RG-S6930-2C

Data Center 100GE/200GE DCI Core Switch

Ruijie

Product Pictures

RG-S6930-2C

M6900-36CQ18DC-CES Line Card

M6900-72CQ-CES Line Card

Product Overview

The RG-S6930-2C switch is a new generation high-density 100GE/200GE DCI switch, featuring 200GE/100GE access, large buffer, and complete data center features.

An RG-S6930-2C switch provides up to 144 x 100GE ports or 72 x 200GE ports, applied to data center gateway, MAN, and DCI scenarios.

| Product Features

Building Next-Generation Data Center Networks

Data Centers with Operable and Maintainable Traffic
To help customers set up data centers with operable and maintainable traffic, the RG-S6930-2C switch supports high-precision traffic collection, enhanced Encapsulated Remote Switched Port Analyzer (ERSPAN), Telemetry, and alarming for silent packet drop.

DCI
The RG-S6930-2C switch has a large buffer, maintains millions of routing entries, and supports * Multiprotocol Label Switching Segment Routing/Segment Routing v6 (MPLS SR/SRv6), helping customers to set up a MAN or DCI network with a low cost. The switch also supports the MACSec feature, which improves data transmission security.

Fast Fault Detection
With BGP support for BFD, the RG-S6930-2C switch can perform fast fault detection and traffic switchover, reducing traffic loss. The core and SDK allow non-stop fault recovery, minimizing the service interruption time.

Carrier-Class High Reliability

The RG-S6930-2C switch supports 2+2 power redundancy and 7+1 fan redundancy. All power modules and fan modules can be hot-swapped without affecting the normal operation of the switch. The switch provides fault detection and alarm functions for power supply and fan modules. It automatically adjusts the fan speed based on temperature changes, better adapting 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 the overall reliability.

*SR Feature, Bringing a More Intelligent Network

***MPLS-SR**
The RG-S6930-2C switch supports the MPLS-SR feature. Compared with MPLS LDP/TE, MPLS-SR enables more flexible routing, and can specify traffic forwarding paths at ingress nodes to meet user requirements for service path planning.

***SRv6**
SRv6 is a future-oriented new-generation network protocol that supports seamless connection to IPv6 networks. The RG-S6930-2C switch supports this feature. It can provide access for massive addresses, meeting requirements of numerous tenants. The SRv6 feature can define traffic forwarding paths based on the segment list and implement flexible routing to meet user requirements for service path planning.

IPv4/IPv6 Dual-Stack Protocols and Multilayer Switching

The hardware of the RG-S6930-2C switch supports IPv4 and IPv6 protocol stacks and multilayer line-rate switching. The hardware differentiates and processes IPv4 and IPv6 packets. The switch also supports 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 status quo.
The RG-S6930-2C switch supports numerous 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 routing protocols based on network environments to flexibly set up an IPv4 network.
The RG-S6930-2C switch also supports abundant IPv6 routing protocols, including static routing, Routing Information Protocol next generation (RIPng), OSPFv3, IS-ISv6, and BGP4+. Users can select routing protocols to upgrade an existing network to an IPv6 network or build 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/v2/v3 and universal network management platform. It supports CLI-based management, Telnet, and cluster management, which facilitates switch 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)/Encapsulated Remote Switched Port Analyzer (ERSPAN) and multiple mirroring destination ports. It can analyze network traffic and take proper management and maintenance measures accordingly, visualizing the service traffic on a network. The switch provides various network traffic analysis reports so that users can optimize the network structure and adjust resource deployment in a timely manner.

MACSec for Hardware-Level Data Encryption

The RG-S6930-2C switch supports MACSec, which provides users with MAC-layer data encryption, data frame integrity check, and data source authenticity check to ensure security.

Product Specifications

Hardware Specifications

System Specifications	RG-S6930-2C
Switching Capacity	28.8 Tbps
Packet Forwarding Rate	5400 Mpps
Port Specifications	RG-S6930-2C
Ports	100GE/200GE ports
Expansion Module Slots	Two, each slot supporting the line card with up to 72 x 100GE ports or 36 x 200GE ports
Expansion Modules	Four power module slots, supporting 2+2 redundancy Eight fan module slots, supporting 7+1 redundancy
Management Ports	One management port, one Console port, and one USB port
Dimensions and Weight	RG-S6930-2C
Dimensions (W × D × H)	442 mm x 760 mm x 175 mm (17.40 in. x 29.92 in. x 6.89 in., 4 RU)
Weight	33.55 kg (73.97 lbs., including eight fan modules and four power supply modules)
Power Supply and Consumption	RG-S6930-2C

Input Voltage	AC	Rated input voltage range: 100 V AC to 127 V AC (50 Hz to 60 Hz), rated input current: 12 A Rated input voltage range: 200 V AC to 240 V AC (50 Hz to 60 Hz), rated input current: 9.5 A Max input voltage range: 90 V AC to 264 V AC (47 Hz to 63 Hz)

System Specifications		RG-S6930-2C
Input Voltage	HVDC	Rated voltage: 240 V DC Rated input current: 8.5 A
Maximum Power Consumption		Max: 2934 W Typical: 1338 W Static: 600 W
Environment and Reliability		RG-S6930-2C
Operating Temperature		0ºC to 40ºC (32ºF to 104ºF)
Storage Temperature		–40ºC to +70ºC (–40ºF to +158ºF)
Operating Humidity		10% RH to 90% RH (non-condensing)
Storage humidity		5% RH to 95% RH (non-condensing)
Working altitude		Operating altitude: up to 5000 m (16,404.20 ft.) Storage altitude: up to 5000 m (16,404.20 ft.)

Software Specification

Software Specification	RG-S6930-2C
802.1Q VLAN	4094
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 (basic QinQ and *selective QinQ), and GVRP
L3 Protocols (IPv4)	BGP4, OSPFv2, IS-IS, RIPv1, RIPv2, MBGP, LPM Routing, Policy-based Routing, Routing Policy, ECMP, WCMP, VRRP, IGMP v1/v2/v3, PIM-SSM/SM/DM, MSDP, and Any-RP
Basic IPv6 Protocols	Neighbor Discovery, 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, and IPv6 QoS
IPv6 Features	Static routing, ECMP, PBR, BGP4+, OSPFv3, IS-ISv6, RIPng, MLDv1/v2, PIM-SMv6, manual tunnel, *automatic tunnel, IPv4 over IPv6 tunnel, and * ISATAP tunnel
Visualization	gRPC sFlow and IPFIX sampling
Data center features	Reporting buffer usage, queue traffic statistics, and packet drop statistics through gRPC Hang prevention MMU Querying queue peak time Displaying packet drop caused by insufficient buffer

Software Specification	RG-S6930-2C
Data center features	Displaying the number of buffer alarms Real-time buffer monitoring Reading unicast packet drop caused by buffer congestion through MIB
Multicast	IGMP Proxy、IGMP v1, v2, v3、IGMP host behavior、Querier election、Membership query and response、Static multicast route、IGMP fast leave、IGMP filter、IGMP v1 and v2 snooping、IVGL mode、Querier、Source IP address check、MLD proxy、MLDv1, v2、MLD snooping、MSDP、PIM-DM、PIM-SM v6(PIM-SM v6/PIM-SSM v6)、PIM-SMv4(PIM-SM/PIM-SSM)
ACL	ACL80、Dual-stack support for ACL、ACL-based redirection、IPv6 ACL、Standard IP ACL、Extended IP ACL、Extended MAC ACL、Ingress/Egress ACLs、Time-based ACL、Global ACL、Resource sharing in the case of applying an ACL on different physical ports or SVIs、ACL counter、ACL counter only、ACL logging、ACL re-marking、IPv4/IPv6 user-defined function(UDF) ACLvDisplaying ACL
QoS	802.1p, DSCP, and ToS priority mapping ACL-based traffic classification Priority marking and remarking Queue scheduling mechanisms, including SP, WFQ, and SP+WFQ
HA Design	GR for RIP/OSPF/BGP, BFD, REUP dual-link fast switching, RLDP unidirectional link detection, 2+2 power redundancy, fan redundancy, and hot swapping for all line cards and power supply modules
Security Features	MACSec, Network foundation protection policy (NFPP), CPU Protection Policy (CPP), DDoS attack defense, unauthorized data packet detection, 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 authentication for OSPF, RIPv2, and BGPv4 packets, uRPF, broadcast packet suppression, Telnet login and password mechanisms for restricted IP addresses
Management Modes	SNMP v1/v2/v3, Telnet, Console, MGMT, RMON, SSHv1/v2, FTP/TFTP, NTP, syslog, and SPAN/RSPAN/ERSPAN
Other Protocols	DHCP Client, DHCP Relay, DHCP Server, DNS Client, UDP Relay, ARP Proxy, and Syslog
*MPLS	MPLS L3VPN, SR, and SRv6

* indicates that the feature will be supported in the future.

Safety and Regulatory Compliance

Specification	RG-S6930-2C
Safety	GB 4943.1
Electromagnetic Compatibility (EMC)	GB/T 9254.1
Environment	2011/65/EU EN 50581 2012/19/EU EN 50419 (EC) No.1907/2006 GB/T 26572

* For more country-specific regulatory information and approvals, contact your local sales agency.

Typical Applications

Ultra-Large DCI
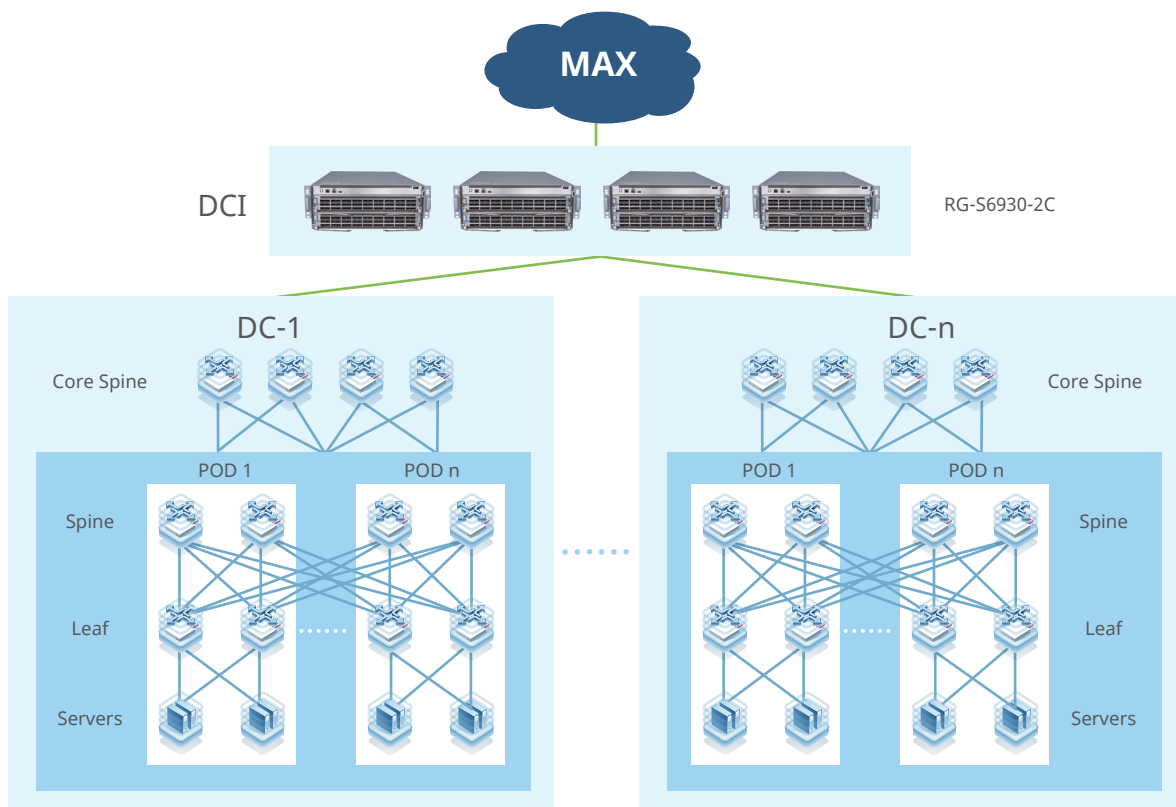
Configuration Guide

Take the following steps to configure an RG-S6930-2C switch:
Select an RG-S6930-2C chassis fully equipped with power supply and fan modules.
Select one or two line cards based on service requirements.

Ordering Information

Chassis and Supervisor Engine

Model	Description
RG-S6930-2C	RG-S6930-2C chassis equipped with four RG-PA1600II-F power supply modules and eight M2EFAN II-F fan modules Two expansion slots, four power supply module slots, and eight fan module slots

Power Supply Modules

Model	Description
RG-PA1600II-F	1600 W power supply module (AC and 240 V HVDC)

Fan Modules

Model	Description
M2EFAN II-F	Fan module (port-side intake)

Line Cards

Model	Description
M6900-36CQ18DC-CES	36 x 100GE QSFP28 ports and 18 x 200GE QSFP56 ports
M6900-72CQ-CES	72 x 100GE QSFP28 ports

200GBASE Series Optical Modules

Model	Description
200G-Q56-SR4-MM850	200G SR4 module, QSFP56 form factor, MPO-12 connector, 100 m (328.08 ft.) over OM4 MMF

100GBASE Series Optical Modules

Model	Description
100G-QSFP-LR4-SM1310	100G LR4 module, QSFP28 form factor, Duplex LC, 1310 nm, 10 km (32,808.40 ft.) over SMF
100G-QSFP-iLR4-SM1310	100G iLR4 module, QSFP28 form factor, Duplex LC, 1310 nm, 2 km (6,561.68 ft.) over SMF
100G-QSFP-SR-MM850	100G SR module, QSFP28 form factor, MPO, 850 nm, 100 m (328.08 ft.) over MMF
100G-QSFP-ER4-SM1310	100G ER4 module, QSFP28 form factor, Duplex LC, 1310 nm, 40 km (131,233.59 ft.) over SMF
100G-AOC-10M	100G QSFP28 AOC cable, 10 m (32.81 ft.)
100G-AOC-5M	100G QSFP28 AOC cable, 5 m (16.40 ft.)

40GBASE Series Optical Modules

Model	Description
40G-QSFP-iLR4-SM1310	40G iLR4 module, QSFP+ form factor, Duplex LC, 2 km (6,561.68 ft.) over SMF
40G-QSFP-LR4-SM1310	40G LR4 module, QSFP+ form factor, Duplex LC, 10 km (32,808.40 ft.) over SMF
40G-QSFP-LSR-MM850	40G LSR module, QSFP+ form factor, MPO, 400 m (1,312.34 ft.) over MMF
40G-QSFP-SR-MM850	40G SR module, QSFP+ form factor, MPO, 150 m (492.13 ft.) over MMF
40G-QSFP-LX4-SM1310	40G LX4 module, QSFP+ form factor, Duplex LC connector, 150 m (492.13 ft.) over OM3/OM4 MMF, or 2 km (6,561.68 ft.) over SMF
40G-AOC-30M	40G QSFP+ AOC cable, 30 m (98.43 ft.)
40G-AOC-5M	40G QSFP+ AOC cable, 5 m (16.40 ft.)

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-Support-Summary/

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