

CloudEngine S5735-L-Q Series Quiet Switches Brochure





Huawei CloudEngine S5735-L-Q series are fanless design simplified gigabit Ethernet quiet switches that provide all GE downlink ports and GE or 10GE uplink ports.

Product Overview

CloudEngine S5735-L-Q series switches are compact all-gigabit switches ideal for noise-sensitive service scenarios in OA, education, healthcare, and other scenarios. Built on next-generation, high-performance hardware and powered by Huawei's Versatile Routing Platform (VRP), CloudEngine S5735-L-Q stands out with flexible Ethernet networking, diversified security control, and support for multiple Layer 3 routing protocols — providing higher performance and more powerful service processing capabilities for networks. All switches in the series are fanless, quiet, and energy-efficient.

Models and Appearances

The following models are available in the CloudEngine S5735-L-Q series.

Models and Appearances	Description
 <p>CloudEngine S5735-L8T4S-QA1</p>	<ul style="list-style-type: none"> • 8 x 10/100/1000Base-T ports, 4 x GE SFP ports • AC power supply • Forwarding performance: 18 Mpps • Switching capacity: 24 Gbps/336 Gbps
 <p>CloudEngine S5735-L8P4S-QA1</p>	<ul style="list-style-type: none"> • 8 x 10/100/1000Base-T ports, 4 x GE SFP ports • AC power supply • PoE+ • Forwarding performance: 18 Mpps • Switching capacity: 24 Gbps/336 Gbps
 <p>CloudEngine S5735-L24T4S-QA1</p>	<ul style="list-style-type: none"> • 24 x 10/100/1000Base-T ports, 4 x GE SFP ports • AC power supply • Forwarding performance: 42 Mpps • Switching capacity: 56 Gbps/336 Gbps
 <p>CloudEngine S5735-L24T4X-QA1</p>	<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

Note: The value before the slash (/) refers to the device's switching capability, while the value after the slash (/) means the system's switching capability.

Features and Highlights

Energy-Saving and Quietness

- Adopts fanless design for noise-free operation and supports energy-saving technologies such as port sleep and automatic port power adjustment.

Flexible Ethernet Networking

- In addition to supporting traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), CloudEngine S5735-L-Q 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 S5735-L-Q supports Smart Link, which implements backup of uplinks. One CloudEngine S5735-L-Q switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.
- CloudEngine S5735-L-Q supports Ethernet OAM (IEEE 802.3ah/802.1ag) to fast-detect link faults.

Diversified Security Control

- CloudEngine S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q 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 S5735-L-Q also supports VLAN Central Management Protocol (VCMP) and VLAN-Based Spanning Tree (VBST) protocol.

Note: Only those switches with USB ports can USB-based deployment.

iStack

- CloudEngine S5735-L-Q supports intelligent stack (iStack). This technology combines multiple switches into a logical switch. Member switches in a stack implement redundancy backup to improve device reliability and use inter-device link aggregation to improve link reliability.
- iStack provides high network scalability. You can increase ports, bandwidth, and processing capacity of a stack by simply adding member switches to the stack.
- iStack also simplifies device configuration and management. After a stack is set up, multiple physical switches are virtualized into one logical device. You can log in to any member switch in the stack to manage all the member switches in the stack. CloudEngine S5735-L-Q support stacking through electrical ports.

Note: Mixed stacking between CloudEngine S5735-L-A/D and CloudEngine S5735-L-A1/D1 is not supported.

Excellent Network Traffic Analysis

- CloudEngine S5735-L-Q 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.

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.

Intelligent O&M

- CloudEngine S5735-L-Q 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 S5735-L-Q 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.

Intelligent Upgrade

- CloudEngine S5735-L-Q supports the intelligent upgrade feature. Specifically, CloudEngine S5735-L-Q 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.

Cloud Management

- The Huawei cloud management platform allows users to configure, monitor, and inspect switches on the cloud, reducing on-site deployment and O&M manpower costs and decreasing network OPEX. Huawei switches support both cloud management and on-premise management modes. These two management modes can be flexibly switched as required to achieve smooth evolution while maximizing return on investment (ROI).

OPS

- CloudEngine S5735-L-Q 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 S5735-L-Q switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Licensing

CloudEngine S5735-L-Q supports both the traditional feature-based licensing mode and the latest Huawei IDN One Software (N1 mode for short) licensing mode. The N1 mode is ideal for deploying Huawei CloudCampus Solution in the on-premises scenario, as it greatly enhances the customer experiences in purchasing and upgrading software services with simplicity.

Software Package Features in N1 Mode

Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package
Basic network functions: Layer 2 functions, IPv4, IPv6, SVF, and others Note: For details, see the Service Features	√	√	√
Basic network automation based on the iMaster NCE-Campus: <ul style="list-style-type: none"> Basic automation: Plug-and-play Basic monitoring: Application visualization NE management: Image and topology management and discovery 	x	√	√
Advanced network automation and intelligent O&M: User access authentication and CampusInsight basic functions	x	x	√

Product Specifications

Item	CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4X-QA1
Fixed port	8 x 10/100/1000Base-T ports, 4 x GE SFP ports	8 x 10/100/1000Base-T ports, 4 x GE SFP ports	24 x 10/100/1000Base-T ports, 4 x GE SFP ports	24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 1x USB
Dimensions (H x W x D)	43.6 mm x 320 mm x 210 mm	43.6 mm x 320 mm x 210 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
Chassis weight (including packaging)	3.10 kg	4.06 kg	4.45 kg	4.45 kg
Power supply type	Built-in AC power	AC adapter	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
Maximum voltage range	<ul style="list-style-type: none"> AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz 	<ul style="list-style-type: none"> AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz 	<ul style="list-style-type: none"> AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz 	<ul style="list-style-type: none"> AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz
Maximum power consumption	22 W	<ul style="list-style-type: none"> 28 W (without PD) 159 W (with PD, PD power consumption of 114 W) 	33 W	34 W

Item	CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4X-QA1
Noise	<ul style="list-style-type: none"> Under normal temperature (sound power): fanless, noise-free, <30dB (A) Under high temperature (sound power): fanless, noise-free, <30dB (A) Under normal temperature (sound pressure): fanless, noise-free, <20dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): fanless, noise-free, <30dB (A) Under high temperature (sound power): fanless, noise-free, <30dB (A) Under normal temperature (sound pressure): fanless, noise-free, <20dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): fanless, noise-free, <30dB (A) Under high temperature (sound power): fanless, noise-free, <30dB (A) Under normal temperature (sound pressure): fanless, noise-free, <20dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): fanless, noise-free, <30dB (A) Under high temperature (sound power): fanless, noise-free, <30dB (A) Under normal temperature (sound pressure): fanless, noise-free, <20dB (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 +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 +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 +45°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	NA	NA	NA
Storage temperature	-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)
Surge protection specification (service port)	±10 kV in common mode	±10 kV in common mode	±10 kV in common mode	±10 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
Heat dissipation	Natural heat dissipation	Natural heat dissipation	Natural heat dissipation	Natural heat dissipation

Service Features

Item	Description
MAC address table	MAC address learning and aging 32896 MAC entries(MAX)

Item	Description
	Static, dynamic, and blackhole MAC address entries
	Packet filtering based on source MAC addresses
	Interface-based MAC learning limiting
VLAN features	4K VLANs
	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
	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
	Up to 4096 FIBv4 entries(MAX)
	Up to 1024 FIBv6 entries(MAX)
IPv6 features	Up to 1024 ND entries(MAX)
	Path MTU (PMTU)
	IPv6 ping, IPv6 tracert, and IPv6 Telnet
Reliability	EFM OAM (802.3ah)
	CFM OAM (802.1ag)
	ITU-Y.1731
	DLDP
	LACP

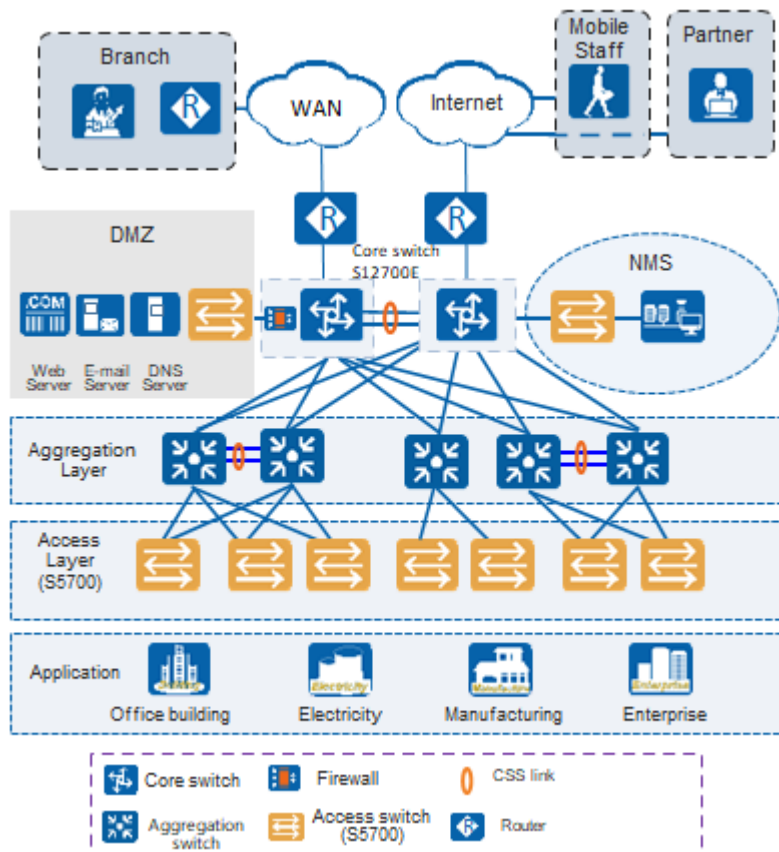
Item	Description
QoS/ACL	Rate limiting on packets sent and received by an interface
	Packet redirection
	Interface-based traffic policing and two-rate and three-color CAR
	Eight queues on each interface
	WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms
	Re-marking of the 802.1p priority and 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
	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	iStack
	Cloud management based on Netconf/Yang
	Virtual Cable Test (VCT)
	Remote configuration and maintenance using Telnet
	SNMPv1/v2c/v3

Item	Description
	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

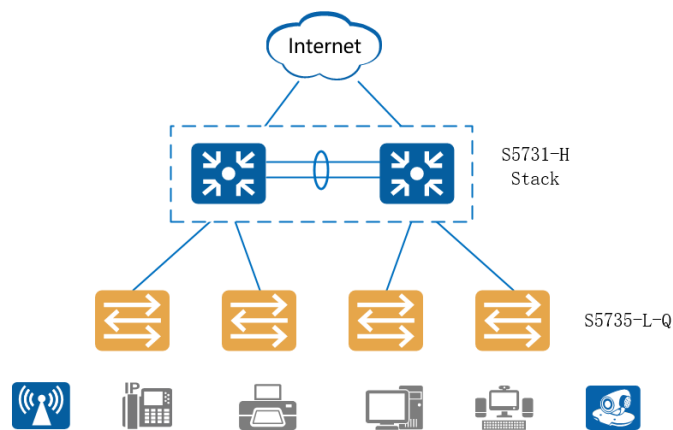
Large-Scale Enterprise Campus Network

CloudEngine S5735-L-Q series switches can be deployed at the access layer of a campus network to build a high-performance and highly reliable enterprise network.



Small- or Medium-scale Enterprise Campus Network

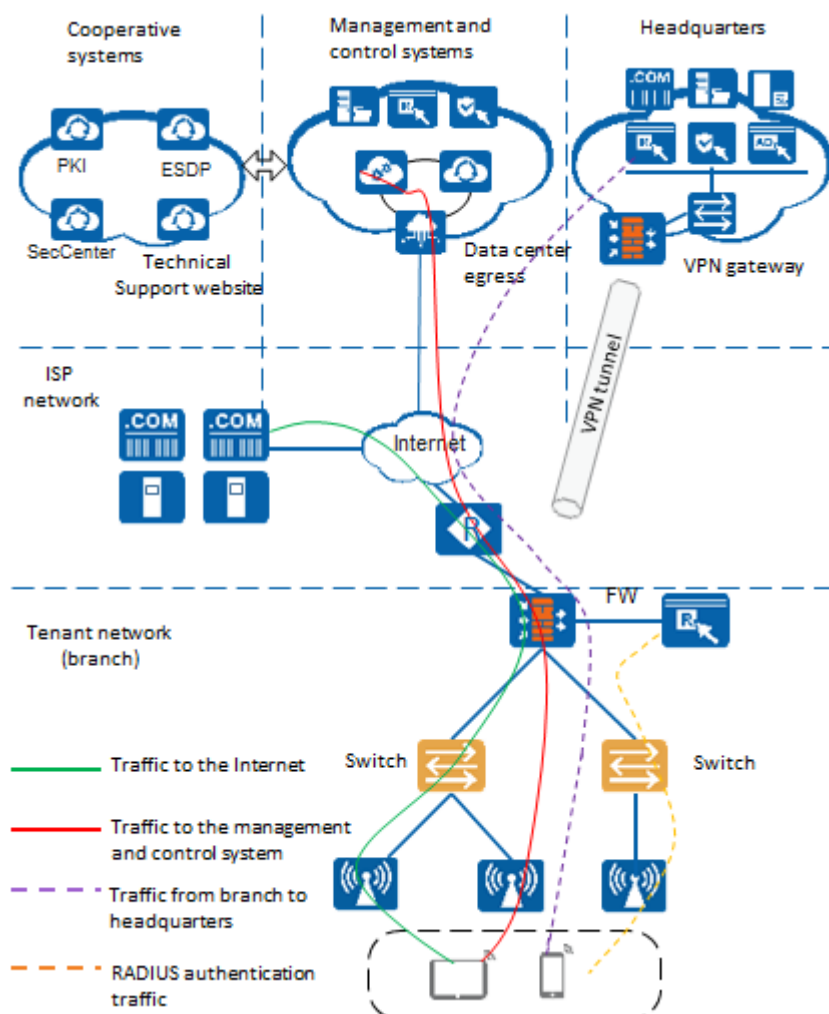
CloudEngine S5735-L-Q series switches are fanless design and can be deployed directly in the office/classroom/ward as the access layer of a campus network to build a high-performance, multi-service, and highly reliable enterprise network.



Application in Public Cloud

CloudCampus Solution is a network solution suite based on Huawei public cloud. CloudEngine S5735-L-Q series switches can be located at the access layer.

The switches are plug-and-play. They go online automatically after being powered on and connected with network cables, without the need for complex configurations. The switches can connect to the management and control system (iMaster NCE-Campus for switches running V200R021C10 and later versions), and use bidirectional certificate authentication to ensure management channel security. The switches provide the NETCONF and YANG interfaces, through which the management and control system delivers configurations to them. In addition, remote maintenance and fault diagnosis can be performed on the management and control system.



Ordering Information

Model	Product Description
CloudEngine S5735-L8T4S-QA1	CloudEngine S5735-L8T4S-QA1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, AC power, Fanless)
CloudEngine S5735-L8P4S-QA1	CloudEngine S5735-L8P4S-QA1 (8*10/100/1000BASE-T ports, 4*GE SFP ports, PoE+, AC power, Fanless)
CloudEngine S5735-L24T4S-QA1	CloudEngine S5735-L24T4S-QA1 (24*10/100/1000BASE-T ports, 4*GE SFP ports, AC power, Fanless)
CloudEngine S5735-L24T4X-QA1	CloudEngine S5735-L24T4X-QA1 (24*10/100/1000BASE-T ports, 4*10GE SFP+ ports, AC power, Fanless)
N1-S57L-M-Lic	S57XX-L Series Basic SW,Per Device
N1-S57L-M-SnS1Y	S57XX-L Series Basic SW,SnS,Per Device,1Year
N1-S57L-F-Lic	N1-CloudCampus,Foundation,S57XX-L Series,Per Device
N1-S57L-F-SnS	N1-CloudCampus,Foundation,S57XX-L Series,SnS,Per Device
N1-S57L-A-Lic	N1-CloudCampus,Advanced,S57XX-L Series,Per Device
N1-S57L-A-SnS	N1-CloudCampus,Advanced,S57XX-L Series,SnS,Per Device
N1-S57L-FToA-Lic	N1-Upgrade-Foundation to Advanced,S57XX-L,Per Device
N1-S57L-FToA-SnS	N1-Upgrade-Foundation to Advanced,S57XX-L,SnS,Per Device

More Information


For more information about Huawei Campus Switches, visit <http://e.huawei.com> or contact us in the following ways:

- Global service hotline: <http://e.huawei.com/en/service-hotline>
- Logging in to the Huawei Enterprise technical support website: <http://support.huawei.com/enterprise/>
- Sending an email to the customer service mailbox: support_e@huawei.com

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