Huawei CloudEngine S5732-H Series Switches Datasheet

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CONTENT

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OVERVIEW

Huawei CloudEngine S5732-H are the next generation of enhanced all-optical GE/10 GE hybrid switches with 24 or 48 downlink ports and six fixed 40 GE uplink ports, supporting system switching capacity of up to 2.4 Tbit/s.

CloudEngine S5732-H series switches offer support for native Access Controller (AC), management of up to 1024 Access Points (APs), with wired and wireless convergence. The series provides free mobility, ensuring a consistent user experience, with Virtual Extensible LAN (VXLAN) and network virtualization meeting the requirements of multi-purpose campus networks. A built-in security probe supports abnormal traffic detection, threat analysis of encrypted traffic, and network-wide threat deception. The CloudEngine S5732-H series is therefore an ideal choice to serve in the aggregation or access layer in large- and medium-sized campus networks, in the core layer of small-sized campus networks, or in the access layer of data centers.

MODELS & APPEARANCE

Appearance	Description
 CloudEngine S5732-H24S6Q	- 20 x GE SFP ports, 4 x 10GE SFP+ ports, 6 x 40GE QSFP+ ports - 1+1 power backup - Forwarding performance: 450 Mpps - Switching capacity: 600 Gbps/2.4 Tbps
 CloudEngine S5732-H48S6Q	- 44 x GE SFP ports, 4 x 10GE SFP+ ports, 6 x 40GE QSFP+ ports - 1+1 power backup - Forwarding performance: 486 Mpps - Switching capacity: 648 Gbps/2.4 Tbps

KEY FEATURES AND BENEFITS

Enabling Networks to Be More Agile for Services

- CloudEngine S5732-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 S5732-H provides open interfaces and supports userdefined 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 S5732-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

- This CloudEngine S5732-H provides the integrated WLAN AC(native AC) function that can manage 1,024 APs, reducing

the costs of purchasing additional WLAN AC hardware and breaking the forwarding performance bottleneck of an external WLAN AC. With this switch series, customers can stay ahead in the high-speed wireless era.

- With the unified user management function, the CloudEngine S5732-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 Portal authentication, 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 experiencecentric management.

- The CloudEngine S5732-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.

Note: The CloudEngine S5732-H can manage 16 APs by default . You can purchase licenses for more AP management on

demand.

Providing Fine Granular Network Management More Agilely

- The CloudEngine S5732-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."

- The CloudEngine S5732-H supports Two-Way Active Measurement Protocol (TWAMP) to accurately check any IP link and obtain the entire network's IP performance. This protocol eliminates the need of using a dedicated probe or a proprietary protocol.

- The CloudEngine S5732-H supports SVF and functions as a parent switch. With this virtualization technology, a physical network with the "Small-sized core/aggregation switches + Access switches + APs" structure can be virtualized into a "super switch", greatly simplifying network management.

- With the Easy Deploy function, the CloudEngine S5732-H manages access switches in a similar way an AC manages APs. In deployment, access switches and APs can go online with zero-touch configuration. In the Easy Deploy solution, the Commander collects topology information about the connected clients and stores the clients' startup information based on the topology. Clients can be replaced with zero-touch configuration. The Commander can deliver configurations and scripts to clients in batches and query the delivery results. In addition, the Commander can collect and display information about power consumption on the entire network.

Comprehensive VPN Technologies

- The CloudEngine S5732-H supports the MPLS function, and can be used as access devices of high-quality enterprise

leased line.

- The CloudEngine S5732-H allows users in different VPNs to connect to the same switch and isolates users through multiinstance routing. Users in multiple VPNs connect to a provider edge (PE) device through the same physical port on the switch,which reduces the cost on VPN network deployment.

Flexible Ethernet Networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the CloudEngine S5732-H supports Huawei-developed Smart Ethernet Protection (SEP) technology and the latest Ethernet Ring Protection Switching (ERPS) standard. 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. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.

- The CloudEngine S5732-H supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One CloudEngine S5732-H switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Various Security Control Methods

- The CloudEngine S5732-H supports 802.1x authentication, MAC address authentication, Portal 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 S5732-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 S5732-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 S5732-H supports strict ARP learning, which prevents ARP spoofing attackers from exhausting ARP entries.

Mature IPv6 Features

- The CloudEngine S5732-H is developed based on the mature, stable VRP and supports IPv4/IPv6 dual stacks, IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6). With these IPv6 features, the CloudEngine S5732-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 S5732-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.

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 S5732-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.

Big Data Security Collaboration

- The CloudEngine S5732-H switches use NetStream to collect campus network data and then report such data to the Huawei Cybersecurity Intelligence System (CIS). 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 CIS delivers the security policies to the Agile Controller. The Agile Controller then delivers such policies to switches that will handle security events accordingly. All these ensure campus network security.

- The CloudEngine S5732-H supports Encrypted Communication Analytics (ECA). It uses built-in ECA probes to extract characteristics of encrypted streams based on NetStream sampling and Service Awareness (SA), generates metadata, and reports the metadata to Huawei Cybersecurity Intelligence System (CIS). The CIS uses the AI algorithm to train the traffic model and compare characteristics of extracted encrypted traffic to identify malicious traffic. The CIS displays detection results on the GUI, provides threat handling suggestions, and automatically isolates threats with the Agile Controller to ensure campus network security.

- The CloudEngine S5732-H supports deception. It functions as a sensor to detect threats such as IP address scanning and port scanning on a network and lures threat traffic to the honeypot for further checks. The honeypot performs in-depth interaction with the initiator of the threat traffic, records various application-layer attack methods of the initiator, and reports security logs to the CIS. The CIS analyzes security logs. If the CIS determines that the suspicious traffic is an attack, it generates an alarm and provides handling suggestions. After the administrator confirms the alarm, the CIS delivers a policy to the Agile Controller. The Agile Controller delivers the policy to the switch for security event processing, ensuring campus network security.

Intelligent O&M

- The CloudEngine S5732-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.

- The CloudEngine S5732-H supports a variety of intelligent O&M features for audio and video services, including the enhanced Media Delivery Index (eMDI). With this eDMI 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

- 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.

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

PRODUCT SPECIFICATIONS

Product Model	CloudEngine S5732-H24S6Q	CloudEngine S5732-H48S6Q
Forwarding Performance	450 mpps	486 mpps
Switching Capacity2	600 Gbit/s/2.4 Tbit/s	648 Gbit/s/2.4 Tbit/s
Fixed Ports	20 x GE SFP ports, 4 x 10 GE SFP+ ports, 6 x 40 GE QSFP+ ports	44 x GE SFP ports, 4 x 10 GE SFP+ ports, 6 x 40 GE QSFP+ ports
Wireless Services	Management of up to 1024 APs AP access control, AP domain management, and AP configuration template management Radio channel management, unified static configuration, and dynamic centralized management	

	WLAN basic services, QoS, security, and user management CAPWAP, tag/terminal location, and spectrum analysis
iPCA	Collection of real-time statistics on the number of lost packets and packet loss ratio at network and device level
Super Virtual Fabric (SVF)	Functions as the parent node to virtualize downstream switches and APs vertically as one device for simpler management Supports a two-layer client architecture Supports third-party devices between SVF parent and clients
VXLAN	VXLAN L2 and L3 gateways Centralized and distributed gateways BGP-EVPN Configured through the NETCONF protocol
Security	Encrypted Communication Analytics (ECA) Threat trap technology Network-wide security collaboration
Interoperability	VBST (compatible with PVST, PVST+, and RPVST) LNP (similar to DTP) VCMP (similar to VTP) For detailed interoperability certifications and test reports, click here.

BASIC ORDERING INFORMATION

SKU	Description
S5732-H24S6Q	Huawei S5732-H24S6Q (20*GE SFP ports,4*10GE SFP+ ports,6*40GE QSFP ports, without power module)
S5732-H48S6Q	Huawei S5732-H48S6Q (44*GE SFP ports,4*10GE SFP+ ports,6*40GE QSFP ports, without power module)
S5732-H48S6Q-K	Huawei S5732 switch, 44 GE SFP, 4 10GE SFP+, 6 40GE QSFP+
S5732-H24S6Q-K	Huawei S5732 switch, 20 GE SFP, 4 10GE SFP+, 6 40GE QSFP+

WHERE TO BUY

Want to buy this series of products? please contact:

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SOURCES

https://e.huawei.com/us/products/enterprise-networking/switches/campus-switches/s5732-h