Cisco CRS-1 24-Slot Fabric-Card Chassis

The Cisco® CRS-1 Carrier Routing System is the industry's first carrier router offering continuous system operation, 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 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 (Figure 1).

This data sheet provides detailed product specifications for the Cisco CRS-1 24-Slot Fabric-Card Chassis (FCC). This FCC is an important element of the Cisco CRS-1 Multichassis System because it contains the second-stage switching fabric that interconnects multiple Cisco CRS-1 16-slot single-shelf systems. The interconnectivity of FCCs and Cisco CRS-1 16-slot single-shelf systems allows the Cisco CRS-1 to gracefully scale from 1.2 to 92 Tbps of system capacity. The initial multichassis system consists of two Cisco CRS-1 16-slot single-shelf systems and one FCC. 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.

Figure 1. Cisco CRS-1 24-Slot Fabric-Card Chassis

Product Specifications

Table 1 gives specifications of the Cisco CRS-1 24-Slot FCC.

Table 1. Product Specifications

Feature	Description	
Software Compatibility	Cisco IOS XR Software Release 3.3	
Components	Each Cisco CRS-1 24-Slot FCC includes: • Two Cisco CRS-1 fan controllers (part number CRS-FCC-SC-22GE) • Eight Cisco CRS-1 S2 fabric cards (part number CRS-FCC-SFC) • Two power shelves (DC, AC type Wye, or AC type Delta) • Two alarm cards • Two fan trays • One fan filter	
Performance	1.2- to 92-Tbps switching capacity	
Reliability and Availability	System redundancy: • Power-shelf redundancy 1:1 • Fan-tray redundancy 1:1 • Fan-controller redundancy 1:1 • Alarm-card redundancy 1:1 • Fabric-card redundancy 1:8	
MIBs	Simple Network Management Protocol (SNMP) framework support: • SNMPv1 • SNMPv2c • SNMPv3 • MIB II, including interface extensions (RFC 1213) • SNMP-FRAMEWORK-MIB • SNMP-TARGET-MIB • SNMP-NOTIFICATION-MIB • SNMP-USM-MIB • SNMP-VACM-MIB System management: • 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)	Chassis: • ENTITY-MIB (RFC 2737) • CISCO-entity-asset-MIB • CISCO-entity-sensor-MIB • CISCO-FRU-MIB (Cisco-Entity-FRU-Control-MIB) Fabric: • CISCO-Fabric-HFR-MIB • CISCO-Fabric-Mcast-MIB • CISCO-Fabric-Mcast-Appl-MIB
Network Management	• Enhanced command-line interface (CLI) • Extensible Markup Language (XML) interface • Craft Works Interface (CWI) • SNMP and MIB support	
Programmatic Interfaces	XML schema support	

Feature	Description
Physical Dimensions	Chassis height: • 84 in. (213.36 cm) with power shelves installed • 80 in. (203.2 cm) without power shelves installed Chassis width: • 23.6 in. (59.94 cm) Chassis depth: • 36 in. (91.44 cm) • 41.5 in. (105.41 cm), including cable-management system and front cover Weight: • 780 lb (355 kg) as shipped, chassis only with fan trays installed, no power shelves • Approximately 1100 lb (500 kg) chassis ship weight including crate and pallet • 1630 lb (740 kg) chassis fully configured, using all card slots, power shelves, and cosmetics (estimated)
Power	• Maximum power consumption when chassis is fully loaded with 24 fabric cards with traffic running: 7036W • Chassis power supply maximum output capacity: 8.8kW for DC power supply and 10 KW for AC power supply
Environmental Conditions	Storage temperature: –40 to 70℃ (–40 to 158℉) Operating temperature: • Normal: 5 to 40℃ (41 to 104℉) • Short-term: –5 to 50℃ (23 to 122℉) Relative humidity: • Normal: 5 to 85% • Short-term: 5 to 90% but not to exceed 0.024 kg water/kg of dry air; Short-term refers to a period of not more than 96 consecutive hours and a total of not more than 15 days in 1 year (this refers to a total of 360 hours in any given year, but no more than 15 occurrences during that 1-year period)

Approvals and Compliance

Table 2 gives compliance and agency approvals for the Cisco CRS-1 24-Slot FCC.

Table 2. Compliance and Agency Approvals

Feature	Description
Safety Standards	• UL/CSA/IEC/EN 60950-1 • IEC/EN 60825 Laser Safety • ACA TS001 • AS/NZS 60950 • FDA-Code of Federal Regulations Laser Safety
EMI	• 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)	• IEC/EN-61000-4-2: Electrostatic Discharge Immunity (8-kV contact, 15-kV air) • IEC/EN-61000-4-3: Radiated Immunity (10 V/m) • IEC/EN-61000-4-4: Electrical Fast Transient Immunity (2-kV power, 1-kV signal) • IEC/EN-61000-4-5: Surge AC Port (4-kV CM, 2-kV DM) • IEC/EN-61000-4-5: Signal Ports (2-kV CM and 1-kV DM) • IEC/EN-61000-4-5: Surge DC Port (1 kV) • IEC/EN-61000-4-6: Immunity to Conducted Disturbances (10 Vrms) • IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity (30 A/m) • IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations

Feature	Description
ETSI and EN	• 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 Standards (NEBS)	This product is designed to meet the following requirements (qualification in progress): • SR-3580: NEBS Criteria Levels (Level 3) • GR-1089-CORE: NEBS EMC and Safety • GR-63-CORE: NEBS Physical Protection

Ordering Information

Table 3.   Ordering Information

Product Part Number	Product Name
CRS-MC-FC24	CRS-1 Multichassis System with 24-Slot Fabric Chassis
CRS-FC24=	CRS-1 Fabric Chassis 24-Slot System (complete FCC)
CRS-FCC=	Cisco CRS-1 FCC, spare (Chassis Only)

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For More Information

For more information about the Cisco CRS-1 24-Slot FCC or the Cisco 16-Slot Single-Shelf System, contact your local Cisco account representative or visit Cisco at: http://www.cisco.com/go/crs.