Cisco Catalyst 9300 Series Switches

Contents

Built to reimage connection, reinforce security and redefine experience

Cisco Catalyst 9300 Series switches are Cisco's lead stackable 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 9300 Series, including the new Catalyst 9300X models, 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. With Catalyst 9300 switches, you choose how you want to manage your network – on-premises, virtual or from the cloud.

The many industry's first include:

- **Up to 1TB of stacking bandwidth:** With Stackwise-1T, Catalyst 9300 switches are the industry's highest-density stacking bandwidth solution with the most flexible uplink architecture.

- **Flexible and dense uplink offerings** with 100G, 40G, 25G, Multigigabit, 10G, and 1G modular uplinks.

- **Mixed Stacking with Backward Compatibility** – Stack your Catalyst 9300X fiber switches with Catalyst 9300 and Catalyst 9300X Multigigabit switches, bringing stackable high-speed fiber to the access.

- **Highest Multigigabit Ports:** With standalone and Stackwise-1T, Catalyst 9300X models enable 48 mGig ports in standalone and 448 mGig ports with an 8-member stack.

- **Highest 90W UPOE+ Density:** Enable your OT/IT needs with up to 48 ports of 90W UPOE+ for standalone or 384 ports of 90W UPOE+ with an 8-member stack.

- **Stack Power with Backward Compatibility:** Enable power resiliency with higher power budgets in mixed Catalyst 9300 and Catalyst 9300X stack.

- **100G IPsec in hardware:** With the UADP 2.0Sec ASIC, the Catalyst 9300X models come with 100G line rate IPsec to enable various options for new edge connectivity.

- **Secure Tunnel connectivity:** With the new edge, the C9300X enables secure connections to Secure Internet Gateway, Cloud Service Providers and Site to Site connectivity using IPsec tunnel with AES-256 Encryption and speeds up to 100G.

- **Enhanced Application Hosting:** With 2x capacity and additional RAM, QAT, and 2 x 10G AppGig Ports, multiple Cisco Signed performance savvy applications can be hosted on Catalyst 9300X models.

- **ThousandEyes Enabled:** 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).

- **Cisco ASAc Firewall enabled:** Using application hosting on Cisco Catalyst 9300 Switches, Cisco Adaptive Security Virtual Appliance (ASAc) and stateful inspection of traffic in a network can be seamlessly added to existing networks without any additional hardware.

- **Cloud management and monitoring:** Cloud management and monitoring provides the ability to manage or view Catalyst 9300 switch statistics, configuration, and troubleshooting capabilities in Meraki dashboard.

- **Investment Protection:** Catalyst 9300X redundant fans and power supplies, data stack and StackPower cables are backward compatible with the Catalyst 9300.

The Foundation of Software-Defined access

Advanced persistent security threats. The exponential growth of Internet of Things (IoT) devices. Mobility everywhere. Cloud adoption. All of these 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 the rollout of business services.

The Cisco Networking Cloud with Software-Defined Access (SD-Access) is the network fabric that powers business. It 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

Cisco Catalyst, Cisco DNA and Meraki Software

Cisco Catalyst, Cisco DNA and Meraki Software subscriptions offer a valuable and flexible way to buy software for the access, WAN, and data center domains. At each stage in the product lifecycle, Cisco Catalyst, Cisco DNA and Meraki Software helps make buying, managing, and upgrading your network and infrastructure software easier. Cisco software provides:

- 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).
- Lower cost of entry with the new Cisco Catalyst Software Subscription for Switching support model.
- Choose what management model works best for you – on-premises, virtual or in the cloud.
- Access to end-to-end network visibility with Cisco Spaces, service assurance through Cisco ThousandEyes Network and Application Synthetics and Cisco ASAc firewall (with Cisco Catalyst and Cisco DNA Advantage licenses).

Cisco Catalyst 9300 Series switches lets you manage your entire switching structure as a single, converged component. With one management system, whether on-premises or in the cloud, and one policy for wired and wireless networks, it offers an efficient way to provide more secure access.

Product overview

Product highlights

- Highest wireless scale for Wi-Fi 6 and 802.11ac Wave 2 access points supported on a single switch with select models.

- Catalyst 9300 and Catalyst 9300L/LM models are based on the Cisco UADP 2.0 Application-Specific Integrated Circuit (ASIC) with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries.

- Catalyst 9300X models are based on UADP 2.0sec ASIC which adds line rate support for Crypto, including 100G hardware-based IPsec.

- x86 CPU complex with 8-GB memory, and 16 GB of flash and external USB 3.0 SSD pluggable storage slot (delivering up to 240GB of storage with an option SSD drive) to host containers. C9300X models support 16GB of memory.

- USB 2.0 slot to load system images and set configurations.

- Up to 1 TBps of local stackable switching bandwidth with Catalyst 9300X models.

- Deeper buffer and higher scale model options for rich multi-media content delivery applications.

- Flexible and dense uplink offerings with 100G, 40G, 25G, Multigigabit, 10G, and 1G as fixed or modular uplinks.

- Easy transition from 40G to 100G and 10G to 25G with dual-rate optics.

- Flexible downlink options with 25G, 10G and 1G Copper and Fiber as well as the densest Multigigabit links.

- With a mix of copper (1G up to 10G) and fiber (1G up to 25G) supported in a single stack, multiple flexible deployment scenarios are enabled, including 2-Tier, 3-Tier and Hybrid architectures.

- Leading PoE capabilities with up to 384 ports of PoE per stack, PoE+, and 288 ports high density IEEE 802.3bt-90W UPOE+, and 60W Cisco UPOE.

- Intelligent Power Management with Cisco StackPower technology, providing power stacking among members for power redundancy. StackPower pools the power supplies across the stack to be used redundancy and supplemental power purposes.

- Line-rate, hardware-based Flexible NetFlow (FNF), delivering flow collection of up to 128,000 flows with select models.

- IPv6 support in hardware, providing wire-rate forwarding for IPv6 networks.

- Dual-stack support for IPv4/IPv6 and dynamic hardware forwarding table allocations, for ease of IPv4-to-IPv6 migration.

- Support for both static and dynamic NAT and Port Address Translation (PAT).

- IEEE 802.1ba AV Bridging (AVB) built in to provide a better audio and video experience through improved time synchronization and QoS.

- Precision Time Protocol (PTP; IEEE 1588v2) provides accurate clock synchronization with sub-microsecond accuracy making it suitable for distribution and synchronization of time and frequency over network.

- Cisco IOS XE, 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.

- End-to-end visualization of the path from campus/branch to clouds/DC with Cisco ThousandEyes Network and Application Synthetics (included with Cisco Catalyst and DNA Advantage license).

- Fully managed Meraki cloud customers are able to take advantage of power of Catalyst 9300 switching in their Meraki cloud through the cloud-management service.

- **SD-Access:** Cisco Catalyst 9300 Series switches form the foundational building block for SD-Access, Cisco's lead enterprise architecture:

  ◦ Policy-based automation from edge to cloud.

  ◦ Simplified segmentation and micro-segmentation, with predictable performance and scalability.

  ◦ Automation through Cisco Catalyst Center and Meraki Dashboard.

  ◦ Policy handled through the Cisco Identity Services Engine (ISE).

  ◦ Network assurance provided through the Cisco Catalyst Center and Meraki Dashboard.

  ◦ Faster launch of new business services and significantly improved issue resolution time.

- Plug and Play (PnP) enabled: A simple, secure, unified, and integrated offering to ease new branch or campus device rollouts or updates to an existing network.

- Advanced security

  ◦ **Encrypted Traffic Analytics (ETA):** You benefit from the power of machine learning to identify and take actions toward threats or anomalies in your network, including malware detection in encrypted traffic (without decryption) and distributed anomaly detection.

  ◦ Support for AES-256 with the powerful MACsec 256-bit encryption algorithm available on all models.

  ◦ **Trustworthy solutions:** Hardware anchored Secure Boot and Secure Unique Device Identification (SUDI) support for Plug and Play, to verify the identity of the hardware and software.

Platform details

Switch models and configurations

Table 1.   Product Family Configurations

Models	Modular Uplinks and Speeds	Stacking Bandwidth Support	mGig Density	Cisco StackPower	HW-Based IPsec	App hosting Capacity
Catalyst 9300X	10G, 25G, 40G, mGig and 100G	Stackwise-1T (480G when stacking with Catalyst 9300 model)	48x 10G	✓ (Larger Power Budget)	Up to 100G IPsec*	✓ (2x hosting resources over Catalyst 9300 models)
Catalyst 9300	10G, 25G, 40G and mGig	Stackwise-480	48x5G and 24x10G	✓	✗	✓
Catalyst 9300L	✗	Stackwise-320	12x10G	✗	✗	✓
Catalyst 9300LM	✗	Stackwise-320	8x10G	✗	✗	✓

* Need to order HSEC Key for IPsec Feature.

The Cisco Catalyst 9300 Series is made up of nineteen modular uplink switch models and fourteen fixed uplink switch models.

Figure 1.
Cisco Catalyst 9300 Series switches

Table 2 lists port scale and power details for the Cisco Catalyst 9300 Series models.

Table 2.   Cisco Catalyst 9300 Series switch configurations

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
Modular uplink models			
C9300X-48HX	48 port Cisco UPOE+, 48x 10G Multigigabit (10G/5G/2.5G/1G/100M) with 90W UPOE+	Modular Uplinks	1100W AC
C9300X-48TX	48 port Data, 48x 10G Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	715W AC

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
C9300X-48HXN	48 port Cisco UPOE+, 8x 10G Multigigabit (10G/5G/2.5G/1G/100M) + 40x 5G Multigigabit (5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300X-24HX	24 port Cisco UPOE+, 24x 10G Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300X-12Y	12 port 25G/10G/1G SFP28	Modular Uplinks	715W AC
C9300X-24Y	24 port 25G/10G/1G SFP28	Modular Uplinks	715W AC
C9300-24T	24 port Data	Modular Uplinks	350W AC
C9300-48T	48 port Data	Modular Uplinks	350W AC
C9300-24P	24 port PoE+	Modular Uplinks	715W AC
C9300-48P[2]	48 port PoE+ ENERGY STAR® certified	Modular Uplinks	715W AC
C9300-24U	24 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-48U	48 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-24UX	24 port Multigigabit Cisco UPOE (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-48UXM[2]	48 port Cisco UPOE, 36 ports 100M/1G/2.5G + 12 ports Multigigabit (10G/5G/2.5G/1G/100M) ENERGY STAR® certified	Modular Uplinks	1100W AC
C9300-48UN	48 port 5Gbps Multigigabit UPOE ports (5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-24UB	24 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-24UXB	24 port Multigigabit Cisco UPOE (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-48UB	48 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-24H	24 port Cisco UPOE+	Modular Uplinks	1100W AC
C9300-48H	48 Cisco UPOE+	Modular Uplinks	1100W AC
C9300-24S	24 1G SFP	Modular Uplinks	715W AC
C9300-48S	48 port 1G SFP	Modular Uplinks	715W AC
Fixed uplink models			
C9300L-24T-4G	24 port Data	4x 1G fixed uplinks	350W AC
C9300L-24T-4X	24 port Data	4x 10G/1G fixed uplinks	350W AC

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
C9300L-48T-4G	48 port Data	4x 1G fixed uplinks	350W AC
C9300L-48T-4X	48 port Data	4x 10G/1G fixed uplinks	350W AC
C9300L-24P-4G	24 port PoE+	4x 1G fixed uplinks	715W AC
C9300L-24P-4X	24 port PoE+	4x 10G/1G fixed uplinks	715W AC
C9300L-48P-4G	48 port PoE+	4x 1G fixed uplinks	715W AC
C9300L-48P-4X	48 port PoE+	4x 10G/1G fixed uplinks	715W AC
C9300L-48PF-4G	48 port PoE+	4x 1G fixed uplinks	1100W AC
C9300L-48PF-4X	48 port PoE+	4x 10G/1G fixed uplinks	1100W AC
C9300L-24UXG-4X	24 port Cisco UPOE, 8 ports Multigigabit (10G/5G/2.5G/1G/100M) + 16 ports 1G (1G/100M/10M)	4x 10G/1G fixed uplinks	1100W AC
C9300L-24UXG-2Q	24 port Cisco UPOE, 8 ports Multigigabit (10G/5G/2.5G/1G/100M) + 16 ports 1G (1G/100M/10M)	2x 40G fixed uplinks	1100W AC
C9300L-48UXG-4X	48 port Cisco UPOE, 12 ports Multigigabit (10G/5G/2.5G/1G/100M) + 36 port 1G (1G/100M/10)	4x 10G/1G fixed uplinks	1100W AC
C9300L-48UXG-2Q	48 port Cisco UPOE, 12 port Multigigabit (10G/5G/2.5G/1G/100M) + 36 port 1G (1G/100M/10M)	2x 40G fixed uplinks	1100W AC
C9300LM-48UX-4Y	48 port Cisco UPOE, 8 port 10G Multigigabit (10G/5G/2.5G/1G/100M) + 40 port 1G (1G/100M/10M)	4x25G fixed uplinks	1000W AC[1]
C9300LM-48U-4Y	48 port 1G (1G/100M/10M) with Cisco UPOE	4x25G fixed uplinks	1000W AC[1]
C9300LM-24U-4Y	24 port 1G (1G/100M/10M) with Cisco UPOE	4x25G fixed uplinks	600W AC[1]
C9300LM-48T-4Y	48 port 1G (1G/100M/10M) Data	4x25G fixed uplinks	600W AC[1]

[1] C9300LM models use different power supplies compared to C9300, C9300X and C9300L models.

[2] ENERGY STAR® certified model.

Network Modules

Cisco Catalyst 9300 Series switches (C9300X and C9300 SKUs) support optional network modules for uplink ports (Figure 2). These field-replaceable network modules with 25G and 40G speeds in the Cisco Catalyst 9300 Series enable greater architectural flexibility and infrastructure investment protection by allowing a nondisruptive migration from 10G to 25G and beyond. The default switch configuration does not include the