Cisco Catalyst 1000 Series Switches

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Product overview

Cisco® Catalyst® 1000 Series Switches are fixed managed Gigabit 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 data or PoE+ ports with line-rate forwarding
- 2 or 4 fixed 1 Gigabit Ethernet Small Form-Factor Pluggable (SFP)/RJ 45 Combo uplinks or 4 fixed 0 Gigabit Ethernet Enhanced SFP (SFP+) uplinks
- 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, or USB console acces
- 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 ports	Uplink interfaces	PoE+power budget	Fanless	Dimensions (WxDxH in inches)	Weight (kg)
C1000-8T-2G-L	8	2 SFP/ RJ-45 combo	-	Y	10.56 x 7.28 x 1.73	1.80
C1000-8T-E-2G-L	8	2 SFP/ RJ-45 combo	-	Y	10.56 x 7.28 x 1.73	1.55
C1000-8P-2G-L	8	2 SFP/ RJ-45 combo	67W	Y	10.56 x 12.73 x 1.73	1.55
C1000-8P-E-2G-L	8	2 SFP/ RJ-45 combo	67W	Y	10.56 x 7.28 x 1.73	1.55

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Product ID*	Gigabit Ethernet ports	Uplink interfaces	PoE+power budget	Fanless	Dimensions (WxDxH in inches)	Weight (kg)
C1000-8FP-2G-L	8	2 SFP/ RJ-45 combo	120W	Y	10.56 x 12.73 x 1.73	2.70
C1000-8FP-E-2G-L	8	2 SFP/ RJ-45 combo	120W	Y	10.56 x 7.28 x 1.73	2.70
C1000-16T-2G-L	16	2 SFP	-	Y	10.56 x 10.69 x 1.73	1.78
C1000-16T-E-2G-L	16	2 SFP	-	Y	10.56 x 8.26 x 1.73	1.42
C1000-16P-2G-L	16	2 SFP	120W	Y	10.56 x 11.69 x 1.73	2.38
C1000-16P-E-2G-L	16	2 SFP	120W	Y	10.56 x 8.26x 1.73	1.42
C1000-16FP-2G-L	16	2 SFP	240W	Y	10.56 x 12.14 x 1.73	2.49
C1000-24T-4G-L	24	4 SFP	-	Y	17.5 x 9.45 x 1.73	2.63
C1000-24P-4G-L	24	4 SFP	195W	Y	17.5 x 11.76 x 1.73	3.53
C1000-24FP-4G-L	24	4 SFP	370W	N	17.5 x 13.59 x 1.73	4.6
C1000-48T-4G-L	48	4 SFP	-	N	17.5 x 10.73 x 1.73	3.95
C1000-48P-4G-L	48	4 SFP	370W	N	17.5 x 13.78 x 1.73	5.43
C1000-48FP-4G-L	48	4 SFP	740W	N	17.5 x 13.78 x 1.73	5.82
C1000-24T-4X-L	24	4 SFP+	-	Y	17.5 x 9.45 x 1.73	2.78
C1000-24P-4X-L	24	4 SFP+	195W	Y	17.5 x 11.76 x 1.73	3.68
C1000-24FP-4X-L	24	4 SFP+	370W	N	17.5 x 13.59 x 1.73	4.6
C1000-48T-4X-L	48	4 SFP+	-	N	17.5 x 10.73 x 1.73	3.95
C1000-48P-4X-L	48	4 SFP+	370W	N	17.5 x 13.78 x 1.73	5.43
C1000-48FP-4X-L	48	4 SFP+	740W	N	17.5 x 13.78 x 1.73	5.82

*Please refer to local price lists for full product SKUs.

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

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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.

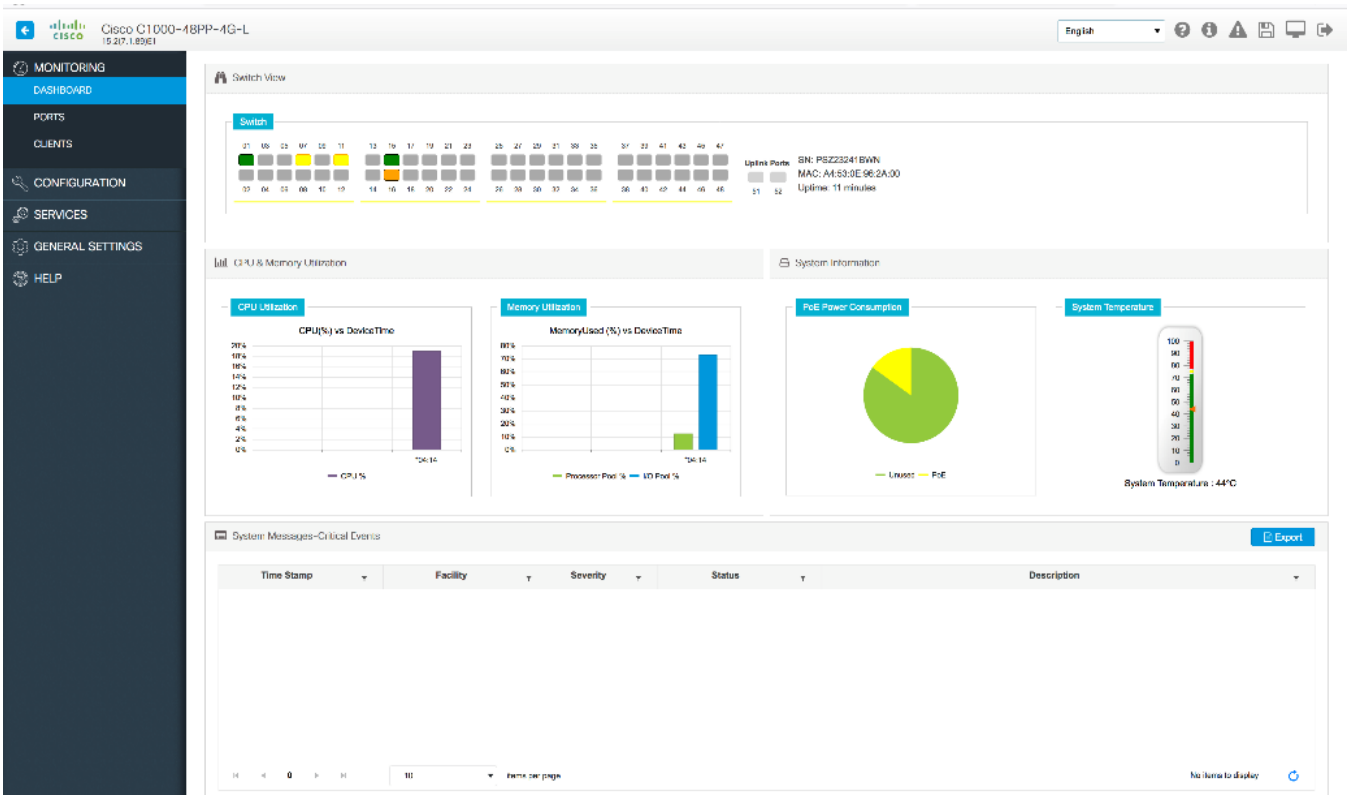

Figure 1.
Cisco Configuration Professional

- **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.

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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 and manage them via a single IP address.

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.

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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.

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- **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.

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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.

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- **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 mini-B	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	1G: 28 Gbps 10G: 64 Gbps	1G: 52 Gbps 10G: 88Gpbs
Switching bandwidth	20 Gbps	36 Gbps	1G: 56 Gbps 10G: 128 Gbps	1G: 104 Gbps 10G: 176 Gbps
Forwarding rate (64–byte L3 packets)	14.88 Mpps	26.78 Mpps	41.67 Mpps	77.38 Mpps

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	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
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	600
IPv6 security ACEs	600	600	600	600
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	Yes
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

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	8-port models		16-port models		24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
MTBF in hours (Full PoE)	1,706,649		-		698,220	856,329
Environmental						
Operating temperature **Seal 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 **Operating relative humidity** **Storage temperature** **Storage altitude** **Storage relative humidit**	10,000 ft (3,000m) 5% to 90% at 40C -13 to 158F (-25 to 70C) 15,000 ft (4500m) 5% to 95% at 65C					
***Note:**	50C operation is supported for short term operation only; GLC-BX-D/U and CWDM optics cannot support 50C operation; Minimum ambient temperature for cold start is at 0C (32F)					
Electrical	**Data**	**Data Ext.PS**	**Data**	**Data Ext. PS**	**Data**	**Data**
Voltage (auto ranging)	110 to 220V AC in	110 to 220V AC in	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	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	0.29A to 0.48A
Power rating (maximum consumption)	0.04 kVA	0.017 kVA	0.05 kVA	0.05 kVA	0.06 kVA	0.09 kVA
Electrical	**PoE**	**PoE Ext. PS**	**PoE**	**PoE Ext. PS**	**PoE**	**PoE**
Voltage (auto ranging)	110 to 220V AC in	110 to 220V AC in	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	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	0.37A to 0.64A

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	8-port models		16-port models		24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
Power rating (maximum consumption)	0.11 kVA	0.087 kVA	0.19 kVA	0.20 kVA	0.48 kVA	0.48 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	110 to 220V AC in
Frequency	50 to 60 Hz	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**	**Data**
0% traffic	14.04	13.15	14.52	14.4	1G: 15.84 10G: 18	1G: 27.37 10G: 29.4
10% traffic	14.06	13.76	16.44	16.44	1G: 22.08 10G: 24.48	1G: 41.57 10G: 42.28
100% traffic	14.26	14	16.68	16.68	1G: 22.8 10G: 25.68	1G: 53.66 10G: 54.73
Weighted average	14.12	13.64	15.88	15.84	1G: 20.2 10G: 22.7	1G: 40.87 10G: 42.1
Power consumption (watts)	**PoE**	**PoE Ext. PS**	**PoE**	**PoE Ext. PS**	**PoE**	**PoE**
0% traffic	10.22	9.13	14.64	13.68	1G: 15.84 10G: 18	1G: 27.9 10G: 28.0
10% traffic	12.02	15.39	16.56	15.48	1G: 22.44 10G: 24.72	1G: 42.77 10G: 42.73
100% traffic	12.19	15.71	16.92	16.32	1G: 23.16 10G: 25.68	1G: 54.25 10G: 54.49

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	8-port models		16-port models		24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
Weighted average	11.48	13.41	16.04	15.16	1G: 20.48 10G: 22.8	1G: 41.64 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 10G: 19.68	1G: 30.61 10G: 30.91
10% traffic	14.4	14.9	16.68		1G: 26.16 10G: 26.28	1G: 45.16 10G: 45.78
100% traffic	14.52	15.7	16.8		1G: 35.4 10G: 36	1G: 61.66 10G: 62.26
Weighted average	14.12	14.97	15.96		1G: 26.68 10G: 27.32	1G: 45.81 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	LpA (typical) LpAD (maximum)				35 dB 39 dB	
Sound power	LwA (typical) LwAD (maximum)				4.8 B 5.2 B	
	Note: Bystander positions operating mode at 77° F (25° C) ambient.					
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					

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	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
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			
	CAB-CONSOLE-USB Console cable 6 ft. with USB Type A and mini-B connectors			
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-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-PORT-QOS-MIB CISCO-PORT-SECURITY-MIB CISCO-PORT-STORM-CONTROL-MIB CISCO-PRODUCTS-MIB CISCO-PROCESS-MIB CISCO-RTTMON-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	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 RMON-MIB RMON2-MIB SNMP-FRAMEWORK-MIB SNMP-MPD-MIB SNMP-NOTIFICATION-MIB	

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	8-port models	16-port models	24-port models (1/10G uplinks)	48-port models (1/10G uplinks)
	CISCO-MAC-NOTIFICATION-MIB CISCO-MEMORY-POOL-MIB CISCO-PAGP-MIB CISCO-POE-EXTENSIONS-MIB	ENTITY-MIB ETHERLIKE-MIB IEEE8021-PAE-MIB IEEE8023-LAG-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	
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		

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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.

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

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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.

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 available1 • Ongoing operating system software updates within the licensed feature set2 • 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 upgrades2 • 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 available1 • Ongoing operating system software updates[2]

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Technical services
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
CAB-CONSOLE-USB	Console Cable 6 Feet with USB Type A and mini-B Connectors	All models
PWR-CLP	Power Cable Restraining Clip	All models
Cisco Catalyst 1000 Series rack mounting kit		
RCKMNT-1RU-2KX=	Rackmount kit for 1 RU for 2960-X and 2960-XR (19/23/24/etsi)	All 24/48 port models
RCKMNT-19-CMPCT=	19” Rack Mount bracket for 3560-CX and 2960CX	All 8/16 port models
RCKMNT-23-CMPCT=	23” and 24” Rack Mount bracket for 3560-CX and 2960-CX	All 8/16 port models

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

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Product number	Description
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
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

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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.

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