

Cisco CRS 16-Slot Line-Card Chassis Route Processor

The Cisco® CRS-1 Carrier Routing System is the industry's first carrier router offering continuous system operation, unprecedented service flexibility, and system longevity. The Cisco CRS-1 is powered by Cisco IOS® XR Software – a unique self-healing, distributed operating system designed for always-on operation while scaling system capacity up to 92 Tbps. The innovative system architecture combines the Cisco Silicon Packet Processor, the first programmable 40-Gbps application-specific integrated circuit (ASIC), with the Cisco Service Separation Architecture for unprecedented service flexibility and speed to service. The Cisco CRS-1 marks a new era in carrier IP Communications by powering the foundation for network and service convergence today while protecting investments for decades to come.

This data sheet provides detailed product specifications for the Cisco CRS-1 16-Slot Line-Card Chassis Route Processor. For more information about the Cisco CRS-1 or about other interfaces available for the Cisco CRS-1, visit: <http://www.cisco.com/go/crs>



Product Specifications

Table 1. Product Specifications

Feature	Description
Chassis Compatibility	Compatible with the Cisco CRS-1 and CRS-3 16-slot line-card chassis
Software Compatibility	Cisco IOS® XR Software Release 2.0 & 3.0 or higher for CRS-1 Cisco IOS XR Software Release 4.0.0 or later for CRS-3
Protocols	<p>Cisco Discovery Protocol</p> <p>IPv4 and IPv6 Addressing</p> <p>Internet Control Message Protocol (ICMP)</p> <p>Layer 3 Routing Protocols, including Border Gateway Protocol Version 4 (BGPv4), Open Shortest Path First Version 2 (OSPFv2), OSPFv3, Intermediate System-to-Intermediate System Protocol (IS-IS)</p> <p>Multicast forwarding with support for source-based and shared distribution trees and the following protocols:</p> <ul style="list-style-type: none"> • Protocol Independent Multicast sparse mode (PIM-SM) • Bi-directional PIM (Bidir-PIM) • PIM Source Specific Multicast (PIM SSM) • Automatic route processing (AutoRP) • Internet Group Management Protocol (IGMP) versions 1,2 and 3 • Multiprotocol BGP (MBGP) • Multicast Source Discovery Protocol (MSDP) <p>Multiprotocol Label Switching (MPLS)</p> <ul style="list-style-type: none"> • MPLS Label Distribution Protocol (LDP) • Resource Reservation Protocol (RSVP)

Feature	Description
	<ul style="list-style-type: none"> • Diffserv Aware TE MPLS Traffic Engineering control plane (RFCs 2702 and 2430) Route Policy Language (RPL) Management <ul style="list-style-type: none"> • Simple Network Management Protocol (SNMP) • Programmatic interfaces (XML) Security <ul style="list-style-type: none"> • Message Digest Algorithm (MD5) • IP Security (IPSec) Protocol • Secure Shell (SSHv2) • Secure FTP (SFTP) • Secure Sockets Layer (SSL)
Connectivity	<ul style="list-style-type: none"> • Console port (RJ-45 connector) • Auxiliary port (RJ-45 connector) • One 10/100/1000 Ethernet port (RJ-45 connector) • Two 10/100/1000 Ethernet ports (1000BASE-LX SFP-LC connector, 10 km) for control plane connectivity
Memory	<ul style="list-style-type: none"> • 4 GB of route memory • 64 MB of boot Flash • 2 MB of nonvolatile RAM (NVRAM) • One 1-GB PCMCIA card (internal) • One 40-GB hard drive
Options	One 1-GB PCMCIA card
Performance	Two 800-MHz Power PC symmetric multiprocessing (SMP)
Reliability and Availability	Software features: <ul style="list-style-type: none"> • Cisco Nonstop Forwarding (NSF) • Hot Standby Router Protocol/Virtual Router Redundancy Protocol (HSRP/VRP) • Online insertion and removal (OIR) • MPLS Fast Reroute (FRR)
MIBs	SNMP Framework Support: <ul style="list-style-type: none"> • SNMPv1 • SNMPv2c • SNMPv3 • MIB II, including interface extensions (RFC 1213) • SNMP-FRAMEWORK-MIB • SNMP-TARGET-MIB • SNMP-NOTIFICATION-MIB System Management: <ul style="list-style-type: none"> • CISCO-BULK-FILE-MIB • CISCO-CONFIG-COPY-MIB • CISCO-CONFIG-MAN-MIB • CISCO-FLASH-MIB • CISCO-MEMORY-POOL-MIB • Cisco FTP Client MIB • Cisco Process MIB • Cisco Syslog MIB • CISCO-SYSTEM-MIB • CISCO-CDP-MIB • IF-MIB (RFC 2233/RFC 2863) <ul style="list-style-type: none"> • SNMP-USM-MIB • SNMP-VACM-MIB Chassis: <ul style="list-style-type: none"> • ENTITY-MIB (RFC 2737) • CISCO-entity-asset-MIB • CISCO-entity-sensor-MIB • CISCO-FRU-MIB (Cisco-Entity-FRU-Control-MIB) Fabric: <ul style="list-style-type: none"> • CISCO-Fabric-HFR-MIB • CISCO-Fabric-Mcast-MIB • CISCO-Fabric-Mcast-Appl-MIB Routing Protocols: <ul style="list-style-type: none"> • BGP4-MIB Version 1 • OSPFv1-MIB (RFC 1253) • CISCO-IETF-IP-FORWARDING-MIB • IP-MIB (was RFC 2011-MIB) • TCP-MIB (RFC 2012) • UDP-MIB • CISCO-HSRP-EXT-MIB • CISCO-HSRP-MIB
	Quality of Service (QoS): <ul style="list-style-type: none"> • MQC-MIB (Cisco Class-Based QoS MIB) • CISCO-PING-MIB MPLS: <ul style="list-style-type: none"> • MPLS-LDP-MIB • MPLS-LSR-MIB • MPLS-TE-MIB Traps: <ul style="list-style-type: none"> • RFC 1157 • Authentication • Linkup • Linkdown • Coldstart • Warmstart

Feature	Description
Network Management	<ul style="list-style-type: none"> Enhanced command-line interface (CLI) Extensible Markup Language (XML) interface XML schemas Craft Works Interface (CWI) Simple Network Management Protocol (SNMP) and MIB support
Programmatic Interfaces	XML Schema support
Physical Dimensions	<ul style="list-style-type: none"> Weight: 12.8 lb (5.8 kg) Height: 20.6 in. (52.2 cm) Width (occupies a single, thin slot): 2.8 in. (7.1 cm) Depth: 11.2 in. (28.4 cm)
Power	166W

Approvals and Compliance

Table 2. Compliance and Agency Approvals

Feature	Description
Safety Standards	<ul style="list-style-type: none"> UL/CSA/IEC/EN 60950-1 IEC/EN 60825 Laser Safety ACA TS001 AS/NZS 60950 FDA – Code of Federal Regulations Laser Safety
EMI	<ul style="list-style-type: none"> FCC Class A ICES 003 Class A AS/NZS 3548 Class A CISPR 22 (EN55022) Class A VCCI Class A BSMI Class A IEC/EN 61000-3-2: Power Line Harmonics IEC/EN 61000-3-3: Voltage Fluctuations and Flicker
Immunity (Basic Standards)	<ul style="list-style-type: none"> IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8kV Contact, 15kV Air) IEC/EN-61000-4-3: Radiated Immunity (10V/m) IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2kV Power, 1kV Signal) IEC/EN-61000-4-5: Surge AC Port (4kV CM, 2kV DM) IEC/EN-61000-4-5: Signal Ports (1kV) IEC/EN-61000-4-5: Surge DC Port (1kV) IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10Vrms) IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30A/m) IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations
ETSI and EN	<ul style="list-style-type: none"> EN300 386: Telecommunications Network Equipment (EMC) EN55022: Information Technology Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN50082-1/EN-61000-6-1: Generic Immunity Standard
Network Equipment Building Systems (NEBS)	<p>This product is designed to meet the following requirements (qualification in progress):</p> <ul style="list-style-type: none"> SR-3580: NEBS Criteria Levels (Level 3) GR-1089-CORE: NEBS EMC and Safety GR-63-CORE: NEBS Physical Protection

Ordering Information

To place an order, visit: [Cisco Ordering Home Page](#).

Table 3. Ordering Information

Product Part Number	Product Name
GLC-LH-SM(=)	GbE LX SFP
CRS-16-RP (=)	Cisco CRS-1 16-Slot Line-Card Chassis Route Processor

To Download the Software

To download Cisco IOS Software, visit: [Cisco Software Center](#).

Service and Support

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For More Information

For more information about the CRS-1 16-Slot Line-Card Chassis Route Processor, contact your local account representative or visit Cisco at: <http://www.cisco.com/go/crs>.



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