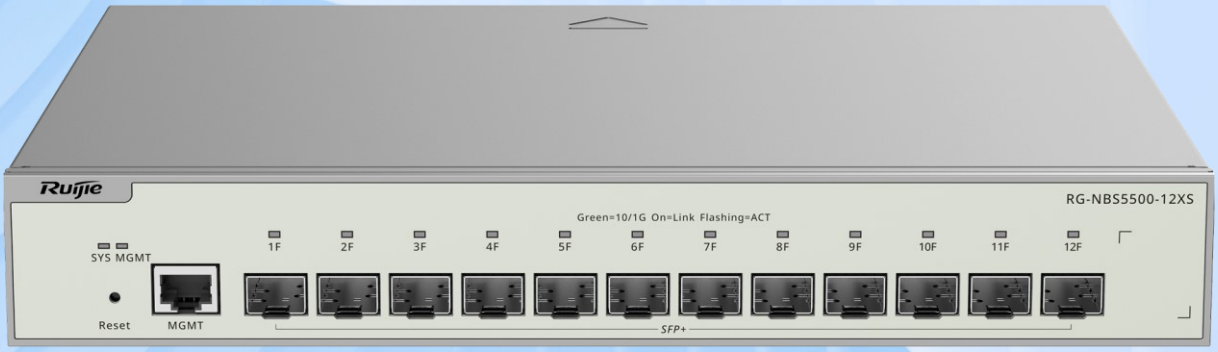
INNOVATION
Beyond Networks

RG-NBS5500-12XS

12-Port Full 10G SFP+ Layer 3 Managed Switch



Highlights

- 12-Port Full 10G SFP+ Layer 3 Managed Switch
- Lightning-fast 10G Ports, Unleashing the Full Performance of Wi-Fi 7 APs
- Easy Configuration with the MGMT Port
- Rich Layer 3 Features: VCS, Static Routing, RIP, OSPF, DHCP Server, etc.
- Multiple Security Policies Protect Your Network
- Easy cloud management anytime and anywhere

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Product Overview

The RG-NBS5500-12XS switch is a high-performance, high-capacity Ethernet switch launched by Ruijie Networks, featuring an enhanced MAC table size, faster hardware processing speeds, and a user-friendly experience.
With 12 x 10G SFP+ ports, this switch delivers high-density, high-performance connectivity suitable for both access and aggregation purposes.
The RG-NBS5500-12XS switch offers exceptional value for small to medium-sized networks, providing high performance and comprehensive end-to-end service quality for high-throughput Wi-Fi 7 access points (APs). Additionally, it features flexible security settings to meet the demands for speed, security, and intelligence.
This switch is ideal as the central network core for small to medium-sized enterprises in campus or office environments.

Product Pictures

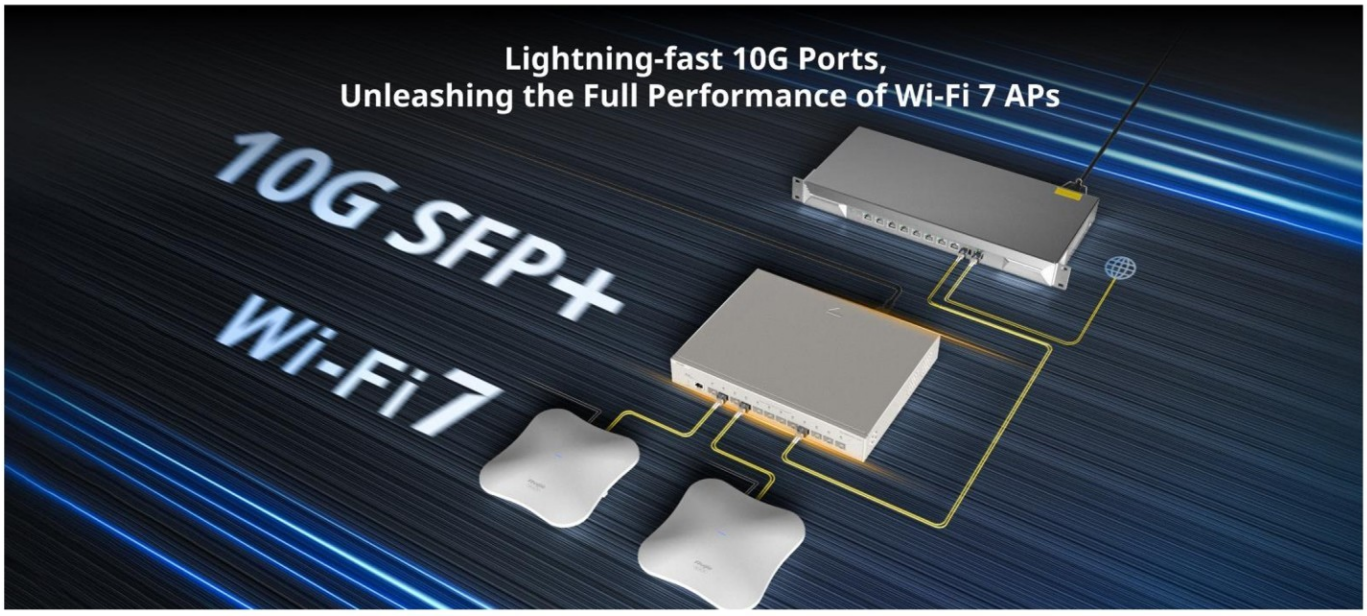
Front View of the RG-NBS5500-12XS

Left View of the RG-NBS5500-12XS

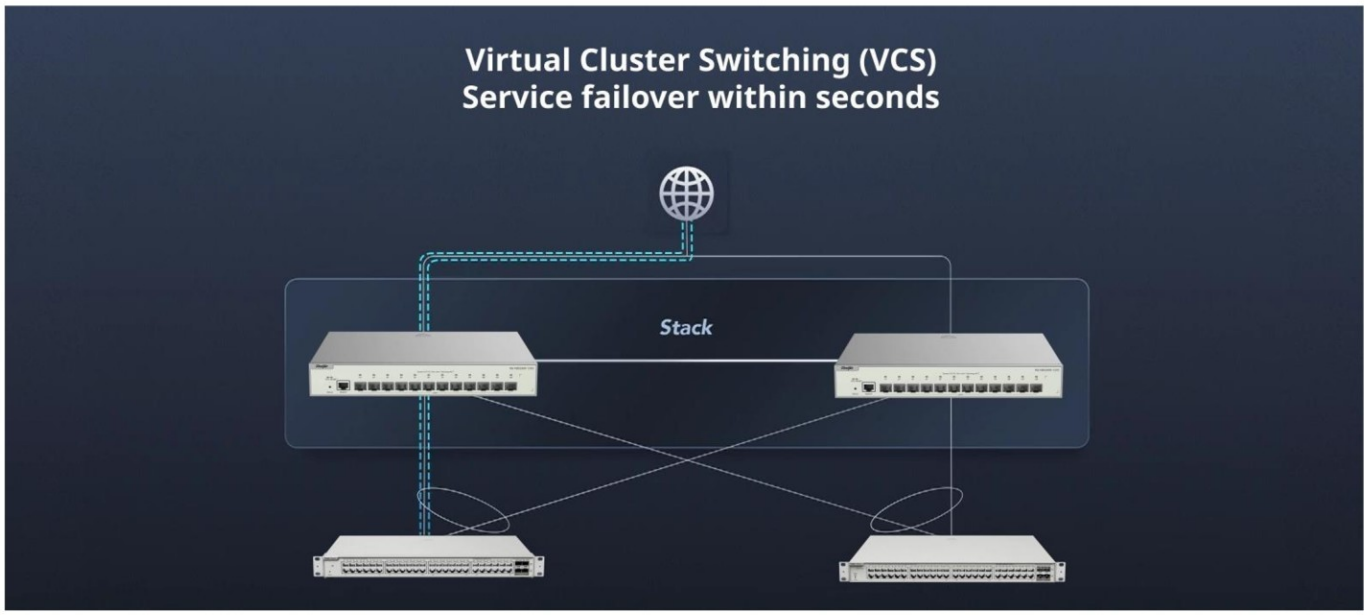
Right View of the RG-NBS5500-12XS

Product Highlights

- 12-port full-10G SPF+ Layer 3 managed switch
- Lightning-fast 10G ports, unleashing the full potential of Wi-Fi 7 APs
- Easy configuration with the MGMT port
- Rich Layer 3 features: VCS, static routing, RIP, OSPF, DHCP server, and so on
- Multiple security policies protect your network
- Easy cloud management anytime, anywhere




Easy Configuration with the
MGMT Port


Virtual Cluster Switching (VCS)
Service failover within seconds
Stack


CPP
CPP Protects the CPU from Attacks,
Ensuring CPU Performance and Stability
CPU
CPU Protection Policy

Enterprise-grade Quality Ensures High Performance

Link Aggregation | IGMP Snooping | VLAN

Product Features

Easy Configuration with the MGMT Port

The MGMT port is dedicated for switch management. Network administrators can configure, monitor, and troubleshoot the switch through the MGMT port.

Rich Layer 3 Features

Static routing:

Static routing involves the manual configuration of routes by network administrators, who enter each routing entry into the router to establish the data packet forwarding path.

Routing Information Protocol (RIP):

RIP is a distance-vector routing protocol used to dynamically exchange routing information on small and medium-sized networks.

RIP Next Generation (RIPng):

RIPng is an extension of RIP, and is designed to support IPv6 networks.

Open Shortest Path First Version 2 (OSPFv2):

OSPFv2 is a link-state routing protocol for IPv4 networks.

OSPFv3 expands on OSPF to support IPv6 networks.

DHCP server:

A DHCP server is a network service that dynamically assigns IP addresses and other network configuration parameters to devices on a network.

VCS

Virtual Cluster Switching (VCS) is an advanced network architecture designed to achieve cluster management of multiple physical switches through virtualization technology, providing an efficient, flexible, and reliable networking solution.

Cluster management:

Multiple physical switches are integrated into one logical unit, simplifying network management and configuration.

High availability:

Redundancy and failover are incorporated to ensure continuous network availability in case of a failure.

Flexible scalability:

Users can quickly add or remove switches as needed, enabling quick adaptation to changes in network size.

Load balancing:

Network traffic are automatically distributed to enhance resource utilization and optimize overall performance.

Enterprise-grade Quality Ensures High Performance

Spanning Tree Protocol (STP):

STP prevents broadcast storms caused by loops and provides link redundancy, aiming to eliminate loops on Ethernet networks. It establishes a loop-free logical topology by selecting a primary path while blocking redundant paths.

Rapid Spanning Tree Protocol (RSTP):

RSTP, as an enhanced version of STP, enables faster convergence to meet the demands of modern networks.

Rapid Link Detection Protocol (RLDP):

RLDP is designed to detect link failures and report Ethernet link issues.

Internet Group Management Protocol (IGMP):

IGMP manages the membership between hosts and multicast groups, allowing hosts to join or leave a multicast group.

IGMP snooping:

IGMP snooping is a feature of network switches that allows them to monitor IGMP traffic, optimizing the forwarding of multicast traffic.

Voice VLAN:

Voice VLAN is a dedicated virtual local area network (VLAN) designed for voice traffic. It separates voice data from regular data traffic, prioritizes voice transmission, and enhances the quality of voice calls.

Multiple Security Policies Protect Your Network

DHCP snooping:

DHCP snooping is a network security feature that protects against Dynamic Host Configuration Protocol (DHCP) attacks by ensuring that only trusted DHCP servers can assign IP addresses to devices on the network. In large enterprise environments, DHCP Snooping effectively prevents internal attacks and enhances network stability and security.

Access Control List (ACL):

An ACL controls data traffic passing through a switch. It filters data packets based on user configurations, thereby enhancing both network security and performance.

IEEE 802.1X:

IEEE 802.1X is a network access control standard used for identity authentication on both wired and wireless networks. It uses port-based access control to ensure that only authenticated devices can access the network.

IP-MAC binding:

IP-MAC binding is a security technology that associates a specified source IP address and source MAC address with a switch port to prevent IP address spoofing and MAC address forgery. Packets can pass through the port only when they match the bound source IP address and MAC address.

ARP anti-spoofing:

ARP anti-spoofing is used to prevent ARP spoofing attacks. ARP spoofing occurs when an attacker sends forged ARP messages to intercept, modify, or disrupt network traffic. ARP anti-spoofing methods include: (1) Static ARP entries: ARP entries are manually configured to prevent dynamic updates and ensure consistency; and (2) ARP monitoring tools: Tools are used to monitor ARP traffic in real time, enabling the detection of abnormal activities.

IP source guard:

IP source guard is a security feature that prevents IP address spoofing attacks. It checks the source IP address of a data packet against the bound source MAC address and port to ensure that only valid IP addresses can send data packets through the switch. If the IP address does not match, the switch discards the data packet.

CPU Protection Policy (CPP):

In a network environment, many malicious attacks are often carried out by forging numerous management and protocol packets. When a switch becomes overwhelmed with attack packets, it is unable to process normal management and protocol packets. This can significantly impact the switch's security and the overall stability of the network.

The CPP function of Ruijie switches offer effective protection against malicious network attacks by identifying and filtering out attack packets, mitigating the impact of attack packets on the switch, and ensuring that packets in different priority queues are handled properly. Additionally, the CPP offers flexible packet policy configuration, allowing network administrators to optimize settings for specific network environments, thereby enhancing both switch security and network stability.

Easy Management

Self-Organizing Network (SON):

SON is an automated network management technology designed to simplify and optimize the deployment, configuration, management, and maintenance of wireless communication networks. SON allows networks to dynamically adapt to actual demands through automated configuration and self-optimization, enhancing both efficiency and user experience.

Management via web interface:

Network devices and services can be configured, monitored, and managed conveniently on a web user interface (UI). It allows network administrators to easily access and manage network resources, whether on a LAN or over the Internet.

Easy cloud management anytime, anywhere

Management via Ruijie Reyee App

SNMP:

Simple Network Management Protocol (SNMP) is a protocol used for managing network devices. It operates on a client/server model that allows for remote monitoring and control of these devices.

SNMP consists of a management station and agents. The management station communicates with the agents using the SNMP protocol to retrieve information such as device status, configuration, and performance data. It can also configure and manage the devices.

SNMP can be used to manage a variety of network devices, including routers, switches, servers, and firewalls. Users can manage user accounts through the SNMP configuration interface and monitor and control devices using third-party software.

Product Information

Model	RG-NBS5500-12XS
Product Category	Layer 3

Hardware Specifications

Model	RG-NBS5500-12XS
Product Information	
Warranty	5 years
Port Specifications	
Total number of RJ45 ports	1
Total number of optical ports	12
Number of 1GE combo ports	No
Number of 1GE SFP ports	No
Number of 10GE SFP+ ports	12
Number of 10/100BASE-T ports	No
Number of 10/100/1000BASE-T ports	No
Number of 10/100/1000/2500BASE-T ports	No
Number of 100/1000/2.5G/5G/10GBASE-T ports	No
Module slots	No
Reset button	1
DIP switch	No
Power Supply and Consumption	
Power input	220 V AC power supply: ● Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 2 A
Maximum power consumption	44 W

Hardware Specifications

Model	RG-NBS5500-12XS
Power output	No
Power supply	Fixed power supply
System Specifications	
RAM	1 GB
Flash memory	256 MB
Forwarding rate	178.56 Mpps
Switching capacity	240 Gbps(bit/s)
Dimensions and Weight	
Casing	Metal
Product dimensions (W x D x H)	300 mm x 232 mm x 44 mm (11.81 in. x 9.13 in. x 1.73 in.)
Weight	2.26 kg (4.98 lbs) (without packaging materials)
Shipping weight	3.04 kg (6.7 lbs)
Environment and Reliability	
Hot swapping of fan modules	No
Fan	2 x fixed fans
Cooling	Air cooling, left-to-right airflow
Acoustic noise	25°C (77°F): 40 dB
Mounting options	Rack
Hot swapping of cables	Service ports support hot swapping of cables.
MTBF	400,000 hours
Operating temperature	0°C to +50°C (32°F to 122°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)

Hardware Specifications

Model	RG-NBS5500-12XS
Altitude	Operating altitude: –500 m to +5,000 m (–1,640.42 ft. to +16,404.20 ft.) Storage altitude: –500 m to +5,000 m (–1,640.42 ft. to +16,404.20 ft.)
Corrosion class	No
ESD protection	Contact discharge: 6 kV Air discharge: 8 kV
Surge protection	Service port: ±6 kV for common mode Power connector: ±6 kV for both common mode and differential mode
Certification and Regulatory Compliance	
EMC	EN 55032 EN 61000-3-2 EN 61000-3-3 EN 55035 EN 300 386
Safety compliance	IEC 62368-1
Certification	CE, FCC, IC, cTUVus

Software Specifications

Model	RG-NBS5500-12XS
Authentication	
RADIUS	Yes
802.1X authentication	Yes
Port-based 802.1X authentication	Yes
MAC address-based 802.1X authentication	Yes
Guest VLAN	Yes
Basic Configurations	
PoE watchdog	No
Online upgrade	Yes
Ethernet Switching	
Maximum number of VLANs	4094
Maximum number of MAC address entries	32000
Interface flow control	Yes
MAC address-based VLAN	No
IP subnet – based VLAN assignment	No
IEEE 802.1Q VLAN	Yes
Basic QinQ	No
VLAN configuration supported on LAN ports	Yes
Voice VLAN	Yes
STP (IEEE 802.1d)	Yes
RSTP (IEEE 802.1w)	Yes
MSTP (IEEE 802.1s)	Yes
LLDP	Yes

Software Specifications

Model	RG-NBS5500-12XS
LLDP-MED	Yes
Static MAC address	Yes
MAC address filtering	Yes
Static aggregation	Yes
LACP	Yes
Inbound or outbound rate limiting based on interface traffic	Yes
Gateway Features	
802.1p priority-based traffic classification	Yes
DSCP priority-based traffic classification	Yes
Egress queues based on 802.1p and DSCP priorities	Yes
SP	Yes
WRR	Yes
SP+WRR	Yes
Global QoS	Yes
Interface	
Jumbo frame length (MTU)	9216 bytes (interface configuration mode)
Cable test	Yes
IP Routing	
Maximum number of IPv4 static routes	500
IPv6 routing table size (network route)	500
Maximum number of IPv6 static routes	500
IPv4 static route	Yes

Software Specifications

Model	RG-NBS5500-12XS
IPv6 static route	Yes
OSPFv2	Yes
OSPFv3	Yes
IP Service	
Maximum number of ARP entries	2000
IPv4 routing table size (host route)	12000
ARP	Yes
IPv4 ping	Yes
IPv4 traceroute	Yes
IPv6	Yes
ICMPv6	Yes
IPv6 ping	Yes
IPv6 traceroute	Yes
DNS client	Yes
DNSv6 client	Yes
DHCP relay	Yes
DHCP server	Yes
DHCP client	Yes
Multicast	
IGMPv1 snooping	Yes
IGMPv2 snooping	Yes
Basic IGMPv3 snooping	Yes
Full IGMPv3 snooping	Yes
IGMP filtering	Yes

Software Specifications

Model	RG-NBS5500-12XS
IGMPv1, v2, and v3	Yes
Network Management and Monitoring	
Fan speed adjustment	Automatic speed adjustment
Port mirroring	Yes
Mirroring	Yes
HTTP login	Yes
HTTPS login	Yes
RLOG	Yes
SON	Yes
Syslog	Yes
Client auto-discovery	Yes
PoE service failure	No
PoE power overload	No
SSH	No
Camera detection	Yes
Loop alarm	Yes
MAC address entries	Yes
IP address pool conflicts	Yes
Full ARP table	Yes
eWeb management	Yes
Ruijie Cloud management	Yes
Ruijie Reyee App management	Yes
SNMPv1, v2c, and v3	Yes
Reliability	

Software Specifications

Model	RG-NBS5500-12XS
Number of VCS members	2
System dual backup	Yes (Only supported on devices with a factory-installed software version of ReyeeOS 2.320 or later)
Enabling dual backup for the partition Uboot (based on a single flash memory)	Yes
Load balancing	No
ERPS	Yes:Stand-alone No:Hot standby
Security	
Maximum number of ACEs	Number of ACEs in the inbound direction of an interface: 1900 Number of ACEs in the outbound direction of an interface: 0
Port isolation	Yes
Broadcast storm control	Yes
Multicast storm control	Yes
Unknown unicast storm control	Yes
DHCP snooping	Yes
Standard ACL	Yes
Extended MAC ACL	Yes
Extended IP ACL	Yes
IPv6 ACL	Yes
IP-MAC-port binding	Yes
ARP anti-spoofing	Yes
IP source guard	Yes
CPU Protection Policy	Yes
System Performance Capacity	
Recommended camera limit	200 W H265: 400 400 W H265: 200

Package Contents

Model	RG-NBS5500-12XS
Device	
Device	1
Accessories	
Rubber pad	4
Power cord retention clip	1
Screw	8 M3 x 6 mm cross recessed countersunk head screws
Grounding cable	1 x 1 m (3.28 ft.)
Power cord	1 x 1.5 m (4.92 ft.)
Rack-mount bracket	2
Manual	
User Manual	1
Warranty Card	1

Ruijie Networks Co., Ltd.

For more information, visit www.ruijie.com or call 86-400-620-8818.