

Cisco Catalyst 9400 Series Switch

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Product overview

Built for Security, IoT, Mobility, and Cloud

Cisco® Catalyst® 9400 Series switches are Cisco's lead modular enterprise access switching platform and as part of the Catalyst 9000 family, are built to 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. The Catalyst 9400 Series, including the Catalyst 9400 SUP-2/2XL supervisor and line cards, continues to shape the future with continued innovation that helps you reimagine connections, reinforce security and redefine the experience for your hybrid workforce big and small.

Advanced persistent security threats, exponential growth of Internet of Things (IoT) devices, mobility everywhere and cloud adoption require a network fabric that integrates advanced hardware and software innovations to automate, secure, and simplify customer networks. The goal of this network fabric is to enable customer revenue growth by accelerating business service rollout.

The Cisco Networking Cloud and Software-Defined Access (SD-Access) is the network fabric that powers business. Cisco Networking Cloud is an open and extensible, software-driven architecture that accelerates and simplifies your enterprise network operations. The programmable architecture frees your IT staff from time consuming, repetitive network configuration tasks so they can focus instead on innovation that positively transforms your business. SD-Access enables policy-based automation from edge to cloud with foundational capabilities. These include:

- Simplified device deployment
- Unified management of wired and wireless networks
- Network virtualization and segmentation
- Group-based policies
- Context-based analytics

The Cisco Catalyst 9400 Series switches are Cisco's leading modular enterprise switching access, distribution and core platform built for security, IoT and cloud. These switches provide unparalleled investment protection with a chassis architecture that supports up to 9 Tbps of system bandwidth and unmatched power delivery with high density IEEE 802.3bt PoE (60W and 90W). Redundancy is now table stakes across the portfolio. The Catalyst 9400 delivers state-of-the-art High Availability (HA) with capabilities like Cisco StackWise® Virtual technology with In-Service-Software-Upgrade (ISSU), SSO/NSF, uplink resiliency, N+1/N+N redundancy for power supplies. The platform is enterprise optimized with an innovative dual-serviceable fan tray design, side to side airflow and is closet-friendly with ~16" depth. A single system can scale up to 384 access ports with your choice of 10G, 5G and 2.5G multigigabit copper, 1G copper, Cisco UPOE⁺, Cisco UPOE and PoE+ options, up to 384 ports of 10G and 1G Fiber, up to 164 ports 25G SFP28 options. The availability of 1/10 G fiber ports facilitate aggregation of existing small form factor fixed access switches. The addition of the new SUP-2/2XL supervisors allows unique investment protection through 100G uplink connectivity option which is becoming a popular alternative to 40G in the core. The platform also supports advanced routing and infrastructure services, SD-Access capabilities, and network system virtualization. These features enable optional placement of the platform in the core and aggregation layers of small to medium-sized campus environments.

Software subscription

There are two choices for software subscription: Cisco DNA or Cisco Catalyst. They provide:

- Flexible licensing models to smoothly distribute customers' software spending over time.
- Investment protection for software purchases through software services-enabled license portability.
- Access to updates, upgrades, and new technology from Cisco through Cisco Software Support Services (SWSS.)
- Base product-level support for hardware, software, and Cisco IOS (included with Cisco Catalyst software subscription).
- ISE licenses included in the Advantage tier to facilitate zero-trust network security* (as part of Cisco Catalyst software subscription).
- Access to end-to-end network visibility with Cisco Spaces and service assurance through Cisco ThousandEyes Network and Application Synthetics (included with the Advantage license).

Manage your entire switching structure as a single, converged component. With one management system and one policy for wired and wireless networks, it offers an efficient way to provide more secure access.

*ISE license quantities are outlined below.

Table 1. ISE license quantities included with Cisco Catalyst Advantage software subscription for Switching

Eligible product families*	Cisco Catalyst 9600 Series	Cisco Catalyst 9500 Series	Cisco Catalyst 9400 Series	Cisco Catalyst 9300 Series
ISE quantity per Advantage license	40 endpoint sessions for ISE	10 endpoint sessions for ISE	40 endpoint sessions for ISE	10 endpoint sessions for ISE

Product highlights

- The Cisco Unified Access Data Plane (UADP) 3.0sec ASIC on C9400X-SUP-2XL, C9400X-SUP-2 and Cisco Unified Access Data Plane (UADP) 2.0 ASIC on C9400-SUP-1/1XL/1XL-Y is ready for next-generation technologies with its programmable pipeline, microengine capabilities, and template-based configurable allocation of Layer 2, Layer 3, forwarding, Access Control List (ACL), and Quality of Service (QoS) entries.
- Intel 2.4-GHz x86 with up to 960 GB of SATA SSD local storage for container-based application hosting.
- Up to 4 non-blocking 100/40 Gigabit Ethernet uplinks and up to 4 non-blocking 25/10 Gigabit Ethernet uplinks on Supervisor-2/2XL.
- Up to 2 non-blocking 25 Gigabit Ethernet uplinks on Supervisor-1XL-Y.
- Up to 2 non-blocking 40 Gigabit Ethernet uplinks (Quad Small Form-Factor Pluggable [QSFP]) and up to 8 non-blocking 10 Gigabit Ethernet uplinks (SFP+) on Supervisor-1/1XL/1XL-Y.
- Up to 384 ports of non-blocking 10/100/1000M RJ-45 ports.
- Up to 392 ports of non-blocking 1 Gigabit Ethernet Fiber (SFP) ports (Sup1/1XL/1XL-Y). Up to 384 ports of non-blocking 1 Gigabit Ethernet Fiber (SFP) ports (SUP2/2XL).

- Up to 392 ports of non-blocking 10 Gigabit Ethernet SFP+ ports (8 uplinks plus 384 10G line card ports) (Sup1/1XL/XL-Y); 388 ports of non-blocking 10 Gigabit Ethernet SFP+ ports (4 uplinks plus 384 10G line cards ports) (SUP2/2XL).
- Up to 168 ports of 25 Gigabit Ethernet SFP28 ports (8 25G uplinks plus 160 25G line cards ports) (SUP2/2XL).
- Up to 36 ports of 100 Gigabit Ethernet QSFP28 ports (4 100G uplinks plus 32 100G line cards ports) (SUP2/2XL).
- Up to 384 ports of non-blocking 10G/5G mGig RJ-45 ports.
- Cisco UPOE[®]+ (90 W), Cisco UPOE (60W), and PoE+ (30W) capabilities on 384 ports simultaneously.
- Line rate hardware-based Flexible NetFlow (FNF) delivering flow collection up to 384,000 flows.
- IPv6 support in hardware, providing wire rate forwarding for IPv6 networks.
- Dual-stack support for IPv4 and IPv6 and dynamic hardware forwarding table allocations for ease of IPv4-to-IPv6 migration.
- Scalable routing (IPv4, IPv6, and multicast) tables and Layer 2 tables.
- Open Cisco IOS[®] XE: This modern operating system for the enterprise provides support for model-driven programmability, 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.
- End-to-end visualization of the path from campus/branch to clouds/DC with Cisco ThousandEyes Network and Application Synthetics (included with Cisco DNA Advantage licenses).

Platform Benefits

Cisco IOS XE opens a completely new paradigm in network configuration, operation and monitoring through network automation. Cisco's automation solution is open, standards-based and extensible across the entire lifecycle of a network device. Various mechanisms employed to bring about the ease of network automation are outlined below based.

- 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 more streamlined GUI that provides a better simplified view of switch configurations and software details on a port-by-port basis.
- **Automated device provisioning:** This is the ability to automate the process of upgrading software images and installing configuration files on Cisco Catalyst switches when they are being deployed in the network for the first time. Cisco provides both turnkey solutions like Plug and Play along with off-the-shelf tools like Zero Touch Provisioning and Pre-boot Execution Environment (PXE) that enable an effortless and automated deployment.
- **API-driven configuration:** A modern network switch like Cisco Catalyst 9400 Series switches support a wide range of automation features and provides robust open APIs over Network Configuration Protocol (NETCONF) and RESTconf using YANG data models for external tools, both off-the-shelf and custom-built, so you can automatically provision network resources.

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- **Granular visibility:** Model-driven telemetry provides a mechanism to stream data from a switch to a destination. The data to be streamed is driven through subscription of a data set in a YANG model. The subscribed data set is streamed to the destination at a configured interval. Additionally, open Cisco IOS XE enables the push model, which provides near real-time monitoring of the network leading to quick detection and rectification of failure situations.

Security

- **Encrypted Traffic Analytics (ETA)¹:** ETA is a unique capability for identifying malware in encrypted traffic from the access layer. Since more and more traffic is becoming encrypted, the visibility this feature affords for threat detection is critical for keeping your networks secure at different layers. Additionally, ETA is able to detect vulnerable implementations in encrypted traffic.
- **Advanced Encryption Standard (AES)-256 MACsec encryption²:** AES is the IEEE 802.1AE standard for authenticating and encrypting packets between switches and endpoints. Cisco Catalyst 9400 Series switches are hardware capable 256-bit and 128-bit AES on all ports at all speeds providing the most secure link encryption.
- **Advanced Layer 3 Encryption: 100G IPsec in hardware:** With the new 3.0sec UADP ASIC, the Catalyst 9400X comes with 100G line rate IPsec to provide secure transport over Layer 3 networks.
- **Trustworthy solutions:** Cisco Trust Anchor Technologies provide a highly secure foundation for Cisco products. With Cisco Catalyst 9400 Series switches, Trust Anchor Technologies enable hardware and software authenticity assurance for supply chain trust and strong mitigation against man-in-the-middle compromise of software and firmware. Trust Anchor capabilities include:
 - **Image signing:** Cryptographically signed images provide assurance that the firmware, BIOS, and other software are authentic and unmodified. As the system boots, the system's software signatures are checked for integrity.
 - **Secure Boot:** Secure Boot anchors the boot sequence chain of trust to immutable hardware, mitigating threats against a system's foundational state and the software that is to be loaded, regardless of a user's privilege level. It provides layered protection against the persistence of illicitly modified firmware.
 - **Cisco Trust Anchor module:** This tamper-resistant, strong-cryptographic, single-chip solution provides hardware authenticity assurance to uniquely identify the product so that its origin can be confirmed to Cisco, providing assurance that the product is genuine.

¹ ETA is currently not supported in C9400X-SUP-2/2XL.

² MACsec is currently not supported on supervisor ports of C9400-SUP-1XL-Y.

Resiliency and high availability

Cisco Catalyst 9400 Series switches are designed for excellent nonstop communications with noninterrupted hardware switching. With Cisco IOS XE Software, you can continue to reap the benefit of this best-in-class resiliency in various ways.

- Cross-Stack EtherChannel provides the ability to configure Cisco EtherChannel technology across different members of the stack for high resiliency.
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) provides rapid spanning tree convergence independent of spanning tree timers and also offers the benefit of Layer 2 load balancing and distributed processing.
- Per-VLAN Rapid Spanning Tree Plus (PVRST+) allows rapid spanning tree (IEEE 802.1w) reconvergence on a per-VLAN spanning tree basis, providing simpler configuration than MSTP. In both MSTP and PVRST+ modes, stacked units behave as a single spanning tree node.
- **Flexlink+:** Flexlink+ allows the setting up of active and backup interfaces or port channels, which can provide Layer 2 failover redundancy without the use of Spanning Tree Protocol (STP).
- Switch port autorecovery (“err-disable” recovery) automatically attempts to reactivate a link that is disabled because of a network error.
- NSF/SSO offers continuous packet forwarding during supervisor-engine switchover. Information is fully synchronized between supervisor engines to allow the standby supervisor engine to immediately take over in subsecond time if the primary engine fails.
- NSF/SSO dramatically improves the network reliability and availability in a Layer 2 or Layer 3 environment. NSF/SSO is essential for business-critical applications such as Voice over IP (VoIP). These features help ensure that VoIP calls are not dropped.
- ISSU allows you to upgrade or downgrade complete Cisco IOS Software images with minimal (less than 200 msec) to no disruption to the network when using a redundant Cisco Catalyst 9400 Series system with dual supervisor engines. Facilitating rapid, non-disruptive software upgrades for new line cards, new power supplies, new features, or bug fixes, ISSU offers continuous packet forwarding during the supervisor-engine switchover running different Cisco IOS Software releases.
- In addition to redundant power supplies and fans, the Cisco Catalyst C9404R, C9407R, and C9410R chassis models support 1+1 supervisor-engine redundancy, using the Supervisor Engine. The primary supervisor engine is active and is responsible for normal system operation. The secondary supervisor engine serves as a standby, monitoring the operation of the primary supervisor engine. The resiliency features of the Cisco Catalyst 9400 Series prevent network outages that could result in lost business and revenue.
- Apart from the features previously mentioned, the C9400-SUP-1/1XL/1XL-Y, C9400-SUP2/2XL supervisor engine has resiliency built into its uplinks. [Cisco Catalyst 9400 Supervisor Engine Modules Data Sheet](#) for different uplink redundancy combinations.

Flexible NetFlow

- **Flexible NetFlow (FNF):** Cisco IOS Software FNF is the next generation in flow visibility technology, allowing optimization of the network infrastructure, reducing operational costs, and improving capacity planning and security incident detection with increased flexibility and scalability.

Open standards based fabric

The Cisco Catalyst 9400 Series Switches support modern fabric technologies such as VXLAN with BGP-EVPN control plane, with open APIs. This technology provides the flexibility to build open standards based fabrics to secure infrastructure, users and data. This fabric architecture provides rich unicast and multicast protocol support to optimally route or bridge traffic as well as support for integrated campus services all of which can be automated via open APIs to effectively configure and monitor the network.

Programmability

Cisco IOS XE provides open standards based APIs such as NETCONF, RESTCONF, gNMI to simplify provisioning and configuration, that allows network administrators to save time when provisioning new network devices and to prevent the human errors that often are a byproduct of manual configuration. Integrating Zero Touch Provisioning with various Devops toolkits allows network admins to drastically reduce the time and resources needed to onboard a device onto their network. The ability to collect real-time statistics through model driven telemetry through gRPC and gNMI allows administrator to integrate to many health monitoring tools to optimize their environments and to troubleshoot and provide alerts about any potential problems.

Application visibility and control

- **Advanced analytics:** Superior FNF reports application performance and activities within the network to any supported NetFlow collector, such as Cisco Secure Network Analytics or any compliant third-party tool.

QoS

- **Superior QoS:** Cisco Catalyst 9400 Series switches offers Gigabit Ethernet speeds with intelligent services that keep traffic flowing smoothly, even at 10 times the normal network speed. Industry-leading mechanisms for cross-stack marking, classification, and scheduling deliver superior performance for data, voice, and video traffic at wire speed. This includes granular wireless bandwidth management and fair sharing, 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port.

Smart operation

- **Bluetooth enabled:** Cisco Catalyst 9400 Series switches have the hardware support to connect a Bluetooth dongle to your switch to use this wireless interface as a Management port. This port functions as an IP management interface and can be used to configure and troubleshoot using the WebUI, CLI, and transfer images and configurations.
- **WebUI:** WebUI is an embedded GUI-based device-management tool that provides the ability to provision the device, to simplify device deployment and manageability, and to enhance the user experience. WebUI comes with the default image. There is no need to enable anything or install any license on the device. WebUI can be used by customers to build a configuration, monitor and troubleshoot the device without having to know how to use the CLI.
- **Efficient switch operation:** Cisco Catalyst 9400 Series switches provide optimum power savings with Energy Efficient Ethernet (EEE) on the RJ-45 ports and low power operations for industry best-in-class power management and power consumption capabilities. The ports are capable of reduced power modes so that ports not in use can move into a lower power utilization state. Other efficient switch operation features are:
 - The per-port power consumption command allows you to specify maximum power setting on an individual port.

- Per-port PoE power sensing measures the actual power being drawn, enabling more intelligent control of powered devices. The PoE MIB provides proactive visibility into power usage and lets you set different power level thresholds.
- **RFID tags:** Cisco Catalyst 9400 Series switches have an embedded RFID tag which facilitates easy asset and inventory management using commercial RFID readers.
- **Blue Beacon:** Cisco Catalyst 9400 Series switches support a blue beacon LED which allows easy identification of the switch being accessed.

High-Performance IP Routing

The Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing in the Cisco Catalyst 9400 Series switches, based on these features:

- IP unicast routing protocols (static, Routing Information Protocol Version 1 [RIPv1], RIPv2, RIPv6, and Open Shortest Path First [OSPF] Routed Access) are supported for small network routing applications with the Network Essentials stack. Equal-cost routing facilitates Layer 3 load balancing and redundancy across the stack.
- Advanced IP unicast routing protocols (Full OSPF, Enhanced Interior Gateway Routing Protocol [EIGRP], Border Gateway Protocol Version 4 [BGPv4], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and constructing scalable LANs. IPv6 routing using OSPFv3 and EIGRPv6 is supported in hardware for maximum performance.
- Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM Sparse Mode (PIM SM), and Source-Specific Multicast (SSM).
- IPv6 addressing is supported on interfaces with appropriate show commands for monitoring and troubleshooting.

Multiprotocol Label Switching (MPLS)

The Cisco Catalyst 9400 Series Switches support Multiprotocol Label Switching (MPLS) which combines the performance and capabilities of Layer 2 (data link layer) switching with the proven scalability of Layer 3 (network layer) routing. MPLS enables the explosive growth in network utilization while providing the opportunity to differentiate services without sacrificing the existing network infrastructure. MPLS support includes

- **MPLS L3 VPN:** An MPLS Virtual Private Network (VPN) consists of a set of sites that are interconnected by means of a Multiprotocol Label Switching (MPLS) provider core network. At each customer site, one or more Customer Edge (CE) devices attach to one or more Provider Edge (PE) devices.
- **VPLS:** VPLS (Virtual Private LAN Service) enables enterprises to link together their Ethernet-based LANs from multiple sites via the infrastructure provided by their service provider.
- **EoMPLS:** EoMPLS is a category of Any Transport over MPLS (AToM) to transport Layer 2 packets over an MPLS backbone.
- **MPLS over GRE:** L3VPN over GRE and VPLS over GRE, are supported to tunnel MPLS/VPLS packets over non-MPLS networks utilizing GRE tunneling.

Power over Ethernet Leadership

Cisco UPOE+ IEEE 802.3bt Type 4: PoE removes the need for wall power to each PoE-enabled device and eliminates the cost for additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments. Cisco UPOE+ enables 90W of power per port. This facilitates delivery of network power to a broad range of devices requiring higher power. These devices include virtual desktop terminals, IP turrets, compact switches, building management gateways, PTZ cameras, LED lights, wireless access points and IP phones. The Cisco Catalyst 9400 Series also supports Cisco UPOE (60 watts), PoE+ (30 watts), and PoE (15 watts), thereby addressing the largest range of network power needs.

SD-Access

Cisco Catalyst 9400 Series switches form the foundation building block for SD-Access – Cisco’s leading enterprise architecture, which includes:

- Policy-based automation from edge to cloud.
- Segmentation and micro-segmentation made easy, with having predictable performance and scalability.
- Automation through Cisco Catalyst Center (formerly Cisco DNA Center).
- Policy through the Cisco Identity Services Engine (ISE).
- Network assurance through Network Data Platform.
- The ability to launch new business services faster and improve issue resolution time significantly.
- **SD-Access Embedded Wireless:** The Cisco Catalyst 9800 embedded Wireless Controller Software package can be installed on Cisco Catalyst 9400 Series switches to enable wireless controller functionality for distributed branches and small campuses. Once installed, the Catalyst 9800 embedded Wireless Controller running on a Catalyst 9400 Series switch can support up to 200 APs and 4000 Clients. A maximum two wireless controllers can be enabled per site on two different Catalyst 9400 Series switches which will increase to scale up to 200 APs and 4000 Wireless Clients. The Catalyst 9800 embedded Wireless Controller Software package will enable wireless functionality only for SD-Access deployments with two supported topologies:
 - The Catalyst 9800 embedded Wireless Controller Software package can be enabled on Catalyst 9400 Series switches functioning as Co-Located Border and Control Plane.
 - Catalyst 9800 Wireless Software Package can be enabled on Catalyst 9400 Series switches functioning as Fabric in a Box.
- **Plug and Play (PnP) enabled:** A simple, secure, unified, and integrated offering eases new branch or campus device rollouts and can also be used for providing updates to an existing network.



Figure 1.
Cisco Catalyst 9400 Series

Cisco Catalyst 9400 Series chassis

The Cisco Catalyst 9400 Series offers three chassis options and a wide range of line card options (Table 2). It provides a common architecture that can scale up to 400 ports. Cisco StackWise Virtual technology doubles this port density by virtually stacking two Catalyst 9400 modular switches in a single logical switch.

The Catalyst 9400 Series chassis is enterprise optimized with efficient side-to-side airflow and full front accessibility for all removable components, including supervisors, line cards, power supplies and fan tray. The chassis also supports optional rear accessibility for fan trays to enable efficient cable management. Catalyst 9400 Series chassis, supervisor, line cards, power supplies and fan trays have embedded RFID tags which facilitate easy asset and inventory management using commercial RFID readers.

Table 2. Cisco Catalyst 9400 Series chassis features

Feature	Cisco Catalyst C9404R Chassis	Cisco Catalyst C9407R Chassis	Cisco Catalyst C9410R Chassis
Total number of slots	4	7	10
Line-card slots	2	5	8
Supervisor engine slots	2 ¹	2 ²	2 ³
Dedicated supervisor engine slot numbers	2 and 3 ⁴	3 and 4 ⁴	5 and 6 ⁴
Supervisor engine redundancy	Yes	Yes	Yes
Supervisor engines supported	C9400X-SUP-2XL, C9400X-SUP-2, C9400-SUP-1XL, C9400-SUP-1XL-Y, C9400-SUP-1	C9400X-SUP-2XL, C9400X-SUP-2, C9400-SUP-1XL, C9400-SUP-1XL-Y, C9400-SUP-1	C9400X-SUP-2XL, C9400X-SUP-2, C9400-SUP-1XL, C9400-SUP-1XL-Y, C9400-SUP-1
Maximum PoE per slot	4320W ⁵	4320W ⁵	4320W ⁵
Maximum Bandwidth scalability per line-card slot	Up to 480 Gbps on all slots ⁶	Up to 480 Gbps on all slots ⁷	Up to 480 Gbps on all slots ⁸
Number of power supply bays	4	8	8

Feature	Cisco Catalyst C9404R Chassis	Cisco Catalyst C9407R Chassis	Cisco Catalyst C9410R Chassis
AC input power	Yes	Yes	Yes
Integrated PoE	Yes	Yes	Yes
Power supplies supported	3200W AC, 2100W AC, 3200W DC	3200W AC, 2100W AC, 3200W DC	3200W AC, 2100W AC, 3200W DC
Number of fan-tray bays	1	1	1
Location of 19-inch rack-mount	Front	Front	Front

¹ Slots 2 and 3 are reserved for supervisor engines only in Cisco Catalyst C9404R; slots 1 and 4 are reserved for line cards.

² Slots 3 and 4 are reserved for supervisor engines only in Cisco Catalyst C9407R; slots 1-2 and 5-7 are reserved for line cards.

³ Slots 5 and 6 are reserved for supervisor engines only in Cisco Catalyst C9410R; slots 1-4 and 7-10 are reserved for line cards.

⁴ Line cards are not supported in the Supervisor slots.

⁵ Maximum PoE mentioned is as per the current shipping line card, however chassis is capable ~4800W PoE per slot.

⁶ 480Gbps per line-card slot when used with C9400X-SUP-2XL, 240Gbps per line card slot when used with C9400X-SUP-2, 240Gbps per line-card slot when used with C9400-SUP-1XL, C9400-SUP-1XL-Y and 80Gbps per line-card slot when used with C9400-SUP-1.

⁷ 480Gbps per line-card slot when used with C9400X-SUP-2XL, 240Gbps per line card slot when used with C9400X-SUP-2, 120Gbps per line-card slot when used with C9400-SUP-1XL, C9400-SUP-1XL-Y and 80Gbps per line-card slot when used with C9400-SUP-1.

⁸ 480Gbps per line-card slot when used with C9400X-SUP-2XL, 240Gbps per line card slot when used with C9400X-SUP-2, 80Gbps per line-card slot when used with C9400-SUP-1XL, C9400-SUP-1XL-Y and 80Gbps per line-card slot when used with C9400-SUP-1.

Supervisor configuration

The Catalyst 9400 Series offers an industry-leading supervisor engine built for secure networks, IoT applications, next generation mobility and cloud adoption. Supervisor Engine-2 options (Sup-2, Sup-2XL) and Supervisor Engine-1 options (Sup-1, Sup-1XL, Sup-1XL-Y) are built with the latest Unified Access Data Plane ASIC future-proofed for next generation technologies with its programmable pipeline, microengine capabilities and template-based configurable allocation of Layer 2, Layer 3, forwarding, Access Control Lists (ACLs) and QoS entries.

Table 3. Cisco Catalyst 9400 Series Supervisor Engine maximum bandwidth per slot

Feature	Cisco Catalyst 9400 Series Supervisor Engine C9400-SUP-1	Cisco Catalyst 9400 Series Supervisor Engine C9400-SUP-1XL	Cisco Catalyst 9400 Series Supervisor Engine C9400-SUP-1XL-Y	Cisco Catalyst 9400 Series Supervisor Engine C9400X-SUP-2	Cisco Catalyst 9400 Series Supervisor Engine C9400X-SUP-2XL
Cisco Catalyst C9404R chassis	80 Gbps/slot	240 Gbps/slot	240 Gbps/slot	240 Gbps/slot	480 Gbps/slot
Cisco Catalyst C9407R chassis	80 Gbps/slot	120 Gbps/slot	120 Gbps/slot	240 Gbps/slot	480 Gbps/slot
Cisco Catalyst C9410R chassis	80 Gbps/slot	80 Gbps/slot	80 Gbps/slot	240 Gbps/slot	480 Gbps/slot

Table 4 lists the minimum software requirements for the Cisco Catalyst 9400 supervisor engine.

Table 4. Cisco Catalyst Supervisor Engine Software Minimum Requirements

Chassis	Supervisor Engine	Minimum Software Requirement
Cisco C9407R	Supervisor Engine C9400-SUP-1	Cisco IOS XE Software Release 16.6.1
Cisco C9410R	Supervisor Engine C9400-SUP-1	Cisco IOS XE Software Release 16.6.1
Cisco C9407R	Supervisor Engine C9400-SUP-1XL	Cisco IOS XE Software Release 16.6.2
Cisco C9410R	Supervisor Engine C9400-SUP-1XL	Cisco IOS XE Software Release 16.6.2
Cisco C9404R	Supervisor Engine C9400-SUP-1	Cisco IOS XE Software Release 16.9.1
Cisco C9404R	Supervisor Engine C9400-SUP-1XL	Cisco IOS XE Software Release 16.9.1
Cisco C9404R	Supervisor Engine C9400-SUP-1XL-Y	Cisco IOS XE Software Release 16.9.1
Cisco C9407R	Supervisor Engine C9400-SUP-1XL-Y	Cisco IOS XE Software Release 16.9.1
Cisco C9410R	Supervisor Engine C9400-SUP-1XL-Y	Cisco IOS XE Software Release 16.9.1
Cisco C9404R	Supervisor Engine C9400X-SUP-2	Cisco IOS XE Software Release 17.7.1
Cisco C9407R	Supervisor Engine C9400X-SUP-2	Cisco IOS XE Software Release 17.7.1
Cisco C9410R	Supervisor Engine C9400X-SUP-2	Cisco IOS XE Software Release 17.7.1

Line card options

The Catalyst 9400 Series offers the ability to mix and match a range of line cards to support numerous LAN access, server connectivity, and Small and Medium-Sized Business (SMB) or branch-office deployments. The Cisco Catalyst 9400 Series supports the line cards listed in Table 5 by part number.

Table 5. Cisco Catalyst 9400 Series line cards

Product Number	Description	Minimum Software Requirement
Cisco Catalyst 9400 Series Line Cards		
C9400-LC-48U	Cisco Catalyst 9400 Series 48-Port UPOE 10/100/1000 (RJ-45)	Cisco IOS XE Software Release 16.6.1
C9400-LC-48T	Cisco Catalyst 9400 Series 48-Port 10/100/1000 (RJ-45)	Cisco IOS XE Software Release 16.6.1
C9400-LC-48UX	Cisco Catalyst 9400 Series 48Port UPOE w/ 24p mGig 24p RJ-45	Cisco IOS XE Software Release 16.6.2
C9400-LC-24XS	Cisco Catalyst 9400 Series 24-Port 10 Gigabit Ethernet (SFP+)	Cisco IOS XE Software Release 16.6.2
C9400-LC-48P	Cisco Catalyst 9400 Series 48-Port POE+ 10/100/1000 (RJ-45)	Cisco IOS XE Software Release 16.8.1

Product Number	Description	Minimum Software Requirement
C9400-LC-24S	Cisco Catalyst 9400 Series 24-Port Gigabit Ethernet (SFP)	Cisco IOS XE Software Release 16.8.1
C9400-LC-48S	Cisco Catalyst 9400 Series 48-Port Gigabit Ethernet (SFP)	Cisco IOS XE Software Release 16.8.1
C9400-LC-48H	Cisco Catalyst 9400 Series 48-Port UPOE+ 10/100/1000 (RJ-45)	Cisco IOS XE Software Release 16.12.1
C9400-LC-48HN	Cisco Catalyst 9400 Series 48-Port 5G multigigabit w/ full 90W UPOE+	Cisco IOS XE Software Release 17.5
C9400-LC-48HX	Cisco Catalyst 9400 Series 48-Port 10G multigigabit w/ full 90W UPOE+	Cisco IOS XE Software Release 17.8.1
C9400-LC-48XS	Cisco Catalyst 9400 Series 48-Port 10 Gigabit (SFP+)	Cisco IOS XE Software Release 17.8.1
C9400-LC-24XY	Cisco Catalyst 9400 Series 20-Port 25G (SFP28), 4-Port 10G (SFP+)	Cisco IOSXE Software Release 17.12.1
C9400-LC-12QC	Cisco Catalyst 9400 Series 12-Port 40G (QSFP+) or 4-Port 100G (QSFP28), 4-Port 40G (QSFP+)	Cisco IOSXE Software Release 17.12.1
C9400-LC-48TX	Cisco Catalyst 9400 Series 48-Port 10G multigigabit, data only (RJ-45)	Cisco IOS XE Software Release 17.13.1

The Cisco Catalyst 9400 Series has flexible interface types and port densities that allow you to mix and match network configurations to meet the specific needs of campus networks (Table 6).

Table 6. Cisco Catalyst 9400 Series Maximum port densities

Cisco Catalyst 9400 Series Switching Modules	Cisco Catalyst C9404R	Cisco Catalyst C9407R	Cisco Catalyst C9410R
10/100/1000BASE-T Gigabit (RJ-45) ports	96	240	384
10/100/1000BASE-T Gigabit (RJ-45) with POE+ ports	96	240	384
10/100/1000BASE-T Gigabit (RJ-45) with UPOE ports	96	240	384
802.3 BT Type 4 (90W) Ports	96	240	384 ¹
5G Multigigabit Ethernet ports	96	240	384
10G Multigigabit Ethernet ports	96	240	384
1 Gigabit Ethernet ports (SFP)	96	240	384
10 Gigabit Ethernet ports (SFP+)	96	240	384
25 Gigabit Ethernet ports (SFP28)²	48	108	168

Cisco Catalyst 9400 Series Switching Modules	Cisco Catalyst C9404R	Cisco Catalyst C9407R	Cisco Catalyst C9410R
40 Gigabit Ethernet ports (QSFP+) ²	24	60	96
100 Gigabit Ethernet ports (QSFP28) ²	8	20	32

¹ With max power 260 ports can supply full 90W on all ports concurrently.

² Requires SUP-2/2XL.

Specifications

Physical specifications of Cisco Catalyst 9400 Series chassis

Table 7 lists physical specifications of the Cisco Catalyst 9400 Series chassis.

Table 7. Physical specifications of Cisco Catalyst 9400 Series chassis

Specification	C9404R	C9407R	C9410R
Dimensions (H x W x D)	10.47 x 17.30 x 16.30 in. (26.53 x 43.94 x 41.40 cm)	17.41 x 17.30 x 16.30 in. (44.22 x 43.94 x 41.40 cm)	22.61 x 17.30 x 16.30 in. (57.43 x 43.94 x 41.40 cm)
Rack Units (RU)	6 RU	10 RU	13 RU
Chassis weight (with fan tray)	39.0 lb (17.2 kg)	63.0 lb (28.58 kg)	65.0 lb (29.48 kg)
Mounting	19-in rack compatible (19-in. rack and cable guide hardware included)	19-in rack compatible (19-in. rack and cable guide hardware included)	19-in. rack compatible (19-in. rack and cable guide hardware included)

Power supply

There are three modes of operation supported by Cisco Catalyst 9400 power supplies. In all the modes the power supplies can be of type whether AC or DC.

Platinum Power Supply (C9400-PWR-3200ACT, IOS XE Release 17.13.1).

Redundant N + N mode

The Cisco Catalyst 9400 Chassis also supports N + N redundancy with N independent input circuits and safeguards against failure of N (+N) of the circuits as opposed to power supply unit failure.

Redundant N + 1 mode

The Cisco Catalyst 9400 Chassis also supports N + 1 redundancy with N independent input circuits and safeguards against failure of one (+1) of the circuits as opposed to power supply unit failure.

Combined mode

In this mode the power available for the entire chassis is equal to the sum of the output power of both power supplies multiplied by the share ratio.

P = Power output of one power-supply unit.

Total combined mode power = $P + (N-1) * P * (\text{share ratio})$.

Tables 8 describe power supply specification for the Catalyst 9400 Series.

Table 8. Cisco Catalyst 9400 Series Power supply specifications

Power Supply	3200W AC	2100W AC	3200W DC
Integrated PoE	Yes	Yes	Yes
Input current (rated)	<ul style="list-style-type: none"> • 16A at 100 VAC • 16A at 200 VAC 	<ul style="list-style-type: none"> • 10.4A at 100 VAC • 10.4A at 200 VAC 	<ul style="list-style-type: none"> • 36A per input (72A total)
Input voltage	100 to 240 VAC ($\pm 10\%$ for full range)	100 to 240 VAC ($\pm 10\%$ for full range)	-48 to -60 VDC (+20/-16.6% for full range)
Output current (data)	<ul style="list-style-type: none"> • 55V at 58.0A/28.36A (230/115VAC ranges) • 3.3V at 3.0A 	<ul style="list-style-type: none"> • 55V at 38.21/17.09A (230/115VAC ranges) • 3.3V at 3.0A 	<ul style="list-style-type: none"> • 55V at 58.0A • 3.3V at 3.0A
Output power (N+N) redundant mode (PoE + data)	<p>$(3190W \times N)/2 + 10W$ (3.3V standby) for 230VAC range</p> <p>$(1560W \times N)/2 + 10W$ (3.3V standby) for 115VAC range</p> <p>N = number of power supplies (N>1)</p>	<p>$(2102W \times N)/2 + 10W$ (3.3V standby) for 230VAC range</p> <p>$(940W \times N)/2 + 10W$ (3.3V standby) for 115VAC range</p> <p>N = number of power supplies (N>1)</p>	<p>$(3190W \times N)/2 + 10W$ (3.3V standby)</p> <p>N = number of power supplies (N>1)</p>
Output power (N+1) redundant mode (PoE + data)	<p>$(3190W \times (N-1)) + 10W$ (3.3V standby) for 230VAC range</p> <p>$(1560W \times (N-1)) + 10W$ (3.3V standby) for 115VAC range</p> <p>N = number of power supplies (N>1)</p>	<p>$(2102W \times (N-1)) + 10W$ (3.3V standby) for 230VAC range</p> <p>$(940W \times (N-1)) + 10W$ (3.3V standby) for 115VAC range</p> <p>N = number of power supplies (N>1)</p>	<p>$(3190W \times (N-1)) + 10W$ (3.3V standby)</p> <p>N = number of power supplies (N>1)</p>
Output Power Combined mode (PoE + data)	<p>$(3190W \times N) + 10W$ (3.3V standby) for 230VAC range</p> <p>$(1560W \times N) + 10W$ (3.3V standby) for 115VAC range</p> <p>N = number of power supplies (N>1)</p>	<p>$(2102W \times N) + 10W$ (3.3V standby) for 230VAC range</p> <p>$(940W \times N) + 10W$ (3.3V standby) for 115VAC range</p> <p>N = number of power supplies (N>1)</p>	<p>$(3190W \times N) + 10W$ (3.3V standby)</p> <p>N = number of power supplies (N>1)</p>
Heat dissipation	<p>950 BTU/hr x N</p> <p>N = number of power supplies</p>	<p>460 BTU/hr x N</p> <p>N = number of power supplies</p>	<p>950 BTU/hr x N</p> <p>N = number of power supplies</p>
Holdup time	20 ms	20 ms	8 ms
Hot swappable	Yes	Yes	Yes
MTBF	300,000 hours	300,000 hours	300,000 hours
Minimum Software Requirement	Cisco IOS XE Software Release 16.6.1	Cisco IOS XE Software Release 16.8.1	Cisco IOS XE Software Release 16.9.1

Note:

- Output power is per power supply unless otherwise stated.
- Heat-dissipation numbers represent the power conversion losses of the power supply in operation.

- The number of power devices supported depends upon the customer configuration.

Power supply indicators

- Output Fail LED (per unit): RED.
- Input Okay LED (per unit): Green.
- ID LED (per unit): Blue.

Table 9. Cisco Catalyst 9400 Series power-cord options

Power Supply	3200W AC	2100W AC
Europe	CAB-CEE77-C19-EU CAB-I309-C19-INTL	CAB-CEE77-C19-EU CAB-I309-C19-INTL
International	CAB-I309-C19-INTL	CAB-I309-C19-INTL
United States	CAB-US520-C19-US CAB-L620P-C19-US CAB-US620P-C19-US	CAB-US515P-C19-US CAB-US520-C19-US CAB-L620P-C19-US CAB-US620P-C19-US
Australia	CAB-AC-16A-AUS	CAB-AC-16A-AUS
Italy	CAB-C2316-C19-IT	CAB-C2316-C19-IT
United Kingdom	CAB-I309-C19-INTL	CAB-I309-C19-INTL CAB-BS1363-C19-UK
Argentina	CAB-I309-C19-INTL	CAB-I309-C19-INTL
South Africa	CAB-I309-C19-INTL	CAB-I309-C19-INTL
Israel	CAB-S132-C19-ISRL	CAB-S132-C19-ISRL
India	CAB-SABS-C19-IND	CAB-SABS-C19-IND
UPS 220V	CAB-C19-CBN	CAB-C19-CBN
China	CAB-9K16A-CH	CAB-9K16A-CH
Japan	CAB-US620P-C19-US CAB-L620P-C19-US	CAB-US620P-C19-US CAB-L620P-C19-US

Fan trays

Each Cisco Catalyst 9400 Series uses dual serviceable fan trays for cooling. Cisco Catalyst 9400 switches can optionally be accessed from the rear for flexible cable management. The chassis is enterprise closet- optimized with side-to-side airflow. All fan trays are composed of multiple independently controlled fans with N+1 redundancy. If any single fan fails, the system will continue to operate without a degradation in cooling. Speeds of fans change dynamically to compensate for fan failure. Catalyst 9400 Series fans have a barometric sensor,

which allows slower fan speed curves at lower altitudes. Catalyst 9400 Series fans also have individual fan Pulse-Width Modulation (PWM) fine-tuning to reduce variability in fan Revolutions Per Minute (RPM) under throttled conditions. This allows for optimal acoustic performance at 60dB when the system is operating at 50% load.



Figure 2.
Dual serviceable fan tray

Environmental conditions

The Cisco Catalyst 9400 Series require the following conditions:

- Operating temperature.
- Normal operating* temperature and altitudes:
 - 23° to 113° F (-5 to +45° C), up to 6,000 feet (1800 m).
 - 23° to 104° F (-5 to +40° C), up to 10,000 feet (3000 m).
 - *Minimum ambient temperature for cold startup is 0° C.
- Short-term** exceptional conditions:
 - 23° to 131° F (-5 to +55° C), up to 6,000 feet (1800 m).
 - 23° to 122° F (-5 to +50° C), up to 10,000 feet (3000 m).
 - **Not more than following in one-year period: 96 consecutive hours, or 360 hours total, or 15 occurrences.
- Storage temperature: -40° to 158° F (-40° to 70° C).
- Relative humidity: 10 to 95 percent, noncondensing.
- Operating altitude: -60 to 3000m.

MTBF information

Table 10 gives Mean-Time-Between-Failures (MTBF) information for different chassis.

Table 10. MTBF information

Part Number	Rated MTBF (Hours)
C9404R	2,077,070
C9407R	1,571,010
C9410R	1,404,840

Regulatory standards compliance

Table 11 lists the regulatory standards compliance supported by the Cisco Catalyst 9400 Series.

Table 11. Regulatory standards compliance

Specification	Standard
Regulatory compliance	<ul style="list-style-type: none">• CE Marking
Safety	<ul style="list-style-type: none">• UL 60950-1• CAN/CSA-C222.2 No. 60950-1• EN 60950-1• IEC 60950-1• AS/NZS 60950.1• IEEE 802.3
EMC	<ul style="list-style-type: none">• 47 CFR Part 15• CISPR22 Class A• KN 32 Class A• EN 300 386 V1.6.1• EN 55022 Class A• EN 55032 Class A• CISPR 32 Class A• EN61000-3-2• EN61000-3-3• ICES-003 Class A• TCVN 7189 Class A• V-3 Class A• CNS13438 Class A• CISPR24• EN 300 386• EN55024• TCVN 7317• KN35

Specification	Standard
Industry EMC, safety, and environmental standards	<ul style="list-style-type: none"> • NEBS: Operating temperature: -5 to 55C • Relative Humidity: 10-93% • Operating Altitude: up to 1829 m (6000 ft) at 55C • ETSI 300-019 Requirements are covered under GR-63-CORE with some deviations. • SR-3580 NEBS level 3 (GR-63-CORE, to current issue, GR-1089-CORE, to current issue) • ETS 300 019-2-1, Class 1.2 Storage • ETS 300 019-2-2, Class 2.3 Transportation • ETS 300 019-2-3, Class 3.2 Stationary • EN50121-4 • EN 300 386
ROHS compliance	<ul style="list-style-type: none"> • ROHS5

Ordering information

Table 12 lists the ordering information for chassis, power supplies, supervisor engines and memory that are commonly used with the Cisco Catalyst 9400 Series.

Table 12. Ordering information

Product Number	Description
C9404R (=)	Cisco Catalyst 9400 Series 4 slot chassis
C9407R (=)	Cisco Catalyst 9400 Series 7 slot chassis
C9410R (=)	Cisco Catalyst 9400 Series 10 slot chassis
C9400-SUP-1 (=)	Cisco Catalyst 9400 Series Supervisor 1 Module
C9400-SUP-1/2	Cisco Catalyst 9400 Series Redundant Supervisor 1 Module
C9400-SUP-1XL (=)	Cisco Catalyst 9400 Series Supervisor 1XL Module
C9400-SUP-1XL/2	Cisco Catalyst 9400 Series Redundant Supervisor 1XL Module
C9400-SUP-1XL-Y (=)	Cisco Catalyst 9400 Series Supervisor 1XL-Y with 25G Module
C9400-SUP-1XL-Y/2	Cisco Catalyst 9400 Series Redundant Supervisor 1XL-Y with 25G Module
C9400X-SUP-2(=)	Cisco Catalyst 9400 Series Supervisor 2 Module
C9400X-SUP-2/2	Cisco Catalyst 9400 Series Redundant Supervisor 2 Module
C9400X-SUP-2XL(=)	Cisco Catalyst 9400 Series Supervisor 2XL Module
C9400X-SUP-2XL/2	Cisco Catalyst 9400 Series Redundant Supervisor 2XL Module
C9400-SSD-240GB	Cisco Catalyst 9400 Series 240GB M2 SATA memory (Supervisor)
C9400-SSD-480GB	Cisco Catalyst 9400 Series 480GB M2 SATA memory (Supervisor)

Product Number	Description
C9400-SSD-960GB	Cisco Catalyst 9400 Series 960GB M2 SATA memory (Supervisor)
C9400-LC-48U (=)	Cisco Catalyst 9400 Series 48-Port UPOE 10/100/1000 (RJ-45)
C9400-LC-48P (=)	Cisco Catalyst 9400 Series 48-Port POE+ 10/100/1000 (RJ-45)
C9400-LC-48T (=)	Cisco Catalyst 9400 Series 48-Port 10/100/1000 (RJ-45)
C9400-LC-48UX (=)	Cisco Catalyst 9400 Series 48-Port UPOE w/ 24-port 10G mGig, 24-port 1G RJ-45
C9400-LC-24XS (=)	Cisco Catalyst 9400 Series 24-Port 10 Gigabit Ethernet (SFP+)
C9400-LC-24S (=)	Cisco Catalyst 9400 Series 24-Port 1 Gigabit Ethernet (SFP)
C9400-LC-48S (=)	Cisco Catalyst 9400 Series 48-Port 1 Gigabit Ethernet (SFP)
C9400-LC-48H (=)	Cisco Catalyst 9400 Series 48-Port UPOE+ 10/100/1000 (RJ-45)
C9400-LC-48HN (=)	Cisco Catalyst 9400 Series 48-Port UPOE+ 5G mGig (RJ-45)
C9400-LC-48HX (=)	Cisco Catalyst 9400 Series 48-Port UPOE+ 10G mGig (RJ-45)
C9400-LC-48TX (=)	Cisco Catalyst 9400 Series 48-Port 10G mGig data (RJ-45)
C9400-LC-48XS (=)	Cisco Catalyst 9400 Series 48-Port 10G (SFP+)
C9400-LC-24XY	Cisco Catalyst 9400 Series 20-Port 25G (SFP28), 4-Port 10G (SFP+)
C9400-LC-12QC	Cisco Catalyst 9400 Series 12-Port 40G (QSFP+) or 4-Port 100G (QSFP28), 4-Port 40G (QSFP+)
C9400-PWR-3200ACT (=)	Cisco Catalyst 9400 Series Titanium Rated 3200W AC Power Supply
C9400-PWR-3200AC (=)	Cisco Catalyst 9400 Series Platinum Rated 3200W AC Power Supply
C9400-PWR-2100AC (=)	Cisco Catalyst 9400 Series Platinum Rated 2100W AC Power Supply
C9400-PWR-3200DC (=)	Cisco Catalyst 9400 Series 3200W DC Power Supply
C9400-S-BLANK (=)	Cisco Catalyst 9400 Series Slot Blank Cover
C9400-PWR-BLANK (=)	Cisco Catalyst 9400 Series Power Supply Blank Cover
C9410-FAN=	Cisco Catalyst 9400 Series 10 slot chassis Fan Tray
C9407-FAN=	Cisco Catalyst 9400 Series 7 slot chassis Fan Tray
C9404-FAN=	Cisco Catalyst 9400 Series 4 slot chassis Fan Tray
C9410-ACC-KIT=	Cisco Catalyst 9400 Series 10 slot chassis Accessory Kit
C9407-ACC-KIT=	Cisco Catalyst 9400 Series 7 slot chassis Accessory Kit
C9404-ACC-KIT=	Cisco Catalyst 9400 Series 4 slot chassis Accessory Kit

Product Number	Description
C9404-RACK-19-KIT=	Cisco Catalyst 9400 Series 4 slot chassis Rack Mount
C9407-RACK-19-KIT=	Cisco Catalyst 9400 Series 7 slot chassis Rack Mount
C9410-RACK-19-KIT=	Cisco Catalyst 9400 Series 10 slot chassis Rack Mount
C9410-SHELF-KIT=	Cisco Catalyst 9400 Series 10 slot chassis Shelf Install Kit
C9407-SHELF-KIT=	Cisco Catalyst 9400 Series 7 slot chassis Shelf Install Kit
C9400-DNA-E	Cisco Catalyst 9400 Cisco DNA Essential Term License
C9400-DNA-E-3Y	Cisco Catalyst 9400 Cisco DNA Essential 3 Year License
C9400-DNA-E-5Y	Cisco Catalyst 9400 Cisco DNA Essential 5 Year License
C9400-DNA-E-7Y	Cisco Catalyst 9400 Cisco DNA Essential 7 Year License
C9400-DNA-A	Cisco Catalyst 9400 Cisco DNA Advantage Term License
C9400-DNA-A-3Y	Cisco Catalyst 9400 Cisco DNA Advantage 3 Year License
C9400-DNA-A-5Y	Cisco Catalyst 9400 Cisco DNA Advantage 5 Year License
C9400-DNA-A-7Y	Cisco Catalyst 9400 Cisco DNA Advantage 7 Year License
C9400-LIC=	Electronic SW License for Cisco Catalyst 9400 Switches
C9400-DNA-E-A	C9400 NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9400-DNA-E-A-3	C9400 NW and Cisco DNA Essentials and Cisco DNA Advantage Upgrade License (3Y)
C9400-DNA-E-A-5	C9400 NW and Cisco DNA Essentials and Cisco DNA Advantage Upgrade License (5Y)
C9400-DNA-E-A-7	C9400 NW and Cisco DNA Essentials and Cisco DNA Advantage Upgrade License (7Y)

Cisco Catalyst software SKUs

Table 13.

SKU	Product Description
C9400-DNX-E-3Y	C9400 3 Year term Cisco Catalyst Essentials software subscription license, Chassis
C9400-DNX-E-5Y	C9400 5 Year term Cisco Catalyst Essentials software subscription license, Chassis
C9400-DNX-E-7Y	C9400 7 Year term Cisco Catalyst Essentials software subscription license, Chassis
C9400-DNX-A-3Y	C9400 3 Year term Cisco Catalyst Advantage software subscription license, Chassis
C9400-DNX-A-5Y	C9400 5 Year term Cisco Catalyst Advantage software subscription license, Chassis
C9400-DNX-A-7Y	C9400 7 Year term Cisco Catalyst Advantage software subscription license, Chassis

Warranty

The Cisco Catalyst 9400 Series Switches come with a Cisco Enhanced Limited Lifetime Warranty (E-LLW) that includes Next-Business-Day (NBD) delivery of replacement hardware where available and 90 days of 8x5 Cisco Technical Assistance Center (TAC) support.

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 review the warranty statement shipped with your specific product carefully before use.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy. For further information about warranty terms, visit <https://www.cisco.com/go/warranty>.

Table 14 provides information about the E-LLW.

Table 14. E-LLW details

	Cisco E-LLW
Devices covered	Applies to Cisco Catalyst 9400 Series 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 5 years from the announcement of discontinuance.
Hardware replacement	Cisco or its service center will use commercially reasonable efforts to ship a replacement for NBD delivery, where available. Otherwise, a replacement will be shipped within 10 working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times might vary depending on customer location.
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).
TAC support	Cisco will provide during business hours, 8 hours per day, 5 days per week, basic configuration, diagnosis, and troubleshooting of device-level problems for up to a 90-day period from the date of shipment of the originally purchased Cisco Catalyst 9400 Series product. This support does not include solution or network-level support beyond the specific device under consideration.
Cisco.com access	Warranty allows guest access only to Cisco.com.

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 reuse program	Cisco Takeback and Reuse Program
	Operating Environmental conditions	Environmental conditions
	Regulatory and compliance	Table 11: Regulatory and compliance information
	Mean Time Between Failures - MTBF (hours)	Table 10: MTBF Information
	Product Warranty	Warranty
Power	Power Supply	Power Supplies
	Power cord options	Table 9. Cisco Catalyst 9400 Series power cord options
	Fan	Fan Trays
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Physical Specifications	Table 7: Physical specifications of Cisco Catalyst 9400 Series chassis

Cisco Services

Achieve infrastructure excellence faster and with less risk. Cisco Catalyst 9000 Services provide expert guidance to help you successfully deploy, manage and support the new Catalyst 9000 Switches. With unmatched networking expertise, best practices and innovative tools, we can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software and protocols into the network. Offering a comprehensive lifecycle of services – from implementation, optimization, technical and managed services – Cisco experts help you minimize disruption and achieve operational excellence to extract maximum value from your Cisco Networking Cloud ready infrastructure. Learn more about [Cisco Services for Enterprise Networks](#).

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Document history

New or Revised Topic	Described In	Date
Added Simplified Campus and 10G mGig Data Line card (C9400-LC-48TX)	Various	June 4, 2024
Added Cisco Catalyst software subscription details and SKUs, updated Cisco Catalyst Center naming	All relevant sections	October 20, 2023
Addition of new fiber line cards	All relevant sections	June 6, 2023
Added new SUP-2/2XL and line cards	Where appropriate	February 03, 2022
Added new Cisco Spaces support	Page 4	May 04, 2021
Added New UPOE+ 5G mGig Line card (C9400-LC-48HN)	Ordering information	March 03, 2021
Added New UPOE+ Line card (C9400-LC-48H)	Ordering information	August 20, 2019
Added New DC Power Supply (C9400-PWR-3200DC)	Power Supply	August 20, 2019
Added 4-slot Chassis and new Supervisor C9400-SUP-1XL-Y	C9404R, SUP-1XL-Y	August 15, 2018
Added new line cards: Access- 48 port PoE+. Core - 24/48 port 1G SFP. Added new power supply options - 2100W AC, 3200W DC. Added RESTCONF support.	Ordering Information	March 31, 2018
Added Sup-1XL, 120 G/slot, core optimized. Corrected references to Catalyst 9000 switches, rather than Catalyst 9000 series switches. Corrected references to Cisco IOS XE, rather than IOS XE.	Sup-1XL, 120 G/slot	December 18, 2017
Page 13: C9400 Part Number changed	Table 12	December 18, 2017
Page 14: C9400 NW and Cisco DNA Ess to NW and Cisco DNA Adv name changed to Cisco DNA Essentials and Cisco DNA Advantage	Table 12	December 18, 2017
Page 14: Add “Cisco” to Cisco Catalyst 9400 product name: Cisco Catalyst 9400 Cisco DNA Advantage 7 Year License	Table 12	December 18, 2017

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