# Huawei CloudEngine S5735-S-C-V2 Series Guarding Switches Brochure

Huawei CloudEngine S5735-S-C-V2 series guarding are standard gigabit Ethernet switches that provide all GE downlink ports and 10GE uplink ports.

## Product Overview

CloudEngine S5735-S-C-V2 series guarding switches are developed based on next-generation high-performing hardware and software platform. CloudEngine S5735-S-C-V2 switches support simplified operations and maintenance (O&M), and flexible Ethernet networking. It also provides enhanced Layer 3 features, mature IPv6 features, dustproof and anti-corrosion. CloudEngine S5735-S-C-V2 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-C-V2 series.

Models and appearances of the CloudEngine S5735-S-C-V2 series

| Models and Appearances | Description |
| --- | --- |
|  CloudEngine S5735-S24T4XE-C-V2 | • 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports<br>• 1+1 power supply backup<br>• Forwarding performance: 132 Mpps<br>• Switching capacity*: 176 Gbps/520 Gbps |
|  CloudEngine S5735-S48T4XE-C-V2 | • 48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports<br>• 1+1 power supply backup<br>• Forwarding performance: 168 Mpps<br>• Switching capacity*: 224 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

### High Protection Capability

• CloudEngine S5735-S-C-V2 and power supplies are coated to prevent dust and corrosion. The fans of the device adopt the intelligent speed adjustment design. When the temperature is lower than a certain value, the fans stop running. When the temperature is high, the fans run. In addition, the power supply adopts the fan-free natural heat dissipation design, which provides strong dustproof capability.

## Powerful Service Processing Capability

- CloudEngine S5735-S-C-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-C-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-C-V2 supports MAC address authentication, 802.1X authentication, and implements dynamic delivery of policies (VLAN, QoS, and ACL) to users.

- CloudEngine S5735-S-C-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-C-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-C-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-C-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 supporting traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), CloudEngine S5735-S-C-V2 is also designed with the industry's latest Ethernet Ring Protection Switching (ERPS) technology. 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-S-C-V2 supports Smart Link, which implements backup of uplinks. One CloudEngine S5735-S-C-V2 switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

## Easy Network deployment

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

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

## Network Slicing Functions

- CloudEngine S5735-S-C-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.

## Intelligent O&M

- CloudEngine S5735-S-C-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-C-V2 supports the intelligent upgrade feature. Specifically, CloudEngine S5735-S-C-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-C-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-C-V2 switch through Python scripts to quickly innovate functions and implement intelligent O&M.

# Licensing

CloudEngine S5735-S-C-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.

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:** <br>• NE management: Device management, topology management and discovery <br>• User access authentication | × | √ | √ |

| Switch Functions | N1 Basic Software | N1 Foundation Software Package | N1 Advanced Software Package |
|---|---|---|---|
| **Advanced network automation and intelligent O&M:** <br> IPCA, CampusInsight basic functions | × | × | √ |

# Product Specifications

| Item | CloudEngine S5735-S24T4XE-C-V2 | CloudEngine S5735-S48T4XE-C-V2 |
|---|---|---|
| Fixed port | 24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports,2 stack ports | 48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 2 stack ports |
| Dimensions (H x W x D) | 43.6 mm x 442 mm x 420 mm | 43.6 mm x 442 mm x 420 mm |
| Chassis height | 1 U | 1 U |
| Chassis weight (including packaging) | 7.48 kg | 7.74 kg |
| Applicable Scenarios | Anti-corrosion, anti-static, and industrial scenarios | Anti-corrosion, anti-static, and industrial scenarios |
| Power supply type | • 80 W AC | • 80 W AC |
| Rated voltage range | • AC input: 100 V AC to 240 V AC, 50/60 Hz | • AC input: 100 V AC to 240 V AC, 50/60 Hz |
| Maximum voltage range | • AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz | • AC input: 90 V AC to 290 V AC, 45 Hz to 65 Hz |
| Maximum power consumption | • 33.1 W (2 *80W AC) | • 55.12 W (2 *80W AC) |
| Noise | • Under normal temperature (sound power): noise free <br> • Under high temperature (sound power): 51dB (A) <br> • Under normal temperature (sound pressure): noise free | • Under normal temperature (sound power): noise free <br> • Under high temperature (sound power): 58.6dB (A) <br> • Under normal temperature (sound pressure): noise free |
| Long-term operating temperature | • 0-1800 m altitude: -5°C to +50°C <br> *Must be used with industrial optical modules* | • 0-1800 m altitude: -5°C to +50°C <br> *Must be used with industrial optical modules* |
| 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 (service port) | ±7 kV in common mode | ±7 kV in common mode |
| Surge protection specification (power port) | • AC power port: ±6 kV in differential mode, ±6 kV in common mode | • AC power port: ±6 kV in differential mode, ±6 kV in common mode |
| Heat dissipation | Natural heat dissipation at normal temperature, air cooling at high temperatures (≥ 40°C), and intelligent speed adjustment | Natural heat dissipation at normal temperature, air cooling at high temperatures (≥ 40°C), and intelligent speed adjustment |

# Service Features

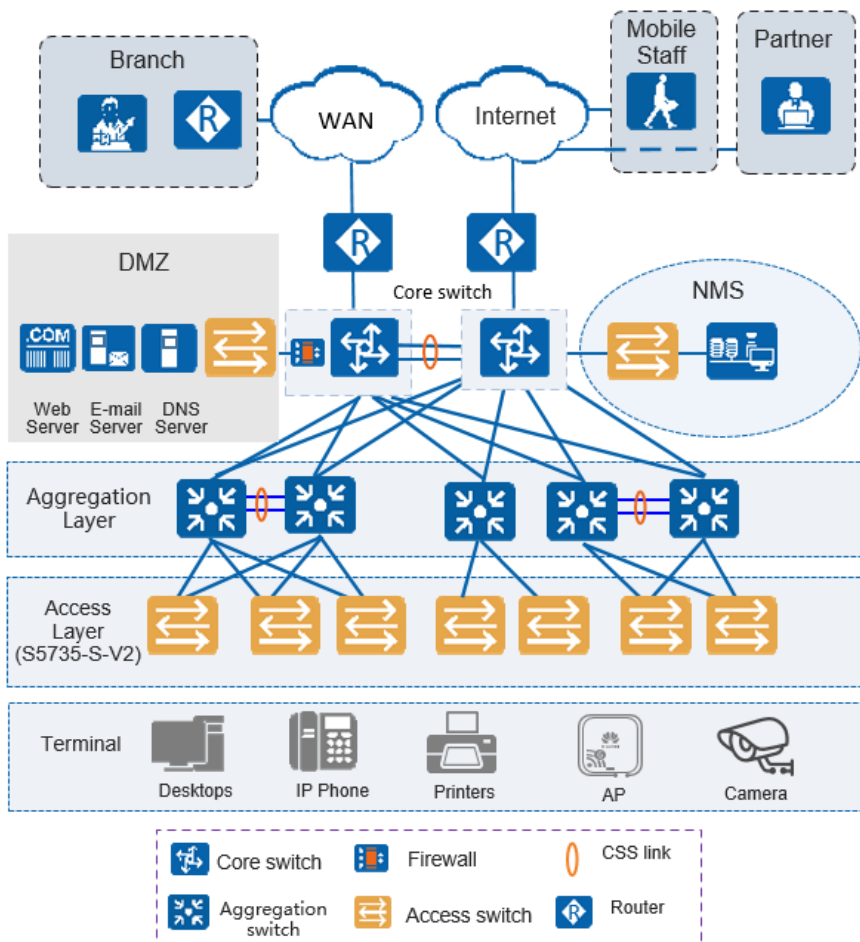| Item | Description |
|------|-------------|
| MAC address table | IEEE 802.1d compliance |
| | 32K MAC entries(MAX) |
| | MAC address learning and aging |
| | Static, dynamic, and blackhole MAC address entries |
| | Packet filtering based on source MAC addresses |
| VLAN | 4K VLANs |
| | Voice VLAN |
| | 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, 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 tracert, 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 |

| Item | Description |
|------|-------------|
| | 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 |
| | 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 |

| Item | Description |
|---|---|
| | 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-C-V2 series guarding switches can be deployed at the access layer of a campus network to build a high-performance and highly reliable enterprise network.



# Ordering Information

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

| Model | Product Description |
|---|---|
| CloudEngine S5735-S24T4XE-C-V2 | CloudEngine S5735-S24T4XE-C-V2 (24 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports, without power module) |

| Model | Product Description |
|---|---|
| CloudEngine S5735-S48T4XE-C-V2 | CloudEngine S5735-S48T4XE-C-V2 (48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 2 x 12GE stack ports, without power module) |
| PAC80S12-CN | 80 W AC 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