

RG-S6580 Series

Next-Generation Data Center and Cloud Computing Switch

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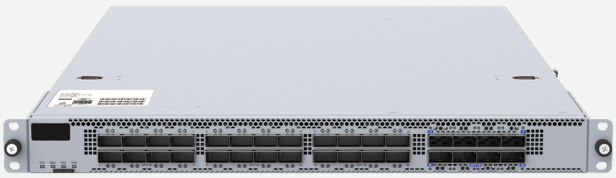
Product Pictures



RG-S6580-48CQ8QC Front View



RG-S6580-48CQ8QC Rear View



RG-S6580-24DC8QC Front View



RG-S6580-24DC8QC Rear View

Product Overview

The RG-S6580 series switches are next-generation high-performance and high-density switches launched by Ruijie Networks for AI and other application scenarios. The switches provide high-density 200GE or 100GE ports and can be used with the RG-S6980-64QC switch to meet design requirements of the spine-leaf network architecture.

There are two models available:

- RG-S6580-48CQ8QC: 48 x 100GE DSFP ports and 8 x 400GE QSFP-DD ports
- RG-S6580-24DC8QC: 24 x 200GE QSFP56 ports and 8 x 400GE QSFP-DD ports



Product Features

Next-Generation Data Center Network

The rapid development of AI/machine learning, and other applications drives the evolution of the next-generation data center network to the 100GE/400GE network. The next-generation data center network requires switches to have higher performance and bandwidth within a specific space. With a height of 1 RU, the RG-S6580 series switches provide a maximum of 48 x 100GE ports (or 24 x 200GE ports) and 8 x 400GE ports, which better meets the evolution requirements of the next-generation data center network.

High-Performance and Low-Delay Data Center Network

The RG-S6580 series switches can work with the RG-S6980-64QC switch to build end-to-end, lossless, low-latency remote direct memory access (RDMA) networks by using advanced network flow control technologies such as PFC and ECN, as well as the memory management unit (MMU) technology. It meets network deployment requirements in various scenarios including AI/machine learning, high-performance computing, distributed storage, and big data.

Carrier-Class High Reliability

The RG-S6580 series switches support 1+1 power redundancy and 5+1 fan redundancy. All power modules and fan modules can be hot-swapped without affecting service continuity on the switch. The switch provides fault detection and alarm functions for power modules and fan modules. It automatically adjusts the fan speed based on ambient temperature to adapt to environment changes in data centers. The switch also supports device-level and link-level reliability protection as well as overcurrent protection, overvoltage protection and over temperature protection.

In addition, the switch integrates various link reliability mechanisms such as process-level graceful restart (GR) and bidirectional forwarding detection (BFD). When multiple services and heavy traffic are carried over the network, these mechanisms can reduce the impact of exceptions on network services and enhance the overall reliability.

IPv4/IPv6 Dual-Stack Protocols and Multilayer Switching

The hardware of the RG-S6580 series switches supports IPv4 and IPv6 protocol stacks and multilayer line-rate switching. The hardware differentiates and processes IPv4 and IPv6 packets. The switch also integrates multiple tunneling technologies such as manually configured tunnels. Users can flexibly work out IPv6 inter-network communication solutions by using this switch based on IPv6 network planning and network conditions.

The RG-S6580 series switches support a wide range of IPv4 routing protocols, including static routing, Routing Information Protocol (RIP), RIPv2, Open Shortest Path First (OSPF), and Border Gateway Protocol version 4 (BGP4). Users can select appropriate routing protocols based on network environments, to flexibly build networks.

The switch also supports abundant IPv6 routing protocols, including static routing, Routing Information Protocol next generation (RIPng), OSPFv3, and BGP4+. Users can flexibly select an IPv6 routing protocol to upgrade the live network to an IPv6 network or establish a new IPv6 network.

All-Round Management Performance

The switch provides various management ports such as the console port, management port, and USB port, and supports Simple Network Management Protocol (SNMP) v1/v2c/v3 and universal network management platform. It supports CLI-based management, telnet, and cluster management, which facilitates device management. The supported encryption modes such as SSH2.0 and SSL enhance management security.

In addition, the switch supports the switched port analyzer (SPAN), remote switched port analyzer (RSPAN), and multiple SPAN monitoring ports, making network traffic monitoring intuitive. The switch provides various network traffic analysis reports to help you promptly optimize the network architecture and schedule resources.

Product Specifications

Hardware Specifications

Item	RG-S6580-48CQ8QC	RG-S6580-24DC8QC
Dimensions (W x D x H)	442 mm x 670 mm x 43.6 mm (17.40 in. x 26.38 in. x 1.72 in.)	442 mm x 670 mm x 43.6 mm (17.40 in. x 26.38 in. x 1.72 in.)
Rack height	1 RU	1 RU
Unit weight	11.5 kg (25.35 lbs., a chassis with two power modules and six fan modules)	11 kg (24.25 lbs., a chassis with two power modules and six fan modules)
Switching capacity	16.0 Tbps	16.0 Tbps
Packet forwarding rate	2680 Mpps	2680 Mpps
Service port	48 x 100G DSFP ports 8 x 100G/400G QSFP-DD ports	24 x 100G/200G QSFP56 ports 8 x 100G/400G QSFP-DD ports
Management port	1 x RJ45 console port 1 x RJ45 MGMT port	1 x RJ45 console port 1 x RJ45 MGMT port
USB port	1 x USB 2.0 port (Type A connector)	1 x USB 2.0 port (Type A connector)
Module slot	2 x power module slots 6 x fan module slots	2 x power module slots 6 x fan module slots
Power consumption	Maximum power consumption: 742 W Typical power consumption: 633 W Static power consumption: 178 W	Maximum power consumption: 850 W Typical power consumption: 700 W Static power consumption: 300 W
Power input	RG-PA1200I-F (AC input) Rated input voltage: 100 V AC to 127 V AC, 200 V AC to 240 V AC, 50 Hz/60Hz Maximum input voltage: 90 V AC to 140 V AC, 180 V AC to 264 V AC, 47 Hz to 63 Hz Rated input current: 13.8 A(100 V AC to 127 V AC) 8.5 A (200 V AC to 240 V AC) Power port type: C14 RG-PA1200I-F (HVDC input): Rated input voltage: 240 V DC Maximum input voltage: 180 V DC to 300 V DC Rated current: 6.5 A Power port type: C14	RG-PA1200I-F (AC input) Rated input voltage: 100 V AC to 127 V AC, 200 V AC to 240 V AC, 50 Hz/60Hz Maximum input voltage: 90 V AC to 140 V AC, 180 V AC to 264 V AC, 47 Hz to 63 Hz Rated input current: 13.8 A(100 V AC to 127 V AC) 8.5 A (200 V AC to 240 V AC) Power port type: C14 RG-PA1200I-F (HVDC input): Rated input voltage: 240 V DC Maximum input voltage: 180 V DC to 300 V DC Rated current: 6.5 A Power port type: C14

Item	RG-S6580-48CQ8QC	RG-S6580-24DC8QC
Temperature	Operating temperature: 0°C to 40°C (32°F to 104°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At altitudes ranging from 1800 m (5,905.51 ft.) to 5000 m (16,404.20 ft.), the maximum temperature decreases by 1°C (1.8°F) for every 200 m (656.17 ft.) increase in elevation.	Operating temperature: 0°C to 40°C (32°F to 104°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At altitudes ranging from 1800 m (5,905.51 ft.) to 5000 m (16,404.20 ft.), the maximum temperature decreases by 1°C (1.8°F) for every 200 m (656.17 ft.) increase in elevation.
Humidity	Operating humidity: 10% RH to 90% RH (non-condensing) Storage humidity: 5% RH to 95% RH (non-condensing)	Operating humidity: 10% RH to 90% RH (non-condensing) Storage humidity: 5% RH to 95% RH (non-condensing)
Altitude	Operating altitude: ≤ 5,000 m (16,404.20 ft.) Storage altitude: ≤ 5000 m (16,404.20 ft.)	Operating altitude: ≤ 5,000 m (16,404.20 ft.) Storage altitude: ≤ 5000 m (16,404.20 ft.)
Cooling	Air cooling, front-to-rear airflow (port-side intake)	Air cooling, front-to-rear airflow (port-side intake)

Software Specifications

Item	RG-S6580-48CQ8QC	RG-S6580-24DC8QC
Layer 2 Protocols	IEEE 802.3x, IEEE 802.3ad (Link Aggregation Control Protocol), IEEE 802.1p, IEEE 802.1Q, IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s (MSTP), Jumbo Frame (9 KB)	
Layer 3 Protocols (IPv4)	BGP4, OSPFv2, RIPv1, RIPv2, LPM routing, Policy-based Routing (PBR), route-policy, Equal-Cost Multi-Path Routing (ECMP), WCMP, VRRP	
IPv6 Basic Protocols	Neighbor Discovery, ICMPv6, Path MTU Discovery, DNSv6, DHCPv6, ICMPv6, ICMPv6 redirection, ACLv6, TCP/UDP for IPv6, SNMP v6, Ping/Traceroute v6, IPv6 RADIUS, Telnet/SSH v6, FTP/TFTP v6, NTP v6, IPv6 MIB support for SNMP, VRRP for IPv6, IPv6 QoS	
IPv6 Features	Static routing, ECMP, PBR, OSPFv3, RIPng, BGP4+	
Data Center Features	PFC, ECN, and other data center features RDMA VXLAN bridge VXLAN gateway IPv6 VXLAN over IPv4 IPv4 VXLAN over IPv4 ECN over VXLAN PFC over VXLAN	

Item	RG-S6580-48CQ8QC	RG-S6580-24DC8QC
Visualization	gRPC sFlow sampling IPFIX	
QoS	Mapping of IEEE 802.1p, DSCP, and ToS priorities ACL-based traffic classification Priority marking/remarking Multiple queue scheduling mechanisms, including SP, WRR, WFQ, DRR, SP+WRR, SP+WFQ, and SP+DRR Congestion avoidance mechanisms such as WRED and tail discarding	
HA Design	GR for RIP/OSPF/BGP, BFD, DLDP, REUP dual-link fast switching, RLDP unidirectional link detection, 1+1 power redundancy and fan redundancy, and hot swapping for all cards and power supply modules	
Security Features	Network foundation protection policy (NFPP), CPP, RADIUS/TACACS, IPv4/v6 packet filtering by basic ACL, extended ACL or VLAN-based ACL, plaintext-based and MD5 ciphertext-based authentication for OSPF, and BGPv4 packets, telnet login and password mechanisms for restricted IP addresses, broadcast packet suppression, hierarchical user management	
Management Mode	SNMP v1/v2c/v3, telnet, console, MGMT, RMON, SSHv1/v2, FTP/TFTP, NTP, syslog, SPAN/RSPAN/ERSPAN, ZTP, NETCONF, Python, fan and power alarm, and temperature alarm	
Other Protocols	DHCP client, DHCP relay, DHCP server, DNS client, ARP proxy, and Syslog	

Ordering Guide

The configuration procedure for RG-S6580 series switches is as follows:

- Select the switch (installed with all fan and power supply modules).
- Select optical transceivers based on port requirements.

Ordering Information

Chassis, Fan Module

Product Model	Description
RG-S6580-48CQ8QC	48 × 100GE DSFP ports + 8 × 400GE QSFP-DD ports Two power slots and six fan slots The chassis is installed with two RG-PA1200I-F modules and six M1HFAN II-F fan modules.
RG-S6580-24DC8QC	24 × 200GE QSFP56 ports + 8 × 400GE QSFP-DD ports Two power slots and six fan slots The chassis is installed with two RG-PA1200I-F modules and six M1HFAN II-F fan modules.

Power Supply Module

Product Model	Description
RG-PA1200I-F	1200 W AC module (AC/240 V HVDC)

Fan Module

Product Model	Description
M1HFAN II-F	Fan module (front-to-rear ventilation)

100GE Optical Transceivers

Model	Description
100G-AOC-5M	100G AOC, QSFP28 form factor, 5 m (16.40 ft.)
100G-AOC-10M	100G AOC, QSFP28 form factor, 10 m (32.81 ft.)
100G-QSFP-SR-MM850	100G SR optical transceiver, QSFP28 form factor, MPO, 850 nm, 100 m (328.08 ft.) over multimode fiber (MMF)
100G-QSFP-iLR4-SM1310	100G iLR4 optical transceiver, QSFP28 form factor, Duplex LC, 1310 nm, 2 km (6,561.68 ft.) over SMF
100G-QSFP-LR4-SM1310	100G LR4 optical transceiver, QSFP28 form factor, Duplex LC, 1310 nm, 10 km (32,808.40 ft.) over SMF

Model	Description
100G-QSFP-ER4-SM1310	100GE ER4 optical transceiver, QSFP28 form factor, Duplex LC, 1310 nm, 40 km (131,233.60 ft.) over SMF

400GE Optical Transceivers

Model	Description
400G-QDD-SR8-MM850	400G optical transceiver, QSFP-DD form factor, MPO-16 APC, 850 nm, 100 m (328.08 ft.) over MMF
400G-QDD-DR4-SM1310	400G optical transceiver, QSFP-DD form factor, MPO-12 APC, 1310 nm, 500 m (1,640.42 ft.) over SMF
400G-QDD-FR4-SM1310	400G FR4 module, QSFP-DD form factor, Duplex LC, 1310 nm, 2 km (6,561.68 ft.) over SMF
*400G-QDD-ZR-SM1550	400G ZR optical transceiver, QSFP-DD, Duplex LC, 1550 nm, 80 km (262,467.19 ft.) over SMF

For more information about optical transceiver compatibility, refer to *Ruijie RG-S6580 Series Data Center Switches Optical Transceiver Compatibility Matrix*.

Warranty

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

- Warranty terms: https://www.ruijie.com/support/servicepolicy
- Warranty period: https://www.ruijie.com/support/servicepolicy/Service-Support-Summany/

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.ruijie.com/
- Online support: https://www.ruijie.com/support
- Hotline support: https://www.ruijie.com/support/hotline
- Email support: service_rj@ruijie.com

Ruijie Networks Co., Ltd.

For more information, visit www.ruijie.com or call 86-400-620-8818.