Data sheet
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Cisco Catalyst 8200 Series Edge uCPE

Contents

The Cisco Catalyst 8200 Series Edge uCPE (Universal Customer Premises Equipment) is designed for branch virtualization, allowing consolidation of network and security functions, simplified network management, and fewer truck rolls for delivery of add-on services.

Cisco® Catalyst® 8200 Series Edge uCPE is the next generation of the Cisco Enterprise Network Compute System (ENCS) 5100 Series. The platform is foundational for branch virtualization, combining routing, switching, and application hosting into a compact, One Rack-Unit (1RU) device for the small and lean virtualized branch. Cisco provides an end-to-end virtualization solution with Cisco's own hypervisor Network Function Virtualization Infrastructure Software (NFVIS), Routing Virtual Network Functions (VNFs), and multiple orchestration choices.

With eight x86 CPU cores with hardware acceleration for IPsec crypto traffic, the Catalyst 8200 uCPE enables branches to run multiple VNFs. Along with a higher number of WAN ports, the platform includes one Network Interface Module (NIM) slot for additional WAN and LAN modules as well as a Pluggable Interface Module (PIM) slot for wireless WAN modules for LTE Advanced and LTE Advanced Pro capabilities. With support for the Cisco Managed Services Accelerator (MSX), Network Services Orchestrator (NSO), and Cisco Catalyst SD-WAN Manager, the platform simplifies network and NFV management and orchestration for both SD-WAN and traditional deployments.

Product overview

Product highlights

Table 1. Product highlights

Product feature	Benefits and description
Multicore processors	• Intel® 8-core x86 CPU • High-performance multicore processors support high-speed WAN connections
Embedded IPsec VPN hardware acceleration	• Up to 500 Mbps of aggregate IPsec Internet Mix (IMIX) traffic • Increased scalability to meet the IPsec throughput needs of small branches • Secure Sockets Layer (SSL) and crypto hardware acceleration
Integrated Gigabit Ethernet ports	• Provides 4 x 1 Gigabit Ethernet Copper (RJ45) ports and 2 x 1 Gigabit Ethernet Small Form-Factor Pluggable (SFP) ports for WAN or LAN
DRAM	• Supports up to 64 GB DRAM for higher scale and performance
HDD storage	• Provides 1x 2.5-inch HDD slot for up to 4 TB SSD-SATA storage

Product feature	Benefits and description
M.2 SSD storage	• Supports by default 75 GB M.2 USB for SD-WAN logging and additional storage on the platform • Can be upgraded to 600 GB or 2 TB M.2 Non-Volatile Memory Express (NVMe)
Modularity and form factor	• 1RU form factor • 1 NIM slot and 1 PIM slot
Power supply	• Internal power supply • Power over Ethernet (PoE) options are available • PoE ports can be added in the NIM slot, which will need a PoE power supply
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

Model and Configuration

Figure 1 highlights the platform details of Cisco Catalyst 8200 Edge uCPE.

Figure 1.
C8200-UCPE-1N8 platform with 1 NIM and 1 PIM slot, 2 x 1 Gigabit Ethernet SFP and 4 x 1 Gigabit Ethernet CU, 2.5 in. HDD, M.2 slot, and 8-core CPU

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

Table 2. Specifications

Model	Description	1G/SFP port density	1G port density	Slots	Memory (DRAM)	Storage (M.2 SSD) default	HDD/SATA Storage
C8200-UCPE-1N8	Cisco Catalyst 8200 Edge uCPE with 1 NIM slot and 1 PIM slot, 6 x 1 Gigabit Ethernet ports, and 8-core CPU, 2.5 in. HDD, M.2 slot	2	4	1 NIM 1 PIM	Up to 64 GB	32 GB (up to 2 TB M.2 NVMe)	Up to 4 TB SSD-SATA storage

Platform performance

The following tables provide Cisco performance specifications for Catalyst 8000V (version 17.4.1) running on NFVIS (version 4.4.0) on a Cisco Catalyst 8200 Edge uCPE.

Table 3.a Performance specifications for Catalyst 8200 Edge uCPE in controller mode (Catalyst SD-WAN)

Feature C8200-UCPE-1N8	Controller mode* (Catalyst SD-WAN)
IPsec throughput (1400 Bytes, clear text)	Up to 1.85 Gbps
IPsec throughput (IMIX, clear text***)**	Up to 500 Mbps
SD-WAN Overlay Tunnels scale	500

* Catalyst 8000V configured to run on four vCPUs.

** IMIX average packet size of 352 Bytes.

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

Table 3.b Performance specifications for Catalyst 8200 Edge uCPE in autonomous mode (non-SD-WAN)

Feature C8200-UCPE-1N8	Autonomous mode* (Cisco IOS® XE non-SD-WAN)
IPv4 forwarding throughput (1400 Bytes)	Up to 3.95 Gbps
IPsec throughput (IMIX, clear text**)**	Up to 500 Mbps

* Catalyst 8000V configured to run on four vCPUs.

** IMIX average packet size of 352 Bytes.

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

Overall platform benefits

Branch virtualization

The Cisco Catalyst 8200 Edge uCPE platform is purpose-built for small and lean branch use cases. With eight x86 CPU cores, the platform now supports more VNFs to combine routing, switching, and application hosting on a 1RU device. You can now enjoy greater flexibility in scaling routing throughput to meet your branch requirements, while using the remaining cores for security functions and other business and analytics applications.

End-to-end virtualization solution

Cisco accelerates your journey to the software-defined branch with an end-to-end solution, from the hardware platform all the way to orchestration. The Cisco Catalyst 8200 Edge uCPE platform provides the foundation for Cisco's hypervisor (NFVIS), routing VNF (Catalyst 8000V), multiple Cisco and third-party security functions, business applications, and orchestration platforms (MSX, NSO, and Cisco Catalyst SD-WAN Manager).

5G-ready

The Cisco Catalyst 8200 Edge uCPE platform is built for future 5G networks. With a PIM slot for LTE and 5G modules, this platform will support the use of wireless WAN for management traffic, with data traffic support in the future.

Accelerated services with Cisco Software-Defined WAN

Cisco Catalyst 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. Cisco Catalyst 8000V on the Catalyst 8200 Edge uCPE can dynamically route traffic across the “best” link based on up-to-the-minute application and network conditions for great application experiences. You get tight control over application performance, bandwidth usage, data privacy, and availability of your WAN links — control you need as your branches conduct greater volumes of mission-critical business with 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 SaaS applications with a simple template push from the SD-WAN controller. Features such as Transmission Control Protocol (TCP) optimization, forward error correction, and packet duplication help application performance for a better user experience.

Cloud-native agility with a programmable software architecture

Cisco continues to offer a feature-rich traditional Cisco IOS XE routing stack on the Cisco Catalyst 8000V software, which can be run on the Catalyst 8200 Edge uCPE. IP routing, IPsec, Quality of Service (QoS), firewall, Network Address Translation (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 easily move from one to the other when you choose to do so.

Multilayer security

You can now move your traditional and complex WAN networks to a more agile software-defined WAN with integrated security. The Cisco Catalyst 8200 Edge uCPE with Catalyst 8000V routing VNF connects branch offices to the internet and cloud, with industry-leading protection against major web attacks. Secure Direct Internet Access (DIA) to the branches helps optimize branch workloads for improved performance, specifically for cloud-hosted applications. At the same time, DIA helps ensure that your branch is protected from external threats. Cisco Catalyst 8200 Edge uCPE with Catalyst 8000V offers an end-to-end trustworthy solution, ensuring a secure chain of trust from hardware to NFVIS and all the way to the VNFs.

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
DSL/broadband	
NIM-VAB-A	Multimode VDSL2/ADSL/2/2+ NIM Annex A
NIM-VA-B	Multimode VDSL2/ADSL/2/2+ NIM Annex B
NIM-VAB-M	Multimode VDSL2/ADSL/2/2+ NIM Annex M
NIM-4SHDSL-EA	Multimode G.SHDSL NIM
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
Wireless WAN (LTE)	
P-LTEAP18-GL	System and spare CAT18 LTE Advanced Pluggable Global
P-LTEA-EA	System and spare CAT6 LTE Advanced Pluggable for North America and Europe
P-LTEA-LA	System and spare 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

Memory, storage, and accessory options

Table 5. Memory, storage, and accessory options

Product number	Description
MEM-C8200-8GB	Cisco C8200 Edge uCPE – 8 GB memory
MEM-C8200-16GB	Cisco C8200 Edge uCPE – 16 GB memory
MEM-C8200-32GB	Cisco C8200 Edge uCPE – 32 GB memory
M2USB-75G	Cisco C8000 Edge uCPE – 75 GB M.2 USB SSD storage
SSD-M2NVME-600G	Cisco C8000 Edge uCPE – 600 GB M.2 NVMe SSD storage
SSD-M2NVME-2T	Cisco C8000 Edge uCPE – 2 TB M.2 NVMe SSD storage
HDD-SATA-1TB	Cisco HDD SATA drive 1 TB
HDD-SATA-2TB	Cisco HDD SATA drive 2 TB
SSD-SATA-480G	Cisco SSD SATA drive 480 GB
SSD-SATA-960G	Cisco SSD SATA drive 960 GB
SSD-SATA-4T	Cisco SSD SATA drive 4 TB
C8200-RM-19-1R	Cisco C8200 Edge uCPE – Rack mount kit – 19 inch
C8200-WM-1R	Cisco 8200 Edge uCPE – Wall mount kit

Optics and transceivers modules

Find the full list of optics and transceivers here.

Power supplies

Table 6. Power supply specifications

Power supply feature	INTERNAL	PWR-CC1-150WAC
Power max rating	100W	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

Power supply feature	INTERNAL	PWR-CC1-150WAC
Output holdup time	20 ms	10 ms
Power supply input receptacles	IEC 320 C14	IEC 320 C14
Power cord rating	10A	10A

Software requirements

Cisco DNA Software for the Catalyst 8200 Edge uCPE offers comprehensive solutions for enterprise branch networks. The platform supports Catalyst 8000V software. You can read more about it here.

Table 7. Minimum software requirements

Platform Product ID (PID)	Description	Minimum software requirement
C8200-UCPE-1N8	Cisco Catalyst 8200 Edge uCPE	Cisco Catalyst 8000V Software Release 17.4.1 Cisco NFVIS 4.4.1

Table 8. Software features and protocols for autonomous mode of Catalyst 8000V (version 17.4.1)

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 Router 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), Access Control Lists (ACL), 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	Quality of Service (QoS), Class-Based Weighted Fair Queuing (CBWFQ), Weighted Random Early Detection (WRED), Hierarchical QoS, Policy-Based Routing (PBR), Performance Routing (PfR), and Network-Based Application Recognition (NBAR)
Cryptographic algorithms	Encryption: DES, 3DES, AES-128 or AES-256 (in CBC and GCM modes) Authentication: RSA (748/1024/2048 bit), ECDSA (256/384 bit) Integrity: MD5, SHA, SHA-256, SHA-384, SHA-512

Table 9. Software features and protocols for controller mode for Catalyst 8000V (version 17.4.1)

Feature	Description
Core features	IPv4, IPv6, static routes, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (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, Dynamic Host Configuration Protocol (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, Access Control Lists (ACL), Bidirectional Forwarding Detection (BFD), Netconf over SSH, command-line interface (CLI), NTP server support, BFD with service-side BGP, BGP community propagation to OMP, 6 SLA for Automated Alternate Routing (AAR), Cisco Trustsec®/SD-Access (inline Scalable Group Tag [SGT] propagation), custom app with Software-Defined Application Visibility and Control (SD-AVC), multicast AAR, dynamic on-demand tunnels, OSPFv3, route policies, Multi-VRF support
Encapsulations	Generic Routing Encapsulation (GRE), Ethernet, 802.1q VLAN
Application experience	Quality of Service (QoS), Forward Error Correction (FEC), COS Marking, Weighted Random Early Detection (WRED), Hierarchical QoS, Policy-Based Routing (PBR), Network-Based Application Recognition (NBAR), SD-AVC, per-tunnel QoS, SD-WAN Cloud OnRamp for SaaS, enhanced Office 365 traffic steering, Direct Access, Flexible NetFlow (FnF)
Cryptographic algorithms	Encryption: AES-256 (in CBC and GCM modes), Internet Key Exchange (IKE), Cisco PKI Authentication: AAA, RSA (2048 bit), ESP-256-CBC, HMAC-SHA1, ECDSA (256/384 bit) Integrity: SHA-1, SHA-2
Security	Built-in end-to-end segmentation (VPNs), Zone-Based Firewall (ZBFW), Public Key Infrastructure (PKI), Cisco DNA Layer Security, Snort IPS/IDS, URL filtering, Advanced Malware Protection (AMP), Threat Grid, Application-Level Gateway (ALG) for ZBFW

Licensing

Cisco Catalyst 8200 Series Edge uCPE is 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

Network stack:

- Network Essentials
- Network Advantage

Introduction to Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure – you control what users can access. With Smart Licensing you get:

- **Easy Activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).
- **Unified Management:** My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- **License Flexibility:** Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco Software Central (software.cisco.com).

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

Specifications

Table 10. Mechanical specifications

Description	Specification
Part number	C8200-UCPE-1N8
Dimensions (H x W x D)	1.73 x 17.25 x 11.8 in. (4.39 x 43.82 x 29.97 cm)
Rack Units (RU)	1RU
Chassis weight	9.3 lb (4.2 kg)
Input voltage	AC: 90 to 264 VAC
Operating temperature	32° to 104°F (0° to 40°C)
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) at 25°C	671,696 hours

Table 11. Safety and compliance

Description	Specification
Safety certifications	UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 AS/NZS 60950.1 IEC 60950-1 UL 62368-1 CAN/CSA-C22.2 No. 62368-1 EN 62368-1 IEC 62368-1 AS/NZS 62368.1 Class I Equipment
EMC	47 CFR Part 15 ICES-003 EN55032, CISPR32 CISPR35, EN55035 VCCI-CISPR32 CNS13438 EN 300 386 EN 55024, CISPR 24 NM EN 55032, NM EN 55024 KN32, KN35
Telecom	DSPR Gray Book (Japan) DSPR Technical Condition (Japan) DSPR Technical Requirement (Japan) Homologation requirements vary by country and interface type. For specific country information, refer to the online approvals data base at: https://www.ciscofax.com/

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 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, with Solution Support or Cisco Subscription Embedded Software Support, customers are entitled to maintenance releases and software updates for **Cisco DNA SD-WAN and Routing software only**. The 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 https://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 https://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 Catalyst 8000 platforms.

Ordering information

To place an order, visit the Cisco Ordering Home Page. To download software, visit the Cisco Software Center.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's Corporate Social Responsibility (CSR) Report.

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

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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For more information

For more information about the Cisco Catalyst 8200 Series Edge uCPE, visit here or contact your local Cisco account representative.

Document history

New or revised topic	Described in	Date
Corrected Storage in Product Overview, Corrected Memory Storage Support Modules, Removed Cisco DNA Premier from Licensing		August 2024

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Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **https://www.cisco.com/go/offices**.

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