Cisco cBR-8 Converged Cable Access Router Supervisor 250G

Contents

Product overview

The Cisco® cBR-8 Converged Cable Access Router Supervisor 250G performs the data forwarding and routing processing functions of the carrier-class cBR-8 Converged Cable Access Router.

The complete supervisor consists of two Field-Replaceable Units (FRUs): supervisor and supervisor Physical Interface Card (PIC). The supervisor PIC has all the physical interface ports and related PHY components onboard.

The Supervisor 250G offers:

- Flexible data path interconnection between active and standby supervisors to support active-active backhaul connectivity across all 4x100G ports from two supervisors in a cBR-8 system
- 1+1 redundant supervisor support
- Two integrated 100G Network-Side Interface (NSI) backhaul interfaces and one RJ45 GE management port support for IEEE-1588 PTP
- Field-replaceable and hot-swappable capabilities for minimal service disruption
- Industry-leading Cisco IOS® Software features and services

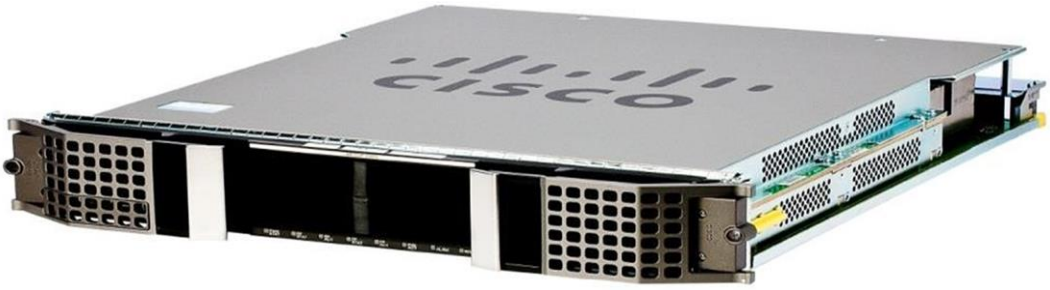

Figure 1.
Cisco® cBR-8 Converged Cable Access Router Supervisor 250G

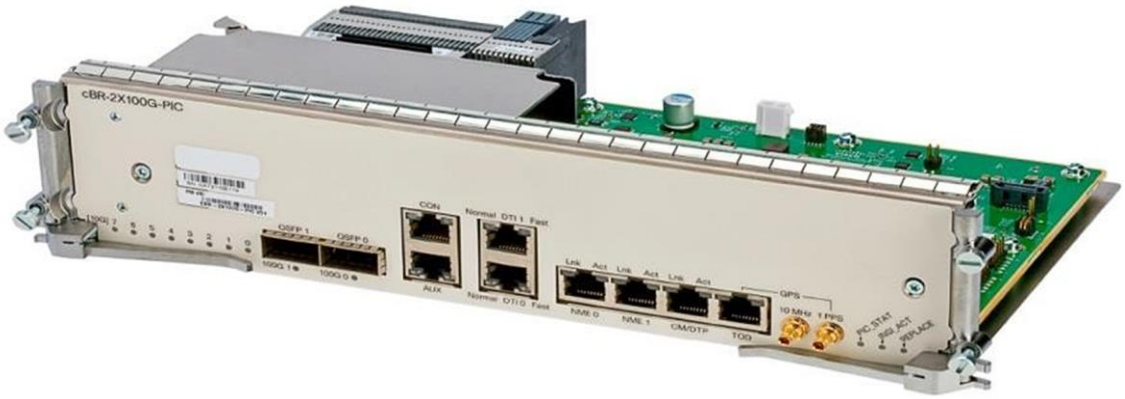

Figure 2.
Cisco® cBR-8 Converged Cable Access Router Supervisor 250G Physical Interface Card

Features and benefits

Table 1. Features and benefits of Cisco cBR-8 CCAP Supervisor 250G and PIC

Feature	Benefit
Support for Cisco IOS XE Software	• Cisco IOS XE provides mechanism to manage data records for high availability, ISSU, process restart, and database operations • Field-proven Cisco IOS Software for all IP network services
1+1 redundant supervisor HA	Minimize service downtime
250-Gbps downstream and upstream aggregated forwarding capability	Increased performance compared to the Supervisor 160G
Two integrated 100G backhaul ports on PIC	Flexible backhaul capacity expansion over time; 10G interface support via breakout cables in addition to 100G interface support
Compatible with all previous released line cards on cBR-8 platform	Backward compatibility
Time and frequency source inputs including DTI, IEEE-1588, GPS	Automatic switchover between different 1588 masters that belong to the same timing domain

Product specifications

Table 2. Product specifications

Description	Specification
Cisco platform compatibility	Cisco cBR-8 Converged Cable Access Router
Software compatibility	Cisco IOS XE operating system, starting from Cisco IOS Software Release 16.7.1
Physical dimensions (H x W x D)	Supervisor: 2.82 x 16.27 x 19.98 in. (7.16 x 41.3 x 50.7cm) Supervisor PIC: 2.82 x 11.79 x 8.1 in. (7.16 x 29.9 x 20.6cm)
Supervisor 250G power consumption (W)	Max rated power: 660W
Supervisor PIC power consumption (W)	Max rated power: 20W
Weight	Supervisor: 26 lbs (11.8kg) Supervisor PIC: 3.44 lbs (1.56kg)
Connectivity	PIC: • One console port (RJ-45 connector) • One auxiliary port (RJ-45 connector) • Two 10/100/1000 GE management ports • One 10/100/1000 GE port for CM measurement Supervisor 250G front panel: • Two Type-A USB 2.0 ports

Description	Specification
	• One mini Type-B console port
Storage options	• 240-GB SSD • 8G eUSB flash module on board
QSFP and SFP support	40G QSFP (must use with breakout cable): • QSFP-40G-SR4, QSFP-4X10G-LR-S 100G QSFP: • QSFP-100G-SR4-S, QSFP-100G-LR4-S 10G SFP (must use with breakout cable and 40G QSFP): • SFP-10G-SR, SFP-10G-LR
Reliability and availability	• 1 + 1 redundancy in dual-processor high-availability configuration • Support for Online Insertion and Removal (OIR) • Support for NSF and Stateful Switchover (SSO) • Support for ISSU
MIBs	Refer to cBR-8 MIBs list
Network management	• Telnet and Secure Shell (SSH) Protocol • Console port (through the CLI) • Simple Network Management Protocol (SNMP)
LEDs	Supervisor LEDs: • 1 PWR LED, 1 RP status LED, 1 RP active LED, 1 FP status LED, 1 FP active LED, 1 alarm LED, 1 replace LED Supervisor PIC LEDs: • 2 LEDs for 2 100G ports • PIC-STAT, iNSI_ACT, replace LED, SFP+ LED, SSD LED, DTI normal LED, DTI fast LED
Environmental	• Operating temperature (nominal): 32 to 104° F (0 to 40° C) sealevel • Operating humidity (nominal) (relative humidity): 5 to 85% • Operating humidity (short-term): 5 to 90% **Note:** Not to exceed 0.024kg water per 1kg of dry air. • Storage temperature: -40 to 158° F (-40 to 70° C) • Storage (relative humidity): 5 to 95% **Note:** Not to exceed 0.024kg water per 1kg of dry air. • Operating altitude: -60 to 4000m
Regulatory and compliance	Safety • UL/CSA/IEC/EN 60950-1 2nd Ed. - United States, Canada, Europe • AS/NZS 60950.1 - Australia • EN60825/IEC 60825 Laser Safety • FDA - Code of Federal Regulations Laser Safety Electromagnetic Emissions Certification • EN50083-2 - Europe

Description	Specification
	• KN 22 Class A – Korea • FCC Part 15 Class A – United States • ICES 003 Class A – Canada • AS/NZS Class A – Australia • CISPR 22 Class A – Europe • EN55022 Class A – Europe • VCCI Class A – Japan • CNS13438 Class A – Taiwan • IEC/EN61000-3-2 Power Line Harmonics – Europe • IEC/EN61000-3-3 Voltage Fluctuations and Flicker – Europe Immunity • EN50083-2 – Europe • CISPR 24 – Europe • KN 24 – Korea • IEC/EN61000-4-2 Electrostatic Discharge Immunity (8kV contact, 15kV air) • IEC/EN61000-4-3 Radiated Immunity (10V/m) • IEC/EN61000-4-4 Electrical Fast Transient Immunity (2kV power, 1kV signal) • IEC/EN61000-4-5 Surge AC Port (4kV CM, 2kV DM) • IEC/EN61000-4-5 Surge Signal Port (1kV) • IEC/EN61000-4-5 Surge DC Port (1kV) • IEC/EN61000-4-6 Immunity to Conducted Disturbances (10Vrms) • IEC/EN61000-4-8 Power Frequency Magnetic Field Immunity (30A/m) • IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations Network Equipment Building Standards (NEBS) The system is designed to meet the following Networking Equipment Building Standards (NEBS): • NEBS Level 3, Bellcore: GR-63-CORE, GR-1089-CORE • European Telecommunication Standards Institute (ETSI) • EN 300 386 Telecommunications Network Equipment (EMC) • EN50083-2 Cable networks for television signals, sound signals and interactive services • EN55022 Information Technology Equipment (Emissions) • EN55024 Information Technology Equipment (Immunity) • EN61000-6-1 Generic Immunity Standard • EN61000-6-2 Generic Immunity Standard for Industrial Environments

System requirements

Table 3. System requirements

Item	Details
Minimum software release	Cisco IOS Software Release 16.7.1, part number SCBR8-UK9-167

Ordering information

To place an order, visit the Cisco Ordering page. Table 4 lists the part number ordering information for the Cisco cBR-8 Converged Cable Access Router Supervisor.

Table 4. Ordering information for Cisco cBR-8 Router

Product description	Part number
Cisco cBR-8 Converged Cable Access Router Supervisor 250G	
Supervisor for cBR series: 250G configured in a system	CBR-SUP-250G
Supervisor for cBR series: 250G, spare	CBR-SUP-250G=
Supervisor 250 PIC, 2x100GE, 8x10GE with 2 breakout cables	CBR-2X100G-PIC
Supervisor 250 PIC, 2x100GE, 8x10GE with 2 breakout cables, spare	CBR-2X100G-PIC=
SFP optics	
100GBASE SR4 QSFP transceiver, MPO, 100m over OM4 MMF, maximum quantity of 2 units per Supervisor 250 PIC	QSFP-100G-SR4-S
100GBASE LR4 QSFP transceiver, LC, 10km over SMF, maximum quantity of 2 units per Supervisor 250 PIC	QSFP-100G-LR4-S
40GBASE-SR4 QSFP transceiver module with MPO connector, used in a 4x10G breakout mode for interoperability with 10GBASE-SR interfaces **Connectivity of 4x10G achieved using an external 12-fiber parallel to 2-fiber duplex breakout cable, connecting the 40GBASE-SR4 module to four 10GBASE-SR optical interfaces** **Maximum quantity of 2 units per Supervisor 250 PIC, installed into the 2 100G ports**	QSFP-40G-SR4
QSFP 4x10G transceiver module, SM MPO, 10KM, enterprise-class, used in a 4x10G mode for interoperability with 10GBASE-LR interfaces up to 10km **The 4x10G connectivity is achieved using an external 12-fiber parallel to 2-fiber duplex breakout cable, connecting the 4x10G LR module to four 10GBASE-LR optical interfaces** **QSFP-4X10G-LR-S does not support FCoE** **Maximum quantity of 2 units per Supervisor 250 PIC, installed into the 2 100G ports**	QSFP-4X10G-LR-S

Product description	Part number
Link length of 26m on standard Fiber Distributed Data Interface (FDDI)-grade multimode fiber (MMF); must be used with a breakout cable **Maximum quantity of 8 units per Supervisor 250 PIC, 4 units per breakout cable**	SFP-10G-SR
Link length of 10 kilometers on standard single-mode fiber (SMF, G.652); must be used with a breakout cable **Maximum quantity of 8 units per Supervisor 250 PIC, 4 units per breakout cable**	SFP-10G-LR
Breakout cables	
Breakout cables to enable select 10G interface support by the Supervisor 250G are not sold by Cisco. Procure from third-party vendors the two breakout cables needed **QSFP-40G-SR4: Must use MPO-4LC multimode fiber optic breakout cable** **QSFP-4X10G-LR: Must use MPO-4LC single-mode fiber optic breakout cable**	Third-party part numbers
Software licenses	
CBR Supervisor 10G port license	CBR-SUP-10G-LIC

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Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

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For more information

For more information about the Cisco cBR-8 Converged Cable Access Router, visit https://www.cisco.com/c/en/us/support/video/cbr-8-converged-broadband-router/model.html or contact your local account representative.

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