Huawei CloudEngine S6750-S Series Switches Datasheet

Huawei CloudEngine S6750-S switches are next-generation enterprise-class access switches that provide GE/10GE downlink ports and 25GE/40GE/100GE uplink optical ports.

Introduction

Huawei CloudEngine S6750-S switches are next-generation enterprise-class core and aggregation switches that offer high performance, high reliability, cloud management, and intelligent operations and maintenance (O&M). They build on an industry-leading software and hardware platform and are purpose-built with security, IoT, and cloud in mind. With these traits, CloudEngine S6750-S can be widely used in enterprise campuses, colleges/universities, data centers, and other scenarios.

CloudEngine S6750-S switches offer GE, 10GE, 40GE and 100GE port types, flexibly adapting to diversified network bandwidth requirements. They also support cloud management and implement cloud-managed network services throughout the full lifecycle from planning, deployment, monitoring, experience visibility, and fault rectification, all the way to network optimization, greatly simplifying network management.

CloudEngine S6750-S switches support free mobility, enables consistent user experience no matter the user location or IP address, fully meeting enterprises' demands for mobile offices.

CloudEngine S6750-S switches support VXLAN to implement network virtualization, achieving multi-purpose networks and multi-network convergence for greatly improved network capacity and utilization. As such, CloudEngine S6750-S switches are an ideal choice for building next-generation IoT converged networks in terms of cost, flexibility, and scalability.

Product Overview

Models and Appearances

The following models are available in CloudEngine S6750-S switches.

Appearance	Description
 CloudEngine S6750-S16X8YZ	• 16 x 1/2.5/10 GE SFP+, 8 x 1/2.5/10/25 GE SFP28 • One extended slot • Dual pluggable power modules, 1+1 power backup • Forwarding performance: 450 Mpps • Switching capacity: 920 Gbps/2.32 Tbps*
 CloudEngine S6750-S16X10Y2CZ	• 16 x FE/1/2.5/10 GE SFP+, 10 x 1/2.5/10/25 GE SFP28, 2 x 40/100 GE QSFP28 • One extended slot • Dual pluggable power modules, 1+1 power backup • Forwarding performance: 450 Mpps

Appearance	Description
	• Switching capacity: 1.42T bps/2.32 Tbps*
 CloudEngine S6750-S24T16X8Y2CZ	• 24 × 10/100/1000M Base-T Ethernet ports, 16 x FE/1/2.5/10 GE SFP+, 8 x 1/2.5/10/25GE SFP28, 2 x 40/100 GE QSFP28 • One extended slot • Dual pluggable power modules, 1+1 power backup • Forwarding performance: 450 Mpps • Switching capacity: 968 Gbps/2.32 Tbps*

*Note：The value before the slash (/) refers to the device's switching capability, while the value after the slash (/) means the system's switching capability.

Fan Module

The following table lists the fan module on CloudEngine S6750-S switches.

Fan Module	Technical Specifications	Applied Switch Model
 FAN-031A-B	• Dimensions (W x D x H): 40 mm x 100.3 mm x 40 mm • Number of fans: 1 • Weight: 0.1 kg • Maximum power consumption: 21.6 W • Maximum fan speed: 24500±10% revolutions per minute (RPM) • Maximum wind rate: 31 cubic feet per minute (CFM) • Hot swap: Supported	• CloudEngine S6750-S16X8YZ • CloudEngine S6750-S16X10Y2CZ • CloudEngine S6750-S24T16X8Y2CZ

Power Supply

The following table lists the power supplies on CloudEngine S6750-S series.

Power Module	Technical Specifications	Applied Switch Model


PAC180S12-CN
	• Dimensions (H x W x D): 40 mm x 66 mm x 215 mm
	• Weight: 0.8 kg
	• Rated input voltage range:
	  – 100 V AC to 130 V AC; 50/60 Hz
	  – 100 V AC to 240 V AC, 50/60 Hz
	  – 240 V DC
	• Maximum input voltage range:
	  – 90 V AC to 290 V AC, 45 Hz to 66 Hz
	  – 190 V DC to 290 V DC
	• Maximum input current:
	  – 3 A
	• Rated output current:
	  – 15 A
	• Rated output voltage: 12 V
	• Rated output power:
	  – 180 W
	• Hot swap: Supported
		• CloudEngine S6750-S16X8YZ
		• CloudEngine S6750-S16X10Y2CZ
		• CloudEngine S6750-S24T16X8Y2CZ

Power Module	Technical Specifications	Applied Switch Model
 PAC600S12-PB	• Dimensions (H x W x D): 39.6 mm x 66 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.) • Weight: 1 kg (2.2 lb) • Rated input voltage range: – 100 V AC to 240 V AC, 50/60 Hz – 240 V DC • Maximum input voltage range: – 90 V AC to 290 V AC, 45 Hz to 66 Hz – 190 V DC to 290 V DC • Maximum input current: 100 V AC to 240 V AC: 8 A 240 V DC: 4 A • Rated output current: 50 A • Rated output voltage: 12 V • Rated output power: 600 W • Hot swap: Supported	• CloudEngine S6750-S16X8YZ • CloudEngine S6750-S16X10Y2CZ • CloudEngine S6750-S24T16X8Y2CZ
 PDC240S12-CN	• Dimensions (H x W x D): 39.6 mm x 66 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.) • Weight: 1.5 kg (3.31 lb) • Rated input voltage range: – +48 V DC – -48 V DC to -60 V DC • Maximum input voltage range: – +40 V DC to +57 V DC – -38.4 V DC to -72 V DC • Maximum input current: 7A • Rated output voltage: 20 V • Rated output power: 240 W • Hot swap: Supported	• CloudEngine S6750-S16X8YZ • CloudEngine S6750-S16X10Y2CZ • CloudEngine S6750-S24T16X8Y2CZ
 PDC400S12-CB	• Dimensions (H x W x D): 39.6 mm x 66 mm x 215 mm (1.56 in. x 2.6 in. x 8.46 in.) • Weight: 0.844 kg (1.86 lb) • Rated input voltage range: – +48 V DC – -48 V DC to -60 V DC • Maximum input voltage range: – +40 V DC to +57 V DC – -38.4 V DC to -72 V DC • Maximum input current: 11A • Rated output voltage: 12 V • Rated output power: 400 W • Hot swap: Supported	

The S6750-S uses pluggable power modules. It can be configured with a single power module or double power modules for 1+1 power redundancy.

Product Features and Highlights

Enable Networks to be More Agile for Services

- Built-in high-speed and flexible processor chips, with their flexible packet processing and traffic control capabilities, CloudEngine S6750-S switches are close to services, meeting current and future challenges, and helping customers build scalable networks.
- CloudEngine S6750-S switches support fully customizing the forwarding mode, forwarding behavior, and search algorithm of traffic. New services are implemented through microcode programming. Customers do not need to replace new hardware and new services can be rolled out within six months.
- CloudEngine S6750-S switches provide open interfaces and user-defined forwarding processes to meet customized service requirements of enterprises. Enterprises can use multi-layer open interfaces to develop new protocols and functions independently. They can also hand over their requirements to vendors and jointly develop them to build an enterprise-dedicated campus network.

Delivering Abundant Services More Agilely

- With the unified user management function, the CloudEngine S6750-S switches authenticates both wired and wireless users, ensuring a consistent user experience no matter whether they are connected to the network through wired or wireless access devices. The unified user management function supports various authentication methods, including 802.1x, MAC address, and is capable of managing users based on user groups, domains, and time ranges. These functions visualize user and service management and boost the transformation from device-centric management to user experience-centric management.
- The CloudEngine S6750-S switches provide excellent quality of service(QoS) capabilities and supports queue scheduling and congestion control algorithms. Additionally, it adopts innovative priority queuing and multi-level scheduling mechanisms to implement fine-grained scheduling of data flows, meeting service quality requirements of different user terminals and services.

Fine-Grained Network Management and Visualized Fault Diagnosis

- In-situ Flow Information Telemetry (IFIT) is an in-band Operations, Administration, and Maintenance (OAM) measurement technology that uses service packets to measure real performance indicators of an IP network, such as the packet loss rate and delay. IFIT can significantly improve the timeliness and effectiveness of network O&M, thereby promoting the development of intelligent O&M.
- Three IFIT modes are available: application-level quality measurement, tunnel-level quality measurement, and native-IP IFIT measurement. Currently, CloudEngine S6750-S switches support native-IP IFIT measurement only. By providing in-band measurement capabilities, CloudEngine S6750-S switches can monitor indicators such as the delay and packet loss rate of service flows in real time. CloudEngine S6750-S switches also offer visualized O&M capabilities to centrally manage and control networks and graphically display performance data. Designed with IFIT capabilities featuring high measurement precision and easy deployment, CloudEngine S6750-S switches are ideal for constructing an intelligent O&M system and stand out with future-proof scalability.

Flexible Ethernet Networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the CloudEngine S6750-S switches support Huawei-developed Smart Ethernet Protection (SEP) technology and the latest Ethernet Ring Protection Switching (ERPS) standard. SEP is a ring protection protocol specific to the Ethernet link layer, and applies to various ring network topologies, such as open ring topology, closed ring topology, and cascading ring topology. This protocol is reliable, easy to maintain, and implements fast service switching within 50 ms. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- CloudEngine S6750-S switches support Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One CloudEngine S6750-S switch can connect to multiple core switches through multiple links, significantly improving reliability of aggregation devices.

Mature IPv6 Features

- The CloudEngine S6750-S series swithes are developed based on the mature, stable VRP and supports IPv4/IPv6 dual stacks, IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6). With these IPv6 features, the CloudEngine S6750-S can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

Intelligent Stack (iStack)

- CloudEngine S6750-S switches support the iStack function that combines multiple switches into a logical switch. Member switches in a stack implement redundancy backup to improve device reliability and use inter-device link aggregation to improve link reliability. iStack provides high network scalability. You can increase a stack's ports, bandwidth, and processing capability by simply adding member switches. iStack also simplifies device configuration and management. After a stack is set up, multiple physical switches can be virtualized into one logical device. You can log in to any member switch in the stack to manage all the member switches in it.

Cloud-based Management

- The Huawei cloud management platform allows users to configure, monitor, and inspect switches on the cloud, reducing on-site deployment and O&M manpower costs and decreasing network OPEX.

VXLAN Features

- VXLAN is used to construct a Unified Virtual Fabric (UVF). As such, multiple service networks or tenant networks can be deployed on the same physical network, and service and tenant networks are isolated from each other. This capability truly achieves 'one network for multiple purposes'. The resulting benefits include enabling data transmission of different services or customers, reducing the network construction costs, and improving network resource utilization.
- This series switches are VXLAN-capable and allow centralized and distributed VXLAN gateway deployment modes. These switches also support the BGP EVPN protocol for dynamically establishing VXLAN tunnels and can be configured using NETCONF/YANG.

Open Programmability System(OPS)

- Open Programmability System (OPS) is an open programmable system based on the Python language. IT administrators can program the O&M functions of a switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Intelligent O&M

- This series switches provides telemetry technology to collect device data in real time and send the data to Huawei campus network analyzer(iMaster NCE-CampusInsight). The CampusInsight analyzes network data based on the intelligent fault identification algorithm, accurately displays the real-time network status, effectively demarcates and locates faults in a timely manner, and identifies network problems that affect user experience, accurately guaranteeing user experience.

Intelligent Upgrade

- Switches support the intelligent upgrade feature. Specifically, switches obtain the version upgrade path and download the newest version for upgrade from the Huawei Online Upgrade Platform (HOUP). The entire upgrade process is highly automated and achieves one-click upgrade. In addition, preloading the version is supported, which greatly shortens the upgrade time and service interruption time.
- The intelligent upgrade feature greatly simplifies device upgrade operations and makes it possible for the customer to upgrade the version independently. This greatly reduces the customer's maintenance costs. In addition, the upgrade policies on the HOUP platform standardize the upgrade operations, which greatly reduces the risk of upgrade failures.

Product Specifications

The following table describes the functions and features available on the CloudEngine S6750-S switches.

Functions and Features

Category	Service Features
User management	Unified user management
	802.1X, MAC, Portal, HACA authentication
	Traffic- and duration-based accounting
	User authorization based on user groups, domains, and time ranges

Category	Service Features
MAC	Automatic MAC address learning and aging
	384K MAC entries (MAX)
	Static, dynamic, and blackhole MAC address entries
	Source MAC address filtering
	MAC address learning limiting based on ports and VLANs
VLAN	4K VLANs
	Access mode, Trunk mode and Hybrid mode
	Default VLAN
	QinQ and enhanced selective QinQ
	VLAN Stacking
	Dynamic VLAN assignment based on MAC addresses
ARP	ARP Snooping
DHCP	DHCPv4 Client, DHCPv4 Relay, DHCPv4 Server, DHCPv4 Snooping
	DHCPv6 Client, DHCPv6 Relay, DHCPv6 Server, DHCPv6 Snooping
IP routing	IPv4 dynamic routing protocols such as RIP, OSPF, IS-IS, and BGP
	IPv6 dynamic routing protocols such as RIPng, OSPFv3, ISISv6, and BGP4+
	Routing Policy, Policy-Based Routing
	VRF
Segment Routing	SRv6 BE (L3 EVPN)
	BGP EVPN
	SRv6 configuration through NETCONF
Multicast	IGMPv1/v2/v3 and IGMP v1/v2/v3 Snooping
	PIM-DM, PIM-SM, and PIM-SSM
	Fast-leave mechanism
	Multicast traffic control
	Multicast querier
	Multicast protocol packet suppression
MPLS	MPLS-LDP
	MPLS-L3VPN
	MPLS Qos
	MPLS TE
VXLAN	Centralized gateway
	Distributed gateway
	BGP-EVPN

Category	Service Features
	Configures VXLANs through NETCONF
QoS	Traffic classification based on Layer 2 headers, Layer 3 protocols, Layer 4 protocols, and 802.1p priority
	Actions such as ACL, Committed Access Rate (CAR), re-marking, and scheduling
	Queuing algorithms, such as PQ, DRR, WDRR, and PQ+DRR, PQ+WDRR
	Congestion avoidance mechanisms such as WRED and tail drop
	Traffic shaping
	Eight queues on each interface
	Network Slicing
Native-IP IFIT	Marks the real service packets to obtain real-time count of dropped packets and packet loss ratio
	The statistical period can be modified
	Two-way frame delay measurement
Ethernet loop protection	STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s).
	BPDU protection, root protection, and loop protection
	G.8032 Ethernet Ring Protection Switching (ERPS)
Reliability	M-LAG
	Service interface-based stacking
	Maximum number of stacked devices
	Stack bandwidth (Bidirectional)
	Link Aggregation Control Protocol (LACP) and E-Trunk
	Virtual Router Redundancy Protocol (VRRP) and Bidirectional Forwarding Detection (BFD) for VRRP
	BFD for BGP/IS-IS/OSPF/static routes
	Eth-OAM 802.1ag(CFM)
	Smartlink
	LLDP
System management	Console terminal service
	Telnet/IPv6 Telnet terminal service
	SSH v1.5
	SSH v2.0
	SNMP v1/v2c/v3
	FTP、TFTP、SFTP
	BootROM upgrade and remote in-service upgrade
	Hot patch
	User operation logs

Category	Service Features
	Open Programmability System (OPS)
	Streaming Telemetry
Security and management	NAC
	RADIUS and HWTACACS authentication for login users
	Command line authority control based on user levels, preventing unauthorized users from using command configurations
	Defense against DoS attacks, Transmission Control Protocol (TCP) SYN Flood attacks, User Datagram Protocol (UDP) Flood attacks, broadcast storms, and heavy traffic attacks
	IPv6 RA Guard
	CPU hardware queues to implement hierarchical scheduling and protection for protocol packets on the control plane
	Remote Network Monitoring (RMON)
	Secure boot
	Netstream
	Port mirroring

NOTE

This content is applicable only to regions outside mainland China. Huawei reserves the right to interpret this content.

Hardware Specifications

The following table lists hardware specifications of the CloudEngine S6750-S switches.

Item		CloudEngine S6750-S16X8YZ	CloudEngine S6750-S16X10Y2CZ	CloudEngine S6750-S24T16X8Y2CZ
Physical specifications	Chassis dimensions (H x W x D, mm)	43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.)	43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.)	43.6 mm x 442.0 mm x 420.0 mm (1.72 in. x 17.40 in. x 16.54 in.)
	Chassis height	1U	1U	1U
	Chassis weight (full configuration weight, including weight of packaging materials)	7.67 kg	7.65 kg	7.96 kg
Fixed port	GE electrical port	NA	NA	24
	GE SFP port	NA	NA	NA
	10GE SFP+ port	16	16	16
	25GE SFP28 port	8	10	8
	40GE QSFP+ port	NA	NA	NA
	100GE QSFP28 port	NA	2	2
Management port	ETH management port	Supported	Supported	Supported

Item		CloudEngine S6750-S16X8YZ	CloudEngine S6750-S16X10Y2CZ	CloudEngine S6750-S24T16X8Y2CZ
	Console port (RJ45)	Supported	Supported	Supported
	USB port	USB 2.0	USB 2.0	USB 2.0
Extended slot		8-port GE/10GE SFP+ interface card (1/2/3/4 support 25GE)		
CPU	Frequency	2 GHz	2 GHz	2 GHz
	Cores	4	4	4
Memory	Memory (RAM)	4GB	4GB	4GB
	Flash	Hardware: 2 GB	Hardware: 2 GB	Hardware: 2 GB
Power supply system	Power supply type	• 180W AC Power Module • 600W AC Power Module • 240W DC Power Module • 400W DC Power Module	• 180W AC Power Module • 600W AC Power Module • 240W DC Power Module • 400W DC Power Module	• 180W AC Power Module • 600W AC Power Module • 240W DC Power Module • 400W DC Power Module
	Rated voltage range	• AC input: 100 V AC to 130 V AC, 200 V AC to 240 V AC; 50/60 Hz • High-voltage DC input: 240 V DC • DC input: –48 V DC to –60 V DC	• AC input: 100 V AC to 130 V AC, 200 V AC to 240 V AC; 50/60 Hz • High-voltage DC input: 240 V DC • DC input: –48 V DC to –60 V DC	• AC input: 100 V AC to 130 V AC, 200 V AC to 240 V AC; 50/60 Hz • High-voltage DC input: 240 V DC • DC input: –48 V DC to –60 V DC
	Maximum voltage range	• AC input: 90 V AC to 290 V AC; 45 Hz to 66 Hz • High-voltage DC input: 190 V DC to 290 V DC • DC input: -38.4 V DC to -72 V DC	• AC input: 90 V AC to 290 V AC; 45 Hz to 66 Hz • High-voltage DC input: 190 V DC to 290 V DC • DC input: -38.4 V DC to -72 V DC	• AC input: 90 V AC to 290 V AC; 45 Hz to 66 Hz • High-voltage DC input: 190 V DC to 290 V DC • DC input: -38.4 V DC to -72 V DC
	Maximum input current	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.	The current specifications are related to the pluggable power module. For details, see Pluggable Power Modules.
	Typical power consumption (30% of traffic load, tested according to ATIS standard)	30% traffic under the ATIS standard, dual power supplies: • 82 W (Dual 180W AC power modules) • 79 W (Dual 240W DC power modules)	30% traffic under the ATIS standard, dual power supplies: • 122 W (Dual 180W AC power modules) • 116 W (Dual 240W AC power modules)	30% traffic under the ATIS standard, dual power supplies: • 127 W (Dual 180W AC power modules) • 121 W (Dual 240W AC power modules)
	Maximum power consumption (100% throughput, full speed of fans)	100% traffic under the ATIS standard, dual power supplies: • 87 W (Dual 180W AC	100% traffic under the ATIS standard, dual power supplies: • 127 W (Dual 180W	100% traffic under the ATIS standard, dual power supplies: • 132 W (Dual 180W

Item		CloudEngine S6750-S16X8YZ	CloudEngine S6750-S16X10Y2CZ	CloudEngine S6750-S24T16X8Y2CZ
		power modules) • 83 W (Dual 240W AC power modules)	AC power modules) • 120 W (Dual 240W DC power modules)	AC power modules) • 125 W (Dual 240W AC power modules)
Heat dissipation system	Heat dissipation mode	Air cooling for heat dissipation, intelligent fan speed adjustment	Air cooling for heat dissipation, intelligent fan speed adjustment	Air cooling for heat dissipation, intelligent fan speed adjustment
	Number of fan modules	2	2	2
	Airflow	Air intake from left, front, and right and air exhaust from rear	Air intake from left, front, and right and air exhaust from rear	Air intake from left, front, and right and air exhaust from rear
Environment parameters	Long-term operating temperature	–5°C to +45°C (23°F to 113°F) at an altitude of 0 to 1800 m (0 to 5905.44 ft.)	–5°C to +45°C (23°F to 113°F) at an altitude of 0 to 1800 m (0 to 5905.44 ft.)	–5°C to +45°C (23°F to 113°F) at an altitude of 0 to 1800 m (0 to 5905.44 ft.)
	Short-term operating temperature	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)	-5°C to +50°C (23°F to 122°F) at an altitude of 0-1800 m (0-5905.44 ft.)
	Storage temperature	–40°C to +70°C (–40°F to +158°F)	–40°C to +70°C (–40°F to +158°F)	–40°C to +70°C (–40°F to +158°F)
	Relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
	Operating altitude	0-5000 m	0-5000 m	0-5000 m
	Noise under normal temperature (sound power)	54.2 dB(A)	54.2 dB(A)	54.2 dB(A)
	Noise under high temperature (sound power)	61.5 dB(A)	62.1 dB(A)	61.5 dB(A)
	Noise under normal temperature (sound pressure)	41.2 dB(A)	41.2 dB(A)	41.2 dB(A)
	Surge protection specification (power port)	• Configured with AC power modules: ±6 kV in differential mode and ±6 kV in common mode • Configured with DC power modules: ±2 kV in differential mode and ±4 kV in common mode	• Configured with AC power modules: ±6 kV in differential mode and ±6 kV in common mode • Configured with DC power modules: ±2 kV in differential mode and ±4 kV in common mode	• Configured with AC power modules: ±6 kV in differential mode and ±6 kV in common mode • Configured with DC power modules: ±2 kV in differential mode and ±4 kV in common mode
Reliability	MTBF (year)[2]	81.40	69.10	47.17
	MTTR (hour)	1.47	1.74	2.54
	Availability	> 0.99999	> 0.99999	> 0.99999
Certification		• EMC certification	• EMC certification	• EMC certification

Item	CloudEngine S6750-S16X8YZ	CloudEngine S6750-S16X10Y2CZ	CloudEngine S6750-S24T16X8Y2CZ
	• Safety certification • Manufacturing certification **NOTE** For details about certifications, see the section Safety and Regulatory Compliance.	• Safety certification • Manufacturing certification **NOTE** For details about certifications, see the section Safety and Regulatory Compliance.	• Safety certification • Manufacturing certification **NOTE** For details about certifications, see the section Safety and Regulatory Compliance.

NOTE

1: The power consumption under different load conditions is calculated according to the ATIS standard. Additionally.

2: The reliability parameter values are calculated based on the typical configuration of the device. The parameter values vary according to the modules configured by the customer.

Licensing

Licensing

This series switches supports both the traditional feature-based licensing mode and the latest Huawei IDN One Software (N1 mode for short) licensing mode. The N1 mode is ideal for deploying Huawei CloudCampus Solution in the on-premises scenario, as it greatly enhances the customer experiences in purchasing and upgrading software services with simplicity.

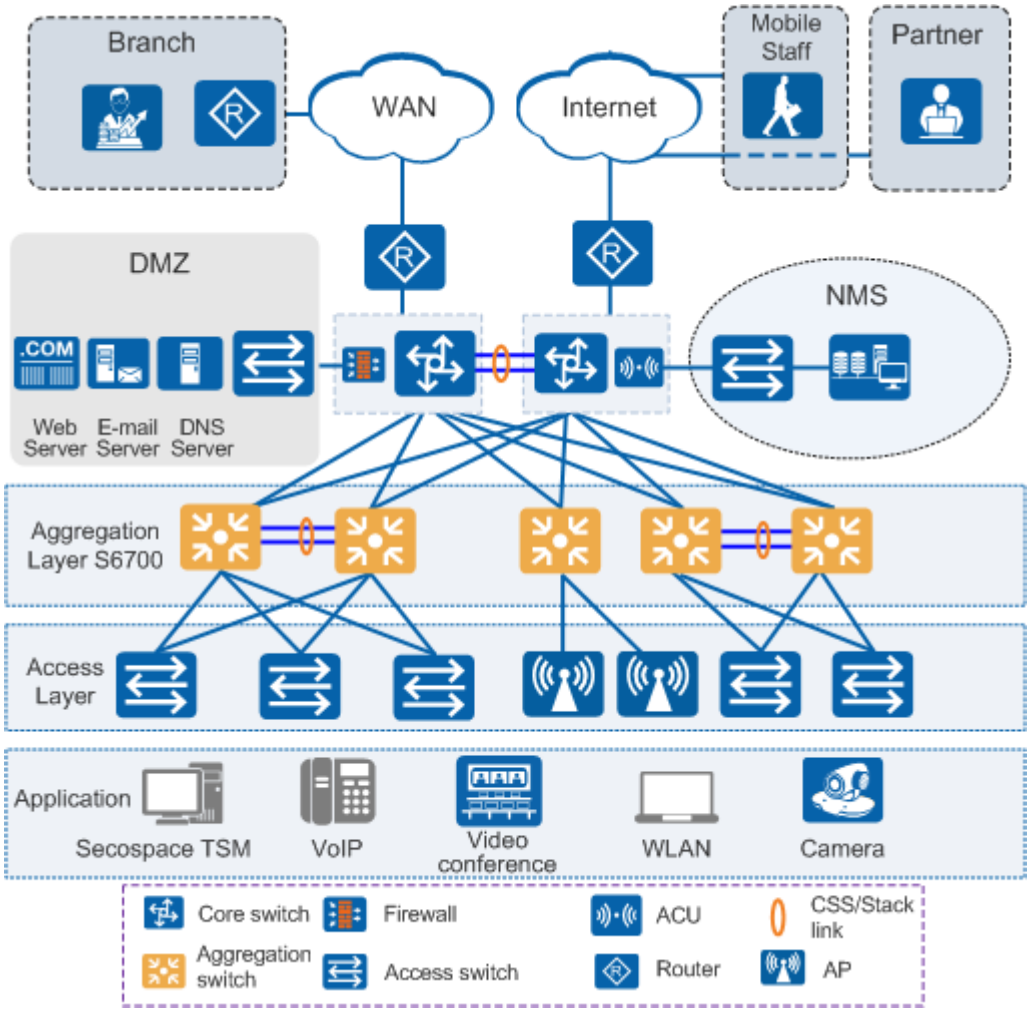
Software Package Features in N1 Mode

Switch Functions	N1 Basic Software	N1 Foundation Software Package	N1 Advanced Software Package
Basic network functions: Layer 2 functions, IPv4, IPv6, and others Note: For details, see the Service Features	√	√	√
Basic network automation based on the iMaster NCE-Campus: • NE management: Device management, topology management and discovery • User access authentication	×	√	√
Advanced network automation and intelligent O&M: VXLAN, Free Mobility, IPCA, CampusInsight basic functions	×	×	√

Networking and Applications

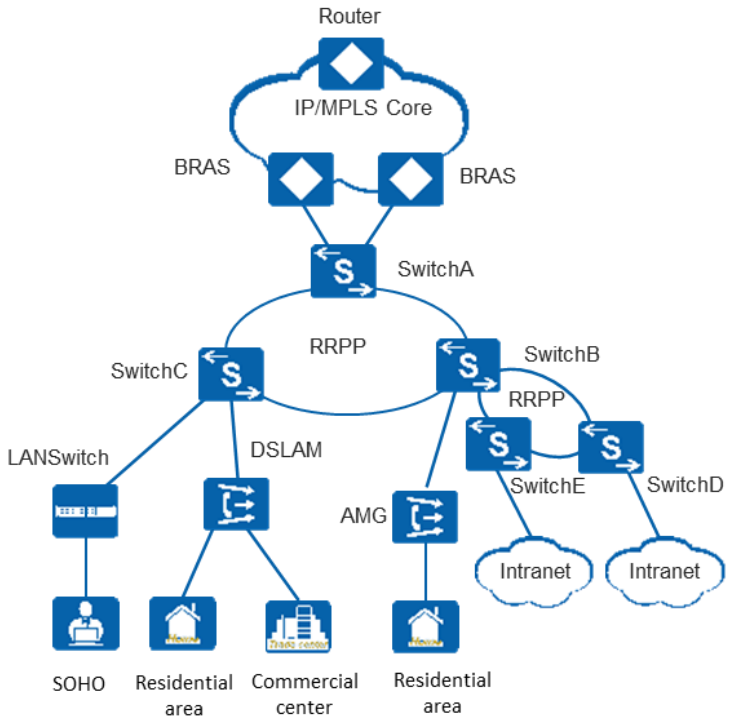
Large-scale Enterprise Campus Network

CloudEngine S6750-S switches can be deployed at the aggregation layer of a large-scale enterprise campus network, creating a highly reliable, scalable, and manageable enterprise campus network.



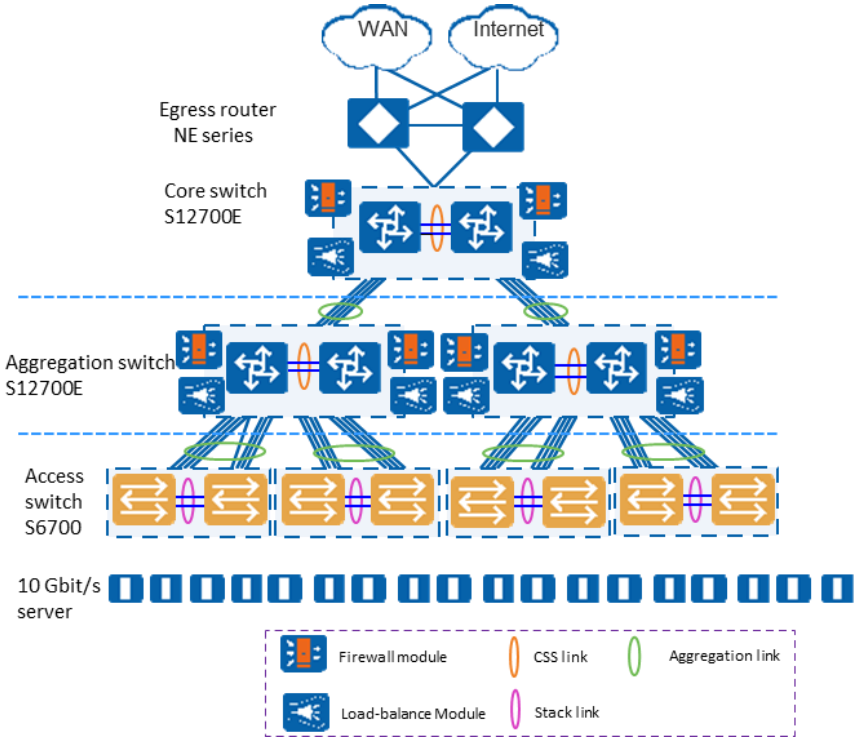
Application on a MAN

CloudEngine S6750-S switches can be deployed at the access layer of a MAN(Metropolitan Area Network) to build a high-performance, multi-service, and highly reliable ISP MAN network.



Data Center

CloudEngine S6750-S switches can be deployed at the access layer build a virtualized, highly reliable, non-blocking, and energy conservative data center network.



Product Accessories

Optical Modules and Fibers

10GE SFP+ ports support optical modules and cables

- GE optical module
- GE-CWDM optical module
- GE-DWDM optical module
- GE copper module
- 10GE SFP+ optical module
- 10GE-CWDM optical module
- 10GE-DWDM optical module
- 1 m, 3 m, 5 m, and 10 m SFP+ high-speed copper cables
- 3 m and 10 m SFP+ AOC cables
- 0.5 m and 1.5 m SFP+ dedicated stack cables (supported by the last 16 SFP+ ports and used only for zero-configuration stacking)

25GE SFP28 ports support optical modules and cables

- GE eSFP optical module
- GE SFP optical module
- GE-CWDM optical module
- GE-DWDM optical module
- 10GE SFP+ optical module
- 10GE-CWDM optical module

- 10GE-DWDM optical module
- 25GE SFP28 optical module
- 1 m, 3 m, 5 m, and 10 m SFP+ high-speed cables
- 3 m and 10 m SFP+ AOC cables
- 1 m, 3 m, 5 m SFP28 high-speed cables
- 3 m, 5 m, 7 m, and 10 m SFP28 AOC cables

40GE/100GE QSFP28 ports support optical modules and cables

- QSFP+ optical module
- QSFP28 optical module
- 1 m, 3 m, and 5 m QSFP+ to QSFP+ high-speed copper cables
- 10 m QSFP+ to QSFP+ AOC cable
- 1 m QSFP28 to QSFP28 high-speed copper cable
- 10 m QSFP28 to QSFP28 AOC cable

Stack Cables

CloudEngine S6750-S switches support service port stacking. The applicable stack cables are as follows:

Port Supporting Stacking	Stack Cable	Rate of a Single Port
10GE ports on the front panel	• 1 m, 3 m, and 5 m SFP+ passive high-speed cables • 10 m SFP+ active high-speed copper cables • 3 m and 10 m AOC cables • 10GE SFP+ optical module and optical fiber • 0.5 m and 1.5 m SFP+ dedicated stack cable	10 Gbit/s
40GE/100GE ports on the front panel	• 1 m QSFP28 high-speed copper cables • 10 m QSFP28 AOC cables • QSFP28 optical module and optical fiber	100Gbit/s

Safety and Regulatory Compliance

The following table lists the safety and regulatory compliance of the CloudEngine S6750-S switches.

Certification Category	Description
Safety	• IEC 60950-1 and all country deviations • EN 60950-1 • UL 60950-1 • CAN/CSA 22.2 No.60950-1 • GB 4943
Electromagnetic Compatibility (EMC)	• EMI • FCC CFR47 Part 15 Class A • EN55022 Class A • CISPR 22 Class A • EN61000-3-2/IEC-1000-3-2, Power line harmonics • EN61000-4-3/IEC-1000-4-3, Radiated immunity • EN61000-4-2/IEC-1000-4-2, ESD

Certification Category	Description
	• EN61000-4-4/IEC-1000-4-4, EFT • EN61000-4-5/IEC-1000-4-5, Surge Signal Port • EN61000-4-6/IEC-1000-4-6, Low frequency conducted immunity • EN61000-4-11/IEC-1000-4-11, Voltage dips and sags • EN61000-4-29/IEC61000-4-29, Voltage dips and sags • EMC Directive 89/336/EEC • EMC Directive 2004/108/EC • VCCI V-3 Class A • ICES-003 Class A • AS/NZS CISPR 22 Class A • CNS 13438 Class A • GB9254 Class A

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

MIB and Standards Compliance

Supported MIBs

Category	MIB
Public MIB	• BRIDGE-MIB • DISMAN-NSLOOKUP-MIB • DISMAN-PING-MIB • DISMAN-TRACEROUTE-MIB • ENTITY-MIB • EtherLike-MIB • IF-MIB • IP-FORWARD-MIB • IPv6-MIB • LAG-MIB • LLDP-EXT-DOT1-MIB • LLDP-EXT-DOT3-MIB • LLDP-MIB

Category	MIB
	• NOTIFICATION-LOG-MIB • NQA-MIB • OSPF-TRAP-MIB • P-BRIDGE-MIB • Q-BRIDGE-MIB • RFC1213-MIB • RIPv2-MIB • RMON2-MIB • RMON-MIB • SAVI-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMP-USER-BASED-SM-MIB • SNMPv2-MIB • TCP-MIB • UDP-MIB
Huawei-proprietary MIB	• HUAWEI-AAA-MIB • HUAWEI-ACL-MIB • HUAWEI-ALARM-MIB • HUAWEI-ALARM-RELIABILITY-MIB • HUAWEI-BASE-TRAP-MIB • HUAWEI-BRAS-RADIUS-MIB • HUAWEI-BRAS-SRVCFG-EAP-MIB • HUAWEI-BRAS-SRVCFG-STATICUSER-MIB • HUAWEI-CBQOS-MIB • HUAWEI-CDP-COMPLIANCE-MIB • HUAWEI-CONFIG-MAN-MIB • HUAWEI-CPU-MIB • HUAWEI-DAD-TRAP-MIB • HUAWEI-DC-MIB • HUAWEI-DATASYNC-MIB • HUAWEI-DEVICE-MIB • HUAWEI-DHCPR-MIB • HUAWEI-DHCPS-MIB • HUAWEI-DHCP-SNOOPING-MIB • HUAWEI-DIE-MIB • HUAWEI-DNS-MIB • HUAWEI-DLDP-MIB • HUAWEI-ELMI-MIB • HUAWEI-ERPS-MIB • HUAWEI-ERRORDOWN-MIB • HUAWEI-ENERGYMNGT-MIB

Category	MIB
	• HUAWEI-EASY-OPERATION-MIB • HUAWEI-ENTITY-EXTENT-MIB • HUAWEI-ENTITY-TRAP-MIB • HUAWEI-ETHARP-MIB • HUAWEI-ETHOAM-MIB • HUAWEI-FLASH-MAN-MIB • HUAWEI-FWD-RES-TRAP-MIB • HUAWEI-GARP-APP-MIB • HUAWEI-GTSM-MIB • HUAWEI-HGMP-MIB • HUAWEI-HWTACACS-MIB • HUAWEI-IF-EXT-MIB • HUAWEI-INFOCENTER-MIB • HUAWEI-IPPOOL-MIB • HUAWEI-IPV6-MIB • HUAWEI-ISOLATE-MIB • HUAWEI-L2IF-MIB • HUAWEI-L2MAM-MIB • HUAWEI-L2VLAN-MIB • HUAWEI_LDT-MIB • HUAWEI-LLDP-MIB • HUAWEI-MAC-AUTHEN-MIB • HUAWEI-MEMORY-MIB • HUAWEI-MFF-MIB • HUAWEI-MFLP-MIB • HUAWEI-MSTP-MIB • HUAWEI-MULTICAST-MIB • HUAWEI-NAP-MIB • HUAWEI-NTPV3-MIB • HUAWEI-PERFORMANCE-MIB • HUAWEI-PORT-MIB • HUAWEI-PORTAL-MIB • HUAWEI-QINQ-MIB • HUAWEI-RIPv2-EXT-MIB • HUAWEI-RM-EXT-MIB • HUAWEI-RRPP-MIB • HUAWEI-SECURITY-MIB • HUAWEI-SEP-MIB • HUAWEI-SNMP-EXT-MIB • HUAWEI-SSH-MIB • HUAWEI-STACK-MIB • HUAWEI-SWITCH-L2MAM-EXT-MIB • HUAWEI-SWITCH-SRV-TRAP-MIB • HUAWEI-SYS-MAN-MIB • HUAWEI-TCP-MIB

Category	MIB
	• HUAWEI-TFTPC-MIB • HUAWEI-TRNG-MIB • HUAWEI-XQOS-MIB

NOTE

For more information about MIBs supported by CloudEngine S6750-S switches, visit:
https://support.huawei.com/enterprise/en/switches/s6700-pid-6691593?category=reference-guides

Standards Compliance

The following table lists the standards that CloudEngine S6750-S switches comply with.

Standard Organization	Standard or Protocol
IETF	• RFC 768 User Datagram Protocol (UDP) • RFC 792 Internet Control Message Protocol (ICMP) • RFC 793 Transmission Control Protocol (TCP) • RFC 826 Ethernet Address Resolution Protocol (ARP) • RFC 854 Telnet Protocol Specification • RFC 951 Bootstrap Protocol (BOOTP) • RFC 959 File Transfer Protocol (FTP) • RFC 1058 Routing Information Protocol (RIP) • RFC 1112 Host extensions for IP multicasting • RFC 1157 A Simple Network Management Protocol (SNMP) • RFC 1256 ICMP Router Discovery • RFC 1305 Network Time Protocol Version 3 (NTP) • RFC 1349 Internet Protocol (IP) • RFC 1493 Definitions of Managed Objects for Bridges • RFC 1542 Clarifications and Extensions for the Bootstrap Protocol • RFC 1643 Ethernet Interface MIB • RFC 1757 Remote Network Monitoring (RMON) • RFC 1901 Introduction to Community-based SNMPv2 • RFC 1902-1907 SNMP v2 • RFC 1981 Path MTU Discovery for IP version 6 • RFC 2131 Dynamic Host Configuration Protocol (DHCP) • RFC 2328 OSPF Version 2 • RFC 2453 RIP Version 2 • RFC 2460 Internet Protocol, Version 6 Specification (IPv6) • RFC 2461 Neighbor Discovery for IP Version 6 (IPv6) • RFC 2462 IPv6 Stateless Address Auto configuration • RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6) • RFC 2474 Differentiated Services Field (DS Field) • RFC 2475 An Architecture for Differentiated Services • RFC 2740 OSPF for IPv6 (OSPFv3) • RFC 2863 The Interfaces Group MIB • RFC 2597 Assured Forwarding PHB Group • RFC 2598 An Expedited Forwarding PHB

Standard Organization	Standard or Protocol
	• RFC 2571 SNMP Management Frameworks • RFC 2865 Remote Authentication Dial In User Service (RADIUS) • RFC 3046 DHCP Option82/Relay • RFC 3376 Internet Group Management Protocol, Version 3 (IGMPv3) • RFC 3513 IP Version 6 Addressing Architecture • RFC 3579 RADIUS Support For EAP • RFC 4271 A Border Gateway Protocol 4 (BGP-4) • RFC 4760 Multiprotocol Extensions for BGP-4 • draft-grant-tacacs-02 TACACS+ • RFC5340 OSPF for IPv6 • RFC 5798 Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6 • RFC 6241 Network Configuration Protocol (NETCONF) • RFC 6020 YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF) • RFC 7348 Virtual eXtensible Local Area Network (VXLAN): A Framework for Overlaying Virtualized Layer 2 Networks over Layer 3 Networks • RFC 8365 A Network Virtualization Overlay Solution Using Ethernet VPN (EVPN)
IEEE	• IEEE 802.1D Media Access Control (MAC) Bridges • IEEE 802.1p Traffic Class Expediting and Dynamic Multicast Filtering • IEEE 802.1Q Virtual Bridged Local Area Networks • IEEE 802.1ad Provider Bridges • IEEE 802.2 Logical Link Control • IEEE Std 802.3 CSMA/CD • IEEE Std 802.3ab 1000BASE-T specification • IEEE Std 802.3ad Aggregation of Multiple Link Segments • IEEE Std 802.3ae 10GE WEN/LAN Standard • IEEE Std 802.3x Full Duplex and flow control • IEEE Std 802.3z Gigabit Ethernet Standard • IEEE 802.1ax/IEEE802.3ad Link Aggregation • IEEE 802.3ah Ethernet in the First Mile. • IEEE 802.1ag Connectivity Fault Management • IEEE 802.1ab Link Layer Discovery Protocol • IEEE 802.1D Spanning Tree Protocol • IEEE 802.1w Rapid Spanning Tree Protocol • IEEE 802.1s Multiple Spanning Tree Protocol • IEEE 802.1x Port based network access control protocol • IEEE 802.3az Automatic power adjustment on Ethernet interfaces
ITU	• ITU SG13 Y.17ethoam • ITU SG13 QoS control Ethernet-Based IP Access • ITU-T Y.1731 ETH OAM performance monitor
ISO	• ISO 10589 IS-IS Routing Protocol
MEF	• MEF 2 Requirements and Framework for Ethernet Service Protection • MEF 9 Abstract Test Suite for Ethernet Services at the UNI

Standard Organization	Standard or Protocol
	• MEF 10.2 Ethernet Services Attributes Phase 2 • MEF 11 UNI Requirements and Framework • MEF 13 UNI Type 1 Implementation Agreement • MEF 15 Requirements for Management of Metro Ethernet Phase 1 Network Elements • MEF 17 Service OAM Framework and Requirements • MEF 20 UNI Type 2 Implementation Agreement • MEF 23 Class of Service Phase 1 Implementation Agreement • Xmodem XMODEM/YMODEM Protocol Reference

NOTE

The listed standards and protocols are fully or partially supported by Huawei switches. For details, visit http://e.huawei.com/en or contact your local Huawei sales office.

Ordering Information

The following table lists ordering information of CloudEngine S6750-S switches.

Model	Product Description
CloudEngine S6750-S16X8YZ	S6750-S16X8YZ(16*10GE SFP+ ports, 8*25GE SFP28 ports, expansion card slot, without power module)
CloudEngine S6750-S24T16X8Y2CZ	S6750-S24T16X8Y2CZ(24*10/100/1000BASE-T ports, 16*10GE SFP+ ports, 8*25GE SFP28 ports, 2*100GE QSFP28 ports, expansion card slot, without power module)
CloudEngine S6750-S16X10Y2CZ	S6750-S16X10Y2CZ (16*10GE SFP+ ports, 10*25GE SFP28 ports, 2*100GE QSFP28 ports, expansion card slot, without power module)
PAC180S12-CN	180W AC power module
PAC600S12-PB	600W AC power module
PDC240S12-CN	240W AC power module
PDC400S12-CB	400W DC power module
FAN-031A-B	Fan Module

License	Product Description
L-VxLAN-S67	S67 Series, VxLAN License, Per Device
N1-S67S-M-Lic	S67XX-S Series Basic SW,Per Device
N1-S67S-M-SnS1Y	S67XX-S Series Basic SW,SnS,Per Device,1Year
N1-S67S-F-Lic	N1-CloudCampus,Foundation,S67XX-S Series,Per Device
N1-S67S-F-SnS	N1-CloudCampus,Foundation,S67XX-S Series,SnS,Per Device(Annual fee validity period:3 years from " 90 days after PO signed ")
N1-S67S-A-SnS	N1-CloudCampus,Advanced,S67XX-S Series,SnS,Per Device(Annual fee validity period:3 years from " 90 days after PO signed ")
N1-S67S-FToA-Lic	N1-Upgrade-Foundation to Advanced,S67XX-S,Per Device

License	Product Description
N1-S67S-FToA-SnS	N1-Upgrade-Foundation to Advanced,S67XX-S,SnS,Per Device(Annual fee validity period:3 years from " 90 days after PO signed ")
N1-S67S-A-Lic	N1-CloudCampus,Advanced,S67XX-S Series,Per Device
N1-AM-30-Lic	N1-CloudCampus, Add-On Package, Access Management, Per 30 Endpoints
N1-AM-30-SnS	N1-CloudCampus, Add-On Package, Access Management, Software Subscription and Support, Per 30 Endpoints(Annual fee validity period:3 years from " 90 days after PO signed ")
N1-EPNP-30-Lic	N1-CloudCampus, Add-On Package, Endpoints Plug and Play, Per 30 Endpoints
N1-EPNP-30-SnS	N1-CloudCampus, Add-On Package, Endpoints Plug and Play, Software Subscription and Support, Per 30 Endpoints(Annual fee validity period:3 years from " 90 days after PO signed ")
N1-APP-X7FSwitch	N1-CloudCampus, Add-On Package, Intelligent Application Analysis, X7 Series Fixed Switch, Per Device
N1-APP-X7FSwitch-SnS	N1-CloudCampus, Add-On Package, Intelligent Application Analysis, X7 Series Fixed Switch, Software Subscription and Support, Per Device(Annual fee validity period:3 years from " 90 days after PO signed ")

More Information

For more information about the Huawei Campus Switches, visit http://e.huawei.com or contact us in the following ways:

- Global service hotline: http://e.huawei.com/en/service-hotline
- Logging in to the Huawei Enterprise technical support website: http://support.huawei.com/enterprise/
- Sending an email to the customer service mailbox: support_e@huawei. com

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