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# Cisco Catalyst 1000 Series Switches

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#### Product overview

Cisco<sup>®</sup> Catalyst<sup>®</sup> 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<sup>®</sup> Catalyst<sup>®</sup> 1000 operate on Cisco IOS<sup>®</sup> 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, 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.

| Product ID <sup>*</sup> | Gigabit Ethernet<br>/ FE ports | Uplink<br>interfaces   | PoE+power<br>budget | Fanless | Dimensions<br>(WxDxH in inches) | Weight (kg) |
|-------------------------|--------------------------------|------------------------|---------------------|---------|---------------------------------|-------------|
| C1000-8T-2G-L           | 8 10/100/1000<br>RJ45 Data     | 2 SFP/ RJ-<br>45 combo | -                   | Y       | 10.56 x 7.28 x 1.73             | 1.80        |
| C1000-8T-E-2G-L         | 8 10/100/1000<br>RJ45 Data     | 2 SFP/ RJ-<br>45 combo | -                   | Y       | 10.56 x 7.28 x 1.73             | 1.55        |

#### **Table 1.**Switch configurations

| Product ID*      | Gigabit Ethernet<br>/ FE ports | Uplink<br>interfaces   | PoE+power<br>budget | Fanless | Dimensions<br>(WxDxH in inches) | Weight (kg) |
|------------------|--------------------------------|------------------------|---------------------|---------|---------------------------------|-------------|
| C1000-8P-2G-L    | 8 10/100/1000<br>RJ45 PoE+     | 2 SFP/ RJ-<br>45 combo | 67W                 | Y       | 10.56 x 12.73 x 1.73            | 1.55        |
| C1000-8P-E-2G-L  | 8 10/100/1000<br>RJ45 PoE+     | 2 SFP/ RJ-<br>45 combo | 67W                 | Y       | 10.56 x 7.28 x 1.73             | 1.55        |
| C1000-8FP-2G-L   | 8 10/100/1000<br>RJ45 PoE+     | 2 SFP/ RJ-<br>45 combo | 120W                | Υ       | 10.56 x 12.73 x 1.73            | 2.70        |
| C1000-8FP-E-2G-L | 8 10/100/1000<br>RJ45 PoE+     | 2 SFP/ RJ-<br>45 combo | 120W                | Y       | 10.56 x 7.28 x 1.73             | 2.70        |
| C1000-16T-2G-L   | 16 10/100/1000<br>RJ45 Data    | 2 SFP                  | -                   | Y       | 10.56 x 10.69 x 1.73            | 1.78        |
| C1000-16T-E-2G-L | 16 10/100/1000<br>RJ45 Data    | 2 SFP                  | -                   | Y       | 10.56 x 8.26x 1.73              | 1.42        |
| C1000-16P-2G-L   | 16 10/100/1000<br>RJ45 PoE+    | 2 SFP                  | 120W                | Υ       | 10.56 x 11.69 x 1.73            | 2.38        |
| C1000-16P-E-2G-L | 16 10/100/1000<br>RJ45 PoE+    | 2 SFP                  | 120W                | Y       | 10.56 x 8.26x 1.73              | 1.42        |
| C1000-16FP-2G-L  | 16 10/100/1000<br>RJ45 PoE+    | 2 SFP                  | 240W                | Y       | 10.56 x 12.14 x 1.73            | 2.49        |
| C1000-24T-4G-L   | 24 10/100/1000<br>RJ45 Data    | 4 SFP                  | -                   | Y       | 17.48 x 9.45 x 1.73             | 2.63        |
| C1000-24P-4G-L   | 24 10/100/1000<br>RJ45 PoE+    | 4 SFP                  | 195W                | Y       | 17.48 x 11.76 x 1.73            | 3.53        |
| C1000-24FP-4G-L  | 24 10/100/1000<br>RJ45 PoE+    | 4 SFP                  | 370W                | Ν       | 17.48 x 13.59 x 1.73            | 4.6         |
| C1000-48T-4G-L   | 48 10/100/1000<br>RJ45 Data    | 4 SFP                  | -                   | Ν       | 17.48 x 11.34 x 1.73            | 3.95        |
| C1000-48P-4G-L   | 48 10/100/1000<br>RJ45 PoE+    | 4 SFP                  | 370W                | Ν       | 17.48 x 13.78 x 1.73            | 5.43        |
| C1000-48FP-4G-L  | 48 10/100/1000<br>RJ45 PoE+    | 4 SFP                  | 740W                | N       | 17.48 x 13.78 x 1.73            | 5.82        |
| C1000-24T-4X-L   | 24 10/100/1000<br>RJ45 Data    | 4 SFP+                 | -                   | Y       | 17.48 x 9.45 x 1.73             | 2.78        |
| C1000-24P-4X-L   | 24 10/100/1000<br>RJ45 PoE+    | 4 SFP+                 | 195W                | Y       | 17.48 x 11.76 x 1.73            | 3.68        |
| C1000-24FP-4X-L  | 24 10/100/1000<br>RJ45 PoE+    | 4 SFP+                 | 370W                | Ν       | 17.48 x 13.59 x 1.73            | 4.6         |
| C1000-48T-4X-L   | 48 10/100/1000<br>RJ45 Data    | 4 SFP+                 | -                   | Ν       | 17.48 x 11.34 x 1.73            | 3.95        |

| Product ID*      | Gigabit Ethernet<br>/ FE ports | Uplink<br>interfaces                | PoE+power<br>budget | Fanless | Dimensions<br>(WxDxH in inches) | Weight (kg) |
|------------------|--------------------------------|-------------------------------------|---------------------|---------|---------------------------------|-------------|
| C1000-48P-4X-L   | 48 10/100/1000<br>RJ45 PoE+    | 4 SFP+                              | 370W                | Ν       | 17.48 x 13.78 x 1.73            | 5.43        |
| C1000-48FP-4X-L  | 48 10/100/1000<br>RJ45 PoE+    | 4 SFP+                              | 740W                | Ν       | 17.48 x 13.78 x 1.73            | 5.82        |
| C1000FE-24T-4G-L | 24 10/100 RJ45<br>Data         | 2 SFP/ RJ-<br>45 combo<br>and 2 SFP | -                   | Υ       | 17.32 x 11.34 x 1.73            | 3.56        |
| C1000FE-24P-4G-L | 24 10/100 RJ45<br>PoE+         | 2 SFP/ RJ-<br>45 combo<br>and 2 SFP | 195W                | Υ       | 17.48 x 13.78 x 1.73            | 4.52        |
| C1000FE-48T-4G-L | 48 10/100 RJ45<br>Data         | 2 SFP/ RJ-<br>45 combo<br>and 2 SFP | -                   | Ν       | 17.32 x 11.34 x 1.73            | 3.97        |
| C1000FE-48P-4G-L | 48 10/100 RJ45<br>PoE+         | 2 SFP/ RJ-<br>45 combo<br>and 2 SFP | 370W                | Ν       | 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 models 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 <u>https://www.cisco.com/c/en/us/products/cloud-</u> systems-management/configuration-professional-catalyst/index.html.

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| Time Stamp   | + Facility                   | y Severity y  | Status v                                      | Description          | •                |

#### 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 feature 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<sup>®</sup> 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<br>(1/10G uplinks)                  | 48-port models<br>(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        | FE: 6.4 Gbps<br>1G: 28 Gbps<br>10G: 64 Gbps        | FE: 8.8 Gbps<br>1G: 52 Gbps<br>10G: 88Gpbs      |
| Switching bandwidth                          | 20 Gbps        | 36 Gbps        | FE: 12.8 Gbps<br>1G: 56 Gbps<br>10G: 128 Gbps      | FE: 17.6 Gbps<br>1G: 104 Gbps<br>10G: 176 Gbps  |
| Forwarding rate<br>(64-byte L3 packets)      | 14.88 Mpps     | 26.78 Mpps     | FE: 9.52 Mpps<br>1G: 41.67 Mpps<br>10G: 95.23 Mpps | FE: 13.09 Mpps<br>1G: 77.38 Mpps<br>10G: 130.94 |
| 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   |

|  | 8-port models                            | 16-port models     | 24-port models<br>(1/10G uplinks) | 48-port models<br>(1/10G uplinks) |
|--|--|--------------------|-----------------------------------|-----------------------------------|
| IPv4 multicast routes and<br>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,<br>1,706,649 (External<br>PS) | 706,983            | 698,220                           | 856,329                           |
| MTBF in hours (Full PoE)                 | 1,706,649                                | -                  | 698,220                           | 856,329                           |
| 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<br>humidity           | 5% to 90% at 40 deg                      | C (non-condensing) |                                   |                                   |
| Storage temperature                      | -13 to 158F (-25 to 7                    | 0C)                |                                   |                                   |

|                                       | Q most me                   |  | 16 mont m         |                                       | 24                     |                   | <b>10</b> mont m       |                   |  |
|---------------------------------------|-----------------------------|--|-------------------|---------------------------------------|------------------------|-------------------|------------------------|-------------------|--|
|                                       | 8-port mo                   | odels  | 16-port m         | lodels                                | 24-port n<br>(1/10G up |                   | 48-port n<br>(1/10G up |                   |  |
| Storage altitude                      | 15,000 ft                   | (4500m)  |                   |                                       |                        |                   |                        |                   |  |
| Storage relative humidit              | 5% to 95%                   | 6 at 65 deg  | C (non-con        | densing)                              |                        |                   |                        |                   |  |
| *Note:                                |                             | • 50C operation is supported for short term operation only;  |                   |                                       |                        |                   |                        |                   |  |
|                                       | 8FP-E-2<br>C1000-<br>GLC-BX | <ul> <li>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-2G-L, C1000-16P-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:</li> <li>Up to 5,000 feet, the operation temperature should not exceed 45°C.</li> </ul> |                   |                                       |                        |                   |                        |                   |  |
|                                       |                             |  |                   | n temperature s                       |                        |                   |                        |                   |  |
|                                       |                             | sing C1000-2<br>mal limitations  | ,                 | 000-24P-4X-L<br>vs:                   | with SFP-10            | G-ER or SFP-      | 10G-ER-S S             | FP+ module,       |  |
|                                       | • Up to                     | 5,000 feet, t  | he operation      | temperature sh                        | ould not exc           | eed 45ºC.         |                        |                   |  |
|                                       |                             |  | •                 | n temperature s<br>cold start is at ( |                        |                   |                        |                   |  |
| Electrical                            |                             | Data Data Data Data Ext. Data FE Data  |                   |                                       |                        |                   | Data                   | FE Data           |  |
| Electrical                            | Data                        | Ext.PS   | Data              | PS                                    | Data                   | FE Dala           | Data                   | FE Dala           |  |
| Voltage (auto ranging)                | 110 to 22                   | 110 to 220V AC in 110 to 220V AC in  |                   | 110 to 22                             | 0V AC in               | 110 to 220V AC in |                        |                   |  |
| Frequency                             | 50 to 60 Hz 50              |  | 50 to 60 H        | Z                                     | 50 to 60 Hz            |                   | 50 to 60 Hz            |                   |  |
| Current                               | 0.13A to<br>0.22A           | 0.16A to<br>0.26A  | 0.16A to<br>0.26A | 0.19A to<br>0.31A                     | 0.20A to<br>0.33A      | 0.12A to<br>0.34A | 0.29A to<br>0.48A      | 0.24A to<br>0.69A |  |
| Power rating<br>(maximum consumption) | 0.04 kVA                    | 0.017<br>kVA   | 0.05 kVA          | 0.05 kVA                              | 0.06 kVA               | 0.02 kVA          | 0.09 kVA               | 0.035 kVA         |  |
| Electrical                            | ΡοΕ                         | PoE Ext.<br>PS   | ΡοΕ               | PoE Ext. PS                           | ΡοΕ                    | FE PoE            | ΡοΕ                    | FE PoE            |  |
| Voltage (auto ranging)                | 110 to 22                   | 0V AC in   | 110 to 220        | OV AC in                              | 110 to 220V AC in      |                   | 110 to 220V AC in      |                   |  |
| Frequency                             | 50 to 60 F                  | lz   | 50 to 60 H        | z                                     | 50 to 60 H             | łz                | 50 to 60 H             | lz                |  |
| Current                               | 0.22A to<br>0.27A           | 0.22A to<br>0.37A  | 0.24A to<br>0.28A | 0.14A to<br>0.24A                     | 0.37A to<br>0.64A      | 0.23A to<br>0.35A | 0.37A to<br>0.64A      | 0.26A to<br>0.46A |  |
| Power rating<br>(maximum consumption) | 0.11 kVA                    | 0.087<br>kVA   | 0.19 kVA          | 0.20 kVA                              | 0.48 kVA               | 0.025 kVA         | 0.48 kVA               | 0.046 kVA         |  |
| Electrical                            | Full PoE                    | Full PoE<br>Ext. PS  | Full PoE          |                                       | Full PoE               |                   | Full PoE               |                   |  |
| Voltage (auto ranging)                | 110 to 22                   | 0V AC in   | 110 to 220        | V AC in                               | 110 to 22              | 0V AC in          | 110 to 22              | 0V AC in          |  |
| Frequency                             | 50 to 60 H                  | lz   | 50 to 60 H        | z                                     | 50 to 60 H             | łz                | 50 to 60 H             | łz                |  |
| Current                               | 0.23A to<br>0.28A           | 0.15A to<br>0.2A   | 0.35A to 0        | .37A                                  | 0.29A to (             | ).48A             | 0.45A to (             | ).94A             |  |
| Power rating<br>(maximum consumption) | 0.15 kVA                    | 0.15 kVA   | 0.45 kVA          |                                       | 0.8 kVA                |                   | 0.95 kVA               |                   |  |

|                              | 8-port m | odels          | 16-port n | nodels          | 24-port n<br>(1/10G up | nodels<br>Ilinks) | 48-port n<br>(1/10G up | nodels<br>Ilinks) |
|------------------------------|----------|----------------|-----------|-----------------|------------------------|-------------------|------------------------|-------------------|
| Power consumption<br>(watts) | Data     | Data<br>Ext.PS | Data      | Data Ext.<br>PS | Data                   | FE Data           | Data                   | FE Data           |
| 0% traffic                   | 14.04    | 13.15          | 14.52     | 14.4            | 1G:<br>15.84           | 11.22             | 1G:<br>27.37           | 21.41             |
|                              |          |                |           |                 | 10G: 18                |                   | 10G:<br>29.4           |                   |
| 10% traffic                  | 14.06    | 13.76          | 16.44     | 16.44           | 1G:<br>22.08           | 12.83             | 1G:<br>41.57           | 23.02             |
|                              |          |                |           |                 | 10G:<br>24.48          |                   | 10G:<br>42.28          |                   |
| 100% traffic                 | 14.26    | 14             | 16.68     | 16.68           | 1G: 22.8               | 17.15             | 1G:<br>53.66           | 23.03             |
|                              |          |                |           |                 | 10G:<br>25.68          |                   | 10G:<br>54.73          |                   |
| Weighted average             | 14.12    | 13.64          | 15.88     | 15.84           | 1G: 20.2               | 13.73             | 1G:<br>40.87           | 22.49             |
|                              |          |                |           |                 | 10G:<br>22.7           |                   | 10G:<br>42.1           |                   |
| Power consumption<br>(watts) | ΡοΕ      | PoE Ext.<br>PS | РоЕ       | PoE Ext. PS     | РоЕ                    | FE PoE            | РоЕ                    | FE PoE            |
|                              |          |                |           |                 |                        |                   |                        |                   |
| 0% traffic                   | 10.22    | 9.13           | 14.64     | 13.68           | 1G:<br>15.84           | 14.5              | 1G: 27.9               | 21.62             |
|                              |          |                |           |                 | 10G: 18                |                   | 10G:<br>28.0           |                   |
| 10% traffic                  | 12.02    | 15.39          | 16.56     | 15.48           | 1G:<br>22.44           | 16.1              | 1G:<br>42.77           | 24.74             |
|                              |          |                |           |                 | 10G:<br>24.72          |                   | 10G:<br>42.73          |                   |
| 100% traffic                 | 12.19    | 15.71          | 16.92     | 16.32           | 1G:<br>23.16           | 18.58             | 1G:<br>54.25           | 24.75             |
|                              |          |                |           |                 | 10G:<br>25.68          |                   | 10G:<br>54.49          |                   |

|                              | 8-port m                  | odels                     | 16-port n                 | nodels   | 24-port m<br>(1/10G up     |   | 48-port n<br>(1/10G up          |                     |
|------------------------------|---------------------------|---------------------------|---------------------------|--|----------------------------|---|---------------------------------|---------------------|
| Weighted average             | 11.48                     | 13.41                     | 16.04                     | 15.16  | 1G:<br>20.48               | 16.39                                     | 1G:<br>41.64                    | 23.70               |
|                              |                           |                           |                           |  | 10G:<br>22.8               |   | 10G:<br>41.74                   |                     |
| Power consumption<br>(watts) | Full PoE                  | Full PoE<br>Ext. PS       | Full PoE                  |  | Full PoE                   |   | Full PoE                        |                     |
| 0% traffic                   | 13.44                     | 14.3                      | 14.4                      |  | 1G: 18.36                  |   | 1G: 30.61                       |                     |
|                              |                           |                           | 10                        |  | 10G: 19.6                  | 8   | 10G: 30.9                       | 1                   |
| 10% traffic                  | 14.4                      | 14.9                      | 16.68                     |  | 1G: 26.16                  |   | 1G: 26.16 1G: 45.16             |                     |
|                              |                           |                           | 10G: 26.28                |  | 8                          | 10G: 45.78                                |                                 |                     |
| 100% traffic                 | 14.52                     | 15.7                      | 16.8                      |  | 1G: 35.4                   |   | 1G: 61.66                       |                     |
|                              |                           |                           |                           |  | 10G: 36                    |   | 10G: 62.2                       | 6                   |
| Weighted average             | 14.12                     | 14.97                     | 15.96                     |  | 1G: 26.68                  |   | 1G: 45.81                       |                     |
|                              |                           |                           |                           |  | 10G: 27.3                  | 2   | 10G: 46.3                       | 1                   |
|                              | indicates<br>for facility | the maximu<br>capacity pl | m power dr<br>anning. For | power supply<br>aw possible b<br>PoE switches<br>t portion of th | y the power<br>cooling rec | <sup>,</sup> supply. This<br>quirements a | s rating can<br>re smaller t    | be useo<br>han tota |
| Acoustic noise (48-port Po   | E models o                | only)                     |                           |  |                            |   |                                 |                     |
| Sound pressure (Typical)     |                           |                           |                           |  |                            | IFP-4G-L,<br>IFP-4X-L -                   | C1000-48<br>C1000-48<br>31.5 dB |                     |
|                              |                           |                           |                           |  |                            |   | C1000-48<br>C1000-48<br>36.1 dB |                     |
|                              |                           |                           |                           |  |                            |   | C1000-48                        | 3FP-4G-             |
|                              |                           |                           |                           |  |                            |   | C1000-48<br>47.6dB              | 3FP-4X-             |

Note: By stander 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<br>(1/10G uplinks) | 48-port models<br>(1/10G uplinks) |  |  |  |  |  |
|--------------------------------|--|--|-----------------------------------|-----------------------------------|--|--|--|--|--|
| Safety and compliance          |  |  |                                   |                                   |  |  |  |  |  |
| Safety                         |  | Edition, CAN/CSA-C22.2<br>0950-1 Second Edition,                       |                                   |                                   |  |  |  |  |  |
| EMC: Emissions                 |  | A, AS/NZS CISPR32 Clas<br>CI-CISPR32 Class A, EN                       |                                   |                                   |  |  |  |  |  |
| EMC: Immunity                  | EN55024 (including El                            | N55024 (including EN 61000-4-5), EN300386, KN35                        |                                   |                                   |  |  |  |  |  |
| Environmental                  | Reduction of Hazardo                             | eduction 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-4<br>(UTP) cabling            | 45 connectors, 2-pair Ca   | ategory 3, 4, or 5 Unshie         | elded Twisted Pair                |  |  |  |  |  |
|                                | 100BASE-TX ports: R                              | J-45 connectors, 2-pair  | Category 5 UTP cabling            | 3                                 |  |  |  |  |  |
|                                | 1000BASE-T ports: R                              | J-45 connectors, 4-pair  | Category 5 UTP cabling            | 3                                 |  |  |  |  |  |
|                                | 1000BASE-T SFP-bas                               | sed ports: RJ-45 connec  | ctors, 4-pair Category 5          | UTP cabling                       |  |  |  |  |  |
| Indicator LEDs                 | Per-port status: link in                         | tegrity, disabled, activity  | /                                 |                                   |  |  |  |  |  |
|                                | System status: System                            | n  |                                   |                                   |  |  |  |  |  |
| Console cables                 | CAB-CONSOLE-RJ45                                 | Console cable 6 ft. with   | n RJ-45                           |                                   |  |  |  |  |  |
|                                | CAB-CONSOLE-USB                                  | Console cable 6 ft. with   | USB Type A and mini-E             | 3 connectors                      |  |  |  |  |  |
| Power                          | Use the supplied AC p<br>Models have external    | oower cord to connect th<br>power supply                               | ne AC power connector             | to an AC power outlet             |  |  |  |  |  |

|            | 8-port models                    | 16-port models                | 24-port models<br>(1/10G uplinks) | 48-port models<br>(1/10G uplinks) |
|------------|----------------------------------|-------------------------------|-----------------------------------|-----------------------------------|
| lanagement |                                  |                               |                                   |                                   |
|            | BRIDGE-MIB                       | CISCO-PORT-QOS-               | IF-MIB                            |                                   |
|            | CISCO-CABLE-<br>DIAG-MIB         | MIB<br>CISCO-PORT-            | INET-ADDRESS-MIB                  |                                   |
|            | CISCO-CDP-MIB                    | SECURITY-MIB                  | OLD-CISCO-CHASS                   | IS-MIB                            |
|            |                                  | CISCO-PORT-STORM-             | OLD-CISCO-FLASH                   | -MIB                              |
|            | CISCO-CLUSTER-<br>MIB            | CONTROL-MIB                   | OLD-CISCO-INTERF                  | ACES-MIB                          |
|            | CISCO-CONFIG-                    | CISCO-PRODUCTS-<br>MIB        | OLD-CISCO-IP-MIB                  |                                   |
|            | COPY-MIB                         | CISCO-PROCESS-MIB             | OLD-CISCO-SYS-M                   | IB                                |
|            | CISCO-CONFIG-<br>MAN-MIB         | CISCO-RTTMON-MIB              | OLD-CISCO-TCP-M                   | IB                                |
|            | CISCO-DHCP-                      | CISCO-SMI-MIB                 | OLD-CISCO-TS-MIE                  | 3                                 |
|            | SNOOPING-MIB                     | CISCO-STP-                    | RFC1213-MIB                       |                                   |
|            | CISCO-ENTITY-<br>VENDORTYPE-OID- | EXTENSIONS-MIB                | RMON-MIB                          |                                   |
|            | MIB                              | CISCO-SYSLOG-MIB              | RMON2-MIB                         |                                   |
|            | CISCO-ENVMON-                    | CISCO-TC-MIB                  | SNMP-FRAMEWORK                    | -MIB                              |
|            | MIB                              | CICSO-TCP-MIB                 | SNMP-MPD-MIB                      |                                   |
|            | CISCO-ERR-<br>DISABLE-MIB        | CISCO-UDLDP-MIB               | SNMP-NOTIFICATIO                  | N-MIB                             |
|            | CISCO-FLASH-MIB                  | CISCO-VLAN-IFTABLE            | SNMP-TARGET-MIB                   |                                   |
|            | CISCO-FTP-                       | CISCO-VLAN-<br>MEMBERSHIP-MIB | SNMPv2-MIB                        |                                   |
|            | CLIENT-MIB<br>CISCO-IGMP-        | CISCO-VTP-MIB                 | TCP-MIB                           |                                   |
|            | FILTER-MIB                       | ENTITY-MIB                    | UDP-MIB                           |                                   |
|            | CISCO-IMAGE-MIB                  | ETHERLIKE-MIB                 |                                   |                                   |
|            | CISCO-IP-STAT-                   | IEEE8021-PAE-MIB              |                                   |                                   |
|            | MIB<br>CISCO-LAG-MIB             | IEEE8023-LAG-MIB              |                                   |                                   |
|            | CISCO-MAC-<br>NOTIFICATION-MIB   |                               |                                   |                                   |
|            | CISCO-MEMORY-<br>POOL-MIB        |                               |                                   |                                   |
|            | CISCO-PAGP-MIB                   |                               |                                   |                                   |
|            | CISCO-POE-<br>EXTENSIONS-MIB     |                               |                                   |                                   |

|           | 8-port models   | 16-port models   | 24-port models<br>(1/10G uplinks)   | 48-port models<br>(1/10G uplinks) |
|-----------|---|--|---|-----------------------------------|
| Standards |   |  |   |                                   |
|           | IEEE 802.1D STP<br>IEEE 802.1p CoS<br>Prioritization<br>IEEE 802.1Q VLAN<br>IEEE 802.1s<br>IEEE 802.1w<br>IEEE 802.1X<br>IEEE 802.1ab LLDP<br>Bluetooth v4.0  | IEEE 802.3ad<br>IEEE 802.3af and IEEE<br>802.3at<br>IEEE 802.3ah<br>(100BASE-X<br>single/multimode fiber<br>only)<br>IEEE 802.3x full duplex<br>on 10BASE-T,<br>100BASE-TX, and<br>1000BASE-T ports<br>IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-T<br>X   | IEEE 802.3ab 1000BAS<br>IEEE 802.3z 1000BASE<br>RMON I and II standard<br>SNMP v1, v2c, and v3<br>IEEE 802.3az<br>IEEE 802.3ae 10 Gigab<br>IEEE 802.1ax | E-X<br>Is                         |
|           | RFC 768 - UDP<br>RFC 783 - TFTP<br>RFC 791 - IP<br>RFC 792 - ICMP<br>RFC 793 - TCP<br>RFC 826 - ARP<br>RFC 854 - Telnet<br>RFC 951 - Bootstrap<br>Protocol (BOOTP)<br>RFC 959 - FTP<br>RFC 1112 - IP<br>Multicast and IGMP<br>RFC 1157 - SNMP<br>v1 | RFC 1256 - ICMP<br>Router Discovery<br>RFC 1305 - NTP<br>RFC 1492 - TACACS+<br>RFC 1493 - Bridge MIB<br>RFC 1542 - BOOTP<br>extensions<br>RFC 1901 - SNMP v2C<br>RFC 1902-1907 -<br>SNMP v2<br>RFC 1981 - Maximum<br>Transmission Unit<br>(MTU) Path Discovery<br>IPv6<br>FRC 2068 - HTTP<br>RFC 2131 - DHCP |   |                                   |
|           | Addresses   | RFC 2138 - RADIUS<br>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 <u>https://www.cisco.com/go/warranty</u> and see Table 3 below.

| 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<br>replacement                           | Cisco or its service center will use commercially reasonable efforts to ship a Cisco Catalyst 1000<br>Series replacement part for next-business-day delivery, where available. Otherwise, a replacement<br>will be shipped within 10 working days after the receipt of the RMA request. Actual delivery times<br>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.   |  |

#### Table 3.Warranty information

## 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.

## **Cisco Services**

Successfully deploy, manage, and support Cisco Catalyst 1000 switches with a full life cycle of Cisco Services including implementation, optimization, technical, managed and training services. Our team of experts can help you speed deployment, reduce costs and minimize risk as you introduce new hardware, software and protocols into the network. As your trusted advisor, we help you achieve extraordinary business outcomes, minimize risk and disruption so you can anticipate change and pivot quickly, securely, and confidently.

#### Table 4. Technical Services

#### **Cisco 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
- NBD, 8x5x4, 24x7x4, and 24x7x2 advance hardware replacement and onsite parts replacement and installation available
- Ongoing operating system software updates within the licensed feature set<sup>1</sup>
- Proactive diagnostics and real-time alerts on Smart Call Home-enabled devices

#### **Cisco Solution Support Service**

- Provides a team of experts who act as primary point of contact to deliver centralized support, including in multivendor network environments
- Speed is paramount when problems arise, so we deliver on a 30-minute service level objective and prioritize Solution Support cases
- Expert guidance helps to enhance IT operations with fewer outages and faster problem resolution while maximizing performance and reliability of Catalyst 1000 Series switches
- We even look beyond identified problems and provide the necessary guidance needed to help you avoid any pitfalls before they can disrupt IT or your business

#### **Cisco Support Essentials Service**

- Callback support from Cisco Technical Assistance Center (TAC) engineers within one business day
- 8 a.m. to 5 p.m. Next-Business-Day (8x5xNBD) hardware replacements
- Ongoing operating system software updates within the licensed feature set<sup>1</sup>
- Access to the Cisco.com knowledge base and tools
- Entitlement to smart capabilities

<sup>1</sup> Cisco operating system updates include the following: maintenance releases, minor updates, and major updates within the licensed feature set

#### Learn more about available services.

#### 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    |

| Part number                                  | Description  | Compatibility          |
|--|--|------------------------|
| PWR-CLP                                      | Power Cable Restraining Clip   | All models             |
| Cisco Catalyst 1000 Series rack mounting kit |  |                        |
| RCKMNT-1RU-2KX=                              | Rackmount kit for 1 RU for C1000, 2960-X and 2960-XR (19/23/24/etsi) | All 24/48 port models* |
| 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.

| 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 |  |
| 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   |  |

 Table 6.
 Cisco Catalyst 1000 Series Switches ordering information

| Product number  | Description  |  |  |
|---|--|--|--|
| 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 <u>Optics Compatibility</u> tables for compatibility information on supported transceivers.

## 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 <u>Corporate Social Responsibility</u> (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                                       | <u>Materials</u> |
| Information on electronic waste laws and regulations, including products, batteries, and packaging | WEEE compliance  |

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