Cisco C9610 Series Smart Switches

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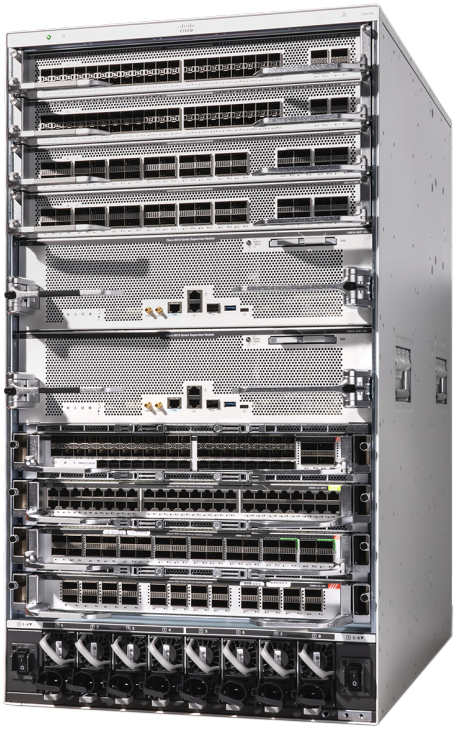
Overview

Introducing Cisco C9610 Series Smart Switches—the next-generation hardware designed to redefine campus switching with high port density and exceptional bandwidth capabilities. Designed to power the AI Enterprise, these switches support 25G and 100G uplinks and are ready for 400G, future-proofing your workplace.

With a security-first architecture and modular scalability, these switches adapt as your business grows. The Cisco C9610 Series delivers robust performance, scale, and security without compromise. Elevate your network with Cisco C9610 Series Smart Switches, where innovation meets the demands of today and tomorrow. They are secure, support Post-Quantum Cryptography (PQC) algorithms and encryption to guard against future attacks using quantum computers, and are hardware-ready to offer protection against zero-day attacks on software vulnerabilities using Cisco Live Protect.

More than just the next generation of enterprise-grade switches, Cisco C9610 Series Smart Switches simplify IT operations by unifying hardware, software, and support, regardless of how you choose to manage your network.

- **Unified hardware** – Common hardware designed to support any management mode
- **Unified licensing** – Common licensing that unlocks advanced features and capabilities across platforms
- **Unified support** – Consistent and reliable product support for both hardware and software included with the unified licenses



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Platform highlights

With high density 25/50 Gigabit SFP and 100/400 Gigabit QSFP modular switches for enterprise campuses, Cisco C9610 Series Smart Switches excel in table scale and buffering capabilities. Featuring revolutionary hashable ternary content addressable memory (HCAM) for enhanced scalability and High-Bandwidth Memory (HBM) with Virtual Output Queuing (VoQ) architecture for deep buffers, these switches deliver unmatched performance and efficiency and are ready to meet diverse deployment needs.

Key features and benefits

Modular versatility	Cisco C9610 Series Smart Switches offer modular versatility, allowing flexible configurations and upgrades to meet evolving network demands, ensuring a future-ready investment.
Simplified management	Smart operations enable simplified management and proactive troubleshooting, helping to reduce operational complexity and costs through intelligent network insights.
High availability and resiliency	High availability and resiliency are core to the Cisco C9610 Series Switches, featuring redundant components and seamless failover mechanisms to maintain uninterrupted network services.
Performance and scalability	Highly scalable and designed to accommodate growing network environments with increased throughput and expanded port densities as organizational needs evolve.
Advanced security	Advanced security protects network infrastructure with encryption, threat defense, and access control for a robust security posture, including zero-day attack mitigation with Cisco Live Protect[1], and Post-Quantum Cryptography (PQC) algorithms[1] against quantum-enabled attacks.
Automation and analytics	The automation and analytics capabilities streamline network operations, offering predictive insights and simplified policy enforcement for optimized network performance.

[1] Software capability will be available in a future release

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Cisco IOS XE

Cisco IOS XE is a modern operating system for the enterprise, with support for model-driven programmability, including NETCONF, RESTCONF, YANG, on-box Python scripting, streaming telemetry, container-based application hosting, and patching for critical bug fixes. The OS also has built-in defenses to protect against runtime attacks.

Cisco IOS XE supports operational flexibility in how users decide to manage their devices. By providing out-of-the-box support for on-premises, native, and hybrid cloud management capabilities on the Cisco C9610 Smart Switch, IOS XE delivers a unified software operating system for multiple management modes.

Cisco IOS XE key features and benefits

Simplified campus automation	Simplified campus automation is designed to optimize the discovery and configuration of devices in your network with a more streamlined, simple, and easy-to-use automation tool. With features such as simplified discovery, IT can discover devices within the network within just a few steps. Also available is a GUI that provides a better, simplified view of switch configurations and software details on a port-by-port basis.
Automated device provisioning	Automated device provisioning is the ability to automate the process of upgrading software images and installing configuration files on Cisco C9000 Smart Switches and Cisco Catalyst 9000 switches when they are being deployed in the network for the first time. Cisco provides streamlined solutions such as Plug and Play and Preboot Execution Environment (PXE) that support a simplified and automated deployment.
API-driven configuration	API-driven configuration is available with modern network switches such as Cisco C9610 Series Smart Switches. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off the shelf and custom built, to automatically provision network resources.
Granular visibility	Granular visibility enables model-driven telemetry to stream data from a switch to a destination. The data to be streamed is identified through subscription to a data set in a YANG model. The subscribed data set is streamed to the destination at specified intervals. Additionally, Cisco IOS XE enables the push model. It provides near-real-time monitoring of the network, leading to quick detection and rectification of failures.

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Seamless software upgrades and patching	Seamless ISSU software upgrades and SMU patching supports OS resilience. On Cisco C9610 Series Smart Switches, Cisco IOS XE supports hot patching without reboot, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support lets you add patches without having to wait for the next maintenance release.
Trustworthy solutions built with Cisco Trust Anchor Technologies	Trustworthy solutions built with Cisco Trust Anchor module (TAm) technologies provide a highly secure foundation for Cisco products. With Cisco C9610 Series Smart Switches, these technologies enable hardware and software authenticity assurance for supply-chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include image signing, Secure Boot, and Cisco Trust Anchor module.

Get more from your Cisco switch with ISE

Integrating Cisco Identity Services Engine (ISE) with Cisco C9610 Series Smart Switches strengthens security, simplifies compliance, and enhances user experience through streamlined access controls and network management.

Discover Cisco Identity Services Engine

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Models and specifications

A fully assembled Cisco C9610 Series Smart Switch includes the chassis, at least one supervisor engine, at least one line card for network connectivity, four fan trays, and at least four power supplies.

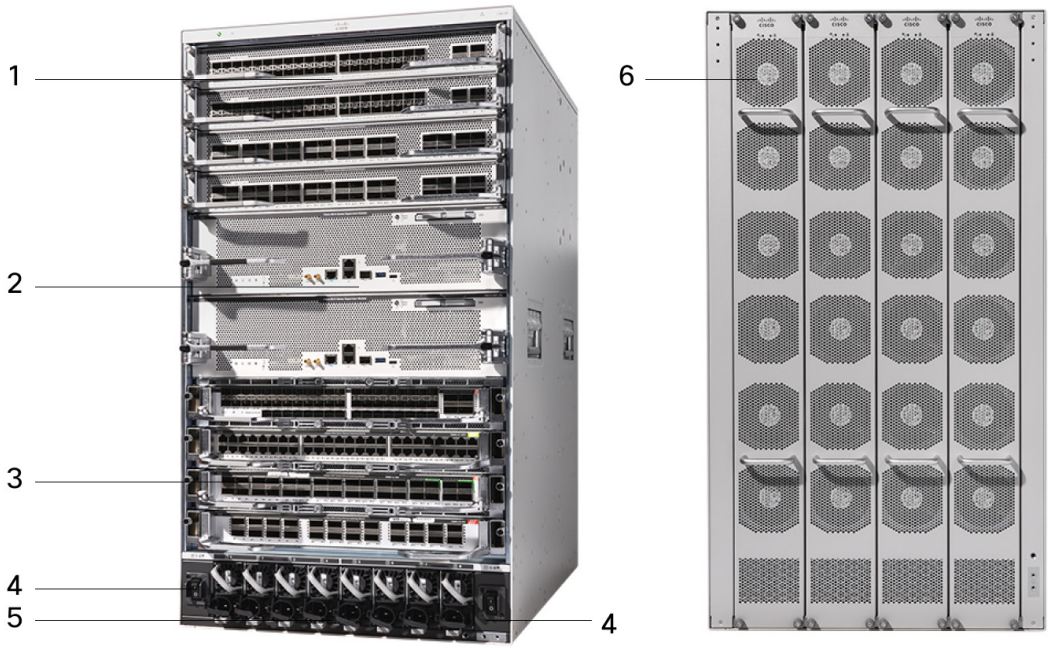


Figure 1. Front and rear view of the C9610R chassis

Table 1. Cisco C9610R front-panel components

Label	Description
1	Line card slots (top)
2	Supervisor module slots
3	Line card slots (bottom)
4	Power switches
5	Power supply modules
6	Fan tray assembly

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Chassis

Cisco C9610 Series Smart Switches offer a 10-slot chassis with two supervisor options and multiple line-card options, including support for the current Cisco Catalyst 9600 Series line cards. The new Cisco C9610R chassis provides a common architecture that can scale up to 448 native 10-Gigabit, 25-Gigabit, or 50-Gigabit SFP56 Ethernet ports (or up to 512 SFP with QSFP-4SFP breakout cables), and up to 256 native 40-Gigabit or 100-Gigabit QSFP28 or up to 16 native 400-Gigabit QSFP-DD Ethernet ports.

The Cisco C9610 Series redundant chassis offers full high availability by supporting 1 + 1 redundant supervisor engines with stateful switchover (SSO), non-stop forwarding (NSF), and full-image in-service software upgrades (ISSUs). NSF/SSO and ISSU help ensure continuous packet forwarding during supervisor engine switchover to enable HA for business-critical applications.

Powered by four Cisco Silicon One™ K100 or E100 ASICs, the new Cisco C9610 Supervisor Engine 3 models deliver 51.2 Tbps (25.6 Tbps full-duplex) throughput and 15.6 Bpps packet processing, supporting up to 2M IPv4 routes, 128K MAC addresses, and 256K HCAM entries for scalable ACLs and NetFlow. Its flexible pipelines, adaptable tables, and scalable buffering make it ideal for future-ready core deployments.

To learn more about Cisco Silicon One ASICs on Cisco C9000 Series Smart Switches, click here.

The Cisco C9610R chassis is enterprise-campus optimized, with efficient front-to-back airflow and front accessibility for most removable components, including supervisors, line cards, and power supplies. The chassis supports rear accessibility for the fan tray to enable efficient cable management. The Cisco C9610R chassis, supervisor, and line cards have optional RFID tags that facilitate easy asset and inventory management using commercial RFID readers.

Table 2. Chassis features

Feature	Cisco C9610R chassis
Total number of slots	10
Line card slots	8
Supervisor engine slots	2
Dedicated supervisor engine slot numbers	5 and 6
Supervisor engine redundancy	Yes
Supervisor engines supported	C9610-SUP-3, C9610-SUP-3XL

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Table 2. Chassis features

Feature	Cisco C9610R chassis
Maximum bandwidth scalability per line-card slot	6.4 Tbps (3.2 Tbps full-duplex) with C9610-SUP-3 or C9610-SUP-3XL
Number of power-supply bays	8
Minimum number of power supplies	4 (using 3000W PS)
Power supplies supported	3000W AC, 2000W AC, and 2000W DC
Number of fan-tray bays	4

Specifications

Table 3. Physical specifications of Cisco C9610R chassis

Description	Specifications
SKU/PID	C9610R
Dimensions (H x W x D)	31.47 x 17.4 x 26.1 inches (79.93 x 44.20 x 66.29 cm)
Rack Units (RU)	18
Chassis weight with 8 power supplies (AC) and 4 fan trays	266.0 lbs (120.7 kg)
Input voltage	AC: 90V to 264V, 47 Hz to 63 Hz DC: -40V to -72V
Operating temperature	-5° to 45°C (23° to 113°F) at sea level -5° to 40°C (23° to 104°F) up to 6000 feet (about 1.83 km)
Storage temperature	-40° to 75°C (40° to 167°F)
Relative humidity, operating and non-operating, non-condensing	10% to 95%, non-condensing

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Description	Specifications
Altitude	-60 to 3000 m (-197 to 9843 ft)
Mean time between failures (MTBF) (hours)	C9610R: 257,200 C9610-FAN: 1,155,370 C9600-PWR-3KWAC: 300,000 C9600-PWR-2KWAC: 300,000 C9600-PWR-2KWDC: 300,000
Chassis weight (without fan tray, without PSU)	184.0 lbs (83.5kg)
Weight of fan tray	13.98 lbs (6.34 kg)
Weight of individual PSUs	AC PSU (3000W): 1.48 kg (3.09 lb) AC PSU (2000W): 1.18 kg (2.60 lb) DC PSU (2000W): 1.28 kg (2.82 lb)
BTU (British Thermal Unit) of C9610R chassis with fan tray	15,164 (max)

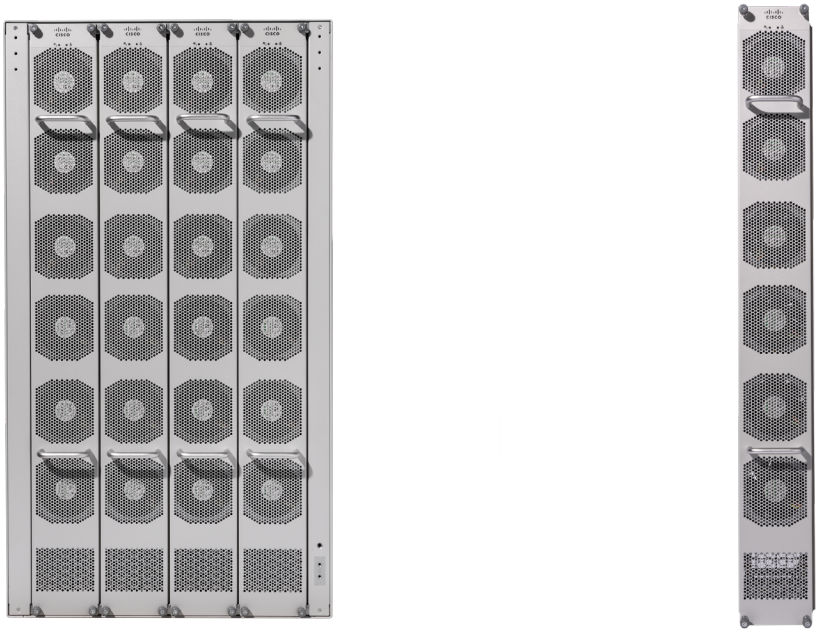


Figure 2. Cisco C9610R chassis with C9610-FAN fan trays

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Fan tray

Each Cisco C9610R chassis uses four field-replaceable fan trays (C9610-FAN) for cooling. The fan trays are accessed from the rear for flexible cable management. The chassis is optimized for enterprise campus wiring closets and data center rack rooms with front-to-back airflow. The fan tray is composed of six independently controlled fans. If any single fan fails, the system will continue to operate without a significant degradation in cooling, as the fan speeds change dynamically to compensate for fan failure.

Cisco C9610 Series Smart Switches fans have a barometric sensor, which allows slower fan speed curves at lower altitudes. The fans also have individual Pulse-Wide Modulation (PWM) fine-tuning to reduce variability in fan revolutions per minute (rpm) under throttled conditions. The C9610R chassis is designed to accommodate single fan tray replacement operation of up to 180 seconds to enable serviceability.

Power supplies

The Cisco C9610 Series Smart Switches and Catalyst 9600 Series share the same power supply units (PSUs) and support two modes of operation.



Figure 3. Cisco C9600-PWR-3KWAC 3000-Watt AC power supply



Figure 4. Cisco C9600-PWR-2KWAC and C9600-PWR-2KWDC 2000 Watt AC and DC power supplies

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Combined mode

The default Cisco C9610R chassis power supply mode is “Combined.” In Combined mode, the total power available for the entire chassis is equal to the sum of the output of all the power supplies multiplied by the share ratio. Additional power supply units operate at ~90% capacity. In Combined mode, the power supplies need to be of equal wattage. The power supplies can be AC and DC mixed as long as the AC input is 220V.

- P = Power output of one PSU
- N = Number of PSUs (1 to 8)
- Total combined power = P + (N–1) * P * (share ratio)

Redundant N+1 mode

The Cisco C9610R chassis also supports N+1 redundancy mode, with N independent input circuits and safeguards against the failure of one (+1) of the circuits during a PSU failure. Additional PSUs operate at ~90% capacity. In redundant mode, the power supplies need to be of equal wattage. The power supplies can be AC and DC mixed as long as the AC input is 220V.

- N = number of PSUs are active (1 to 7)
- +1 is the PSU reserved for redundancy

Redundant N+N mode

The Cisco C9610R chassis also supports N+N redundancy mode, with N independent input circuits and safeguards against the failure of any one or more of the active PSUs. Additional PSUs operate at ~90% capacity. In redundant mode, the power supplies need to be of equal wattage. The power supplies can be AC and DC mixed provided AC input is 220V.

- N = number of PSUs are active (1 to 4)
- +N are the PSUs reserved for redundancy (1 to 4)

Note: 3KW power supplies operate at 220V are required for system to operate with N+N redundancy.

For more information, please visit the Cisco C9610 Series Smart Switches Hardware Installation Overview.

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Table 4. Power supply specifications for Cisco C9610 Series Smart Switches

Description	Specifications		
	C9600-PWR-3KWAC	C9600-PWR-2KWAC	C9600-PWR-2KWDC
Max power rating[1]	3000W	2000W	2000W
Input voltage range and frequency	90VAC to 140VAC, 180VAC to 264VAC 47 to 63 Hz	90VAC to 140VAC, 180VAC to 264VAC 47 to 63 Hz	-40VDC to -72VDC frequency
Power supply efficiency	94% (typical)	94% (typical)	92% (typical)
Input current	17.6A max at 115VAC (1500W) 17.6A max at 230VAC (3000W)	10.5A max at 115VAC (1050W) 10.5 A max at 230VAC (2000W)	Maximum: 60A per DC input at -40VDC input (when full PSU loading)
Output ratings	12Vmain at 125A (1,500W) 12Vmain at 250A (3000W)	12Vmain at 88A 12Vmain at 167A	12Vmain at 167A
Output holdup time	AC = 20 ms minimum for system	AC = 20 ms minimum for system	AC = 5 ms minimum for system
Power supply input receptacles	AC IEC 60320 C20	AC IEC 60320 C16	Amphenol C10-638976-000
Power cord rating	AC 20A	AC 15A	DC 70A

[1]The power listed is the absolute maximum. Typically, the power would be 70% of absolute maximum.

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Table 5. Cisco C9610 Series Smart Switches power cord options

Power supply	Product number	Power cable options by country
C9600-PWR-3KWAC	CAB-9K20A-NA	North America/Japan 20A, 125VAC
	CAB-9K16A-US2	US/Japan 16A, 250VAC
	CAB-9K16A-AUS	Australia 16A, 250VAC
	CAB-9K16A-CH	China 16A, 250VAC
	CAB-9K16A-INT	International 16A, 250VAC
	CAB-9K16A-SW	Switzerland 16A, 250VAC
	CAB-9K16A-EU	Continental Europe 16A, 250VAC
	CAB-C19-CBN	Cabinet Jumper 16A, 250VAC
	CAB-TA-CN	China AC Type A Power Cable
	CAB-TA-IS	Israel AC Type A Power Cable
	CAB-TA-AP	Australia AC Type A Power Cable
	CAB-TA-AR	Argentina AC Type A Power Cable
	CAB-TA-DN	Denmark AC Type A Power Cable
	CAB-TA-EU	Europe AC Type A Power Cable
	CAB-TA-IN	India AC Type A Power Cable
	CAB-TA-IT	Italy AC Type A Power Cable
	CAB-TA-SW	Switzerland AC Type A Power Cable
	CAB-TA-UK	United Kingdom AC Type A Power Cable
	CAB-TA-NA	North America AC Type A Power Cable
	CAB-C15-CBN	Cabinet Jumper Power Cord, 250 VAC 13A, C14-C15 Connectors

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Power supply	Product number	Power cable options by country
C9600-PWR-2KWAC	CAB-TA-JP	Japan AC Type A Power Cable
	CAB-C15-CBN-JP	Japan Cabinet Jumper Power Cord, 250 VAC 12A, C14-C15
	CAB-TA-250V-JP	Japan 250V AC Type A Power Cable
	CAB-ACBZ-12A	AC Power Cord (Brazil) 12A/125V BR-3-20 plug up to 12A
C9600-PWR-2KWDC	PWR-2KW-DC-CBL	Power Cord - 2KW DC

Power consumption

Power consumption depends on the unique per-device hardware configuration—specifically, the supervisor engine and line cards installed and the power supplies. To model the power consumption for a specific hardware configuration, visit the Cisco Power Calculator.

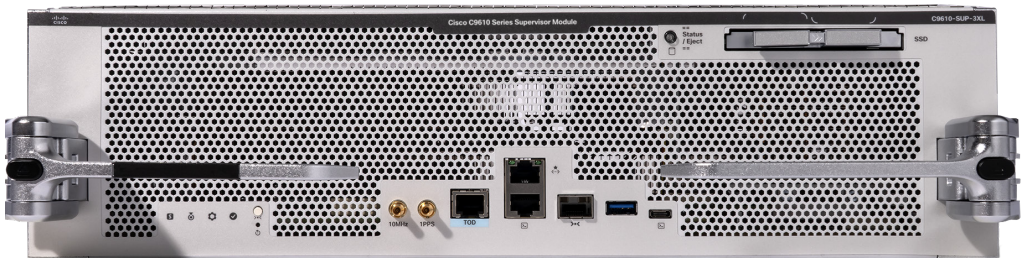
Supervisor engines

Cisco C9610 Series Smart Switches offer two industry-leading supervisor engines built for secure networks, IoT applications, next-generation mobility, and cloud adoption.

Cisco C9610 Supervisor Engine 3XL and 3 are based on the new Cisco Silicon K100 and E100 ASICs (with Q200L) and are purpose-built for current and future campus distribution, core, and edge designs with high-performance full routing and switching capabilities.

To learn more about Cisco Silicon One ASICs on Cisco 9000 Series switches, click here.

Cisco C9610 Supervisor Engine 3



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Cisco C9610 Supervisor Engine 3

Supervisor Engine 3 use cases:

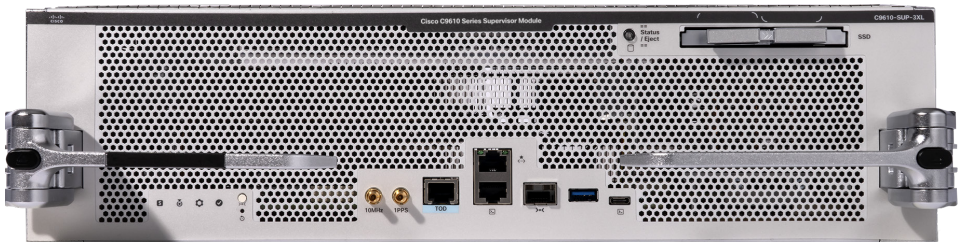
- C9610-SUP-3 is specifically designed for customers focusing on deployments with medium-large Layer 2 (L2) and Layer 3 (L3) forwarding scale, medium-large ACL and FNF feature scale, and medium QoS buffers.
- Intended for campus distribution or collapsed-core layer with a focus on L2 MAC address and L3 ARP/NDP scale.
- Provides bandwidth for medium-density high-speed interfaces from 10G–50G SFP and 40G-400G QSFP with 256MB of built-in QoS buffers.

Supervisor Engine 3 highlights:

- The C9610-SUP-3 model features 4x Cisco Silicon One E100 forwarding ASICs connected via a Q200L fabric ASIC.
- Cisco Silicon One E100 ASIC is designed for the next-generation campus distribution core and core switch. Each E100 ASIC offers speeds up to 12.8 Tbps (6.4 Tbps full duplex) with up to 3.9 Bpps of forwarding performance.
- Cisco Silicon One Q200L ASIC offers speeds up to 25.6 Tbps (12.8 Tbps full duplex) with up to 8 Bpps of forwarding performance.
- 64MB of dedicated low-latency Shared-Memory System (SMS) buffer per E100 ASIC.
- Intel 2.0-GHz x86 CPU with 8 cores and 32GB of DDR4 memory.
- Up to 960 GB of SATA SSD local storage for container-based application hosting.
- ASIC tables for switching scale up to 128K MAC addresses and IP routing scale up to 1M routes.
- IPv6 support in hardware provides wire-rate forwarding for IPv6 networks.
- Dual-stack support for IPv4 and IPv6 and dynamic hardware forwarding table allocations enable easy IPv4-to-IPv6 migration.
- Flexible routing (IPv4, IPv6, and multicast) tables, Layer 2 tables, ACL tables, and QoS tables.
  Cisco C9610 Series Supervisor Engine 3XL.

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Cisco C9610 Series Supervisor Engine 3XL



Supervisor Engine 3XL use cases:

- C9610-SUP-3XL is specifically designed for customers focusing on L3 (core or edge) deployments with large L2 and L3 forwarding scale, large ACL and FNF scale, and deep QoS buffers.
- Intended for campus core, edge or gateway (internet) deployments that require high IPv4 or IPv6 route scale.
- Provides bandwidth for dense high-speed interfaces from 10G-50G SFP and 40G-400G QSFP, with deep 256MB + 8GB QoS buffers.

Supervisor Engine 3XL highlights:

- The C9610-SUP-3XL model features 4x Cisco Silicon One K100 forwarding ASICs, connected via a Q200L fabric ASIC.
- Cisco Silicon One K100 ASIC is designed for the next-generation campus distribution core , core and campus gateway switch. Each K100 ASIC offers speeds up to 12.8 Tbps (6.4 Tbps full duplex) with up to 3.9 Bpps of forwarding performance.
- Cisco Silicon One Q200L ASIC offers speeds up to 25.6 Tbps (12.8 Tbps full duplex) with up to 8 Bpps of forwarding performance.
- Cisco Silicon One K100 ASICs includes an 8GB on-chip 2.5D high-bandwidth memory (HBM2E) for deep packet buffers and route table expansion.
- 64MB of dedicated low-latency buffer with up to 8GB of HBM buffer per K100 ASIC.
- Intel 2.0-GHz x86 CPU with 8 cores and 32GB of DDR4 memory.
- Up to 960 GB of SATA SSD local storage for container-based application hosting.
- ASIC tables for switching scale up to 128K MAC addresses and IP routing scale up to 2M routes.
- IPv6 support in hardware provides wire-rate forwarding for IPv6 networks.
- Dual-stack support for IPv4 and IPv6 and dynamic hardware forwarding table allocations enable easy IPv4-to-IPv6 migration.
- Flexible routing (IPv4, IPv6, and multicast) tables, L2 tables, ACL tables, and QoS tables.

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Supervisor engine comparison

The Cisco C9610 Series Supervisor Engine 3 and 3XL use common hardware with consistent performance but different feature scale support. The C9610-SUP-3 is designed for medium-high scale distribution layer deployments, while the C9610-SUP-3XL is designed for highest scale distribution or core layer deployments.

Software features

Cisco IOS XE, running on Cisco C9610 Series Smart Switches, supports advanced Layer 2 (L2) and Layer 3 (L3) forwarding capabilities, increased forwarding and access control scale, and hardware-based encryption, delivering high performance and security for the modern enterprise campus.

Table 6. Feature comparison for Cisco C9610 Series Smart Switches supervisor engines

Model	C9610-SUP-3	C9610-SUP-3XL
Cisco StackWise Virtual	✓[1]	✓[1]
Stateful Switchover (SSO)	✓ (2 SUP, SVL[1])	✓ (2 SUP, SVL[1])
Enterprise Security	✓	✓
Enterprise Quality of Service	✓	✓
Layer 2 Switching	✓	✓
IP routing	✓	✓
IP Multicast routing	✓	✓
IPv6 routing	✓	✓
IPv6 Multicast routing	✓	✓
Software-Defined Access (SD-Access)	✓[1]	✓[1]

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Model	C9610-SUP-3	C9610-SUP-3XL
Flexible NetFlow (FNF)	✓[1]	✓[1]
Programmability	✓	✓
Out-of-band management	✓	✓
Minimum software requirement	IOS XE 17.18.1	IOS XE 17.18.1

[1]C9610-SUP-3/3XL: Feature is not available at FCS, but it is hardware capable.

For a detailed list of the latest software features available on the Cisco C9610 Series, per Cisco IOS XE release, please refer to the Cisco Feature Navigator tool.

For a detailed list of the software features available in each license, please refer to the Unified Licensing section below, or visit the Cisco Switching Licensing feature matrix.

Cisco Feature Navigator

Compare platforms, determine common features between products, and identify unique product features.

Access Cisco Feature Navigator

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Table 7. Switch performance

Feature	C9610-SUP-3	C9610-SUP-3XL
System switching capacity	Up to 51.2 Tbps (25.6 Tbps full-duplex)[1]	Up to 51.2 Tbps (25.6 Tbps full-duplex)[1]
Per-slot switching capacity	Up to 6.4 Tbps (3.2 Tbps full-duplex)	Up to 6.4 Tbps (3.2 Tbps full-duplex)
ASICs	4x E100 and 1x Q200L	4x K100 and 1x Q200L
Forwarding rate	Up to 15.6 Bpps[1] (4x 3.9 Bpps)	Up to 15.6 Bpps[1] (4x 3.9 Bpps)
DRAM	32 GB	32 GB
Flash	16 GB	16 GB
SSD capacity	Up to 960 GB	Up to 960 GB
VLAN IDs	4094	4094
PVST instances	4094	4094
STP virtual ports (port X VLANs) for PVST	32K	32K
STP virtual ports (port X VLANs) for MST	100K	100K
Switched virtual interfaces (SVIs)	4000[2]	4000[2]
Jumbo frames	9216	9216
Total number of MAC addresses	Up to 128,000[2]	Up to 128,000[2]

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Feature	C9610-SUP-3	C9610-SUP-3XL
Total number of IPv4 routes	Up to 1,000,000[2,3,4]	Up to 2,000,000[2,3,4]
Total number of IPv6 routes	Up to 500,000[2,3,4]	Up to 1,000,000[2,3,4]
Address resolution protocol (ARP) entries	Up to 128,000[2,3,4]	Up to 128,000[2,3,4]
Neighbor discovery protocol (NDP) entries	Up to 128,000[2,3,4]	Up to 128,000[2,3,4]
IGMP/MLD snooping entries	Up to 16,000[2,3,4]	Up to 16,000[2,3,4]
Multicast routes	Up to 32,000[2,3,4]	Up to 32,000[2,3,4]
QoS ACL scale (IPv4/IPv6)	Up to 5000/2500[2]	Up to 8000/4000[2]
Security ACL scale (IPv4/IPv6)	Up to 21,000 ingress [2], Up to 21,000 egress [2]	Up to 36,000 ingress [2], Up to 36,000 egress [2]
GRE tunnels	Up to 1000	Up to 1000
NetFlow entries[5] (IPv4/IPv6)	Up to 32,000 ingress [2], Up to 32,000 egress [2]	Up to 64,000 ingress [2], Up to 64,000 egress [2]
Packet buffer	256MB (4x 64MB)	256MB (4x 64MB) + 8GB

[1] Based on C9610R chassis with 8 line cards operating at 3.2 Tbps.

[2] Varies based on selected flexible SDM ASIC template.

[3] Total routes are shared between IPv4 and IPv6.

[4] Table maximum. The exact % of allocation will depend on specific IP/mask combinations.

[5] Feature is not available at FCS, but it is hardware capable.

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Cisco C9610 Series Smart Switches have flexible interface types and port densities that allow you to mix and match network configurations to meet the specific needs of campus networks. See the following table for more information.

Table 8. Maximum port densities

Cisco C9610R chassis	C9610-SUP-3	C9610-SUP-3XL
400G	16	16
200G	16[1]	16[1]
100G	256	256
50G	448	448
40G	256	256
25G	448	448
10G	448	448

[1] Hardware-ready (based on TMG availability)

Supervisor engine specifications

The following table lists the physical specifications of Cisco C9610 Supervisor Engine 3 and Supervisor Engine 3XL.

Table 9. Physical specifications for Cisco C9610 Supervisor Engines

Description	Specifications
SKU	C9610-SUP-3, C9610-SUP-3XL
Dimensions (H x W x D)	4.30 x 16.64 x 18.78 inches (10.92 x 42.27 x 47.69 cm)
Weight of Supervisor	31.1 lbs (14.1 kg)
Rack units (RU)	2.5 RU
Operating temperature	23° to 113°F (-5° to 45°C) at sea level 23° to 104°F (-5° to 40°C) up to 6,000 feet (1.83 km)
Storage temperature	40° to 158°F (-40° to 70°C)

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Description	Specifications
Relative humidity, operating and non-operating, non-condensing	10% to 95%, noncondensing
Altitude	-197 to 9843 feet (-60 to 3000 m)
Mean time between failures (MTBF) (hours)	C9610-SUP-3: 223,220 C9610-SUP-3XL: 223,220

Supervisor ASIC templates

Cisco C9610 Series Smart Switches use flexible software database manager (SDM) ASIC templates to enable universal deployments by leveraging the ASIC's ability to flexibly allocate resources to optimize table sizes for different places in the network.

Based on how the switch is used in the network, an appropriate standard SDM ASIC template may be configured for specific features. The Cisco C9610 Series Smart Switch Supervisor Engine supports eDM ASIC templates:

- Standard SDM templates: These are predefined (static) templates based on the primary requirements for specific places in the network.
  - This includes the "default" SDM template, which is available without configuration. The default SDM template for Cisco C9610 is the "core" template

SDM templates

The following sections describe the flexible ASIC SDM templates for C9610-SUP-3/XL.

Default SDM ASIC template

The following table describes the default SDM ASIC (core) template for C9610-SUP-3/XL.

Table 10. SDM template descriptions for C9610-SUP-3/XL

Features	Default template C9610-SUP-3	Default template C9610-SUP-3XL
MAC addresses	128,000	128,000
IP host routes[1]	128,000	128,000
IP LPM routes[1]	1,000,000	2,000,000

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Features	Default template C9610-SUP-3	Default template C9610-SUP-3XL
IP multicast routes[1]	32,000	32,000
IGMP/MLD snooping[1]	16,000	16,000
MPLS VPN labels[2]	64,000	64,000
Security/Object groups	24,000	24,000
NetFlow entries [1,2]	32,000 ingress, 32,000 egress	64,000 ingress, 64,000 egress
Security ACLs[1]	21,000 ingress, 21,000 egress	36,000 ingress, 36,000 egress
QoS ACLs[1]	5000 ingress, 5000 egress	8000 ingress, 8000 egress
PBR[1]	8000	16000
GRE Tunnels	1000	1000

[1] IPv4 and IPv6 entries coexist in the same tables, but IPv6 entries require two entries.

[2] Feature is not available at FCS but will be available in future software releases.

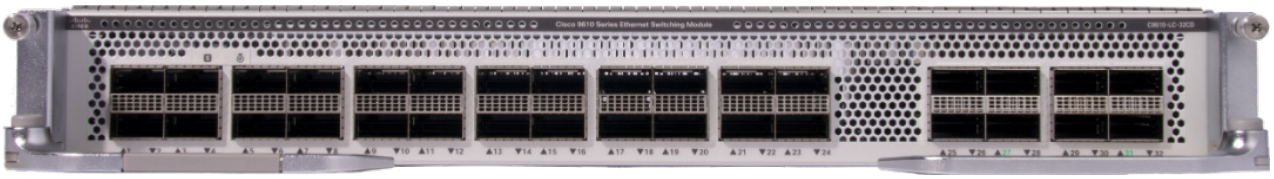
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Line cards

Line cards provide the physical network ports and are essential modular components that enhance the adaptability and performance of Cisco C9610 Series Smart Switches, meeting diverse network requirements and helping to protect the investment in network infrastructure.

C9610-LC-32CD

30-port 100/40GE, 2-port 200GE[1], 2-port 400GE line card



Line card use cases:

- C9610-LC-32CD combo card is a newer version of C9600X-LC-32CD specifically designed for C9610R with superior airflow and layout, for high port-density campus core or edge designs with majority QSFP optics.
- Able to support 32 line-rate QSFP28 ports for maximum high-speed upstream or downstream connections.
- Able to convert four QSFP28 ports into two QSFP-DD ports for high-speed connections to upstream devices (e.g., SP or DC switches).

Line card highlights:

- Paired with **C9610-SUP-3/3XL** (3.2 Tbps full-duplex), this line card provides up to 32 ports of QSFP28 or 28 ports of QSFP28 and two ports of QSFP-DD non-blocking.
- 100/40 GE QSFP28
- 400/200 GE QSFP-DD ports

Notes:

1. Based on transceiver module availability

C9610-LC-40YL4CD

40-port 50/25/10GE, 2-port 200GE[1], 2-port 400GE line card



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Line card use cases:

- C9610-LC-40YL4CD combo card is a newer version of C9600-LC-40YL4CD specifically designed for C9610R with superior airflow and layout, for medium to high port density campus core or distribution designs with both SFP (downlink) and QSFP (uplink) optics.
- The traditional two-row design provides 40 ports of multi-rate SFP56 ports to connect to downstream devices (e.g., access switches).
- The same line card also provides two ports of multi-rate QSFP28 ports and two ports of multi-rate QSFP-DD to connect to upstream devices (for example, SP or DC switches), without need for additional modules.

Line card highlights:

- Paired with **C9610-SUP-3/3XL** (3.2 Tbps full-duplex) this line card provides up to 40 non-blocking ports of SFP56, two ports of QSFP56 and two ports of QSFP-DD fiber.
- 50/25/10GE SFP56
- 200/100/40GE QSFP56[1]
- 400GE QSFP-DD

Notes:

1. Based on transceiver module availability

C9610-LC-ADPT



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Adapter use cases:

- Adapts existing C9600-LC or C9600X-LC modules to operate in a C9610R chassis

Adapter highlights:

- Includes a small PCB to convert C9606R backplane connectors to new C9610R backplane connectors
- Extra LC width and height (1.2RU) to fit securely in the C9610R chassis
- Converts side-to-side airflow (C9606R) to front-to-back airflow in C9610R chassis

C9600X-LC-32CD

30-port 100/40GE, 2-port 200GE[1], 2-port 400GE line card



Line card use cases:

- C9600X-LC-32CD combo card is specifically designed for high port-density campus core or edge designs with majority QSFP optics.
- Able to support 32 line-rate QSFP28 ports for maximum high-speed upstream or downstream connections.
- Able to convert four QSFP28 ports into two QSFP-DD ports for high-speed connections to upstream devices (e.g., SP or DC switches).

Line card highlights:

- Paired with **C9610-SUP-3/3XL**[2] (3.2 Tbps full-duplex bandwidth), this line card provides up to 30 ports of 100/40GE and two ports of 400/200/100/40GE non-blocking.
- 100/40GE QSFP28
- 400/200GE QSFP-DD

Notes:

1. Based on transceiver module availability
2. With C9610-LC-ADPT adapter

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C9600-LC-40YL4CD

40-port 50/25/10GE, 2-port 200GE[1], 2-port 400GE line card



Line card use cases:

- C9600-LC-40YL4CD combo card is specifically designed for medium-high port-density campus core or distribution designs with both SFP and QSFP optics.
- The traditional two-row 1RU design provides 40 ports of multi-rate SFP56 ports to connect to downstream devices (e.g., access switches).
- The same line card also provides two ports of multi-rate QSFP28 ports and two ports of multi-rate QSFP-DD to connect to upstream devices (for example, SP or DC switches), without the need for additional modules.

Line card highlights:

- Paired with **C9610-SUP-3/3XL**[2] (3.2 Tbps full-duplex), this line card provides up to 40 non-blocking ports of SFP56, two ports of QSFP56 and two ports of QSFP-DD fiber.
- 50/25/10GE SFP56
- 200/100/40GE QSFP56[1]
- 400GE QSFP-DD.

Notes:

1. Based on transceiver module availability
2. With C9610-LC-ADPT adapter

C9600X-LC-56YL4C

56-port 50/25/10GE, 4-port 100GE line card



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Line card use cases:

- C9600X-LC-56YL4C combo card is specifically designed for high port-density campus core or distribution designs with majority SFP optics.
- The unique three-row 1RU design provides 56 ports of multi-rate SFP56 ports to connect to downstream devices (e.g., access switches).
- The same line card also provides two ports of multi-rate QSFP28 ports to connect to upstream devices (e.g., SP or DC switches), without the need for additional modules.

Line card highlights:

- Paired with **C9610-SUP-3/3XL**[1] (3.2 Tbps full-duplex bandwidth), this line card provides up to 56 ports of 50/25/10GE and four ports of 40/100GE non-blocking.
- 50/25/10GE SFP56
- 100/40GE QSFP28 ports

Notes:

1. With C9610-LC-ADPT adapter

C9600-LC-48TX

48-port multigigabit RJ45 copper line card



Line card use cases:

- C9600-LC-48TX line card is specifically designed for high port-density campus distribution or access designs with majority multgigabit (mGiG) RJ45 ports.
- Able to support 48 line-rate 10G-baseT mGig ports for high-density high-speed downstream connections based on copper cabling.

Line card highlights:

- Supported on C9610-SUP-3/3XL Paired with C9610-SUP-3/3XL[1] (2.4 Tbps full-duplex), this line card provides up to 48 ports of RJ45 non-blocking copper.
- 10GE RJ45

Notes:

1. With C9610-LC-ADPT adapter

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Line card compatibility

Cisco C9610 Series Smart Switches offer the ability to mix and match a range of line cards to support numerous cores and distribution deployments. Supported line cards are listed in the following tables by part number.

Table 11. Line card compatibility and minimum software requirements

Product number	Description	C9600-SUP3	C9600-SUP3XL
C9610-LC-32CD	Cisco C9610 Series Smart Switch combo line card 30 ports 100/40GE QSFP28 2 ports 400/100/40GE QSFP-DD	17.18.1	17.18.1
C9610-LC-40YL4CD	Cisco C9610 Series Smart Switch combo line card 40 ports 10/25GE SFP and 2 ports 40/100GE QSFP uplinks	17.18.1	17.18.1
C9600X-LC-32CD	Catalyst 9600 Series Switch combo line card 30 ports 100/40GE QSFP28 2 ports 400/100/40GE QSFP-DD	17.18.1	17.18.1
C9600-LC-40YL4CD	Catalyst 9600 Series Switch combo line card 40 ports 10/25GE SFP 2 ports 40/100GE QSFP uplinks	17.18.1	17.18.1
C9600X-LC-56YL4C	Catalyst 9600 Series Switch combo line card 56 ports 50/25/10GE SFP56 4 ports 100/40GE QSFP28 uplinks	17.18.1	17.18.1
C9600-LC-48TX	Catalyst 9600 Series Switch line card 48-port RJ45 copper – 10GE	17.18.1	17.18.1

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Pluggable optics

Optical transceivers, also known as pluggable optics, are required to operate Cisco C9610 Series Smart Switch fiber-optic line cards. Cisco C9610 Series Smart Switches fiber-optic line cards provide a variety of optical port types and speeds. These are compatible with Cisco-branded or non-Cisco branded optical transceivers.

For details about the different optical modules supported by each line card and the minimum Cisco software release required for each of the supported optical modules, please visit the following links:

Optics compatibility for each Cisco C9610 Series Smart Switches line card:

- C9610-LC-32CD (30-port 100/40GE, 2-port 200GE, 2-port 400GE)
- C9610-LC-40YL4CD (40-port 50/25/10GE, 2-port 200GE, 2-port 400GE)
- C9600X-LC-32CD (30-port 100/40GE, 2-port 200GE, 2-port 400GE)
- C9600-LC-40YL4CD (40-port 50/25/10GE, 2-port 200GE, 2-port 400GE)
- C9600-LC-56YL4C (56-port 50/25/10GE, 4-port 40/100GE)
- C9600-LC-48TX (48-port RJ45 copper - 10GE)

For more information about Cisco pluggable optics, please visit Optical Transceivers and Coherent Optics.

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Management

The ability to manage these devices from the cloud brings enhanced scalability, flexibility, and efficiency through central configuration management, monitoring, and troubleshooting. Users opting to leverage the cloud-native capabilities of IOS XE retain advanced control from the cloud through the implementation of Cloud CLI to access read and write commands based on their selected operating mode.

Unified experience

Cisco C9610 Series Smart Switches deliver a seamless onboarding experience to the management mode of your choice, allowing you to select the management options that best match your operational needs.

Cloud management

Cisco Meraki dashboard is a cloud-native network management platform that empowers you to streamline provisioning, configuration, and monitoring of your Cisco C9610 Series Smart Switches while reducing IT overhead. Through the guided onboarding workflow, you can choose the operating mode that fits your needs:

1. **Configuration Source: Device:** Configuration through console, SSH, or CLI, complemented by centralized monitoring and read/write Cloud CLI terminal via Meraki dashboard. For details on cloud management with device configuration, click here.
2. **Configuration Source: Cloud[1]:** Full cloud-managed provisioning and monitoring plus read-only Cloud CLI terminal for advanced troubleshooting via Meraki dashboard. For details on cloud management with cloud configuration, click here.

Cisco Meraki dashboard also supports inventory and license management for Cisco C9610 Series Smart Switches without fully onboarding them for cloud or device configuration.

[1] Available in a future release.

On-premises management

Cisco Catalyst™ Center, formerly Cisco DNA Center, is a powerful on-premises network controller and management dashboard that empowers you to take charge of your network, optimize your Cisco investment, and lower your IT spending. Catalyst Center provides a single dashboard for every fundamental management task to simplify running your network. With this platform, IT can respond to changes and challenges faster and more intelligently.

Catalyst Center provides coverage for Cisco enterprise switching, routing, and mobility products. For a complete list of Cisco products supported, please see our compatibility matrix, which is updated regularly.

For more information on Catalyst Center support, click here.

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Licensing

Unified licensing

Unified licensing in a Cisco Networking Subscription or an Enterprise Agreement is available for Cisco C9610 Series Smart Switches.

To learn more about Cisco Networking Subscription, go to the Cisco Networking Subscription data sheet.

Cisco Enterprise Agreements

The Cisco Enterprise Agreement (EA) is a flexible licensing solution that simplifies the purchase, management, and deployment of Cisco technologies.

By combining multiple Cisco software and services into one agreement, the EA provides easy access to a wide range of products, including networking, security, collaboration, and data center solutions.

This approach reduces administrative tasks, offers predictable costs, and allows for scalability and adaptability. With the flexibility of the Cisco EA, organizations can drive digital transformation and innovation while maintaining control over their IT investments. For more information, go to Cisco Enterprise Agreement.

Migration essentials

The network is the backbone of modern workplaces, powering seamless experiences across all environments. Cisco C9610 Series Smart Switches ensure every device connects to your network with unparalleled ease, security, and reliability. All with embedded security and assurance to keep everything across your network up and running.

This platform is crucial in completing the comprehensive transition from the previous generation of Switching (Catalyst 6500 and Catalyst 6800). Consequently, customers will now be empowered to capitalize on the campus innovation that Cisco has invested in its Switching Portfolio through the utilization of the Cisco C9610 Series Smart Switches.

Cisco stands alone in delivering a networking solution that integrates security, assurance, and intelligence across the entire network spectrum, from campuses to branches to datacenters and beyond. Cisco C9610 Series Smart Switches take the core of the future-proofed workplace to the next level in terms of high availability, performance and density. This new modular core switching platform offers a pathway to cloud, on-premises, or air-gapped core deployments with the same hardware. Programmability (NETconf, RESTconf, gNMI), EVPN, and enhanced cloud storage (S3) are enabled by our next generation Enterprise-Class Silicon One that combines Switching/Routing into one powerful ASIC with strong scale and performance in L2/L3.

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Why upgrade?

Key benefits:

- Transform your network to handle a hybrid world where the workplace is anywhere, endpoints could be anything, and applications are hosted all over the place.
- Reinforce security and redefine the experience for your hybrid workforce big and small.
- Reduce costs, complexity, and downtime, automate policy, enable fast service creation, and get 360-degree contextual insights across users, devices, and applications.
- Assure network performance with real-time and historical data analytics, to learn, adapt, and even detect problems before they happen.
- Create better customer and employee experiences through higher performance and improved support for mobility and new apps.
- Detect and stop threats, simplify security complexity, keep your business more secure, and make your IT more productive.

The Cisco C9000 series of switches is the first to support the latest, cloud-native Cisco IOS XE and unified software licenses, allowing customers to purchase the features and capabilities they need. See the benefits you could be receiving now by comparing Cisco C9610 Series Smart Switches to older models.

Resources for upgrading

Cisco Validated design and deployment resources	Access design and deployment documentation to take advantage of Cisco products as part of your architecture. Cisco Validated helps you deliver trusted, unified experiences at every touchpoint. Access Cisco Validated for campus and branch
Cisco C9000 Series Switches feature comparison	Compare the benefits of upgrading from previous Catalyst switch models to the Cisco C9350 and C9610 Series Smart Switches with detailed comparisons of features and capabilities. Discover upgrade benefits
Migrating from Cisco Catalyst 6500/6800 to 9600 Series Switches	Deploy Cisco C9610 Series Smart Switches in the enterprise networking environment using this guide. The guide is intended for network planners and engineers who are familiar with Cisco Catalyst 6500 and 6800 Series Switches. Read migration guide

Customer stories

Read, hear, and watch what our customers have to say about how Cisco technology is pushing the limits to bring better, more secure outcomes for them and those they serve. See what customers are saying.

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Trials and offers

Trials and demos

To connect with a Cisco sales expert, build your own estimate, or find a partner, visit our How to Buy hub.

Request a one-on-one demo

Ask our experts to show you how this solution could work for your organization.

Request a demo

Catalyst Center demos

See how to use Cisco Catalyst Center to easily configure and manage network settings, IP addresses, profiles, and more.

View Catalyst Center demos

Offers

Up to 16% off next-gen line cards and supervisor

Save big on upgrading to next-generation 400G line cards and Cisco C9610 or Cisco Catalyst 9600X Supervisor

View offer

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Ordering information

The following table lists the ordering information for chassis, power supplies, supervisor engines, line cards, and accessories that are commonly used with the Cisco C9610 Series Smart Switches, as well as the Cisco Networking Subscription licenses.

For a detailed overview of the ordering process, please visit the Cisco C9610 Series Smart Switches Ordering Guide.

We recommend working with a Cisco partner to purchase.

- Contact sales
- Find a partner
- Create an estimate

Table 12. Ordering information

Product number	Description
C9610R (=)	Cisco C9610 Series Smart Switches 10-slot chassis
C9610-SUP-3 (=)	Cisco C9610 Series Smart Switches Supervisor 3 module
C9610-SUP-3XL (=)	Cisco C9610 Series Smart Switches Supervisor 3XL module
C9610-LC-32CD (=)	Cisco C9610 Series Smart Switches combo line card 30 ports 100/40G QSFP28 2 ports 400/200/100/40GE QSFP-DD
C9610-LC-40YL4CD (=)	Cisco C9610 Series Smart Switches combo line card 40 ports 50/25/10GE SFP56 2 ports 100/40GE QSFP56 uplinks 2 ports 400/200/100/40GE QSFP-DD uplinks
C9600X-LC-32CD (=)	Cisco Catalyst 9600 Series Switches combo line card 30 ports 100/40GE QSFP28 2 ports 400/200/100/40GE QSFP-DD

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Product number	Description
C9600-LC-40YL4CD (=)	Cisco Catalyst 9600 Series Switches combo line card 40 ports 50/25/10GE SFP56 2 ports 100/40GE QSFP56 uplinks 2 ports 400/100/40GE QSFP-DD uplinks
C9600X-LC-56YL4C (=)	Cisco Catalyst 9600 Series Switches combo line card 56 ports 50/25/10GE SFP56 4 ports 100/40GE QSFP28 uplinks
C9600-LC-48TX (=)	Cisco Catalyst 9600 Series Switches 48-port RJ45 copper 10GE line card
C9610-FAN (=)	Cisco C9610 Series Smart Switches Fan Tray
C9610-SSD-480G-V1 (=)	Cisco C9610 Series Smart Switches 480GB SSD storage
C9610-SSD-960G-V1 (=)	Cisco C9610 Series Smart Switches 960GB SSD storage
Cisco Networking Subscription	
LIC-CS-CO-MO-A	Cisco Switching Advantage License Core Modular
LIC-CS-CO-MO-A-3Y	Cisco Switching Advantage License Core Modular 3 years
LIC-CS-CO-MO-A-5Y	Cisco Switching Advantage License Core Modular 5 years
LIC-CS-CO-MO-A-7Y	Cisco Switching Advantage License Core Modular 7 years
Power supplies	
C9600-PWR-3KWAC (=)	Cisco Catalyst 9600 Series Switches 3000W AC power supply
C9600-PWR-2KWAC (=)	Cisco Catalyst 9600 Series Switches 2000W AC power supply
C9600-PWR-2KWDC (=)	Cisco Catalyst 9600 Series Switches 2000W DC power supply

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Product number	Description
Spare accessories and kits	
C9610-LC-ADPT (=)	Cisco C9610 Series Line Card Adapter
C9610-SUP-BLANK (=)	Cisco C9610 Series Smart Switches blank for Supervisor slot
C9610-LC-BLANK (=)	Cisco C9610 Series Smart Switches blank for Line Card slot
C9600-PWR-BLANK (=)	Cisco C9610 Series Smart Switches blank for chassis power supply slot
CAB-CONSOLE-USB	Console Cable 6 ft with USB Type A and mini-B
CAB-CONSOLE-RJ45	Console Cable 6 ft with RJ45 and DB9F
C9610-19-KIT-4=	Cisco C9610 Series Smart Switches 19” 4 post
C9610-23-KIT-2=	Cisco C9610 Series Smart Switches 23" 2 post
C9610-NEBS-KIT	Cisco C9610 Series Smart Switches NEBS kit
C9610-NEBSFILTER=	Cisco C9610 Series Smart Switches NEBS kit filter

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Warranty

Cisco C9610 Series Smart Switches come with a Limited Lifetime Warranty (LLW) that includes next-business-day (NBD) shipment of replacement hardware. Your formal warranty statement, including the warranty applicable to Cisco software, appears in the information packet that accompanies your Cisco product. We encourage you to carefully review the warranty statement shipped with your specific product before use. Cisco reserves the right to refund the purchase price as its exclusive warranty remedy. For further information about warranty terms, visit the Cisco Warranty portal.

The following table provides information about the Cisco C9610 Series product warranty.

Table 13. Limited Lifetime Warranty (LLW) details

Description	Cisco Limited Lifetime Warranty (LLW)
Devices covered	Applies to Cisco C9610 Series Smart Switches
Warranty duration	As long as the original customer owns the product.
End-of-life policy	In the event of discontinuance of product manufacture, Cisco warranty support is limited to five years from the announcement of discontinuance.
Hardware replacement	Cisco or its service center will use commercially reasonable efforts to ship a replacement part to the customer's address of record on the next business day after issuance of a valid RMA request. Actual delivery times may vary depending on customer location. Taxes and duties may apply and will be borne by the recipient of the replacement part.
Effective date	Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than 90 days after original shipment by Cisco).
Cisco.com access	Warranty allows guest access only to Cisco.com.

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Sustainability profile

Cisco is embedding sustainability into the product lifecycle, from manufacturing to end of use. Designed with consideration for Circular Design Principles,, our products feature both individual and portfolio-wide programs and innovations, including those that address efficient architecture design, power consumption, energy management, packaging sustainability, and takeback. These elements are pivotal in reducing operational costs, and advancing net-zero greenhouse gas (GHG) emissions targets and other sustainability-related ambitions.

Information about Cisco's Environmental, Social, and Governance (ESG) initiatives and performance is available in Cisco's Purpose Reporting Hub.

Information regarding Cisco compliance with applicable environmental laws and regulations is available in the Environmental Compliance section.

Table 14. Sustainability references

Sustainability topic		Description
Power	Cisco Power Calculator	The Cisco Power Calculator tool provides an estimation of power and allows customers to calculate the power supply requirements for a specific Power over Ethernet (PoE) configuration. Cisco Power Calculator
	Power management configuration	The power management chapter in the System Management Configuration Guide provides detailed information on power management features and configurations available for the Cisco C9610 Smart Switches. The features discussed include power-supply modes, module operating states, and power-budgeting considerations. System management and power management
Energy management	Catalyst Center dashboard	The Catalyst Center dashboard offers comprehensive energy management capabilities, allowing users to monitor power usage, energy mix, costs, and CO2e emissions and optimize energy consumption in real time. Catalyst Center release notes
	Environmental monitoring configuration	The environmental monitoring chapter in the System Management Configuration Guide provides guidelines for configuring monitoring of environmental conditions of chassis components. System management and environmental monitoring

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Sustainability topic		Description
	Cisco SmartPower	Cisco SmartPower is an extensible power management protocol that employs a domain-based, hierarchical architecture for power management across network devices. It utilizes a signalling mechanism within the network infrastructure to communicate power data and enforce power policies on endpoints. This allows for granular control over device power states and the implementation of energy-saving measures across the network.
Ecolabels	80 PLUS Platinum/ Titanium Certified power supply units (PSUs)	Cisco C9610 Smart Switches support high efficiency power supply units. 80 PLUS Platinum Certified PSUs offer up to 92% efficiency at 50% load and titanium PSUs reach up to 94% efficiency at 50% load. Power supply units
Materials, modularity, and reuse	Hardware standardization and modularity	Cisco C9610 Smart Switches designed with Cisco's Circular Design Principles uses standard subassemblies and common modular components across products to streamline production and enhance reusability, repairability and upgradability.
	Simplified architecture	Cisco C9610 Smart Switches offer a simplified architecture by consolidating multiple discreet ASIC/NPU components into a central system-on-chip (SoC) architecture, providing multiple discrete functions in a more integrated design. Cisco C9610 Series Smart Switches architecture
	Recycled content	Cisco C9610 Smart Switches use non-commodity plastic components that contain up to 75% post-consumer recycled content.
	Recycled content	Cisco C9610 Smart Switches use non-commodity plastic components that contain up to 75% post-consumer recycled content.
	Powder-coat finish	Cisco C9610 Smart Switches eliminated the use of oil-based wet paints, instead using a powder-coating finish. A powder-coating finish reduces the amount of harmful solvents used and volatile organic compounds (VOCs) emitted during the painting process.
	Bezel-free design	Cisco C9610 Smart Switches use a bezel-free design reducing plastic usage.

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Sustainability topic		Description
	Cisco Takeback and Reuse	This program allows customers to return used equipment for responsible recycling and reuse. Takeback and Reuse Program
	Cisco Refresh	This program offers certified remanufactured products, providing cost-effective alternatives to new equipment. Cisco Refresh
Packaging	Removal of single-use plastic bags	The Cisco C9610 Series Smart Switches Accessory Kit (C9610-ACC-KIT) is packaged with fiber-based materials, removing single-use plastic bags.
	Foam reduction	Expanded foam end caps used in packaging hardware are now replaced with thermoform cushioning end caps (made of at least 50% post-consumer recycled content). Circular economy and packaging sustainability
	Accessory opt-in	Cisco C9610 Series Smart Switches now support further reduction of materials and waste by allowing customers to select whether to include the accessory kit. The default does not include it, unless required.
General	Sustainability inquiries	Contact this alias for questions and information related to Cisco's general and product-specific sustainability initiatives. csr_inquiries@cisco.com
	Cisco policies, positions, and guides	Links to select Cisco's Environmental Sustainability policies, positions, and guides are provided in the "Policies, positions, and guides" section of Cisco's Purpose Reporting Hub. Policies, positions, and guides
	Cisco Green Pay	This page provides an overview of Cisco Green Pay, a financing program aimed at promoting more sustainable technology adoption by providing flexible payment options. Green Pay

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Appendix

Safety and compliance

Chassis

The section below lists the safety and compliance information for the Cisco C9610 Series Smart Switches chassis.

Safety and certifications	EMC and EMI compliance
• IEC 60950-1 plus Am1, Am2, Am9, Am10, Am11, Am12, and all deviations and differences; • EN 60950-1; 2006 • IEC 62368-1 Second Edition with all deviations and differences • UL 60950-1, Second Edition • AS/NZS 60950.1.2011 • CAN/CSA-C22.2 No. 60950-1-07 • CAN/CSA-C22.2 No. 62368-1-14 • GB 4943-95 • NOM-019-SCFI-1998	• 47 CFR Part 15 Class A CNS13438: 2006 Class A EN 300 386 V1.6.1 • EN 61000-3-2: 2014 • EN 61000-3-3: 2013 • EN 300 386 V1.6.1 • EN 55032: 2012/ AC:2013 Class A EN 55032:2015 Class A • EN 55024: 2010 + A1: 2015 • ICES-003 Issue 6: 2016 Class A • KN 35: 2015 • KN 32: 2015 Class A • TCVN 7189: 2009 Class A • TCVN 7317: 2003 • CISPR 32 Edition 2 Class A • CISPR 24: 2010 + A1: 2015 • V-2/2015.04 Class A V-3/2015.04 Class A • EN55024: 2010 + A1: 2015 • KN35: 2015 • TCVN 7317: 2003

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Supervisor engine

The section below lists the safety and compliance information for the Cisco C9610 Series Smart Switches supervisor engines.

EMC and EMI compliance

- 47 CFR Part 15 Class A CNS13438: 2006 Class A EN 300 386 V1.6.1
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- EN 300 386 V1.6.1
- EN 55032: 2012/ AC:2013 Class A EN 55032:2015 Class A
- EN 55024: 2010 + A1: 2015
- ICES-003 Issue 6: 2016 Class A
- KN 35: 2015
- KN 32: 2015 Class A
- TCVN 7189: 2009 Class A
- TCVN 7317: 2003
- CISPR 32 Edition 2 Class A
- CISPR 24: 2010 + A1: 2015
- V-2/2015.04 Class A V-3/2015.04 Class A

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Line cards

The section below lists the safety and compliance information for Cisco C9610 Series Smart Switches line cards.

Safety conditions

- Fiber-optic lasers: Class 1 laser products

Safety certifications

- UL 60950-1
- EN 60950-1
- AS/NZS 60950.1
- CAN/CSA-C222.2 No. 60950-1
- IEC 60950-1
- IEEE 802.3

Electromagnetic emissions

- EN55032:2015
- EN61000-3-2:2014
- EN55032:2012
- NM EN 55032:2015
- QCVN 118:2018/BTTTT
- ICES-003:2016:Iss:6
- NM EN 61000-3-3:2015
- NM EN 61000-3-2:2015
- 47 CFR Part 15:2016a
- KN61000-3-3:2014
- CISPR32:2012:Ed:1
- EN300 386:2012:V1.6.1
- KN61000-3-2:2014
- CNS13438:2006
- CISPR32:2015:Ed:2
- KN32:2015
- VCCI-CISPR 32:2016
- EN61000-3-3:2013
- CISPR24:2010+A1:2015
- CISPR35:2016:Ed:1
- EN55024:2010
- EN55024:2010:A1
- EN55035:2017
- EN61000-6-1:2007
- EN61000-6-2:2005
- IEC61000-6-1:2016:Ed:3
- IEC61000-6-2:2016:Ed:3
- KN35:2015
- NM EN 55024:2018
- TCVN 7317:2003

Electromagnetic emissions

- ROHS5

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Management and Industry standards

The following section lists the management and standards support for Cisco C9610 Series Smart Switches.

SNMP management MIB:

- BGP4-MIB BRIDGE-MIB
- CISCO-ACCESS-ENVMON-MIB CISCO-AUTH-FRAMEWORK-MIB CISCO-BGP4-MIB
- CISCO-BRIDGE-EXT-MIB CISCO-BULK-FILE-MIB CISCO-CABLE-DIAG-MIB CISCO-CALLHOME-MIB CISCO-CDP-MIB
- CISCO-CEF-MIB
- CISCO-CLASS-BASED-QOS-MIB CISCO-CONFIG-COPY-MIB CISCO-CONFIG-MAN-MIB CISCO-CONTEXT-MAPPING-MIB CISCO-DATA-COLLECTION-MIB CISCO-DHCP-SNOOPING-MIB CISCO-EIGRP-MIB
- CISCO-EMBEDDED-EVENT-MGR-MIB CISCO-ENHANCED-IMAGE-MIB CISCO-ENHANCED-MEMPOOL-MIB CISCO-ENTITY-ASSET-MIB
- CISCO-ENTITY-EXT-MIB
- CISCO-ENTITY-FRU-CONTROL-MIB CISCO-ENTITY-SENSOR-MIB
- CISCO-ENTITY-VENDORTYPE-OID-MIB CISCO-ENVMON-MIB
- CISCO-ERR-DISABLE-MIB CISCO-FLASH-MIB CISCO-FTP-CLIENT-MIB CISCO-HSRP-EXT-MIB CISCO-HSRP-MIB
- CISCO-IETF-BFD-MIB
- CISCO-IETF-DHCP-SERVER-EXT-MIB CISCO-IETF-DHCP-SERVER-MIB CISCO-IETF-ISIS-MIB
- CISCO-IETF-PPVPN-MPLS-VPN-MIB CISCO-IF-EXTENSION-MIB
- CISCO-IGMP-FILTER-MIB
- CISCO-IMAGE-LICENSE-MGMT-MIB CISCO-IMAGE-MIB
- CISCO-IP-CBR-METRICS-MIB CISCO-IP-STAT-MIB
- CISCO-IP-URPF-MIB CISCO-IPMROUTE-MIB
- CISCO-IPSLA-AUTOMEASURE-MIB CISCO-IPSLA-ECHO-MIB
- CISCO-IPSLA-JITTER-MIB CISCO-L2-CONTROL-MIB
- CISCO-L2L3-INTERFACE-CONFIG-MIB CISCO-LAG-MIB
- CISCO-LICENSE-MGMT-MIB CISCO-LISP-EXT-MIB

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- CISCO-LOCAL-AUTH-USER-MIB CISCO-MAC-AUTH-BYPASS-MIB CISCO-MAC-NOTIFICATION-MIB CISCO-MEMORY-POOL-MIB CISCO-MPLS-LSR-EXT-STD-MIB CISCO-NHRP-EXT-MIB
- CISCO-NTP-MIB
- CISCO-OSPF-MIB
- CISCO-OSPF-TRAP-MIB CISCO-PAE-MIB
- CISCO-PAGP-MIB CISCO-PIM-MIB CISCO-PING-MIB CISCO-PKI-MIB
- CISCO-PORT-SECURITY-MIB
- CISCO-PORT-STORM-CONTROL-MIB CISCO-PRIVATE-VLAN-MIB
- CISCO-PROCESS-MIB
- CISCO-PRODUCTS-MIB
- CISCO-RESILIENT-ETHERNET-PROTOCOL-MIB CISCO-RTTMON-ICMP-MIB
- CISCO-RTTMON-IP-EXT-MIB
- CISCO-RTTMON-MIB CISCO-RTTMON-RTP-MIB
- CISCO-SNMP-TARGET-EXT-MIB CISCO-STP-EXTENSIONS-MIB CISCO-SYSLOG-MIB
- CISCO-TCP-METRICS-MIB CISCO-TCP-MIB
- CISCO-TRUSTSEC-INTERFACE-MIB
- CISCO-TRUSTSEC-MIB
- CISCO-TRUSTSEC-POLICY-MIB CISCO-TRUSTSEC-SERVER-MIB CISCO-TRUSTSEC-SXP-MIB CISCO-UDLDP-MIB
- CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB CISCO-VLAN-MEMBERSHIP-MIB
- CISCO-VRF-MIB
- CISCO-VTP-MIB ENTITY-MIB ENTITY-STATE-MIB
- EtherLike-MIB HC-ALARM-MIB HC-RMON-MIB
- IEEE8021-PAE-MIB
- IEEE8023-LAG-MIB
- IF-MIB
- IGMP-STD-MIB
- IP-FORWARD-MIB IP-MIB

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- IPMROUTE-STD-MIB LISP-MIB
- LLDP-EXT-MED-MIB LLDP-MIB
- MAU-MIB
- MPLS-L3VPN-STD-MIB
- MPLS-LDP-GENERIC-STD-MIB MPLS-LDP-MIB
- MPLS-LSR-STD-MIB MPLS-VPN-MIB MSDP-MIB
- NHRP-MIB NOTIFICATION-LOG-MIB NTPv4-MIB
- OLD-CISCO-CHASSIS-MIB OLD-CISCO-CPU-MIB
- OLD-CISCO-INTERFACES-MIB OLD-CISCO-IP-MIB
- OLD-CISCO-MEMORY-MIB OLD-CISCO-SYS-MIB
- OLD-CISCO-SYSTEM-MIB OLD-CISCO-TCP-MIB OLD-CISCO-TS-MIB OSPF-MIB
- OSPF-TRAP-MIB OSPFV3-MIB PIM-MIB RFC1213-MIB RMON-MIB RMON2-MIB
- SNMP-COMMUNITY-MIB SNMP-FRAMEWORK-MIB SNMP-MPD-MIB
- SNMP-NOTIFICATION-MIB
- SNMP-PROXY-MIB SNMP-TARGET-MIB SNMP-USM-MIB
- SNMP-VIEW-BASED-ACM-MIB SNMPv2-MIB
- TCP-MIB
- UDP-MIB
- CISCO-802-TAP-MIB
- CISCO-TAP2-MIB CISCO-IP-TAP-MIB

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Standards

- IEEE 802.1s IEEE 802.1w IEEE 802.1X
- IEEE 802.3ae for 10G SKU
- IEEE 802.3ae, IEEE 802.3ba, IEEE 802.3by IEEE 802.1X-Rev
- IEEE 802.3ad
- IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports IEEE 802.1D Spanning Tree Protocol
- IEEE 802.1p CoS prioritization IEEE 802.1Q VLAN
- IEEE 802.3 10BASE-T specification IEEE 802.3u 100BASE-TX specification
- IEEE 802.3ab 1000BASE-T specification IEEE 802.3z 1000BASE-X specification RMON I and II standards
- SNMPv1, SNMPv2c, and SNMPv3

Additional resources

Translations

- Japanese

Documentation and support

- Cisco C9610 Series Smart Switches Architecture White Paper
- Cisco C9610 Series Smart Switches Switches Hardware Installation Guide
- Cisco C9610 Series Smart Switches Switches Ordering Guide
- Enterprise Networks Software Subscription Matrix for Switching
- Migrating from Cisco Catalyst 6500/6800 to 9600 Series Switches (PDF)
- Benefits of Upgrading to Cisco C9610 Series Smart Switches
- Cisco Power Calculator
- Cisco Support Home for Cisco C9610R Switch
- Networking customer stories

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Document history

New or revised topic	Described in	Date
Document created	Data sheet	June 10, 2025
Revision	Data sheet	July 17, 2025
Revision	Data sheet	January 09, 2026

Time to switch it up

Cisco Capital	Cisco Capital flexible payment solutions offer choices so you get the tech you need and the business outcomes you want.
Explore Cisco Capital	https://www.cisco.com/site/us/en/buy/payment-solutions/index.html
Find a partner	Solve your business challenges by finding a Cisco partner authorized to design, sell, and support custom solutions.
Meet our partners	https://www.cisco.com/site/us/en/partners/connect-with-a-partner/index.html
Community	Cisco Community is an active and collaborative place to learn more about our products and ask questions of peers and Cisco experts.
Join the community	https://community.cisco.com/
Cisco Services	Transform with more ease and less risk while making sure your technology delivers tangible business value.
Browse Cisco Services	https://www.cisco.com/site/us/en/services/index.html

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C78-5480851-01 01/26