a small- or medium-sized network. They support a large amount of entries, and their performance is twice or thrice higher than counterparts.

The RG-S5760C-X uses next-generation switching chips in the industry and RGOS12.X modular operating system to provide more entries, faster hardware processing, and better operation experience.

RGOS12.X modular operating system is open and programmable. Basic functions are incorporated into the main version, and custom functions are released in app mode, ensuring stability of the basic functions.

The RG-S5760C-X supports the x86 platform, which supports containers, allows third-party management applications to be installed, and makes it easy for customizing functions.

Faults related to processes are rectified online in seconds, without interrupting network operation.

The RG-S5760C-X supports Python that allows applications across platforms.

It supports high-speed access to northbound interfaces, with the performance of up to thousands of operations. It can associate with the controller to upgrade the man-machine interface to machine-machine interface.

Functions can be upgraded and extended online to ensure nonstop services.

The RG-S5760C-X is fit for a mobile network or an IoT of a large campus where thousands of terminals are deployed. It can automatically isolate multiple service networks, which is independent of interfaces and locations. This simplifies deployment. The RG-S5760C-X can securely connect to and isolate IoT terminals and users. Furthermore, its high bandwidth can cope with lossless operation of services on a mobile network or the Internet, achieving service continuity.

IPv4/IPv6 Dual-Stack Multi-Layer Switching

The hardware of RG-S5760C-X series switches supports IPv4 and IPv6 stacks and multi-layer line-rate switching, and differentiates and processes IPv4 and IPv6 packets. The switches also provide flexible IPv6 network communication solutions for network administrators to perform network planning or maintain the network status based on various IPv6 network demands. The RG-S5760C-X series switches support a wide range of IPv4 routing protocols, including static routing, Routing Information Protocol (RIP), Open Shortest Path First version 2 (OSPFv2), Intermediate System to Intermediate System version 4 (IS-ISv4), and Border Gateway Protocol version 4 (BGP4). You can select routing protocols to suit your network environments and flexibly build networks. They also support abundant IPv6 routing protocols, including static routing, Routing Information Protocol Next Generation (RIPng), OSPFv3, IS-ISv6, and BGP4+. You can select a routing protocol flexibly to either upgrade the existing network to an IPv6 network or build a new IPv6 network.

VSU

The RG-S5760C-X series switches support Virtual Switching Unit (VSU) technology. VSU enables multiple

physical devices to be connected through aggregate links and virtualized into one logical device. The physical devices use the same IP address, Telnet process, and CLI for management, and support automatic version check and automatic configuration. VSU improves management efficiency and delivers sound experience.
Aggregate links can use 10GE ports, and the maximum stack bandwidth is 80 Gbps, maximizing the return on investment (ROI).

Simplified management: Administrators can uniformly manage multiple switches, with no need to connect to each switch for configuration and management.

Simplified network topology: A VSU serves as a switch on a network and connects to peripheral devices through aggregate links. In this case, no Layer 2 loop exists, so you do not need to configure the Multiple Spanning Tree Protocol (MSTP). Various control protocols run on the VSU.

Fault rectification within milliseconds: A VSU connects to peripheral devices through aggregate links. If one device or member link in the VSU fails, data and services can be switched to another member link within only 50 ms to 200 ms.

High scalability: User devices can be added to or removed from a virtualized network without affecting normal operation of other devices.

VXLAN

The hardware of RG-S5760C-X series switches supports Virtual Extensible LAN (VXLAN). You can use the switches to establish a Layer 2 logical network over a Layer 3 network through software upgrade.

Sound Security Protection Policies

RG-S5760C-X series switches effectively defend against virus spread and hacker attacks by using multiple inherent mechanisms such as DoS attack prevention, IP scanning prevention, validity check of ARP packets on interfaces, and multiple hardware-based ACLs.
Hardware-based IPv6 ACLs can easily control access of IPv6 users at the network boundary even if there are IPv6 users on an IPv4 network. The ACLs can allow IPv4 and IPv6 users to coexist and, control access permissions of IPv6 users, for example, restricting access to sensitive resources on a network.
They provide a unique hardware CPU protection mechanism, that is, CPU Protect Policy (CPP). It classifies data traffic sent to the CPU, processes traffic by queue priority, and rate-limits the bandwidth as required. This protection mechanism fully protects the CPU from being occupied by unauthorized traffic, defends against malicious attacks, and prevents resource consumption, to ensure security of the CPU and switch itself.
They employ the innovative Network Foundation Protection Policy (NFPP) technology to rate-limit outgoing ARP packets, ICMP request packets, DHCP Request messages, and other packets to networks. The switch discards packets whose rate exceeds the threshold, identifies attacks, and isolates STAs launching attacks. This protects basic networks against network attacks to guarantee network stability.
The hardware of the switches flexibly binds an interface or switch to a user's IP address and MAC address, to strictly restrict access of users connected to the interface or switch.
DHCP snooping enables the switch to receive DHCP Reply messages only from trusted ports, preventing spoofing from unauthorized DHCP servers. With DHCP snooping, the switch dynamically monitors ARP packets, checks users' IP addresses, and discards unauthorized packets that do not match binding entries. This technology effectively prevents ARP spoofing and source IP address spoofing.
The switches support Telnet-based access control based on source IP addresses, which can prevent unauthorized users and hackers from maliciously attacking and controlling the devices. This enhances network management security of devices.
Through Secure Shell (SSH) and Simple Network Management Protocol version 3 (SNMPv3), the switches can encrypt management information in Telnet and SNMP processes, to ensure information security of management devices, and to prevent hackers from attacking or controlling devices.
The switches reject unauthorized network access, and enables authorized users to use networks properly by employing multi-element binding, port security, time range-based ACL, and rate limit based on data streams. This strictly controls user access to enterprise networks and campus networks, and restricts communication of unauthorized users.

High Reliability

With STP (IEEE 802.1D), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s), the RG-S5760C-X achieves fast convergence, improves the fault tolerance capability, and ensures stable network operation and link load balancing. In this way, the RG-S5760C-X effectively utilizes network channels to better use redundant links.

The Virtual Router Redundancy Protocol (VRRP) ensures network stability.

With the Rapid Link Detection Protocol (RLDP), the RG-S5760C-X can quickly detect link connectivity and unidirectional optical links. You can enable loop detection on an interface to prevent network failures caused by loops when interfaces are connected to unauthorized hubs.

The RG-S5760C-X supports the Ethernet Ring Protection Switching (ERPS) technology, which is a Layer 2 link redundancy protocol designed for the core Ethernet. The control device blocks loops and restores links, and non-control devices directly report their link status to the control device, without processing from other non-control devices. Therefore, the loop elimination and restoration time of ERPS is faster than that of STP. ERPS supports link recovery within milliseconds.

When STP is disabled, the Rapid Ethernet Uplink Protection Protocol (REUP) can still provide basic link redundancy and millisecond-level fault rectification faster than STP.

The RG-S5760C-X supports Bidirectional Forwarding Detection (BFD), which provides upper-level protocols (such as routing protocols) with a method of rapidly detecting connectivity of the forwarding path between two devices. BFD greatly shortens the convergence time for the upper-level protocols in the case of link status changes.

The RG-S5760C-X supports hardware-level dual-boot. It uses two flash chips to store boot software (system boot program) to achieve hardware-level redundancy, and to avoid switch boot failures due to flash chip faults.

Strong Multi-Service Support

The RG-S5760C-X supports IPv4 and IPv6 multicast functions as well as multiple multicast protocols, such as IGMP snooping, IGMP, MLD, PIM for IPv4, and PIM for IPv6.

It checks IGMP source ports and source IP addresses to effectively eliminate unauthorized multicast sources, enhancing network security.

It supports abundant Layer 3 features such as equal-cost multi-path routing (ECMP).

Sound QoS Policies

The RG-S5760C-X can classify and control various flows, such as MAC flows, IP flows, and application flows, to implement different policies such as fine-grained bandwidth control and forwarding priority. In this way, it provides differentiated services based on applications and characteristics of service quality required by the applications.

It provides QoS guarantee based on the DiffServ model, and can filter traffic based on 802.1p priorities and IP ToS values, and from Layer 2 to Layer 7. It supports SP, WRR, and other QoS policies.

Energy Saving

The RG-S5760C-X adopts the next-generation hardware architecture, and advanced energy-efficient circuit design and components, to efficiently reduce energy consumption and noise. It is equipped with variable-speed axial fan modules to intelligently control the fan speed based on the ambient temperature. This reduces power consumption and noise while ensuring stable operation of the switch.

Easy Network Maintenance

The RG-S5760C-X supports routine network diagnosis and maintenance based on SNMP, RMON, Syslog, and USB-based backup log and configuration. A network administrator can use various management and maintenance modes such as command line interface (CLI), web network management, and Telnet to facilitate device management.

It supports OpenFlow and NETCONF, and can be upgraded to support software-defined networking (SDN) networks in the future, substantially reducing network maintenance costs while simplifying network management.

Telemetry based on gRPC enables it to periodically collect CPU and memory information.

With simplified optical management software and service template embedded in the S5760C-48SFP4XS-X and S5760C-48GT4XS-HP-X, the two switch models can be deployed quickly. In addition to network service planning, the two switch models support plug and play, zero-touch provisioning (ZTP), and optical link fault detection and alarms.

Product Specifications

Hardware Specifications

Port Specifications

Port specifications	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP/8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
Fixed service port	24 x 10/100/1000BASE-T ports 8 x 1GE/10GE SFP+ ports	48 x 10/100/1000BAST-T ports 4 x 1GE/10GE SFP+ ports	24 x 1GE SFP ports • Ports 1 to 16 support the rate of 100Mbps, ports 17 to 24 do not support the rate of 100Mbps • Ports 1 to 8 are 10/100/1000BASE-T combo ports 8 x 1GE/10GE SFP+ ports	48 x 1GE SFP ports 4 x 1GE/10GE SFP+ ports	48 x 10/100/1000BASE-T ports, supporting PoE/PoE+ 4 x 1GE/10GE SFP+ ports
Module slot	1 x expansion module slot 2 x power module slots	1 x expansion module slot 2 x power module slots	1 x expansion module slot 2 x power module slots	1 x expansion module slot 2 x power module slots 3 x fan module slots	1 x expansion module slot 2 x power module slots 2 x fan module slots
Expansion module	M5000X-4XS2CQ Note: The V1.X switch needs to be upgraded to version 12.5(4)B0701 or later to support the expansion module.				
Power module	RG-PA150IB-F RG-PD150IB-F	RG-PA150IB-F RG-PD150IB-F	RG-PA150IB-F RG-PD150IB-F	RG-PA150IB-F RG-PD150IB-F	RG-PA600I-P-F RG-PA1000I-P-F
Fan module	Not Supported	Not Supported	Not Supported	M2SFAN I-F (pre-installed 3)	M2SFAN I-F (pre-installed 2)
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port				
USB	1 x USB 2.0 port				

System Specifications

System specifications	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP/8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
System packet forwarding rate *1	614 Mpps	586 Mpps	614 Mpps	586 Mpps	586 Mpps
System switching capacity *2	826 Gbps	787 Gbps	826 Gbps	787 Gbps	787 Gbps
CPU	Dual-core CPU, each core with the clock speed of 1.2 GHz				

System specifications	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP/8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
Real-time clock (RTC)	Supported				
BootROM	16 MB (2 flash chips for 1+1 boot redundancy)				
Flash memory	4 GB eMMC				
Memory	1 GB	1 GB	1 GB	2 GB	2 GB
Switch buffer	4 MB	4 MB	4 MB	4 MB	4 MB

*1 means the system's packet forwarding rate.
*2 means the system's switching capacity.

Power Supply and Consumption

Power supply and consumption	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP/8GT8XS-X	RG-S5760C-48SFP4XS-X
Power supply	2 x pluggable power modules			
Power input	RG-PA150IB-F (AC input): • Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz • Maximum input current: 3 A RG-PD150IB-F (DC input): • Rated input voltage: –48 V DC to –60 V DC • Maximum input voltage: –36 V DC to –75 V DC • Maximum input current: 5 A			
Maximum output power	RG-PA150IB-F: 150 W RG-PD150IB-F: 150 W			
Maximum power consumption	60 W (excluding expansion modules) 85 W (including expansion modules)	70 W (excluding expansion modules) 95 W (including expansion modules)	77 W (excluding expansion modules) 102 W (including expansion modules)	105 W (excluding expansion modules) 125 W (including expansion modules)

Power supply and consumption	RG-S5760C-48GT4XS-HP-X
Power supply	2 x pluggable power modules
Power input	RG-PA600I-P-F (AC input): • Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz • Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz • Maximum input current: 8 A RG-PA1000I-P-F (AC input 1): • Rated input voltage: 100 V AC to 130 V AC, 50/60 Hz • Maximum input voltage: 90 V AC to 143 V AC, 47 Hz to 63 Hz • Maximum input current: 12 A RG-PA1000I-P-F (AC input 2): • Rated input voltage: 200 V AC to 240 V AC, 50/60 Hz • Maximum input voltage: 180 V AC to 264 V AC, 47 Hz to 63 Hz • Maximum input current: 8 A

Power supply and consumption	RG-S5760C-48GT4XS-HP-X
Maximum output power	RG-PA600I-P-F: 600 W RG-PA1000I-P-F: • 100 V AC to 130 V AC: 930 W • 200 V AC to 240 V AC: 1000 W
PoE port	Ports 1 to 48 support PoE/PoE+ (IEEE 802.3af/at) power supply
PoE power cable pairs	Mode A (1-2, 3-6 pairs)
PoE output power	Each PoE port provides up to 30 W of power The maximum power depends on the configured power supply • 1 x RG-PA600I-P-F: 370 W • 2 x RG-PA600I-P-F: 740 W • 1 x RG-PA1000I-P-F: 740 W • 2 x RG-PA1000I-P-F: 1480 W, a maximum output of 1440 W over 48 ports (30 W x 48) Note: The maximum number of powered devices supported by the switch is determined by the available power of the switch and the actual power consumption of each device.
Maximum power consumption	120 W (without PoE load) 1,600 W (full PoE load)

Dimensions and Weight

Dimensions and weight	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP/8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
Unit dimensions (W x D x H)	440 mm x 340 mm x 44 mm (17.32 in. x 13.39 in. x 1.73 in.)			442.0 mm x 420.0 mm x 43.6 mm (17.40 in. x 16.54 in. x 1.72 in.)	
Shipping dimensions (W x D x H)	593 mm x 497 mm x 192 mm (23.35 in. x 19.57 in. x 7.56 in.)			563 mm x 563 mm x 210 mm (22.17 in. x 22.17 in. x 8.27 in.)	
Rack height	1 RU			1 RU	
Unit weight	4.4 kg (9.70 lbs)	4.5 kg (9.92 lbs)	4.3 kg (9.48 lbs)	5.3 kg (11.68 lbs)	5.5 kg (12.13 lbs)
Shipping weight	6.20 kg (13.67 lbs)	6.30 kg (13.89 lbs)	6.30 kg (13.89 lbs)	7.80 kg (17.20 lbs)	7.70kg (16.98 lbs)

Environment and Reliability

Environment and Reliability	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
Temperature	Operating temperature: • 0°C to 45°C (32°F to 113°F), V1.X without expansion modules or V2.X • 0°C to 40°C (32°F to 104°F), V1.X with expansion modules Storage temperature: –40°C to +70°C (–40°F to +158°F)			Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F)	
	Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).				
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)				

Environment and Reliability	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
Altitude	Operating altitude: –500 m to +5,000 m (–1,640.42 ft. to +16,404.20 ft.) Storage altitude: –500 m to +5,000 m (–1,640.42 ft. to +16,404.20 ft.)				
Mean time between failure (MTBF)	1,025,280 hours (about 120 years)	939,840 hours (about 110 years)	803,136 hours (about 94 years)	768,960 hours (about 90 years)	811,680 hours (about 95 years)
Fan	2 x fixed fan modules	2 x fixed fan modules	2 x fixed fan modules	3 x pluggable fan modules	2 x pluggable fan modules
Heat dissipation	Fan cooling, left-to-right airflow			Fan cooling, front-to-rear airflow	
Acoustic noise	45°C (113°F): 56.2 dB	45°C (113°F): 57.9 dB	45°C (113°F): 56.2 dB	27°C (80.6°F): 50 dB 45°C (113°F): 65 dB	27°C (80.6°F): 53 dB 45°C (113°F): 68 dB
Power module redundancy	1+1 redundancy	1+1 redundancy	1+1 redundancy	1+1 redundancy	1+1 redundancy
Fan redundancy	Not supported	Not supported	Not supported	2+1 redundancy	1+1 redundancy
Power module hot swapping	Supported				
USB hot swapping	Supported				
Cable hot swapping	Supported				
Power supply monitoring	Monitoring of the power supply model and status Power supply failure alarming				
Fan monitoring	Fan speed adjustment: 3 levels Fan failure alarming				
Temperature monitoring	Temperature monitoring, over-temperature alarming				
ESD	ESD contact/air discharge: 6 kV/8 kV ESD susceptibility contact/air discharge: 8 kV/15 kV				
Surge protection	MGMT port: 4 kV Service port: 10 kV Power port: common mode 6 kV, differential mode 6 kV				

Certifications and Regulatory Compliance

Certifications and regulatory compliance	RG-S5760C-24GT8XS-X	RG-S5760C-48GT4XS-X	RG-S5760C-24SFP/8GT8XS-X	RG-S5760C-48SFP4XS-X	RG-S5760C-48GT4XS-HP-X
Safety regulation	IEC 62368-1				
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11				
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863				

Software Specifications

Performance and Capacity

Performance and Capacity	RG-S5760C-X Series
Maximum number of VSU members	8
VSU bandwidth	260 Gbps
Maximum number of SVIs	1,000
Maximum number of MAC address entries	64,000
Maximum number of ARP address entries	24,000
Maximum number of ND entries	12,000
Maximum number of IPv4 unicast routes	24,000 (shared with IPv6 routes)
Maximum number of IPv6 unicast routes	14,000 (shared with IPv4 routes)
Maximum number of IPv4 multicast routes	4,000 (3,000 in mmu-enhance mode)
Maximum number of IPv6 multicast routes	2,000 (1,500 in mmu-enhance mode)
Maximum number of IGMP groups	4,000 (3,000 in mmu-enhance mode)
Maximum number of MLD groups	2,000 (1,500 in mmu-enhance mode)
Maximum number of VRF instances	512
Maximum number of ACEs	In: 75,000 Out:3,750

Feature	RG-S5760C-X Series
Ethernet switching	Jumbo frame (maximum length: 9,216 bytes)
	IEEE 802.1Q (supporting 4K VLANs)
	Voice VLAN
	Super-VLAN and private VLAN
	MAC address-based, port-based, protocol-based, and IP subnet-based VLAN assignment
	GVRP
	Basic QinQ and selective QinQ
	STP, RSTP, and MSTP
	ERPS (G.8032)
	LLDP/LLDP-MED
	LACP (IEEE 802.3ad)
IP service	ARP
	DHCP client, DHCP relay, and DHCP server

Feature	RG-S5760C-X Series
IP service	DHCP snooping
	DNS
	DHCPv6 client, DHCPv6 server, and DHCPv6 relay
	DHCPv6 snooping
	Neighbor Discovery (ND) and ND snooping
	IPV6 addressing, ICMPv6, Stateless Address Auto-configuration (SLAAC), and path MTU discovery
IP routing	Static routing
	RIP and RIPng
	OSPFv2, OSPFv3, IS-ISv4, ISv4, and IS-ISv6
	BGP4 and BGP4+
	ECMP
	IPv4 and IPv6 VRF
	IPv4 and IPv6 PBR
Multicast	IGMP v1/v2/v3 and IGMP proxy
	IGMP v1/v2/v3 snooping
	IGMP filtering and IGMP fast leave
	PIM-DM, PIM-SM, and PIM-SSM
	MSDP
	MLD snooping v1/v2
	PIM-SMv6 and PIM-SSM v6
MPLS	MPLS L3VPN
ACL and QoS	Standard IP ACLs Extended IP ACLs Extended MAC ACLs Time-based ACLs Expert-level ACLs ACL80 IPv6 ACL
	ACL redirection
	Port traffic identification
	Port traffic rate limiting
	Congestion management: SP, WRR, DRR, WFQ, SP+WRR, SP+DRR, and SP+WFQ
	Congestion avoidance: tail drop, RED, and WRED
	802.1p/DSCP/ToS traffic classification Eight priority queues per port

Feature	RG-S5760C-X Series
Security	AAA
	RADIUS and TACAS+
	Port-based and MAC address-based 802.1X authentication
	Web authentication
	HTTPS
	SSHv1 and SSHv2
	Global IP-MAC binding
	Port isolation and port security
	IP source guard
	SAVI
	CPP and NFPP
	Strict and loose RPF uRPF ignoring default routes
	3-tuple binding (IP address, MAC address, and port) 3-tuple binding (IPv6 address, MAC address, and port) Filtering of unauthorized MAC addresses MAC address bypass (MAB) authentication Portal authentication and Portal 2.0 authentication ARP check Dynamic ARP Inspection (DAI) ARP packet rate limiting Gateway ARP anti-spoofing Broadcast storm suppression Hierarchical management of administrators and password protection AAA for device login management MAC Authentication Bypass (SSH) BPDU guard Port protection
Reliability	REUP, RLDP, and DLDP
	IPv4 VRRP v2/v3 and IPv6 VRRP
	GR for RIP, OSPF, BGP, and other routing protocols
	BFD
	Link tracing, fault notification, and remote loopback based on 802.3ah (EFM)
	1+1 power module redundancy
	Hot swapping of power modules and cables
	3-level fan speed adjustment Fan fault alarm
Device virtualization	VSU
Forwarding mode	Store and forwarding

Feature	RG-S5760C-X Series
NMS and maintenance	SPAN, RSPAN, and ERSPAN
	sFlow
	NTP and SNTP
	FTP and TFTP
	SNMP v1/v2c/v3
	RMON (1, 2, 3, 9)
	SSHv1 and SSHv2
	Syslog
	NETCONF
	CWMP (TR-069)
	gRPC
	CLI (Telnet/Console), SNMP over IPv6, IPv6 MIB support for SNMP, SSHv6, Telnet v6, FTP/TFTP v6, DNS v6, NTP for IPv6, and Traceroute v6
PoE	RG-S5760C-48GT4XS-HP-E: IEEE 802.3af and 802.3at, uninterruptible power supply upon hot start, and port priority
VXLAN	With VXLAN, a Layer 2 logical network can be built based on a Layer 3 network through software upgrade.

Protocol Compliance

Organization	Standards and Protocol
IETF	RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1305 Network Time Protocol Version 3 (NTP) RFC 1349 Internet Protocol (IP) RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1591 Domain Name System Structure and Delegation RFC 1643 Ethernet Interface MIB RFC 1757 Remote Network Monitoring (RMON) RFC 1812 Requirements for IP Version 4 Router RFC 1901 Introduction to Community-based SNMPv2 RFC 1902-1907 SNMP v2 RFC 1918 Address Allocation for Private Internet RFC 2131 Dynamic Host Configuration Protocol (DHCP) RFC 2132 DHCP Options and BOOTP Vendor Extensions RFC 2571 SNMP Management Frameworks RFC 2863 The Interfaces Group MIB RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only) RFC 3046 DHCP Option82 RFC 3417 (SNMP Transport Mappings) RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 4022 MIB for TCP

Organization	Standards and Protocol
IETF	RFC 768 User Datagram Protocol (UDP) RFC 783 TFTP Protocol (revision 2) RFC 792 Internet Control Message Protocol (ICMP) RFC 793 Transmission Control Protocol (TCP) RFC 813 Window and Acknowledgement Strategy in TCP RFC 815 IP datagram reassembly algorithms RFC 826 Ethernet Address Resolution Protocol (ARP) RFC 854 Telnet Protocol RFC 959 File Transfer Protocol (FTP) RFC 1058 Routing Information Protocol (RIP) RFC 1583 OSPF Version 2 RFC 1981 Path MTU Discovery for IP version 6 RFC 1997 BGP Communities Attribute RFC 2236 IGMP RFC 2328 OSPF Version 2 RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option RFC 2439 BGP Route Flap Damping RFC 2460 Internet Protocol, Version 6 (IPv6) RFC 2461 Neighbor Discovery for IP Version 6 (IPv6) RFC 2462 IPv6 Stateless Address Auto configuration RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6) RFC 2545 Use of BGP 4 Multiprotocol Extensions for IPv6 Inter Domain Routing RFC 2711 IPv6 Router Alert Option RFC 2787 Definitions of Managed Objects for the Virtual Router Redundancy Protocol RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2918 Route Refresh Capability for BGP 4 RFC 2934 Protocol Independent Multicast MIB for IPv4 RFC 3065 Autonomous System Confederation for BGP RFC 3101 OSPF Not so stubby area option RFC 3137 OSPF Stub Router Advertisement sFlow RFC 3509 Alternative Implementations of OSPF Area Border Routers RFC 3513 IP Version 6 Addressing Architecture RFC 3575 IANA Considerations for RADIUS RFC 3579 RADIUS Support For EAP RFC 3623 Graceful OSPF Restart RFC 3768 VRRP RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6 RFC 3973 PIM Dense Mode RFC 4271 A Border Gateway Protocol 4 (BGP 4) RFC 4273 Definitions of Managed Objects for BGP 4 RFC 4360 BGP Extended Communities Attribute RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP) RFC 4486 Subcodes for BGP Cease Notification Message RFC 4552 Authentication/Confidentiality for OSPFv3 RFC 4724 Graceful Restart Mechanism for BGP RFC 4750 OSPFv2 MIB partial support no SetMIB RFC 4760 Multiprotocol Extensions for BGP 4 RFC 4940 IANA Considerations for OSPF RFC 5065 Autonomous System Confederation for BGP RFC 5187 OSPFv3 Graceful Restart RFC 5340 OSPFv3 for IPv6 RFC 5492 Capabilities Advertisement with BGP 4 RFC 6620 FCFS SAVI

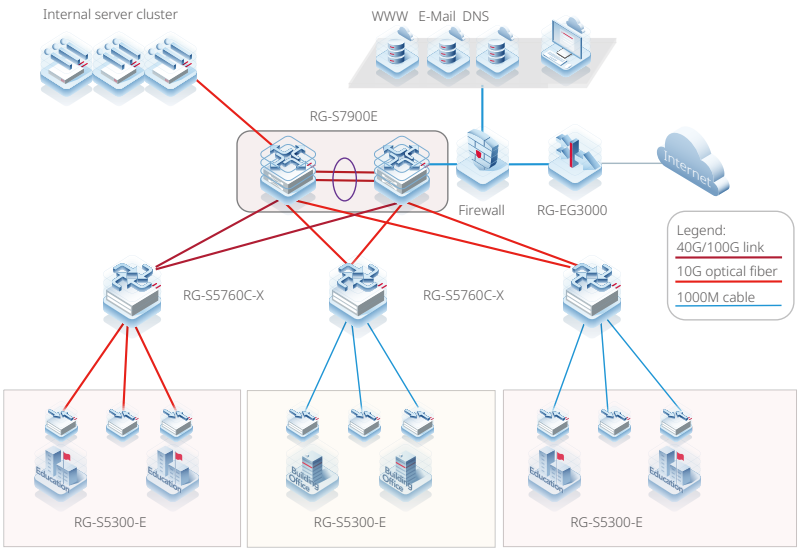
Organization	Standards and Protocol
IEEE	IEEE 802.2 Logical Link Control IEEE 802.1ab Link Layer Discovery Protocol IEEE 802.1ad Provider Bridges IEEE 802.1ax/IEEE802.3ad Link Aggregation IEEE 802.1D Media Access Control (MAC) Bridges IEEE 802.1Q Virtual Bridged Local Area Networks (VLAN) IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE Std 802.3x Full Duplex and flow control IEEE 802.1D Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.3bt Power over Ethernet

Typical Applications

- The switches can be deployed at the aggregation layer of large-sized networks, the core layer of medium- and small-sized networks, the access layer of server groups, and Layer 3 access of all 1000 Mbps ports in large enterprises or office buildings in campuses.
- Each model of the series provides four to eight fixed 10GE optical ports to meet user requirements for smoothly upgrading uplinks connected to the backbone network to 10GE uplinks, maximizing the return on investment for users.
- Abundant security management mechanisms provide robust network security defense, high-security access control, and effective network access control.
- Sound management policies can be configured to manage bandwidth to guarantee the bandwidth required by key services such as voice, multicast audio and video services, and Video on Demand (VoD).

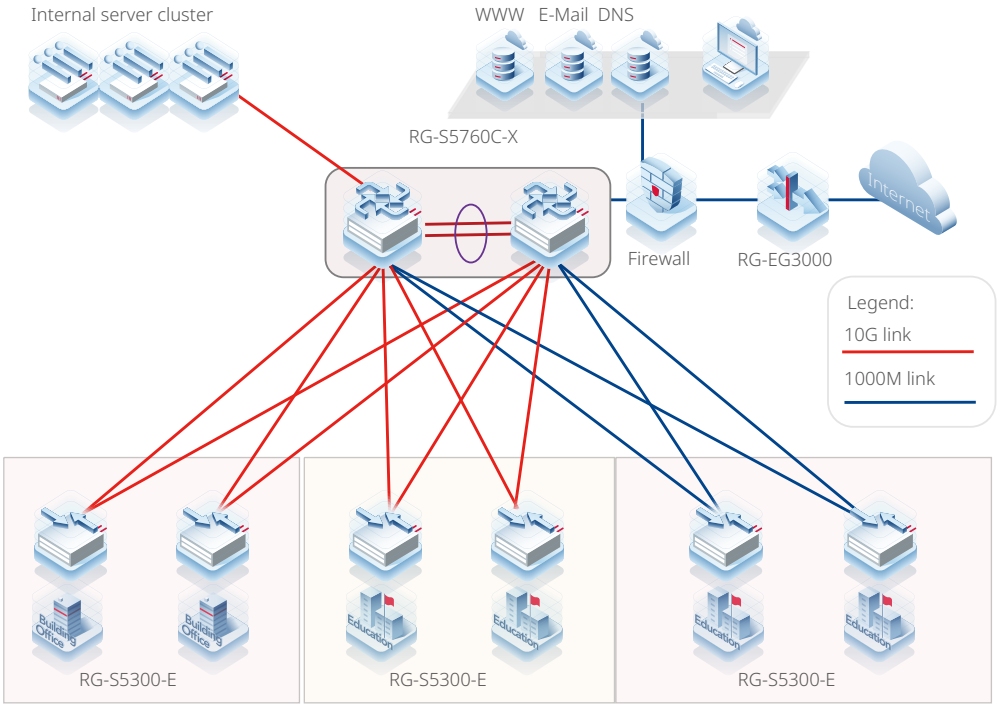
Scenario 1

The RG-S5760C-X series switches serve as aggregation switches on a large-sized campus network. The switches provide high-performance 10G bandwidth links from the aggregation layer to the core layer, and deliver higher bandwidth for access devices, to cope with increasing information amount of access users.



Scenario 2

The RG-S5760C-X series switches serve as core switches on small- and medium-sized enterprise networks. The switches simplify the network architecture through VSU technology and substantially improves reliability and efficiency of the network system.



Ordering Guide

Follow the steps to order the RG-S5760C-X series switches:

- Select a switch and expansion modules based on port requirements.
- Select power modules.
- Select optical modules based on port requirements.

Ordering Information

Order switches, expansion modules, power modules, and other components as needed. Before ordering an expansion module or power module, contact our online customer service team for the latest support information about the module.

Switches and Power Modules

Model	Description
RG-S5760C-24GT8XS-X	24 x 10/100/1000BASE-T ports, 8 x 1GE/10GE SFP+ ports, 1 x expansion slot, 2 x built-in fixed fans, 2 x power module slots. Purchase at least one RG-PA150IB-F module.
RG-S5760C-48GT4XS-X	48 x 10/100/1000BAST-T ports, 4 x 1GE/10GE SFP+ ports, 1 x expansion slot, 2 x built-in fixed fans, 2 x power module slots. Purchase at least one RG-PA150IB-F module.
RG-S5760C-24SFP/8GT8XS-X	24 x 1GE SFP ports (ports 1 to 16 support the rate of 100Mbps, ports 17 to 24 do not support the rate of 100Mbps, ports 1 to 8 are 10/100/1000BASE-T combo ports), 8 x 1GE/10GE SFP+ ports, 1 x expansion slot, 2 x built-in fans, 2 x power module slots. Purchase at least one RG-PA150IB-F module.
RG-S5760C-48SFP4XS-X	48 x 1GE SFP ports, 4 x 1GE/10GE SFP+ ports, 1 x expansion slot, 3 x modular fans, 2 x power module slots. Purchase at least one RG-PA150IB-F module.
RG-PA150IB-F	150 W AC power module
RG-PD150IB-F	150 W DC power module

Model	Description
RG-S5760C-48GT4XS-HP-X	48 x 10/100/1000BASE-T ports, 4 x 1GE/10GE SFP+ ports, 1 x expansion slot, 2 x modular fans, 2 x power module slots Purchase at least one RG-PA600I-P-F/RG-PA1000I-P-F module.
RG-PA600I-P-F	600 W AC power module
RG-PA1000I-P-F	1000 W AC power module

Expansion module

Model	Description
M5000X-4XS2CQ	4 x 1GE/10GE SFP+ ports, 2 x 40GE/100GE QSFP28 ports

Note:

- 1GE/10GE SFP+ ports support 1GE SFP transceivers, 10GE SFP+ transceivers.
- 40GE QSFP+ ports support 40GE QSFP+ transceivers. The port can work in 4 x 10GE mode.
- 40GE/100GE QSFP28 ports support 40GE QSFP+ transceivers and 100GE QSFP28 transceivers.

Optical Transceivers and Cables

1GE

Model	Description
Mini-GBIC-GT	1000BASE-X to 1000BASE-T, copper SFP transceiver, RJ45, 100 m over Cat 5e/6/6a The port needs to be configured with auto-negotiation
MINI-GBIC-SX-MM850	1000BASE-SX, SFP transceiver, 850 nm, Duplex LC, 500 m over MMF
MINI-GBIC-LX-SM1310	1000BASE-LX, SFP transceiver, 1310 nm, Duplex LC, 10 km over SMF
MINI-GBIC-LH40-SM1310	1000BASE-LH, SFP transceiver, 1310 nm, Duplex LC, 40 km over SMF
MINI-GBIC-ZX80-SM1550	1000BASE-ZX, SFP transceiver, 1550 nm, Duplex LC, 80 km over SMF
GE-SFP-LX20-SM1310-BIDI	1000BASE-LX, SFP transceiver, TX1310/RX1550 , BiDi LC, 20 km over SMF
GE-SFP-LX20-SM1550-BIDI	1000BASE-LX, SFP transceiver, TX1550/RX1310, BiDi LC, 20 km over SMF
GE-SFP-LH40-SM1310-BIDI	1000BASE-LH, SFP transceiver, TX1310/RX1550, BiDi LC, 40 km over SMF
GE-SFP-LH40-SM1550-BIDI	1000BASE-LH, SFP transceiver, TX1550/RX1310, BiDi LC, 40 km over SMF
GE-SFP-LX03-SM1310-BIDI-I	1000BASE-LX, SFP transceiver, TX1310/RX1550, BiDi LC, 3 km over SMF
GE-SFP-LX03-SM1550-BIDI-I	1000BASE-LX, SFP transceiver, TX1550/RX1310, BiDi LC, 3 km over SMF

10GE

Model	Description
XG-SFP-SR-MM850	10GBASE-SR, SFP+ transceiver, 850nm, Duplex LC, 300 m over MMF
XG-SFP-LR-SM1310	10GBASE-LR, SFP+ transceiver, 1310nm, Duplex LC, 10 km over SMF
XG-SFP-ER-SM1550	10GBASE-ER, SFP+ transceiver, 1550nm, Duplex LC, 40 km over SMF
XG-SFP-ZR-SM1550	10GBASE-ZR, SFP+ transceiver, 1550nm, Duplex LC, 80 km over SMF
XG-SFP-LR10-SM1270-BIDI-I	10GBASE-LR, SFP+ transceiver, TX1270/RX1330, BiDi LC, 10 km over SMF
XG-SFP-LR10-SM1330-BIDI-I	10GBASE-LR, SFP+ transceiver, TX1330/RX1270, BiDi LC, 10 km over SMF
XG-SFP-AOC1M	10GBASE, SFP+ active optical cable (AOC), 1 m, including one cable and two optical transceivers
XG-SFP-AOC3M	10GBASE, SFP+ active optical cable (AOC), 3 m, including one cable and two optical transceivers
XG-SFP-AOC5M	10GBASE, SFP+ active optical cable (AOC), 5 m, including one cable and two optical transceivers

40GE

Model	Description
40G-QSFP-LR4-SM1310	40GBASE-LR4, QSFP+ transceiver, 1310 nm, Duplex LC, 10 km over SMF
40G-QSFP-iLR4-SM1310	40GBASE-iLR4, QSFP+ transceiver, 1310 nm, Duplex LC, 2 km over SMF
40G-AOC-5M	40GBASE, QSFP+ active optical cable (AOC), 5 m, including one cable and two optical transceivers

100GE

Model	Description
100G-QSFP-SR-MM850	100GBASE-SR, QSFP28 transceiver, 850 nm, MPO 1 x 12, 100 m over OM4 MMF, 70 m over OM3 MMF
100G-QSFP-LR4-SM1310	100GBASE-LR4, QSFP28 transceiver, 1310 nm, Duplex LC, 10 km over SMF
100G-AOC-10M	100GBASE, QSFP28 active optical cable (AOC), 10 m, including one cable and two optical transceivers

Package Contents

Item	RG-S5760C-X Series
Chassis	1
Grounding wire	1
Mounting bracket	2
Rubber pad	4
M4x8 cross recessed countersunk head screw, GB819-85	8
Mounting Bracket Installation Guide	1
Network Product Warranty Manual and Hazardous Substance Statement	1
Ruijie Networks Convergence Product Management Software	1 (pre-installed)

Warranty

For more information about warranty terms and period, contact your local sales agency:

- Warranty terms: https://www.ruijienetworks.com/support/servicepolicy
- Warranty period: https://www.ruijienetworks.com/support/servicepolicy/Service-SupportSummany/

Note: The warranty terms are subject to the terms of different countries and distributors.

More Information

For more information about Ruijie Networks, visit the official Ruijie website or contact your local sales agency:

- Ruijie Networks official website: https://www.ruijienetworks.com/
- Online support: https://www.ruijienetworks.com/support
- Hotline support: https://www.ruijienetworks.com/support/hotline
- Email support: service_rj@ruijienetworks.com