# RG-CR5016XS Cloud-Managed Router Datasheet （1.0）

## RG-CR5016XS Cloud-Managed Router

Datasheet

V1.0

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Ruijie Networks Co., Ltd.

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# 1. Product Overview

### Introduction

As new hot spots such as social networking, cloud computing, and big data have emerged, the Internet has entered an unprecedented era of prosperity. However, the network have become increasingly complex, bringing huge challenges to the traditional router. Drawing on years of technological expertise and in line with the development trend of next-generation router, Ruijie Networks has unveiled the RG-CR5016XS cloud-managed router to cater for ever-changing demands of today's market. This router can be installed on a standard 19-inch rack and features high performance and flexible expansion.

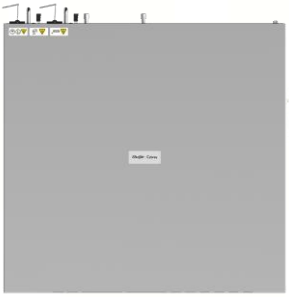
### Product Features and Benefits

The RG-CR5016XS router use SON, SME APP and  SME cloud to provide intelligent quick deployment, intelligent operation and management, one-click fault analysis, and service health diagnosis, simplifying device deployment and O&M. It has rich network functions, including NAT, multiple WAN loadbalance, URL  filtering, SD-WAN, application control, and defense against DoS/DDoS attacks. They also support unified management on the cloud platform, data synchronization to the cloud for analysis and reporting, remote monitoring and O&M, batch configuration, and automatic inspection.

# 2. Product Appearance









## Appearance Design

- The RG-CR5016XS  adopts a brand new router product design style of Ruijie Networks. The symmetrical, concise, octagonal-corner appearance reflects simplicity and high reliability.
- The octagonal corners are user-friendly.
- The unique mounting bracket design allows rapid deployment, simplifying the installation process. In a complex equipment room environment, only one person is needed to complete the device installation and securing processes.

## Hardware Security

Different from common software-based defense, the RG-CR5016XS  router implements attack defense by using an exclusive built-in anti-DoS/DDoS component on the CPU. This significantly improves the DoS/DDoS attack defense performance and enables more robust and secure networks.

## All-New Hardware Design, Higher Reliability

A voltage or grid exception may incur a storage component failure. To cope with this risk, add monitoring and spare components on the router to enhance the capability of storage components to withstand shocks, thereby reducing device damages and data loss.

# 3. Product Highlights

- Supreme Capacity Up to 500 concurrent Clients
- The Brilliant Brain of Network Management
- Freely Open to Third-Party Authentication Integration

- Easy Intranet Connection
- Terminal Recognition for Easy Management & Bandwidth Management
- Easy VPN Configuration
- Exclusive built-in anti-DoS/DDoS component on the CPU
- Transforming the troubleshooting capabilities of senior engineers into product functions, provides you with a one-stop troubleshooting wizard.
- SD-WAN makes your networks site-to-site connection more easy

# 4. Product Features

## Simple Cloud O&M, Remote Device Commissioning

Administrators can remotely manage and control the router through SME Cloud. Device configurations can be delivered uniformly, and device monitoring and other routine O&M functions can be implemented remotely.

## Integrated Implementation and O&M on Ruijie SME App

You can use Ruijie SME App to perform quick onboarding and follow-up O&M of the router on a mobile phone. In addition, configurations can be delivered on this app, greatly improving the efficiency of implementation and O&M.

## Hot Upgrade/Recovery

Hot patches can be installed in seconds to upgrade forwarding components, management components, and some system components and restart these components without affecting device running. This greatly improves the maintainability and stability of the device.

If the forwarding component encounters an exception during device running, second-level automatic hot restart can be performed, without manual discovery and device restart for recovery. The forwarding recovery time is reduced from minutes or even hours to seconds, which greatly reduces the impact on normal services of users.

## Intelligent Service Diagnostic Center

### Fault Analysis

The RG-CR5016XS  router is developed to transform the troubleshooting capabilities of senior engineers into product functions and provides you with a one-stop troubleshooting wizard. In the diagnostic center, automatic troubleshooting can be

conducted based on the paths that clients use to access target resources, and fault information and handling suggestions are displayed. This greatly improves the efficiency of troubleshooting and saves additional expenses for troubleshooting.

### Packet Tracing

In the diagnostic center, you can also analyze and trace packet processing of each network service module on the device, and check detailed information of packet tracing records to accelerate network fault troubleshooting and locating.

### New NTOS Operating System, High Efficiency

The router adopts an advanced multi-core lock-free design. Typically, a router has multiple CPUs. Without lock-free design, when multiple CPUs compete for data from a common memory pool for processing, a CPU obtains data and locks it, and the other CPUs can process the data only after it is unlocked, resulting in low efficiency. The router uses the industry-leading multi-core lock-free design, and designates an independent space in the memory for each CPU. The CPU can obtain data from the designated memory space, so data does need to be locked and no conflict will occur. Data is also stored independently. For example, data from the same IP address source is stored in one memory unit and is processed by the same CPU. This multi-core lock-free design is applied at each of the four layers of the TCP/IP model, significantly improving efficiency.

## 5. Product Specifications

### Product Performance

| System Performance and Capacity | RG-CR5016XS |
|---|---|
| throughput (1518-byte UDP packets) | 15 Gbps |
| Concurrent sessions (TCP) | 2500000 |
| New sessions/second (TCP) | 143000 |
| SSL VPN throughput (1392-byte) | 2.7 Gbps |
| Concurrent SSL VPN users (recommended maximum, tunnel mode) | 2000 |
| Application control throughput (HTTP 64K)2 | 9.1 Gbps |
| IPsec VPN throughput (1418-byte) | 5 Gbps |

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|---|---|
| Gateway-to-gateway IPsec VPN tunnels | 2000 |

## Hardware Specifications

### Dimensions and Weight

| **Dimensions and Weight** | RG-CR5016XS |
|---|---|
| Product dimensions (W x D x H) | 440mm × 420mm × 43.6mm |
| Shipping dimensions (W x D x H) | 555mm × 518mm × 170mm |
| Product weight | 5.7kg |
| Shipping weight | 7.2kg |
| Form factor | 1 RU rack |

### Port Specifications

| Port Specifications | RG-CR5016XS |
|---|---|
| Fixed service port | 8x 10/100/1000BASE-T ports<br>4 x 10/100/1000BASE-T/25001000BASE-T ports<br>4 x 10GE SFP+ ports |
| Fixed management port | 1 x RJ45 MGMT port<br>1 x RJ45 console port |
| USB port | 1 USB3.0 port |
| 4G port | Not supported |

### Storage Specifications

| Storage | RG-CR5016XS |
|---|---|
| Hard disk | 1 Hard disk slot |

## Power Supply and Consumption

| Power Supply and Consumption | RG-CR5016XS |
| --- | --- |
| Power supply | 90V AC~264V AC，50/60Hz |
| Max. Power Consumption | 75W |

## Environment and Reliability

| Environment and Reliability | 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) |
| Noise level | |
| Operating altitude | 0m-5000m |
| Compliance | |

# Software Specifications

## Network

| Network | RG-CR5016XS |
| --- | --- |
| Physical | Configuring interfaces as LAN/WAN interfaces; three IP address |

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|---|---|
| interface | assignment modes for WAN interfaces: PPPoE, DHCP, and static IP modes<br>Configuring routing or transparent mode for interfaces |
| Sub-interface | Configuring sub-interfaces and VLAN IDs |
| Bridge interface | Configuring interfaces in transparent mode as bridge interfaces |
| Static route | Configuring IPv4 static routes |
| PBR | Configuring policy-based routing (PBR) |
| Routing table | Overall routing information of a device |
| DHCP server | DHCP server; configuring DHCP address pools |
| Address management list | Assigned DHCP address list |
| DNS server | Configuring DNS addresses for devices |
| Link detection | Link detection and link detection logs |
| VPN | SSL VPN and IPsec VPN |
| VRRP | VRRP functions |
| High availability | Deployment with redundancy to achieve automatic switchover between active and passive devices, ensuring service continuity |
| SD-WAN | Integrate with cloud platforms to achieve unified orchestration and monitoring of multiple branches |
| PMS integration | PMS integration, connecting with the hotel's PMS system to enable easy authentication for guests' internet access |

## Object

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|---|---|
| Object | RG-CR5016XS |
| Address/Address group | Configuring address objects in IP address/range format |
| Zone | Configuring security zones |
| Application and application group | Configuring application types in application/application group mode |
| Service/Service group | Configuring service objects; common default port services supported |
| Time plan | Configuring time objects; one-off time plans and cyclic time plans supported |
| SSL proxy certificate | Adding, importing, deleting, viewing, and downloading SSL proxy certificates; configuring a global SSL proxy certificate |
| Server certificate | Importing, deleting, viewing, and downloading server certificates |
| Content identification | URL category and keyword configuration |
| User authentication | User management, user import, authentication server configuration, real-name user information synchronization, and authentication policy configuration |

## Policy

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|---|---|
| Policy | RG-CR5016XS |
| NAT | NAT and NAT policies |
| Policy import | Batch import of NAT policies |

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|---|---|
| ALG | Common NAT ALG services in NAT policy |
| Server mapping | Server port mapping in NAT policy |
| Address pool | NAT address pool status display in NAT policy |
| DoS/DDoS attack defense | Different DDoS attack defense policies in security defense |
| ARP attack defense | Anti-ARP spoofing, ARP flooding suppression, and other functions in security defense |
| Local defense | Configuring local defense policies in security defense |
| Blocklist/Allowlist | Configuring global blocklists and allowlists |
| SSL proxy policy | Configuring SSL proxy policies; customizing policies based on parameters including objects, contents, and zones; policy list |
| SSL proxy template | Configuring SSL proxy templates; setting the template type to protecting client or server |
| Allowlist | Configuring domain name allowlists and application allowlists |
| Allowlist | Configuring domain name allowlists and application allowlists |
| Behavior analysis | Configuring analysis policies, templates, and allowlists |

## System

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|---|---|
| System | RG-CR5016XS |
| Administrator | Creating device administrators, including account names, passwords, and description |
| Administrator role | Setting multiple administrator roles and assigning different permissions |
| Clock | Configuring system time; NTP service configuration supported |

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|---|---|
| configuration | |
| Service parameter | Configuring service ports for a device, including web (HTTPS), SSH, and other ports |
| Device information | Viewing device information, including the product name, SN, and MAC address, version information, running time, and license information |
| System restart | Restarting the system on the web UI |
| System upgrade | Upgrading the system |
| Patch installation | Downloading and installing patches for upgrade |
| Configuration backup | Import and export of device configurations |
| Factory settings restoration | Restoring factory settings on the web UI |
| Cloud management platform | Enabling or disabling unified management on the cloud management platform |
| Device binding | Adding devices to the cloud management platform by scanning a QR code |
| Ping | Ping for troubleshooting |
| Tracert | Tracert for troubleshooting |
| Packet obtaining tool | Tool for obtaining packets and exporting results |
| One-click collection | Collecting fault information with one click |
| Device health | Device health diagnosis |
| Service diagnosis | Service continuity diagnosis |

| | |
|---|---|
| Breakdown record | Breakdown information records |
| Device log retention | Device log retention |
| Factory settings restoration | Restoring factory settings on the web UI |
| API | Open APIs facilitate integration and docking with other third-party platforms |

### O&M

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|---|---|
| O&M | RG-CR5016XS |
| Dashboard | Dashboard provides insights into the network's status and network operation status |
| Reports | Reports periodically or regularly generate network status and network reports, |
| Fault diagnosis | Fault diagnosis helps quickly locate and resolve network and security issues |

## 6. Ordering Information

| Model | Description |
|---|---|
| RG-CR5016XS | Routing throughput: 15 Gbps; 8 x GE RJ45 Ports, 4 x 2.5GE RJ45 Ports, 4 x 10GE SFP+ Ports; Built-in 64 GB Storage, 8GB RAM; 2 x 150W Hot-swappable Power Supplies; Hard Disk Expansion Support |
| RG-NSEC-SSD-480G-B-M | 480 GB SSD Expansion Module |
| RG-NSEC-HDD-1T-B | 1 TB HDD Expansion Module |

Note:

a. To ensure syslog security and system stability, please use hard disks from Ruijie. Ruijie will not be responsible for any hardware damage, syslog loss, or performance degradation resulting from the use of third-party hard disks. An unauthorized third-party hard disk does not have a hard disk tray provided by Ruijie, which will cause hardware malfunctions. In addition, insufficient hard disk IOPS specifications and improper hard disk partitioning may lead to system failures.

## 7. Ordering Guide

The RG-CR5016XS router provides one GE SFP port and one 10GE SFP+ port. The following table lists the optional optical transceivers.

| Model | Description |
| --- | --- |
| MINI-GBIC-SX-MM850 | 1G SR module, SFP form factor, LC, 550 m (1,804.46 ft.) over MMF |
| MINI-GBIC-LX-SM1310 | 1G LX module, SFP form factor, LC, 10 km (32,808.40 ft.) over SMF |
| Mini-GBIC-GT | 1G SFP copper module, SFP form factor, RJ-45, 100 m (328.08 ft.) over Cat 5e/6/6a |
| MINI-GBIC-LH40-SM1310 | 1G LH module, SFP form factor, LC, 40 km (131,233.60 ft.) over SMF |
| XG-SFP-LR-SM1310 | 10G LR module, SFP+ form factor, LC, 10 km (32,808.40 ft.) over SMF |
| XG-SFP-ER-SM1550 | 10G ER module, SFP+ form factor, LC, 40 km (131,233.60 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.) |

## 8. Package Contents

| Item | Quantity（RG-CR5016XS） |
| --- | --- |
| Host | 1 |
| Yellow/Green grounding cable | 1 |
| Rubber pad | 4 |
| Console cable | 1 |
| Warranty Card | 1 |
| User Manual | 1 |

## 9. Warranty Informatio

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-Summany/

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

## 10. 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