RAGILE

RA-S6510-32C
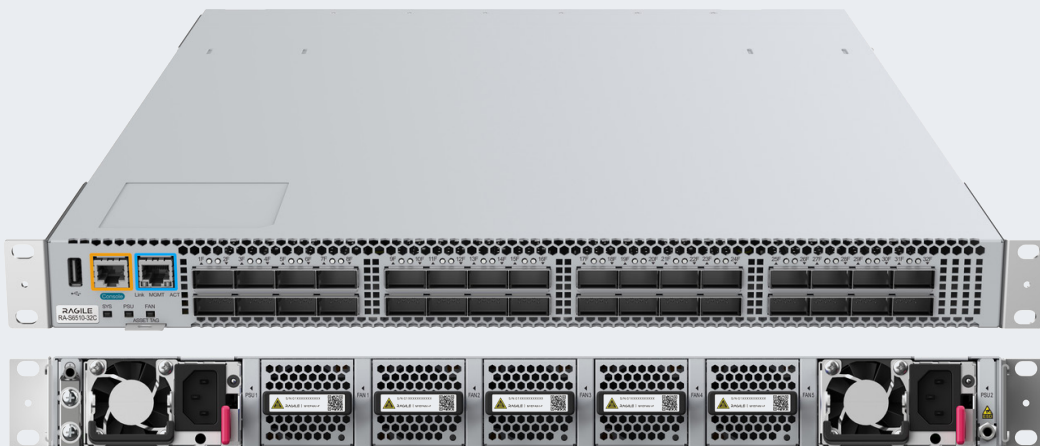# 100GbE Data Center Switch

OVERVIEW

The RA-S6510-32C is a high-performance modular access switch of Ragile Networks.

It can meet deployment requirements of multiple network architectures, including the traditional L3 architecture and Spine-Leaf architecture. It also supports deployment of the Overlay network and construction of traditional enterprise data center networks and super-large cloud data center networks.

This product offers adjustable L2/L3 resource allocation capabilities for different types of networks, rich virtualization features for deployment of Overlay/virtual networks, and monitoring and O&M functions (such as INT/Telemetry/ZTP) for automatic monitoring and O&M. Besides, switches of this series all support construction of lossless networks and can be applied to service scenarios that require lossless transmission, such as AI training or HPC.

MANAGED BY HULKOS™

The HULKOS embedded operating system (OS) is independently developed by Ragile for various network communication devices. This OS is fully modularized and designed for network security operation and management that supports multiple platforms. It supports various network products of Ragile, from switches, router products to wireless Wi-Fi and AP products, to ensure consistent production operation and management styles and functions.

PRODUCT HIGHLIGHTS

Non-blocking Hyperscale Data Center Network

- Provides 32 x 100GbE ports.
- Meets requirements of constructing hyperscale 25GbE data center networks.

Data Center Overlay Networking

- Supports VXLAN to meet the data center overlay networking requirements and enables the establishment of a logically layer-2 network on the layer-3 network.

RDMA-based Lossless Ethernet

- Supports the RDMA feature and enables the establishment of lossless, low-latency data center Ethernet.

Automated O&M/Monitoring Network

- Supports In-band Network Telemetry to enable active pushing of switch status based on gRPC. Supports the ZTP protocol to meet automatic deployment requirements.

SOFTWARE FEATURES

L2 Protocols

802.1D Spanning Tree Protocol (STP)
802.1w Rapid Spanning Tree Protocol (RSTP)
802.1s Multiple Spanning Tree Protocol (MSTP)
802.3ad Link Aggregation Control Protocol (LACP)
802.1Q VLAN Tagging
IGMP Snooping
MLD Snooping
Jumbo Frames (9216 bytes)
802.1ad Flexible QinQ
GARP VLAN Registration Protocol (GVRP)
MLAG

L3 Protocols

Routing protocols: OSPF, BGP, MBGP, IS-IS, and RIPv1/v2
32 equal-cost multi-path (ECMP) routes
Weighted cost multi-path (WCMP) routes
VRF
IGMP v1/v2/v3
PIM-SSM/PIM-SM/PIM-DM
Multicast Source Discovery Protocol (MSDP)
Anycast RP (Any-RP)
Distance Vector Multicast Routing Protocol (DVMRP)
VRRP
Policy-based routing (PBR)
Route map

IPv6

Routing protocols: OSPFv3, BGP4+, IS-ISv6, and RIPng
Neighbor Discovery (ND)
MLDv1/v2
PIM-SMv6
Path MTU Discovery (PMTUD)
IPv6 tunnel: IPv4 over IPv6, IPv6 over IPv6
ISATAP tunnel
GRE tunnel
ICMPv6, DHCPv6, DNSv6, SNMP v6, TCP/UDP for IPv6
IPv6 RADIUS
ACLv6, IPv6 QoS
Telnet/SSH v6
FTP/TFTP v6
NTP v6
Ping/Traceroute v6
VRRP for IPv6
IPv6 MIB support for SNMP

Data Center Features

VXLAN
EVPN VXLAN
RDMA feature: PFC/ECN
OpenFlow 1.3

Visualization

gRPC
sFlow
INT

QoS

Up to eight unicast queues and 8 multicast queues for each port
EXP priority mapping including 802.1p, DSCP, and ToS
ACL-based traffic classification
Priority marking/remarking
Multiple queue scheduling mechanisms: SP/WRR/DRR/SP + WRR/SP + DRR
Congestion avoidance mechanisms, such as WRED and tail discarding

Virtualization

VSU (Virtual Switching Unit)

HA Design

GR for RIP/OSPF
BFD
DLDP
Dual-link fast switching (REUP)
Unidirectional link detection (RLDP)

Security Features

Network Foundation Protection Policy (NFPP)
DDoS attack defense
CPU Protection Policy (CPP)
RADIUS
TACACS
Plaintext-based and MD5 ciphertext-based authentication for OSPF, RIPv2, and BGPv4 packets
DHCP Snooping
IPv4/v6 packet filtering by standard ACL, extended ACL and VLAN-based ACL

Management Mode

SNMP v1/v2/v3
Telnet, SSHv1/v2
Console
MGMT
RMON
FTP/TFTP
NTP clock
Syslog
SPAN/RSPAN/ERSPAN
ZTP
NETCONF
Configuration Rollback

SPECIFICATIONS

System Specifications	RA-S6510-32C
Port Form	32×100G QSFP28
Expansion Module	M1HFAN I-F×5
	PA550I-F×2
Management Port	One MGMT port, one console port, and one USB port, compliant with the USB2.0 standard
Switching Capacity	6.4 Tbps
Packet Forwarding Rate	2030 Mpps
802.1Q VLAN	4K
Dimensions and Weight	
Dimensions (W x D x H)	442 mm x 560 mm x 44 mm, 1RU
Weight	About 11 kg (including two power modules and five fan modules)

STANDARD COMPLIANCE

EMC Standards	FCC CFR Title 47, Part 15, Subpart B, ANSI C63.4-2014
Safety Standards	CSA C22.2#62368-1: 2014 Ed.2 UL62368-1:2014 Ed.2
Certifications	FCC; IC; ETL

POWER SUPPLY SPECIFICATIONS

Power Supply and Consumption	RA-S6510-32C
AC	Rated voltage range: 100–240 VAC
	Maximum voltage range: 90–264 VAC
	Frequency: 50–60 Hz
High-voltage DC	Input voltage range: 180-300 VDC
	Rated input voltage: 240 VDC
Maximum Power Consumption	< 450 W

ENVIRONMENTAL REQUIREMENTS

Environment and Reliability	RA-S6510-32C
Operating Temperature	0°C to 45°C
Operating Humidity (Non-condensing)	10% to 90% RH

ORDER INFORMATION

Switch

Model	Description
RA-S6510-32C	Provides 32 x 100GbE ports. Offers two power slots and five fan slots. The power module model is PA550I-F, and the fan model is M1HFAN I-F.

Fan and Power Supply

Model	Description
PA550I-F	550 W switching power module (supporting AC and 240 VDC)
M1HFAN I-F	RA-S6510-32C fan module, supporting 4+1 redundancy, hot swap, and front-to-rear ventilation channel design

WARRANTY POLICY

Ragile Networks Warranty and Support Summary

Warranty and support included with your product purchase from Ragile Networks for all previous warranty information

Definition of the Warranty Term

Products	Hardware Support			support (OS / Firmware)	Remote Technical Support	
	Warranty Period	RMA/DOA - Return for Repair (RFR)*	Advance Hardware Replacement (AHR)**	Software Updates	TAC Support (7x14 Online)	Online Self-Services Support
RA-S6510-32C	1 Year	9×5×15CD-Ship		√	√	√

RAGILE SERVICE

Ragile will continue to iterate the HULKOS system through continuous technical innovation. HULKOS will continuously provide customers with quality services and more application values based on its technical advantages in terms of stability, security, and openness.

Device maintenance service

- 9x5x15CD-S Basic RFR Service
- 9x5xNBD Standard AHR Service
- 24x7x4 Golden AHR Service
- 9x5xNBD Standard Onsite Service
- 24x7x4 Golden Onsite Service

System integration service

- Hardware Installation Service
- Software & Network Configuration Service

Value-added service

- Critical Moment Onsite Support
- Man-day Service