





CloudEngine S5335-L Series Switches Brochure


Huawei CloudEngine S5335-L series are simplified gigabit Ethernet switches that provide all GE downlink ports and GE or 10GE uplink ports.

Product Overview

CloudEngine S5335-L series switches are ideal for scenarios such as enterprise campus network access and gigabit to the desktop. Built on next-generation, high-performance hardware and the Huawei Versatile Routing Platform (VRP), CloudEngine S5335-L switches stand out with compelling features such as flexible Ethernet networking, and diversified security control. They support multiple Layer 3 routing protocols and provide high performance and service processing capabilities.

Models and Appearances

Models and Appearances	Description
 CloudEngine S5335-L12T4S-A	<ul style="list-style-type: none"> • 12 x 10/100/1000Base-T ports, 4 x GE SFP ports • AC power supply • Forwarding performance: 24 Mpps • Switching capacity: 32 Gbps/336 Gbps
 CloudEngine S5335-L12P4S-A	<ul style="list-style-type: none"> • 12 x 10/100/1000Base-T ports, 4 x GE SFP ports • AC power supply • PoE+ • Forwarding performance: 24 Mpps • Switching capacity: 32 Gbps/336 Gbps
 CloudEngine S5335-L24T4X-A	<ul style="list-style-type: none"> • 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports • AC power supply • Forwarding performance: 96 Mpps • Switching capacity: 128 Gbps/336 Gbps
 CloudEngine S5335-L24P4X-A	<ul style="list-style-type: none"> • 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports • AC power supply • PoE+ • Forwarding performance: 96 Mpps • Switching capacity: 128 Gbps/336 Gbps

Models and Appearances	Description
 <p data-bbox="185 286 536 315">CloudEngine S5335-L32ST4X-A</p>	<ul data-bbox="624 181 1437 336" style="list-style-type: none"> • 24 x GE SFP ports, 8 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports • AC power supply • Forwarding performance: 108 Mpps • Switching capacity: 144 Gbps/432 Gbps

Features and Highlights

Flexible Ethernet Networking

- In addition to supporting traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), CloudEngine S5335-L is also designed with Huawei-developed Smart Ethernet Protection (SEP) technology and the industry's latest Ethernet Ring Protection Switching (ERPS) technology. SEP is a ring protection protocol specific to the Ethernet link layer, and applies to various ring network topologies, such as open ring topology, closed ring topology, and cascading ring topology. This protocol is reliable, easy to maintain, and implements fast protection switching within 50 ms. ERPS is defined in ITU-T G.8032, and it implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- CloudEngine S5335-L supports Smart Link, which implements backup of uplinks. One CloudEngine S5335-L switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.
- CloudEngine S5335-L supports Ethernet OAM (IEEE 802.3ah/802.1ag) to fast-detect link faults.

Diversified Security Control

- CloudEngine S5335-L supports 802.1X authentication, MAC address authentication, and hybrid authentication on a per port basis, as well as Portal authentication on a per VLANIF interface basis, and implements dynamic policy delivery (VLAN, QoS, and ACL) to users.
- CloudEngine S5335-L provides a series of mechanisms to defend against DoS attacks and user-targeted attacks. DoS attacks are targeted at switches and include SYN flood, Land, Smurf, and ICMP flood attacks. User-targeted attacks include bogus DHCP server attacks, IP/MAC address spoofing, DHCP request flood, and changing of the DHCP CHADDR value.
- CloudEngine S5335-L sets up and maintains a DHCP snooping binding table, and discards the packets that do not match the table entries. The DHCP snooping trusted port feature ensures that users connect only to the authorized DHCP server.
- CloudEngine S5335-L supports strict ARP learning. This feature prevents ARP spoofing attackers from exhausting ARP entries so that users can connect to the Internet normally.

Easy Operation and Maintenance

- CloudEngine S5335-L supports Huawei Easy Operation, a solution that provides zero-touch deployment, replacement of faulty devices without additional configuration, USB-based deployment, batch device configuration, and batch remote upgrade. The Easy Operation solution facilitates device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduces O&M costs. CloudEngine S5335-L can be managed and maintained using Simple Network Management Protocol (SNMP) V1, V2, and V3, Command Line Interface (CLI), web-based network management system, or Secure Shell (SSH) V2.0. Additionally, it supports remote network monitoring (RMON), multiple log hosts, port traffic statistics collection, and network quality analysis, paving the way for network optimization and reconstruction.
- CloudEngine S5335-L supports the EasyDeploy function. Specifically, the Commander collects the topology information of the downstream clients and saves client startup information based on the topology. Clients can be replaced without configuration. Configuration and scripts can be delivered to clients in batches. In addition, the configuration delivery result can be queried. The Commander can also collect and display power consumption information on the entire network.
- CloudEngine S5335-L can use the GARP VLAN Registration Protocol (GVRP) to implement VLAN dynamic distribution, registration, and attribute propagation. GVRP reduces manual configuration workload and ensures correct configuration.
- CloudEngine S5335-L supports MUX VLAN, which involves a principal VLAN and multiple subordinate VLANs. Subordinate VLANs are classified into group VLANs and separate VLANs. Ports in the principal VLAN can communicate with ports in subordinate VLANs. Ports in a subordinate group VLAN can communicate with each other, whereas ports in a subordinate separate VLAN cannot communicate with each other. CloudEngine S5335-L also supports VLAN Central Management Protocol (VCMP) and VLAN-Based Spanning Tree (VBST) protocol.

Excellent Network Traffic Analysis

- CloudEngine S5335-L supports the sFlow function. It uses a method defined in the sFlow standard to sample traffic passing through it and sends sampled traffic to the collector in real time. The collected traffic statistics are used to generate statistical reports, helping enterprises maintain their networks.

Intelligent O&M

- CloudEngine S5335-L provides telemetry technology to collect device data in real time and send the data to Huawei campus network analyzer CampusInsight. The CampusInsight analyzes network data based on the intelligent fault identification algorithm, accurately displays the real-time network status, effectively demarcates and locates faults in a timely manner, and identifies network problems that affect user experience, accurately guaranteeing user experience.
- CloudEngine S5335-L supports a variety of intelligent O&M features for audio and video services, including the enhanced Media Delivery Index (eMDI). With this eMDI function, the switch can function as a monitored node to periodically conduct statistics and report audio and video service indicators to the CampusInsight platform. In this way, the CampusInsight platform can quickly demarcate audio and video service quality faults based on the results of multiple monitored nodes.

PoE Function

- **Perpetual PoE:** When a PoE switch is abnormal Power-off or the software version is upgraded, the power supply to PDs is not interrupted. This capability ensures that PDs are not powered off during the switch reboot.
- **Fast PoE:** PoE switches can supply power to PDs within seconds after they are powered on. This is different from common switches that generally take 1 to 3 minutes to start to supply power to PDs. When a PoE switch reboots due to a power failure, the PoE switch continues to supply power to the PDs immediately after being powered on without waiting until it finishes reboot. This greatly shortens the power failure time of PDs.

OPS

- CloudEngine S5335-L supports Open Programmability System (OPS), an open programmable system based on the Python language. IT administrators can program the O&M functions of a CloudEngine S5335-L switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Intelligent Upgrade

- CloudEngine S5335-L supports the intelligent upgrade feature. Specifically, CloudEngine S5335-L obtains the version upgrade path and downloads the newest version for upgrade from the Huawei Online Upgrade Platform (HOUP). The entire upgrade process is highly automated and achieves one-click upgrade. In addition, preloading the version is supported, which greatly shortens the upgrade time and service interruption time.
- The intelligent upgrade feature greatly simplifies device upgrade operations and makes it possible for the customer to upgrade the version independently. This greatly reduces the customer's maintenance costs. In addition, the upgrade policies on the HOUP platform standardize the upgrade operations, which greatly reduces the risk of upgrade failures.

Product Specifications

Item	CloudEngine S5335-L12T4S-A	CloudEngine S5335-L12P4S-A	CloudEngine S5335-L24T4X-A	CloudEngine S5335-L24P4X-A	CloudEngine S5335-L32ST4X-A
Fixed port	12 x 10/100/1000Base-T ports, 4 x GE SFP ports	12 x 10/100/1000Base-T ports(PoE+), 4 x GE SFP ports	24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports	24 x 10/100/1000Base-T ports(PoE+), 4 x 10 GE SFP+ ports	24 x GE SFP ports, 8 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports
Dimensions (H x W x D)	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm	43.6 mm x 442 mm x 220 mm
Chassis height	1 U	1 U	1 U	1 U	1 U
Chassis weight (including	3.83 kg	4.24 kg	4 kg	4.31 kg	4.31 kg

Item	CloudEngine S5335-L12T4S-A	CloudEngine S5335-L12P4S-A	CloudEngine S5335-L24T4X-A	CloudEngine S5335-L24P4X-A	CloudEngine S5335-L32ST4X-A
packaging)					
Power supply type	Built-in AC power	Built-in AC power	Built-in AC power	Built-in AC power	Built-in AC power
Rated voltage range	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz	100 V AC to 240 V AC, 50/60 Hz
Maximum voltage range	<ul style="list-style-type: none"> AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification) 	<ul style="list-style-type: none"> AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification) 	<ul style="list-style-type: none"> AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification) 	<ul style="list-style-type: none"> AC input: 90 V AC to 290 V AC, 45 Hz to 60 Hz High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification) 	<ul style="list-style-type: none"> AC input: 90 V AC to 264 V AC, 47 Hz to 63 Hz High-voltage DC input: 190 V DC to 290 V DC (meeting 240 V high-voltage DC certification)
Maximum power consumption	29 W	<ul style="list-style-type: none"> 49 W (without PD) 441 W (with PD, PD power consumption of 360 W) 	43 W	<ul style="list-style-type: none"> 56 W (without PD) 458 W (with PD, PD power consumption of 380 W) 	65 W
Noise	Noise-free (no fans)	<ul style="list-style-type: none"> Under normal temperature (sound power): 57.7dB (A) Under high temperature (sound power): 74.2dB (A) Under normal temperature (sound pressure): 43dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): 50.8dB (A) Under high temperature (sound power): 71dB (A) Under normal temperature (sound pressure): 36dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): 57.7dB (A) Under high temperature (sound power): 74.2dB (A) Under normal temperature (sound pressure): 43dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): 53.3dB (A) Under high temperature (sound power): 74.5dB (A) Under normal temperature (sound pressure): 38.5dB (A)
Long-term operating temperature	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +45°C 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m. 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +50°C 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m. 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +50°C 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m. 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +50°C 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m. 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +50°C 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.
Short-term operating temperature	NA	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +55°C 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +55°C 1800-5000 m 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +55°C 	<ul style="list-style-type: none"> 0-1800 m altitude: -5°C to +55°C 1800-5000 m

Item	CloudEngine S5335-L12T4S-A	CloudEngine S5335-L12P4S-A	CloudEngine S5335-L24T4X-A	CloudEngine S5335-L24P4X-A	CloudEngine S5335-L32ST4X-A
		<ul style="list-style-type: none"> 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m. 	altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.	<ul style="list-style-type: none"> 1800-5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m. 	altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.
Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Relative humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Surge protection specification (service port)	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode	±7 kV in common mode
Surge protection specification (power port)	<ul style="list-style-type: none"> Differential mode: ± 6 kV Common mode: ±6 kV 	<ul style="list-style-type: none"> Differential mode: ± 6 kV Common mode: ±6 kV 	<ul style="list-style-type: none"> Differential mode: ± 6 kV Common mode: ±6 kV 	<ul style="list-style-type: none"> Differential mode: ± 6 kV Common mode: ±6 kV 	<ul style="list-style-type: none"> Differential mode: ± 6 kV Common mode: ±6 kV
Heat dissipation	Natural heat dissipation	Air-cooled heat dissipation and intelligent speed adjustment	Air-cooled heat dissipation and intelligent speed adjustment	Air-cooled heat dissipation and intelligent speed adjustment	Air-cooled heat dissipation and intelligent speed adjustment

Service Features

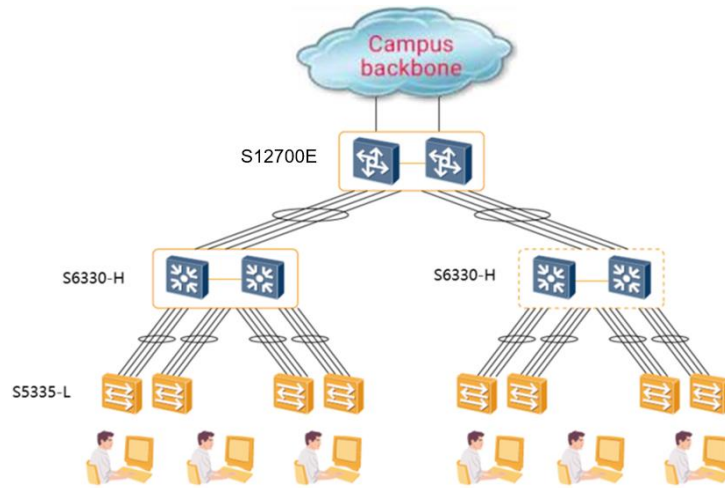
Item	Description
MAC address table	MAC address learning and aging
	Static, dynamic, and blackhole MAC address entries
	Packet filtering based on source MAC addresses
	Interface-based MAC learning limiting
VLAN features	Guest VLAN and voice VLAN
	GVRP
	MUX VLAN
	VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and interfaces
	1: 1 and N: 1 VLAN mapping
Ethernet loop protection	RRPP ring topology and RRPP multi-instance
	Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switchover

Item	Description
	SEP
	ERPS (G.8032)
	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s)
	BPDU protection, root protection, and loop protection
	BPDU tunnel
Multicast	PIM DM, PIM SM, PIM SSM
	IGMPv1/v2/v3 and IGMPv1/v2/v3 snooping
	MLD v1/v2 and MLDv1/v2 snooping
	Multicast forwarding in a VLAN and multicast replication between VLANs
	Multicast load balancing among member ports of a trunk
	Controllable multicast
	Interface-based multicast traffic statistics
IP routing	Static route, RIP, RIPng, OSPF, OSPFv3
IPv6 features	Neighbor Discovery (ND)
	Path MTU (PMTU)
	IPv6 ping, IPv6 tracert, and IPv6 Telnet
Reliability	EFM OAM (802.3ah)
	CFM OAM (802.1ag)
	ITU-Y.1731
	DLDP
	LACP
QoS/ACL	Rate limiting on packets sent and received by an interface
	Packet redirection
	Interface-based traffic policing and two-rate and three-color CAR
	Eight queues on each interface
	WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms
	Re-marking of the 802.1p priority and DSCP priority
	Packet filtering at Layer 2 to Layer 4, filtering out invalid frames based on the source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, and VLAN ID
	Rate limiting in each queue and traffic shaping on interfaces
Security	Hierarchical user management and password protection
	DoS attack defense, ARP attack defense, and ICMP attack defense
	Binding of the IP address, MAC address, interface number, and VLAN ID
	Port isolation, port security, and sticky MAC

Item	Description
	MFF
	Blackhole MAC address entries
	Limit on the number of learned MAC addresses
	IEEE 802.1x authentication and limit on the number of users on an interface
	AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC
	SSH V2.0
	Hypertext Transfer Protocol Secure (HTTPS)
	CPU defense
	Blacklist and whitelist
	DHCP relay, DHCP server, DHCP snooping
	DHCPv6 relay, DHCPv6 server, DHCPv6 snooping
	Supports separation between user authentication and policy enforcement points
Super Virtual Fabric (SVF)	Working as an SVF client that is plug-and-play with zero configuration
	Automatically loading the system software packages and patches of SVF clients
	Automatically delivering service configurations in a one-click manner
	Independent running of SVF clients
Management and maintenance	Virtual Cable Test (VCT)
	Remote configuration and maintenance using Telnet
	SNMPv1/v2c/v3
	RMON
	eSight and web-based NMS
	HTTPS
	LLDP/LLDP-MED
	System logs and multi-level alarms
	802.3az EEE
Interoperability	Supports VBST (Compatible with PVST/PVST+/RPVST)
	Supports LNP (Similar to DTP)
	Supports VCMP (Similar to VTP)

Networking and Applications

CloudEngine S5335-L provides PoE, voice VLAN, NAC, and other functions, achieving gigabit-to-the-desktop access.



Ordering Information

Model	Product Description
CloudEngine S5335-L12T4S-A	CloudEngine S5335-L12T4S-A (12 x 10/100/1000BASE-T ports, 4 x GE SFP ports, AC power supply)
CloudEngine S5335-L12P4S-A	CloudEngine S5335-L12P4S-A (12 x 10/100/1000BASE-T ports, 4 x GE SFP ports, PoE+, AC power supply)
CloudEngine S5335-L24T4X-A	CloudEngine S5335-L24T4X-A (24 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, AC power supply)
CloudEngine S5335-L24P4X-A	CloudEngine S5335-L24P4X-A (24 x 10/100/1000BASE-T ports, 4 x 10 GE SFP+ ports, PoE+, AC power supply)
CloudEngine S5335-L32ST4X-A	CloudEngine S5335-L32ST4X-A (24 x GE SFP ports, 8 of which are dual-purpose 10/100/1000Base-T or SFP ports, 4 x 10 GE SFP+ ports, AC power supply)


More Information

For more information, visit <http://www.huawei.com/> or contact your local Huawei sales office.

Copyright © Huawei Technologies Co., Ltd. 2019. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions

 HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base Bantian,
Longgang Shenzhen 518129 People's
Republic of China

Website: e.huawei.com