

RG-CR5016XS Series

Cloud-Managed Intelligent Router



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Product Overview

Introduction

With the rise of social networking, cloud computing, and big data, the Internet has entered a new era of growth. However, the network has become increasingly complex, bringing huge challenges to traditional routers. Drawing on extensive expertise and the evolution toward next-generation routers, Ruijie Networks has unveiled the RG-CR5016XS cloud-managed router to cater to the ever-changing demands of today's market. The router is 19-inch rack-mountable, delivering high performance and flexible expansion.

Product Features and Benefits

The RG-CR5016XS uses Cybrey App and Cybrey Cloud to provide intelligent rapid deployment, intelligent operation and management (O&M), one-click fault analysis, and service health diagnosis, simplifying device deployment and O&M. It has rich network functions, including Network Address Translation (NAT), multi-WAN load balancing, URL filtering, Software-Defined Wide-Area Network (SD-WAN), application control, and Denial-of-Service/Distributed Denial-of-Service (DoS/DDoS) attack defense. The device also supports unified management on the cloud platform, cloud-based data synchronization for analysis and reporting, remote monitoring and O&M, batch configuration, and automatic inspection.

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Product Appearance

RG-CR5016XS



Front View



Side View



Top View



Bottom View

Appearance Design

The unique mounting bracket design allows rapid deployment, simplifying the installation process. In a complex equipment environment, only one technician is needed to complete the device installation and securing processes.

All-New Hardware Design, Higher Reliability

Voltage fluctuations and power-grid anomalies may cause storage component failures. To mitigate this risk, the router incorporates monitoring and redundant hardware to boost storage-unit shock resistance, reducing the chances of hardware damage and data loss.

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Product Highlights

- Supports integration with Property Management System (PMS) . No additional software deployment is required.
- Screen mirroring is available without QR code scanning.
- Portal authentication integrates with AD or Microsoft Entra ID (Azure AD) with no need for standalone software deployment.
- Provides a comprehensive application library with more than 7,000 applications.
- Features a URL classification signature library with millions of URLs and supports automatic remote updates.
- Delivers cloud-based unified visibility and management for SD-WAN. Supports multi-link bundling and application-based routing.

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Product Features

Simplified Property Management System (PMS) Integration

Featuring PMS-integrated portal authentication, this solution removes the requirement for third-party portal servers and costly hotel-specific gateways, reducing integration costs by up to 80%.

All-in-One Design and One-Click Screen Mirroring

Guests can connect to the AP using their room numbers to cast content directly onto in-room TVs. QR-code scanning is not required, and mis-casting risks are avoided. In a 300-room hotel, this solution reduces the number of screen-mirroring VLANs from 300 down to 2 when compared with the GPSK solution.

Simplified Authentication

Portal authentication integrates with AD or Microsoft Entra ID (Azure AD) with no need for standalone software deployment. Authentication deployment steps are reduced by 60%.

SD-WAN Networking

It satisfies interconnection requirements between headquarters and chain branches even without public IP addresses, and delivers cloud-based unified visibility and management. It also supports multi-link bundling and application-aware routing, achieving bandwidth utilization above 90% to maximize bandwidth efficiency.

Intelligent Service Diagnostic Center

• Fault Analysis

The RG-CR5016XS embeds diagnostic capabilities derived from senior-level engineer troubleshooting expertise, delivering a one-stop troubleshooting wizard. Within the diagnostic center, automatic troubleshooting runs along paths between clients and target resources, presenting fault details and remediation suggestions. This significantly boosts troubleshooting efficiency and reduces extra troubleshooting-related costs.

• Packet Tracing

The diagnostic center also supports analysis and tracing of packet processing across each network service module on the device. Detailed packet-tracing records can be reviewed to accelerate network fault troubleshooting and locating.

05 Product Specifications

Performance and Capacity

Item	RG-CR5016XS Series
Throughput	15 Gbps
Maximum number of concurrent Clients	7,000
Maximum number of concurrent sessions	2,500,000
New sessions per second	143,000
Maximum number of concurrent clients (PPPoE server)	2,000
SSL VPN throughput	2.2 Gbps
Maximum number of concurrent SSL VPN users	2,000
IPsec VPN throughput	9.9 Gbps
Maximum number of branches (IPsec VPN networking)	2,000
WireGuard throughput	2.4 Gbps
Maximum number of concurrent tunnels (WireGuard server)	1,500
SD-WAN throughput	2.4 Gbps
Maximum number of SD-WAN tunnels	6,000
Maximum number of SD-WAN branches	1,000

Hardware Specifications

• Dimensions and Weight

Item	RG-CR5016XS
Product dimensions (W x D x H)	442 mm x 420 mm x 43.6 mm (17.40 in. x 16.54 in. x 1.72 in.)
Shipping dimensions (W x D x H)	555 mm x 518 mm x 170 mm (21.85 in. x 20.39 in. x 6.69 in.)
Product weight	4.8 kg (10.58 lbs)
Shipping weight	6.65 kg (14.66 lbs)
Form factor	1 RU

• Port Specifications

Item	RG-CR5016XS
Fixed service port	8 x 10/100/1000BASE-T ports
	4 x 10/100/1000/2500BASE-T ports
	4 x 10GE SFP+ ports
Fixed management port	1 x RJ45 MGMT port (reusing LAN0)
	1 x RJ45 console port
USB port	1 x USB 3.0 port
4G port	Not supported

• Storage Specifications

Note: Session logs and local reports are not available without a hard disk

Item	RG-CR5016XS
Flash memory	64 GB eMMC
Hard disk slot	1 x 2.5-inch SATA hard disk slot

• Hard Disk Specifications

Item	RG-NSEC-SSD-480G-B-M	RG-NSEC-HDD-1T-B
Size	79.2 mm x 109.5 mm x 19.2 mm (3.12 in. x 4.31 in. x 0.76 in.)	79.2 mm x 109.5 mm x 19.2 mm (3.12 in. x 4.31 in. x 0.76 in.)
Port type	SATA	SATA
Storage capacity	480 GB	1 TB
Hard disk type	Solid state drive	Mechanical hard disk drive (HDD)
Maximum power consumption	2.4 W	3.5 W
Hot swapping	Not supported	Not supported
Product weight	0.2 kg (0.44 lbs)	0.25 kg (0.55 lbs)

Power Module Specifications

The RG-CR5016XS supports swappable power modules. The chassis is delivered without a power module.

Item	RG-PA150IB-F
Dimensions	50.5 mm x 196 mm x 40 mm (1.99 in. x 7.72 in. x 1.57 in.)
Device weight	0.55 kg (1.21 lbs)
Rated input voltage	AC: 100 V AC to 240 V AC, 50/60 Hz High-voltage direct current (HVDC): 190 V DC to 290 V DC
Rated input current	3 A MAX
Rated output voltage	12 V
Maximum output current	12.5 A
Maximum output power	150 W
Earth leakage current	□ 3.5 mA
Temperature	Operating temperature: -10° C to +55° C (14° F to 131° F)
	Storage temperature: -40° C to +70° C (-40° F to +158° F)
Humidity	Operating humidity: 5% RH to 95% RH (non-condensing)
	Storage humidity: 5% RH to 95% RH (non-condensing)
Altitude	Operating altitude: 0 m to 5,000 m (0 ft. to 16404.20 ft.)
Hot swapping of power module	Supported When two power modules are configured on the device for power redundancy, one power module may be disconnected from the external power source, removed, and reinstalled while the device remains in operation.

Power Supply and Consumption

Item	RG-CR5016XS
Power supply	100 V AC to 240 V AC, 50/60 Hz (x 2)
Maximum power consumption	75 W

Environment and Reliability

Item	RG-CR5016XS
Operating temperature	0° C to 45° C (32° F to 113° F)
Storage temperature	-40° C to +70° C (-40° F to +158° F)
Operating humidity	10% RH to 90% RH (non-condensing)
Storage humidity	5% RH to 95% RH (non-condensing)
Operating altitude	0 m to 5,000 m (0 ft. to 16,404.20 ft.)
Fan	2 x built-in fixed fan

Regulatory Compliance

Item	RG-CR5016XS
RoHS	Yes
Safety compliance	IEC 62368-1:2014
EMC	EN 55032:2015+A11:2020+A1:2020,BS EN55032:2015+A11:2020+A1:2020,EN 61000-3-3:2013+A1:2019+A2:2021,BS EN 61000-3-3:2013+A1:2019+A2:2021,EN IEC 61000-3-2:2019+A1:2021+A2:2024,BS EN IEC 61000-3-2:2019+A1:2021+A2:2024,EN 55035:2017+A11:2020,BS EN 55035:2017+A11:2020,EN300386V2.2.1

Software Specifications

Basic Configurations

Item	RG-CR5016XS
Routing mode	Static IP address, static IPv6 address, dynamic IP address, dynamic IPv6 address, and PPPoE
Configuration backup	Yes
Local upgrade	Yes
Online upgrade	Yes
Restoring factory defaults	Yes
AC mode	No

• Authentication

Item	RG-CR5016XS
Local portal authentication	Yes
Cloud portal authentication	Yes
One-click authentication	Yes
Password authentication	Yes
SMS-based authentication	Yes
Voucher authentication supported by Ruijie Cybrey Cloud	Yes
QR code authentication	No
Custom portal page	Yes
Account-based authentication supported by Ruijie Cybrey Cloud	Yes
Account-based authentication with Microsoft Entra ID	Yes
Local cache for cloud authentication	Yes
802.1X authentication	No
PPPoE server	Yes
RADIUS client	Yes
RADIUS accounting (time-based/traffic-based)	Yes
RADIUS flow control authorization	Yes
RADIUS proxy server	No
RADIUS traffic quota authorization	Yes
RADIUS user group authorization	Yes
WISPr	Yes
WiFiDog	Yes
SSO for the AD domain	Yes

• Ethernet Interface

Item	RG-CR5016XS
IP conflict prevention on WAN interfaces	Yes
Multiple IP addresses per WAN interface	Yes
Load balancing	Yes
MAC address cloning	No
Multiple WAN interfaces on the same subnet	Yes
PPPoE client	Yes
Scheduled PPPoE reconnection	No
Multi-VLAN provisioning via configuration delivery	No
Link aggregation	Yes
LLDP	Yes
VLAN	Yes
VLAN configuration on LAN interfaces	Yes
Super-VLAN	No
Shared VLAN tag across multiple WAN interfaces	Yes
VLAN priority	Yes

• Gateway Features

Item	RG-CR5016XS
WAN failover	Yes
Application priority	Yes
Application recognition	Yes
Behavior management	Yes
Traffic control	Yes
Time-based blocking policy	Yes
IP address-based blocking policy	Yes
URL filtering	Yes
Keyword filtering	Yes
File filtering	Yes

• IP Routing

Item	RG-CR5016XS
Application-based routing	Yes
Bandwidth aggregation	Yes
BGP	Yes
BGP4	Yes
BGP4+	Yes
ECMP	No
IPv4 static route	Yes
IPv6 PBR	Yes
Route selection via country-level address database	No
IPv6 static route	Yes
IS-ISv4	No
IS-ISv6	No
Flow-based load balancing	Yes
Load balancing based on source IP addresses	Yes
Load balancing based on the interface weight	Yes
Route selection by link quality	Yes
OSPFv2	Yes
OSPFv3	Yes
RIP	Yes
RIPng	Yes

• IP Service

Item	RG-CR5016XS
ALG	Yes
ARP binding	Yes
Proxy ARP	Yes
DDNS	Cloudflare, 3322.org, No-IP

Item	RG-CR5016XS
DDNSv6	Yes
DHCP client	Yes
DHCP server	Yes
DHCP relay	No
DHCP option 43; DHCP option 138	Yes
Static/Dynamic NAT	Yes
NAT-PT	No
NAT loopback	Yes
DNS client	Yes
DNS proxy	Yes
DNS server	Yes
GRE tunnel	Yes
IPTV	Yes
IPv4 ping	Yes
IPv6	Yes
IPv6 ping	Yes
Port mapping	Yes
UPnP	Yes

• Network Management and Monitoring

Item	RG-CR5016XS
Web management	Yes
Ruijie Cybrey Cloud management	Yes
Ruijie Cybrey App management	Yes
Fault diagnosis	Yes
FTP client	No
FTP server	No
TFTP client	No

Item	RG-CR5016XS
TFTP server	No
HTTPS login	Yes
NTP client	Yes
NTP server	No
Scheduled device restart	Yes
SNMPv1, v2c, and v3	Yes
SON	Yes
SSH	Yes
Telnet	No

• Reliability

Item	RG-CR5016XS
HA	Active-Passive mode Active-Active mode
VRRP	Yes

• SD-WAN

Item	RG-CR5016XS
SD-WAN	Yes
Active/Standby mode (automatic switchover upon the active interface failure)	Yes
Centralized traffic forwarding policy	Yes

• Security

Item	RG-CR5016XS
Local attack defense	Yes
DHCP snooping	Yes
Malformed packet attack defense	Yes
Fragmentation attack defense	Yes
Teardrop attack defense	Yes
LAND attack defense	Yes

Item	RG-CR5016XS
SYN flood attack defense	Yes
Smurf attack defense	Yes
IP attack defense	Yes
Disabling ping	Yes
IP-MAC binding	Yes
ARP guard	Yes
Security log	Yes
DNS protection	Yes
Blocklist	IPv4 blocklist, IPv6 blocklist, MAC address blocklist, and user blocklist
Allowlist	IPv4 allowlist and IPv6 allowlist

• VPN

Item	RG-CR5016XS
IPsec VPN	Yes
L2TP VPN	Yes
OpenVPN	Yes
PPTP VPN	Yes
SSL VPN	Yes
WireGuard server	Yes
WireGuard client	Yes
Easy VPN	No

06 Ordering Information

Model	Description
RG-CR5016XS	Rack-mountable router. Throughput: 15 Gbps; maximum number of concurrent clients: 7,000; 8 x 1GE RJ45 ports, 4 x 2.5GE RJ45 ports, 4 x 10GE SFP+ ports; 64 GB flash memory, 8 GB RAM; 2 x hot-swappable power supply slots (purchase at least one power module); hard disk expansion support
RG-PA150IB-FC	150 W AC power module
RG-NSEC-SSD-480G-B-M	480 GB SSD expansion module
RG-NSEC-HDD-1T-B	1 TB HDD expansion module

Note: To ensure syslog security and system stability, use only Ruijie-supplied hard disks. Ruijie shall not be liable for hardware damage, syslog loss, or performance degradation caused by third-party hard disks. Unauthorized third-party hard disks do not come with Ruijie-provided hard-disk trays and may result in hardware malfunctions. Furthermore, insufficient hard-disk IOPS ratings or improper hard-disk partitioning may trigger system failures.

07 Ordering Guide

The RG-CR5016XS supports swappable power modules. The chassis is delivered without a power module. At least one power module should be purchased.

Model	Description
RG-PA150IB-FC	150 W AC power module

The RG-CR5016XS provides 4 x 10GE SFP+ ports. The following table lists the optional optical transceivers.

Model	Description
XG-SFP-SR-MM850	10G SR module, SFP+ form factor, Duplex LC, 300 m (984.25 ft., with OM3 optical cables) or 400 m (1312.34 ft., with OM4 optical cables) over MMF
XG-SFP-LR-SM1310	10G LR transceiver, SFP+ form factor, duplex LC, 10 km ((32,808.40 ft.) over SMF
XG-SFP-ER-SM1550	10G ER transceiver, SFP+ form factor, duplex LC, 40 km (131,233.60 ft.) over SMF
XG-SFP-ZR-SM1550	10G ZR transceiver, SFP+ form factor, duplex LC, 80 km (262,467.19 ft.) over SMF
XG-SFP-LR10-SM1270-BIDI-I	10G LR transceiver, SFP+ form factor, BiDi LC, 10 km (32,808.40 ft.) over SMF
XG-SFP-LR10-SM1330-BIDI-I	10G LR transceiver, SFP+ form factor, BiDi LC, 10 km (32,808.40 ft.) over SMF
XG-SFP-AOC1M	10G SFP+ AOC cable, 1 m (3.28 ft.)
XG-SFP-AOC3M	10G SFP+ AOC cable, 3 m (9.84 ft.)
XG-SFP-AOC5M	10G SFP+ AOC cable, 5 m (16.40 ft.)
XG-SFP-T	10G SFP+ copper transceiver, SFP+ form factor, RJ45 connector, 100 m (328.08 ft.) over Cat 6a/7 cable

08 Package Contents

Item	Quantity
RG-CR5016XS chassis	1
Grounding wire	1
Rubber pad	4
L-shaped rack-mount bracket	2
M4 x 8 mm cross recessed countersunk head screw	10
Rear mounting bracket	2
Guide rail	2
Warranty card	1
User manual	1

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Warranty Information

Security Defense at Area Boundary

For more information about warranty terms and period, visit the official Ruijie website or contact your local sales agency:

- Warranty terms: <https://www.ruijie.com/support/servicepolicy>
- Warranty period: <https://www.ruijie.com/support/servicepolicy/Service-Support-Summary/>

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

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More Information

Security Defense at Area Boundary

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

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