RA-B6920-4S
100GbE Data Center Switch
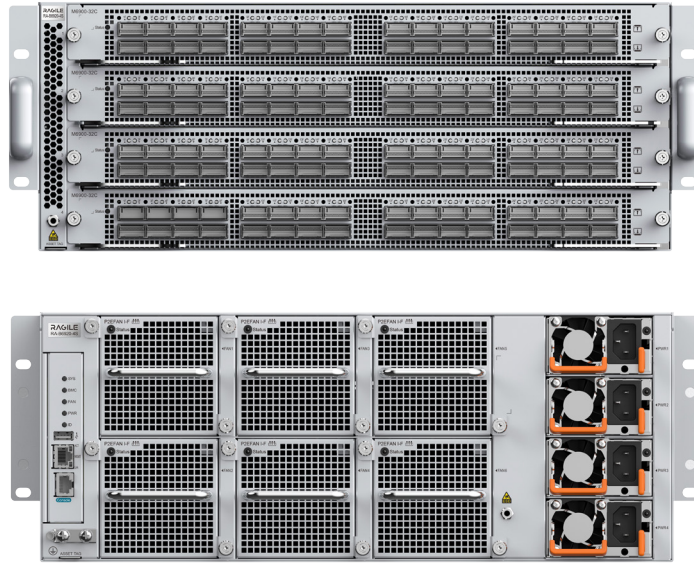
OVERVIEW

The Ragile RA-B6920-4S data center switch offers 128-port 100GbE interface in 4RU chassis, which delivers the highest performance combined with complete L2 and L3 forwarding feature in modern large-scale datacenter networks. RA-B6920-4S based on Broadcom BCM56980 (Tomahawk 3) 12.8Tb/s switch ASIC with maximum port density while consuming minimum power and latency. The RA-B6920-4S switch support latency as low as 700ns in cut-through mode, and a 64 MB packet buffer with a large shared pool allowing for superior burst absorption compared to systems with fixed port buffering. RA-B6920-4S support industry standard 100G optics and cables. All ports allow a choice of speeds including 100GbE or 40GbE, up to 128 interfaces.

PRODUCT HIGHLIGHTS

First-class Performance

- 128 × QSFP28 100GbE Ports
- Highest density 100GbE in compact 4RU
- Up to 25.6 Tbps full duplex
- Up to 8 Bpps
- Wire speed L2 and L3 forwarding
- Latency from 700ns

Resilient Configuration

- Broadcom BCM56980 (Tomahawk 3)
- Intel Xeon D-1527 Processor (Formerly Broadwell DE)
- 8GB DRAM
- System storage ≥240GB

Data Center Optimized Design
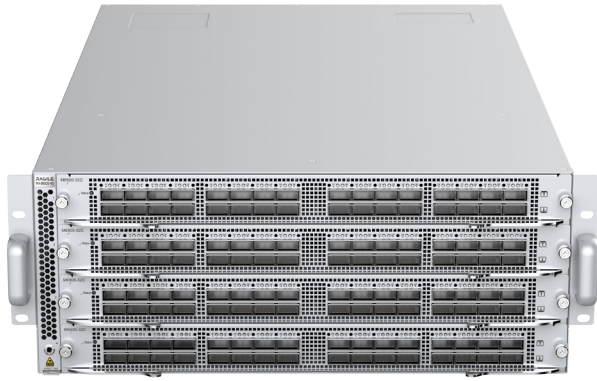
- Typical power of under 5W per port

- Over 94% efficient power supplies
- 2+2 redundant & hot-swappable power supplies
- 5+1 redundant & hot-swappable fans
- Front-to-rear cooling
- Tool-less maintenance and simple installation

Cloud Networking Ready

- 128-way ECMP for hyper-scale networks
- Dynamic Load Balancing for advanced multi-pathing
- Shared 64MB Buffer with burst absorption
- Up to 72K MAC and 80K Host entries
- Over 480K IPv4 Routes
- Over 300K 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-B6920-4S
Ports	128 × QSFP28
Max 100GbE Ports	128
Max 40GbE Ports	128
Throughput (full duplex)	25.6 Tbps
Packets/Second	8 Bpps
Latency	700ns
CPU	Intel Xeon D-1527
System Memory	8GB (Up to 32GB)
System Storage	≥240GB
BMC Option	Yes
Switch ASIC	Broadcom BCM56980 (Tomahawk 3)
Packet Buffer Memory	64MB (Dynamic Buffer Allocation)
10/100/1000 MGMT Ports	1
RS-232 Serial Ports	1 (RJ-45)
USB Ports	1
Hot-swap Power Supplies	4 (2+2 redundant)
Hot-swappable Fans	6 (5+1 redundant)
Airflow	Front to rear
Max Power Draw	< 2400W
Max Heat Dissipation	< 8191.2 BTU/hr
Size(W×H×D)	17.4 × 6.83 × 28.9 in. (442 × 173.5 × 735mm)
Weight	95.9 pounds (43.5kg)
Power Supplies	1300W AC & HVDC

POWER SUPPLY SPECiFiCATIONS

Power Supply	1300W
Input Voltage	100-240V AC 180-310V DC
Typical Input Current	12-7A (AC) 6A (DC)
Input Frequency (AC)	50~60Hz
Input Connector	IEC 320-C13
Efficiency (Typical)	94% Platinum

STANDARD 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 104° F (0 to 40°C)
Storage Temperature	-40 to 158° F (-40 to 70°C)
Relative Humidity (Operating)	10 to 90% non-condensing
Altitude (Operating)	-1640ft to 9843ft
Altitude (Non-operating)	-1640ft to 13123ft

ORDER INFORMATION

Model	Description
RA-B6920-4S	4 slots for line card and max 128 × 100GbE QSFP28 ports 4 slots for power supply modules. 6 slots for fan modules. 4 power supply modules and 6 fan modules already included.
M6900-32C	32 × 100GbE line card
P2EFAN I-F	Fan module for, front-to-rear airflow. With up to 6 fan modules, support 5+1 redundancy.
PA1300I-F	AC power supply module, front-to-rear airflow. With up to 4 power modules, support 2+2 redundancy.

NOTE：

The Ragile RA-B6920-4S is a white box switch hardware system with basic SONiC OS. Software and other services need to be purchased separately.

MORE INFORMATION

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For more information about the Ragile RA-B6920-4S switch, please visit

http://www.ragilenetworks.com or contact your local Ragile sales representative.