CloudEngine 6860 Series Data Center Switches





HUAWEI TECHNOLOGIES CO., LTD.

CloudEngine 6860 Series Data Center Switches

Product Overview

Huawei CloudEngine 6860 series switches are next-generation 25G Ethernet switches designed for data centers and high-end campus networks, providing high-performance, high-density 25GE ports, and low latency. The CloudEngine 6860 series have advanced hardware architecture with 100GE uplink ports and high-density 25GE access ports.

Using the Huawei VRP8 software platform, CloudEngine 6860 series 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. CloudEngine 6860 series can work with CloudEngine 16800 or CloudEngine 12800 switches to build an elastic, virtualized, high-quality 100GE fully-connected fabric that meets the requirements of cloud-computing data centers.

CloudEngine 6860 series provide high-density 10GE/25GE 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 CloudEngine 6860 series come in the following models.



48*25GE SFP28 ports, 8*100GE QSFP28 ports

Product Characteristics

High-Density 25GE Access

- CloudEngine 6860 series (1 U) provide 3200mpps forwarding performance and supports L2/L3 line-rate forwarding.
- CloudEngine 6860 series provide up to 48*25GE ports, allowing for high density 10G/25G server access and smooth evolution.

CloudEngine 6860 series provide eight 100GE QSFP28 ports. Each QSFP28 port can be used as one 40GE QSFP+ port, four 25GE SFP28 ports, or four 10GE SFP+ ports, providing flexibility in networking. The 100GE uplink ports can be connected to CloudEngine 16800 or CloudEngine 12800 switches to build a non-blocking network platform.

Highly Reliable, High-Performance Stacking

- 16-member stack system
 - » A stack system of 16 member switches has a maximum of 768*25GE access ports that provide high-density server access in a data center.
 - » Multiple switches in a stack system 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
 - » CloudEngine 6860 series 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.

Inter-device Link Aggregation, High Efficiency and Reliability

- CloudEngine 6860 series support multichassis link aggregation group (M-LAG), which enables links of multiple switches to aggregate into one to implement device-level link backup.
- Switches in an M-LAG system all work in active state to share traffic and back up each other, enhancing system reliability.
- Switches in an M-LAG system can be upgraded independently. During the upgrade, other switches in the system take over traffic forwarding to ensure uninterrupted services.
- M-LAG supports dual-homing to Ethernet, TRILL, VXLAN, and IP networks, allowing for flexible networking.
- With the comprehensive inter-device link aggregation technology, the device networking coupling relationship evolves from stacking at the control plane to the use of M-LAG and then finally to coupling-free M-LAG Lite. This achieves active-active server access and zero interruption of services when upgrading switches.

Large-Scale Routing Bridge, On-Demand Scaling

- CloudEngine 6860 series support the IETF Transparent Interconnection of Lots of Links (TRILL) protocol and can connect to 25G and 10G servers simultaneously. CloudEngine 6850 switches can establish a large Layer 2 TRILL network with more than 500 nodes, enabling flexible service deployments and large-scale Virtual Machine (VM) migrations.
- The TRILL protocol uses a routing mechanism similar to IS-IS and sets a limited time to live(TTL) value in packets to prevent Layer 2 loops. This significantly improves network stability and speeds up network convergence.
- On a TRILL network, all data flows are forwarded quickly using Shortest Path First (SPF) and

Equal-cost Multi-path (ECMP) routing. SPF and ECMP avoid the suboptimal path selection problem in STP and increase link bandwidth efficiency to 100 percent.

CloudEngine 6860 series support TRILL-based Layer 2 equal-cost paths, greatly improving links' load balancing capabilities. The network has a fat-tree architecture that enhances expansion.

Hardware Overlay Gateway Achieves Fast Service Deployment

- CloudEngine 6860 series can work with a mainstream virtualization platform. As the highperformance, hardware gateway of an overlay network (VXLAN), CloudEngine 6860 series can support more than 16 million tenants.
- The hardware gateway deployment enables fast service deployment without changing the customer network, providing investment protection.
- CloudEngine 6860 series support Border Gateway Protocol Ethernet VPN (BGP-EVPN), which can run as the VXLAN control plane to simplify VXLAN configuration within and between data centers.

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

- CloudEngine 6860 series 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.
- CloudEngine 6860 series support centralized FCoE gateway deployment, which makes network O&M simpler.
- Various CloudEngine 6860 switches support multiple data center features: Priority-based Flow Control (PFC), Enhanced Transmission Selection (ETS) and Data Center Bridging eXchange (DCBX). These features ensure low latency and zero packet loss for FC storage and high-speed computing services.

Full Openness and Programmability, Flexible Customization

- CloudEngine 6860 series use the Open Programmability System (OPS) embedded in the VRP8 software platform to provide programmability at the control plane.
- The OPS provides open APIs. APIs can be integrated with mainstream cloud platforms (including commercial and open cloud platforms) and third-party controllers. The OPS enables services to be flexibly customized and provides automatic management.
- Users or third-party developers can use open APIs to develop and deploy specialized network management policies to implement extension of fast service functions, automatic deployment, and intelligent management. The OPS also implements automatic operation and maintenance, and reduces management costs.
- CloudEngine 6860 series support CE modules for Ansible, which enables unified provisioning of physical and virtual networks.
- The OPS provides seamless integration of data center service and network in addition to a service-oriented, software-defined networking (SDN).

Zero Touch Provisioning, Automatic O&M

- CloudEngine 6860 series support Zero Touch Provisioning (ZTP). ZTP enables CloudEngine 6860 series 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.

Intelligent O&M with the FabricInsight Solution

- CloudEngine 6860 series provide proactive path detection on the entire network. It periodically
 checks sample flows to determine connectivity of all paths on the network and locates failure
 points, enabling you to know the network health in real time.
- CloudEngine 6860 series support visualization of all flows and congestion, improving service experience.
- CloudEngine 6860 series support global, precise time synchronization based on IEEE 1588v2, detecting delay with sub-microsecond accuracy.

Flexible Airflow Design, High Energy Efficiency

- Flexible front-to-back/back-to-front airflow design
 - » CloudEngine 6860 series use 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
 - » CloudEngine 6860 series have energy-saving chips and can measure system power consumption in real time. Fan speed can be adjusted dynamically based on system consumption. These energy-saving technologies reduce O&M costs and contribute to a greener data center.

Al Fabric, Improving Reliability of High-Performance Computing

- Automatic buffer configuration, eliminating packet loss
 - » The packet buffer of the forwarding chip is automatically configured at boot time.
 - » The threshold for the buffer of the forwarding chip is configurable, ensuring the optimal application performance for specific network topologies and traffic models.
- Dynamic traffic priority adjustment
 - » The scheduling priority of latency-sensitive microflows can be dynamically adjusted to

preferentially schedule them, guaranteeing the performance of latency-sensitive applications.

- Traffic congestion control
 - » Dynamic ECN is supported. When any packet leaves a queue, the ECN flag is set according to the congestion status of the queue. This shortens the delay caused by the queue depth.
 - » Fast CNP is supported. A switch directly sends the CNP to the NIC of the source server, shortening the CNP feedback path.
 - » The dynamic ECN threshold is supported. The ECN threshold can be dynamically adjusted for a queue according to traffic changes.
- Dynamic load balancing (DLB)
 - » The ECMP and LAG support the DLB function.
- Monitoring prioritized lossless traffic under control
 - » The PFC can be mapped based on DSCP.

Clear Indicators, Simple Maintenance

- Clear indicators
 - » Port indicators clearly show port status and port speeds. The 100GE port indicators can show the states of all ports derived from the 100GE ports.
 - » State and stack indicators on both the front and rear panels enable operators to maintain the switch from either side.
 - » CloudEngine 6860 series 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 Specifications¹

Functions and Features

Item	CloudEngine 6860-48S8CQ-EI	CloudEngine 6865-48S8CQ-EI	
Device	iStack ²		
virtualization	M-LAG		
	TRILL (supported by CloudEngine 6860-48S8CQ-EI)		
	VXLAN routing and bridging		
	BGP-EVPN		
	QinQ access VXLAN		
Data center interconnect	VXLAN mapping, implementing interconnection between multiple DC networks at Layer 2		
	Agile Controller		
SDN	VMware NSX (supported by CloudEngine 6865-48S8CQ-EI)		
Network	FCoE		
convergence	DCBX, PFC, ETS		
	OPS		
programmability	OpenFlow		
	CE modules for Ansible released on open source websites		
- <i>m</i>	NetStream		
Traffic analysis	sFlow		
	Adding access, trunk, and hybrid interfaces to VLANs		
VLAN	Default VLAN		
	QinQ		
	MUX VLAN		
	GVRP		

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

Item	CloudEngine 6860-48S8CQ-EI	CloudEngine 6865-48S8CQ-EI	
	Dynamic learning and aging of MAC addresses		
MAC address table	Static, dynamic, and blackhole MAC address entries		
	Packet filtering based on source MAC addresses		
	MAC address limiting based on ports and VLANs		
IP routing	IPv4 routing protocols, such as RIP, OSPF, BGP, and IS-IS		
	IPv6 routing protocols, such as RIPng, OSPFv3, IS-ISv6, and BGP4+		
	IPv6 Neighbor Discovery (ND)		
15.0	IPv6 VXLAN over IPv4		
IPv6	Path MTU Discovery (PMTU)		
	TCP6,IPv6 ping,IPv6 tracert,IPv6 socket,UDP6,and Raw IP6		
	IGMP, PIM-SM, PIM-DM, MSDP, and MBGP		
	IGMP snooping		
	IGMP proxy		
Multicast	Fast leaving of multicast member interfaces		
	Multicast traffic suppression		
	Multicast VLAN		
	Multicast VXLAN		
MPLS	Multi-Protocol Label Switching		
	LACP		
	STP, RSTP, VBST, and MSTP		
Reliability	BPDU protection, root protection, and loop protection		
	Smart Link and multi-instance		
	DLDP		
	ERPS (G.8032)		
	VRRP, VRRP load balancing, and BFD for VRRP		
	BFD for BGP/IS-IS/OSPF/Static route		
	BFD for VXLAN		

Item	CloudEngine 6860-48S8CQ-EI	CloudEngine 6865-48S8CQ-EI	
	Traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority		
QoS	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		
	Network-wide path detection		
	IEEE 1588v2 (supported by CloudEngine 6865-48S8CQ-EI)		
OSM	Telemetry		
Odin	INT (IOAM) and ERSPAN+ (supporte	ed by CloudEngine 6865-48S8CQ-EI)	
	Statistics on the buffer microburst sta	tus	
	VXLAN OAM: VXLAN ping, VXLAN to	racert	
	VIQ (supported by CloudEngine 6865	5-48S8CQ-EI)	
	Dynamic ECN (supported by CloudEngine 6865-48S8CQ-EI)		
AI Fabric	Fast CNP (supported by CloudEngine 6865-48S8CQ-EI)		
	Dynamic load balancing (DLB) (supported by CloudEngine 6865-48S8CQ- EI)		
	Console, Telnet, and SSH terminals		
	Network management protocols, such as SNMPv1/v2/v3		
	File upload and download through FTP and TFTP		
Configuration and	BootROM upgrade and remote upgrade		
maintenance	802.3az Energy Efficient Ethernet (EEE)		
	Hot patches		
	User operation logs		
	ZTP		
	802.1x authentication		
	Command line authority control based on user levels, preventing unauthorized users from using commands		
	DoS, ARP, and ICMP attack defenses		
Security and management	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	CloudEngine 6860-48S8CQ-EI	CloudEngine 6865-48S8CQ-EI
Maximum number of MAC address entries	136K	288K
Maximum number of forwarding routes (FIB IPv4/ IPv6)	192K/128K	380K/256K
ARP table size	84K	168K
Maximum number of VRF	1024	4096
IPv6 ND(Neighbour Discovery) table size	32K	64K
Maximum number of multicast routes (Multicast FIB IPv4/IPv6)	8K/2K	
Maximum VRRP groups	256	1000
Maximum number of ECMP paths	32	32
Maximum ACL number	ingress 2750, egress 1000	ingress 7662, egress 2000
Maximum number of broadcast domains	8К	16K
Maximum number of BDIF	4K	12K
Maximum number of tunnel endpoints (VTEP)	2К	2К
Maximum number of lag group	1024\512\256\128\64	
Maximum number of links in a lag group	2\4\8\16\32	
Maximum number of MSTP instance	64	
VBST (Maximum number of VLANs where VBST can be configured)	500	
Maximum number of PTP slaves	NA	56

Note

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

Hardware Specifications

Item		CloudEngine 6860-48S8CQ-EI	CloudEngine 6865-48S8CQ-EI
	Dimensions(W × D ×H ,mm)	442 * 420 * 43.6	
Physical Features	Weight (excluding optical modules, power modules, and fan assemblies / including AC power modules and fan assemblies, excluding optical modules, kg)	5.9/8.8	6.2/8.8
	Switching capacity(Tbit/s)	4	
	Forwarding performance(Mpps)	3200	2000
20GE SFP+ pe	orts	48	
100GE QSFP2	28 ports	8	
Card	Number of card slot	1	
Caru	Card type	Fixed switch	
	Out-of-band management port	1*GE management interface	
Management interface	Console port	1*RJ45	
	USB port	1	
CDU	Main frequency(HZ)	1.5G	
CPU	Number of cores	8	
	RAM	2GB	4GB
Storage	NOR Flash	32MB	32MB
	NAND Flash	1GB	2GB
System	System buffer	16MB	32MB
	Power modules	600 W AC 350W DC	
	Rated voltage range(V)	100 V to 240 V AC - 48 V to -60 V DC	
	Maximum voltage range(V)	90 V to 290 V AC - 38.4 V to -72 V DC	
	Maximum input current	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	
Power Supply System	Typical power	253W(100% traffic load, copper cable, normal temperature, dual power modules) 318W(100% traffic load, short-distance optical modules, normal temperature, dual power modules)	265W(100% traffic load, copper cable, normal temperature, dual power modules) 327W(100% traffic load, short-distance optical modules, normal temperature, dual power modules)
	Maximum power	458W	470W
	Frequency (AC ,HZ)	50/60	

Item		CloudEngine 6860-48S8CQ-EI	CloudEngine 6865-48S8CQ-EI	
Heat		issipation mode	Air cooling	
	Numbe	er of fans	2	
neat Dissipation	Heat di	issipation airflow	Front-to-back or back-to-front airflow	
Maxi (BTU		um heat consumption r)	1563	1604
I		Long-term operating temperature(°C)	0 to 40℃(0-1800m) The temperature decreases by 1℃ each time the altitude increases by 220 m.	
		Storage temperature(℃)	- 40 to +70°C	
		Relative humidity	5% to 95%	
Environment specifications		Operating altitude(m)	Up to 5000	
		Sound power at 27°C (dBA)	Front-to-back airflow: < 63 dBA Back-to-front airflow: < 62 dBA	Front-to-back airflow: < 65 dBA Back-to-front airflow: < 65 dBA
		Sound power at 40°C (dBA)	Front-to-back airflow: < 82 dBA Back-to-front airflow: < 83 dBA	Front-to-back airflow: < 83 dBA Back-to-front airflow: < 81 dBA
		Sound pressure at 27°C (dBA)	Front-to-back airflow: 47 dBA in average (maximum: 52 dBA) Back-to-front airflow: 49 dBA in average (maximum: 51 dBA)	Front-to-back airflow: 51 dBA in average (maximum: 53 dBA) Back-to-front airflow: 51 dBA in average (maximum: 55 dBA)
		Surge protection	AC power supply protection: 6 kV in common mode and 6 kV in differential mode DC power supply protection: 2 kV in common mode and 1 kV in differential mode	
		MTBF (year)	51.5	38.85
Reliability		MTTR (hour)	1.67	0.96
		Availability	0.99999629199	0.999997178

For detailed information of CloudEngine 6860 Platform hardware information, visit https://support.huawei.com/enterprise/en/doc/EDOC1000019246?idPath=7919710%7C21782165% 7C21782239%7C22318540%7C7597815

Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of CloudEngine 6860 series switches.

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
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

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

MIB and Standards Compliance

The following table lists the MIBs supported by CloudEngine 6860-48S8CQ-EI.

Category
Public MIB

MIB
 HUAWEI-AAA-MIB HUAWEI-ALARM-MIB HUAWEI-BASE-TRAP-MIB HUAWEI-BASE-TRAP-MIB HUAWEI-BSC-MIB HUAWEI-BFD-MIB HUAWEI-BRAS-RADIUS-MIB HUAWEI-CBQOS-MIB HUAWEI-CC-PING-MIB HUAWEI-CONFIG-MAN-MIB HUAWEI-CDAD-MIB HUAWEI-DATASYNC-MIB HUAWEI-DEVICE-MIB HUAWEI-DEVICE-MIB HUAWEI-DEVICE-RAT-MIB HUAWEI-DHCP-SNOOPING-MIB HUAWEI-DLOP-MIB HUAWEI-DLOP-MIB HUAWEI-DLOP-SNOOPING-MIB HUAWEI-DLOP-SNOOPING-MIB HUAWEI-DLOP-SNOOPING-MIB HUAWEI-DLOP-MIB HUAWEI-DLOP-MIB HUAWEI-ENERGYMNGT-MIB HUAWEI-ENERGYMNGT-MIB HUAWEI-ENERGYMNGT-MIB HUAWEI-ENERGYMIB HUAWEI-ERNERGYMIB HUAWEI-ERNERGRIB HUAWEI-ERNERGRIB HUAWEI-ERNERGRIB HUAWEI-ERNERGRIB HUAWEI-ERNERGRIB HUAWEI-ERNERGRIB HUAWEI-ERNERGRIB HUAWEI-FTO-MIB HUAWEI-FTO-AMIB HUAWEI-FTO-PAF-TRAP-MIB HUAWEI-FWD-PAF-TRAP-MIB HUAWEI-FWD-PAF-TRAP-MIB HUAWEI-FWD-PAF-TRAP-MIB HUAWEI-FWD-PAF-TRAP-MIB HUAWEI-FWD-PAF-TRAP-MIB HUAWEI-FINFOCENTER-MIB HUAWEI-FINFOCENTER-MIB HUAWEI-INFOCENTER-MIB HUAWEI-INFOCENTER-MIB HUAWEI-INFOCENTER-MIB HUAWEI-INFOCENTER-MIB HUAWEI-ISIS-CONF-MIB HUAWEI-ISIS-CONF-MIB HUAWEI-ISIS-CONF-MIB HUAWEI-22/IAMI-MIB HUAWEI-122/IAMI-MIB HUAWEI-122/IAMI-MIB HUAWEI-122/IAMI-MIB HUAWEI-122/IAMI-MIB HUAWEI-122/IAMI-MIB HUAWEI-122/IAMI-MIB HUAWEI-122/IAMI-MIB
 HUAWEI-ENERGYMNGT-MIB HUAWEI-ENTITY-TRAP-MIB HUAWEI-ENTITY-EXTENT-MIB HUAWEI-ETHOAM-MIB HUAWEI-ERPS-MIB HUAWEI-ERRORDOWN-MIB HUAWEI-ETHARP-MIB HUAWEI-EVC-MIB HUAWEI-FCOE-MIB HUAWEI-FCOE-MIB HUAWEI-FLASH-MAN-MIB HUAWEI-FTP-MIB
 HUAWEI-FWD-RES-TRAP-MIB HUAWEI-FWD-PAF-TRAP-MIB HUAWEI-GTL-MIB HUAWEI-HWTACACS-MIB HUAWEI-INFOCENTER-MIB HUAWEI-IF-EXT-MIB HUAWEI-IFFPM-MIB HUAWEI-ISIS-CONF-MIB HUAWEI-L2IF-MIB HUAWEI-L2MAM-MIB HUAWEI-L2MAUTICAST-MIB
 HUAWEI-L2VLAN-MIB HUAWEI-L3VPN-EXT-MIB HUAWEI-LDT-MIB HUAWEI-LINE-MIB HUAWEI-MLAG-MIB HUAWEI-MEMORY-MIB HUAWEI-MFLP-MIB HUAWEI-MIB HUAWEI-MPLS-EXTEND-MIB HUAWEI-MPLSLSR-EXT-MIB HUAWEI-MSTP-MIB HUAWEI-ND-MIB HUAWEI-ND-MIB

Category	МІВ
Huawei- proprietary MIB	 HUAWEI-NTP-TRAP-MIB HUAWEI-NVO3-MIB HUAWEI-OPENFLOW-MIB HUAWEI-OSPFV2-MIB HUAWEI-OSPFV3-MIB HUAWEI-OSPFV3-MIB HUAWEI-PRFMGMT-MIB HUAWEI-PRFMGMT-MIB HUAWEI-PRT-MIB HUAWEI-PTP-MIB (supported by CloudEngine 6865-48S8CQ-EI) HUAWEI-RIPv2-EXT-MIB HUAWEI-SECURITY-MIB HUAWEI-SMARTLINK-MIB HUAWEI-SMARTLINK-MIB HUAWEI-SSH-MIB HUAWEI-SSH-MIB HUAWEI-SYS-CLOCK-MIB HUAWEI-SYS-MAN-MIB HUAWEI-SYS-MAN-MIB HUAWEI-TCP-MIB HUAWEI-TCP-MIB HUAWEI-TRILL-CONF-MIB (supported by CloudEngine 6860-48S8CQ-EI) HUAWEI-TRNG-MIB HUAWEI-TRNG-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-VPST-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-TRNG-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-TRNG-MIB HUAWEI-VPST-MIB HUAWEI-VPST-MIB HUAWEI-VPAST-MIB HUAWEI-VAQOS-MIB

For detailed information of MIB information, visit http://support.huawei.com/hedex/hdx.do?docid =EDOC1100020548&lang=en&idPath=7919710%7C21782165%7C21782239%7C22318540% 7C7597815 or contact your local Huawei sales office.

Standard Compliance

The following table lists the standards the CloudEngine 6860 series switches comply with.

Standard Organization	Standard or Protocol
IETF	 RFC6991 Common YANG Data Types RFC0768 User Datagram Protocol RFC0791 INTERNET PROTOCOL DARPA INTERNET PROGRAM PROTOCOL SPECIFICATION RFC0792 INTERNET CONTROL MESSAGE PROTOCOL RFC0793 TRANSMISSION CONTROL PROTOCOL RFC0813 Window and Acknowledgement Strategy in TCP/IP RFC0826 Ethernet Address Resolution Protocol: Or Converting Network Protocol Addresses to 48.bit Ethernet Address for Transmission on Ethernet Hardware RFC0854 TELNET PROTOCOL SPECIFICATION RFC0856 Echo Protocol RFC0879 The TCP Maximum Segment Size and Related Topics RFC0896 Congestion control in IP/TCP internetworks RFC0919 Broadcasting Internet Datagrams RFC0922 Broadcasting Internet datagrams in the presence of subnets

Standard Organization	Standard or Protocol
	 RFC0950 Internet Standard Subnetting Procedure REC0959 FILE TRANSFER PROTOCOL (ETP)
	 RFC1027 Using ARP to implement transparent subnet gateways RFC1034 Domain names - concepts and facilities
	RFC1035 Domain names - implementation and specification
	RFC1042 Standard for the transmission of IP datagrams over IEEE 802
	REC1058 Routing Information Protocol
	RFC1071 Computing the Internet Checksum
	RFC1091 Telnet Terminal-Type Option
	RFC1122 Requirements for Internet Hosts Communication Layers
	REC1155 Structure and identification of management information for
	TCP/IP-based internets
	 RFC1157 Simple Network Management Protocol (SNMP)
	RFC1195 Use of OSI Is-Is for Routing in TCP/IP and Dual Environments
	REC1212 Concise MIB definitions REC1214 OSI internet management: Management Information Base
	RFC1215 A Convention for Defining Traps for use with the SNMP
	RFC1245 OSPF Protocol Analysis
	RFC1305 Network Time Protocol (Version 3)
	RFC1321 The MD5 Message-Digest Algorithm REC1350 THE TETP PROTOCOL (REVISION 2)
	RFC1389 RIP Version 2 MIB Extensions
	RFC1493 Definitions of Managed Objects for Bridges
	RFC1721 RIP Version 2 Protocol Analysis
	RFC1722 RIP Version 2 Protocol Applicability Statement
IETE	REC1723 RIP Version 2 - Carrying Additional Information REC1724 RIP Version 2 MIB Extension
	RFC1757 Remote Network Monitoring Management Information Base
	RFC1765 OSPF Database Overflow
	RFC1860 Variable Length Subnet Table For IPv4
	RFC1901 Introduction to Community-based SNMPv2
	REC1918 Address Allocation for Private Internets REC1981 Path MTU Discovery for IP version 6
	RFC2080 RIPng for IPv6
	RFC2081 RIPng Protocol Applicability Statement
	RFC2082 RIP-2 MD5 Authentication
	RFC2104 HMAC: Keyed-Hashing for Message Authentication
	REC2113 IP Router Alert Option REC2131 Dynamic Host Configuration Protocol
	RFC2132 DHCP Options and BOOTP Vendor Extensions
	RFC2233 The Interfaces Group MIB using SMIv2
	RFC2246 The TLS Protocol Version 1.0
	RFC2285 Benchmarking Terminology for LAN Switching Devices
	RFC2329 OSPF Standardization Report
	RFC2385 Protection of BGP Sessions via the TCP MD5 Signature Option
	RFC2452 IP Version 6 Management Information Base for the Transmission Control Protocol
	RFC2453 RIP Version 2
	RFC2454 IP Version 6 Management Information Base for the User Datagram Protocol
	RFC2465 Management Information Base for IP Version 6: Textual Conventions and Convent
	REC2466 Management Information Base for IP Version 6: ICMPv6 Group
	RFC2472 IP Version 6 over PPP

Standard Organization	Standard or Protocol
IETF	 RFC2576 Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework RFC2578 Structure of Management Information Version 2 (SMIv2) RFC2578 Textual Conventions for SMIv2 RFC2618 RADIUS Authentication Client MIB RFC2618 RADIUS Authentication Client MIB RFC2763 Dynamic Hostname Exchange Mechanism for IS-IS RFC2819 Remote Network Monitoring Management Information Base RFC2803 Generic AAA Architecture RFC2906 AAA Authorization Framework RFC2906 AAA Authorization Requirements RFC2906 AAA Authorization Requirements RFC2906 AAA Authorization Requirements RFC2906 Diami-wide Prefix Distribution with Two-Level IS-IS RFC2907 IS-IS Mesh Groups RFC3014 Notification Log MIB RFC3015 Delegation of IP6.ARPA RFC3152 Delegation of IP6.ARPA RFC3152 Delegation of IP6.ARPA RFC3162 The BSD Syslog Protocol RFC3170 IP Multicast Applications: Challenges and Solutions RFC3277 Intermediate System to Intermediate System (IS-IS) Transient Blackhole Avoidance RFC3368 Optional Checksums in Intermediate System (IS-IS) Transient Blackhole Avoidance RFC3369 Reserved Type, Length and Value (TLV) Codepoints in Intermediate System (ISIS) RFC3363 Reserved Type, Length and Value (TLV) Codepoints in Intermediate System to I

Standard Organization	Standard or Protocol
	 RFC3579 RADIUS (Remote Authentication Dial In User Service) Support For Extensible Authentication Protocol (EAP). RFC3584 Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework RFC3587 IPv6 Global Unicast Address Format RFC3596 DNS Extensions to Support IP Version 6 RFC3623 Graceful OSPF Restart RFC3682 The Generalized TTL Security Mechanism (GTSM) RFC3719 Recommendations for Interoperable Networks using Intermediate System to Intermediate System (IS-IS) RFC3756 IPv6 Neighbor Discovery (ND) Trust Models and Threats RFC3787 Recommendations for Interoperable IP Networks using Intermediate System to Intermediate System (IS-IS) RFC3787 Recommendations for Interoperable IP Networks using Intermediate System to Intermediate System (IS-IS) RFC3826 The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model RFC3847 Restart Signaling for Intermediate System to Intermediate System (IS-IS) RFC3879 Deprecating Site Local Addresses RFC3954 Cisco Systems NetFlow Services Export Version 9 RFC3971 SEcure Neighbor Discovery (SEND) RFC3972 Cryptographically Generated Addresses (CGA) RFC4007 IPv6 Scoped Address Architecture RFC4022 Management Information Base for the Transmission Control Protocol(TCP) RFC4113 Management Information Base for the User Datagram Protocol (UDP)
IETF	 RFC4133 Entity Milb (Version 3) RFC4188 "Definitions of Managed Objects for Bridges RFC4191 Default Router Preferences and More-Specific Routes RFC4213 Basic Transition Mechanisms for IPv6 Hosts and Routers RFC4245 High-Level Requirements for Tightly Coupled SIP Conferencing RFC4250 The Secure Shell (SSH) Protocol Assigned Numbers RFC4251 The Secure Shell (SSH) Protocol Architecture RFC4252 The Secure Shell (SSH) Authentication Protocol RFC4253 The Secure Shell (SSH) Transport Layer Protocol RFC4254 The Secure Shell (SSH) Connection Protocol RFC4254 The Secure Shell (SSH) Connection Protocol RFC4294 IPv6 Node Requirements RFC4294 IPv6 Node Requirements RFC4344 The Secure Shell (SSH) Transport Layer Encryption Modes RFC4345 Improved Arcfour Modes for the Secure Shell (SSH) Transport Layer Protocol RFC4363 Q-BRIDGE-MIB RFC4364 BGP/MPLS IP Virtual Private Networks (VPNs) RFC4443 Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification RFC4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches RFC4560 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations RFC4562 MAC-Forced Forwarding: A Method for Subscriber Separation on an Ethernet Access Network draft-bonica-tcp-auth-06 Authentication for TCP-based Routing and Management Protocols

Standard Organization	Standard or Protocol
IETF	 draft-ietf-l3vpn-rfc2547bis-03 BGP/MPLS IP VPNs draft-ietf-ppvpn-rfc2547bis-04 BGP/MPLS VPN Arch draft-ietf-secsh-filexfer-02 draft-ietf-secsh-filexfer-02 draft-ietf-secsh-filexfer-13 SFTP File transfer protocol - Partially Not supported. draft-ietf-secsh-filexfer-14 draft-ietf-secsh-filexfer-14 draft-ietf-secsh-filexfer-14 draft-ietf-secsh-filexfer-14 draft-ietf-tls-rfc2246-bis-06 The TLS Protocol (Version 1.1) draft-shen-sm2-ecdsa-00 Support of SM2 key exchange draft-zhang-mac-forced-forwarding-vepa-01 MAC-Forced Forwarding Inter-operates with VEPA
IEEE	 IEEE 802.1A Overview and Architecture IEEE 802.1A Overview and Architecture IEEE 802.1AC Media Access Control Service revision IEEE 802.1AC Media Access Control Service revision IEEE 802.1AG "IEEE Standard for IEEE Local and metropolitan area networks— IEEE Virtual Bridged Local Area Networks IEEE Connectivity Fault Management" IEEE Connectivity Fault Management" IEEE 802.1AP Management Information Base (MIB) definitions for VLAN Bridges IEEE 802.1AP Management Information Base (MIB) definitions for VLAN Bridges IEEE 802.1AP Management Information Base (MIB) definitions for VLAN Bridges IEEE 802.1AP Management (MAC) IEEE 802.1D Rapid Reconvergence of Spanning Tree (RSTP) IEEE 802.1D Rapid Reconvergence of Spanning Tree (RSTP) IEEE Bridging of Ethernet V2.0 in Local IEEE Area Networks" IEEE 802.1Q IEEE Standard for Local and Metropolitan Area Networks : Virtual Bridged Local Area Networks IEEE 802.1Q IZ Enhanced Transmission Selection IEEE 802.1QAZ CHAN tagging IEEE 802.3AC VLAN tagging IEEE 802.3AC VLAN tagging IEEE 802.3AC VLAN tagging IEEE 802.3AL Operations, Administration, and Maintenance (OAM) IEEE 802.3AL (IEEE P802.1AX) Link Aggregation Task Force. IEEE 802.3AL (IEEE P802.1AX) Link Aggregation Task Force. IEEE 802.3AX (IEEE P802.1AX) Link Aggregation Task Force.
ITU	Y.1344 Ethernet ring protection switching
ISO	ISO10598 "Information technology —Telecommunications and information exchange between systems — Intermediate System to Intermediate System intra-domain routeing information exchange protocol for use in conjunction with the protocol for providing the connectionless-mode network service (ISO 8473)

The listed standards and protocols are fully or partially supported by Huawei switches. For details, visit https://e.huawei.com/ca/material/onLineView?MaterialID=821895aad0bd48e6aa079c06e82fb 7f8 or contact your local Huawei sales office.

Optical transceivers and Cables

Part Number	Product Description	
GE-SFP Optical Transceivers		
SFP-1000BaseT	Electrical Transceiver, SFP, GE, Electrical Interface Module (100m, RJ45)	
BIDI-SFP Optical Transceive	ers	
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)	
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)	
25GE-SFP28 Optical Transco	eivers	
SFP-25G-SR	Optical Transceiver,SFP28,25GE, Multi-mode Module(850nm,0.1km,LC)	
40GE-QSFP+ Optical Transc	eivers	
QSFP-40G-SR-BD	40GBase-BD Optical Transceiver,QSFP+,40G,Multi-mode (850nm,0.1km,LC)	
QSFP-40G-SDLC-PAM	40GBase-SDLC Optical Transceiver,QSFP+,40G,Multi- mode(850nm,PAM4,0.1km-OM3,0.15km-OM4,LC)	
QSFP-40G-iSR4	40GBase-iSR4 Optical Transceiver,QSFP+,40G,Multi-mode (850nm,0.15km,MPO)(connecting to one QSFP+ or four SFP+)	
QSFP-40G-eSR4	40GBase-eSR4 Optical Transceiver,QSFP+,40G,Multi-mode (850nm,0.3km,MPO)(connecting to one QSFP+ or four SFP+)	
QSFP-40G-eSDLC-PAM	40GBase-eSDLC Optical Transceiver,QSFP+,40G,Multi- mode(850nm,PAM4,0.1km-OM3,0.3km-OM4,LC)	

QSFP-40G-LR4-Lite	40GBase-LR4 Lite Optical Transceiver,QSFP+,40G,Single-mode Module(1310nm,2km,LC)
QSFP-40G-eSM4	40GBase-eSM4 Optical Transceiver,QSFP+,40G,Single-mode Module (1310nm,10km,MPO)(connecting to one QSFP+ or four SFP+)
QSFP-40G-LR4	40GBASE-LR4 optical transceiver, QSFP+, 40G, single-mode module (1310nm, 10km, LC)
QSFP-40G-ER4	40GBase-ER4 Optical Transceiver,QSFP+,40G,Single-mode Module (1310nm,40km,LC)
100GE-QSFP28 Optical Tra	nsceivers
QSFP-100G-SWDM4	100GBase-SWDM4 Optical Transceiver,QSFP28,100GE,Multi- mode Module(850nm,0.075km-OM3,0.1km-OM4,LC)
QSFP28-100G-SR4	100GBase-SR4 Optical Transceiver,QSFP28,100G,Multi-mode (850nm,0.1km,MPO)
QSFP-100G-SR4-NT	100GBase-SR4 Optical Transceiver,QSFP28,100G,Multi-mode (850nm,0.1km,MPO,NT) ,20-60C
QSFP-100G-CWDM4-NT	100GBase-CWDM4 Optical Transceiver,QSFP28,100G,Single- mode module (1310nm,2km,LC,NT) ,20-65C
QSFP28-100G-PSM4	100GBase-PSM4 Optical Transceiver,QSFP28,100G,Single-mode module (1310nm,0.5km,MPO)
QSFP-100G-CWDM4	100GBase-CWDM4 Optical Transceiver,QSFP28,100G,Single- mode module (1310nm,2km,LC)
QSFP28-100G-LR4	100GBase-LR4 Optical Transceiver,QSFP28,100G,Single-mode module (1310nm,10km,LC)
QSFP-100G-eCWDM4	100GBase-eCWDM4 Optical Transceiver,QSFP28,100G,Single- mode module (1310nm,10km,LC)
QSFP-100G-ER4-Lite	100GBase-ER4-Lite Optical Transceiver,QSFP28,100G,Single- mode module (1310nm,30km(FEC OFF),40km(FEC ON),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)
SFP-25G-AOC-3M	Active Optical Cable , SFP28, 25G, (850nm, 3m, AOC)
SFP-25G-AOC-5M	Active Optical Cable , SFP28, 25G, (850nm, 5m, AOC)

SFP-25G-AOC-7M	Active Optical Cable , SFP28, 25G, (850nm, 7m, AOC)
SFP-25G-AOC-10M	Active Optical Cable, SFP28, 25G, (850nm, 10m, AOC)
SFP-25G-AOC-5M-A	Active Optical Cable ,SFP28,25G,(850nm,5m,AOC,Aqua)
SFP-25G-AOC-7M-A	Active Optical Cable ,SFP28,25G,(850nm,7m,AOC,Aqua)
SFP-25G-AOC-10M-A	Active Optical Cable ,SFP28,25G,(850nm,10m,AOC,Aqua)
SFP-25G-AOC-20M-A	Active Optical Cable ,SFP28,25G,(850nm,20m,AOC,Aqua)
QSFP-100G-AOC-10M	Active Optical Cable ,QSFP28,100G,(850nm,10m,AOC)
QSFP-100G-AOC-30M	Active Optical Cable ,QSFP28,100G,(850nm,30m,AOC)
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
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
SFP-25G-CU1M	SFP28, 25G, High Speed Direct-attach Cables, 1m, (SFP28), CC8P0.254B(S), SFP28
SFP-25G-CU3M	SFP28, 25G, High Speed Direct-attach Cables, 3m, (SFP28), CC8P0.254B(S), SFP28
SFP-25G-CU3M-N	SFP28, 25G, High Speed Direct-attach Cables, 3m, (SFP28), CC2P0.4B(S), SFP28
SFP28-25G-CU5M	SFP28, 25G, High Speed Direct-attach Cables, 5m, (SFP28), CC2P0.4B(S), SFP28
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
QSFP28-100G-CU1M	QSFP28, 100G, High Speed Direct-attach Cables, 1m, (QSFP28), CC8P0.254B(S), QSFP28, Used indoor
QSFP28-100G-CU3M	QSFP28, 100G, High Speed Direct-attach Cables, 3m, (QSFP28), CC8P0.254B(S), QSFP28, Used indoor
QSFP28-100G-CU5M	QSFP28, 100G, High Speed Direct-attach Cables, 5m, (QSFP28), CC8P0.4B(S), QSFP28, Used indoor
QSFP-4SFP25G-CU1M	100GE QSFP28-4SFP25G, High Speed Direct-attach Cables, 1m, (QSFP28), (4*(CC2P0.254B(S))), (4SFP28)
QSFP-4SFP25G-CU3M	100GE QSFP28-4SFP25G, High Speed Direct-attach Cables, 3m, (QSFP28), (4*(CC2P0.254B(S))), (4SFP28)
QSFP-4SFP25G-CU3M-N	100GE QSFP28-4SFP25G, High Speed Direct-attach Cables, 3m, (QSFP28), (4*(CC2P0.4B(S))), 4SFP28
QSFP-4SFP25G-CU5M	100GE QSFP28-4SFP25G, High Speed Direct-attach Cables, 5m, (QSFP28), (4*(CC2P0.4B(S))), 4SFP28

Ordering Information

Mainframe

CE6860-48S8CQ-E	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, Without Fan and Power Module)
CE6860-EI-F-B0B	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Exhaust)
CE6860-EI-B-B0B	CE6860-48S8CQ-EI Switch (48-Port 25GE SFP28, 8*100GE QSFP28, 2*AC Power Module, 2*FAN Box, Port-side Intake)
CE6865-48S8CQ-E	I CE6865-48S8CQ-EI Switch(48-Port 25GE SFP28,8*100GE QSFP28,Without Fan and Power Module)
CE6865-EI-F-B0B	CE6865-48S8CQ-EI Switch(48-Port 25GE SFP28,8*100GE QSFP28,2*AC Power Module,2*FAN Box,Port-side Exhaust)
CE6865-EI-B-B0B	CE6865-48S8CQ-EI Switch(48-Port 25GE SFP28,8*100GE QSFP28,2*AC Power Module,2*FAN Box,Port-side Intake)

Fan box		
Model	Description	Applicable Product
FAN-40HA-F	Fan box (HA, Front to Back, FAN panel side intake)	CE6860-48S8CQ-EI and CE6865- 48S8CQ-EI
FAN-40HA-B	Fan box (HA, Back to Front, FAN panel side exhaust)	CE6860-48S8CQ-EI and CE6865- 48S8CQ-EI
Power		
Model	Description	Applicable Product
PAC-600WA-F	600W AC Power Module (Front to Back, Power panel side intake)	CE6860-48S8CQ-EI and CE6865- 48S8CQ-EI
PAC-600WA-B	600W AC Power Module (Back to Front, Power panel side exhaust)	CE6860-48S8CQ-EI and CE6865- 48S8CQ-EI
PDC-350WA-F	350W DC Power Module (Front to Back, Power panel side intake)	CE6860-48S8CQ-EI
PDC-350WA-B	350W DC Power Module (Back to Front, Power panel side exhaust)	CE6860-48S8CQ-EI
PDC600S12-CF	600W DC Power Module(Front to Back,Power panel side intake)	CE6865-48S8CQ-EI
PDC600S12-CB	600W DC Power Module(Back to Front,Power panel side exhaust)	CE6865-48S8CQ-EI
Software		
CE68-LIC-VXLAN	CloudEngine 6800 VXLAN Function	
CE68-LIC-FCF16	CloudEngine 6800 FCF 16 Ports	
CE68-LIC-FCFAL	CloudEngine 6800 FCF All Ports	
CE68-LIC-BUN01	CE6800 Function License Bundle 1	
CE6800-LIC-NPV	CloudEngine 6800 FCOE NPV Function	
CE68-LIC-TLM	CE6800 Telemetry Function	
CE68-LIC-AIF	CloudEngine 6800 AI Fabric Function(CE switch DCB/ dynamic ECN/ fastCNP function)	
CE68-LIC-PTP	CE6800 Precision Time Protocol Function	
N1-CE68LIC-CFFD	N1-CloudFabric Foundation SW License for CloudEngine 6800 (N1- CE68LIC-CFFD software is applicable to single DC scenarios, includes basic L2/L3 functions and features such as VXLAN, EVPN, Telemetry and Agile Controller-DCN)	
N1-CE68CFFD- SnS1Y	N1-CloudFabric Foundation SW License for CloudEngine 6800-SnS-1 Year (The annual fee for the CloudFabric N1 package is one-time from 3 to 5 years, at least 3 year)	

N1-CE68LIC-CFAD	N1-CloudFabric Advanced SW License for CloudEngine 6800 (N1- CE68LIC-CFAD software is applicable to multiple DC scenarios, includes all the functions of the N1-CE68LIC-CFFD software package and NSH function)
N1-CE68CFAD- SnS1Y	N1-CloudFabric Advanced SW License for CloudEngine 6800-SnS-1 Year (The annual fee for the CloudFabric N1 package is one-time from 3 to 5 years, at least 3 year)
N1-CE68LIC-AIF	N1-CloudEngine 6800 AI Fabric Function (CE switch DCB/ dynamic ECN/ fastCNP function)
N1-CE68AIF- SnS1Y	N1-CloudEngine 6800 AI Fabric Function-SnS-1 Year (The annual fee for the CloudFabric N1 package is one-time from 3 to 5 years, at least 3 year)

Networking and Applications

Data Center Applications

On a typical data center network, CloudEngine 16800/CloudEngine 12800/ CloudEngine 8800/CloudEngine 7800 switches work as core switches, and CloudEngine 6860 switches work as ToR switches. CloudEngine 6860 switches use 100GE ports to set up 100GE full connections with CloudEngine 16800/ CloudEngine 12800/CloudEngine 8800 core switches, or use 40GE ports to connect to CloudEngine 7800 switches. The core and ToR switches use fabric technology such as TRILL or VXLAN to establish a non-blocking large Layer 2 network, which allows large-scale VM migrations and flexible service deployments.

Note: TRILL and VXLAN can be also used on campus networks to support flexible service deployments in different service areas.



Campus Network Applications

CloudEngine 6860 switches can be used as aggregation or core switches on a campus network. Their high-density, line-rate 10GE/25GE ports and high stacking capability can meet the everincreasing demand for network bandwidth. CloudEngine 6860 switches are cost-effective campus network switches, thanks to their extensive service features and innovative energy-saving technologies.

On a typical campus network, multiple CloudEngine 16800/CloudEngine 12800/CloudEngine 8800/CloudEngine 7800 switches are virtualized into a logical core switch using CSS or iStack technology. Multiple CloudEngine 8800/CloudEngine 7800/CloudEngine 6800 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, CloudEngine 6800/CloudEngine 5800 switches are virtualized with CloudFabric technology, such as iStack or M-LAG (vertical virtualization), to provide high-density line-rate ports.

Note: CSS, iStack, and M-LAG are also widely used in data centers to facilitate network management.



Copyright © Huawei Technologies Co., Ltd. 2019. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademark Notice

HUAWEI, and **W** are trademarks or registered trademarks of Huawei Technologies Co., Ltd. Other trademarks, product, service and company names mentioned are the property of their respective owners.

General Disclaimer

The information in this document may contain predictive statements including, without limitation, statements regarding the future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purpose only and constitutes neither an offer nor an acceptance. Huawei may change the information at any time without notice.

HUAWEI TECHNOLOGIES CO.,LTD. Huawei Industrial Base Bantian Longgang Shenzhen 518129,P.R.China Tel: +86 755 28780808