Ruijie RG-S5750-E

Switch Series Datasheet

Ruijie Networks Co., Ltd.
For further information, please visit our website http://www.ruijienetworks.com

Product Overview

Ruijie RG-S5750-E Series is a collection of new-generation Layer 3 switches offering high performance, advanced security, and multiservices. The Ruijie RG-S5750-E Series provides flexible media interfaces to meet the connection needs of different media in network construction.

With full Gigabit interface form, scalable high-density 10 Gigabit Ethernet ports, and 1:1 multilayer switching at full line rates, this series is ideal acting as the aggregation layer of a large network, fulfilling the demanding requirements of high bandwidth, performance and scalability, and also acting as the core layer of a medium-sized network, and access of the server cluster of a data center.

The RG-S5750-E Series provides hardware support for IPv4/IPv6 switching at line rates and support rich tunnel technologies for communication between IPv6 networks. This series can be used in pure IPv4 networks, IPv6 networks, and IPv4/IPv6 dual-stack networks and meet the requirements of current and future campus network for transition from IPv4 to IPv6.

The RG-S5750-E Series delivers Layer 2 to 7 traffic classifications and advanced Quality of Service (QoS) policies. The series also processes different service flows based on different applications to ensure zero delay in critical data transmission.

The RG-S5750-E Series offers flexible interface combination and configuration, providing 24 or 48 adaptive 10/100/1000M electrical ports as well as 4 or 8 SFP 10/100M optical ports to adapt to various network construction scenarios.

The RG-S5750-E Series offers outstanding performance, advanced end-to-end QoS, high flexibility, superior security settings, and policy-based network management with an unparalleled price to performance ratio to meet the enterprise customers' needs of high speed, robust security, and intelligent network automation.

Product Features

High Performance

The RG-S5750-E Series offers 10 Gigabit Ethernet ports to ensure smooth traffic flowing, even at 10 times the normal network speed. The series meets the needs of fast growing network applications and increasing network bandwidth.

Offers upgradable 10 Gigabit Ethernet ports to meet current and future demands.

IPv4/IPv6 Multilayer Switching

Provides hardware support for IPv4/IPv6 multilayer switching at line rates, supports distinction and processing of IPv4 and IPv6 packets by hardware, and provides flexible IPv6 network communication schemes according to requirement planning and network status of the IPv6 network.

Supports rich IPv4 routing protocols, including static routing protocols, RIP, OSPF, and BGP4, which enable users to select appropriate protocols for network building in different environments.

Supports rich IPv6 routing protocols, including static routing protocols, RIPng, OSPFv3, and BGP4+, which enable users to select appropriate protocols for upgrading an existing network to an IPv6 network or building a new IPv6 network.

Network Virtualization Support

Up to 8 switches can be virtualized into one logical unit.

Switches operation management can be unified and simplified through single IP address, Telnet and CLI session.

Enables any Virtual Switch Unit (VSU) member to leave or join the VSU group with zero business interruption, offering high reliability and availability.

Provides high degree of flexibility; can be realized with either Gigabit Ethernet or 10 Gigabit Ethernet ports without limitation on copper or fiber media types.

Aggregates up to 8 Gigabit Ethernet ports or 4 10 Gigabit Ethernet ports as the VSU Link.

Flexible and Comprehensive Security Policies

Effectively prevents and controls virus spread and hack attacks with various inherent mechanisms, such as anti-DoS attacks, hacker IP scanning, illegal ARP packets checking and multiple hardware ACL policies.

Supports hardware-based IPv6 ACL. Allows coexistence of IPv4/IPv6 users and controls the resources access by IPv6 users.

Industry-leading CPU protection mechanism: The CPU protection policy (CPP) distinguishes the data flows sent to the CPU, which are processed according to their priorities, and implements the limitation on the bandwidth rate as needed. In this manner, users can prevent the CPU from being occupied by illegal traffic and protect against malicious attacks to guarantee normal operation of the CPU and switch.

Implements flexible binding of a port or the system to the IP address and MAC address of users, strictly limiting user access on a port or in the entire system.

Supports DHCP snooping, and allows DHCP responses from trusted ports only. Based on DHCP listening and by monitoring ARP dynamically and checking the user IP address, the series directly discards illegal packets inconsistent with binding entries to effectively prevent ARP frauds and source IP address frauds.

Telnet access control based on the source IP address to prevent illegal personnel or hack attacks and strengthen the device security.

Secure Shell (SSH) and Simple Network Management Protocol v3 (SNMPv3) cryptographic network protocol ensure the security of management information and provide services such as multi-element binding, port security, time-based ACL and bandwidth rate limiting to block unauthorized users.

Superior Multiservice Support Capabilities

Supports IPv4 and IPv6 multicast functions, including rich multicast protocols such as IGMP Snooping, IGMP, MLD, PIM, PIM for IPv6, and MSDP, to provide multicast service support for IPv4 networks, IPv6 networks, and IPv4/IPv6 dual-stack networks. Supports the Internet Group Management Protocol (IGMP) source IP address checking to guard against illegal multicast sources and improve network security.

Supports rich Layer 3 service features such as Equal-cost Multipath routing (ECMP) and Weighted-cost Multipath routing (WCMP) to meet communication needs of different link planning.

Supports IPFIX (RFC 3917) traffic analysis protocol, providing in-depth network flow information for operation management and troubleshooting support.

Advanced QoS Policies

Supports multilayer traffic classification and flow control capabilities such as MAC traffic, IP traffic, and application traffic that implement multiple traffic policies such as refined bandwidth control and forwarding priorities; supports the provision of services according to the corresponding QoS level.

The QoS guarantee system with DiffServ at its core supports complete QoS policies such as 802.1p, IP TOS, Layers 2 through 7 filter, SP, and WRR.

High Reliability

Supports Spanning Tree Protocols (STP) of 802.1d, 802.1w, and 802.1s to ensure rapid convergence, improve fault tolerance capabilities, ensure stable running of networks and load balancing of links, and provide redundant links.

Supports the Virtual Router Redundant Protocol (VRRP) to effectively ensure network stability.

Supports Rapid Link Detection Protocol (RLDP) to detect the connectivity of links and whether an optical fiber link is normal from both ends, and supports the loop detection function based on the port to prevent network faults caused by loops generated by the connection of devices such as hubs to ports.

Supports Rapid Ethernet Ring Protection Protocol (RERP), a Layer 2 redundancy protocol designed for the core Ethernet. Its loop blocking and link recovery are performed on the master device, and a non-master device reports its link status to the master device without processing by other non-master devices. Therefore, the loop blocking time and link recovery time are shorter than those in the case of STP. Based on the preceding differences, the link recovery capability of RERP can reach a 100-subsecond level in an ideal environment.

When Spanning Tree Protocol (STP) is disabled, the Rapid Ethernet Uplink Protection Protocol (REUP) can provide basic link redundancy through the rapid uplink protection function and provide faster millisecond-level fault recovery than STP.

Supports Bidirectional Forwarding Detection (BFD) to provide a method for upper-layer protocols such as routing protocols and MPLS to rapidly detect the connectivity of forwarding paths between routing devices, reducing the convergence time of upper-layer protocols greatly in the case of changes in link status.

Ease of Use and Management

Various types of Gigabit Ethernet interfaces meet different network requirements.

The RG-S5750-24GT/8SFP-P and RG-S5750-48GT/4SFP-P switches support PoE, which can provide power through remote PoE devices. The switches meet the network requirements of financial institutions, enterprises, schools, hospitals, and factories for implementing network applications such as VoIP, remote monitoring, and wireless APs.

Network Timing Protocol (NTP) provides an accurate and consistent timestamp for traffic information analysis and fault diagnosis.

Supports Syslog for effective network maintenance and management.

Supports port mirroring to ease the maintenance workload.

The CLI interface provides convenience for advanced users.

Technical Specifications

Product Model	RG-S5750-24GT/8SFP-E	RG-S5750-48GT/4SFP-E	RG-S5750-24SFP/8GT-E	RG-S5750-24GT/8SFP-P	RG-S5750-48GT/4SFP-P
Ports	24 10/100/1000BASE-T ports 8 100/1000BASE-X SFP ports (combo)	48 10/100/1000BASE-T ports 4 100/1000BASE-X SFP ports (combo)	24 100/1000BASE-X SFP ports 8 10/100/1000BASE-T ports (combo)	24 10/100/1000BASE-T ports (PoE+) 8 100/1000BASE-X SFP ports (combo)	48 10/100/1000BASE-T ports (PoE+) 4 100/1000BASE-X SFP ports (combo)
Expansion Slots	2				
Modular Power Slots	N/A	N/A	2	2	2
Expansion Modules	1-port 10G SFP+ module 2-port 10G SFP+ module 4-port 10G SFP+ module (Future release support) 2-port 10/100/1000BASE-T / 100/1000BASE-X SFP (combo) module				
Management Ports	1 console port 1 USB 2.0 port				
Switching Capacity	256Gbps				
Packet Forwarding Rate	155Mpps	191Mpps	155Mpps	155Mpps	191Mpps
PoE	N/A	N/A	N/A	Support	Support
ARP Table	Up to 4,000				
MAC Address	Up to 16K				
Routing Entries	Up to 13K				
IP Host Entries (IPv4/IPv6)	Up to 13K				
ACL Entries	Up to 3,000				
VLAN	4K 802.1q VLANs, Port-based VLAN, MAC-based VLAN, Protocol-based VLAN, Private VLAN, Voice VLAN, QinQ, IP subnet-based VLAN, GVRP				
QinQ	Basic QinQ, Flexible QinQ				
Link Aggregation	Support LACP				
Port Mirroring	Many-to-one mirroring, Flow-based mirroring, Over devices mirroring, AP-port mirroring, RSPAN				
Spanning Tree Protocols	IEEE802.1d STP, IEEE802.1w RSTP, Standard 802.1s MSTP, Port fast, BPDU filter, BPDU guard, TC guard, TC protection, ROOT guard				
DHCP	DHCP server, DHCP client, DHCP snooping, DHCP relay, IPv6 DHCP snooping, IPv6 DHCP client, IPv6 DHCP relay				
Multiple Spanning Tree Protocol (MSTP) Instances	64				

Product Model	RG-S5750-24GT/8SFP-E	RG-S5750-48GT/4SFP-E	RG-S5750-24SFP/8GT-E	RG-S5750-24GT/8SFP-P	RG-S5750-48GT/4SFP-P
Maximum Aggregation Port (AP)	Up to 120				
Virtual Routing and Forwarding (VRF) Instances	512				
VSU (Virtual Switch Unit)	Support (up to 8 stack members)				
L2 Features	MAC, ARP, VLAN, Basic QinQ, Felix QinQ, Link aggregation, Mirroring, STP, RSTP, MSTP, Broadcast storm control, IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, DHCP, Jumbo frame, RLDP, LLDP, REUP, G.8032 ERPS, Layer 2 protocol tunnel				
Layer 3 Features	ARP proxy, Ping, Traceroute, Equal-Cost Multi-Path Routing (ECMP), URPF, Neighbor Discovery, ISATAP				
Layer 3 Protocols (IPv4)	Static routing, RIP, RIPng, BGP4, BGP4+, OSPFv2/v3, IS-IS				
IPv4 Features	Ping, Traceroute, URPF				
IPv6 Features	ICMPv6, IPv6 Ping, IPv6 Tracert, Manually configure local address, Automatically create local address, Neighbor Discovery, 65-128 bit mask, IPv4 over IPv6 tunnel, GRE tunnel				
Basic IPv6 Protocols	IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 Ping and IPv6 Tracert				
IPv6 Routing Protocols	Static routing, RIP, RIPng, BGP4, BGP4+, OSPFv2/v3				
IPv6 Tunnel Features	IPv4 over IPv6 tunnel, GRE tunnel				
Multicast	IGMP v1/v2/v3, IGMP v1/v2/v3 snooping, IGMP proxy, IGMP filter, IGMP fast leave, Multicast routing protocols (PIM-DM, PIM-SM, PIM-SSM), MLD snooping, MLD, PIM for IPv6, MSDP, Multicast static routing				
MPLS	MPLS L3 VPN				
G.8032	Support				
ACL	Standard/Extended/Expert ACL, Extended MAC ACL, IPv6 ACL, ACL logging, ACL counter, ACL remark				
QoS	802.1p/DSCP traffic classification; Multiple queue scheduling mechanisms, such as SP, WRR, DRR,SP+WRR, SP+DRR; Input / output port-based speed limit; Port-based traffic recognition; Each port supports 8 queue priorities				
IPv6 ACL	Support				
Reliability	VSU (virtualization technology for virtualizing multiple devices into 1); RIP GR; ERPS (G.8032); REUP dual-link fast switching technology; RLDP (Rapid Link Detection Protocol)	VSU (virtualization technology for virtualizing multiple devices into 1); RIP GR; ERPS (G.8032); REUP dual-link fast switching technology; RLDP (Rapid Link Detection Protocol)	VSU (virtualization technology for virtualizing multiple devices into 1); RIP GR; ERPS (G.8032); REUP dual-link fast switching technology; RLDP (Rapid Link Detection Protocol); 1+1 power redundancy; Hot-swappable power module	VSU (virtualization technology for virtualizing multiple devices into 1); RIP GR; ERPS (G.8032); REUP dual-link fast switching technology; RLDP (Rapid Link Detection Protocol); 1+1 power redundancy; Hot-swappable power module	VSU (virtualization technology for virtualizing multiple devices into 1); RIP GR; ERPS (G.8032); REUP dual-link fast switching technology; RLDP (Rapid Link Detection Protocol); 1+1 power redundancy; Hot-swappable power module

Product Model	RG-S5750-24GT/8SFP-E	RG-S5750-48GT/4SFP-E	RG-S5750-24SFP/8GT-E	RG-S5750-24GT/8SFP-P	RG-S5750-48GT/4SFP-P
Security	Binding of the IP address, MAC address, and port address; Binding of the IPv6, MAC address, and port address; Filter illegal MAC addresses; Port-based and MAC-based 802.1x; MAB; Portal and Portal 2.0 authentication; ARP-check; Restriction on the rate of ARP packets; Gateway anti-ARP spoofing; Broadcast suppression; Hierarchical management by administrators and password protection; RADIUS and TACACS+; AAA security authentication (IPv4/IPv6) in device login management; SSH and SSH V2.0; BPDU guard; IP source guard; CPP, NFPP; Port protection				
Manageability	SNMPv1/v2c/v3, CLI (Telnet / Console), RMON (1, 2, 3, 9), SSH, Syslog/Debug, NTP, FTP, TFTP				
Other Protocols	FTP, TFTP, DNS client				
Dimensions (W x D x H) (mm)	440×260×44	440×300×44	440×300×44	440×400×44	440×420×44
Rack Height	1RU				
Weight	3.9kg	4.4kg	4kg	7.3kg	8kg
MTBF	>200K hours				
Lightning Protection	6KV				
RPS	Support	Support	N/A	N/A	N/A
Power Supply	Rated voltage range: 100V to 240V Maximum voltage range: 90V to 264V Frequency: 50-60Hz Rated current: 2A	Rated voltage range: 100V to 240V Maximum voltage range: 90V to 264V Frequency: 50-60Hz Rated current: 2A	AC input: Rated voltage range: 100V to 240V AC, 50-60Hz Maximum voltage range: 90V to 264V AC, 50-60Hz Overvoltage protection: 13.4V to 16V Overcurrent protection: 6A to 12A	AC input: Rated voltage range: 100V to 240V AC Frequency: 50-60Hz Overvoltage protection: 54V: -57V to -60V 12V: 13.4V to 16V Overcurrent protection: 54V: 8A to 10A 12V: 12A to 16A	AC input: Rated voltage range: 100V to 240V AC Frequency: 50-60Hz Overvoltage protection: 54V: -57V to -60V 12V: 13.4V to 16V Overcurrent protection: 54V: 8A to 10A 12V: 12A to 16A
Power Consumption	43W (w/o expansion modules) 60W (w/ expansion modules)	72W (w/o expansion modules) 90W (w/ expansion modules)	Dual power: 34W (w/o expansion modules) 50W (w/ expansion modules) Single power: 33W (w/o expansion modules) 48W (w/ expansion modules)	<50W (w/o both expansion modules and PD) <65W (w/ expansion modules but w/o PD) <900W (w/ PD but w/ o expansion modules) <915W (w/ both expansion modules and PD)	<80W (w/o both expansion modules and PD) <95W (w/ expansion modules but w/o PD) <930W (w/ PD but w/ o expansion modules) <945W (w/ both expansion modules and PD)
PoE Power Consumption	N/A	N/A	N/A	370W	370W

Product Model	RG-S5750-24GT/8SFP-E	RG-S5750-48GT/4SFP-E	RG-S5750-24SFP/8GT-E	RG-S5750-24GT/8SFP-P	RG-S5750-48GT/4SFP-P
Temperature	Operating temperature: 0°C to 50°C Storage temperature: -40°C to 70°C				
Humidity	Operating humidity: 10% to 90%RH Storage humidity: 5% to 95%RH				

Table 2. Technical Specifications for RG-M5000E-DC500P

Power Supply Module	RG-M5000E-DC500P
Compatible Model	RG-S5750-24GT/8SFP-P RG-S5750-48GT/4SFP-P
DC Input Voltage Range	-32 VDC to -72 VDC
Power Supply Output	500W including 370W for PoE power supply For dual power supply, the available power supply wattage for PoE is 740W.
Hot-swapping Capability	Support
Power Supply Redundancy	Support 1+1 redundancy
Overvoltage Protection	54V: -58V to -66V 12V: 13.2V to 15.6V
Overcurrent Protection	54V: 7.8A to 10A 12V: 11A to 14A
Overheat Protection	Support
Current Sharing	Support
Mixed Power Operation	Support mixed power operation with RG-M5000E-AC500P power supply module
Weight	1.6kg

Typical Applications

Aggregation layer of a large network, core layer of medium-sized network, access of a server cluster, and full Gigabit Layer 3 access of buildings in large enterprise or campus networks

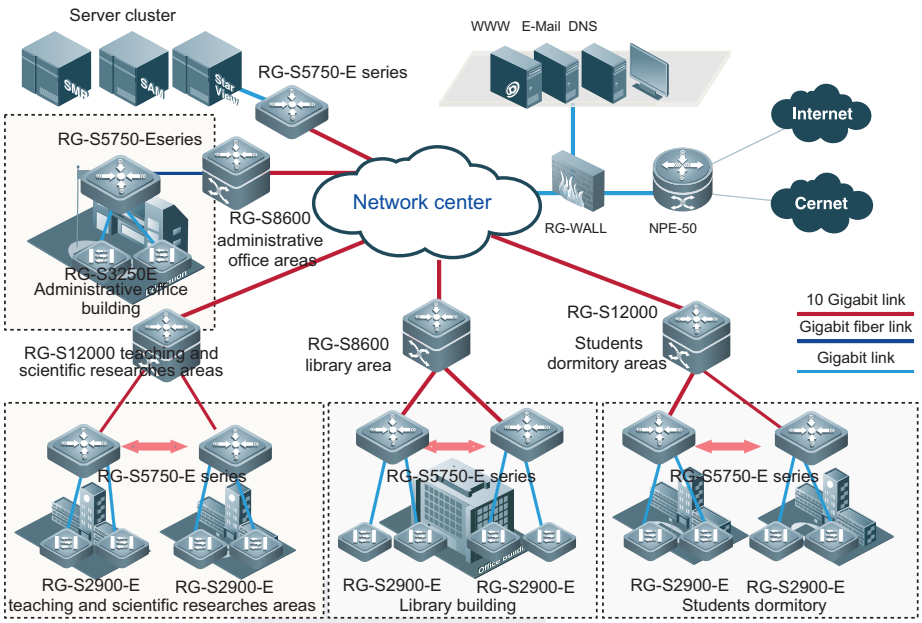
A network can be upgraded to a 10 Gigabit Ethernet uplink backbone by adding 10 Gigabit Ethernet modules so as to protect end-user investment.

Scenarios require flexible Gigabit port formation and quantity, high-performance multilayer switching and data processing.

Strong security management mechanisms provide network security defense, high-security access control, and effective network access control.

Superior management policies facilitate bandwidth management and ensure the performance of key applications such as voice/video conference, music and video streaming and Video on Demand (VoD).

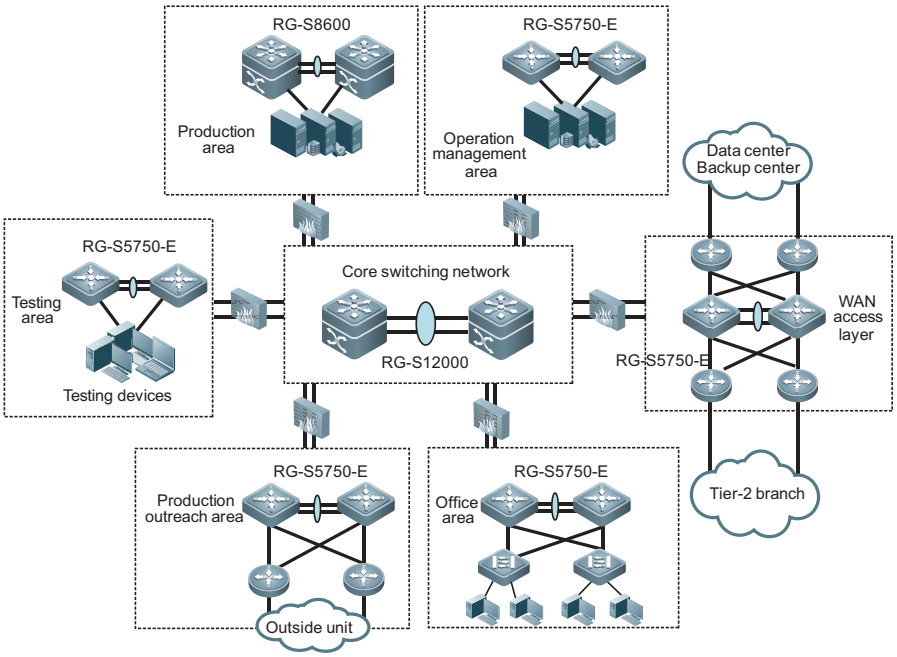
Typical Application 1: 10 Gigabit Ethernet Backbone Campus Network



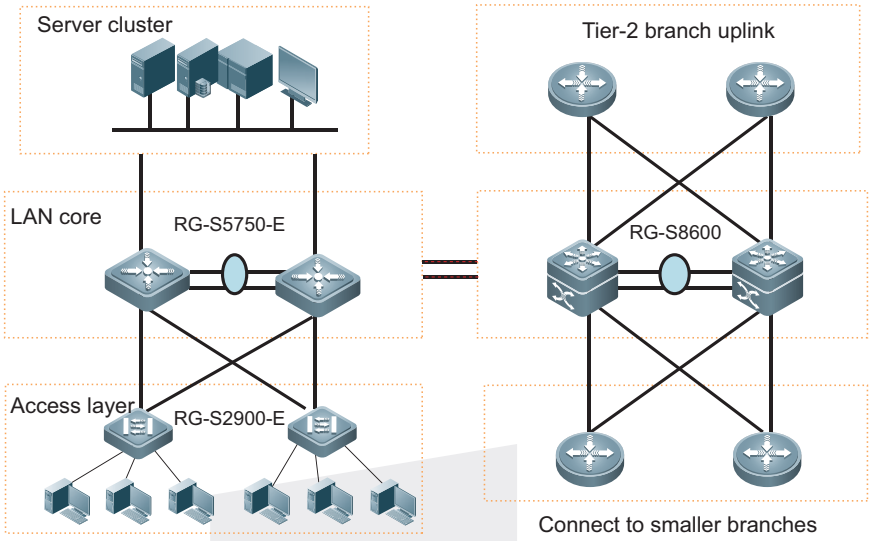
Typical 10 Gigabit Ethernet Backbone Campus Network Topology Diagram

Deployed in teaching and scientific research buildings, library and student dormitories, the Ruijie RG-S5750-E Series is connected to access switches with Gigabit downlinks and to core switches with Gigabit uplinks, providing high-performance 10 Gigabit Ethernet backbone links and meeting the needs of high data traffic and large number of network nodes.

Typical Application 2: Secure Financial LAN



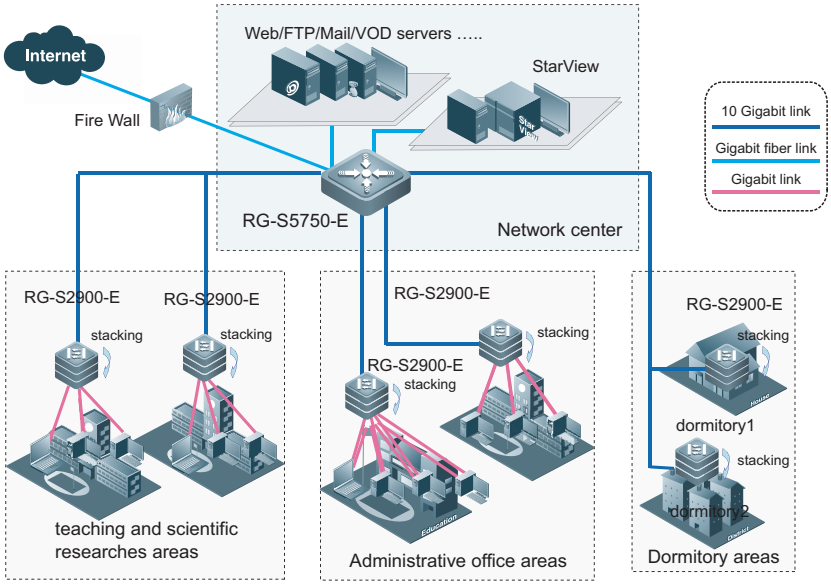
Secure Financial LAN Network Topology Diagram



Detailed Secure Financial LAN Network Topology Diagram

Division of functional modules and powerful security protection provided by the RG-S8600, RG-S7800, and RG-S5750-E can meet the tier 1 financial branch requirements for information systems. Establishing an integrated network security system in cooperation with data center, complete network security projects can be implemented within the tier 1 branches.

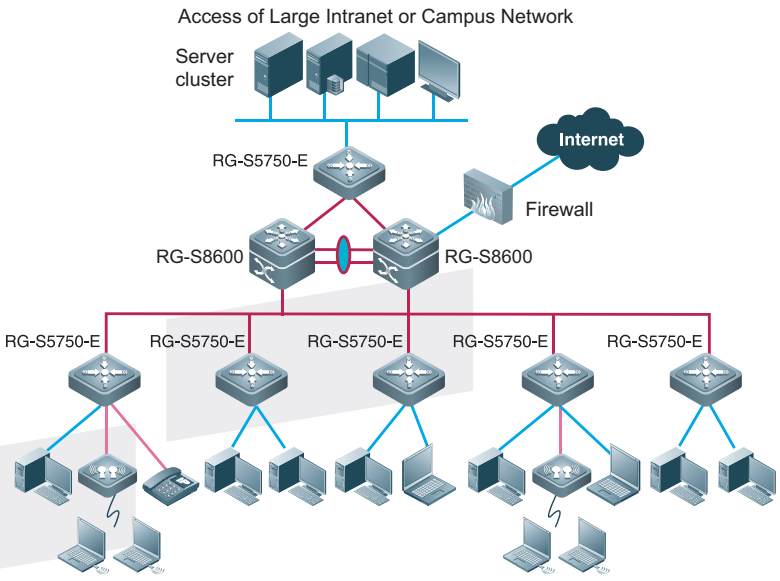
Typical Application 3: Core Switch for SME Network



Typical SME Network Topology Diagram

The secure and intelligent 10 Gigabit Ethernet multilayer switch RG-S5750-24GT/8SFP-E is able to function as core switch with high backplane bandwidth and line-rate forwarding that meets application needs of primary and secondary schools, and small to medium-sized enterprises. Additionally, the Gigabit interfaces (24 Gigabit electrical ports and 8 Combo fiber ports) enable flexible connection to switches and servers.

Typical Application 4: Access of Large Intranets or Campus Networks



Typical Campus Network Topology Diagram

The Ruijie RG-S5750-E Series Switches can be connected to the multiservice IPv6 core routing switch RG-S8600 Series through 10 Gigabit Ethernet or Gigabit uplinks, while the core devices are connected to one another through a 10 Gigabit Ethernet link or multiple converged Gigabit links. This connection provides seamless expansion of ports and flexible expansion of networks.

Ordering Information

Model	Description
RG-S5750-24GT/8SFP-E	24 10/100/1000BASE-T Ports, 8 100/1000BASE-X SFP Ports (combo), 2 Extension Slots (Stack or Uplink), 1 USB 2.0
RG-S5750-48GT/4SFP-E	48 10/100/1000BASE-T Ports, 4 100/1000BASE-X SFP Ports (combo), 2 Extension Slots (Stack or Uplink), 1 USB 2.0
RG-S5750-24SFP/8GT-E	24 100/1000BASE-X SFP Ports, 8 10/100/1000BASE-T Ports (combo), 2 Extension Slots (Stack or Uplink), 2 Modular Power Slots, 1 USB 2.0
RG-S5750-24GT/8SFP-P	24 10/100/1000BASE-T Ports (PoE+), 8 100/1000BASE-X SFP Ports (combo), 2 Extension Slots (Stack or Uplink), 2 Modular Power Slots, 1 USB 2.0
RG-S5750-48GT/4SFP-P	48 10/100/1000BASE-T Ports (PoE+), 4 100/1000BASE-X SFP Ports (combo), 2 Extension Slots (Stack or Uplink), 2 Modular Power Slots, 1 USB 2.0
Optional Accessories	
RG-M5000E-AC500P	Power Supply Module, for S57 PoE series switches, 500W AC, 370W for PoE
RG-M5000E-DC500P	Power Supply Module, Only for S5750-P series switches, DC
RG-M5000E-AC60	Power Supply Module, Only for RG-S5750-24SFP/8GT-E, 60W AC
M5000E-02SFP/GT	M5000E Interface Module, 2 10/100/1000BASE-T Ports, 2 GE SFP Combo Ports
M5000E-01XS	M5000E Interface Module, 1-Port 10GE (SFP+)
M5000E-02XS	M5000E Interface Module, 2-Port 10GE (SFP+)
* M5000E-04XS	M5000E Interface Module, 4-Port 10GE (SFP+) * Planned for future support
* M5000E-02XT	M5000E Interface Module, 2-Port 10GE (BASE-T) * Planned for future support
RPS150	Redundant Power System, for S5750 Series Switches, include 1 RPS Cable
CAB-RPS-1.5M	Redundant Power Supply Cable, 1.5m
FE-SFP-LH15-SM1310	100BASE-LH, SFP Transceiver, SM (1310nm, 15km, LC)
FE-SFP-LX-MM1310	100BASE-LX, SFP Transceiver, MM (1310nm, 2km, LC)
Mini-GBIC-SX-MM850	1000BASE-SX mini GBIC Transceiver (850nm)
Mini-GBIC-LX-SM1310	1000BASE-LX mini GBIC Transceiver (1310nm)
Mini-GBIC-GT	1000BASE-TX, SFP Transceiver (100m)
Mini-GBIC-LH40-SM1310	1000BASE-LH mini GBIC Transceiver (1310nm, 40km)
Mini-GBIC-ZX50-SM1550	1000BASE-ZX mini GBIC Transceiver (1550nm, 50km)
Mini-GBIC-ZX80-SM1550	1000BASE-ZX mini GBIC Transceiver (1550nm, 80km)
Mini-GBIC-ZX100-SM1550	1000BASE-ZX mini GBIC Transceiver (1550nm, 100km)
XG-SFP-SR-MM850	10GBASE-SR, SFP+ Transceiver, MM (850nm, 300m, LC)
XG-SFP-LR-SM1310	10GBASE-LR, SFP+ Transceiver, SM (1310nm, 10km, LC)
XG-SFP-ER-SM1550	10GBASE-LR, SFP+ Transceiver, SM (1550nm, 40km, LC)
XG-SFP-CU1M	10GBASE-CU SFP+ Cable, 1m
XG-SFP-CU3M	10GBASE-CU SFP+ Cable, 3m
XG-SFP-CU5M	10GBASE-CU SFP+ Cable, 5m

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