RG-S6920-4C

Data Center Switch Datasheet

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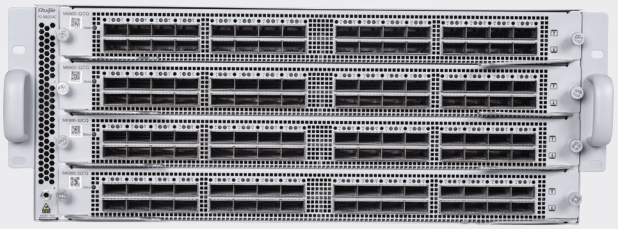
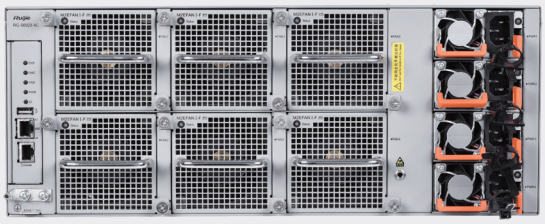
Product Pictures



Front View



Rear View

Isometric View

Product Overview

The RG-S6920-4C switch is a new-generation fixed switch released by Ruijie Networks for AI and other application scenarios. It is highlighted by its high performance and high density. It can be used with the RG-S6510 or RG-S6250 series switches to meet the design requirements of the spine-leaf network architecture.

Product Features

Next-Generation Data Center Network

The rapid development of AI/machine learning and other applications is driving the evolution of next-generation data center networks to 100GE/400GE networks. The next-generation data center network requires switches to have higher performance and greater bandwidth within a specific space. With a height of 4 RU, the RG-S6920-4C switch can provide a maximum of 128 100GE ports or a combination of 64 100GE ports and16 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-S6920-4C switch can work with the RG-S6510 series switches to build end-to-end, lossless, low-latency remote direct memory access (RDMA) networks based on priority-based flow control (PFC), explicit congestion notification (ECN), and other network flow control technologies as well as the memory management unit (MMU) technology. It meets network deployment requirements in scenarios such as AI/machine learning, high-performance computing, distributed storage, and big data.

Carrier-Class Reliability Protection

The RG-S6920-4C switch supports 2+2 power redundancy and 5+1 fan redundancy. All power supply modules and fan modules can be hot-swapped without affecting the normal operation of the device. The switch provides fault detection and alarm functions for power supply modules and fans. It automatically adjusts the fan speed based on temperature changes, to better adapt to the environment in data centers. The switch also supports device-level and link-level reliability protection as well as overcurrent protection, overvoltage protection, and overheating protection.

In addition, the switch integrates various link reliability mechanisms such as 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 overall reliability.

IPv4/IPv6 Dual-Stack Protocols and Multilayer Switching

The hardware of the RG-S6920-4C switch supports IPv4 and IPv6 protocol stacks and multilayer line-rate switching. The hardware processes IPv4 and IPv6 packets in a differentiated manner. The switch also integrates multiple tunneling technologies such as manual tunneling. Users can flexibly work out IPv6 inter-network communication solutions by using this switch based on IPv6 network planning and network conditions.

The RG-S6920-4C switch supports a wide range of IPv4 routing protocols, including static routing, Routing Information Protocol (RIP), Open Shortest Path First (OSPF), Intermediate System to Intermediate System (IS-IS), 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+. Appropriate routing protocols can be selected to upgrade an existing network to an IPv6 network or build a new IPv6 network.

All-Round Management Performance

The switch provides various management interfaces such as the console interface, management interface, and USB interface, and supports Simple Network Management Protocol (SNMP) v1/v2/v3 anthe d 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 ensure more secure management.

In addition, the switch supports the Switched Port Analyzer (SPAN)/Remote Switched Port Analyzer (RSPAN) and multiple SPAN monitoring ports. It can analyze network traffic and take proper management and maintenance measures accordingly, clearly presenting the service traffic on a network. The switch can provide various network traffic analysis reports so that users can optimize the network structure and adjust resource deployment in a timely manner.

Technical Specifications

Hardware Specifications

System Specifications

System Specifications	RG-S6920-4C
Ports	100GE/400GE ports
Expansion Modules	Four expansion modules, with each module supporting 32 × 100GE ports
Expansion Slots	Four power supply module slots Six fan module slots
Management Port	One management port, one console port, and one USB port, compliant with the USB2.0 standard
Switching Capacity	25.6 Tbps
Packet Forwarding Rate	8000 Mpps
802.1Q VLAN	4094

Dimensions and Weight

Dimensions and Weight	RG-S6920-4C
Dimensions (W × D × H)	442 mm × 173.5 mm × 735 mm, 4 RU
Weight	About 43.5 kg (including all line cards, power supply modules, and fans)

Power Supply and Consumption

Power Supply and Consumption	RG-S6920-4C
Maximum Power Consumption	1950 W
AC	Rated voltage range: 100 VAC to 240 VAC, 50 Hz to 60 Hz Maximum voltage range: 90 VAC to 264 VAC, 50 Hz to 60 Hz
High-voltage DC	Input voltage range: 192 VDC to 288 VDC

Environment and Reliability

Environment and Reliability	RG-S6920-4C
Operating Temperature	0°C to 40°C
Operating Humidity	10% to 90% RH (Non-condensing)

Software Specifications

Software Specifications	RG-S6920-4C
L2 Protocols	IEEE802.3ad (Link Aggregation Control Protocol), IEEE802.1p, IEEE802.1Q, IEEE802.1D (STP), IEEE802.1w (RSTP), IEEE802.1s (MSTP), IGMP Snooping, MLD Snooping, Jumbo Frame (9 KB), IEEE802.1ad (QinQ and selective QinQ), GVRP
L3 Protocols (IPv4)	BGP4, OSPFv2, RIPv1, RIPv2, MBGP, LPM Routing, Policy-based Routing (PBR), Route-policy, Equal-Cost Multi-Path Routing (ECMP), WCMP, VRRP, IGMP v1/v2/v3, DVMRP, PIM-SSM/SM/DM, MSDP, Any-RP
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+, MLDv1/v2, PIM-SMv6, manual tunnel and IPv4 over IPv6 tunnel
Data Center Features	PFC, ECN, and other data center features M-LAG RDMA OpenFlow 1.3
Visualization	gRPC sFLOW sampling INT
QoS	Mapping of IEEE 802.1p, DSCP, and ToS priorities ACL-based traffic classification Priority marking/remarking Multiple queue scheduling mechanisms, including SP, WRR, DRR, SP+WRR, 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

Software Specifications	RG-AP880-AR
Security Features	Network Foundation Protection Policy (NFPP), CPP, DDoS attack defense, illegitimate data packet detection, data encryption, source IP spoofing prevention, IP scanning prevention, RADIUS/TACACS, IPv4/v6 packet filtering by basic ACL, extended ACL or VLAN-based ACL, plaintext-based and MD5 ciphertext-based authentication for OSPF, RIPv2, and BGPv4 packets, telnet login and password mechanisms for restricted IP addresses, uRPF, broadcast packet suppression, DHCP Snooping, ARP spoofing prevention, ARP check, and hierarchical user management
Management Mode	SNMP v1/v2/v3, telnet, console, MGMT, RMON, SSHv1/v2, FTP/TFTP, NTP, Syslog, SPAN/RSPAN/ERSPAN, ZTP, NETCONF, Python, fan and power alarm function, temperature alarm function, and configuration rollback
Other Protocols	DHCP Client, DHCP Relay, DHCP Server, DNS Client, UDP relay, ARP Proxy, and Syslog

Configuration Guide

The configuration procedure for the RG-S6920-4C switch is as follows:

- Select the switch.
- Select expansion modules based on business requirements.
- Select the fan and power supply modules.
- Select Optical Transceivers based on port requirements.

Ordering Information

Chassis, Fan, and Power Supply Modules

Product Model	Description
RG-S6920-4C	Four expansion slots, four power supply module slots, and six fan module slots The power supply module model is RG-PA1200I-F and the fan model is M2EFAN I-F.
RG-PA1200I-F	Power supply module, supporting 2+2 redundancy, hot swapping, and front-to-rear ventilation design
M2EFAN I-F	Fan module, supporting 5+1 redundancy, hot swapping, and front-to-rear ventilation design

Expansion Modules

Product Model	Description
M6900-32CQ	32 x 100GE ports
M6900-16CQ4QC	16 × 100GE optical ports (QSFP28) + 4 × 400GE optical ports (QSFP-DD)

100GE Optical Transceivers

Product Model	Description
100G-QSFP-SR-MM850	100GE SR Optical Transceivers, QSFP28 package, MPO connector, and 850 nm wavelength The transmission distance is 100 m when OM4 optical fibers are used and 70 m when OM3 optical fibers are used.
100G-QSFP-iLR4-SM1310	100GE iLR Optical Transceivers, QSFP28 package, LC connector, and 1310 nm wavelength The maximum transmission distance is 2 km (applicable to single-mode optical fibers).
100G-QSFP-LR4-SM1310	100GE LR Optical Transceivers, QSFP28 package, LC connector, and 1310 nm wavelength The maximum transmission distance is 10 km (applicable to single-mode optical fibers).
100G-AOC-10M	100GE QSFP28 port cable (including modules on both ends), with a length of 10 m

Ruijie Networks Co., Ltd.

For further information, please visit our website https://www.ruijienetworks.com