CloudEngine 6810 Series Data Center Switches

HUAWEI TECHNOLOGIES CO., LTD.

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Product Overview

Huawei CloudEngine 6810 (CE6810 for short) series switches are next-generation 10G Ethernet switches designed for data centers and high-end campus networks, providing high-performance, high-density 10GE ports, and low latency. The CE6810 series uses an advanced hardware architecture with 40GE uplink ports and the industry's highest density of 10GE access ports.

Using the Huawei VRP8 software platform, CE6810 switches provide extensive data center service features and high stacking capability. In addition, the airflow direction (front-to-back or back-to-front) can be changed. CE6810 switches can work with CE12800 switches to build an elastic, virtualized, high-quality fabric that meets the requirements of cloud-computing data centers.

The CE6810 switches provide high-density 10GE access to help enterprises and carriers build a scalable data center network platform in the cloud computing era. They can also be used as aggregation or core switches for enterprise campus networks.

Product Appearance

The CE6810 series comes in three models.

CE6810-48S4Q-LI

48*10GE SFP+ ports, 4*40GE QSFP+ ports

CE6810-32T16S4Q-LI

32*10GE Base-T ports, 16*10GE SFP+ ports, 4*40GE QSFP+ ports

Product Characteristics

High-Density 10GE Access

- The CE6810 is the industry's highest-performing 1 U ToR switch. It provides forwarding performance of 960 mpps and supports L2 line-rate forwarding.
- The CE6810 provides 64*10GE ports, allowing for high-density 10G server access.
- The CE6810 has four 40GE QSFP+ ports, each of which can be used as four 10GE SFP+ ports to provide flexibility in network deployment. Using the 40GE uplink ports, the CE6810 switches can connect to CE12800 switches to build a non-blocking network platform.

Highly Reliable, High-Performance Stacking

- The industry's first 16-member stack system
  - » A stack system of 16 member switches has up to 768*10GE access ports that provide high-density server access in a data center.
  - » Multiple stacked switches are virtualized into one logical device, making it possible to build a scalable, easy-to-manage data center network platform.
  - » A stack system separates the control plane from the data plane. This eliminates the risk of single points of failure and greatly improves system reliability.
- Long-distance, highly reliable stacking
  - » The CE6810 can use service ports as stack ports. A stack system can be established with switches in the same rack or different racks, and even over long distances.
  - » Service and stack bandwidths can be allocated based on the network's scale so that network resources can be used more efficiently.

Vertical Virtualization Simplifies Management

- The CE6810 supports Super Virtual Fabric (SVF), which can virtualize multiple physical switches of the same or different types into one logical switch to simplify network management and improve reliability.
- SVF enables different types of switches to set up a vertical virtual system. In an SVF system, CE6810 switches can act as leaf nodes and connect to spine switch CE6850 as its remote line cards. This facilitates cabling and equipment management in equipment rooms.
- Huawei's SVF is the first in the industry to implement local forwarding on leaf switches. When horizontal traffic dominates in a data center, SVF improves the forwarding efficiency and reduces network delay.

Converged Enhanced Ethernet, Allowing for Data, Storage, and Computing Services on One Network

- The CE6810 series switches support Fibre Channel over Ethernet (FCoE), which permits storage, data, and computing services to be transmitted on one network, reducing the costs of network construction and maintenance.
- The CE6810 series switches support centralized FCoE gateway deployment, which makes network O&M simpler.
- The CE6810 series switches support multiple data center features: Priority-based Flow Control (PFC), and Data Center Bridging eXchange (DCBX). These features ensure low latency and zero packet loss for FC storage and high-speed computing services.

Zero Touch Provisioning, Automatic O&M

- The CE6810 supports Zero Touch Provisioning (ZTP). ZTP enables the CE6810 to automatically obtain and load version files from a USB flash drive or file server, freeing network engineers from onsite configuration or deployment. ZTP reduces labor costs and improves device deployment efficiency.
- ZTP provides built-in scripts for users through open APIs. Data center personnel can use the programming language they are familiar with, such as Python, to provide unified configuration of network devices.
- ZTP decouples configuration time of new devices from device quantity and area distribution, which improves service provisioning efficiency.

Flexible Airflow Design, High Energy Efficiency

- Flexible front-to-back/back-to-front airflow design
  - » The CE6810 uses a front-to-back/back-to-front airflow design that isolates cold air channels from hot air channels. This design meets heat dissipation requirements in data center equipment rooms.
  - » Air can flow from front to back, or back to front when different fans and power modules are used.
  - » Redundant power modules and fans can be configured to ensure uninterrupted service transmission.
- Energy-saving technology
  - » The CE6810 series switches have energy-saving chips and can measure system power consumption in real time. Fan speeds can be adjusted dynamically based on system consumption. These energy-saving technologies reduce O&M costs and contribute to a greener data center.

Clear Indicators, Simple Maintenance

- Clear indicators
  - » Port indicators clearly show port status and port speeds. The 40GE port indicators can show the state of all the 10GE ports derived from the 40GE ports.
  - » State and stack indicators on both the front and rear panels enable operators to maintain the switch from either side.

» CE6810 series switches support remote positioning. Operators can turn on remote positioning indicators on the switches they want to maintain, so that they can find switches easily in an equipment room full of devices.

- Simple maintenance
  - » The management port, fans, and power modules are on the front panel, which facilitates device maintenance.
  - » Data ports are located at the rear, facing servers. This simplifies cabling.

Product Specifications[1]

Functions and Features

Item	CE6810-48S4Q-LI	CE6810-32T16S4Q-LI
Airflow design	Front-to-back or back-to-front	
Device virtualization	iStack[2]	
	Super Virtual Fabric (SVF)[3]	
	M-LAG	
Traffic analysis	NetStream	
	sFlow	
VLAN	Adding access, trunk, and hybrid interfaces to VLANs	
	Default VLAN	
	QinQ	
	MUX VLAN	
	GVRP	
MAC address table	Dynamic learning and aging of MAC addresses	
	Static, dynamic, and blackhole MAC address entries	
	Packet filtering based on source MAC addresses	
	MAC address limiting based on ports and VLANs	
Multicast	IGMP Proxy(CE6810EI)	
	MLD-Snooping	

1 This content is applicable only to regions outside mainland China. Huawei reserves the right to interpret this content
2 For details about the configuration, please see: http://support.huawei.com/onlinetoolsweb/virtual/en/dc/stack_index.html?dcb
3 For details about the configuration, please see: http://support.huawei.com/onlinetoolsweb/virtual/en/dc/svf_index.html?dcb

Item	CE6810-48S4Q-LI	CE6810-32T16S4Q-LI
Reliability	LACP	
	STP, RSTP, VBST, MSTP	
	BPDU protection, root protection, and loop protection	
	Smart Link and multi-instance	
	DLDP, LLDP	
	ERPS (G.8032)	
QoS	Traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority	
	Actions of ACL, CAR, re-marking, and scheduling	
	Queue scheduling algorithms, including PQ, WRR, DRR, PQ+WRR, and PQ+DRR	
	Congestion avoidance mechanisms, including WRED and tail drop	
	Traffic shaping	
Configuration and maintenance	Console, Telnet, and SSH terminals	
	Network management protocols, such as SNMPv1/v2c/v3	
	File upload and download through FTP and TFTP	
	BootROM upgrade and remote upgrade	
	802.3az Energy Efficient Ethernet (EEE)	
	Hot patches	
	User operation logs	
	ZTP	
Security and management	802.1x authentication	
	Command line authority control based on user levels, preventing unauthorized users from using commands	
	DoS, ARP, and ICMP attack defenses	
	Port isolation, port security, and sticky MAC	
	Binding of the IP address, MAC address, interface number, and VLAN ID	
	Authentication methods, including AAA, RADIUS, and HWTACACS	
	Remote Network Monitoring (RMON)	

Performance and Scalability

Item	CE6810-48S4Q-LI	CE6810-32T16S4Q-LI
ACL number	Ingress:1250 Egress:500	
MAC address table	128K	
Maximum number of lag group	1024/512/256/128/64	
Maximum number of links in a lag group	2/4/8/16/32	
MSTP	64	

NOTE

This specification may vary between different scenarios. Please contact Huawei for details.

Hardware Specifications

Item		CE6810-48S4Q-LI	CE6810-32T16S4Q-LI
Physical Features	Dimensions (W × D ×H ,mm)	442*600*43.6	442*420*43.6
	Weight (excluding optical modules, power modules, and fan assemblies / including AC power modules and fan assemblies, excluding optical modules ,kg)	7.8/10.4	5.9/8.5
	Switching capacity(Tbit/s)	1.28	
	Forwarding performance(Mpps)	960	960
10G Base-T ports		0	32
10g SFP+ ports		48	16
40g QSFP+ ports		4	4
Card	Number of card slot	0	
	Card type	Fixed switch	
Management interface	Out-of-band management port	1* GE management interface	
	Console port	1* RJ45	
	USB port	1	

Item		CE6810-48S4Q-LI	CE6810-32T16S4Q-LI
CPU	Main frequency(HZ)	1.2GB	
	Number of cores	4GB	
Storage	RAM	2GB	
	NOR Flash	16MB	
	NAND Flash	512MB	
System	System buffer	9MB	
Power Supply System	Power modules	600 W AC /350 W –48 V DC	
	Input voltage range(V)	AC rated voltage range: about 100 V to 240 V; 50/60 Hz Maximum AC voltage range: about 90 V to 290 V; 47 Hz to 63 Hz -48 V DC rated voltage range: –48 V to –60 V Maximum -48 V DC voltage range: –38.4 V to –72 V	
	Input current range (A)	600 W AC power module: 100 V to 240 V 9 A 350 W DC power module: –48 V to –60 V DC 11 A	
	Typical power	101W(100% traffic load, copper cable, normal temperature, dual power modules) 141W(100% traffic load, short-distance optical modules, normal temperature, dual power modules)	204W(100% traffic load, 3 m network cable and copper cable, normal temperature, dual power modules) 216W(100% traffic load, 3 m network cable, short-distance optical modules, normal temperature, dual power modules)
	Maximum power	238W	288W
	Frequency (AC ,HZ)	50/60	
Heat Dissipation	Heat dissipation mode	Air cooling	
	Number of fans	2	
	Heat dissipation airflow	Front-to-back or back-to-front airflow	
	Maximum heat consumption (BTU/hr)	812	983

Item		CE6810-48S4Q-LI	CE6810-32T16S4Q-LI
Environment specifications	Long-term operating temperature(°C)	0 to 40°C(0-1800m) The temperature decreases by 1°C each time the altitude increases by 220 m.	
	Storage temperature(°C)	-40 to +70°C	
	Relative humidity	5% to 95%	
	Operating altitude(m)	Up to 5000	
	Sound power at 27°C (dBA)	Front-to-back airflow: < 77 dBA Back-to-front airflow: < 77 dBA	Front-to-back airflow: < 63 dBA Back-to-front airflow: < 63 dBA
	Sound power at 40°C (dBA)	Front-to-back airflow: < 77 dBA Back-to-front airflow: < 77 dBA	Front-to-back airflow: < 75 dBA Back-to-front airflow: < 75 dBA
	Sound pressure at 27°C (dBA)	Front-to-back airflow: 45 dBA in average (maximum: 48 dBA) Back-to-front airflow: 47 dBA in average (maximum: 51 dBA)	Front-to-back airflow: 47 dBA in average (maximum: 51 dBA) Back-to-front airflow: 47 dBA in average (maximum: 51 dBA)
	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)	49.33	46.04
	MTTR (hour)	1.74	1.84
	Availability	0.9999959688	0.99999544092

Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of CE 6810.

Certification Category	Description
Safety	• EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011 • EN 60825-1: 2007 • EN 60825-2: 2010 • UL 60950-1: 2007 2nd Edition • CSA C22.2 No.650: 2007 2nd Edition • IEC 60950-1: 2005+A1: 2009 • AS/NZS 60950-1: 2011 • GB4943: 2011

Certification Category	Description
Electromagnetic Compatibility (EMC)	• FCC 47CFR Part15 CLASS A • ETSI EN 300 386 V1.6.1: 2012 • ICES-003: 2012 CLASS A • CISPR 22: 2008 CLASS A • CISPR 24: 2010 • EN 55022: 2010 CLASS A • EN 55024: 2010 • AS/NZS CISPR 22: 2009 CLASS A • IEC 61000-3-2: 2005+A1: 2008+A2: 2009/EN 61000-3-2: 2006+A1: 2009+A2: 2009 • IEC 61000-3-3: 2008/EN 61000-3-3: 2008 • CNS 13438: 2006 CLASS A • VCCI V-4: 2012 CLASS A • VCCI V-3: 2012 CLASS A • EC Council Directive 2004/108/EC • GB9254
Environment	• 2002/95/EC, 2011/65/EU • 2002/96/EC, 2012/19/EU • EC NO.1907/2006 • ETSI EN 300 019-1-1 V2.1.4 • ETSI EN 300 019-1-2 V2.1.4 • ETSI EN 300 019-1-3 V2.3.2 • ETSI EN 300753 V1.2.1

NOTE

EMC: electromagnetic compatibility
CISPR: International Special Committee on Radio Interference
EN: European Standard
ETSI: European Telecommunications Standards Institute
CFR: Code of Federal Regulations
FCC: Federal Communication Commission
IEC: International Electrotechnical Commission
AS/NZS: Australian/New Zealand Standard
VCCI: Voluntary Control Council for Interference
UL: Underwriters Laboratories
CSA: Canadian Standards Association
IEEE: Institute of Electrical and Electronics Engineers
RoHS: restriction of the use of certain hazardous substances
REACH: Registration Evaluation Authorization and Restriction of Chemicals
WEEE: Waste Electrical and Electronic Equipment

Optical transceivers and Cables

Part Number	Product Description
GE-SFP Optical Transceivers	
SFP-1000BaseT	Electrical Transceiver, SFP, GE, Electrical Interface Module (100m, RJ45)
eSFP-GE-SX-MM850	Optical Transceiver, eSFP, GE, Multi-mode Module (850nm, 0.55km, LC)
SFP-GE-LX-SM1310	Optical Transceiver, eSFP, GE, Single-mode Module (1310nm, 10km,LC)
S-SFP-GE-LH40-SM1310	Optical Transceiver, eSFP, GE, Single-mode Module(1310nm,40km,LC)

Part Number	Product Description
S-SFP-GE-LH80-SM1550	Optical Transceiver, eSFP, GE, Single-mode Module(1550nm,80km,LC)
eSFP-GE-ZX100-SM1550	Optical Transceiver, eSFP, GE, Single-mode Module(1550nm,100km,LC)
BIDI-SFP Optical Transceivers	
SFP-GE-LX-SM1490-BIDI	Optical Transceiver, eSFP, GE, BIDI Single-mode Module (TX1490/RX1310, 10km,LC)
SFP-GE-LX-SM1310-BIDI	Optical Transceiver, eSFP, GE, BIDI Single-mode Module (TX1310/RX1490, 10km, LC)
LE2MGSC40ED0	Optical Transceiver, eSFP, GE, BIDI Single-mode Module (TX1490/RX1310, 40km, LC)
LE2MGSC40DE0	Optical Transceiver, eSFP, GE, BIDI Single-mode Module (TX1310/RX1490, 40km,LC)
SFP-10G-ER-SM1330-BIDI	Optical Transceiver,SFP+,10G,BIDI Single-mode Module(TX 1330nm/RX 1270nm,40km,LC)
SFP-10G-ER-SM1270-BIDI	Optical Transceiver,SFP+,10G,BIDI Single-mode Module(TX 1270nm/RX 1330nm,40km,LC)
SFP-10G-BXU1	10GBase,BIDI Optical Transceiver,SFP+,10G,Single-mode Module (TX1270nm/RX1330nm,10km,LC)
SFP-10G-BXD1	10GBase,BIDI Optical Transceiver,SFP+,10G,Single-mode Module (TX1330nm/RX1270nm, 10km, LC)
10G-SFP+ Optical Transceivers	
SFP-10G-USR	10GBase-USR Optical Transceiver,SFP+,10G,Multi-mode Module (850nm, 0.1km, LC)
OSXD22N00	Optical Transceiver,SFP+,10G,Multi-mode Module(1310nm,0.22km,LC,LRM)
OMXD30000	Optical Transceiver,SFP+,10G,Multi-mode Module(850nm,0.3km,LC)
SFP-10G-LR	Optical Transceiver,SFP+,10G,Single-mode Module(1310nm,10km,LC)
OSX040N01	Optical Transceiver,SFP+,10G,Single-mode Module(1550nm,40km,LC)
SFP-10G-ZR	10GBase-ZR Optical Transceiver, SFP+, 10G, Single-mode Module (1550nm, 80km, LC)
SFP-10G-iLR	Optical Transceiver,SFP+,9.8G,Single-mode Module(1310nm,1.4km,LC)
10G-SFP+ DWDM Optical Transceivers	
SFP-10G-ZDWT-L	Optical Transceiver,SFP+,10G,Single-mode Module(DWDM,1560.61-1529.16nm,60km,LC)
40GE-QSFP+ Optical Transceivers	
QSFP-40G-SR-BD	40GBase-BD Optical Transceiver,QSFP+,40G,Multi-mode (850nm,0.1km,LC)

Part Number	Product Description
QSFP-40G-iSR4	40GBase-iSR4 Optical Transceiver, QSFP+, 40G, Multi-mode (850nm, 0.15km, MPO) (Connect to four SFP+ Optical Transceiver)
QSFP-40G-eSR4	40GBase-eSR4 Optical Transceiver, QSFP+, 40G, Multi-mode (850nm, 0.3km, MPO) (Connect to four SFP+ Optical Transceiver)
QSFP-40G-LX4	40GBase-LX4 Optical Transceiver, QSFP+, 40GE, Single-mode (1310nm, 2km, LC), Multi-mode(1310nm, 0.15km, LC)
QSFP-40G-eSM4	40GBase-eSM4 Optical Transceiver, QSFP+, 40G, Single-mode Module (1310nm, 10km, MPO) (Connect to four SFP+ Optical Transceiver)
QSFP-40G-LR4	40GBase-LR4 Optical Transceiver, QSFP+, 40GE, Single-mode Module (1310nm, 10km, LC)
QSFP-40G-LR4-Lite	QSFP-40G-LR4-Lite,40GBase-LR4 Lite Optical Transceiver,QSFP+,40G,Single-mode Module(1310nm,2km,LC)
QSFP-40G-ER4	40GBase-ER4 Optical Transceiver, QSFP+, 40G, Single-mode Module (1310nm, 40km, LC)
QSFP-40G-SDLC-PAM	40GBase-SDLC Optical Transceiver, QSFP+, 40G, Multi-mode (850nm, PAM4, 0.1km, LC)
QSFP-40G-eSDLC-PAM	40GBase-eSDLC Optical Transceiver, QSFP+, 40G, Multi-mode (850nm, PAM4, 0.3km, LC)
AOC High-Speed Cables	
SFP-10G-AOC-5M	Active Optical Cable , SFP+, 10G, (850nm, 5m, AOC)
SFP-10G-AOC-7M	Active Optical Cable , SFP+, 10G, (850nm, 7m, AOC)
SFP-10G-AOC10M	AOC Optical Transceiver, SFP+, 850nm, 1G~10G, 10m
SFP-10G-AOC-3M	Optical transceiver, SFP+, 1G~10.5G, (850nm, 3m, AOC)
QSFP-H40G-AOC10M	Optical transceiver, QSFP+, 40G, (850nm, 10m, AOC)
QSFP-4SFP10-AOC10M	Optical transceiver, QSFP+, 40G, (850nm, 10m, AOC)(Connect to four SFP+ Optical Transceiver)
Copper Cable	
SFP-10G-CU1M	SFP+, 10G, High Speed Direct-attach Cables, 1m, SFP+20M, CC2P0.254B(S), SFP+20M, Used indoor
SFP-10G-CU3M	SFP+, 10G, High Speed Direct-attach Cables, 3m, SFP+20M, CC2P0.254B(S), SFP+20M, Used indoor
SFP-10G-CU5M	SFP, 10G, High Speed Cable, 5m, SFP+20M, CC2P0.254B(S), SFP+20M, LSFRZH For Indoor

Part Number	Product Description
SFP-10G-AC7M	SFP, 10G, Active High Speed Cable, 7m, SFP+20M, CC2P0.254B(S), SFP+20M, LSFRZH For Indoor
SFP-10G-AC10M	SFP+, 10G, Active High Speed Cables, 10m, SFP+20M, CC2P0.32B(S), SFP+20M, Used indoor
QSFP-40G-CU1M	QSFP+, 40G, High Speed Direct-attach Cables, 1m, QSFP+38M, CC8P0.254B(S), QSFP+38M, Used indoor
QSFP-40G-CU3M	QSFP+, 40G, High Speed Direct-attach Cables, 3m, QSFP+38M, CC8P0.32B(S), QSFP+38M, Used indoor
QSFP-40G-CU5M	QSFP+, 40G, High Speed Direct-attach Cables, 5m, QSFP+38M, CC8P0.40B(S), QSFP+38M, Used indoor
QSFP-4SFP10G-CU1M	QSFP+, 4SFP+10G, High Speed Direct-attach Cables, 1m, QSFP+38M, CC8P0.254B(S), 4*SFP+20M, Used indoor
QSFP-4SFP10G-CU3M	QSFP+, 4SFP+10G, High Speed Direct-attach Cables, 3m, QSFP+38M, CC8P0.32B(S), 4*SFP+20M, Used indoor
QSFP-4SFP10G-CU5M	QSFP+, 4SFP+10G, High Speed Direct-attach Cables, 5m, QSFP+38M, CC8P0.4B(S), 4*SFP+20M, Used indoor

Ordering Information

Mainframe

CE6810-LI-B-B0A	CE6810-48S4Q-LI Switch(2*AC Power Module,2*FAN Box,Port-side Intake)
CE6810-LI-B00	CE6810-48S4Q-LI Switch(2*600W AC Power Module,2*FAN Box,Port side exhaust)
CE6810-48S4Q-LI	CE6810-48S4Q-LI Switch (48-Port 10GE SFP+,4-Port 40GE QSFP+,Without Fan and Power Module)
CE6810-32T16S4Q-LI	CE6810-32T16S4Q-LI Switch(32-Port 10G RJ45,16-Port 10G SFP+,4-Port 40G QSFP+,Without Fan and Power Module)
CE6810-LI-B-B00	CE6810-32T16S4Q-LI Switch(32-Port 10G RJ45,16-Port 10G SFP+,4-Port 40G QSFP+,2*AC Power Module,2*FAN Box,Port-side Intake)
CE6810-LI-F-B00	CE6810-32T16S4Q-LI Switch(32-Port 10G RJ45,16-Port 10G SFP+,4-Port 40G QSFP+,2*AC Power Module,2*FAN Box,Port-side Exhaust)

Fan box

Part Number	Product Description	Support Product
FAN-40EA-F	Fan box (EA, Front to Back, FAN panel side intake)	CE6810-48S4Q-LI, CE6810-32T16S4Q-LI
FAN-40EA-B	Fan box (EA, Back to Front, FAN panel side exhaust)	CE6810-48S4Q-LI, CE6810-32T16S4Q-LI

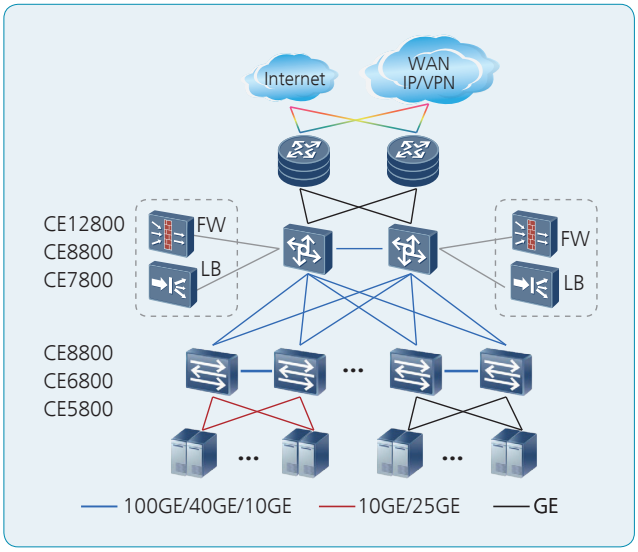
Power		
Part Number	Product Description	Support Product
PAC-600WA-F	600W AC Power Module (Front to Back, Power panel side intake)	CE6810-48S4Q-LI, CE6810-32T16S4Q-LI
PAC-600WA-B	600W AC Power Module (Back to Front, Power panel side exhaust)	CE6810-48S4Q-LI, CE6810-32T16S4Q-LI
PDC-350WA-F	350W DC Power Module (Front to Back, Power panel side intake)	CE6810-48S4Q-LI, CE6810-32T16S4Q-LI
PDC-350WA-B	350W DC Power Module (Back to Front, Power panel side exhaust)	CE6810-48S4Q-LI, CE6810-32T16S4Q-LI
Software		
N1-CE68LIC-CFFD	N1-CloudFabric Foundation SW License for CloudEngine 6800	
N1-CE68CFFD-SYS1Y	N1-CloudFabric Foundation SW License for CloudEngine 6800-SnS-1 Year	
N1-CE68LIC-CFAD	N1-CloudFabric Advanced SW License for CloudEngine 6800	
N1-CE68CFAD-SYS1Y	N1-CloudFabric Advanced SW License for CloudEngine 6800-SnS-1 Year	

Networking and Applications

Data Center Applications

On a typical data center network, CE12800/CE8800/CE7800 switches work as core switches, whereas CE6810 and CE5800 switches work as ToR switches and connect to the core switches using 40GE/10GE ports. These switches use a fabric protocol, such as M-LAG or SVF, to establish a non-blocking large Layer 2 network, which allows large-scale VM migrations and flexible service deployments.

Note: M-LAG and SVF can be also used on campus networks to support flexible service deployments in different service areas.

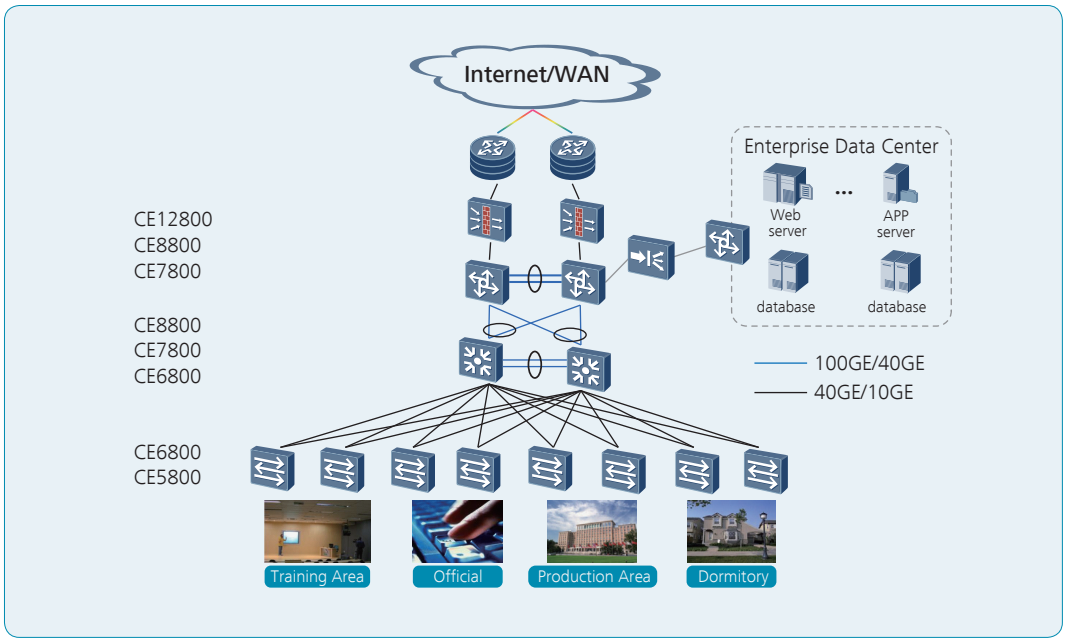


Campus Network Applications

CE6800 switches can be used as aggregation or core switches on a campus network. Their high-density, line-rate 10GE ports and high stacking capability can meet the ever-increasing demand for network bandwidth. CE6800 switches are cost-effective campus network switches, thanks to their extensive service features and innovative energy-saving technologies.

On a typical campus network, multiple CE12800/CE8800/CE7800 switches are virtualized into a logical core switch using CSS or iStack technology. Multiple CE6810 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, CE5800 switches are virtualized with SVF to provide high-density line-rate ports.

Note: iStack technology is also widely used in data centers to facilitate network management.



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