

Huawei CloudEngine S5735-S-V2 Series 2.5GE Switches Brochure

Huawei CloudEngine S5735-S-V2 series 2.5GE Switches are standard 2.5G Ethernet switches that provide 24/48 x 2.5GE downlink ports and 4 x 10GE uplink ports and 2 x stack ports.

Product Overview

CloudEngine S5735-S-V2 series 2.5GE Switches are developed based on next-generation high-performing hardware and software platform. CloudEngine S5735-S-V2 2.5GE Switches support simplified operations and maintenance (O&M), and flexible Ethernet networking. It also provides enhanced Layer 3 features and mature IPv6 features. CloudEngine S5735-S-V2 2.5GE Switches can be used in various scenarios. For example, it can be used as an access or aggregation switch on a campus network or as an access switch for Metropolitan Area Network.

Models and Appearances

The following models are available in the CloudEngine S5735-S-V2 series 2.5GE Switches.

Models and appearances of the CloudEngine S5735-S-V2 series 2.5GE

Models and Appearances	Description
 <p>CloudEngine S5735-S24PN4XE-V2</p>	<ul style="list-style-type: none"> • 24 x 10/100/1000/2.5G Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports • 3 power supplies, N+1 power supply backup • PoE+ • Forwarding performance: 144 Mpps • Switching capacity*: 248 Gbps/520 Gbps
 <p>CloudEngine S5735-S48PN4XE-V2</p>	<ul style="list-style-type: none"> • 48 x 10/100/1000/2.5G Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports • 3 power supplies, N+1 power supply backup • PoE+ • Forwarding performance: 276 Mpps • Switching capacity*: 368 Gbps/520 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

Powerful Service Processing Capability

- CloudEngine S5735-S-V2 supports a broad set of Layer 2/Layer 3 multicast protocols, such as PIM SM, PIM DM, PIM SSM, and IGMP snooping. This capability is ideal for high-definition video backhaul and video conferencing access.
- CloudEngine S5735-S-V2 provides multiple Layer 3 features including OSPF, IS-IS, BGP, and VRRP, meeting enterprises' access and aggregation service needs and enabling a variety of voice, video, and data applications.

Multiple Security Control Mechanisms

- CloudEngine S5735-S-V2 supports MAC address authentication, 802.1X authentication, and implements dynamic delivery of policies (VLAN, QoS, and ACL) to users.
- CloudEngine S5735-S-V2 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-S-V2 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-S-V2 supports strict ARP learning, which protects a network against ARP spoofing attacks to ensure that users can connect to the Internet normally.

Multiple Reliability Mechanisms

- CloudEngine S5735-S-V2 is equipped with two pluggable power modules that work in 1+1 redundancy backup mode. Mixed installation of AC and DC power modules is supported, allowing for flexible configuration of AC or DC power modules according to service requirements.
- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the CloudEngine S5735-S-V2 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.
- CloudEngine S5735-S-V2 supports Smart Link, which implements backup of uplinks. One CloudEngine S5735-S-V2 switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Easy Network deployment

- CloudEngine S5735-S-V2 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 capabilities facilitate device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduce O&M costs. CloudEngine S5735-S-V2 can be managed using SNMP v1/v2c/v3, CLI, web-based network management system, or SSH v2.0. Additionally, it supports RMON, multiple log hosts, port traffic statistics collection, and network quality analysis, which facilitate network optimization and reconstruction.

Mature IPv6 Technologies

- CloudEngine S5735-S-V2 uses the mature, stable VRRP platform and supports IPv4/IPv6 dual stack, IPv6 RIPng.
- CloudEngine S5735-S-V2 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)

- CloudEngine S5735-S-V2 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-S-V2 support stacking through electrical ports.

Network Slicing Functions

- CloudEngine S5735-S-V2 provides a range of VLAN slicing functions to meet diversified SLA requirements of different services and customers. Service isolation and bandwidth guarantee are implemented based on QoS. Slices can be completely isolated from each other without affecting each other. Traffic is isolated at the physical layer, and network slicing is performed for services on the same physical network. The Network Slicing technology can be used at the access, aggregation, and core layers to meet differentiated SLA requirements of new services on campus 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-S-V2 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.

Intelligent Upgrade

- CloudEngine S5735-S-V2 supports the intelligent upgrade feature. Specifically, CloudEngine S5735-S-V2 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(Open Programmability System)

- CloudEngine S5735-S-V2 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-S-V2 switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Licensing

CloudEngine S5735-S-V2 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.

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: <ul style="list-style-type: none"> NE management: Device management, topology management and discovery User access authentication 	×	√	√
Advanced network automation and intelligent O&M: IPCA, CampusInsight basic functions	×	×	√

Product Specifications

Item	CloudEngine S5735-S24PN4XE-V2	CloudEngine S5735-S48PN4XE-V2
Fixed port	24 x 10/100/1000/2.5G Base-T ports(PoE+), 4 x 10 GE SFP+ ports, 2 stack ports	48 x 10/100/1000/2.5G Base-T ports(PoE+), 4 x 10 GE SFP+ ports, 2 stack ports
Chassis height	1 U	1 U
Chassis weight (including packaging)	11.98 kg	12.83 kg
Power supply type	<ul style="list-style-type: none"> 600 W AC PoE 1000 W AC PoE 1000 W DC PoE 	<ul style="list-style-type: none"> 600 W AC PoE 1000 W AC PoE 1000 W DC PoE
Rated voltage range	<ul style="list-style-type: none"> AC input: 100 V AC to 130 V, 200 V AC to 240 V AC, 50/60 Hz High-Voltage DC input: 240 V DC DC input: -48 V DC to -60 V DC 	<ul style="list-style-type: none"> AC input: 100 V AC to 130 V, 200 V AC to 240 V AC, 50/60 Hz High-Voltage DC input: 240 V DC DC input: -48 V DC to -60 V DC
Maximum voltage range	<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 DC input: -38.4 V DC to -72 V DC 	<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 DC input: -38.4 V DC to -72 V DC
Maximum power consumption	<ul style="list-style-type: none"> 79.9 W (without PD) (with two 600 W AC power modules) 1070.85 W (with PD, PD Power consumption of :840W, with three 1000 W AC power modules) 	<ul style="list-style-type: none"> 121.9 W (without PD) (with two 600 W AC power modules) 2019.68 W (with PD, PD Power consumption of :1680W, with three 1000 W AC power modules)
Noise	<ul style="list-style-type: none"> Under normal temperature (sound power): 50dB (A) Under high temperature (sound power): 54.9dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound power): 50dB (A) Under high temperature (sound power): 54.9dB (A)

Item	CloudEngine S5735-S24PN4XE-V2	CloudEngine S5735-S48PN4XE-V2
	<ul style="list-style-type: none"> Under normal temperature (sound pressure): 38dB (A) 	<ul style="list-style-type: none"> Under normal temperature (sound pressure): 38dB (A)
Long-term operating temperature	<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.
Storage temperature	-40°C to +70°C	-40°C to +70°C
Relative humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)
Surge protection specification (power port)	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
Heat dissipation	Air-cooled heat dissipation and intelligent speed adjustment	Air-cooled heat dissipation and intelligent speed adjustment

Service Features

Item	Description
MAC address table	IEEE 802.1d compliance
	32K MAC entries(MAX)
	MAC address learning and aging
	Static, dynamic, and blackhole MAC address entries
	Packet filtering based on source MAC addresses
VLAN	4K VLANs
	Voice VLAN
	MUX VLAN
	VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports
	Basic QinQ & Selective QinQ
	VLAN Stacking, VLAN mapping
Reliability	Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switchover
	SEP
	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s)
	ERPS (G.8032)
	BPDU protection, root protection, and loop protection
	LLDP
	LBDT
	Y.1731
IP routing	Static route, RIPv1/v2, RIPng, OSPF, OSPFv3, IS-IS, IS-ISv6, BGP, BGP4+, ECMP, VRRP, VRRP6,

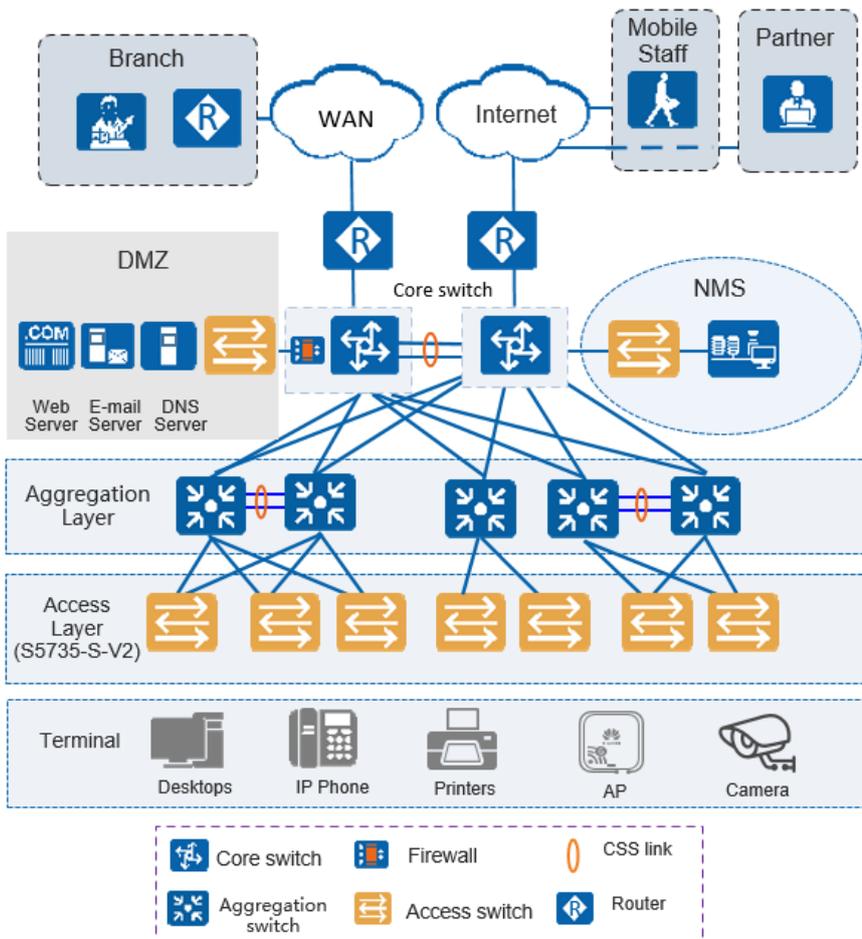
Item	Description
	Routing Policy, Policy-Based Routing
	Up to 8192 FIBv4 entries
	Up to 3072 FIBv6 entries
IPv6 features	Up to 3072 ND entries
	Path MTU (PMTU)
	IPv6 ping, IPv6 tracer, and IPv6 Telnet
Multicast	PIM DM, PIM SM, PIM SSM, PIMv6
	IGMP v1/v2/v3, IGMP v1/v2/v3 snooping, MLD Snooping and IGMP fast leave
	Multicast load balancing among member ports of a trunk
	Port-based multicast traffic statistics
	Multicast VLAN
QoS/ACL	Rate limiting on packets sent and received by a port
	Packet redirection
	Port-based traffic policing and two-rate three-color CAR
	Eight queues on each port
	DRR, 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 ports
	Network Slicing (VLAN)
Security	Hierarchical user management and password protection
	DoS attack defense, ARP attack defense, and ICMP attack defense
	Binding of the IP address, MAC address, port number, and VLAN ID
	Port isolation, port security, and sticky MAC
	Blackhole MAC address entries
	Limit on the number of learned MAC addresses
	IEEE 802.1x authentication and limit on the number of users on a port
	AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC
	SSH v2.0
	HTTPS
	CPU defense
	Blacklist and whitelist
	IEEE 802.1x authentication, MAC address authentication

Item	Description
	DHCPv4 client/relay/server/snooping
	DHCPv6 client/relay
	Attack source tracing and punishment for IPv6 packets such as ND, DHCPv6
	ND snooping
Management and maintenance	iStack
	Cloud management based on Netconf/Yang
	Virtual cable test
	SNMP v1/v2c/v3
	RMON
	Web-based NMS
	System logs and alarms of different levels
	802.3az EEE
	IFIT
	Port mirroring
	Registration Center Deployment
	GVRP
	iPCA、sFlow、NQA、Telemetry
Interoperability	Supports VBST (Compatible with PVST/PVST+/RPVST)

Networking and Applications

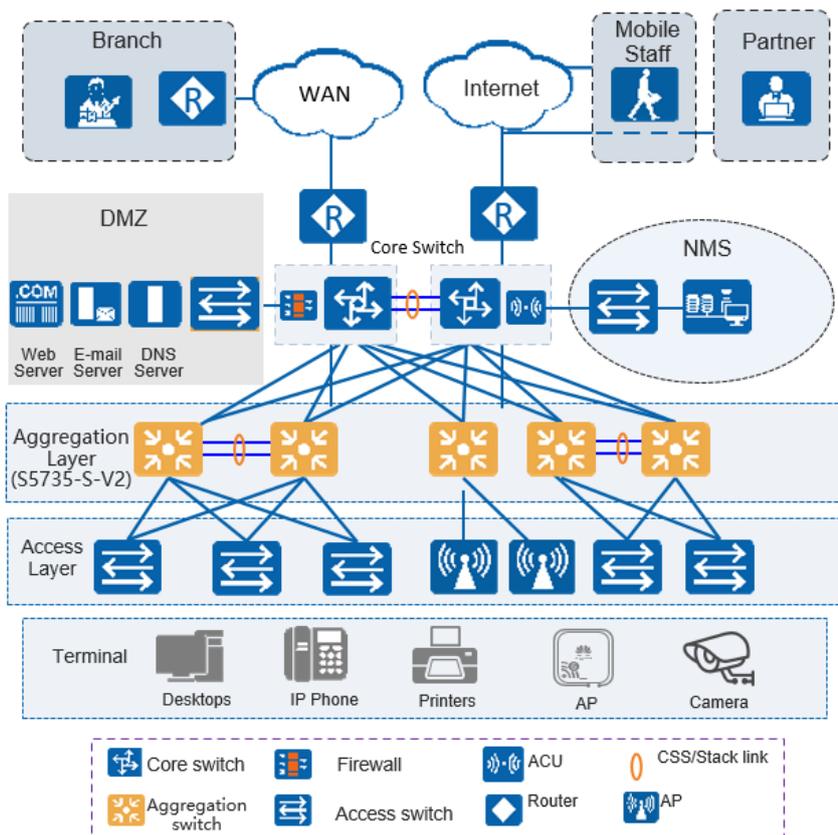
Large-Scale Enterprise Campus Network

CloudEngine S5735-S-V2 series 2.5GE 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-S-V2 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.



Ordering Information

The following table lists ordering information of the CloudEngine S5735-S-V2 series 2.5GE switches.

Model	Product Description
CloudEngine S5735-S24PN4XE-V2	CloudEngine S5735-S24PN4XE-V2 (24 x 10/100/1000/2.5G Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports, PoE+, without power module)
CloudEngine S5735-S48PN4XE-V2	CloudEngine S5735-S48PN4XE-V2 (48 x 10/100/1000/2.5G Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports, PoE+, without power module)
PAC600S56-EB	600 W AC PoE power module
PAC1000S56-EB	1000 W AC PoE power module
PDC1000S56-EB	1000 W DC PoE power module
N1-S57S-M-Lic	S57XX-S Series Basic SW, Per Device
N1-S57S-M-SnS1Y	S57XX-S Series Basic SW, SnS, Per Device, 1Year
N1-S57S-F-Lic	N1-CloudCampus, Foundation, S57XX-S Series, Per Device
N1-S57S-F-SnS1Y	N1-CloudCampus, Foundation, S57XX-S Series, SnS, Per Device, 1Year
N1-S57S-A-Lite-Lic	N1-CloudCampus,Advanced-Lite,S57XX-S, Per Device
N1-S57S-A-Lite-SnS-3Y	N1-CloudCampus,Advanced-Lite,S57XX-S,SnS,Per Device,3 Year
N1-S57S-FToA-Lite-Lic	N1-Upgrade-Foundation to Advanced-Lite,S57XX-S,Per Device
N1-S57S-FToA-Lite-SnS-3Y	N1-Upgrade-Foundation to Advanced-Lite,S57XX-S,SnS,Per Device,3 Year

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

Copyright © Huawei Technologies Co., Ltd. 2024. 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