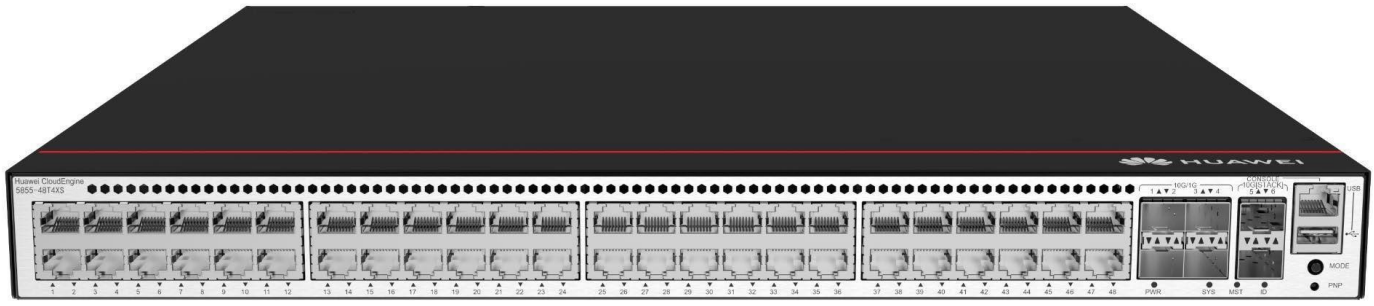
CloudEngine 5855-48T4XS Switch Datasheet

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

Product Appearance	Description
 **CloudEngine 5855-48T4XS**	• 48 x 10/100/1000BASE-T ports, • 4 x 10GE SFP+ ports

Product Features and Highlights

Powerful Service Processing Capability

- CloudEngine 5855-48T4XS supports Layer 2 and Layer 3 multicast protocols, including Protocol Independent Multicast Sparse Mode (PIM SM), PIM Dense Mode (DM), PIM Source-Specific Multicast (SSM), and Internet Group Management Protocol (IGMP) snooping, meeting DCN requirements.

- CloudEngine 5855-48T4XS supports Layer 3 features such as OSPF, IS-IS, BGP, and VRRP, meeting DCN requirements.

Diversified Security Control

- CloudEngine 5855-48T4XS supports MAC address authentication and 802.1X authentication, and can dynamically deliver user policies (VLAN, QoS, and ACL).

- CloudEngine 5855-48T4XS 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 spoofing attacks, DHCP request flood attacks, and attacks with variable DHCP CHADDR values in packets.

- CloudEngine 5855-48T4XS can generate and maintain DHCP snooping binding entries and discard invalid packets that do not match the binding entries. DHCP snooping trusted and untrusted interfaces can be specified to ensure that users connect only to the authorized DHCP server.

Various Reliability Protection Mechanisms

- CloudEngine 5855-48T4XS supports two pluggable power modules to implement 1+1 redundancy. AC and DC power modules can be used together, allowing for flexible configuration of AC or DC power modules based on service requirements.

- In addition to supporting traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), CloudEngine 5855-48T4XS 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 5855-48T4XS supports 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.

Simple Network Deployment

- CloudEngine 5855-48T4XS supports zero-touch deployment of new devices, configuration-free replacement of faulty devices, USB-based deployment, and batch device configuration. These functions facilitate installation, upgrade, service provisioning, and other management and maintenance tasks. The switch also supports topology plan-based deployment as well as automatic discovery and collection and intelligent error correction for network topologies, thereby reducing 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.

Mature IPv6 Technologies

- Based on the mature and stable VRP platform, CloudEngine 5855-48T4XS supports IPv4/IPv6 dual stack and IPv6 RIPng.

- The switch can be deployed on a pure IPv4 or IPv6 network or a network where IPv4 and IPv6 coexist, meeting IPv4-to-IPv6 transition requirements.

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.

Hardware Specifications

Item		CloudEngine 5855-48T4XS
Physical features	Dimensions (H x W x D)	43.6 mm x 442.0 mm x 420.0 mm
	Weight without packaging (full configuration) [kg (lb)]	7.74 kg
	Switching capacity (Gbps)	176
	Forwarding performance (Mpps)	132
10/100/1000BASE-T ports		48
10GE SFP+ ports		4
Management interface	Console port	1 x RJ45 interface
	USB port	1
CPU	Number of cores	2
Buffer	System Buffer	2 MB
Power supply	Power modules	180 W AC power supply 600 W AC power supply 1200 W DC power supply
	Rated input voltage [V]	AC input: 100 V AC to 240 V AC, 50/60 Hz High-voltage DC input: 240 V DC DC input (1200 W DC): –48 V DC to –60 V DC
	Input voltage range [V]	AC input: 90 V AC to 290 V AC; 45 Hz to 65 Hz Highvoltage DC input: 190 V DC to 290 V DC DC input: –38.4 V DC to –72 V DC
	Typical power	39 W
	Maximum power	65 W (with two 180 W AC power modules) 93 W (with two 1200 W DC power modules)

Heat dissipation	Heat dissipation mode	Air cooling
	Number of fans	2
	Heat dissipation airflow	Air intake from left, front, and right and air exhaust from rear
Environment specifications	Long-term operating temperature (°C)	-5°C to 50°C (0-1800 m)
	Storage temperature (°C)	-40°C to +70°C
	Storage relative humidity (RH)	5% to 95%
	Operating altitude (m)	Up to 5000
	Noise at normal temperature (27°C, sound pressure) (dBA)	Average: 29.9 dB(A); max: 32.9 dB(A)
	Noise at high temperature (40°C, sound pressure) (dBA)	46.6 db(A)
	Surge protection	AC power supply protection: 6 kV in common mode and 6 kV in differential mode DC power supply protection: 4 kV in common mode and 2 kV in differential mode
Reliability	MTBF (year)	124.62
	MTTR (hour)	2
	Availability	>0.99999

Performance and Scalability

Item	Value
Maximum number of MAC address entries	32K
Maximum number of routes (FIB IPv4/IPv6)	8K/3K
ARP size	4K
Maximum number of multicast routes	1024
Maximum number of ACLs	IPv4: 2432 @ 320 bits; IPv6: 1536 @ 480 bits
Number of BGP routes	8K
VPN size	64

Performance and Scalability

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
	In compliance with IEEE 802.1d
VLAN features	4K VLANs
	MUX VLAN
	VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and interfaces
	Basic QinQ and selective QinQ
Reliability	Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protective switchover
	G.8032 Ethernet Ring Protection Switching (ERPS)
	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s)
	BPDU protection, root protection, and loop protection
	LLDP
Multicast	PIM DM, PIM SM, and PIM SSM
	IGMPv1/v2/v3, IGMPv1/v2/v3 snooping, MLD snooping, and IGMP fast-leave
	Multicast load balancing among member ports of a trunk
	Interface-based multicast traffic statistics
	Multicast VLAN

IP routing	Static routing, RIP, RIPng, OSPF, OSPFv3, IS-IS, IS-ISv6, BGP, BGP4+, VRRP, VRRP6, ECMP, routing policy, and policy-based routing (PBR)
	Up to 8192 FIBv4 entries
	Up to 3072 FIBv6 entries
IPv6 features	Up to 3072 neighbor discovery (ND) entries
	PMTU
	IPv6 ping, IPv6 tracert, and IPv6 telnet
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, TCP/UDP port number, 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
Security features	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
	IEEE 802.1X authentication and MAC address authentication
Management and maintenance	iStack
	Cloud management based on NETCONF or YANG
	Virtual cable test (VCT)
	SNMPv1/v2c/v3
	RMON
	NMS
	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
CE5855-48T4XS	CE5855-48T4XS switch (48*GE RJ45, 4*10GE SFP, Built-in Fans, Port-side Intake, Without Power Modules)
CE5855-48T4XS-B	CE5855-48T4XS switch (48*GE RJ45, 4*10GE SFP, 2*AC Power Modules, Built-in Fans, Port-side Intake)

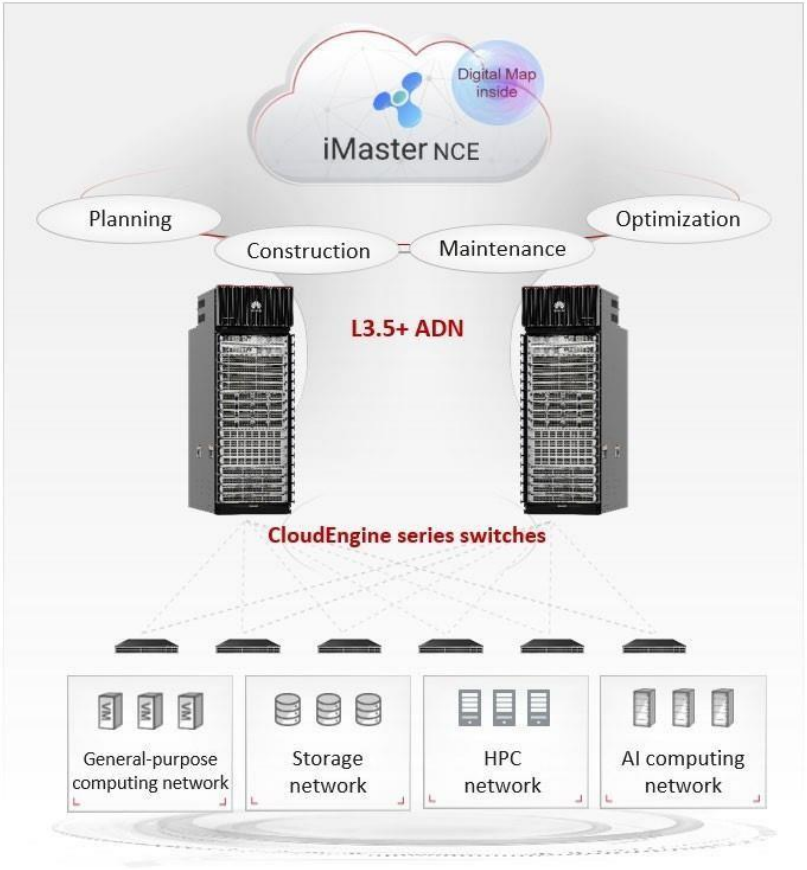
Power module

Model	Description	Applicable Product
PAC180S12-CN	180 W AC power module	CE5855-48T4XS
PAC600S12-PB	600 W AC power module	CE5855-48T4XS
PDC1K2S12-CE	1200 W DC power module	CE5855-48T4XS

Networking and Applications

Typical Applications in DCs

On a typical DCN, CloudEngine 16800 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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