Huawei CloudEngine Series Switches

Product and Solution Overview

Huawei CloudEngine (CE) series switches are high-performance cloud switches designed for next-generation data centers and high-end campus networks. This series includes Huawei's flagship CE12800 core switches with the world's highest performance, CE8800/7800/6800/5800 high-performance aggregation and access switches, and CE1800V distributed virtual switch. The CloudEngine series uses Huawei's next-generation VRP8 software platform and supports extensive data center and campus network service features.

The CloudFabric solution is based on Huawei's flagship CloudEngine 12800 series data center core switches, CloudEngine 8800/7800/6800/5800 series high-performance fixed switches, and CloudEngine 1800V virtual switch. These switches are used with the Huawei Agile Controller to provide customers with an all-cloud data center network. The solution also integrates transmission, routing, security, and network management products, which can be combined with the data center switches to deliver a one- stop data center network solution.

CE12800 Series

CE12800 switches are high-performance core switches designed for data center networks and high-end campus networks.

Their advanced hardware architecture offers the highest performance of any currently available core switches, with as much as 178 Tbit/s per chassis switching capacity and up to 576*100GE, 576*40GE, 2,304*25GE, or 2,304*10GE wire-speed ports.

The CE12800 switches use an industry-leading Clos architecture and a front-to-back airflow design to provide industrial-grade reliability. The switches also provide comprehensive virtualization capabilities and data center service features. Moreover, their energy-saving designs greatly reduce power consumption.

The CE12800 series is available in six models: CE12816, CE12812, CE12808, CE12804, CE12808S, and CE12804S. They all use interchangeable modules to reduce costs of spare parts. This design ensures device scalability and provides investment protection.

Figure 1 CE12800 series

Item	CE12804S	CE12808S	CE12804	CE12808	CE12812	CE12816
Switching capacity (Tbit/s)	30/258[1]	59/516[1]	45/258[1]	89/516[1]	134/774[1]	178/1032[1]
Forwarding performance (Mpps)	17,280	34,560	17,280	34,560	51,840	69,120
Service slots	4	8	4	8	12	16
Switching fabric module slots	2	4	6	6	6	6
Fabric architecture	Clos architecture, cell switching, VoQ, and distributed large buffer					
Airflow design	Strict front-to-back					
Device virtualization	VS, CSS, SVF, M-LAG					
Network virtualization	BGP-EVPN, VxLAN					
Intelligent O&M	Proactive path detection on the entire network, real-time monitoring of network health status					

1 Roadmap

CE8800 Series

The CE8800 series switch is a high-performance 100GE TOR switch released for data centers and high-end campus networks. It can act as an access node to support high-density 25GE/10GE server access, a compact core or aggregation node on a small-sized network, or connect to High-Performance Computing (HPC) servers. The CE8800 switches provide L2/L3 wire-speed on the interfaces.

The CE8860 is the industry's first 25GE access TOR switch and provides high-density 100GE/40GE uplink ports for connection with core switches. It provides up to 32*100GE, 64*40GE, or 128*25GE/10GE

ports, which can be used in combinations through cards, delivering flexible, high-density access and aggregation capabilities. The CE8800 switch provides high-density 100GE QSFP28 ports, L2/L3 wire-speed forwarding, extensive data center features, and high-performance stacking capability.

The CE8800 comes in four models.

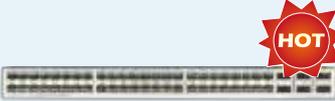| Model and Appearance	Description
CE8861-4C-EI	• Supports four half-width interface cards: » 24-port 10GE SFP+ and 2-port 100GE QSFP28 interface card » 24-port 10GE BASE-T and 2-port 100GE QSFP28 interface card » 8-port 100GE QSFP28 interface card » 16-port 40GE QSFP+ interface card » 24-port 25GE/16GE SFP28 and 2-port 40GE/100GE QSFP28 interface card • 6.4 Tbit/s switching capacity, forwarding performance 2030Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry • Supports AI Fabric
CE8860-4C-EI	• Supports four half-width interface cards: » 24-port 10GE SFP+ and 2-port 100GE QSFP28 interface card » 24-port 10GE BASE-T and 2-port 100GE QSFP28 interface card » 8-port 100GE QSFP28 interface card » 16-port 40GE QSFP+ interface card » 24-port 25GE/16GE SFP28 and 2-port 40GE/100GE QSFP28 interface card • 6.4 Tbit/s switching capacity, forwarding performance 3200Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Supports telemetry
CE8850-32CQ-EI	• 32*100GE QSFP28 ports, 2*10GE SFP+ ports • 6.4 Tbit/s switching capacity, forwarding performance 3200Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE8850-64CQ-EI	• 64*100GE QSFP28 ports • 12.8 Tbit/s switching capacity, forwarding performance 4400Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry

CE7800 Series

The CE7800 switches can be used as core or aggregation switches on data centers and campus networks.

Using an advanced hardware design, the CE7800 series provides high-density 40GE QSFP+ ports (each can be split into four 10GE SFP+ ports), L2/L3 wire-speed forwarding , extensive data center features, high-performance stacking capability. CE7800 switches support front-to-back and back-to-front airflows for you to choose based on the airflow direction in your equipment room.

The CE7800 series comes in one model.

Model and Appearance	
HOT CE7855-32Q-EI	• 32*40GE QSFP+ ports • 2.56Tbit/s switching capacity, forwarding performance 1440Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry

CE6800 Series

The CE6800 switches provide high-density 10GE/25GE access in data centers and can also be used as core or aggregation switches on campus networks.

The CE6800 series has an advanced hardware design, which provides the industry's highest density of 10GE/25GE downlink ports as well as 100GE QSFP28 or 40GE QSFP+ uplink ports. (A 100GE QSFP28 port can be split into four 25GE SFP28 ports or work as a 40GE QSFP+ port. A 40GE QSFP+ port can be split into four 10GE SFP+ ports). The CE6800 switches provide L2/L3 wire-speed forwarding on these interfaces and support extensive data center features, high-performance stacking capability. They support front-to-back and back-to-front airflows for you to choose based on the airflow direction in your equipment room.

The CE6800 series comes in sixteen models.

Model and Appearance	
Microsegmentation CE6880-24S4Q2CQ-EI	• 24*10GE SFP+ ports, 4*40GE QSFP+ ports, and 2*100GE QSFP28 ports • 1.2Tbit/s switching capacity • Rich data center features: mircorsegmentation, VxLAN, BGP-EVPN, iStack • Flexible front-to-back or back-to-front airflow • Supports telemetry

Model and Appearance	Description
CE6870-48T6CQ-EI	• 48-port 10GE BASE-T , and 6-port 100GE QSFP28, • 4GB deep buffer, 2.16Tbit/s switching capacity, forwarding performance 720Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6870-48S6CQ-EI	• 48*10GE SFP+ ports, 6*100GE QSFP28 ports • 4GB deep buffer, 2.16Tbit/s switching capacity, forwarding performance 720Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
HOT CE6875-48S4CQ-EI	• 48*10GE SFP+ ports, 4*100GE QSFP28 ports • 4GB deep buffer, 1.76Tbit/s switching capacity, forwarding performance 835Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
HOT CE6865-48S8CQ-EI	• 48*25GE SFP28 ports, 8*100GE QSFP28 ports • 4Tbit/s switching capacity, forwarding performance 2000Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
HOT CE6860-48S8CQ-EI	• 48*25GE SFP28 ports, 8*100GE QSFP28 ports • 4Tbit/s switching capacity, forwarding performance 3200Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6857-48S6CQ-EI	• 48*10GE SFP+ ports, 6*40GE / 6*100GE QSFP28 ports • 2.16Tbit/s switching capacity, forwarding performance 1000Mpps • iStack, M-LAG, VXLAN Bridge and Routing, BGP EVPN • Microsegmentation • Hardware-based BFD • Telemetry, Netstream, sFlow, Enhanced ERSPAN

Model and Appearance	Description
CE6856-48S6Q-HI	• 48*10GE SFP+ ports, 6*40GE QSFP+ ports • 2.56Tbit/s switching capacity, forwarding performance 1080Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6856-48T6Q-HI	• 48*10GE Base-T ports, 6*40GE QSFP+ ports • 2.56Tbit/s switching capacity, forwarding performance 1080Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6855-48S6Q-HI	• 48*10GE SFP+ ports, 6*40GE QSFP+ ports • 2.56Tbit/s switching capacity, forwarding performance 1080Mpps • Rich data center features: M-LAG, VxLAN, VxLAN RIOT, BGP-EVPN, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6855-48T6Q-HI	• 48*10GE Base-T ports, 6*40GE QSFP+ ports • 2.56Tbit/s switching capacity, forwarding performance 1080Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6851-48S6Q-HI	• 48*10GE SFP+ ports,6*40GE QSFP+ ports • 2.56Tbit/s switching capacity, forwarding performance 1080Mpps • Rich data center features: M-LAG, VxLAN, BGP-EVPN, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow • Supports telemetry
CE6810-48S4Q-LI	• 48*10GE SFP+ ports, 4*40GE QSFP+ ports • 1.28Tbit/s switching capacity, forwarding performance 960Mpps • Rich data center features: M-LAG, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow
CE6810-32T16S4Q-LI	• 32*10GE BASE-T ports, 16*10GE SFP+ ports, 4*40GE QSFP+ ports • 1.28Tbit/s switching capacity, forwarding performance 960Mpps • Rich data center features: M-LAG, iStack, SVF, FCoE • Flexible front-to-back or back-to-front airflow

CE5800 Series

The CE5800 switches provide high-density GE access in data centers and can also be used as aggregation or access switches on campus networks.

The CE5800 series is the first in the industry to provide 40GE uplink ports, and the advanced hardware design supports the industry's highest density of GE access ports. The CE5800 switches provide L2/L3 wire-speed forwarding, extensive data center features, and

high-performance stacking capability. They support front-to-back and back-to-front airflows for you to choose based on the airflow direction in your equipment room.

The CE5800 series comes in three models.

Model and Appearance	Description
CE5880-48T6Q-EI	• 4*GE RJ45, 4*10GE RJ45; 6*40GE QSFP+ • 648 Gbit/s switching capacity • VXLAN Bridge and Routing, BGP EVPN, Microsegmentation • Hardware-based (BFD) , Telemetry, Enhanced ERSPAN
CE5855-48T4S2Q-EI	• 48*GE BASE-T ports, 4*10GE SFP+ ports, 2*40GE QSFP+ ports • 336Gbit/s switching capacity, forwarding performance 252Mpps • Rich data center features: M-LAG, iStack, SVF • Flexible front-to-back or back-to-front airflow
CE5855-24T4S2Q-EI	• 24*GE BASE-T ports, 4*10GE SFP+ ports, 2*40GE QSFP+ ports • 288Gbit/s switching capacity, forwarding performance 215Mpps • Rich data center features: M-LAG, iStack, SVF • Flexible front-to-back or back-to-front airflow
CE5850-48T4S2Q-HI	• 48*GE BASE-T ports, 4*10GE SFP+ ports, 2*40GE QSFP+ ports • 336Gbit/s switching capacity, forwarding performance 252Mpps • Rich data center features: M-LAG, iStack • Flexible front-to-back or back-to-front airflow

CloudEngine 1800V

Huawei CloudEngine 1800V (CE1800V) is a distributed virtual switch designed for virtualized environments in cloud data centers. It provides best-in-class forwarding performance, open architecture, and enhanced security protection. And it can run on multiple compute virtualization platforms such as Huawei FusionSphere, VMware ESXi, as well as open-source platforms.

The CE1800V can be combined with Huawei CloudEngine hardware switches and Huawei Agile Controller to offer a Software-Defined Networking (SDN) solution for data centers based on hybrid or host overlays. This solution supports Virtual Machines (VMs), containers, and physical servers with the same architecture.

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