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Cisco Catalyst 1000 Series Switches

Contents

Product overview

Cisco® Catalyst® 1000 Series Switches are fixed managed Gigabit Ethernet and Fast Ethernet enterprise-class Layer 2 switches designed for small businesses and branch offices. These are simple, flexible and secure switches ideal for out-of-the-wiring-closet and critical Internet of Things (IoT) deployments. Cisco Catalyst 1000 operate on Cisco IOS® Software and support simple device management and network management via a Command-Line Interface (CLI) as well as an on-box web UI. These switches deliver enhanced network security, network reliability, and operational efficiency for small organizations.

Product highlights

Cisco Catalyst 1000 Series Switches feature:

- 8, 16, 24, or 48 Gigabit Ethernet and 24, 48 port Fast Ethernet data or PoE+ ports with line-rate forwarding

- 2 or 4 fixed 1 Gigabit Ethernet Small Form-Factor Pluggable (SFP)/RJ 45 Combo uplinks (8 Port models only) or 4 fixed 10 Gigabit Ethernet Enhanced SFP (SFP+) uplinks on the Gigabit Ethernet models and 4 fixed 1 Gigabit Ethernet Small Form-Factor Pluggable (SFP) and 2 RJ 45 Combo uplinks on the Fast Ethernet models

- Perpetual PoE+ support with a power budget of up to 740W

- CLI and/or intuitive web UI manageability options

- Network monitoring through sampled flow (sFlow)

- Security with 802.1X support for connected devices, Switched Port Analyzer (SPAN), and Bridge Protocol Data Unit (BPDU) Guard

- Compact fanless models available with a depth of less than 13 inches (33 cm)

- Device management support with over-the-air access via Bluetooth, Simple Network Management Protocol (SNMP), RJ-45 console access

- Reliability with a higher Mean Time Between Failures (MTBF) and an enhanced limited lifetime warranty support (E-LLW)

Switch models and configurations

Cisco Catalyst 1000 Series Switches include a single fixed power supply. Table 1 shows configuration information.

Table 1. Switch configurations

Product ID*	Gigabit Ethernet / FE ports	Uplink interfaces	PoE+power budget	Fanless	Dimensions (WxDxH in inches)	Weight (kg)
C1000-8T-2G-L	8 10/100/1000 RJ45 Data	2 SFP/ RJ-45 combo	–	Y	10.56 x 7.28 x 1.73	1.80
C1000-8T-E-2G-L	8 10/100/1000 RJ45 Data	2 SFP/ RJ-45 combo	–	Y	10.56 x 7.28 x 1.73	1.55
C1000-8P-2G-L	8 10/100/1000 RJ45 PoE+	2 SFP/ RJ-45 combo	67W	Y	10.56 x 12.73 x 1.73	1.55
C1000-8P-E-2G-L	8 10/100/1000 RJ45 PoE+	2 SFP/ RJ-45 combo	67W	Y	10.56 x 7.28 x 1.73	1.55
C1000-8FP-2G-L	8 10/100/1000 RJ45 PoE+	2 SFP/ RJ-45 combo	120W	Y	10.56 x 12.73 x 1.73	2.70
C1000-8FP-E-2G-L	8 10/100/1000 RJ45 PoE+	2 SFP/ RJ-45 combo	120W	Y	10.56 x 7.28 x 1.73	2.70
C1000-16T-2G-L	16 10/100/1000 RJ45 Data	2 SFP	–	Y	10.56 x 10.69 x 1.73	1.78
C1000-16T-E-2G-L	16 10/100/1000 RJ45 Data	2 SFP	–	Y	10.56 x 8.26x 1.73	1.42
C1000-16P-2G-L	16 10/100/1000 RJ45 PoE+	2 SFP	120W	Y	10.56 x 11.69 x 1.73	2.38
C1000-16P-E-2G-L	16 10/100/1000 RJ45 PoE+	2 SFP	120W	Y	10.56 x 8.26x 1.73	1.42
C1000-16FP-2G-L	16 10/100/1000 RJ45 PoE+	2 SFP	240W	Y	10.56 x 12.14 x 1.73	2.49
C1000-24T-4G-L	24 10/100/1000 RJ45 Data	4 SFP	–	Y	17.48 x 9.45 x 1.73	2.63
C1000-24P-4G-L	24 10/100/1000 RJ45 PoE+	4 SFP	195W	Y	17.48 x 11.76 x 1.73	3.53
C1000-24FP-4G-L	24 10/100/1000 RJ45 PoE+	4 SFP	370W	N	17.48 x 13.59 x 1.73	4.6
C1000-48T-4G-L	48 10/100/1000 RJ45 Data	4 SFP	–	N	17.48 x 11.34 x 1.73	3.95

Product ID*	Gigabit Ethernet / FE ports	Uplink interfaces	PoE+power budget	Fanless	Dimensions (WxDxH in inches)	Weight (kg)
C1000-48P-4G-L	48 10/100/1000 RJ45 PoE+	4 SFP	370W	N	17.48 x 13.78 x 1.73	5.43
C1000-48FP-4G-L	48 10/100/1000 RJ45 PoE+	4 SFP	740W	N	17.48 x 13.78 x 1.73	5.82
C1000-24T-4X-L	24 10/100/1000 RJ45 Data	4 SFP+	–	Y	17.48 x 9.45 x 1.73	2.78
C1000-24P-4X-L	24 10/100/1000 RJ45 PoE+	4 SFP+	195W	Y	17.48 x 11.76 x 1.73	3.68
C1000-24FP-4X-L	24 10/100/1000 RJ45 PoE+	4 SFP+	370W	N	17.48 x 13.59 x 1.73	4.6
C1000-48T-4X-L	48 10/100/1000 RJ45 Data	4 SFP+	–	N	17.48 x 11.34 x 1.73	3.95
C1000-48P-4X-L	48 10/100/1000 RJ45 PoE+	4 SFP+	370W	N	17.48 x 13.78 x 1.73	5.43
C1000-48FP-4X-L	48 10/100/1000 RJ45 PoE+	4 SFP+	740W	N	17.48 x 13.78 x 1.73	5.82
C1000FE-24T-4G-L	24 10/100 RJ45 Data	2 SFP/ RJ-45 combo and 2 SFP	–	Y	17.32 x 11.34 x 1.73	3.56
C1000FE-24P-4G-L	24 10/100 RJ45 PoE+	2 SFP/ RJ-45 combo and 2 SFP	195W	Y	17.48 x 13.78 x 1.73	4.52
C1000FE-48T-4G-L	48 10/100 RJ45 Data	2 SFP/ RJ-45 combo and 2 SFP	–	N	17.32 x 11.34 x 1.73	3.97
C1000FE-48P-4G-L	48 10/100 RJ45 PoE+	2 SFP/ RJ-45 combo and 2 SFP	370W	N	17.48 x 13.78 x 1.73	5.46

*Please refer to local price lists for product SKUs available in the region

Software

The software features supported on the Cisco Catalyst 1000 Series can be found on Cisco Feature Navigator: https://cfn.cloudapps.cisco.com/ITDIT/CFN/jsp/by-feature-technology.jsp. Catalyst 1000 series Fast Ethernet models are available with LAN Lite equivalent feature set only. Fast ethernet provide reduced functionality and scalability compared to the Gigabit ethernet models and are targeted for deployments with basic requirements.

Switch management

Cisco Catalyst 1000 Series Switches support the following on-device management features:

- **Web UI** via Cisco Configuration Professional. Cisco Configuration Professional provides a user interface for day-zero provisioning, which enables easy onboarding of the switch. It also has an intuitive dashboard for configuring, monitoring, and troubleshooting the switch (Figure 1). For more information, about Cisco Configuration Professional, refer to https://www.cisco.com/c/en/us/products/cloud-systems-management/configuration-professional-catalyst/index.html.
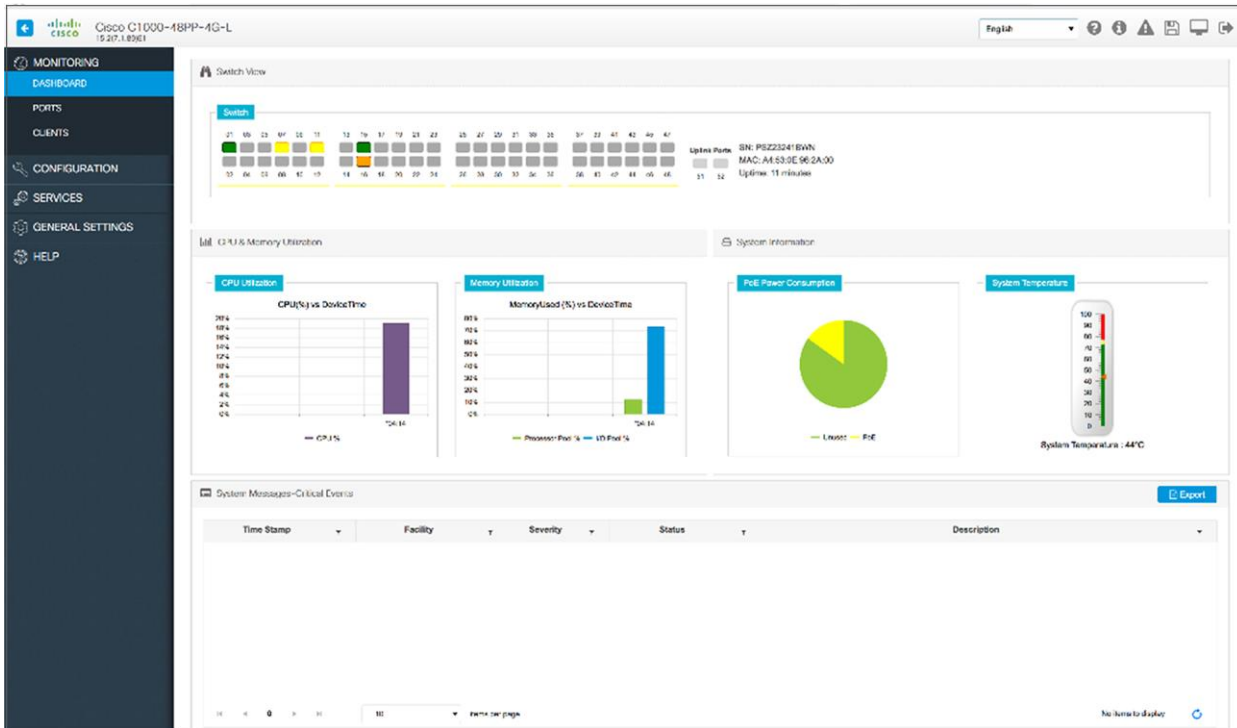

Figure 1.
Cisco Configuration Professional

- **Bluetooth** for over-the-air access. The switches support an external Bluetooth dongle that plugs into the USB port on the switch and allows a Bluetooth-based RF connection with external laptops and tablets (Figure 2). Laptops and tablets can access the switch CLI using a Telnet or Secure Shell (SSH) client over Bluetooth. The GUI can be accessed over Bluetooth with a browser.
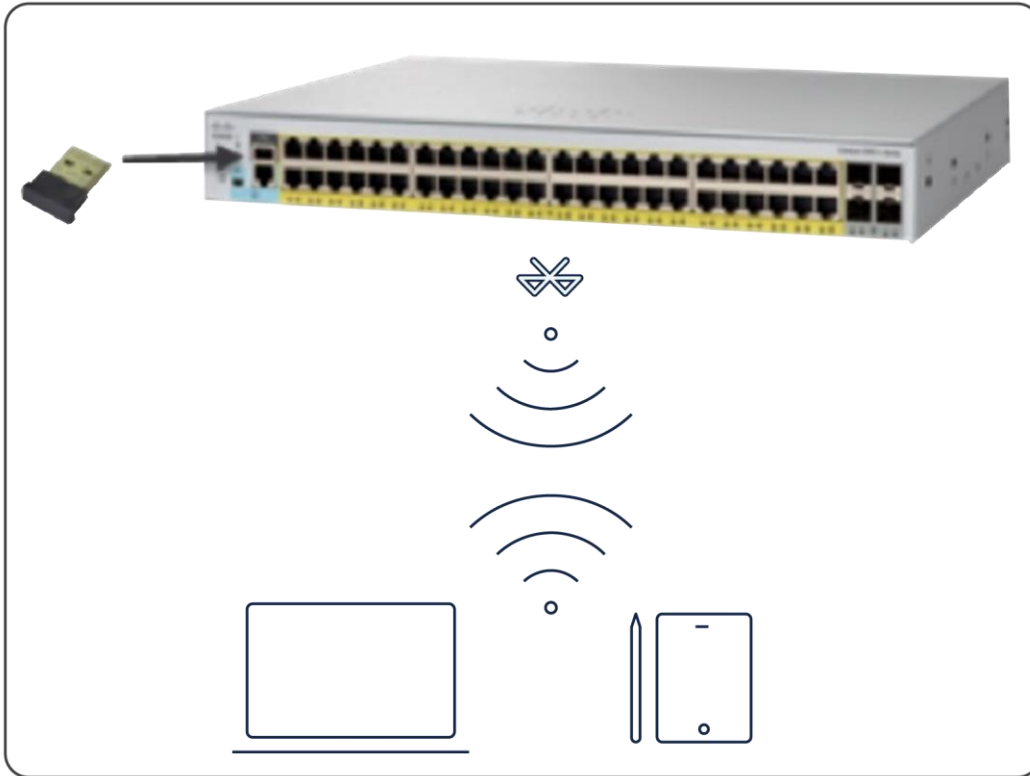
Figure 2.
Over-the-air switch access using Bluetooth

- Single IP Management is available on the Cisco Catalyst 1000 Series switches. The uplink ports can be used to connect up to eight switches in a sigle stack and manage them via a single IP address to ease the network management activities like configurations and troubleshooting. This feautre is only available on the Gigabit ethernet models

Network management

The Cisco Catalyst 1000 Series Switches offer a superior CLI for detailed configuration and administration.

Intelligent PoE+

Cisco Catalyst 1000 Series Switches support both IEEE 802.3af PoE and IEEE 802.3at PoE+ (up to 30W per port) to deliver a lower total cost of ownership for deployments that incorporate Cisco IP phones, Cisco Aironet® and Catalyst wireless access points, or other standards-compliant PoE and PoE+ end devices. PoE removes the need to supply wall power to PoE-enabled devices and eliminates the cost of adding electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments.

The PoE power allocation in the Cisco Catalyst 1000 Series Switches is dynamic, and power mapping scales up to a maximum of 740W of PoE+ power. Intelligent power management allows flexible power allocation across all ports. With Perpetual PoE, the PoE+ power is maintained during a switch reload. This is important for critical endpoints such as medical devices and for IoT endpoints such as PoE-powered lights, so that there is no disruption during a switch reboot.

Network security

Cisco Catalyst 1000 Series Switches provide a range of security features to limit access to the network and mitigate threats, including:

- **Comprehensive 802.1X** features to control access to the network, including flexible authentication, 802.1X monitor mode, and RADIUS change of authorization.

- **802.1X support with Network Edge Access Topology (NEAT)**, which extends identity authentication to areas outside the wiring closet (such as conference rooms).

- **IEEE 802.1X user distribution**, which enables you to load-balance users with the same group name across multiple different VLANs.

- **Ability to disable per-VLAN MAC learning** to allow you to manage the available MAC address table space by controlling which interface or VLANs learn MAC addresses.

- **Multidomain authentication** to allow an IP phone and a PC to authenticate on the same switch port while being placed on the appropriate voice and data VLANs.

- **Authentication, Authorization, and Accounting (AAA) command authorization** in PnP to enable seamless PnP provisioning.

- **Access Control Lists (ACLS)** for IPv6 and IPv4 security and Quality-of-Service (QoS) ACL elements (ACEs).

- **Port-based ACLs** for Layer 2 interfaces to allow security policies to be applied on individual switch ports.

- **SSH, Kerberos, and SNMP v3** to provide network security by encrypting administrator traffic during Telnet and SNMP sessions. SSH, Kerberos, and the cryptographic version of SNMP v3 require a special cryptographic software image because of U.S. export restrictions.

- **SPAN**, with bidirectional data support, to allow the Cisco Intrusion Detection System (IDS) to take action when an intruder is detected.

- **TACACS+ and RADIUS authentication** to facilitate centralized control of the switch and restrict unauthorized users from altering the configuration.

- **MAC address notification** to notify administrators about users added to or removed from the network.

- **MAC Authentication Bypass (MAB) and WebAuth with downloadable ACLs** to allow per-user ACLs to be downloaded from the Cisco Identity Services Engine (ISE)as policy enforcement after authentication using MAB or web authentication in addition to IEEE 802.1X.

- **Web authentication redirection** to enable networks to redirect guest users to the URL they had originally requested.

- **Multilevel security on console access** to prevent unauthorized users from altering the switch configuration.

- **BPDU Guard** to shut down Spanning Tree PortFast-enabled interfaces when BPDUs are received, to avoid accidental topology loops.

- **IP Source Guard** to restrict IP traffic on nonrouted Layer 2 interfaces by filtering traffic based on the Dynamic Host Configuration Protocol (DHCP) snooping binding database or by manually configuring IP source bindings.

- **SSH v2** to allow use of digital certificates for authentication between user and server.

- **Spanning Tree Root Guard (STRG)** to prevent edge devices that are not in the network administrator's control from becoming Spanning Tree Protocol (STP) root nodes.
- **Internet Group Management Protocol (IGMP) filtering** to provide multicast authentication by filtering out nonsubscribers and to limit the number of concurrent multicast streams available per port.
- **Dynamic VLAN assignment** through implementation of VLAN Membership Policy Server client capability to provide flexibility in assigning ports to VLANs. Dynamic VLAN facilitates the fast assignment of IP addresses.

Redundancy and resiliency

Cisco Catalyst 1000 Series Switches offer a number of redundancy and resiliency features to prevent outages and help ensure that the network remains available:

- **IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP)** provide rapid spanning-tree convergence independent of spanning-tree timers and also offer the benefits of Layer 2 load balancing and distributed processing.
- **Per-VLAN Rapid Spanning Tree (PVRST+)** allows rapid spanning-tree reconvergence on a per-VLAN spanning-tree basis, without requiring the implementation of spanning-tree instances.
- **Switch-port auto-recovery (error disable)** automatically attempts to reactivate a link that is disabled because of a network error.
- **Link state tracking** binds the link state of multiple interfaces. The server Network Interface Cards (NICs) form a group to provide redundancy in the network. When the link is lost on the primary interface, network connectivity is transparently changed to the secondary interface.

Enhanced QoS

Cisco Catalyst 1000 Series Switches offer intelligent traffic management that keeps everything flowing smoothly. Flexible mechanisms for marking, classifying, and scheduling deliver superior performance for data, voice, and video traffic, all at wire speed. Primary QoS features include:

- Up to **eight egress queues** and two thresholds per port, supporting egress bandwidth control, shaping, and priority queuing so that high-priority packets are serviced ahead of other traffic.
- **Ingress policing** to allow the analysis of IP service levels for IP applications and services using active traffic monitoring – generating traffic in a continuous, reliable, and predictable manner – for measuring network performance. The number of ingress policers available per port is 64.
- **QoS through Differentiated Services Code Point (DSCP) mapping and filtering**.
- **QoS through traffic classification**.
- **Trust boundary** to configure device-based trust.
- **AutoQoS** to simplify the deployment of QoS features.
- **Shaped Round Robin** (SRR) scheduling and **Weighted Tail Drop** (WTD) congestion avoidance.
- **802.1p Class of Service** (CoS) classification, with marking and reclassification.

Energy management

Cisco Catalyst 1000 Series Switches offer a range of industry-leading features for energy efficiency and management:

- **IEEE 802.3az Energy Efficient Ethernet** (EEE) enables ports to dynamically sense idle periods between traffic bursts and quickly switch the interfaces into a low-power idle mode, reducing power consumption.
- **Loop detection** is a new method to detect network loops in the absence of STP.
- **Cisco AutoConfig** determines the level of network access provided to an endpoint based on the type of device. This feature also permits hard binding between the end device and the interface.
- **Cisco Auto SmartPorts** enables automatic configuration of switch ports as devices connect to the switch with settings optimized for the device type, resulting in zero-touch port-policy provisioning.
- **Cisco Smart Troubleshooting** is an extensive array of diagnostic commands and system health checks in the switch, including Smart Call Home. The Cisco Generic Online Diagnostics (GOLD) and online diagnostics on switches in live networks help predict and detect failures more quickly.

For more information about Cisco Catalyst SmartOperations, visit cisco.com/go/SmartOperations.

Operational simplicity

- **Cisco AutoSecure** provides a single-line CLI to enable baseline security features (port security, DHCP snooping, Dynamic Address Resolution Protocol [ARP] Inspection). This feature simplifies security configurations with a single touch.
- **DHCP** auto configuration of multiple switches through a boot server eases switch deployment.
- **Auto negotiation** on all ports automatically selects half- or full-duplex transmission mode to optimize bandwidth.
- **Dynamic Trunking Protocol (DTP)** facilitates dynamic trunk configuration across all switch ports.
- **Port Aggregation Protocol (PAgP)** automates the creation of Cisco Fast EtherChannel groups or Gigabit EtherChannel groups to link to another switch, router, or server.
- **Link Aggregation Control Protocol (LACP)** allows the creation of Ethernet channeling with devices that conform to IEEE 802.3ad. This feature is similar to Cisco EtherChannel technology and PAgP.
- **Automatic media-dependent interface crossover (MDIX)** automatically adjusts transmit and receive pairs if an incorrect cable type (crossover or straight-through) is installed.
- **Unidirectional Link Detection Protocol (UDLD)** and Aggressive UDLD allow unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces.
- **Local Proxy ARP** works in conjunction with Private VLAN Edge to minimize broadcasts and maximize available bandwidth.
- **VLAN1 minimization** allows VLAN1 to be disabled on any individual VLAN trunk.
- **IGMP** snooping for IPv4 and IPv6 and Multicast Listener Discovery (MLD) v1 and v2 snooping provide fast client joins and leaves of multicast streams and limit bandwidth-intensive video traffic to only the requesters.

- **Per-port broadcast, multicast, and unicast storm control** prevents faulty end stations from degrading overall system performance.
- **Voice VLAN** simplifies telephony installations by keeping voice traffic on a separate VLAN for easier administration and troubleshooting.
- **Cisco VLAN Trunking Protocol (VTP)** supports dynamic VLANs and dynamic trunk configuration across all switches.
- **Layer 2 trace route** eases troubleshooting by identifying the physical path that a packet takes from source to destination.
- **Trivial File Transfer Protocol (TFTP)** reduces the cost of administering software upgrades by downloading from a centralized location.
- **Network Time Protocol (NTP)** provides an accurate and consistent timestamp to all intranet switches.

Specifications

Product specifications (Table 2) apply to both PoE and non-PoE models.

Table 2.   Specifications

	8-port models	**16-port models**	**24-port models (1/10G uplinks)**	**48-port models (1/10G uplinks)**
Console ports				
RJ-45 Ethernet	1	1	1	1
USB-A port for storage and Bluetooth console	1	1	1	1
Memory and processor				
CPU	ARM v7 800 MHz	ARM v7 800 MHz	ARM v7 800 MHz	ARM v7 800 MHz
DRAM	512 MB	512 MB	512 MB	512 MB
Flash memory	256 MB	256 MB	256 MB	256 MB
Performance				
Forwarding bandwidth	10 Gbps	18 Gbps	FE: 6.4 Gbps 1G: 28 Gbps 10G: 64 Gbps	FE: 8.8 Gbps 1G: 52 Gbps 10G: 88Gpbs
Switching bandwidth	20 Gbps	36 Gbps	FE: 12.8 Gbps 1G: 56 Gbps 10G: 128 Gbps	FE: 17.6 Gbps 1G: 104 Gbps 10G: 176 Gbps

	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
Forwarding rate (64-byte L3 packets)	14.88 Mpps	26.78 Mpps	FE: 9.52 Mpps 1G: 41.67 Mpps 10G: 95.23 Mpps	FE: 13.09 Mpps 1G: 77.38 Mpps 10G: 130.94
Unicast MAC addresses	16000	16000	16000	16000
IPv4 unicast direct routes	542	542	542	542
IPv4 unicast indirect routes	256	256	256	256
IPv6 unicast direct routes	414	414	414	414
IPv6 unicast indirect routes	128	128	128	128
IPv4 multicast routes and IGMP groups	1024	1024	1024	1024
IPv6 multicast groups	1024	1024	1024	1024
IPv4/MAC security ACEs	600	600	600 (FE: 384)	600 (FE: 384)
IPv6 security ACEs	600	600	600 (FE: 256)	600 (FE: 256)
Maximum active VLANs	256	256	256	256
VLAN IDs available	4094	4094	4094	4094
Maximum STP instances	64	64	64	64
Maximum SPAN sessions	4	4	4	4
MTU-L3 packet	9198 bytes	9198 bytes	9198 bytes	9198 bytes
Jumbo Ethernet frame	10,240 bytes	10,240 bytes	10,240 bytes	10,240 bytes
Dying Gasp	Yes	Yes	Yes (FE: No)	Yes (FE: No)
MTBF in hours (data)	2,171,669	2,165,105	2,026,793	1,452,667
MTBF in hours (PoE)	1,786,412, 1,706,649 (External PS)	706,983	698,220	856,329
MTBF in hours (Full PoE)	1,706,649	–	698,220	856,329

	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
Environmental				
Operating temperature				
Sea level	–5 to 50 deg C*			
Up to 5,000ft (1500 m)	–5 to 45 deg C			
Upto 10,000 (3000 m)	–5 to 40 deg C			
Operating altitude	10,000 ft (3,000m)			
Operating relative humidity	5% to 90% at 40 deg C (non-condensing)			
Storage temperature	–13 to 158F (–25 to 70C)			
Storage altitude	15,000 ft (4500m)			
Storage relative humidit	5% to 95% at 65 deg C (non-condensing)			
*Note:	50C operation is supported for short term operation only; - When using C1000-8T-E-2G-L, C1000-8T-2G-L, C1000-8P-E-2G-L, C1000-8P-2G-L, C1000-8FP-E-2G-L, C1000-8FP-2G-L, C1000-16T-E-2G-L, C1000-16T-2G-L, C1000-16P-E-2G-L, C1000-16P-2G-L, C1000-16FP-2G-L, C1000-24T-4G-L, C1000-24P-4G-L with GLC-BX-U or GLC-BX-D SFP module, the thermal limitations are as follows: - Up to 5,000 feet, the operation temperature should not exceed 45ºC. - Up to 10,000 feet, the operation temperature should not exceed 40ºC. - When using C1000-24T-4X-L, C1000-24P-4X-L with SFP-10G-ER or SFP-10G-ER-S SFP+ module, the thermal limitations are as follows: - Up to 5,000 feet, the operation temperature should not exceed 45ºC. - Up to 10,000 feet, the operation temperature should not exceed 40ºC. - Minimum ambient temperature for cold start is at 0 deg C (32 deg F)			

Electrical	Data	Data Ext.PS	Data	Data Ext. PS	Data	FE Data	Data	FE Data
Voltage (auto ranging)	110 to 220V AC in		110 to 220V AC in		110 to 220V AC in		110 to 220V AC in	
Frequency	50 to 60 Hz		50 to 60 Hz		50 to 60 Hz		50 to 60 Hz	
Current	0.13A to 0.22A	0.16A to 0.26A	0.16A to 0.26A	0.19A to 0.31A	0.20A to 0.33A	0.12A to 0.34A	0.29A to 0.48A	0.24A to 0.69A
Power rating (maximum consumption)	0.04 kVA	0.017 kVA	0.05 kVA	0.05 kVA	0.06 kVA	0.02 kVA	0.09 kVA	0.035 kVA

	8-port models		16-port models		24-port models (1/10G uplinks)		48-port models (1/10G uplinks)	
Electrical	PoE	PoE Ext. PS	PoE	PoE Ext. PS	PoE	FE PoE	PoE	FE PoE
Voltage (auto ranging)	110 to 220V AC in		110 to 220V AC in		110 to 220V AC in		110 to 220V AC in	
Frequency	50 to 60 Hz		50 to 60 Hz		50 to 60 Hz		50 to 60 Hz	
Current	0.22A to 0.27A	0.22A to 0.37A	0.24A to 0.28A	0.14A to 0.24A	0.37A to 0.64A	0.23A to 0.35A	0.37A to 0.64A	0.26A to 0.46A
Power rating (maximum consumption)	0.11 kVA	0.087 kVA	0.19 kVA	0.20 kVA	0.48 kVA	0.025 kVA	0.48 kVA	0.046 kVA
Electrical	Full PoE	Full PoE Ext. PS	Full PoE		Full PoE		Full PoE	
Voltage (auto ranging)	110 to 220V AC in		110 to 220V AC in		110 to 220V AC in		110 to 220V AC in	
Frequency	50 to 60 Hz		50 to 60 Hz		50 to 60 Hz		50 to 60 Hz	
Current	0.23A to 0.28A	0.15A to 0.2A	0.35A to 0.37A		0.29A to 0.48A		0.45A to 0.94A	
Power rating (maximum consumption)	0.15 kVA	0.15 kVA	0.45 kVA		0.8 kVA		0.95 kVA	
Power consumption (watts)	Data	Data Ext.PS	Data	Data Ext. PS	Data	FE Data	Data	FE Data
0% traffic	14.04	13.15	14.52	14.4	1G: 15.84 10G: 18	11.22	1G: 27.37 10G: 29.4	21.41
10% traffic	14.06	13.76	16.44	16.44	1G: 22.08 10G: 24.48	12.83	1G: 41.57 10G: 42.28	23.02
100% traffic	14.26	14	16.68	16.68	1G: 22.8 10G: 25.68	17.15	1G: 53.66 10G: 54.73	23.03
Weighted average	14.12	13.64	15.88	15.84	1G: 20.2 10G: 22.7	13.73	1G: 40.87 10G: 42.1	22.49
Power consumption (watts)	PoE	PoE Ext. PS	PoE	PoE Ext. PS	PoE	FE PoE	PoE	FE PoE
0% traffic	10.22	9.13	14.64	13.68	1G: 15.84 10G: 18	14.5	1G: 27.9 10G: 28.0	21.62

	8-port models		16-port models		24-port models (1/10G uplinks)		48-port models (1/10G uplinks)	
10% traffic	12.02	15.39	16.56	15.48	1G: 22.44	16.1	1G: 42.77	24.74
					10G: 24.72		10G: 42.73	
100% traffic	12.19	15.71	16.92	16.32	1G: 23.16	18.58	1G: 54.25	24.75
					10G: 25.68		10G: 54.49	
Weighted average	11.48	13.41	16.04	15.16	1G: 20.48	16.39	1G: 41.64	23.70
					10G: 22.8		10G: 41.74	
Power consumption (watts)	**Full PoE**	**Full PoE Ext. PS**	**Full PoE**		**Full PoE**		**Full PoE**	
0% traffic	13.44	14.3	14.4		1G: 18.36		1G: 30.61	
					10G: 19.68		10G: 30.91	
10% traffic	14.4	14.9	16.68		1G: 26.16		1G: 45.16	
					10G: 26.28		10G: 45.78	
100% traffic	14.52	15.7	16.8		1G: 35.4		1G: 61.66	
					10G: 36		10G: 62.26	
Weighted average	14.12	14.97	15.96		1G: 26.68		1G: 45.81	
					10G: 27.32		10G: 46.31	

Note: The wattage rating on the power supply does not represent actual power draw. It indicates the maximum power draw possible by the power supply. This rating can be used for facility capacity planning. For PoE switches, cooling requirements are smaller than total power draw because a significant portion of the load is dissipated in the endpoints.

Acoustic noise (48-port PoE models only)				
Sound pressure (Typical)			C1000-24FP-4G-L, C1000-24FP-4X-L – 34.8 dB	C1000-48T-4G-L, C1000-48T-4X-L – 31.5 dB
				C1000-48P-4G-L, C1000-48P-4X-L – 36.1 dB
				C1000-48FP-4G-L C1000-48FP-4X-L – 47.6dB

Note: Bystander positions operating mode at 77°F (25°C) ambient; All other models are fanless for silent operations

	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
Safety and compliance				
Safety	UL 60950-1 Second Edition, CAN/CSA-C22.2 No. 60950-1 Second Edition, EN 60950-1 Second Edition, IEC 60950-1 Second Edition, AS/NZS 60950-1, IEC 62368-1, UL 62368-1 GB 4943.1-2011			
EMC: Emissions	47CFR Part 15 Class A, AS/NZS CISPR32 Class A, CISPR32 Class A, EN55032 Class A, ICES-003 Class A, VCCI-CISPR32 Class A, EN61000-3-2, EN61000-3-3, KN32 Class A, CNS13438 Class A			
EMC: Immunity	EN55024 (including EN 61000-4-5), EN300386, KN35			
Environmental	Reduction of Hazardous Substances (RoHS) including Directive 2011/65/EU			
Telco	Common Language Equipment Identifier (CLEI) code			
U.S. government certifications	USGv6 and IPv6 Ready Logo			
Connectors and interfaces				
Ethernet interfaces	10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 Unshielded Twisted Pair (UTP) cabling			
	100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling			
	1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling			
	1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling			
Indicator LEDs	Per-port status: link integrity, disabled, activity			
	System status: System			
Console cables	CAB-CONSOLE-RJ45 Console cable 6 ft. with RJ-45			
Power	Use the supplied AC power cord to connect the AC power connector to an AC power outlet			
	Models have external power supply			
Management	BRIDGE-MIB CISCO-CABLE-DIAG-MIB CISCO-CDP-MIB CISCO-CLUSTER-MIB CISCO-CONFIG-COPY-MIB CISCO-CONFIG-MAN-MIB CISCO-DHCP-SNOOPING-MIB	CISCO-PORT-QOS-MIB CISCO-PORT-SECURITY-MIB CISCO-PORT-STORM-CONTROL-MIB CISCO-PRODUCTS-MIB CISCO-PROCESS-MIB CISCO-RTTMON-MIB	IF-MIB INET-ADDRESS-MIB OLD-CISCO-CHASSIS-MIB OLD-CISCO-FLASH-MIB OLD-CISCO-INTERFACES-MIB OLD-CISCO-IP-MIB OLD-CISCO-SYS-MIB OLD-CISCO-TCP-MIB OLD-CISCO-TS-MIB RFC1213-MIB	

	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
	CISCO-ENTITY-VENDORTYPE-OID-MIB CISCO-ENVMON-MIB CISCO-ERR-DISABLE-MIB CISCO-FLASH-MIB CISCO-FTP-CLIENT-MIB CISCO-IGMP-FILTER-MIB CISCO-IMAGE-MIB CISCO-IP-STAT-MIB CISCO-LAG-MIB CISCO-MAC-NOTIFICATION-MIB CISCO-MEMORY-POOL-MIB CISCO-PAGP-MIB CISCO-POE-EXTENSIONS-MIB	CISCO-SMI-MIB CISCO-STP-EXTENSIONS-MIB CISCO-SYSLOG-MIB CISCO-TC-MIB CICSO-TCP-MIB CISCO-UDLDP-MIB CISCO-VLAN-IFTABLE CISCO-VLAN-MEMBERSHIP-MIB CISCO-VTP-MIB ENTITY-MIB ETHERLIKE-MIB IEEE8021-PAE-MIB IEEE8023-LAG-MIB	RMON-MIB RMON2-MIB SNMP-FRAMEWORK-MIB SNMP-MPD-MIB SNMP-NOTIFICATION-MIB SNMP-TARGET-MIB SNMPv2-MIB TCP-MIB UDP-MIB	
	For an updated list of supported MIBs, refer to the MIB Locator at cisco.com/go/mibs.			
Standards	IEEE 802.1D STP IEEE 802.1p CoS Prioritization IEEE 802.1Q VLAN IEEE 802.1s IEEE 802.1w IEEE 802.1X IEEE 802.1ab LLDP Bluetooth v4.0	IEEE 802.3ad IEEE 802.3af and IEEE 802.3at IEEE 802.3ah (100BASE-X single/multimode fiber only) IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX	IEEE 802.3ab 1000BASE-T IEEE 802.3z 1000BASE-X RMON I and II standards SNMP v1, v2c, and v3 IEEE 802.3az IEEE 802.3ae 10 Gigabit Ethernet IEEE 802.1ax	

	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
RFC compliance	RFC 768 – UDP RFC 783 – TFTP RFC 791 – IP RFC 792 – ICMP RFC 793 – TCP RFC 826 – ARP RFC 854 – Telnet RFC 951 – Bootstrap Protocol (BOOTP) RFC 959 – FTP RFC 1112 – IP Multicast and IGMP RFC 1157 – SNMP v1 RFC 1166 – IP Addresses	RFC 1256 – ICMP Router Discovery RFC 1305 – NTP RFC 1492 – TACACS+ RFC 1493 – Bridge MIB RFC 1542 – BOOTP extensions RFC 1901 – SNMP v2C RFC 1902-1907 – SNMP v2 RFC 1981 – Maximum Transmission Unit (MTU) Path Discovery IPv6 FRC 2068 – HTTP RFC 2131 – DHCP RFC 2138 – RADIUS RFC 2233 – IF MIB v3		

Warranty

Cisco Catalyst 1000 Series Switches come with an enhanced limited lifetime warranty (E-LLW). The E-LLW provides the same terms as the Cisco standard limited lifetime warranty but adds next-business-day 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 carefully 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 more information about warranty terms, visit https://www.cisco.com/go/warranty and see Table 3 below.

Table 3.　　Warranty information

Cisco enhanced limited lifetime hardware warranty	
Device covered	Applies to all Cisco Catalyst 1000 Series Switches
Warranty duration	As long as the original end user continues to own or use 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 Cisco Catalyst 1000 Series replacement part for next-business-day delivery, where available. Otherwise, a replacement will be shipped within 10 working days after the receipt of the RMA request. Actual delivery times might vary depending on customer location.
Effective date	Hardware warranty commences from the date of shipment to the 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 the customer's local business hours, 8 hours per day, 5 days per week basic configuration, diagnosis, and troubleshooting of device-level problems for up to 90 days from the date of shipment of the originally purchased Cisco Catalyst 1000 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.

Software policy

Customers are provided with maintenance updates and bug fixes designed to maintain the compliance of the software with published specifications, release notes, and industry standards as long as the original end user continues to own or use the product or up to one year from the end-of-sale date for this product, whichever occurs earlier.

This policy supersedes any previous warranty or software statement and is subject to change without notice.

Technical support and services

Table 4 describes available technical services.

Table 4. Technical services available

Technical services
Cisco Smart Net Total Care® Service • Around-the-clock, global access to the Cisco TAC • Unrestricted access to the extensive Cisco.com knowledge base and tools • Next-business-day, 8x5x4, 24x7x4, or 24x7x2 advance hardware replacement and onsite parts replacement and installation available[1] • Ongoing operating system software updates within the licensed feature set[2] • Proactive diagnostics and real-time alerts on Smart Call Home-enabled devices
Cisco Smart Foundation Service • Next-business-day advance hardware replacement as available • Access to SMB TAC during business hours (access levels vary by region) • Access to Cisco.com SMB knowledge base • Online technical resources through Smart Foundation portal • Operating system software bug fixes and patches
Cisco Smart Care Service • Network-level coverage for the needs of small and medium-sized businesses • Proactive health checks and periodic assessments of Cisco network foundation, voice, and security technologies • Technical support for eligible Cisco hardware and software through Smart Net Total Care portal • Cisco operating system and application software updates and upgrades[2] • Next-business-day advance hardware replacement as available, 24x7x4 option available[1]
Cisco SP Base Service • Around-the-clock, global access to the Cisco TAC • Registered access to Cisco.com • Next-business-day, 8x5x4, 24x7x4, and 24x7x2 advance hardware replacement; return to factory option available[1] • Ongoing operating system software updates[2]
Cisco Focused Technical Support Services Three levels of premium, high-touch services are available: • Cisco High-Touch Operations Management Service • Cisco High-Touch Technical Support Service • Cisco High-Touch Engineering Service Valid Cisco Smart Net Total Care or SP Base contracts are required on all network equipment.

[1] Advance hardware replacement is available in various service-level combinations. For example, 8x5xNBD indicates that shipment is initiated during the standard 8-hour business day, 5 days a week (the generally accepted business days within the relevant region), with Next-Business-Day (NBD) delivery. Where NBD is not available, same-day shipping is provided. Restrictions apply; for details, review the appropriate service descriptions.

[2] Cisco operating system updates include the following: maintenance releases, minor updates, and major updates within the licensed feature set.

Accessories

Table 5 describes the available accessories.

Table 5. Accessories

Part number	Description	Compatibility
CAB-CONSOLE-RJ45	Console Cable 6 Feet with RJ-45	All models
PWR-CLP	Power Cable Restraining Clip	All models
Cisco Catalyst 1000 Series rack mounting kit		
RCKMNT-19-CMPCT=	19" Rack Mount bracket for C1000, 3560-CX and 2960CX	All 8/16 port models
RCKMNT-23-CMPCT=	23" and 24" Rack Mount bracket for C1000, 3560-CX and 2960-CX	All 8/16 port models

*Only 24 and 48 port models include the 19" mounting brackets with the switch

Ordering information

Tables 6 and 7 list ordering information for the Cisco Catalyst 1000 Series Switches. To place an order, visit the Cisco Ordering homepage at:
https://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html.

Table 6. Cisco Catalyst 1000 Series Switches ordering information

Product number	Description
Cisco Catalyst 1000 Series Switches with 2x 1GSFP and RJ-45 combo uplinks	
C1000-8T-2G-L	8x 10/100/1000 Ethernet ports, 2x 1G SFP and RJ-45 combo uplinks
C1000-8T-E-2G-L	8x 10/100/1000 Ethernet ports, 2x 1G SFP and RJ-45 combo uplinks, with external PS
C1000-8P-2G-L	8x 10/100/1000 Ethernet PoE+ ports and 67W PoE budget , 2x 1G SFP and RJ-45 combo uplinks
C1000-8P-E-2G-L	8x 10/100/1000 Ethernet PoE+ ports and 67W PoE budget, 2x 1G SFP and RJ-45 combo uplinks, with external PS
C1000-8FP-2G-L	8x 10/100/1000 Ethernet PoE+ ports and 120W PoE budget, 2x 1G SFP and RJ-45 combo uplinks
C1000-8FP-E-2G-L	8x 10/100/1000 Ethernet PoE+ ports and 120W PoE budget, 2x 1G SFP and RJ-45 combo uplinks, with external PS

Product number	Description
Cisco Catalyst 1000 Series Switches with 2x 1G SFP uplinks	
C1000-16T-2G-L	16x 10/100/1000 Ethernet ports, 2x 1G SFP uplinks
C1000-16T-E-2G-L	16x 10/100/1000 Ethernet ports, 2x 1G SFP uplinks with external PS
C1000-16P-2G-L	16x 10/100/1000 Ethernet PoE+ ports and 120W PoE budget, 2x 1G SFP uplinks
C1000-16P-E-2G-L	16x 10/100/1000 Ethernet PoE+ ports and 120W PoE budget, 2x 1G SFP uplinks with external PS
C1000-16FP-2G-L	16x 10/100/1000 Ethernet PoE+ ports and 240W PoE budget, 2x 1G SFP uplinks
Cisco Catalyst 1000 Series Switches with 4x 1G SFP uplinks	
C1000-24T-4G-L	24x 10/100/1000 Ethernet ports, 4x 1G SFP uplinks
C1000-24P-4G-L	24x 10/100/1000 Ethernet PoE+ ports and 195W PoE budget, 4x 1G SFP uplinks
C1000-24FP-4G-L	24x 10/100/1000 Ethernet PoE+ ports and 370W PoE budget, 4x 1G SFP uplinks
C1000-48T-4G-L	48x 10/100/1000 Ethernet ports, 4x 1G SFP uplinks
C1000-48P-4G-L	48x 10/100/1000 Ethernet PoE+ and 370W PoE budget ports, 4x 1G SFP uplinks
C1000-48FP-4G-L	48x 10/100/1000 Ethernet PoE+ ports and 740W PoE budget, 4x 1G SFP uplinks
Cisco Catalyst 1000 Series Switches with 4x 10G SFP+ uplinks	
C1000-24T-4X-L	24x 10/100/1000 Ethernet ports, 4x 10G SFP+ uplinks
C1000-24P-4X-L	24x 10/100/1000 Ethernet PoE+ ports and 195W PoE budget, 4x 10G SFP+ uplinks
C1000-24FP-4X-L	24x 10/100/1000 Ethernet PoE+ ports and 370W PoE budget, 4x 10G SFP+ uplinks
C1000-48T-4X-L	48x 10/100/1000 Ethernet ports, 4x 10G SFP+ uplinks
C1000-48P-4X-L	48x 10/100/1000 Ethernet PoE+ ports and 370W PoE budget, 4x 10G SFP+ uplinks
C1000-48FP-4X-L	48x 10/100/1000 Ethernet PoE+ ports and 740W PoE budget, 4x 10G SFP+ uplinks
Cisco Catalyst 1000 Series Switches with 2x 1GSFP and RJ-45 combo uplinks and 2x 1G SFP uplinks	
C1000FE-24T-4G-L	24x 10/100 Ethernet ports, 2x 1GSFP and RJ-45 combo uplinks and 2x 1G SFP uplinks
C1000FE-24P-4G-L	24x 10/100 Ethernet PoE+ ports and 195W PoE budget, 2x 1GSFP and RJ-45 combo uplinks and 2x 1G SFP uplinks
C1000FE-48T-4G-L	48x 10/100 Ethernet ports, 2x 1GSFP and RJ-45 combo uplinks and 2x 1G SFP uplinks
C1000FE-48P-4G-L	48x 10/100 Ethernet PoE+ and 370W PoE budget ports, 2x 1GSFP and RJ-45 combo uplinks and 2x 1G SFP uplinks

Optics compatibility information

The Cisco Catalyst 1000 Series Switches support a wide range of optics. Because the list of supported optics is updated on a regular basis, consult the Optics Compatibility tables for compatibility information on supported transceivers.

Contact Cisco

For more information about Cisco products, contact:

Phone: +1 800 553-NETS (6387).

Worldwide Product Support.

Company website: cisco.com.

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The bridge to possible

Cisco Catalyst 9200 Series Switches

Contents

Introduction

Extend intent-based networking everywhere

Cisco® Catalyst® 9200 Series switches extend the power of intent-based networking and Catalyst 9000 hardware and software innovation to a broader set of deployments. With its family pedigree, **Catalyst 9200 Series switches offer simplicity without compromise – it is secure, always on, and IT simplified.**

As foundational building blocks for the Cisco Digital Network Architecture, Catalyst 9200 Series switches help customers simplify complexity, optimize IT, and reduce operational costs by leveraging intelligence, automation and human expertise that no other vendor can deliver regardless of where you are in the intent-based networking journey.

Catalyst 9200 Series switches provide security features that protect the integrity of the hardware as well as the software and all data that flows through the switch. It provides resiliency that keeps your business up and running seamlessly. Combine that with open APIs of Cisco IOS XE® and programmability of the UADP ASIC technology, Catalyst 9200 Series switches give you what you need now with investment protection on future innovations.

With full PoE+ capability, power and fan redundancy, stacking bandwidth up to 160 Gbps, modular uplinks, Layer 3 feature support, and cold patching, Catalyst 9200 Series switches are the industry's unparalleled solution with differentiated resiliency and progressive architecture for cost-effective branch-office access. Catalyst 9200 Series switches also provide operational choice of CLI, Cisco Catalyst Center (formerly Cisco DNA Center) on-premises management, or cloud monitoring for Catalyst on Meraki dashboard.

Product overview

Product highlights

- Full Power over Ethernet Plus (PoE+) capability for up to 48 ports for C9200. Power over Ethernet Plus (PoE+) capability for up to 12 ports, IEEE 802.3bt class 6 and Cisco UPOE capability for up to 8 ports for C9200CX.

- Resiliency with **Field-Replaceable Units** (FRU) and redundant power supply, fans, and modular uplinks for C9200 models. C9200CX models are fanless and are powered by internal fixed power supply or optional power adapters, when not powered by upstream IEEE 802.3bt class 6 60W PSE.

- Flexible power source options from line voltage AC, low voltage DC to High Voltage DC (HVDC) in C9200CX models provide the choices for customers to migrate to efficient DC micro grid powered by renewable energy sources for a sustainable future.

- Flexible downlink options with data, PoE+, UPOE, UPOE with mGig for Wi-Fi 6/6E.

- Operational efficiency with optional **backplane stacking**, supporting stacking bandwidth up to 160 Gbps.

- **UADP 2.0** Mini with integrated CPU offers customers optimized scale with better cost structure.

- Enhanced security with AES-128 MACsec encryption on C9200 and AES-256 MACsec encryption for C9200CX models, policy-based segmentation, and trustworthy solutions for the whole Catalyst 9200 Series.

- **Layer 3** https://apps.cisco.com/Commerce/ and CLI operations options.

- Cisco **Software-Defined Access** (SD-Access).

  ◦ Simplified operations and deployment with policy-based automation from edge to cloud managed with **Cisco Identity Services Engine** (ISE).

  ◦ Network assurance and improved resolution time through Cisco Catalyst Center.

- **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.

- **Cisco IOS XE**: A Common Licensing based operating system for the enterprise Cisco Catalyst 9000 product family with support for model-driven programmability and streaming telemetry.

- 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.

- Cloud monitoring for Catalyst on Meraki dashboard.

- ENERGY STAR® certified models (C9200L models).

Features and benefits platform details

Switch models and configurations

Table 1.   Catalyst 9200 Series models and configurations

Models	FRU Power Supply	FRU Fans	Modular Uplinks	Stacking Bandwidth Support	SD-Access Support[1]
Modular uplink models (C9200 Enhanced VN SKUs)	Yes	Yes	Yes	160 Gbps	Yes (32 Virtual Networks)[2]
Modular uplink models (C9200 SKUs)	Yes	Yes	Yes	160 Gbps	Yes (4 Virtual Networks)
Fixed uplink Models (C9200L SKUs)	Yes	No	No	80 Gbps	Limited (1 Virtual Network)
Compact Models (C9200CX SKUs)	Fixed internal power supply	Fanless	No	No	Yes (16 Virtual Networks)

[1] Catalyst 9200 standalone and stack can support 25 Access Tunnels for fabric enabled APs.

Catalyst 9200CX can support 25 Access Tunnels for fabric enabled APs with IOS-XE 17.9.5 and above.

Catalyst 9200L is not supported as Fabric Edge for SD-Access Wireless.

Catalyst 9200, 9200L and 9200CX do not support SD-Access Embedded Wireless Controller.

Note: Over the top fabric deployments eventually migrating to fabric wireless architecture should consider this limit during design/deployment.

[2] C9200-24PB-A, C9200-48PB-A SKUs supports 32 Virtual Networks. These SKUs cannot be stacked with C9200 SKUs with 4VNs.

The Cisco Catalyst 9200 Series is made up of modular (C9200), fixed (C9200L) and compact (C9200CX) switch models.
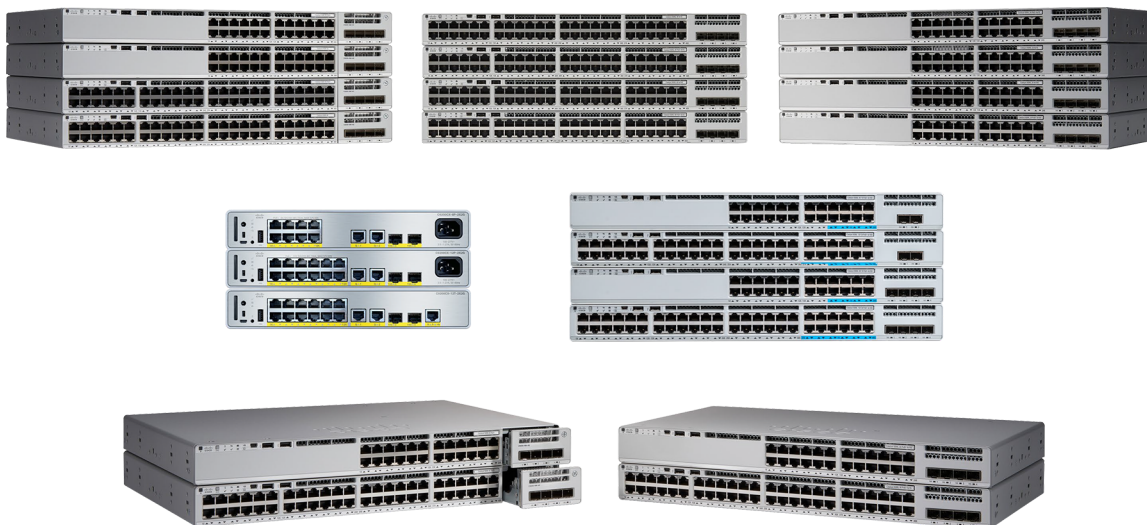
Figure 1.
Cisco Catalyst 9200 Series switches

Table 2.   Cisco Catalyst 9200 Series Switch configurations

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary power supply	Fans
Modular uplink models				
C9200-24T	24 ports data	Modular uplink options	PWR-C6-125WAC	FRU redundant
C9200-24P	24 ports full PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-24PB	24 ports full PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-24PXG	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-48T	48 ports data	Modular uplink options	PWR-C6-125WAC	FRU redundant
C9200-48P	48 ports full PoE+	Modular uplink options	PWR-C6-1KWAC	FRU redundant
C9200-48PL	48 Ports partial PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-48PB	48 ports full PoE+	Modular uplink options	PWR-C6-1KWAC	FRU redundant
C9200-48PXG	48 ports full PoE+ (8 mGig ports up to 10G, 40 ports up to 1G)	Modular uplink options	PWR-C6-1KWAC	FRU redundant
Fixed uplink models				
C9200L-24T-4G	24 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-24P-4G	24 ports full PoE+	4x 1G fixed uplinks	PWR-C5-600WAC	Fixed redundant

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary power supply	Fans
C9200L-48T-4G	48 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-48P-4G	48 ports full POE+	4x 1G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-48PL-4G	48 Ports partial PoE+	4X 1G Fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-24T-4X	24 ports data	4x 1/10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-24P-4X	24 ports full PoE+	4x 1/10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48T-4X	48 ports data	4x 1/10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-48P-4X	48 ports full PoE+	4x 1/10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-48PL-4X	48 Port partial PoE+	4X 1/10G Fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-24PXG-4X	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	4x 1/10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48PXG-4X	48 ports full POE+ (12 mGig ports up to 10G, 36 ports up to 1G)	4x 1/10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-24PXG-2Y	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	2x 1/10/25G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48PXG-2Y	48 ports full POE+ (8 mGig ports up to 10G, 40 ports up to 1G)	2x 1/10/25G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
Compact models				
C9200CX-12T-2X2G	12 ports data	2x 1G copper, 1x 1G CU PD 802.3bt Class 6, 2x 10G SFP+ fixed uplinks	Powered by 802.3bt class 6 PoE Optional auxiliary 80W AC or DC power adaptor	Fanless
C9200CX-12P-2X2G	12 ports PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
C9200CX-8P-2X2G	8 ports full PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
C9200CX-8UXG-2X	8 ports UPOE (4 mGig ports up to 10G, 4 ports up to 1G)	2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
C9200CX-12P-2XGH	12 ports PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless
C9200CX-8P-2XGH	8 ports full PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless
C9200CX-8UXG-2XH	8 ports UPOE (4 mGig ports up to 10G, 4 ports up to 1G)	2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless

Network modules

Cisco Catalyst 9200 Series switches come with modular or fixed uplinks as indicated in Table 1. With modular SKUs, the field-replaceable network modules provide infrastructure investment protection by allowing a nondisruptive migration from 1G to 10G and beyond. When you purchase the switch, you can choose from the network modules described in Table 3.

Figure 2.
Cisco Catalyst 9200 Series Switch network modules

Table 3.   Network module part numbers and descriptions

Network module	Description
C9200-NM-2Y[1]	2 x 25G network module
C9200-NM-2Q[1]	2 x 40G network module
C9200-NM-4G[2]	4x 1G network module
C9200-NM-4X	4x 1G/10G network module
C9200-NM-BLANK	No network module

[1] Supported only on C9200-24PXG, C9200-48PXG

[2] Not supported on C9200-24PXG, C9200-48PXG

For additional details, please read our FAQ:
https://www.cisco.com/c/dam/en/us/products/collateral/switches/catalyst-9000/nb-09-cat-9k-faq-cte-en.pdf.

Platform resiliency

Power supplies

Cisco Catalyst 9200 Series switches support dual field-replaceable power supplies (Figure 3). Each switch ships with one default power supply, and a second identical power supply can be purchased with the initial order or can be added later. The second power supply can provide redundancy or additional power to PoE+ ports as needed.

Cisco Catalyst 9200CX Series HVDC models can be powered by high voltage DC as well as line voltage AC with its default power supply. These switches support high efficiency and low energy consumption when connected to DC micro grid by avoiding multiple AC-DC conversions. The compatibility with AC also provides flexibility and investment protection for moving to DC power in the future.

Intelligent PoE+

- **IEEE 802.3at PoE+ (up to 30W per port)** is supported on Cisco Catalyst 9200 Series switches to lower the total cost of ownership for deployments that incorporate Cisco IP phones, Cisco Aironet wireless access points, or other standards-compliant PoE+ end devices. PoE+ removes the need to supply wall power to PoE-enabled devices and eliminates the cost of adding electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments. With Cisco Catalyst 9200 Series switches, PoE+ power allocation is dynamic, and power mapping scales up to a maximum of 1440W of PoE+ power.

- **IEEE 802.3bt Class 6 and Cisco UPOE (up to 60W per port)** is supported on Catalyst 9200CX Series mGig model. This facilitates delivery of network power to devices requiring higher power.

- **PoE Powered Device (PD)** - Catalyst 9200CX-12T-2X2G can be powered through the uplink with IEEE 802.3bt class 6 or UPOE+ power from upstream switch.

- **Perpetual PoE** is supported on Cisco Catalyst 9200 Series switches, and maintains the PoE+ power during a switch reload. This is important for critical endpoints such as medical devices and for Internet of Things (IoT) endpoints such as PoE-powered lights, so that there is no disruption during a switch reboot.

- **Fast PoE**: When power is restored to a switch, Fast PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.

Figure 3.
Cisco Catalyst 9200 Series Switch dual redundant power supplies

Table 4 lists the PoE power availability for each model.

Table 4.   PoE+ Power with primary and secondary power supplies

Model	Primary power supply	Available PoE power with single primary power supply only[1]	Optional secondary power supply	Available PoE power with additional secondary power supply[1]
C9200-24P	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=[2]	485W	PWR-C6-715WDC=	740W
C9200-24PB	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	740W
C9200-24PXG	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	740W
C9200-48P	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200-48PL	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200-48PB	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200-48PXG	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200L-24P-4G	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=[2]	485W	PWR-C5-715WDC=	740W
C9200L-24P-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	740W
C9200L-48P-4G	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-48PL-4G	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-48P-4X[3]	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-48PL-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-24PXG-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W

Model	Primary power supply	Available PoE power with single primary power supply only[1]	Optional secondary power supply	Available PoE power with additional secondary power supply[1]
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	740W
C9200L-48PXG-4X	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-24PXG-2Y	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	740W
C9200L-48PXG-2Y	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200CX-12P-2X2G	315W AC Internal	240W	N/A	N/A
C9200CX-8P-2X2G	315W AC internal	240W	N/A	N/A
C9200CX-8UXG-2X	315W AC internal	240W	N/A	N/A
C9200CX-12P-2XGH	315W HVDC/AC internal	240W	N/A	N/A
C9200CX-8P-2XGH	315W HVDC/AC internal	240W	N/A	N/A
C9200CX-8UXG-2XH	315W HVDC/AC internal	240W	N/A	N/A

[1] Limited by port number and port rating (for example, 24 PoE+ 30W ports = 720W)

[2] PWR-C5-715WDC= and PWR-C6-715WDC= are available to order as spare only and supported in IOS-XE 17.8.1 and above

PWR-C5-715WDC= and PWR-C6-715WDC= are only supported on C9200L and C9200 PoE models.

PWR-C5-715WDC= and PWR-C6-715WDC= can mix with AC power supplies as primary/secondary on the same device for C9200L and C9200.

[3] ENERGY STAR® certified model

Stacking

Cisco Catalyst 9200 Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 384 access ports.

Table 5 lists the supported stacking options.

Table 5. Supported stacking options

Model	Stacking support	Stacking bandwidth support	Stacking hardware	Number of members	Supported stack members
Modular models (C9200 SKUs)	StackWise-160	160 Gbps	C9200-STACK-KIT	8	Other C9200 models with same license level

Model	Stacking support	Stacking bandwidth support	Stacking hardware	Number of members	Supported stack members
Fixed models (C9200L SKUs)	StackWise-80	80 Gbps	C9200L-STACK-KIT	8	Other C9200L models with same license level

Mixed stacking is **not supported.** You cannot stack fixed (C9200L SKUs) with modular (C9200 SKUs) models, or other Catalyst switches, e.g. Cisco Catalyst 2960-X and 2960-XR Series. Stacking not available on C9200CX switches.

The optional StackWise-160 and StackWise-80 kits consist of two adapters and a stacking cable. The default stacking cable is 0.5 m, but options of 1 m and 3 m are also available.

Table 6 lists the stacking accessories.

Table 6.   Stacking accessories

Model	Description
C9200-STACK-KIT	Stack kit for C9200 SKUs only: Two data stack adapters and one data stack cable
C9200L-STACK-KIT	Stack kit for C9200L SKUs only: Two data stack adapters and one data stack cable
STACK-T4-50CM	Data stack 50 cm cable (default cable with Stack Kit)
STACK-T4-1M	Data stack 1 m cable
STACK T4-3M	Data stack 3 m cable

Figure 4.
Cisco Catalyst 9200 Series Switch stacked units

Fan

Cisco Catalyst 9200 Series switches also come with dual fans and support redundancy. Cisco Catalyst 9200 Series switches support redundancy with dual fans. On the C9200 SKUs, the fan units are field-replaceable, whereas on the fixed C9200L SKUs, the fan units are fixed. C9200CX SKUs are fanless.

Table 7 lists the fan module part number.

Table 7.   Fan modules

Model	Description
FAN-T2=	Fan module

Performance and scalability

Table 8 lists performance and scalability metrics for Cisco Catalyst 9200 Series switches. Table 9 lists the bandwidth specifications.

Performance specifications

Table 8. Performance specifications

Description	C9200 SKUs	C9200L SKUs	C9200CX SKUs
Virtual Networks	4 for C9200-24T, C9200-24P, C9200-48T, C9200-48P, C9200- 24PXG, C9200-48PXG, C9200-48PL 32 for C9200-24PB, C9200-48PB	1	16
Stacking bandwidth	160 Gbps	80 Gbps	N/A
Total number of MAC addresses	32,000	16,000	32,000
Total number of IPv4 routes (ARP plus learned routes)	14,000 (10,000 direct routes and 4,000 indirect routes)	11,000 (8,000 direct routes and 3,000 indirect routes)	14,000 (10,000 direct routes and 4,000 indirect routes)
IPv4 routing entries	4,000	3,000	4,000
IPv6 routing entries	2,000	1,500	2,000
Multicast routing scale	1,000	1,000	1,000
QoS scale entries	1,000	1,000	1,000
ACL scale entries	1,600	1,500	1,600
Packet buffer per SKU	6 MB buffers for 24- or 48-port Gigabit Ethernet models, 12MB buffers for 24 or 48 port multigigabit models	6 MB buffers for 24- or 48-port Gigabit Ethernet models, 12 MB buffers for 24 or 48 port multigigabit models	6 MB buffers
Flexible NetFlow (FNF) entries	16,000 flows on 24- and 48-port Gigabit Ethernet models	16,000 flows on 24- and 48-port Gigabit Ethernet models, 32,000 flows on 24 or 48 port multigigabit models	16,000 flows
DRAM	4 GB	2 GB	4 GB
Flash	4 GB	4 GB	8 GB

Description	C9200 SKUs	C9200L SKUs	C9200CX SKUs
VLAN IDs	4096	4096	4096
PVST Instances	128	128	128
STP Virtual Ports (Port ˙VLANs) for PVST	13,000	13,000	13,000
STP Virtual Ports (Port ˙VALNs) for MST	13,000	13,000	13,000
Total Switched Virtual Interfaces (SVIs)	1000	512	1000
Jumbo frames	9198 bytes	9198 bytes	9198 bytes
Wireless bandwidth per switch	Up to 48 Gbps on 24-port and 48-port Gigabit Ethernet model	N/A	N/A
IP SGT binding scale	8K	10K	8K
Number of IPv4 bindings	8K	10K	8K
Number of SGT/DGT policies	2K	2K	2K
Number of SXP Sessions	200	200	200

Bandwidth specifications

Table 9. Bandwidth specifications

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
C9200-24T	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24P	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24PB	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24PXG	352 Gbps	532 Gbps	261.90 Mpps	395 Mpps
C9200-48T	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48P	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48PL	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48PB	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48PXG	400 Gbps	580 Gbps	297.61 Mpps	431 Mpps
C9200L-24T-4G	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
C9200L-24P-4G	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
C9200L-48T-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-48P-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-48PL-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-24T-4X	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
C9200L-24P-4X	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
C9200L-48T-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-48P-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-48PL-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-24PXG-4X	272 Gbps	352 Gbps	214.28 Mpps	262 Mpps
C9200L-24PXG-2Y	292 Gbps	372 Gbps	229.16 Mpps	277 Mpps
C9200L-48PXG-4X	392 Gbps	472 Gbps	291.66 Mpps	351 Mpps
C9200L-48PXG-2Y	340 Gbps	420 Gbps	252.97 Mpps	313 Mpps
C9200CX-12T-2X2G	70 Gbps	N/A	52.08 Mpps	N/A
C9200CX-12P-2X2G	68 Gbps	N/A	50.59 Mpps	N/A
C9200CX-8P-2X2G	60 Gbps	N/A	44.64 Mpps	N/A
C9200CX-8UXG-2X	128 Gbps	N/A	95.23 Mbps	N/A
C9200CX-12P-2XGH	68 Gbps	N/A	50.59 Mpps	N/A
C9200CX-8P-2XGH	60 Gbps	N/A	44.64 Mpps	N/A
C9200CX-8UXG-2XH	128 Gbps	N/A	95.23 Mbps	N/A

*Measured with 64 byte packets

Software

Platform software benefits

Cisco IOS XE

Cisco IOS XE Software 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. The various automation mechanisms are outlined below.

- **Automated device provisioning** 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 turnkey solutions such as Plug and Play and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.

- **API-driven configuration** is available with modern network switches such as Cisco Catalyst 9200 Series 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** 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. Cloud monitoring for Catalyst is also available.

- **Seamless software upgrades and patching** supports OS resilience. On Cisco Catalyst 9200 Series switches Cisco IOS XE supports cold patching with 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. Cold patching requires the switch to be rebooted after patching to allow the changes to take effect.

- **Trustworthy solutions built with Cisco Trust Anchor Technologies** provide a highly secure foundation for Cisco products. With Cisco Catalyst 9200 Series 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.

- **High availability:** Cisco Catalyst 9200 Series switches support high-availability features, including the following:

  ◦ 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 (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.

  ◦ Switch-port auto-recovery ("err-disable" recovery) automatically attempts to reactivate a link that is disabled because of a network error.

  ◦ The Catalyst 9200 Series platform delivers the best SSO resiliency architecture in a stackable solution with sub-50-ms failover.

The Foundation of Software-Defined Access

Secure Segmentation with SD-Access

Software-Defined Access

The enterprise network lies at the heart of digital transformation. A network that is open, programmable, integrated, and secure maximizes business agility, allowing new business opportunities to be pursued and captured.

Cisco DNA with 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

- **SD-Access:** Cisco Catalyst 9200 Series switches are the entry-level devices for SD-Access, Cisco's lead enterprise architecture, with policy-based automation from edge to cloud.

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

  ◦ Automation through Cisco Catalyst Center

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

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

Assurance

  ◦ Full network visibility and monitoring

  ◦ End-to-end Quality of Experience (QoE)

  ◦ Fast issue resolution and network remediation

- 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

Cloud Security

Umbrella Integration

- **Umbrella Integration:** Small to midsize networks reliant on managed service providers can now host Cisco Umbrella agent directly on their Catalyst 9200 series switches. This allows the business to easily customize their DNS filtering policies to prevent BYOD or IoT guest or corporate users from accessing malicious or inappropriate websites, without having to rely on the MSP to push the policies out. It also lets them optimize use of bandwidth by allowing direct cloud access for trusted apps. Requires Cisco DNA-Advantage License and Umbrella License per device.

Full Flexible NetFlow

- **Full Flexible NetFlow (FNF):** Cisco IOS FNF is the next generation in flow visibility technology. It enables optimization of the network infrastructure, reduces operation costs, and improves capacity planning and security incident detection with increased flexibility and scalability. Catalyst 9200 Series switches are capable of up to 16,000 flow entries on 48-port,24, 12 and 8 port models.

QoS

- **Superior QoS:** Cisco Catalyst 9200 Series switches offer 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. Superior QoS 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

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. It comes with the default image, so there is no need to enable anything or install any license on the device. You can use WebUI to build configurations, and to monitor and troubleshoot the device without having CLI expertise.

RFID tags

Cisco Catalyst 9200 Series switches have an embedded RFID tag that facilitates easy asset and inventory management using commercial RFID readers.

Blue beacon

Cisco Catalyst 9200 Series switches support both front and back blue beacon LEDs for easy identification of the switch being accessed.

Efficient switch operation

Cisco Catalyst 9200 Series switches provide optimum power saving 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 support reduced power modes so that ports not in use can move into a lower power utilization state. Other efficient switch operation features are as follows:

- Per-port power consumption command allows customers to specify a maximum power setting on an individual port.
- Per-port PoE power sensing measures actual power being drawn, enabling more intelligent control of powered devices. The PoE MIB provides proactive visibility into power usage and allows you to set different power-level thresholds.

Bluetooth ready

Cisco Catalyst 9200 Series switches have hardware support to connect a Bluetooth dongle to your switch, enabling you to use this wireless interface as an IP management port interface. The port can be used for configuration and troubleshooting using WebUI or the Command-Line Interface (CLI), and to transfer images and configurations.

Storage

Cisco Catalyst 9200CX switches have hardware support for up to 4G Micro-SD card storage.

High-performance IP routing

The Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing in Cisco Catalyst 9200 Series switches, based on:

- IP unicast routing protocols (including static, Routing Information Protocol Version 1 [RIPv1], RIPv2, RIPng, 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 (including Full [OSPF], Enhanced Interior Gateway Routing Protocol [EIGRP], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for 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.

Licensing

Introduction to Smart Licensing

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

- **Easy Activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).

- **Unified Management:** My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.

- **License Flexibility:** Your software is not node-locked to your hardware, so you can easily use, and transfer licenses as needed.

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

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

Software licenses

Table 10. License matrix

	Cisco Catalyst Software Subscription new	Cisco DNA subscription	Network Stack
Packages[1]	3, 5 or 7 Year Terms	3, 5 or 7 Year Terms	Perpetual
Tiers	Advantage, Essentials	Advantage, Essentials	Advantage, Essentials
Portability[2]	✓	✓	✓
Management options	Catalyst Center, Meraki Dashboard	Catalyst Center, Meraki Dashboard	CLI, Web UI
Included support	Base product-level support for Hardware, Software and OS	Software support (SWSS)	X
Included[3] add-ons: Common ISE policy, Thousand Eyes network and application assurance, Cisco Spaces	X	X	X

[1] For all new orders, subscription licenses are mandatory and must be of the same tier as network licenses

[2] Portability within the same Catalyst 9K series of hardware

[3] Only available with Advantage tier

Network licensing

Table 11. Network Essentials and Advantage (Perpetual) features

Features on Cisco Catalyst uplink switches	Network Essentials	Network Advantage
Switch fundamentals Layer 2, Static Routing, Routed Access (RIP, EIGRP Stub, OSPF -– 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder, SSO	Yes	Yes
Advanced switch capabilities and scale EIGRP, HSRP, IS-IS, BSR, MSDP, IP SLA, OSPF	No	Yes
Network segmentation VRF, VXLAN, LISP, SGT	No	Yes
Automation NETCONF, RESTCONF, YANG, PnP Agent, PnP	Yes	Yes
Telemetry and visibility Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	Yes	Yes

Features on Cisco Catalyst uplink switches	Network Essentials	Network Advantage
Advanced security MACsec-256 on C9200CX SKUs	No	Yes

Cisco Catalyst Software licensing

Table 12.   Cisco Catalyst Essentials and Advantage Package Features

Features	Cisco Catalyst Essentials	Cisco Catalyst Advantage	Cisco DNA Essentials	Cisco DNA Advantage
Advanced telemetry and visibility **Full Flexible NetFlow, EEM**	Yes	Yes	Yes	Yes
Optimized telemetry and visibility **AVC (NBAR2)**	No	Yes	No	Yes
Day-0 network bring-up automation **Cisco Network Plug-and-Play application, network settings, device credentials, LAN automation, host onboarding**	Yes	Yes	Yes	Yes
Element management **Discovery, inventory, topology, software image, licensing, and configuration management**	Yes	Yes	Yes	Yes
Element management **Patch management**	No	Yes	No	Yes
Basic Assurance **Health dashboards – Network, Client, Application; switch and wired client health monitoring**	Yes	Yes	Yes	Yes
SD-Access **Policy-based automation and assurance for wired and wireless**	No	Yes	No	Yes
Network assurance and analytics **Global insights, trends, compliance, custom reports; switch 360, wired client 360; fabric and non-fabric insights; app health, app 360, app performance (loss, latency, jitter)**	No	Yes	No	Yes
Cloud monitoring for Catalyst	Yes[*]	Yes	Yes[*]	Yes

[*]Limited device visibility

For a full list of features, please refer to Cisco Feature Navigatorcfnng.cisco.com

Cisco Catalyst 9200 Series switches run on Cisco IOS XE Release 16.9.2 or later. This software release includes all the features listed earlier in the Platform Software Benefits section.

Managing licenses with Smart Accounts

Creating Smart Accounts by using the Cisco Smart Software Manager (Cisco SSM) enables you to order devices and licensing packages and also manage your software licenses from a centralized website. You can set up Cisco SSM to receive daily email alerts and to be notified of expiring add-on licenses that you want to renew.

You must order an add-on license in order to purchase a switch. When the license term expires, you can either renew the add-on license to continue using it or deactivate the add-on license and then reload the switch to continue operating with the base license capabilities.

Both the base and add-on licenses are also available for a 90-day evaluation period. An evaluation license is activated temporarily, without purchase. An expired evaluation license cannot be reactivated after reload.

Note: It is not required to deploy Cisco Catalyst Center, just to use one of the above packages.

Table 11 shows the features included in the Network Essentials and Advantage packages.

Table 12 shows the features included in the Cisco DNA Essentials and Advantage packages.

Specifications

Dimensions, weight, acoustic, mean time between failures

Table 13-16 show the dimensions, weights, acoustic, and mean time between failures of all models of Cisco Catalyst 9200 Series switches.

Table 13. Model Dimensions

Platform Physical Specifications				
	Chassis Dimensions		**Chassis + FEP + Fan Dimensions (HxWxD)**	
Model	**Inches**	**Centimeters**	**Inches**	**Centimeters**
C9200-24T	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-24P	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-24PB	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-24PXG	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-48T	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-48P	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-48PL	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-48PB	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200-48PXG	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-24T-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9

Platform Physical Specifications

Model	Chassis Dimensions		Chassis + FEP + Fan Dimensions (HxWxD)	
	Inches	Centimeters	Inches	Centimeters
C9200L-24P-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48T-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48P-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48PL-4G	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24T-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24P-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48T-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48P-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-48PL-4X	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
C9200L-24PXG-4X	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-24PXG-2Y	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-48PXG-4X	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200L-48PXG-2Y	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
C9200CX-12T-2X2G	1.73 x 10.6 x 6.5	4.4 x 26.9 x 16.5	1.73 x 10.6 x 6.5	4.4 x 26.9 x 16.5
C9200CX-12P-2X2G	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
C9200CX-8P-2X2G	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
C9200CX-8UXG-2X	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
C9200CX-12P-2XGH	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
C9200CX-8P-2XGH	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
C9200CX-8UXG-2XH	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4

Table 14. Model Weights

Model	Pounds	Kilograms
C9200-24T	11.02	5.0
C9200-24P	12.12	5.5
C9200-24PB	12.12	5.0
C9200-24PXG	11.33	5.1
C9200-48T	11.02	5.0
C9200-48P	12.12	5.5
C9200-48PL	12.12	5.5
C9200-48PB	12.12	5.5
C9200-48PXG	11.98	5.45
C9200L-24T-4G	9.59	4.35
C9200L-24P-4G	10.38	4.71
C9200L-48T-4G	9.97	4.53
C9200L-48P-4G	10.58	4.80
C9200L-48PL-4G	10.58	4.80
C9200L-24T-4X	9.59	4.35
C9200L-24P-4X	10.38	4.71
C9200L-48T-4X	9.97	4.53
C9200L-48P-4X	10.58	4.80
C9200L-48PL-4X	10.58	4.80
C9200L-24PXG-4X	12	5.44
C9200L-24PXG-2Y	12	5.44
C9200L-48PXG-4X	12.6	5.71
C9200L-48PXG-2Y	12.6	5.71
C9200CX-12T-2X2G	4.0	1.81
C9200CX-12P-2X2G	6.6	2.99
C9200CX-8P-2X2G	6.6	2.99
C9200CX-8UXG-2X	7.0	3.18

Model	Pounds	Kilograms
C9200CX-12P-2XGH	6.6	2.99
C9200CX-8P-2XGH	6.6	2.99
C9200CX-8UXG-2XH	7.0	3.18

Table 15. Model Mean time between failures metrics

Mean time between failures (hours)	
C9200-24T	587,800
C9200-24P	422,310
C9200-24PB	434,220
C9200-24PXG	353,960
C9200-48T	571,440
C9200-48P	375,570
C9200-48PL	375,570
C9200-48PB	384,980
C9200-48PXG	320,440
C9200L-24T-4G	531,030
C9200L-24P-4G	392,210
C9200L-48T-4G	508,700
C9200L-48P-4G	347,760
C9200L-48PL-4G	347,760
C9200L-24T-4X	525,990
C9200L-24P-4X	390,310
C9200L-48T-4X	503,400
C9200L-48P-4X	346,270
C9200L-48PL-4X	346,270
C9200L-24PXG-4X	379,410
C9200L-24PXG-2Y	374,730
C9200L-48PXG-4X	337,360

Mean time between failures (hours)	
C9200L-48PXG-2Y	337,260
C9200CX-12T-2X2G	960,180
C9200CX-12P-2X2G	704,430
C9200CX-8P-2X2G	736,000
C9200CX-8UXG-2X	711,500
C9200CX-12P-2XGH	702,630
C9200CX-8P-2XGH	734,030
C9200CX-8UXG-2XH	709,660
PWR-C5-125WAC	3,332,120
PWR-C5-600WAC	1,600,060
PWR-C5-1KWAC	1,600,060
PWR-C6-125WAC	3,332,120
PWR-C6-600WAC	1,600,060
PWR-C6-1KWAC	1,600,060

Table 16.   Model Environmental Ranges

Environmental ranges	
Acoustic noise Measured per ISO 7779 and declared per ISO 9296 Bystander positions operating to an ambient temperature of **25°C**	9200L/9200 With AC power supply (with 48 PoE+ ports loaded): ● LpA: 42dB typical, 45 dB max ● LwA: 5.3B typical, 5.6B max With AC power supply (with 24 PoE+ ports loaded): ● LpA: 42dB typical, 45 dB max ● LwA: 5.3B typical, 5.6B max Typical: Noise emission for a typical configuration Maximum: Statistical maximum to account for variation in production

Connectors

Table 17 shows the supported connectors for Cisco Catalyst 9200 Series switches.

Table 17. Connectors

Power	
Connectors and cabling	1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling 100BASE-FX, 1000BASE-SX, -LX/LH, -ZX, -BX10, Dense Wavelength-Division Multiplexing (DWDM) and Coarse Wavelength-Division Multiplexing (CWDM) SFP transceivers: LC fiber connectors (single-mode or multimode fiber) 10GBASE-SR, LR, LRM (only C9200), ER, ZR, DWDM SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) - SFP+ connector - Cisco StackWise-160/80 stacking ports: copper-based Cisco StackWise cabling - Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling - Management console port: 9200/9200L – RJ45 or mini USB connectors.-RJ-45-to-DB9 cable for PC connections, USB-C adaptor, USB adaptor; 9200CX - Micro USB connector, with option to convert to RJ45 with CAB-CON-USBRJ45
Power connectors	Internal power supply connector: The internal power supply is an auto-ranging unit. It supports input voltages between 100 and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet.

For the latest Cisco transceiver module compatibility information, refer to https://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/TMG_CM_Tool_User_Manual.html.

Management and standards support

Table 18 shows management and standards support for Cisco Catalyst 9200 Series switches.

Table 18. Management and standards support*

Description	Specification	
Management	BRIDGE-MIB	CISCO-NHRP-EXT-MIB
	CISCO-BRIDGE-EXT-MIB	CISCO-NTP-MIB
	CISCO-BULK-FILE-MIB	CISCO-PAGP-MIB
	CISCO-CABLE-DIAG-MIB	CISCO-PORT-SECURITY-MIB
	CISCO-CALLHOME-MIB	CISCO-PORT-STORM-CONTROL-MIB
	CISCO-CEF-MIB	CISCO-POWER-ETHERNET-EXT-MIB
	CISCO-CIRCUIT-INTERFACE-MIB	CISCO-PRIVATE-VLAN-MIB
	CISCO-CONFIG-COPY-MIB	CISCO-PROCESS-MIB
	CISCO-CONFIG-MAN-MIB	CISCO-PRODUCTS-MIB
	CISCO-DEVICE-LOCATION-MIB	CISCO-RF-MIB

Description	Specification	
	CISCO-DHCP-SNOOPING-MIB	CISCO-RTP-METRICS-MIB
	CISCO-EIGRP-MIB	CISCO-RTTMON-ICMP-MIB
	CISCO-EMBEDDED-EVENT-MGR-MIB	CISCO-STACKWISE-MIB
	CISCO-ENTITY-FRU-CONTROL-MIB	CISCO-STP-EXTENSIONS-MIB
	CISCO-ENTITY-SENSOR-MIB	CISCO-SYSLOG-MIB
	CISCO-ENTITY-VENDORTYPE-OID-MIB	CISCO-TCP-MIB
	CISCO-ERR-DISABLE-MIB	CISCO-UDLDP-MIB
	CISCO-FLASH-MIB	CISCO-VLAN-IFTABLE-RELATIONSHIP- MIB
	CISCO-FLOW-MONITOR-MIB	ENTITY-MIB
	CISCO-FTP-CLIENT-MIB	HC-ALARM-MIB
	CISCO-HSRP-EXT-MIB	HC-RMON-MIB
	CISCO-HSRP-MIB	IEEE8023-LAG-MIB
	CISCO-IETF-BFD-MIB	IF-MIB
	CISCO-IETF-PPVPN-MPLS-VPN-MIB	IP-FORWARD-MIB
	CISCO-IETF-PW-MPLS-MIB	IP-MIB
	CISCO-IF-EXTENSION-MIB	LLDP-EXT-MED-MIB
	CISCO-IGMP-FILTER-MIB	LLDP-MIB
	CISCO-IMAGE-LICENSE-MGMT-MIB	MAU-MIB
	CISCO-IMAGE-MIB	MPLS-L3VPN-STD-MIB
	CISCO-IP-CBR-METRICS-MIB	MPLS-LSR-STD-MIB
	CISCO-IP-STAT-MIB	MPLS-VPN-MIB
	CISCO-IP-TAP-MIB	OLD-CISCO-CHASSIS-MIB
	CISCO-IP-URPF-MIB	OLD-CISCO-CPU-MIB
	CISCO-IPSEC-FLOW-MONITOR-MIB	OLD-CISCO-INTERFACES-MIB
	CISCO-IPSEC-MIB	OLD-CISCO-IP-MIB
	CISCO-IPSEC-PROVISIONING-MIB	OLD-CISCO-MEMORY-MIB
	CISCO-IPSLA-AUTOMEASURE-MIB	OLD-CISCO-SYS-MIB

Description	Specification	
	CISCO-IPSLA-ECHO-MIB	OLD-CISCO-TCP-MIB
	CISCO-IPSLA-JITTER-MIB	OLD-CISCO-TS-MIB
	CISCO-L2-CONTROL-MIB	POWER-ETHERNET-MIB
	CISCO-L2L3-INTERFACE-CONFIG-MIB	RFC1213-MIB
	CISCO-LAG-MIB	RMON-MIB
	CISCO-LICENSE-MGMT-MIB	RMON2-MIB
	CISCO-LOCAL-AUTH-USER-MIB	SMON-MIB
	CISCO-MAC-NOTIFICATION-MIB	SNMPv2-MIB
	CISCO-MDI-METRICS-MIB	SONET-MIB
	CISCO-MEDIA-METRICS-MIB	TCP-MIB
	CISCO-MEMORY-POOL-MIB	UDP-MIB
	CISCO-MPLS-LSR-EXT-STD-MIB	CISCO-NBAR-PROTOCOL-DISCOVERY-MIB
Standards	EEE 802.1s	RMON I and II standards
	IEEE 802.1w	SNMPv1, v2c, and v3
	IEEE 802.1x	IEEE 802.1Q VLAN
	IEEE 802.1x-Rev	IEEE 802.3 10BASE-T specification
	IEEE 802.3ad	IEEE 802.3u 100BASE-TX specification
	IEEE 802.3af	IEEE 802.3ab 1000BASE-T specification
	IEEE 802.3at	IEEE 802.3z 1000BASE-X specification
	IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports	IEEE 802.1AE - 128-bit AES MACsec inter network device encryption with MACsec Key Agreement (MKA)
	IEEE 802.1D Spanning Tree Protocol	IEEE 802.3bz (for mGig PKG SKU's only)
	IEEE 802.1p CoS prioritization	IEEE 802.3an (10GBase-T) (for mGig PKG SKU's only)

Power supply specifications

Table 19 lists the power specifications for Cisco Catalyst 9200 Series switches based on the kind of power supply used.

Table 19. Power supply specifications

Description	Specification											
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	PWR-C5-715WDC	PWR-C6-715WDC	C9200CX Internal 315W AC	C9200CX Internal 315W	C9K-80W-ADPT	C9K-ADPT-DC
Power supply rated maximum	125W	125W	600W	600W	1000W	1000W	715W	715W	315W	315W	80W	80W
Total output BTU (note: 1000 BTU/hr = 293W)	426.5 BTU/hr, 125W	426.5 BTU/hr, 125W	2047.3 BTU/hr, 600W	2047.3 BTU/hr, 600W	3412 BTU/hr, 1000W	3412 BTU/hr, 1000W	2440 BTU/hr, 715W	2440 BTU/hr, 715W	1057.1 BTU/hr, 315W	1057.1 BTU/hr, 315W	273 BTU/hr, 80W	273 BTU/hr, 80W
Input-voltage range and frequency	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	-40 to -72 VDC	-40 to -72 VDC	100 to 240 VAC, 50 to 60 Hz	120–418 VDC 100 to 277 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	18 to 60 VDC
Input current	1.6-0.7A	1.6-0.7A	7-2.8A	7-2.8A	12-6A	12-6A	20-11.3A	20-11.3A	3.95-1.5A	3.95-0.92A	1.8A	6A – 1.6A
Output ratings	12V at 10.5A	12V at 10.5A	54V at 11.1A	54V at 11.1A	54V at 16.5A	54V at 16.5A	55V at 13.25A 5V at 0.3A	55V at 13.25A 5V at 0.3A	-55V at 4.5A 5V at 14A	–55V at 4.5A 5V at 14A	53V at 1.5A	53V at 1.5A
Output holdup time	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	2 ms minimum at -40 VDC	2 ms minimum at -40 VDC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC and 380 VDC	20 ms minimum at 100 VAC	0.5 ms minimum at 18 VDC
Power-supply input receptacles	IEC 320-C14 (IEC60320-C14)	IEC 320-C14 (IEC60320-C14)	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	Terminal block	Terminal block	IEC 320-C14 (IEC60320-C14)	Saf-D-Grid	IEC 320-C8 (IEC60320-C8)	Terminal block
Power cord rating	10A	10A	15A	15A	15A	15A	25A	25A	10A	10A	7A	10A
Physical specifications	(H x W x D):	(H x W x D):	(H x W x D):	(H x W x D):	(H x W x D):	(H x W x D):	(H x W x D):	(H x W x D):	N/A	N/A	(H x W x D):	(H x W x D):

Description	Specification											
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	PWR-C5-715WDC	PWR-C6-715WDC	C9200CX Internal 315W AC	C9200CX Internal 315W	C9K-80W-ADPT	C9K-ADPT-DC
	1.58" x 4.0" x 7.6" Weight: 1.5 lb (0.68 kg)	1.58" x 4.0" x 7.6" Weight: 1.5 lb (0.68 kg)	1.58" x 4.0" x 7.6" Weight: 1.7 lb (0.77 kg)	1.58" x 4.0" x 7.6" Weight: 1.7 lb (0.77 kg)	1.58" x 4.0" x 7.6" Weight: 2 lb (0.9 kg)	1.58" x 4.0" x 7.6" Weight: 2 lb (0.9 kg)	1.6" x 4.0" x 7.1" Weight: 3.5 lb (1.59 kg)	1.6" x 4.0" x 7.1" Weight: 3.5 lb (1.59 kg)			1.18" x 1.73" x 5.1" Weight: 0.6 lb (0.27 kg)	1.4" x 2.6" x 6.2" Weight: 0.8 lb (0.36 kg)
Supported Product Family	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200CX	C9200CX	C9200CX	C9200CX
Operating temperature	Normal operating temperature[*] and altitudes: • –5°C to +45°C, up to 5000 feet (1500m) –5°C to +40°C for C9200CX-8UXG-2X and C9200CX-8UXG-2XH) • –5°C to +40°C, up to 10,000 feet (3000m) [*]Minimum ambient temperature for cold start is 32°F (0°C) Short-term[*] exceptional conditions: (9200L/9200 only) • –5°C to +50°C, up to 5000 feet (1500m) • –5°C to +45°C, up to 10,000 feet (3000m) • –5°C to +45°C, at sea level with single fan failure [*]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 operating and nonoperating noncondensing	5% to 90% noncondensing											
Altitude	10,000 ft. (3000 meters), up to 45°C											
EMC compliance	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A VCCI Class A CISPR 35 EN 55035, EN300 386[*], EN 61000-3-2, EN 61000-3-3											

Description	Specification											
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	PWR-C5-715WDC	PWR-C6-715WDC	C9200CX Internal 315W AC	C9200CX Internal 315W	C9K-80W-ADPT	C9K-ADPT-DC
Safety compliance	UL 60950-1/62368-1, CAN/CSA-C22.2 No. 60950-1/62368-1, EN 60950-1/62368-1, IEC 60950-1/62368-1, CCC, CE Marking											
LED indicators	"AC OK": Input power to the power supply is OK "PS OK": Output power from the power supply is OK											

*Use shielded cables for locations other than telecom centers

Power consumption of Standalone 9200 Series switches

Table 20 shows the power consumption of standalone Cisco Catalyst 9200 Series switches based on Alliance for Telecommunications Industry Solutions (ATIS) testing using Internet Mix (IMIX) distribution stream traffic, with input voltage of 115VAC at 60 Hz and no PoE loading. The values given are the maximum possible power consumption numbers under the respective test scenarios.

Table 20. Power consumption of standalone Catalyst 9200 Series switches

SKU	FEP	Uplink	Input	Half port traffic 0.01%/EEE	10%	30%	50%	100%	Full port traffic 0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	PoE test (no traffic) 25%	50%	90%	100%
C9200-24T	125W (C5/C6)	C9200-NM-4X1G	115VAC	33.09	36.08	36.15	36.20	36.34	35.51	41.78	41.89	42.00	42.27	41.20	30.65	TBD	TBD	TBD	TBD
			230VAC	33.15	35.95	36.00	36.06	36.19	35.36	41.50	41.62	41.74	42.01	40.94	30.53	TBD	TBD	TBD	TBD
C9200-24T	125W	C9200-NM—4X10G	115VAC	33.62	36.99	37.29	37.58	38.26	35.41	42.00	42.55	43.11	44.49	41.588	32.20	TBD	TBD	TBD	TBD
			230VAC	33.70	36.85	37.13	37.41	38.10	35.40	41.75	42.30	42.85	44.22	41.364	31.90	TBD	TBD	TBD	TBD
C9200-24P	600W (C5/C6)	C9200-NM-4X1G	115VAC	43.57	47.37	47.42	47.47	47.68	46.82	53.79	53.91	54.02	54.30	53.14	40.75	150.71	251.67	416.85	457.98
			230VAC	43.38	46.92	46.95	47.03	47.18	46.35	53.23	53.34	53.45	53.76	52.59	40.43	148.14	247.03	406.62	446.27
C9200-24P	600W (C5/C6)	C9200-NM-4X10G	115VAC	44.62	48.49	48.79	49.11	49.88	47.02	54.18	54.77	55.34	56.77	53.72	42.55	144.60	245.42	410.22	451.45
			230VAC	44.32	48.06	48.37	48.66	49.40	46.41	53.38	53.99	54.51	55.96	52.94	42.26	142.29	241.14	400.76	440.37
C9200-24PXG	600W (C6)	C9200-NM-4X10G	115VAC	84.30	90.90	91.00	92.30	94.20	95.00	110.60	111.60	112.60	115.20	109.5	72.8	296.8	506.3	858.3	941.5
			230VAC	84.10	90.50	91.10	91.60	92.90	94.30	108.80	109.90	111.00	113.60	107.83	72.24	287.8	492.4	826.7	909.1
C9200-24PXG	600W (C6)	C9200-NM-2X25G	115VAC	83.41	87.59	88.56	89.19	90.85	93.96	101.38	103.32	104.89	107.22	101.22	72.52	187.94	290.47	452.61	494.88
			230VAC	81.90	86.97	87.68	88.38	90.03	92.21	99.79	101.14	102.45	105.65	99.62	71.74	185.45	283.86	441.83	480.86
C9200-24PXG	600W (C6)	C9200-NM-2X40G	115VAC	82.34	86.78	87.91	88.90	91.64	92.97	100.93	103.00	104.89	108.81	100.92	71.72	188.86	289.2	448.52	496.28
			230VAC	80.05	84.53	85.64	86.69	89.29	90.26	99.20	101.41	103.56	108.70	99.26	71.72	185.29	282.86	441.33	480.95
C9200-48T	125W (C5/C6)	C9200-NM-4X1G	115VAC	36.57	45.09	45.45	45.63	45.70	36.98	53.95	55.36	53.91	55.87	52.445	36.98	TBD	TBD	TBD	TBD
			230VAC	36.99	45.58	45.65	45.71	45.86	36.48	54.51	54.64	54.7	55.04	52.76	36.48	TBD	TBD	TBD	TBD
C9200-48T	125W (C5/C6)	C9200-NM-4X10G	115VAC	38.84	47.07	48.67	48.71	50.41	39.20	56.33	58.36	58.75	61.80	55.164	38.38	TBD	TBD	TBD	TBD
			230VAC	39.1	47.11	47.91	48.37	49.65	39.46	56.32	57.25	58.19	60.72	55.074	38.67	TBD	TBD	TBD	TBD
			115VAC	56.07	60.25	60.31	60.36	60.55	56.45	69.33	69.46	69.56	69.87	68.10	50.42	262.61	467.50	812.39	899.99

| | | | | Measured P(W) | | | | | | | | | | | | | | | |
| | | | | Half port traffic | | | | | Full port traffic | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
SKU	FEP	Uplink	Input	0.01%/ EEE	10%	30%	50%	100%	0.01%/ EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200-48P	1000W (C5/C6)	C9200-NM-4X1G	230VAC	55.66	59.98	60.05	60.05	60.27	56.09	69.07	69.20	69.30	69.58	67.83	50.04	258.08	457.61	785.35	867.75
C9200-48P	1000W (C5/C6)	C9200-NM-4X10G	115VAC	54.27	61.71	62.20	62.68	63.88	56.114	70.93	70.95	71.92	74.39	69.79	52.26	262.38	467.41	812.23	899.40
			230VAC	53.89	61.09	61.60	62.07	63.24	55.79	69.52	70.47	71.43	73.89	68.58	51.34	257.97	457.30	785.03	867.35
C9200-48PL	600W (C6)	C9200-NM-4X1G	115VAC	43.57	47.37	47.42	47.47	47.68	46.82	53.79	53.91	54.02	54.30	53.14	40.75	150.71	251.67	416.85	457.98
			230VAC	43.38	46.92	46.95	47.03	47.18	46.35	53.23	53.34	53.45	53.76	52.59	40.43	148.14	247.03	406.62	446.27
C9200-48PL	600W (C6)	C9200-NM-4X10G	115VAC	44.62	48.49	48.79	49.11	49.88	47.02	54.18	54.77	55.34	56.77	53.72	42.55	144.60	245.42	410.22	451.45
			230VAC	44.32	48.06	48.37	48.66	49.40	46.41	53.38	53.99	54.51	55.96	52.94	42.26	142.29	241.14	400.76	440.37
C9200-48PXG	1000W (C6)	C9200-NM-4X10G	115VAC	84.26	90.86	91.02	92.26	94.18	95.01	110.55	111.62	112.62	115.2	109.46	72.3	296.81	506.33	858.27	941.49
			230VAC	84.14	90.52	91.05	91.57	92.85	94.25	108.84	109.94	111	113.6	107.86	73.2	287.79	492.42	826.74	909.07
C9200-48PXG	1000W (C6)	C9200-NM-2X25G	115VAC	87.84	95.23	95.98	96.69	98.34	99.25	113.66	115.37	116.7	120.91	112.94	77.57	300.71	513.82	872.63	957.36
			230VAC	87.12	94.14	94.79	95.42	96.99	97.59	111.99	113.52	114.86	117.82	111.13	76.53	290.61	492.91	826.5	910.08
C9200-48PXG	1000W (C6)	C9200-NM-2X40G	115VAC	88.01	94.35	95.5	96.48	99.36	98.72	113.2	115.13	117.08	121.84	112.61	76.84	296.86	503.87	861.87	957.4
			230VAC	87.02	93.09	94.15	95.16	97.79	97.28	111.43	113.57	115.66	120.67	110.94	75.84	291.54	491.67	824.85	909.78
C9200 L-24T-4G	125W (C5)	Fixed	115VAC	30.03	32.15	32.17	32.2	32.33	32.03	35.90	35.98	36.06	36.23	35.546	27.39	no PoE	no PoE	no PoE	no PoE
			230VAC	29.81	32.26	32.23	32.22	32.35	31.86	35.86	35.94	36.03	36.28	35.502	27.50	no PoE	no PoE	no PoE	no PoE
C9200 L-24P-4G	600W (C5)	Fixed	115VAC	39.28	43.98	44.04	44.08	44.22	38.95	48.47	48.6	48.74	49.00	47.571	39.59	153.06	256.56	423.44	466.34
			230VAC	38.88	43.6	43.66	43.69	43.83	38.57	48.09	48.22	48.35	48.62	47.191	39.20	150.51	252.10	413.89	455.15
C9200 L-24T-4X	125W (C5)	Fixed	115VAC	30.99	31.98	32.21	32.43	33.04	33.29	36.62	37.02	37.47	38.6	36.485	27.82	no PoE	no PoE	no PoE	no PoE
			230VAC	30.98	32.02	32.24	32.46	33.02	33.24	36.59	36.96	37.41	38.52	36.448	27.90	no PoE	no PoE	no PoE	no PoE
C9200 L-24P-4X	600W (C5)	Fixed	115VAC	42.83	44.15	44.62	44.72	45.39	45.45	51.08	51.52	52.2	53.49	50.758	40.17	144.82	241.99	401.32	445.35
			230VAC	42.36	44.19	44.47	44.61	45.28	44.6	49.33	49.91	50.36	51.51	49.075	39.48	142.32	237.52	392.77	434.06

SKU	FEP	Uplink	Input	Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01%/ EEE	10%	30%	50%	100%	0.01%/ EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200 L-48T-4G	125W (C5)	Fixed	115VAC	33.85	40.11	40.20	40.24	40.34	32.74	46.65	46.88	46.96	47.33	45.327	33.85	no PoE	no PoE	no PoE	no PoE
			230VAC	33.62	40.5	40.57	40.63	40.74	33.06	46.8	46.91	47.05	47.49	45.495	34.16	no PoE	no PoE	no PoE	no PoE
C9200 L-48P-4G	1000W (C5)	Fixed	115VAC	45.07	52.15	52.22	52.28	52.44	44.6	58.59	58.7	58.81	59.1	57.242	45.82	270.96	484.59	842.07	933.03
			230VAC	44.55	51.5	51.55	51.6	51.77	44.08	57.82	57.91	58.04	58.29	56.493	45.17	266.35	474.24	814.85	899.58
C9200 L-48PL-4G	600W (C5)	Fixed	115VAC	39.28	43.98	44.04	44.08	44.22	38.95	48.47	48.6	48.74	49.00	47.571	39.59	153.06	256.56	423.44	466.34
			230VAC	38.88	43.6	43.66	43.69	43.83	38.57	48.09	48.22	48.35	48.62	47.191	39.20	150.51	252.10	413.89	455.15
C9200 L-48T-4X	125W (C5)	Fixed	115VAC	35.52	42.36	42.9	43.35	43.69	35.06	49.27	50.24	51.19	53.60	48.282	36.08	no PoE	no PoE	no PoE	no PoE
			230VAC	35.84	42.60	43.09	43.58	44.81	35.27	49.41	50.36	51.33	53.67	48.422	36.38	no PoE	no PoE	no PoE	no PoE
C9200 L-48P-4X	1000W (C5)	Fixed	115VAC	53.12	56.89	57.34	57.80	57.81	55.22	63.92	64.86	65.84	68.36	63.494	50.31	262.59	463.36	789.46	872.6
			230VAC	52.63	56.37	56.82	57.3	58.47	54.71	63.41	64.32	65.27	67.64	62.963	50.02	258.64	453.81	766.04	843.89
C9200 L-48PL-4X	600W (C5)	Fixed	115VAC	42.83	44.15	44.62	44.72	45.39	45.45	51.08	51.52	52.2	53.49	50.758	40.17	144.82	241.99	401.32	445.35
			230VAC	42.36	44.19	44.47	44.61	45.28	44.6	49.33	49.91	50.36	51.51	49.075	39.48	142.32	237.52	392.77	434.06
C9200 L-48PXG-4X	1000W (C5)	Fixed	115VAC	82.60	87.80	88.28	88.76	89.95	92.56	103.53	104.55	105.57	108.19	102.90	72.14	291.62	496.85	842.43	930.11
			230VAC	81.77	86.62	87.11	87.60	88.82	91.87	102.05	103.02	103.98	106.40	101.47	72.50	286.71	486.25	814.71	898.24
C9200 L-24PXG-4X	600W (C5)	Fixed	115VAC	70.94	73.88	74.37	74.84	76.02	77.37	84.12	85.06	86.00	88.32	83.86	64.54	173.05	271.04	431.68	472.39
			230VAC	70.10	73.04	73.62	74.07	75.15	76.74	82.96	83.86	84.78	87.09	82.75	64.04	170.02	265.51	420.96	459.88
C9200 L-48PXG-2Y	1000W (C5)	Fixed	115VAC	81.81	85.14	85.81	86.49	88.08	89.40	96.32	97.51	98.71	101.76	96.17	71.45	294.56	500.25	846.33	934.08
			230VAC	79.59	82.94	83.64	84.28	85.81	88.20	95.17	96.36	97.52	100.40	95.00	70.28	283.88	483.54	812.20	894.11
C9200 L-24PXG-2Y	600W (C5)	Fixed	115VAC	70.54	73.04	73.78	74.46	76.10	76.25	83.50	84.78	86.09	89.26	83.35	65.58	178.82	280.13	446.82	489.62
			230VAC	68.89	72.02	72.66	73.35	74.93	75.32	82.00	83.34	84.64	87.87	81.92	65.01	175.55	274.59	434.38	475.39
	315W AC	Fixed	115VAC	34.5	35.6	35.7	35.8	35.9	35.1	37.8	37.9	38.0	38.3	37.6	33.3	86.9	150.9	254.3	280.2

SKU	FEP	Uplink	Input	Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01%/ EEE	10%	30%	50%	100%	0.01%/ EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200 CX-8P-2X2G			230VAC	34.3	35.4	35.5	35.5	35.7	35.0	37.5	37.6	37.8	38.0	37.3	33.1	85.9	148.8	249.4	274.5
C9200 CX-8P-2XGH	315W HVDC/AC	Fixed	277VAC	34.0	35.3	35.3	35.4	35.5	34.8	37.5	37.6	37.7	37.9	37.2	32.8	89.6	153.1	254.4	279.4
			380VDC	34.0	35.1	35.1	35.2	35.4	34.6	37.3	37.4	37.5	37.7	37.0	32.8	89.8	153.0	253.4	278.7
C9200 CX-12P-2X2G	315W AC	Fixed	115VAC	34.9	37.0	37.1	37.2	37.4	35.7	39.5	39.6	39.8	40.2	39.2	33.8	88.0	152.3	256.2	281.9
			230VAC	34.6	36.7	36.7	36.8	37.0	35.5	39.2	39.4	39.5	39.8	38.9	33.5	87.1	150.4	251.1	276.7
C9200 CX-12P-2XGH	315W HVDC/AC	Fixed	277VAC	34.6	36.7	36.8	36.9	37.0	35.3	39.1	39.3	39.4	39.7	38.7	33.4	92.3	155.1	255.9	281.4
			380VDC	34.5	36.5	36.5	36.6	36.8	35.2	38.9	39.0	39.2	39.6	38.6	33.3	92.7	155.0	256.5	281.8
C9200 CX-12T-2X2G	80W AC	Fixed	115VAC	20.0	21.9	22.0	22.1	22.3	21.1	25.1	25.3	25.4	25.9	24.7	18.7	no PoE	no PoE	no PoE	no PoE
			230VAC	20.1	22.0	22.1	22.2	22.4	21.1	25.1	25.3	25.4	25.9	24.8	18.8	no PoE	no PoE	no PoE	no PoE
C9200 CX-8UXG-2X	315W AC	Fixed	115VAC	43.4	45.1	45.3	45.3	45.5	46.7	50.3	50.5	50.6	50.9	50.0	40.1	105.5	170.5	275.7	301.9
			230VAC	43.1	44.7	44.8	44.9	45.0	46.5	49.9	50.1	50.2	50.5	49.6	39.9	103.5	166.8	268.7	293.9
C9200 CX-8UXG-2XH	315W HVDC/AC	Fixed	277VAC	43.2	45.0	45.0	45.1	45.3	46.4	50.4	50.5	50.7	51.0	50.0	40.1	103.1	166.1	267.4	292.3
			380VDC	43.1	44.9	44.9	45.0	45.1	46.5	50.0	50.1	50.3	50.5	49.7	39.6	103.7	166.4	267.3	292.2

[*] C9200CX HVDC models can also operate at 115V or 230V AC, the power consumption is the same as the corresponding AC models.

Safety and compliance

Table 21 lists the safety and compliance information for Cisco Catalyst 9200 Series switches.

Table 21. Safety and compliance information

Description	Specification
Safety certifications	- IEC 60950-1/62368-1 - UL 60950-1/62368-1 - CAN/CSA C22.2 No. 60950-1/62368-1 - EN 60950-1/62368-1 - AS/NZS 60950.1, AS/NZS 62368.1 - Class I Equipment
Electromagnetic compatibility certifications	47 CFR Part 15 - CISPR 32 Class A - CNS 13438 - EN 300 386* - EN 55032 Class A - EN61000-3-2 - EN61000-3-3 - ICES-003 Class A - KN 32 - TCVN 7189 Class A - V-3 Class A - CISPR 35 - EN 300 386* - EN 55035 - KN 35 - TCVN 7317
Environmental	Reduction of Hazardous Substances (ROHS) 5

*Use shielded cables for locations other than telecom centers

Warranty

Cisco enhanced limited lifetime hardware warranty

Cisco Catalyst 9200 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 22 provides information about the E-LLW.

Table 22. Warranty information

	Cisco E-LLW
Devices covered	Applies to Cisco Catalyst 9200 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 9200 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.

Cisco services for next-generation Cisco Catalyst switches

Achieve infrastructure excellence faster and with less risk. Cisco Catalyst 9000 Switch Services provide expert guidance to help you successfully deploy, manage and support the Cisco 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.

Ordering

Ordering information

Table 23 lists ordering information for Cisco Catalyst 9200 Series switches. To place an order, visit the Cisco Ordering home page at:
https://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html.

Switch Models

C9200 models

Table 23. C9200 Models Ordering information

Product number	Product description
C9200-24T-A	Catalyst 9200 24-port Data Switch, Network Advantage
C9200-24T-E	Catalyst 9200 24-port Data Switch, Network Essentials
C9200-24P-A	Catalyst 9200 24-port PoE+ Switch, Network Advantage
C9200-24P-E	Catalyst 9200 24-port PoE+ Switch. Network Essentials
C9200-24PB-A	Catalyst 9200 24-port PoE+, enhanced VRF, Network Advantage
C9200-24PXG-E	Catalyst 9200 24-port 8xmGig, 16x1G, PoE+, Network Essentials
C9200-24PXG-A	Catalyst 9200 24-port 8xmGig, 16x1G, PoE+, Network Advantage
C9200-48T-A	Catalyst 9200 48-port Data Switch, Network Advantage
C9200-48T-E	Catalyst 9200 48-port Data Switch, Network Essentials
C9200-48P-A	Catalyst 9200 48-port PoE+ Switch, Network Advantage
C9200-48P-E	Catalyst 9200 48-port PoE+ Switch, Network Essentials
C9200-48PL-A	Catalyst 9200 48-Port partial PoE+ Switch, Network Advantage
C9200-48PL-E	Catalyst 9200 48-Port partial PoE+ Switch, Network Essentials
C9200-48PB-A	Catalyst 9200 48-port PoE+, enhanced VRF, Network Advantage
C9200-48PXG-E	Catalyst 9200 48-port 8xmGig, 40x1G, PoE+, Network Essentials
C9200-48PXG-A	Catalyst 9200 48-port 8xmGig, 40x1G, PoE+, Network Advantage

Network modules

Table 24. C9200 Models Ordering information – network modules

Modular uplink network modules for C9200 Models	
Product number	**Product description**
C9200-NM-2Y (=)	Catalyst 9200 2 x 25 GE Network Module, spare
C9200-NM-2Q (=)	Catalyst 9200 2 x 40GE Network Module, spare
C9200-NM-4G (=)	Catalyst 9200 4 x 1GE Network Module, spare
C9200-NM-4X (=)	Catalyst 9200 4 x 10GE Network Module, spare
C9200-NM-BLANK	Catalyst 9200 BLANK Network Module

C9200L models

Table 25. C9200L Models Ordering information

Product number	Product description
C9200L-24T-4G-A	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Advantage
C9200L-24T-4G-E	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Essentials
C9200L-24P-4G-A	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Advantage
C9200L-24P-4G-E	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Essentials
C9200L-48T-4G-A	Catalyst 9200L 48-port Data 4x1G uplink Switch, Network Advantage
C9200L-24T-4X-A	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Advantage
C9200L-24T-4X-E	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Essentials
C9200L-24P-4X-A	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Advantage
C9200L-24P-4X-E	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Essentials
C9200L-48T-4X-A	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Advantage
C9200L-48T-4X-E	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Essentials
C9200L-48P-4X-A	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Advantage
C9200L-48P-4X-E	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Essentials
C9200L-48PL-4X-A	Catalyst 9200L 48-port partial PoE+ 4x10G uplink Switch, Network Advantage
C9200L-48PL-4X-E	Catalyst 9200L 48-port partial PoE+ 4x10G uplink Switch, Network Essentials
C9200L-24PXG-4X-E	Catalyst 9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Essentials

Product number	Product description
C9200L-24PXG-4X-A	Catalyst 9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Advantage
C9200L-48PXG-4X-E	Catalyst 9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Essentials
C9200L-48PXG-4X-A	Catalyst 9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Advantage
C9200L-24PXG-2Y-E	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Essentials
C9200L-24PXG-2Y-A	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Advantage
C9200L-48PXG-2Y-E	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Essentials
C9200L-48PXG-2Y-A	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Advantage

C9200CX models

Table 26. C9200CX Models Ordering information

Product number	Product description
C9200CX-12T-2X2G-E	Catalyst 9200CX 12-port 1G, 2x10G and 3x1G, data, Network Essentials
C9200CX-12T-2X2G-A	Catalyst 9200CX 12-port 1G, 2x10G and 3x1G, data, Network Advantage
C9200CX-12P-2X2G-E	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, Network Essentials
C9200CX-12P-2X2G-A	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, Network Advantage
C9200CX-8P-2X2G-E	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, Network Essentials
C9200CX-8P-2X2G-A	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, Network Advantage
C9200CX-8UXG-2X-E	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, Network Essentials
C9200CX-8UXG-2X-A	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, Network Advantage
C9200CX-12P-2XGH-E	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Essentials
C9200CX-12P-2XGH-A	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Advantage
C9200CX-8P-2XGH-E	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Essentials
C9200CX-8P-2XGH-A	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Advantage
C9200CX-8UXG-2XH-E	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, HVDC, Network Essentials
C9200CX-8UXG-2XH-A	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, HVDC, Network Advantage

Software licenses

C9200 software licenses

Table 27. C9200 Models Ordering information – software licenses

C9200 Cisco DNA software licenses	
Product number	**Product description**
C9200-DNA-E-24	C9200 Cisco DNA Essentials Term 24-port
C9200-DNA-E-24-3Y	C9200 Cisco DNA Essentials, 24-port, 3 Year Term license
C9200-DNA-E-24-5Y	C9200 Cisco DNA Essentials, 24-port, 5 Year Term license
C9200-DNA-E-24-7Y	C9200 Cisco DNA Essentials, 24-port, 7 Year Term license
C9200-DNA-E-48	C9200 Cisco DNA Essentials Term 48-port
C9200-DNA-E-48-3Y	C9200 Cisco DNA Essentials, 48-port, 3 Year Term license
C9200-DNA-E-48-5Y	C9200 Cisco DNA Essentials, 48-port, 5 Year Term license
C9200-DNA-E-48-7Y	C9200 Cisco DNA Essentials, 48-port, 7 Year Term license
C9200-DNA-A-24	C9200 Cisco DNA Advantage Term 24-port
C9200-DNA-A-24-3Y	C9200 Cisco DNA Advantage, 24-port, 3 Year Term license
C9200-DNA-A-24-5Y	C9200 Cisco DNA Advantage, 24-port, 5 Year Term license
C9200-DNA-A-24-7Y	C9200 Cisco DNA Advantage, 24-port, 7 Year Term license
C9200-DNA-A-48	C9200 Cisco DNA Advantage Term 48-port
C9200-DNA-A-48-3Y	C9200 Cisco DNA Advantage, 48-port, 3 Year Term license
C9200-DNA-A-48-5Y	C9200 Cisco DNA Advantage, 48-port, 5 Year Term license
C9200-DNA-A-48-7Y	C9200 Cisco DNA Advantage, 48-port, 7 Year Term license
C9200-LIC=	Electronic Cisco DNA Upgrade License for C9200 switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is upgraded to Network Advantage
C9200-24-E-A	C9200 24-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200-24-E-A-3	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200-24-E-A-5	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200-24-E-A-7	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y
C9200-48-E-A	C9200 48-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200-48-E-A-3	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y

C9200 Cisco DNA software licenses

Product number	Product description
C9200-48-E-A-5	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200-48-E-A-7	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y

C9200 Cisco Catalyst software licenses senses

Product number	Product description
C9200-DNX-E-24-3Y	C9200 Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9200-DNX-E-24-5Y	C9200 Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9200-DNX-E-24-7Y	C9200 Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9200-DNX-E-48-3Y	C9200 Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9200-DNX-E-48-5Y	C9200 Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9200-DNX-E-48-7Y	C9200 Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9200-DNX-A-24-3Y	C9200 Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9200-DNX-A-24-5Y	C9200 Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9200-DNX-A-24-7Y	C9200 Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9200-DNX-A-48-3Y	C9200 Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9200-DNX-A-48-5Y	C9200 Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9200-DNX-A-48-7Y	C9200 Cisco Catalyst Advantage, 48-port, 7 Year Term license

C9200L software licenses

Table 28. C9200L Models Ordering information – software licenses

C9200L Cisco DNA software licenses	
Product Number	**Product Description**
C9200L-DNA-E-24	C9200L Cisco DNA Essentials Term 24-port
C9200L-DNA-E-24-3Y	C9200L Cisco DNA Essentials, 24-port, 3 Year Term license
C9200L-DNA-E-24-5Y	C9200L Cisco DNA Essentials, 24-port, 5 Year Term license
C9200L-DNA-E-24-7Y	C9200L Cisco DNA Essentials, 24-port, 7 Year Term license
C9200L-DNA-E-48	C9200L Cisco DNA Essentials Term 48-port
C9200L-DNA-E-48-3Y	C9200L Cisco DNA Essentials, 48-port, 3 Year Term license
C9200L-DNA-E-48-5Y	C9200L Cisco DNA Essentials, 48-port, 5 Year Term license
C9200L-DNA-E-48-7Y	C9200L Cisco DNA Essentials, 48-port, 7 Year Term license
C9200L-DNA-A-24	C9200L Cisco DNA Advantage Term 24-port
C9200L-DNA-A-24-3Y	C9200L Cisco DNA Advantage, 24-port, 3 Year Term license
C9200L-DNA-A-24-5Y	C9200L Cisco DNA Advantage, 24-port, 5 Year Term license
C9200L-DNA-A-24-7Y	C9200L Cisco DNA Advantage, 24-port, 7 Year Term license
C9200L-DNA-A-48	C9200L Cisco DNA Advantage Term 48-port
C9200L-DNA-A-48-3Y	C9200L Cisco DNA Advantage, 48-port, 3 Year Term license
C9200L-DNA-A-48-5Y	C9200L Cisco DNA Advantage, 48-port, 5 Year Term license
C9200L-DNA-A-48-7Y	C9200L Cisco DNA Advantage, 48-port, 7 Year Term license
C9200L-LIC=	Electronic Cisco DNA Upgrade License for C9200L switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is upgraded to Network Advantage
C9200L-24-E-A	C9200L 24-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200L-24-E-A-3	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200L-24-E-A-5	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200L-24-E-A-7	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y
C9200L-48-E-A	C9200L 48-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200L-48-E-A-3	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200L-48-E-A-5	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y

C9200L Cisco DNA software licenses

Product Number	Product Description
C9200L-48-E-A-7	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y

C9200L Cisco Catalyst software licenses

Product number	Product description
C9200L-DNX-E-24-3Y	C9200L Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9200L-DNX-E-24-5Y	C9200L Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9200L-DNX-E-24-7Y	C9200L Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9200L-DNX-E-48-3Y	C9200L Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9200L-DNX-E-48-5Y	C9200L Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9200L-DNX-E-48-7Y	C9200L Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9200L-DNX-A-24-3Y	C9200L Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9200L-DNX-A-24-5Y	C9200L Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9200L-DNX-A-24-7Y	C9200L Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9200L-DNX-A-48-3Y	C9200L Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9200L-DNX-A-48-5Y	C9200L Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9200L-DNX-A-48-7Y	C9200L Cisco Catalyst Advantage, 48-port, 7 Year Term license

C9200CX software licenses

Table 29. C9200CX Models Ordering information – software licenses

C9200CX Cisco DNA software licenses	
Product Number	**Product Description**
C9200CX-DNA-E-8	C9200CX Cisco DNA Essentials Term 8-port
C9200CX-DNAE-8-3Y	C9200CX Cisco DNA Essentials, 8-port, 3 Year Term license
C9200CX-DNAE-8-5Y	C9200CX Cisco DNA Essentials, 8-port, 5 Year Term license
C9200CX-DNAE-8-7Y	C9200CX Cisco DNA Essentials, 8-port, 7 Year Term license
C9200CX-DNA-A-8	C9200CX Cisco DNA Advantage Term 8-port
C9200CX-DNAA-8-3Y	C9200CX Cisco DNA Advantage, 8-port, 3 Year Term license
C9200CX-DNAA-8-5Y	C9200CX Cisco DNA Advantage, 8-port, 5 Year Term license
C9200CX-DNAA-8-7Y	C9200CX Cisco DNA Advantage, 8-port, 7 Year Term license
C9200CX-DNA-E-12	C9200CX Cisco DNA Essentials Term 12-port
C9200CX-DNAE-12-3Y	C9200CX Cisco DNA Essentials, 12-port, 3 Year Term license
C9200CX-DNAE-12-5Y	C9200CX Cisco DNA Essentials, 12-port, 5 Year Term license
C9200CX-DNAE-12-7Y	C9200CX Cisco DNA Essentials, 12-port, 7 Year Term license
C9200CX-DNA-A-12	C9200CX Cisco DNA Advantage Term 12-port
C9200CX-DNAA-12-3Y	C9200CX Cisco DNA Advantage, 12-port, 3 Year Term license
C9200CX-DNAA-12-5Y	C9200CX Cisco DNA Advantage, 12-port, 5 Year Term license
C9200CX-DNAA-12-7Y	C9200CX Cisco DNA Advantage, 12-port, 7 Year Term license
C9200CX-LIC=	Electronic Cisco DNA Upgrade License for C9200CX switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is upgraded to Network Advantage
C9200CX-8-E-A	C9200CX 8-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200CX-8-E-A-3	C9200CX 8-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200CX-8-E-A-5	C9200CX 8-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200CX-8-E-A-7	C9200CX 8-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y
C9200CX-12-E-A	C9200CX 12-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade

C9200CX Cisco DNA software licenses	
Product Number	**Product Description**
C9200CX-12-E-A-3	C9200CX 12-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200CX-12-E-A-5	C9200CX 12-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200CX-12-E-A-7	C9200CX 12-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y

C9200CX Cisco Catalyst software licenses	
Product Number	**Product Description**
C9200CX-DNXE-12-3Y	C9200CX Cisco Catalyst Essentials software subscription, 12P, 3 Yr Lic
C9200CX-DNXE-12-5Y	C9200CX Cisco Catalyst Essentials software subscription, 12P, 5 Yr Lic
C9200CX-DNXE-12-7Y	C9200CX Cisco Catalyst Essentials software subscription, 12P, 7 Yr Lic
C9200CX-DNXE-8-3Y	C9200CX Cisco Catalyst Essentials software subscription, 8P, 3 Yr Lic
Product Number	**Product Description**
C9200CX-DNXE-8-5Y	C9200CX Cisco Catalyst Essentials software subscription, 8P, 5 Yr Lic
C9200CX-DNXE-8-7Y	C9200CX Cisco Catalyst Essentials software subscription, 8P, 7 Yr Lic
C9200CX-DNXA-12-3Y	C9200CX Cisco Catalyst Advantage software subscription, 12P, 3 Yr Lic
C9200CX-DNXA-12-5Y	C9200CX Cisco Catalyst Advantage software subscription, 12P, 5 Yr Lic
C9200CX-DNXA-12-7Y	C9200CX Cisco Catalyst Advantage software subscription, 12P, 7 Yr Lic
C9200CX-DNXA-8-3Y	C9200CX Cisco Catalyst Advantage software subscription, 8P, 3 Yr Lic
C9200CX-DNXA-8-5Y	C9200CX Cisco Catalyst Advantage software subscription, 8P, 5 Yr Lic
C9200CX-DNXA-8-7Y	C9200CX Cisco Catalyst Advantage software subscription, 8P, 7 Yr Lic

Stacking Cables

Table 30. StackWise Cable Ordering information

StackWise-80 and StackWise-160 Kit and cables	
Product number	**Product description**
C9200-STACK-KIT=	C9200 Stack Kit Spare
C9200L-STACK-KIT=	C9200L Stack Kit Spare
STACK-T4-50CM	50CM Type 3 Stacking Cable
STACK-T4-50CM=	50CM Type 3 Stacking Cable, spare
STACK-T4-1M	1M Type 3 Stacking Cable
STACK-T4-1M=	1M Type 3 Stacking Cable, spare
STACK-T4-3M	3M Type 3 Stacking Cable
STACK-T4-3M=	3M Type 3 Stacking Cable, spare

Power supplies

Table 31. Power Supply Ordering information

Power supplies	
Product Number	**Product Description**
PWR-C5-125WAC (=)	125W AC Config 5 Power Supply
PWR-C5-125WAC/2	125W AC Config 5 Power Supply - Secondary Power Supply
PWR-C5-600WAC (=)	600W AC Config 5 Power Supply
PWR-C5-600WAC/2	600W AC Config 5 Power Supply - Secondary Power Supply
PWR-C5-1KWAC (=)	1KW AC Config 5 Power Supply
PWR-C5-1KWAC/2	1KW AC Config 5 Power Supply - Secondary Power Supply
PWR-C5-715WDC=	715W DC Config 5 Power Supply
PWR-C6-125WAC (=)	125W AC Config 6 Power Supply
PWR-C6-125WAC/2	125W AC Config 6 Power Supply - Secondary Power Supply
PWR-C6-600WAC (=)	600W AC Config 6 Power Supply
PWR-C6-600WAC/2	600W AC Config 6 Power Supply - Secondary Power Supply
PWR-C6-1KWAC (=)	1KW AC Config 6 Power Supply

Power supplies	
Product Number	**Product Description**
PWR-C6-1KWAC/2	1KW AC Config 6 Power Supply – Secondary Power Supply
PWR-C6-715WDC=	715W DC Config 6 Power Supply
PWR-C5-BLANK=	Blank Module
PWR-ADPT	AC-DC power adapter for the C9200CX-12T-2X2G compact switch (80W)
C9K-80W-ADPT	AC-DC slim power adapter for the C9200CX-12T-2X2G compact switch (80W)
C9K-ADPT-DC	DC-DC power adapter for the C9200CX-12T-2X2G compact switch (80W)
C9K-ADPT-BRKT-12T	Power adaptor bracket for C9200CX-12T-2X2G
C9K-CMPCT-PWR-CLP	Power clip for the C9200CX compact switches (not compatible with HVDC SKUs)

Table 32. Spare power cords Ordering information

Spare power cords	
Product Number	**Product Description**
CAB-TA-NA=	AC power cord for Cisco Catalyst (North America)
CAB-TA-AP=	AC power cord for Cisco Catalyst (Australia)
CAB-TA-AR=	AC power cord for Cisco Catalyst (Argentina)
CAB-TA-SW=	AC power cord for Cisco Catalyst (Switzerland)
CAB-TA-UK=	AC power cord for Cisco Catalyst (United Kingdom)
CAB-TA-JP=	AC power cord for Cisco Catalyst (Japan)
CAB-TA-250V-JP=	Japan 250VAC power cord for Cisco Catalyst (Japan)
CAB-TA-125V-JP=	Japan 125V AC Type A Power Cable (Japan – 48 port only)
CAB-TA-EU=	AC power cord for Cisco Catalyst (Europe)
CAB-TA-IT=	AC power cord for Cisco Catalyst (Italy)
CAB-TA-IN=	AC power cord for Cisco Catalyst (India)
CAB-TA-CN=	AC power cord for Cisco Catalyst (China)
CAB-TA-DN=	AC power cord for Cisco Catalyst (Denmark)
CAB-TA-IS=	AC power cord for Cisco Catalyst (Israel)
CAB-ACBZ-12A=	AC power cord for Cisco Catalyst (Brazil), 12A/125V BR-3-20 plug up to 12A

Spare power cords	
Product Number	**Product Description**
CAB-ACBZ-10A=	AC power cord for Cisco Catalyst (Brazil), 10A/250V BR-3-10 plug up to 10A
CAB-C15-CBN	Cabinet jumper power cord, 250VAC 13A, C14-C15 connectors

* For 9200CX switch models with internal HVDC power supply, customer or system integrator is responsible for the power cable as HVDC switches are usually installed in DC micro grid with customized cables and connectors. For more information, please consult with your Cisco sales representative.

Mounting Accessories

Table 33. Mounting Accessories Ordering information

Product Number	Product Description
ACC-KIT-T1=	Accessory kit with 19 inch Type 1 rack mount
RACK-KIT-T1=	19, 23, 24 inch and ETSI Type 1 rack mount kit
4PT-KIT-T2=	4 Point rack mount kit New
REC-KIT-T1=	Recessed 1RU rack mount for 9200L and 9200 switches
C9K-MGNT-TRAY	Magnet and Mounting Tray for compact switches
C9K-CMPCT-DIN-MNT	DIN Rail Mount for compact switches
RACKMNT-19-CMPACT	19-Inch Rack Mounting Brackets for compact switches
C9K-CMPCT-CBLE-GRD	Cable guard for compact switches (for C9K-WALL-TRAY)
C9K-WALL-TRAY	Wall mount bracket for compact switches
C9K-CMPCT-DESK-MNT	Under desk mount for compact switches
C9K-ACC-RBFT	Rubber Feet For Table Top Setup 9200 and 9300
C9K-ACC-SCR-4	12-24 and 10-32 Screws For Rack Installation, Qty 4
CAB-GUIDE-1RU	1RU Cable Management Guides 9200 and 9300

Optics online reference

Cisco Catalyst 9200 Series switches support a wide range of optics. Because the list of supported optics is updated on a regular basis, consult the tables available here for the latest SFP+ and SFP compatibility information: https://tmgmatrix.cisco.com

Product sustainability

Refer to the CSR/Social Responsibility section for more information on Cisco's environmental sustainability policies and initiatives.

ENERGY STAR Certification

Cisco is driving long term value and market advantage by continuing to embed energy efficiency through hardware, software and by providing customers visibility into their energy consumption to help them baseline, identify trends and anomalies and take corrective actions.

With the ENERGY STAR certification of Catalyst 9200 Series models, Cisco is one of the first networking company to have third party-approved Campus Switches. Ecolabel certifications like ENERGY STAR help customers identify **"environmentally preferable"** products to help maximize energy efficiency, reduce GHG emissions and lower energy costs.

ENERGY STAR certification reinforces Cisco's ongoing commitment to deliver energy efficient products including top-rated power supplies, active power management and monitoring capabilities, alignment to ISO 14000 Environmental Management systems standards, and all designed with circularity principles in mind.

Learn more:

ENERGY STAR Certified Product Finder
https://www.energystar.gov/productfinder/product/certified-large-network-equipment/results

Table 34.   Sustainability References

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
	Safety and compliance	Safety and compliance information
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
Power	IEEE 802.3at PoE+	Intelligent PoE+ Section
	IEEE 802.3bt / Cisco UPOE	Intelligent PoE+ Section
	IEEE 802.3bt class 6 PD	Intelligent PoE+ Section

Sustainability Topic		Reference
	PoE power availability	[PoE Power with Primary and secondary power supplies](#)
	High efficiency with HVDC power options	[Power supply specifications](#)
	Fan	[Fan Section](#)
	Power connectors	[Connectors](#)
	Power supply specifications	[Power supply specifications](#)
	Power consumption (ATIS)	[Power consumption of standalone Catalyst 9200 Series switches](#)
	ENERGY STAR® certified models	[ENERGY STAR Certified Large Network Equipment](#)
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Chassis Dimension, weight, MTBF	[Model dimensions, weight, and mean time between failure metrics](#)
	Elimination of wet paint on plastic bezel	[2019 Cisco Corporate Social Responsibility Report,](#) Pg. 19 Stepping up our work on circularity

Cisco Services

Accelerate your journey to intent-based networking

With Cisco Services, you can achieve infrastructure excellence faster with less risk. Our services for Cisco Catalyst 9200 Series switches provide expert guidance to help you successfully plan, deploy, manage, and support your new switches. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco Networking infrastructure. [Learn more](#).

CSR/Social Responsibility

Information about Cisco's Environmental, Social and Governance (ESG) policies and initiatives can be found in Cisco's [Corporate Social Responsibility](#) (CSR) Report.

Cisco Capital

Flexible payment solutions to help you achieve your objectives

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

Document history

New or revised topic	Described In	Date
Added ENERGY Start certification	Various locations	April 12, 2024
Added recessed mounting kit and DC power supply for 9200L and 9200.	Various locations	Jun 26, 2023
Added new Catalyst 9200CX mGig and HVDC SKUs	Various locations	Feb 6, 2023
Added new Catalyst 9200CX models, Cloud Monitoring for Catalyst support	Various locations	June 14, 2022
Added New C9200/L partial PoE Information	Table 1, 3, 7, 8, 12, 17, 19, 22	September 22, 2020
Added correct images for module uplinks	Network Modules	February 21, 2020
Added New C9200 mGig and C9200 32 VN information	Table 1, 3, 7, 8, 12, 22	January 28, 2020
Added New C9200 Network Modules	Table 2, 22	January 28, 2020
Added New Power Supply information PWR-C6-600WAC	Table 3, 16, 19, 22	October 09, 2019
Forwarding rate with Stacking	Table 8	October 09, 2019
Cloud Security Information	General Information	October 09, 2019
Adding C9200L mGig SKUs	Table 1, 3, 8, 12, 19	May 14, 2019
Revisions of Weight, addition of LIC upgrade and other minor edits	Software licenses table and weights table	April 01, 2019
Revised Table of Contents Headings	Specifications (was "Dimensions, eight, acoustic, mean time between failures"), added Document History	January 03, 2019

Printed in USA

C78-741344-21   04/24

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CISCO
The bridge to possible

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-premise, 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 32 ports of 90W UPOE+ for standalone or 256 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 new 2.0Sec UADP ASIC, the Catalyst 9300X comes 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.

- **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 Digital Network Architecture (Cisco DNA) 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+	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)	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
C9300L-48T-4G	48 port Data	4x 1G fixed uplinks	350W AC

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
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 network module. When you purchase the switch, you can choose from the network modules described in Table 2.
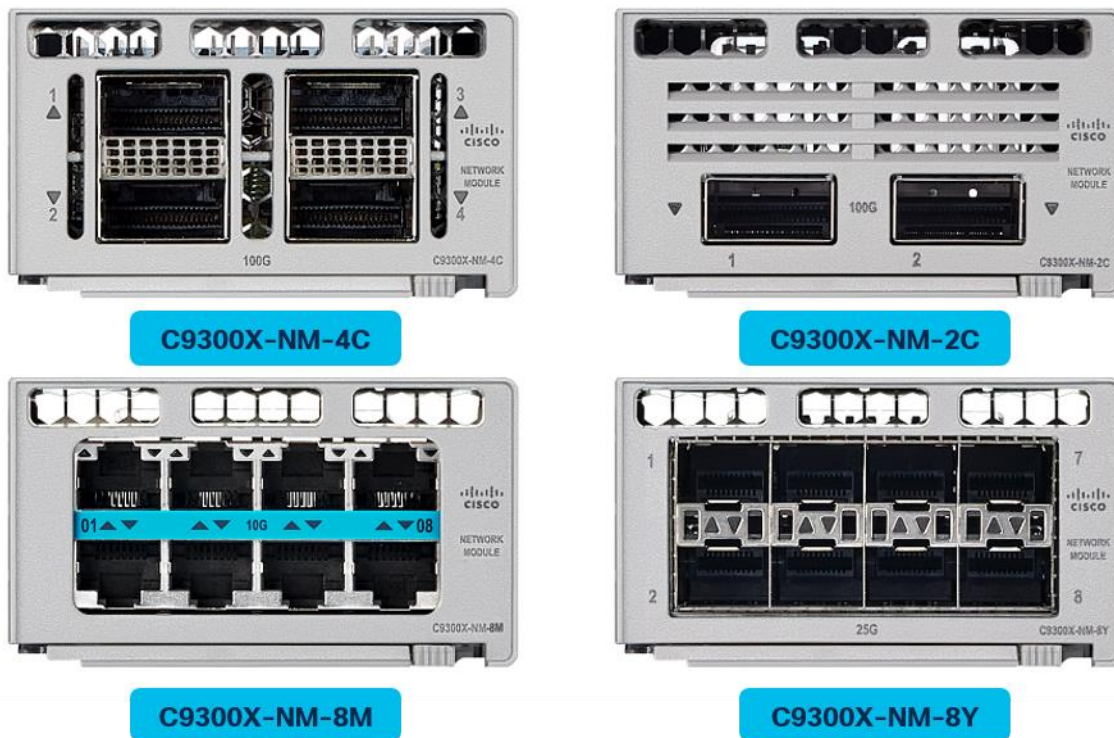
Figure 2.
Cisco Catalyst 9300X Network Modules

Figure 3.
Cisco Catalyst 9300 Series Network Modules

Table 3.   Network module numbers and descriptions

Network module	Description
C9300X-NM-8M	Catalyst 9300X 8x 10G/1G Multigigabit Network Module
C9300X-NM-8Y	Catalyst 9300X 8x 25G/10G/1G Network Module
C9300X-NM-2C	Catalyst 9300X 2x 100G/40G Network Module
C9300X-NM-4C[*]	Catalyst 9300X 4x 100G/40G Network Module
C9300-NM-4G	Catalyst 9300 Series 4x 1G Network Module

Network module	Description
C9300-NM-4M	Catalyst 9300 Series 4x Multigigabit Network Module
C9300-NM-8X	Catalyst 9300 Series 8x 10G/1G Network Module
C9300-NM-2Q	Catalyst 9300 Series 2x 40G Network Module
C9300-NM-2Y	Catalyst 9300 Series 2x 25G/10G/1G Network Module

*C9300X-NM-4C is compatible only with C9300X-48HX, C9300X-48TX and C9300X-24Y models.

Please note: Catalyst 3850 and Catalyst 9300 network modules are supported on the Catalyst 9300 models. Catalyst 9300X network modules are only supported on the Catalyst 9300X models.

For additional details, please read our FAQs:
https://www.cisco.com/c/dam/en/us/products/collateral/switches/catalyst-9300-series-switches/nb-09-cat-9k-faq-cte-en.pdf.

Power supplies

Cisco Catalyst 9300 Series switches support dual redundant power supplies. The switches ship with one power supply by default, and the second power supply can be purchased when the switch is ordered or at a later time. If only one power supply is installed, it should always be in power supply bay #1. The switches also ship with three field-replaceable fans. Power Supplies are common across the Catalyst 9300 Series.

Figure 4.
Cisco Catalyst 9300 Series Dual Redundant power supplies

Table 4 lists the different power supplies available in these switches and available PoE power.

Table 4.   Power supply models

Models	Primary Power Supply	Default or Upgrade	Available PoE	With 350W Secondary PS	With 715W secondary PS	With 1100W Secondary PS	With 1900W Secondary PS
C9300X-48HX	PWR-C1-1900WAC-P	Upgrade	1390W	1740W	2105W	2490W	3290W
	PWR-C1-1100WAC-P	Default	590W	940W	1305W	1690W	2490W
C9300X-48TX	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE

Models	Primary Power Supply	Default or Upgrade	Available PoE	With 350W Secondary PS	With 715W secondary PS	With 1100W Secondary PS	With 1900W Secondary PS
C9300X-48HXN	PWR-C1-1900WAC-P	Upgrade	1490W	1840W	2205W	2590W	3390W
	PWR-C1-1100WAC-P	Default	690W	1040W	1405W	1790W	2590W
C9300X-24HX	PWR-C1-1900WAC-P	Upgrade	1535W	1885W	2160W*	2160W*	2160W*
	PWR-C1-1100WAC-P	Default	735W	1085W	1450W	1835W	2160W*
C9300X-24Y	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9300X-12Y	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9300-48H	PWR-C1-1900WAC-P	Upgrade	1622W	1972W	2337W	2722W	2880W
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1922W	2722W
C9300-24H	PWR-C1-1900WAC-P	Upgrade	1630W	1980W	2160W*	2160W*	2160W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1545W	1930W	2160W
C9300-48UN	PWR-C1-1900WAC-P	Upgrade	1445W	1795W	2160W	2545W	2880W*
	PWR-C1-1100WAC-P	Default	645W	995W	1360W	1745W	2545W
C9300-48UXM	PWR-C1-1900WAC-P	Upgrade	1290W	1640W	2005W	2880W*	2880W*
	PWR-C1-1100WAC-P	Default	490W	840W	1205W	1590W	2390W
C9300-24UX	PWR-C1-1900WAC-P	Upgrade	1360W	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	560W	910W	1275W	1440W*	1440W*
C9300-48U	PWR-C1-1900WAC-P	Upgrade	1622W	1800W**	1800W**	1800W**	1800W**
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1800W**	1800W**
C9300-24U	PWR-C1-1900WAC-P	Upgrade	1440W*	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1152W	1440W*	1440W*
C9300-48P	PWR-C1-1100WAC-P	Upgrade	822W	1172W	1440W*	1440W*	1440W*
	PWR-C1-715WAC-P	Default	437W	787W	1152W	1440W*	1440W*
C9300-24P	PWR-C1-1100WAC-P	Upgrade	720W*	720W*	720W*	720W*	720W*
	PWR-C1-715WAC-P	Default	445W	720W*	720W*	720W*	720W*
C9300-48T	PWR-C1-350WAC-P***	Default	No POE	No POE	No POE	No POE	No POE
C9300-24T	PWR-C1-350WAC-P***	Default	No POE	No POE	No POE	No POE	No POE

Models	Primary Power Supply	Default or Upgrade	Available PoE	With 350W Secondary PS	With 715W secondary PS	With 1100W Secondary PS	With 1900W Secondary PS
C9200-48S	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9200-24S	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9300-48UB	PWR-C1-1900WAC-P	Upgrade	1622W	1800W**	1800W**	1800W**	1800W**
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1800W**	1800W**
C9300-24UB	PWR-C1-1900WAC-P	Upgrade	1440W*	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1440W*	1440W*	1440W*
C9300-24UXB	PWR-C1-1900WAC-P	Upgrade	1360W	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	560W	910W	1275W	1440W*	1440W*

Model	Primary power supply	Default or Upgrade	Available PoE power	With 350W Secondary PS	With 715W Secondary PS	With 1100W Secondary PS
C9300L-24T-4G	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-24T-4X	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-48T-4G	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-48T-4X	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-24P-4G	PWR-C1-715WAC-P	Default	505W	720W*	720W*	720W*
C9300L-24P-4X	PWR-C1-715WAC-P	Default	505W	720W*	720W*	720W*
C9300L-48P-4G	PWR-C1-715WAC-P	Default	505W	855W	1220W	1440W*
C9300L-48P-4X	PWR-C1-715WAC-P	Default	505W	855W	1220W	1440W*
C9300L-48PF-4G	PWR-C1-1100WAC-P	Default	890W	1240W	1440W	1440W*
C9300L-48PF-4X	PWR-C1-1100WAC-P	Default	890W	1240W	1440W	1440W*
C9300L-24UXG-4X	PWR-C1-1100WAC-P	Default	880W	1230W	1440W	1440W*

Model	Primary power supply	Default or Upgrade	Available PoE power	With 350W Secondary PS	With 715W Secondary PS	With 1100W Secondary PS
C9300L-24UXG-2Q	PWR-C1-1100WAC-P	Default	722W	1072W	1440W	1440W[*]
C9300L-48UXG-4X	PWR-C1-1100WAC-P	Default	675W	1025W	1390W	1775W
C9300L-48UXG-2Q	PWR-C1-1100WAC-P	Default	675W	1025W	1390W	1775W

[*]Limited by port number and port rating (e.g. 24 PoE+ 30W ports = 720W)

[**]Limited by design

[***]Upgrade options for 715W and 1100W PSU are available

Model	Primary power supply	Default or Upgrade	Available PoE power	With 600W AC Secondary PS	With 715W DC Secondary PS	With 1000W AC Secondary PS
C9300LM-48UX-4Y	PWR-C6-1KWAC	Default	790W	1390W	1505W	1790W
C9300LM-48U-4Y	PWR-C6-1KWAC	Default	790W	1390W	1505W	1790W[*]
C9300LM-24U-4Y	PWR-C6-1KWAC	Upgrade	820W	1420W	1440W[*]	1440W[*]
	PWR-C6-600WAC	Default	420W	1020W	1135W	1420W
C9300LM-48T-4Y	PWR-C6-600WAC	Default	No PoE	No PoE	No PoE	No PoE

[*] Limited by port number and port rating (e.g. 24 60W UPOE ports = 1440W)

Stacking

Cisco Catalyst 9300 Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 448 access ports.

Figure 5.
Cisco Catalyst 9300 Series modular uplink models stack (C9300/C9300X SKUs) and fixed uplink models stack (C9300L SKUs)

Table 5 lists the supported stacking options.

Table 5. Supported stacking options

Model	Stacking support	Stacking bandwidth support	Optional Stacking hardware	Number of members	Supported stack members
C9300X SKUs	StackWise-1T	1 Tbps	StackWise cable	8	Stacks with other Catalyst 9300X models at StackWise-1T speeds with same license level Stacks with C9300 SKUs at StackWise-480 speeds with same license level
C9300 SKUs	StackWise-480	480 Gbps	StackWise Cable	8	Other C9300 SKUs with same license level C9300 higher scale SKUs only stack with other like higher scale models
C9300L SKUs	StackWise-320	320 Gbps	C9300L-STACK-KIT Or C9300L-STACK-KIT2	8	Stacks with other Catalyst 9300L and 9300LM models with same license level
C9300LM SKUs	StackWise-320	320 Gbps	C9300L-STACK-KIT2	8	Stacks with other Catalyst 9300L and 9300LM models with same license level

Mixed stacking between Catalyst 9300X and Catalyst 9300 models are supported at StackWise-480 speeds.

Mixed stacking between Catalyst 9300 and Catalyst 9300X and Catalyst 9300 higher scale models (C9300-24UB, C9300-24UXB, C9300-48UB) is **not supported**. You cannot stack fixed uplink models (C9300L SKUs) with modular uplink models (C9300 SKUs) or other Catalyst switches, e.g. Cisco Catalyst 3850 and 3650 Series. Any combination of Catalyst 9300 models can form a stack. Separately, any combination of Catalyst 9300L models can form a stack.

Catalyst 9300 higher scale SKUs (C9300-24UB, C9300-24UXB, C9300-48UB) need to be stacked with other higher scale models.

StackWise cables that are available to configure stacking with Catalyst 9300 Series modular uplink models (C9300X and C9300 SKUs) come in lengths of 0.5m, 1m and 3m.

The optional StackWise-320 kit for Catalyst 9300 Series fixed uplink models (C9300L and 9300LM SKUs) consists of two stack adapters and a stacking cable. The default stacking cable is 0.5 m, but options of 1m and 3m are also available. Table 6 lists the stacking accessories.

Table 6.   Stacking accessories

Model	Description
STACK-T1-50CM	Data stack 50 cm (cable option with C9300 and C9300X SKUs)
STACK-T1-1M	Data stack 1m (cable option with C9300 and C9300X SKUs)
STACK-T1-3M	Data stack 3m (cable option with C9300 and C9300X SKUs)
C9300L-STACK-KIT	Stack kit for C9300L SKUs only: Two data stack adapters and one data stack cable
STACK-T3-50CM	Data stack 50cm cable (default cable with C9300L Stack Kit)
STACK-T3-1M	Data stack 1m cable (cable option with C9300L Stack Kit)
STACK T3-3M	Data stack 3m cable (cable option with C9300L Stack Kit)
C9300L-STACK-KIT2	Stack kit for C9300LM and C9300L SKUs: Two data stack adapters and one data stack cable
STACK-T3A-50CM	Data stack 50cm cable (default cable with C9300L Stack Kit2)
STACK-T3A-1M	Data stack 1m cable (cable option with C9300L Stack Kit2)
STACK T3A-3M	Data stack 3m cable (cable option with C9300L Stack Kit2)

Figure 6.
Cisco Catalyst 9300 Series fixed uplink models with optional stack kit

Fan

Cisco Catalyst 9300 Series switches also come with three field-replaceable fans and support (N+1) redundancy. Table 7 lists the fan module part number.

Table 7.   Fan modules

Model	Description
FAN-T2=	Fan module

Performance and scalability

Performance and scalability metrics for the Cisco Catalyst 9300 Series are provided in Table 8.

Performance specifications

Table 8.   Performance specifications

Description	Catalyst 9300X modular uplink models	Catalyst 9300 modular uplink models	Catalyst 9300 higher scale, models	Catalyst 9300L/LM fixed uplink models
Total number of MAC addresses	32,000	32,000	64,000	32,000
Total number of IPv4 routes (ARP plus learned routes)	39,000 (24,000 direct routes and 15,000 indirect routes)	32,000 (24,000 direct routes and 8000 indirect routes)	112,000 (48,000 direct routes and 64,000 indirect routes)	32,000 (24,000 direct routes and 8000 indirect routes)
IPv6 routing entries	19,500	16,000	56,000	16,000
Multicast routing scale	8,000	8,000	16,000	8,000
QoS scale entries	4,000	5,120	18,000	5,120
ACL scale entries	8,000	5,120	18,000	5,120
Packet buffer per SKU	16 MB buffer for 48-port 5G Multigigabit, 24-port 10G Multigigabit and 12-port Fiber 32 MB buffer for 48-port 10G Multigigabit and 24-port Fiber	16 MB buffer for 24-or 48-port Gigabit Ethernet models 32 MB buffer for 24 and 48-port Multigigabit	32 MB buffer for 24- and 48-port Gigabit Ethernet models 64 MB buffer for 24-port Multigigabit model (24UXB)	16 MB buffer for 24 and 48 port Gigabit Ethernet models
FNF entries	64,000 flows on 48-port 5G Multigigabit and 24-port 10G Multigigabit and 12-port Fiber128,000 flows on 48-port 10G Multigigabit and 24-port Fiber	64,000 flows on 24- and 48-port Gigabit Ethernet models 128,000 flows on 24-port Multigigabit	128,000 flows on 24- and 48-port Gigabit Ethernet models 256,000 flows on 24-port Multigigabit	64,000 flows on 24- and 48-port Gigabit Ethernet models
DRAM	16 GB	8 GB	8 GB	8 GB
Flash	16 GB	16 GB	16 GB	16 GB
VLAN IDs	4094	4094	4094	4094
Total Switched Virtual Interfaces (SVIs)	1000	1000	1000	1000
Jumbo frames	9198 bytes	9198 bytes	9198 bytes	9198 bytes
Total routed ports per Catalyst 9300 Series stack	448	448	448	416

Bandwidth specifications

Table 9.   Bandwidth specifications

SKU	Switching capacity	Switching capacity with stacking	Forwarding rate	Forwarding rate with stacking
C9300X-48TX	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300X-48HX	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300X-48HXN	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300X-24HX	880 Gbps	1,880 Gbps	327.38 Mpps	1398.80 Mpps
C9300X-12Y	1,000 Gbps	2,000 Gbps	744.04 Mpps	1488 Mpps
C9300X-24Y	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300-24T	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48T	256 Gbps	736 Gbps	190.47 Mpps	547.62 Mpps
C9300-24P	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48P	256 Gbps	736 Gbps	190.47 Mpps	547.62 Mpps
C9300-24U	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48U	256 Gbps	736 Gbps	190.48 Mpps	547.62 Mpps
C9300-24UX	640 Gbps	1120 Gbps	476.19 Mpps	833.33 Mpps
C9300-48UXM	580 Gbps	1060 Gbps	431.54 Mpps	788.69 Mpps
C9300-48UN	640 Gbps	1120 Gbps	476.19 Mpps	833.33 Mpps
C9300-24UB	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48UB	256 Gbps	736 Gbps	190.48 Mpps	547.62 Mpps
C9300-24UXB	640 Gbps	1120 Gbps	476.19 Mpps	833.33 Mpps
C9300-24H	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48H	256 Gbps	736 Gbps	190.48 Mpps	547.62 Mpps
C9300-24S	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48S	256 Gbps	736 Gbps	190.47 Mpps	547.62 Mpps
C9300X-12Y	1,000 Gbps	2,000 Gbps	744.04 Mpps	1488 Mpps
C9300X-24Y	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300LM-48UX-4Y	440 Gbps	760 Gbps	327.36 Mpps	565.44 Mpps

SKU	Switching capacity	Switching capacity with stacking	Forwarding rate	Forwarding rate with stacking
C9300LM-48U-4Y	296 Gbps	616 Gbps	220.22 Mpps	458.30 Mpps
C9300LM-24U-4Y	248 Gbps	568 Gbps	184.51 Mpps	422.59 Mpps
C9300LM-48T-4Y	296 Gbps	616 Gbps	220.22 Mpps	458.30 Mpps
C9300L-24T-4G	56 Gbps	376 Gbps	41.66 Mpps	279.76 Mpps
C9300L-24T-4X	128 Gbps	448 Gbps	95.23 Mpps	333.33 Mpps
C9300L-48T-4G	104 Gbps	424 Gbps	77.38 Mpps	315.48 Mpps
C9300L-48T-4X	176 Gbps	496 Gbps	130.95 Mpps	369.05 Mpps
C9300L-24P-4G	56 Gbps	376 Gbps	41.66 Mpps	279.76 Mpps
C9300L-24P-4X	128 Gbps	448 Gbps	95.23 Mpps	333.33 Mpps
C9300L-48P-4G	104 Gbps	424 Gbps	77.38 Mpps	315.48 Mpps
C9300L-48P-4X	176 Gbps	496 Gbps	130.95 Mpps	369.05 Mpps
C9300L-48PF-4G	104 Gbps	424 Gbps	77.38 Mpps	315.48 Mpps
C9300L-48PF-4X	176 Gbps	496 Gbps	130.95 Mpps	369.05 Mpps
C9300L-24UXG-4X	272 Gbps	592 Gbps	202.38 Mpps	440.47 Mpps
C9300L-24UXG-2Q	352 Gbps	672 Gbps	261.90 Mpps	500.00 Mpps
C9300L-48UXG-4X	392 Gbps	712 Gbps	291.66 Mpps	529.76 Mpps
C9300L-48UXG-2Q	472 Gbps	792 Gbps	351.19 Mpps	589.28 Mpps

All models are at wire-speed nonblocking performance for both IPv4 and IPv6. The forwarding rates in the table above are measured with 64 byte IPv4 packet sizes.

SD-Access architecture

What if you could give time back to IT? Provide network access in minutes for any user or device to any application – without compromise? SD-Access is the industry's first policy-based automation from network edge to cloud. Your foundation for your digital network, Cisco SD-Access. Built on the principles of the Cisco DNA, SD-Access provides end-to-end segmentation to keep user, device and application traffic separate without a redesign of the network. It automates user access policy so organizations can make sure the right policies are set for any user or device with any application across the network. This is accomplished with a single network fabric across LAN and WLAN which creates a consistent user experience anywhere without compromising on security.

There are many challenges today in managing the network to drive business outcomes. These limitations are due to manual configuration and fragmented tool offerings. SD-Access provides:

- A transformational management solution that reduces operational expenses and enhances business agility.

- Consistent management of wired and wireless network provisioning and policy.

- Automated network segmentation and group-based policy.

- Contextual insights for fast issue resolution and capacity planning.

- Open and programmable interfaces for integration with third-party solutions.

For an overview of key use-cases SD-Access addresses, refer to [SD-Access Solution Overview](#).

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. The various automation mechanisms are outlined below.

- **Automated device provisioning** 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 such as Plug and Play and off-the-shelf tools such as Zero-Touch Provisioning (ZTP) and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.

- **API-driven configuration** is available with modern network switches such as the Cisco Catalyst 9300 Series. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF and GNMI using YANG data models for external tools, both off-the-shelf and custom built, to automatically provision network resources.

- **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.

- **Seamless software upgrades and patching** supports OS resilience. Cisco IOS XE supports patching, 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.

Security

- **Encrypted Traffic Analytics (ETA)** is a unique capability for identifying malware in encrypted traffic coming 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 network secure at different layers.

- **AES-256 MACsec encryption** is the IEEE 802.1AE standard for authenticating and encrypting packets between switches. The Cisco Catalyst 9300 Series switches support 256-bit and 128-bit Advanced Encryption Standard (AES), providing the most secure link encryption.

- **IPsec encryption** delivers secure end-to-end encrypted traffic between sites and connectivity to the Cloud. C9300X models support line rate IPsec up to 100 Gbps delivering uncompromised secure connectivity.

- **Trustworthy solutions built with Cisco Trust Anchor Technologies** provide a highly secure foundation for Cisco products. With the Catalyst 9300 Series, 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:** 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:** Cisco Secure Boot technology 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:** A 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. This provides assurance that the product is genuine.

Cloud Security

- **Umbrella DNS Integration:**

  Small to midsize networks reliant on managed service providers can now host Cisco Umbrella agent directly on their Catalyst 9300 Series switches. This allows the business to easily customize their DNS filtering policies granularly at user or group level to prevent BYOD or IoT guest or corporate users from accessing malicious or inappropriate websites, without having to rely on the MSP to push the policies out. It also lets them optimize use of bandwidth by allowing direct cloud access for trusted apps. Requires Cisco Catalyst and Cisco DNA Advantage License and Umbrella License per device.

- **Cisco ASAc App hosting Integration:**

  The integration of ASAc on Cisco Catalyst 9000 switches simplifies the network design by providing the flexibility to plug in small-form factor firewalls in the network closer to the source. It also avoids complex tunnels to centralized firewalls. This design lowers the total cost of ownership by reducing the number of physical firewall appliances in the network.

  The ASAc Firewall App hosting solution hosts a virtual firewall or ASAc on Cisco Catalyst 9300 switches. All the physical firewalls next to a switch can be virtualized and deployed on the switch itself. As in a traditional network, the SecOps manage the ASAc firewalls deployed on the Catalyst switches, and the NetOps teams instantiate the application and perform lifecycle management using Cisco Catalyst Center. The SecOps team controls policy management using the Cisco Defense Orchestrator. Both the SecOps and NetOps teams can seamlessly manage the network without any disruptions.

  The container-version of the Cisco ASAc provides full firewall functionality to secure IT, OT, and IoT converged networks. ASAc uses Layer 3 firewall policies and does a stateful inspection of the traffic.

  The ASAc firewall runs on a 240G external Solid-State Drive (SSD) that is mounted on a Cisco Catalyst 9300 Series switch. Cisco Catalyst Center deploys the ASAc on these Catalyst switches, and ASAc is then onboarded to the Cisco Defense Orchestrator.

Service Assurance

- **Cisco ThousandEyes Integration:**

  Deliver superior network and service experience for your users, employees and partners with groundbreaking observability from network to app. Cisco ThousandEyes network tests are now integrated into Cisco Catalyst 9300 Series switches with Cisco Catalyst and Cisco DNA Advantage licenses, giving you visibility beyond your campus perimeter so you solve issues faster. The Cisco ThousandEyes Network and Application Synthetics license is included by default upon the selection of a Cisco Catalyst and Cisco DNA Advantage option with a 3 year, 5 year or a 7 year subscription. Please see this guide for more information about the free Cisco ThousandEyes entitlements that come with your Cisco Catalyst 9300 or 9400 Series Cisco DNA Advantage subscription.

Resiliency and high availability

- **StackWise-1T:** Cisco Catalyst 9300 Series modular uplink models (C9300X SKUs) support the industry's highest back-panel stacking bandwidth solution (1Tbps) with StackWise-1T. Up to 8 Switches can be configured in a StackWise-1T with the special connector at the back of the switch using dedicated stack cables.

- **StackWise-480:** Cisco Catalyst 9300 Series modular uplink models (C9300 SKUs) support high-speed back-panel stacking bandwidth solution (480 Gbps) with StackWise-480. Up to 8 Switches can be configured in a StackWise-480 with the special connector at the back of the switch using dedicated stack cables.

- **StackWise-320:** Cisco Catalyst 9300 Series fixed uplink models (C9300L and C9300LM SKUs) support stacking bandwidth solution (320 Gbps) with StackWise-320. Up to 8 Switches can be optionally configured in a StackWise-320 with the special Stack Kit at the back of the switch using dedicated stack cables.

- **Cisco StackPower:** Cisco StackPower is an innovative power interconnect system that allows the power supplies in a stack to be shared as a common resource among all the switches. This allows you to simply add one extra power supply in any switch of the stack and either provide power redundancy for any of the stack members or simply add more power to the shared pool. Up to 4 switches can be configured in a StackPower stack with the special connector at the back of the switch. However, with the use of XPS-2200 appliance, up to 8 switches can be configured in the StackPower stack. **Cisco StackPower is only supported on the models with modular uplink stack - C9300 and C9300X SKUs. C9300X models support StackPower+ delivering more power over StackPower cables compared to C9300 models.**

Figure 7.
Cisco Catalyst 9300 Series StackPower

- **High availability:** The Catalyst 9300 Series supports high-availability features, including the following:

  ○ Cross-stack EtherChannel provides the ability to configure Cisco EtherChannel technology across different members of the stack for high resiliency.

  ○ **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).

  ○ **Extended Fast Software Upgrade** provides the ability to upgrade the platform software or to reload the system in under 30 seconds of traffic impact; both stand-alone and stack configurations.

  ○ 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 (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.

  ○ Switch-port auto-recovery ("err-disable" recovery) automatically attempts to reactivate a link that is disabled because of a network error.

  ○ The Catalyst 9300 Series platform delivers the best NSF/SSO resiliency architecture in a stackable solution with sub-50-ms failover.

  ○ Always-On wireless network with stateful switchover when wireless functionality is enabled on stack of Catalyst 9300 Series switches.

Deep buffer Technology

Cisco Catalyst 9300 higher scale models have a deeper buffer to address the requirements of rich multi-media lossless content delivery and large routing tables in a fixed access solution with a wide range of uplink choices for deployment flexibility.

Flexible NetFlow

- **Flexible NetFlow (FNF):** Cisco IOS Software FNF is the next generation in flow visibility technology. It enables optimization of the network infrastructure, reduces operation costs, and improves capacity planning and security incident detection with increased flexibility and scalability. The Catalyst 9300 Series is capable of up to 64,000 flow entries on 48-port, 24-port and 12-port models and up to 128,000 flow entries on Multigigabit models.

Application visibility and control

- **NBAR2:** Next-Generation Network-Based Application Recognition (NBAR2) enables advanced application classification techniques, accuracy with up to 1400 predefined and well-known application signatures and up to 150 encrypted applications on the Cisco Catalyst 9000 switches. The most popular applications included are Skype, Office 365, Microsoft Lync, Cisco WebEx, and Facebook, among many others that are predefined and easy to configure. NBAR2 provides the network administrator with an important tool to identify, control, and monitor end-user application usage while helping ensure a quality user experience and securing the network from malicious attacks. NBAR2 leverages FNF to report application performance and activities within the network to any supported NetFlow collector, such as Cisco Prime, Cisco Stealthwatch, or any compliant third-party tool.

QoS

- **Superior QoS:** The Cisco Catalyst 9300 Series 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. Superior QoS 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.

Service discovery

- **Multicast DNS (mDNS) gateway:** This service discovery gateway capability facilitates sharing of services advertised using the Apple mDNS (Bonjour) protocol, such as printers, Apple TVs, and file services across the network. Additionally, the administrator can create policies defining which services can be seen and accessed by the users in the network. This capability facilitates a Bring-Your-Own-Device (BYOD) rollout.

Smart operation

- **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. It comes with the default image, so there is no need to enable anything or install any license on the device. You can use WebUI to build configurations, and to monitor and troubleshoot the device without having CLI expertise.

- **Efficient switch operation***: Cisco Catalyst 9300 Series switches provide optimum power saving 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 support reduced power modes so that ports not in use can move into a lower power utilization state. Other efficient switch operation features are as follows:

  - Per-port power consumption command allows customers to specify a maximum power setting on an individual port.

  - Per-port PoE power sensing measures actual power being drawn, enabling more intelligent control of powered devices. The PoE MIB provides proactive visibility into power usage and allows you to set different power-level thresholds.

- **RFID tags:** Catalyst 9300 Series switches have an embedded RFID tag that facilitates easy asset and inventory management using commercial RFID readers.

- **Blue beacon:** Catalyst 9300 Series switches support a blue beacon LED for easy identification of the switch being accessed.

Open standards based fabric

The Cisco Catalyst 9300 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.

High-Performance IP routing

The Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing in Cisco Catalyst 9300 Series switches, based on:

- IP unicast routing protocols (including static, Routing Information Protocol Version 1 [RIPv1], RIPv2, RIPng, 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 (including 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 for constructing scalable LANs. IPv6 routing (using OSPFv3 and BGPv6) 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.

Audio Video Bridging (AVB)

Starting with Cisco IOS XE Software Release 16.8, the Cisco Catalyst 9300 Series supports the IEEE 802.1 AVB standard. This standard provided the means for highly reliable delivery of low-latency, time-synchronized audio and video streaming services through Layer 2 Ethernet networks. The standard also makes it easier to integrate new services and for AV equipment from different vendors to interoperate.

Benefits

- Improves quality of experience by lowering jitter and latency for time-synchronized delivery of high-quality AV.

- Provides scalability of applications across networked deployments, including expansive and complex AV infrastructure.

- Lowers Total Cost of Ownership (TCO) with reduced cabling (lowers CapEx) and no license fees (lowers OpEx).

For more details about AVB and specific models supported, check https://www.cisco.com/go/avb.

Multigigabit Ethernet technology

Cisco Multigigabit Ethernet technology allows you to achieve bandwidth speeds from 1 Gbps to 10 Gbps over traditional Category 5e/6 cabling or above. This technology addresses the need for exponential increases in bandwidth with the enormous growth of 802.11ac Wave 2, to be eclipsed by the growth of Wi-Fi 6 and new wireless applications without having to replace current cabling infrastructure.

Multiprotocol label switching (MPLS)

The Cisco Catalyst 9300 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 Universal Power over Ethernet (Cisco UPOE and Cisco UPOE+): PoE removes the need for wall sockets to power each PoE-enabled device and eliminates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments. Cisco UPOE extends the IEEE PoE+ standard to double the power per port to 60 watts. This facilitates delivery of network power to a broad range of devices requiring higher power, including virtual desktop terminals, IP turrets, compact switches, building management gateways, LED lights, wireless access points, and IP phones. Designed for smart building and IoT applications, Cisco Catalyst 9300 UPOE+ switches (delivering PoE power up to 90W) provide data and power over a single cable to power devices like wireless access points, digital signage, security cameras, thermal cameras with PTZ features, LED lighting fixtures and large display screens. UPOE+ offers reduced cabling and installation costs without need for permits, device daisy-chaining application that require higher power draw, real-time device information, centralized management and remote control, faster and flexible device installation where devices can be positioned in a practical location instead of proximity to the electrical outlets.

Catalyst 9300 Series modular uplink (C9300 and C9300X SKUs) models support Cisco, Cisco UPOE, PoE+ and PoE, thereby addressing the largest range of network power needs.

Catalyst 9300 Series fixed uplink (C9300LM SKUs) models support Cisco UPOE or PoE+ and PoE.

Catalyst 9300 Series fixed uplink (C9300L SKUs) models support Cisco UPOE or PoE+ and PoE.

Tables 10 and 11 show the power supply combinations required for different PoE needs.

Table 10. Power supply requirements for Catalyst 9300 Series modular uplink PoE/PoE+ models (C9300-xxP SKUs)

	24-port PoE switch	**48-port PoE switch**
PoE on all ports (15.4W per port)	1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 2 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC
PoE+ on all ports (30W per port)	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 2 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 1 PWR-C1-1100WAC/PWR-C1-1100WAC-P and 1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC

Table 11. Power supply requirements for Catalyst 9300 Series UPOE models
(C9300-xxU/UB/UXM/UN, C9300L-xxUXG-xx SKUs)

	24-port Cisco UPOE switch	**48-port Cisco UPOE switch**	**48 and 24-port Multigigabit Cisco UPOE switch***
Cisco UPOE (60W per port) & IEEE 802.3bt type3 on all ports (24-port switch) or up to 30 ports (48-port switch)	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P and 1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P

Table 12. Power supply requirements for Catalyst 9300 Series UPOE+ models (C9300-xxH SKUs)

	24-port Cisco UPOE+ switch	48-port Cisco UPOE+ switch
Cisco UPOE+ (90W per port) & IEEE 802.3bt type4 on 21 ports (24-port and 48-port switch)	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P and 1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 2 PWR-C1-1900WAC-P

Table 13. Power supply requirements for Catalyst 9300 Series fixed uplink PoE/PoE+ models (C9300L-xxP SKUs)

	24-port PoE switch	48-port PoE switch
PoE on all ports (15.4W per port)	1 PWR-C1-715WAC-P/PWR-C1-715WDC	1 PWR-C1-1100WAC-P or 2 PWR-C1-715WAC-P
PoE+ on all ports (30W per port)	1 PWR-C1-1100WAC-P or 2 PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC-P or 1 PWR-C1-1100WAC-P and 1 PWR-C1-715WAC-P/PWR-C1-715WDC

- **Perpetual PoE:** With Perpetual PoE, the PoE power is maintained during a switch reload. This is important for IoT endpoints such as PoE-powered lights, so that there is no disruption during switch reboot.

- **Fast PoE:** When power is restored to a switch, PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.

*C9300-48UN, C9300-24UX, C9300-48UXM are available with PWR-C1-1100WAC-P Platinum-rated power supply. Platinum-rated power supplies are more efficient, lowering operating power costs.

*PWR-C1-1100WAC-UP and PWR-C1-715WAC-UP Platinum-rated power supply upgrade options are available to upgrade the default AC power supply to 1100W or 715W.

Software requirements

[Cisco Catalyst and Cisco DNA Software for Access Switching](#) **is available for the Cisco Catalyst 9300 Series.** Meraki Software for cloud management is also available for certain models.

Cisco Catalyst and Cisco DNA Software for Access Switching offers comprehensive solutions for the enterprise campus and branch offices. Cisco Catalyst and Cisco DNA for Access Switching introduces a simpler and more economical way to deploy access, aggregation, and core switches across enterprise campus and branch locations.

The Cisco Catalyst and Cisco DNA Subscription for Switching offer delivers an unbound network on an open and extensible architecture to help you navigate the digital journey. This subscription offer simplifies the buying process and includes lower initiation costs and flexible terms. It includes: Cisco Catalyst and Cisco DNA Advantage Software with full Cisco DNA capabilities and SD-Access, bundled with ISE Base, ISE Plus, and StealthWatch.

For ordering information for Cisco Catalyst and Cisco DNA Software for the Cisco Catalyst 9300 Series, go to https://www.cisco.com/c/en/us/products/software/one-access/switching-part-numbers.html.

Cisco Catalyst 9300 Series switches run on Cisco IOS XE 16.5.1a release or later with the following exceptions. Catalyst 9300 Series 1G fiber models (C9300-xxS SKUs) are supported on Cisco IOS XE 16.11.1a release or later. Catalyst 9300 Series fixed uplink models (C9300L SKUs) are supported on Cisco IOS XE 16.11.1b release or later. These software releases includes all the features listed earlier in the Platform Benefits section.

The Meraki Software option combines the simplicity of the Meraki dashboard with power of Catalyst 9000 switching hardware. To satisfy high-bandwidth applications and the deployment of high-speed 802.11ax/Wi-Fi 6/6E access points, the Meraki Software option provides multigigabit ports, 480G stacking, and modular 10/40G uplinks. Catalyst 9300 models with the Meraki Software option deliver resiliency with fast stack convergence and StackPower. They provide Adaptive Policy using an over-the-wire tag which segments traffic into security groups to deliver scalable security. The Catalyst 9300 models integrated under the Meraki dashboard provide a simple, powerful solution to the most demanding wired access applications.

Catalyst 9300 model switches come with Adaptive Policy to provide simple and scalable security policies to segment traffic using Security Groups in Meraki Dashboard. Security Groups are created in the dashboard using natural language such as "IoT device" and "Guest." The security policy intent (e.g. Permit or Deny) is then simply provisioned between Security Groups which results in the segmentation of each group's traffic. By making security policy management intuitive and scalable relative to legacy IP-address based Access Control Lists, Adaptive Policy empowers operators to confidently secure their network traffic independent of future network changes.

Licensing Packaging

The Cisco Catalyst 9000 family of switches introduces a new and simplified licensing package in the form of base and add-on licenses.

- **The perpetual licensing** package includes the Network Essentials and Network Advantage licensing options that are tied to the hardware. Between them, the base licensing packages cover switching fundamentals, management automation, troubleshooting, and advanced switching features. These Network licenses are perpetual.

  The subscription licensing package includes the Cisco Catalyst and Cisco DNA Essentials, Cisco Catalyst and Cisco DNA Advantage and Meraki Advanced and Enterprise options. In addition to on-box capabilities, the features available with this package provide Cisco innovations on the switch, as well as on Cisco Catalyst Center. and Meraki Dashboard. For Catalyst 9300 models ordered with a Network Essentials and Network Advantage license, a Cisco Catalyst or Cisco DNA subscription license is mandatory at the time of configuration. For Catalyst 9300 models ordered with a Meraki SKU, the term license is ordered separately but is required to be recognized in Meraki Dashboard. With Cisco Catalyst and Cisco DNA software licenses, customers receive embedded SWSS – which covers 24x7x365 Cisco Technical Assistance Center (TAC) support, software release updates, advanced support analytics, and designated service management. This is valid only for the Cisco Catalyst and Cisco DNA Software subscription stacks (Cisco Catalyst and Cisco DNA Essentials or Advantage).

  Note: For full hardware support, including the perpetual network stack, customers will require Smart Net Total Care for 24x7x365 Cisco Technical Assistance Center (TAC) support, proactive security and product alerts, and product lifecycle management. An additional option for hardware support is Solution Support for your multivendor Cisco solution environment.

License consumption is easily determined by the package itself. While Network Essentials and Network Advantage perpetual licenses are always permanent and without an expiration date, subscription licenses have to be purchased for a 3-, 5-, or 7-year term (and hence are also known as term-based licenses). Table 13 shows the combinations of Network perpetual and Cisco Catalyst and Cisco DNA Software subscription licenses that must be purchased.

Table 14. Cisco Catalyst, Cisco DNA and Network Licensing combinations

	Cisco Catalyst and Cisco DNA Essentials	Cisco Catalyst and Cisco DNA Advantage
Network Essentials	Yes**	Yes**
Network Advantage	No*	Yes

*At the time of Cisco Catalyst and Cisco DNA license renewal, the Cisco Catalyst and Cisco DNA Essentials license can be purchased to be used with Network Advantage

**Network Advantage is inclusive of Network Essentials features.

Managing licenses with Smart Accounts

Creating Smart Accounts by using the Cisco Smart Software Manager (SSM) enables you to manage your software licenses from a centralized website. You can set up Cisco SSM to receive daily email alerts and to be notified of expiring subscription licenses that you want to renew.

You must order a Cisco Catalyst or Cisco DNA subscription term license in order to purchase a switch with Network Essentials or Network Advantage perpetual licenses. When the license term expires, you can either renew the add-on license to continue using it or deactivate the add-on license and then reload the switch to continue operating with the base license capabilities.

Both the base and add-on licenses are also available for a 90-day evaluation period. An evaluation license is activated temporarily, without purchase. An expired evaluation license cannot be reactivated after reload.

Note: It is not required to deploy Cisco Catalyst Center just to use Cisco Catalyst, Cisco DNA or Network packages. Meraki Dashboard is required to deploy a Catalyst 9300 switch with a Meraki software license.

Introduction to Smart Licensing

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

- **Easy Activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).

- **Unified Management:** My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.

- **License Flexibility:** Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

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

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

Software licenses

	Cisco Catalyst Software subscriptionnew	Cisco DNA Software subscription	Cisco Meraki Software subscriptionnew	Network Stack
Packages[1]	3Y, 5Y or 7 Year Terms	3Y, 5Y or 7 Year Terms	1Y, 3Y, 5Y, 7Y or 10 Year Terms	Perpetual
Tiers	Advantage, Essentials	Advantage, Essentials	Advanced, Enterprise	Advantage, Essentials
Portability[2]	✓	✓		✓
Management options	Catalyst Center, Meraki Dashboard Monitoring	Catalyst Center, Meraki Dashboard Monitoring	Meraki Dashboard Management	Meraki Dashboard CLI, Web UI
Included support	Base product-level support for Hardware, Software and OS	Software support (SWSS)	Product-level support for Hardware, Software and OS	✗
Included[3] add-ons: Common ISE policy, Thousand Eyes network and application assurance, Cisco Spaces	✓	✓	✗	✗

[1]For all new orders, subscription licenses are mandatory and must be of the same tier as network licenses

[2]Portability within the same Catalyst 9K series of hardware

[3]Only available with Advantage tier

There are three choices for software subscription: Cisco DNA, Cisco Catalyst or Cisco Meraki. 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 (Catalyst Software only).

- ISE licenses included in the Advantage tier to facilitate zero-trust network security* (Catalyst Software only).

- Access to end-to-end network visibility with Cisco Spaces, service assurance through Cisco ThousandEyes Network and Application Synthetics and app hosted ASAc Firewall (with the Advantage license).

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

Table 15 shows the features included in the Cisco Catalyst and Cisco DNA Essentials and Advantage packages.

Table 15. Network Essentials and Advantage package features

Features	Network Essentials	Network Advantage
Switch fundamentals Layer 2, Routed Access (RIP, EIGRP Stub, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes)), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder, SSO	✓	✓
Advanced switch capabilities and scale BGP, EIGRP, HSRP, IS-IS, BSR, MSDP, PIM-BIDIR,* IP SLA, OSPF	✗	✓
Network segmentation VRF, VXLAN, LISP, TrustSec, SGT, MPLS, mVPN	✗	✓
Automation NETCONF, RESTCONF, gRPC, YANG, PnP Agent, ZTP/Open PnP, GuestShell (On-Box Python)	✓	✓
Telemetry and visibility Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	✓	✓
High availability and resiliency Nonstop Forwarding (NSF), Graceful Insertion and Removal (GIR), Extended Fast Software Upgrade (xFSU), Software Patching (CLI Based)	✗	✓
IOT integration AVB, PTP, CoAP	✗	✓
Security MACsec-256	✗	✓

Table 16. Cisco Catalyst and Cisco DNA Essentials and Advantage package features

Features	Cisco Catalyst and Cisco DNA Essentials	Cisco Catalyst and Cisco DNA Advantage
Switch features		
Optimized network deployments Cisco Catalyst Service for Bonjour	✗	✓
Advanced telemetry and visibility Full Flexible NetFlow, EEM	✓	✓
Optimized telemetry and visibility ERSPAN, AVC (NBAR2), app hosting (in containers/VMs), Wireshark	✗	✓

Features	Cisco Catalyst and Cisco DNA Essentials	Cisco Catalyst and Cisco DNA Advantage
Advanced security Encrypted Traffic Analytics (ETA), IPsec	✗	✓
Cisco DNA Center features		
Day-0 network bring-up automation Cisco Network Plug-and-Play application, network settings, device credentials, LAN automation, host onboarding	✓	✓
Element management Discovery, inventory, topology, software image, licensing, and configuration management	✓	✓
Element management Patch management	✗	✓
Basic Assurance Health dashboards – Network, Client, Application; switch and wired client health monitoring	✓	✓
Cisco ThousandEyes Network and Application Synthetics Network performance metrics, dashboarding, visibility into app and service experience, end-to-end visibility across cloud and DC applications	✗	✓
App hosted Cisco ASAc Firewall Stateful inspection of network traffic with Cisco Adaptive Security Virtual Appliance (ASAc) without any additional hardware	✗	✓
SD-Access Policy-based automation and assurance for wired and wireless	✗	✓
Network assurance and analytics Global insights, trends, compliance, custom reports; switch 360, wired client 360; fabric and non-fabric insights; app health, app 360, app performance (loss, latency, jitter)	✗	✓

Specifications

Dimensions, Weight, Acoustic, Mean time between failures

The table below shows the dimensions, weights, acoustic and mean time between failures of all models of Cisco Catalyst 9300 Series switches.

Table 17.   Model Dimensions, Weight, and Mean Time between failures metrics

General Specifications			
Dimensions (H x W x D) inches			
Model	**Chassis only**	**W/ Default Power Supply**	**W/ 1100W Power Supply**
C9300X-48HX	1.73 x 17.5 x 19	1.73 x 17.5 x 22.03	1.73 x 17.5 x 22.03
C9300X-48TX	1.73 x 17.5 x 19	1.73 x 17.5 x 20.56	1.73 x 17.5 x 22.03
C9300X-48HXN	1.73 x 17.5 x 17.57	1.73 x 17.5 x 20.63	1.73 x 17.5 x 20.63
C9300X-24HX	1.73 x 17.5 x 17.57	1.73 x 17.5 x 20.63	1.73 x 17.5 x 20.63
C9300X-12Y	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.6	1.73 x 17.5 x 19.2
C9300X-24Y	1.73 x 17.5 x 17.6	1.73 x 17.5 x 19.2	1.73 x 17.5 x 20.7
C9300-24T	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-24P	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-24U	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-24UX	1.73 x 17.5 x 17.1	1.73 x 17.5 x 20.2	1.73 x 17.5 x 20.2
C9300-24UB	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-24UXB	1.73 x 17.5 x 17.1	1.73 x 17.5 x 20.2	1.73 x 17.5 x 20.2
C9300-24H	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-48T	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-48P	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-48U	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-48UXM	1.73 x 17.5 x 19.1	1.73 x 17.5 x 22.2	1.73 x 17.5 x 22.2
C9300-48UN	1.73 x 17.5 x 19.1	1.73 x 17.5 x 22.2	1.73 x 17.5 x 22.2
C9300-48UB	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-48H	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-24S	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2	1.73 X 17.5 X 20.7

General Specifications			
C9300-48S	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2	1.73 X 17.5 X 20.7
C9300LM-48UX-4Y	1.73'' x 17.50''x 13.03''	1.73 x 17.50 13.17	1.73 x 17.50 x 13.03 (w/ DC power supply)
C9300LM-48U-4Y	1.73'' x 17.50''x 13.03''	1.73 x 17.50 13.17	1.73 x 17.50 x 13.03 (w/ DC power supply)
C9300LM-24U-4Y	1.73'' x 17.50''x 13.03''	1.73 x 17.50 13.17	1.73 x 17.50 x 13.03 (w/ DC power supply)
C9300LM-48T-4Y	1.73'' x 17.50''x 10.84''	1.73 x 17.50 12.39	1.73 x 17.50 x 11.86 (w/ DC power supply)
C9300L-24T-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-24T-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48T-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48T-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-24P-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-24P-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48P-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48P-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
Dimensions (H x W x D) Cms			
C9300X-48HX	4.4 x 44.5 x 48.3	4.4 x 44.5 x 56.0	4.4 x 44.5 x 56.0
C9300X-48TX	4.4 x 44.5 x 48.3	4.4 x 44.5 x 52.2	4.4 x 44.5 x 56.0
C9300X-48HXN	4.4 x 44.5 x 44.6	4.4 x 44.5 x 52.4	4.4 x 44.5 x 52.4
C9300X-24HX	4.4 x 44.5 x 44.6	4.4 x 44.5 x 52.4	4.4 x 44.5 x 52.4
C9300X-12Y	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.7	4.4 x 44.5 x 48.8
C9300X-24Y	4.4 x 44.5 x 44.7	4.4 x 44.5 x48.8	4.4 x 44.5 x 52.6
C9300-24T	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-24P	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-24U	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-24UX	4.4 x 44.5 x 43.4	4.4 x 44.5 x 51.3	4.4 x 44.5 x 51.3
C9300-24H	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-48T	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8

General Specifications			
C9300-48P	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-48U	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-48UXM	4.4 x 44.5 x 48.5	4.4 x 44.5 x 56.4	4.4 x 44.5 x 56.4
C9300-48UN	4.4 x 44.5 x 48.5	4.4 x 44.5 x 56.4	4.4 x 44.5 x 56.4
C9300-48H	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-24S	4.3 x 44.4 x 44.9	4.3 x 44.4 x 48.8	4.3 x 44.4 x 52.6
C9300-48S	4.3 x 44.4 x 44.9	4.3 x 44.4 x 48.8	4.3 x 44.4 x 52.6
C9300LM-48UX-4Y	4.3 x 44.4 x 33.1	4.3 x 44.4 x 33.4	4.3 x 44.4 x 32.5 (w/ DC power supply)
C9300LM-48U-4Y	4.3 x 44.4 x 33.1	4.3 x 44.4 x 33.4	4.3 x 44.4 x 32.5 (w/ DC power supply)
C9300LM-24U-4Y	4.3 x 44.4 x 33.1	4.3 x 44.4 x 33.4	4.3 x 44.4 x 32.5 (w/ DC power supply)
C9300LM-48T-4Y	4.3 x 44.4 x 27.5	4.3 x 44.4 x 27.5	4.3 x 44.4 x 29.7 (w/ DC power supply)
C9300L-24T-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-24T-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48T-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48T-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-24P-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-24P-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48P-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48P-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48PF-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-48PF-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-24UXG-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-24UXG-2Q	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-48UXG-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-48UXG-2Q	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8

General Specifications

Weight (with default power supply)

Model	Pounds	Kilograms
C9300X-48HX	14.6	6.62
C9300X-48TX	14.6	6.62
C9300X-48HXN	14.2	6.44
C9300X-24HX	13.8	6.25
C9300X-12Y	15.0	6.80
C9300X-24Y	16.2	7.35
C9300-24T	16.03	7.27
C9300-24P	16.33	7.4
C9300-24U	16.63	7.54
C9300-24UX	18.18	8.25
C9300-24UB	16.63	7.54
C9300-24UXB	18.18	8.25
C9300-24H	16.63	7.54
C9300-48T	16.43	7.45
C9300-48P	16.73	7.59
C9300-48U	17.03	7.72
C9300-48UXM	20.50	9.34
C9300-48UN	20.05	9.09
C9300-48UB	17.03	7.72
C9300-48H	17.03	7.72
C9300-24S	16.84	7.64
C9300-48S	17.32	7.86
C9300LM-48UX-4Y	12	5.45
C9300LM-48U-4Y	12	5.45
C9300LM-24U-4Y	11.5	5.21

General Specifications		
C9300LM-48T-4Y	11	4.99
C9300L-24T-4G	14.93	6.78
C9300L-24T-4X	14.93	6.78
C9300L-48T-4G	15.41	7.0
C9300L-48T-4X	15.41	7.0
C9300L-24P-4G	14.99	6.81
C9300L-24P-4X	14.99	6.81
C9300L-48P-4G	15.46	7.03
C9300L-48P-4X	15.46	7.03
C9300L-48PF-4G	15.48	7.03
C9300L-48PF-4X	15.48	7.03
C9300L-24UXG-4X	15.73	7.13
C9300L-24UXG-2Q	16.01	7.26
C9300L-48UXG-4X	16.86	7.65
C9300L-48UXG-2Q	16.86	7.65
Mean Time Between Failures – MTBF (hours)		
C9300X-48HX	185,420	
C9300X-48TX	206,480	
C9300X-48HXN	188,200	
C9300X-24HX	220,250	
C9300X-12Y	265,650	
C9300X-24Y	249,350	
C9300-24T	314,790	
C9300-24P	299,000	
C9300-24U	238,410	
C9300-24UX	214,760	
C9300-24UB	354,300	

General Specifications	
C9300-24UXB	288.520
C9300-24H	238,410
C9300-48T	305,870
C9300-48P	277,770
C9300-48U	227,410
C9300-48UXM	202,160
C9300-48UN	198,647
C9300-48UB	337,170
C9300-48H	227,410
C9300-24S	284,130
C9300-48S	281,920
C9300L-24T-4G	395,800
C9300L-24T-4X	387,700
C9300L-48T-4G	387,860
C9300L-48T-4X	380,080
C9300L-24P-4G	346,940
C9300L-24P-4X	340,710
C9300L-48P-4G	314,140
C9300L-48P-4X	309,020
C9300L-48PF-4G	303,660
C9300L-48PF-4X	298,880
C9300L-24UXG-4X	332,640
C9300L-24UXG-2Q	291,670
C9300L-48UXG-4X	273,820
C9300L-48UXG-2Q	275,010
C9300LM-24U-4Y	357,350
C9300LM-48U-4Y	304,970

General Specifications	
C9300LM-48T-4Y	408,710
C9300LM-48UXG-4Y	292,410
PWR-C1-350WAC-P	1,335,012 (ranges from 1.3M to 3.1M depending on temperature, input voltage and vendor)
PWR-C1-715WAC-P	1,054,881 (ranges from 1.05M to 2.6M depending on temperature, input voltage and vendor)
PWR-C1-1100WAC-P	1,217,904 (ranges from 1.2M to 2.8M depending on temperature, input voltage and vendor) (investigating an anomaly in MTBF data received from 1 Power Supply vendor – Artesyn)
PWR-C1-1900WAC-P	
PWR-C1-715WDC	1,812,103 (-48V input at 40C and vendor Delta)
PWR-C6-600WAC	1,600,060
PWR-C6-1000WAC	1,600,060
PWR-C6-715WDC	1,712,103
C9300-NM-2Q	10,778,230
C9300-NM-2Y	7,568,820
C9300-NM-4G	8,953,570
C9300-NM-4M	10,549,060
C9300-NM-8X	7,151,930
C9300X-NM-8Y	
C9300X-NM-2C	
FAN-T2	4,521,330
Environmental ranges	
Acoustic noise **Measured per ISO 7779 and declared per ISO 9296** **Bystander positions operating to an ambient temperature of 25° C**	With AC power supply (with 24 PoE+ ports loaded for C9300 SKUs) • LpA: 45dB typical, 48 dB max • LwA: 5.6B typical, 5.9B max With AC power supply (with half the number of PoE+ ports loaded for C9300L SKUs) • LpA: 44dB typical, 47 dB max • LwA: 5.5B typical, 5.8B max Typical: Noise emission for a typical configuration Maximum: Statistical maximum to account for variation in production

Connectors

Table 18 shows the supported connectors for the Cisco Catalyst 9300 Series.

Table 18. Connectors

Connectors and cabling	• 1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling • Multigigabit-T ports: RJ-45 connectors, 4-pair Cat 5E, Cat 6, Cat 6A UTP cabling • 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling • SFP transceivers: LC fiber connectors (single-mode or multimode fiber) • SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) • QSFP+ transceivers: MPO and LC fiber connectors (single-mode or multimode fiber) • QSFP+ connector • SFP+ connector • Cisco StackWise stacking ports: copper-based Cisco StackWise cabling • Cisco StackPower: Cisco proprietary power stacking cables • Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling • Management console port: RJ-45-to-DB9 cable for PC connections
Power connectors	• Customers can provide power to a switch by using the internal power at the back of the switch • Internal power supply connector: The internal power supply is an auto-ranging unit. It supports input voltages between 100 (115 for 1100WAC) and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet

For the latest Cisco transceiver module compatibility information, refer to
https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html.

Management and standards support

Table 19 shows management and standards support for the Cisco Catalyst 9300 Series.

Table 19. Management and standards support[*]

Description	Specification	
Management	BRIDGE-MIB	CISCO-PORT-STORM-CONTROL-MIB
	CISCO-BRIDGE-EXT-MIB	CISCO-POWER-ETHERNET-EXT-MIB
	CISCO-BULK-FILE-MIB	CISCO-PRIVATE-VLAN-MIB
	CISCO-CABLE-DIAG-MIB	CISCO-PROCESS-MIB
	CISCO-CALLHOME-MIB	CISCO-PRODUCTS-MIB
	CISCO-CEF-MIB	CISCO-RF-MIB
	CISCO-CIRCUIT-INTERFACE-MIB	CISCO-RTP-METRICS-MIB
	CISCO-CONFIG-COPY-MIB	CISCO-RTTMON-ICMP-MIB
	CISCO-CONFIG-MAN-MIB	CISCO-STACKWISE-MIB
	CISCO-DEVICE-LOCATION-MIB	CISCO-STP-EXTENSIONS-MIB
	CISCO-DHCP-SNOOPING-MIB	CISCO-SYSLOG-MIB
	CISCO-EIGRP-MIB	CISCO-TCP-MIB
	CISCO-EMBEDDED-EVENT-MGR-MIB	CISCO-UDLDP-MIB

Description	Specification	
	CISCO-ENTITY-FRU-CONTROL-MIB	CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB
	CISCO-ENTITY-SENSOR-MIB	ENTITY-MIB
	CISCO-ENTITY-VENDORTYPE-OID-MIB	HC-ALARM-MIB
	CISCO-ERR-DISABLE-MIB	HC-RMON-MIB
	CISCO-FLASH-MIB	IEEE8023-LAG-MIB
	CISCO-FLOW-MONITOR-MIB	IF-MIB
	CISCO-FTP-CLIENT-MIB	IP-FORWARD-MIB
	CISCO-HSRP-EXT-MIB	IP-MIB
	CISCO-HSRP-MIB	LLDP-EXT-MED-MIB
	CISCO-IETF-BFD-MIB	LLDP-MIB
	CISCO-IETF-PPVPN-MPLS-VPN-MIB	MAU-MIB
	CISCO-IETF-PW-MPLS-MIB	MPLS-L3VPN-STD-MIB
	CISCO-IF-EXTENSION-MIB	MPLS-LSR-STD-MIB
	CISCO-IGMP-FILTER-MIB	MPLS-VPN-MIB
	CISCO-IMAGE-LICENSE-MGMT-MIB	OLD-CISCO-CHASSIS-MIB
	CISCO-IMAGE-MIB	OLD-CISCO-CPU-MIB
	CISCO-IP-CBR-METRICS-MIB	OLD-CISCO-INTERFACES-MIB
	CISCO-IP-STAT-MIB	OLD-CISCO-IP-MIB
	CISCO-IP-TAP-MIB	OLD-CISCO-MEMORY-MIB
	CISCO-IP-URPF-MIB	OLD-CISCO-SYS-MIB
	CISCO-IPSEC-FLOW-MONITOR-MIB	OLD-CISCO-TCP-MIB
	CISCO-IPSEC-MIB	OLD-CISCO-TS-MIB
	CISCO-IPSEC-PROVISIONING-MIB	POWER-ETHERNET-MIB
	CISCO-IPSLA-AUTOMEASURE-MIB	RFC1213-MIB
	CISCO-IPSLA-ECHO-MIB	RMON-MIB
	CISCO-IPSLA-JITTER-MIB	RMON2-MIB
	CISCO-L2-CONTROL-MIB	SMON-MIB
	CISCO-L2L3-INTERFACE-CONFIG-MIB	SNMPv2-MIB
	CISCO-LAG-MIB	SONET-MIB
	CISCO-LICENSE-MGMT-MIB	TCP-MIB
	CISCO-LOCAL-AUTH-USER-MIB	UDP-MIB
	CISCO-MAC-NOTIFICATION-MIB	
	CISCO-MDI-METRICS-MIB	
	CISCO-MEDIA-METRICS-MIB	
	CISCO-MEMORY-POOL-MIB	
	CISCO-MPLS-LSR-EXT-STD-MIB	
	CISCO-NBAR-PROTOCOL-DISCOVERY-MIB	
	CISCO-NHRP-EXT-MIB	

Description	Specification	
	CISCO-NTP-MIB	
	CISCO-PAGP-MIB	
	CISCO-PORT-SECURITY-MIB	
Standards	IEEE 802.1s	RMON I and II standards
	IEEE 802.1w	SNMPv1, v2c, and v3
	IEEE 802.1x	
	IEEE 802.1x-Rev	
	IEEE 802.3ad	
	IEEE 802.3ae	
	IEEE 802.3af	
	IEEE 802.3at	
	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	
	IEEE 802.3bz Multirate 2.5G/5G specification	
	IEEE 802.3an 10G BASE-T specification	

Power supply specifications

Table 20 lists the power specifications for the Cisco Catalyst 9300 Series based on the kind of power supply used.

Table 20.   Power specifications

Description	Specification			
	PWR-C1-1100WAC**	PWR-C1-715WAC**	PWR-C1-350WAC**	PWR-C1-715WDC
Power supply rated maximum	1100W	715W	350W	715W
Total output BTU (note: 1000 BTU/hr = 293W)	3793 BTU/hr, 1100W	2465 BTU/hr, 715W	1207 BTU/hr, 350W	2440 BTU/hr
Input-voltage range and frequency	115V to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	-36V to-72 VDC

Description	Specification			
Input current	12-6A	10-5A	4-2A	24-12A
Output ratings	-56V at 19.64A	-56V at 12.8A	-56V at 6.25A	-56V at 12.8A
Output holdup time	10 ms minimum at 100VAC	16.7 ms minimum at 100VAC	16.7 ms minimum at 100VAC	2 ms minimum at -48Vdc
Power-supply input receptacles	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C14 (IEC60320-C14)	Right angle barrier style terminal block
Power cord rating	15A	15A	10A	25A@100VDC
Physical specifications	(H x W x D): 1.58 x 3.25 x 13.7 in Weight: 3.1 lb (1.4 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.6 lb (1.2 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.3 lb (1.2 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.2 lb (1kg)

**These Power Supply options will not be available as options for purchase with C9300 in CCW starting Q2 FY21

Table 21. Power specifications – platinum rated power supplies

Description	Specification				
	*PWR-C1-1900WAC-P		*PWR-C1-1100WAC-P	*PWR-C1-715WAC-P	PWR-C1-350WAC-P
Power supply rated maximum output power	1500W With 115V	1900W With 230 V	1100W	715W	350W
Total output BTU (note: 1000 BTU/hr = 293W)	5118 BTU/hr, with 115V	6483 BTU/hr, With 230V	3754 BTU/hr, 1100W	2440 BTU/hr, 715W	1194 BTU/hr, 350W
Input-voltage range and frequency	115V to 127 VAC, 50 to 60 Hz	200V to 240 VAC 55 to 60 Hz	115V to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz
Input current	16A maximum	12A maximum	12-6A	10-5A	4-2A
Output ratings	-56V at 26.78A	-56V at 33.92A	-56V at 19.64A	-56V at 12.8A	-56V at 6.25A
Output holdup time	20 ms minimum at 100VAC	20 ms minimum at 100VAC	20 ms minimum at 100VAC	20 ms minimum at 100VAC	20 ms minimum at 100VAC
Power-supply input receptacles	IEC 320-C22	IEC 320-C22	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C14 (IEC60320-C14)

Description	Specification				
Power cord rating	20A	16A	15A	15A	10A
Physical specifications	(H x W x D): 1.58 x 3.25 s 13.7 in Weight: xxx lb (x.x kg)		(H x W x D): 1.58 x 3.25 s 13.7 in Weight: 3.1 lb (1.4 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.6 lb (1.2 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.3 lb (1.2 kg)
Operating temperature	Normal operating temperature[*] and altitudes: –5°C to +45°C, up to 5000 feet (1500m) –5°C to +40°C, up to 10,000 feet (3000m) –5°C to +35°C, up to 15,000 feet (5000m) [*] Minimum ambient temperature for cold start is 32°F (0°C) Short-term[*] exceptional conditions: –5°C to +55°C, at sea level –5°C to +50°C, up to 5000 feet (1500m) –5°C to +45°C, up to 10,000 feet (3000m) –5°C to +35°C, up to 15,000 feet (5000m) [*]Not more than following in one year period: 96 consecutive hours, or 360 hours total, or 15 occurrences	Normal operating temperature[*] and altitudes: • –5°C to +45°C, up to 5000 feet (1500m) • –5°C to +40°C, up to 10,000 feet (3000m) [*]Minimum ambient temperature for cold start is 32°F (0°C) Short-term[*] exceptional conditions: • –5°C to +50°C, up to 5000 feet (1500m) • –5°C to +45°C, up to 10,000 feet (3000m) • –5°C to +45°C, at sea level with single fan failure [*]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)	-40° to 158°F (–40° to 70°C)			

Description	Specification	
Relative humidity operating and nonoperating noncondensing	5% to 90% noncondensing	5% to 90% noncondensing
Altitude	10,000 ft. (3000 meters), up to 45° C	10,000 ft. (3000 meters), up to 45° C
EMI and EMC compliance	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A (AC input models only) VCCI Class A EN 55024, EN300386, EN 61000-3-2, EN 61000-3-3 EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A (AC input models only) VCCI Class A EN 55024, EN300386, EN 61000-3-2, EN 61000-3-3 EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6
Safety compliance		
LED indicators	"AC OK": Input power to the power supply is OK "PS OK": Output power from the power supply is OK	"AC OK": Input power to the power supply is OK "PS OK": Output power from the power supply is OK

[*]PWR-C1-1900WAC-UP is available as an PSU upgrade option to 1900W primary PSU

[*]PWR-C1-1100WAC-UP is available as an PSU upgrade option to 1100W primary PSU

[*]PWR-C1-715WAC-UP is available as an PSU upgrade option to 715W primary PSU

Power consumption of standalone 9300 Series Switches

Table 22 shows the power consumption of standalone Cisco Catalyst 9300 Series Switches based on Alliance for Telecommunications Industry Solutions (ATIS) testing using Internet Mix (IMIX) distribution stream traffic, with input voltage of 115VAC at 60 Hz and no PoE loading. The values given are the maximum possible power consumption numbers under the respective test scenarios.

Table 22.   Power Consumption of Standalone 9300 Series Switches (tested on IOS XE 16.5.1)

SKU	FEP	Uplink	Input	Half port traffic 0.01%/EEE	10%	30%	50%	100%	Full port traffic 0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	PoE test (no traffic) 25%	50%	90%	100%
C9300-24P	715W	Not Installed	115Vac	82.6	91.0	93.4	93.7	93.9	82.0	94.8	95.9	96.1	96.6	93.7	82.9	202.3	325.8	527.5	579.0
			230Vac	81.6	89.8	92.2	92.4	92.6	81.7	93.7	94.6	94.7	95.2	92.6	82.3	199.0	318.2	510.6	559.9
		C9300-NM-4G	115Vac	87.5	93.0	96.5	97.7	98.5	89.8	99.5	102.4	103.0	103.4	98.9	85.4	211.4	334.5	537.8	585.7
			230Vac	86.1	91.3	94.4	95.8	96.6	88.9	98.5	101.5	101.9	102.4	97.9	84.6	207.9	328.0	520.3	568.2
		C9300-NM-4M	115Vac	90.4	100.4	101.6	101.9	102.3	94.1	106.8	107.8	108.2	109.1	105.7	90.8	214.9	337.9	539.4	590.8
			230Vac	89.4	99.1	100.3	100.5	100.7	92.8	106.1	106.5	106.9	107.8	104.9	89.6	211.0	329.7	522.2	571.0
		C9300-NM-2Q	115Vac	88.1	98.6	99.5	99.6	99.9	91.1	104.4	105.2	105.6	106.5	103.3	88.4	212.2	335.2	536.2	586.5
			230Vac	87.1	97.2	98.1	98.3	98.8	90.0	103.3	103.9	104.3	105.2	102.1	87.5	208.0	326.8	519.3	567.6
		C9300-NM-8X	115Vac	90.0	99.4	101.0	101.2	101.6	94.2	107.1	107.9	108.3	109.2	106.0	88.7	215.3	339.6	541.4	591.3
			230Vac	89.0	97.9	99.8	100.0	100.5	93.1	105.8	106.7	107.1	108.1	104.8	87.8	211.7	331.9	524.2	572.3
C9300-24S	715W	C9300-NM-4G	115Vac	99.40	100.30	101.50	102.10	102.50	116.20	117.70	119.10	119.50	119.80	117.76	91.70				
			230Vac	98.00	98.90	99.70	100.60	101.60	114.40	115.80	116.70	117.20	117.70	115.85	90.90				
		C9300-NM-2Q	115Vac	101.90	104.80	105.30	105.40	106.10	117.60	120.50	121.10	121.70	123.10	120.47	85.40				
			230Vac	100.20	103.00	103.50	103.70	104.30	115.70	118.70	119.30	119.50	120.70	118.60	84.40				
		C9300-NM-8X	115Vac	104.60	107.40	108.30	108.50	109.10	121.30	124.10	124.80	125.40	126.40	124.05	85.90				
			230Vac	103.40	105.70	106.40	106.70	107.00	119.40	122.50	122.90	123.20	124.30	122.37	84.60				
		C9300-NM-4M	115Vac	99.15	101.80	102.50	102.70	103.30	116.60	119.70	120.30	121.00	122.20	119.64	82.10				
			230Vac	97.64	100.30	100.80	101.00	101.60	115.40	118.30	118.90	119.30	120.20	118.20	81.20				
		C9300-NM-2Y	115Vac	101.24	104.48	104.75	104.81	105.42	116.40	119.01	120.31	120.58	121.31	118.98	85.02				
			230Vac	99.17	102.36	102.63	102.85	103.57	114.10	117.42	118.00	118.46	119.62	117.31	83.03				

| | | | | Measured P(W) | | | | | | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
| | | | | Half port traffic | | | | | Full port traffic | | | | | | | | | | |
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-24T	350W	Not Installed	115Vac	77.7	86.1	89.1	89.5	89.7	77.5	91.0	91.7	91.9	92.5	89.8	78.1				
			230Vac	77.4	85.4	88.5	88.7	88.8	77.0	89.8	90.7	90.9	91.3	88.7	77.7				
		C9300-NM-4G	115Vac	82.5	88.4	92.1	93.3	94.1	85.9	96.0	98.9	99.7	100.0	95.4	81.2				
			230Vac	81.8	87.6	90.4	92.0	92.9	84.9	94.2	96.9	97.9	98.3	93.7	80.5				
		C9300-NM-4M	115Vac	86.4	96.3	98.0	98.2	98.7	90.2	103.7	104.5	104.9	105.9	102.6	87.0				
			230Vac	85.4	95.1	96.6	96.8	97.3	89.1	102.1	102.9	103.3	104.2	101.0	86.0				
		C9300-NM-2Q	115Vac	84.0	94.7	95.7	95.9	96.1	87.1	101.1	101.7	102.1	103.0	99.9	83.9				
			230Vac	83.2	93.6	94.4	94.6	95.1	86.2	99.2	100.1	100.5	101.4	98.1	83.2				
		C9300-NM-8X	115Vac	86.3	95.6	97.5	97.8	98.2	90.7	103.9	104.7	105.1	106.1	102.8	85.0				
			230Vac	85.4	94.5	96.2	96.4	97.0	89.7	102.2	103.2	103.6	104.5	101.2	84.3				
C9300-24U	1100W	Not Installed	115Vac	87.4	95.9	99.0	99.2	99.4	87.0	100.8	101.5	101.8	102.3	99.6	87.8	313.7	547.9	940.3	1041.4
			230Vac	85.9	94.7	97.3	97.6	97.8	85.5	98.0	99.6	99.8	100.3	96.9	86.4	306.2	529.1	895.6	988.7
		C9300-NM-4G	115Vac	92.2	97.8	101.2	102.7	103.6	95.4	105.2	108.3	109.0	109.4	104.6	94.4	321.0	554.0	943.5	1045.5
			230Vac	90.6	96.1	99.4	100.9	101.7	93.7	103.4	106.4	107.2	107.6	102.8	93.2	313.5	536.6	901.5	994.6
		C9300-NM-4M	115Vac	96.0	106.2	107.6	107.8	108.4	99.7	113.4	114.2	114.6	115.6	112.3	96.1	325.7	559.0	950.6	1053.0
			230Vac	94.3	104.5	105.8	106.1	106.6	97.9	112.1	112.8	113.2	114.0	110.8	94.4	318.3	541.9	906.2	997.8
		C9300-NM-2Q	115Vac	93.4	103.9	104.8	105.0	105.5	96.5	110.4	111.3	111.5	112.4	109.2	93.4	323.2	555.8	946.7	1048.6
			230Vac	91.8	102.0	103.0	103.3	103.7	94.8	108.7	109.4	109.8	110.6	107.5	91.8	314.9	538.4	902.2	994.5
		C9300-NM-8X	115Vac	95.8	105.4	107.3	107.6	108.1	100.2	114.0	114.8	115.2	116.2	112.8	94.4	324.4	557.7	946.6	1049.0
			230Vac	94.0	103.0	105.1	105.4	106.0	98.4	112.0	113.1	113.5	114.5	110.9	93.2	317.8	541.8	907.7	999.1

| SKU | FEP | Uplink | Input | Measured P(W) | | | | | | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
| | | | | Half port traffic | | | | | Full port traffic | | | | | | | | | | |
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-24UB	1100W	Not Installed	115Vac	87.4	95.9	99.0	99.2	99.4	87.0	100.8	101.5	101.8	102.3	99.6	87.8	313.7	547.9	940.3	1041.4
			230Vac	85.9	94.7	97.3	97.6	97.8	85.5	98.0	99.6	99.8	100.3	96.9	86.4	306.2	529.1	895.6	988.7
		C9300-NM-4G	115Vac	92.2	97.8	101.2	102.7	103.6	95.4	105.2	108.3	109.0	109.4	104.6	94.4	321.0	554.0	943.5	1045.5
			230Vac	90.6	96.1	99.4	100.9	101.7	93.7	103.4	106.4	107.2	107.6	102.8	93.2	313.5	536.6	901.5	994.6
		C9300-NM-4M	115Vac	96.0	106.2	107.6	107.8	108.4	99.7	113.4	114.2	114.6	115.6	112.3	96.1	325.7	559.0	950.6	1053.0
			230Vac	94.3	104.5	105.8	106.1	106.6	97.9	112.1	112.8	113.2	114.0	110.8	94.4	318.3	541.9	906.2	997.8
		C9300-NM-2Q	115Vac	93.4	103.9	104.8	105.0	105.5	96.5	110.4	111.3	111.5	112.4	109.2	93.4	323.2	555.8	946.7	1048.6
			230Vac	91.8	102.0	103.0	103.3	103.7	94.8	108.7	109.4	109.8	110.6	107.5	91.8	314.9	538.4	902.2	994.5
		C9300-NM-8X	115Vac	95.8	105.4	107.3	107.6	108.1	100.2	114.0	114.8	115.2	116.2	112.8	94.4	324.4	557.7	946.6	1049.0
			230Vac	94.0	103.0	105.1	105.4	106.0	98.4	112.0	113.1	113.5	114.5	110.9	93.2	317.8	541.8	907.7	999.1
C9300-24UX	1100W	C9300-NM-8X	115Vac	188.0	195.7	196.8	197.4	198.9	208.8	224.6	227.0	228.6	232.0	223.8	168.6	364.2	521.6	784.3	851.4
			230Vac	184.4	192.2	192.9	193.5	195.1	204.6	220.0	222.0	223.5	226.9	219.2	165.3	354.2	505.0	749.7	810.6
C9300-24UXB	1100W	C9300-NM-8X	115Vac	188.0	195.7	196.8	197.4	198.9	208.8	224.6	227.0	228.6	232.0	223.8	168.6	364.2	521.6	784.3	851.4
			230Vac	184.4	192.2	192.9	193.5	195.1	204.6	220.0	222.0	223.5	226.9	219.2	165.3	354.2	505.0	749.7	810.6
C9300-24H	1100W	Not Installed	115Vac	87.4	95.9	99.0	99.2	99.4	87.0	100.8	101.5	101.8	102.3	99.6	87.8	313.7	547.9	940.3	1041.4
			230Vac	85.9	94.7	97.3	97.6	97.8	85.5	98.0	99.6	99.8	100.3	96.9	86.4	306.2	529.1	895.6	988.7
		C9300-NM-4G	115Vac	92.2	97.8	101.2	102.7	103.6	95.4	105.2	108.3	109.0	109.4	104.6	94.4	321.0	554.0	943.5	1045.5
			230Vac	90.6	96.1	99.4	100.9	101.7	93.7	103.4	106.4	107.2	107.6	102.8	93.2	313.5	536.6	901.5	994.6
		C9300-NM-4M	115Vac	96.0	106.2	107.6	107.8	108.4	99.7	113.4	114.2	114.6	115.6	112.3	96.1	325.7	559.0	950.6	1053.0
			230Vac	94.3	104.5	105.8	106.1	106.6	97.9	112.1	112.8	113.2	114.0	110.8	94.4	318.3	541.9	906.2	997.8
		C9300-NM-2Q	115Vac	93.4	103.9	104.8	105.0	105.5	96.5	110.4	111.3	111.5	112.4	109.2	93.4	323.2	555.8	946.7	1048.6
			230Vac	91.8	102.0	103.0	103.3	103.7	94.8	108.7	109.4	109.8	110.6	107.5	91.8	314.9	538.4	902.2	994.5
		C9300-NM-8X	115Vac	95.8	105.4	107.3	107.6	108.1	100.2	114.0	114.8	115.2	116.2	112.8	94.4	324.4	557.7	946.6	1049.0
			230Vac	94.0	103.0	105.1	105.4	106.0	98.4	112.0	113.1	113.5	114.5	110.9	93.2	317.8	541.8	907.7	999.1

SKU	FEP	Uplink	Input	Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-48P	715W	Not Installed	115Vac	90.5	103.2	104.5	104.7	105.2	89.9	104.9	107.8	109.2	110.2	103.9	91.3	206.1	324.1	514.4	563.2
			230Vac	89.4	102.2	103.4	103.6	104.1	88.9	103.7	106.9	108.4	109.3	102.7	89.9	202.9	316.9	500.6	547.5
		C9300-NM-4G	115Vac	95.3	103.5	106.2	108.1	108.8	98.0	112.1	114.9	115.9	116.2	111.1	94.3	215.0	332.6	523.4	572.1
			230Vac	94.0	102.2	105.2	106.9	107.8	96.4	111.3	114.1	115.2	115.5	110.2	93.1	211.2	324.8	509.3	555.8
		C9300-NM-4M	115Vac	98.7	111.5	112.3	112.7	113.5	101.5	119.7	120.5	121.2	122.8	118.2	99.2	219.1	336.5	528.8	576.6
			230Vac	97.1	110.7	111.5	111.9	112.7	100.6	119.2	120.0	120.7	122.3	117.6	97.9	215.5	329.5	514.2	560.5
		C9300-NM-2Q	115Vac	96.9	110.1	110.7	111.0	111.9	99.3	118.2	119.0	119.7	121.5	116.7	97.6	217.4	335.4	527.4	577.8
			230Vac	95.6	109.2	109.7	110.1	111.0	98.1	117.5	118.2	119.0	120.6	115.8	96.0	213.0	326.9	511.9	558.8
		C9300-NM-8X	115Vac	100.5	113.4	114.2	114.6	115.5	106.4	124.5	125.4	126.1	128.0	123.0	99.5	215.1	334.7	520.8	568.8
			230Vac	99.4	112.8	113.5	113.9	114.9	105.3	124.0	124.9	125.6	127.4	122.5	98.4	212.3	327.4	507.4	553.1
C9300-48S	715W	C9300-NM-4G	115Vac	116.30	117.00	118.40	119.10	119.60	149.40	151.10	152.20	152.90	153.50	151.17	93.50				
			230Vac	114.90	115.60	116.70	117.60	118.10	147.10	148.80	150.10	150.30	150.70	148.82	92.10				
		C9300-NM-2Q	115Vac	117.70	121.30	121.80	122.40	124.10	150.60	154.10	155.30	156.30	158.60	154.20	88.00				
			230Vac	116.40	119.70	120.20	120.80	122.10	147.70	151.20	152.70	153.80	156.10	151.34	87.60				
		C9300-NM-8X	115Vac	120.50	123.60	124.30	125.20	126.00	152.80	156.10	157.60	158.60	160.80	156.24	87.40				
			230Vac	119.00	121.90	122.90	123.40	124.40	150.20	153.90	154.90	155.80	158.30	153.97	88.90				
		C9300-NM-4M	115Vac	118.29	121.62	122.36	122.78	124.03	153.80	157.53	158.17	159.28	161.00	157.50	87.53				
			230Vac	117.15	120.62	120.89	121.30	122.35	150.20	153.61	154.60	155.58	157.86	153.69	86.48				
		C9300-NM-2Y	115Vac	114.30	119.20	119.70	120.30	121.50	144.40	152.00	152.80	153.10	156.10	151.65	85.80				
			230Vac	112.00	118.00	118.60	118.90	120.10	142.20	149.20	150.20	151.00	153.40	148.92	83.90				

SKU	FEP	Uplink	Input	Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-48T	350W	Not Installed	115Vac	81.5	94.9	95.7	95.9	96.4	80.8	98.6	100.2	101.3	102.3	97.2	82.2				
			230Vac	80.5	93.7	94.6	94.8	95.3	80.1	97.3	99.5	99.9	100.8	96.0	81.5				
		C9300-NM-4G	115Vac	86.4	94.9	97.8	99.4	100.4	89.3	104.6	107.6	108.6	108.9	103.5	85.7				
			230Vac	85.3	93.8	96.6	98.4	99.1	88.2	103.4	106.2	106.9	107.2	102.3	84.8				
		C9300-NM-4M	115Vac	89.6	103.4	104.2	104.6	105.4	93.0	112.7	113.5	114.1	115.7	111.0	90.6				
			230Vac	89.0	102.0	102.8	103.1	103.9	91.9	111.0	111.8	112.4	114.0	109.4	89.3				
		C9300-NM-2Q	115Vac	88.3	102.4	102.9	103.3	104.2	91.0	110.5	111.3	112.1	113.9	108.9	88.6				
			230Vac	87.3	100.9	101.4	101.8	102.7	89.9	108.8	109.6	110.3	112.1	107.2	87.6				
		C9300-NM-8X	115Vac	92.1	105.2	106.1	106.5	107.4	98.6	117.6	118.4	119.1	120.9	116.0	91.0				
			230Vac	91.1	103.9	104.7	105.1	106.0	97.3	115.8	116.6	117.3	119.0	114.3	90.0				
C9300-48U	1100W	Not Installed	115Vac	96.0	110.2	110.9	111.2	111.7	95.6	112.5	114.3	115.9	116.9	111.3	97.0	315.1	544.0	925.9	1023.0
			230Vac	94.8	108.5	109.2	109.4	109.9	94.2	110.0	112.5	114.1	115.0	108.9	95.6	308.6	529.4	889.9	978.8
		C9300-NM-4G	115Vac	97.4	105.8	109.0	110.7	111.0	99.9	115.1	117.8	118.9	119.2	114.0	96.4	319.2	547.3	928.0	1026.3
			230Vac	95.4	103.9	107.4	108.7	110.0	98.8	113.4	116.2	117.0	117.4	112.4	94.9	314.3	535.6	896.0	984.3
		C9300-NM-4M	115Vac	104.4	118.5	119.0	119.5	120.1	107.4	126.8	127.6	128.3	130.0	125.2	104.9	326.2	556.0	938.6	1035.6
			230Vac	102.8	116.0	117.1	117.5	118.2	106.4	124.8	125.5	126.2	127.7	123.2	103.6	320.4	541.4	903.0	991.6
		C9300-NM-2Q	115Vac	102.9	117.2	117.6	118.0	119.0	104.8	123.8	124.6	125.3	127.0	122.2	102.5	324.1	552.4	934.4	1032.6
			230Vac	101.2	114.9	115.5	115.9	117.0	103.9	123.0	123.7	124.4	126.1	121.4	101.7	316.9	537.9	898.2	988.3
		C9300-NM-8X	115Vac	106.7	120.4	121.1	121.5	122.3	112.7	131.5	132.4	133.0	134.8	130.0	105.7	330.0	563.7	941.8	1043.4
			230Vac	105.0	118.5	119.2	119.6	120.2	110.9	129.4	130.2	131.0	132.6	127.9	104.1	324.5	549.0	908.0	998.9

SKU	FEP	Uplink	Input	Measured P(W)										Weighted average Pw	No link	PoE test (no traffic)			
				Half port traffic					Full port traffic										
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-48H	1100W	Not Installed	115Vac	96.0	110.2	110.9	111.2	111.7	95.6	112.5	114.3	115.9	116.9	111.3	97.0	315.1	544.0	925.9	1023.0
			230Vac	94.8	108.5	109.2	109.4	109.9	94.2	110.0	112.5	114.1	115.0	108.9	95.6	308.6	529.4	889.9	978.8
		C9300-NM-4G	115Vac	97.4	105.8	109.0	110.7	111.0	99.9	115.1	117.8	118.9	119.2	114.0	96.4	319.2	547.3	928.0	1026.3
			230Vac	95.4	103.9	107.4	108.7	110.0	98.8	113.4	116.2	117.0	117.4	112.4	94.9	314.3	535.6	896.0	984.3
		C9300-NM-4M	115Vac	104.4	118.5	119.0	119.5	120.1	107.4	126.8	127.6	128.3	130.0	125.2	104.9	326.2	556.0	938.6	1035.6
			230Vac	102.8	116.0	117.1	117.5	118.2	106.4	124.8	125.5	126.2	127.7	123.2	103.6	320.4	541.4	903.0	991.6
		C9300-NM-2Q	115Vac	102.9	117.2	117.6	118.0	119.0	104.8	123.8	124.6	125.3	127.0	122.2	102.5	324.1	552.4	934.4	1032.6
			230Vac	101.2	114.9	115.5	115.9	117.0	103.9	123.0	123.7	124.4	126.1	121.4	101.7	316.9	537.9	898.2	988.3
		C9300-NM-8X	115Vac	106.7	120.4	121.1	121.5	122.3	112.7	131.5	132.4	133.0	134.8	130.0	105.7	330.0	563.7	941.8	1043.4
			230Vac	105.0	118.5	119.2	119.6	120.2	110.9	129.4	130.2	131.0	132.6	127.9	104.1	324.5	549.0	908.0	998.9
C9300-48UB	1100W	C9300-NM-8X	115Vac	106.7	120.4	121.1	121.5	122.3	112.7	131.5	132.4	133.0	134.8	130.0	105.7	330.0	563.7	941.8	1043.4
			230Vac	105.0	118.5	119.2	119.6	120.2	110.9	129.4	130.2	131.0	132.6	127.9	104.1	324.5	549.0	908.0	998.9
C9300-48UN	1100W	C9300-NM-8X	115Vac	172.9	176.7	178.7	179.8	181.8	193.8	199.8	201.5	203.1	206.9	199.9	159.1	357.3	525.0	803.9	875.1
			230Vac	171.2	174.8	176.8	178.1	179.9	191.7	197.8	199.4	201.0	204.7	197.9	157.9	351.5	512.1	777.0	843.8
C9300-48UXM	1100W	C9300-NM-8X	115Vac	236.2	241.4	246.6	247.8	249.6	253.2	261.5	272.4	278.5	283.0	262.8	219.2	392.3	528.7	750.8	810.1
			230Vac	232.2	237.4	242.5	243.7	245.6	249.0	256.7	267.6	272.9	277.2	258.0	215.7	382.8	515.2	728.0	784.7
C9300L-24P-4G	715W	Integrated	115Vac	62.33	68.39	69.42	70.19	70.99	62.74	74.98	76.05	76.93	77.70	74.02	61.92	203.54	341.71	569.96	627.59
			230Vac	60.91	67.07	68.18	68.91	69.68	61.32	73.88	74.99	75.84	76.58	72.89	60.60	199.69	334.16	552.06	606.54
			115Vac	62.33	68.39	69.42	70.19	70.99	62.74	74.98	76.05	76.93	77.70	74.02	61.92	203.54	341.71	569.96	627.59
			230Vac	60.91	67.07	68.18	68.91	69.68	61.32	73.88	74.99	75.84	76.58	72.89	60.60	199.69	334.16	552.06	606.54
C9300L-24P-4X	715W	Integrated	115Vac	64.32	70.97	72.60	73.02	73.63	69.27	76.96	79.15	79.85	81.00	76.59	64.99	207.17	343.00	569.93	626.15
			230Vac	64.09	69.90	71.75	72.28	72.92	67.80	76.12	78.34	78.78	79.91	75.67	63.70	203.04	336.39	553.25	607.02
			115Vac	64.32	70.97	72.60	73.02	73.63	69.27	76.96	79.15	79.85	81.00	76.59	64.99	207.17	343.00	569.93	626.15
			230Vac	64.09	69.90	71.75	72.28	72.92	67.80	76.12	78.34	78.78	79.91	75.67	63.70	203.04	336.39	553.25	607.02

| SKU | FEP | Uplink | Input | Measured P(W) | | | | | | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
| | | | | Half port traffic | | | | | Full port traffic | | | | | | | | | | |
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300L-24T-4G	350W	Integrated	115Vac	57.75	63.72	64.67	65.37	66.09	58.39	69.87	70.92	71.74	72.37	68.97	57.30				
			230Vac	56.63	62.65	63.60	64.28	65.02	57.16	68.55	69.59	70.38	70.99	67.65	56.20				
			115Vac	57.75	63.72	64.67	65.37	66.09	58.39	69.87	70.92	71.74	72.37	68.97	57.3				
			230Vac	56.63	62.65	63.60	64.28	65.02	57.16	68.55	69.59	70.38	70.99	67.65	56.2				
C9300L-24T-4X	350W	Integrated	115Vac	58.69	65.61	67.13	67.54	68.03	59.12	71.55	73.49	74.06	75.14	70.66	58.13				
			230Vac	57.36	64.19	65.74	65.94	66.41	57.85	70.03	71.96	72.31	73.54	69.17	56.85				
			115Vac	58.69	65.61	67.13	67.54	68.03	59.12	71.55	73.49	74.06	75.14	70.66	58.13				
			230Vac	57.36	64.19	65.74	65.94	66.41	57.85	70.03	71.96	72.31	73.54	69.17	56.85				
C9300L-48P-4G	715W	Integrated	115Vac	69.21	77.07	78.03	78.82	79.86	70.06	86.76	87.97	88.97	90.01	85.41	68.42	213.65	351.15	575.52	632.46
			230Vac	67.90	76.03	76.95	77.76	78.78	68.72	85.61	86.74	87.62	88.63	84.22	67.16	209.87	342.56	556.81	611.08
			115Vac	69.21	77.07	78.03	78.82	79.86	70.06	86.76	87.97	88.94	90.01	85.41	68.42	213.65	351.15	575.52	632.46
			230Vac	67.90	76.03	76.95	77.76	78.78	68.72	85.61	86.74	87.62	88.63	84.22	67.16	209.87	342.56	556.81	611.08
C9300L-48P-4X	715W	Integrated	115Vac	68.05	78.83	80.51	80.97	81.98	69.18	90.03	91.95	92.67	94.13	88.35	68.50	203.00	337.40	559.30	616.70
			230Vac	66.98	77.59	79.12	79.53	80.51	67.76	88.18	90.24	90.79	92.67	86.58	67.40	200.30	331.50	545.00	598.60
			115Vac	68.05	78.83	80.51	80.97	81.98	69.18	90.03	91.95	92.67	94.13	88.35	68.50	203.0	337.4	559.3	616.7
			230Vac	66.98	77.59	79.12	79.53	80.51	67.76	88.18	90.24	90.79	92.67	86.58	67.40	200.3	331.5	545.0	598.6
C9300L-48PF-4G	1100W	Integrated	115Vac	70.41	79.73	81.33	81.58	82.62	71.36	90.17	91.32	92.11	93.00	88.57	69.35	314.03	558.56	973.60	1082.14
			230Vac	68.66	77.95	78.87	79.64	80.56	69.59	87.79	88.87	89.73	90.72	86.27	67.84	306.85	541.37	928.90	1027.83
C9300L-48PF-4X	1100W	Integrated	115Vac	69.68	80.51	82.08	82.50	83.37	71.08	91.01	93.09	94.17	96.27	89.54	69.35	310.72	552.92	965.47	1079.44
			230Vac	68.14	78.81	80.34	80.71	81.61	69.11	88.83	90.73	91.38	93.06	87.28	67.38	305.26	539.36	924.23	1023.56
C9300L-48T-4G	350W	Integrated	115Vac	60.32	69.53	70.41	71.16	72.00	61.57	79.62	80.62	81.44	82.32	78.083	59.47				
			230Vac	59.75	68.45	69.31	70.05	70.81	60.58	78.05	79.06	79.80	80.67	76.564	59.00				
			115Vac	60.32	69.53	70.41	71.16	72.00	61.57	79.62	80.62	81.44	82.32	78.083	59.47				
			230Vac	59.75	68.45	69.31	70.05	70.84	60.58	78.05	79.06	79.80	80.67	76.564	59.00				

SKU	FEP	Uplink	Input	Measured P(W)										Weighted average Pw	No link	PoE test (no traffic)			
				Half port traffic					Full port traffic										
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300L-48T-4X	350W	Integrated	115Vac	63.28	73.75	75.38	75.85	76.86	64.15	83.82	85.53	86.68	88.72	82.34	62.37				
			230Vac	61.91	72.22	73.73	74.13	75.06	62.82	82.21	84.17	84.97	86.77	80.73	60.97				
			115Vac	63.28	73.75	75.38	75.85	76.86	64.15	83.82	85.53	86.68	88.72	82.34	62.37				
			230Vac	61.91	72.22	73.73	74.13	75.06	62.82	82.21	84.17	84.97	86.77	80.73	60.97				

ATIS Testing – 100%				Measured P(W)										Weighted Average Pw	No Link	PoE Test (No Traffic)			
				Half Port Traffic					Full Port Traffic										
SKU	Archer FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300L-48UXG-4X	1100W	Integrated	115Vac	107.79	133.06	135.05	136.80	137.79	108.80	156.13	159.76	160.69	163.14	152.09	107.04	332.8	520.2	835.6	918.4
			230Vac	105.60	130.55	132.50	134.12	135.07	106.04	153.51	157.24	158.19	160.17	149.43	104.56	326.0	505.7	801.0	875.3
C9300L-24UXG-4X	1100W	Integrated	115Vac	70.90	87.08	88.80	89.32	90.30	71.26	103.11	105.06	105.80	107.58	100.37	70.87	335.16	579.52	996.96	1108.51
			230Vac	69.20	85.22	87.09	87.51	88.40	69.46	100.48	102.39	103.16	104.94	97.82	68.98	326.96	562.27	951.15	1049.47
C9300L-48UXG-2Q	1100W	Integrated	115Vac	111.73	138.34	140.48	141.17	143.22	112.35	162.30	164.13	165.51	168.68	157.94	111.10	335.47	521.76	835.04	919.11
			230Vac	109.53	135.16	137.16	137.89	139.68	110.21	158.42	161.05	162.32	165.66	154.32	108.86	328.17	507.54	801.77	876.22
C9300L-24UXG-2Q	1100W	Integrated	115Vac	104.07	121.70	122.67	123.44	125.05	104.41	139.04	140.97	142.77	145.33	136.20	103.78	325.38	526.58	861.27	949.66
			230Vac	100.88	118.72	119.46	120.13	122.11	101.16	135.91	137.68	139.26	143.13	133.15	100.52	317.08	510.67	829.62	909.10
C9300LM-48UX-4Y	1000W	Integrated	115Vac	95.1	110.7	111.6	112.0	114.6	103.0	123.3	124.6	126.2	130.1	121.9	87.9	323.3	543.2	913.7	1008.3
			230Vac	93.8	108.6	109.5	110.4	112.4	101.3	120.9	122.6	124.3	128.4	119.7	86.7	317.1	530.1	879.1	965.2
C9300LM-48U-4Y	1000W	Integrated	115Vac	83.5	96.2	96.9	97.3	98.3	86.4	106.3	107.3	108.0	109.9	104.7	80.5	305.7	524.0	892.9	986.7
			230Vac	82.3	94.9	95.5	95.9	96.8	85.3	104.5	105.4	106.2	108.0	103.0	79.5	299.5	510.7	857.4	944.4
C9300LM-48T-4Y	600W	Integrated	115Vac	76.1	88.8	89.4	89.8	90.7	79.2	97.9	98.8	99.6	101.4	96.4	73.3				
			230Vac	75.2	87.4	88.0	88.3	89.3	78.1	96.4	97.3	98.1	99.9	94.9	72.4				
C9300LM-24U-4Y	600W	Integrated	115Vac	77.7	84.5	86.9	87.1	87.6	80.1	91.1	93.0	93.4	94.3	90.3	75.3	301.6	523.6	894.9	990.9
			230Vac	76.1	83.3	85.8	86.0	86.5	78.6	90.1	91.9	92.3	93.3	89.2	73.8	295.6	510.2	860.0	948.3

Table 23. Power consumption of standalone 9300 Series Switches with platinum rated power supply (tested on Cisco IOS XE 16.8.1)

| SKU | FEP | Uplink | Input | Measured P(W) | | | | | | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
| | | | | Half port traffic | | | | | Full port traffic | | | | | | | | | | |
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-24P	715W-P	C9300-NM-8X	115Vac	89.2	94.3	99	100.1	100.7	92	98.9	103.5	105.9	107.1	99	85.8	205.6	324.7	518.9	568.4
			230Vac	86.7	91.8	96.4	97.5	98	89.4	97.1	101.4	103.6	104.5	97	84.1	201.9	318.7	507.2	554.4
C9300-24T	350W-P	C9300-NM-8X	115Vac	83.1	88.2	92.9	94	94.5	85.8	92.9	97.2	99.6	100.4	92.9	80.5				
			230Vac	81.9	86.8	91.3	92.4	92.9	84.4	91.6	95.9	98.2	99	91.6	79.2				
C9300-24U	1100W-P	C9300-NM-8X	115Vac	90.5	95.9	100.5	101.6	102.1	93.3	100.6	104.9	107.2	108.1	100.6	87.9	319.9	549.5	935.3	1034.1
			230Vac	88.1	93.1	97.7	98.8	99.4	92.8	98	102.4	104.6	105.5	98.2	85.4	313.4	535.5	899.7	990.3
C9300-24UX	1100W-P	C9300-NM-8X	115Vac	186.8	191	194.9	197.1	198.9	209	215.4	227.2	230.1	233.1	216.6	165.3	367.5	522.1	776.1	842.3
			230Vac	182.8	186.9	190.6	193	194.1	205	211.2	222.7	225.5	229.8	212.5	162.7	361.1	510.2	752.3	809.9
C9300-24H	1100W-P	C9300-NM-8X	115Vac	90.5	95.9	100.5	101.6	102.1	93.3	100.6	104.9	107.2	108.1	100.6	87.9	319.9	549.5	935.3	1034.1
			230Vac	88.1	93.1	97.7	98.8	99.4	92.8	98	102.4	104.6	105.5	98.2	85.4	313.4	535.5	899.7	990.3
C9300-48P	715W-P	C9300-NM-8X	115Vac	99.1	105.5	110.8	111.3	112.4	99.6	112.5	118.2	120.1	122.2	112.2	94.7	214.7	336.1	521.5	569.4
			230Vac	97.3	103.7	108.9	109.4	110.4	99	110.3	115.8	118.3	119.5	110.1	92.6	213.9	329.3	509.4	555
C9300-48T	350W-P	C9300-NM-8X	115Vac	89.8	95.4	100.4	101.1	102	90.4	102.4	107.5	109.8	111.8	102.2	85.4				
			230Vac	88.7	94.5	99.4	100.1	101	88.7	101.2	106	108.1	109.9	100.8	83.9				
C9300-48U	1100W-P	C9300-NM-8X	115Vac	168.9	170.6	172.4	176.6	178.5	190.8	194	198.3	200.1	203.9	194.6	147.3	355.4	524.9	804.6	875.4
			230Vac	165.7	167.3	169.2	169.9	171.5	186.5	189.6	193.9	195.7	199.8	190.3	145	348.8	511.7	777.7	844.9

| SKU | FEP | Uplink | Input | Measured P(W) | | | | | | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
| | | | | Half port traffic | | | | | Full port traffic | | | | | | | | | | |
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-48UN	1100W-P	C9300-NM-8X	115Vac	172.9	176.7	178.7	179.8	181.8	193.8	199.8	201.5	203.1	206.9	199.9	159.1	357.3	525	803.9	875.1
			230Vac	171.2	174.8	176.8	178.1	179.9	191.7	197.8	199.4	201	204.7	197.9	157.9	351.5	512.1	777	843.8
C9300-48UXM	1100W-P	C9300-NM-8X	115Vac	241	248.1	254.8	256.4	258.9	260.1	269.4	281.6	286.5	291.6	270.7	225.1	394.8	531.4	755	809.5
			230Vac	237.5	243.1	249	250.3	251.1	253.9	261.8	273.9	279.2	283.6	263.2	218.5	386.8	518.1	731.3	785.5
C9300-48H	1100W-P	C9300-NM-8X	115Vac	168.9	170.6	172.4	176.6	178.5	190.8	194	198.3	200.1	203.9	194.6	147.3	355.4	524.9	804.6	875.4
			230Vac	165.7	167.3	169.2	169.9	171.5	186.5	189.6	193.9	195.7	199.8	190.3	145	348.8	511.7	777.7	844.9
C9300X-12Y	715WAC-P	Not Installed	115Vac	107.6	118.1	119.7	121.4	124.9	117	126.1	128.6	131.2	137.6	126.4	99.1				
			230Vac	105.7	112.6	113.6	114.9	118.4	114.9	123.7	126.5	129.1	135.4	124	97.1				
C9300X-12Y	715WAC-P	C9300X-NM-8M	115Vac	121.1	127.9	129.8	131.8	135.8	136.6	145.3	148.3	151.7	160.6	146	108.1				
			230Vac	117.3	126.9	128.6	130.4	134.8	136	144.9	147.9	150.6	157.1	145.2	106.1				
C9300X-12Y	715WAC-P	C9300X-NM-2C	115Vac	118.6	132.1	134.2	136.2	141.1	136.9	143	146.2	148.9	156.5	143.7	107.6				
			230Vac	116.6	129.6	131.7	133.7	138.6	134.4	141.1	144.1	147	154.1	141.8	106.4				
C9300X-12Y	715WAC-P	C9300X-NM-8Y	115Vac	119.8	128.2	129.6	131	134.4	136.3	147.6	150.5	153.2	159.9	147.7	108.1				
			230Vac	117.5	125.6	127	128.3	131.8	136	144.9	147.9	150.6	157.3	145.2	106.1				
C9300X-24Y	715WAC-P	Not Installed	115Vac	158.2	173.8	177.4	180.9	187.4	179	197.7	204.5	209.4	221.2	198.2	142				
			230Vac	163.1	164.9	167.9	170.6	177	176.5	194.5	200.5	205.6	217.9	195.1	139.6				

SKU	FEP	Uplink	Input	Measured P(W) Half port traffic 0.01%/EEE	10%	30%	50%	100%	Full port traffic 0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	PoE test (no traffic) 25%	50%	90%	100%
C9300X-24Y	715WAC-P	C9300X-NM-8M	115Vac	173.4	183.3	186.6	189.3	196.7	199.7	219.2	226.4	232.6	247.7	220.1	151.8				
			230Vac	169.4	179.8	183.3	186.8	194.1	194	215.4	222.4	228.4	243.3	216.1	149.4				
C9300X-24Y	715WAC-P	C9300X-NM-2C	115Vac	171.7	181.8	188.2	188.8	189.6	199.6	218	226.4	232.7	247.7	219.1	151.8				
			230Vac	170.5	179.1	184.6	185.2	186.7	196.6	214.2	222.2	228.5	243.3	215.3	149.3				
C9300X-24Y	715WAC-P	C9300X-NM-8Y	115Vac	172.9	182	185.4	188.8	195.8	201.5	220.8	227.6	233.6	248.3	221.6	151.2				
			230Vac	170	178.9	182.3	185.6	192.8	198.4	216.3	223.2	229.1	243.7	217.2	149.1				
C9300X-24Y	715WAC-P	C9300X-NM-4C	115Vac	196.6	220.4	225	229.4	237.7	219.5	248.4	256.4	261.8	275	248.2	169.9				
			230Vac	191.3	216.5	222.6	226	232.8	216.4	238.7	246.8	252.8	267.9	239.4	159.7				
C9300X-48HX	1100WAC-P	Not Installed	115Vac	217.4	222.2	224.1	223.9	224.2	252.2	259.9	268.3	268.5	268.9	260	180.4	307.1	433.2	640.8	694.4
			230Vac	211.4	217.8	219.5	219.8	220.1	242.8	255.5	263.5	264.2	264.9	255.2	178.9	300.2	422.5	620.5	672
C9300X-48HX	1100WAC-P	C9300X-NM-8M	115Vac	230.7	239.2	240.8	241	241.3	269.6	284.2	291.4	291.6	292.2	283.5	191.9	327.9	454.4	662.1	716.6
			230Vac	226.2	233.7	234.5	235.6	236.4	265.9	278.3	285.3	285.7	286.5	277.9	187.9	321.2	444.6	642.5	693.6

SKU	FEP	Uplink	Input	Measured P(W)										Weighted average Pw	No link	PoE test (no traffic)			
				Half port traffic					Full port traffic										
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300X-48HX	1100WAC-P	C9300X-NM-2C	115Vac	234.4	255.1	257.5	260.8	266.9	266.2	284.1	286.6	288.8	294.7	283.3	199.5	413.7	575.4	845.1	914.2
			230Vac	229	250	252.6	255.1	260	261	276.4	280.3	282.5	288.3	276	195.1	400.6	554.4	806.7	873.6
C9300X-48HX	1100WAC-P	C9300X-NM-8Y	115Vac	238.2	253.6	258.2	262.8	272.6	267.5	285.8	287.2	288.1	289.4	284.3	212.8	418.7	580.2	849.8	918.8
			230Vac	226.9	248	252.5	257	266.4	262.2	295.4	316.5	318.6	333.2	295.9	196.4	407.6	560.8	815.3	880.2
C9300X-48HX	1100WAC-P	C9300X-NM-4C	115Vac	254.2	270.1	272.9	275.5	282	289.3	304.9	307.6	310.2	315.2	304.4	224.1	437.2	599.9	869.6	939.8
			230Vac	248.8	259.2	262.4	263.1	270.8	280.6	298.3	301	303.7	308.9	297.6	215.3	426.4	581.6	834.9	899.5
C9300X-48TX	715WAC-P	Not Installed	115Vac	229.9	236.3	239.8	242.4	247.8	253.4	266.5	268.4	271.5	276.7	266.2	192.5				
			230Vac	213.6	233.4	235.7	237.8	242.7	246.9	260.8	263.5	265	269.8	260.3	184.3				
C9300X-48TX	715WAC-P	C9300X-NM-8M	115Vac	215.8	237	245.2	250.4	254.2	249.9	282.4	291.1	297.6	312.8	282.2	185.7				
			230Vac	213.2	233.6	237.8	240.5	247.6	244	275.8	285	291	305.5	275.6	181.4				
C9300X-48TX	715WAC-P	C9300X-NM-2C	115Vac	229.9	236.3	239.8	242.4	247.8	253.4	266.5	268.4	271.5	276.7	266.2	192.5				
			230Vac	213.6	233.4	235.7	237.8	242.7	246.9	260.8	263.5	265	269.8	260.3	184.3				
C9300X-48TX	715WAC-P	C9300X-NM-8Y	115Vac	217.6	234.6	238.4	242.1	250	254.4	284.2	292	297.9	315	284.3	187.8				
			230Vac	212.7	230.4	234.2	237.7	245.3	247.8	278.7	287	293.5	309.9	278.7	184.1				
C9300X-48TX	715WAC-P	C9300X-NM-4C	115Vac	232.2	246.7	249.1	251.4	256.6	270.1	286.1	288.6	290.9	295.2	285.4	195.5				
			230Vac	215.6	242.7	244.9	247.1	251.6	248.4	280.3	282.6	284.7	288.7	278	187.3				

SKU	FEP	Uplink	Input	Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300X-24HX	1100WAC-P	Not Installed	115Vac	133.8	148.9	150.1	151.3	153.9	147.6	161.7	164	166.5	171.8	161.3	130.2	333.4	532.4	870.1	956.4
			230Vac	131.2	145.5	147	148.4	151.3	144.8	158.4	161	163.3	169.5	158.1	127.2	325	515.4	833.4	912.6
C9300X-24HX	1100WAC-P	C9300X-NM-8M	115Vac	148.9	166	167.2	168	170.5	166.9	183	184.9	186.8	191.4	182.3	131.7	352.2	551.8	889.3	976.2
			230Vac	141.6	162.5	163.5	164.5	166.6	154.7	178.8	180.7	182.6	187	177.2	128.6	344.5	537	852.7	933.9
C9300X-24HX	1100WAC-P	C9300X-NM-2C	115Vac	148.7	169.2	171.2	173.1	178.3	166.9	185.7	189.8	193.9	204.3	185.7	131.6	352.3	552.1	890.4	976.3
			230Vac	145.2	165.4	167.5	169.5	174.4	163.4	181.5	185.6	189.5	199.5	181.5	128.6	343.8	535.6	852	932.6
C9300X-24HX	1100WAC-P	C9300X-NM-8Y	115Vac	148.8	171.9	174.4	176.6	181.6	171.3	186.5	190.6	194.7	204.8	186.8	131.2	357	557.6	895.5	982.3
			230Vac	145.8	168.4	170.5	172.6	177.5	167.7	182.7	186.8	190.6	200.5	183	128.2	348.3	537.1	857.9	936.7
C9300X-48HXN	1100WAC-P	Not Installed	115Vac	133.8	148.9	150.1	151.3	153.9	147.6	161.7	164	166.5	171.8	161.3	130.2	333.4	532.4	870.1	956.4
			230Vac	131.2	145.5	147	148.4	151.3	144.8	158.4	161	163.3	169.5	158.1	127.2	325	515.4	833.4	912.6
C9300X-48HXN	1100WAC-P	C9300X-NM-8M	115Vac	148.9	166	167.2	168	170.5	166.9	183	184.9	186.8	191.4	182.3	131.7	352.2	551.8	889.3	976.2
			230Vac	141.6	162.5	163.5	164.5	166.6	154.7	178.8	180.7	182.6	187	177.2	128.6	344.5	537	852.7	933.9
C9300X-48HXN	1100WAC-P	C9300X-NM-2C	115Vac	148.7	169.2	171.2	173.1	178.3	166.9	185.7	189.8	193.9	204.3	185.7	131.6	352.3	552.1	890.4	976.3
			230Vac	145.2	165.4	167.5	169.5	174.4	163.4	181.5	185.6	189.5	199.5	181.5	128.6	343.8	535.6	852	932.6
C9300X-48HXN	1100WAC-P	C9300X-NM-8Y	115Vac	186.8	198.2	202.9	205.6	209.4	197.1	214.2	219.9	222.9	231	214.2	150.6	375.1	561.6	871.6	952.5
			230Vac	175.3	186.4	190.5	193.3	196.7	195.6	210	215.6	218.4	224.5	210	147.6	366.9	546.8	839.5	914.5

| ATIS Testing -100% | | | | Measured P(W) | | | | | | | | | | | | | | |
| SKU | Archer FEP | Uplink | Input | Half port traffic | | | | | Full port traffic | | | | | Weighted average Pw | No link | PoE test (no traffic) | | | |
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-48H	1900W	C9300-NM-4G	115Vac	91.15	96.80	98.07	69.60	99.12	92.85	10.40	104.67	105.25	105.74	102.58	90.17	419.9	750.2	1296.2	1440.9
			230Vac	90.84	95.57	96.73	97.22	97.75	92.19	102.55	103.94	104.25	104.60	101.72	89.35	517.0	939.1	1637.6	1816.5
C9300-48H	1900W	C9300-NM-2Q	115Vac	93.15	100.87	101.21	101.56	102.40	94.69	108.16	108.96	109.71	111.58	107.16	91.53	420.7	749.8	1299.1	1441.8
			230Vac	92.27	99.91	100.35	100.64	101.53	93.81	106.72	107.52	108.35	110.41	105.80	90.66	516.0	940.1	1635.3	1814.6
C9300-48H	1900W	C9300-NM-8X	115Vac	94.48	102.47	102.94	103.46	104.43	97.27	110.25	110.92	111.75	113.79	109.30	92.43	422.9	751.3	1299.6	1441.6
			230Vac	94.02	101.23	101.69	102.10	103.08	96.24	108.89	109.65	110.53	112.55	108.00	91.44	519.2	943.8	1643.5	1821.3
C9300-48H	1900W	C9300-NM-4M	115Vac	94.02	101.47	102.50	102.61	103.41	96.78	109.46	110.25	110.98	112.77	108.53	91.43	421.8	749.9	1297.5	1440.1
			230Vac	93.08	100.78	101.16	101.45	102.31	95.92	108.19	108.96	109.73	111.46	107.29	90.29	518.5	940.8	1635.2	1810.3
C9300-48H	1900W	C9300-NM-2Y	115Vac	93.40	101.26	101.70	102.03	103.06	94.65	108.27	108.91	109.17	111.32	107.22	91.52	421.5	748.9	1295.7	1436.4
			230Vac	92.57	100.14	100.55	100.95	101.93	94.03	106.73	107.56	108.40	110.35	105.82	90.76	517.0	939.3	1635.0	1809.6
C9300-48H	1900W	Not Installed	115Vac	85.65	92.17	93.35	93.63	94.11	84.96	97.07	98.24	98.40	99.50	96.10	85.76	411.4	739.6	1288.7	1430.7
			230Vac	84.89	91.33	92.45	92.68	93.17	84.33	96.45	97.00	97.36	98.37	95.43	85.32	506.8	928.8	1621.9	1799.9
C9300-24H	1900W	Not Installed	115Vac	80.63	84.52	85.17	85.40	85.65	80.79	86.49	87.62	87.83	88.43	86.12	8041	407.5	741.3	1297.1	1438.1
			230Vac	79.55	83.21	84.70	84.91	85.25	79.70	86.09	87.13	87.36	87.94	85.63	79.39	503.6	931.8	1635.4	1810.3
C9300-24H	1900W	C9300-NM-4G	115Vac	86.38	88.78	89.98	90.51	91.09	87.24	94.12	95.57	96.06	96.63	93.68	85.58	415.5	741.6	1288.9	1433.7
			230Vac	85.98	88.27	89.66	90.6	90.77	86.81	93.47	74.72	95.17	95.73	93.03	84.94	511.5	938.2	1639.5	1818.1
C9300-24H	1900W	C9300-NM-2Q	115Vac	87.16	93.14	93.45	93.62	94.17	89.33	98.20	98.92	99.39	100.11	97.50	85.73	417.1	750.9	1304.4	1448.9
			230Vac	86.66	92.16	92.53	92.8	93.36	88.11	96.56	96.95	97.38	98.39	95.90	84.95	512.7	940.2	1641.6	1818.3
C9300-24H	1900W	C9300-NM-8X	115Vac	88.85	93.82	94.89	95.08	95.69	91.72	99.50	100.50	101.03	102.21	98.99	85.95	419.9	754.5	1307.5	1450.9
			230Vac	88.10	92.69	93.80	94.12	94.71	90.92	98.32	99.29	99.71	100.60	97.81	85.24	515.0	942.7	1644.3	1822.0
C9300-24H	1900W	C9300-NM-4M	115Vac	88.57	93.90	94.22	94.51	96.03	91.37	99.29	100.13	100.44	101.54	98.72	85.83	418.9	744.3	1298.3	1449.9
			230Vac	88.24	93.10	93.33	93.55	94.17	90.90	98.67	99.07	99.65	100.80	98.11	85.65	515.8	943.4	1644.0	1821.9
C9300-24H	1900W	C9300-NM-4M	115Vac	87.81	94.47	94.73	94.79	95.29	89.81	98.27	99.32	100.28	101.12	97.71	86.65	418.6	748.4	1311.1	1448.7
			230Vac	87.26	92.59	92.86	93.13	93.90	88.93	97.03	97.58	97.97	99.03	96.42	85.48	511.9	940.9	1642.0	1819.4

Safety and compliance

Table 24 lists the safety and compliance information for the Cisco Catalyst 9300 Series.

Table 24.   Safety and compliance information

Description	Specification
Safety certifications	● UL 60950-1 ● CAN/CSA-C222.2 No. 60950-1 ● EN 60950-1 ● IEC 60950-1 ● AS/NZS 60950.1 ● IEEE 802.3
Electromagnetic compatibility certifications	● 47 CFR Part 15 ● EN 300 386 V1.6.1 ● 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 ● CISPR 35 ● EN 300 386 ● EN 55035 ● TCVN 7317 ● V-2/2015.04 ● V-3/2015.04 ● CNS13438 ● KN32 ● KN35 **Additional Certifications for C9300L SKUs:** ● QCVN 118:2018/BTTTT ● VCCI-CISPR 32 Class A
Environmental	Reduction of Hazardous Substances (ROHS) 5

Warranty

Cisco enhanced limited lifetime hardware warranty

The Cisco Catalyst 9300 Series Switches come with a Cisco Enhanced Limited Lifetime hardware 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 23 provides information about the E-LLW.

Table 25. E-LLW details

	Cisco E-LLW
Devices covered	Applies to Cisco Catalyst 9300 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 9300 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](#).

ENERGY STAR Certification

Cisco is driving long term value and market advantage by continuing to embed energy efficiency through hardware, software and by providing customers visibility into their energy consumption to help them baseline, identify trends and anomalies and take corrective actions.

With the ENERGY STAR certification of Catalyst 9300 Series models, Cisco is one of the first networking company to have third party-approved Campus Switches. Ecolabel certifications like ENERGY STAR help customers identify "environmentally preferable" products to help maximize energy efficiency, reduce GHG emissions and lower energy costs.

ENERGY STAR certification reinforces Cisco's ongoing commitment to deliver energy efficient products including top-rated power supplies, active power management and monitoring capabilities, alignment to ISO 14000 Environmental Management systems standards, and all designed with circularity principles in mind.

Learn more:

[ENERGY STAR Certified Product Finder](#).

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](#)
	Safety and compliance	[Table 23. Safety and compliance information](#)
	Mean Time Between Failures – MTBF (hours)	[Table.16 Model Dimensions, Weight, and Mean Time between failures metrics](#)
Power	Default AC power supply	[Table 1. Cisco Catalyst 9300 Series switch configurations](#)
	Power supplies	[Table 3. Power supply models](#) [Table 19. Power specifications](#) [Table 20. Power specifications – platinum rated power supplies](#)
	Fan	[Table 6. Fan modules](#)
	Energy Efficient Ethernet	[Smart operation](#)
	Power over ethernet (Cisco UPOE and UPOE+)	[Power over ethernet leadership](#)

Sustainability Topic		Reference
	Power connectors	Table 17. Power connectors
	Power consumption (ATIS)	Table 21. Power Consumption of Standalone 9300 Series Switches
		Table 22. Power consumption of Standalone 9300 Series Switches with platinum rated power supply
	ENERGY STAR® certified models	ENERGY STAR Certified Large Network Equipment
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Dimensions	Table.16 Model Dimensions, Weight, and Mean Time between failures metrics.
	Weight	Table.16 Model Dimensions, Weight, and Mean Time between failures metrics.
	Elimination of wet paint on plastic bezel	2019 Cisco Corporate Social Responsibility Report, Pg. 19 Stepping up our work on circularity

Cisco Services

Cisco Services for next-generation Cisco Catalyst 9000 Switches

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 Cisco Catalyst 9000 switching family. 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 reduce disruption and achieve operational excellence to extract maximum value from your Cisco DNA ready infrastructure.

Learn more about Cisco Services for Enterprise Networks

Software policy for Cisco Catalyst 9300 Series Switches

Software policy for network stack components

Customers with the Network Essentials Stack and Network Advantage Stack software feature sets are provided with maintenance updates and bug fixes designed to maintain compliance of the software. This includes compliance with published specifications, release notes, and industry standards as long as the original end user continues to own or use the product or up to one year from the end-of-sale date for the product, whichever occurs earlier.

Cisco embedded support for Cisco Catalyst and Cisco DNA term components

Cisco Embedded Support delivers the right support for Cisco software products and suites. It will keep your business applications performing as expected and protect your investment. Cisco Embedded Support for the Cisco Catalyst and Cisco DNA Essentials and Cisco Catalyst and Cisco DNA Advantage term components is included. Cisco Embedded Support provides access to TAC support, major software updates, maintenance and minor software releases, and the Cisco Embedded Support site, for increased productivity with anytime access.

Ordering information

Table 26 lists ordering information for the Cisco Catalyst 9300 Series. To place an order, visit the Cisco Ordering home page at
https://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html.

Table 26. Ordering information

Switches	
Product number	**Product description**
C9300X-48HX-E	Catalyst 9300 48-port 10G/mGig copper with modular uplink, UPOE+, Network Essentials
C9300X-48HX-A	Catalyst 9300 48-port 10G/mGig copper with modular uplink, UPOE+, Network Advantage
C9300X-48HX-M	Catalyst 9300 48-port 10G/mGig copper with modular uplink, Meraki Advance or Enterprise
C9300X-48TX-E	Catalyst 9300 48-port 10G/mGig copper with modular uplink, data only, Network Essentials
C9300X-48TX-A	Catalyst 9300 48-port 10G/mGig copper with modular uplink, data only, Network Advantage
C9300X-48TX-M	Catalyst 9300 48-port 10G/mGig copper with modular uplink, data only, Meraki Advance or Enterprise
C9300X-48HXN-E	Catalyst 9300 36-port 5G/mGig, 12-port 10G copper with modular uplink, UPOE+, Network Essentials
C9300X-48HXN-A	Catalyst 9300 36-port 5G/mGig, 12-port 10G copper with modular uplink, UPOE+, Network Advantage
C9300X-48HXN-M	Catalyst 9300 36-port 5G/mGig, 12-port 10G copper with modular uplink, UPOE+, Meraki Advance or Enterprise
C9300X-24HX-E	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE+, Network Essentials
C9300X-24HX-A	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE+, Network Advantage
C9300X-24HX-M	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE+, Meraki Advance or Enterprise
C9300X-12Y-E	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Network Essentials
C9300X-12Y-A	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Network Advantage
C9300X-12Y-M	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Meraki Advance or Enterprise
C9300X-24Y-E	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Network Essentials
C9300X-24Y-A	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Network Advantage
C9300X-24Y-M	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Meraki Advance or Enterprise
C9300-24T-E	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Network Essentials

Switches	
Product number	**Product description**
C9300-24T-A	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Network Advantage
C9300-24T-M	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Meraki Advance or Enterprise
C9300-24P-E	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Network Essentials
C9300-24P-A	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Network Advantage
C9300-24P-M	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Meraki Advance or Enterprise
C9300-24U-E	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-24U-A	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-24U-M	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-24UB-E	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-24UB-A	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-24U-E-UL	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
C9300-24U-A-UL	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
C9300-24H-E	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE+, Network Essentials
C9300-24H-A	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE+, Network Advantage
C9300-24UX-E	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE, Network Essentials
C9300-24UX-A	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE, Network Advantage
C9300-24UX-M	Catalyst 9300 24-port 10G/mGig copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-24UXB-E	Catalyst 9300 higher scale 24-port 10G/mGig copper with modular uplink, UPOE, Network Essentials
C9300-24UXB-A	Catalyst 9300 higher scale 24-port 10G/mGig copper with modular uplink, UPOE, Network Advantage
C9300-48T-E	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Essentials
C9300-48T-A	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Advantage
C9300-48T-M	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Meraki Advance or Enterprise

Switches	
Product number	**Product description**
C9300-48P-E	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Network Essentials
C9300-48P-A	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Network Advantage
C9300-48P-M	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Meraki Advance or Enterprise
C9300-48U-E	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-48U-A	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-48U-M	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-48UB-E	Catalyst 9300 higher scale 48-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-48UB-A	Catalyst 9300 higher scale 48-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-48U-E-UL	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Essentials (Compatible with UL1069 Standard[*])
C9300-48U-A-UL	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard[*])
C9300-48H-E	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE+, Network Essentials
C9300-48H-A	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE+, Network Advantage
C9300-48UXM-E	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Network Essentials
C9300-48UXM-A	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Network Advantage
C9300-48UXM-M	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-48UN-E	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Network Essentials
C9300-48UN-A	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Network Advantage
C9300-48UN-M	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-24S-E	Catalyst 9300 24-port 1G SFP with modular uplinks, Network Essentials
C9300-24S-A	Catalyst 9300 24-port 1G SFP with modular uplinks, Network Advantage
C9300-24S-M	Cisco Catalyst 9300 24-port 1G SFP, modular uplinks, Meraki Advance or Enterprise
C9300-48S-E	Catalyst 9300 48-port 1G SFP with modular uplinks, Network Essentials
C9300-48S-A	Catalyst 9300 48-port 1G SFP with modular uplinks, Network Advantage

Switches	
Product number	**Product description**
C9300-48S-M	Catalyst 9300 48-port 1G SFP with modular uplinks, Meraki Advance or Enterprise
C9300L-24T-4G-E	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Essentials
C9300L-24T-4G-A	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Advantage
C9300L-24P-4G-E	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, PoE+, Network Essentials
C9300L-24P-4G-A	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, PoE+, Network Advantage
C9300L-48T-4G-E	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Essentials
C9300L-48T-4G-A	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Advantage
C9300L-48P-4G-E	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, PoE+, Network Essentials
C9300L-48P-4G-A	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+, Network Advantage
C9300L-48PF-4G-E	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+, Network Essentials
C9300L-48PF-4G-A	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+, Network Advantage
C9300L-24T-4X-E	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Essentials
C9300L-24T-4X-A	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Advantage
C9300L-24T-4X-M	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Meraki Advanced or Enterprise
C9300L-24P-4X-E	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Essentials
C9300L-24P-4X-A	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Advantage
C9300L-24UXG-4X-E	Catalyst 9300 24-port 8XmGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 4x10G/1G SFP+ uplinks, UPOE, Network Essentials
C9300L-24UXG-4X-A	Catalyst 9300 24-port 8XmGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 4x10G/1G SFP+ uplinks, UPOE, Network Advantage
C9300L-24UXG-4X-M	Catalyst 9300 24-port 8XmGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 4x10G/1G SFP+ uplinks, UPOE, Meraki Advanced or Enterprise
C9300L-48T-4X-E	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Essentials

Switches

Product number	Product description
C9300L-48T-4X-A	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Advantage
C9300L-48T-4X-M	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Meraki Advanced or Enterprise
C9300L-48P-4X-E	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Essentials
C9300L-48P-4X-A	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Advantage
C9300L-48P-4X-M	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Meraki Advanced or Enterprise
C9300L-48PF-4X-E	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+, Network Essentials
C9300L-48PF-4X-A	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+, Network Advantage
C9300L-48PF-4X-M	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+, Meraki Advanced or Enterprise
C9300L-48UXG-4X-E	Catalyst 9300 48-port fixed uplinks UPOE, 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper, 4x 10G uplinks, Network Essentials
C9300L-48UXG-4X-A	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 4x 10G/1G SFP+ uplinks, UPOE, Network Advantage
C9300L-48UXG-4X-M	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 4x 10G/1G SFP+ uplinks, UPOE, Meraki Advanced or Enterprise
C9300L-24UXG-2Q-E	Catalyst 9300 24-port 8x mGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Essentials
C9300L-24UXG-2Q-A	Catalyst 9300 24-port 8x mGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Advantage
C9300L-48UXG-2Q-E	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Essentials
C9300L-48UXG-2Q-A	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Advantage
C9300LM-48UX-4Y-E	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit copper, 40-port 1G, 4x 25G uplinks, Network Essentials
C9300LM-48UX-4Y-A	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit copper, 40-port 1G, 4x 25G uplinks, Network Advantage
C9300LM-48U-4Y-E	Catalyst 9300 mini 48-port 1G copper, UPOE, 4x 25G uplinks, Network Essentials
C9300LM-48U-4Y-A	Catalyst 9300 mini 48-port 1G copper, UPOE, 4x 25G uplinks, Network Advantage

Switches	
Product number	**Product description**
C9300LM-48T-4Y-E	Catalyst 9300 mini 48-port 1G copper, data, 4x 25G uplinks, Network Essentials
C9300LM-48T-4Y-A	Catalyst 9300 mini 48-port 1G copper, data, 4x 25G uplinks, Network Advantage
C9300LM-24U-4Y-E	Catalyst 9300 mini 24-port 1G copper, UPOE, 4x 25G uplinks, Network Essentials
C9300LM-24U-4Y-A	Catalyst 9300 mini 24-port 1G copper, UPOE, 4x 25G uplinks, Network Advantage

Network modules	
Product number	**Product description**
C9300X-NM-8M	Catalyst 9300X 8 x 10G/mGig copper Network Module
C9300X-NM-8M=	Catalyst 9300X 8 x 10G/mGig copper Network Module, spare
C9300X-NM-8Y	Catalyst 9300 8 x 25G/10G/1G multi-rate SFP Network Module
C9300X-NM-8Y=	Catalyst 9300 8 x 25G/10G/1G multi-rate SFP Network Module, spare
C9300X-NM-2C	Catalyst 9300 2 x 100G/40G dual rate QSFP Network Module
C9300X-NM-2C=	Catalyst 9300 2 x 100G/40G dual rate QSFP Network Module, spare
C9300X-NM-4C	Catalyst 9300 4 x 100G/40G dual rate QSFP Network Module
C9300X-NM-4C=	Catalyst 9300 4 x 100G/40G dual rate QSFP Network Module, spare
C9300-NM-4G	Catalyst 9300 4 x 1GE SFP Network Module
C9300-NM-4G=	Catalyst 9300 4 x 1GE SFP Network Module, spare
C9300-NM-8X	Catalyst 9300 8 x 10G/1G SFP+ Network Module
C9300-NM-8X=	Catalyst 9300 8 x 10G/1G SFP+ Network Module, spare
C9300-NM-2Q	Catalyst 9300 2 x 40GE QSFP Network Module
C9300-NM-2Q=	Catalyst 9300 2 x 40GE QSFP Network Module, spare
C9300-NM-2Y	Catalyst 9300 2 x 25G/10G/1G SFP28 Network Module
C9300-NM-2Y=	Catalyst 9300 2 x 25G/10G/1G SFP28 Network Module, spare
C9300-NM-4M	Catalyst 9300 4 x 10G/mGig copper Network Module
C9300-NM-4M=	Catalyst 9300 4 x 10G/mGig copper Network Module, spare
NM-BLANK-T1=	Cisco Catalyst Type 1 Network Module Blank, spare

Storage Module	
Product number	**Product description**
SSD-120G	Cisco pluggable USB3.0 120G SSD storage
SSD-120G=	Cisco pluggable USB3.0 120G SSD storage, spare
SSD-240G	Cisco pluggable USB3.0 240G SSD storage
SSD-240G=	Cisco pluggable USB3.0 240G SSD storage, spare

Software licenses for C9300 SKUs	
Product number	**Product description**
C9300-DNX-E-24-3Y	**C9300 Cisco Catalyst Essentials, 24-port, 3 Year Term license**
C9300-DNX-E-24-5Y	C9300 Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9300-DNX-E-24-7Y	C9300 Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9300-DNX-A-24-3Y	C9300 Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9300-DNX-A-24-5Y	C9300 Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9300-DNX-A-24-7Y	C9300 Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9300-DNX-E-48-3Y	C9300 Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9300-DNX-E-48-5Y	C9300 Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9300-DNX-E-48-7Y	C9300 Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9300-DNX-A-48-3Y	C9300 Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9300-DNX-A-48-5Y	C9300 Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9300-DNX-A-48-7Y	C9300 Cisco Catalyst Advantage, 48-port, 7 Year Term license
C9300-DNX-E-24S-3Y	C9300 1G Fiber Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9300-DNX-E-24S-5Y	C9300 1G Fiber Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9300-DNX-E-24S-7Y	C9300 1G Fiber Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9300-DNX-A-24S-3Y	C9300 1G Fiber Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9300-DNX-A-24S-5Y	C9300 1G Fiber Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9300-DNX-A-24S-7Y	C9300 1G Fiber Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9300-DNX-E-48S-3Y	C9300 1G Fiber Cisco Catalyst Essentials, 48-port, 3 Year Term license

Software licenses for C9300 SKUs	
Product number	**Product description**
C9300-DNX-E-48S-5Y	C9300 1G Fiber Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9300-DNX-E-48S-7Y	C9300 1G Fiber Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9300-DNX-A-48S-3Y	C9300 1G Fiber Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9300-DNX-A-48S-5Y	C9300 1G Fiber Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9300-DNX-A-48S-7Y	C9300 1G Fiber Cisco Catalyst Advantage, 48-port, 7 Year Term license
C9300-DNA-L-E-3Y	C9300 Cisco DNA Essentials license, for 12Y, 24Y SKUs, 3 Year Term license
C9300-DNA-L-E-5Y	C9300 Cisco DNA Essentials license, for 12Y, 24Y SKUs, 5 Year Term license
C9300-DNA-L-E-7Y	C9300 Cisco DNA Essentials license, for 12Y, 24Y SKUs, 7 Year Term license
C9300-DNA-L-A-3Y	C9300 Cisco DNA Advantage license, for 12Y, 24Y SKUs, 3 Year Term license
C9300-DNA-L-A-5Y	C9300 Cisco DNA Advantage license, for 12Y, 24Y SKUs, 5 Year Term license
C9300-DNA-L-A-7Y	C9300 Cisco DNA Advantage license, for 12Y, 24Y SKUs, 7 Year Term license
C9300-LIC=	Electronic Cisco DNA Upgrade License for C9300 switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is also upgraded to Network Advantage
LIC-C9300-24A-1Y	C9300 Cisco Meraki Advanced Software license, 24-port, 1 Year Term license
LIC-C9300-24A-3Y	C9300 Cisco Meraki Advanced Software license, 24-port, 3 Year Term license
LIC-C9300-24A-5Y	C9300 Cisco Meraki Advanced Software license, 24-port, 5 Year Term license
LIC-C9300-24A-7Y	C9300 Cisco Meraki Advanced Software license, 24-port, 7 Year Term license
LIC-C9300-24A-10Y	C9300 Cisco Meraki Advanced Software license, 24-port, 10 Year Term license
LIC-C9300-24E-1Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 1 Year Term license
LIC-C9300-24E-3Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 3 Year Term license
LIC-C9300-24E-5Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 5 Year Term license
LIC-C9300-24E-7Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 7 Year Term license
LIC-C9300-24E-10Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 10 Year Term license
LIC-C9300-48A-1Y	C9300 Cisco Meraki Advanced Software license, 48-port, 1 Year Term license
LIC-C9300-48A-3Y	C9300 Cisco Meraki Advanced Software license, 48-port, 3 Year Term license
LIC-C9300-48A-5Y	C9300 Cisco Meraki Advanced Software license, 48-port, 5 Year Term license
LIC-C9300-48A-7Y	C9300 Cisco Meraki Advanced Software license, 48-port, 7 Year Term license

Software licenses for C9300 SKUs

Product number	Product description
LIC-C9300-48A-10Y	C9300 Cisco Meraki Advanced Software license, 48-port, 10 Year Term license
LIC-C9300-48E-1Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 1 Year Term license
LIC-C9300-48E-3Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 3 Year Term license
LIC-C9300-48E-5Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 5 Year Term license
LIC-C9300-48E-7Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 7 Year Term license
LIC-C9300-48E-10Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 10 Year Term license

Software licenses for C9300L SKUs

Product number	Product number
C9300L-DNX-E-24-3Y	C9300L Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9300L-DNX-E-24-5Y	C9300L Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9300L-DNX-E-24-7Y	C9300L Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9300L-DNX-A-24-3Y	C9300L Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9300L-DNX-A-24-5Y	C9300L Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9300L-DNX-A-24-7Y	C9300L Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9300L-DNX-E-48-3Y	C9300L Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9300L-DNX-E-48-5Y	C9300L Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9300L-DNX-E-48-7Y	C9300L Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9300L-DNX-A-48-3Y	C9300L Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9300L-DNX-A-48-5Y	C9300L Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9300L-DNX-A-48-7Y	C9300L Cisco Catalyst Advantage, 48-port, 7 Year Term license
C9300L-DNA-E-24-3Y	C9300L Cisco DNA Essentials, 24-port, 3 Year Term license
C9300L-DNA-E-24-5Y	C9300L Cisco DNA Essentials, 24-port, 5 Year Term license
C9300L-DNA-E-24-7Y	C9300L Cisco DNA Essentials, 24-port, 7 Year Term license
C9300L-DNA-A-24-3Y	C9300L Cisco DNA Advantage, 24-port, 3 Year Term license
C9300L-DNA-A-24-5Y	C9300L Cisco DNA Advantage, 24-port, 5 Year Term license

Software licenses for C9300L SKUs

Product number	Product number
C9300L-DNA-A-24-7Y	C9300L Cisco DNA Advantage, 24-port, 7 Year Term license
C9300L-DNA-E-48-3Y	C9300L Cisco DNA Essentials, 48-port, 3 Year Term license
C9300L-DNA-E-48-5Y	C9300L Cisco DNA Essentials, 48-port, 5 Year Term license
C9300L-DNA-E-48-7Y	C9300L Cisco DNA Essentials, 48-port, 7 Year Term license
C9300L-DNA-A-48-3Y	C9300L Cisco DNA Advantage, 48-port, 3 Year Term license
C9300L-DNA-A-48-5Y	C9300L Cisco DNA Advantage, 48-port, 5 Year Term license
C9300L-DNA-A-48-7Y	C9300L Cisco DNA Advantage, 48-port, 7 Year Term license
C9300L-LIC=	Electronic Cisco DNA Upgrade License for C9300L switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is also upgraded to Network Advantage

Power supplies

Product number	Product description
PWR-C1-350WAC=	350WAC power supply spare
PWR-C1-715WAC=	715WAC power supply spare
PWR-C1-715WDC=	715WDC power supply spare
PWR-C1-1100WAC=	1100WAC power supply spare
PWR-C1-1900WAC=	1900WAC Power supply spare
PWR-C1-350WAC-P=	350WAC Platinum-rated power supply spare
PWR-C1-715WAC-P=	715WAC Platinum-rated power supply spare
PWR-C1-1100WAC-P=	1100WAC Platinum-rated power supply spare
PWR-C1-715WAC-UP	Upgrade to 715WAC Platinum-rated power supply
PWR-C1-1100WAC-UP	Upgrade to 1100WAC Platinum-rated power supply
PWR-C1-1900WAC-UP	Upgrade to 1900WAC Platinum-rated power supply

Cisco StackWise-480/1T and StackPower cables

Product number	Product description
STACK-T1-50CM=	Cisco StackWise-480/1T 50cm stacking cable spare

Cisco StackWise-480/1T and StackPower cables	
Product number	**Product description**
STACK-T1-1M=	Cisco StackWise-480/1T 1m stacking cable spare
STACK-T1-3M=	Cisco StackWise-480/1T 3m stacking cable spare
CAB-SPWR-30CM=	Cisco Catalyst StackPower cable 30cm spare
CAB-SPWR-150CM=	Cisco Catalyst StackPower cable 150cm spare

Cisco StackWise-320 Accessories	
Product number	**Product description**
C9300L-STACK-KIT	Stack Kit for C9300L SKUs – includes 2 Stack Adaptors and 1 Stack Cable
C9300L-STACK-KIT=	Stack Kit for C9300L SKUs – includes 2 Stack Adaptors and 1 Stack Cable, spare
STACK-T3-50CM	50CM Type 3 Stacking Cable – default with Stack Kit for C9300L SKUs
STACK-T3-50CM=	50CM Type 3 Stacking Cable, spare for C9300L SKUs
STACK-T3-1M	1M Type 3 Stacking Cable for C9300L SKUs
STACK-T3-1M=	1M Type 3 Stacking Cable, spare for C9300L SKUs
STACK-T3-3M	3M Type 3 Stacking Cable for C9300L SKUs
STACK-T3-3M=	3M Type 3 Stacking Cable, spare for C9300L SKUs
Spare power cords	
CAB-TA-NA=	AC power cord for Cisco Catalyst (North America)
CAB-TA-AP=	AC power cord for Cisco Catalyst (Australia)
CAB-TA-AR=	AC power cord for Cisco Catalyst (Argentina)
CAB-TA-SW=	AC power cord for Cisco Catalyst (Switzerland)
CAB-TA-UK=	AC power cord for Cisco Catalyst (United Kingdom)
CAB-TA-JP=	AC power cord for Cisco Catalyst (Japan)
CAB-TA-250VAC-JP=	Japan 250VAC power cord for Cisco Catalyst (Japan)
CAB-TA-EU=	AC power cord for Cisco Catalyst (Europe)
CAB-TA-IT=	AC power cord for Cisco Catalyst (Italy)
CAB-TA-IN=	AC power cord for Cisco Catalyst (India)

Cisco StackWise-320 Accessories	
Product number	**Product description**
CAB-TA-CN=	AC power cord for Cisco Catalyst (China)
CAB-TA-DN=	AC power cord for Cisco Catalyst (Denmark)
CAB-TA-IS=	AC power cord for Cisco Catalyst (Israel)
CAB-ACBZ-12A=	AC power cord for Cisco Catalyst (Brazil), 12A/125V BR-3-20 plug up to 12A
CAB-ACBZ-10A=	AC power cord for Cisco Catalyst (Brazil), 10A/250V BR-3-10 plug up to 10A
CAB-C15-CBN	Cabinet jumper power cord, 250VAC 13A, C14-C15 connectors

Optics online reference

The Cisco Catalyst 9300 Series supports a wide range of optics. Because the list of supported optics is updated on a regular basis, consult the tables available here for the latest QSFP28, QSFP+, SFP+, and SFP compatibility information:
https://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html.

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Document history

New or revised topic	Described In	Date
ENERGY STAR certification	All relevant sections	April 12, 2024
Added new models supporting the Meraki Software options	All relevant sections	February 6, 2024
Added Cisco Catalyst and Meraki Software options	All relevant sections	December 5, 2023
Added Information about 9300X, copper models	All relevant sections	February 3, 2022
Added Information about 9300X fiber models	All relevant sections	March 2, 2021
Added information about the 1G 90W UPOE+ SKUs	Across different sections	February 10, 2020
Added new SKUs for C9300L – Full PoE+ and mGig SKUs	Content added to all the tables	December 2, 2019
Updates for C9300 – large buffer/scale SKUs	All relevant sections	October 9, 2019
Adding Primary PSU upgrade option for 9300	Table 3: Power supply models	June 20, 2019
Product name change: Cisco ONE to Cisco DNA	Introduction	May 10, 2019
Wi-Fi 6 addition	Product Overview: Features	May 10, 2019
Add: Features	Product Overview: Features	May 10, 2019
Add: Modular uplink models table	Platform Details	May 10, 2019
Edit: Cisco Catalyst 9300 Series modular uplink	Platform Details	May 10, 2019
Edit: Table 1: Cisco Catalyst 9300 Series Switch configurations; uplink configuration add	Platform Details	May 10, 2019
Edit: Table 2: Name change to "Catalyst 9300…"	Platform Details	May 10, 2019
Add: Figure 3: picture for C9300L	Platform Details	May 10, 2019
Edit: Table 3: Power supply models	Platform Details	May 10, 2019

New or revised topic	Described In	Date
Add: Stacking, Table 4	[Platform Details](#)	May 10, 2019
Add: Stacking Accessories, Table 5	[Platform Details](#)	May 10, 2019
Edit: Replaced C3850 stack picture with C9300 stack picture	[Platform Details](#)	May 10, 2019
Add: Fan, Table 6	[Platform Details](#)	May 10, 2019
Edit: Table 7	[Performance and Scalability](#)	May 10, 2019
Add: Bandwidth Specifications	[Performance and Scalability](#)	May 10, 2019
Add: StackWise-320	[Resiliency and High Availability](#)	May 10, 2019
Edit: name change from Cisco One to Cisco DNA Software	[Software Requirements](#)	May 10, 2019
Edit: text edits	[Licensing](#)	May 10, 2019
Edit: Table 13	[Licensing](#)	May 10, 2019
Edit: Table 14	[Specifications](#)	May 10, 2019
Edit: Table 15	[Connectors](#)	May 10, 2019
Edit: Table 17	[Power Supply Specifications](#)	May 10, 2019
Edit: Table 21	[Safety and Compliance](#)	May 10, 2019
Edit: Table 23	[Ordering Information](#)	May 10, 2019
Added support for SD-Access Embedded Wireless	Added support for SD-Access Embedded Wireless Controller functionality.	November 13, 2018
Updated Platinum Power Supply specifications	Platinum rated power supplies available on the C9300 switches.	October 5, 2018
Updated availability of SSD card	Availability of 120G storage module for the C9300.	October 5, 2018

New or revised topic	Described In	Date
Updated Product overview	Added Catalyst 9500 high density platforms and updated associated speeds and densities, e.g. Up to 6.4-Tbps switching capacity with up to 2 Bpps of forwarding performance from "3.2 Tbps/1 Bpps" a. 32 port 100G, b. 32 port 40G, c. 48 port 25G. Added Catalyst 9500 mid density platform a. 24 port 25G, b. 16 port 1/10G. Added new optical interfaces - QSFP28, SFP28. Added new power supply options - 650W, 1600W. Added RESCONF support. Stackwise Virtual extended to all Catalyst 9500 platforms.	March 31, 2018
Updated Audio Video Bridging	AVB support noted for certain platforms. Corrected references to Catalyst 9000 switches, rather than Catalyst 9000 Series switches. Corrected references to Cisco IOS XE, rather than IOS XE.	December 15, 2017

Printed in USA

C78-738977-41   04/24

Cisco Firepower 1000 Series

Cisco Secure Firewall ASA
Cisco Secure Firewall Threat Defense (FTD)

The bridge to possible

Contents

Cisco Firepower 1000 Series Appliances

The Cisco Firepower® 1000 Series is a family of firewall platforms that delivers business resiliency, management ease-of-use, and threat defense. They offer exceptional sustained performance when advanced threat functions are enabled. 1000 Series addresses use cases from small offices to remote branches. 1000 Series platforms run Cisco Threat Defense (FTD) or Cisco ASA software.

Model overview

Cisco Firepower 1000 Series summary

Model	Throughput: Threat Defense Software	IPS Throughput	Interfaces
FPR-1010	890 Mbps	900 Mbps	8 x RJ45
FPR-1120	2.3 Gbps	2.6 Gbps	8 x RJ45, 4 x SFP
FPR-1140	3.3 Gbps	3.5 Gbps	8 x RJ45, 4 x SFP
FPR-1150	5.3 Gbps	6.1 Gbps	8 x RJ45, 2 x SFP, 2 x 10G SFP+

Detailed performance specifications and feature highlights

Table 1.   Performance specifications and feature highlights for Cisco Firepower 1000 with the Threat Defense (FTD) image

Features	1010/1010E	1120	1140	1150
Throughput: Firewall (FW) + Application Visibility and Control (AVC) (1024B)	890 Mbps	2.3 Gbps	3.3 Gbps	5.3 Gbps
Throughput: FW + AVC + Intrusion Prevention System (IPS) (1024B)	880 Mbps	2.3 Gbps	3.3 Gbps	4.9 Gbps
Maximum concurrent sessions, with AVC	100K	200K	400K	600K
Maximum new connections per second, with AVC	6K	15K	22K	28K
Transport Layer Security (TLS)	195 Mbps	850 Mbps	1.2 Gbps	1.4 Gbps
Throughput: NGIPS (1024B)	900 Mbps	2.6 Gbps	3.5 Gbps	6.1 Gbps
IPSec VPN throughput (1024B TCP w/Fastpath)	400 Mbps	1.2 Gbps	1.4 Gbps	2.4 Gbps
Maximum VPN Peers	75	150	400	800
Cisco Device Manager (local management)	Yes	Yes	Yes	Yes
Centralized management	Centralized configuration, logging, monitoring, and reporting are performed by the Threat Defense Manager (FMC) or, alternatively, from the cloud with Cisco Defense Orchestrator			
AVC	Standard, supporting more than 4000 applications, as well as geolocations, users, and websites			
AVC: OpenAppID support for custom, open-source application detectors	Standard			
Cisco Security Intelligence	Standard, with IP, URL, and DNS threat intelligence			
Cisco IPS	Available; can passively detect endpoints and infrastructure for threat correlation and Indicators of Compromise (IoC) intelligence			
Cisco Malware Defense for Networks	Available; enables detection, blocking, tracking, analysis, and containment of targeted and persistent malware, addressing the attack continuum both during and after attacks. Integrated threat correlation with Cisco AMP for Endpoints is also optionally available			
Cisco Malware Analytics sandboxing	Available			
URL filtering: number of categories	More than 80			
URL filtering: number of URLs categorized	More than 280 million			
Automated threat feed and IPS signature updates	Yes: class-leading Collective Security Intelligence (CSI) from the Cisco Talos® group (https://www.cisco.com/c/en/us/products/security/talos.html)			
Third-party and open- source ecosystem	Open API for integrations with third-party products; Snort® and OpenAppID community resources for new and specific threats			
High availability and clustering	Active/standby			
Cisco Trust Anchor Technologies	Cisco Firepower 1000 Series platforms include Trust Anchor Technologies for supply chain and software image assurance. Please see the section below for additional details			

Note: Performance will vary depending on features activated, and network traffic protocol mix, and packet size characteristics. Performance is subject to change with new software releases. Consult your Cisco representative for detailed sizing guidance.

Table 2.   ASA Performance and capabilities on Firepower 1000 appliances

Features	1010/1010E	1120	1140	1150
Stateful inspection firewall throughput[1]	2 Gbps	4.5 Gbps	6 Gbps	7.5 Gbps
Stateful inspection firewall throughput (multiprotocol)[2]	1.4 Gbps	2.5 Gbps	3.5 Gbps	4.5 Gbps
Concurrent firewall connections	100,000	200,000	400,000	600,000
Firewall latency (UDP 64B microseconds)	–	–	–	–
New connections per second	25,000	75,000	100,000	150,000
IPsec VPN throughput (450B UDP L2L test)	500 Mbps	1 Gbps	1.2 Gbps	1.7 Gbps
Maximum VPN Peers	75	150	400	800
Security contexts (included; maximum)	NA	2; 5	2; 5	2; 25
High availability	Active/standby	Active/active and Active/standby	Active/active and Active/standby	Active/active and Active/standby
Clustering	–			
Scalability	VPN Load Balancing			
Centralized management	Centralized configuration, logging, monitoring, and reporting are performed by Cisco Security Manager or alternatively in the cloud with Cisco Defense Orchestrator			
Adaptive Security Device Manager	Web-based, local management for small-scale deployments			

Performance testing methodologies LINK

1. Throughput measured with 1500B User Datagram Protocol (UDP) traffic measured under ideal test conditions.

2. "Multiprotocol" refers to a traffic profile consisting primarily of TCP-based protocols and applications like HTTP, SMTP, FTP, IMAPv4, BitTorrent, and DNS.

Hardware specifications

Table 3.   Cisco Firepower 1000 Series hardware specifications

Features	1010		1010E	1120	1140	1150
Dimensions (H x W x D)	1.82 x 7.85 x 8.07 in.			1.72 x 17.2 x 10.58 in.	1.72 x 17.2 x 10.58 in.	1.72 x 17.2 x 10.58 in.
Form factor	Compact (Desktop, wall-mount)			Rack mount, 1U	Rack mount, 1U	Rack mount, 1U
Network interfaces	8 x 1000BASE-T			8 x 1000BASE-T 4 x SFP	8 x RJ-45 4 x SFP	8 x RJ-45 2 x SFP 2 x SFP+
Power over Ethernet	2 ports PoE+ (IEEE 802.3at)		N/A	N/A	N/A	N/A
Management interfaces	1x 1000BASE-T 1x Serial console (RJ-45)			1x 1000BASE-T 1x Serial console (RJ-45)	1x 1000BASE-T 1x Serial console (RJ-45)	1x 1000BASE-T 1x Serial console (RJ-45)
USB	1 x USB 3.0 Type-A (500mA)			1 x USB 3.0 Type-A (500mA)	1 x USB 3.0 Type-A (500mA)	1 x USB 3.0 Type-A (500mA)
Storage	1 x 200 GB			1 x 200 GB	1 x 200 GB	1 x 200 GB
Power supply configuration	External power supply, AC input			Integrated, single AC input	Integrated, single AC input	Integrated, single AC input
AC input voltage	100 to 240V AC			100 to 240V AC	100 to 240V AC	100 to 240V AC
AC maximum current draw	< 2A at 100V, < 1A at 240V			< 2A at 100V, < 1A at 240V	< 2A at 100V, < 1A at 240V	< 2A at 100V, < 1A at 240V
AC maximum power draw	115W		55W	100W	100W	100W
AC frequency	50 to 60 Hz			50 to 60 Hz	50 to 60 Hz	50 to 60 Hz
AC efficiency	>88% at 50% load			>85% at 50% load	>85% at 50% load	>85% at 50% load
Fans	None			1 integrated fan	1 integrated fan	1 integrated fan
Noise	0 dBA			31.7 dBA @ 25C, 56.8 dBA at highest system performance	34.2 dBA @ 25C, 56.8 dBA at highest system performance	34.2 dBA @ 25C, 56.8 dBA at highest system performance
Rack mounting	Via optional rack mount kit			2-post mounting Brackets included.	2-post mounting Brackets included.	2-post mounting Brackets included.
Weight	3 lb (1.4 kg)			8 lb (3.6 kg)	8 lb (3.6 kg)	8 lb (3.6 kg)
Temperature: operating	32 to 104°F (0 to 40°C)			32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
Temperature: nonoperating	−13 to 158°F (−25 to 70°C)			−13 to 158°F (−25 to 70°C)	−13 to 158°F (−25 to 70°C)	−13 to 158°F (−25 to 70°C)
Humidity: operating	90% noncondensing			90% noncondensing	90% noncondensing	90% noncondensing
Humidity: nonoperating	10 to 90% noncondensing			10 to 90% noncondensing	10 to 90% noncondensing	10 to 90% noncondensing
Altitude: operating	9,843 ft (max) 3,000 m (max)			9,843 ft (max) 3,000 m (max)	9,843 ft (max) 3,000 m (max)	9,843 ft (max) 3,000 m (max)
Altitude: nonoperating	15,000 ft (max)			15,000 ft (max)	15,000 ft (max)	15,000 ft (max)

Table 4.   Cisco Firepower 1000 Series regulatory, safety, and EMC compliance

Specification	Description
Regulatory compliance	Products comply with CE markings per directives 2004/108/EC and 2006/108/EC
Safety	• UL 60950-1 • CAN/CSA-C22.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950-1 • GB4943
EMC: emissions	• 47CFR Part 15 (CFR 47) Class A (FCC Class A) • AS/NZS CISPR22 Class A • CISPR22 CLASS A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A • EN300386 • TCVN7189
EMC: immunity	• EN55024 • CISPR24 • EN300386 • KN24 • TVCN 7317 • EN-61000-4-2, EN-61000-4-3, EN-61000-4-4, EN-61000-4-5, EN-61000-4-6, EN-61000-4-8, EN61000-4-11

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Document history

New or Revised Topic	Described In	Date
Product Performance numbers updated	Series Summary Table and Table 1	July 14, 2021
Added 1010E	Table 1, Table 3	

The bridge to possible

Cisco Secure Firewall 3100 Series

Cisco Secure Firewall

Cisco Secure IPS

Contents

Cisco Secure Firewall 3100 Series

The mid-range Cisco Secure Firewall 3100 Series supports your evolving world. It makes hybrid work and zero trust practical, with the flexibility to ensure strong return on investment.

The Cisco Secure Firewall 3100 Series is a family of threat-focused security appliances that delivers business resiliency and superior threat defense. **Each model offers outstanding performance for multiple firewall use cases, even when advanced threat functions are enabled**. These performance capabilities are enabled by a modern CPU architecture coupled with purpose-built hardware that optimizes firewall, cryptographic, and threat inspection functions.

The five models in the 3100 Series deliver a range of performance levels to address use cases from the Internet edge to the data center and private cloud. The 3100 Series supports also clustering to deliver increased performance that can scale to meet your needs as your organization grows.

Each model in the series can run either ASA or Firewall Threat Defense (FTD) software and the platform can be deployed in both firewall and dedicated IPS modes. For inline sets and passive interfaces, the 3100 series supports Q-in-Q (stacked VLAN) with up to two 802.1Q headers in a packet.

Model overview
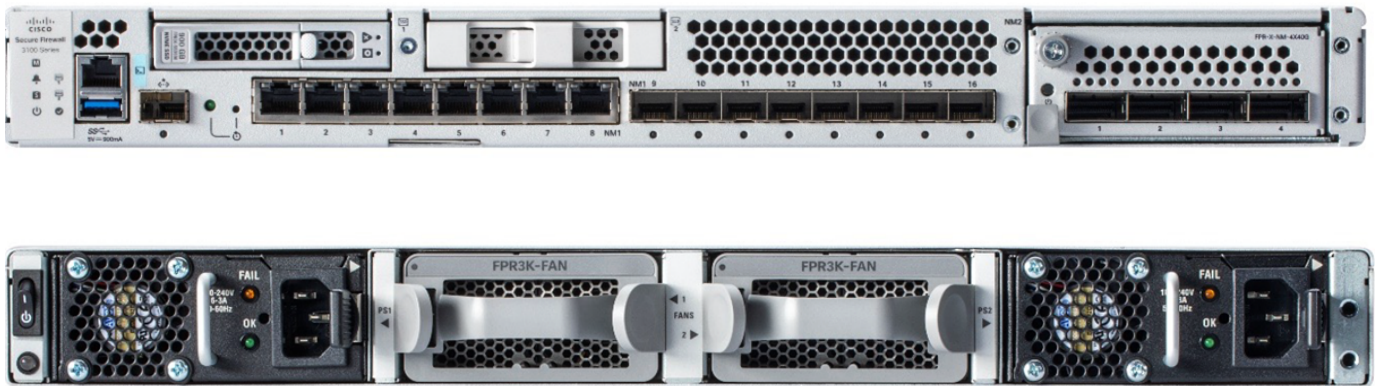
Cisco Secure Firewall 3100 series summary

Table 1. Cisco Secure Firewall 3100 Series performance and specification highlights

Secure Firewall Models	Firewall	FW+AVC+IPS	IPS Throughput	Interfaces	Optional interfaces
3105	10G	10G	10G	8 x RJ45, 8 x 1/10G SFP+	10G SFP+
3110	18G	17G	17G	8 x RJ45, 8 x 1/10G SFP+	10G SFP+
3120	22G	21G	21G	8 x RJ45, 8 x 1/10G SFP+	10G SFP+
3130	42G	38G	38G	8 x RJ45, 8 x 1/10/25G SFP+	10G/25G/40G SFP+, 4X40G NM
3140	49G	45G	45G	8 x RJ45, 8 x 1/10/25G SFP+	10G/25G/40G SFP+, 4x40G NM

Performance specifications and feature details

Table 2. Cisco Secure Firewall 3100 Series performance and capabilities, running on Firewall Threat Defense (FTD) software

Features	3105	3110	3120	3130	3140
Throughput: FW + AVC (1024B)	10 Gbps	17.0 Gbps	21.0 Gbps	38.0 Gbps	45.0 Gbps
Throughput: FW + AVC + IPS (1024B)	10 Gbps	17.0 Gbps	21.0 Gbps	38.0 Gbps	45.0 Gbps
Maximum concurrent sessions, with AVC	1.5 million	2 million	4 million	6 million	10 million
Maximum new connections per second, with AVC	90,000	130,000	170,000	240,000	300,000
TLS[1]	3.2 Gbps	4.8 Gbps	6.7 Gbps	9.1 Gbps	11.5 Gbps
Throughput: NGIPS (1024B)	10.0 Gbps	17.0 Gbps	21.0 Gbps	38.0 Gbps	45.0 Gbps
IPSec VPN Throughput (1024B TCP w/Fastpath)	5.5 Gbps	8 Gbps	10 Gbps	17.8 Gbps	22.4 Gbps
Projected IPSec VPN Throughput (1024B TCP w/Fastpath) with VPN Offload (FTD 7.2)	NA	11.0 Gbps	13.5 Gbps	33.0 Gbps	39.4 Gbps
Maximum VPN Peers	2,000	3,000	7,000	15,000	20,000
Local On-device Management	Yes	Yes	Yes	Yes	Yes
Centralized management	Centralized configuration, logging, monitoring, and reporting are performed by the Firewall Management Center or alternatively in the cloud with Cisco Defense Orchestrator				
Application Visibility and Control (AVC)	Standard, supporting more than 4000 applications, as well as geolocations, users, and websites				
AVC: OpenAppID support for custom, open source, application detectors	Standard				
Cisco Security Intelligence	Standard, with IP, URL, and DNS threat intelligence				
Cisco Secure IPS	Available; can passively detect endpoints and infrastructure for threat correlation and Indicators of Compromise (IoC) intelligence				
Cisco Malware Defense	Available; enables detection, blocking, tracking, analysis, and containment of targeted and persistent malware, addressing the attack continuum both during and after attacks. Integrated threat correlation with Cisco Secure Endpoint is also optionally available				
Cisco Secure Malware Analytics	Available				
URL Filtering: number of categories	More than 80				

Features	3105	3110	3120	3130	3140
URL Filtering: number of URLs categorized	More than 280 million				
Automated threat feed and IPS signature updates	Yes: class-leading Collective Security Intelligence (CSI) from the Cisco Talos Group (https://www.cisco.com/c/en/us/products/security/talos.html)				
Third-party and open-source ecosystem	Open API for integrations with third-party products; Snort® and OpenAppID community resources for new and specific threats				
High availability and clustering	Active/active, Active/standby. Cisco Secure Firewall 3100 Series allows clustering of up to 8 chassis				
Cisco Trust Anchor Technologies	Secure Firewall 3100 Series platforms include Trust Anchor Technologies for supply chain and software image assurance. Please see the section below for additional details				

[1] Throughput measured with 50% TLS 1.2 traffic with AES256-SHA with RSA 2048B keys.

Note: Performance will vary depending on features activated, and network traffic protocol mix, and packet size characteristics. Performance is subject to change with new software releases. Consult your Cisco representative for detailed sizing guidance.

Table 3. ASA Performance and capabilities on Secure Firewall 3100 appliances

Features	3105	3110	3120	3130	3140
Stateful inspection firewall throughput[1]	10.0 Gbps	18.0 Gbps	22.0 Gbps	42.0 Gbps	49.0 Gbps
Stateful inspection firewall throughput (multiprotocol)[2]	9.0 Gbps	15.0 Gbps	17.0 Gbps	39.0 Gbps	43.0 Gbps
Concurrent firewall connections	1.5 million	2 million	4 million	6 million	10 million
New connections per second	150,000	300,000	500,000	875,000	1,100,000
IPsec VPN throughput (450B UDP L2L test)	5.5 Gbps	8 Gbps	10 Gbps	14 Gbps	17 Gbps
Projected IPsec VPN throughput (450B UDP L2L test) with VPN Offload (ASA 9.18)	7.0 Gbps	12.0 Gbps	15.4 Gbps	28.0 Gbps	33.0 Gbps
Maximum VPN Peers	2,000	3,000	7,000	15,000	20,000
Security contexts (included; maximum)	2; 100	2; 100	2; 100	2; 100	2; 100
High availability	Active/active and active/ standby	Active/active and active/ standby	Active/active and active/ standby	Active/active and active/ standby	Active/active and active/ standby
Clustering	8	8	8	8	8
Scalability	VPN Load Balancing				

Features	3105	3110	3120	3130	3140
Centralized management	Centralized configuration, logging, monitoring, and reporting are performed by Cisco Security Manager or alternatively in the cloud with Cisco Defense Orchestrator				
Adaptive Security Device Manager	Web-based, local management for small-scale deployments				

[1] Throughput measured with 1500B User Datagram Protocol (UDP) traffic measured under ideal test conditions.

[2] "Multiprotocol" refers to a traffic profile consisting primarily of TCP-based protocols and applications like HTTP, SMTP, FTP, IMAPv4, BitTorrent, and DNS.

Hardware specifications

Table 4.   Cisco Secure Firewall 3100 Series hardware specifications

Features	Cisco Secure Firewall Model				
	3105	3110	3120	3130	3140
Dimensions (H x W x D)	1.75 x 17 x 20 in. (4.4 x 43.3 x **50.8 cm)**	1.75 x 17 x 20 in. (4.4 x 43.3 x 50.8 cm)	1.75 x 17 x 20 in. (4.4 x 43.3 x 50.8 cm)	1.75 x 17 x 20 in. (4.4 x 43.3 x 50.8 cm)	1.75 x 17 x 20 in. (4.4 x 43.3 x 50.8 cm)
Form factor (rack units)	1RU	1RU	1RU	1RU	1RU
Integrated I/O	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ-45), 8 x 1/10 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ-45), 8 x 1/10 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ-45), 8 x 1/10 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ-45), 8 x 1/10/25 Gigabit (SFP) Ethernet interfaces	8 x 10M/100M/ 1GBASE-T Ethernet interfaces (RJ-45), 8 x 1/10/25 Gigabit (SFP) Ethernet interfaces
Network modules	8 x 1/10G Options	8 x 1/10G Options	8 x 1/10G Options	8 x 1/10/25G, 4 x 40G Options,	8 x 1/10/25G, 4 x 40G Options
Maximum number of interfaces	Up to 24 total Ethernet ports, (8x1G RJ-45, 8x1/10G SFP, and network module)	Up to 24 total Ethernet ports, (8x1G RJ-45, 8x1/10G SFP, and network module)	Up to 24 total Ethernet ports, (8x1G RJ-45, 8x1/10G SFP, and network module)	Up to 24 total Ethernet ports (8x1G RJ-45, 8x1/10/25G SFP, and network module)	Up to 24 total Ethernet ports (8x1G RJ-45, 8x1/10/25G SFP, and network module)
Integrated network management ports	1 x 1/10G SFP	1 x 1/10G SFP	1 x 1/10G SFP	1 x 1/10G SFP	1 x 1/10G SFP
Serial port	1 x RJ-45 console	1 x RJ-45 console	1 x RJ-45 console	1 x RJ-45 console	1 x RJ-45 console
USB	1 x USB 3.0 Type-A (900mA)	1 x USB 3.0 Type-A (900mA)	1 x USB 3.0 Type-A (900mA)	1 x USB 3.0 Type-A (900mA)	1 x USB 3.0 Type-A (900mA)
Storage	1x 900 GB, 1x spare slot	1x 900 GB, 1x spare slot	1x 900 GB, 1x spare slot	1x 900 GB, 1x spare slot	1x 900 GB, 1x spare slot

Features	Cisco Secure Firewall Model				
	3105	**3110**	**3120**	**3130**	**3140**
Power supply configuration	Single 400W AC, Dual 400W AC optional. Single/Dual 400W DC optional[1]	Single 400W AC, Dual 400W AC optional. Single/Dual 400W DC optional[1]	Single 400W AC, Dual 400W AC optional. Single/Dual 400W DC optional[1]	Dual 400W AC. Single/dual 400W DC optional[1]	Dual 400W AC. Single/dual 400W DC optional[1]
AC input voltage	100 to 240V AC	100 to 240V AC	100 to 240V AC	100 to 240V AC	100 to 240V AC
AC maximum input current	< 6A at 100V	< 6A at 100V	< 6A at 100V	< 6A at 100V	< 6A at 100V
AC maximum output power	400W	400W	400W	400W	400W
AC frequency	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz
AC efficiency	>89% at 50% load	>89% at 50% load	>89% at 50% load	>89% at 50% load	>89% at 50% load
DC input voltage	–48V to –60VDC	–48V to –60VDC	–48V to –60VDC	–48V to –60VDC	–48V to –60VDC
DC maximum input current	< 12.5A at –48V	< 12.5A at –48V	< 12.5A at –48V	< 12.5A at –48V	< 12.5A at –48V
DC maximum output power	400W	400W	400W	400W	400W
DC efficiency	>88% at 50% load	>88% at 50% load	>88% at 50% load	>88% at 50% load	>88% at 50% load
Redundancy	1+1 AC or DC with dual supplies	1+1 AC or DC with dual supplies	1+1 AC or DC with dual supplies	1+1 AC or DC with dual supplies	1+1 AC or DC with dual supplies
Fans	2 hot-swappable fan modules (with 2 fans each)[2]	2 hot-swappable fan modules (with 2 fans each)[2]	2 hot-swappable fan modules (with 2 fans each)[2]	2 hot-swappable fan modules (with 2 fans each)[2]	2 hot-swappable fan modules (with 2 fans each)[2]
Noise	65 dBA@ 25C 74 dBA maximum	65 dBA@ 25C 74 dBA maximum	65 dBA@ 25C 74 dBA maximum	65 dBA@ 25C 74 dBA maximum	65 dBA@ 25C 74 dBA maximum
Rack mountable	Yes. Fixed mount brackets optional. (2- post). Mount rails included (4-post EIA-310-D rack)	Yes. Fixed mount brackets optional. (2- post). Mount rails included (4-post EIA-310-D rack)	Yes. Fixed mount brackets optional. (2- post). Mount rails included (4-post EIA-310-D rack)	Yes. Fixed mount brackets optional. (2- post). Mount rails included (4-post EIA-310-D rack)	Yes. Fixed mount brackets optional. (2- post). Mount rails included (4-post EIA-310-D rack)
Weight	23 lb (10.5 kg) 1 x power supplies, 1 x NM, fan module, 1x	23 lb (10.5 kg) 1 x power supplies, 1 x NM, fan module, 1x	23 lb (10.5 kg) 1 x power supplies, 1 x NM, fan module, 1x	25 lb (11.4 kg) 2 x power supplies, 1 x NM, fan module, 1x	25 lb (11.4 kg) 2 x power supplies, 1 x NM, fan module, 1x

Features	Cisco Secure Firewall Model				
	3105	3110	3120	3130	3140
	SSD	SSD	SSD	SSD	SSD
Temperature: operating	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C) or NEBS operation (see below)[3]	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)
Temperature: nonoperating	-4 to 149°F (-20 to 65°C)	-4 to 149°F (-20 to 65°C)	-4 to 149°F (-20 to 65°C)	-4 to 149°F (-20 to 65°C)	-4 to 149°F (-20 to 65°C)
Humidity: operating	10 to 85% noncondensing	10 to 85% noncondensing	10 to 85% noncondensing	10 to 85% noncondensing	10 to 85% noncondensing
Humidity: nonoperating	5 to 95% noncondensing	5 to 95% noncondensing	5 to 95% noncondensing	5 to 95% noncondensing	5 to 95% noncondensing
Altitude: operating	10,000 ft (max)	10,000 ft (max)	10,000 ft (max) or NEBS operation (see below)[3]	10,000 ft (max)	10,000 ft (max)
Altitude: nonoperating	40,000 ft (max)	40,000 ft (max)	40,000 ft (max)	40,000 ft (max)	40,000 ft (max)
NEBS operation (FPR- 3120 Only)[3]			Operating altitude: 0 to 13,000 ft (3962 m) Operating temperature: Long term: 0 to 45°C, up to 6,000 ft (1829 m) Long term: 0 to 35°C, 6,000 to 13,000 ft (1829 to 3964 m) Short term: -5 to 55°C, up to 6,000 ft (1829 m)		

[1] Dual power supplies are hot-swappable.

[2] Fans operate in a 3+1 redundant configuration where the system will continue to function with only 3 operational fans. The 3 remaining fans will run at full speed.

[3] FPR-3120 platform is designed to be NEBS ready. The availability of NEBS certification is pending.

Table 5. Cisco Secure Firewall 3100 Series NEBS, Regulatory, Safety, and EMC Compliance

Specification	Description
Regulatory compliance	• Products comply with CE markings per directives 2004/108/EC and 2006/108/EC
Safety	• UL 62368-1 • CAN/CSA-C22.2 No. 62368-1 • EN 62368-1 • IEC 62368-1 • IEC 60950-1 • AS/NZS 62368-1 • GB4943
EMC: emissions	• FCC 47CFR15 Class A • AS/NZS CISPR 32 Class A • EN55032/CISPR 32 Class A • ICES-003 Class A • VCCI Class A • KS C 9832 Class A • CNS-13438 Class A • EN61000-3-2 Power Line Harmonics • EN61000-3-3 Voltage Changes, Fluctuations, and Flicker
EMC: Immunity	• IEC/EN61000-4-2 Electrostatic Discharge Immunity • IEC/EN61000-4-3 Radiated Immunity • IEC/EN61000-4-4 EFT-B Immunity • IEC/EN61000-4-5 Surge • IEC/EN61000-4-6 Immunity to Conducted Disturbances • IEC/EN61000-4-11 Voltage Dips, Short Interruptions, and Voltage Variations • KS C 9835
EMC: ETSI/EN	• EN 300 386 Telecommunications Network Equipment (EMC) • EN55032/CISPR 35 Multimedia Equipment (Emissions) • EN55024/CISPR 24 Information Technology Equipment (Immunity) • EN55035/CISPR 35 Multimedia Equipment (Immunity) • EN61000-6-1 Generic Immunity Standard

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Document history

New or Revised Topic	Described In	Date
3105 model added	Tables 1, 2, 3, 4	March xx, 2023

Cisco 4000 Series Integrated Services Router T1/E1 Voice and WAN Network Interface Modules Data Sheet

These flexible interface cards support multiple integrated data and voice applications, facilitating the migration from data-only as well as circuit-switched voice services to a packet voice solution.

Introduction

The Cisco® Fourth-Generation 1-, 2-, 4-, and 8-Port T1/E1 Multiflex Trunk Voice and WAN Network Interface Modules (NIMs) support data and voice applications on the Cisco 4000 Integrated Services Routers (Figure 1). These cards combine WAN-interface-card (WIC), voice-interface-card (VIC), ISDN Primary Rate Interface (PRI), dial-access integration, and channelized-data (CE1T1) functions to provide superior flexibility, versatility, and investment protection through their many uses. Customers who choose to integrate data and voice in multiple steps preserve their investment in a T1/E1 WAN interface.

Note: These NIMs are not supported with Cisco 2900 and 3900 Integrated Services Routers.

Figure 1.   Cisco 4000 T1/E1 NIMs

Table 1 lists the available cards and compares their features.

Table 1.   Cisco T1/E1 NIM Types and Feature Comparison

Part Number	Number of Ports	Clear-Channel Data	MFT Packet Voice	Unstructured E1 (G.703) Support	Channelized Data
NIM-1MFT-T1/E1	1	Yes	Yes	No	No
NIM-2MFT-T1/E1	2	Yes	Yes	No	No
NIM-4MFT-T1/E1	4	Yes	Yes	No	No
NIM-8MFT-T1/E1	8	Yes	Yes	No	No
NIM-1CE1T1-PRI	1	Yes	Yes	Yes	Yes
NIM-2CE1T1-PRI	2	Yes	Yes	Yes	Yes
NIM-8CE1T1-PRI	8	Yes	Yes	Yes	Yes

You can insert the Cisco T1/E1 NIMs into the NIM slot on the supported Cisco 4000 Integrated Services Routers (ISRs). In addition to the features listed in Table 1, these modules support both T1 and E1, providing additional flexibility for supporting T1, fractional T1, E1, and fractional E1 for both voice and WAN applications simultaneously. All modules include the drop-and-insert multiplexing capability, which eliminates costly external third-party channel service units/data service units (CSUs/DSUs) and drop-and-insert multiplexers.

The fourth-generation Cisco T1/E1 NIMs add improvements over the Cisco Second- and Third-Generation T1/E1 Multiflex Trunk Voice and WAN Interface Cards (MFT VWIC2s and VWIC3s, respectively). The fourth-generation T1/E1 modules enable each port to be clocked from an independent clock source for data applications. Voice applications can now be clocked independently from data applications, with all ports for voice applications clocked from a single source.

The T1/E1 modules contain an onboard Cisco Packet Voice Digital Signal Processor Module 4 (PVDM4) slot, which requires a fourth-generation PVDM4 module. A PVDM4 on the T1/E1 module is necessary for the voice features. The PVDM4 also provides for echo cancellation of up to 128-ms echo-tail length for demanding network conditions. Refer to Table 2 for all configuration options offered with the modules.

These fourth-generation modules also provide increased port density per chassis compared to the Cisco Integrated Services Routers Generation 2 (ISR G2) platform.

Key Features

- Basic T1/E1 data: The MFT versions act as WICs, supporting T1, fractional T1, E1, and fractional E1. To simplify remote management, these modules integrate a fully managed DSU/CSU for T1 deployments and a fully managed DSU for E1 deployments.
- E1/G.703 data: In addition to the basic T1/E1 data support, the CE1T1 versions also support structured G.703 with G.704 framing and unstructured E1 (G.703) applications.
- T1/E1 packet voice: All the modules support packet voice applications by providing T1, fractional T1, E1, and fractional E1 connections to private branch exchanges (PBXs) and central offices, thereby enabling new services and reducing voice and fax toll charges. An additional onboard PVDM4 is required. Also, each NIM has its own PVDM4, so each module can be connected to a different service provider with no single clock domain restriction.
- Mixed data and packet voice: All the modules can simultaneously support both data and voice, reducing the complexity and number of network components and facilitating a graceful migration to bandwidth-efficient packet voice.
- Mixed data and packet voice with drop and insert: You can deploy all the modules as T1/E1 drop-and-insert multiplexers with integrated DSUs/CSUs, reducing the complexity of the network and the cost of the central-office ports by efficiently combining time-division multiplexing (TDM) voice (PBX), IP voice, and data on the same trunks.

Applications

Packet Voice Solutions: PBX and Central-Office Connectivity

The modules supply PBX and public-switched-telephone-network (PSTN) connectivity for the Cisco 4000 with the onboard NIM slots. The ISRs support H.323, Session Initiation Protocol (SIP), Media Gateway Control Protocol (MGCP), and Skinny Client Control Protocol (SCCP)-based voice over IP (VoIP).

Multiplexed Data and Voice Solutions: T1/E1 Drop-and-Insert Multiplexer with Integrated DSU/CSU

The Cisco fourth-generation T1/E1 modules simplify branch-office connectivity by consolidating the functions of a router, a fully managed drop-and-insert multiplexer, and a fully managed DSU/CSU into a single box. Typically a drop-and-insert multiplexer is used for channelized (that is, TDM) integration of data and voice onto a single T1, fractional T1, E1, or fractional E1 connection to the central office. Sharing a line can significantly reduce costs over those of two separate physical lines to the central office. Although the normal use is for data and voice sharing of a T1 or E1 service, you can also use the drop-and-insert capability for voice and data, or data and data sharing of the service. Moreover, the integrated drop-and-insert capability enhances system availability by allowing the Cisco IOS® Software to be reloaded while maintaining TDM switching. 56/64K Digital Data Service (DDS) function is not supported by T1/E1 NIMs.

Analog Cross-Connect Solution

You can cross-connect the TDM DS-0 channels with analog voice ports to create an analog cross-connect solution.

Table 2.   Cisco T1/E1 Module Capacity Comparison

Configuration Description	MFT Modules NIM-1MFT-T1/E1, NIM-2MFT-T1/E1, NIM-4MFT-T1/E1, and NIM-8MFT-T1/E1	Channelized Modules NIM-1CE1T1-PRI, NIM-2CE1T1-PRI, and NIM-8CE1T1-PRI
Data Only		
Serial data (channel-group*)	2 per port	24 per port
E1 unframed G.703	Not supported	Supported
Voice Only		
Voice channel associated signaling (CAS) (ds0-group)**	24 per port (T1) 31 per port (E1) 1 per timeslot	24 per port (T1) 31 per port (E1) 1 per timeslot
Voice and Data		
PRI (pri-group*)**	1 per port	1 per port
Drop and insert (tdm-group**)**	24 per port (T1) 31 per port (E1) 1 per timeslot	24 per port (T1) 31 per port (E1) 1 per timeslot

* channel-group refers to bonding of one or more time slots into a single High-Level Data Link Control (HDLC)-framed serial connection for IP data traffic connectivity. This connection is used for HDLC, Frame Relay, and Multilink PPP (MLPPP) serial WAN connections.

** ds0-group refers to bonding of one or more time slots into a single TDM voice connection using CAS such as ear and mouth (E&M), foreign exchange station (FXS), or foreign exchange office (FXO). This connection is used for TDM PBX or PSTN connections and typically is deployed only on T1.

*** pri-group refers to bonding of two or more time slots into a single TDM connection using ISDN signaling. This connection is typically used for TDM PBX or PSTN voice connections on T1 and E1, and also for data WAN connections on E1. Each call on the PRI is individually indicated as being a voice or data call with the ISDN bearer capability delivered with the call. Signaling is done on the D-channel, which is always channel 24 on a T1 and channel 31 on an E1.

**** tdm-group refers to cross-connecting one or more time slots from one TDM interface to another. This connection is used to groom channels from different access points onto a combined T1 or E1 uplink. Because the router merely cross-connects and does not interpret or route the traffic from the ingress interface to the egress interface, the traffic type (voice and data) is transparent to the router.

Cisco IOS XE Software Release Requirements

The modules are supported on the Cisco 4000 and require Cisco IOS XE Software Release 3.9.

The DSP farm services (conferencing & transcoding) on the modules are supported only on Release 3.11 and above.

Data applications require the IP Base technology package, which is included by default. Voice applications require a minimum of the UC technology package, which is optional.

Data Features

NIM data features follow:

- T1/E1 or fractional T1/E1 network interface
- n x 64 kbps or n x 56 kbps, nonchannelized data rates (T1: n = 1 to 24, E1: n = 1 to 31)
- Standards-based, including ANSI T1.403 and AT&T Publication 62411
- Non-Facility Associated Signaling (NFAS) on one single module is supported. NFAS across multiple NIM modules is not supported.

NIM data features do not include Dial on Demand Routing (DDR).

Network Interface Specifications

Tables 3 and 4 give T1 and E1 network interface specifications, respectively.

Table 3.　T1 Network Interface Specifications

T1 Network Interface	
Transmit bit rate	1.544 Mbps ±50 bps/32 ppm
Receive bit rate	1.544 Mbps ±50 bps/32 ppm
Line code	Alternate mark inversion (AMI) and binary 8-zero substitution (B8ZS)
AMI ones density	Enforced for n x 56-kbps channels
Framing format	D4 (Super Frame [SF]) and Extended Super Frame (ESF)
Output level (line build-out [LBO])	0, -7.5 or -15 dB
Input level	+1 dB0 down to -24 dB0
Data-terminal-equipment (DTE) interface (WIC mode)	Fractional service
DTE interface (VIC mode)	G.704 or structured
Data-communications-equipment (DCE) interface	G.704 or structured

Table 4.　E1 Network Interface Specifications

E1 Network Interface	
Transmit bit rate	2.048 Mbps ±100 bps/50 ppm
Receive bit rate	2.048 Mbps ±100 bps/50 ppm
Data rate	1.984 Mbps (framed mode) per E1 port
Clocking	Internal and loop (recovered from network)
E1 national bits	Fixed (nonconfigurable)
Encoding	High-density bipolar three (HDB3)
DTE interface (WIC mode)	Fractional service
DTE interface (VIC mode)	G.704 or structured
DCE interface	G.704 or structured

Table 5 gives the module specifications, and Table 6 lists the weights.

Table 5.   Module Specifications

Features	Specifications
Dimensions (H x W x D)	1.25 x 3.50 x 7.24 in. (3.18 x 8.89 x 18.39 cm)
Environmental	● Operating temperature: 0 to 50°C (32 to 122°F) ● Storage temperature: -20 to +65°C (-4 to 148°F) ● Relative humidity: 10 to 85% noncondensing operating; 5 to 95% noncondensing, nonoperating
T1 Compliance (partial list)	● TIA-968-A ● CS-03 ● Jate ● ANSI T1.403
E1 Compliance (partial list)	● TBR4, TBR12, and TBR13 ● ITU-T G.703, G.704, G.823, and I.431 ● S016 (Australia)

Table 6.   Weight (All values are +/-0.01 lb (+/-5g.)

Product Number	Weight
NIM-1MFT-T1/E1	0.40 lb (181g)
NIM-2MFT-T1/E1	0.42 lb (191g)
NIM-4MFT-T1/E1	0.44 lb (200g)
NIM-8MFT-T1/E1	0.52 lb (236g)
NIM-1CE1T1-PRI	0.40 lb (181g)
NIM-2CE1T1-PRI	0.42 lb (191g)
NIM-8CE1T1-PRI	0.52 lb (236g)

Diagnostics

- ANSI T1.403 Annex B/V.54 loop-up/down code recognition, network loopback, user-initiated loopbacks, network payload loopback, local DTE loopback, and remote line (codes: V.54, loop up, and loop down)

- Bit-error-rate-testing (BERT) patterns: All 0s, all 1s, 1:2, 1:8, 3:24, QRW, QRSS, 63, 511, 2047, and V.54/T1.403 annex B bit patterns, and two user-programmable 24-bit patterns

- Alarm detection: Alarm indication signal (AIS), time-slot 16 AIS, remote alarm, far-end block error (FEBE), out of frame (OOF), cyclic-redundancy-check (CRC) multiframe OOF, signaling multiframe OOF, frame errors, CRC errors, loss of network signal (red alarm), loss of network frame, receive (blue alarm) (AIS) from network, receive (yellow) from network performance reports or error-counters CRC, errored seconds, burst errored seconds, severely errored seconds, Ft and Fs framing errors for SF framing, (FPS) framing errors for ESF framing, and 24-hour history stored in 15-minute increments

- Onboard processor for real-time facility-data-link (FDL) messaging, in-band code detection and insertion, alarm integration, and performance monitoring

- Full FDL support and FDL performance monitoring, according to configurable standard: ANSI T1.403 or AT&T TR 54016

DSU/CSU

- Selectable DSX-1 cable length in increments from 0 to 655 feet in DSU mode

- Selectable DS-1 CSU line build-out: 0, -7.5, and -15 dB

LEDs

- CD (data carrier detect): Indicates a received error on the telco link
- LP (loopback): Indicates that the interface is in loopback mode
- AL (alarm): Indicates an alarm condition

Table 7 gives the network management features and Table 8 gives regulatory compliance information about the NIMs.

Table 7.   Network Management Features

Management Feature	
Telnet or console	Remote and local configuration, monitoring, and troubleshooting from Cisco IOS XE Software command-line interface (CLI)
Simple Network Management Protocol (SNMP)	• Router and DSU/CSU managed by single SNMP agent; router, DSU, and CSU appear as a single network entity to user • Standard MIB (MIB II) • Cisco Integrated DSU/CSU MIB • RFC 1406 T1 MIB, including Alarm Detection and Reporting
SNMP traps	Generated in response to alarms

Table 8.   Regulatory Compliance

Safety	EMC Immunity	EMC Emissions	Network Equipment Building Standards (NEBS)
• UL 60950 • CAN/CSA C22.2 No. 60950 • IEC 60950-1 • EN 60950-1 • AS/NZS 60950	• EN55024 (CISPR24) • EN61000-4-2 • EN61000-4-3 • EN41000-4-4 • EN41000-4-5 • EN41000-4-6 • EN41000-4-8 • EN41000-4-11 • EN50082-1 • EN61000-6-2 • ITU-T K.21	• CFR 47 Part 15, Class A • ICES-003 Class A • EN55022 Class A • CISPR22 Class A • AS/NZS 3548 Class A • VCCI Class A • EN 300386 • EN61000-3-2 • EN61000-3-3	• GR-63 • GR-1089 Type 1, 3

Telecom Homologation

Homologation requirements vary by country and interface type. For specific country information, refer to the online approvals database at:

http://tools.cisco.com/cse/prdapp/jsp/externalsearch.do?action=externalsearch&page=EXTERNAL_SEARCH&module=EXTERNAL_SEARCH.

Ordering Information

Help customers understand all the components or parts they need to purchase in order to install and use the product. This section also provides a direct link to the Cisco Ordering Tool and lists part numbers for customer convenience.

Table 9.　　Ordering Information

Product Name	Part Number
NIM-1MFT-T1/E1	1 port Multi-flex Trunk Voice/Clear-channel Data T1/E1 Module
NIM-2MFT-T1/E1	2 port Multi-flex Trunk Voice/Clear-channel Data T1/E1 Module
NIM-4MFT-T1/E1	4 port Multi-flex Trunk Voice/Clear-channel Data T1/E1 Module
NIM-8MFT-T1/E1	8 port Multi-flex Trunk Voice/Clear-channel Data T1/E1 Module
NIM-1CE1T1-PRI	1 port Multi-flex Trunk Voice/Channelized Data T1/E1 Module
NIM-2CE1T1-PRI	2 port Multi-flex Trunk Voice/Channelized Data T1/E1 Module
NIM-8CE1T1-PRI	8 port Multi-flex Trunk Voice/Channelized Data T1/E1 Module

To place an order, visit the Cisco Ordering Home Page and refer to Table 9. To download software, visit the Cisco Software Center.

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C78-728308-03　08/16

Cisco Packet Voice Digital Signal Processor Modules (PVDMs) for Cisco Unified Communications Solutions

Contents

Product overview

The Cisco® Packet Voice Digital Signal Processor Modules (PVDMs) enable the Cisco Catalyst 8000 Edge Platforms Family and the Cisco 4000 Series Integrated Services Routers (ISRs) to provide rich-media capabilities such as high-density voice connectivity, conferencing, transcoding, media optimization, transrating, and secure voice for Cisco Unified Communications solutions. These new modules support unprecedented scale while allowing for a smaller solution footprint than ever before.

Figure 1.
On-Board Motherboard PVDM (PVDM4-X)

Figure 2.
PVDM Enhanced Services Module (SM-X-PVDM)

Figure 3.
PVDM Network Interface Module (NIM-PVDM-X)

Features and benefits

The PVDMs support digital voice connections, conferencing, universal transcoding, and media optimization services:

- **T1/E1 voice:** One of the primary uses of PVDMs is to packetize digital voice into IP packets to enable Time-Division Multiplexing (TDM) digital voice applications.

- **Conferencing:** PVDM modules support ad hoc and meet-me conferencing with various codecs in conjunction with Cisco Unified Communications Manager and Cisco Unified Communications Manager Express.

- **Universal transcoding:** In conjunction with Cisco IOS® Software, the PVDMs support universal transcoding, which allows conversion from any supported codec to any other supported codec.

- **Transrating:** The PVDMs support transrating, in which the same codec is repacketized in order to connect dissimilar networks that have different codec packetization periods.

- **Voice-quality management:** The PVDMs perform compression, voice-activity detection, jitter management, and echo cancellation. The echo cancellation offered in the PVDMs has a tail length of 128 milliseconds and complies with ITU-T G.168.

- **Energy savings:** The motherboard PVDMs (PVDM4s) offer multiple power-saving modes, including a power-saver mode when the module is not in use. In power-saver mode, each PVDM4 can save up to 5 watts of power.

The analog voice modules (FXS, FXO, and E/M) and Basic Rate Interface (BRI) digital voice modules for the Catalyst 8000 and the 4000 Series ISRs contain built-in, nonconfigurable Digital Signal Processors (DSPs) and do not require any additional PVDMs for voice packetization.

Refer to the [PVDM Q&A](#) for commonly asked questions.

Form factor and options

The Cisco PVDMs are available in three form factors with four supported densities in each form factor:

- Motherboard PVDMs (PVDM4) for densities up to 256 channels (Figure 1)

- PVDM enhanced Services Modules (SM-X-PVDM) for densities up to 3080 channels (Figure 2)

- NIM PVDM for densities up to 256 channels (Figure 3)

The motherboard PVDMs are supported on all Cisco 4000 Series ISRs except the ISR 4461. They can be plugged directly into the single slot on the router motherboard or into the Network Interface Module (NIM) that supports T1/E1 ports. A PVDM4 module plugged into the motherboard delivers IP-based voice services such as conferencing, media optimization, and transcoding only.

A PVDM4 module plugged into the T1/E1 NIM would be used for voice T1/E1 connectivity. Any excess channels can be reused toward other IP-based services supported on the motherboard slot. Enhanced DSP architecture accommodates a new packet-processing engine optimized for rich-media voice applications, while concurrently supporting the TDM-IP voice framework.

The PVDM enhanced services modules are supported on all Catalyst 8300s and ISRs that contain an SM-X slot - namely the Cisco 4331, 4351, 4451 and 4461 ISRs.

The PVDM network interface modules are supported on Catalyst 8300s and ISR 4461 all of which contain NIM slots.

The SM-X modules and the NIM PVDM modules support only IP-based voice services and cannot be used for TDM applications.

Table 1 lists the various PVDM options along with their slot requirements.

Table 1.   Cisco PVDM Part Numbers and Slot Requirements

Part Number	Slot	Description
PVDM4-32(=)	On-board motherboard or T1/E1 module slot	32-channel high-density voice DSP module, or spare
PVDM4-64(=)	On-board motherboard or T1/E1 module slot	64-channel high-density voice DSP module, or spare
PVDM4-128(=)	On-board motherboard or T1/E1 module slot	128-channel high-density voice DSP module, or spare
PVDM4-256(=)	On-board motherboard or T1/E1 module slot	256-channel high-density voice DSP module, or spare
SM-X-PVDM-500(=)	Enhanced services module slot	768-channel high-density voice DSP module, or spare
SM-X-PVDM-1000(=)	Enhanced services module slot	1024-channel high-density voice DSP module, or spare
SM-X-PVDM-2000(=)	Enhanced services module slot	2048-channel high-density voice DSP module, or spare
SM-X-PVDM-3000(=)	Enhanced services module slot	3080-channel high-density voice DSP module, or spare
NIM-PVDM-32(=)	Network Interface module slot	NIM PVDM with 32-channel DSP
NIM-PVDM-64(=)	Network Interface module slot	NIM PVDM with 64-channel DSP
NIM-PVDM-128(=)	Network Interface module slot	NIM PVDM with 128-channel DSP
NIM-PVDM-256(=)	Network Interface module slot	NIM PVDM with 256-channel DSP

Codec support and capacity

The PVDM4 modules support a wide range of codecs of different complexities. They support all codecs supported by the Cisco 2800/3800 High-Density PVDMs (PVDM3s). Table 2 lists the codecs supported on the PVDM4 and SM-X-PVDM modules, and Table 3 gives the channel densities of the PVDM4, SM-X-PVDM and NIM-PVDM modules. Table 4 lists the media-enhancement features.

Table 2.   Voice, Fax, and Modem Codec Support on PVDMs

Low-Complexity Codecs	Complexity	Motherboard PVDMs (PVDM4s)	PVDM Enhanced Services Modules (SM-X-PVDMs)	NIM PVDM Modules
Clear channel	Low	Supported	Not applicable	Supported
G.711	Low	Supported	Supported	Supported
Fax and modem pass-through	Low	Supported	Not supported	Supported
G.722	Medium	Supported	Supported	Supported
G.726	Medium	Supported	Not supported	Supported
G.728	High	Supported	Not supported	Supported
G.729	High	Supported	Supported (mapped to G.729a)	Supported
G.729a	Medium	Supported	Supported	Supported
G.729b	High	Supported	Supported (mapped to G.729ab)	Supported
G.729ab	Medium	Supported	Supported	Supported
Fax Relay	Medium	Supported	Not supported	Supported
iLBC (Internet low bit rate codec)	High	Supported	Supported	Supported
iSAC (Internet speech audio codec)	High	Transcoding only	Transcoding only	Transcoding only
AMR-WB	High	Not supported	Not supported	Not supported
Modem relay	High	Supported	Not supported	Supported

Table 3. Channel Densities of PVDM4, NIM-PVDM-X and SM-X-PVDM Modules

Name	Number of Channels		
	Low Complexity	**Medium Complexity**	**High Complexity**
PVDM4-32	32	24	16
PVDM4-64	64	48	32
PVDM4-128	128	96	64
PVDM4-256	256	192	128
SM-X-PVDM-500	768	384	192
SM-X-PVDM-1000	1024	512	256
SM-X-PVDM-2000	2048	1024	512
SM-X-PVDM-3000	3080	1400	770
NIM-PVDM-32	32	24	16
NIM-PVDM-64	64	48	32
NIM-PVDM-128	128	96	64
NIM-PVDM-256	256	192	128

Table 4. Media-Enhancement Features

Feature	Motherboard PVDMs (PVDM4s)	PVDM Enhanced Services Modules (SM-X-PVDMs)	NIM PVDM Modules
Echo cancellation	Yes	No	Yes
Tone detection	Yes	Yes	Yes
Noise reduction	Yes	Yes	Yes
Acoustic shock prevention	Yes	Yes	Yes
Gain control	Yes	Yes	Yes

Cisco platform availability and performance

The PVDM4 modules are supported on all Cisco 4000 Series ISRs except the ISR 4461. The platform motherboard has one slot for the PVDM4 module. You can plug any additional PVDM4 modules into the T1/E1 NIMs.

The SM-X-PVDM modules are supported on the Catalyst 8300 and the Cisco 4000 Series ISRs with a SM-X slot. Table 5 provides details on the platform support. Tables 6 and 7 give information on platform performance for transcoding and conferencing, respectively.

The NIM-PVDM-X modules are supported on the Catalyst 8300 and the ISR 4461.

Table 5.   Platform Availability for SM-X-PVDM Modules

4000 Series Platform	SM-X-PVDM-500 (maximum channels)	SM-X-PVDM-1000 (maximum channels)	SM-X-PVDM-2000 (maximum channels)	SM-X-PVDM-3000 (maximum channels)
C8300-1N1S-6T	1 (500)	1 (1000)	1 (2000)	1 (3000)
C8300-1N1S-4T2X	1 (500)	1 (1000)	1 (2000)	1 (3000)
C8300-2N2S-6T	2 (1000)	2 (2000)	1 (2000)	1 (3000)
C8300-2N2S-4T2X	2 (1000)	2 (2000)	2 (4000)	2 (6000)
4321	Not supported	Not supported	Not supported	Not supported
4331	1 (500)	1 (1000)	Not supported	Not supported
4351	2 (1000)	1 (1000)	Not supported	Not supported
4431	Not supported	Not supported	Not supported	Not supported
4451	2 (1000)	2 (2000)	1 (2000)	1 (3000)
4461	3(1500)	3 (3000)	2 (4000)	2 (4000)

All SM-X-PVDM modules require minimum of 8GB RAM

Table 6. Platform Performance for Transcoding

Platform	Low Complexity to Low Complexity
C8300-1N1S-6T	3336
C8300-1N1S-4T2X	3336
C8300-2N2S-6T	3592
C8300-2N2S-4T2X	6672
4321	768
4331	1024
4351	1280
4431	1024
4451	3336
4461	6160

Table 7. Platform Performance for Conferencing

Platform	Low Complexity (8-party)
C8300-1N1S-6T	498
C8300-1N1S-4T2X	520
C8300-2N2S-6T	591
C8300-2N2S-4T2X	937
4321	130
4331	220
4351	245
4431	241
4451	502
4461	850

Note that the 4000 Series ISRs do not support the PVDM3 modules, and the 2900 and 3900 Series ISRs do not support the PVDM4, SM-X-PVDM and NIM-PVDM-X modules.

Product specifications

Table 8 gives the specifications for the PVDM4 and SM-X-PVDM modules.

Table 8. Module Specifications

Feature	Motherboard PVDMs (PVDM4s)	PVDM Enhanced Services Modules (SM-X-PVDMs)	PVDM Network Interface Modules (NIM-PVDM-X)
Components			
DSP	Multicore DSP technology	Multicore DSP technology	Multicore DSP technology
Interface	Integrated Services Card (ISC) slot on motherboard or T1/E1 NIM	Enhanced services module (SM-X)	Network Interface module (NIM-PVDM-X)
Features			
Operating temperature	32° to 122°F (0° to 50°C)	32° to 104°F (0° to 40°C)	32° to 122°F (0° to 50°C)
Voltage	3.3V	12V	12V
Current	1.47A	4.17A	1.25A
Power	4.85W	50W	15W
Weight	0.08 lb (36 g)	1.78 lb (808 g)	0.45lb (204 g)
Dimensions (H x W x D)	0.67 x 2.50 x 2.62 in. (1.7 x 5.1 x 6.7 cm)	1.58 x 8.55 x 8.10 in. (4.0 x 21.7 x 20.6 cm)	1.25 x 3.50 x 7.24 in. (3.18 x 8.89 x 18.39 cm)
Regulatory and Compliance			
Safety	Complies with: • IEC 60950 (worldwide) • AS/NZS 60950-1 (Australia and New Zealand) • CAN/CSA-C22.2 No. 60950-1, 1st and 2nd Ed. (Canada) • GB4943-95 (People's Republic of China) • EN60950-1, 1st and 2nd Ed. (CENELEC; includes EU and EFTA) • NOM-019-SCFI-1998 (Mexico) • UL 60950-1, 1st and 2nd Ed. (United States)	Complies with: • IEC 60950 (worldwide) + A1 and A2 • AS/NZS 60950-1 (Australia and New Zealand) • CAN/CSA-C22.2 No. 60950-1, 2nd Ed. (Canada) • GB4943-95 (People's Republic of China) • EN60950-1, 2nd Ed. (CENELEC; includes EU and EFTA) plus Am1 and Am2 • NOM-019-SCFI-1998 (Mexico) • UL 60950-1, 2nd Ed. (United States)	Complies with: IEC 60950-1, 2nd Ed with all group differences and national deviations (worldwide) • CAN/CSA-C22.2 No. 60950-1-07. (Canada) • EN 60950-1, 2nd Ed. (CENELEC; includes EU and EFTA) • UL 60950-1, 2nd Ed. (United States) • IEC 62368, 2nd Ed with all group differences and national deviations (worldwide) • CAN/CSA-C22.2 No. 62368-1-14. (Canada) • EN 62368-1, 2nd Ed. (CENELEC; includes EU and EFTA) • UL 62368-1, 2nd Ed. (United States)

Feature	Motherboard PVDMs (PVDM4s)	PVDM Enhanced Services Modules (SM-X-PVDMs)	PVDM Network Interface Modules (NIM-PVDM-X)
Homologation	Platform dependent	Platform dependent	Platform dependent
Mean time between failures (MTBF)	System dependent	System dependent	System dependent
EMC			
Emissions	• CISPR22, Class B • EN55022, Class B, CFR47, Part 15, Subpart B, Class B	• CISPR22, Class A • EN55022, Class A, CFR47, Part 15, Subpart B, Class B	• CISPR32, Class A • EN55032, Class A, CFR47, Part 15, Subpart B, Class A
Harmonics	EN61000-3-2	EN61000-3-2	EN61000-3-2
Flicker	EN61000-3-3	EN61000-3-3	EN61000-3-3
Immunity	• CISPR24 • EN 55024 • EN50082-1	• CISPR24 • EN 55024 • EN50082-1	• CISPR24 • EN 55024 • EN61000-6-1
Electrostatic discharge (ESD)	EN 61000-4-2	EN 61000-4-2	EN 61000-4-2
RF fields	EN 61000-4-3	EN 61000-4-3	EN 61000-4-3
EFT	EN 61000-4-4	EN 61000-4-4	EN 61000-4-4
Surge	EN 61000-4-5	EN 61000-4-5	EN 61000-4-5
Conducted RF	EN 61000-4-6	EN 61000-4-6	EN 61000-4-6
Power-frequency magnetic fields	EN 6100-4-8	EN 6100-4-8	EN 6100-4-8
Voltage dips, sags, and interruptions	EN 61000-4-11	EN 61000-4-11	EN 61000-4-11

Ordering information

To place an order, visit the Cisco Ordering Home Page and refer to Table 1. To download software, visit the Cisco Software Center.

Cisco environmental sustainability

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

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

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

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The bridge to possible

Cisco 10GBASE SFP+ Modules

Contents

A broad range of industry-compliant SFP+ modules for 10 Gigabit Ethernet deployments in diverse networking environments.

Product overview

The Cisco® 10GBASE SFP+ modules (Figure 1) give you a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

Figure 1.
Cisco 10GBASE SFP+ modules

Features and benefits

Cisco SFP+ modules offer the following features and benefits.

- Industry's smallest 10G form factor for greatest density per chassis

- Hot-swappable input/output device that plugs into an Ethernet SFP+ port of a Cisco switch (no need to power down if installing or replacing)

- Supports "pay-as-you-populate" model for investment protection and ease of technology migration

- Digital optical monitoring capability for strong diagnostic capabilities

- Optical interoperability with 10GBASE XENPAK, 10GBASE X2, and 10GBASE XFP interfaces on the same link

- Cisco quality Identification (ID) feature enables a Cisco platform to identify whether the module is certified and tested by Cisco

Cisco SFP-10G-T-X module

The Cisco 10GBASE-T module (Figure 2) offers connectivity options at the following data rates: 100M/1G/10Gbps. It has the SFP+ form factor and an RJ-45 interface so that CAT5e/CAT6A/CAT7 cables can be used to connect to end points with embedded 10GBASE-T ports. They are suitable for distances up to 30 meters and offers a cost-effective way to connect within racks and across adjacent racks.

Figure 2.
Cisco SFP+ 10GBASE-T module with RJ-45 connector

Table 1, details the specifications for the SFP-10G-T-X module, including cable type, distance, and data rates supported.

Table 1.   SFP-10G-T-X cabling specifications

Cisco PIDs	Speeds	Cable Type	Distance	Max. Power Consumption (W)
SFP-10G-T-X	10Gbps	Cat6A/Cat7 or better	Up to 30 meters	2.5W
SFP-10G-T-X	100M/1Gbps	Cat5e/Cat6A/Cat7 or better	Up to 100 meters	1.0W

Cisco SFP-10G-SR-S module (S-Class)

The Cisco 10GBASE-SR module supports a link length of 26 meters on standard Fiber Distributed Data Interface (FDDI)-grade Multimode Fiber (MMF). Using 2000 MHz*km MMF (OM3), up to 300-meter link lengths are possible. Using 4700 MHz*km MMF (OM4), up to 400 meter link lengths are possible. SFP-10G-SR-S does not support FCoE.

Cisco SFP-10G-SR module

The Cisco 10GBASE-SR Module supports a link length of 26m on standard Fiber Distributed Data Interface (FDDI)-grade Multimode Fiber (MMF). Using 2000MHz*km MMF (OM3), up to 300m link lengths are possible. Using 4700MHz*km MMF (OM4), up to 400m link lengths are possible.

Cisco SFP-10G-SR-X module

The Cisco SFP-10G-SR-X is a multirate* 10GBASE-SR, 10GBASE-SW and OTU2/OTU2e module for extended operating temperature range. It supports a link length of 26m on standard Fiber Distributed Data Interface (FDDI)-grade Multimode Fiber (MMF). Using 2000MHz*km MMF (OM3), up to 300m link lengths are possible. Using 4700MHz*km MMF (OM4), up to 400m link lengths are possible.

* Except for version 1, which supports only 10GBASE-SR.

Cisco SFP-10G-SR-I module

The Cisco SFP-10G-SR-I is a multirate 10GBASE-SR, 10GBASE-SW and OTU2/2e module for industrial operating temperature range. This module also supports CPRI datarate options 3, 4, 5, 6, 7, 7a, 8. It supports a link length of 26m on standard Fiber Distributed Data Interface (FDDI)-grade Multimode Fiber (MMF). Using 2000MHz*km MMF(OM3), up to 300m link lengths are possible. Using 4700MHz*km MMF (OM4), up to 400m link lengths are possible.

Cisco SFP-10G-LRM module

The Cisco 10GBASE-LRM Module supports link lengths of 220m on standard Fiber Distributed Data Interface (FDDI) grade Multimode Fiber (MMF). To make sure that specifications are met over FDDI-grade, OM1 and OM2 fibers, the transmitter should be coupled through a mode conditioning patch cord. No mode conditioning patch cord is required for applications over OM3 or OM4. For additional information on mode conditioning patch cord requirements please see:
https://www.cisco.com/en/US/prod/collateral/modules/ps5455/product_bulletin_c25-530836.html.

The Cisco 10GBASE-LRM Module also supports link lengths of 300m on standard Single-Mode Fiber (SMF, G.652).

Cisco FET-10G module

The Cisco FET-10G Fabric Extender Transceiver supports link lengths up to 100m on laser-optimized OM3 or OM4 multimode fiber. It is supported on fabric links from a Nexus 2000 to a Cisco parent switch only. Note this product is not orderable individually. For more information refer to Nexus 2000 datasheet:
https://www.cisco.com/en/US/prod/collateral/switches/ps9441/ps10110/data_sheet_c78-507093.html.

Cisco SFP-10G-LR-S module (S-Class)

The Cisco 10GBASE-LR module supports a link length of 10 kilometers on standard Single-Mode Fiber (SMF) (G.652). SFP-10G-LR-S does not support FCoE.

Cisco SFP-10G-LR module

The Cisco 10GBASE-LR Module supports a link length of 10 kilometers on standard Single-Mode Fiber (SMF, G.652).

Cisco SFP-10G-LR-X module

The Cisco SFP-10G-LR-X is a multirate 10GBASE-LR, 10GBASE-LW, and OTU2/OTU2e module for extended operating temperature range. It supports a link length of 10 kilometers on standard Single-Mode Fiber (SMF, G.652).

Cisco SFP-10G-LR10-I module

The Cisco SFP-10G-LR10-I supports a link length of 10 kilometers on standard Single-Mode Fiber (SMF, G.652). The SFP-10G-LR10-I is for industrial operating temperature range. The SFP-10G-LR10-I also supports CPRI datrates options 3, 4, 5, 6, 7, 7a, 8.

Cisco SFP-10G-BXD-I and SFP-10G-BXU-I for 10Km (single-fiber bidirectional applications)

The Cisco SFP-10G-BXD-I and SFP-10G-BXU-I SFPs operate on a single strand of standard SMF.

A SFP-10G-BXD-I device is always connected to a SFP-10G-BXU-I device with a single strand of standard SMF with an operating transmission range up to 10 km.

The communication over a single strand of fiber is achieved by separating the transmission wavelength of the two devices, as depicted in Figure 3. SFP-10G-BXD-I transmits a 1330-nm channel and receives a 1270-nm signal, whereas SFP-10G-BXU-I transmits at a 1270-nm wavelength and receives a 1330-nm signal. Note in Figure 3 the presence of a Wavelength-Division Multiplexing (WDM) splitter integrated into the SFP to split the 1270-nm and 1330-nm light paths. This module also supports CPRI datarate options 3, 4, 5, 6, 7, 7a, 8.[*]
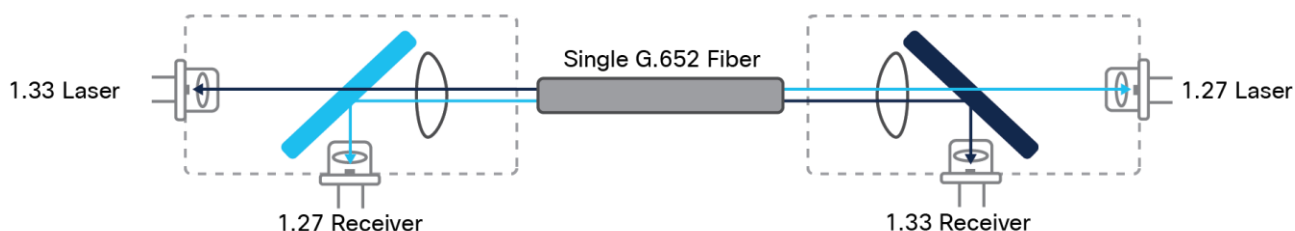
Figure 3.
Bidirectional transmission of a single strand of SMF

The SFP-10G-BXD-I and SFP-10G-BXU-I SFPs also support Digital Optical Monitoring (DOM) functions according to the industry-standard SFF-8472 Multisource Agreement (MSA). This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

[*]Version -02 of SFP-10G-BXD-I and SFP-10G-BXU-I supports the CPRI rates.

Cisco SFP-10G-ER-S module (S-Class)

The Cisco 10GBASE-ER module supports a link length of up to 40 kilometers on SMF (G.652). SFP-10G-ER-S does not support FCoE.

Cisco SFP-10G-ER module

The Cisco 10GBASE-ER Module supports a link length of up to 40 kilometers on standard Single-Mode Fiber (SMF, G.652).

Cisco SFP-10G-ER-I module

The Cisco 10GBASE-ER Industrial Temperature Module supports a link length of up to 40 kilometers on standard Single-Mode Fiber (SMF, G.652). The SFP-10G-ER-I for Industrial Operating Temperature Range is a multirate 10GBASE-ER, 10GBASE-EW and OTU2/2e module.

Cisco SFP-10G-BX40D-I and SFP-10G-BX40U-I (for 40Km single-fiber bidirectional applications)

The Cisco SFP-10G-BX40D-I and SFP-10G-BX40U-I SFPs operate on a single strand of standard SMF.

A SFP-10G-BX40D-I device is always connected to a SFP-10G-BX40U-I device with a single strand of standard SMF with an operating transmission range up to 40 km.

The communication over a single strand of fiber is achieved by separating the transmission wavelength of the two devices. SFP-10G-BX40D-I transmits a 1330-nm channel and receives a 1270-nm signal. The SFP-10G-BX40U-I transmits at a 1270-nm wavelength and receives a 1330-nm signal.

The SFP-10G-BX40D-I and SFP-10G-BX40U-I SFPs support Digital Optical Monitoring (DOM) functions according to the industry-standard SFF-8472 Multisource Agreement (MSA). This feature gives the end user the ability to monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

Cisco SFP-10G-ZR-S module (S-Class)

The Cisco 10GBASE-ZR module supports link lengths of up to about 80 kilometers on standard SMF (G.652). This interface is not specified as part of the 10 Gigabit Ethernet standards and is, instead, built according to Cisco specifications. SFP-10G-ZR-S does not support FCoE.

Cisco SFP-10G-ZR module

The Cisco SFP-10G-ZR is a multirate 10GBASE-ZR, 10GBASE-ZW, and OTU2/OTU2e module. It supports link lengths of up to about 80 kilometers on standard Single-Mode Fiber (SMF, G.652). This interface is not specified as part of the 10 Gigabit Ethernet standard and is instead built according to Cisco specifications.

Cisco SFP-10G-ZR-I module

The Cisco SFP-10G-ZR-I is a multirate 10GBASE-ZR, 10GBASE-ZW, and OTU2/OTU2e module for industrial operating temperature range. The SFP-10G-ZR-I has a limiting electrical interface receiver, which does not require EDC PHY on the host board, it can be plugged into any SFP+ port. It supports link lengths of up to 70 kilometers on standard Single-Mode Fiber (SMF, G.652), assuming a fiber chromatic dispersion of 20 ps/(nm*km). This interface is not specified as part of the 10 Gigabit Ethernet standard and is instead built according to Cisco specifications. The SFP-10G-ZR-I has a cold start at -40⁰C; the transceiver will be operational except optical traffic is not supported from -40⁰ to -28⁰C, all other low speed features (DOM, I2C, etc.) are operational. The module is fully operational from -28⁰C to 85⁰C.

Cisco SFP+ Twinax copper cables

Cisco SFP+ Copper Twinax (Figure 4) direct-attach cables are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. Cisco offers passive Twinax cables in lengths of 1, 1.5, 2, 2.5, 3, 4 and 5 meters, and active Twinax cables in lengths of 7 and 10 meters.

Figure 4.
Cisco direct-attach twinax copper cable assembly with SFP+ connectors

Cisco SFP+ Active optical cables

Cisco SFP+ Active Optical Cables (Figure 5) are direct-attach fiber assemblies with SFP+ connectors. They are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. Cisco offers Active Optical Cables in lengths of 1, 2, 3, 5, 7, and 10 meters.

Figure 5.
Cisco direct-attach active optical cables with SFP+ connectors

Platform support

Cisco SFP+ modules are supported on a wide range of Cisco switches and routers[*]:

Table 2.   Cisco Platforms

● 7600 Series Router	● Catalyst 4500 and 4500-X Series Switches
● ASR 901	● CRS Router
● ASR 903	● MDS 9000
● ASR 1000 Series Router	● ME 4500
● ASR 9000 Series Router	● ME 4900NCS 6000 Series Router
● ASR 9000v Series Router	● Nexus 2000, 3000, and 4000 Series Switches
● Catalyst 2350 and 2360 Series Switches	● Nexus 9000 and 9500 (modular) Series Switches
● Catalyst 2960-S, 2960-X, and 2960-XR Series Switches	● RF Gateway Series
● Catalyst 3100 Blade Switches	● SCE 8000
● Catalyst 3560, 3560-E, and 3560-X Series Switches	● Shared Port Adapter (SPA)
● Catalyst 3750, 3750-E, and 3750-X Series Switches	● Unified Computing System (UCS) Switches
● Catalyst 3850 Series Switches	

[*] Not all devices listed support every module. For details about which modules run in which devices and other compatibility information, refer to the document "Cisco 10 Gigabit Ethernet Transceiver Modules Compatibility Matrix": https://www.cisco.com/en/US/docs/interfaces_modules/transceiver_modules/compatibility/matrix/OL_6974.html.

Additional platforms may continually be added; please check the compatibility matrix for the latest information and for the Cisco compatible operating system for each platform.

Connectors: Dual LC/PC connector (-SR, -LRM, -LR, -ER, -ZR and FET-10G).

Note: Only connections with patch cords with PC or UPC connectors are supported. Patch cords with APC connectors are not supported. All cables and cable assemblies used must be compliant with the standards specified in the standards section.

Product specifications

Table 3 provides cabling specifications for the SFP+ modules.

Table 3.   SFP+ port cabling specifications

SFP+	Wavelength (nm)	Cable Type	Core Size (Microns)	Modal Bandwidth (MHz*km)[3]	Cable Distance[1]
SFP-10G-SR-S[a] SFP-10G-SR SFP-10G-SR-X SFP-10G-SR-I[a]	850	MMF	62.5 62.5 50.0 50.0 50.0 50.0 50.0	160 (FDDI) 200 (OM1) 400 500 (OM2) 2000 (OM3) 4700 (OM4) 4700 (OM5)	26m 33m 66m 82m 300m 400m 400m
SFP-10G-LRM	1310	MMF SMF	62.5 50.0 50.0 G.652	500 400 500 -	220m 100m 220m 300m
FET-10G	850	MMF	50.0 50.0 50.0 50.0	500 (OM2) 2000 (OM3) 4700 (OM4) 4700 (OM5)	25m 100m 100m 100m
SFP-10G-LR-S[a] SFP-10G-LR SFP-10G-LR-X SFP-10G-LR10-I[b]	1310	SMF	G.652	-	10km
SFP-10G-BXD-I	1330	SMF	G.652	-	10km[b]
SFP-10G-BXU-I	1270	SMF	G.652	-	10km[b]
SFP-10G-ER-S[*4a] SFP-10G-ER[*4] SFP-10G-ER-I[*4]	1550	SMF	G.652	-	40km[*2]

SFP+	Wavelength (nm)	Cable Type	Core Size (Microns)	Modal Bandwidth (MHz*km)*3	Cable Distance*1
SFP-10G-BX40D-I*6	1330	SMF	G.652	–	40km
SFP-10G-BX40U-I*6	1270	SMF	G.652	–	40km
SFP-10G-ZR-S*5a SFP-10G-ZR*5	1550	SMF	G.652	–	80km
SFP-10G-ZR-I*5a	1550	SMF	G.652	–	70km
SFP-H10GB-CU1Mᶜ	–	Twinax cable, passive, 30AWG cable assembly	–	–	1m
SFP-H10GB-CU1-5M	–	Twinax cable, passive, 30AWG cable assembly	–	–	1.5m
SFP-H10GB-CU2M	–	Twinax cable, passive, 30AWG cable assembly	–	–	2m
SFP-H10GB-CU2-5M	–	Twinax cable, passive, 30AWG cable assembly	–	–	2.5m
SFP-H10GB-CU3Mᶜ	–	Twinax cable, passive, 30AWG cable assembly	–	–	3m
SFP-H10GB-CU4M	–	Twinax cable, passive, 24AWG or 26AWG cable assembly	–	–	4m
SFP-H10GB-CU5Mᶜ	–	Twinax cable, passive, 24AWG or 26AWG cable assembly	–	–	5m
SFP-H10GB-ACU7M	–	Twinax cable, active, 30 AWG cable assembly	–	–	7m
SFP-H10GB-ACU10M	–	Twinax cable, active, 28 AWG cable assembly	–	–	10m
SFP-10G-AOC1M	–	Active Optical Cable assembly	–	–	1m
SFP-10G-AOC2M	–	Active Optical Cable assembly	–	–	2m
SFP-10G-AOC3M	–	Active Optical Cable assembly	–	–	3m

SFP+	Wavelength (nm)	Cable Type	Core Size (Microns)	Modal Bandwidth (MHz*km)[*3]	Cable Distance[*1]
SFP-10G-AOC5M	-	Active Optical Cable assembly	-	-	5m
SFP-10G-AOC7M	-	Active Optical Cable assembly	-	-	7m
SFP-10G-AOC10M	-	Active Optical Cable assembly	-	-	10m

[*1] Minimum cabling distance for –SR, –LRM, –LR, –ER modules is 2m, according to the IEEE 802.3ae.

[*2] Links longer than 30km are considered engineered links as per IEEE 802.3ae.

[*3] Specified at transmission wavelength.

[*4] Requires 5 dB 1550nm fixed loss attenuator for < 20km. Attenuator is available as a spare. The part number is 15216 ATT LC 5=.

[*5] Requires 15dB attenuator if Link Distance < 5km.

   Requires 10dB attenuator if Link Distance is between 5km and 25km.

   Requires 5dB attenuator if Link Distance is between 25km and 45km.

[*6] Requires 15dB attenuator if Link Distance < 5km.

   Requires 10dB attenuator if Link Distance is between 5km and 15km.

   Requires 5dB attenuator if Link Distance is between 15km and 25km.

Attenuator is available as a spare. The part numbers:

- 5dB – 15216 ATT LC 5=
- 10dB – 15216 ATT LC 10=
- 15dB – 15216 ATT LC 15=

a – No FCoE support.

b – Links up to 15 km are supported as engineered links as long as channel insertion loss < 6.2 dB.

c – Only Version –02 and later of this DAC cable is qualified on all Cisco platforms.

Table 4 lists the main optical characteristics for the SFP+ modules.

Table 4.   Optical transmit and receive specifications

Product	Type	Transmit Power (dBm)[*]		Receive Power (dBm)[*]		Transmit and Receive Wavelength (nm)
		Maximum	Minimum	Maximum	Minimum	
SFP-10G-SR-S SFP-10G-SR	10GBASE-SR 850nm MMF	-1.2[**]	-7.3	-1.0	-9.9	840 to 860
SFP-10G-SR-X SFP-10G-SR-I	10GBASE-SR, 10GBASE-SW and OTU2e 850nm MMF	-1.2[**]	-7.3	-1.0	-9.9	840 to 860

Product	Type	Transmit Power (dBm)[*]		Receive Power (dBm)[*]		Transmit and Receive Wavelength (nm)
		Maximum	Minimum	Maximum	Minimum	
SFP-10G-LRM	10GBASE-LRM 1310nm MMF and SMF	0.5	–6.5	0.5	–8.4 (in average) and –6.4 (in OMA)[***]	1260 to 1355
FET-10G	FET-10G 850nm MMF	–1.3	–8	–1	–9.9	840 to 860
SFP-10G-LR-S **SFP-10G-LR**	10GBASE-LR 1310nm SMF	0.5	–8.2	0.5	–14.4	1260 to 1355
SFP-10G-LR-X	10GBASE-LR, 10GBASE-LW and OTU2e 1310nm SMF	0.5	–8.2	0.5	–14.4	1260 to 1355
SFP-10G-LR10-I	10GBASE-LR, CPRI 1310 SMF	0.5	–8.2	0.5	–14.4	1260 to 1355
SFP-10G-BXD-I	10G-SFP Bidirectional for 10km	0.5	–8.2	0.5	–14.4	1320 to 1340 (Tx) 1260 to 1280 (Rx)
SFP-10G-BXU-I	10G-SFP Bidirectional for 10km	0.5	–8.2	0.5	–14.4	1260 to 1280 (Tx) 1320 to 1340 (Rx)
SFP-10G-ER-S **SFP-10G-ER** **SFP-10G-ER-I**	10GBASE-ER 1550nm SMF	4.0	–4.7	–1	–15.8	1530 to 1565
SFP-10G-BX40D-I	10G-SFP Bidirectional for 40km	4.5	–2.7	–9	–21.2	1320 to 1340 (Tx) 1260 to 1280 (Rx)
SFP-10G-BX40U-I	10G-SFP Bidirectional for 40km	4.5	–2.7	–9	–21.2	1260 to 1280 (Tx) 1320 to 1340 (Rx)
SFP-10G-ZR-S **SFP-10G-ZR** **SFP-10G-ZR-I**	10GBASE-ZR 1550nm SMF	4.0	0	–7	–24	1530 to 1565

[*] Transmitter and receiver power is in average, unless specified.

[**] The launch power shall be the lesser of the class 1 safety limit or the maximum receive power. Class 1 laser requirements are defined by IEC 60825-1: 2001.

[***] Both average and OMA specifications must be met simultaneously.

Table 5 details optical specifications for the SFP-10G-ZR modules.

Table 5.   SFP-10G-ZR, SFP-10G-ZR-S optical parameters

Parameter	Symbol	Minimum	Typical	Maximum	Units	Notes and Conditions
Transmitter						
Transmitter wavelength		1530		1565	nm	
Side-mode suppression ratio	SMSR	30			dB	
Transmitter extinction ratio		9			dB	
Transmitter optical output power	Pout	0		4.0	dBm	Average power coupled into single-mode fiber
Receiver						
Receiver optical input wavelength		1260		1565	nm	Receiver Sensitivity specified over 1530-1565nm only, with 3dB degradation permitted from 1260-1530nm
Receiver damage threshold		+5			dBm	
Receiver Overload		-7			dBm	
Receiver performance at 10GE LAN and 10GE WAN rates, non-FEC application						
Receiver sensitivity		-24			dBm	At BER=1E-12 with PRBS31 and 10GE frame
Chromatic Dispersion Penalty@ 1600 ps/nm[*]				3	dB	
Receiver performance at OTU2/OTU2e rates, FEC application						
Receiver sensitivity		-27			dBm	At Pre-FEC BER=1E-5 for GFEC and Pre-FEC BER=7E-4 for EFEC with PRBS31 and OTU2 frame
Chromatic Dispersion Penalty@ 1300 ps/nm				3	dB	

[*]Maximum chromatic dispersion for SFP-10G-ZR and SFP-10G-ZR-S is 1600 ps/nm.

Note: Parameters are specified over temperature and at end of life unless otherwise noted. When shorter distances of single-mode fiber are used (<40km), an inline optical attenuator must be used to avoid overloading and damaging the receiver.

Table 6.   SFP-10G-ZR-I optical parameters

Parameter	Symbol	Minimum	Typical	Maximum	Units	Notes and Conditions
Transmitter						
Transmitter wavelength		1530		1565	nm	
Side-mode suppression ratio	SMSR	30			dB	
Transmitter extinction ratio		9			dB	
Transmitter optical output power	Pout	0		4.0	dBm	Average power coupled into single-mode fiber
Receiver						
Receiver optical input wavelength		1260		1565	nm	Receiver Sensitivity specified over 1530-1565nm only, with 3dB degradation permitted from 1260-1530nm
Receiver damage threshold		+5			dBm	
Receiver Overload		-7			dBm	
Receiver performance at 10GE LAN and 10GE WAN rates, non-FEC application						
Receiver sensitivity		-24			dBm	At BER=1E-12 with PRBS31 and 10GE frame
Chromatic Dispersion Penalty@ 1400 ps/nm[*]				3	dB	
Receiver performance at OTU2/OTU2e rates, FEC application						
Receiver sensitivity		-27			dBm	At Pre-FEC BER=1E-5 for GFEC and Pre-FEC BER=7E-4 for EFEC with PRBS31 and OTU2 frame
Chromatic Dispersion Penalty@ 1300 ps/nm				3	dB	

[*]Maximum chromatic dispersion for SFP-10G-ZR-I is 1400 ps/nm.

Note: Parameters are specified over temperature and at end of life unless otherwise noted. When shorter distances of single-mode fiber are used (<40km), an inline optical attenuator must be used to avoid overloading and damaging the receiver.

Table 7 describes the bail latch color code for each type of optical SFP+ module.

Table 7.   SFP+ optical modules color code

Product	Bail Latch Color
SFP-10G-T-X	Golden/Yellow
SFP-10G-SR-S SFP-10G-SR SFP-10G-SR-X SFP-10G-SR-I	Beige
SFP-10G-LRM	Orange
FET-10G	Brown
SFP-10G-LR-S SFP-10G-LR SFP-10G-LR-X SFP-10G-LR10-I	Blue
SFP-10G-BXD-I SFP-10G-BXU-I	Blue
SFP-10G-ER-S SFP-10G-ER SFP-10G-ER-I	Red
SFP-10G-BX40D-I SFP-10G-BX40U-I	Red
SFP-10G-ZR-S SFP-10G-ZR SFP-10G-ZR-I	Green
SFP-H10GB-CU1M	Beige
SFP-H10GB-CU1-5M	Black
SFP-H10GB-CU2M	Brown
SFP-H10GB-CU2-5M	Yellow
SFP-H10GB-CU3M	Orange
SFP-H10GB-CU4M	Green
SFP-H10GB-CU5M	Gray
SFP-H10GB-ACU7M	Blue

Product	Bail Latch Color
SFP-H10GB-ACU10M	Red
SFP-10G-AOC1M	Beige
SFP-10G-AOC2M	Brown
SFP-10G-AOC3M	Orange
SFP-10G-AOC5M	Gray
SFP-10G-AOC7M	Blue
SFP-10G-AOC10M	Red

Table 8 provides the maximum power consumption and operating temperature range ratings per SFP+ module.

Table 8. SFP+ modules power consumption

Product	Power Consumption (W)	Operating Temperature Range
SFP-10G-T-X	2.5W	EXT
SFP-10G-SR-S SFP-10G-SR	1	COM
SFP-10G-SR-I	1	IND
SFP-10G-SR-X	1	EXT
SFP-10G-LRM	1	COM
FET-10G	1	COM
SFP-10G-LR-S SFP-10G-LR	1	COM
SFP-10G-LR-X	1	EXT
SFP-10G-LR10-I	1	IND
SFP-10G-BXD-I SFP-10G-BXU-I	1	IND
SFP-10G-ER-S SFP-10G-ER	1.5	COM
SFP-10G-ER-I	1.5	IND
SFP-10G-BX40D-I SFP-10G-BX40U-I	1.2	IND

Product	Power Consumption (W)	Operating Temperature Range
SFP-10G-ZR-S SFP-10G-ZR	1.5	COM
SFP-10G-ZR-I	2	IND*
SFP-H10GB-CU1M	0.1	COM
SFP-H10GB-CU1-5M	0.1	COM
SFP-H10GB-CU2M	0.1	COM
SFP-H10GB-CU2-5M	0.1	COM
SFP-H10GB-CU3M	0.1	COM
SFP-H10GB-CU4M	0.1	COM
SFP-H10GB-CU5M	0.1	COM
SFP-H10GB-ACU7M	1	COM
SFP-H10GB-ACU10M	1	COM
SFP-10G-AOC1M	1	COM
SFP-10G-AOC2M	1	COM
SFP-10G-AOC3M	1	COM
SFP-10G-AOC5M	1	COM
SFP-10G-AOC7M	1	COM
SFP-10G-AOC10M	1	COM

* The SFP-10G-ZR-I has a cold start at -40ºC, the transceiver will be operational except optical traffic is not supported from -40ºC to -28ºC, all other low speed features (DOM, I2C, etc.) are operational. The module is fully operational -28ºC to 85ºC.

Dimensions

Dimensions (H x W x D): 8.5 x 13.4 x 56.5mm. Cisco SFP+ connectors typically weigh 75 grams or less.

Environmental Conditions and Power Requirements

Operating temperature range:

- Commercial temperature range (COM): 0 to 70° C (32 to 158°F)
- Extended temperature range (EXT): -5 to 85° C (23 to 185° F)
- Industrial temperature range (IND): -40 to 85° C (-40 to 185°F)
- Storage temperature range: -40 to 85°C (-40 to 185°F)

Warranty

- Standard warranty: 5 years
- Expedited replacement available via a Cisco SMARTnet® Service support contract

Cisco environmental sustainability

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

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability	Topic	Reference
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
	Information on product takeback and resuse program	Cisco Takeback and Reuse Program
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
	Countries and Regions Supported	Regulatory Compliance Page 19
Power	Power (Including Pluggable)	Table 6: Power Consumption
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Weight	Dimensions Page 17

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

Ordering information

Table 9 provides the ordering information for SFP+ modules and related cables.

Table 9.   Ordering information

Description	Product Number
10GBASE-T SFP+ Module for CAT6A cables (up to 30 meters)	SFP-10G-T-X
10GBASE-SR SFP+ Module for MMF S-Class	SFP-10G-SR-S
10GBASE-SR SFP+ Module for MMF	SFP-10G-SR
Multirate 10GBASE-SR, 10GBASE-SW and OTU2e SFP+ Module for MMF, extended temperature range	SFP-10G-SR-X
Multirate 10GBASE-SR, 10GBASE-SW and OTU2e SFP+ Module for MMF, industrial temperature range	SFP-10G-SR-I
10GBASE-LRM SFP+ Module for MMF and SMF	SFP-10G-LRM
10GBASE-LR SFP+ Module for SMF S-Class	SFP-10G-LR-S
10GBASE-LR SFP+ Module for SMF	SFP-10G-LR
Multirate 10GBASE-LR, 10GBASE-LW and OTU2e SFP+ Module for SMF, extended temperature range	SFP-10G-LR-X
Multirate 10GBASE-LR, CPRI 3-8, Industrial Temperature Module	SFP-10G-LR10-I
10GBASE-BX10-D Bidirectional for 10km	SFP-10G-BXD-I
10GBASE-BX10-U Bidirectional for 10km	SFP-10G-BXU-I
10GBASE-ER SFP+ Module for SMF S-Class	SFP-10G-ER-S
10GBASE-ER SFP+ Module for SMF	SFP-10G-ER
Multirate 10GBASE-ER, 10GBASE-EW and OTU2e SFP+ Module for SMF, Industrial Temperature range	SFP-10G-ER-I
10GBASE-BX40-D Bidirectional for 40km	SFP-10G-BX40D-I
10GBASE-BX40-U Bidirectional for 40km	SFP-10G-BX40U-I
10GBASE-ZR SFP+ Module for SMF S-Class	SFP-10G-ZR-S
Multirate 10GBASE-ZR, 10GBASE-ZW and OTU2e SFP+ Module for SMF	SFP-10G-ZR
Multirate 10GBASE-ZR, 10GBASE-ZW and OTU2e SFP+ Module for SMF	SFP-10G-ZR-I
10GBASE-CU SFP+ Cable 1 Meter, passive	SFP-H10GB-CU1M
10GBASE-CU SFP+ Cable 1.5 Meter, passive	SFP-H10GB-CU1-5M
10GBASE-CU SFP+ Cable 2 Meter, Passive	SFP-H10GB-CU2M

Description	Product Number
10GBASE-CU SFP+ Cable 2.5 Meter, Passive	SFP-H10GB-CU2-5M
10GBASE-CU SFP+ Cable 3 Meter, passive	SFP-H10GB-CU3M
10GBASE-CU SFP+ Cable 4 Meter, passive	SFP-H10GB-CU4M
10GBASE-CU SFP+ Cable 5 Meter, passive	SFP-H10GB-CU5M
10GBASE-CU SFP+ Cable 7 Meter, active	SFP-H10GB-ACU7M
10GBASE-CU SFP+ Cable 10 Meter, active	SFP-H10GB-ACU10M
10GBASE-AOC SFP+ Cable 1 Meter	SFP-10G-AOC1M
10GBASE-AOC SFP+ Cable 2 Meter	SFP-10G-AOC2M
10GBASE-AOC SFP+ Cable 3 Meter	SFP-10G-AOC3M
10GBASE-AOC SFP+ Cable 5 Meter	SFP-10G-AOC5M
10GBASE-AOC SFP+ Cable 7 Meter	SFP-10G-AOC7M
10GBASE-AOC SFP+ Cable 10 Meter	SFP-10G-AOC10M

Regulatory and standards compliance

Standards:

- GR-20-CORE: Generic Requirements for Optical Fiber and Optical Fiber Cable
- GR-326-CORE: Generic Requirements for Single-Mode Optical Connectors and Jumper Assemblies
- GR-1435-CORE: Generic Requirements for Multifiber Optical Connectors
- IEEE 802.3: 10-Gigabit Ethernet
- ITU-T G.709: Interfaces for the Optical Transport Network
- ITU-T G.975: GFEC
- ITU-T G.975.1: EFEC
- SFP+ MSA SFF-8431 (Optical Modules, Active Optical Cables, and Passive Twinax cables)
- SFP+ MSA SFF-8461 (Active Twinax cables)

Safety:

- Laser Class 1 21CFR-1040 LN#50 7/2001
- Laser Class 1 IEC60825-1
- Cable jacket of SFP+ copper modules is UL #E116441 Compliant
- All length SFP+ copper cables are ELV and RoHS Compliant

Cisco Capital

Flexible payment solutions to help you achieve your objectives

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

Next steps

Learn more about Cisco 10GBASE SFP+ fiber modules or 10GBase SFP+ copper modules (twinax cable) by contacting your sales representative or visiting https://www.cisco.com/en/US/products/ps6574/index.html.

For S-Class SFP+ 10 Gigabit Modules, refer to the link below:
https://www.cisco.com/c/en/us/products/interfaces-modules/transceiver-modules/datasheet-listing.html.

Document history

New or revised topic	Described in	Date
New PID SFP-10G-LR10-I added	Ordering Information	March 04, 2021
New PIDs SFP-10G-SR-I, SFP-10G-ZR-I added	Ordering Information	July 15, 2022

The bridge to possible

Cisco Network Security

January 2024

Contents

Introduction

Purpose

This document describes ordering Cisco physical, virtual, and containerized network security solutions, including:

- Cisco Secure Firewall Threat Defense (FTD).
- Cisco Secure Firewall Adaptive Security Appliance (ASA).
- Cisco Firepower 1000 Series, 2100 Series, 3100 Series, 4100 Series, 4200 Series and 9300 Series Appliances
(which can run both FTD and ASA software).

In addition, this guide details the process of enabling extended logging and analytics for both FTD and ASA platforms as well as Cisco ISE Passive Identity Connector (ISE-PIC) for identity integration into FTD.

This guide will help you make sure that the right quantities and types of parts are selected to reduce the risk of order rejection.

Audience

This guide is intended for Cisco sales, partners, and distributors.

Scope

This document covers orderability for the following products, associated licenses and options:

Cisco Secure Firewall (Both Firewall Threat Defense and ASA software).

- Hardware appliances (Cisco Firepower or Cisco Secure Firewall appliances).
- Virtualized and containerized appliances (FTDv, ASAv, and Secure Firewall Cloud Native).

Firewall management solutions

- **Cisco Secure Firewall Management Center** (formerly Firepower Management Center): provides complete and unified management over firewalls, application control, intrusion prevention, URL filtering, and advanced malware protection. Quickly and easily go from managing a firewall to controlling applications to investigating and remediating malware outbreaks. Firewall Management Center is available in all form factors – physical appliance, virtual appliance, public cloud and cloud-delivered (software as a service model).

- **Cisco Defense Orchestrator** helps you establish and maintain a security posture by managing security policies across Cisco security devices. Cisco Defense Orchestrator also incorporates the cloud-delivered version of Secure Firewall Management Center. As a cloud service, it is an always-available, highly reliable, highly scalable, multitenant platform.

  Cisco Defense Orchestrator provides management of security policy, objects and configuration for Cisco Adaptive Security Appliance and Cisco Secure Firewall Threat Defense (formerly Next-Generation Firewalls, or NGFW). Also supported are the Meraki MX Firewalls and AWS Security Groups for pure policy and object management. Configuration management for these platforms is still available through their native user interface.

Note: For the Cisco Defense Orchestrator Ordering Guide, please click here.

- **Cisco Security Manager software** is an on-premise centralized management platform for Cisco Adaptive Security Appliances (ASA), enabling consistent policy enforcement, troubleshooting, and summarized reports.

Optional Software

- Cisco Secure DDOS Protection (formerly Radware Virtual DefensePro DDoS Mitigation).

- Cisco Secure Client (formerly Cisco AnyConnect Secure Mobility Client).

Support

- Cisco Smart Net Total Care appliance support services.

- Cisco Software Application Support plus Upgrades (SASU).

Note: Any order for a service will be subject to the detailed terms and conditions presented in this guide.

Selecting the Appropriate Management Solution

Several management solutions are available to manage Cisco Secure Firewalls. The following guidelines can help select the most appropriate one, but you can consult a Cisco expert to help select the best manager for your customer or use cases.

Choosing the right management solution is tied to a few factors:

- The software image you select, either Firewall Threat Defense (FTD) or ASA software image.

- Willingness to use a cloud based solution for management.

- Need for specific features or environment scale.

Local managers are included with both software options for single firewall deployments:

- ASDM is included with the ASA software image.

- Firewall Device Manager (FDM) is included with the Firewall Threat Defense software Image for all supported appliance models (Cisco Firepower 1000 Series, 2100 Series, 4100 Series and 9300 Series).

The Cisco Secure Firewall Threat Defense software image enables centralized management with either an on-premise, virtual or cloud based manager – Cisco Secure Firewall Management Center.

Cisco Defense Orchestrator unites management across Cisco solutions and incorporates the cloud-delivered version of Secure Firewall Management Center. This makes Cisco Defense Orchestrator the best option for customers who want to use a cloud based solution for the management of ASAs, FTDs or a mix of ASAs and FTDs from a single pane of glass.

Devices running the ASA software can be managed centrally with the Cisco Security Manager (local) or Cisco Defense Orchestrator (Cloud).

If a customer wants to manage multiple ASA with FirePOWER Services devices centrally, then two managers are required: Firewall Management Center for threat functions and Cisco Security Manager for firewall functions.

The following table can help guide you in which manager to select with your firewall order.
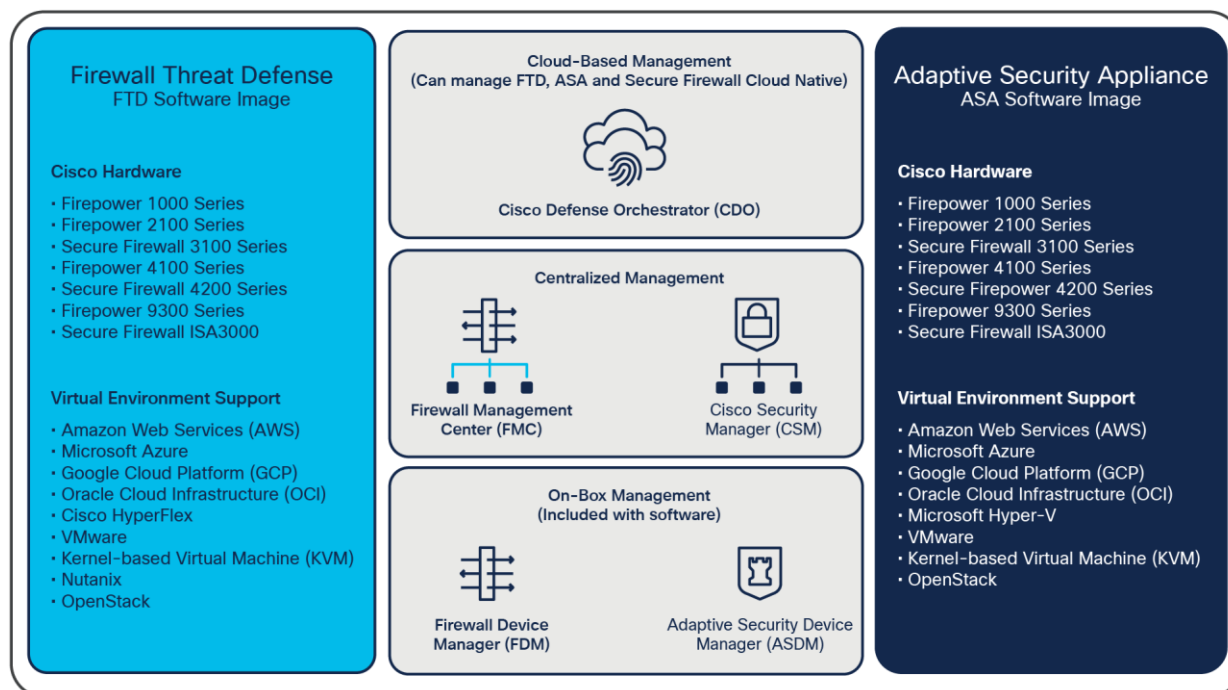
Figure 1.
Manager selection matrix

Licensing

Smart Licensing is Cisco's new licensing system. It enables customers to easily move licenses themselves between similar systems in their organization, overcoming limitations associated with previous device-locked Product Authorization Key (PAK)-based licenses. Become familiar with the new Smart Software Licensing portion of the ordering process.

End customers must create a Smart Licensing account on Cisco's Smart Software Manager portal before initiating an order for the Cisco Secure Firewall Threat Defense software on select ASA appliances. Alternatively, Cisco or a partner can begin the process of creating the Smart Licensing account on behalf of the end customer. The Smart Software Manager portal is available for customers to manage the efficient use of purchased smart licenses. When the order is placed, all ordered licenses are added to the customer's Smart Licensing account.

Table 1.   Product licensing by product type

Product	Licensing
Cisco ASA Virtual appliances	Cisco Smart Licensing
Cisco Secure Firewall Threat Defense Virtual appliances	Cisco Smart Licensing
Cisco Secure DDOS Protection (Radware vDefensePro) on Cisco Firepower 9300 and 4100 Series appliances	Supplied by Radware
Cisco Secure Firewall Management Center	None required

Product	Licensing
Cisco Secure Firewall Management Center Virtual Appliance	Either Cisco PAK and Smart Licensing
Cisco Security Manager	Cisco PAK Licensing
Cisco Security Analytics and Logging	Either Cisco Smart Licensing or Classic License
Cisco ISE Passive Identity Connector (ISE-PIC)	Either Cisco Smart Licensing or Classic License

With the Cisco Smart License Manager, the customer can connect devices to the Smart Software Manager portal, so purchased licenses can be consumed as needed. These licenses can be relinquished back to the portal when a device is powered down or a user is finished using the license. With Smart Software Licensing, customers can easily check in and check out licenses to use on different platforms. Licenses are no longer locked to a specific platform.

A Smart Account can be created from Cisco Software Central. For more information on setting up a Smart Account, please refer to this Quick Reference Guide.

Table 2. Additional Smart Licensing resources are available here

Location	Description
https://cisco.com/go/smartaccounts	Cisco Smart Accounts Overview
https://cisco.com/go/smartlicensing	Cisco Smart Software Licensing Overview
Software Operation Exchange Page **Live Training Schedule** **Orderable Smart Licensing SKU List**	Additional Software training and informational resources

ASA and Firewall Threat Defense License Terminology

This guide consistently uses the license terminology used in the Cisco Commerce tool. As of ASA 9.19.1 and FTD 7.3, new licensing terminology appears in the user interfaces of the management platforms. The differences are only in naming and are not different licenses per se.

Table 3. License terminology differences between Cisco Commerce and the user interfaces of the management platforms

License Name Used in the Cisco Commerce tool		License Name Seen in User Interface
Base	**Essentials**	
Threat	**IPS**	
Malware	**Malware Defense**	
URL License		URL

Cisco Secure DDOS Protection (Radware vDefensePro) Licensing

Licensing of the vDP and Vision will be administered directly by Radware. Once the order is shipped, Radware will send an email to the customer with their serial numbers. Please note the address of the person on the customer order who will receive the email. These serial numbers will be needed along with the MAC address for either vDP and/or Vision after installation. If the email with the serial numbers cannot be found, please open a TAC case to get them reissued. For detailed licensing instructions, please refer to the Radware Customer Onboarding and License Generation Instructions.

High Availability Pair Licensing

Cisco requires two (2) subscriptions for a High Availability (HA) pair of appliances running Firewall Threat Defense software image, which is configured for active-passive operation. The hardware models available with this optional configuration include:

- Cisco Firepower 1000 Series
- Cisco Firepower 2100 Series
- Cisco Secure Firewall 3100 Series
- Cisco Firepower 4100 Series
- Cisco Secure Firewall 4200 Series
- Cisco Firepower 9300 Series

We now offer specially configured bundle SKUs that enable the purchase of a high availability pair of appliances and software subscriptions that includes 50% discounted pricing for the second software subscription in the two-appliance bundle.

The bundle consists of:

- Two (2) identically configured hardware appliances
- Two (2) identical software subscriptions

A 50% discount will be automatically applied to the second software subscription in the bundle. See the specific model section in this document for the appropriate bundle PID.

Renewing HA Bundle Software Subscriptions

The 50% pricing discount also applies to HA bundles at time of renewal.

Cisco Secure Client Licensing

Cisco Secure Client (formerly AnyConnect Plus, Apex, and VPN Only) licenses are required to use the Remote Access VPN (RA VPN) functions on all firewalls (physical and virtual) running the Firewall Threat Defense code base version 6.2.1 and later. This adds capability to the Firewall Threat Defense code base previously only available on appliances running the ASA code base.

For information on purchasing Cisco Secure Client licenses and sharing the licenses with your Smart Account, please see the Cisco Secure Client Ordering Guide.

Instructions can also be found in the Cisco Secure Client License FAQ.

Service and Support Offerings

Software Application Support Plus Upgrades (SASU)

Cisco Secure Firewall Threat Defense software, ASA with FirePOWER Services, ASA firewall, and Cisco Secure Firewall Management Center security licenses include software subscription support. SASU is essential to keeping your business-critical applications available, highly secure, and operating at optimal performance. For the term of your software subscription licenses, you will receive timely, uninterrupted access to the latest software updates and major upgrade releases, which may contain significant architectural changes and new features and functions. With software subscription support, you will have the latest software working to protect your business. You will also have access to a wide range of online tools and communities that can help you solve problems quickly, maintain business continuity, improve your competitiveness, and make the most of limited resources through increased productivity.

This support entitles customers to the services listed here for the full term of the purchased software subscription:

- Software updates and major upgrades, to keep applications performing optimally with the most current feature set.

- Access to the Cisco Technical Assistance Center (TAC), which provides fast, specialized support.

- Online tool building, to expand in-house expertise and boost business agility.

- Collaborative learning, to provide additional knowledge and training opportunities.

No additional products or fees are required to receive these services with a software subscription.

Cisco SASU includes:

- Registered access to Cisco.com.

- 24-hour access to the Cisco TAC and Cisco software specialists.

- Maintenance and minor software release updates.

- Major software upgrade releases.

Please refer to the following link for more detailed information regarding Cisco SASU: https://www.cisco.com/en/US/services/ps2827/ps2993/services_at_a_glance_sas_sasu.pdf.

Cisco Smart Net Total Care Service

Customers require a Cisco Smart Net Total Care support contract with each appliance to download application signature updates. The Smart Net Total Care Service gives customers access to an abundance of Cisco support tools and expertise, providing them with greater network availability and performance while reducing operating costs. Technical service is required to be attached at the point of the product sale so that customers get the necessary support and entitlement and the best possible return on investment. When ordering Threat Defense software on select ASA hardware, ASA with FirePOWER Services, the Management Center, or Cisco SSL hardware in Cisco Commerce, the appropriate Smart Net Total Care service items are automatically added to your quote.

The Cisco Smart Net Total Care Service provides:

- Global 24-hour access to the Cisco TAC.
- Access to the online knowledge base, communities, and tools.
- Current hardware replacement option: next business day, where available.
- Operating system software updates.
- Smart, proactive diagnostics and real-time alerts on devices enabled with Cisco Smart Call Home.

Please refer to the following link for more detailed information regarding Cisco Smart Net Total Care Service: https://www.cisco.com/en/US/products/svcs/ps3034/ps2827/ps2978/serv_group_home.html.

Cisco Advanced Services

The Cisco Global Security Solutions team provides comprehensive assessment, design, deployment, and migration assistance through the Cisco Advanced Services Transaction (AS-T) model, which involves the use of a Statement of Work (SOW). These Cisco AS-T offers are custom scoped and priced, and partners need to engage a Cisco Services account manager to purchase them.

Cisco Security Plan and Build Services help customers develop and deploy a comprehensive security strategy they can rely on to deliver the industry's most comprehensive advanced threat protection solution. This service incorporates a best-practice review, deployment, and mini-tune-up to help ensure that the system is alerting properly.

Cisco Security Migration Services help customers move from existing Cisco Source fire or competitive environments. Cisco performs an analysis of the current environment, develops a migration plan, tests the plan in a lab, and performs the migration in the production environment.

To order the customized Cisco Security Plan and Build Services and Migration Services, use the Cisco AS-T part numbers in the table below.

Table 4.   Cisco AS-T ordering information

Part numbers	Description	Price (US$)
AS-SEC-CNSLT (-A, -L)	Cisco Security Plan and Build Services	Custom priced
AS-SEC-CNSLT (-A, -L)	Cisco Security Migration Services	Custom priced

Cisco Technical Services

Cisco Technical Services for Cisco products can be quoted and ordered in Cisco tools, including the Cisco Service Contract Center (SCC) and Cisco Commerce (CCW). Tool use varies depending on the service offer and partner type and whether the service is attached at the time of product purchase.

Partner Supported Services (PSS)

Customers who choose to purchase Partner Supported Services (PSS) from an authorized Cisco partner are also entitled to download application signature updates. For more details, visit https://www.cisco.com/go/partnerservices and the Partner Support Service Global Ordering Guide for Cisco 1-Tier Partners.

Cisco Talos Incident Response

Cisco Talos Incident Response (CTIR) provides a full suite of proactive and emergency services to help you prepare, respond and recover from a cyber security breach. CTIR enables 24 hour emergency response capabilities and direct access to Cisco Talos, the world's largest threat intelligence and research group.

You can order and transact CTIR while ordering specific Cisco Firepower 4K and 9K Series master bundles. This will provide you yet another option to create a stronger security posture and stay protected in case of a security breach. The CTIR PID will be auto-attached based on product order size. **The auto-attached SKU can be removed and is not mandatory.**

Table 5. CTIR option available in Cisco Firepower master bundles

CTIR PID (Orderable PID)	CTIR SKU (Do not order without CTIR PID)	Description
CTIR-NGFW-S=	CON-CTIR-NGFW	Cisco Talos Incident Response Retainer-Small, Attach with NGFW

To learn more on CTIR, click here.

SKUs and ordering guidance for Cisco Secure Firewall 1000, 2100, 3100, 4100, 4200 and 9300 Series

Introduction

Scope: This section describes the pricing and ordering for the following products:

- Cisco Firepower 1000 Series
- Cisco Firepower 2100 Series
- Cisco Secure Firewall 3100 Series
- Cisco Firepower 4100 Series
- Cisco Secure Firewall 4200 series
- Cisco Firepower 9300 Series

About the Cisco Firepower 1000, 2100, 3100, 4100,4200 and 9300 Series

The Cisco Firepower 1000, 2100, 3100, 4100, 4200 and 9300 Series, when deployed as Layer 3, 4, and 7 firewall sensors, use the Cisco Secure Firewall Threat Defense software image. The Cisco Secure Firewall Management Center provides unified management for firewall and dedicated IPS. The on-device Firewall Device Manager is also available with Secure Firewall Threat Defense software. Alternatively, the Cisco Secure Firewall with Adaptive Security Appliance (ASA) software image is also supported on the Cisco Firepower 9300, Cisco 4100 Series, Cisco 3100 Series, Cisco 2100 Series and Cisco 1000 Series. When running the ASA software image, the ADSM on-device manager is available. Cisco Firepower 4100 and 9300 series appliances are also available with the Cisco Secure DDoS Protection. Alternatively, all Secure Firewalls are available with cloud-based Cisco Secure DDoS Protection.

Cisco Firepower 1000 Series Appliances

The Cisco Firepower 1000 Series comprises three threat-focused security appliances. The 1000 Series addresses SMB, Branch/Distributed Enterprise and Internet Edge deployments. The 1000 Series hardware delivers superior threat defense, at fast spends, with a smaller footprint than their predecessors, the ASA-5506-X, ASA-5508-X and ASA-5516-X. The 1000 Series is now available in ASA and FTD software images.

Chassis Overview: Cisco Firepower 1010

Front view Integrated 8x10/100/1000 RJ45 ports Integrated 4x1G SFP ports Console (Cisco RJ45 serial or mini-USB) 1x USB 2.0 Host and 1x USB console 1 RJ45 10/100/1000Base-T Management Port • Management Console and Ethernet • Singular AC PSU	
Rear view 1 power supply module bay	

Chassis Overview: Cisco Firepower 1120 and 1140

Front view 1. Fixed ports • Integrated 8x10/100/1000 RJ45 ports • Integrated 4x1G SFP ports • Console (Cisco RJ45 serial or mini-USB) • 1x USB 2.0 Host and 1x USB console • 1 RJ45 10/100/1000Base-T Management Port • Management Console and Ethernet 2. Modular options (FRU)	
Rear view 1 power supply module bay	

Chassis Overview: Cisco Firepower 1150

Front view 1. Fixed ports • Integrated 8x10/100/1000 RJ45 ports • Integrated 2x1G SFP ports and 2x10G SPF+ ports • Console (Cisco RJ45 serial or mini-USB) • 1x USB 2.0 Host and 1x USB console • 1 RJ45 10/100/1000Base-T Management Port • Management Console and Ethernet 2. Modular options (FRU)	
Rear view 1 power supply module bay	

Cisco Firepower 2100 Series Appliances

The Cisco Firepower 2100 Series comprises four threat-focused security appliances. The 2100 Series addresses mid-market use cases from the Internet edge to the data center.

Chassis Overview: Cisco Firepower 2110 and 2120

Front view 1. Fixed ports • 4 x SFP and 12 x RJ45 ports, USB2.0 • 12 x 1G copper and 4 x SFP 1G • Secondary bay for AMP storage • Management Console and Ethernet • Singular AC PSU	
Rear view 1 power supply module bay	
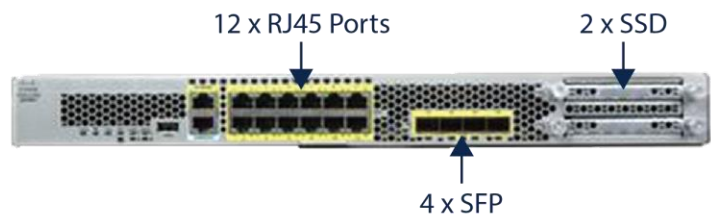
Chassis Overview: Cisco Firepower 2130 and 2140

Front view 1. **Fixed ports** ● 4 x SFP+ and 12 x RJ45 ports, USB2.0 ● 12 x 1G Copper and integrated 4 x SFP+ 10G ● Secondary bay for AMP storage ● Netmod bay with optional expansion for fiber, copper modules ● Management Console and Ethernet **2. Modular options (FRU)** ● Optional dual PSU 2130, standard dual PSU 2140 ● Optional DC	
Rear view 1. 2 power supply module bays 2. 4 Fans	
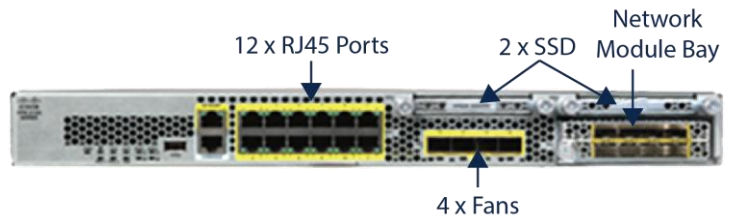
Cisco Secure Firewall 3100 Series Appliances

The Cisco Secure Firewall 3100 Series comprises four threat-focused security appliances. The 3100 Series addresses emerging hybrid mid-market and high-end use cases from the Internet edge to the data center, providing superior performance at a highly competitive price point and bringing several high-end capabilities to the mid-market.

Chassis Overview: Cisco Firepower 3110 and 3120

Front view 1. Fixed ports ● 8x 10/100/1000 Base-T Copper Ports ● 8x 1/10G (SFP) Fiber Ports ● Secondary bay for optional RAID1 support ● Management Console and Ethernet ● Singular AC PSU ● Optional DC	
Rear view 1. 1 power supply module bay 2. 2 Fans	

Chassis Overview: Cisco Firepower 3130 and 3140

Front view	
1. Fixed ports	
• 8x 10/100/1000 Base-T Copper Ports	
• 8x 1/10/25G (SFP) Fiber Ports	
• 4x 40G Netmod Bays	
• Secondary bay for optional RAID1 support	
• Management Console and Ethernet	
2. Modular options (FRU)	
• Standard dual PSU	
• Optional DC	
Rear view	
1. 2 power supply module bays	
2. 2 Fans	

Cisco Firepower 4100 Series Appliances

The Cisco Firepower 4100 Series comprises four threat-focused security appliances. The 4100 Series addresses use cases from the Internet edge to the data center. The 4100 Series hardware delivers superior threat defense, at faster speeds, with a smaller footprint. Also, the Cisco Firepower 4100 Series enables an upgrade path, on the customer's timeline, to the Cisco Secure Firewall Threat Defense software, even if the customer chooses the ASA image in the immediate term.

Chassis Overview: Cisco Firepower 4100 Series

Front view	
1. 8 SFP+ ports (require SFP optics module selection)	
• 2 Network Module bays	
• Optional Network Modules with optional optics modules	
2. SSD bays (one occupied by default, second bay for future expansion)	
Rear view	
1. 2 power supply module bays	
• 4112, and 4115: single AC default, dual AC or DC optional	
• 4125 and 4145: dual AC default, DC optional	
2. 6 hot-swappable fans (default configuration, no options)	

Cisco Firepower 4200 Series Appliances

The Cisco Secure Firewall 4200 Series is a high-end firewall designed to meet the security requirements of large enterprises, datacenters, and service providers. It is available in three different performance models, offering superior threat defense within a compact 1 RU form factor. Key features and benefits of the appliance include:

- Cryptographic acceleration architecture preserves performance with SSL and VPN decryption.

- Save space and energy with 1RU form factor.

- Future-proof your investment with 16x node cluster.

- Flexibility of 2x interface module bays for additional interface support.

- Customize and future proof investment up to 200G interfaces.

- 2x SSD for event storage and malware analysis.

- Uptime/resilience with dual management interfaces.

- Fail-to-wire network modules, further enhancing its reliability and fault tolerance.

These platforms can be deployed in both firewall and dedicated IPS modes, providing versatile deployment options. For inline sets and passive interfaces, the 4200 Series supports Q-in-Q (stacked VLAN) with the ability to handle up to two 802.1Q headers in a packet.

Chassis Overview: Cisco Firepower 4200 Series

Front view 1. 8 SFP28 ports (require SFP optics module selection) 2. Qty 2 Network Module bays • Optional Network Modules 3. Qty 2 SSD bays (Both occupied by default)	
Rear view 1. 2 power supply module bays • 4215: single AC default, dual AC optional • 4225 and 4245: dual AC default 2. 3 hot-swappable fan trays (default configuration, no options)	

Cisco Firepower 9300 Series Appliances

The Cisco Firepower 9300 is a modular, scalable, carrier-grade appliance, available in Network Equipment Building System (NEBS) configurations, designed for service providers, data centers, campuses, supercomputing centers, high-frequency trading environments, and other environments requiring both low latency and the greatest throughput. In the service provider context, it is specifically designed for carriers, content providers, and cloud service providers to protect the Cisco Evolved Programmable Network, Cisco Evolved Services platform, and Cisco Application Centric Infrastructure architectures. (For more information, please see Cisco service provider security solutions.)

Tightly integrating threat-centric security services from Cisco and its partners, the 9300 appliance lowers integration costs and supports the full realization of highly secure, open, and programmable networks. In addition to providing class-leading security services, it offers low (less than 5-microsecond) latency, throughput for single flows exceeding 30 Gbps, and class-leading performance and port density on a per-rack-unit basis.

Chassis Overview: Cisco Firepower 9300

Supervisor module (included): provides overall chassis management and network interaction • Network interface allocation and security module connectivity (960-Gbps internal fabric) 2 x Network Module bays • 10, 40, and 100 Gigabit Ethernet network connectivity options	
Security Modules: modular computing capability expands as your needs grow. Pictured are the three bays for Security Modules. A minimum of one must be ordered for standard operation. With three SM-56 Security Modules, Cisco Firepower 9300 features up to 235 Gbps of stateful (ASA) firewalling performance, and 1.2 Tbps of clustered performance with 5 clustered Cisco Firepower 9300 chassis. Also available: NEBS-compliant modules. Pictured at right is the rear view of the Cisco Firepower 9300. Note that it is available with dual AC, DC, or HVDC power supplies. Also, the fan assemblies and power supplies are user replaceable. Reminder: The Cisco Firepower 9300 is available with 10, 40, and 100 Gigabit Ethernet Network Modules.	

Special Guidelines for Quoting the Cisco Firepower 9300

Cisco Firepower 9300 ordering is highly customizable, and options are offered separately. You'll nevertheless find the ordering process straightforward.

The following table shows the four core components of a Cisco Firepower 9300 order.

Table 6.   Components of a Cisco Firepower 9300 order

Common hardware	Optional modules	Software licenses	Services and subscriptions
Base Cisco Firepower 9300 Security Appliances include: • Chassis (1) • Supervisor (1) • Fans (4) • Power supplies (2 – AC, DC or HVDC)	Choice of Security Modules–up to three bays per chassis: • SM-40, 48, 56 Choice of network modules – two bays per chassis: • 1/10/40/100Gbps options	Smart Licenses ASA: • ASA Standard • Carrier • Strong Encryption • Security Contexts Cisco Secure Firewall Threat Defense: • Threat Base (includes Application Visibility and Control – AVC) • Threat license and subscription terms (see next column) Third-party software: • Cisco Secure DDOS Protection (Radware Virtual DefensePro)	Smart Net Total Care Service Cisco Secure Firewall Threat Defense Subscriptions (1, 3, or 5 year terms) • Threat (includes Security Intelligence, IPS) • Malware defense • URL

Common hardware is bundled. However, your customer may wish to order extra fans and power supplies with the initial order, as these are hot-swappable, user-replaceable items. Please note that every order will require at least one, and up to three, **Security Modules. Network Modules** are also ordered separately.

Regarding **software licenses**, keep in mind that the Cisco Firepower 9300 runs either the ASA software image or the Cisco Secure Firewall Threat Defense image. Also, please note that the Encryption license is export controlled. It is available for most markets, to customers in countries where U.S. export control permits the export of strong cryptography. For more information, visit export compliance details.

In the **third-party software** category, Cisco Secure DDOS Protection (Radware Virtual DefensePro DDoS-mitigation capability) has been tightly integrated into the Cisco Firepower 9300 and 4100 Series with ASA software, is orderable from and supported directly by Cisco.

ASA Licensing for Cisco Firepower Appliances

The 9300 appliance, 4100 Series, 3100 Series, 4200 Series, 2100 Series and 1000 Series are available with either the Cisco Secure Firewall Threat Defense (FTD) image or the Cisco Adaptive Security Appliance (ASA) image. Cisco Firepower appliances with ASA are available through Smart Licenses. They include a Base license and up to three optional licenses (Encryption, Security Contexts, and Carrier).

Base License (Free)

L-F9K-ASA(=) (for the Cisco Firepower 9300), **L-FPR4100-ASA(=)** (for the Cisco Firepower 4100 Series models), **L-FPR3100-ASA(=)** (for the Cisco Secure Firewall 3100 Series models), **L-FPR2100-ASA(=)** (for the Cisco Firepower 2100 Series models) or **L-FPR1000-ASA(=)** (for the Cisco Firepower 1000 Series models) and FPR42xx-BSE (for the Cisco Secure Firewall 4200 Series models): Licensing on the ASA is simplified for the Cisco Firepower appliances. More than 50 ASA feature licenses are condensed into a single license. This license also includes the following security contexts by default: 10 security contexts for Firepower 9300, 10 security contexts for Firepower 4100 Series, 10 security contexts for Secure Firewall 4200, 2 security contexts for Secure Firewall 3100 Series, 2 security contexts for Firepower 2100 Series and 2 security contexts for Firepower 1000 Series.

Encryption License (Free)

L-F9K-ASA-ENCR-K9(=) (for the Cisco Firepower 9300), **L-FPR4K-ENC-K9(=)** (for Cisco Firepower 4100 Series models), **L-FPR3K-ENC-K9(=)** (for Cisco Secure Firewall 3100 Series models), **L-FPR2K-ENC-K9(=)** (for the Cisco Firepower 2100 Series models) or **L-FPR1K-ENC-K9(=)** (for Cisco Firepower 1000 Series models) and **FPR4200-ENC-K9/ L-FPR4200-ENC-K9=** (for Cisco Secure Firewall 4200 Series models): This license provides for strong encryption (K9) on the platform. The U.S. export of strong cryptography is not available to export-restricted regions. Cisco solutions and products with strong encryption may not be delivered to individuals or entities on the U.S. government's list of denied or restricted parties.

Please review the U.S. Bureau of Industry and Security's list of parties of concern at: https://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern.

Additional Security Contexts (Paid)

L-F9K-ASA-SC-10(=) (for the Cisco Firepower 9300), **L-FPR4K-ASASC-10(=)** (for the Cisco Firepower 4100 Series models), **L-FPR3K-ASASC-10(=)** (for the Cisco Secure Firewall 3100 Series models), **FPR4200-ASASC-10/ L-FPR4200-ASASC10=** (for the Cisco Secure Firewall 4200 Series models), or **L-FPR2K-ASASC-10(=)** (for the Cisco Firepower 2100 Series models): This license adds 10 security contexts to an ASA instance on the 9300 appliance, 4100 appliance, 4200 appliance, 3100 appliance or 2100 appliance, respectively.

Carrier License Option (Paid)

L-F9K-ASA-CAR(=) (for the Cisco Firepower 9300) or **L-FP4K-ASA-CAR=** (for Cisco Firepower 4100 Series models), **FPR42K-ASA-CAR/L-FPR42-ASA-CAR=** (for Cisco Secure Firewall 4200 Series models), or **L-FPR3K-ASA-CAR=** (for Cisco Secure Firewall 3100 Series models): This license covers carrier feature enablement that allows for inspection of Diameter, GTP/GPRS and SCTP protocols

Cisco Secure Firewall Threat Defense Licensing for Cisco Firepower Appliances

Figure 2 provided for general reference only, shows the typical order flow. Start with the primary bundle part numbers and the software image (ASA or Firewall Threat Defense), and then, in the case of the example, associated Cisco Secure Firewall Threat Defense-related licenses and subscriptions for functionality like Security Intelligence and IPS ("T"), Advanced Malware Protection ("M"), and URL Filtering ("C"). This example concludes with ordering the associated virtualized Cisco Secure Firewall Management Center. Note that Cisco Secure Firewall Threat Defense ships standard with the option to activate a 3-month trial license without activation of a Smart License account.

Figure 2.
Typical order flow

Ordering Steps for Cisco Firepower 9300, FTD-Based Cisco Firepower 9300

Start with one of the following FTD Bundle SKUs in CCW, example shown above is FPR9K-FTD-BUN.

Select Hardware Options and Quantity.

Chassis Type – AC, DC, or HVDC.

Chassis Options including Netmod, Sup, SFPs, power cables.

Security Module Quantity – up to 3 per chassis.

Select Subscriptions – T=, URL=, AMP=,TC=, TM=, TMC=.

Select Term – 1, 3 or 5 years.

Select Base Software License for each security module.

You can add additional features to the system. For example, starting with FTD release 7.3, you can add Carrier License to Firepower 3100 (**FPR3K-FTD-CAR**), Firepower 4100 (**FPR4K-FTD-CAR**), Firepower 9300 (**FPR9K-FTD-CAR**) and FTD virtual (**FTDV-CAR**) configurations. This license covers inspection of Diameter, GTP/GPRS and SCTP protocols.

Save and exit bundle configuration and select quantity of each bundle configured. Each bundle corresponds to a single-chassis configuration. After saving the configuration, you can change quantity for more than one chassis with the same configuration

Cisco ISE Passive Identity Connector (ISE-PIC)

Due to End-of-Life for the Cisco Firepower User Agent, FTD requires the use of either Cisco Identity Services Engine (ISE) or Cisco ISE Passive Identity Connector (ISE-PIC) in order to control policy based on Active Directory user. This section describes the procedure for ordering Cisco ISE Passive Identity Connector (ISE-PIC). For information on how to order of Cisco Identity Services Engine (ISE) please see the Cisco ISE Licensing Guide.

The Cisco Identity Services Engine (ISE) Passive Identity Connector centralizes, consolidates, and distributes identity information, including IP addresses, MAC addresses, and usernames. It centralizes the authentication information, becoming the single source of truth for its subscribers. Using the Cisco Platform Exchange Grid (pxGrid), the Cisco ISE Passive Identity Connector can support up to 20 subscribers. Further details on the capabilities of the Cisco ISE Passive Identity Connector (ISE-PIC) can be found on the Cisco ISE Passive Identity Connector Data Sheet.

Table 7.   Cisco ISE-PIC ordering information

SKU	Description	Services and subscriptions
R-ISE-PIC-VM-K9=	ISE Passive Identity Connector 3,000 session Virtual Machine	CON-ECMU-RISEPIVM
L-ISE-PIC-UPG=	ISE Passive Identity Connector – Upgrade to maximum 300,000 sessions	CON-ECMU-LISEPUPG

Note: You may be entitled to ISE-PIC at no cost if you have a qualifying FMC and valid support contract. For more information see End-of-Life and End-of-Support for the Cisco Firepower User Agent.

Cisco Security Analytics and Logging

This section describes the procedure to enable extended logging and analytics by ordering Cisco Security Analytics and Logging as part of your firewall purchase. The detail ordering process is described here.

The Security Analytics and Logging offer has two distinct delivery mechanisms:

- **Security Analytics and Logging (SaaS):** A cloud-delivered, Software-as-a-Service (SaaS) offering with a Cloud Data Store.

- **Security Analytics and Logging (On prem):** An on-premises appliance-based software application with an On-premises Data Store.

Discounted Bundling When Attaching with Firewall Subscriptions via CCW

a. Begin by navigating to the firewall model to be ordered (FPR1150-NGFW-K9, for example).

b. Make your software choice under the "Subscriptions" category at the top (wherever present) and navigate to the "Extended Logging and Analytics" category below.

c. You are presented with two options to the right: "On-Premises Data Store" or "Cloud Data Store." Only one option can be selected per firewall being ordered, with either the same or different subscription term as the firewall subscription.

d. The "Cloud Data Store" option allows selection of either the Logging License, **SEC-LOG-CL**, or the "Logging Analytics License," **SEC-ANYL-CL**. Only one option needs be chosen, as the Logging License is nested under Logging Analytics. Both Cloud licenses include access to a Cisco Defense Orchestrator tenant for log viewing only, which can be requisitioned using the link here: https://www.ciscofeedback.vovici.com/se/6A5348A75C69D114.

e. Choosing either of the two data store options will attach a default logging volume in GB/day for that firewall model, based on expected daily volume per the Logging Volume Estimator Tool. Logging rate comes with a default retention of 90 days rolling storage for Cloud Logging.

f. The last three optional licenses are Data Retention extensions, which extend log retention to 1, 2, or 3 years in the cloud.

g. If SAL (Op) is desired, the "On-Premises Data Store" tab allows choosing the base Logging and Troubleshooting license, **SEC-LOG-OP**. This license supports remote query by FMC and is hosted on SNA appliance(s), as detailed in section 1.2.2.

h. The process for bundling extended logging and analytics for Firewall FPR9K series devices is different, as the Security Modules (SM) configured as part of order determines the Logging quantity required. The Logging quantities needed are 190, 225 and 257 GBs/day for each SM-40, SM-48 and SM-56 respectively, and this quantity needs to be entered manually for the extended logging and analytics licenses. The system will display a warning of the logging quantities required for each Security Module, as shown below:

Expected Retention Period

The expected retention period for the SAL service under average deployment conditions (see note below table) is as follows:

Table 8.   Retention Matrix

Sustained Firewall Events per Second (eps)	Equivalent GB/day	On-premises					Cloud		
		Single node* 1TB Storage	Single node 2TB Storage	Single node 4TB Storage	Multinode** Virtual	Multinode HW	Single SEC	MultiSEC	Direct-to Cloud
		Expected Retention period in days (under average deployment conditions)							
5,000	562	50	100	200	300	600	Up to 3 years	Up to 3 years	Up to 3 years
10,000	1,123	25	50	100	150	300			Not recommended when individual device's logging rate exceeds 8,500 eps
20,000	2,246	12.5	25	50	75	150***			
50,000	5,616	NA	NA	NA	30	60			
75,000	8,424	NA	NA	NA	NA	40			
100,000	11,232	NA	NA	NA	NA	30			
200,000	22,464	NA	NA	NA	NA	NA			

Note: The on-premises log retention in days above are based on average deployment conditions, and may vary materially in different production environments.

* Single-node = Repurposed SMC 2210 (HW or Virtual)

** Multi-node = SMC 2210 + FC 4210 + DS 6200 (All appliances HW or Virtual)

*** Compare FMC native logs retention ½ day @ 20,000 peak eps

Cisco Secure DDOS Protection (formerly Radware Virtual DefensePro DDoS Mitigation Option)

Overview

Cisco Secure DDOS Protection is provided by Radware Virtual DefensePro (vDP), available and supported directly from Cisco. It is available with the Cisco Firepower 9300 and select Cisco Firepower 4100 Series models running either the ASA or FTD software image. The following table details Firepower model and software image compatibility with Radware vDP.

Table 9.   Cisco Secure DDOS Protection (Radware vDP) on Cisco Firepower running either ASA or FTD software image

Firepower Series	ASA Compatibility	FTD Compatibilty
9300 Series – All Security Modules	yes	yes
4100 Series – All Models	yes	yes

Performance

The performance figures in the tables below apply to all Cisco Firepower 9300 and 4100 Series model configurations running either the ASA or FTD software image.

Table 10.   Key DDoS performance metrics for Cisco Firepower 4100 Series

Parameter	Firepower 4100 Metric
Maximum mitigation capacity/throughput	10 Gbps
Maximum legitimate concurrent sessions	209,000 Connections Per Second (CPS)
Maximum DDoS flood attack prevention rate	1,800,000 Packets Per Second (PPS)

The performance figures in the following table are for Cisco Firepower 9300 with 1 to 3 Security Modules irrespective of Security Module type.

Table 11.   Key DDoS performance metrics for Cisco Firepower 9300 with 1, 2, or 3 Security Modules

Parameter	Firepower 9300 with 1 Security Module	Firepower 9300 with 2 Security Modules	Firepower 9300 with 3 Security Modules
Maximum mitigation capacity/throughput	10 Gbps	20 Gbps	30 Gbps
Maximum legitimate concurrent sessions	209,000 Connections Per Second (CPS)	418,000 Connections Per Second (CPS)	627,000 Connections Per Second (CPS)
Maximum DDoS flood attack prevention rate	1,800,000 Packets Per Second (PPS)	3,600,000 Packets Per Second (PPS)	5,400,000 Packets Per Second (PPS)

Capacity vs. Licensing

Performance/Capacity/Throughput is dependent on the number of cores assigned to the vDP virtual device:

- By default, Radware virtual DefensePro (vDP) installs using 6 cores (1 management, 5 software) across each of Cisco Firepower 9300's Security Modules and 4100 Series platforms.

- At install, the number of cores assigned to vDP can be adjusted from 2 to 10 to optimize the throughput performance of Cisco Firepower appliance depending on the customer need.

- While using the default 6 cores, the performance numbers for vDP are constant across platforms. The table below represents the relative performance level expected from ASA and FTD by removing 6 cores from the total available cores on the respective platforms (i.e. 24 cores minus 6 equals 75% of the total performance still available).

Table 12.   Expected ASA or FTD image performance with 6 of the available cores assigned to vDP

Cisco Firepower Model	Total vCores	Expected ASA or FTD Performance with vDP Active
Firepower 9300 – SM-56	56	89.3%
Firepower 9300 – SM-48	48	87.5%
Firepower 9300 – SM-40	40	85.0%
Firepower 4145	44	93.2%
Firepower 4125	32	90.6%
Firepower 4115	24	75.0%
Firepower 4112	24	75.0%

Licensing is based on the amount of legitimate traffic, not the capacity of the VM to process information.

- Purchase vDP licenses based on the amount of the client's peak legitimate traffic flow.

- This approach differs from other vendors that charge based on attack volume. Radware licenses are based on **known** legitimate traffic rather than an **unknown** attack volume.

VM Capacity/Performance/Throughput
- Capacity based on # cores assigned to the VM
- Fixed at 6 cores (1 management, 5 software)
- vDP @ 6 cores = 14GB Inspection capacity per instance
  - vDP 8.10 is 40% more efficient than previous version @ 10GB

Licensing is based on peak clean traffic
- Peak traffic is a known value
- If peak traffic is 2GB, purchase a 2GB license
- 14GB – 2GB = 12GB of DDoS scrubbing on box

Future: Ability to change # of cores assigned to VM

Figure 3.
Capacity vs. licensing

Example 1: Client has a 10-Gbps WAN link with a daily peak traffic flow of 2-Gbps.

- Purchase a 2-Gbps license or higher if the traffic is expected to increase in the near future.

- vDP will be able to mitigate a DDoS attack up to the capacity of the WAN link's 10-Gbps, after which a cloud scrubbing solution will have to take over at the ISP level.
  - Radware can be set up to automatically notify a cloud scrubber to take over.
  - Radware's Emergency Response Team (ERT) can assist in configuring vDP for each customer as part of the standard Cisco ECMU support contract for vDP.
  - Radware cloud availability on GPL is on the roadmap.

- **Warning: Do not over-purchase or over-quote the client's throughput needs. License is based on clean traffic only, not the capacity of the VM.**

The vDP Software Licenses and Support SKUs

The following tables outline the product information and SKUs for ordering. Cisco is only OEMing the Virtual License for Radware Manager Vision. Customers may want additional Manager Options that are provided directly by Radware.

Table 13.   vDP spare SKUs: May be ordered separately

SKU	Description	Service ECMU SKU
L–FPR–RVDP–10G=	Radware Virtual Defense Pro 10-Gbps license for Firepower	CON–ECMU–LFPRRVG1
L–FPR–RVDP–5G=	Radware Virtual Defense Pro 5-Gbps license for Firepower	CON–ECMU–LFPR5RGV
L–FPR–RVDP–2G=	Radware Virtual Defense Pro 2-Gbps license for Firepower	CON–ECMU–LFPRRVG2
L–FPR–RVDP–1G=	Radware Virtual Defense Pro 1-Gbps license for Firepower	CON–ECMU–LFPRRVGP
L–FPR–RVDP–500M=	Radware Virtual Defense Pro 500-Mbps license for Firepower	CON–ECMU–LFPR5RVD

SKU	Description	Service ECMU SKU
L-FPR-RVDP-200M=	Radware Virtual Defense Pro 200-Mbps license for Firepower	CON-ECMU-LFPR0RVD
L-RD-APV-VA-LIC==	APSolute Vision - VA - Yearly Subscription	None
L-RD-APV-RTU6-LIC	APSolute Vision RTU - 6/30 - Yearly Subscription	None

Table 14.   Regular SKUs: Orderable with the Cisco Firepower platform

SKU	Description	Service ECMU SKU
FPR-RVDP-10G	Radware Virtual Defense Pro 10-Gbps license for Firepower	CON-ECMU-LFPRRVG1
FPR-RVDP-5G	Radware Virtual Defense Pro 5-Gbps license for Firepower	CON-ECMU-LFPR5RGV
FPR-RVDP-2G	Radware Virtual Defense Pro 2-Gbps license for Firepower	CON-ECMU-LFPRRVG2
FPR-RVDP-1G	Radware Virtual Defense Pro 1-Gbps license for Firepower	CON-ECMU-LFPRRVGP
FPR-RVDP-500M	Radware Virtual Defense Pro 500-Mbps license for Firepower	CON-ECMU-LFPR5RVD
FPR-RVDP-200M	Radware Virtual Defense Pro 200-Mbps license for Firepower	CON-ECMU-LFPR0RVD

Notes:

- Radware vDP license are based on legitimate traffic. Please refer to this deck for more details: [Cisco Secure DDoS Protection](#)

- L-RDWR-APV-VA includes both APSolute Vision with Security Reporter – 10 vDP

- The CON Service SKUs should automatically be added to the cart with a 12-month term

- Cisco will provide Level 0/1 to determine if problem is Cisco Firepower or vDP. All vDP issues will be escalated to Radware.

- Radware vDP clustering is currently only supported in the Cisco Firepower 9300 intrachassis configuration. This is clustering of multiple security modules (SM-40, SM-48, SM-56) within the same Cisco Firepower 9300 chassis.

- For High Availability (HA), Active-Active and Active-Standby modes are supported.

- Radware Vision Manager is a Virtual License and needs to be installed on its own server, not the Cisco Firepower platform. For version 4.6, VMware ESXi 5.1, 5.5, 6.0, 6.5, 6.7, 6.7U2 or VMware Workstation 8 or 11 are supported. Please check Cisco Secure Firewall Radware DefensePro DDoS Release Notes for details.

Cisco Secure DDOS Protection (Radware vDP) Ordering Steps

Ordering SPARE SKUs for existing equipment:

Spare SKUs are provided (start with "L" and end in "=" sign) to allow you to order the vDP software license for existing equipment. These are the L-FPR-RVDP-10G=. 5G=, and 2G=, respectively.

- Go to the Cisco Commerce home page.

- Create a new estimate or edit an old one.

- In the "Search by SKU" box, paste in one of the SPARE SKUs. Or click on the "Find Products and Solutions" link to the right of the "Search by SKU" box.

- Typing in "Radware" in search box will return all active Radware SPARE SKUs.
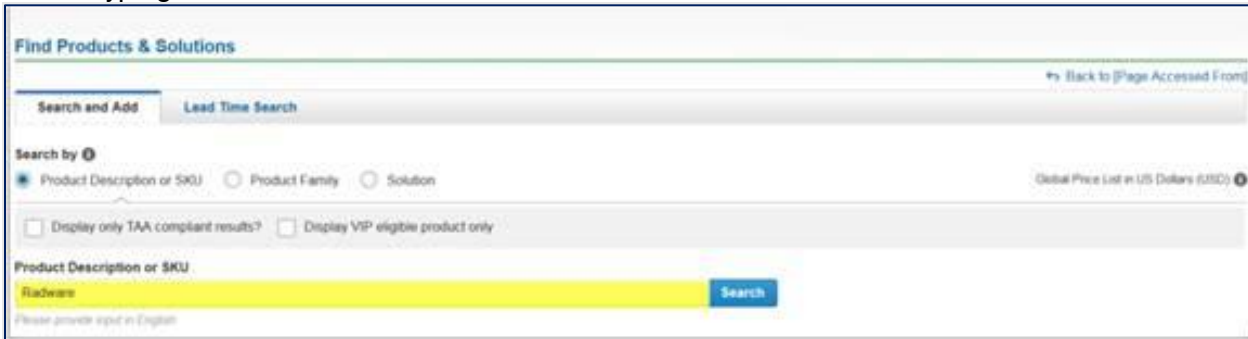
Figure 4.
Find products and solutions

- Once you find the SKU you need, then click the '+' sign to add it to the cart.

- Next click on the "Edit Service/Subscription" link and set the term of the service contract.

Figure 5.
Edit service/subscription

A 12-month (1y) ECME contract is selected by default, but that can be increased up to 60 months (5y).

Note: As of this writing, you have to visit the Edit Service/Subscription link and click done to accept the default 12-month service contract. Otherwise, the cart will produce an error.

If you do not already own Radware Vision Manager, please add to your order SKU: L-RDWR-APV-VA=. This is the Radware Manager Vision and Security Reporter with support for 10 vDP instances.

Secure Workload Ordering Steps in Firewall Bundle

Ordering SPARE SKUs for existing equipment

A Workload SKU is provided to allow you to order workload within a firewall bundle, securing a multi-product discount. The SKU is C1-TAAS-XX-SW-K9 and is available for Firepower 4100 and 9300 bundles.

- Go to the [Cisco Commerce home page](#).

- Select the firewall bundle to be ordered, for example FPR4115-FTD-HA-BUN.

- Click "Select Options" for the bundle to open the configurator.

		Hardware, Software and Services	Estimated Lead Time 🛈	Unit List Price (USD)	Qty	Unit Net Price (USD)	Discount (%)	Extended Net Price (USD)
☐	1.0	**FPR4115-FTD-HA-BUN** more ▸ Cisco Firepower 4115 Threat Defens e Chss Subs HA Bundle 12-Dec-2021 12:26:29 PST	Not Applicable	0.00	1	0.00	0.00	0.00

Select Options | Validate | Recommended Content | Add Note | More Actions ▾   Add Subtotal

- Open the "Secure Workload" section on the left-hand side and add the license C1-TAAS-XX-SW-K9 to the bundle.

- Finalize the bundle configuration and proceed with the purchase.

Cisco Secure Firewall Small Business Edition License Pack

Overview

To meet real-world needs of small businesses, Cisco Secure Firewall Small Business Edition is tailor-made to simplify security. Secure Firewall Small Business Edition licenses are available in 2 types and can ordered at the time of hardware purchase or as standalone license.

Table 15. Small Business Edition – Included Feature Set

License Feature (Available in 3 Yr Term only)	SBE Lite	SBE Standard
Threat Protection, Malware and URL Filtering	Yes	Yes
Cisco Defense Orchestrator	Yes[*]	Yes[*]
Cisco Secure Client - 50 Licenses (Anyconnect Advantage for Mobile Devices and or Desktops)	Yes	Yes
Security Analytics and Logging (Logging and Troubleshooting)	No	Yes

Platforms available

Table 16. Small Business Edition – Product Series Availability

Product Series	SBE Lite	SBE Standard
Firepower 1000 Series	Yes – Only on FPR1010	Yes – Only on FPR1010
All other platforms	Not Available	Not Available

*require CDO–SEC–SUB–Cisco Defense Orchestrator XaaS Subscription

SKUs and Ordering

Table 17. Small Business Edition – Part Numbers

Part Number	Description
FPR–SEC–TERM	Cisco Secure Firewall Term Licenses – For Distributors/Drop Ship Orders
FPR1010T–SBE	Cisco Secure Firewall FPR1010 Small Business Edition
FPR1010T–SBE–L	Cisco Secure Firewall FPR1010 Small Business Edition Lite without Logging
FPR1010T–SBE–3Y	Cisco FPR1010 Small Business Edition, 3Y Subs
FPR1010T–SBE–L–3Y	Cisco FPR1010 Small Business Edition Lite, 3Y Subs

Ordering Steps for Cisco Secure Small Business Edition

Start with one of the Firepower 1010 SKUs, for example - FPR1010-NGFW-K9.

Select "Edit Options".

Select Subscription for Small Business Edition or Small Business Edition Lite: FPR1010T-SBE or FPR1010T-SBE-L.

Select Country.

Save and exit configuration.

Ordering Steps for Cisco Secure Small Business Edition for Distributors
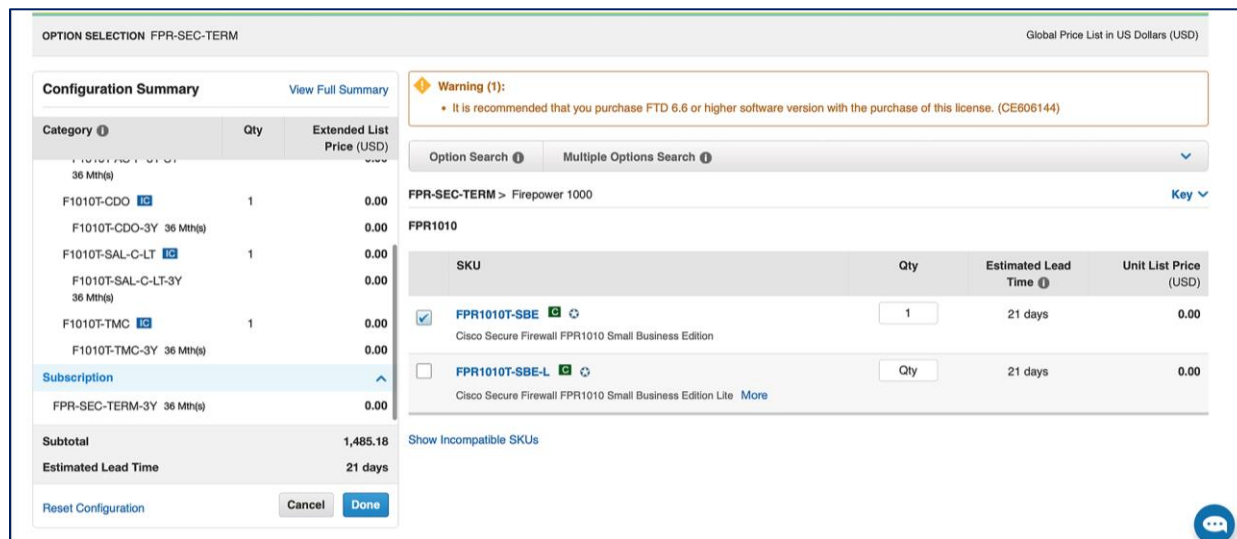
Start with the following SKU in CCW FPR-SEC-TERM.

Select Subscription for Small Business Edition or Small Business Edition Lite: **FPR1010T-SBE** or **FPR1010T-SBE-L.**

Save and exit configuration.

Ordering vDP with the Cisco Secure Firewall Platform

The non-spare versions of the SKUs are available options when ordering the 9300 or 4100 Cisco Firepower platform.

- Go to Cisco Commerce: https://apps.cisco.com/Commerce/home.
- Create a new estimate or edit an old one.
- Add Cisco Firepower 9300 or 4100 as desired (example is of a 4125) and configure appropriately.
   a. As of January 2017, vDP works with both ASA (minimum version 9.6.1) and Firewall Threat Defense (minimum version 6.2).
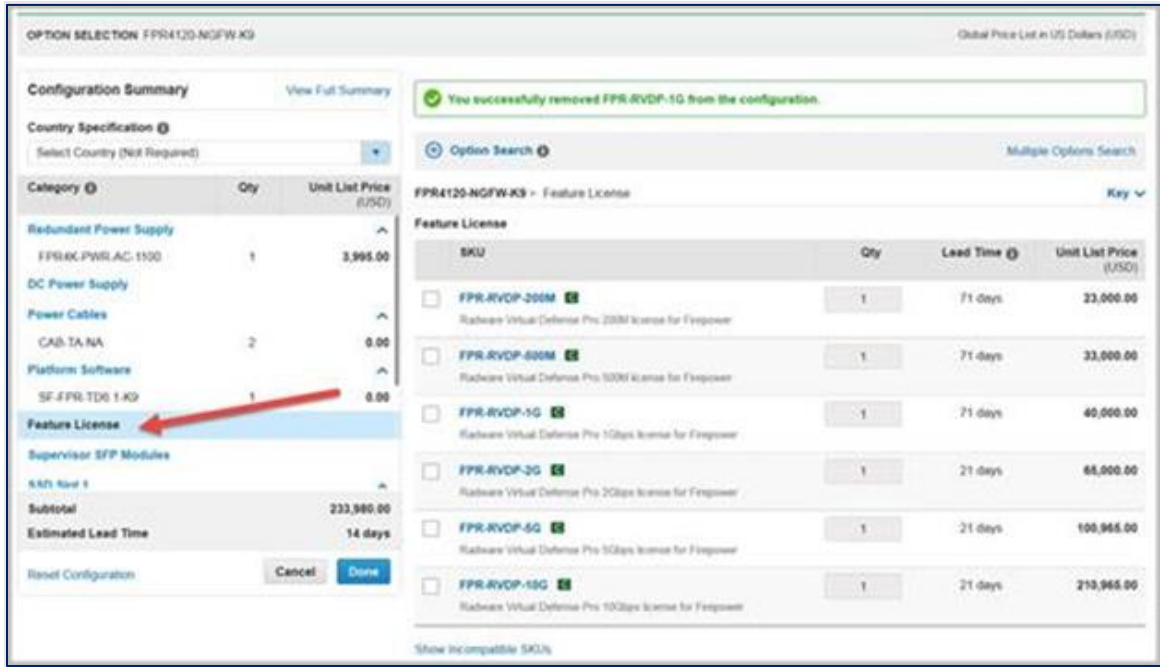
Figure 6.
Configuration options for Cisco Firepower 4125 platform

The Radware vDP SKUs are available under "Feature Licenses." When configuring a Firepower 9300, you will need 1 license of equal size for **each** blade.

Figure 7.
Feature licenses

When you make your selection, you will see the Service Contract and the Right-to-Use licenses are automatically added to the cart. As with the SPARE license, you can change the length of the service contract by clicking the "Edit Service/Subscription" link. You will find the EMCU contract under the selected Radware SKU.

If you do not already own Radware Vision Manager, please add to your order SKU: L-RDWR-APV-VA=. This is the Radware Manager Vision and Security Reporter with support for 10 vDP instances.

Links and Resources for Radware vDP

For Cisco internal questions, please send an email to: ask-radware@external.cisco.com

For Radware specific questions, please go to Cisco Technology Partnership with Radware.

SKUs and Ordering for Cisco Firepower 1000 Series

The following tables outline the product part number information for the Cisco Firepower 1000 Series. Note that the customer may want extra power supplies and fans. You can add these to the order separately. Table 18A and 18B provides the chassis part numbers for chassis running the ASA software and chassis running the Firewall Threat Defense software. Note that software subscriptions can only be added to chassis running the Firewall Threat Defense software. The chassis SKUs are automatically included in the bundle. The bundle also offers the part numbers for network modules, and Table 14 provides part numbers for accessories.

Table 18A. 1000 Series Chassis Part Numbers

Part Number	Description
Bundles	
FPR1010-BUN	Cisco Firepower 1010 Master Bundle
FPR1120-BUN	Cisco Firepower 1120 Master Bundle
FPR1140-BUN	Cisco Firepower 1140 Master Bundle
FPR1150-BUN	Cisco Firepower 1150 Master Bundle
FPR1010-FTD-HA-BUN	Cisco Firepower 1010 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR1120-FTD-HA-BUN	Cisco Firepower 1120 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR1140-FTD-HA-BUN	Cisco Firepower 1140 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR1150-FTD-HA-BUN	Cisco Firepower 1150 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
Appliances	
FPR1010-NGFW-K9	Cisco Firepower 1010 NGFW Appliance, Desktop, PoE (runs FTD software + optional subscriptions)
FPR1010E-NGFW-K9	Cisco Firepower 1010E NGFW Appliance, Desktop, no PoE (runs FTD software + optional subscriptions)
FPR1120-NGFW-K9	Cisco Firepower 1120 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR1140-NGFW-K9	Cisco Firepower 1140 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR1150-NGFW-K9	Cisco Firepower 1150 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR1010-ASA-K9	Cisco Firepower 1010 NGFW Appliance, Desktop, PoE (run ASA SW + Optional security plus license for High Availability)
FPR1010E-ASA-K9	Cisco Firepower 1010E NGFW Appliance, Desktop. no PoE (run ASA SW + Optional security plus license for High Availability)

Part Number	Description
FPR1120-ASA-K9	Cisco Firepower 1120 NGFW Appliance, 1RU (runs ASA software + optional security context license)
FPR1140-ASA-K9	Cisco Firepower 1140 NGFW Appliance, 1RU (runs ASA software + optional security context license)
FPR1150-ASA-K9	Cisco Firepower 1150 NGFW Appliance, 1RU (runs ASA software + optional security context license)

Table 18B.   1000 Series ASA Licenses and SKUs

Part Number	Description
ASA Standard License	
FPR1000-ASA	Cisco Firepower 1000 Standard ASA License
L-FPR1000-ASA=	Cisco Firepower 1000 Standard ASA License
Security Context Licenses	
L-FPR1K-ASASC-10=	Cisco Firepower 1000 – Add 10 Security Context Licenses
L-FPR1K-ASASC-5=	Cisco Firepower 1000 – Add 5 Security Context Licenses
Encryption Licenses	
L-FPR1K-ENC-K9=	Cisco Firepower 1K Series ASA Strong Encryption (3DES/AES)
FPR1010 Security Plus License (for HA)	
L-FPR1010-SEC-PL=	Cisco Firepower 1010 – Security Plus License

Table 19.   1000 Series Accessories Part Numbers

Part Number	Description
FPR1K-CBL-MGMT=	Cisco Firepower 1k Series Cable Mgmt Brackets 1120/1140/1150
FPR1K-DT-ACY-KIT=	Cisco Firepower 1K Series Accessory Kit for FPR-1010
FPR1K-DT-PWR-AC=	Cisco Firepower 1K Series 150W Power Adapter for FPR-1010
FPR1K-DT-RACK-MNT=	Cisco Firepower 1K Series Rackmount Kit for FPR-1010
FPR1K-DT-WALL-MNT=	Cisco Firepower 1K Series Wall Mount for FPR-1010
FPR1K-RM-ACY-KIT=	Cisco Firepower 1K Series Accessory Kit for FPR-1120/1140/1150
FPR1K-RM-BRKT=	Cisco Firepower 1K Series Rackmount Brackets – FPR-1120/1140/1150
FPR1K-RM-FIPS-KIT=	Cisco Firepower 1K Series FIPS Kits for FPR-1120/1140/1150

Part Number	Description
FPR1K-RM-SSD200=	Cisco Firepower 1K Series 200GB for FPR-1120/1140/1150

Note: Use these part numbers if the customer is ordering spare fans, power supplies, or a rack mount kit.

SKUs for 1000 Series Licenses and Subscriptions

When ordering a 1000 Series with the Cisco Secure Firewall Threat Defense image, both licenses and a subscription to optional security services are required. Subscription terms are 1, 3, and 5 years, with the greatest price discount at 5 years. In the listed part numbers, the threat services are identified as follows:

Table 20.   Threat Subscription Details

Threat Subscription Abbreviations	Description
T	Threat (Security Intelligence and IPS)
M or AMP	Malware defense
C or URL	URL Filtering
1Y	**1-Year** Subscription
3Y	**3-Year** Subscription
5Y	**5-Year** Subscription

Table 21.   Cisco Firepower 1000 Series License Part Numbers for Configurations with the Cisco Secure Firewall Threat Defense Image

Part Number	Description
L-FPR1010T-AMP=	Cisco Firepower 1010 Threat Defense Malware Protection License
L-FPR1010T-T=	Cisco Firepower 1010 Threat Defense Threat Protection License
L-FPR1010T-TC=	Cisco Firepower 1010 Threat Defense Threat and URL License
L-FPR1010T-TM=	Cisco Firepower 1010 Threat Defense Threat and Malware License
L-FPR1010T-TMC=	Cisco Firepower 1010 Threat Defense Threat, Malware, and URL License
L-FPR1010T-URL=	Cisco Firepower 1010 Threat Defense URL Filtering License
L-FPR1120T-AMP=	Cisco Firepower 1120 Threat Defense Malware Protection License
L-FPR1120T-T=	Cisco Firepower 1120 Threat Defense Threat Protection License
L-FPR1120T-TC=	Cisco Firepower 1120 Threat Defense Threat and URL License
L-FPR1120T-TM=	Cisco Firepower 1120 Threat Defense Threat and Malware License
L-FPR1120T-TMC=	Cisco Firepower 1120 Threat Defense Threat, Malware, and URL License

Part Number	Description
L-FPR1120T-URL=	Cisco Firepower 1120 Threat Defense URL Filtering License
L-FPR1140T-AMP=	Cisco Firepower 1140 Threat Defense Malware Protection License
L-FPR1140T-T=	Cisco Firepower 1140 Threat Defense Threat Protection License
L-FPR1140T-TC=	Cisco Firepower 1140 Threat Defense Threat and URL License
L-FPR1140T-TM=	Cisco Firepower 1140 Threat Defense Threat and Malware License
L-FPR1140T-TMC=	Cisco Firepower 1140 Threat Defense Threat, Malware, and URL License
L-FPR1140T-URL=	Cisco Firepower 1140 Threat Defense URL Filtering License
L-FPR1150T-AMP=	Cisco Firepower 1150 Threat Defense Malware Protection License
L-FPR1150T-T=	Cisco Firepower 1150 Threat Defense Threat Protection License
L-FPR1150T-TC=	Cisco Firepower 1150 Threat Defense Threat and URL License
L-FPR1150T-TM=	Cisco Firepower 1150 Threat Defense Threat and Malware License
L-FPR1150T-TMC=	Cisco Firepower 1150 Threat Defense Threat, Malware, and URL License
L-FPR1150T-URL=	Cisco Firepower 1150 Threat Defense URL Filtering License

Table 22.   Cisco Firepower 1000 Series Subscription Part Numbers for Configurations with the Firewall Threat Defense Image

Part Number	Description
L-FPR1010T-AMP-1Y	Cisco Firepower 1010 Threat Defense Malware Protection 1Y Subscription
L-FPR1010T-AMP-3Y	Cisco Firepower 1010 Threat Defense Malware Protection 3Y Subscription
L-FPR1010T-AMP-5Y	Cisco Firepower 1010 Threat Defense Malware Protection 5Y Subscription
L-FPR1010T-T-1Y	Cisco Firepower 1010 Threat Defense Threat Protection 1Y Subscription
L-FPR1010T-T-3Y	Cisco Firepower 1010 Threat Defense Threat Protection 3Y Subscription
L-FPR1010T-T-5Y	Cisco Firepower 1010 Threat Defense Threat Protection 5Y Subscription
L-FPR1010T-TC-1Y	Cisco Firepower 1010 Threat Defense Threat and URL 1Y Subscription
L-FPR1010T-TC-3Y	Cisco Firepower 1010 Threat Defense Threat and URL 3Y Subscription
L-FPR1010T-TC-5Y	Cisco Firepower 1010 Threat Defense Threat and URL 5Y Subscription
L-FPR1010T-TM-1Y	Cisco Firepower 1010 Threat Defense Threat and Malware 1Y Subscription
L-FPR1010T-TM-3Y	Cisco Firepower 1010 Threat Defense Threat and Malware 3Y Subscription
L-FPR1010T-TM-5Y	Cisco Firepower 1010 Threat Defense Threat and Malware 5Y Subscription

Part Number	Description
L-FPR1010T-TMC-1Y	Cisco Firepower 1010 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR1010T-TMC-3Y	Cisco Firepower 1010 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR1010T-TMC-5Y	Cisco Firepower 1010 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR1010T-URL-1Y	Cisco Firepower 1010 Threat Defense URL Filtering 1Y Subscription
L-FPR1010T-URL-3Y	Cisco Firepower 1010 Threat Defense URL Filtering 3Y Subscription
L-FPR1010T-URL-5Y	Cisco Firepower 1010 Threat Defense URL Filtering 5Y Subscription
L-FPR1120T-AMP-1Y	Cisco Firepower 1120 Threat Defense Malware Protection 1Y Subscription
L-FPR1120T-AMP-3Y	Cisco Firepower 1120 Threat Defense Malware Protection 3Y Subscription
L-FPR1120T-AMP-5Y	Cisco Firepower 1120 Threat Defense Malware Protection 5Y Subscription
L-FPR1120T-T-1Y	Cisco Firepower 1120 Threat Defense Threat Protection 1Y Subscription
L-FPR1120T-T-3Y	Cisco Firepower 1120 Threat Defense Threat Protection 3Y Subscription
L-FPR1120T-T-5Y	Cisco Firepower 1120 Threat Defense Threat Protection 5Y Subscription
L-FPR1120T-TC-1Y	Cisco Firepower 1120 Threat Defense Threat and URL 1Y Subscription
L-FPR1120T-TC-3Y	Cisco Firepower 1120 Threat Defense Threat and URL 3Y Subscription
L-FPR1120T-TC-5Y	Cisco Firepower 1120 Threat Defense Threat and URL 5Y Subscription
L-FPR1120T-TM-1Y	Cisco Firepower 1120 Threat Defense Threat and Malware 1Y Subscription
L-FPR1120T-TM-3Y	Cisco Firepower 1120 Threat Defense Threat and Malware 3Y Subscription
L-FPR1120T-TM-5Y	Cisco Firepower 1120 Threat Defense Threat and Malware 5Y Subscription
L-FPR1120T-TMC-1Y	Cisco Firepower 1120 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR1120T-TMC-3Y	Cisco Firepower 1120 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR1120T-TMC-5Y	Cisco Firepower 1120 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR1120T-URL-1Y	Cisco Firepower 1120 Threat Defense URL Filtering 1Y Subscription
L-FPR1120T-URL-3Y	Cisco Firepower 1120 Threat Defense URL Filtering 3Y Subscription
L-FPR1120T-URL-5Y	Cisco Firepower 1120 Threat Defense URL Filtering 5Y Subscription
L-FPR1140T-AMP-1Y	Cisco Firepower 1140 Threat Defense Malware Protection 1Y Subscription
L-FPR1140T-AMP-3Y	Cisco Firepower 1140 Threat Defense Malware Protection 3Y Subscription
L-FPR1140T-AMP-5Y	Cisco Firepower 1140 Threat Defense Malware Protection 5Y Subscription

Part Number	Description
L-FPR1140T-T-1Y	Cisco Firepower 1140 Threat Defense Threat Protection 1Y Subscription
L-FPR1140T-T-3Y	Cisco Firepower 1140 Threat Defense Threat Protection 3Y Subscription
L-FPR1140T-T-5Y	Cisco Firepower 1140 Threat Defense Threat Protection 5Y Subscription
L-FPR1140T-TC-1Y	Cisco Firepower 1140 Threat Defense Threat and URL 1Y Subscription
L-FPR1140T-TC-3Y	Cisco Firepower 1140 Threat Defense Threat and URL 3Y Subscription
L-FPR1140T-TC-5Y	Cisco Firepower 1140 Threat Defense Threat and URL 5Y Subscription
L-FPR1140T-TM-1Y	Cisco Firepower 1140 Threat Defense Threat and Malware 1Y Subscription
L-FPR1140T-TM-3Y	Cisco Firepower 1140 Threat Defense Threat and Malware 3Y Subscription
L-FPR1140T-TM-5Y	Cisco Firepower 1140 Threat Defense Threat and Malware 5Y Subscription
L-FPR1140T-TMC-1Y	Cisco Firepower 1140 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR1140T-TMC-3Y	Cisco Firepower 1140 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR1140T-TMC-5Y	Cisco Firepower 1140 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR1140T-URL-1Y	Cisco Firepower 1140 Threat Defense URL Filtering 1Y Subscription
L-FPR1140T-URL-3Y	Cisco Firepower 1140 Threat Defense URL Filtering 3Y Subscription
L-FPR1140T-URL-5Y	Cisco Firepower 1140 Threat Defense URL Filtering 5Y Subscription
L-FPR1150T-AMP-1Y	Cisco FPR1150 Threat Defense Malware Protection 1Y Subs
L-FPR1150T-AMP-3Y	Cisco FPR1150 Threat Defense Malware Protection 3Y Subs
L-FPR1150T-AMP-5Y	Cisco FPR1150 Threat Defense Malware Protection 5Y Subs
L-FPR1150T-T-1Y	Cisco FPR1150 Threat Defense Threat Protection 1Y Subs
L-FPR1150T-T-3Y	Cisco FPR1150 Threat Defense Threat Protection 3Y Subs
L-FPR1150T-T-5Y	Cisco FPR1150 Threat Defense Threat Protection 5Y Subs
L-FPR1150T-TC-1Y	Cisco FPR1150 Threat Defense Threat and URL 1Y Subs
L-FPR1150T-TC-3Y	Cisco FPR1150 Threat Defense Threat and URL 3Y Subs
L-FPR1150T-TC-5Y	Cisco FPR1150 Threat Defense Threat and URL 5Y Subs
L-FPR1150T-TM-1Y	Cisco FPR1150 Threat Defense Threat and Malware 1Y Subs
L-FPR1150T-TM-3Y	Cisco FPR1150 Threat Defense Threat and Malware 3Y Subs
L-FPR1150T-TM-5Y	Cisco FPR1150 Threat Defense Threat and Malware 5Y Subs

Part Number	Description
L-FPR1150T-TMC-1Y	Cisco FPR1150 Threat Defense Threat, Malware and URL 1Y Subs
L-FPR1150T-TMC-3Y	Cisco FPR1150 Threat Defense Threat, Malware and URL 3Y Subs
L-FPR1150T-TMC-5Y	Cisco FPR1150 Threat Defense Threat, Malware and URL 5Y Subs
L-FPR1150T-URL-1Y	Cisco FPR1150 Threat Defense URL Filtering 1Y Subs
L-FPR1150T-URL-3Y	Cisco FPR1150 Threat Defense URL Filtering 3Y Subs
L-FPR1150T-URL-5Y	Cisco FPR1150 Threat Defense URL Filtering 5Y Subs

Ordering Example: Cisco Firepower 1010 with FTD

Step 1: Smart Software Licensing

Before placing a Cisco Firepower 1010 order, a Smart Software Licensing account for the end customer must be initiated. If the customer already has a Smart Software Licensing account, that account must be associated with the order. More information on Smart Software Licensing account establishment is available in the Smart Software Licensing section of this ordering guide, and online at: https://www.cisco.com/web/ordering/smart-software-manager/index.html.

To associate the order's licenses with the customer's Smart Licensing account, or to begin the establishment of the Smart Licensing account, follow these steps. Note that if you are initiating the account, you can complete the order only if the account is initiated on the end customer's behalf and associated with the order.

Go to Cisco Commerce: https://www.cisco.com/go/ccw.

From the Orders pull-down menu, select Create Order.

Select Assign Smart Account and follow the subsequent prompts for Smart Licensing.

Step 2: Navigate to Catalog -> Products -> Security -> Cisco Firepower 1000 Series. Click on FPR1010-NGFW-K9

The Chassis is added on the cart along with the software subscription. By default the 3 Year FPR1010-TMC license will be added to the configuration.

Step 3: Follow the instructions in the yellow box. First, click the power cables link and make the cable selection in the next screen.

Step 4: After cable(s) selection, if there is a requirement for extended logging and analytics. Click on Extended logging and analytics on the configuration summary and add the cloud logging option along with the data retention SKU.

Step 5: After completing the selection of the Extended logging and analytics. Click "Done" to complete the configuration. An alert message appears to indicate to the user of the selected configuration. Click "Done" to proceed to the summary screen.
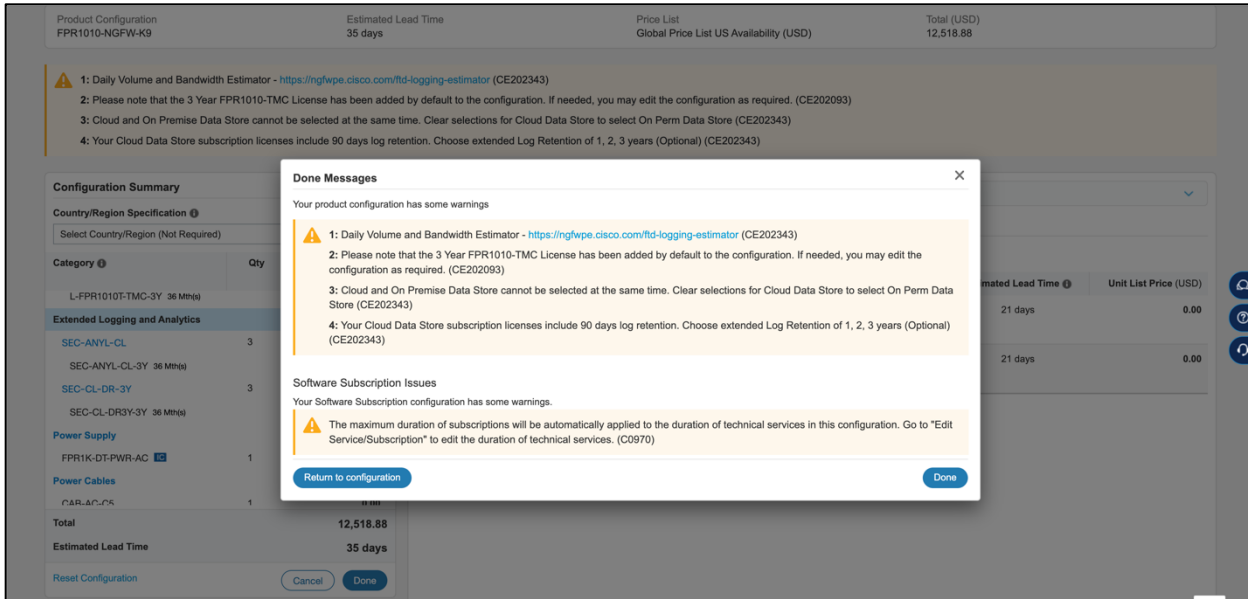
Step 6: After clicking done. The product configuration summary page will appear with all the selection.
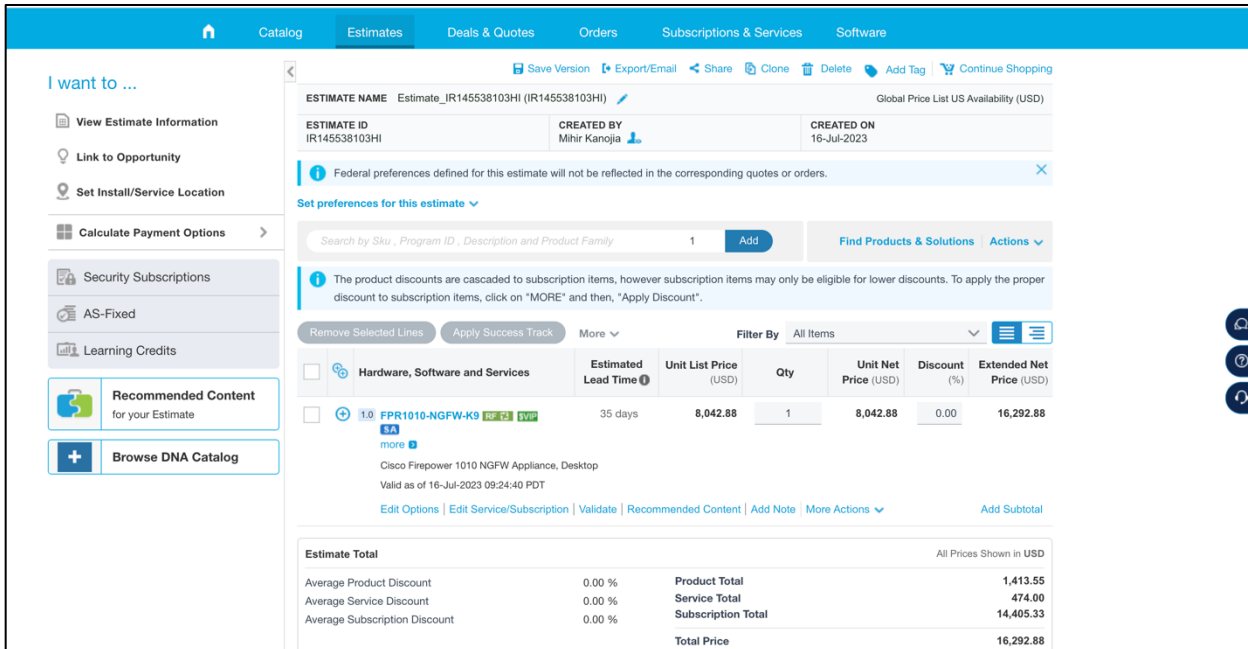
SKUs and Ordering for Cisco Firepower 2100 Series

The following tables outline the product part number information for the Cisco Firepower 2100 Series. The customer may want extra power supplies and fans. You can add these to the order separately. The software subscriptions can only be added to chassis running the FTD software. The chassis SKUs are automatically included in the bundle. The bundle also offers the part numbers for network modules.

Table 23.   2100 Series chassis part numbers

Part Number	Description
Bundles	
FPR2110-BUN	Cisco Firepower 2110 Master Bundle
FPR2120-BUN	Cisco Firepower 2120 Master Bundle
FPR2130-BUN	Cisco Firepower 2130 Master Bundle
FPR2140-BUN	Cisco Firepower 2140 Master Bundle
FPR2110-FTD-HA-BUN	Cisco Firepower 2110 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR2120-FTD-HA-BUN	Cisco Firepower 2120 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR2130-FTD-HA-BUN	Cisco Firepower 2130 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR2140-FTD-HA-BUN	Cisco Firepower 2140 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
Appliances	
FPR2110-NGFW-K9	Cisco Firepower 2110 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR2120-NGFW-K9	Cisco Firepower 2120 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR2130-NGFW-K9	Cisco Firepower 2130 NGFW Appliance, 1RU, 1 x Network Module Bays (runs FTD software + optional subscriptions)
FPR2140-NGFW-K9	Cisco Firepower 2140 NGFW Appliance, 1RU, 1 x Network Module Bays (runs FTD software + optional subscriptions)
FPR2110-ASA-K9	Cisco Firepower 2110 ASA Appliance, 1RU (runs ASA software with optional security context license)
FPR2120-ASA-K9	Cisco Firepower 2120 ASA Appliance, 1RU (runs ASA software with optional security context license)
FPR2130-ASA-K9	Cisco Firepower 2130 ASA Appliance, 1RU, 1 x Network Module Bays (runs ASA software with optional security context license)
FPR2140-ASA-K9	Cisco Firepower 2140 ASA Appliance, 1RU, 1 x Network Module Bays (runs ASA software with optional security context license)

Part Number	Description
Netmods	
FPR2K-NM-8X10G	Cisco Firepower 8 port SFP+ Network Module
FPR2K-NM-8X10G=	Cisco Firepower 8 port SFP+ Network Module
FPR2K-NM-8X1G	Cisco Firepower 8-port SFP Network Module
FPR2K-NM-8X1G=	Cisco Firepower 8-port SFP FTW Network Module (Spare)
FPR2K-NM-8X1G-F	Cisco Firepower 8-port 1G Copper FTW Network Module
FPR2K-NM-8X1G-F=	Cisco Firepower 8-port 1G Copper FTW Network Module (Spare)
FPR2K-NM-6X10LR-F=	Cisco Firepower 6 port 10G LR FTW Network Module
FPR2K-NM-6X10LR-F	Cisco Firepower 6 port 10G LR FTW Network Module
FPR2K-NM-6X10SR-F=	Cisco Firepower 6 port 10G SR FTW Network Module
FPR2K-NM-6X10SR-F	Cisco Firepower 6 port 10G SR FTW Network Module
FPR2K-NM-6X1SX-F=	Cisco Firepower 6 port 1G SX Fiber FTW Network Module
FPR2K-NM-6X1SX-F	Cisco Firepower 6 port 1G SX Fiber FTW Network Module

Table 24.   2100 Series ASA software license SKUs

Part Number	Description
Multicontext License	
L-FPR2K-ASASC-10=	Cisco Firepower 2100 Add-on 10 security context licenses
L-FPR2K-ASASC-5=	Cisco Firepower 2100 add-on 5 security context licenses
Encryption License	
L-FPR2K-ENC-K9=	License to enable strong encryption for ASA on Cisco Firepower 2100 Series

Table 25.   2100 Series accessories part numbers

Part Number	Description
FPR2K-PWR-AC-400=	Firepower 2000 Series 400W AC Power Supply
FPR2K-PWR-DC-350=	Firepower 2000 Series 350W DC Power Supply
FPR2K-FAN=	Firepower 2000 Series Fan Tray
FPR2K-PSU-BLANK=	Firepower 2000 Series Chassis Power Supply Blank Slot Cover
FPR2K-NM-BLANK=	Firepower 2000 Series Network Module Blank Slot Cover

Part Number	Description
FPR2K-SSD100=	Firepower 2000 Series SSD for FPR-2110/2120
FPR2K-SSD200=	Firepower 2000 Series SSD for FPR-2130/2140
FPR2K-BBLKD=	Firepower 2000 Series SSD Carrier
FPR2K-RM-BRKT=	Firepower 2000 Rackmount Brackets
FPR2K-RAIL-BRKT=	Firepower 2000 Slide Rail Brackets
FPR2K-CBL-MGMT=	Firepower 2000 Cable Management Brackets
FPR-2100-FIPS-KIT=	Firepower 2000 FIPS Kit
FPR2K-SLIDE-RAILS=	Firepower 2000 Slide Rail Kit

Note: Use these part numbers if the customer is ordering spare fans, power supplies, or a rack mount kit.

SKUs for 2100 Series Licenses and Subscriptions

When ordering a 2100 Series with the Cisco Secure Firewall Threat Defense image, both licenses and a subscription to optional security services are required. Subscription terms are 1, 3, and 5 years, with the greatest price discount at 5 years. In the listed part numbers, the threat services are identified as follows:

Table 26.   Threat Subscription Details

Threat Subscription Abbreviations	Description
T	Threat (Security Intelligence and IPS)
M or AMP	Malware defense
C or URL	URL Filtering
1Y	**1-Year** Subscription
3Y	**3-Year** Subscription
5Y	**5-Year** Subscription

Table 27. Cisco Firepower 2100 Series license part numbers for configurations with the Cisco Secure Firewall Threat Defense image

Part Number	Description
L-FPR2110T-AMP=	Cisco Firepower 2110 Threat Defense Malware Protection License
L-FPR2110T-T=	Cisco Firepower 2110 Threat Defense Threat Protection License
L-FPR2110T-TC=	Cisco Firepower 2110 Threat Defense Threat and URL License
L-FPR2110T-TM=	Cisco Firepower 2110 Threat Defense Threat and Malware License
L-FPR2110T-TMC=	Cisco Firepower 2110 Threat Defense Threat, Malware, and URL License
L-FPR2110T-URL=	Cisco Firepower 2110 Threat Defense URL Filtering License
L-FPR2120T-AMP=	Cisco Firepower 2120 Threat Defense Malware Protection License
L-FPR2120T-T=	Cisco Firepower 2120 Threat Defense Threat Protection License
L-FPR2120T-TC=	Cisco Firepower 2120 Threat Defense Threat and URL License
L-FPR2120T-TM=	Cisco Firepower 2120 Threat Defense Threat and Malware License
L-FPR2120T-TMC=	Cisco Firepower 2120 Threat Defense Threat, Malware, and URL License
L-FPR2120T-URL=	Cisco Firepower 2120 Threat Defense URL Filtering License
L-FPR2130T-AMP=	Cisco Firepower 2130 Threat Defense Malware Protection License
L-FPR2130T-T=	Cisco Firepower 2130 Threat Defense Threat Protection License
L-FPR2130T-TC=	Cisco Firepower 2130 Threat Defense Threat and URL License
L-FPR2130T-TM=	Cisco Firepower 2130 Threat Defense Threat and Malware License
L-FPR2130T-TMC=	Cisco Firepower 2130 Threat Defense Threat, Malware, and URL License
L-FPR2130T-URL=	Cisco Firepower 2130 Threat Defense URL Filtering License
L-FPR2140T-AMP=	Cisco Firepower 2140 Threat Defense Malware Protection License
L-FPR2140T-T=	Cisco Firepower 2140 Threat Defense Threat Protection License
L-FPR2140T-TC=	Cisco Firepower 2140 Threat Defense Threat and URL License
L-FPR2140T-TM=	Cisco Firepower 2140 Threat Defense Threat and Malware License
L-FPR2140T-TMC=	Cisco Firepower 2140 Threat Defense Threat, Malware, and URL License
L-FPR2140T-URL=	Cisco Firepower 2140 Threat Defense URL Filtering License

Table 28. Cisco Firepower 2100 Series subscription part numbers for configurations with the Firewall Threat Defense image

Part Number	Description
L-FPR2110T-AMP-1Y	Cisco Firepower 2110 Threat Defense Malware Protection 1Y Subscription
L-FPR2110T-AMP-3Y	Cisco Firepower 2110 Threat Defense Malware Protection 3Y Subscription
L-FPR2110T-AMP-5Y	Cisco Firepower 2110 Threat Defense Malware Protection 5Y Subscription
L-FPR2110T-T-1Y	Cisco Firepower 2110 Threat Defense Threat Protection 1Y Subscription
L-FPR2110T-T-3Y	Cisco Firepower 2110 Threat Defense Threat Protection 3Y Subscription
L-FPR2110T-T-5Y	Cisco Firepower 2110 Threat Defense Threat Protection 5Y Subscription
L-FPR2110T-TC-1Y	Cisco Firepower 2110 Threat Defense Threat and URL 1Y Subscription
L-FPR2110T-TC-3Y	Cisco Firepower 2110 Threat Defense Threat and URL 3Y Subscription
L-FPR2110T-TC-5Y	Cisco Firepower 2110 Threat Defense Threat and URL 5Y Subscription
L-FPR2110T-TM-1Y	Cisco Firepower 2110 Threat Defense Threat and Malware 1Y Subscription
L-FPR2110T-TM-3Y	Cisco Firepower 2110 Threat Defense Threat and Malware 3Y Subscription
L-FPR2110T-TM-5Y	Cisco Firepower 2110 Threat Defense Threat and Malware 5Y Subscription
L-FPR2110T-TMC-1Y	Cisco Firepower 2110 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR2110T-TMC-3Y	Cisco Firepower 2110 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR2110T-TMC-5Y	Cisco Firepower 2110 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR2110T-URL-1Y	Cisco Firepower 2110 Threat Defense URL Filtering 1Y Subscription
L-FPR2110T-URL-3Y	Cisco Firepower 2110 Threat Defense URL Filtering 3Y Subscription
L-FPR2110T-URL-5Y	Cisco Firepower 2110 Threat Defense URL Filtering 5Y Subscription
L-FPR2120T-AMP-1Y	Cisco Firepower 2120 Threat Defense Malware Protection 1Y Subscription
L-FPR2120T-AMP-3Y	Cisco Firepower 2120 Threat Defense Malware Protection 3Y Subscription
L-FPR2120T-AMP-5Y	Cisco Firepower 2120 Threat Defense Malware Protection 5Y Subscription
L-FPR2120T-T-1Y	Cisco Firepower 2120 Threat Defense Threat Protection 1Y Subscription
L-FPR2120T-T-3Y	Cisco Firepower 2120 Threat Defense Threat Protection 3Y Subscription
L-FPR2120T-T-5Y	Cisco Firepower 2120 Threat Defense Threat Protection 5Y Subscription
L-FPR2120T-TC-1Y	Cisco Firepower 2120 Threat Defense Threat and URL 1Y Subscription
L-FPR2120T-TC-3Y	Cisco Firepower 2120 Threat Defense Threat and URL 3Y Subscription

Part Number	Description
L-FPR2120T-TC-5Y	Cisco Firepower 2120 Threat Defense Threat and URL 5Y Subscription
L-FPR2120T-TM-1Y	Cisco Firepower 2120 Threat Defense Threat and Malware 1Y Subscription
L-FPR2120T-TM-3Y	Cisco Firepower 2120 Threat Defense Threat and Malware 3Y Subscription
L-FPR2120T-TM-5Y	Cisco Firepower 2120 Threat Defense Threat and Malware 5Y Subscription
L-FPR2120T-TMC-1Y	Cisco Firepower 2120 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR2120T-TMC-3Y	Cisco Firepower 2120 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR2120T-TMC-5Y	Cisco Firepower 2120 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR2120T-URL-1Y	Cisco Firepower 2120 Threat Defense URL Filtering 1Y Subscription
L-FPR2120T-URL-3Y	Cisco Firepower 2120 Threat Defense URL Filtering 3Y Subscription
L-FPR2120T-URL-5Y	Cisco Firepower 2120 Threat Defense URL Filtering 5Y Subscription
L-FPR2130T-AMP-1Y	Cisco Firepower 2130 Threat Defense Malware Protection 1Y Subscription
L-FPR2130T-AMP-3Y	Cisco Firepower 2130 Threat Defense Malware Protection 3Y Subscription
L-FPR2130T-AMP-5Y	Cisco Firepower 2130 Threat Defense Malware Protection 5Y Subscription
L-FPR2130T-T-1Y	Cisco Firepower 2130 Threat Defense Threat Protection 1Y Subscription
L-FPR2130T-T-3Y	Cisco Firepower 2130 Threat Defense Threat Protection 3Y Subscription
L-FPR2130T-T-5Y	Cisco Firepower 2130 Threat Defense Threat Protection 5Y Subscription
L-FPR2130T-TC-1Y	Cisco Firepower 2130 Threat Defense Threat and URL 1Y Subscription
L-FPR2130T-TC-3Y	Cisco Firepower 2130 Threat Defense Threat and URL 3Y Subscription
L-FPR2130T-TC-5Y	Cisco Firepower 2130 Threat Defense Threat and URL 5Y Subscription
L-FPR2130T-TM-1Y	Cisco Firepower 2130 Threat Defense Threat and Malware 1Y Subscription
L-FPR2130T-TM-3Y	Cisco Firepower 2130 Threat Defense Threat and Malware 3Y Subscription
L-FPR2130T-TM-5Y	Cisco Firepower 2130 Threat Defense Threat and Malware 5Y Subscription
L-FPR2130T-TMC-1Y	Cisco Firepower 2130 Threat Defense Threat, Malware, and URL 1Y Subscription

Part Number	Description
L-FPR2130T-TMC-3Y	Cisco Firepower 2130 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR2130T-TMC-5Y	Cisco Firepower 2130 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR2130T-URL-1Y	Cisco Firepower 2130 Threat Defense URL Filtering 1Y Subscription
L-FPR2130T-URL-3Y	Cisco Firepower 2130 Threat Defense URL Filtering 3Y Subscription
L-FPR2130T-URL-5Y	Cisco Firepower 2130 Threat Defense URL Filtering 5Y Subscription
L-FPR2140T-AMP-1Y	Cisco Firepower 2140 Threat Defense Malware Protection 1Y Subscription
L-FPR2140T-AMP-3Y	Cisco Firepower 2140 Threat Defense Malware Protection 3Y Subscription
L-FPR2140T-AMP-5Y	Cisco Firepower 2140 Threat Defense Malware Protection 5Y Subscription
L-FPR2140T-T-1Y	Cisco Firepower 2140 Threat Defense Threat Protection 1Y Subscription
L-FPR2140T-T-3Y	Cisco Firepower 2140 Threat Defense Threat Protection 3Y Subscription
L-FPR2140T-T-5Y	Cisco Firepower 2140 Threat Defense Threat Protection 5Y Subscription
L-FPR2140T-TC-1Y	Cisco Firepower 2140 Threat Defense Threat and URL 1Y Subscription
L-FPR2140T-TC-3Y	Cisco Firepower 2140 Threat Defense Threat and URL 3Y Subscription
L-FPR2140T-TC-5Y	Cisco Firepower 2140 Threat Defense Threat and URL 5Y Subscription
L-FPR2140T-TM-1Y	Cisco Firepower 2140 Threat Defense Threat and Malware 1Y Subscription
L-FPR2140T-TM-3Y	Cisco Firepower 2140 Threat Defense Threat and Malware 3Y Subscription
L-FPR2140T-TM-5Y	Cisco Firepower 2140 Threat Defense Threat and Malware 5Y Subscription
L-FPR2140T-TMC-1Y	Cisco Firepower 2140 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR2140T-TMC-3Y	Cisco Firepower 2140 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR2140T-TMC-5Y	Cisco Firepower 2140 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR2140T-URL-1Y	Cisco Firepower 2140 Threat Defense URL Filtering 1Y Subscription
L-FPR2140T-URL-3Y	Cisco Firepower 2140 Threat Defense URL Filtering 3Y Subscription
L-FPR2140T-URL-5Y	Cisco Firepower 2140 Threat Defense URL Filtering 5Y Subscription

SKUs and Ordering for Cisco Secure Firewall 3100 Series

The following tables outline the product part number information for the Cisco Secure Firewall 3100 Series. Note that the customer may want extra power supplies and fans. You can add these to the order separately. Note that software subscriptions can only be added to chassis running the FTD software. The chassis SKUs are automatically included in the bundle. The bundle also offers the part numbers for network modules.

Table 29.   3100 Series chassis part numbers

Part Number PID	Description
Bundles	
FPR3100-FTD-HA-BUN	Cisco Secure Firewall 3100 series Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
Appliances	
FPR3105-NGFW-K9	Cisco Secure Firewall 3105 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR3110-NGFW-K9	Cisco Secure Firewall 3110 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR3120-NGFW-K9	Cisco Secure Firewall 3120 NGFW Appliance, 1RU (runs FTD software + optional subscriptions)
FPR3130-NGFW-K9	Cisco Secure Firewall 3130 NGFW Appliance, 1RU, 1 x Network Module Bays (runs FTD software + optional subscriptions)
FPR3140-NGFW-K9	Cisco Secure Firewall 3140 NGFW Appliance, 1RU, 1 x Network Module Bays (runs FTD software + optional subscriptions)
FPR3105-ASA-K9	Cisco Secure Firewall 3105 ASA Appliance, 1RU (runs ASA software with optional security context license)
FPR3110-ASA-K9	Cisco Secure Firewall 3110 ASA Appliance, 1RU (runs ASA software with optional security context license)
FPR3120-ASA-K9	Cisco Secure Firewall 3120 ASA Appliance, 1RU (runs ASA software with optional security context license)
FPR3130-ASA-K9	Cisco Secure Firewall 3130 ASA Appliance, 1RU, 1 x Network Module Bays (runs ASA software with optional security context license)
FPR3140-ASA-K9	Cisco Secure Firewall 3140 ASA Appliance, 1RU, 1 x Network Module Bays (runs ASA software with optional security context license)

Part Number PID	Description
Netmods	
FPR3K-XNM-8X10G	Cisco SECURE FIREWALL 3100 8-port 1G/10G SFP+ Network Module
FPR3K-XNM-8X10G=	Cisco SECURE FIREWALL 3100 8-port 1G/10G SFP+ Network Module (Spare)
FPR3K-XNM-8X25G	Cisco SECURE FIREWALL 3100 8-port 1/10/25G ZSFP Network Module
FPR3K-XNM-8X25G=	Cisco SECURE FIREWALL 3100 8-port 1/10/25G ZSFP Network Module (Spare)
FPR3K-XNM-4X40G	Cisco SECURE FIREWALL 3100 4-port 40G QSFP+ Network Module
FPR3K-XNM-4X40G=	Cisco SECURE FIREWALL 3100 4-port 40G QSFP+ Network Module (Spare)

Table 30.   3100 Series ASA software license SKUs

Part Number	Description
Multicontext License	
L-FPR3K-ASASC-10=	Cisco Secure Firewall 3100 Add-on 10 security context licenses
L-FPR3K-ASASC-5=	Cisco Secure Firewall 3100 add-on 5 security context licenses
Encryption License	
L-FPR3K-ENC-K9=	License to enable strong encryption for ASA on Cisco Secure Firewall 3100 Series

Table 31.   3100 Series accessories part numbers

Part Number	Description
FPR3K-PWR-AC-400=	Cisco Secure Firewall 3100 Series 400W AC Power Supply
FPR3K-PWR-DC-400=	Cisco Secure Firewall 3100 Series 400W DC Power Supply
FPR3K-FAN=	Cisco Secure Firewall 3100 Series Fan Tray
FPR3K-PSU-BLANK=	Cisco Secure Firewall 3100 Series Chassis Power Supply Blank Slot Cover
FPR3K-SSD-BLANK=	Cisco Secure Firewall 3100 Series SSD Slot Carrier
FPR3K-NM-BLANK=	Cisco Secure Firewall 3100 Series Network Module Blank Slot Cover
FPR3K-SSD900=	Cisco Secure Firewall 3100 Series SSD for FPR 3100 Series
FPR3K-BRKT=	Cisco Secure Firewall 3100 Series Rackmount Brackets
FPR3K-RAIL-BRKT=	Cisco Secure Firewall 3100 Series Slide Rail Brackets
FPR3K-CBL-MGMT=	Cisco Secure Firewall 3100 Series Cable Management Brackets

Part Number	Description
FPR3K-FIPS-KIT=	Cisco Secure Firewall 3100 Series FIPS Kit
FPR3K-SLIDE-RAILS=	Cisco Secure Firewall 3100 Series Slide Rail Kit
FPR3K-ACY-KIT	Cisco Secure Firewall 3100 Series Accessory Kit

Note: Use these part numbers if the customer is ordering spare fans, power supplies, or a rack mount kit.

SKUs for 3100 Series Licenses and Subscriptions

When ordering a 3100 Series with the Cisco Secure Firewall Threat Defense image, both licenses and a subscription to optional security services are required. Subscription terms are 1, 3, and 5 years, with the greatest price discount at 5 years. In the listed part numbers, the threat services are identified as follows:

Table 32. Threat Subscription Details

Threat Subscription Abbreviations	Description
T	Threat (Security Intelligence and IPS)
M or AMP	Malware defense
C or URL	URL Filtering
1Y	**1-Year** Subscription
3Y	**3-Year** Subscription
5Y	**5-Year** Subscription

Table 33. Cisco Secure Firewall 3100 Series license part numbers for configurations with the Cisco Secure Firewall Threat Defense image

Part Number	Description
L-FPR3105T-AMP=	Cisco Secure Firewall 3105 Threat Defense Malware Protection License
L-FPR3105T-T=	Cisco Secure Firewall 3105 Threat Defense Threat Protection License
L-FPR3105T-TC=	Cisco Secure Firewall 3105 Threat Defense Threat and URL License
L-FPR3105T-TM=	Cisco Secure Firewall 3105 Threat Defense Threat and Malware License
L-FPR3105T-TMC=	Cisco Secure Firewall 3105 Threat Defense Threat, Malware, and URL License
L-FPR3105T-URL=	Cisco Secure Firewall 3105 Threat Defense URL Filtering License
L-FPR3110T-AMP=	Cisco Secure Firewall 3110 Threat Defense Malware Protection License
L-FPR3110T-T=	Cisco Secure Firewall 3110 Threat Defense Threat Protection License
L-FPR3110T-TC=	Cisco Secure Firewall 3110 Threat Defense Threat and URL License

Part Number	Description
L-FPR3110T-TM=	Cisco Secure Firewall 3110 Threat Defense Threat and Malware License
L-FPR3110T-TMC=	Cisco Secure Firewall 3110 Threat Defense Threat, Malware, and URL License
L-FPR3110T-URL=	Cisco Secure Firewall 3110 Threat Defense URL Filtering License
L-FPR3120T-AMP=	Cisco Secure Firewall 3120 Threat Defense Malware Protection License
L-FPR3120T-T=	Cisco Secure Firewall 3120 Threat Defense Threat Protection License
L-FPR3120T-TC=	Cisco Secure Firewall 3120 Threat Defense Threat and URL License
L-FPR3120T-TM=	Cisco Secure Firewall 3120 Threat Defense Threat and Malware License
L-FPR3120T-TMC=	Cisco Secure Firewall 3120 Threat Defense Threat, Malware, and URL License
L-FPR3120T-URL=	Cisco Secure Firewall 3120 Threat Defense URL Filtering License
L-FPR3130T-AMP=	Cisco Secure Firewall 3130 Threat Defense Malware Protection License
L-FPR3130T-T=	Cisco Secure Firewall 3130 Threat Defense Threat Protection License
L-FPR3130T-TC=	Cisco Secure Firewall 3130 Threat Defense Threat and URL License
L-FPR3130T-TM=	Cisco Secure Firewall 3130 Threat Defense Threat and Malware License
L-FPR3130T-TMC=	Cisco Secure Firewall 3130 Threat Defense Threat, Malware, and URL License
L-FPR3130T-URL=	Cisco Secure Firewall 3130 Threat Defense URL Filtering License
L-FPR3140T-AMP=	Cisco Secure Firewall 3140 Threat Defense Malware Protection License
L-FPR3140T-T=	Cisco Secure Firewall 3140 Threat Defense Threat Protection License
L-FPR3140T-TC=	Cisco Secure Firewall 3140 Threat Defense Threat and URL License
L-FPR3140T-TM=	Cisco Secure Firewall 3140 Threat Defense Threat and Malware License
L-FPR3140T-TMC=	Cisco Secure Firewall 3140 Threat Defense Threat, Malware, and URL License
L-FPR3140T-URL=	Cisco Secure Firewall 3140 Threat Defense URL Filtering License

Table 34. Cisco Secure Firewall 3100 Series subscription part numbers for configurations with the Firewall Threat Defense image

Part Number	Description
L-FPR3105T-AMP-1Y	Cisco Secure Firewall 3105 Threat Defense Malware Protection 1Y Subscription
L-FPR3105T-AMP-3Y	Cisco Secure Firewall 3105 Threat Defense Malware Protection 3Y Subscription
L-FPR3105T-AMP-5Y	Cisco Secure Firewall 3105 Threat Defense Malware Protection 5Y Subscription
L-FPR3105T-T-1Y	Cisco Secure Firewall 3105 Threat Defense Threat Protection 1Y Subscription
L-FPR3105T-T-3Y	Cisco Secure Firewall 3105 Threat Defense Threat Protection 3Y Subscription
L-FPR3105T-T-5Y	Cisco Secure Firewall 3105 Threat Defense Threat Protection 5Y Subscription
L-FPR3105T-TC-1Y	Cisco Secure Firewall 3105 Threat Defense Threat and URL 1Y Subscription
L-FPR3105T-TC-3Y	Cisco Secure Firewall 3105 Threat Defense Threat and URL 3Y Subscription
L-FPR3105T-TC-5Y	Cisco Secure Firewall 3105 Threat Defense Threat and URL 5Y Subscription
L-FPR3105T-TM-1Y	Cisco Secure Firewall 3105 Threat Defense Threat and Malware 1Y Subscription
L-FPR3105T-TM-3Y	Cisco Secure Firewall 3105 Threat Defense Threat and Malware 3Y Subscription
L-FPR3105T-TM-5Y	Cisco Secure Firewall 3105 Threat Defense Threat and Malware 5Y Subscription
L-FPR3105T-TMC-1Y	Cisco Secure Firewall 3105 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR3105T-TMC-3Y	Cisco Secure Firewall 3105 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR3105T-TMC-5Y	Cisco Secure Firewall 3105 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR3105T-URL-1Y	Cisco Secure Firewall 3105 Threat Defense URL Filtering 1Y Subscription
L-FPR3105T-URL-3Y	Cisco Secure Firewall 3105 Threat Defense URL Filtering 3Y Subscription
L-FPR3105T-URL-5Y	Cisco Secure Firewall 3105 Threat Defense URL Filtering 5Y Subscription
L-FPR3110T-AMP-1Y	Cisco Secure Firewall 3110 Threat Defense Malware Protection 1Y Subscription
L-FPR3110T-AMP-3Y	Cisco Secure Firewall 3110 Threat Defense Malware Protection 3Y Subscription
L-FPR3110T-AMP-5Y	Cisco Secure Firewall 3110 Threat Defense Malware Protection 5Y Subscription
L-FPR3110T-T-1Y	Cisco Secure Firewall 3110 Threat Defense Threat Protection 1Y Subscription
L-FPR3110T-T-3Y	Cisco Secure Firewall 3110 Threat Defense Threat Protection 3Y Subscription
L-FPR3110T-T-5Y	Cisco Secure Firewall 3110 Threat Defense Threat Protection 5Y Subscription

Part Number	Description
L-FPR3110T-TC-1Y	Cisco Secure Firewall 3110 Threat Defense Threat and URL 1Y Subscription
L-FPR3110T-TC-3Y	Cisco Secure Firewall 3110 Threat Defense Threat and URL 3Y Subscription
L-FPR3110T-TC-5Y	Cisco Secure Firewall 3110 Threat Defense Threat and URL 5Y Subscription
L-FPR3110T-TM-1Y	Cisco Secure Firewall 3110 Threat Defense Threat and Malware 1Y Subscription
L-FPR3110T-TM-3Y	Cisco Secure Firewall 3110 Threat Defense Threat and Malware 3Y Subscription
L-FPR3110T-TM-5Y	Cisco Secure Firewall 3110 Threat Defense Threat and Malware 5Y Subscription
L-FPR3110T-TMC-1Y	Cisco Secure Firewall 3110 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR3110T-TMC-3Y	Cisco Secure Firewall 3110 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR3110T-TMC-5Y	Cisco Secure Firewall 3110 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR3110T-URL-1Y	Cisco Secure Firewall 3110 Threat Defense URL Filtering 1Y Subscription
L-FPR3110T-URL-3Y	Cisco Secure Firewall 3110 Threat Defense URL Filtering 3Y Subscription
L-FPR3110T-URL-5Y	Cisco Secure Firewall 3110 Threat Defense URL Filtering 5Y Subscription
L-FPR3120T-AMP-1Y	Cisco Secure Firewall 3120 Threat Defense Malware Protection 1Y Subscription
L-FPR3120T-AMP-3Y	Cisco Secure Firewall 3120 Threat Defense Malware Protection 3Y Subscription
L-FPR3120T-AMP-5Y	Cisco Secure Firewall 3120 Threat Defense Malware Protection 5Y Subscription
L-FPR3120T-T-1Y	Cisco Secure Firewall 3120 Threat Defense Threat Protection 1Y Subscription
L-FPR3120T-T-3Y	Cisco Secure Firewall 3120 Threat Defense Threat Protection 3Y Subscription
L-FPR3120T-T-5Y	Cisco Secure Firewall 3120 Threat Defense Threat Protection 5Y Subscription
L-FPR3120T-TC-1Y	Cisco Secure Firewall 3120 Threat Defense Threat and URL 1Y Subscription
L-FPR3120T-TC-3Y	Cisco Secure Firewall 3120 Threat Defense Threat and URL 3Y Subscription
L-FPR3120T-TC-5Y	Cisco Secure Firewall 3120 Threat Defense Threat and URL 5Y Subscription
L-FPR3120T-TM-1Y	Cisco Secure Firewall 3120 Threat Defense Threat and Malware 1Y Subscription
L-FPR3120T-TM-3Y	Cisco Secure Firewall 3120 Threat Defense Threat and Malware 3Y Subscription
L-FPR3120T-TM-5Y	Cisco Secure Firewall 3120 Threat Defense Threat and Malware 5Y Subscription

Part Number	Description
L-FPR3120T-TMC-1Y	Cisco Secure Firewall 3120 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR3120T-TMC-3Y	Cisco Secure Firewall 3120 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR3120T-TMC-5Y	Cisco Secure Firewall 3120 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR3120T-URL-1Y	Cisco Secure Firewall 3120 Threat Defense URL Filtering 1Y Subscription
L-FPR3120T-URL-3Y	Cisco Secure Firewall 3120 Threat Defense URL Filtering 3Y Subscription
L-FPR3120T-URL-5Y	Cisco Secure Firewall 3120 Threat Defense URL Filtering 5Y Subscription
L-FPR3130T-AMP-1Y	Cisco Secure Firewall 3130 Threat Defense Malware Protection 1Y Subscription
L-FPR3130T-AMP-3Y	Cisco Secure Firewall 3130 Threat Defense Malware Protection 3Y Subscription
L-FPR3130T-AMP-5Y	Cisco Secure Firewall 3130 Threat Defense Malware Protection 5Y Subscription
L-FPR3130T-T-1Y	Cisco Secure Firewall 3130 Threat Defense Threat Protection 1Y Subscription
L-FPR3130T-T-3Y	Cisco Secure Firewall 3130 Threat Defense Threat Protection 3Y Subscription
L-FPR3130T-T-5Y	Cisco Secure Firewall 3130 Threat Defense Threat Protection 5Y Subscription
L-FPR3130T-TC-1Y	Cisco Secure Firewall 3130 Threat Defense Threat and URL 1Y Subscription
L-FPR3130T-TC-3Y	Cisco Secure Firewall 3130 Threat Defense Threat and URL 3Y Subscription
L-FPR3130T-TC-5Y	Cisco Secure Firewall 3130 Threat Defense Threat and URL 5Y Subscription
L-FPR3130T-TM-1Y	Cisco Secure Firewall 3130 Threat Defense Threat and Malware 1Y Subscription
L-FPR3130T-TM-3Y	Cisco Secure Firewall 3130 Threat Defense Threat and Malware 3Y Subscription
L-FPR3130T-TM-5Y	Cisco Secure Firewall 3130 Threat Defense Threat and Malware 5Y Subscription
L-FPR3130T-TMC-1Y	Cisco Secure Firewall 3130 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR3130T-TMC-3Y	Cisco Secure Firewall 3130 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR3130T-TMC-5Y	Cisco Secure Firewall 3130 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR3130T-URL-1Y	Cisco Secure Firewall 3130 Threat Defense URL Filtering 1Y Subscription
L-FPR3130T-URL-3Y	Cisco Secure Firewall 3130 Threat Defense URL Filtering 3Y Subscription
L-FPR3130T-URL-5Y	Cisco Secure Firewall 3130 Threat Defense URL Filtering 5Y Subscription
L-FPR3140T-AMP-1Y	Cisco Secure Firewall 3140 Threat Defense Malware Protection 1Y Subscription

Part Number	Description
L-FPR3140T-AMP-3Y	Cisco Secure Firewall 3140 Threat Defense Malware Protection 3Y Subscription
L-FPR3140T-AMP-5Y	Cisco Secure Firewall 3140 Threat Defense Malware Protection 5Y Subscription
L-FPR3140T-T-1Y	Cisco Secure Firewall 3140 Threat Defense Threat Protection 1Y Subscription
L-FPR3140T-T-3Y	Cisco Secure Firewall 3140 Threat Defense Threat Protection 3Y Subscription
L-FPR3140T-T-5Y	Cisco Secure Firewall 3140 Threat Defense Threat Protection 5Y Subscription
L-FPR3140T-TC-1Y	Cisco Secure Firewall 3140 Threat Defense Threat and URL 1Y Subscription
L-FPR3140T-TC-3Y	Cisco Secure Firewall 3140 Threat Defense Threat and URL 3Y Subscription
L-FPR3140T-TC-5Y	Cisco Secure Firewall 3140 Threat Defense Threat and URL 5Y Subscription
L-FPR3140T-TM-1Y	Cisco Secure Firewall 3140 Threat Defense Threat and Malware 1Y Subscription
L-FPR3140T-TM-3Y	Cisco Secure Firewall 3140 Threat Defense Threat and Malware 3Y Subscription
L-FPR3140T-TM-5Y	Cisco Secure Firewall 3140 Threat Defense Threat and Malware 5Y Subscription
L-FPR3140T-TMC-1Y	Cisco Secure Firewall 3140 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR3140T-TMC-3Y	Cisco Secure Firewall 3140 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR3140T-TMC-5Y	Cisco Secure Firewall 3140 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR3140T-URL-1Y	Cisco Secure Firewall 3140 Threat Defense URL Filtering 1Y Subscription
L-FPR3140T-URL-3Y	Cisco Secure Firewall 3140 Threat Defense URL Filtering 3Y Subscription
L-FPR3140T-URL-5Y	Cisco Secure Firewall 3140 Threat Defense URL Filtering 5Y Subscription

Ordering Example: Cisco Secure Firewall 3140 with FTD

Step 1: Smart Software Licensing

Before placing a Cisco Firepower 1010 order, a Smart Software Licensing account for the end customer must be initiated. If the customer already has a Smart Software Licensing account, that account must be associated with the order. More information on Smart Software Licensing account establishment is available in the Smart Software Licensing section of this ordering guide, and online at: https://www.cisco.com/web/ordering/smart-software-manager/index.html.

To associate the order's licenses with the customer's Smart Licensing account, or to begin the establishment of the Smart Licensing account, follow these steps. Note that if you are initiating the account, you can complete the order only if the account is initiated on the end customer's behalf and associated with the order.

Go to Cisco Commerce: https://www.cisco.com/go/ccw.

From the Orders pull-down menu, select Create Order.

Select Assign Smart Account and follow the subsequent prompts for Smart Licensing.

Step 2: Navigate to Products -> Security -> Cisco Secure Firewall 3100 series-> Cisco Secure Firewall 3140 -> FPR3140-NGFW-K9

Step 3: Follow the instructions on the yellow box. Select the Power Cables or the DC Power Supply.

Step 4: After the cable selection is complete. Click on the Network module to add to the configuration.

Step 5: Complete the configuration by clicking on done. An alert message appears for the user to confirm the selection.

Step 6: Product summary page appears with the selected configurations.
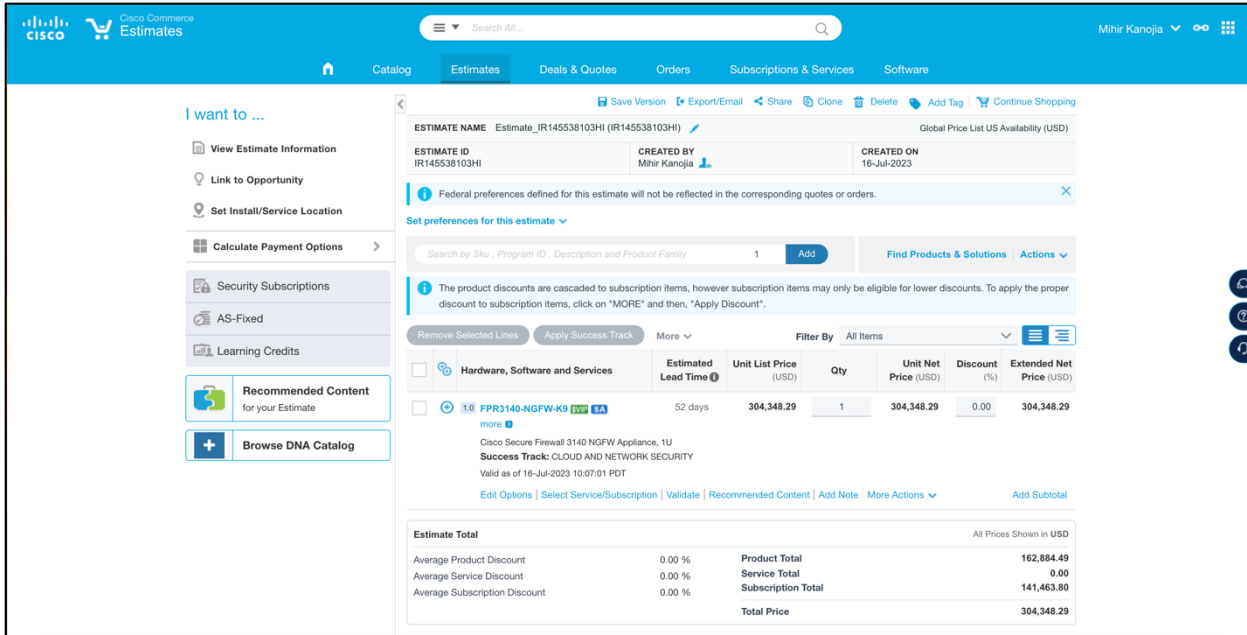
SKUs and Ordering for Cisco Firepower 4100 Series

The following tables outline the product part number information for the Cisco Firepower 4100 Series. Note that the customer may want extra power supplies and fans.

Table 35. 4100 Series chassis part numbers

Part Number	Description
PID	Description
FPR4112-BUN	Cisco Firepower 4112 Master Bundle
FPR4115-BUN	Cisco Firepower 4115 Master Bundle
FPR4125-BUN	Cisco Firepower 4125 Master Bundle
FPR4145-BUN	Cisco Firepower 4145 Master Bundle
FPR4112-FTD-HA-BUN	Cisco Firepower 4112 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4115-FTD-HA-BUN	Cisco Firepower 4115 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4125-FTD-HA-BUN	Cisco Firepower 4125 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4145-FTD-HA-BUN	Cisco Firepower 4145 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4112-ASA-K9	Cisco Firepower 4112 ASA Appliance, 1RU, 2 x Network Module Bays
FPR4112-NGFW-K9	Cisco Firepower 4112 NGFW Appliance, 1RU, 2 x Network Module Bays

Part Number	Description
FPR4112-NGIPS-K9	Cisco Firepower 4112 NGIPS Appliance, 1RU, 2 x Network Module Bays
FPR4115-ASA-K9	Cisco Firepower 4115 ASA Appliance, 1RU, 2 x Network Module Bays
FPR4115-NGFW-K9	Cisco Firepower 4115 NGFW Appliance, 1RU, 2 x Network Module Bays
FPR4115-NGIPS-K9	Cisco Firepower 4115 NGIPS Appliance, 1RU, 2 x Network Module Bays
FPR4125-ASA-K9	Cisco Firepower 4125 ASA Appliance, 1RU, 2 x Network Module Bays
FPR4125-NGFW-K9	Cisco Firepower 4125 NGFW Appliance, 1RU, 2 x Network Module Bays
FPR4125-NGIPS-K9	Cisco Firepower 4125 NGIPS Appliance, 1RU, 2 x Network Module Bays
FPR4145-ASA-K9	Cisco Firepower 4145 ASA Appliance, 1RU, 2 x Network Module Bays
FPR4145-NGFW-K9	Cisco Firepower 4145 NGFW Appliance, 1RU, 2 x Network Module Bays
FPR4145-NGIPS-K9	Cisco Firepower 4145 NGIPS Appliance, 1RU, 2 x Network Module Bays

Note: Use the bundle part number unless you have an explicit reason not to. the bundle pid ensures that all necessary components are purchased.

Table 36. 4100 Series network module part numbers

Part Number	Description
FPR4K-NM-2X40G-F	Cisco Firepower 2-port 40G SR FTW Network Module
FPR4K-NM-2X40G-F=	Cisco Firepower 2-port 40G SR FTW Network Module
FPR4K-NM-4X40G	Cisco Firepower 4-port QSFP+ Network Module
FPR4K-NM-4X40G=	Cisco Firepower 4-port QSFP+ Network Module
FPR4K-NM-6X10LR-F	Cisco Firepower 6-port 10G LR FTW Network Module
FPR4K-NM-6X10LR-F=	Cisco Firepower 6-port 10G LR FTW Network Module
FPR4K-NM-6X10SR-F	Cisco Firepower 6-port 10G SR FTW Network Module
FPR4K-NM-6X10SR-F=	Cisco Firepower 6-port 10G SR FTW Network Module
FPR4K-NM-6X1SX-F	Cisco Firepower 6-port 1G SX Fiber FTW Network Module
FPR4K-NM-6X1SX-F=	Cisco Firepower 6-port 1G SX Fiber FTW Network Module
FPR4K-NM-8X10G	Cisco Firepower 8-port SFP+ Network Module
FPR4K-NM-8X10G=	Cisco Firepower 8-port SFP+ Network Module
FPR4K-NM-8X1G-F	Cisco Firepower 8-port 1Gbps copper FTW Network Module
FPR4K-NM-8X1G-F=	Cisco Firepower 8-port 1Gbps copper FTW Network Module

Part Number	Description
FPR4K-NM-2X100G=	Cisco FirePower 2 port 100G Network Module

Table 37. 4100 Series accessories part numbers

Part Number	Description
FPR4K-FAN	Cisco Firepower 4000 Series Fan
FPR4K-FAN=	Cisco Firepower 4000 Series Fan
FPR4K-NM-BLANK	Cisco Firepower 4000 Series Network Module Blank Slot Cover
FPR4K-NM-BLANK=	Cisco Firepower 4000 Series Network Module Blank Slot Cover
FPR4K-PSU-BLANK	Cisco Firepower 4000 Series Chassis Power Supply Blank Slot Cover
FPR4K-PSU-BLANK=	Cisco Firepower 4000 Series Chassis Power Supply Blank Slot Cover
FPR4K-PWR-AC-1100	Cisco Firepower 4000 Series 1100W AC Power Supply
FPR4K-PWR-AC-1100=	Cisco Firepower 4000 Series 1100W AC Power Supply
FPR4K-PWR-DC-950	Cisco Firepower 4000 Series 950W DC Power Supply
FPR4K-PWR-DC-950=	Cisco Firepower 4000 Series 950W DC Power Supply
FPR4K-RACK-MNT	Cisco Firepower 4000 Series Rack Mount Kit
FPR4K-RACK-MNT=	Cisco Firepower 4000 Series Rack Mount Kit
FPR4K-SSD-BBLKD	Cisco Firepower 4000 Series SSD Slot Carrier
FPR4K-SSD-BBLKD=	Cisco Firepower 4000 Series SSD Slot Carrier
FPR4K-SSD200	Cisco Firepower 4000 Series SSD for 4110 and 4120
FPR4K-SSD200=	Cisco Firepower 4000 Series SSD for 4110 and 4120
FPR4K-SSD400	Cisco Firepower 4000 Series SSD for 4140 and 4150
FPR4K-SSD400=	Cisco Firepower 4000 Series SSD for 4140 and 4150
FPR4K-SSD800	Cisco Firepower 4000 Series 800GB SSD
FPR4K-SSD800=	Cisco Firepower 4000 Series 800GB SSD
FPR4K-ACC-KIT	Cisco Firepower 4000 Series Hardware Accessory Kit (Rack Mounts, Cables)
FPR4K-ACC-KIT=	Cisco Firepower 4000 Series Hardware Accessory Kit (Rack Mounts, Cables)
FPR4K-ACC-KIT2	Cisco Firepower 4115/25/45 Hardware Accessory Kit
FPR4K-ACC-KIT2=	Cisco Firepower 4115/25/45 Hardware Accessory Kit

Part Number	Description
FPR4K-CBL-MGMT	Cisco Firepower 4100 Series Cable Management Kit
FPR4K-CBL-MGMT=	Cisco Firepower 4100 Series Cable Management Kit

Note: Use these part numbers if the customer is ordering spare fans, power supplies, or a rack mount kit.

SKUs for 4100 Series Licenses and Subscriptions

When ordering a 4100 Series firewall with the ASA configuration, a license is required. When ordering a 4100 Series hardware with the Cisco Secure Firewall Threat Defense image, both licenses and a subscription to optional security services are required. Subscription terms are 1, 3, and 5 years, with the greatest price discount at 5 years. In the listed part numbers, the threat services are identified as follows:

Table 38.   Threat Subscription Details

Threat Subscription Abbreviations	Description
T	Threat (Security Intelligence and IPS)
M or AMP	Malware defense
C or URL	URL Filtering
1Y	**1-Year** Subscription
3Y	**3-Year** Subscription
5Y	**5-Year** Subscription

Table 39.   Cisco Firepower 4100 Series license part numbers for configurations with the Cisco Secure Firewall Threat Defense image

Part Number	Description
L-FPR4112T-AMP=	Cisco Firepower 4112 Threat Defense Malware Protection License
L-FPR4112T-T=	Cisco Firepower 4112 Threat Defense Threat Protection License
L-FPR4112T-TC=	Cisco Firepower 4112 Threat Defense Threat and URL License
L-FPR4112T-TM=	Cisco Firepower 4112 Threat Defense Threat and Malware License
L-FPR4112T-TMC=	Cisco Firepower 4112 Threat Defense Threat, Malware, and URL License
L-FPR4112T-URL=	Cisco Firepower 4112 Threat Defense URL Filtering License
L-FPR4115T-AMP=	Cisco Firepower 4115 Threat Defense Malware Protection License
L-FPR4115T-T=	Cisco Firepower 4115 Threat Defense Threat Protection License
L-FPR4115T-TC=	Cisco Firepower 4115 Threat Defense Threat and URL License
L-FPR4115T-TM=	Cisco Firepower 4115 Threat Defense Threat and Malware License

Part Number	Description
L-FPR4115T-TMC=	Cisco Firepower 4115 Threat Defense Threat, Malware, and URL License
L-FPR4115T-URL=	Cisco Firepower 4115 Threat Defense URL Filtering License
L-FPR4125T-AMP=	Cisco Firepower 4125 Threat Defense Malware Protection License
L-FPR4125T-T=	Cisco Firepower 4125 Threat Defense Threat Protection License
L-FPR4125T-TC=	Cisco Firepower 4125 Threat Defense Threat and URL License
L-FPR4125T-TM=	Cisco Firepower 4125 Threat Defense Threat and Malware License
L-FPR4125T-TMC=	Cisco Firepower 4125 Threat Defense Threat, Malware, and URL License
L-FPR4125T-URL=	Cisco Firepower 4125 Threat Defense URL Filtering License
L-FPR4145T-AMP=	Cisco Firepower 4145 Threat Defense Malware Protection License
L-FPR4145T-T=	Cisco Firepower 4145 Threat Defense Threat Protection License
L-FPR4145T-TC=	Cisco Firepower 4145 Threat Defense Threat and URL License
L-FPR4145T-TM=	Cisco Firepower 4145 Threat Defense Threat and Malware License
L-FPR4145T-TMC=	Cisco Firepower 4145 Threat Defense Threat, Malware, and URL License
L-FPR4145T-URL=	Cisco Firepower 4145 Threat Defense URL Filtering License

Table 40. Cisco Firepower 4100 Series subscription part numbers for configurations with the Firewall Threat Defense image

Part Number	Description
L-FPR4112T-AMP-1Y	Cisco Firepower 4112 Threat Defense Malware Protection 1Y Subscription
L-FPR4112T-AMP-3Y	Cisco Firepower 4112 Threat Defense Malware Protection 3Y Subscription
L-FPR4112T-AMP-5Y	Cisco Firepower 4112 Threat Defense Malware Protection 5Y Subscription
L-FPR4112T-T-1Y	Cisco Firepower 4112 Threat Defense Threat Protection 1Y Subscription
L-FPR4112T-T-3Y	Cisco Firepower 4112 Threat Defense Threat Protection 3Y Subscription
L-FPR4112T-T-5Y	Cisco Firepower 4112 Threat Defense Threat Protection 5Y Subscription
L-FPR4112T-TC-1Y	Cisco Firepower 4112 Threat Defense Threat and URL 1Y Subscription
L-FPR4112T-TC-3Y	Cisco Firepower 4112 Threat Defense Threat and URL 3Y Subscription
L-FPR4112T-TC-5Y	Cisco Firepower 4112 Threat Defense Threat and URL 5Y Subscription
L-FPR4112T-TM-1Y	Cisco Firepower 4112 Threat Defense Threat and Malware 1Y Subscription
L-FPR4112T-TM-3Y	Cisco Firepower 4112 Threat Defense Threat and Malware 3Y Subscription

Part Number	Description
L-FPR4112T-TM-5Y	Cisco Firepower 4112 Threat Defense Threat and Malware 5Y Subscription
L-FPR4112T-TMC-1Y	Cisco Firepower 4112 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR4112T-TMC-3Y	Cisco Firepower 4112 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR4112T-TMC-5Y	Cisco Firepower 4112 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR4112T-URL-1Y	Cisco Firepower 4112 Threat Defense URL Filtering 1Y Subscription
L-FPR4112T-URL-3Y	Cisco Firepower 4112 Threat Defense URL Filtering 3Y Subscription
L-FPR4112T-URL-5Y	Cisco Firepower 4112 Threat Defense URL Filtering 5Y Subscription
L-FPR4115T-AMP-1Y	Cisco Firepower 4115 Threat Defense Malware Protection 1Y Subscription
L-FPR4115T-AMP-3Y	Cisco Firepower 4115 Threat Defense Malware Protection 3Y Subscription
L-FPR4115T-AMP-5Y	Cisco Firepower 4115 Threat Defense Malware Protection 5Y Subscription
L-FPR4115T-T-1Y	Cisco Firepower 4115 Threat Defense Threat Protection 1Y Subscription
L-FPR4115T-T-3Y	Cisco Firepower 4115 Threat Defense Threat Protection 3Y Subscription
L-FPR4115T-T-5Y	Cisco Firepower 4115 Threat Defense Threat Protection 5Y Subscription
L-FPR4115T-TC-1Y	Cisco Firepower 4115 Threat Defense Threat and URL 1Y Subscription
L-FPR4115T-TC-3Y	Cisco Firepower 4115 Threat Defense Threat and URL 3Y Subscription
L-FPR4115T-TC-5Y	Cisco Firepower 4115 Threat Defense Threat and URL 5Y Subscription
L-FPR4115T-TM-1Y	Cisco Firepower 4115 Threat Defense Threat and Malware 1Y Subscription
L-FPR4115T-TM-3Y	Cisco Firepower 4115 Threat Defense Threat and Malware 3Y Subscription
L-FPR4115T-TM-5Y	Cisco Firepower 4115 Threat Defense Threat and Malware 5Y Subscription
L-FPR4115T-TMC-1Y	Cisco Firepower 4115 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR4115T-TMC-3Y	Cisco Firepower 4115 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR4115T-TMC-5Y	Cisco Firepower 4115 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR4115T-URL-1Y	Cisco Firepower 4115 Threat Defense URL Filtering 1Y Subscription
L-FPR4115T-URL-3Y	Cisco Firepower 4115 Threat Defense URL Filtering 3Y Subscription
L-FPR4115T-URL-5Y	Cisco Firepower 41154115 Threat Defense URL Filtering 5Y Subscription

Part Number	Description
L-FPR4125T-AMP-1Y	Cisco Firepower 4125 Threat Defense Malware Protection 1Y Subscription
L-FPR4125T-AMP-3Y	Cisco Firepower 4125 Threat Defense Malware Protection 3Y Subscription
L-FPR4125T-AMP-5Y	Cisco Firepower 4125 Threat Defense Malware Protection 5Y Subscription
L-FPR4125T-T-1Y	Cisco Firepower 4125 Threat Defense Threat Protection 1Y Subscription
L-FPR4125T-T-3Y	Cisco Firepower 4125 Threat Defense Threat Protection 3Y Subscription
L-FPR4125T-T-5Y	Cisco Firepower 4125 Threat Defense Threat Protection 5Y Subscription
L-FPR4125T-TC-1Y	Cisco Firepower 4125 Threat Defense Threat and URL 1Y Subscription
L-FPR4125T-TC-3Y	Cisco Firepower 4125 Threat Defense Threat and URL 3Y Subscription
L-FPR4125T-TC-5Y	Cisco Firepower 4125 Threat Defense Threat and URL 5Y Subscription
L-FPR4125T-TM-1Y	Cisco Firepower 4125 Threat Defense Threat and Malware 1Y Subscription
L-FPR4125T-TM-3Y	Cisco Firepower 4125 Threat Defense Threat and Malware 3Y Subscription
L-FPR4125T-TM-5Y	Cisco Firepower 4125 Threat Defense Threat and Malware 5Y Subscription
L-FPR4125T-TMC-1Y	Cisco Firepower 4125 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR4125T-TMC-3Y	Cisco Firepower 4125 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR4125T-TMC-5Y	Cisco Firepower 4125 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR4125T-URL-1Y	Cisco Firepower 4125 Threat Defense URL Filtering 1Y Subscription
L-FPR4125T-URL-3Y	Cisco Firepower 4125 Threat Defense URL Filtering 3Y Subscription
L-FPR4125T-URL-5Y	Cisco Firepower 4125 Threat Defense URL Filtering 5Y Subscription
L-FPR4140T-AMP-5Y	Cisco Firepower 4140 Threat Defense Malware Protection 5Y Subscription
L-FPR4140T-T-1Y	Cisco Firepower 4140 Threat Defense Threat Protection 1Y Subscription
L-FPR4145T-AMP-1Y	Cisco Firepower 4145 Threat Defense Malware Protection 1Y Subscription
L-FPR4145T-AMP-3Y	Cisco Firepower 4145 Threat Defense Malware Protection 3Y Subscription
L-FPR4145T-AMP-5Y	Cisco Firepower 4145 Threat Defense Malware Protection 5Y Subscription
L-FPR4145T-T-1Y	Cisco Firepower 4145 Threat Defense Threat Protection 1Y Subscription
L-FPR4145T-T-3Y	Cisco Firepower 4145 Threat Defense Threat Protection 3Y Subscription
L-FPR4145T-T-5Y	Cisco Firepower 4145 Threat Defense Threat Protection 5Y Subscription

Part Number	Description
L-FPR4145T-TC-1Y	Cisco Firepower 4145 Threat Defense Threat and URL 1Y Subscription
L-FPR4145T-TC-3Y	Cisco Firepower 4145 Threat Defense Threat and URL 3Y Subscription
L-FPR4145T-TC-5Y	Cisco Firepower 4145 Threat Defense Threat and URL 5Y Subscription
L-FPR4145T-TM-1Y	Cisco Firepower 4145 Threat Defense Threat and Malware 1Y Subscription
L-FPR4145T-TM-3Y	Cisco Firepower 4145 Threat Defense Threat and Malware 3Y Subscription
L-FPR4145T-TM-5Y	Cisco Firepower 4145 Threat Defense Threat and Malware 5Y Subscription
L-FPR4145T-TMC-1Y	Cisco Firepower 4145 Threat Defense Threat, Malware, and URL 1Y Subscription
L-FPR4145T-TMC-3Y	Cisco Firepower 4145 Threat Defense Threat, Malware, and URL 3Y Subscription
L-FPR4145T-TMC-5Y	Cisco Firepower 4145 Threat Defense Threat, Malware, and URL 5Y Subscription
L-FPR4145T-URL-1Y	Cisco Firepower 4145 Threat Defense URL Filtering 1Y Subscription
L-FPR4145T-URL-3Y	Cisco Firepower 4145 Threat Defense URL Filtering 3Y Subscription
L-FPR4145T-URL-5Y	Cisco Firepower 4145 Threat Defense URL Filtering 5Y Subscription

Ordering Example: Cisco Firepower 4145 with ASA

Step 1: Smart Software Licensing

Before placing a Cisco Firepower 1010 order, a Smart Software Licensing account for the end customer must be initiated. If the customer already has a Smart Software Licensing account, that account must be associated with the order. More information on Smart Software Licensing account establishment is available in the Smart Software Licensing section of this ordering guide, and online at: https://www.cisco.com/web/ordering/smart-software-manager/index.html.

To associate the order's licenses with the customer's Smart Licensing account, or to begin the establishment of the Smart Licensing account, follow these steps. Note that if you are initiating the account, you can complete the order only if the account is initiated on the end customer's behalf and associated with the order.

Go to Cisco Commerce: https://www.cisco.com/go/ccw.

From the Orders pull-down menu, select Create Order.

Select Assign Smart Account and follow the subsequent prompts for Smart Licensing.

Step 2: Navigate to Products -> Security -> Cisco Firepower 4100 Series -> Cisco Firepower 4145 Security Appliance -> FPR4145-ASA-K9

Step 3: Click on the Power cables to make the selection.

Step 4: Click on "SFP-Modules – On Chassis ports" to make the selection.

Step 5: Select the Network Modules – Slot 1 and Slot 2

Step 6: Select Feature License

Step 7: Select Cables from Cable Management

Step 8: Adding Spares. Navigate back to Products -> Security -> Cisco Firepower 4100 Series -> Accessories and Spares > Cisco Firepower 4145 Security Appliance -> FPR4K-NM-2X100G= -> Click Configure

Step 9: Select the trans receiver for the SFP Option and click done.

Step 10: Final Product Summary configuration.

SKUs and Ordering for Cisco Firepower 4200 Series

The following tables outline the product part number information for the Cisco Firepower 4200 Series. Note that the customer may want extra power supplies and fans.

Table 41. 4200 Series chassis part numbers

Part Number	Description
PID	**Description**
FPR4215-BUN	Cisco Secure Firewall 4215 Master Bundle
FPR4225-BUN	Cisco Secure Firewall 4225 Master Bundle
FPR4245-BUN	Cisco Secure Firewall 4245 Master Bundle
FPR4215-FTD-HA-BUN	Cisco Secure Firewall 4215 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4225-FTD-HA-BUN	Cisco Secure Firewall 42255 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4245-FTD-HA-BUN	Cisco Secure Firewall 4245 Two Unit High Availability Bundle (will order 2 identical chassis and software subscriptions to be configured as a high-availability pair)
FPR4215-ASA-K9	Cisco Secure Firewall 4215 ASA Appliance, 1U, 2x NetMod Bays
FPR4215-NGFW-K9	Cisco Secure Firewall 4215 NGFW Appliance, 1RU, 2 x Network Module Bays
FPR4225-ASA-K9	Cisco Secure Firewall 4225 ASA Appliance, 1RU, 2 x Network Module Bays
FPR4225-NGFW-K9	Cisco Secure Firewall 4225 NGFW Appliance, 1RU, 2 x Network Module Bays
FPR4245-ASA-K9	Cisco Secure Firewall 4125 ASA Appliance, 1RU, 2 x Network Module Bays
FPR4245-NGFW-K9	Cisco Secure Firewall 4125 NGFW Appliance, 1RU, 2 x Network Module Bays

Note: Use the bundle part number unless you have an explicit reason not to. the bundle pid ensures that all necessary components are purchased.

Table 42. 4200 Series network module part numbers

Part Number	Description
FPR4K-XNM-2X100G	Cisco Secure Firewall 4200 2X100G QSFP+ Netmod
FPR4K-XNM-4X200G	Cisco Secure Firewall 4200 4X200G Netmod
FPR4K-XNM-4X40G	Cisco Secure Firewall 4200 4X40G QSFP+ Netmod
FPR4K-XNM-6X10LRF	Cisco Secure Firewall 4200 6X10G FTW Netmod, LR-Singlemode
FPR4K-XNM-6X10SRF	Cisco Secure Firewall 4200 6X10G FTW Netmod, SR-Multimode

Part Number	Description
FPR4K-XNM-6X25LRF	Cisco Secure Firewall 4200 6X25G FTW Netmod, LR-Singlemode
FPR4K-XNM-6X25SRF	Cisco Secure Firewall 4200 6X25G FTW Netmod, SR-Multimode
FPR4K-XNM-8X10G	Cisco Secure Firewall 4200 8X10G SFP+ Netmod
FPR4K-XNM-8X1GF	Cisco Secure Firewall 4200 8X1G Copper FTW Netmod, RJ45
FPR4K-XNM-8X25G	Cisco Secure Firewall 4200 8X25G ZSFP Netmod

Table 43.   4200 Series accessories part numbers

Part Number	Description
FPR4200-PWR-AC	Cisco Secure Firewall 4200 Series AC Power Supply
FPR4200-PWR-AC=	Cisco Secure Firewall 4200 Series AC Power Supply
FPR4200-SSD1800	Cisco Secure Firewall 4200 Series 1.8TB SSD
FPR4200-SSD1800=	Cisco Secure Firewall 4200 Series 1.8TB SSD
FPR4200-PSU-BLANK	Cisco Secure Firewall 4200 Series Chassis PWR Blank Slot Cvr
FPR4200-PSU-BLANK=	Cisco Secure Firewall 4200 Series Chassis PWR Blank Slot Cvr
FPR4200-NM-BLANK	Cisco Secure Firewall 4200 Series NM Blank Slot Cover
FPR4200-NM-BLANK=	Cisco Secure Firewall 4200 Series NM Blank Slot Cover
FPR4200-FAN	Cisco Secure Firewall 4200 Series Fan
FPR4200-FAN=	Cisco Secure Firewall 4200 Series Fan
FPR4200-ACC-KIT	Cisco Secure Firewall 4200 HW Acc Kit (Rack Mounts, Cables)
FPR4200-ACC-KIT=	Cisco Secure Firewall 4200 HW Acc Kit (Rack Mounts, Cables)
FPR4200-CBL-MGMT	Cisco Secure Firewall 4200 Series Cable Management Brackets
FPR4200-CBL-MGMT=	Cisco Secure Firewall 4200 Series Cable Management Brackets
FPR4200-FIPS-KIT	Cisco Secure Firewall 4200 Series FIPS Kits
FPR4200-FIPS-KIT=	Cisco Secure Firewall 4200 Series FIPS Kits
FPR4200-SLD-RAILS	Cisco Secure Firewall 4200 Series Slide Rail Kit
FPR4200-SLD-RAILS=	Cisco Secure Firewall 4200 Series Slide Rail Kit

Note: Use these part numbers if the customer is ordering spare fans, power supplies, or a rack mount kit.

SKUs for 4200 Series Licenses and Subscriptions

When ordering a 4200 Series firewall with the ASA configuration, a license is required. When ordering a 4200 Series hardware with the Cisco Secure Firewall Threat Defense image, both licenses and a subscription to optional security services are required. Subscription terms are 1, 3, and 5 years, with the greatest price discount at 5 years. In the listed part numbers, the threat services are identified as follows:

Table 44.   Threat Subscription Details

Threat Subscription Abbreviations	Description
T	Threat (Security Intelligence and IPS)
M or AMP	Malware defense
C or URL	URL Filtering
1Y	**1-Year** Subscription
3Y	**3-Year** Subscription
5Y	**5-Year** Subscription

Table 45.   Cisco Firepower 4200 Series license part numbers for configurations with the Cisco Secure Firewall Threat Defense image

Part Number	Description
L-FPR4215T-AMP=	Cisco Secure Firewall 4215 Threat Defence License
FPR4215T-T / L-FPR4215T-T=	Cisco Secure Firewall 4215 TD and URL Filtering License
FPR4215T-TC / L-FPR4215T-TC=	Cisco Secure Firewall 4215 TD, AMP & URL Filtering License
FPR4215T-TM / L-FPR4215T-TM=	Cisco Secure Firewall 4215 TD, AMP & URL Filtering License
FPR4215T-TMC / L-FPR4215T-TMC=	Cisco Secure Firewall 4225 Threat Defence License
L-FPR4215T-URL=	Cisco Secure Firewall 4225 TD and URL Filtering License
L-FPR4225T-AMP=	Cisco Secure Firewall 4225 TD, AMP & URL Filtering License
FPR4225T-T / L-FPR4225T-T=	Cisco Secure Firewall 4225 TD, AMP & URL Filtering License
FPR4225T-TC / L-FPR4225T-TC=	Cisco Secure Firewall 4245 Threat Defence License
FPR4225T-TM / L-FPR4225T-TM=	Cisco Secure Firewall 4245 TD and URL Filtering License
FPR4225T-TMC / L-FPR4225T-TMC=	Cisco Secure Firewall 4245 TD, AMP & URL Filtering License
L-FPR4225T-URL=	Cisco Secure Firewall 4245 TD, AMP & URL Filtering License
L-FPR4245T-AMP=	Cisco Secure Firewall 4215 Adv Malware Protection License
FPR4245T-T / L-FPR4245T-T=	Cisco Secure Firewall 4215 Threat Defence License

Part Number	Description
FPR4245T-TC / L-FPR4245T-TC=	Cisco Secure Firewall 4215 TD and URL Filtering License
FPR4245T-TM / L-FPR4245T-TM=	Cisco Secure Firewall 4215 Threat Defence and AMP License
FPR4245T-TMC / L-FPR4245T-TMC=	Cisco Secure Firewall 4215 TD, AMP & URL Filtering License
L-FPR4245T-URL=	Cisco Secure Firewall 4215 URL Filtering License

Table 46.   Cisco Secure Firewall 4200 Series subscription part numbers for configurations with the FTD image

Part Number	Description
L-FPR4215T-T-1Y	Cisco Secure Firewall 4215 Threat Defence 1Y Subs
L-FPR4215T-T-3Y	Cisco Secure Firewall 4215 Threat Defence 3Y Subs
L-FPR4215T-T-5Y	Cisco Secure Firewall 4215 Threat Defence 5Y Subs
L-FPR4215T-TC-1Y	Cisco Secure Firewall 4215 TD and URL Filtering 1Y Subs
L-FPR4215T-TC-3Y	Cisco Secure Firewall 4215 TD and URL Filtering 3Y Subs
L-FPR4215T-TC-5Y	Cisco Secure Firewall 4215 TD and URL Filtering 5Y Subs
L-FPR4215T-TM-1Y	Cisco Secure Firewall 4215 Threat Defence and AMP 1Y Subs
L-FPR4215T-TM-3Y	Cisco Secure Firewall 4215 Threat Defence and AMP 3Y Subs
L-FPR4215T-TM-5Y	Cisco Secure Firewall 4215 Threat Defence and AMP 5Y Subs
L-FPR4215T-TMC-1Y	Cisco Secure Firewall 4215 TD, AMP & URL Filtering 1Y Subs
L-FPR4215T-TMC-3Y	Cisco Secure Firewall 4215 TD, AMP & URL Filtering 3Y Subs
L-FPR4215T-TMC-5Y	Cisco Secure Firewall 4215 TD, AMP & URL Filtering 5Y Subs
L-FPR4215T-AMP-1Y	Cisco Secure Firewall 4215 Adv Malware Protection 1Y Subs
L-FPR4215T-AMP-3Y	Cisco Secure Firewall 4215 Adv Malware Protection 3Y Subs
L-FPR4215T-AMP-5Y	Cisco Secure Firewall 4215 Adv Malware Protection 5Y Subs
L-FPR4215T-URL-1Y	Cisco Secure Firewall 4215 URL Filtering 1Y Subs
L-FPR4215T-URL-3Y	Cisco Secure Firewall 4215 URL Filtering 3Y Subs
L-FPR4215T-URL-5Y	Cisco Secure Firewall 4215 URL Filtering 5Y Subs
L-FPR4225T-T-1Y	Cisco Secure Firewall 4225 Threat Defence 1Y Subs
L-FPR4225T-T-3Y	Cisco Secure Firewall 4225 Threat Defence 3Y Subs
L-FPR4225T-T-5Y	Cisco Secure Firewall 4225 Threat Defence 5Y Subs

Part Number	Description
L-FPR4225T-TC-1Y	Cisco Secure Firewall 4225 TD and URL Filtering 1Y Subs
L-FPR4225T-TC-3Y	Cisco Secure Firewall 4225 TD and URL Filtering 3Y Subs
L-FPR4225T-TC-5Y	Cisco Secure Firewall 4225 TD and URL Filtering 5Y Subs
L-FPR4225T-TM-1Y	Cisco Secure Firewall 4225 Threat Defence and AMP 1Y Subs
L-FPR4225T-TM-3Y	Cisco Secure Firewall 4225 Threat Defence and AMP 3Y Subs
L-FPR4225T-TM-5Y	Cisco Secure Firewall 4225 Threat Defence and AMP 5Y Subs
L-FPR4225T-TMC-1Y	Cisco Secure Firewall 4225 TD, AMP & URL Filtering 1Y Subs
L-FPR4225T-TMC-3Y	Cisco Secure Firewall 4225 TD, AMP & URL Filtering 3Y Subs
L-FPR4225T-TMC-5Y	Cisco Secure Firewall 4225 TD, AMP & URL Filtering 5Y Subs
L-FPR4225T-AMP-1Y	Cisco Secure Firewall 4225 Adv Malware Protection 1Y Subs
L-FPR4225T-AMP-3Y	Cisco Secure Firewall 4225 Adv Malware Protection 3Y Subs
L-FPR4225T-AMP-5Y	Cisco Secure Firewall 4225 Adv Malware Protection 5Y Subs
L-FPR4225T-URL-1Y	Cisco Secure Firewall 3140 URL Filtering 1Y Subs
L-FPR4225T-URL-3Y	Cisco Secure Firewall 4225 URL Filtering 3Y Subs
L-FPR4225T-URL-5Y	Cisco Secure Firewall 4225 URL Filtering 5Y Subs
L-FPR4245T-T-1Y	Cisco Secure Firewall 4245 Threat Defence 1Y Subs
L-FPR4245T-T-3Y	Cisco Secure Firewall 4245 Threat Defence 3Y Subs
L-FPR4245T-T-5Y	Cisco Secure Firewall 4245 Threat Defence 5Y Subs
L-FPR4245T-TC-1Y	Cisco Secure Firewall 4245 TD and URL Filtering 1Y Subs
L-FPR4245T-TC-3Y	Cisco Secure Firewall 4245 TD and URL Filtering 3Y Subs
L-FPR4245T-TC-5Y	Cisco Secure Firewall 4245 TD and URL Filtering 5Y Subs
L-FPR4245T-TM-1Y	Cisco Secure Firewall 4245 Threat Defence and AMP 1Y Subs
L-FPR4245T-TM-3Y	Cisco Secure Firewall 4245 Threat Defence and AMP 3Y Subs
L-FPR4245T-TM-5Y	Cisco Secure Firewall 4245 Threat Defence and AMP 5Y Subs
L-FPR4245T-TMC-1Y	Cisco Secure Firewall 4245 TD, AMP & URL Filtering 1Y Subs
L-FPR4245T-TMC-3Y	Cisco Secure Firewall 4245 TD, AMP & URL Filtering 3Y Subs
L-FPR4245T-TMC-5Y	Cisco Secure Firewall 4245 TD, AMP & URL Filtering 5Y Subs

Part Number	Description
L-FPR4245T-AMP-1Y	Cisco Secure Firewall 4245 Adv Malware Protection 1Y Subs
L-FPR4245T-AMP-3Y	Cisco Secure Firewall 4245 Adv Malware Protection 3Y Subs
L-FPR4245T-AMP-5Y	Cisco Secure Firewall 4245 Adv Malware Protection 5Y Subs
L-FPR4245T-URL-1Y	Cisco Secure Firewall 3140 URL Filtering 1Y Subs
L-FPR4245T-URL-3Y	Cisco Secure Firewall 4245 URL Filtering 3Y Subs
L-FPR4245T-URL-5Y	Cisco Secure Firewall 4245 URL Filtering 5Y Subs

Example of Cisco Firepower Solution Configurations

Below tables show example configurations for ordering the 9300 appliances. Note that these are high-level overviews and that actual orders will include additional items. Fully populated chassis with three SM-48 Security Modules for maximum I/O capability.

Table 47.

Part Number	Description	Quantify
FPR-C9300-AC	Cisco Firepower 9300 AC Chassis + 2 PSU + 4 fans	1
FPR9K-SUP	Cisco Firepower 9000 Series Supervisor	1
FPR9K-SM-48	Cisco Firepower 9000 Series 48 Physical Core, Security Module includes 2 SSDs	3
FPR9K-NM-4X40G	Cisco Firepower 9000 Series – 4-port QSFP+ Network Module	1
FPR9K-NM-8X10G	Cisco Firepower 9000 Series – 8-port SFP+ Network Module	1
CAB-AC-C6K-TWLK	Power Cord, 250VAC 16A, twist-lock NEMA L6-20 plug, U	1
L-F9K-ASA-SC-10=	License to add 10 Security Contexts to ASA in Cisco Firepower 9000	3

Table 48.   Chassis with one SM-40 Security Module

Part Number	Description	Quantify
FPR-C9300-AC	Cisco Firepower 9300 AC Chassis + 2 PSU + 4 fans	1
FPR9K-SUP	Cisco Firepower 9000 Series Supervisor	1
FPR9K-SM-40	Cisco Firepower 9000 Series Enterprise, 40 Physical Core, Security Module (NEBS Ready) includes 2 SSDs	1
CAB-AC-C6K-TWLK	Power Cord, 250VAC 16A, twist lock NEMA L6-20 plug, U	1

Ordering Example: Cisco Secure Firewall 4225 with FTD

Step 1: Smart Software Licensing

Before placing a Cisco Firepower 1010 order, a Smart Software Licensing account for the end customer must be initiated. If the customer already has a Smart Software Licensing account, that account must be associated with the order. More information on Smart Software Licensing account establishment is available in the Smart Software Licensing section of this ordering guide, and online at: https://www.cisco.com/web/ordering/smart-software-manager/index.html.

To associate the order's licenses with the customer's Smart Licensing account, or to begin the establishment of the Smart Licensing account, follow these steps. Note that if you are initiating the account, you can complete the order only if the account is initiated on the end customer's behalf and associated with the order.

Go to Cisco Commerce: https://www.cisco.com/go/ccw.

From the Orders pull-down menu, select Create Order.

Select Assign Smart Account and follow the subsequent prompts for Smart Licensing.

Step 2: Navigate to Products -> Security -> Cisco Secure Firewall 4200 Series -> Cisco Secure Firewall 4225 Security Appliance -> FPR4225-NGFW-K9

Step 3: Select the Power Cables

Step 4: Select Transceiver modules – On-Chassis Ports

Step 5: Select Transceiver modules – Management Ports

Step 6: Select Network Modules for Slot-1 and Slot-2

	Catalog	Estimates	Deals & Quotes	Orders	Subscriptions & Services	Software

Product Configuration
FPR4225-NGFW-K9

Estimated Lead Time
35 days

Price List
Global Price List US Availability (USD)

Total (USD)
618,022.86

⚠ Please note that the 3 Year FPR4225T-TMC License has been added by default to the configuration. If needed, you may edit the configuration as required. (CE202093)

Configuration Summary   View Full Summary

Country/Region Specification ⓘ

Select Country/Region (Not Required)   ⌄

Category ⓘ	Qty	Extended List Price (USD)
FPR4200-SSD1800 🄲	2	0.00
Network Module Slot 1		⌃
FPR4K-XNM-2X100G	1	10,050.00
Network Module Slot 2		
Rack Mounting Options		⌃
FPR4200-SLD-RAILS 🄲	1	0.00
Cable Management		
Console Cable		⌃
CAB-CONS-RJ45-DB9 🄲	1	0.00
Base License		⌃
Total		**618,022.86**
Estimated Lead Time		**35 days**

Reset Configuration   [Cancel] [Done]

Option Search ⓘ   Multiple Options Search ⓘ   ⌄

FPR4225-NGFW-K9 > Network Module Slot 1

Network Module Slot 1

	SKU	Qty	Estimated Lead Time ⓘ	Unit List Price (USD)
⦿	FPR4K-XNM-2X100G 🄲 PLH Cisco Secure Firewall 4200 2X100G QSFP+ Netmod	1	21 days	10,050.00
○	FPR4K-XNM-4X40G 🄲 PLH Cisco Secure Firewall 4200 4X40G QSFP+ Netmod	1	21 days	10,050.00
○	FPR4K-XNM-4X200G 🄲 PLH Cisco Secure Firewall 4200 4X200G Netmod	1	21 days	28,140.00
○	FPR4K-XNM-6X10LRF PLH Cisco Secure Firewall 4200 6X10G FTW Netmod, LR-Singlemode	1	21 days	30,150.00
○	FPR4K-XNM-6X10SRF PLH Cisco Secure Firewall 4200 6X10G FTW Netmod, SR-Multimode	1	21 days	28,140.00
○	FPR4K-XNM-6X25LRF PLH Cisco Secure Firewall 4200 6X25G FTW Netmod, LR-Singlemode	1	21 days	47,309.37
○	FPR4K-XNM-6X25SRF PLH Cisco Secure Firewall 4200 6X25G FTW Netmod, SR-Multimode	1	21 days	34,170.0 ⤒

	Catalog	Estimates	Deals & Quotes	Orders	Subscriptions & Services	Software

Product Configuration
FPR4225-NGFW-K9

Estimated Lead Time
35 days

Price List
Global Price List US Availability (USD)

Total (USD)
628,072.86

⚠ Please note that the 3 Year FPR4225T-TMC License has been added by default to the configuration. If needed, you may edit the configuration as required. (CE202093)

Configuration Summary   View Full Summary

Country/Region Specification ⓘ

Select Country/Region (Not Required)   ⌄

Category ⓘ	Qty	Extended List Price (USD)
FPR4K-XNM-2X100G	1	10,050.00
Network Module Slot 2		⌃
FPR4K-XNM-2X100G	1	10,050.00
Rack Mounting Options		⌃
FPR4200-SLD-RAILS 🄲	1	0.00
Cable Management		
Console Cable		⌃
CAB-CONS-RJ45-DB9 🄲	1	0.00
Base License		⌃
FPR4225-BSE 🄲	1	0.00
Total		**628,072.86**
Estimated Lead Time		**35 days**

Reset Configuration   [Cancel] [Done]

Option Search ⓘ   Multiple Options Search ⓘ   ⌄

FPR4225-NGFW-K9 > Network Module Slot 2

Network Module Slot 2

	SKU	Qty	Estimated Lead Time ⓘ	Unit List Price (USD)
⦿	FPR4K-XNM-2X100G 🄲 PLH Cisco Secure Firewall 4200 2X100G QSFP+ Netmod	1	21 days	10,050.00
○	FPR4K-XNM-4X40G 🄲 PLH Cisco Secure Firewall 4200 4X40G QSFP+ Netmod	1	21 days	10,050.00
○	FPR4K-XNM-4X200G 🄲 PLH Cisco Secure Firewall 4200 4X200G Netmod	1	21 days	28,140.00
○	FPR4K-XNM-6X10LRF PLH Cisco Secure Firewall 4200 6X10G FTW Netmod, LR-Singlemode	1	21 days	30,150.00
○	FPR4K-XNM-6X10SRF PLH Cisco Secure Firewall 4200 6X10G FTW Netmod, SR-Multimode	1	21 days	28,140.00
○	FPR4K-XNM-6X25LRF PLH Cisco Secure Firewall 4200 6X25G FTW Netmod, LR-Singlemode	1	21 days	47,309.37
○	FPR4K-XNM-6X25SRF PLH Cisco Secure Firewall 4200 6X25G FTW Netmod, SR-Multimode	1	21 days	34,170.0 ⤒

Step 7: Select the cables from Cable Management

Step 8: Adding Spares. Navigate back to Products -> Security -> Cisco Secure Firewall 4200 Series -> Accessories and Spares -> Cisco Firepower 4225 Security Appliance -> Accessories and Spares -> L-FPR4225T-TMC= -> Click Add to Cart. The spare license is added to cart. The final product summary shown below.

SKUs and Ordering for Cisco Firepower 9300

The following tables outline the product part number information for the Cisco Firepower 9300. Note that the customer may want extra power supplies and fans. You can add these to the order separately. When you order, you choose between one and three security modules per chassis. Note that security module types cannot be mixed within a chassis.

Table 49. Chassis and sublevel assemblies and components included with each chassis

Part Number (Chassis Hardware)	Description
FPR-C9300-AC	Cisco Firepower 9300 AC Chassis - includes 2 power supply units + 4 fans + rack-mount kit (3RU; accommodates up to three security modules)
FPR-C9300-DC	Cisco Firepower 9300 DC Chassis - includes 2 power supply units + 4 fans + rack-mount kit (3RU; accommodates up to three security modules)
FPR-C9300-HVDC	Cisco Firepower 9300 high-voltage DC Chassis - includes 2 power supply units + 4 fans + rack-mount kit (3RU; accommodates up to three security modules)
FPR-C9300-AC=	Cisco Firepower 9300 AC Chassis Spare - without power supply and fans
FPR-C9300-DC=	Cisco Firepower 9300 DC Chassis Spare - without power supply and fans
FPR9K-PS-AC=	Cisco Firepower 9000 Series AC Power Supply (order for spare only)
FPR9K-PS-DC=	Cisco Firepower 9000 Series DC Power Supply (order for spare only)
FPR9K-FAN=	Cisco Firepower 9000 Series Fan (order for spare only)
FPR9K-RMK=	Cisco Firepower 9000 Series Rack Mount Kit (order for spare only)
FPR9K-SUP=	Cisco Firepower 9000 Series Supervisor Spare

Part Number (Security Modules)	Description
FPR9K-SM-40=	Cisco Firepower 9000 Series, Security Module 40 Spare, includes 2 SSDs
FPR9K-SM-48=	Cisco Firepower 9000 Series, Security Module 48 Spare, includes 2 SSDs
FPR9K-SM-56=	Cisco Firepower 9000 Series, Security Module 56 Spare, includes 2 SSDs
FPR9K-FTD-BUN	Cisco FPR9300 Threat Defense Bundle for Security Modules
FPR9K-SM40-FTD-BUN	Cisco FPR9300 SM-40 Threat Defense Chassis, Subs HA Bundle
FPR9K-SM48-FTD-BUN	Cisco FPR9300 SM-48 Threat Defense Chassis, Subs HA Bundle
FPR9K-SM56-FTD-BUN	Cisco FPR9300 SM-56 Threat Defense Chassis, Subs HA Bundle

Part Number (Cables)	Description
Breakout Cables	Generic breakout cables can be used, please see: https://www.cisco.com/c/en/us/products/collateral/interfaces-modules/transceiver-modules/data_sheet_c78-660083.html

Note: There are eight 10-Gbps ports on the supervisor module bundled by default with the chassis. However, customers that plan to use supervisor module ports will require connectors for both those ports as well as for the ports on the network modules. Only one 1-Gbps connector, for the management port, is included by default with each supervisor module.

Table 50.   Cisco Firepower 9300 Network Modules

Network Modules	Description
FPR9K-NM-4X40G	Firepower 9000 Series – 4 port QSFP+ Network Module
FPR9K-NM-4X40G=	Firepower 9000 Series – 4 port QSFP+ Network Module
FPR9K-NM-8X10G	Firepower 9000 Series – 8 port SFP+ Network Module
FPR9K-NM-8X10G=	Firepower 9000 Series – 8 port SFP+ Network Module
FPR9K-DNM-2X100G	Cisco FirePower 2 port 100G Network Module, Double Width
FPR9K-DNM-2X100G=	Cisco FirePower 2 port 100G Network Module, Double Width
FPR9K-NM-2X100G	Cisco FirePower 2 port 100G Network Module
FPR9K-NM-2X100G=	Cisco FirePower 2 port 100G Network Module
FPR9K-NM-4X100G	Cisco FirePower 4 port 100G Network Module
FPR9K-NM-4X100G=	Cisco FirePower 4 port 100G Network Module
FPR9K-NM-6X10SR-F	10G Short range Fail to Wire Network Module (includes built-in SFP)
FPR9K-NM-6X10SR-F=	10G Short range Fail to Wire Spare Network Module (includes built-in SFP)
FPR9K-NM-6X10LR-F	10G Long range Fail to Wire Network Module (includes built-in SFP)
FPR9K-NM-6X10LR-F=	10G Long range Fail to Wire Spare Network Module (includes built-in SFP)
FPR9K-NM-2X40G-F	40G Fail to Wire Network Module (includes built-in QSFP)
FPR9K-NM-2X40G-F=	40G Fail to Wire Spare Network Module (includes built-in QSFP)
FPR9K-NM-6X1SX-F	Cisco Firepower 6-port 1G SX Fiber FTW Network Module (includes built-in SFP)
FPR9K-NM-6X1SX-F=	Cisco Firepower 6-port 1G SX Fiber FTW Network Module (Spare) (includes built-in SFP)

Table 51.   SFP module options for 10G netmod and 10G supervisor ports

Part Number (SFP Modules) SKU	Description
SFP-10G-SR	10GBASE-SR SFP Module
SFP-10G-LR	10GBASE-LR SFP Module
SFP-10G-SR-S	10GBASE-SR SFP Module, Enterprise-Class
SFP-10G-LR-S	10GBASE-LR SFP Module, Enterprise-Class
SFP-10G-LRM	10GBASE-LRM SFP Module

Part Number (SFP Modules) SKU	Description
SFP-10G-ER	10GBASE-ER SFP Module
SFP-H10GB-CU1M	10GBASE-CU SFP+ Cable 1m
SFP-H10GB-CU3M	10GBASE-CU SFP+ Cable 3m
SFP-H10GB-CU5M	10GBASE-CU SFP+ Cable 5m
SFP-H10GB-ACU7M	Active Twinax cable assembly, 7m
SFP-H10GB-ACU10M	Active Twinax cable assembly, 10m
SFP-10G-AOC1M	10GBASE Active Optical SFP+ Cable, 1m
SFP-10G-AOC2M	10GBASE Active Optical SFP+ Cable, 2m
SFP-10G-AOC3M	10GBASE Active Optical SFP+ Cable, 3m
SFP-10G-AOC5M	10GBASE Active Optical SFP+ Cable, 5m
SFP-10G-AOC7M	10GBASE Active Optical SFP+ Cable, 7m
SFP-10G-AOC10M	10GBASE Active Optical SFP+ Cable, 10m
GLC-SX-MMD	1000BASE-SX SFP transceiver module, MMF, 850nm, DOM
GLC-LH-SMD	1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM
GLC-EX-SMD	1000BASE-EX SFP transceiver module, SMF, 1310nm, DOM
GLC-ZX-SMD	1000BASE-ZX SFP transceiver module, SMF, 1550nm, DOM

Table 52. SFP module options for 40G netmod

Part Number (SFP Modules)	Description
QSFP-40G-SR4	40GBASE-SR4 QSFP Transceiver Module with MPO Connector
QSFP-40G-CSR4	QSFP 4x10GBASE-SR Transceiver Module, MPO, 300M
QSFP-40G-SR-BD	QSFP40G BiDi Short-reach Transceiver
QSFP-40G-LR4-S	QSFP 40GBASE-LR4 Transceiver Mod, LC, 10km, Enterprise-Class
QSFP-40G-LR4	QSFP 40GBASE-LR4 OTN Transceiver, LC, 10km
WSP-Q40GLR4L	QSFP 40G Ethernet - LR4 Lite, LC, 2KM
QSFP-H40G-CU1M	40GBASE-CR4 Passive Copper Cable, 1m
QSFP-H40G-CU3M	40GBASE-CR4 Passive Copper Cable, 3m

Part Number (SFP Modules)	Description
QSFP-H40G-CU5M	40GBASE-CR4 Passive Copper Cable, 5m
QSFP-H40G-AOC1M	40GBASE Active Optical Cable, 1m
QSFP-H40G-AOC2M	40GBASE Active Optical Cable, 2m
QSFP-H40G-AOC3M	40GBASE Active Optical Cable, 3m
QSFP-H40G-AOC5M	40GBASE Active Optical Cable, 5m
QSFP-H40G-AOC7M	40GBASE Active Optical Cable, 7m
QSFP-H40G-AOC10M	40GBASE Active Optical Cable, 10m
QSFP-H40G-AOC15M	40GBASE Active Optical Cable, 15m
QSFP-H40G-ACU7M	40GBASE-CR4 Active Copper Cable, 7m
QSFP-H40G-AOC10M	40GBASE-CR4 Active Copper Cable, 10m

Table 53. 100G network QSFP28 module options

Part Number (SFP Modules)	Description
QSFP-100G-LR4-S	100GBASE LR4 QSFP Transceiver, LC, 10km over SMF

When ordering a Cisco Firepower 9300 firewall with the ASA configuration, a Standard (base) ASA license (L-F9K-ASA) is required.

Table 54. Cisco Firepower 9300 power cables

Part Number (Power Cables)	Country	Description
CAB-AC-2500W-INT	International	Power Cord, 250VAC 16A, INTL
CAB-C19-CBN	International	Cabinet Jumper Power Cord, 250VAC 16A, C20-C19 Connectors
CAB-AC-C6K-TWLK	[All Categories]	Power Cord, 250VAC 16A, twist lock NEMA L6-20 plug, US
CAB-AC-2500W-US1	North America and Japan	Power Cord, 250VAC 16A, straight blade NEMA 6-20 plug, US
CAB-AC-16A-AUS	Australia	Power Cord, 250VAC, 16A, Australia C19
CAB-AC16A-CH	China	16A AC Power Cord for China
CAB-AC-2500W-ISRL	People's Republic of China	Power Cord, 250VAC, 16A, Israel
CAB-S132-C19-ISRL	Israel	S132 to IEC-C19 14ft Israeli
CAB-ACS-16	Switzerland	AC Power Cord (Swiss) 16A

Part Number (Power Cables)	Country	Description
CAB-IR2073-C19-AR	Argentina	IRSM 2073 to IEC-C19 14ft Argentina
CAB-BS1363-C19-UK	United Kingdom	BS-1363 to IEC-C19 14ft UK
CAB-SABS-C19-IND	India	SABS 164-1 to IEC-C19 India
CAB-C2316-C19-IT	Italy	CEI 23-16 to IEC-C19 14ft Italy
UCSB-CABL-C19-BRZ	Brazil	NBR 14136 to C19 AC 14ft Power Cord, Brazil
CAB-C19-C20-3M-JP	Japan	Power Cord C19-C20, 3m/10ft Japan PSE mark
CAB-AC-2500W-INT	International	Power Cord, 250VAC 16A, INTL

SKUs for Cisco Firepower 9300 Series Licenses and Firewall Threat Defense Subscriptions

When ordering a Cisco Firepower 9300 firewall with the ASA configuration, a Standard (base) ASA license (L-F9K-ASA) is required.

Alternatively, when ordering a 9300 Series with the Cisco Secure Firewall Threat Defense image, base AVC capability comes by default with Cisco Secure Firewall Threat Defense license (L-FPR9K-TD-BASE=). Additionally, subscriptions can be purchased (one license per security module) to add IPS, URL Filtering, and malware defense capabilities. Similarly, if the customer already has a Firepower 9300, the same PIDs are used to upgrade to the Cisco Secure Firewall Threat Defense image. Subscription terms are 1, 3, and 5 years, with the greatest price discount at 5 years. In the listed part numbers, the threat services are identified as follows:

Table 55.   Threat subscription decoder

Threat Subscription Abbreviations	Description
T	Threat (Security Intelligence and IPS)
M or AMP	Malware defense
C or URL	URL Filtering
1Y	**1-Year** Subscription
3Y	**3-Year** Subscription
5Y	**5-Year** Subscription

Table 56. Cisco Firepower 9300 Series license part numbers and subscription terms for Cisco Secure Firewall Threat Defense on Security Module SM-40

PID	Description
L-FPR9K-40T-T=	Cisco FPR9K SM-40 Threat Defense Threat Protection License
L-FPR9K-40T-AMP=	Cisco FPR9K SM-40 Threat Defense Malware Protection License
L-FPR9K-40T-URL=	Cisco FPR9K SM-40 Threat Defense URL Filtering License
L-FPR9K-40T-TM=	Cisco FPR9K SM-40 Threat Defense Threat and Malware License
L-FPR9K-40T-TC=	Cisco FPR9K SM-40 Threat Defense Threat and URL License
L-FPR9K-40T-TMC=	Cisco FPR9K SM-40 Threat Defense Threat, Malware and URL License
L-FPR9K-40T-AMP-1Y	Cisco FPR9K SM-40 Threat Defense Malware Protection 1Y Subs
L-FPR9K-40T-AMP-3Y	Cisco FPR9K SM-40 Threat Defense Malware Protection 3Y Subs
L-FPR9K-40T-AMP-5Y	Cisco FPR9K SM-40 Threat Defense Malware Protection 5Y Subs
L-FPR9K-40T-URL-1Y	Cisco FPR9K SM-40 Threat Defense URL Filtering 1Y Subs
L-FPR9K-40T-URL-3Y	Cisco FPR9K SM-40 Threat Defense URL Filtering 3Y Subs
L-FPR9K-40T-URL-5Y	Cisco FPR9K SM-40 Threat Defense URL Filtering 5Y Subs
L-FPR9K-40T-T-1Y	Cisco FPR9K SM-40 Threat Defense Threat Protection 1Y Subs
L-FPR9K-40T-T-3Y	Cisco FPR9K SM-40 Threat Defense Threat Protection 3Y Subs
L-FPR9K-40T-T-5Y	Cisco FPR9K SM-40 Threat Defense Threat Protection 5Y Subs
L-FPR9K-40T-TM-1Y	Cisco FPR9K SM-40 Threat Defense Threat and Malware 1Y Subs
L-FPR9K-40T-TM-3Y	Cisco FPR9K SM-40 Threat Defense Threat and Malware 3Y Subs
L-FPR9K-40T-TM-5Y	Cisco FPR9K SM-40 Threat Defense Threat and Malware 5Y Subs
L-FPR9K-40T-TC-1Y	Cisco FPR9K SM-40 Threat Defense Threat and URL 1Y Subs
L-FPR9K-40T-TC-3Y	Cisco FPR9K SM-40 Threat Defense Threat and URL 3Y Subs
L-FPR9K-40T-TC-5Y	Cisco FPR9K SM-40 Threat Defense Threat and URL 5Y Subs
L-FPR9K-40T-TMC-1Y	Cisco FPR9K SM-40 Threat Defense Threat, Malware, URL 1Y Sub
L-FPR9K-40T-TMC-3Y	Cisco FPR9K SM-40 Threat Defense Threat, Malware, URL 3Y Sub
L-FPR9K-40T-TMC-5Y	Cisco FPR9K SM-40 Threat Defense Threat, Malware, URL 5Y Sub

Table 57. Cisco Firepower 9300 Series license part numbers and subscription terms for Cisco Secure Firewall Threat Defense on Security Module SM-48

FPR9K-SM-48	Firepower 9000 Series High Performance Security Module
L-FPR9K-48T-T=	Cisco FPR9K SM-48 Threat Defense Threat Protection License
L-FPR9K-48T-AMP=	Cisco FPR9K SM-48 Threat Defense Malware Protection License
L-FPR9K-48T-URL=	Cisco FPR9K SM-48 Threat Defense URL Filtering License
L-FPR9K-48T-TM=	Cisco FPR9K SM-48 Threat Defense Threat and Malware License
L-FPR9K-48T-TC=	Cisco FPR9K SM-48 Threat Defense Threat and URL License
L-FPR9K-48T-TMC=	Cisco FPR9K SM-48 Threat Defense Threat, Malware and URL License
L-FPR9K-48T-AMP-1Y	Cisco FPR9K SM-48 Threat Defense Malware Protection 1Y Subs
L-FPR9K-48T-AMP-3Y	Cisco FPR9K SM-48 Threat Defense Malware Protection 3Y Subs
L-FPR9K-48T-AMP-5Y	Cisco FPR9K SM-48 Threat Defense Malware Protection 5Y Subs
L-FPR9K-48T-URL-1Y	Cisco FPR9K SM-48 Threat Defense URL Filtering 1Y Subs
L-FPR9K-48T-URL-3Y	Cisco FPR9K SM-48 Threat Defense URL Filtering 3Y Subs
L-FPR9K-48T-URL-5Y	Cisco FPR9K SM-48 Threat Defense URL Filtering 5Y Subs
L-FPR9K-48T-T-1Y	Cisco FPR9K SM-48 Threat Defense Threat Protection 1Y Subs
L-FPR9K-48T-T-3Y	Cisco FPR9K SM-48 Threat Defense Threat Protection 3Y Subs
L-FPR9K-48T-T-5Y	Cisco FPR9K SM-48 Threat Defense Threat Protection 5Y Subs
L-FPR9K-48T-TM-1Y	Cisco FPR9K SM-48 Threat Defense Threat and Malware 1Y Subs
L-FPR9K-48T-TM-3Y	Cisco FPR9K SM-48 Threat Defense Threat and Malware 3Y Subs
L-FPR9K-48T-TM-5Y	Cisco FPR9K SM-48 Threat Defense Threat and Malware 5Y Subs
L-FPR9K-48T-TC-1Y	Cisco FPR9K SM-48 Threat Defense Threat and URL 1Y Subs
L-FPR9K-48T-TC-3Y	Cisco FPR9K SM-48 Threat Defense Threat and URL 3Y Subs
L-FPR9K-48T-TC-5Y	Cisco FPR9K SM-48 Threat Defense Threat and URL 5Y Subs
L-FPR9K-48T-TMC-1Y	Cisco FPR9K SM-48 Threat Defense Threat, Malware, URL 1Y Sub
L-FPR9K-48T-TMC-3Y	Cisco FPR9K SM-48 Threat Defense Threat, Malware, URL 3Y Sub
L-FPR9K-48T-TMC-5Y	Cisco FPR9K SM-48 Threat Defense Threat, Malware, URL 5Y Sub

Table 58. Cisco Firepower 9300 Series license part numbers and subscription terms for Cisco Secure Firewall Threat Defense on Security Module SM-56

FPR9K-SM-56	Firepower 9000 Series Security Module 56
L-FPR9K-56T-T=	Cisco FPR9K SM-56 Threat Defense Threat Protection License
L-FPR9K-56T-AMP=	Cisco FPR9K SM-56 Threat Defense Malware Protection License
L-FPR9K-56T-URL=	Cisco FPR9K SM-56 Threat Defense URL Filtering License
L-FPR9K-56T-TM=	Cisco FPR9K SM-56 Threat Defense Threat and Malware License
L-FPR9K-56T-TC=	Cisco FPR9K SM-56 Threat Defense Threat and URL License
L-FPR9K-56T-TMC=	Cisco FPR9K SM-56 Threat Defense Threat, Malware and URL License
L-FPR9K-56T-AMP-1Y	Cisco FPR9K SM-56 Threat Defense Malware Protection 1Y Subs
L-FPR9K-56T-AMP-3Y	Cisco FPR9K SM-56 Threat Defense Malware Protection 3Y Subs
L-FPR9K-56T-AMP-5Y	Cisco FPR9K SM-56 Threat Defense Malware Protection 5Y Subs
L-FPR9K-56T-URL-1Y	Cisco FPR9K SM-56 Threat Defense URL Filtering 1Y Subs
L-FPR9K-56T-URL-3Y	Cisco FPR9K SM-56 Threat Defense URL Filtering 3Y Subs
L-FPR9K-56T-URL-5Y	Cisco FPR9K SM-56 Threat Defense URL Filtering 5Y Subs
L-FPR9K-56T-T-1Y	Cisco FPR9K SM-56 Threat Defense Threat Protection 1Y Subs
L-FPR9K-56T-T-3Y	Cisco FPR9K SM-56 Threat Defense Threat Protection 3Y Subs
L-FPR9K-56T-T-5Y	Cisco FPR9K SM-56 Threat Defense Threat Protection 5Y Subs
L-FPR9K-56T-TM-1Y	Cisco FPR9K SM-56 Threat Defense Threat and Malware 1Y Subs
L-FPR9K-56T-TM-3Y	Cisco FPR9K SM-56 Threat Defense Threat and Malware 3Y Subs
L-FPR9K-56T-TM-5Y	Cisco FPR9K SM-56 Threat Defense Threat and Malware 5Y Subs
L-FPR9K-56T-TC-1Y	Cisco FPR9K SM-56 Threat Defense Threat and URL 1Y Subs
L-FPR9K-56T-TC-3Y	Cisco FPR9K SM-56 Threat Defense Threat and URL 3Y Subs
L-FPR9K-56T-TC-5Y	Cisco FPR9K SM-56 Threat Defense Threat and URL 5Y Subs
L-FPR9K-56T-TMC-1Y	Cisco FPR9K SM-56 Threat Defense Threat, Malware, URL 1Y Sub
L-FPR9K-56T-TMC-3Y	Cisco FPR9K SM-56 Threat Defense Threat, Malware, URL 3Y Sub
L-FPR9K-56T-TMC-5Y	Cisco FPR9K SM-56 Threat Defense Threat, Malware, URL 5Y Sub

Ordering Example: Cisco Firepower 9300 with ASA

Step 1: Smart Software Licensing

Before placing a Cisco Firepower 9300 order, a Smart Software Licensing account for the end customer must be initiated. If the customer already has a Smart Software Licensing account, that account must be associated with the order. More information on Smart Software Licensing account establishment is available in the Smart Software Licensing section of this ordering guide, and online at: https://www.cisco.com/web/ordering/smart-software-manager/index.html.

To associate the order's licenses with the customer's Smart Licensing account, or to begin the establishment of the Smart Licensing account, follow these steps. Note that if you are initiating the account, you are able to complete the order only if the account is initiated on the end customer's behalf and associated with the order.

Go to Cisco Commerce: https://www.cisco.com/go/ccw.

From the Orders pull-down menu, select Create Order.

Select Assign Smart Account, and follow the subsequent prompts for Smart Licensing.

Step 2: Navigate to Catalog > Products > Security > Cisco Firepower 9300 Series -> Search for FPR9KT-HA-BUN. Add the chassis to the cart by clicking add.

Step 3: Check the box 1.0 FPR9KT-HA-BUN and select Options.

Follow the instructions in the yellow box. First click the hardware and make the selection.

Step 4: Click on Edit Options in the FPR-CH-9300-AC Hardware and select the power cables, supervisor and network modules.

1. Power Cables Selection

2. Supervisor Selection

3. Network Module Selection

Step 5: Add a Security Module

Step 6: Add a Subscription License

Step 7: Product Configuration Summary.

SKUs and Ordering Guidance for Cisco Secure Firewall Threat Defense Virtual

Cisco Secure Firewall Threat Defense Virtual is available where virtualized firewall and IPS capabilities are required, including in public cloud environments. It is the virtualized version of Firewall Threat Defense. It enables consistent security policies to follow workloads across your physical, virtual, and cloud environments, and between clouds. Complexity is further minimized with simple provisioning and a single console, the Firewall Management Center (FMC), which enables threat visibility, and automated defense, across your estate. FMC can manage both physical and virtual devices. See the Firewall Management Center section of this guide for FMC part numbers.

In Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP) and Oracle Cloud Infrastructure (OCI) environments, Cisco Secure Firewall Threat Defense Virtual devices can be managed either by an on-premises FMC, or in the respective public cloud with the virtualized FMC. When deployed in AWS and Microsoft Azure environments, two licensing models are available:

- Bring Your Own License (BYOL), where an existing Threat Defense Virtual license is required.

- Hourly billing (a pay-as-you-go model) available through the AWS interface.

Google Cloud Platform (GCP) and Oracle Cloud Infrastructure (OCI) only support the Bring Your Own License (BYOL) licensing model.

For the supported private cloud platforms and Hyper Converged Infrastructure like Cisco Hyperflex and Nutanix AHV the same licenses can be used in the BYOL model.

Cisco Secure Firewall Threat Defense Virtual enables inter-VM and east-west traffic inspection, as well as at ingress and egress points to the cloud. It is designed to address security concerns in both traditional networks infrastructures and to be optionally inserted into Cisco's Application Centric Infrastructure (ACI) for flexible orchestration.

Firewall Threat Defense Virtual performance tiered Subscriptions

Performance tiered licensing is available starting from Firewall Threat Defense Virtual version 7.0. The new licensing model also includes Base License as a subscription. There are 6 tiers in the new performance tiered licensing model which can be ordered using the following SKU's.

Table 59.   Cisco Secure Firewall Threat Defense Virtual Performance tiered Base Subscription and Threat, Malware and URL Filtering Subscription SKUs

Top level SKU		
License	**Term Subscription**	**Description**
FTDV-SEC-SUB	1,3 and 5 Year	Cisco Secure Firewall Threat Defense Virtual Subscription

Term Subscription 1, 3 and 5 year						Description
FTDv 5s	**FTDv 10s**	**FTDv 20s**	**FTDv 30s**	**FTDv 50s**	**FTDv 100s**	
FTD-V-5S-BSE-K9	FTD-V-10S-BSE-K9	FTD-V-20S-BSE-K9	FTD-V-30S-BSE-K9	FTD-V-50S-BSE-K9	FTD-V-100S-BSE-K9	Cisco Firepower TD Virtual Base License
FTD-V-5S-TMC	FTD-V-10S-TMC	FTD-V-20S-TMC	FTD-V-30S-TMC	FTD-V-50S-TMC	FTD-V-100S-TMC	Cisco Firepower TD Virtual Threat, Malware and URL Filtering License
FTD-V-5S-TM	FTD-V-10S-TM	FTD-V-20S-TM	FTD-V-30S-TM	FTD-V-50S-TM	FTD-V-100S-TM	Cisco Firepower TD Virtual Threat Protection, Malware License
FTD-V-5S-TC	FTD-V-10S-TC	FTD-V-20S-TC	FTD-V-30S-TC	FTD-V-50S-TC	FTD-V-100S-TC	Cisco Firepower TD Virtual Threat Protection, URL Filtering License
FTD-V-5S-T	FTD-V-10S-T	FTD-V-20S-T	FTD-V-30S-T	FTD-V-50S-T	FTD-V-100S-T	Cisco Firepower TD Virtual Threat Protection License
FTD-V-5S-URL	FTD-V-10S-URL	FTD-V-20S-URL	FTD-V-30S-URL	FTD-V-50S-URL	FTD-V-100S-URL	Cisco Firepower TD Virtual URL Filtering License
FTD-V-5S-AMP	FTD-V-10S-AMP	FTD-V-20S-AMP	FTD-V-30S-AMP	FTD-V-50S-AMP	FTD-V-100S-AMP	Cisco Firepower TD Virtual Malware License

Search for the top level subscription SKU – FTDV-SEC-SUB and "Add"

Add Base License quantity for the tiers required

Then select the tier.

Select Additional features for each of Base license selected (Optional). Quantity should be aligned to Base License quantity

The Service tab shows the support options available. Cisco Solution Support is the default level of support for the Base and TMC subscription. It provides 24*7 technical phone support and is the recommended level of support. Included in the subscription at no additional cost is 8*5 online support which also provides Software upgrades.
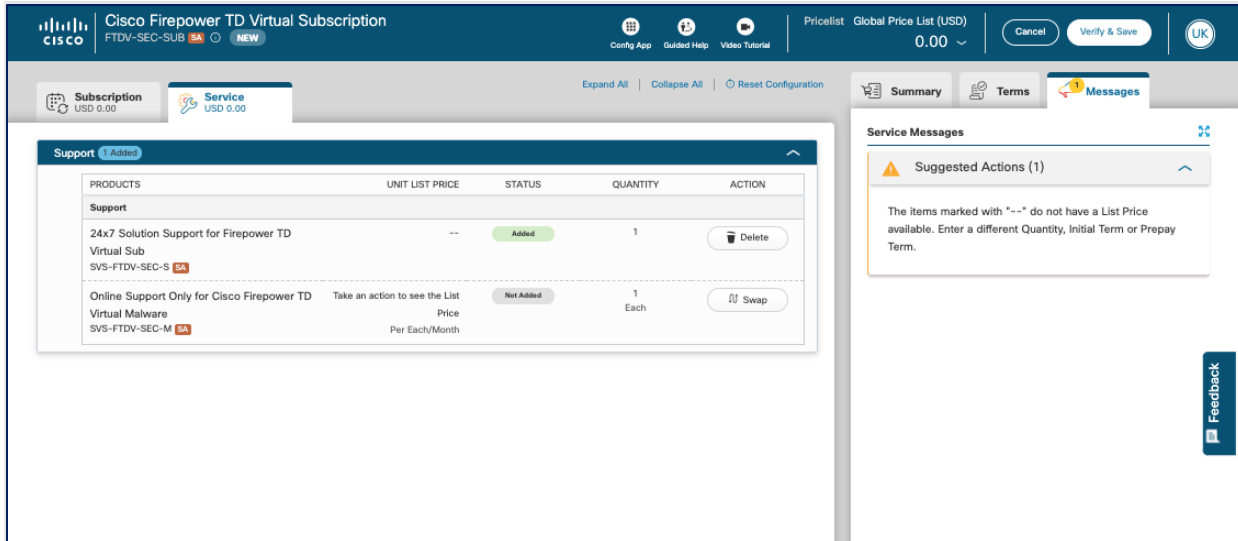
Default term is 3 Years which can be updated by clicking on Terms tab and editing duration. Click on Save Changes
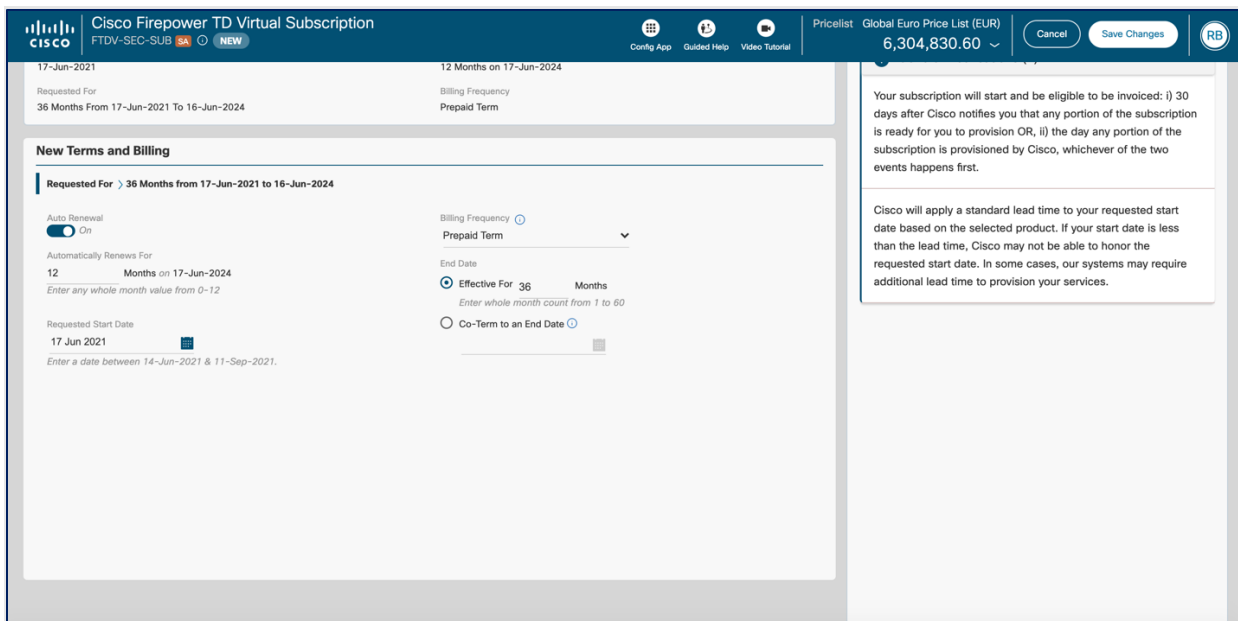
Once the changes are saved, the complete configuration is displayed. There is an option to switch from Solution support to basic support

Click on Save and Continue to review the complete configuration by clicking on Save and Continue. This will redirect to the main CCW screen.

Please note the older non tiered license with perpetual base will continue to work with 7.0. This can be selected as FTDv – Variable license on FMC UI during registration.

Table 60. Cisco Secure Firewall Threat Defense Virtual Perpetual Base

SKUs		
Base License	**Term Subscription**	**Description**
FPRTD-V-K9		Cisco Firepower NGFWv Base License

Table 61. Cisco Secure Firewall Threat Defense Subscription SKUs

Term Licenses	Term Subscription	Description
L-FPRTD-V-TMC=	L-FPRTD-V-TMC-1Y	Cisco Firepower NGFWv Threat Defense Threat, Malware, and URL 1YR Subscription
L-FPRTD-V-TMC=	L-FPRTD-V-TMC-3Y	Cisco Firepower NGFWv Threat Defense Threat, Malware, and URL 3YR Subscription
L-FPRTD-V-TMC=	L-FPRTD-V-TMC-5Y	Cisco Firepower NGFWv Threat Defense Threat, Malware, and URL 5YR Subscription
L-FPRTD-V-T=	L-FPRTD-V-T-1Y	Cisco Firepower NGFWv Threat Defense Threat Protection 1YR Subscription
L-FPRTD-V-T=	L-FPRTD-V-T-3Y	Cisco Firepower NGFWv Threat Defense Threat Protection 3YR Subscription
L-FPRTD-V-T=	L-FPRTD-V-T-5Y	Cisco Firepower NGFWv Threat Defense Threat Protection 5YR Subscription
L-FPRTD-V-URL=	L-FPRTD-V-URL-1Y	Cisco Firepower NGFWv Threat Defense URL Filtering 1YR Subscription
L-FPRTD-V-URL=	L-FPRTD-V-URL-3Y	Cisco Firepower NGFWv Threat Defense URL Filtering 3YR Subscription
L-FPRTD-V-URL=	L-FPRTD-V-URL-5Y	Cisco Firepower NGFWv Threat Defense URL Filtering 5YR Subscription
L-FPRTD-V-TC=	L-FPRTD-V-TC-1Y	Cisco Firepower NGFWv Threat Defense Threat and URL 1Y Subscription
L-FPRTD-V-TC=	L-FPRTD-V-TC-3Y	Cisco Firepower NGFWv Threat Defense Threat and URL 3Y Subscription
L-FPRTD-V-TC=	L-FPRTD-V-TC-5Y	Cisco Firepower NGFWv Threat Defense Threat and URL 5Y Subscription
L-FPRTD-V-TM=	L-FPRTD-V-TM-1Y	Cisco Firepower NGFWv Threat Defense Threat and Malware Protection 1Y Subscription
L-FPRTD-V-TM=	L-FPRTD-V-TM-3Y	Cisco Firepower NGFWv Threat Defense Threat and Malware Protection 3Y Subscription
L-FPRTD-V-TM=	L-FPRTD-V-TM-5Y	Cisco Firepower NGFWv Threat Defense Threat and Malware Protection 5Y Subscription

Term Licenses	Term Subscription	Description
L-FPRTD-V-AMP=	L-FPRTD-V-AMP-1Y	Cisco Firepower NGFWv Threat Defense Malware Protection 1Y Subscription
L-FPRTD-V-AMP=	L-FPRTD-V-AMP-3Y	Cisco Firepower NGFWv Threat Defense Malware Protection 3Y Subscription
L-FPRTD-V-AMP=	L-FPRTD-V-AMP-5Y	Cisco Firepower NGFWv Threat Defense Malware Protection 5Y Subscription

SKUs for Cisco Secure Firewall Threat Defense Software on New ASA Appliances

The following tables provide ordering information for all Threat Defense software on ASA appliances. For optimal threat defense, we recommend choosing one of the multiservice subscriptions highlighted below. As well, we recommend multiyear subscriptions to customers for value and convenience.

Cisco Firepower 1000, 2100, 4100 and 9300 Series appliances function as a stateful firewall when running the ASA operating system. This is sometimes referred to as a L3/L4 firewall. The ASA firewall delivers enterprise-class firewall capabilities for ASA devices in an array of form factors—standalone appliances, blades, and virtual appliances—for any distributed network environment. Among its benefits, Cisco ASA Software:

- Offers integrated IPS, VPN, and unified communications capabilities.
- Helps increase capacity and improve performance through high-performance, multisite, multinode clustering.
- Delivers high availability for high-resiliency applications.
- Provides collaboration between physical and virtual devices.
- Provides context awareness with Cisco TrustSec security group tags and identity-based firewall technology.
- Facilitates dynamic routing and clientless and site-to-site VPN on a per-context basis.

Cisco ASA software also supports modern encryption standards, including the Suite B set of cryptographic algorithms. It also integrates with the Cisco Cloud Web Security solution to provide world-class, web-based threat protection.

SKUs and Ordering Guidance for Cisco Adaptive Security Virtual Appliance (ASAv)

The Cisco ASAv brings the power of ASA to the virtual domain and private cloud environments. It runs the same software as the physical ASA appliance to deliver proven security functionality. You can use ASAv to protect virtual workloads within your data center. Later, you can expand, contract, or shift the location of these workloads over time and can span physical and virtual infrastructures. The Adaptive Security Virtual Appliance runs as a virtual machine inside a hypervisor in a virtual host. Most of the features that are supported on a physical ASA by Cisco software are supported on the virtual appliance as well, except for clustering and multiple contexts. The virtual appliance supports site-to-site VPN, remote-access VPN, and clientless VPN functionalities as supported by physical ASA devices. See the ASAv data sheet for more details.

ASAv is available in both subscription and perpetual licensing models.

Table 62. Cisco Adaptive Security Virtual Appliance (ASAv) Subscription License

Part number	Description
L-ASA-V-5S-K9=	Cisco 100 Mbps entitlement (ASAv5) subscription
L-ASA-V-10S-K9=	Cisco 1 Gbps entitlement (ASAv10) subscription
L-ASA-V-30S-K9=	Cisco 2 Gbps entitlement (ASAv30) subscription
L-ASA-V-50S-K9=	Cisco 10 Gbps entitlement (ASAv50) subscription
L-ASA-V-100S-K9=	Cisco 20 Gbps entitlement (ASAv100) subscription*

Table 63. Cisco Adaptive Security Virtual Appliance (ASAv) Perpetual License

Cisco Adaptive Security Virtual Appliance (ASAv)	
L-ASAV5S-K9=	Cisco 100 Mbps entitlement (ASAv5) selection
L-ASAV5S-STD-8	8-pack Cisco ASAv5(100 Mbps) with all firewall features licensed
L-ASAV10S-K9=	Cisco ASAv10 (1 Gbps) selection
L-ASAV10S-STD	Cisco ASAv10 (1 Gbps) with all firewall features licensed
L-ASAV10S-STD-16	16-pack Cisco ASAv10 (1 Gbps) with all firewall features licensed
L-ASAV30S-K9=	Cisco ASAv30 (2 Gbps) selection
L-ASAV30S-STD	Cisco ASAv30 (2 Gbps) with all firewall features licensed
L-ASAV30S-STD-4	4-pack Cisco ASAv30 (2 Gbps) with all firewall features licensed
L-ASAV50S-K9=	Cisco ASAv50 selection
L-ASAV50S-STD-4	4-Pack Cisco ASAv50 with all firewall features licensed

Note: For ASAv, remote-access VPN and clientless VPN functionality can be licensed separately as outlined in https://www.cisco.com/c/en/us/products/collateral/security/anyconnect-secure-mobility-client/guide-c07-732790.html.

ASAc on Catalyst 9300 - Ordering guide

To host ASAc on Catalyst 9300 Series switches, any model (C9300/L/LM/X) with a Cisco Catalyst or Cisco DNA Advantage Software license is required. Additionally, the switch should include a pluggable USB SSD-240G hardware. For the Catalyst 9300 ordering - please refer to the relevant ordering guide. Choose the appropriate ASAc term-based license:

- L-ASA-C-5S-K9= (up to 100Mbps)
- L-ASA-C-10S-K9= (up to 1Gbps)

Customers who have purchased the following SKUs and still have term remaining can leverage their existing virtual Secure Firewall ASA Virtual license entitlements to run containerized Secure Firewall ASA instances on the Catalyst 9300 switches.

- L-ASA-V-5S-K9=
- L-ASA-V-10S-K9=

This provides investment protection and flexibility to migrate existing virtual ASA instances hosted on servers to Catalyst 9300 switches. This allows customers to seamlessly transition their network security infrastructure while maximizing the value of their Secure Firewall ASA Virtual licenses.

Firepower Virtual Appliances: Multiple-Quantity Order

When ordered, Firepower virtual appliances are licensed as software since they are not tied to a hardware appliance platform. The result is that if multiple virtual appliances are ordered, a single product authorization key, or PAK, is generated for that quantity. In Figure 11, a quantity of 10 virtual sensors with a subscription is configured. A single PAK would be generated for the entire quantity. In this example, all 10 virtual sensors must be registered to the same Cisco Secure Firewall Management Center. The 10 cannot be separated into smaller quantities.

If the customer requires virtual appliances to be registered to different Cisco Secure Firewall Management Centers, desired quantities must be ordered as separate line items. The customer can then register each group of five appliances to a different Cisco Secure Firewall Management Center if so desired.

Regardless of the licenses installed and applied, virtual appliances do not support hardware-based features, including clustering, switching, routing, Network Address Translation, fast-path, and fail-open; nor is VPN supported. Also, virtual appliances do not have a local web-based interface.

Qualys Connector

The Qualys Connector is a software application that collects Qualys Guard vulnerability report data and sends it to the Cisco Secure Firewall Management Center. The Qualys vulnerability data is then aggregated with Cisco's vulnerability information found in the host map. Customers can choose to use Cisco or Qualys vulnerability data, or both, for Impact Flag calculations and automatic rule recommendations.

Firepower Product Licensing and License Activation

- The customer logs on to https://cisco.com/go/licensing and uses the Smart Licensing feature to request a token to be installed in the FMC or FDM. This license is then applied to the Cisco Secure Firewall Management Center that is going to manage the feature or appliance.
- Exception: Cisco Secure Endpoint (formerly AMP for Endpoints) does not require an activation key at this time.

High-Availability Configurations

Type 1: Secure Firewall High-Availability

- If the customer wants high availability for sensors, two appliances are required.
- Appliances must be of the same model and generation.
- Both appliances must be identically licensed and have support.
- Licenses will be applied to the same primary Cisco Secure Firewall Management Center managing the high-availability pair.

Cisco Secure Firewall Malware Defense

Cisco malware defense is based on the FirePOWER platform. It delivers network-based protection against targeted and advanced malware attacks. Malware defense is available in two deployment options:

- As an add-on, software-enabled subscription that can be added to any FirePOWER appliance as part of a FirePOWER IPS configuration.

- As a purpose-built, dedicated appliance based on FirePOWER technology that is optimized to deliver enhanced malware defense related performance and meet storage requirements. A separate subscription is required for malware defense functionality, even with dedicated malware defense appliances.

Snort Subscriber Rule Set: Subscription Options

Personal: This subscription type is for use in a home network environment. If you'd like to purchase a subscription online using a credit card, you may do so. For a personal subscription, please go to https://www.snort.org/products to place an order. It is not available to purchase on Cisco Commerce. As you approach the expiration date, renewal by way of Snort.org is automatic for credit card orders and is part of the license agreement.

Business: This subscription type is for use in businesses, nonprofit organizations, colleges and universities, government agencies, consultancies, and other venues where Snort sensors are in use in a production or lab environment. This subscription type does not include a license to redistribute the Snort Subscriber Rule Set except as described in section 2.1 of the Rule Set license agreement.

If you'd like to purchase a Rule subscription online using a credit card, you may do so. Customers or end users who cannot purchase by credit card are requested to contact a partner or distributor who can purchase on their behalf through Cisco Commerce. If you need assistance with a quote, contact snort-sub@cisco.com. Unlike Snort.org automatic renewals, orders placed in Cisco Commerce require a manual renewal to trigger another subscription. Important: Email address of the recipient of the subscription license needs to be included on the order for electronic delivery.

For more information, visit: https://www.snort.org/products.

SKUs and ordering guidance for Cisco Security Manager

Cisco Security Manager provides scalable and centralized operations management for ASA functions, including policy and object management, event management, reporting, and troubleshooting for Cisco ASA firewall functions. The Security Manager can be used to manage:

- Cisco Firepower 2100, 4100,4200 and 9300 series platforms with ASA management.

- Cisco Secure Firewall ASA Virtual on VMware and KVM.

- Cisco Secure Client (formerly AnyConnect Secure Mobility Client).

- Integrated Services Router (ISR) platforms running a Cisco IOS Software security image.

- Cisco Catalyst 6500 Series ASA Services Modules.

Security Manager is available in two feature levels: Standard and Professional (Table 94). Enterprise customers with numerous security devices will benefit from Security Manager Professional, and customers with fewer security device deployments will find Security Manager Standard an exceptional value. For small-scale and simple deployments, the Cisco Adaptive Security Device Manager (ASDM) is available to provide on-device, GUI-based firewall network operations management for Cisco ASA with FirePOWER Services deployments.

Note: Modern server hardware is required. Please see the Cisco Security Manager data sheet for more details.

Table 64. Cisco Security Manager models

E-Delivery Part Number	Description
L-CSMST-5-K9	Cisco Security Manager Standard - 5 Device License
L-CSMST-10-K9	Cisco Security Manager Standard - 10 Device License
L-CSMST-25-K9	Cisco Security Manager Standard - 25 Device License
L-CSMPR-50-K9	Cisco Security Manager Professional - 50 Device License
L-CSMPR-100-K9	Cisco Security Manager Professional - 100 Device License
L-CSMPR-250-K9	Cisco Security Manager Professional - 250 Device License
Cisco Security Manager Professional Incremental Device Licenses	
L-CSMSTPR-U-K9	Cisco Security Manager Upgrade License from 25 Device license (Standard) to 50 Device license (Professional)
L-CSMPR-LIC-50	50 additional Devices on top of any Cisco Security Manager Professional license
L-CSMPR-LIC-100	100 additional Devices on top of any Cisco Security Manager Professional license
L-CSMPR-LIC-250	250 additional Devices on top of any Cisco Security Manager Professional license

Table 65. Cisco Security Manager Software Application Support (SAS) SKUs

Cisco Security Manager		
E-Delivery Part Number	**Product Description**	**SKU**
L-CSMST-5-K9	Cisco Security Manager Standard - 5 Device License SAS (Minor Software Updates)	CON-SAS-LSMST5K9
L-CSMST-10-K9	Cisco Security Manager Standard - 10 Device License SAS (Minor Software Updates)	CON-SAS-LSMST10K
L-CSMST-25-K9	Cisco Security Manager Standard - 25 Device License SAS (Minor Software Updates)	CON-SAS-LSMST25K
L-CSMSTPR-U-K9	Cisco Security Manager ST-25 To PR-50 Upgrade License SAS (Minor Software Updates)	CON-SAS-LCMSTPU9

Cisco Security Manager		
E-Delivery Part Number	**Product Description**	**SKU**
Cisco Security Manager Enterprise Professional Incremental Device Licenses		
L-CSMPR-50-K9	Cisco Security Manager Professional - 50 Device License SAS (Minor Software Updates)	CON-SAS-LSMPR50K
L-CSMPR-100-K9	Cisco Security Manager Professional - 100 Device License SAS (Minor Software Updates)	CON-SAS-LSMPR100
L-CSMPR-250-K9	Cisco Security Manager Professional - 250 Device License SAS (Minor Software Updates)	CON-SAS-LCMPR250

SKUs and ordering guidance for Cisco Secure Firewall Management Center

The **Cisco Secure Firewall Management Center**, available as a physical or virtual appliance, provides unified management of:

- Cisco Secure Firewall Threat Defense software on the Cisco Firepower 1000 Series appliances.
- Cisco Secure Firewall Threat Defense software on the Cisco Firepower 2100 Series appliances.
- Cisco Secure Firewall Threat Defense software on the Cisco Firepower 3100 Series appliances.
- Cisco Secure Firewall Threat Defense software on the Cisco Firepower 4100 Series appliances.
- Cisco Secure Firewall Threat Defense software on the Cisco Firepower 4200 Series appliances.
- Cisco Secure Firewall Threat Defense Virtual.
- Cisco Secure Firewall Threat Defense software on the Cisco Firepower 9300.
- FirePOWER module of Cisco ASA with FirePOWER Services.
- Cisco Secure Intrusion Prevention System (IPS) and Cisco Secure Firewall malware defense solutions.
- Cisco Secure Firewall Threat Defense for Integrated Services Routers (ISR).

The Firewall Management Center provides a centralized management console and event database repository. It is available in a range of physical appliance models, as a virtual appliance for VMware or KVM or a cloud-delivered version that is delivered via the Cisco Defense Orchestrator. One physical or virtual management appliance can manage multiple appliances as long as all the appliances are running the compatible firewall configuration.

The appropriate Firewall Management Center hardware is selected based on the firewall configuration deployed and the number of appliances and events to be monitored. Firewall Management Center 1600, 1700, 2600, 2700, 4600 and 4700 physical appliances or the Firewall Management Center virtual appliance is required to manage Cisco ASA with Firepower Services or Cisco ASA with Threat Defense software deployments. Version 6.0 or later is required to manage the Firewall Threat Defense (FTD) software image. Cisco Security Manager is required to manage ASA physical or virtual appliance firewall functionality. Cisco Defense Orchestrator delivers the cloud-delivered version of Firewall Management Center and a consistent and simplified cloud-based security policy management for ASA, ASA with FirePOWER Services, and FTD devices. For more details, visit the Cisco Defense Orchestrator (CDO). For CDO ordering details, visit the Guidelines for Quoting Cisco Defense Orchestrator Products.

Table 66. Cisco Secure Firewall Management Center SKUs

Cisco Secure Firewall Management Center (Hardware) Appliances	
Part Number	**Product Description**
FMC1600-K9	Cisco Secure Firewall Management Center 1600 Chassis, 1RU
FMC1700-K9	Cisco Secure Firewall Management Center 1700 Chassis, 1RU
FMC2600-K9	Cisco Secure Firewall Management Center 2600 Chassis, 1RU
FMC2700-K9	Cisco Secure Firewall Management Center 2700 Chassis, 1RU
FMC4600-K9	Cisco Secure Firewall Management Center 4600 Chassis, 1RU
FMC4700-K9	Cisco Secure Firewall Management Center 4700 Chassis, 1RU
Cisco Secure Firewall Management Center (Hardware) Spare	
FMC-M5-PS-AC-770W=	Cisco Secure Firepower 770W AC Power Supply for FMC1600, 2600, 4600
UCSC-PSU1-1050W=	Cisco Secure Firepower 1050W Power Supply for FMC1700, 2700, 4700

For new deployments, a compatible Management Center can be ordered with Firepower 2100, 3100 Series, 4100 Series, 4200 Series, and Secure Firewall 9300 devices. Alternately, ASDM 7.3 on-device management is available for small-scale deployments, and the Management Center is optional. For small-scale FTD deployments, Firewall Device Manager on-device manager is included (except for CSF 4200).

Note: To manage network operations in large-scale deployments of devices running the ASA software image, using the Cisco Secure Firewall Management Center and Cisco Security Manager is highly recommended.

SKUS and Ordering Guidance for Cisco Secure Firewall Management Center Virtual Appliance

The PAK-enabled, 2- and 10-device Firewall Management Center Virtual Appliances (FMCv) are part of a promotional offer to more cost-effectively manage FirePOWER Services or Firewall Threat Defense on small-scale deployments of low-end ASA-X Series appliances. However, the 2-, 10-, and 25-device FMCv Smart License or PAK SKUs do not have any limitations with respect to which appliances they can manage. For add-on licenses requirement for new devices on your FMCv, it is recommended to migrate to a higher FMCv model that supports additional devices.

The FMCv software is not different for PAK or Smart Licensing.

Table 67. PAK Licensing-enabled Cisco Secure Firewall Management Center Virtual Appliance SKUs

Cisco Secure Firewall Management Center (Software) Virtual Appliance (PAK enabled)	
FS-VMW-SW-K9	Cisco Secure Firewall Management Center, Virtual for 25 devices Firepower License
FS-VMW-2-SW-K9*	Cisco Secure Firewall Management Center, for 2 devices Firepower License
FS-VMW-10-SW-K9*	Cisco Secure Firewall Management Center, for 10 devices Firepower License

Table 68. Smart Licensing–enabled Cisco Secure Firewall Management Center Virtual Appliance SKUs

Cisco Secure Firewall Management Center (Software) Virtual Appliance	
SF-FMC-VMW-K9	Cisco Secure Firewall Management Center, for 25 devices
SF-FMC-VMW-2-K9	Cisco Secure Firewall Management Center, for 2 devices
SF-FMC-VMW-10-K9	Cisco Secure Firewall Management Center, for 10 devices
SF-FMC-KVM-K9	Cisco Secure Firewall Management Center, for 25 devices
SF-FMC-KVM-2-K9	Cisco Secure Firewall Management Center, for 2 devices
SF-FMC-KVM-10-K9	Cisco Secure Firewall Management Center, for 10 devices
SF-FMC-VMW-300-K9	Cisco Secure Firewall Management Center, Virtual for 300 devices Firepower License
SF-FMC-VMW-25-300	Upgrade SKU from FMCv25 to FMCv300 Cisco Secure Firewall Management Center, Virtual

Licensing Guidance for Cisco Secure Firewall Management Center

Firewall Management Center physical appliances do not require any separate management licenses. Firewall Management Center virtual appliances require only one of the license mentioned in the previous tables based on the number of devices being managed. Separate to the Firewall Management Center, the managed devices each require classic or Smart subscription feature licenses. Firewall Management Center Virtual Appliance Smart SKUs can manage any device running Firewall Threat Defense software.

IMPORTANT: For version 6.3 and later:

Enablement of strong crypto features (3DES/AES VPN) continues to happen automatically via Smart Licensing for those customers that are not subject to export restrictions or require an export license. However, those customers who are subject to export restrictions or require an export license will be asked to select a $0 strong crypto enablement key during configuration of any FMC device with version 6.3+.

For those customers who are subject to export restrictions or require an export license that upgrades an existing FMC to version 6.3+, there are spare versions of the PIDs available (those with "=" suffix).

To determine if you are subject to export restrictions or require an export license, customers can log in to CSSM and try to generate an installation token. For those customers that do NOT have export restrictions, this box will be checked by default. If you do NOT see this box or are NOT able to check the box, this means that your account is subject to export restrictions. See image below:

Table 69. Cisco Secure Firewall Management Center strong crypto enablement SKUs

Firewall Management Center strong crypto	
L-FMCVIR-ENC-K9=	Cisco Virtual FMC Series Strong Encryption (3DES/AES)
L-FMC1K-ENC-K9=	Cisco FMC 1K Series Strong Encryption (3DES/AES)
L-FMC2K-ENC-K9=	Cisco FMC 2K Series Strong Encryption (3DES/AES)
L-FMC4K-ENC-K9=	Cisco FMC 4K Series Strong Encryption (3DES/AES)

The standalone Cisco Secure Firewall Management Center is optimal for high-availability pairing. For the FMC, a high-availability or redundancy feature helps ensure continuity of operations. The secondary Management Center must be the same model as the primary appliance.

For Version 6.0 and later: Cisco ASA with FirePOWER Services system software release 5.0 and later for the Management Center can be hosted on VMware ESX and ESXi. A virtual Management Center can manage up to 300 physical or virtual devices.

The Cisco Secure Firewall Management Center Virtual Appliance does not offer high availability. However, native VMware capabilities such as VMware vSphere High Availability, Distributed Resource Scheduling (DRS), and snapshots can improve availability. As for the physical Management Center, both Cisco FireSIGHT and Cisco NetFlow licenses can be added to the Management Center virtual appliance.

Product high-availability configuration:

High availability for the Management Center (available for all versions earlier than 6.0 and later than 6.1; high availability is not supported with the 6.0 version)

- If the customer wants high availability for the Management Center, an additional appliance is required.
- The secondary Management Center must be of the same model and generation as the primary one.
- If the primary Management Center has a FireSIGHT license (v. 5.4 and earlier ONLY), an additional Cisco Firepower license does not need to be ordered for the secondary Management Center.

- License keys for all sensors, feature licenses (including Cisco Firepower), and subscriptions managed on the primary Management Center can be duplicated and loaded onto the secondary Management Center using the original activation keys.

Product Licensing and License Activation

- License activation keys are used to generate licenses to activate the Cisco ASA with FirePOWER Services configuration on all virtual and physical appliances. License keys activate added software features such as application control and subscription-based features such as URL Filtering and malware defense.

- The customer logs on to https://cisco.com/go/licensing and uses the activation key to request appliance or feature licenses. The license is then applied to the Management Center or on-device ASDM or FDM that will be managing the feature or appliance.

- Exceptions:

  - Physical and virtual Management Center appliances do not require activation keys, and none are issued.

Connect and protect bundle ordering

Overview

Partners can now order Cisco's security portfolio tailored for 3 specific customer use cases: Secure Campus, Secure Branch and Secure Hybrid Datacenter. The bundles include products that address the real-world needs of each use case. The bundles are designed to simplify ordering and providing an attractive price-point.

Please contact your partner for eligibility and additional information.

Figure 8.
Connect and Protect Offers – Included Products and Criteria

SKUs and ordering

Adding the below to the estimate and configuring the required/optional sub-lines ("->") by clicking "select options" for the main line, following the indicated (minimum/maximum) quantities.

The hardware selection will need to happen as a separate line-item on the estimate. First, select and configure the use-case-specific bundle:

Table 70. Connect and Protect bundle components and options (Step 1)

Product Category	Secure Campus	Secure Branch	Secure Hybrid Datacenter
Bundle for Discount and Pre-Configuration	FPR-SECURE-CAMPUS	FPR-SECURE-BRANCH	FPR-SECURE-DC
Firewall HW **(Quantity combined** **with virtual firewalls: 2-40)**	FPR31XX-NGFW-K9 • L-FPR31XXT-TMC=3Y (or • L-FPR31XXT-TMC=1Y)	FPR11XX-NGFW-K9 • L-FPR11XXT-TMC=3Y (or • L-FPR11XXT-TMC=1Y)	FPR41X5-NGFW-K9 • L-FPR41X5T-TM=3Y (or • L-FPR41X5T-TM=1Y) • L-FPR41X5T-TMC=3Y (or • L-FPR41X5T-TMC=1Y)
Technical support: Solution support must be purchased or attached appliance ordered	CON-SSSNT-xxx	CON-SSSNT-xxx	CON-SSSNT-xxx
Firewall Management **(optional)**	SF-FMC-VMW-300-K9 SF-FMC-VMW-K9		
Technical support: Solution support must be purchased or attached to the FMC	CON-ECMUS-XXX		
SW Solution Support (Required- match the same quantity as HW or/and virtual appliance)	FPR3K-SWSUPP-ENH= (top level) CON-SWC1-TMC33XX	FPR1K-SWSUPP-ENH= CON-SWS1-TMC11XX	FPR4K-SWSUPP-ENH= CON-SWS1-TMC41X5
AnyConnect **(Quantity: minimum 250)**	L-AC-APX-LIC=	L-AC-APX-LIC=	L-AC-APX-LIC=

Next, configure the remaining items required for the respective bundles:

Table 71. Connect and Protect bundle components and options (Step 2)

Product Category	Secure Campus	Secure Branch	Secure Hybrid Datacenter
Bundle for Discount and Pre-Configuration	FPR-CAMPUS-SUB	FPR-BRANCH-SUB	FPR-DC-SUB
Virtual Firewalls **(Quantity combined with** **hardware firewalls: 2-40)**	FTDv-SEC-SUB • FTD-V-50S-BSE-K9 (or • FTD-V-30S-BSE-K9 or • FTD-V-100S-BSE-K9) • SVS-FTDV-SEC-S	FTDv-SEC-SUB • FTD-V-30S-BSE-K9 (or • FTD-V-50S-BSE-K9 or • FTD-V-100S-BSE-K9) • SVS-FTDV-SEC-S	FTDv-SEC-SUB • FTD-V-100S-BSE-K9 (or • FTD-V-50S-BSE-K9) • SVS-FTDV-SEC-S
CDO tenant if needed	CDO-SEC-SUB • CDO-BASE-LIC • SVS-CDO-SUP-B		
CDO device license with unlimited logging and 90 days retention (Quantity matching **firewall quantity if CDO** **management selected)**	**CDO-ML-FP31xx-LIC**	**CDO-ML-FP11xx-LIC**	**CDO-ML-FP41x5-LIC**
DNS Essentials **or** **DNS Advantage (optional upgrade to DNS Essentials)**	UMB-SEC-SUB • UMB-[DNS or SIG]-ESS-K9 (quantity: minimum 250) UMB-[DNS or SIG]-ADV-K9 (quantity: minimum 250) • SVS-UMB-SUP-S or SVS-UMB-SUP-E or SVS-UMB-SUP-P		NA
Secure Workload **(optional)**	NA	NA	C1-TAAS-SW-K9 • C1TAAS-WD-FND-k9 • SVS-TAAS-WP
MINT Security **(optional)**	MINT-SECURITY • MINT-SECURITY-SVW		

For additional information regarding the ordering of Umbrella / DNS essentials or advantage, also see the
Umbrella ordering guide.

Additional resources

Cisco Commerce

Cisco Commerce is the primary tool used for ordering Cisco products and new services offered on the Cisco Price List. Three main steps are involved in creating an order: creating a quick quote, converting a quote to an order, and submitting an order.

Cisco Commerce also acts as a quoting, pricing, configuration, and status tool. The Cisco Service Contract Center can be used to view the status of a covered item as well as service contract information.

Cisco Service Contract Center

The Cisco Service Contract Center is the primary tool used for ordering services, purchasing follow-on software subscription licenses, and processing renewals of service offerings available on the Cisco Price List. Three main steps are involved in creating an order: creating a quick quote, validating the quote, and submitting an order.

Customers and partners use the standard quoting process, and distributors have the option of using the standard or quick-quote function to create a quote. Prior to ordering, partners and distributors validate and save the quote after all software subscription licenses and services have been added.

The Cisco Service Contract Center is an integrated solution that makes it easy for Cisco service sales teams and partners to manage and grow their service business, profitably. It will:

- Quote and book your service orders and manage your service contracts and renewals with one simple, easy-to-use solution.

- Reduce the time you spend solving administrative problems, searching for opportunities, and creating quotes.

- Give you more time to grow your business using data you can trust, because you do not need to spend time fixing or verifying data.

- Help partners to create and proactively manage their contracts.

Cisco Capital Financing

The significant benefits offered by the Cisco Firepower 9300 make it the natural choice for service provider security and provisioning. As with any technology investment, the question is whether the new system is affordable. The answer is Cisco Capital financing. We can give customers the financing solution that works best for them. We offer both flexible repayments to help mitigate cash flow issues and operating leases to help negate capital expenditures.

Cisco Capital can help remove or reduce the barriers preventing organizations from obtaining the technology they need. Total solution financing programs help customers and partners:

- Achieve business objectives.

- Accelerate growth.

- Acquire technology to match current strategies and future needs.

- Remain competitive.

Cisco Capital also helps your customers achieve financial goals such as optimizing investment dollars, turning capital expenditures into operating expenses, and managing cash flow. And there's just one predictable payment. Cisco Capital operates in more than 100 countries, so regardless of location, customers and partners have access to a trusted means to secure Cisco products and services.

For more information about Cisco Capital financing, visit the following sites:

- For channel partners: https://www.ciscocapital.com/.

- For Cisco sales staff: https://wwwin.cisco.com/FinAdm/csc/.