# CloudEngine 5855SL-48T4XS Switch Datasheet

CloudEngine 5855SL-48T4XS series standard gigabit Ethernet switches provide GE downlink ports and 10GE uplink ports.

## Product Overview

Based on the next-generation high-performance hardware and Huawei's unified software platform, CloudEngine 5855SL-48T4XS series switches provide enhanced features, simplified operations and maintenance (O&M), flexible Ethernet networking, and mature IPv6 features. These capabilities make them ideal for various application scenarios such as data center network (DCN) management.

## Product Models and Appearances

CloudEngine 5855SL-48T4XS series switches fall into the following models:

| Product Appearance | Description |
| --- | --- |
|  <br>**CloudEngine 5855SL-48T4XS** | ● 48 x 10/100/1000Base-T ports, 4 x 10 GE SFP+ ports, 2 x dedicated stack ports<br>● AC power supply<br>● Packet forwarding rate: 207 Mpps<br>● Switching capacity: 520 Gbps/5.2 Tbps |

# Product Features and Highlights

## Flexible Ethernet Networking

- In addition to supporting traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), CloudEngine 5855SL-48T4XS is also designed with the industry's latest Ethernet Ring Protection Switching (ERPS) technology. ERPS is defined in ITU-T G.8032, and it implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- CloudEngine 5855SL-48T4XS series switches support the Smart Link function, which implements backup of uplinks. One switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

## Diversified Security Control

- CloudEngine 5855SL-48T4XS supports multiple security authentication modes such as MAC address authentication, 802.1X authentication, and portal authentication, and implements dynamic policy delivery (VLAN, QoS, and ACL) to users. Especially, the switch supports 802.1X authentication, MAC address authentication, and hybrid authentication on a per port basis.
- CloudEngine 5855SL-48T4XS supports comprehensive defense 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 5855SL-48T4XS 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 5855SL-48T4XS supports strict ARP entry learning, which prevents ARP spoofing from exhausting ARP entries and ensures Internet access of authorized users.

## Easy Operations and Maintenance

- CloudEngine 5855SL-48T4XS supports Easy Operation, a solution that provides zero-touch deployment, replacement of faulty devices without additional configuration, USB-based deployment, batch configuration, and batch remote upgrade. The Easy Operation solution facilitates device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduces operations and maintenance (O&M) costs. The switches can be managed and maintained using SNMPv1, SNMPv2c, SNMPv3, command-line interface (CLI), web system, or SSHv2.0. Additionally, they support remote network monitoring (RMON), multiple log hosts, port traffic statistics collection, and network quality analysis, facilitating network optimization and reconstruction.
- CloudEngine 5855SL-48T4XS supports the MUX VLAN function. MUX VLAN contains a principal VLAN and multiple subordinate VLANs. Subordinate VLANs can be classified into group VLANs and separate VLANs. Subordinate VLANs can communicate with the principal VLAN. Ports on a subordinate group VLAN can communicate with each other, whereas ports on a subordinate separate VLAN cannot communicate with each other. CloudEngine 5855SL-48T4XS supports VLAN Central Management Protocol (VCMP) and VLAN-based Spanning Tree (VBST).

*Note: All models that provide USB ports support this function.*

## iStack

- CloudEngine 5855SL-48T4XS supports intelligent stack (iStack). This technology virtualizes multiple switches that support stacking into a logical switch.
- Member devices in an iStack implement redundancy to improve device reliability and use inter-device link aggregation to improve link reliability.

- iStack technology provides high network scalability. You can easily increase the number of ports, bandwidth, and processing capability of a stack by adding member devices.
- 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 device to centrally configure and manage all the member devices in the stack.
- CloudEngine 5855SL-48T4XS supports electrical port stacking, which simplifies stack construction and reduces costs.
- CloudEngine 5855SL-48T4XS supports two dedicated stack ports, which free uplink ports and do not need to be configured.

## OPS

- The 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

| Item | CloudEngine 5855SL-48T4XS |
|---|---|
| Fixed port | 48 x 10/100/1000Base-T ports, 4 x 10GE SFP+ ports, 2 x dedicated stack ports |
| Dimensions (H x W x D) | 43.6 mm x 442 mm x 220 mm |
| Chassis height | 1 U |
| Weight in full configuration (including packaging materials) | 4.01 kg |
| Power supply | Built-in AC power module |
| Rated voltage | 100 V AC to 240 V AC, 50/60 Hz |
| Maximum voltage | AC input: 90 V AC to 264 V AC, 47-63 Hz |
| Maximum power consumption | 75.25 W |
| Noise | • Sound power at normal temperature: 45.6 dB(A)<br>• Sound power at high temperature: 58.6 dB(A)<br>• Sound pressure at normal temperature: 33.6 dB(A) |
| Long-term operating temperature | –5°C to +50°C |
| Storage temperature | –40°C to +70°C |
| Relative humidity | 5% to 95% (non-condensing) |
| Heat dissipation mode | Air cooling, intelligent fan speed adjustment |

## Service Features

| Feature | Description |
|---|---|
| MAC address table | Automatic MAC address learning and aging |
| | Up to 32k MAC address entries |
| | Static, dynamic, and blackhole MAC address entries |
| | Source MAC address filtering |
| | Interface-based MAC learning limiting |
| VLAN features | 4094 VLANs |
| | Voice VLAN |
| | MUX VLAN |
| | VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and interfaces |
| | VLAN stacking |
| Ethernet ring protection | Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switchover |
| | ERPS (G.8032) |
| | STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s) |
| | BPDU protection, root protection, and loop protection |
| | BPDU tunnel |
| Multicast | PIM DM, PIM SM, and PIM SSM |
| | IGMPv1/v2/v3, IGMPv1/v2/v3 snooping, and MLD snooping |
| | Multicast load balancing among member ports of a trunk |
| | Interface-based multicast traffic statistics |
| | Multicast VLAN |
| IP routing | Static routing, RIP, RIPng, OSPF, OSPFv3, VRRP, VRRP6, routing policy, and policy-based routing (PBR) |
| | Up to 4096 FIBv4 entries |
| | Up to 1024 FIBv6 entries |
| IPv6 features | Neighbor discovery (ND) |
| | PMTU |
| | IPv6 ping, IPv6 tracert, and IPv6 telnet |
| Reliability | LACP |

| Feature | Description |
| --- | --- |
| | VRRP |
| | BFD |
| | LLDP |
| QoS/ACL | Rate limiting on packets sent and received by an interface |
| | Packet redirection |
| | Interface-based traffic policing; two-rate and three-color CAR |
| | Eight queues on each interface |
| | DRR, SP, and DRR+SP queue scheduling algorithms |
| | Re-marking of 802.1p and DSCP priorities for packets |
| | 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, source/destination port number of TCP or UDP, protocol type, and VLAN ID |
| | Queue-based rate limiting and traffic shaping on interfaces |
| | VLAN slicing |
| Security features | Hierarchical user management and password protection |
| | Defense against DoS, ARP, and ICMP attacks |
| | 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 an interface |
| | Multiple authentication modes including AAA, RADIUS, HWTACACS, and NAC authentication |
| | SSH v2.0 |
| | Hypertext Transfer Protocol Secure (HTTPS) |
| | CPU protection |
| | Blacklist and whitelist |
| | DHCP client, DHCP relay, DHCP server, and DHCP snooping |
| | DHCPv6 client and DHCPv6 relay |
| Management and | iStack |

| Feature | Description |
| --- | --- |
| maintenance | Cloud management based on NETCONF or YANG |
| | Virtual cable test (VCT) |
| | Remote configuration and maintenance using Telnet |
| | SNMPv1/v2/v3 |
| | RMON |
| | eSight and web-based network management features |
| | HTTPS |
| | LLDP/LLDP-MED |
| | System logs and multi-level alarms |
| | IEEE 802.3az Energy Efficient Ethernet (EEE) |
| | In-situ Flow Information Telemetry (IFIT) |
| | Port mirroring |
| | Deployment through the registration query center |
| Interoperability | VBST, working with PVST, PVST+, and RPVST |

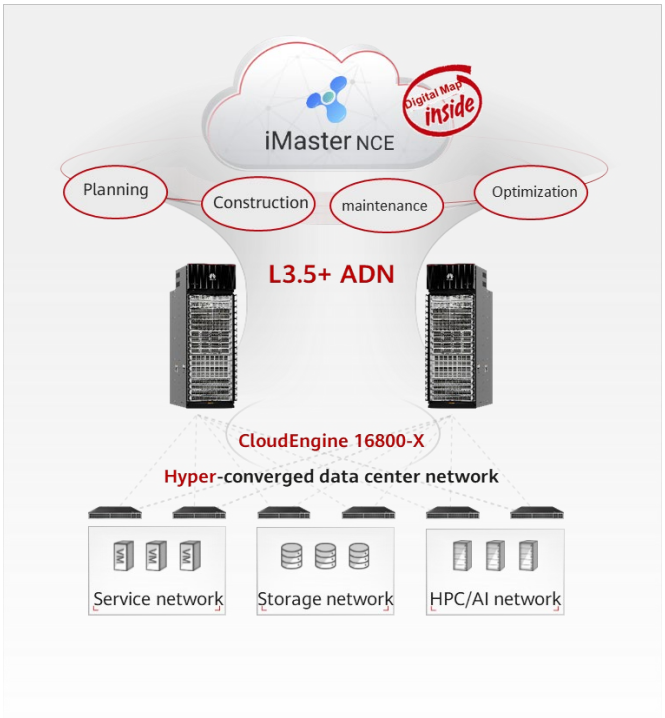
# Ordering Information

| Product Model | Product Description |
| --- | --- |
| **CE5855SL-48T4XS** | CE5855SL-48T4XS switch (48*GE RJ45, 4*10GE SFP, Built-in Power Modules, Built-in Fans) |

# Networking and Applications

## Typical Applications in DCs

On a typical DCN, CloudEngine 16800, 12800, or 8800 switches work as core switches, whereas CloudEngine 8800, 6800, or 5800 switches work as ToR switches and connect to the core switches through 100GE, 40GE, or 10GE ports. CloudEngine 5800 switches function as management switches. All of this allows large-scale VM migration and flexible service deployment.



# More Information

For more information about Huawei 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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