Ruijie | Cybrey



RG-CNC312

Datasheet

Product Overview

The RG-CNC312 high-performance network controller (CNC) is developed to support next-generation high-speed wireless networks. It can be deployed on either a Layer 2 or Layer 3 network without any architecture or hardware changes, implementing seamless and secure control. The RG-CNC312 can manage up to 32 wireless access points (APs) by default. With licenses for capacity expansion, it can manage up to 512 generic APs or 1,024 wall plate APs.

Through powerful centralized and visualized management and control over wireless networks, the RG-CNC312 can significantly simplify construction and deployment of wireless networks. The RG-CNC312 can be used with same brand APs and Cloud -- a unified management platform for wired and wireless networks, to achieve flexible control of APs, optimize RF coverage and performance, implement cluster management, and reduce the workload of device deployment.

By adopting enhanced security and clustering technologies, the RG-CNC312 offers identity-based networking services. Multiple CNCs in a cluster can share a user database, allowing clients to seamlessly roam in different areas of a network. The cluster design guarantees security and session integrity during roaming and smooth interaction of data and voice over Wi-Fi applications.

Product Highlights

High-Speed Forwarding

- Increased forwarding capacity with 10 Gbps connections.
- Centralized/Distributed, integrated, and intelligent local forwarding, eliminating the traffic bottleneck of the wireless access controller.

Intelligent Management

- Advanced wireless access controller technology for fast roaming.
- Intelligent load balancing through band steering.
- Dynamic QoS based on channel utilization, unleashing full wireless capacity.
- Intelligent RF management, enabling flexible AP configuration and optimizing RF coverage and performance

Secure and Reliable Network Systems

- Advanced AC virtualization technology for high reliability as well as capacity and

performance scaling.

- Virtual AP technology, managing APs by group to isolate guest and business traffic.
- Dynamic network policy for identity-based access control.
- Authentication and encryption technologies including WPA3, 802.1X, PSK, WEP, and AES for enhanced data security.

Product Specifications

Hardware Specifications

Dimensions and Weight

Dimensions and Weight	
Unit dimensions (W x D x H)	440 mm x 200 mm x 43.6 mm (17.32 in. x 7.87 in. x 1.72 in., without rack-mount brackets) 486.2 mm x 205 mm x 43.6 mm (19.14 in. x 8.07 in. x 1.72 in., including rack-mount brackets)
Shipping dimensions (W x D x H)	-
Rack height	1 RU
Unit weight	-
Shipping weight	
Mounting	Rack-mount

Port Specifications

Port Specifications	
Fixed service port	8 x 10/100/1000BASE-T ports 2 x 1G SFP/RJ45 combo ports 2 x 10G SFP+ ports
Fixed management port	1 x RJ45 console port 2 x USB 3.0 ports, compatibility with USB 2.0

Status LED	1 x system status LED 1 x power status LED 8 x 10/100/1000BASE-T port LEDs 2 x 1G SFP/RJ45 combo port LEDs 2 x 10G SFP+ port LEDs
Button	1 x Reset button

Power Supply and Consumption

Power Supply and Consumption	
Maximum power consumption	30 W
Power input	100 V AC to 240 V AC, 50 Hz to 60 Hz

Environment and Reliability

Environment and Reliability	
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude in the range of 1,800–4,000 m (5,905.51–13,123.36 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F)
Altitude	Operating altitude: –500 m to +4,000 m (–1,640.42 ft. to +13,123.36 ft.) Storage altitude: –500 m to +4,000 m (–1,640.42 ft. to +13,123.36 ft.)
Humidity	Operating humidity: 10%RH to 90% RH (non-condensing) Storage humidity: 5% RH to 95% RH (non-condensing)
Acoustic noise	< 78 dB
Mean Time Between Failure (MTBF)	200,000 hours (22 years) at the operating temperature of 25°C (77°F)

Certifications and Regulatory Compliance

Certifications and Regulatory Compliance	
Safety regulation	IEC 62368-1

	EN 62368-1
EMC regulation	EN 55032 EN 55035 EN 61000-3-3 EN IEC 61000-3-2 ETSI EN 300 386

Software Specifications

Performance and Capacity

Performance and Capacity	
Default number of manageable APs	32 Note: The default number of APs that can be managed by the RG-CNC312 is subject to the AP model. See the Ordering Information for details.
Max. number of configurable APs	2,048
Max. number of manageable APs	512 (Generic APs) 1024 (Wall-Plate APs) Note: The maximum number of APs that can be managed by the RG-CNC312 is subject to the AP model. See the Ordering Information for details.
Maximum number of manageable STAs	3500 Note: The maximum number of STAs that can be managed by the RG-CNC312 is subject to the network environment. Contact technical support team for details.
Forwarding capacity	10 Gbps (subject to the wireless network environment)
VLAN	4,094
Maximum number of WLAN IDs	2,048
Maximum number of clients supported by the built-in Portal server	1,300

MAC address table	32,768
ARP table	32,768
Intra-AC roaming handoff time	< 50 ms
Max. number of virtualized ACs	4
Number of concurrent CAPWAP data channels	1,536
Number of ACEs	65,536
Maximum manageable third-party devices	128

WLAN

WLAN	
IEEE 802.11 protocols	802.11, 802.11b, 802.11a, 802.11g, 802.11d, 802.11h, 802.11w, 802.11k, 802.11v, 802.11r, 802.11i, 802.11e, 802.11n, 802.11ac, 802.11ax, and 802.11be
Roaming	Intra-AC Layer 2 or Layer 3 roaming Inter-AC Layer 2 or Layer 3 roaming Intra-AC Layer 2 or Layer 3 roaming in local forwarding mode Inter-AC Layer 2 or Layer 3 roaming in local forwarding mode
CAPWAP	Layer 2 and Layer 3 topology supported between an AP and an AC An AP can automatically discover the accessible AC. An AP can be automatically upgraded through the AC. An AP can automatically download the configuration file from the AC. CAPWAP through NAT
Forwarding mode	Centralized forwarding Local forwarding Service-based flexible forwarding
Wireless QoS	AP/WLAN/STA-based bandwidth limiting (STA-based rate limit range: 8–261,120 in the unit of 8 kbps. For example, if you set the value to 8, the rate limit is 8 x 8 kbps = 64 kbps.) Static and intelligent rate limiting based on STA quantity

	Fair scheduling
User isolation	AC-based user isolation AP-based user isolation WLAN-based user isolation
Reliability	AC virtualization AC failover Multi-AC hot standby (1+1 A/A and A/S hot standby, and N+1 hot standby) Multi-AC cluster (N-to-N) Remote intelligent perception technology (RIPT) Non-stop service during upgrade
STA management	Access control based on the number of STAs associated with the AP Access control based on the number of STAs associated with the SSID Balanced access control based on the number of STAs associated with the AP Balanced access control based on the AP traffic Band steering Configuration of the RSSI threshold in dBm (range: 0–100) Configuration of the STA idle timeout period in seconds (range: 60–86,400)
WLAN optimization	Adjustment of the transmit power for beacon packets or probe responses
RF management	Country or region code setting Manual setting of the transmit power Automatic setting of the transmit power Manual setting of the operating channel Automatic setting of the operating channel Automatic adjustment of the data rate Coverage Hole Detection AP load balancing based on traffic and STA quantity Band selection Radio frequency interference (RFI) detection and mitigation Real-time RF configuration changes with minimal user disruption

Security

Security	
IPv4 security authentication	Web authentication 802.1X authentication MAB authentication
IPv6 security authentication	802.1X authentication Web authentication
IEEE 802.11 security and encryption	Multi-SSID mode SSID hiding IEEE 802.11i-compliant PSK authentication WPA and WPA2 WEP (WEP/WEP128) TKIP CCMP ARP anti-spoofing
CPP	Supported
NFPP	Supported
WIDS	Supported
AP virtualization	Supported

Protocols

Protocols	
IPv4 protocols	Ping and traceroute DHCP server, DHCP client, DHCP relay, and DHCP snooping DNS client NTP Telnet TFTP server and TFTP client FTP server and FTP client

IPv6 protocols	DNSv6 client DHCPv6 relay and DHCPv6 server TFTPv6 client FTPv6 server and FTPv6 client IPv6 CAPWAP ICMPv6 IPv6 ping Manual tunnels, automatic tunnels, and ISATAP Manually configured IP addresses and automatically created local addresses IPv6 traceroute Neighbor discovery
IPv4 routing	Static routing, RIP, and OSPF
IPv6 routing	Static routing

Management

Management	
Network management	SNMP v1/v2c/v3 RMON Syslog Remote probe
Network management platform	Eweb Ruijie Cloud Pro
User access management	Console port login Telnet login SSH login FTP upload

Ordering Information

Take the following ordering procedure:

Order an RG-CNC312.

The RG-CNC312 supports up to 32 APs by default. To increase the number of supported APs, purchase a corresponding license.

Main Unit

Model	Description
RG-CNC312	• The RG-CNC312 is a network controller in the AI era, integrating features of various devices such as AC, network manager, and cloud-edge collaborative controller. • Provides 8 x 10/100/1000BASE-T ports, 2 x 1G SFP/RJ45 combo ports, and 2 x 10G SFP+ ports. • It supports 32 licenses by default. • The maximum number of APs that can be managed is 512 generic APs or 1024 wall plate APs.

License

Model	Description
RG-LIC-CNC-16	The number of capacity expansion licenses for the RG-CNC series wireless controller can be expanded to 16. Each license supports one generic AP or two wall plate APs.
RG-LIC-CNC-32	The number of capacity expansion licenses for the RG-CNC series wireless controller can be expanded to 32. Each license supports one generic AP or two wall plate APs.
RG-LIC-CNC-128	The number of capacity expansion licenses for the RG-CNC series wireless controller can be expanded to 128. Each license supports one generic AP or two wall plate APs.


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