

Cisco CRS 8-Slot Single-Shelf System

The Cisco[®] Carrier Routing System (CRS) offers industry-leading performance, advanced services intelligence, environmentally conscious design, and system longevity. The Cisco CRS is powered by the Cisco QuantumFlow Array[™], a chipset architecture based on multidimensional engineering and Cisco IOS[®] XR Software, a unique self-healing, distributed operating system.

Packet-based data communications are being replaced by video and interactive multimedia traversing the IP Next-Generation Network (NGN) in multiple directions, straining the architectural foundations of both public and private networks serving businesses and consumers. As part of the medianet, a media-aware Cisco IP NGN, the Cisco CRS delivers continuous, always-on operations and scales easily from numerous single-chassis form factors to a massive multichassis system. Its design provides an industry-leading efficiency, consuming very low power, cooling and rack-space resources for an intelligent and comprehensive service bandwidth capacity.

The Cisco CRS 8-Slot Single-Shelf System offers many advantages:

- The system is powered by Cisco QuantumFlow Array, the chipset architecture engineered for the Cisco CRS router family, which provides higher bandwidth than competing products, without any compromise on service performance. Cisco QuantumFlow Array is based on multidimensional engineering that comprises several functional components working in tandem throughout the platform.
- The system is powered by Cisco IOS XR Software, the only fully modular, fully distributed internetwork operating system that uses a memory-protected, microkernel-based architecture and control-plane distribution that allows the system to scale and provide always-on operation.
- The system is compatible with existing and future line cards of the Cisco CRS Family.
- The system provides up to 800 Gbps per slot capacity on existing power, cooling, and rack-space profile, significantly reducing its carbon footprint.
- The fully redundant carrier-class configuration supports in-service upgrades from 40 Gbps per slot to 400 Gbps per slot.
- Integrated technology includes IP/MPLS routing, IP over DWDM (IPoDWDM), network virtualization with Secure Domain Routers (SDRs), fabric multicast replication, fabric quality of service (QoS), NetFlow accounting, and Carrier-Grade IPv6 (CGv6) to provide an outstanding quality of experience (QoE) at the lowest possible total cost of ownership (TCO).

See Figure 1 for an illustration. There are two versions of the 8-slot system: Cisco CRS-8/S and CRS-8/S-B. This data sheet provides detailed product specification of the two versions. For more information about the Cisco CRS and other available interfaces, visit: <http://www.cisco.com/go/crs>.

Figure 1. Cisco CRS 8-Slot Single-Shelf System



Product Specifications

Table 1 provides specifications for Cisco CRS-8/S. See Table 2 for specifications for the Cisco CRS-8/S-B.

Table 1. Specifications of Cisco CRS-8/S

Feature	Description
Product compatibility	Compatible with all current Cisco CRS-3 Family modular services cards (MSCs), forwarding processors, interface modules (PLIMs), CRS Label Switch Processors (CRS-LSPs), route processors, and fabric cards Compatible with all current Cisco CRS-1 Family MSCs, forwarding processors, PLIMs, and route processors
Software compatibility	Cisco IOS XR Software Release 4.0.0 or later
Protocols	<ul style="list-style-type: none"> • Cisco Discovery Protocol • IPv4 and IPv6 addressing • Internet Control Message Protocol (ICMP) • Layer 3 routing protocols, including: <ul style="list-style-type: none"> ◦ Border Gateway Protocol Version 4 (BGPv4) ◦ Open Shortest Path First Version 2 (OSPFv2) ◦ OSPFv3 ◦ Intermediate System-to-Intermediate System (IS-IS) Protocol • Multicast forwarding with support for source-based and shared distribution trees and the following protocols: <ul style="list-style-type: none"> ◦ Protocol Independent Multicast sparse mode (PIM-SM) ◦ Bidirectional PIM (Bidir-PIM) ◦ PIM source-specific mode (PIM SSM) ◦ Automatic route processing (AutoRP) ◦ Internet Group Management Protocol (IGMP) Versions 1, 2, and 3 ◦ Multiprotocol BGP (MBGP) ◦ Multicast Source Discovery Protocol (MSDP) • Multiprotocol Label Switching (MPLS): <ul style="list-style-type: none"> ◦ MPLS Label Distribution Protocol (LDP) ◦ Resource Reservation Protocol (RSVP) ◦ DiffServ-Aware Traffic Engineering (TE) • MPLS Traffic Engineering control plane (RFCs 2702 and 2430)

Feature	Description
	<ul style="list-style-type: none"> • 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 Protocol Version 2 (SSHv2) ◦ Secure FTP (SFTP) ◦ Secure Sockets Layer (SSL)
Components	<p>Each Cisco CRS-3 8-slot line card chassis includes:</p> <ul style="list-style-type: none"> • 1 Cisco CRS-1 8-slot line card chassis route processor (CRS-8-RP) • 4 Cisco CRS-3 8-slot fabric cards • 2 power supplies (either DC, AC type Wye, or AC type Delta) • 2 fan trays <p>Optional items include:</p> <ul style="list-style-type: none"> • 8 Cisco CRS-1 line cards or CRS-3 line cards • 8 Cisco CRS-1 PLIMs or CRS-3 PLIMs • Redundant Cisco CRS-1 8-slot route processor (CRS-8-RP/R)
Cards, ports, and slots	<ul style="list-style-type: none"> • 1-port OC-768c/STM-256c packet over SONET (PoS) • 4-port OC-192c/STM-64c PoS/Dynamic Packet Transport (DPT) • 16-port OC-48c/STM-16 PoS/DPT • 8-port 10 Gigabit Ethernet (GE) • 4-port 10 GE • 42-port 1 GE • 1-port OC-768c/STM-256c Tunable WDMPoS • 4-port 10 GE tunable WDMPHY • 14-port 10 GE LAN/WAN PHY • 20-port 10 GE LAN/WAN PHY • 1-port 100 GE • Cisco CRS-1-SIP-800 Carrier Card • 2- and 4-port OC-3c/STM-1c PoS shared port adapters (SPAs) • 1-, 2-, and 4-port OC-48c/STM-16c PoS/RPR SPA • 1-port OC-192c/STM-64c PoS/RPR SPA • 1-port 10 GE SPA • 2-port and 4-port Clear Channel T3/E3 SPAs • 2-port, 4-port, and 8-port OC-12c/STM-4 PoS SPAs • 2-port, 5-port, 8-port, and 10-port GE SPAs • 1-port 10 GE LAN/WAN-PHY SPA • 20-port GE flexible interface module • 2-port 10 GE WAN/LAN-PHY flexible interface module
Connectivity	PoS, WDM, DPT, T3/E3, 100 GE, 10 GE, 1 GE
Features and functions	<p>IP features:</p> <ul style="list-style-type: none"> • Control-plane packet handling • IPv4 host services • IPv4 unicast forwarding • IPv4 equal-cost multipath (ECMP) • IPv6 host services • IPv6 forwarding services • IPv6 ECMP <p>Forwarding features:</p> <ul style="list-style-type: none"> • Access control lists (ACLs) • Quality of service (QoS) and class of service (CoS) using Modular QoS CLI (MQC) • IP packet classification and marking • Queuing (both ingress and egress)

Feature	Description
	<ul style="list-style-type: none"> • Policing (both ingress and egress) • Diagnostic and network-management support <p>Routing features:</p> <ul style="list-style-type: none"> • Multiprotocol BGP Version 4 (MP-BGP v4) • OSPFv2 • OSPFv3 • IS-IS • Static routes • Routing Policy Language (RPL) <p>IPv4 multicast features:</p> <ul style="list-style-type: none"> • Dynamic registration using IGMP • Multicast Reverse Path Forwarding (RPF) • PIM sparse mode (SM) • PIM source-specific mode (PIM SSM) • Automatic route processing • MSDP • MBGP • Bidirectional PIM • Source Specific Multicast with IGMPv3 • Explicit tracking of hosts, group, and channels for IGMPv3 • Multicast nonstop forwarding (NSF) <p>MPLS features:</p> <ul style="list-style-type: none"> • MPLS forwarding and load balancing • LDP • RSVP • MPLS traffic-engineering features • User-Network Interface (UNI) • Link Management Protocol (LMP) <p>Security features:</p> <ul style="list-style-type: none"> • Message Digest Algorithm 5 (MD5) • Secure Sockets Layer (SSL) • Secure Shell (SSH) Protocol and Secure FTP (SFTP) • Secure HTTP (SHTTP) support • Control packet policing • IP Security (IPsec) <p>Manageability features:</p> <ul style="list-style-type: none"> • Alarms management • Configuration management • Accounting and statistics management • Performance management • Control point and network management: Generic requirements • Terminal services enhancements • Enhanced command-line interface (CLI) • Extensible Markup Language (XML) interface • XML schemas • Cisco Craft Works Interface (CWI) • Common Object Request Broker Architecture (CORBA) support • Simple Network Management Protocol (SNMP) and MIB support
Memory	Dependent on option chosen for route processor, up to 4 GB supported per Cisco CRS-1 8-Slot Line Card Chassis Route Processor (CRS-8-RP)
Options	Cisco CRS-1 8-Slot Line Card Chassis Route Processor (CRS-8-RP)
Performance	2.24-Tbps switching capacity

Feature	Description
Reliability and availability	<p>System redundancy:</p> <ul style="list-style-type: none"> • Power-shelf redundancy 1:1 • Fan-tray redundancy 1:1 • Route-processor redundancy 1:1 • Fabric-card redundancy 1:4 • Dual homing with line cards • Support for APS <p>Software features:</p> <ul style="list-style-type: none"> • NSF using graceful restart for: IS-IS, OSPF, BGP, LDP, and RSVP • SONET APS 1:1 • Line-card OIR support • Fabric-card OIR support • Out-of-resource management • Process restartability • MPLS Fast Reroute (FRR) • Hot Standby Router Protocol (HSRP) and Virtual Router Redundancy Protocol (VRRP)
MIBs	<p>SNMP framework support:</p> <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 • SNMP-USM-MIB • SNMP-VACM-MIB <p>System management:</p> <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) <p>Chassis:</p> <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) <p>Fabric:</p> <ul style="list-style-type: none"> • CISCO-Fabric-HFR-MIB • CISCO-Fabric-Mcast-MIB • CISCO-Fabric-Mcast-Appl-MIB <p>Routing protocols:</p> <ul style="list-style-type: none"> • BGP4-MIB Version 1 • OSPFv1MIB (RFC1253) • CISCO-IETF-IP-FORWARDING-MIB • IP-MIB (was RFC2011-MIB) • TCP-MIB (RFC 2012) • UDP-MIB • CISCO-HSRP-EXT-MIB

Feature	Description
	<ul style="list-style-type: none"> • CISCO-HSRP-MIB • CISCO-BGP-POLICY-ACCOUNTING-MIB QoS: <ul style="list-style-type: none"> • MQC-MIB (Cisco Class-Based QoS MIB) • CISCO-PING-MIB Traps: <ul style="list-style-type: none"> • RFC 1157 • Authentication • Linkup • Linkdown • Coldstart • Warmstart
Network management	<ul style="list-style-type: none"> • Enhanced CLI • XML interface • CWI • SNMP and MIB support
Programming interfaces	XML schema support
Physical dimensions	Chassis height: 38.5 in. (97.79 cm, with base cosmetics) Chassis width: 17.5 in. (44.45 cm) Chassis depth: 36.6 in (92.964 cm); 40.5 in. (102.87 cm), including full cosmetics Weight: <ul style="list-style-type: none"> • 330.8 lb (148.86 kg) chassis with fans, PDUs, and blanks (as shipped) • 650 lb (292.5 kg) chassis as shipped, including power shelves, and all line cards and route processors
Power	<ul style="list-style-type: none"> • Maximum power consumption when chassis is fully configured with line cards with traffic running: 6160W • Chassis power supply maximum output capacity: 7.5kW for both DC power supply and AC power supply
Environmental conditions	Storage temperature: -40 to 70°C (-40 to 158°F) Operating temperature: <ul style="list-style-type: none"> • Normal: 5 to 40°C (41 to 104°F) • Short-term: -5 to 50°C (23 to 122°F) Relative humidity: <ul style="list-style-type: none"> • Normal: 5 to 85 percent • Short-term: 5 to 90 percent but not to exceed 0.024 kg water per kg of dry air Note: 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 (a total of 360 hours in any given year, but no more than 15 occurrences during that 1-year period).

Table 2 provides specifications for the CRS-8/S-B.

Table 2. Cisco CRS-8/S-B Product Specifications

Feature	Description
Product compatibility	Compatible with all current Cisco CRS-3 Family modular services cards (MSCs), forwarding processors, interface modules (PLIMs), Label Switch Processors (CRS-LSPs), route processors, and fabric cards Compatible with all current Cisco CRS-1 Family MSCs, forwarding processors, PLIMs, and route processors
Software compatibility	Cisco IOS XR Software Release 4.1.2 or later
Protocols	<ul style="list-style-type: none"> • Cisco Discovery Protocol • IPv4 and IPv6 addressing • Internet Control Message Protocol (ICMP) • Layer 3 routing protocols, including: <ul style="list-style-type: none"> ◦ Border Gateway Protocol Version 4 (BGPv4) ◦ Open Shortest Path First Version 2 (OSPFv2) ◦ OSPFv3 ◦ Intermediate System-to-Intermediate System (IS-IS) Protocol • Multicast forwarding with support for source-based and shared distribution trees and the following protocols: <ul style="list-style-type: none"> ◦ Protocol Independent Multicast sparse mode (PIM-SM) ◦ Bidirectional PIM (Bidir-PIM) ◦ PIM source-specific mode (PIM SSM) ◦ Automatic route processing (AutoRP) ◦ Internet Group Management Protocol (IGMP) Versions 1, 2, and 3 ◦ Multiprotocol BGP (MBGP) ◦ Multicast Source Discovery Protocol (MSDP) • Multiprotocol Label Switching (MPLS): <ul style="list-style-type: none"> ◦ MPLS Label Distribution Protocol (LDP) ◦ Resource Reservation Protocol (RSVP) ◦ DiffServ-Aware Traffic Engineering (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 Protocol Version 2 (SSHv2) ◦ Secure FTP (SFTP) ◦ Secure Sockets Layer (SSL)
Components	Each Cisco CRS enhanced 8-slot line card chassis includes: <ul style="list-style-type: none"> • 2 Cisco CRS-1 8-slot line card chassis route processors (CRS-8-RP) • 4 Cisco CRS-3 8-slot fabric cards • 2 power supplies (either DC or AC) • 2 fan trays Optional items: <ul style="list-style-type: none"> • 8 Cisco CRS-1 line cards or CRS-3 line cards • 8 Cisco CRS-1 PLIMs or CRS-3 PLIMs
Cards, ports, and slots	<ul style="list-style-type: none"> • 1-port OC-768c/STM-256c packet over SONET (PoS) • 4-port OC-192c/STM-64c PoS/Dynamic Packet Transport (DPT) • 16-port OC-48c/STM-16 PoS/DPT • 8-port 10 Gigabit Ethernet (GE) • 4-port 10 GE • 42-port 1 GE

Feature	Description
	<ul style="list-style-type: none"> • 1-port OC-768c/STM-256c Tunable WDMPoS • 4-port 10 GE tunable WDMPHY • 14-port 10 GE LAN/WAN PHY • 20-port 10 GE LAN/WAN PHY • 1-port 100 GE • Cisco CRS-1-SIP-800 Carrier Card • 2- and 4-port OC-3c/STM-1c PoS shared port adapters (SPAs) • 1-, 2-, and 4-port OC-48c/STM-16c PoS/RPR SPA • 1-port OC-192c/STM-64c PoS/RPR SPA • 1-port 10 GE SPA • 2-port and 4-port Clear Channel T3/E3 SPAs • 2-port, 4-port, and 8-port OC-12c/STM-4 PoS SPAs • 2-port, 5-port, 8-port, and 10-port GE SPAs • 1-port 10 GE LAN/WAN-PHY SPA • 20-port GE flexible interface module • 2-port 10 GE WAN/LAN-PHY flexible interface module
Connectivity	PoS, WDM, DPT, T3/E3, 100 GE, 10 GE, 1 GE
Features and functions	<p>IP features:</p> <ul style="list-style-type: none"> • Control-plane packet handling • IPv4 host services • IPv4 unicast forwarding • IPv4 equal-cost multipath (ECMP) • IPv6 host services • IPv6 forwarding services • IPv6 ECMP <p>Forwarding features:</p> <ul style="list-style-type: none"> • Access control lists (ACLs) • Quality of service (QoS) and class of service (CoS) using Modular QoS CLI (MQC) • IP packet classification and marking • Queuing (both ingress and egress) • Policing (both ingress and egress) • Diagnostic and network-management support <p>Routing features:</p> <ul style="list-style-type: none"> • Multiprotocol BGP Version 4 (MP-BGP v4) • OSPFv2 • OSPFv3 • IS-IS • Static routes • Routing Policy Language (RPL) <p>IPv4 multicast features:</p> <ul style="list-style-type: none"> • Dynamic registration using IGMP • Multicast Reverse Path Forwarding (RPF) • PIM sparse mode (SM) • PIM source-specific mode (PIM SSM) • Automatic route processing • MSDP • MBGP • Bidirectional PIM • Source Specific Multicast with IGMPv3 • Explicit tracking of hosts, group, and channels for IGMPv3 • Multicast nonstop forwarding (NSF) <p>MPLS features:</p> <ul style="list-style-type: none"> • MPLS forwarding and load balancing • LDP • RSVP

Feature	Description
	<ul style="list-style-type: none"> • MPLS traffic-engineering features • User-Network Interface (UNI) • Link Management Protocol (LMP) <p>Security features:</p> <ul style="list-style-type: none"> • Message Digest Algorithm 5 (MD5) • Secure Sockets Layer (SSL) • Secure Shell (SSH) Protocol and Secure FTP (SFTP) • Secure HTTP (SHTTP) support • Control packet policing • IP Security (IPsec) <p>Manageability features:</p> <ul style="list-style-type: none"> • Alarms management • Configuration management • Accounting and statistics management • Performance management • Control point and network management – Generic requirements • Terminal services enhancements • Enhanced command-line interface (CLI) • Extensible Markup Language (XML) interface • XML schemas • Cisco Craft Works Interface (CWI) • Common Object Request Broker Architecture (CORBA) support • Simple Network Management Protocol (SNMP) and MIB support
Performance	6.42.24-Tbps switching capacity
Reliability and availability	<p>System redundancy:</p> <ul style="list-style-type: none"> • Power-shelf redundancy 1:1 • Fan-tray redundancy 1:1 • Route-processor redundancy 1:1 • Fabric-card redundancy 1:4 • Dual homing with line cards • Support for APS <p>Software features:</p> <ul style="list-style-type: none"> • NSF using graceful restart for: IS-IS, OSPF, BGP, LDP, and RSVP • SONET APS 1:1 • Line-card OIR support • Fabric-card OIR support • Out-of-resource management • Process restartability • MPLS Fast Reroute (FRR) <p>Hot Standby Router Protocol (HSRP) and Virtual Router Redundancy Protocol (VRRP)</p>
MIBs	<p>SNMP framework support:</p> <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 • SNMP-USM-MIB • SNMP-VACM-MIB <p>System management:</p> <ul style="list-style-type: none"> • CISCO- BULK-FILE-MIB • CISCO-CONFIG-COPY-MIB • CISCO-CONFIG-MAN-MIB • CISCO-FLASH-MIB

Feature	Description
	<ul style="list-style-type: none"> • 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) <p>Chassis:</p> <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) <p>Fabric:</p> <ul style="list-style-type: none"> • CISCO-Fabric-HFR-MIB • CISCO-Fabric-Mcast-MIB • CISCO-Fabric-Mcast-Appl-MIB <p>Routing protocols:</p> <ul style="list-style-type: none"> • BGP4-MIB Version 1 • OSPFv1MIB (RFC1253) • CISCO-IETF-IP-FORWARDING-MIB • IP-MIB (was RFC2011-MIB) • TCP-MIB (RFC 2012) • UDP-MIB • CISCO-HSRP-EXT-MIB • CISCO-HSRP-MIB • CISCO-BGP-POLICY-ACCOUNTING-MIB <p>QoS:</p> <ul style="list-style-type: none"> • MQC-MIB (Cisco Class-Based QoS MIB) • CISCO-PING-MIB <p>Traps:</p> <ul style="list-style-type: none"> • RFC 1157 • Authentication • Linkup • Linkdown • Coldstart • Warmstart
Network management	<p>Enhanced CLI XML interface CWI SNMP and MIB support</p>
Programming interfaces	<p>XML schema support</p>
Physical dimensions	<p>Chassis height: 38.5 in. (97.79 cm, with base cosmetics) Chassis width: 17.5 in. (44.45 cm) Chassis depth: 36.6 in (92.964 cm); 40.5 in. (102.87 cm), including full cosmetics Weight:</p> <ul style="list-style-type: none"> • 330.8 lb (148.86 kg) chassis with fans, PDUs, and blanks (as shipped) • 650 lb (292.5 kg) chassis as shipped, including power shelves, and all line cards and route processors
Power	<p>Maximum power consumption when chassis is fully configured with line cards with traffic running: 6160W Chassis power supply maximum output capacity: 7.5kW for both DC power supply and AC power supply</p>
Environmental conditions	<p>Storage temperature: –40 to 70°C (–40 to 158°F) Operating temperature:</p> <ul style="list-style-type: none"> • Normal: 5 to 40°C (41 to 104°F) • Short-term: –5 to 50°C (23 to 122°F) <p>Relative humidity:</p>

Feature	Description
	<ul style="list-style-type: none"> • Normal: 5 to 85 percent • Short-term: 5 to 90 percent but not to exceed 0.024 kg water per kg of dry air • Note: 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 (a total of 360 hours in any given year, but no more than 15 occurrences during that 1-year period).

Approvals and Compliance

Table 3 lists compliance and agency approvals for both models of the Cisco CRS 8-Slot Single-Shelf System

Table 3. Approvals and Compliance for Cisco CRS-8/S and Cisco CRS-8/S-B

Feature	Description
Safety standards	<ul style="list-style-type: none"> • UL/CSA/IEC/EN 60950-1 • AS/NZS 60950.1 • IEC/EN 60825 Laser Safety • FDA – Code of Federal Regulations Laser Safety
Electromagnetic interference (EMI)	<ul style="list-style-type: none"> • FCC Class A • ICES 003 Class A • AS/NZS CISPR 22 Class A • CISPR 22 (EN55022) Class A • VCCI 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 (8-kV contact, 15-kV air) • IEC/EN-61000-4-3: Radiated Immunity (10V/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 (1 kV) • 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 (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

System Capacity

Table 4 shows the system capacity for both versions of the Cisco CRS 8-Slot Single-Shelf System.

Table 4. System Capacity for Cisco CRS 8-Slot Single-Shelf System

Number of Interface Slots	Maximum Capacity per Slot	Total Capacity
8	400 Gbps per slot ingress, 400 Gbps per slot egress	6.4 Tbps per single-shelf system

Ordering Information

To place an order, visit the [Cisco Ordering Home Page](#) and refer to Table 5. To download Cisco IOS Software, visit the [Cisco Software Center](#).

Table 5. Ordering Information for Cisco CRS 8-Slot Single-Shelf System

Product Name	Product Part Number
Cisco CRS 8-Slot Single-Shelf System	CRS-8/S
Cisco CRS 8-Slot Single-Shelf System Enhanced	CRS-8/S-B

Cisco Services

Cisco Services make networks, applications, and the people who use them work better together.

Today, the network is a strategic platform in a world that demands better integration between people, information, and ideas. The network works better when services, together with products, create solutions aligned with business needs and opportunities.

The unique Cisco Lifecycle approach to services defines the requisite activities at each phase of the network lifecycle to help ensure service excellence. With a collaborative delivery methodology that joins the forces of Cisco, our skilled network of partners, and our customers, we achieve the best results.

For More Information

For more information about the 8-slot single-shelf configuration of the Cisco CRS and related products, visit Cisco at <http://www.cisco.com/go/crs> or contact your local Cisco account representative.



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