

Cisco Catalyst 8200 Series Edge Platforms

Contents

Product overview	4
Platform details	5
Platform performance	5
Overall platform benefits	6
Supported modules	8
Memory, storage, and accessory options	10
Optics and transceivers modules	10
Power supplies	11
Software requirements	11
Licensing	13
Product sustainability	14
Specifications	14
Services	16
Cisco Capital	17
Ordering information	17
For more information	18
Document history	19

The Cisco Catalyst 8200 Series Edge Platforms are 5G-ready cloud edge platforms designed for Secure Access Service Edge (SASE), multilayer security, and cloud-native agility to accelerate your journey to cloud.



The Cisco® Catalyst® 8200 Series Edge Platforms with Cisco IOS® XE SD-WAN software deliver Cisco's secure, cloud-scale SD-WAN solution for the small branch. The platforms are purpose-built for performance and integrated SD-WAN services along with flexibility to deliver security and networking services together from the cloud or on premises. They have a wide variety of interface options to choose from, with backward compatibility to existing WAN, LAN, and voice modules. Powered by Cisco IOS XE, a fully programmable software architecture, and API support, the Catalyst 8200 Series can facilitate automation at scale to achieve zero-touch IT capability while migrating workloads to the cloud. The platforms also come with a trustworthy solutions 2.0 infrastructure that secures them against threats and vulnerabilities through advanced integrity verification and remediation of threats.

The 8200 Series is well suited for small and medium-sized enterprise branch offices at optimal price/performance with integrated SD-WAN services.

The Catalyst 8200 Series Edge Platforms are offered in two models: C8200L-1N-4T for the small branch with SASE-compliant, cloud-based security requirements, and C8200-1N-4T for the small to medium-sized branch with requirements for higher throughput, scale, and service flexibility. In addition to supporting SASE-compliant cloud-based security services, the C8200-1N-4T also delivers a flexible system of best-in-class, on-premises security services through container-based apps, using Cisco's third-party ecosystem.

Product overview

Product highlights

Table 1. Product highlights

Product feature	Benefits and description
Multicore processors	• C8200-1N-4T uses an Intel® x86 CPU with 8 GB memory default • C8200L-1N-4T uses an Intel x86 CPU with 4 GB memory default • High-performance multicore processors support high-speed WAN connections • Dynamic core allocation architecture will repurpose unused cores into forwarding entities as per the user's configuration
Embedded IPsec VPN hardware acceleration	• C8200-1N-4T enables up to 1 Gbps IPsec traffic • C8200L-1N-4T enables up to 500 Mbps IPsec traffic • Increases scalability for IPsec throughput requirements • SSL and crypto hardware acceleration
Integrated Gigabit Ethernet ports	• Provides four built-in Ethernet WAN ports • Two Ethernet ports are Small Form-Factor Pluggable (SFP) and two are RJ45 ports, enabling fiber as well as copper connectivity
DRAM	• C8200-1N-4T ships with 8 GB DRAM • C8200L-1N-4T ships with 4 GB DRAM • Both models can be upgraded to 16 GB and 32 GB for higher scale and performance
Flash memory support	• Both models have an integrated onboard 8-GB flash and are not upgradable. M.2 storage provides flash upgrade options
M.2 storage	• The C8200-1N-4T is shipped with default 16G M.2 storage and can be upgraded to 32G M.2 USB and 600G M.2 Non-Volatile Memory Express (NVMe) Storage • The C8200L-1N-4T has no default M.2 storage and can be upgraded to 16G, 32G USB and 600G M.2 Non-Volatile Memory Express (NVMe) Storage
Power supply	• Both models use an internal, fixed AC power supply • Power over Ethernet (PoE) is available as an option • PoE ports added in the Network Interface Module (NIM) slot will require an additional external PoE power supply
Modularity and form factor	• 1-Rack Unit (1RU) form factor • Supports NIM and Pluggable Interface Module (PIM) slots
Integrated security	• Hardware-anchored Secure Boot and Secure Unique Device Identification (SUDI) support for Plug and Play to verify the identity of the hardware and software

Platform details

Models and configurations

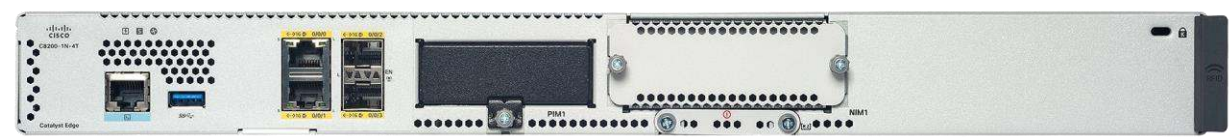


Figure 1.
Catalyst 8200 Series with 1 NIM slot and 4x 1 Gigabit Ethernet WAN ports

Tables 2 and 3 detail platform specifications and performance, respectively.

Table 2. Platform specifications

Model	Description	1G port density	Slots	Memory (DRAM) default	Storage (M.2 SSD) default
C8200-1N-4T	C8200 1RU w/ 1 NIM slot and 4x 1 Gigabit Ethernet WAN ports	4	1 NIM 1 PIM	8 GB	16 GB
C8200L-1N-4T	C8200L 1RU w/ 1 NIM slot and 4x 1 Gigabit Ethernet WAN ports	4	1 NIM 1 PIM	4 GB	16 GB

Platform performance

Table 3a Cisco controller mode (SD-WAN) performance specifications

Feature	C8200-1N-4T	C8200L-1N-4T
SD-WAN IPsec throughput (1400 bytes, clear text)	Up to 1 Gbps	Up to 500 Mbps
SD-WAN IPsec throughput (IMIX,* clear text**)	900 Mbps	400 Mbps
SD-WAN overlay tunnels scale	2500	1500

* IMIX is average packet size of 352 bytes.

**Based on clear text traffic measurement from traffic generator.

Table 3b Cisco autonomous mode (non SD-WAN) performance specifications

Feature	C8200-1N-4T	C8200L-1N-4T
IPv4 forwarding throughput (1400 bytes)	Up to 3.8 Gbps	Up to 3.8 Gbps
IPsec throughput (1400 bytes, clear text ^{**})	Up to 1 Gbps	Up to 500 Mbps
Number of IPsec static virtual tunnel interface (SVTI) tunnels	2500	1500

^{**}Based on clear text traffic measurement from traffic generator.

Table 3c Cisco autonomous mode (non SD-WAN) system scalability

Feature	C8200-1N-4T	C8200L-1N-4T
Number of access control lists (ACLs) per system	4000	4000
Number of IPv4 access control entries (ACEs) per system	72,000	72,000
Number of IPv4 routes	1.6M with default 8 GB, up to 4M with 32 GB	800,000 with default 4 GB, up to 4M with 32 GB
Number of IPv6 routes	1.5M with default 8 GB, up to 4M with 32 GB	800,000 with default 4 GB, up to 4M with 32 GB
Number of queues	16,000	16,000
Number of Network Address Translation (NAT) sessions	1.2M with default 8 GB, up to 2M with 32 GB	600,000 with default 8 GB, up to 2M with 32 GB
Number of firewall sessions	512,000	512,000
Number of Virtual Route Forwarding (VRF) instances	4000	2000

Overall platform benefits

Accelerated services with Cisco Software-Defined WAN

Cisco SD-WAN is a set of intelligent software services that allow you to connect users, devices, and branch office locations reliably and securely across a diverse set of WAN transport links. The Cisco Catalyst 8000 Edge Platforms Family can dynamically route traffic across the “best” link based on up-to-the-minute application and network conditions for great application experiences. With Cisco SD-WAN you get tight control over application performance, bandwidth usage, data privacy, and availability of your WAN links. This control is critical as branches conduct greater volumes of mission-critical business using both on-premises and cloud controllers.

Application performance optimization

Ensure that SD-WAN networks meet Service-Level Agreements (SLAs) and maintain strong performance, even if network problems occur. With branch multicloud access, you can accelerate your Software-as-a-Service (SaaS) applications with a simple template push from the SD-WAN controller. Features such as TCP optimization, Forward Error Correction (FEC), and packet duplication enhance application performance for a better user experience.

Multilayer security

You can now move your traditional and complex WAN networks into an agile, software-defined WAN with integrated security. The Catalyst 8200 Series Edge Platforms connect branch offices to the internet and cloud with industry-leading protection against major web attacks. Secure Direct Internet Access (DIA) from the branches helps optimize branch workloads for improved performance, specifically for cloud-hosted applications. At the same time, secure DIA helps ensure that your branch is protected from external threats.

Application visibility

Applications and users are more distributed than ever, and the internet has effectively become the new enterprise WAN. As organizations continue to embrace internet, cloud, and SaaS, network and IT teams are challenged to deliver consistent and reliable connectivity and application performance over networks and services they don't own or directly control.

The Catalyst 8200 Series Edge Platforms are integrated with Cisco ThousandEyes internet and cloud intelligence. IT managers now have expanded visibility, including hop-by-hop analytics, into network underlay, proactive monitoring of SD-WAN overlay, and performance measurement of SaaS applications. This granular visibility ultimately lowers the Mean Time to Identification of Issues (MTTI) and accelerates resolution time.

Unified communications

The Catalyst 8200 Series Edge Platforms offer rich voice services in both SD-WAN and traditional Cisco IOS XE software feature stacks. Cisco is the only SD-WAN vendor to natively integrate analog and digital IP directly into single Customer Premises Equipment (CPE), reducing CapEx and OpEx. In SD-WAN mode, the Catalyst 8200 Series also helps prevent internal and external outages with Survivable Remote Site Telephony (SRST), enabling branch routers to assume the role of call control PBX for telephony survivability. They also continue to support a long list of traditional Cisco IOS XE voice use cases such as Cisco Unified Border Element (CUBE), Cisco Unified Communications Manager, Session Border Controller, SRST, ISDN, and voice over IP.

Cloud-native agility with a programmable software architecture

Cisco continues to offer a feature-rich traditional Cisco IOS XE routing stack on the Catalyst 8200 Series. IP routing, IPsec, QoS, firewall, NAT, Network-Based Application Recognition (NBAR), Flexible NetFlow (FNF), and many other features are part of Cisco IOS XE, a fully programmable software architecture with API support and a wide variety of protocols and configurations. With an integrated software image and a single binary file, you can now choose between Cisco IOS XE SD-WAN and Cisco IOS XE. And you can easily move from one to the other when you choose to do so.

5G-ready

The Catalyst 8200 Series Edge Platforms are built for future 5G networks. With the higher throughputs from Cat18 LTE and 5G, wireless WAN solutions are becoming feasible options for primary transport use cases. These platforms will support both integrated pluggable modules as well as external cellular gateways with Cat18 LTE and 5G capability for improved throughput that addresses those use cases. Either an integrated or external gateway can be chosen based on a specific branch's cellular coverage.

Interface flexibility

Switched and routed ports

The Catalyst 8200 Series continues Cisco's support for 4- and 8-port Layer 2 modules with PoE capability for a single-box solution, providing both switching and routing for a small branch.

Voice modules

The Catalyst 8200 Series continues Cisco's support for a variety of voice modules for the different voice needs at the branch. Voice module examples include Foreign Exchange Station (FXS), Foreign Exchange Office (FXO), Digital Signal Processor (DSP), etc.

Supported modules

Table 4. Modules supported

Product number	Description
LAN modules	
NIM-ES2-4	Cisco 4-port Gigabit Ethernet switch NIM
NIM-ES2-8	Cisco 8-port Gigabit Ethernet switch NIM
NIM-ES2-8-P	Cisco 8-port Gigabit Ethernet switch NIM with PoE support
Voice modules	
NIM-2FXO	2-port FXO NIM
NIM-4FXO	4-port FXO NIM
NIM-2FXSP	2-port FXS NIM
NIM-4FXSP	4-port FXS NIM
NIM-2FXSP/4FXOP	2-port FXS and 4-port FXO NIM
NIM-4E/M	4-port E/M NIM
NIM-2BRI-NT/TE	2-port BRI (NT and TE) NIM
NIM-4BRI-NT/TE	4-port BRI (NT and TE) NIM
NIM-PVDM-32	32-channel voice DSP NIM
NIM-PVDM-64	64-channel voice DSP NIM
NIM-PVDM-128	128-channel voice DSP NIM
NIM-PVDM-256	256-channel voice DSP NIM
NIM-1MFT-T1/E1	1-port multiflex trunk voice/clear-channel data T1/E1 module
NIM-2MFT-T1/E1	2-port multiflex trunk voice/clear-channel data T1/E1 module
NIM-4MFT-T1/E1	4-port multiflex trunk voice/clear-channel data T1/E1 module
NIM-8MFT-T1/E1	8-port multiflex trunk voice/clear-channel data T1/E1 module

Product number	Description
DSL/broadband	
NIM-VAB-A	Multi-mode VDSL2/ADSL/2/2+ NIM Annex A
NIM-VA-B	Multi-mode VDSL2/ADSL/2/2+ NIM Annex B
NIM-VAB-M	Multi-mode VDSL2/ADSL/2/2+ NIM Annex M
NIM-4SHDSL-EA	Multi-mode G.SHDSL NIM
Channelized T1/E1 and ISDN PRI	
NIM-1CE1T1-PRI	1-port Multiflex trunk voice/channelized data T1/E1 module
NIM-2CE1T1-PRI	2-port Multiflex trunk voice/channelized data T1/E1 module
NIM-8CE1T1-PRI	8-port Multiflex trunk voice/channelized data T1/E1 module
ISDN BRI WAN interface	
NIM-2BRI-S/T	2-port ISDN BRI WAN interface card for data
NIM-4BRI-S/T	4-port ISDN BRI WAN interface card for data
Serial WAN interface	
NIM-1T	1-port serial high-speed WAN interface card
NIM-2T	2-port serial high-speed WAN interface card
NIM-4T	4-port serial high-speed WAN interface card
Async WAN interface	
NIM-16A	16-port Asynchronous Module
NIM-24A	24-port Asynchronous Module
Wireless WAN (LTE)	
P-5GS6-GL	5G Sub-6 GHz Pluggable - Global
P-LTEAP18-GL	4G/CAT18 LTE Advanced Pro Pluggable - Global
P-LTEA-EA	4G/CAT6 LTE Advanced Pluggable for North American and Europe
P-LTEA-LA	4G/ CAT6 LTE Advanced Pluggable for APAC, ANZ, and LATAM
NIM-LTEA-EA	LTE Advanced for Europe and North America
NIM-LTEA-LA	LTE Advanced for Asia Pacific, Australia and LATAM

Product number	Description
Ethernet WAN Interface	
C-NIM-1X	1-port 10Gbps/1Gbps SFP+ WAN, Network Interface Module
C-NIM-1M	1-port 2.5/1Gbps RJ-45 WAN, Network Interface Module
C-NIM-2T	2-port 100Mbps/1Gbps dual-mode RJ45/SFP, Network Interface Module
NIM Carrier Adapter Card	
C-SM-NIM-ADPT	Single-wide 2x NIM carrier module in SM-X form factor

Memory, storage, and accessory options

Table 5. Memory, storage, and accessory options

Product number	Description
MEM-C8200-8GB	Cisco C8200 Edge Platform – 8 GB Memory
MEM-C8200-16GB	Cisco C8200 Edge Platform – 16 GB Memory
MEM-C8200-32GB	Cisco C8200 Edge Platform – 32 GB Memory
M2USB-16G	Cisco C8000 Edge Platform – 16 GB M.2 USB SSD Storage
M2USB-32G	Cisco C8000 Edge Platform – 32 GB M.2 USB SSD Storage
SSD-M2NVME-600G	Cisco C8000 Edge Platform – 600 GB M.2 NVMe SSD Storage
C8200-RM-19	Cisco C8200 1RU Edge Platform – Rack Mount kit – 19"
C8200-RM-23	Cisco C8200 1RU Edge Platform – Rack Mount kit – 23"
C8200-WM-1R	Cisco C8200 1RU Edge Platform – Wall Mount Kit
C8200-RFID-1R	Cisco C8200 1RU Edge Platform – RFID
C8200-NIM-BLANK	Cisco C8200 NIM Blank
C8200-PIM-BLANK	Cisco C8200 PIM Blank

Optics and transceivers modules

Find a full list of optics and transceivers [here](#).

Power supplies

Table 6. Power supply specifications

Power supply feature	Default	PWR-CC1-150WAC optional external PSU for PoE
Power maximum rating	100W	150W For PoE only PoE budget: 150W
Input-voltage range and frequency	90 to 264 VAC 47 to 63 Hz	90 to 264 VAC 47 to 63 Hz
Power supply efficiency	85%	Avg 89%
Input current	1.5A max	2A max
Output ratings	12V 8.4A	54V 2.78A
Output holdup time	20 ms	10 ms
Power supply input receptacles	IEC 320 C14	IEC 320 C14
Power cord rating	10A	10A

Asset management: The Catalyst 8200 Series Edge Platforms have an embedded RFID tag that holds the serial number and product ID for easy asset and inventory management using commercial RFID readers. The RFID tag is external and can be easily removed if needed or can be unselected at the time of ordering. It also features an extendable label tag providing the same information. A QR code on this tag makes asset management easy by simply scanning the label using a smartphone QR reader.

Software requirements

Cisco DNA Software for the Catalyst 8200 Series offers comprehensive solutions for enterprise branch networks.

Table 7. Minimum software requirements

Platform product ID (PID)	Description	Minimum software requirement
C8200-1N-4T	Cisco Catalyst 8200 Series Edge Platform	Cisco IOS XE Software Release 17.4.1
C8200L-1N-4T	Cisco Catalyst 8200 Series Edge Platform	Cisco IOS XE Software Release 17.5.1

Table 8. ThousandEyes requirements

Feature	Requirements
Cisco ThousandEyes	ThousandEyes is natively integrated with eligible Catalyst 8200 Series Edge Platforms with a minimum 8 GB DRAM and 8 GB bootflash/storage. Additional memory and storage will be necessary for concurrently running the ThousandEyes agent with containerized SD-WAN security services.

Table 9a. Software features and protocols for autonomous mode

Feature	Description
Protocols	IPv4, IPv6, static routes, Routing Information Protocol Versions 1 and 2 (RIP and RIPv2), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP), BGP Route Reflector, Intermediate System-to-Intermediate System (IS-IS), Multicast Internet Group Management Protocol Version 3 (IGMPv3), Protocol Independent Multicast Sparse Mode (PIM SM), PIM Source-Specific Multicast (SSM), Resource Reservation Protocol (RSVP), Cisco Discovery Protocol, Encapsulated Remote Switched Port Analyzer (ERSPAN), Cisco IOS IP Service-Level Agreements (IPSLA), Call Home, Cisco IOS Embedded Event Manager (EEM), Internet Key Exchange (IKE), ACLs, Ethernet Virtual Connections (EVC), Dynamic Host Configuration Protocol (DHCP), Frame Relay, DNS, Locator ID Separation Protocol (LISP), Hot Standby Router Protocol (HSRP), RADIUS, Authentication, Authorization, and Accounting (AAA), Application Visibility and Control (AVC), Distance Vector Multicast Routing Protocol (DVMRP), IPv4-to-IPv6 Multicast, Multiprotocol Label Switching (MPLS), Layer 2 and Layer 3 VPN, IPsec, Layer 2 Tunneling Protocol Version 3 (L2TPv3), Bidirectional Forwarding Detection (BFD), IEEE 802.1ag, and IEEE 802.3ah
Encapsulations	Generic Routing Encapsulation (GRE), Ethernet, 802.1q VLAN, Point-to-Point Protocol (PPP), Multilink Point-to-Point Protocol (MLPPP), Frame Relay, Multilink Frame Relay (MLFR) (FR.15 and FR.16), High-Level Data Link Control (HDLC), serial (RS-232, RS-449, X.21, V.35, and EIA-530), and PPP over Ethernet (PPPoE)
Traffic management	QoS, Class-Based Weighted Fair Queuing (CBWFQ), Weighted Random Early Detection (WRED), Hierarchical QoS, Policy-Based Routing (PBR), Performance Routing (PfR), and NBAR
Cryptographic algorithms	Encryption: Data Encryption Standard (DES), 3DES, Advanced Encryption Standard (AES)-128 or AES-256 (in Cipher Block Chaining [CBC] and Galois/Counter Mode [GCM]) Authentication: RSA (748/1024/2048 bit), ECDSA (256/384 bit) Integrity: MD5, SHA, SHA-256, SHA-384, SHA-512
Unified communications	Call Admission Control (CAC), CUBE, Cisco Unified Communications Manager, dialer, ISDN, Interactive Voice Response (IVR), RADIUS, RFC 4040-based clear channel codec signaling with Session Initiation Protocol (SIP), Resource Reservation Protocol (RSVP), RTP Control Protocol (RTCP), Service Advertisement Framework (SAF), Session Border Controller (SBC), SIP for voice over IP (VoIP), SRST, Secure Real-Time Transport Protocol (SRTP), Voice over Frame Relay (FRF.11), VoIP, and voice modules

Table 9b. Software features and protocols for controller mode

Feature	Description
Core features	IPv4, IPv6, static routes, OSPF, EIGRP, BGP, Overlay Management Protocol (OMP), Application Aware Routing (AAR), Traffic Engineering, service insertion, zero trust, whitelisting, tamper-proof module, DTLS/TLS, IPsec, classification, prioritization, low latency queuing, remarking, shaping, scheduling, policing, mirroring, Multicast IPv4 support, service advertisement and insertion policy, Simple Network Management Protocol (SNMP), Network Time Protocol (NTP), DNS client, DHCP, DHCP client, DHCP server, DHCP relay archival, syslog, Secure Shell (SSH), Secure Copy (SCP), Cflowd v10 IPFIX export, IPv6 for transport side, Virtual Router Redundancy Protocol (VRRP), MPLS, NAT (DIA, service-side, overload/PAT, NAT64, etc.), NAT pools, split DNS, ACLs, BFD, NETCONF over SSH, CLI, NTP server support, BFD with service-side BGP, BGP community propagation to OMP, 6 SLA for AAR, Cisco TrustSec®/SD-Access (inline scalable group tag [SGT] propagation), custom app with Software-Defined AVC (SD-AVC), multicast AAR, dynamic on-demand tunnels, OSM, OSPFv3, route policies, multi-VRF support
Encapsulations	Generic Routing Encapsulation (GRE), Ethernet, 802.1q VLAN
Application experience	QoS, FEC, Class of Service (CoS) marking, Weighted Random Early Detection (WRED), Hierarchical QoS, PBR, NBAR, SD-AVC, per-tunnel QoS, Cloud OnRamp for SaaS, Enhanced Office 365 traffic steering, direct access, FNF
Cryptographic algorithms	Encryption: AES-256 (in CBC and GCM modes), Internet Key Exchange (IKE), Cisco Public Key Infrastructure (PKI) Authentication: AAA, RSA (2048 bit), ESP-256-CBC, HMAC-SHA1, ECDSA (256/384 bit) Integrity: SHA-1, SHA-2
Security: C8200-1N-4T	Built-in end-to-end segmentation (VPNs), zone-based firewall (ZBFW), PKI, Cisco DNA Layer Security, Snort® IPS/IDS, URL filtering, Secure Malware Defense, Secure Malware Analytics, Application-Level Gateway (ALG) for ZBFW, Secure Internet Gateway (SIG)
Security: C8200L-1N-4T	Built-in end-to-end segmentation (VPNs), ZBFW, PKI, Cisco DNA Layer Security, SIG
Unified communications	CUBE Connector, SRST, voice modules

Licensing

The Catalyst 8200 Series Edge Platforms are offered only with a Cisco DNA Software subscription, Enterprise Agreement, and Managed Service Licensing Agreement (MSLA). For more details, refer to this [licensing guide](#).

Cisco DNA stack:

- Cisco DNA Essentials
- Cisco DNA Advantage
- Cisco DNA Premier

Network stack:

- Network Essentials
- Network Advantage

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide

Cisco ThousandEyes

A valid ThousandEyes agent license is required to activate the ThousandEyes agent. Existing ThousandEyes subscriptions can be leveraged on eligible Catalyst 8200 Series platforms. Additional ThousandEyes subscription information can be found [here](#).

Product sustainability

Information about Cisco's environmental, Social and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

Sustainability Topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
	Information on product takeback and resuse program	Cisco Takeback and Reuse Program
	Operating and nonoperating conditions	Table 10. Mechanical specifications
	Mean Time Between Failures (MTBF)	Table 10. Mechanical specifications
	Safety and EMC (emissions, immunity and ETSI/EN)	Table 11. Mechanical specifications
Power	Power Supply	Table 1. Product highlights Table 6. Power supply specifications
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Dimensions and weight	Table 10. Mechanical specifications

Specifications

Table 10. Mechanical specifications

Description	Specification
Part number	C8200-1N-4T
Dimensions (H x W x D)	1.73 x 17.25 x 11.8 in. (4.39 x 43.81 x 29.97 cm)
Rack Units (RU)	1RU
Chassis weight	10 lb (4.54 kg)
Input voltage	AC: 90 to 264 VAC
Operating temperature	32° to 104° F (0° to 40° C)

Description	Specification
Storage temperature	-40° to 150° F (-40° to 70° C)
Relative humidity operating and nonoperating noncondensing	Ambient (noncondensing) operating: 5% to 85% Ambient (noncondensing) nonoperating and storage: 5% to 95%
Altitude	0 to 10,000 feet (0 to 3050 meters)
Mean Time Between Failures (MTBF)	692,577 hours

Table 11. Safety and compliance

Description	Specification
Safety certifications	UL 60950-1 CAN/CSA-C22.2 No. 60950-1 EN 60950-1 IEC 60950-1 AS/NZS 60950-1 IEC/EN 60825 Laser Safety FDA: Code of Federal Regulations Laser Safety
EMC (emissions)	47 CFR Part 15 Class A ICES 003 Class A AS/NZS CISPR 32 Class A CISPR 32 Class A EN55032 Class A VCCI-CISPR 32 Class A CNS-13438 Class A KN32 Class A IEC/EN 61000-3-2: Power Line Harmonics IEC/EN 61000-3-3: Voltage Fluctuations and Flicker

Description	Specification
EMC (immunity)	IEC/EN-61000-4-2: Electrostatic Discharge Immunity IEC/EN-61000-4-3: Radiated Immunity IEC/EN-61000-4-4: Electrical Fast Transient Immunity IEC/EN-61000-4-5: Surge AC, DC, and Signal Ports IEC/EN-61000-4-6: Immunity to Conducted Disturbances IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations KN35
EMC (ETSI/EN)	EN300 386: Telecommunications Network Equipment (EMC) EN55032: Multimedia Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN55035: Multimedia Equipment (Immunity) EN61000-6-1: Generic Immunity Standard

Services

Cisco Customer Experience support services for Catalyst 8000 platforms and Cisco DNA Software for SD-WAN and Routing

This section discusses the Cisco support services available for the Catalyst 8000 platforms and associated Cisco DNA Software for SD-WAN and Routing, as well as optional support service offers.

- **Catalyst 8000 platforms:** Cisco Solution Support is the default and recommended Cisco support service. However, Cisco Solution Support is not mandatory; it can be removed or replaced with another Cisco support service or partner service per the customer's preference.
- **Cisco DNA Software for SD-WAN and Routing:** Cisco Solution Support is the default Cisco support service. However, Cisco Solution Support is not mandatory; the customer may choose to use the Cisco Subscription Embedded Software Support included with the purchase of this software.

Note:

- When Solution Support is selected, it must be ordered on both the Catalyst 8000 platform and Cisco DNA Software for SD-WAN and Routing for complete customer entitlement to this premium support service.
- SD-WAN and Routing customers with Solution Support or Cisco Subscription Embedded Software Support are entitled to maintenance releases and software updates for **Cisco DNA SD-WAN and Routing software only**. Support for the Catalyst 8000 platform's OS and network stack, along with OS updates, is covered by the support contract on the Catalyst 8000 platform.

Cisco Solution Support is a premium support purpose-built for today's multiproduct, multivendor network environments and provides:

- A primary point of contact, centralizing support across a solution deployment
- Solution, product, and interoperability expertise
- No requirement for customers to isolate their issue to a product to open a case
- 30-minute service response objective for Severity 1 and 2 cases
- Prioritized case handling over product support cases
- Product support team coordination (Cisco and Solution Support Alliance Partners)
- Accountability for multiproduct, multivendor issue management from first call to resolution, no matter where the issue resides

Learn more about Cisco Solution Support at www.cisco.com/go/solutionsupport

Cisco Subscription Embedded Software Support includes:

- Access to support and troubleshooting via online tools and web case submission. Case severity or escalation guidelines are not applicable.
- Cisco Technical Assistance Center (TAC) access 24 hours per day, 7 days per week to assist by telephone, or web case submission and online tools with application software use and troubleshooting issues.
- Access to www.cisco.com, providing helpful technical and general information on Cisco products, as well as access to Cisco's online Software Center library.

Note: No additional products or fees are required to receive embedded support for Cisco DNA Software for SD-WAN and Routing. However, if using embedded support for this software, hardware support for the Catalyst 8000 platforms must be purchased separately, as Cisco Subscription Embedded Software Support does not cover hardware. In this case, Cisco Smart Net Total Care® Service is recommended for the Catalyst 8000 platforms.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital® makes it easier to get the right technology to achieve your objectives, enable business transformation, and stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. [Learn more.](#)

Ordering information

To place an order, visit the [Cisco Ordering Home Page](#). To download software, visit the [Cisco Software Center](#).

For more information

For more information about the Cisco Catalyst 8200 Series Edge Platforms, visit <https://www.cisco.com/go/C8200> or contact your local Cisco account representative.

Document history

New or Revised Topic	Described In	Date
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