Cisco Business 250 Series Smart Switches

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Build a reliable, easy-to-use business network at an affordable price

In today's hyperconnected world, reliable access to network resources is critical to all businesses. However, you also need to invest wisely to stay competitive, knowing how to separate the essential from the extraneous and get the most value for your dollar. While building a solid foundation for your business network infrastructure is essential, it doesn't mean you need the most advanced feature set on the market.

For businesses requiring high performance, advanced security, and rich manageability from the network, fully managed switches are an excellent choice. However, they also typically come with high price tags. Smart switches provide the right level of network features and capabilities for growing businesses at an affordable price, so you'll have more dollars to put toward growing your business.

With Cisco® Business 250 Series Smart Switches (Figure 1), you can achieve enterprise-grade network performance and security without paying for advanced network features that you will not use. When you need a reliable solution to share online resources and connect computers, phones, and wireless access points, Cisco Business 250 Series Smart Switches provide the ideal solution at an affordable pricing point.

Figure 1.
Cisco Business 250 Series Smart Switches

The Cisco Business 250 Series is the next generation of affordable smart switches that combine powerful network performance and reliability with a complete suite of the network features you need for a solid business network. These powerful Gigabit Ethernet switches, with Gigabit or 10 Gigabit Ethernet uplinks, provide multiple management options, sophisticated security capabilities, and fine-tuned Quality of Service (QoS) and Layer 3 static routing features far beyond those of an unmanaged or consumer-grade switch, at a lower cost than for fully managed switches. And with an easy-to-use web user interface and Power over Ethernet Plus (PoE+) capability, you can deploy and configure a complete business network in minutes.

Business applications

Whether you need basic, high-speed connectivity for your computers and servers or a comprehensive voice, data, and wireless technology solution, Cisco Business 250 Series switches can meet your business needs. Possible deployment scenarios include:

- **Small office networking:** The versatility and affordability of the Cisco Business 250 Series family of switches provide an ideal enterprise-class networking foundation for small businesses with limited IT support and budget.
- **High-speed desktop connectivity:** Cisco Business 250 Series switches can quickly and securely connect employees working in small offices with one another and with all of the printers, servers, and other networking devices. High performance and reliable connectivity help speed up file transfers and data processing, improve network uptime, and keep your employees productive.
- **Flexible wireless connectivity:** Cisco Business 250 Series switches work with Cisco and third-party wireless solutions to extend the reach of your network. With security features, Power over Ethernet (PoE), Virtual Local Area Network (VLAN), and QoS, these switches are the perfect foundation to add enterprise-grade wireless solutions to a network. The capability of up to 30W of power per port provided through the Ethernet cable means you can easily deploy innovative 802.11ac wireless technology to maximize workforce productivity.
- **Unified communications:** The Cisco Business 250 Series provides QoS features to enable you to prioritize delay-sensitive traffic in your network and let you converge all of your communications solutions such as IP telephony and video surveillance onto a single Ethernet network. Cisco offers a complete portfolio of IP telephony and other unified communications products designed for small businesses, and Cisco 250 Series switches have been rigorously tested to help ensure easy integration and full compatibility with these and other vendor products.

Features and benefits

Cisco Business 250 Series Smart Switches provide all of the features you need to create a basic enterprise-class network at an affordable price. These features include:

- **Easy configuration and management:** Cisco Business 250 Series switches are designed to be easy to deploy and use by small businesses or the partners that serve them:
    - Cisco Business Dashboard is designed to manage Cisco Business switches, routers, and wireless access points. It lets you easily customize the interface and widgets to proactively manage your network. Cisco Business 250 Series switches support embedded probe for Cisco Business Dashboard, eliminating the need to set up a separate hardware or virtual machine on site. For more information, visit https://www.cisco.com/go/cbd.
    - The redesigned modern web user interfaces reduce the time required to deploy, troubleshoot, and manage the network. Configuration wizards simplify the most common configuration tasks and provide the ultimate tool for anyone to set up and manage the network.

- **Reliability and performance:** Cisco Business 250 Series switches have been tested to deliver the high performance and reliability you would expect from a Cisco switch and help you prevent costly downtime. The switches speed file transfer times, improve slow and sluggish networks, keep your vital business applications available, and help your employees respond more quickly to customers and each other. With a network based on Cisco Business 250 Series switches, you can address all of your business communications and connectivity needs and reduce the total cost of ownership of your technology infrastructure. Cisco Business 250 Series switches also support 10 Gigabit Ethernet uplinks on select models, so you can build a high-performance and future-ready network to support your thriving business.
- **Layer 3 static routing:** This capability allows you to segment your network into separate workgroups and communicate across VLANs without degrading application performance. As a result, you can manage internal routing with your switches and dedicate your router to external traffic and security, helping your network run more efficiently.
- **Power over Ethernet Plus (PoE+):** Cisco Business 250 Series switches are available with PoE+ on Gigabit Ethernet models. This capability enables the deployment of IP telephony, wireless, video surveillance, and other solutions with just a single network cable, thereby eliminating the need for separate power supplies or cabling. PoE+ provides up to 30W of power per port, ideal for deployments of 802.11ac wireless access points, Pan-Tilt-Zoom (PTZ) IP cameras, videophones, and thin client devices, delivering more flexibility and investment protection.
- **Network security:** Cisco Business 250 Series switches provide the security and network management features you need to maintain a high level of security for your business, keep unauthorized users off the network, and protect your business data. The switches include integrated network security to reduce the risk of a security breach, with IEEE 802.1X port security to control access to your network, Denial-of-Service (DoS) attack prevention to increase network uptime during an attack, and extensive Access Control Lists (ACLs) to protect sensitive portions of the network from unauthorized users and guard against network attacks.
- **IPv6 support:** As the IP network addressing scheme evolves to accommodate more devices, you can have peace of mind that your network is ready. Cisco Business 250 Series switches provide native support for IPv6 alongside traditional IPv4. With USGv6 and IPv6 Gold Logo certifications, these switches will enable you to take full advantage of IPv6-enabled applications in the future, without having to upgrade your network equipment.
- **IP telephony support:** Cisco Business 250 Series switches include QoS features that prioritize delay-sensitive services such as voice and video, simplify unified communications deployments, and help ensure consistent network performance for all services.
- **Networkwide automatic voice deployment:** Using a combination of Cisco Discovery Protocol, Layer Link Discovery Protocol - Media Endpoint Discovery (LLDP-MED), Auto Smartports, and Voice Services Discovery Protocol (VSDP, a unique, patented Cisco protocol), customers can deploy an end-to-end voice network dynamically. The switches in the network automatically converge into a single voice VLAN and set of QoS parameters and then propagate them out to the phones on the ports where they are discovered. For example, automated voice VLAN capabilities let you plug any IP phone (including third-party phones) into your IP telephony network and receive an immediate dial tone. The switch automatically configures the device with the right VLAN and QoS parameters to prioritize voice traffic.
- **Flexible and compact design:** The sleek and compact design provide additional deployment flexibility, including outside wiring closet installation such as retail stores, open plan offices, and classrooms without disturbing the environment.

- **An energy-efficient solution:** Cisco Business 250 Series switches are designed to be energy efficient and eco-friendly without compromising performance. They help conserve energy by optimizing power use, which helps protect the environment and lowers your energy costs. Power-saving features include:
  - Support for the Energy Efficient Ethernet (IEEE 802.3az) standard, which reduces energy consumption by monitoring the amount of traffic on an active link and putting the link into a sleep state during quiet periods
  - Automatic power shutoff on ports when a link is down
  - Embedded intelligence to adjust power based on cable length
  - Fan-less design in most models, which reduces power consumption, increases reliability, and provides quieter operation
- **Peace of mind and investment protection:** Cisco Business 250 Series switches offer the reliable performance, investment protection, and peace of mind you expect from a Cisco switch. Complementary one-year access to our Small Business Support Center for ongoing support. Limited lifetime warranty with return to factory replacement keeps your business running smoothly

Product specifications

Table 1 describes product specifications.

Table 1. Product specifications

Feature	Description		
Performance			
Switching capacity and forwarding rate **All switches are wire-speed and nonblocking**	**Model**	**Capacity in millions of packets per second (mpps) (64-byte packets)**	**Switching capacity in gigabits per second (Gbps)**
	CBS250-8T-E-2G	14.88	20.0
	CBS250-8PP-E-2G	14.88	20.0
	CBS250-8P-E-2G	14.88	20.0
	CBS250-8FP-E-2G	14.88	20.0
	CBS250-16T-2G	26.78	36.0
	CBS250-16P-2G	26.78	36.0
	CBS250-24T-4G	41.66	56.0
	CBS250-24PP-4G	41.66	56.0
	CBS250-24P-4G	41.66	56.0
	CBS250-24FP-4G	41.66	56.0
	CBS250-48T-4G	77.38	104.0

Feature	Description		
	CBS250-48PP-4G	77.38	104.0
	CBS250-48P-4G	77.38	104.0
	CBS250-24T-4X	95.23	128.0
	CBS250-24P-4X	95.23	128.0
	CBS250-24FP-4X	95.23	128.0
	CBS250-48T-4X	130.94	176.0
	CBS250-48P-4X	130.94	176.0
Layer 2 switching			
Spanning Tree Protocol (STP)	Standard 802.1d spanning tree support Fast convergence using 802.1w (Rapid Spanning Tree Protocol [RSTP]), enabled by default Multiple spanning tree instances using 802.1s (MSTP); 8 instances are supported Per-VLAN Spanning Tree Plus (PVST+); 126 instances are supported Rapid PVST+ (RPVST+); 126 instances are supported		
Port grouping/link aggregation	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP) • Up to 4 groups • Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad Link Aggregation Group (LAG)		
VLAN	Support for up to 255 active VLANs simultaneously Port-based and 802.1Q tag-based VLANs Management VLAN Guest VLAN		
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS. Auto voice capabilities deliver networkwide zero-touch deployment of voice endpoints and call control devices		
Generic VLAN Registration Protocol (GVRP) and Generic Attribute Registration Protocol (GARP)	Protocols for automatically propagating and configuring VLANs in a bridged domain		
IGMP (versions 1, 2, and 3) snooping	Internet Group Management Protocol (IGMP) limits bandwidth-intensive multicast traffic to only the requesters; supports 255 multicast groups (source-specific multicasting is also supported)		
IGMP querier	Used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router		
HOL blocking	Head-of-Line (HOL) blocking prevention		

Feature	Description
Loopback detection	Provides protection against loops by transmitting loop protocol packets out of ports on which loop protection has been enabled. It operates independently of STP.
Layer 3 routing	
IPv4 routing	Wire-speed routing of IPv4 packets Up to 32 static routes and up to 16 IP interfaces
IPv6 routing	Wire-speed routing of IPv6 packets
Layer 3 interface	Configuration of Layer 3 interface on physical port, LAG, VLAN interface, or loopback interface
Classless Interdomain Routing (CIDR)	Support for CIDR
Dynamic Host Configuration Protocol (DHCP) relay at Layer 3	Relay of DHCP traffic across IP domains
User Datagram Protocol (UDP) relay	Relay of broadcast information across Layer 3 domains for application discovery or relaying of Bootstrap Protocol (BootP)/DHCP packets
Security	
Secure Sockets Layer (SSL)	SSL encrypts all HTTPS traffic, allowing secure access to the browser-based management GUI in the switch
Secure Shell (SSH) Protocol	SSH is a secure replacement for Telnet traffic. Secure Copy (SCP) also uses SSH. SSH v1 and v2 are supported.
IEEE 802.1X (authenticator role)	Remote Authentication Dial-In User Service (RADIUS) authentication, guest VLAN, single/multiple host mode, and single/multiple sessions
STP loopback guard	Provides additional protection against Layer 2 forwarding loops (STP loops)
Secure Core Technology (SCT)	Ensures that the switch will receive and process management and protocol traffic no matter how much traffic is received
Secure Sensitive Data (SSD)	A mechanism to manage sensitive data (such as passwords, keys, and so on) securely on the switch, populating this data to other devices, and secure autoconfig. Access to view the sensitive data as plain text or encrypted is provided according to the user-configured access level and the access method of the user
Trustworthy systems	Trustworthy systems provide a highly secure foundation for Cisco products Run-time defenses (Executable Space Protection [X-Space], Address Space Layout Randomization [ASLR], Built-In Object Size Checking [BOSC])
Port security	Ability to lock source MAC addresses to ports and limit the number of learned MAC addresses
RADIUS	Supports RADIUS authentication for management access. Switch functions as a client.
Storm control	Broadcast, multicast, and unknown unicast

Feature	Description
DoS prevention	Denial-of-Service (DoS) attack prevention
Multiple user privilege levels in CLI	Level 1, 7, and 15 privilege levels
Access Control Lists (ACLs)	Support for up to 512 rules Drop or rate limit based on source and destination MAC, VLAN ID or IPv4 or IPv6 address, IPv6 flow label, protocol, port, Differentiated Services Code Point (DSCP)/IP precedence, TCP/UDP source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, IGMP packets, TCP flag; ACL can be applied on both ingress and egress sides Time-based ACLs supported
Quality of service	
Priority levels	8 hardware queues
Scheduling	Strict priority and Weighted Round-Robin (WRR) queue assignment based on DSCP and class of service (802.1p/CoS)
Class of service	Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/Type of Service (ToS)/DSCP based; Differentiated Services (DiffServ); classification and re-marking ACLs, trusted QoS
Rate limiting	Ingress policer; egress shaping and rate control; per VLAN, per port, and flow based
Congestion avoidance	A TCP congestion avoidance algorithm is required to reduce and prevent global TCP loss synchronization
Standards	
Standards	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad Link Aggregation Control Protocol, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.3 ad LACP, IEEE 802.1D (STP), IEEE 802.1Q/p VLAN, IEEE 802.1w RSTP, IEEE 802.1s Multiple STP, IEEE 802.1X Port Access Authentication, IEEE 802.3af, IEEE 802.3at, RFC 768, RFC 783, RFC 791, RFC 792, RFC 793, RFC 813, RFC 879, RFC 896, RFC 826, RFC 854, RFC 855, RFC 856, RFC 858, RFC 894, RFC 919, RFC 920, RFC 922, RFC 950, RFC 951, RFC 1042, RFC 1071, RFC 1123, RFC 1141, RFC 1155, RFC 1157, RFC 1213, RFC 1215, RFC 1286, RFC 1350, RFC 1442, RFC 1451, RFC 1493, RFC 1533, RFC 1541, RFC 1542, RFC 1573, RFC 1624, RFC 1643, RFC 1700, RFC 1757, RFC 1867, RFC 1907, RFC 2011, RFC 2012, RFC 2013, RFC 2030, RFC 2131, RFC 2132, RFC 2233, RFC 2576, RFC 2616, RFC 2618, RFC 2665, RFC 2666, RFC 2674, RFC 2737, RFC 2819, RFC 2863, RFC 3164, RFC 3411, RFC 3412, RFC 3413, RFC 3414, RFC 3415, RFC 3416, RFC 4330

Feature	Description
IPv6	
IPv6	IPv6 host mode IPv6 over Ethernet Dual IPv6/IPv4 stack IPv6 Neighbor Discovery (ND) IPv6 stateless address auto configuration Path Maximum Transmission Unit (MTU) discovery Duplicate Address Detection (DAD) Internet Control Message Protocol (ICMP) version 6 IPv6 over IPv4 network with Intrasite Automatic Tunnel Addressing Protocol (ISATAP) support USGv6 and IPv6 Gold Logo certified
IPv6 QoS	Prioritize IPv6 packets in hardware
IPv6 ACL	Drop or rate limit IPv6 packets in hardware
Multicast Listener Discovery (MLD v1/2) snooping	Deliver IPv6 multicast packets only to the required receivers
IPv6 applications	Web/SSL, Telnet server/SSH, Ping, Traceroute, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP), Simple Network Management Protocol (SNMP), Remote Authentication Dial-In User Service (RADIUS), Syslog, DNS client, DHCP client, DHCP autoconfig
IPv6 RFCs supported	RFC 4443 (which obsoletes RFC 2463): ICMPv6 RFC 4291 (which obsoletes RFC 3513): IPv6 address architecture RFC 4291: IPv6 Addressing Architecture RFC 2460: IPv6 Specification RFC 4861 (which obsoletes RFC 2461): Neighbor Discovery for IPv6 RFC 4862 (which obsoletes RFC 2462): IPv6 Stateless Address Autoconfiguration RFC 1981: Path MTU Discovery RFC 4007: IPv6 Scoped Address Architecture RFC 3484: Default address selection mechanism RFC 5214 (which obsoletes RFC 4214): ISATAP tunneling RFC 4293: Management Information Base (MIB) IPv6: Textual Conventions and General Group RFC 3595: Textual Conventions for IPv6 Flow Label

Feature	Description	
Management		
Web user interface	Built-in switch configuration utility for easy browser-based device configuration (HTTP/HTTPS). Supports configuration, wizards, system dashboard, system maintenance, and monitoring Basic and advanced mode for maximum operational efficiency	
SNMP	SNMP versions 1, 2c, and 3 with support for traps, and SNMP v3 User-based Security Model (USM)	
Standard MIBs	lldp-MIB	rfc2668-MIB
	lldpextdot1-MIB	rfc2737-MIB
	lldpextdot3-MIB	rfc2925-MIB
	lldpextmed-MIB	rfc3621-MIB
	rfc2674-MIB	rfc4668-MIB
	rfc2575-MIB	rfc4670-MIB
	rfc2573-MIB	trunk-MIB
	rfc2233-MIB	tunnel-MIB
	rfc2013-MIB	udp-MIB
	rfc2012-MIB	draft-ietf-bridge-8021x-MIB
	rfc2011-MIB	draft-ietf-bridge-rstpmib-04-MIB
	RFC-1212	draft-ietf-hubmib-etherif-mib-v3-00-MIB
	RFC-1215	draft-ietf-syslog-device-MIB
	SNMPv2-CONF	ianaaddrfamnumbers-MIB
	SNMPv2-TC	ianaifty-MIB
	p-bridge-MIB	ianaprot-MIB
	q-bridge-MIB	inet-address-MIB
	rfc1389-MIB	ip-forward-MIB
	rfc1493-MIB	ip-MIB
	rfc1611-MIB	RFC1155-SMI
	rfc1612-MIB	RFC1213-MIB
	rfc1850-MIB	SNMPv2-MIB
	rfc1907-MIB	SNMPv2-SMI
	rfc2571-MIB	SNMPv2-TM
	rfc2572-MIB	RMON-MIB
	rfc2574-MIB	rfc1724-MIB
	rfc2576-MIB	dcb-raj-DCBX-MIB-1108-MIB
	rfc2613-MIB	rfc1213-MIB
	rfc2665-MIB	rfc1757-MIB

Feature	Description	
Private MIBs	CISCOSB-lldp-MIB	CISCOSB-ip-MIB
	CISCOSB-brgmulticast-MIB	CISCOSB-iprouter-MIB
	CISCOSB-bridgemibobjects-MIB	CISCOSB-ipv6-MIB
	CISCOSB-bonjour-MIB	CISCOSB-mnginf-MIB
	CISCOSB-dhcpcl-MIB	CISCOSB-lcli-MIB
	CISCOSB-MIB	CISCOSB-localization-MIB
	CISCOSB-wrandomtaildrop-MIB	CISCOSB-mcmngr-MIB
	CISCOSB-traceroute-MIB	CISCOSB-mng-MIB
	CISCOSB-telnet-MIB	CISCOSB-physdescription-MIB
	CISCOSB-stormctrl-MIB	CISCOSB-PoE-MIB
	CISCOSBssh-MIB	CISCOSB-protectedport-MIB
	CISCOSB-socket-MIB	CISCOSB-rmon-MIB
	CISCOSB-sntp-MIB	CISCOSB-rs232-MIB
	CISCOSB-smon-MIB	CISCOSB-SecuritySuite-MIB
	CISCOSB-phy-MIB	CISCOSB-snmp-MIB
	CISCOSB-multisessionterminal-MIB	CISCOSB-specialbpdu-MIB
	CISCOSB-mri-MIB	CISCOSB-banner-MIB
	CISCOSB-jumboframes-MIB	CISCOSB-syslog-MIB
	CISCOSB-gvrp-MIB	CISCOSB-TcpSession-MIB
	CISCOSB-endofmib-MIB	CISCOSB-traps-MIB
	CISCOSB-dot1x-MIB	CISCOSB-trunk-MIB
	CISCOSB-deviceparams-MIB	CISCOSB-tuning-MIB
	CISCOSB-cli-MIB	CISCOSB-tunnel-MIB
	CISCOSB-cdb-MIB	CISCOSB-udp-MIB
	CISCOSB-brgmacswitch-MIB	CISCOSB-vlan-MIB
	CISCOSB-3sw2swtables-MIB	CISCOSB-ipstdacl-MIB
	CISCOSB-smartPorts-MIB	CISCOSB-eee-MIB
	CISCOSB-tbi-MIB	CISCOSB-ssl-MIB
	CISCOSB-macbaseprio-MIB	CISCOSB-qosclimib-MIB
	CISCOSB-env_mib-MIB	CISCOSB-digitalkeymanage-MIB
	CISCOSB-policy-MIB	CISCOSB-tbp-MIB
	CISCOSB-sensor-MIB	CISCOSMB-MIB
	CISCOSB-aaa-MIB	CISCOSB-secsd-MIB
	CISCOSB-application-MIB	CISCOSB-draft-ietf-entmib-sensor-MIB
	CISCOSB-bridgesecurity-MIB	CISCOSB-draft-ietf-syslog-device-MIB
	CISCOSB-copy-MIB	CISCOSB-rfc2925-MIB
	CISCOSB-CpuCounters-MIB	CISCO-SMI-MIB

Feature	Description	
	CISCOSB-Custom1BonjourService-MIB	CISCOSB-DebugCapabilities-MIB
	CISCOSB-dhcp-MIB	CISCOSB-CDP-MIB
	CISCOSB-dlf-MIB	CISCOSB-vlanVoice-MIB
	CISCOSB-dnscl-MIB	CISCOSB-EVENTS-MIB
	CISCOSB-embweb-MIB	CISCOSB-sysmng-MIB
	CISCOSB-fft-MIB	CISCOSB-sct-MIB
	CISCOSB-file-MIB	CISCO-TC-MIB
	CISCOSB-greeneth-MIB	CISCO-VTP-MIB
	CISCOSB-interfaces-MIB	CISCO-CDP-MIB
	CISCOSB-interfaces_recovery-MIB	
Remote monitoring (RMON)	Embedded RMON software agent supports 4 RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis	
IPv4 and IPv6 dual stack	Coexistence of both protocol stacks to ease migration	
Firmware upgrade	Web browser upgrade (HTTP/HTTPS) and TFTP and upgrade over SCP running over SSH Dual images for resilient firmware upgrades	
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to 4 source ports can be mirrored to one destination port	
VLAN mirroring	Traffic from a VLAN can be mirrored to a port for analysis with a network analyzer or RMON probe. Up to 4 source VLANs can be mirrored to one destination port	
Dynamic Host Configuration Protocol (DHCP) (options 12, 66, 67, 129, and 150)	DHCP options facilitate tighter control from a central point (DHCP server), to obtain IP address, autoconfiguration (with configuration file download), DHCP Relay, and host name	
Secure Copy (SCP)	Securely transfers files to and from the switch	
Autoconfiguration with SCP file download	Enables mass deployment with protection of sensitive data	
Text-editable configs	Config files can be edited with a text editor and downloaded to another switch, facilitating easier mass deployment	
Smartports	Simplified configuration of QoS and security capabilities	
Auto Smartports	Automatically applies the intelligence delivered through the Smartports roles to the port based on the devices discovered over Cisco Discovery Protocol or LLDP-MED. This facilitates zero-touch deployments.	
Text view Command-Line Interface (CLI)	Scriptable CLI. A full CLI as well as a menu-based CLI is supported. User privilege levels 1, 7, and 15 are supported for the CLI.	
Cloud services	Support for Cisco Business Dashboard and Cisco Active Advisor	
Embedded Probe for Cisco Business Dashboard	Support for embedded probe for Cisco Business Dashboard running on the switch. Eliminates the need to set up a separate hardware or virtual machine for the Cisco Business Dashboard Probe on site.	

Feature	Description
Cisco Network Plug and Play (PnP) agent	The Cisco Network Plug and Play solution provides a simple, secure, unified, and integrated offering to ease new branch or campus device rollouts or for provisioning updates to an existing network. The solution provides a unified approach to provision Cisco routers, switches, and wireless devices with a near-zero-touch deployment experience. Supports Cisco PnP Connect
Localization	Localization of GUI and documentation into multiple languages
Login banner	Configurable multiple banners for web as well as CLI
Other management	Traceroute; single IP management; HTTP/HTTPS; RADIUS; port mirroring; TFTP upgrade; DHCP client; Simple Network Time Protocol (SNTP); cable diagnostics; Ping; syslog; Telnet client (SSH secure support); automatic time settings from Management Station
Green (power efficiency)	
Energy detect	Automatically turns power off on RJ-45 port when detecting link down. Active mode is resumed without loss of any packets when the switch detects the link is up
Cable length detection	Adjusts the signal strength based on the cable length. Reduces the power consumption for shorter cables
EEE compliant (802.3az)	Supports IEEE 802.3az on all copper Gigabit Ethernet ports
Disable port LEDs	LEDs can be manually turned off to save on energy
Time-based port operation	Link up or down based on user-defined schedule (when the port is administratively up)
Time-based PoE	PoE power can be on or off based on user-defined schedule to save energy
General	
Jumbo frames	Frame sizes up to 9K bytes. The default MTU is 2K bytes
MAC table	8K addresses
Discovery	
Bonjour	The switch advertises itself using the Bonjour protocol
Link Layer Discovery Protocol (LLDP) (802.1ab) with LLDP-MED extensions	Link Layer Discovery Protocol (LLDP) allows the switch to advertise its identification, configuration, and capabilities to neighboring devices that store the data in a MIB. LLDP-MED is an enhancement to LLDP that adds the extensions needed for IP phones
Cisco Discovery Protocol	The switch advertises itself using the Cisco Discovery Protocol. It also learns the connected device and its characteristics using Cisco Discovery Protocol

Feature	Description
Power over Ethernet (PoE)	
802.3at PoE+ and 802.3af PoE delivered over any of the RJ-45 ports within the listed power budgets	The following switches support 802.3at PoE+, 802.3af, and Cisco prestandard (legacy) PoE. Maximum power of 30.0W to any 10/100 or Gigabit Ethernet port, until the PoE budget for the switch is reached. The total power available for PoE per switch is as follows:

Model	Power dedicated to PoE	Number of ports that support PoE
CBS250-8PP-E-2G	45W	8
CBS250-8P-E-2G	67W	8
CBS250-8FP-E-2G	120W	8
CBS250-16P-2G	120W	16
CBS250-24PP-4G	100W	24
CBS250-24P-4G	195W	24
CBS250-24FP-4G	370W	24
CBS250-48PP-4G	195W	48
CBS250-48P-4G	370W	48
CBS250-24P-4X	195W	24
CBS250-24FP-4X	370W	24
CBS250-48P-4X	370W	48

Feature	Description			
Power consumption (worst case)	Model	System power consumption	Power consumption (with PoE)	Heat dissipation (BTU/hr)
	CBS250-8T-E-2G	110V=12.55W 220V=12.56W	N/A	42.86
	CBS250-8PP-E-2G	110V=14.34W 220V=14.47W	110V=65.29W 220V=66.02W	222.79
	CBS250-8P-E-2G	110V=13.84W 220V=14.31W	110V=80.79W 220V=80.86W	275.91
	CBS250-8FP-E-2G	110V=17.07W 220V=16.68W	110V=147.48W 220V=145.26W	503.22
	CBS250-16T-2G	110V=18.63W 220V=18.37W	N/A	64.46
	CBS250-16P-2G	110V=24.51W 220V=25.01W	110V=156.4W 220V=154.5W	124.20
	CBS250-24T-4G	110V=25.91W 220V=25.63W	N/A	89.13
	CBS250-24PP-4G	110V=34.4W 220V=33.11W	110V=138.9W 220V=138.1W	132.73
	CBS250-24P-4G	110V=34.42W 220V=33.09W	110V=239.7W 220V=236.4W	152.52
	CBS250-24FP-4G	110V=46.60W 220V=46.35W	110V=449.7W 220V=438.3W	271.95
	CBS250-48T-4G	110V=48.27W 220V=48.64W	N/A	165.96
	CBS250-48PP-4G	110V=68.68W 220V=67.18W	110V=276.75W 220V=270.58W	944.31
	CBS250-48P-4G	110V=60.77W 220V=59.73W	110V=451.95W 220V=445.85W	1,542.12
	CBS250-24T-4X	110V=27.54W 220V=27.25W	N/A	93.32
	CBS250-24P-4X	110V=35.72W 220V=34.53W	110V=240.4W 220V=236.9W	154.91

Feature	Description			
	CBS250-24FP-4X	110V=47.14W 220V=47.01W	110V=451.8W 220V=437.4W	279.11
	CBS250-48T-4X	110V=51.01W 220V=50.58W	N/A	174.06
	CBS250-48P-4X	110V=61.53W 220V=60.73W	110V=471.90W 220V=463.32W	1,610.19
Ports	**Model name**	**Total system ports**	**RJ-45 ports**	**Combo ports (RJ-45 + SFP)**
	CBS250-8T-E-2G	10 Gigabit Ethernet	8 Gigabit Ethernet	2 Gigabit Ethernet combo
	CBS250-8PP-E-2G	10 Gigabit Ethernet	8 Gigabit Ethernet	2 Gigabit Ethernet combo
	CBS250-8P-E-2G	10 Gigabit Ethernet	8 Gigabit Ethernet	2 Gigabit Ethernet combo
	CBS250-8FP-E-2G	10 Gigabit Ethernet	8 Gigabit Ethernet	2 Gigabit Ethernet combo
	CBS250-16T-2G	18 Gigabit Ethernet	16 Gigabit Ethernet	2 Small Form-Factor Pluggable (SFP)
	CBS250-16P-2G	18 Gigabit Ethernet	16 Gigabit Ethernet	2 SFP
	CBS250-24T-4G	28 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP
	CBS250-24PP-4G	28 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP
	CBS250-24P-4G	28 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP
	CBS250-24FP-4G	28 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP
	CBS250-48T-4G	52 Gigabit Ethernet	48 Gigabit Ethernet	4 SFP
	CBS250-48PP-4G	52 Gigabit Ethernet	48 Gigabit Ethernet	4 SFP
	CBS250-48P-4G	52 Gigabit Ethernet	48 Gigabit Ethernet	4 SFP
	CBS250-24T-4X	24 Gigabit Ethernet + 4 10 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP+
	CBS250-24P-4X	24 Gigabit Ethernet + 4 10 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP+
	CBS250-24FP-4X	24 Gigabit Ethernet + 4 10 Gigabit Ethernet	24 Gigabit Ethernet	4 SFP+
	CBS250-48T-4X	48 Gigabit Ethernet + 4 10 Gigabit Ethernet	48 Gigabit Ethernet	4 SFP+

Feature	Description			
	CBS250-48P-4X	48 Gigabit Ethernet + 4 10 Gigabit Ethernet	48 Gigabit Ethernet	4 SFP+
Console port	Cisco Standard mini USB Type-B / RJ45 console port			
USB slot	USB Type-A slot on the front panel of the switch for easy file and image management			
Buttons	Reset button			
Cabling type	Unshielded Twisted Pair (UTP) Category 5e or better for 1000BASE-T			
LEDs	System, Link/Act, PoE, Speed			
Flash	256 MB			
CPU	800 MHz ARM			
DRAM	512 MB			
Packet buffer	All numbers are aggregate across all ports because the buffers are dynamically shared:			

Model name	Packet buffer
CBS250-8T-E-2G	1.5 MB
CBS250-8PP-E-2G	1.5 MB
CBS250-8P-E-2G	1.5 MB
CBS250-8FP-E-2G	1.5 MB
CBS250-16T-2G	1.5 MB
CBS250-16P-2G	1.5 MB
CBS250-24T-4G	1.5 MB
CBS250-24PP-4G	1.5 MB
CBS250-24P-4G	1.5 MB
CBS250-24FP-4G	1.5 MB
CBS250-48T-4G	3 MB
CBS250-48PP-4G	3 MB
CBS250-48P-4G	3 MB
CBS250-24T-4X	1.5 MB
CBS250-24P-4X	1.5 MB
CBS250-24FP-4X	1.5 MB

Feature	Description			
	CBS250-48T-4X		3 MB	
	CBS250-48P-4X		3 MB	
Supported SFP/SFP+ modules	**SKU**	**Media**	**Speed**	**Maximum distance**
	MGBSX1	Multimode fiber	1000 Mbps	500 m
	MGBLH1	Single-mode fiber	1000 Mbps	40 km
	MGBLX1	Single-mode fiber	1000 Mbps	10 km
	MGBT1	UTP cat 5e	1000 Mbps	100 m
	GLC-SX-MMD	Multimode fiber	1000 Mbps	550 m
	GLC-LH-SMD	Single-mode fiber	1000 Mbps	10 km
	GLC-BX-U	Single-mode fiber	1000 Mbps	10 km
	GLC-BX-D	Single-mode fiber	1000 Mbps	10 km
	GLC-TE	UTP cat 5e	1000 Mbps	100 m
	SFP-H10GB-CU1M	Copper coax	10 Gig	1 m
	SFP-H10GB-CU3M	Copper coax	10 Gig	3 m
	SFP-H10GB-CU5M	Copper coax	10 Gig	5 m
	SFP-10G-SR	Multimode fiber	10 Gig	26 m – 400 m
	SFP-10G-LR	Single-mode fiber	10 Gig	10 km
	SFP-10G-SR-S	Multimode fiber	10 Gig	26 m – 400 m
	SFP-10G-LR-S	Single-mode fiber	10 Gig	10 km
Environmental				
Unit dimensions (W x H x D)	**Model name**		**Unit dimensions**	
	CBS250-8T-E-2G		268 x 185 x 44 mm (10.56 x 7.28 x 1.73 in)	
	CBS250-8PP-E-2G		268 x 185 x 44 mm (10.56 x 7.28 x 1.73 in)	
	CBS250-8P-E-2G		268 x 185 x 44 mm (10.56 x 7.28 x 1.73 in)	
	CBS250-8FP-E-2G		268 x 185 x 44 mm (10.56 x 7.28 x 1.73 in)	
	CBS250-16T-2G		268 x 272 x 44 mm (10.56 x 10.69 x 1.73 in)	
	CBS250-16P-2G		268 x 297 x 44 mm (10.56 x 11.69 x 1.73 in)	

Feature	Description	
	CBS250-24T-4G	445 x 240 x 44 mm (17.5 x 9.45 x 1.73 in)
	CBS250-24PP-4G	445 x 299 x 44 mm (17.5 x 11.76 x 1.73 in)
	CBS250-24P-4G	445 x 299 x 44 mm (17.5 x 11.76 x 1.73 in)
	CBS250-24FP-4G	445 x 345 x 44 mm (17.5 x 13.59 x 1.73 in)
	CBS250-48T-4G	445 x 273 x 44 mm (17.5 x 10.73 x 1.73 in)
	CBS250-48PP-4G	445 x 350 x 44 mm (17.5 x 13.78 x 1.73 in)
	CBS250-48P-4G	445 x 350 x 44 mm (17.5 x 13.78 x 1.73 in)
	CBS250-24T-4X	445 x 240 x 44 mm (17.5 x 9.45 x 1.73 in)
	CBS250-24P-4X	445 x 299 x 44 mm (17.5 x 11.76 x 1.73 in)
	CBS250-24FP-4X	445 x 345 x 44 mm (17.5 x 13.59 x 1.73 in)
	CBS250-48T-4X	445 x 273 x 44 mm (17.5 x 10.73 x 1.73 in)
	CBS250-48P-4X	445 x 350 x 44 mm (17.5 x 13.78 x 1.73 in)
Unit weight	**Model name**	**Unit weight**
	CBS250-8T-E-2G	1.7 kg (3.75 lb)
	CBS250-8PP-E-2G	3.5 kg (7.72 lb)
	CBS250-8P-E-2G	3.5 kg (7.72 lb)
	CBS250-8FP-E-2G	3.5 kg (7.72 lb)
	CBS250-16T-2G	1.78 kg (3.92 lb)
	CBS250-16P-2G	2.38 kg (5.25 lb)
	CBS250-24T-4G	2.63 kg (5.80 lb)
	CBS250-24PP-4G	3.53 kg (7.78 lb)
	CBS250-24P-4G	3.53 kg (7.78 lb)
	CBS250-24FP-4G	4.6 kg (10.14 lb)
	CBS250-48T-4G	3.95 kg (8.71 lb)
	CBS250-48PP-4G	5.43 kg (11.97 lb)
	CBS250-48P-4G	5.43 kg (11.97 lb)
	CBS250-24T-4X	2.78 kg (6.13 lb)

Feature	Description			
	CBS250-24P-4X		3.68 kg (8.11 lb)	
	CBS250-24FP-4X		4.6 kg (10.14 lb)	
	CBS250-48T-4X		3.95 kg (8.71 lb)	
	CBS250-48P-4X		5.43 kg (11.97 lb)	
Power	100 to 240V 50 to 60 Hz, internal, universal: CBS250-16T-2G, CBS250-16P-2G, CBS250-24T-4G, CBS250-24PP-4G, CBS250-24P-4G, CBS250-24FP-4G, CBS250-48T-4G, CBS250-48PP-4G, CBS250-48P-4G, CBS250-24T-4X, CBS250-24P-4X, CBS250-24FP-4X, CBS250-48T-4X, CBS250-48P-4X 100 to 240V 50 to 60 Hz, external: CBS250-8T-E-2G, CBS250-8PP-E-2G, CBS250-8P-E-2G, CBS250-8FP-E-2G			
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A			
Operating temperature	23° to 122°F (-5° to 50°C)			
Storage temperature	-13° to 158°F (-25° to 70°C)			
Operating humidity	10% to 90%, relative, noncondensing			
Storage humidity	10% to 90%, relative, noncondensing			
Acoustic noise and Mean Time Between Failures (MTBF)	**Model name**	**Fan (number)**	**Acoustic noise**	**MTBF at 25°C (hours)**
	CBS250-8T-E-2G	Fanless	N/A	2,171,669
	CBS250-8PP-E-2G	Fanless	N/A	1,706,649
	CBS250-8P-E-2G	Fanless	N/A	1,706,649
	CBS250-8FP-E-2G	Fanless	N/A	1,706,649
	CBS250-16T-2G	Fanless	N/A	2,165,105
	CBS250-16P-2G	Fanless	N/A	706,983
	CBS250-24T-4G	Fanless	N/A	2,026,793
	CBS250-24PP-4G	Fanless	N/A	698,220
	CBS250-24P-4G	Fanless	N/A	698,220
	CBS250-24FP-4G	1	25°C: 34.8 dBA	698,220
	CBS250-48T-4G	1	25°C: 29.7 dBA	1,452,667
	CBS250-48PP-4G	1	25°C: 37.3 dBA	1,206,349
	CBS250-48P-4G	1	25°C: 37.3 dBA	856,329
	CBS250-24T-4X	Fanless	N/A	2,026,793

Feature	Description			
	CBS250-24P-4X	Fanless	N/A	698,220
	CBS250-24FP-4X	1	25° C: 34.8 dBA	698,220
	CBS250-48T-4X	1	25° C: 29.7 dBA	1,452,667
	CBS250-48P-4X	1	25° C: 37.3 dBA	856,329
Warranty	Limited lifetime			
Package contents				
• Cisco Business 250 Series Smart Switch • Power cord (power adapter for 8-port SKUs) • Mounting kit • Quick Start Guide				
Minimum requirements				
• Web browser: Chrome, Firefox, Edge, Safari • Category 5e Ethernet network cable • TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed				

Ordering information

Table 2 provides ordering information.

Table 2. Ordering information

Model name	Product order ID number	Description
Gigabit Ethernet		
CBS250-8T-E-2G	CBS250-8T-E-2G-xx	• 8 10/100/1000 ports • 2 Gigabit copper/SFP combo ports
CBS250-8PP-E-2G	CBS250-8PP-E-2G-xx	• 8 10/100/1000 PoE+ ports with 45W power budget • 2 Gigabit copper/SFP combo ports
CBS250-8P-E-2G	CBS250-8P-E-2G-xx	• 8 10/100/1000 PoE+ ports with 67W power budget • 2 Gigabit copper/SFP combo ports
CBS250-8FP-E-2G	CBS250-8FP-E-2G-xx	• 8 10/100/1000 PoE+ ports with 120W power budget • 2 Gigabit copper/SFP combo ports
CBS250-16T-2G	CBS250-16T-2G-xx	• 16 10/100/1000 ports • 2 Gigabit SFP
CBS250-16P-2G	CBS250-16P-2G-xx	• 16 10/100/1000 PoE+ ports with 120W power budget • 2 Gigabit SFP
CBS250-24T-4G	CBS250-24T-4G-xx	• 24 10/100/1000 ports • 4 Gigabit SFP

Model name	Product order ID number	Description
CBS250-24PP-4G	CBS250-24PP-4G-xx	• 24 10/100/1000 PoE+ ports with 100W power budget • 4 Gigabit SFP
CBS250-24P-4G	CBS250-24P-4G-xx	• 24 10/100/1000 PoE+ ports with 195W power budget • 4 Gigabit SFP
CBS250-24FP-4G	CBS250-24FP-4G-xx	• 24 10/100/1000 PoE+ ports with 370W power budget • 4 Gigabit SFP
CBS250-48T-4G	CBS250-48T-4G-xx	• 48 10/100/1000 ports • 4 Gigabit SFP
CBS250-48PP-4G	CBS250-48PP-4G-xx	• 48 10/100/1000 PoE+ ports with 195W power budget • 4 Gigabit SFP
CBS250-48P-4G	CBS250-48P-4G-xx	• 48 10/100/1000 PoE+ ports with 370W power budget • 4 Gigabit SFP
Gigabit Ethernet with 10G Uplinks		
CBS250-24T-4X	CBS250-24T-4X-xx	• 24 10/100/1000 ports • 4 10 Gigabit SFP+
CBS250-24P-4X	CBS250-24P-4X-xx	• 24 10/100/1000 PoE+ ports with 195W power budget • 4 10 Gigabit SFP+
CBS250-24FP-4X	CBS250-24FP-4X-xx	• 24 10/100/1000 PoE+ ports with 370W power budget • 4 10 Gigabit SFP+
CBS250-48T-4X	CBS250-48T-4X-xx	• 48 10/100/1000 ports • 4 10 Gigabit SFP+
CBS250-48P-4X	CBS250-48P-4X-xx	• 48 10/100/1000 PoE+ ports with 370W power budget • 4 10 Gigabit SFP+

Each combo port has one 10/100/1000 copper Ethernet port and one SFP Gigabit Ethernet slot, with one port active at a time.

The -xx in the product order ID number is a country/region specific suffix. For example, the complete PID of CBS250-24T-4G for the United States is CBS250-24T-4G-NA. Please refer to the following table for the suffix to use for your country/region.

Table 3. Country/region suffix for product order ID number

Suffix	Country/region
-NA	USA, Canada, Mexico, Colombia, Chile, and rest of Latin America
-BR	Brazil
-AR	Argentina
-EU	European Economic Area, Russia, Ukraine, Israel, United Arab Emirates, Turkey, Egypt, South Africa, Indonesia, Philippines, Vietnam, Thailand, Korea
-UK	United Kingdom, Saudi Arabia, Qatar, Kuwait, Singapore, Hong Kong, Malaysia
-AU	Australia, New Zealand

Suffix	Country/region
-CN	China
-IN	India
-JP	Japan
-KR	Korea

The products may also be available in countries or regions not listed above. Not all product models are offered in all countries/regions. For Korea, either the -EU or -KR suffix will be used, depending on product models. Please consult with your local Cisco sales representative or Cisco partner for more details.

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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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