

CISCO

SG300-10

10-Port Gigabit + 2 Combo mini-GBIC

DESCRIPTION

The Cisco 300 Series, part of the Cisco Small Business line of network solutions, is a portfolio of affordable managed switches that provides a reliable foundation for your business network.



Performance

Capacity in Millions of Packets per Second (mpp) 1,000 (64-byte packets)

Switching Capacity in Gigabits per Second (Gbps) 20.0

Layer 2 Switching

Spanning Tree Protocol (STP)	Standard 802.1d Spanning Tree support Fast convergence using 802.1w (Rapid Spanning Tree [RSTP]), enabled by default 8 instances are supported Multiple Spanning Tree instances using 802.1s (MSTP)
Port grouping	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP) Up to 8 groups Up to 8 ports per group with 16 candidate ports for each (dynamic) 802.3ad link aggregation
VLAN	Support for up to 4096 VLANs simultaneously Port-based and 802.1Q tag-based VLANs MAC-based VLAN Management VLAN Private VLAN Edge (PVE), also known as protected ports, with multiple uplinks Guest VLAN Unauthenticated VLAN Dynamic VLAN assignment via Radius server along with 802.1x client authentication CPE VLAN
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS Auto voice capabilities deliver network-wide zero touch deployment of voice endpoints and call control
Multicast TV VLAN	Multicast TV VLAN allows the single multicast VLAN to be shared in the network while subscribers remain isolated
Q-in-Q VLAN	VLANs transparently cross a service provider network while isolating traffic among customers
Generic VLAN Registration Protocol (GVRP)/Generic Attribute Registration Protocol (GARP)	Protocols for dynamically propagating VLANs in a bridged domain
Unidirectional Link Detection (UDLD)	UDLD monitors physical connection to detect unidirectional links caused by incorrect wiring or cable/po
Dynamic Host Configuration Protocol (DHCP) Relay	Relay of DHCP traffic to DHCP server in different VLAN. Works with DHCP Option 82
Internet Group Management Protocol (IGMP) v1, v2, and v3	IGMP v1, v2, and v3 for comprehensive multicast traffic to only the requesters; supports 1K multicast groups (
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a m
Head-of-line (HOL) blocking	HOL blocking prevention
Jumbo Frames	Up to 9K (9216) bytes

Layer 3

IPv4 routing	Wirespeed routing of IPv4 packets Up to 512 static routes and up to 128 IP interfaces
Classless Inter-Domain Routing (CIDR)	Support for CIDR
Layer 3 Interface	Configuration of layer 3 interface on physical port, LAG, VLAN interface or Loopback interface
DHCP relay at Layer 3	Relay of DHCP traffic across IP domains
User Datagram Protocol (UDP) relay	Switch functions as an IPv4 DHCP Server serving IP addresses for multiple DHCP pools/scopes Support for DHCP options

Security

Secure Shell (SSH) Protocol	SSH is a secure replacement for Telnet traffic. SCP also uses SSH. SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL support: Encrypts all HTTPS traffic, allowing highly secure access to the browser-based management
IEEE 802.1X (Authenticator role)	802.1X: RADIUS authentication and accounting, MD5 hash; guest VLAN; unauthenticated VLAN, single Supports time-based 802.1X Dynamic VLAN assignment
Web Based Authentication	Web based authentication provides network admission control through web browser to any host device

Security

STP Bridge Protocol Data Unit (BPDU) Guard	A security mechanism to protect the network from invalid configurations. A port enabled for BPDU Guard
STP Root Guard	This prevents edge devices not in the network administrators control from becoming Spanning Tree Pr
DHCP snooping	Filters out DHCP messages with unregistered IP addresses and/or from unexpected or untrusted interfa
IP Source Guard (IPSG)	When IP Source Guard is enabled at a port, the switch filters out IP packets received from the port if th
Dynamic ARP Inspection (DAI)	The switch discards ARP packets from a port if there is no static or dynamic IP/MAC bindings or if there
IP/Mac/Port Binding (IPMB)	The features (DHCP Snooping, IP Source Guard, and Dynamic ARP Inspection) above work together to
Secure Core Technology (SCT)	Ensures that the switch will receive and process management and protocol traffic no matter how much
Secure Sensitive Data (SSD)	A mechanism to manage sensitive data (such as passwords, keys, etc) securely on the switch, populatin
Layer 2 isolation Private VLAN Edge (PVE) with Overlays	Private VLANs protected ports) provides Layer 2 isolation between devices in the same VLAN, sup
Port security	The ability to lock Source MAC addresses to ports, and limits the number of learned MAC addresses.
RADIUS/TACACS+	Supports RADIUS and TACACS authentication. Switch functions as a client.
Storm control	Broadcast, multicast, and unknown unicast
RADIUS accounting	The RADIUS accounting functions allow data to be sent at the start and end of services, indicating the
DoS prevention	Denial-of-Service (DOS) attack prevention
ACLs	Support for up to 512 rules
	Drop or rate limit based on source and destination MAC, VLAN ID or IP address, protocol, port, differ

Quality of Service

Priority levels	4 hardware queues
Scheduling	Strict priority and weighted round-robin (WRR) Queue assignment based on DSCP and class of service
Class of service	Port based; 802.1p VLAN priority based; IPv4/v6 IP precedence/type of service (ToS)/DSCP based; Diff
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 minimize and prevent global TCP loss synchroniz

Standards

Standards	IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gig
-----------	---

IPv6

IPv6	IPv6 host mode
	IPv6 over Ethernet Dual IPv6/IPv4 stack
	IPv6 neighbor and router discovery (ND) IPv6 stateless address auto-configuration
	Path maximum transmission unit (MTU) discovery
	Duplicate address detection (DAD) ICMP version 6
	IPv6 over IPv4 network with Intra-Site 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
IPv6 First Hop Security	RA guard
	ND inspection
	DHCPv6 guard
	Neighbor binding table (Snooping and static entries)
	Neighbor binding integrity check
Multicast Listener Discovery (MLD v1/2) snooping	Deliver IPv6 multicast packets only to the required receivers

Specs



IPv6

IPv6 applications	Web/SSL, Telnet server/SSH, ping, traceroute, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP)
IPv6 RFCs supported	RFC 4443 (which obsoletes RFC2463) ICMP version 6
	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 auto-configuration
	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 MIB IPv6: Textual conventions and MIB

Management

Web user interface	Built-in switch configuration utility for easy browser-based device configuration (HTTP/HTTPS). Support for multiple languages.
SNMP	SNMP versions 1, 2c, and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Remote Monitoring (RMON)	Embedded RMON software agent supports 4 RMON groups (history, statistics, alarms, and events) for monitoring network traffic
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
	Upgrade can be initiated through console port as well
	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.
VLAN mirroring	Traffic from a VLAN can be mirrored to a port for analysis with a network analyzer or RMON probe.
DHCP (Options 12, 66, 67, 82, 129, and 150)	DHCP Options facilitate tighter control from a central point (DHCP server) to obtain IP address, auto-configuration, and other parameters
Secure Copy (SCP)	Securely transfer files to and from the switch
Autoconfiguration with Secure Copy (SCP) file download	Enables secure mass deployment with protection of sensitive data
Text-editable config files	Config files can be edited with a text editor and downloaded to another switch, facilitating easier mass configuration
Smartports	Simplified configuration of QoS and security capabilities
Auto Smartports	Applies the intelligence delivered through the Smartport roles and applies it automatically to the port based on the role
Textview CLI	Scriptable command-line interface. A full CLI as well as a menu-based CLI is supported. User privilege levels are supported.
Cloud services	Support for Cisco Small Business FindIT Network and Cisco OnPlus
Localization	Localization of GUI and documentation into multiple languages
Other management	Traceroute; single IP management; HTTP/HTTPS; SSH; RADIUS; port mirroring; TFTP upgrade; DHCP client
Time-based port operation	Link up or down based on user-defined schedule (when the port is administratively up)
Login banner	Configurable multiple banners for web as well as CLI

Power Efficiency

EEE Compliant (802.3az)	Supports 802.3az on all copper ports (SG300 models)
Energy Detect	Automatically turns off power off on Gigabit Ethernet and 10/100 RJ-45 port when detecting link down
	Active mode is resumed without loss of any packets when the switch detects the link up
Cable length detection	Adjusts the signal strength based on the cable length for Gigabit Ethernet models. Reduces the power consumption
Disable port LEDs	LEDs can be manually turned off to save on Energy

General

Specs



General

Jumbo frames	Frame sizes up to 9K (9216) bytes supported on 10/100 and Gigabit interfaces
MAC table	Up to 16K (16384) MAC addresses

Discovery

Bonjour	The switch advertises itself using the Bonjour protocol.
Link Layer Discovery Protocol (LLDP) (802.1ab)	with LLDP-MED, the switch can advertise its identification, configuration, and capabilities to neighboring devices
Cisco Discovery Protocol (CDP)	The switch advertises itself using the Cisco Discovery Protocol. It also learns the connected device and

Power consumption (worst case)

Power Savings Mode	Energy Detect
System Power Consumption	110V=10.33W 220V=10.27W
Power Consumption: Case (with PoE)	N/A
Heat Dissipation Worst Case (BTU/hr)	35.25

Ports

Total System Ports	10 Gigabit Ethernet
RJ-45 Ports	8 Gigabit Ethernet
Combo Ports (RJ-45 + SFP)	2 Gigabit Ethernet combo
Buttons	Reset button
Cabling type	Unshielded twisted pair (UTP) Category 5 or better for 10BASE-T/100BASE-TX; UTP Category 5 Ethernet

LEDs: System, Link/Act, PoE, Speed, LED power saving option

Flash	16 MB
CPU memory	128 MB
Packet buffer	All numbers are aggregate across all ports as the buffers are dynamically shared 8Mb

Environmental

Dimensions (W x H x D)	11 x 1.45 x 6.7 in. (279.4 x 44.45 x 170 mm)
Unit weight	2.56 lb (1.16 kg)
Power	100-240V 50-60 Hz, 0.5A, external
Certification	UL (UL 60950), CSA (CSA 22.2), CE mark, FCC Part 15 (CFR 47) Class A
Operating temperature	32°to 104°F (0°to 40°C)
Storage temperature	-4°to 158°F (-20°to 70°C)
Operating humidity	10% to 90%, relative, noncondensing
Storage humidity	10% to 90%, relative, noncondensing

Acoustic Noise and MTBF

FAN (Number)	Fanless
Acoustic Noise	N/A
MTBF @40°C (hr)	74,294

Ordering Info

Specs



Ordering Info

SG300-10

10-Port Gigabit + 2 Combo mini-GBIC
