CloudEngine 5800 Series Switches

V200R005C00

Product Description

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About This Document

Intended Audience

This document is intended for network engineers responsible for network design and deployment. You should understand your network well, including the network topology and service requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
⚠ DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
⚠ NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
📖 NOTE	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Mappings between Product Software Versions and NMS Versions

The mappings between product software versions and NMS versions are as follows.

CE series switches Product Software Version	NMS
V200R005C00	eSight V300R009C00/iManager U2000 V200R018C50

Mappings between Product Software Versions and Controller Versions

The mappings between product software versions and Controller versions are as follows.

CE series switches Product Software Version	Controller
V200R005C00	Agile Controller-DCN V300R003C00

Contents

1 Product and Version Mapping

Table 1-1 lists mappings between CloudEngine 5800 series switches and versions.

Table 1-1 Product and version mapping

Model	Minimum Version
CE5810-24T4S-EI	V100R002C00
CE5810-48T4S-EI	V100R002C00
CE5850-48T4S2Q-EI	V100R001C00
CE5850-48T4S2Q-HI	V100R003C00
CE5855-48T4S2Q-EI	V100R005C10
CE5855-24T4S2Q-EI	V100R005C10

2 Product Overview

Huawei CloudEngine 5800 (CE5800 for short) series switches are next-generation, high-density gigabit Ethernet switches designed for data centers and high-end campus networks. CE5800 series switches have an advanced hardware architecture design with the industry's highest density of GE access ports. They are the industry's first gigabit access switches that provide 40GE uplink ports. Using the Huawei VRP8 software platform, CE5800 switches support Transparent Interconnection of Lots of Links (TRILL) and have a high stacking capability (up to 16-member switches in a stack system). In addition, the airflow direction (front-to-back or back-to-front) can be changed. CE5800 switches can work with CE12800/CE8800/CE7800/CE6800 switches to build an elastic, virtualized, high-quality fabric that meets the requirements of cloud-computing data centers.

CE5800 switches can function as GE access switches with high-density ports on data center networks to help enterprises and carriers build a scalable data center network platform for cloud computing. They can also be used as aggregation or access switches on enterprise campus networks.

3 Product Appearance

NOTE

This section only briefly describes switch appearances and key hardware parameters. For detailed hardware information, see the *Hardware Description*.

CE5810

Figure 3-1 and **Figure 3-2** show appearances of the CE5810-24T4S-EI and CE5810-48T4S-EI respectively.

Figure 3-1 Appearance of the CE5810-24T4S-EI

Front (power supply side)

Rear (port side)

Figure 3-2 Appearance of the CE5810-48T4S-EI

Front (power supply side)

Rear (port side)

Table 3-1 lists key hardware parameters.

Table 3-1 CE5810 key hardware parameters

Parameter	CE5810-24T4S-EI	CE5810-48T4S-EI
Interface description	24 GE BASE-T electrical ports Four 10GE SFP+ optical ports	48 GE BASE-T electrical ports Four 10GE SFP+ optical ports
Dimensions (W x D x H)	442.0 mm x 420.0 mm x 43.6 mm	442.0 mm x 420.0 mm x 43.6 mm
Weight	8.0 kg	8.2 kg
Operating temperature	0°C to 40°C (0 m to 1800 m)	0°C to 40°C (0 m to 1800 m)
Storage temperature	-40°C to +70°C	-40°C to +70°C
Relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Operating voltage	Maximum AC voltage range: 90 V to 290 V, 45 Hz to 65 Hz Maximum DC voltage range: -38.4 V to -72 V	Maximum AC voltage range: 90 V to 290 V, 45 Hz to 65 Hz Maximum DC voltage range: -38.4 V to -72 V
Maximum power supply capacity	68 W	92 W

CE5850

Figure 3-3, Figure 3-4, Figure 3-5, and Figure 3-6 show appearances of the CE5850-48T4S2Q-EI, CE5850-48T4S2Q-HI, CE5855-24T4S2Q-EI, and CE5855-48T4S2Q-EI respectively.

Figure 3-3 Appearance of the CE5850-48T4S2Q-EI

Front (power supply side)

Rear (port side)

Figure 3-4 Appearance of the CE5850-48T4S2Q-HI

Front (power supply side)

Rear (port side)

Figure 3-5 Appearance of the CE5855-24T4S2Q-EI

Front (power supply side)

Rear (port side)

Figure 3-6 Appearance of the CE5855-48T4S2Q-EI

Front (power supply side)

Rear (port side)

Table 3-2 lists key hardware parameters.

Table 3-2 CE5850 key hardware parameters

Parameter	CE5850-48T4S 2Q-EI	CE5850-48T4S 2Q-HI	CE5855-24T4S 2Q-EI	CE5855-48T4S 2Q-EI
Interface description	48 GE BASE-T electrical ports Four 10GE SFP + optical ports Two 40GE QSFP+ optical ports	48 GE BASE-T electrical ports Four 10GE SFP + optical ports Two 40GE QSFP+ optical ports	24 GE BASE-T electrical ports Four 10GE SFP + optical ports Two 40GE QSFP+ optical ports	48 GE BASE-T electrical ports Four 10GE SFP + optical ports Two 40GE QSFP+ optical ports
Dimensions (W x D x H)	442.0 mm x 420.0 mm x 43.6 mm	442.0 mm x 420.0 mm x 43.6 mm	442.0 mm x 420.0 mm x 43.6 mm	442.0 mm x 420.0 mm x 43.6 mm
Weight	8.85 kg	8.8 kg	8.1 kg	8.4 kg
Operating temperature	0°C to 40°C (0 m to 1800 m)	0°C to 40°C (0 m to 1800 m)	0°C to 40°C (0 m to 1800 m)	0°C to 40°C (0 m to 1800 m)
Storage temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Operating voltage	Maximum AC voltage range: 90 V to 290 V, 45 Hz to 65 Hz Maximum DC voltage range: -38.4 V to -72 V	Maximum AC voltage range: 90 V to 290 V, 45 Hz to 65 Hz Maximum DC voltage range: -38.4 V to -72 V	Maximum AC voltage range: 90 V to 264 V, 45 Hz to 65 Hz Maximum DC voltage range: -38.4 V to -72 V	Maximum AC voltage range: 90 V to 264 V, 45 Hz to 65 Hz Maximum DC voltage range: -38.4 V to -72 V

Parameter	CE5850-48T4S 2Q-EI	CE5850-48T4S 2Q-HI	CE5855-24T4S 2Q-EI	CE5855-48T4S 2Q-EI
Maximum power supply capacity	133 W	131 W	75 W	103 W

4 Typical Applications

4.1 Data Center Applications

On a typical data center network, CE12800/CE8800/CE7800 switches work as core switches, whereas CE8800/CE6800/CE5800 switches work as access switches and connect to the core switches using 100GE/40GE/25GE/10GE ports. The switches use VXLAN and other fabric protocols to establish a non-blocking large Layer 2 network, which allows large-scale VM migrations and flexible service deployments.

Figure 4-1 Typical application of CE series switches in a data center
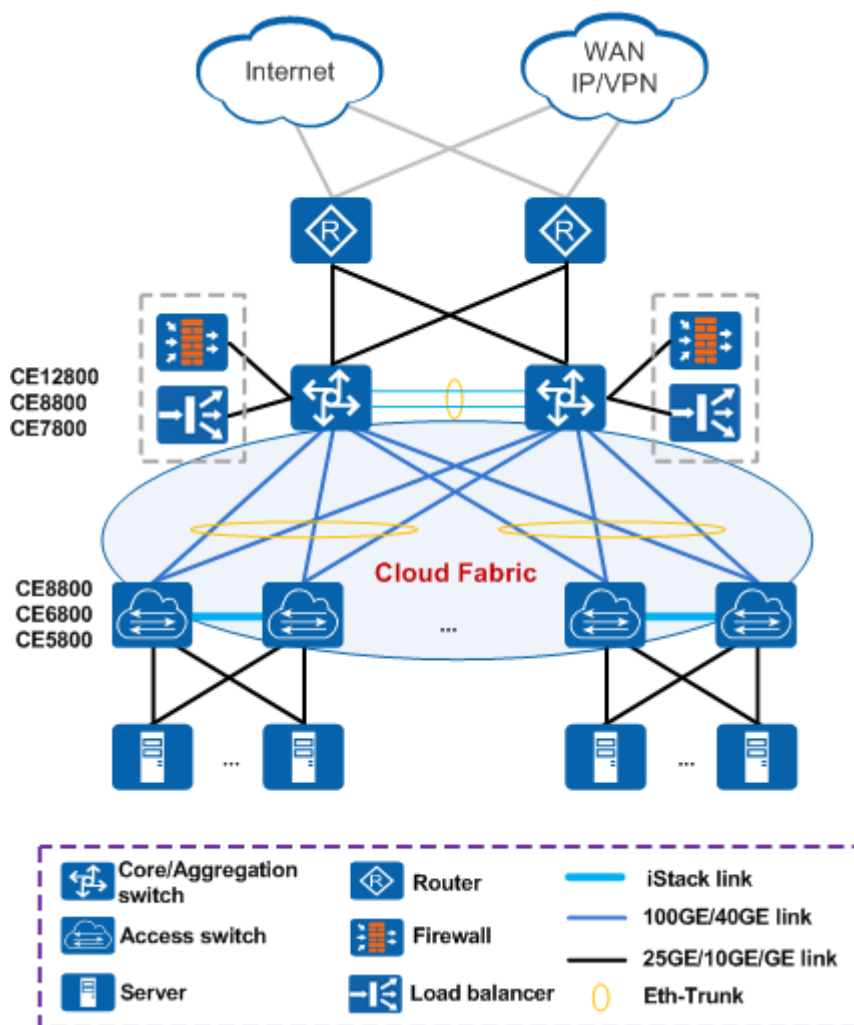
4.2 Campus Network Applications

On a typical campus network, multiple CE12800/CE8800/CE7800 switches are virtualized into a logical core switch using CSS or iStack technology. Multiple CE8800/CE7800/CE6800 switches at the aggregation layer form a logical switch using iStack technology. CSS and iStack improve network reliability and simplify network management. At the access layer, CE6800/CE5800 switches are virtualized using technologies such as SVF and M-LAG to provide high-density line-rate ports.

Figure 4-2 Typical application of CE series switches on a campus network
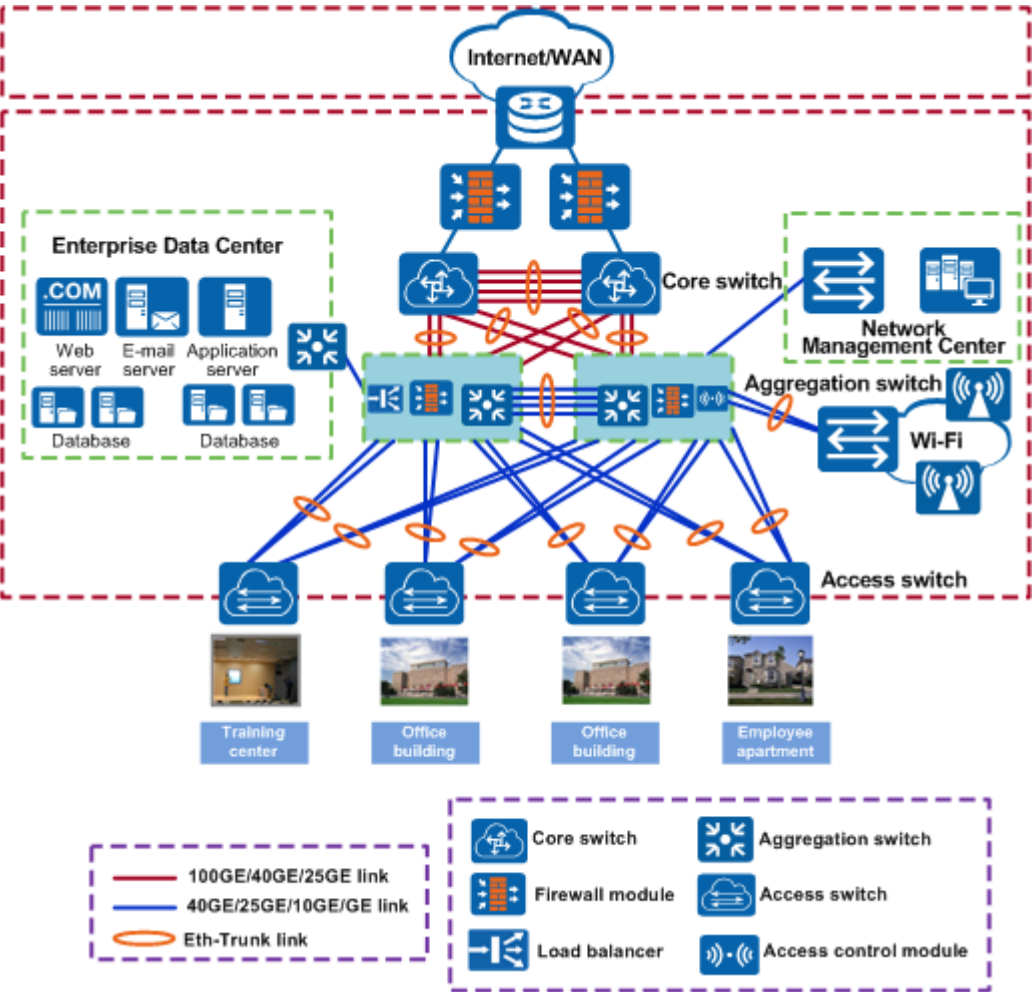
5 Product Features

5.1 Feature List

Table 5-1 lists the main features supported by the CE5800.

Table 5-1 Main features supported by the CE5800

Item	Feature	Support
Device virtualization	Stack	- iStack - Stack split and merge - Dual-active detection - Version and configuration synchronization
	SVF	SVF
	M-LAG	M-LAG
Network virtualization	TRILL	- TRILL - TRILL NSR - TRILL ECMP - IGMP over TRILL - TRILL multi-homing active-active - Association between STP/RSTP/MSTP and TRILL - TRILL gateway **NOTE** The CE5810 does not support TRILL.
VM awareness	VM awareness	The Agile Controller communicates with the VM management platform to implement dynamic deployment of VM network policies and online VM migration on the switch.

Item	Feature	Support
NLB server cluster association	NLB server cluster association	• Association between virtual IP addresses of NLBs and multicast MAC addresses • Association between one multicast MAC address and multiple outbound interfaces
Programmability	OPS	OPS
Interface management	Interface management	• Operating modes of full-duplex and auto-negotiation • 10M, 100M, 1000M, 10GE, and 40GE Ethernet ports • 40GE port split • Aggregating 10GE optical ports into a 40GE port • Traffic suppression and storm suppression • Jumbo frames • Configuration of the minimum jumbo frame length • Configuration of the minimum jumbo frame length • Port isolation and forwarding restriction • Protocol-based packet statistics collection on a port **NOTE** • Only 10GE optical ports on the CE5855-24T4S2Q-EI can be aggregated into a 40GE port. • The CE5810EI does not support configuration of the minimum jumbo frame length.
Ethernet	Link aggregation	• Link aggregation in manual load balancing mode and LACP mode • Load balancing among links of an Eth-Trunk
	VLAN	• Access modes of access, trunk, hybrid, and QinQ • VLAN creation and assignment • VLAN aggregation • MUX VLAN • Transparent transmission of protocol packets in a VLAN • Batch configuration of multiple VLANs
	QinQ	• Basic QinQ • Selective QinQ
	VLAN Mapping	• 1 to 1 VLAN mapping • 2 to 1 VLAN mapping • 2 to 2 VLAN mapping
	GVRP	GVRP

Item	Feature	Support
	MAC	- Automatic learning and aging of MAC addresses - Static, dynamic, and blackhole MAC address entries - Packet filtering based on source MAC addresses - Interface-based MAC address learning limiting
Ethernet loop prevention	MSTP	- STP - RSTP - MSTP - VBST - BPDU protection, root protection, and loop protection - Partitioned STP and Layer 2 protocol transparent transmission
	ERPS	G.8032 v1/v2
IP features	ARP	- Static and dynamic ARP entries - Applying ARP in a VLAN - Aging ARP entries - Gratuitous ARP - Proxy ARP - ARP-Ping - Fast ARP reply - ARP gateway anti-collision - Disabling learning of ARP entries on different network segments
	IPv6	- IPv4/IPv6 dual stack - ND - IPv6 over IPv4 manual tunnel - IPv6 over IPv4 GRE tunnel 6to4 Tunnel **NOTE** The CE5855EI does not support IPv6. However, interfaces on a CE5855EI provide the IPv6 capability when the switch functions as a leaf switch in a super virtual fabric (SVF) system and the SVF forwarding mode is set to centralized or hybrid.
	DHCP	- DHCP server - DHCP snooping - DHCP relay - DHCPv6 server - DHCPv6 relay
	DNS	- DNS client - IPv6 DNS client

Item	Feature	Support
IP forwarding	IP unicast routing	- IPv4 and IPv6 static routes - RIPv1, RIPv2, and RIPng - OSPFv2 and OSPFv3 - IS-IS (IPv4) and IS-IS (IPv6) - BGP and BGP4+ - Routing policy - Policy-based routing **NOTE** The CE5855EI does not support IPv6. However, interfaces on a CE5855EI provide the IPv6 capability when the switch functions as a leaf switch in a super virtual fabric (SVF) system and the SVF forwarding mode is set to centralized or hybrid.
	IP multicast routing	- IGMPv1, IGMPv2, and IGMPv3 - IGMP SSM mapping - MLDv1 and MLDv2 - MLD SSM mapping - PIM-DM (IPv4) - PIM-SM (IPv4) and PIM-SM (IPv6) - PIM-SSM (IPv4) and PIM-SSM (IPv6) - Bidirectional PIM (IPv4) and bidirectional PIM (IPv6) - MSDP - Multicast routing policy - RPF check - IGMP snooping and MLD snooping - IGMP snooping proxy and MLD snooping proxy - Fast leave - Multicast traffic suppression - Multicast VLAN **NOTE** A standalone CE5855EI does not support IPv6 multicast. When a CE5855EI functions as a leaf switch in an SVF system, ports on the switch provide the IPv6 multicast capability.
	VPN	- IPv4 multi-VPN-instance CE (MCE) - IPv6 MCE - GRE **NOTE** The CE5855EI does not support IPv6 MCE and GRE. Interfaces on a CE5855EI provide the IPv6 capability and support IPv6 MCE when the switch functions as a leaf switch in an SVF system and the SVF forwarding mode is set to centralized or hybrid.

Item	Feature	Support
Device reliability	BFD	● Basic BFD functions ● Association between BFD and Eth-Trunk ● BFD for static routing/OSPF/IS-IS/BGP ● BFD for PIM ● BFD for VRRP
	Others	● VRRP ● DLDP ● Smart Link and Monitor Link ● EFM (802.3ah) ● CFM (802.1ag)
QoS	Traffic classification	● Traffic classification based on combination of the L2 protocol header, IP 5-tuple, outbound interface, and 802.1p priority ● Traffic classification based on the C-VID and C-PRI of QinQ packets ● Matching inner information of TRILL packets
	Traffic behavior	● Access control after traffic classification ● Traffic policing based on traffic classifiers ● Re-marking based on the traffic classification result ● Class-based packet queuing ● Packet redirection after traffic classification ● Association between traffic classifiers and traffic behaviors
	Priority mapping	● Mapping from 802.1p priorities to PHBs and colors ● Mapping from PHBs and colors to 802.1p priorities ● Mapping from DSCP priorities to PHBs and colors ● Mapping from PHBs and colors to DSCP priorities
	Queue scheduling	● Priority queuing (PQ) scheduling ● Deficit round robin (DRR) scheduling ● PQ+DRR scheduling ● Weighted round robin (WRR) scheduling ● PQ+WRR scheduling
	Congestion avoidance	● Tail drop ● WRED

Item	Feature	Support
	Rate limiting on outbound interfaces	Rate limiting on outbound interfaces
	ACL-based simplified traffic policy	- ACL-based packet filtering - ACL-based redirection - ACL-based traffic statistics collection
Configuration and maintenance	Terminal service	- Command line configuration - Error messages and online help in English - Login through console and Telnet terminals - Send function and data communication between terminal users
	File system	- File system, directory and file management - Uploading and downloading files through SFTP, FTP, and TFTP
	Debugging and maintenance	- Unified management of logs, alarms, and debugging information - Electronic labels - User operation logs - Detailed debugging information for network fault diagnosis - Network test tools such as ping and tracert commands - Port mirroring, remote mirroring, and traffic mirroring - Network Time Protocol (NTP)
	Version upgrade	- Device software loading and online software loading - In-service upgrade through the BIOS menu - In-service patching - ZTP

Item	Feature	Support
Security and management	System security	- Command line authority control based on user levels to prevent unauthorized users from using commands - SSHv1.0/v2.0 - RADIUS (IPv4) and RADIUS (IPv6) authentication for login users - HWTACACS (IPv4) and HWTACACS (IPv6) authentication for login users - ACL filtering - Dynamic ARP inspection (DAI) - DHCP packet filtering - Local attack defense - Attack defense - Defense against flood attacks without IP payloads, attacks from IGMP null payload packets, LAND attacks, Smurf attacks, and attacks from packets with invalid TCP flag bits - Defense against attacks from many fragments, attacks from many packets with offsets, attacks from repeated packet fragments, Tear Drop attacks, Syndrop attacks, NewTear attacks, Bonk attacks, Nesta attacks, Rose attacks, Fawx attacks, Ping of Death attacks, and Jolt attacks - Defense against TCP SYN flood attacks, UDP flood attacks (including Fraggle attacks and UDP diagnosis port attacks), and ICMP flood attacks - Recording attackers' MAC addresses in logs - URPF 802.1x authentication
	Network management	- ICMP ping and tracert - SNMPv1, SNMPv2c, and SNMPv3 - Standard MIB - LLDP - RMON - NETCONF interfaces - NetStream, with output statistics packets in the V5, V8, or V9 format - NetStream Top Talkers - sFlow - NQA - RESTCONF

Item	Feature	Support
Low-latency Network	Low-latency Network	Fast ECN **NOTE** Only the CE5850HI supports fast ECN.

5.2 Performance Specifications

For the product specifications, log in to **Huawei official website** to download the product brochure or product feature list for channel (if your account is unauthorized, contact Huawei local office).