Huawei CloudEngine S5755-H Series High-Quality Multi-GE Switches Datasheet

CloudEngine S5755-H series High-Quality Multi-GE switches are brand-new access switches that provide 12/36-port gigabit,12-port Multi-GE, and provide four 1/10/25GE and two 40/100GE uplink ports.

Introduction

CloudEngine S5755-H series High-Quality Multi-GE Switches are brand-new full-1/2.5/5/10GE switches developed by Huawei for the Wi-Fi 6/Wi-Fi 7. The CloudEngine S5755-H builds on Huawei's unified Platform and boasts various IDN features. For example, the VXLAN functionality implements network virtualization. With these merits, the CloudEngine S5755-H can function as core switches for small-sized campus networks and branches of medium- and large-sized campus networks, and also work as access switches for Metropolitan Area Network. CloudEngine S5755-H can provide a maximum of 48 10GE Multi-GE ports, which is a good choice for WLAN APs to connect to a switch in the high-quality campus networks.

Product Overview

Models and Appearances

The following models are available in the CloudEngine S5755-H series.

Models and Appearances	Description
 CloudEngine S5755-H24UTM4X4Y2C	• 12 × 10/100/1000M Base-T Ethernet ports, 12 × 100M/1/2.5/5/10G Base-T Ethernet ports, 4 x 1/10GE SFP+, 4 x 1/10/25GE SFP28, 2 x 40/100GE QSFP28 ports** • 90W PoE++ • 1+1 power backup • Forwarding performance: 450 Mpps • Switching capacity*: 944 Gbps/2.32 Tbps
 CloudEngine S5755-H24UTM4X4Y2C-T***	• 12 × 10/100/1000M Base-T Ethernet ports, 12 × 100M/1/2.5/5/10G Base-T Ethernet ports, 4 x 1/10GE SFP+, 4 x 1/10/25GE SFP28, 2 x 40/100GE QSFP28 ports** • 90W PoE++ • 1+1 power backup • Forwarding performance: 450 Mpps • Switching capacity*: 944 Gbps/2.32 Tbps
 CloudEngine S5755-H48UTM4X4Y2C	• 36 × 10/100/1000M Base-T Ethernet ports, 12 × 100M/1/2.5/5/10G Base-T Ethernet ports, 4 x 1/10GE SFP+, 4 x 1/10/25GE SFP28, 2 x 40/100GE QSFP28 ports** • 90W PoE++

Models and Appearances	Description
	• 1+1 power backup • Forwarding performance: 450 Mpps • Switching capacity*: 992 Gbps/2.32 Tbps
 CloudEngine S5755-H48UTM4X4Y2C-T***	• 36 × 10/100/1000M Base-T Ethernet ports, 12 × 100M/1/2.5/5/10G Base-T Ethernet ports, 4 x 1/10GE SFP+, 4 x 1/10/25GE SFP28, 2 x 40/100GE QSFP28 ports** • 90W PoE++ • 1+1 power backup • Forwarding performance: 450 Mpps • Switching capacity*: 992 Gbps/2.32 Tbps

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.

**Uplink 40GE ports can be split into 4 x 10GE ports, and uplink 100GE ports can be split into 4 x 25GE ports.

***Note：‘-T ’means Hardware Trust Module(HTM), support hardware root of trust and measurement startup.

Fan Models

The following table lists the fan module applicable to the CloudEngine S5755-H.

Technical specifications of the fan module applicable to the CloudEngine S5755-H series

Fan Module	Technical Specifications	Applied Switch Model
 FAN-031A-B	• Dimensions (W x D x H): 40 mm x 100.3 mm x 40 mm • Number of fans: 1 • Weight: 0.1 kg • Maximum power consumption: 21.6 W • Maximum fan speed: 24500±10% revolutions per minute (RPM) • Maximum wind rate: 31 cubic feet per minute (CFM) • Hot swap: Supported	• CloudEngine S5755-H24UTM4X4Y2C • CloudEngine S5755-H24UTM4X4Y2C-T • CloudEngine S5755-H48UTM4X4Y2C • CloudEngine S5755-H48UTM4X4Y2C-T

Power Supply

The following table lists the power supplies applicable to the CloudEngine S5755-H.

Technical specifications of the power supplies applicable to the CloudEngine S5755-H series

Power Module	Technical Specifications	Applied Switch Model


PAC600S56-EB
	• Dimensions (H x W x D): 40 mm x 66 mm x 215 mm(1.57 in. x 2.6 in. x 8.46 in.)
	• Weight: 0.9 kg(1.98 lb)
	• Rated input voltage range:
	  − 100 V AC to 130 V AC; 50/60 Hz
	  − 100 V AC to 240 V AC, 50/60 Hz
	  − 240 V DC
	• Maximum input voltage range:
	  − 90 V AC to 290 V AC, 45 Hz to 66 Hz
		• CloudEngine S5755-H24UTM4X4Y2C
		• CloudEngine S5755-H24UTM4X4Y2C-T
		• CloudEngine S5755-H48UTM4X4Y2C
		• CloudEngine S5755-H48UTM4X4Y2C-T

Power Module	Technical Specifications	Applied Switch Model
	– 190 V DC to 290 V DC • Maximum input current: – 100 V AC to 130 V AC: 8 A – 100 V AC to 240 V AC: 8 A – 240 V DC: 4 A • Rated output current: – 53.5 V: 11.21 A – 55.5 V: 10.81 A • Rated output voltage: 53.5 V or 55.5 V • Rated output power: – 100 V AC to 130 V AC input: 300W – 100 V AC to 240 V AC & 240 V DC input: 600W • Hot swap: Supported	
 PAC1000S56-EB	• Dimensions (H x W x D): 40 mm x 66 mm x 215 mm(1.57 in. x 2.6 in. x 8.46 in.) • Weight: 1.1 kg (2.43 lb) • Rated input voltage range: – 100 V AC to 130 V AC, 50/60 Hz – 200 V AC to 240 V AC, 50/60 Hz – 240 V DC • Maximum input voltage range: – 90 V AC to 290 V AC, 45 Hz to 66 Hz – 190 V DC to 290 V DC • Input current: – 100 V AC to 130 V AC: 12 A – 200 V AC to 240 V AC: 8 A – 240 V DC: 8 A • Maximum output current: – 100 V AC to 130 V AC input: 12 A – 200 V AC to 240 V AC input and 240 V DC input: 8 A – 240V DC: 8 A • Maximum output power: – Total power: 900 W (100 V AC to 130 V AC input)/1000 W (200 V AC to 240 V AC input and 240 V DC input) • Hot swap: Supported	• CloudEngine S5755-H24UTM4X4Y2C • CloudEngine S5755-H24UTM4X4Y2C-T • CloudEngine S5755-H48UTM4X4Y2C • CloudEngine S5755-H48UTM4X4Y2C-T
 PDC1000S56-EB	• Dimensions (H x W x D): 40 mm x 66 mm x 215 mm(1.57 in. x 2.6 in. x 8.46 in.) • Weight: 1 kg(2.20 lb) • Rated input voltage range: -48 V DC to -60 V DC • Maximum input voltage range: -38.4 V DC to -72 V DC • Maximum input current: 30 A • Rated output voltage: 53.5 V or 55.5 V	• CloudEngine S5755-H24UTM4X4Y2C • CloudEngine S5755-H24UTM4X4Y2C-T • CloudEngine S5755-H48UTM4X4Y2C • CloudEngine S5755-H48UTM4X4Y2C-T

Power Module	Technical Specifications	Applied Switch Model

	• Rated output current:
	  – 53.5 V: 18.69 A
	  – 55.5 V: 18.02 A
	• Rated output power: 1000 W
	• Hot swap: Supported	

The switch is a PoE switch and supports two power module slots, each of which can have a 1000 W PoE or 600 W PoE power module installed. Pluggable AC and DC PoE power modules can be used together in the same switch.

The following table lists its power supply configurations.

Power supply configurations of CloudEngine S5755-H

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
CloudEngine S5755-H24UTM4X4Y2C/S5755-H24UTM4X4Y2C-T	1000 W AC (220 V) 1000 W DC	–	745 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 12 • 802.3bt (90 W per port): 8
	1000 W AC (110 V)	–	655 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 21 • 802.3bt (60 W per port): 10 • 802.3bt (90 W per port): 7
	1000 W AC (220 V) 1000 W DC	1000 W AC (220 V) 1000 W DC	1645 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 24 • 802.3bt (90 W per port): 18
	1000 W AC (110 V) 1000 W DC	1000 W AC (110 V)	1465 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 24 • 802.3bt (90 W per port): 16
	600 W AC (220 V)	–	407 W	• 802.3af (15.4 W per port): 26 • 802.3at (30 W per port): 13 • 802.3bt (60 W per port): 6 • 802.3bt (90 W per port): 4
	600 W AC (110 V)	–	122 W	• 802.3af (15.4 W per port): 7 • 802.3at (30 W per port): 4 • 802.3bt (60 W per port): 2 • 802.3bt (90 W per port): 1
	600 W AC (220 V)	600 W AC (220 V)	977 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 16 • 802.3bt (90 W per port): 10
	600 W AC (110 V)	600 W AC (110 V)	407 W	• 802.3af (15.4 W per port): 26 • 802.3at (30 W per port): 13

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
				• 802.3bt (60 W per port): 6 • 802.3bt (90 W per port): 4
	1000 W AC (220 V) 1000 W DC	600 W AC (220 V)	1285 W	• 802.3af (15.4 W per port): 24 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 21 • 802.3bt (90 W per port): 14
CloudEngine S5755-H48UTM4X4Y2C/S5755-H48UTM4X4Y2C-T	1000 W AC (220 V) 1000 W DC	–	734 W	• 802.3af (15.4 W per port): 47 • 802.3at (30 W per port): 24 • 802.3bt (60 W per port): 12 • 802.3bt (90 W per port): 8
	1000 W AC (110 V)	–	644 W	• 802.3af (15.4 W per port): 41 • 802.3at (30 W per port): 21 • 802.3bt (60 W per port): 10 • 802.3bt (90 W per port): 7
	1000 W AC (220 V) 1000 W DC	1000 W AC (220 V) 1000 W DC	1634 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 48 • 802.3bt (60 W per port): 27 • 802.3bt (90 W per port): 18
	1000 W AC (110 V) 1000 W DC	1000 W AC (110 V)	1454 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 48 • 802.3bt (60 W per port): 24 • 802.3bt (90 W per port): 16
	600 W AC (220 V)	–	394 W	• 802.3af (15.4 W per port): 25 • 802.3at (30 W per port): 13 • 802.3bt (60 W per port): 6 • 802.3bt (90 W per port): 4
	600 W AC (110 V)	-	109 W	• 802.3af (15.4 W per port): 7 • 802.3at (30 W per port): 3 • 802.3bt (60 W per port): 1 • 802.3bt (90 W per port): 1
	600 W AC (220 V)	600 W AC (220 V)	964 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 32 • 802.3bt (60 W per port): 16 • 802.3bt (90 W per port): 10
	600 W AC (110 V)	600 W AC (110 V)	394 W	• 802.3af (15.4 W per port): 25 • 802.3at (30 W per port): 13 • 802.3bt (60 W per port): 6 • 802.3bt (90 W per port): 4
	1000 W AC (220 V) 1000 W DC	600 W AC (220 V)	1274 W	• 802.3af (15.4 W per port): 48 • 802.3at (30 W per port): 42 • 802.3bt (60 W per port): 21

Model	Power Module 1	Power Module 2	Available PoE Power	Maximum Number of Ports (Fully Loaded)
				• 802.3bt (90 W per port): 14

Product Features and Highlights

High-density Multi-GE Access Interface

- The uplink bandwidth of WLAN APs has been increased from 2.5 Gbit/s in 802.11ac to 5 Gbit/s or 10 Gbit/s. Traditional gigabit access or Multi-gigabit bundled access cannot meet the uplink bandwidth requirements of APs. With the launch of the CloudEngine S5755-H series switches, the ports support 100M/1/2.5/5/10G auto-sensing, meeting the bandwidth requirements of high-speed wireless APs in the Wi-Fi 6 era. In addition, Multi-GE ports support 90 W PoE++, which provides high-power power for powered devices (PDs) such as APs and IP cameras.
- The S5755-H series switches provide industry-leading Multi-GE port density, switching capacity, and packet forwarding rate. A single switch supports a maximum of 48 100M/1G/2.5G/5G/10G Base-T auto-sensing ports and 1G/10G/25G/40G/100G optical uplink ports, meets various device interconnection requirements and can be seamlessly integrated into the existing network.

Enabling Networks to Be More Agile for Services

- CloudEngine S5755-H has a built-in high-speed and flexible processor chip. The chip's flexible packet processing and traffic control capabilities can meet current and future service requirements, helping build a highly scalable network.
- In addition to capabilities of traditional switches, the CloudEngine S5755-H provides open interfaces and supports user-defined forwarding behavior. Enterprises can use the open interfaces to develop new protocols and functions independently or jointly with equipment vendors to build campus networks meeting their own needs.
- CloudEngine S5755-H series switches, on which enterprises can define their own forwarding models, forwarding behavior, and lookup algorithms. Microcode programmability makes it possible to provide new services within six months, without the need of replacing the hardware. In contrast, traditional ASIC chips use a fixed forwarding architecture and follow a fixed forwarding process. For this reason, new services cannot be provisioned until new hardware is developed to support the services one to three years later.

Delivering Abundant Services More Agilely

- With the unified user management function, the CloudEngine S5755-H authenticates both wired and wireless users, ensuring a consistent user experience no matter whether they are connected to the network through wired or wireless access devices. The unified user management function supports various authentication methods, including 802.1x, MAC address, and is capable of managing users based on user groups, domains, and time ranges. These functions visualize user and service management and boost the transformation from device-centric management to user experience-centric management.
- The CloudEngine S5755-H provides excellent quality of service(QoS) capabilities and supports queue scheduling and congestion control algorithms. Additionally, it adopts innovative priority queuing and multi-level scheduling mechanisms to implement fine-grained scheduling of data flows, meeting service quality requirements of different user terminals and services.

Providing Fine Granular Network Management More Agilely

- The CloudEngine S5755-H uses the Packet Conservation Algorithm for Internet(iPCA) technology that changes the traditional method of using simulated traffic for fault location. iPCA technology can monitor network quality for any service flow anywhere and anytime, without extra costs. It can detect temporary service interruptions in a very short time and can identify faulty ports accurately. This cutting-edge fault detection technology turns "extensive management" to "fine granular management."

Flexible Ethernet Networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the CloudEngine S5755-H supports the latest Ethernet Ring Protection Switching (ERPS) standard. This protocol is reliable, easy to maintain, and implements fast protection switching within 50 ms. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.

- The CloudEngine S5755-H supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One CloudEngine S5755-H switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Various Security Control Methods

- The CloudEngine S5755-H supports 802.1x authentication, MAC address authentication, and hybrid authentication, and can dynamically delivery user policies such as VLANs, QoS policies, and access control lists (ACL). It also supports user management based on user groups.
- The CloudEngine S5755-H provides a series of mechanisms to defend against DoS 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 change of the DHCP CHADDR value.
- The CloudEngine S5755-H sets up and maintains a DHCP snooping binding table, and discards the packets that do not match the table entries. You can specify DHCP snooping trusted and untrusted ports to ensure that users connect only to the authorized DHCP server.
- The CloudEngine S5755-H supports strict ARP learning, which prevents ARP spoofing attackers from exhausting ARP entries.
- The CloudEngine S5755-H supports Media Access Control Security (MACsec-256) with all downlink ports and uplink ports . It provides identity authentication, data encryption, integrity check, and replay protection to protect Ethernet frames and prevent attack packets.

Mature IPv6 Features

- The CloudEngine S5755-H is developed based on the mature, stable platform and supports IPv4/IPv6 dual stacks, IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6). With these IPv6 features, the CloudEngine S5755-H can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

Intelligent Stack (iStack)

- The CloudEngine S5755-H supports the iStack function that 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 a stack's ports, bandwidth, and processing capacity by simply adding member switches. iStack also simplifies device configuration and management. After a stack is set up, up to nine physical switches can be 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.

Note：All ports of the S5755-H series switches can be used as stack ports or service ports as required.

Inter-Device Link Aggregation, Ensuring High Efficiency and Reliability

- The CloudEngine S5755-H supports Multichassis Link Aggregation Group (M-LAG) to implement link aggregation among multiple devices, improving link reliability from the card level to the device level.
- Switches in an M-LAG all work in active state to share traffic and back up each other, enhancing system reliability.
- Switches in an M-LAG system can be upgraded independently. During the upgrade, other switches in the system take over traffic forwarding to ensure uninterrupted services.
- M-LAG supports dual-homing to Ethernet, VXLAN, and IP networks, allowing for flexible networking.

VXLAN Features

- VXLAN is used to construct a Unified Virtual Fabric(UVF). As such, multiple service networks or tenant networks can be deployed on the same physical network, and service and tenant networks are isolated from each other. This capability truly achieves 'one network for multiple purposes'. The resulting benefits include enabling data transmission of different services or customers, reducing the network construction costs, and improving network resource utilization.
- The CloudEngine S5755-H series switches are VXLAN-capable and allow centralized and distributed VXLAN gateway deployment modes. These switches also support the BGP EVPN protocol for dynamically establishing VXLAN tunnels and can be configured using NETCONF/YANG.

Intelligent O&M

- The CloudEngine S5755-H 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.

PoE Function

- **Perpetual PoE**:When a PoE switch is warm rebooting (Don't turn PSE switch power off), for example, reboot upon the software upgrade, the power supply to PDs is not interrupted.This capability ensures that PDs are not powered off during the switch warm 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 Upgrade

- Switches support the intelligent upgrade feature. Specifically, switches obtain the version upgrade path and download 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.

Big Data Security Collaboration

- The CloudEngine S5755-H switches use NetStream to collect campus network data and then report such data to the Huawei HiSec Insight. The purposes of doing so are to detect network security threats, display the security posture across the entire network, and enable automated or manual response to security threats. The HiSec Insight delivers the security policies to the iMaster NCE-Campus. The iMaster NCE-Campus then delivers such policies to switches that will handle security events accordingly. All these ensure campus network security.

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).

Link Layer Security

- This series switches support MACsec. MACsec protects transmitted Ethernet data frames through identity authentication, data encryption, integrity check, and anti-replay protection, reducing the risks of information leakage and malicious network attacks. With MACsec, these switch models are able to address strict information security requirements of customers in industries such as government and finance.

Open Programmability System(OPS)

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

Licensing

IDN One Software

CloudEngine S5755-H 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, and others Note: For details, see the Service Features	√	√	√
Basic network automation based on the iMaster NCE-Campus: • Basic automation: Plug-and-play • Basic monitoring: Application visualization • NE management: Image and topology management and discovery • User access authentication	×	√	√
Advanced network automation and intelligent O&M: VXLAN, free mobility, and CampusInsight basic functions	×	×	√

Product Specifications

Functions and Features

Category	Service Features
User management	Unified user management
	802.1X authentication
	MAC authentication
	Traffic- and duration-based accounting
	User authorization based on user groups, domains, and time ranges
MAC	Automatic MAC address learning and aging
	256K MAC entries (MAX)
	Static, dynamic, and blackhole MAC address entries
	Source MAC address filtering
	MAC address learning limiting based on ports and VLANs
VLAN	4K VLANs simultaneously
	Access mode, Trunk mode and Hybrid mode
	Default VLAN
	Private VLAN
	QinQ and enhanced selective QinQ
	VLAN Stacking
	Dynamic VLAN assignment based on MAC addresses
ARP	ARP Snooping

Category	Service Features
IP routing	IPv4 dynamic routing protocols such as RIP v1/v2, OSPF v1/v2, IS-IS, and BGP
	IPv6 dynamic routing protocols such as RIPng, OSPFv3, ISISv6, and BGP4+
	Routing Policy, Policy-Based Routing, ECMP
Segment Routing	SRv6 BE (L3 EVPN)
	BGP EVPN
	SRv6 configuration through NETCONF
Multicast	IGMPv1/v2/v3 and IGMP v1/v2/v3 Snooping
	PIM-DM, PIM-SM, and PIM-SSM
	Fast-leave mechanism
	Multicast traffic control
	Multicast querier
	Multicast protocol packet suppression
	Multicast VLAN
MPLS	MPLS-LDP
	MPLS-L3VPN
	MPLS Qos
VXLAN	Centralized gateway
	Distributed gateway
	BGP-EVPN
	Configures VXLANs through NETCONF
QoS	Traffic classification based on Layer 2 headers, Layer 3 protocols(IP), Layer 4 protocols(TCP/UDP), and 802.1p priority
	Actions such as ACL, Committed Access Rate (CAR), re-marking, and scheduling
	Queuing algorithms, such as PQ, DRR, and PQ+DRR
	Congestion avoidance mechanisms such as WRED and tail drop
	Traffic shaping
	8 queues on each interface
	Network Slicing（VLAN/VxLAN/SRv6）
Native-IP IFIT	Marks the real service packets to obtain real-time count of dropped packets and packet loss ratio
	The statistical period can be modified
	Two-way frame delay measurement
Ethernet loop protection	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s).
	VLAN-based Spanning Tree (VBST)
	BPDU protection, root protection, and loop protection

Category	Service Features
	G.8032 Ethernet Ring Protection Switching (ERPS)
Reliability	M-LAG
	Service interface-based stacking
	Maximum number of stacked devices
	Stack bandwidth (Bidirectional)
	Link Aggregation Control Protocol (LACP)
	Virtual Router Redundancy Protocol (VRRP) and Bidirectional Forwarding Detection (BFD) for VRRP
	BFD for BGP/IS-IS/OSPF/static routes
	Eth-OAM 802.1ag(CFM)
	Smartlink
	LLDP, LLDP-MED
System management	Console terminal service
	Telnet/IPv6 Telnet terminal service
	SSH v1.5
	SSH v2.0
	SNMP v1/v2c/v3
	FTP、TFTP、SFTP
	BootROM upgrade and remote in-service upgrade
	Hot patch
	User operation logs
	Open Programmability System (OPS)
	Streaming Telemetry
	Registration Center Deployment
Security and management	NAC
	Port-security
	Macsec-256(IEEE 802.1ae)
	RADIUS and HWTACACS authentication for login users
	Management by Command Line Interface(CLI)
	Command line authority control based on user levels, preventing unauthorized users from using command configurations
	Defense against DoS attacks, Transmission Control Protocol (TCP) SYN Flood attacks, User Datagram Protocol (UDP) Flood attacks, broadcast storms, and heavy traffic attacks
	IPv6 RA Guard
	CPU hardware queues to implement hierarchical scheduling and protection for protocol packets on the control plane

Category	Service Features
	Remote Network Monitoring (RMON)
	Secure boot
	Port mirroring
	Dynamic ARP Inspection
	IP Source Guard
Interface Management	IEEE 802.3bz

Hardware Specifications

The following table lists the hardware specifications of the CloudEngine S5755-H.

Hardware specifications of CloudEngine S5755-H models

Item		CloudEngine S5755-H24UTM4X4Y2C/S5755-H24UTM4X4Y2C-T	CloudEngine S5755-H48UTM4X4Y2C/S5755-H48UTM4X4Y2C-T
Physical specifications	Dimensions (H x W x D, mm)	43.6 x 442 x 335	43.6 x 442 x 335
	Chassis height	1 U	1 U
	Chassis weight (including packaging)	7.53kg	7.75kg
Fixed port	GE port	12	36
	10GE port	12	12
	GE SFP port	8	8
	10GE SFP+ port	8	8
	25GE SFP28 port	4	4
	40GE QSFP+ port	2	2
	100GE QSFP28 port	2	2
Management port	ETH port	Supported	Supported
	Console port (RJ45)	Supported	Supported
	USB port	USB 2.0	USB 2.0
CPU	Frequency	2 GHz	2 GHz
	Cores	4	4
Storage	Memory (RAM)	4 GB	4 GB
	Flash memory	2 GB	2 GB
Power supply system	Power supply type	• 600 W PoE AC (pluggable) • 1000 W PoE AC (pluggable) • 1000 W PoE DC (pluggable)	• 600 W PoE AC (pluggable) • 1000 W PoE AC (pluggable) • 1000 W PoE DC (pluggable)
	Rated voltage range	• AC input : 100 V AC to 130 V AC, 200 V AC to 240 V AC，50/60 Hz • High-Voltage DC input: 240 V	• AC input : 100 V AC to 130 V AC, 200 V AC to 240 V AC，50/60 Hz • High-Voltage DC input: 240 V DC

Item		CloudEngine S5755-H24UTM4X4Y2C/S5755-H24UTM4X4Y2C-T	CloudEngine S5755-H48UTM4X4Y2C/S5755-H48UTM4X4Y2C-T
		DC • DC input : -48 VDC to -60 V DC	• DC input : -48 VDC to -60 V DC
	Maximum voltage range	• 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 • DC input: -38.4 V DC to -72 V DC	• 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 • DC input: -38.4 V DC to -72 V DC
	Maximum power consumption	• 100% traffic under the ATIS standard, dual power supplies, and without PoE: • 135 W (all ports used) • 124 W (2 x 100GE ports not used) • Full PoE load, two 1000 W power modules: 1823 W (PoE: 1645 W)	• 100% traffic under the ATIS standard, dual power supplies, and without PoE: • 152 W (all ports used) • 142 W (2 x 100GE ports not used) • Full PoE load, two 1000 W power modules: 1829 W (PoE: 1634 W)
	Typical power consumption	30% traffic under the ATIS standard, dual power supplies: • 128 W (all ports used) • 117 W (2 x 100GE ports not used)	30% traffic under the ATIS standard, dual power supplies: • 140 W (all ports used) • 130 W (2 x 100GE ports not used)
	Static power consumption	74 W	83 W
Heat dissipation system	Heat dissipation mode	Air-cooled heat dissipation and intelligent fan speed adjustment	Air-cooled heat dissipation and intelligent fan speed adjustment
	Number of fan modules	3	3
	Airflow	Air flows in from the front side and exhausts from the rear panel.	Air flows in from the front side and exhausts from the rear panel.
	Maximum heat dissipation of the device (BTU/hour)	• 100% traffic under the ATIS standard, dual power supplies, and without PoE: • 460.63 (all ports used) • 423.10 (2 x 100GE ports not used) • Full PoE load, two 1000 W power modules: 6220.26	• 100% traffic under the ATIS standard, dual power supplies, and without PoE: • 518.64 (all ports used) • 484.52 (2 x 100GE ports not used) • Full PoE load, two 1000 W power modules: 6274.85
Environment parameters	Long-term operating temperature	• 0-1800 m: -5°C to 45°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m	• 0-1800 m: -5°C to 45°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m
	Short-term operating temperature	• 0-1800 m: -5°C to 50°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m	• 0-1800 m: -5°C to 50°C • 1800-5000 m: The operating temperature decreases 1°C every time the altitude increases 220 m

Item		CloudEngine S5755-H24UTM4X4Y2C/S5755-H24UTM4X4Y2C-T	CloudEngine S5755-H48UTM4X4Y2C/S5755-H48UTM4X4Y2C-T
	Storage temperature	-40°C to +70°C	-40°C to +70°C
	Relative humidity	5%–95% (non-condensing)	5%–95% (non-condensing)
	Operating altitude	5000 m	5000 m
	Acoustics (LpA) maximum	39.7 dB(A)	39.7 dB(A)
	Acoustics (LwA) maximum	5.17 B	5.17 B
	Surge protection specification (power port)	• AC power port: ±6 kV in differential mode, ±6 kV in common mode • DC power port: ±2 kV in differential mode, ±4 kV in common mode	• AC power port: ±6 kV in differential mode, ±6 kV in common mode • DC power port: ±2 kV in differential mode, ±4 kV in common mode
Reliability	MTBF (year)[2]	59.77	49.54
	MTTR (hour)	2.01	2.42
	Availability	> 0.99999	> 0.99999
Certification		• EMC certification • Safety certification • Manufacturing certification	• EMC certification • Safety certification • Manufacturing certification

NOTE

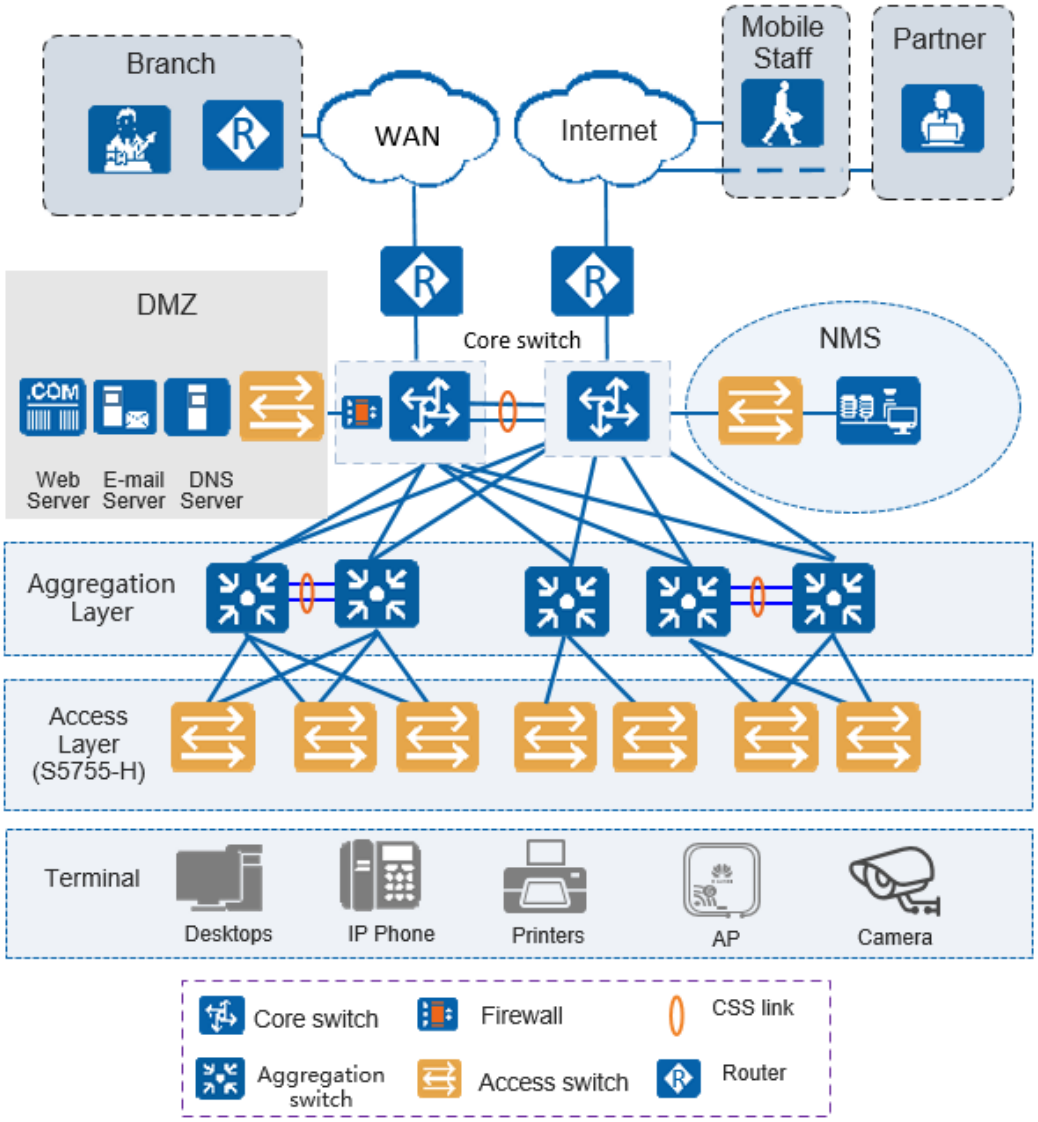
1: The power consumption under different load conditions is calculated according to the ATIS standard. Additionally, the EEE function is enabled and there is no PoE power output.

2: The reliability parameter values are calculated based on the typical configuration of the device. The parameter values vary according to the modules configured by the customer.

Networking and Applications

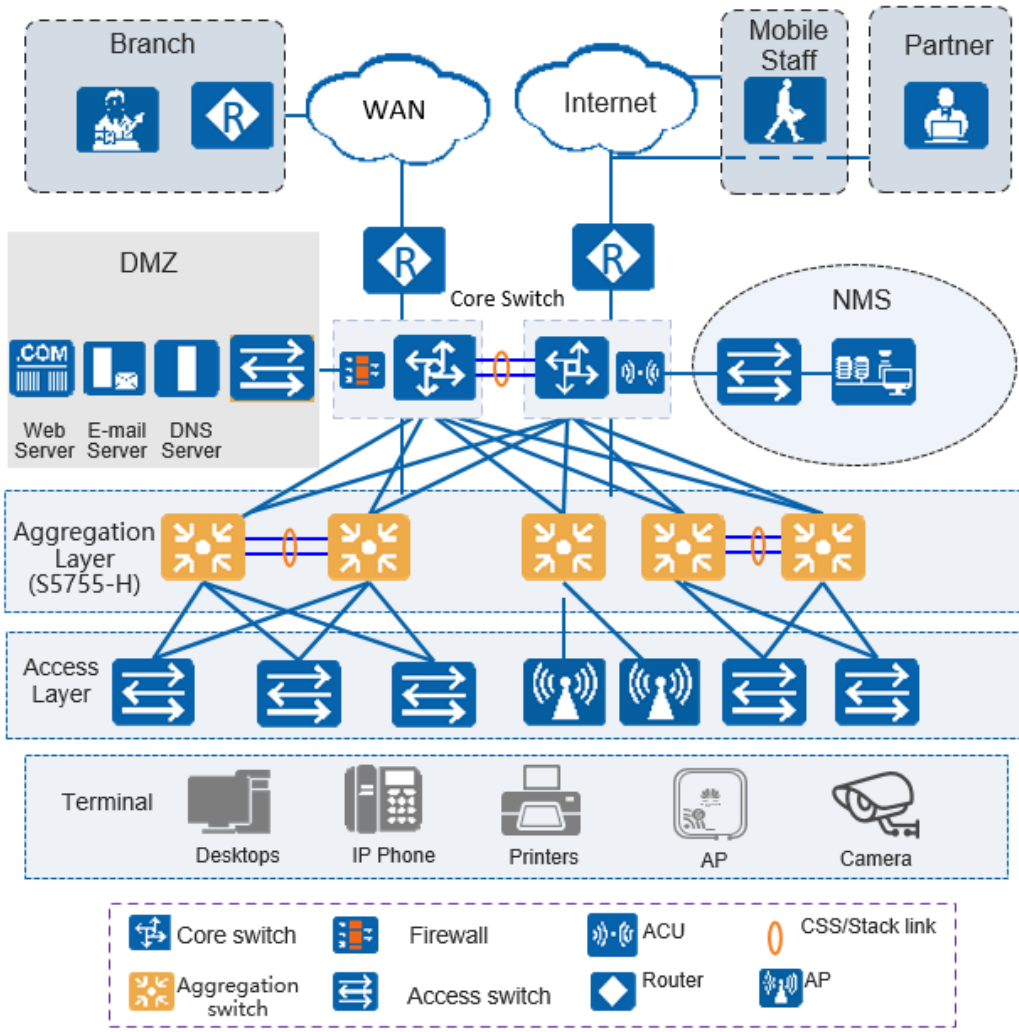
Large-Scale Enterprise Campus Network

CloudEngine S5755-H series switches can be deployed at the access layer of a campus network to build a high-performance and highly reliable enterprise network.



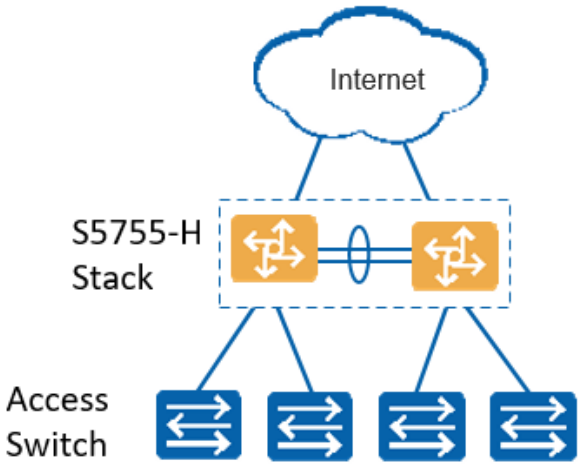
Small- or Medium-scale Enterprise Campus Network

CloudEngine S5755-H series switches can be deployed at the aggregation layer of a campus network to build a high-performance, multi-service, and highly reliable enterprise network.



Small-scale Enterprise Campus Network

With powerful aggregation and routing capabilities of CloudEngine S5755-H series switches make them suitable for use as core switches in a small-scale enterprise network. Two or more S5755-H switches use iStack technology to ensure high reliability. They provide a variety of access control policies to achieve centralized management and simplify configuration.



Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of the CloudEngine S5755-H.

Safety and regulatory compliance of the CloudEngine S5755-H series

Certification Category	Description
Safety	• IEC 60950-1 • EN 60950-1/A11/A12 • UL 60950-1 • CSA C22.2 No 60950-1 • AS/NZS 60950.1 • CNS 14336-1 • IEC60825-1 • IEC60825-2 • EN60825-1 • EN60825-2
Electromagnetic Compatibility (EMC)	• CISPR22 Class A • CISPR24 • EN55022 Class A • EN55024 • ETSI EN 300 386 Class A • CFR 47 FCC Part 15 Class A • ICES 003 Class A • AS/NZS CISPR22 Class A • VCCI Class A • IEC61000-4-2 • ITU-T K 20 • ITU-T K 21 • ITU-T K 44 • CNS13438
Environment	• RoHS • REACH • WEEE

NOTE

- EMC: electromagnetic compatibility
- CISPR: International Special Committee on Radio Interference
- EN: European Standard
- ETSI: European Telecommunications Standards Institute
- CFR: Code of Federal Regulations
- FCC: Federal Communication Commission
- IEC: International Electrotechnical Commission
- AS/NZS: Australian/New Zealand Standard
- VCCI: Voluntary Control Council for Interference
- UL: Underwriters Laboratories
- CSA: Canadian Standards Association
- IEEE: Institute of Electrical and Electronics Engineers

- RoHS: restriction of the use of certain hazardous substances
- REACH: Registration Evaluation Authorization and Restriction of Chemicals
- WEEE: Waste Electrical and Electronic Equipment

MIB and Standards Compliance

Supported MIBs

The following table lists the MIBs supported by the CloudEngine S5732-H.

MIBs supported by the CloudEngine S5755-H series

Category	MIB
Public MIB	• BRIDGE-MIB • DISMAN-NSLOOKUP-MIB • DISMAN-PING-MIB • DISMAN-TRACEROUTE-MIB • ENTITY-MIB • EtherLike-MIB • IF-MIB • IP-FORWARD-MIB • IPv6-MIB • LAG-MIB • LLDP-EXT-DOT1-MIB • LLDP-EXT-DOT3-MIB • LLDP-MIB • MPLS-FTN-STD-MIB • MPLS-L3VPN-STD-MIB • MPLS-LDP-GENERIC-STD-MIB • MPLS-LDP-STD-MIB • MPLS-LSR-STD-MIB • MPLS-TE-STD-MIB • NOTIFICATION-LOG-MIB • NQA-MIB • OSPF-TRAP-MIB • P-BRIDGE-MIB • Q-BRIDGE-MIB • RFC1213-MIB • RIPv2-MIB • RMON2-MIB • RMON-MIB • SAVI-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMP-USER-BASED-SM-MIB

Category	MIB
	• SNMPv2-MIB • SNMPv3-MIB • TCP-MIB • UDP-MIB
Huawei-proprietary MIB	• HUAWEI-AAA-MIB • HUAWEI-ACL-MIB • HUAWEI-ALARM-MIB • HUAWEI-ALARM-RELIABILITY-MIB • HUAWEI-BASE-TRAP-MIB • HUAWEI-BRAS-RADIUS-MIB • HUAWEI-BRAS-SRVCFG-EAP-MIB • HUAWEI-BRAS-SRVCFG-STATICUSER-MIB • HUAWEI-CBQOS-MIB • HUAWEI-CDP-COMPLIANCE-MIB • HUAWEI-CONFIG-MAN-MIB • HUAWEI-CPU-MIB • HUAWEI-DAD-TRAP-MIB • HUAWEI-DC-MIB • HUAWEI-DATASYNC-MIB • HUAWEI-DEVICE-MIB • HUAWEI-DHCPR-MIB • HUAWEI-DHCPS-MIB • HUAWEI-DHCP-SNOOPING-MIB • HUAWEI-DIE-MIB • HUAWEI-DNS-MIB • HUAWEI-DLDP-MIB • HUAWEI-ELMI-MIB • HUAWEI-ERPS-MIB • HUAWEI-ERRORDOWN-MIB • HUAWEI-ENERGYMNGT-MIB • HUAWEI-EASY-OPERATION-MIB • HUAWEI-ENTITY-EXTENT-MIB • HUAWEI-ENTITY-TRAP-MIB • HUAWEI-ETHARP-MIB • HUAWEI-ETHOAM-MIB • HUAWEI-FLASH-MAN-MIB • HUAWEI-FWD-RES-TRAP-MIB • HUAWEI-GARP-APP-MIB • HUAWEI-GTSM-MIB • HUAWEI-HGMP-MIB • HUAWEI-HWTACACS-MIB • HUAWEI-IF-EXT-MIB • HUAWEI-INFOCENTER-MIB • HUAWEI-IPPOOL-MIB

Category	MIB
	• HUAWEI-IPV6-MIB • HUAWEI-ISOLATE-MIB • HUAWEI-L2IF-MIB • HUAWEI-L2MAM-MIB • HUAWEI-L2VLAN-MIB • HUAWEI_LDT-MIB • HUAWEI-LLDP-MIB • HUAWEI-MAC-AUTHEN-MIB • HUAWEI-MEMORY-MIB • HUAWEI-MFF-MIB • HUAWEI-MFLP-MIB • HUAWEI-MSTP-MIB • HUAWEI-BGP-VPN-MIB • HUAWEI-CCC-MIB • HUAWEI-MULTICAST-MIB • HUAWEI-NAP-MIB • HUAWEI-NTPV3-MIB • HUAWEI-PERFORMANCE-MIB • HUAWEI-PORT-MIB • HUAWEI-PORTAL-MIB • HUAWEI-QINQ-MIB • HUAWEI-RIPv2-EXT-MIB • HUAWEI-RM-EXT-MIB • HUAWEI-RRPP-MIB • HUAWEI-SECURITY-MIB • HUAWEI-SEP-MIB • HUAWEI-SNMP-EXT-MIB • HUAWEI-SSH-MIB • HUAWEI-STACK-MIB • HUAWEI-SWITCH-L2MAM-EXT-MIB • HUAWEI-SWITCH-SRV-TRAP-MIB • HUAWEI-SYS-MAN-MIB • HUAWEI-TCP-MIB • HUAWEI-TFTPC-MIB • HUAWEI-TRNG-MIB • HUAWEI-XQOS-MIB

Standard Compliance

The following table lists the standards that the CloudEngine S5732-H complies with.

Standard compliance list of the CloudEngine S5755-H series

Standard Organization	Standard or Protocol
IETF	• RFC 768 User Datagram Protocol (UDP) • RFC 792 Internet Control Message Protocol (ICMP)

Standard Organization	Standard or Protocol
	• RFC 793 Transmission Control Protocol (TCP) • RFC 826 Ethernet Address Resolution Protocol (ARP) • RFC 854 Telnet Protocol Specification • RFC 951 Bootstrap Protocol (BOOTP) • RFC 959 File Transfer Protocol (FTP) • RFC 1058 Routing Information Protocol (RIP) • RFC 1112 Host extensions for IP multicasting • RFC 1157 A Simple Network Management Protocol (SNMP) • RFC 1256 ICMP Router Discovery • RFC 1305 Network Time Protocol Version 3 (NTP) • RFC 5905 Network Time Protocol Version 4 (NTP) • RFC 1349 Internet Protocol (IP) • RFC 1493 Definitions of Managed Objects for Bridges • RFC 1542 Clarifications and Extensions for the Bootstrap Protocol • RFC 1643 Ethernet Interface MIB • RFC 1757 Remote Network Monitoring (RMON) • RFC 1901 Introduction to Community-based SNMPv2 • RFC 1902-1907 SNMP v2 • RFC 2574 SNMP v3 • RFC 1981 Path MTU Discovery for IP version 6 • RFC 2131 Dynamic Host Configuration Protocol (DHCP) • RFC 2328 OSPF Version 2 • RFC 2453 RIP Version 2 • RFC 2460 Internet Protocol, Version 6 Specification (IPv6) • RFC 2461 Neighbor Discovery for IP Version 6 (IPv6) • RFC 2462 IPv6 Stateless Address Auto configuration • RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6) • RFC 2474 Differentiated Services Field (DS Field) • RFC 2740 OSPF for IPv6 (OSPFv3) • RFC 2863 The Interfaces Group MIB • RFC 2597 Assured Forwarding PHB Group • RFC 2598 An Expedited Forwarding PHB • RFC 2571 SNMP Management Frameworks • RFC 2865 Remote Authentication Dial In User Service (RADIUS) • RFC 3046 DHCP Option82/Relay • RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3) • RFC 3513 IP Version 6 Addressing Architecture • RFC 3579 RADIUS Support For EAP • RFC 4271 A Border Gateway Protocol 4 (BGP-4) • RFC 4760 Multiprotocol Extensions for BGP-4 • draft-grant-tacacs-02 TACACS+ • RFC 6241 Network Configuration Protocol (NETCONF) • RFC 6020 YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)

Standard Organization	Standard or Protocol
IEEE	• IEEE 802.1D Media Access Control (MAC) Bridges • IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering • IEEE 802.1Q Virtual Bridged Local Area Networks • IEEE 802.1ad Provider Bridges • IEEE 802.2 Logical Link Control • IEEE Std 802.3 CSMA/CD • IEEE Std 802.3ab 1000BASE-T specification • IEEE Std 802.3ab RJ45 con Auto-MDIX • IEEE Std 802.3ad Aggregation of Multiple Link Segments • IEEE Std 802.3ae 10GE WEN/LAN Standard • IEEE Std 802.3x Full Duplex and flow control • IEEE Std 802.3z Gigabit Ethernet Standard • IEEE Std 802.3u Fast Ethernet Standard • IEEE802.1ax/IEEE802.3ad Link Aggregation • IEEE 802.1ag Connectivity Fault Management • IEEE 802.1ab Link Layer Discovery Protocol • IEEE 802.1D Spanning Tree Protocol • IEEE 802.1w Rapid Spanning Tree Protocol • IEEE 802.1s Multiple Spanning Tree Protocol • IEEE 802.1x Port based network access control protocol • IEEE 802.3az Automatic power adjustment on Ethernet interfaces • IEEE 802.3ba 40Gbit/s and 100Gbit/s Ethernet Standard
ITU	• ITU SG13 Y.17ethoam • ITU SG13 QoS control Ethernet-Based IP Access
ISO	• ISO 10589 IS-IS Routing Protocol
MEF	• MEF 2 Requirements and Framework for Ethernet Service Protection • MEF 9 Abstract Test Suite for Ethernet Services at the UNI • MEF 10.2 Ethernet Services Attributes Phase 2 • MEF 11 UNI Requirements and Framework • MEF 13 UNI Type 1 Implementation Agreement • MEF 15 Requirements for Management of Metro Ethernet Phase 1 Network Elements • MEF 17 Service OAM Framework and Requirements • MEF 20 UNI Type 2 Implementation Agreement • MEF 23 Class of Service Phase 1 Implementation Agreement • Xmodem XMODEM/YMODEM Protocol Reference

Ordering Information

The following table lists ordering information of the CloudEngine S5755-H series switches.

Model	Product Description
CloudEngine S5755-H24UTM4X4Y2C	S5755-H24UTM4X4Y2C (12*10/100/1000BASE-T ports, 12*100M/1/2.5/5/10G Ethernet ports, 4*10GE SFP+ ports, 4*25GE SFP28 ports, 2*100GE QSFP28 ports, PoE++, without power

Model	Product Description
	module)
CloudEngine S5755-H24UTM4X4Y2C-T	S5755-H24UTM4X4Y2C-T (12*10/100/1000BASE-T ports, 12*100M/1/2.5/5/10G Ethernet ports, 4*10GE SFP+ ports, 4*25GE SFP28 ports, 2*100GE QSFP28 ports, PoE++, HTM, without power module)
CloudEngine S5755-H48UTM4X4Y2C	S5755-H48UTM4X4Y2C (36*10/100/1000BASE-T ports, 12*100M/1/2.5/5/10G Ethernet ports, 4*10GE SFP+ ports, 4*25GE SFP28 ports, 2*100GE QSFP28 ports, PoE++, without power module)
CloudEngine S5755-H48UTM4X4Y2C-T	S5755-H48UTM4X4Y2C-T (36*10/100/1000BASE-T ports, 12*100M/1/2.5/5/10G Ethernet ports, 4*10GE SFP+ ports, 4*25GE SFP28 ports, 2*100GE QSFP28 ports, PoE++, HTM, without power module)
PAC180S12-CN	180 W AC&240 V DC Power Module
PAC600S12-PB	600 W AC Power Module
PDC1K2S12-CE	1200 W DC PoE Power Module
PAC600S56-EB	600W PoE AC&240 V DC Power Module
PAC1000S56-EB	1000 W PoE AC&240 V DC Power Module
PDC1000S56-EB	1000 W PoE DC Power Module
FAN-031A-B	Fan module
N1-S57H-M-Lic	S57XX-H Series Basic SW,Per Device
N1-S57H-M-SnS1Y	S57XX-H Series Basic SW,SnS,Per Device,1Year
N1-S57H-F-Lic	N1-CloudCampus,Foundation,S57XX-H Series,Per Device
N1-S57H-F-SnS1Y	N1-CloudCampus,Foundation,S57XX-H Series,SnS,Per Device,1Year
N1-S57H-A-Lic	N1-CloudCampus,Advanced,S57XX-H Series,Per Device
N1-S57H-A-SnS1Y	N1-CloudCampus,Advanced,S57XX-H Series,SnS,Per Device,1Year
N1-S57H-FToA-Lic	N1-Upgrade-Foundation to Advanced,S57XX-H,Per Device
N1-S57H-FToA-SnS1Y	N1-Upgrade-Foundation to Advanced,S57XX-H,SnS,Per Device,1Year

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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