RA-B6510-32C 100GbE Data Center Switch
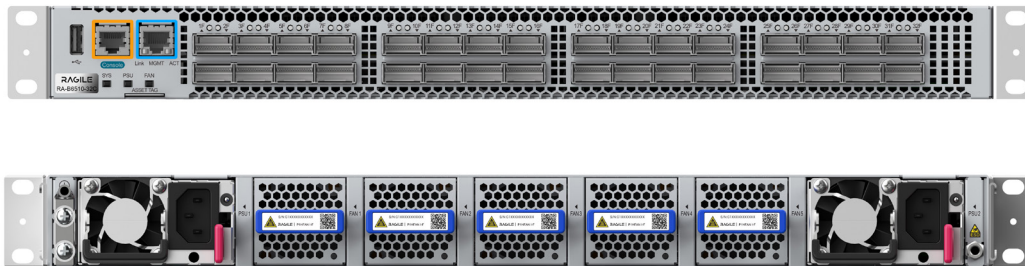
RAGILE

OVERVIEW

The RA-B6510-32C is a 32-port 100 GbE QSFP28 switch designed for carrier/enterprise aggregation, data center top-of-rack/spine networks.

It provides 1 management port, 1 console port, 1 USB port and 5 fan slots, which supports 4+1 fan redundancy. The device operates in the ambient temperature of 0℃ to 45℃, and supports the forward and reversed airflow.

RA-B6510-32C uses the BCM56870 chip and offers a maximum switching bandwidth of up to 3.2Tbps.

PRODUCT HIGHLIGHTS

First-class Performance

- 32 × QSFP28 100/40GbE Ports
- Flexible 100GbE, 40GbE, support
- Up to 6.4 Tbps (full duplex)
- Up to 2003.4 Mpps
- Wire speed L2 and L3 forwarding

Resilient Configuration

- Broadcom BCM56870 (Trident 3)
- Intel Xeon D-1527 Processor (Formerly Broadwell DE)
- System memory 8GB DRAM(up to 32GB)
- System storage ≥240GB

Data Center Optimized Design

- Typical power of under 4W per 100GbE port
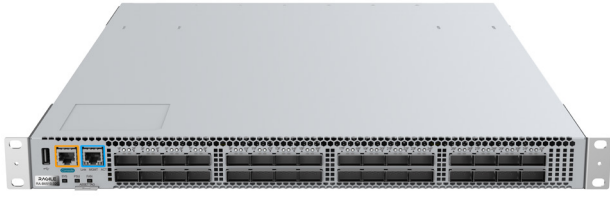- Over 94% efficient power supplies

- 1+1 redundant & hot-swappable power
- 4+1 redundant & hot-swappable fans
- Front-to-rear or reversed cooling
- Tool-less maintenance and simple installation

Cloud Networking Ready

- 128-way ECMP for hyper-scale networks
- Dynamic Load Balancing for advanced multi-pathing
- Advanced Congestion Management for NVMe and AI workloads
- Flow aware traffic scheduling
- Shared 32MB Buffer with burst absorption
- Up to 288K MAC and 168K Host entries
- Over 344K IPv4 Routes
- Over 96K IPv6 Routes

* Above is the maximum capacity that the switching chip can provide.

SOFTWARE FEATURES

OS Compatibility

- Loaded with Open Network Install Environment (ONIE) software installer and OpenBMC.
- Compatible with SONiC (Software for Open Networking in the Cloud).

Layer 2 Features

802.3ad LACP
Storm suppression
SPAN
*ERSPAN
Mac address
Monitor-link
Interface traffic statistics
Carrier Delay
Port status detection
802.1ab LLDP
802.1q VLAN
Jumbo Frame (9Kbytes)

Layer 3 Features

ARP to host routing
ARP linkage with MAC for layer 2 port switching
IP conflict detection
Aging of ARP entries
Support to open local ARP proxy based on interface
Support to set the three-layer MAC address on VLAN interface
Send gratuitous ARP
ARP entry aging detection
*ND to host routing
*ND to network segment routing
Support IPv4 ECMP32
Support IPv6 ECMP32
Border Gateway Protocol (BGP) (v4,v6)
iBGP
eBGP
Route Reflector
Route Policies
IPv4 Static Routing

IPv6 Static Routing
Load Balance based on LAG/ECMP

ACL & QoS

* L2 ACL
L3 ACL
Control plane ACL
L3 IPv6 ACL
Interface ACL
Global ACL
Queue traffic statistics
SP
WRR
DRR
*WFQ
*SP+WFQ
SP+WRR
SP+DRR
Incoming flow rate limit
Outgoing flow rate limit
DSCP remarking

Security Features

COPP
*NFPP
SSH
AAA
TACACS+

Application Protocol Features

DHCP relay
*DHCPv6 relay
FTP
SFTP

Management Features

SNMP Version(V1,V2c,V3)
SNMP Trap
Syslog
ZTP
NTP
Management VRF
*GRPC
*NETCONF
*SFLOW
*IPFIX
*INT
*MOD

*Future features

SPECIFICATIONS

Switch Model	RA-B6510-32C
Ports	32×QSFP28
Max 100/40GbE Ports	32
Throughput (full duplex)	6.4Tbps
Packets/Second	2003.4Mpps
Latency (cut-through mode)	814ns
CPU	Intel Xeon D-1527
System Memory	8GB (Up to 32GB)
System Storage	240GB
BMC Option	Yes
Switch ASIC	Broadcom BCM56870 (Trident 3)
Packet Buffer Memory	32MB (Dynamic Buffer Allocation)
10/100/1000 MGMT Ports	1
RS-232 Serial Ports	1 (RJ-45)
USB Ports	1
Hot-swap Power Supplies	2 (1+1 redundant)
Hot-swappable Fans	5 (4+1 redundant)
Airflow Option	Yes(Forward and Reversed airflow)
Typical/Max Power Draw	280W/450W
Typical/Max Heat Dissipation	883.6/1027.3 BTU/hr
Size(W×H×D)	17.40×1.73×22.04 in. (442×44×560mm)
Weight	22.7 pounds (10.3kg)
Power Supplies	550W(Forward and Reversed airflow)

POWER SUPPLY SPECIfiCATIONS

Power Supply	550W
Input Voltage	100-240V AC 240V DC
Typical Input Current	7.2-3.5A (AC) 3.6A (DC)
Input Frequency (AC)	50~60Hz
Input Connector	IEC 320-C13
Efficiency (Typical)	94% Platinum

COMPLIANCE

EMC	Emissions: FCC part15 Subpart B, EN55032, EN61000-3-2, EN61000-3-3 or EN61000-3-11, EN61000-3-12 (as applicable) Immunity: EN55035 Emissions and Immunity: EN300386
Safety	UL/CSA 62368-1, EN 62368-1, IEC 62368-1 CB Scheme with all country differences
Certifications	North America (NRTL) European Union (EU) BSMI (Taiwan) C-Tick (Australia) CCC (PRC) MSIP (Korea) EAC (Customs Union) VCCI (Japan)
European Union Directives	2006/95/EC Low Voltage Directive 2004/108/EC EMC Directive 2011/65/EU RoHS Directive

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature	32 to 113° F (0 to 45°C)
Storage Temperature	-40 to 158° F (-40 to 70°C)
Relative Humidity	10 to 90% non-condensing
Altitude (Operating)	Designed to meet: -1,640ft to 9,843ft
Altitude (Non-operating)	-1,640ft to 13,123 ft

ORDER INFORMATION

Model	Description
RA-B6510-32C	32 fixed 100/40GbE QSFP28 ports. 2 slots for power supply modules. 5 slots for fan modules. 2 power supply modules and 5 fan modules already included.
P1HFAN I-F	Fan module for, front-to-rear airflow. With up to 5 fan modules, support 4+1 redundancy.
PA550I-F	AC power supply module, front-to-rear airflow. With up to 2 power modules, support 1+1 redundancy.

NOTE：

The Ragile RA-B6510-32C is a white box switch hardware system with basic SONiC OS. Software and other services need to be purchased separately.