

2014年3月25日星期二

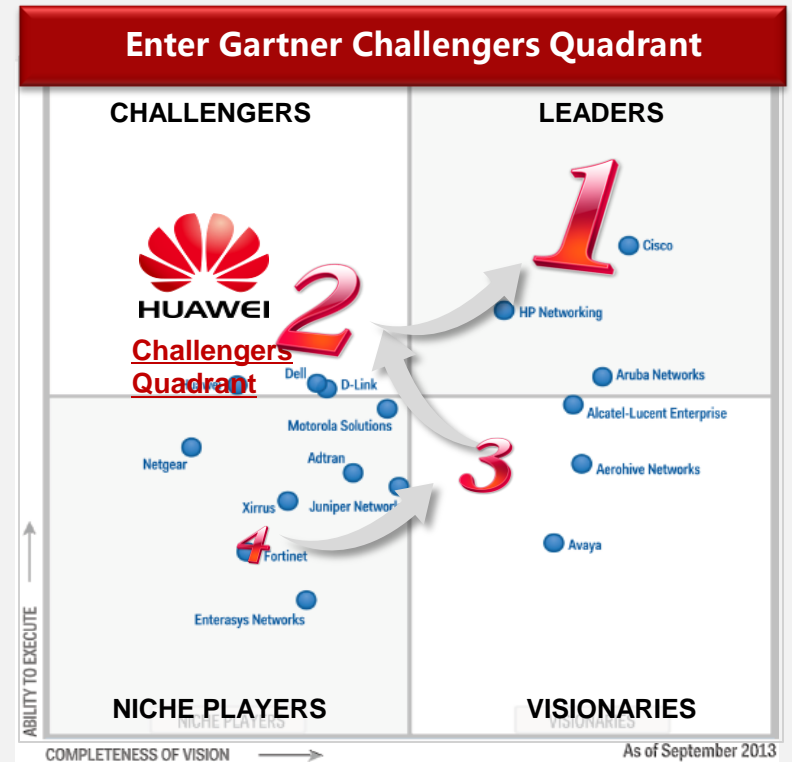
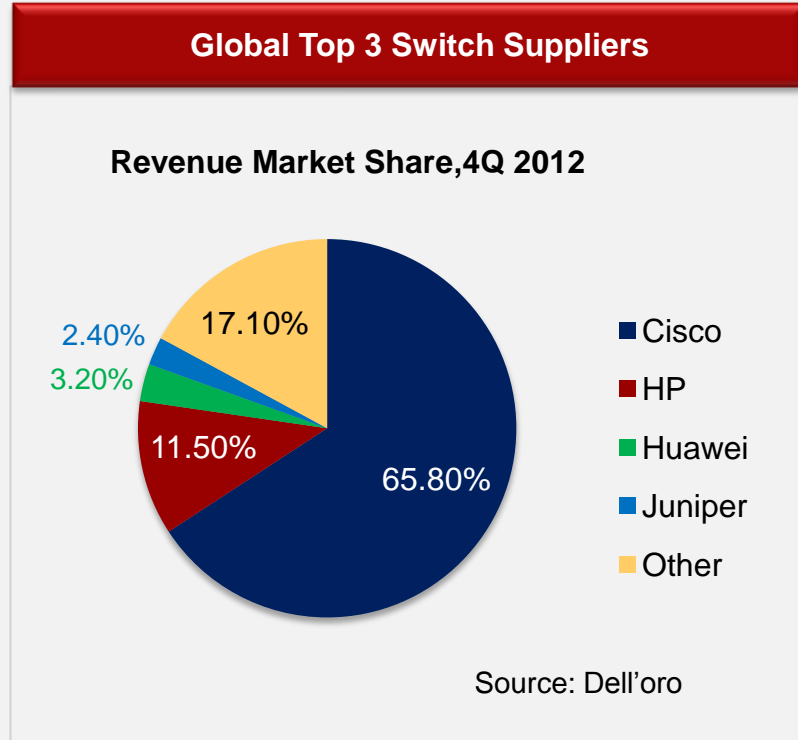
HUAWEI ENTERPRISE ICT SOLUTIONS **A BETTER WAY**

# Huawei S5700 Series Switches Tech-Level Main Slides

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HUAWEI TECHNOLOGIES CO., LTD.



# Rapid Growth of Huawei Switches in Enterprise Network Market



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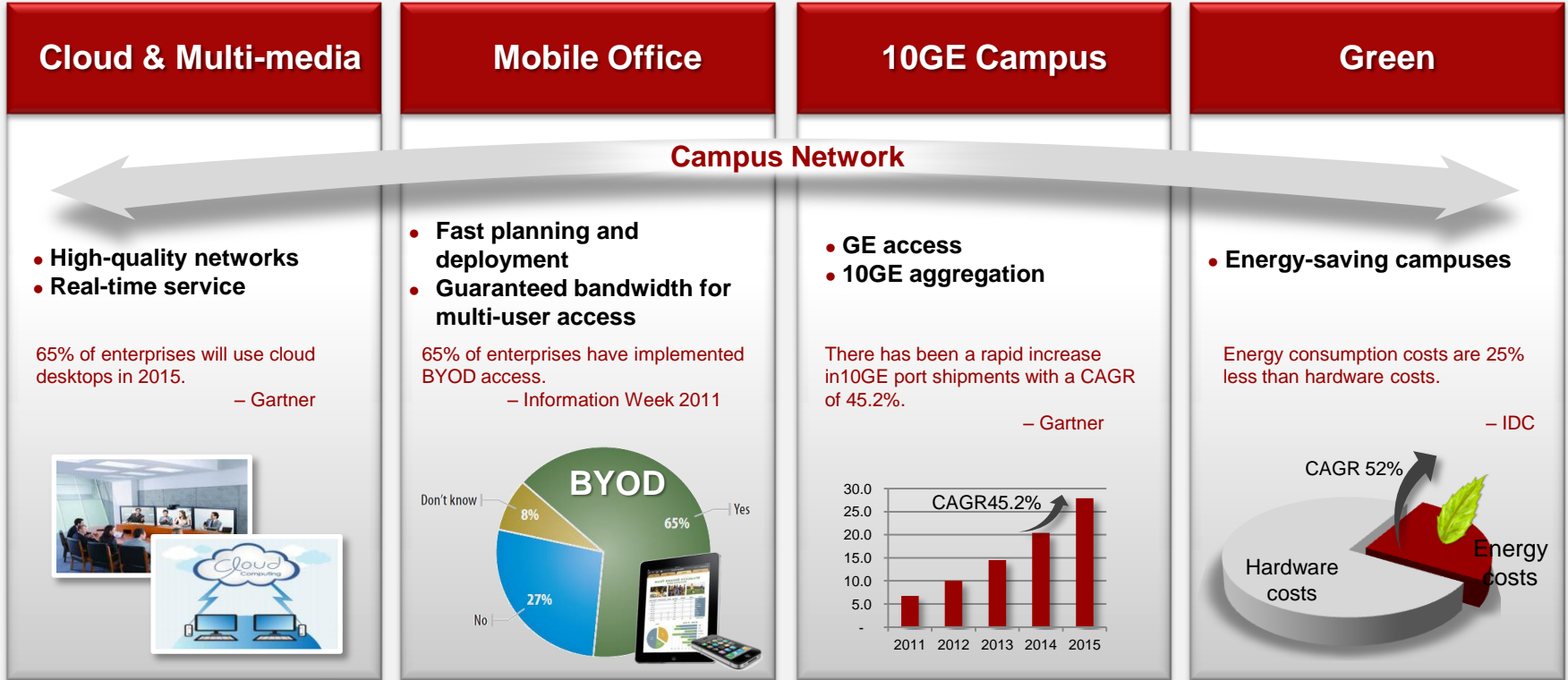
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S5700 Switch Application Scenarios

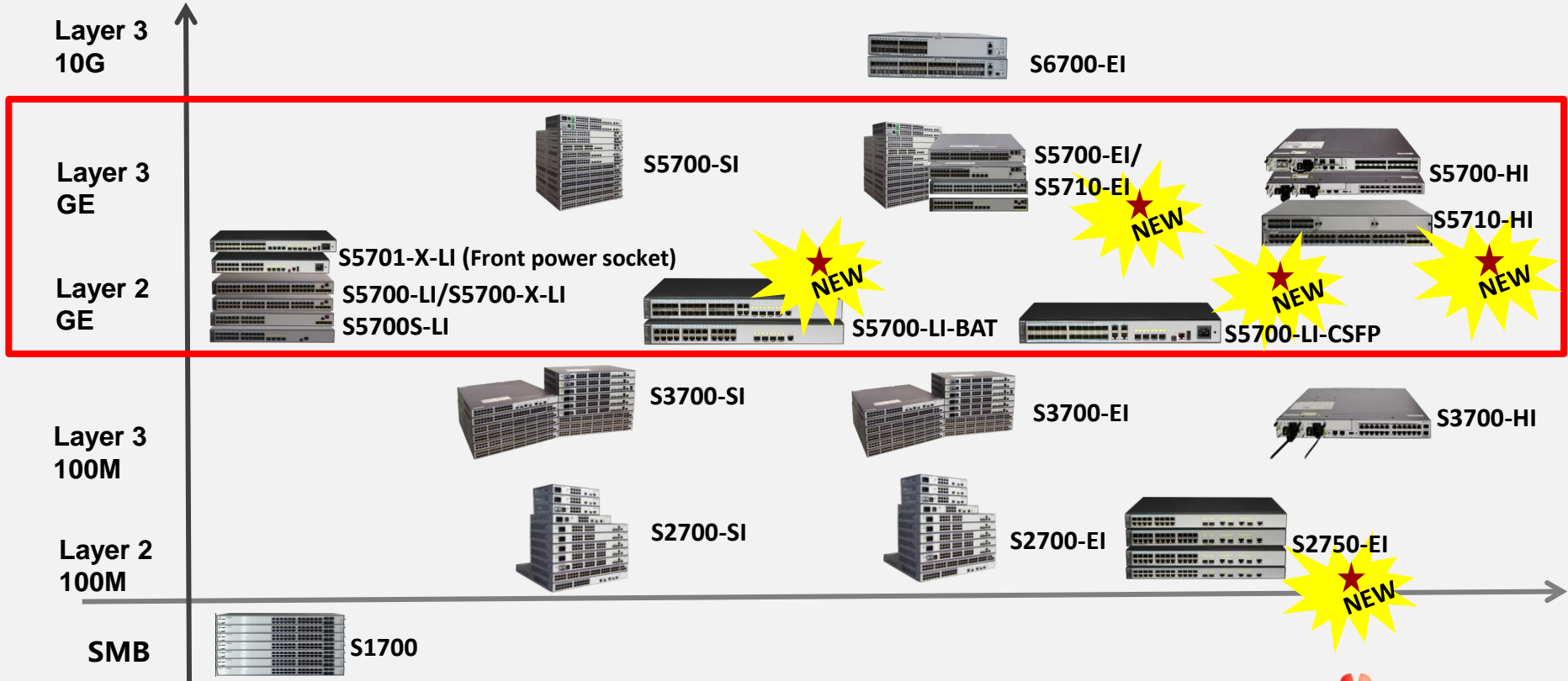
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# Changes in Campus Networks



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Gigabit Ethernet Access Era

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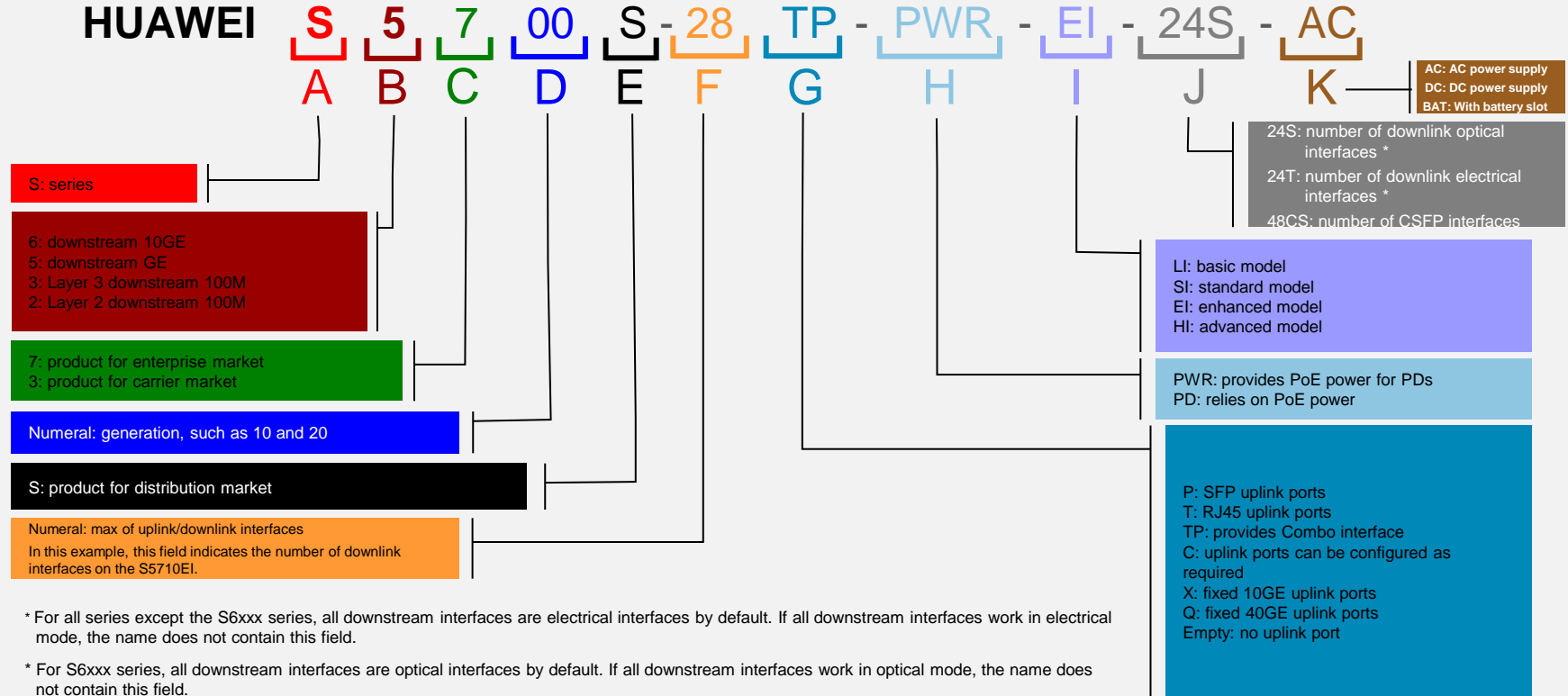
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S5700 Switch Application Scenarios

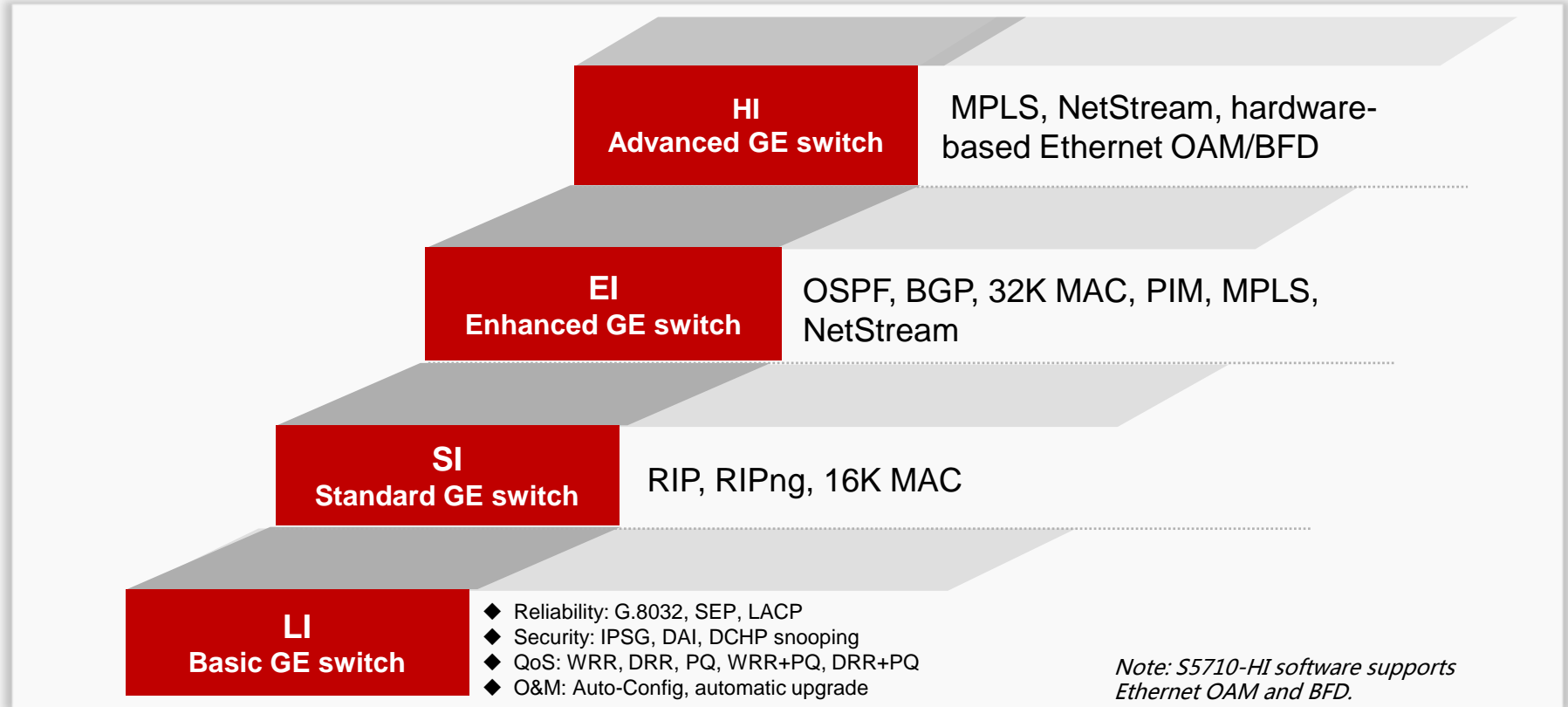
5

S5700 Switch Success Stories

# Sx7 Switch Naming Conventions





# S57XX Product Models and Features





# Simplified GE Switch: S5700-P-LI

--GE-to-desktop, GE uplink

Item	S5700-10P-LI-AC S5700-10P-PWR-LI-AC	S5700-28P-LI-BAT S5700-28P-LI-4AH 	S5700-28P-LI-24S-BAT S5700-28P-LI-24S-4AH 	S5700-28P-LI-AC S5700-28P-LI-DC S5700-28P-PWR-LI-AC	S5700-52P-LI-AC S5700-52P-LI-DC S5700-52P-PWR-LI-AC
Interface	8*10/100/1000BASE-T+2*1000Base-X	24 10/100/1000Base-T, 4 GE SFP	28 GE SFP, 4 Combo 10/100/1000Base-T	24*10/100/1000BASE-T+4*1000Base-X	48*10/100/1000BASE-T+4*1000Base-X
Forwarding capacity	208Gbps/15Mpps	208Gbps/42Mpps	208Gbps/42Mpps	208Gbps/42Mpps	256Gbps/78Mpps
Power/Fan	One internal power supply 124 W for PoE power supply No fans	S5700-28P-LI-4AH/S5700-28P-LI-24S-4AH: internal AC power and one pluggable 4AH lithium battery S5700-28P-LI-BAT/S5700-28P-LI-24S-BAT: internal AC power,pluggable power module or battery module as the backup •BAT-4AHA/BAT-8AHA (chargeable lithium battery) •PBB-12AHA (lead-acid battery charger module) •150 W AC/DC power module		Non-PoE devices use the internal power supply and support RPS redundant power modules. PoE devices use 370 W internal PoE power supply modules. A 740 W PoE power supply is provided using external RPS redundant power modules. 28-port non-PoE devices use a fanless and noiseless design.	
Battery management	-	<b>Power supply management by web NMS:</b> visualized display of the battery type, status, and capacity <b>Battery protection:</b> Protection against overtemperature, input overvoltage, input overcurrent, output overcurrent, undervoltage, and short circuit. <b>Battery alarm:</b> charge overvoltage, charge overcurrent, discharge overcurrent, undervoltage, battery faults, and battery insufficient power supply time.		-	
Access	DHCP Relay、 DHCP Server、 DHCP Snooping、 DHCP Security (Supported by S5700 series)				
iStack	Not supported	Not supported		Four GE interfaces are provided as stack interfaces. The system supports an SFP+ cable stack with a maximum bidirectional stack bandwidth of 40 Gbit/s.A maximum of <b>nine</b> switches can be used to set up one logical switch, and the switches in a stack support dual master detection.	
AHM	Supported PoE models do not support this function.	Not supported		Supported PoE models do not support this function.	

# S5700-LI-BAT Battery Parameters

Specification	4 AH Lithium Battery	8 AH Lithium Battery
Hot swap	Supported	
Typical Standby time <sup>1</sup>	S5700-28P-LI-BAT: 4.1 hours S5700-28P-LI-24S-BAT: 2.1 hours	S5700-28P-LI-BAT: 8.2 hours S5700-28P-LI-24S-BAT: 4.2 hours
Service life <sup>2</sup>	Longer than four years	
Maximum output power	50 W (rated power: 40 W)	80 W (rated power: 45 W)
Dimensions (W x D x H)	100 mm x 205 mm x 40 mm	
Weight	0.8 kg	
Operating temperature	Charging ambient temperature: 0°C to 45°C; discharging ambient temperature: -5°C to +50°C	
Relative humidity	5% RH to 95% RH, noncondensing	
Storage temperature	-20°C to +60°C; recommended range: 20°C to 30°C	
Maximum storage time	Six months in the temperature of lower than 40°C. The battery must be charged after the maximum storage time.	

Note:

1. The standby time provided here is a value in the typical scenario when 70% ports on the switch are Up, 10% bandwidth on each port is occupied, and EEE is enabled on electrical ports.

➤ Standby time of a BAT-4AHA lithium battery working at the minimum power:

S5700-28P-LI-BAT: > **5.6** hours; S5700-28P-LI-24S-BAT: > **4.1** hours

➤ Standby time of a BAT-8AHA lithium battery working at the minimum power:

S5700-28P-LI-BAT: > **11.2** hours; S5700-28P-LI-24S-BAT: > **8.3** hours

➤ The standby time is shortened as the battery is used.

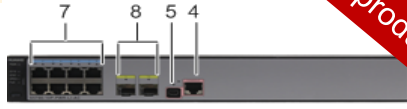
2. The service life provided here is a value in the typical scenario when the ambient temperature ranges from 20°C to 30°C and the battery discharging exceeds 50% for no more than twice per day.

# S5700-P-LI Front Panel

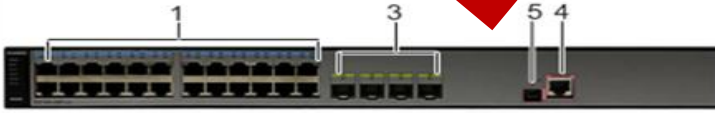
S5700-10P-LI-AC



S5700-10P-PWR-LI-AC



S5700-28P-LI-AC  
S5700-28P-LI-DC



S5700-52P-LI-AC  
S5700-52P-LI-DC



S5700-28P-PWR-LI-AC



S5700-52P-PWR-LI-AC



1. 24 10/100/1000BASE-T Ethernet interfaces
2. 48 10/100/1000BASE-T Ethernet interfaces
3. 4 1000BASE-X Ethernet optical interfaces
4. 1 Console port (RJ45)
5. 1 USB Console port (mini USB)
7. 8 10/100/1000BASE-T Ethernet interfaces
8. 2 1000BASE-X Ethernet optical interfaces

# S5700-P-LI Rear Panel

S5700-28P-LI-AC  
S5700-52P-LI-AC  
S5700-28P-PWR-LI-AC  
S5700-52P-PWR-LI-DC



S5700-28P-LI-DC  
S5700-52P-LI-DC



S5700-10P-PWR-LI-AC



S5700-10P-LI-AC



New product

1. Ground screw
2. RPS power jack
3. AC jack
4. DC jack

# Front and Rear Panels of S5700-LI-BAT

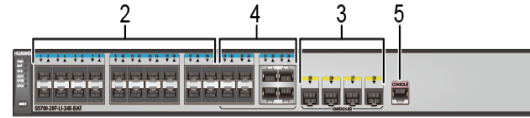
New product

**S5700-28P-LI-BAT**  
**S5700-28P-LI-4AH**



1. 24 10/100/1000BASE-T Ethernet interfaces
2. 20 100/1000BASE-X Ethernet interfaces
3. 4 1000BASE-X Ethernet optical interfaces
4. 4 Combo interfaces (10/100/1000BASE-T+100/1000BASE-X)
5. 1 Console interface (RJ45)

**S5700-28P-LI-24S-BAT**  
**S5700-28P-LI-24S-4AH**



**S5700-28P-LI-BAT**  
**S5700-28P-LI-4AH**




1. Ground screw
2. AC jack
3. Jack reserved for AC terminal locking latch
4. Battery slot and power supply slot

**S5700-28P-LI-24S-BAT**  
**S5700-28P-LI-24S-4AH**



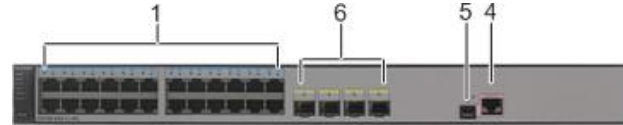
# Simplified GE Switch: S5700-X-LI

--GE-to-desktop, 10GE uplink

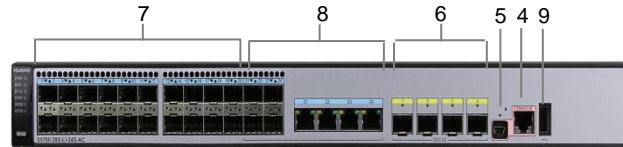
Item	S5700-28X-LI-AC/ S5700-28X-LI-DC S5700-28X-PWR-LI-AC S5701-28X-LI-AC	S5700-28X-LI-24S-AC/S5700-28X-LI-24S-DC S5701-28X-LI-24S-AC	S5700-52X-LI-AC/ S5700-52X-LI-DC S5700-52X-PWR-LI-AC	S5700-52X-LI-48CS-AC 
Interface	24*10/100/1000BASE-T+4*10GE SFP+ (work as GE optical interfaces, or work as GE electrical interfaces through an optical-to-electrical converter)	24 GE SFP ports, 4 Combo 10/100/1000Base-T Ethernet ports, 4 10GE SFP+ ports(work as GE optical interfaces)	48*10/100/1000BASE-T+4*10GE SFP+ (work as GE optical interfaces, or work as GE electrical interfaces through an optical-to-electrical converter)	48*GE CSFP ports or 24 GE SFP ports, 4 Combo 10/100/1000Base-T Ethernet ports, 4*10GE SFP+ ports
Forwarding capacity	96 Mpps	96 Mpps	132 Mpps	132Mpps
Access	DHCP Relay、 DHCP Server、 DHCP Snooping、 DHCP Security (Supported by S5700 series)			
Power	Non-PoE devices use the internal power supply and support RPS redundant power modules. PoE devices use the internal power supply, 370 W of which is provided by PoE power supply modules. External RPS power modules provide system power supply redundancy and expand the PoE power supply to 740 W.			
iStack	The stack function is supported on service interfaces. 4*10GE SFP+ on the front panel are provided for use as stack interfaces. Long distance stacking is supported by fibers up to a maximum distance of 80 km. When SFP+ cables are used, short-distance stacking is also supported for distances of 1 m, 3 m, and 10 m. <i>Note: 5700-X-LI and S5700-P-LI cannot form a stack together.</i>			
AHM	S5700-X-LI provides AHM, which functions in both sleeping and awakening modes to reduce power consumption (Ethernet electrical interfaces support this function). <i>Note: PoE and CSFP models do not support AHM.</i>			

# S5700-X-LI Front Panel

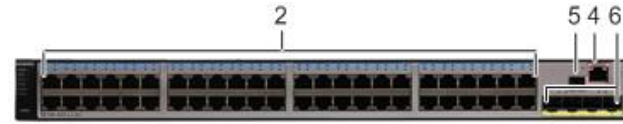
S5700-28X-LI-AC  
S5700-28X-LI-DC



S5700-28X-LI-24S-AC  
S5700-28X-LI-24S-DC



S5700-52X-LI-AC  
S5700-52X-LI-DC



S5700-28X-PWR-LI-AC



S5700-52X-PWR-LI-AC



1. 24 10/100/1000BASE-T Ethernet interfaces

2. 48 10/100/1000BASE-T Ethernet interfaces

4. 1 Console port (RJ45)

5. 1 USB Console port (mini USB)

6. 4 10GE SFP+ Ethernet optical interfaces

7. 20 100/1000 BASE-X Ethernet optical interfaces

8. 4 GE Combo ports

9. USB interface

# S5700-X-LI Rear Panel

S5700-28X-LI-24S-AC



S5700-28X-LI-24S-DC



S5700-28X-LI-AC



S5700-28X-LI-DC



S5700-52X-LI-AC



S5700-52X-LI-DC



S5700-28X-PWR-LI-AC  
S5700-52X-PWR-LI-AC

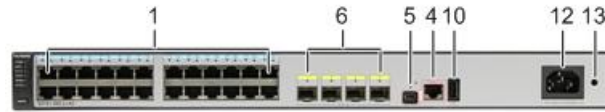


1. Ground screw
2. RPS power socket
3. AC power socket
4. DC power socket



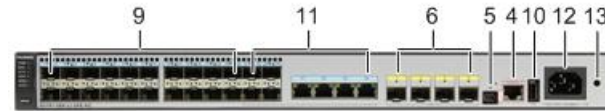
# Front and Rear Panels of the S5701-X-LI and S5700-X-LI-CSFP

S5701-28X-LI-AC



1. 24 10/100/1000BASE-T Ethernet interfaces
4. 1 Console interface (RJ45)
5. 1 USB Console interface (mini USB)
6. 4 10GE SFP+ Ethernet optical interfaces
9. 20 100/1000BASE-X Ethernet optical interfaces
- 10.1 USB interface
11. 4 Combo interfaces (10/100/1000BASE-T+100/1000BASE-X)
12. AC jack
13. Jack reserved for AC terminal locking latch

S5701-28X-LI-24S-AC



14. 44 100/1000BASE-X CSFP Ethernet optical interfaces

S5700-52X-LI-48CS-AC



S5701-28X-LI-AC  
S5701-28X-LI-24S-AC  
S5700-52X-LI-48CS-AC



1. Ground screw
2. RPS power socket

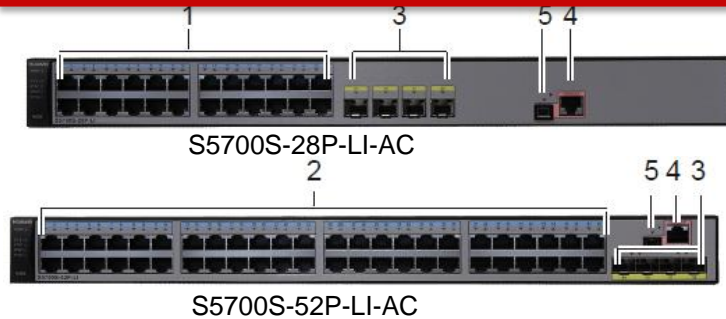
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NEW

# Simplified Layer 2 GE Switch: S5700S-LI

Item	S5700S-28P-LI	S5700S-52P-LI
Interface	24*10/100/1000BASE-T+4*1000Base-X	48*10/100/1000BASE-T+4*1000Base-X
Forwarding capacity	42 Mpps	78 Mpps
MAC	8K	
Power/Fan	RPS A 28-port non-PoE switch does not have a fan module.	
iStack	Not supported	
AHM	S5700S-LI provides AHM, which functions in both sleeping and awakening modes to reduce power consumption. <i>PoE switch do not support this function.</i>	

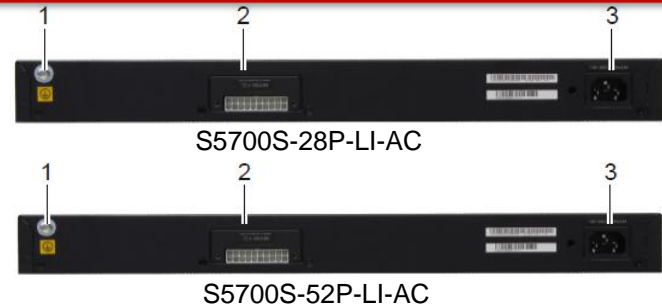
# S5700S-LI Panels

## Front panel



1. 24 10/100/1000BASE-T Ethernet interfaces
2. 48 10/100/1000BASE-T Ethernet interfaces
3. 4 1000BASE-X Ethernet optical interfaces
4. 1 Console port (RJ45)
5. 1 USB Console port (mini USB)

## Rear panel



1. Ground screw
2. RPS power socket
3. AC power socket

# Standard GE Switch: S5700-SI

-- Aggregation for small-scale networks, GE access, 10GE/GE uplink

Item	S5700-24TP-SI S5700-24TP-PWR-SI	S5700-48TP-SI S5700-48TP-PWR-SI	S5700-28C-SI S5700-28C-PWR-SI	S5700-52C-SI S5700-52C-PWR-SI	S5700-26X-SI-12S-AC
Interface	24 Ethernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports	48 Ethernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports	24 Ethernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports	48*10/100/1000BASE-T	12* 10/100/1000BASE-T + 12* 1000BASE-X + 2*10GE SFP+
Optional subcard	Not supported		One optional subcard, providing 4*GE SFP, 2*10GE SFP+, and 4*10GE SFP+		None
Forwarding capacity	36 Mpps	72 Mpps	96 Mpps	132 Mpps	66 Mpps
Power	Non-PoE switches support a single power supply (AC or DC). PoE switches support 1+1 power backup.		Dual power supplies and 1+1 power backup.		Single power supply and RPS
iStack	S5700-SI uses a dedicated stack card with maximum bidirectional stack bandwidth of 48 Gbit/s.				Not supported
PoE	S5700-SI supports 802.3af and 802.3at. Each switch supports a maximum of 740 W PoE power.				Not supported

# S5700-SI Front Panel

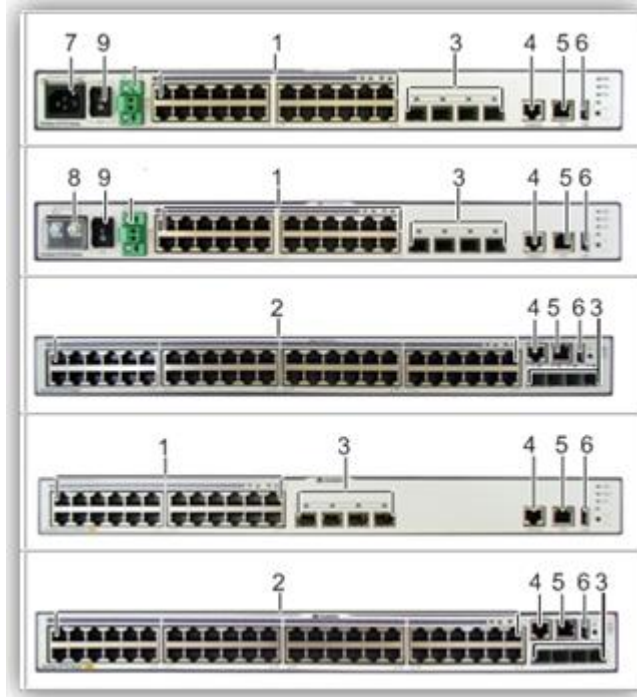
S5700-24TP-SI-AC

S5700-24TP-SI-DC

S5700-48TP-SI-AC  
S5700-48TP-SI-DC

S5700-24TP-PWR-SI

S5700-48TP-PWR-SI



1. 24 10/100/1000BASE-T Ethernet interfaces
2. 48 10/100/1000BASE-T Ethernet interfaces
3. 4 GE SFP Combo port
4. Console port
5. Network interface
6. USB port
7. AC power socket
8. DC power socket
9. Power switch

# S5700-SI Front Panel (Continued)

S5700-28C-SI  
S5700-28C-PWR-SI



S5700-52C-SI  
S5700-28C-PWR-SI



S5700-26X-SI-12S-AC



- 2. 4 GE SFP combo ports
- 3. 24 10/100/1000BASE-T Ethernet interfaces
- 4. 48 10/100/1000BASE-T Ethernet interfaces
- 5. Console port
- 6. Management network interface
- 7. Optional subcard
- 8. USB port
- 13. 12 1000BASE-X Ethernet optical interfaces
- 14. 12 10/100/1000BASE-T Ethernet interfaces
- 15. 2 10GE SFP+ Ethernet optical interfaces

# S5700-SI Rear Panel

S5700-24TP-SI-AC  
S5700-24TP-SI-DC



S5700-48TP-SI-AC



S5700-48TP-SI-DC



S5700-28TP-PWR-SI  
S5700-48TP-PWR-SI  
S5700-28C-PWR-SI  
S5700-52C-PWR-SI  
S5700-28C-SI  
S5700-52C-SI



S5700-26X-SI-12S-AC



1. ESD jack
2. Stack card slot
3. Reserved interface
4. Ground screw
5. Power switch
6. AC power socket
7. DC power socket
8. Fan module/ power jack
9. Power supply slot
10. RPS power jack

# Enhanced GE Switch: S5700-EI

--Core for small-scale campus networks, and comprehensive routing functions

Item	S5700-28C-EI S5700-28C-PWR-EI	S5700-52C-EI S5700-52C-PWR-EI	S5700-28C-EI-24S
Interface	24*10/100/1000BASE-T	48*10/100/1000BASE-T	24*100/1000BASE-X + 4* RJ45 GE Combo
Subcard slot	Two slots: one slot as the interface card slot, supporting 4*GE SFP, 2*10GE SFP+, and 4*10GE SFP+ subcard; the other slot as the stack card slot		
Forwarding capacity	96 Mpps	132 Mpps	96 Mpps
Power	Dual power supplies in 1+1 backup mode		
iStack	S5700-EI uses a dedicated stack card with maximum bidirectional stack bandwidth of 48 Gbit/s.		
MCE	Each switch supports 63 MCEs to ensure user data security.		
sFlow	S5700-EI collects statistics on traffic and works with the NAS to provide customized reports.		
MAC	S5700-EI supports 32K MAC addresses to provide access for a large number of terminals.		



# S5700-EI Front and Rear Panels

S5700-28C-EI-24S



S5700-28C-EI



S5700-28C-PWR-EI



S5700-52C-EI



S5700-52C-PWR-EI



## Front panel

1. 24 100/1000BASE-T Ethernet optical interfaces
2. 4 GE RJ45 Combo port
3. 24 10/100/1000BASE-T Ethernet interfaces
4. 48 10/100/1000BASE-T Ethernet optical interfaces
5. Console port
6. Network interface
7. Optional subcard



## Rear panel

1. ESD jack
2. Stack card slot
3. Fan module
4. Power supply slot

# High-density Enhanced GE Switch: S5710-EI

-- Aggregation for large-scale campus networks, flexible port combinations, high port density; data center GE TOR, high-density access, large internal buffer

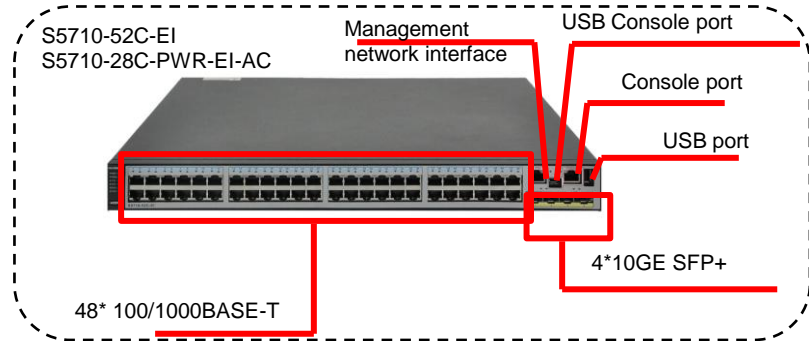
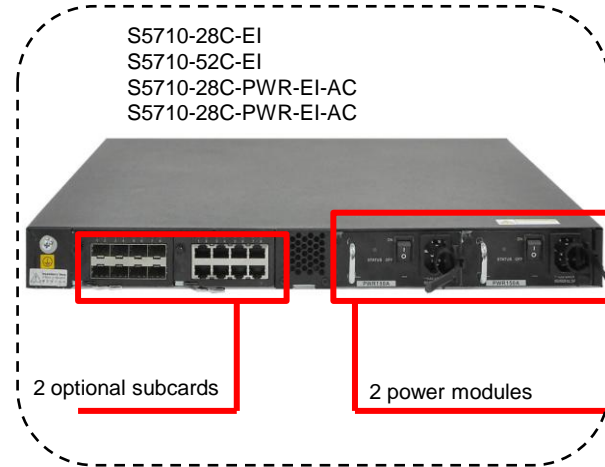
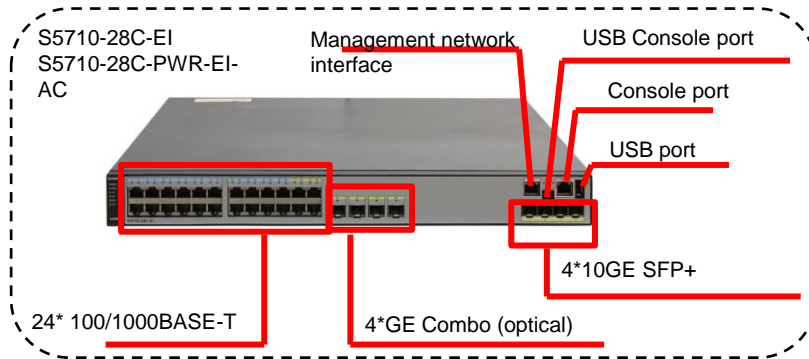
Item	S5710-28C-EI S5710-28C-PWR-EI-AC	S5710-52C-EI S5710-52C-PWR-EI-AC
Forwarding capacity	156 Mpps	192 Mpps
Interface	24*10/100/1000base-T+4*SFP GE combo +4*10GE SFP+	48*10/100/1000base-T+4*10GE SFP+
Power	Dual power supplies in 1+1 backup mode	
iStack	Service interfaces can be used as stack interfaces. Any 10GE interface can be used as a stack interface with maximum bidirectional stack bandwidth of 160 Gbit/s. Long distance stacking is supported up to a maximum distance of 80 km. The device supports up to two stack interfaces and each stack interface supports at most four SFP+ physical interfaces. When cables are used, stacking distances of 1 m, 3 m, and 10 m are supported. When fibers are used, the distance of 80 km is supported.	
MPLS	MPLS L2 VPN (VPWS/VPLS), MPLS L3 VPN, MPLS-TE, MPLS QoS	
NetStream	V5/V8/V9 format, traffic statistics collection and monitoring	
ACL	7K	
Buffer	4M	8M

# S5710-EI Physical Interfaces

Optional Subcard	S5710-28C-EI				S5710-52C-EI			
	GE electrical	GE optical	GE Combo	10GE	GE electrical	GE optical	GE combo	10GE
Two 2*10GE	24	0	4	8	48	0	0	8
Two 8*GE electrical	40	0	4	4	64	0	0	4
Two 8*GE optical	24	16	4	4	48	16	0	4

- Optional subcard: There are two slots in the rear panel compatible with the following subcards: 2\*10GE SFP+ (supporting GE optical interfaces), 8\*1000Base-X, and 8\*10/100/1000BASE-T.
- Fixed interface: S5710-28C-EI provides 24GE electrical + 4 SFP GE combo + 4\*10GE SFP+. S5710-52C-EI provides 48GE electrical + 4\*10GE SFP+.
- Stack interface: Fixed 10GE ports and 10GE ports in the extended card can be used as stack interfaces. Each switch uses 1 to 8 10GE interfaces for stack interfaces.

# S5710-EI Interface Descriptions

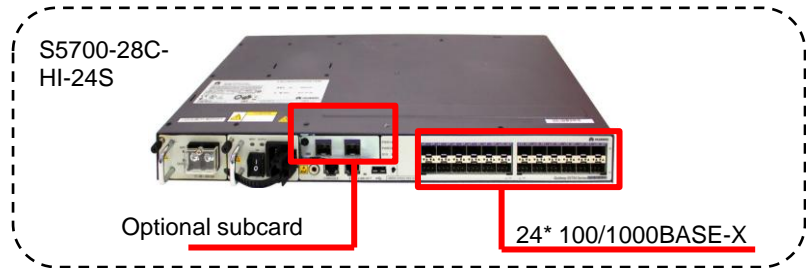
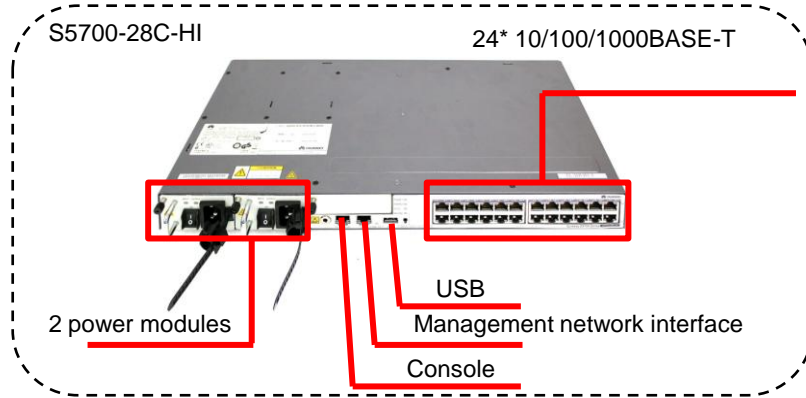


# Advanced GE Switch: S5700-HI

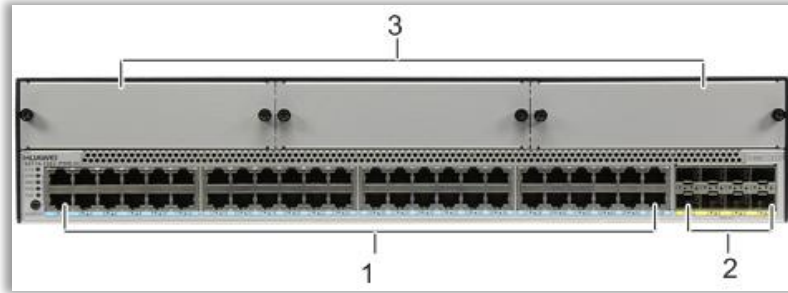
--Aggregation for large-scale campus networks, core in small enterprise networks, value-added services, high port density, and high security

Item	S5700-28C-HI	S5700-28C-HI-24S	S5710-108C-PWR-HI
Forwarding capacity	96 Mpps		504 Mpps
Interface	24*10/100/1000BASE-T	24*100/1000BASE-X	48 10/100/1000BASE-T, 8 10GE SFP+
Optional subcard	1 flexible subcard, supporting 4* GE SFP, 2*10GE SFP+, 4*10GE SFP+		4 flexible subcards 3 slots on the front panel supporting 16*GE SFP and 16*GE Base-T 1 slot on the rear panel supporting 4*40GE QSFP+ and 4*10GE SFP+
Power	Dual power supplies in 1+1 backup mode		
iStack	Service interfaces are provided for use as stack interfaces.		Not supported
ETH OAM and BFD	S5700-HI supports hardware-based ETH OAM and BFD and provides 3.3 ms fault detection and 50 ms switchover, improving network reliability.		Software support
MPLS	MPLS L3 VPN, MPLS L2 VPN (VLL/VPLS), MPLS-TE, MPLS QoS		
Dying gasp	S5700-HI has built-in large-capacity capacitors. After the switch is powered off, it can send power-off alarms to the NMS.		
Monitoring interface	S5700-HI can be installed outdoors, is resistant to even very low temperatures, and is theft-resistant.		Not supported

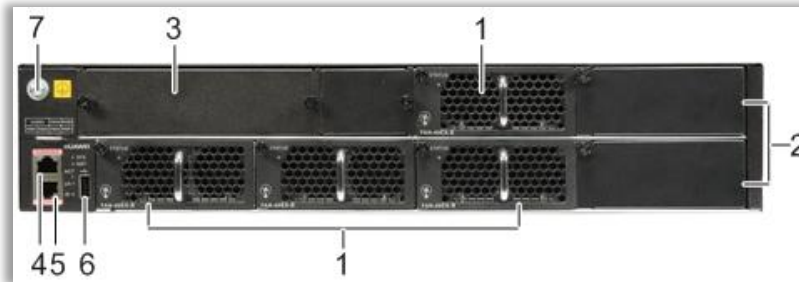
# S5700-HI Port Description



# S5710-HI Front and Rear Panels



1. 48 10/100/1000BASE-T Ethernet interfaces
2. 8 10GE SFP+ Ethernet optical interfaces
3. 3 front subcard slots



1. 4 fan slots
2. 2 power module slots
3. 1 rear subcard slot
4. 1 console interface
5. ETH management interface
6. USB interface
7. Ground screw

# S5700 Service Cards

ES5D000X4S00



Applicable to 5700EI/SI

4\*10GE SFP+

ES5D000X2S00



Applicable to 5700EI/SI

2\*10GE SFP+

ES5D000G4S00 ES5D00G4SA00



Applicable to EI Applicable to SI

4\*GE SFP

- 5700C-SI/S5700C-EI subcard
- 4\*10GE SFP+/2\*10GE SFP+ interfaces can function as GE optical or electrical interfaces on the S5700SI, but cannot function as GE optical or electrical interfaces on the S5700EI.



4\*10GE SFP+



2\*10GE SFP+



4\*GE SFP

- 5700-HI subcard
- 10GE SFP+ interface is compatible with GE optical modules.



16\*GE SFP



16\* 10/100/1000Base-T



4\*10GE SFP+



4\*40GE QSFP+

- 5710-HI subcard



2\*10GE SFP+



8\*GE SFP



8\*10/100/1000Base-T

- 5710-EI subcard
- 10GE SFP+ interface is compatible with GE optical modules.



# RPS1800: External Power Supplies for S5700 (P/X/S)-LI

## Non-PoE



- RPS1800 provides power for a maximum of six devices.
- RPS1800 ensures seamless failover if the switch's internal power module fails.

## PoE



- Provides PoE power for 2 PoE devices and up to 740 W power for each device.
- Works with the internal PoE power supply (370 W) in backup mode. Once backup power is used up, each device provides up to 740 W PoE power.
- Requires up to 800 W power supply to provide PoE power.

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**iStack: Increased Bandwidth and Reliability**

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Network Traffic Analysis: Precise Traffic Management

Flexible Ethernet Networking: Stability and Reliability

Comprehensive VPN Technologies: Economical Leased Lines

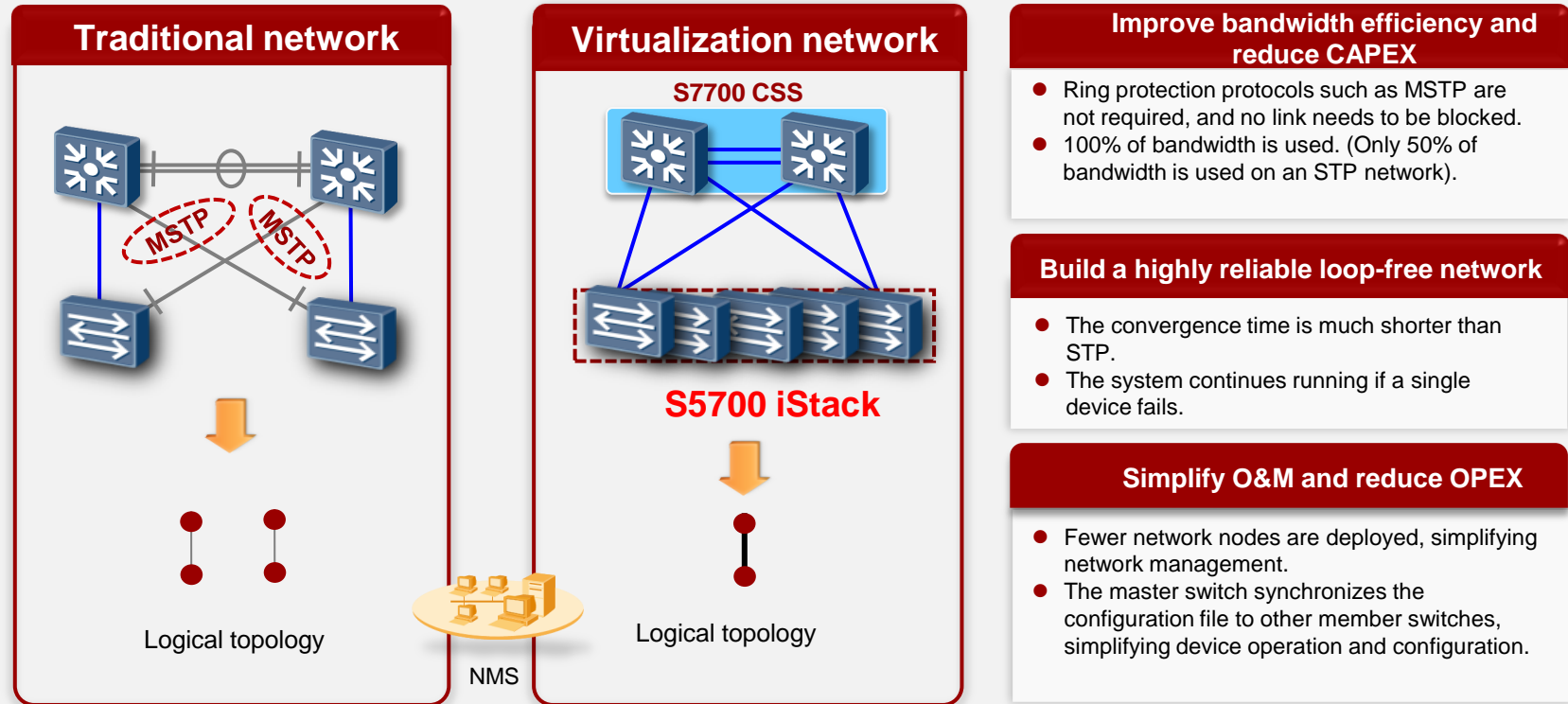
Diversified Security Control

Mature IPv6 Technologies: Seamless Migration

EasyOperation: Centralized Operation and Maintenance

Innovative Internal Battery

# iStack Benefits



# S5700 Stack Summary

## Stacking with stack card



## Stacking with service interface



Item	Stack Card	Service Interface
Applicable device	S5700-SI/S5700-EI	S5700-LI, S5710-EI, S5700-HI
Number of switches	9	9
Distance	1 m (SI/EI) 3 m (EI)	5710-EI supports 80 km when using fiber cable; 5700X-LI, S5700-HI and 5710-EI support 1 m, 3 m, 10 m when using SFP+ cables; 5700P-LI supports 1 m, 10 m when using SFP+ cables. S5700 supports SFP optical modules for stacking.
Bandwidth	48 Gbit/s bidirectional	S5700-LI: 20 Gbit/s bidirectional (1 m) or 40 Gbit/s bidirectional (10 m) S5710-EI: 160 Gbit/s bidirectional S5700-HI: 80 Gbit/s bidirectional
Structure	Chain or ring	Chain or ring
Dual-active detection	Supported	Supported
Redundancy	1:N	1:N
Management	Uniform IP address, SNMP, and system log management	
Configuration	A stack is managed as a logical device using the same CLI.	
Service mode	Uniform routing table and MAC address	

*Note: Switches that use service interfaces and switches that use stack cards cannot be combined in a single stack. Switches from different series cannot be combined in a single stack.*

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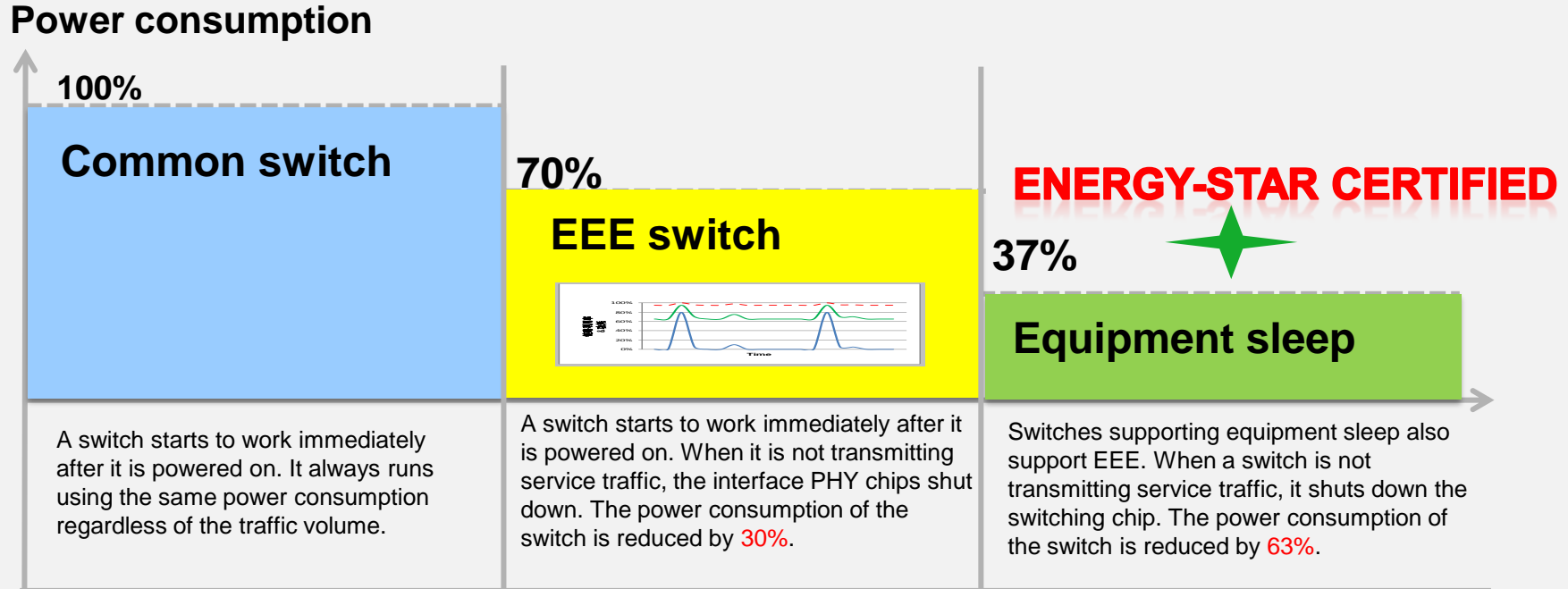
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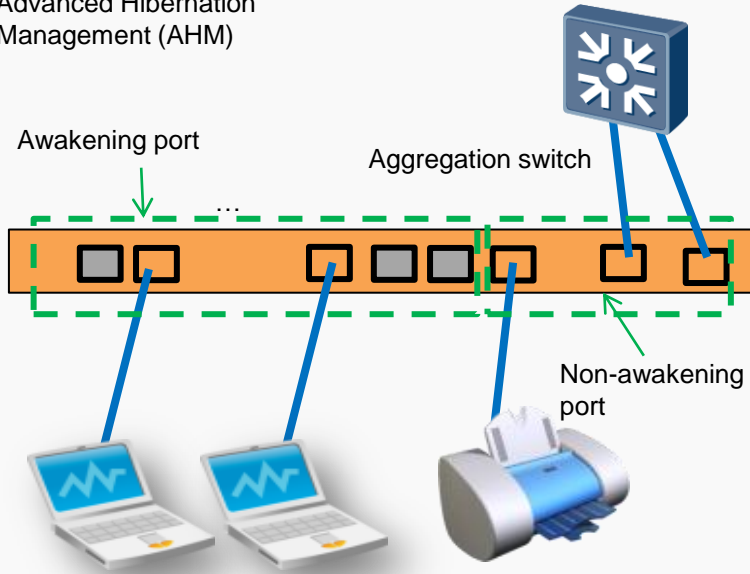
# Switch Energy-Saving Technology Development



Only supported by  
S5700-LI

# Huawei AHM Technology

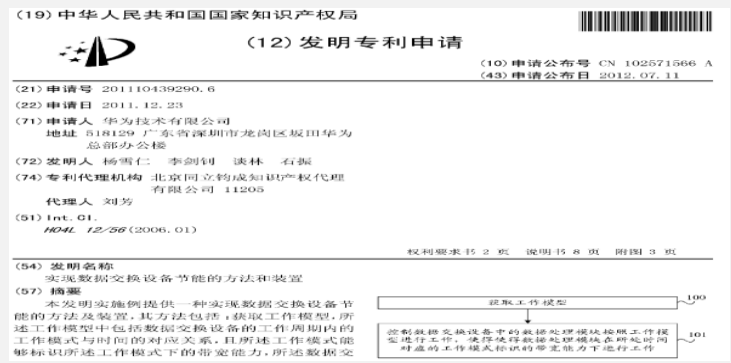
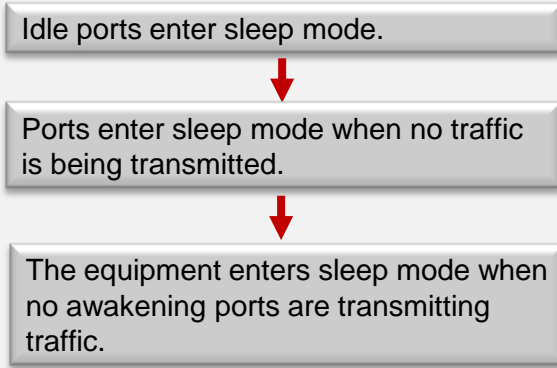
Advanced Hibernation Management (AHM)



- Awakening port: These ports have a sleep mode, so when ports are connected to cables or the connected terminals are powered on, these ports are awakened.
- Non-awakening port: The equipment does not have a sleep mode, so it does not sleep or awaken when the status of these ports changes.
- Equipment sleep: When detecting that all awakening ports are in sleep mode, the equipment enters the sleep mode.

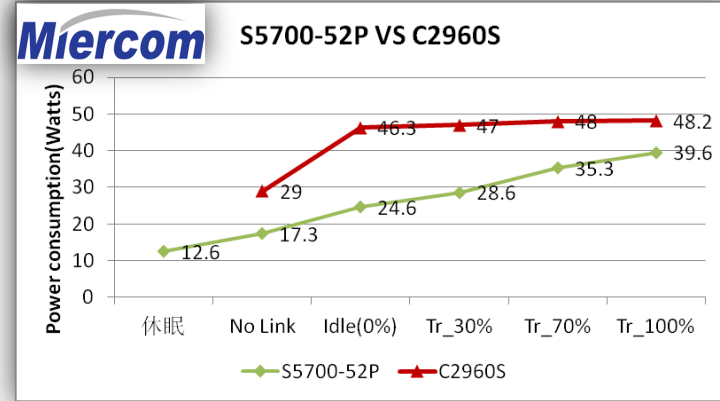
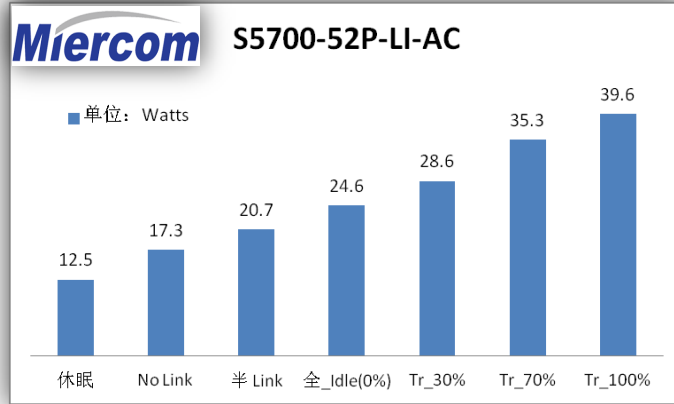
**Note:** The S5700-LI models that **do not support** AHM are S5700-LI PoE models, S5700-LI-BAT, S5700-10P-LI, S5700-28X-LI-24S,

S5700-52X-LI-48G-AC, S5701-28X-LI-AC, and S5701-28X-LI-24S-AC.



# S5700-LI Energy Saving Benefits

Only supported by S5700-LI



**Case:** An S5700-52P-LI is used in a small- or medium-sized company. The switch works for 10 hours of each workday. During these 10 hours, the switch works below 30% of a full traffic load. The switch enters the sleeping state at the rest of the time. With AHM, S5700-LI consumes **63%** less power than similar products.

Period	Hours	Switches Using AHM	Common Switches in Industry
Idle period	6360 hours	Sleep: 12.6 W	29 W
Work period (30% traffic)	2400 hours	Working: 28.6 W	47 W
		Yearly power consumption: 148,776 W x hours	Yearly power consumption: 406,788 W x hours

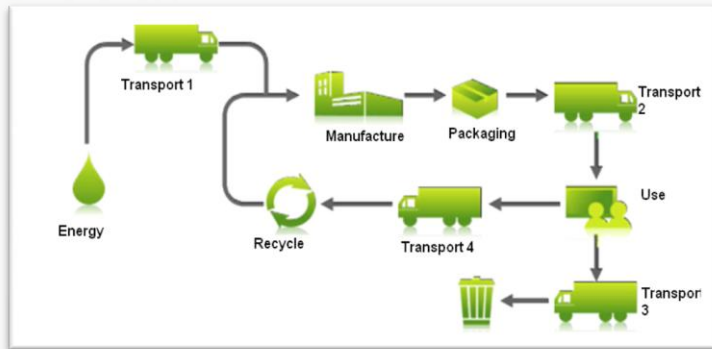


# S5700, First to Pass Carbon Footprint Certificate and CQC

Carbon Footprint: 5700-52C-  
SI,5700-52C-El, 5700-48TP-  
SI,5700-28C-El-24S  
CQC: S5700-28X-LI-AC



The Carbon Footprint Certificate is the **first national energy-saving certification in China**. It identifies GHG emissions produced during manufacturing (or service provisioning), distribution, use and processing, and recycling.



**CQC** is China state authorized third-party certification body for certification of energy saving, water saving, and environmental friendly products.



**CHINA CERTIFICATE For ENERGY CONSERVATION PRODUCT**

*Note: Pay attention to certificate's validity period in actual use.*

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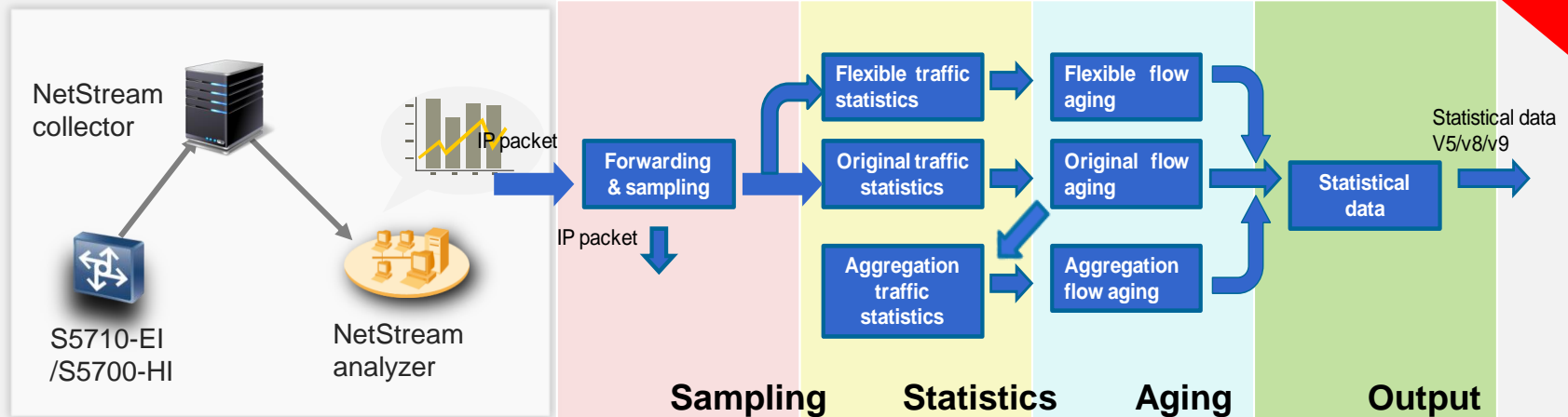
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# NetStream: Fine-grained Traffic Management

5710-EI/5700-HI  
S5710-HI

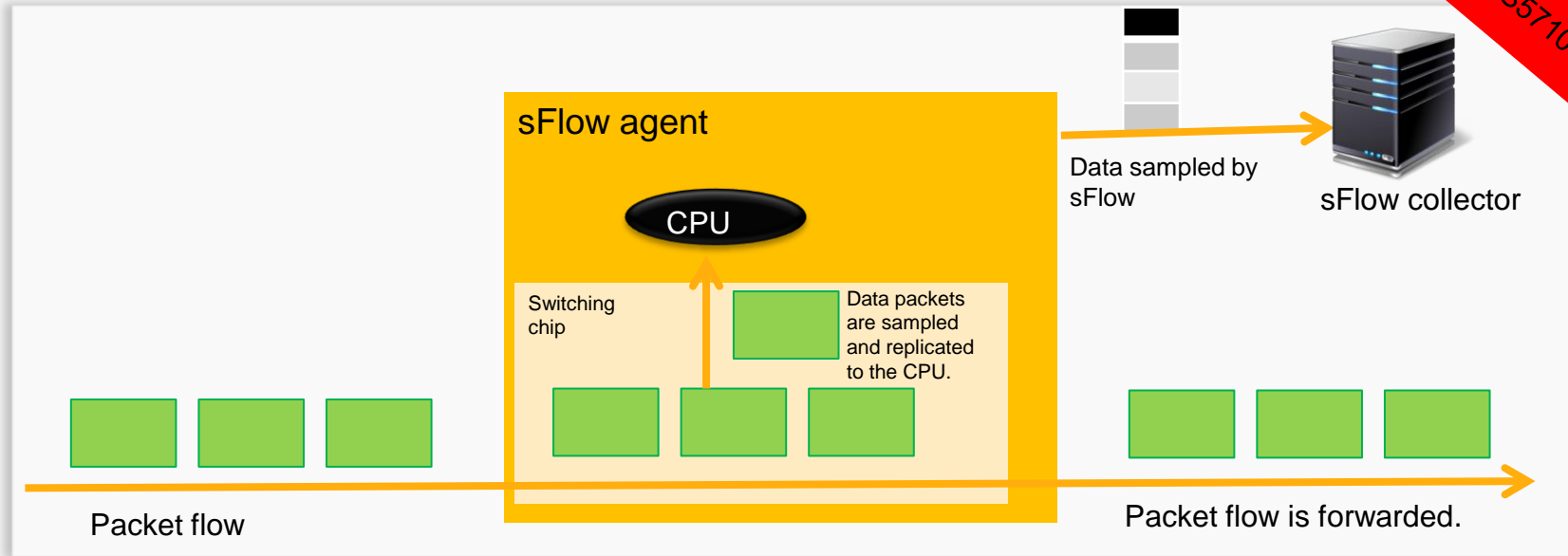


## The switch supports three traffic statistics modes:

- ◆ **Original traffic statistics:** classifies packets and collects statistics based on 7-tuple information: inbound/outbound interface index, source IP address, destination IP address, source port number, destination port number, protocol, and TOS.
- ◆ **Flexible traffic statistics:** classifies packets and collects statistics based on one or more of the six attributes: protocol, TOS, destination port number, source port number, source IP address, and destination IP address.
- ◆ **Aggregation traffic statistics:** supports 10 aggregation rules.

# sFlow: Visualized Traffic Management

S5700-EI/S5710-EI/S5700-LI/S5700-HI/S5710-HI



- The sFlow agent is integrated into the switch. The switch samples packet data, and sends sampled data packets to the sFlow collector for analysis through sFlow. Huawei switches support counter sampling and packet flow sampling, in compliance with sFlow V5.
- NetStream collects and analyzes statistics on network flows, stores statistics in a buffer, and outputs statistics. Compared with NetStream, sFlow does not require a buffer. In addition, a network device only samples packets. sFlow is easy and occupies less resources, but with simple functions.

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# Flexible Ethernet Networking: Stability and Reliability

## Key Component Redundancy

Power supplies and fans are hot swappable and work in redundancy mode.

## OAM

All the S5700 series switches support OAM to implement end-to-end fault detection.

## G.8032

Supports multiple rings and domains and provides interworking capabilities for devices. Originates from SDH.

High reliability

99.999%+

## 6 kV surge protection

Provides 6 kV patented surge protection technology, 8 times the standard surge protection performance.

## SEP

Supports closed-ring, open-ring, and cascading topologies. SEP can work with STP to provide 50 ms protection switching.

## Smart-link

Used in dual-homing networking to ensure nonstop forwarding if a single link fails.

# Power Redundancy, Configured on Demand

## Plan 1: dual power redundancy on non-PoE device



- Hot swapping
- AC and DC power supplies that can be installed on the same switch
- Applied to: 5700-C

## Plan 2: dual power redundancy on PoE device



- Hot swapping
- A maximum of 30 W on each interface
- 250 W and 500 W PoE power supplies
- 1+1 backup or shared mode
- A maximum of 740 W PoE power supply
- Applied to: switches except 5700-LI PoE switches

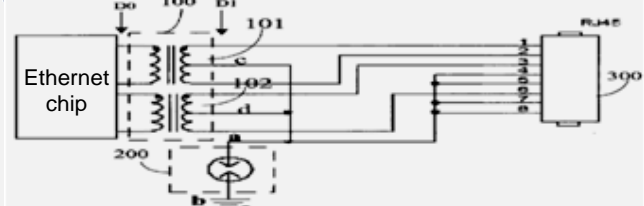
## Plan 3: single internal power supply and external RPS



- Hot swapping
- A maximum of 30 W on each interface
- Single internal power supply with 370 W PoE power
- A maximum of 740 W PoE power with the external RPS power supply installed
- A maximum of 740 W power with redundant power supplies  
*Note: The shared mode is not supported, that is, 1110 W (740 W + 370 W) PoE power supply is not supported.*
- Applied to: S5700-LI PoE switches

# 6 kV Patented Surge Protection Technology, 8 Times Surge Protection Performance

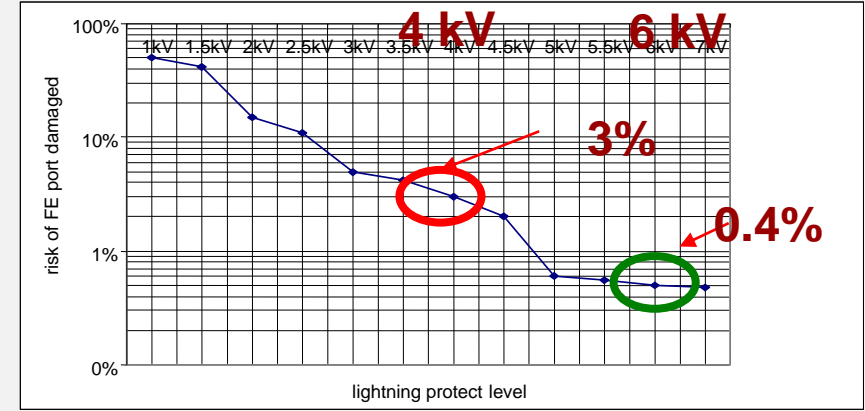
Only supported by 5700-L1



Patent No. ZL2008100268325

**Technology:** The S5700 uses patented surge protection technology (patent No. ZL2008100268325) to achieve **6 kV** surge protection capability.

**Problem:** When lightning strikes near an equipment room, the sudden increase in current will generate an enormous electromagnetic field in the surrounding area. Instantaneous over-voltage and over-current generated between aerial cables and power cables, or between network cables, or in the loops between the cables and ground, damages the device ports.

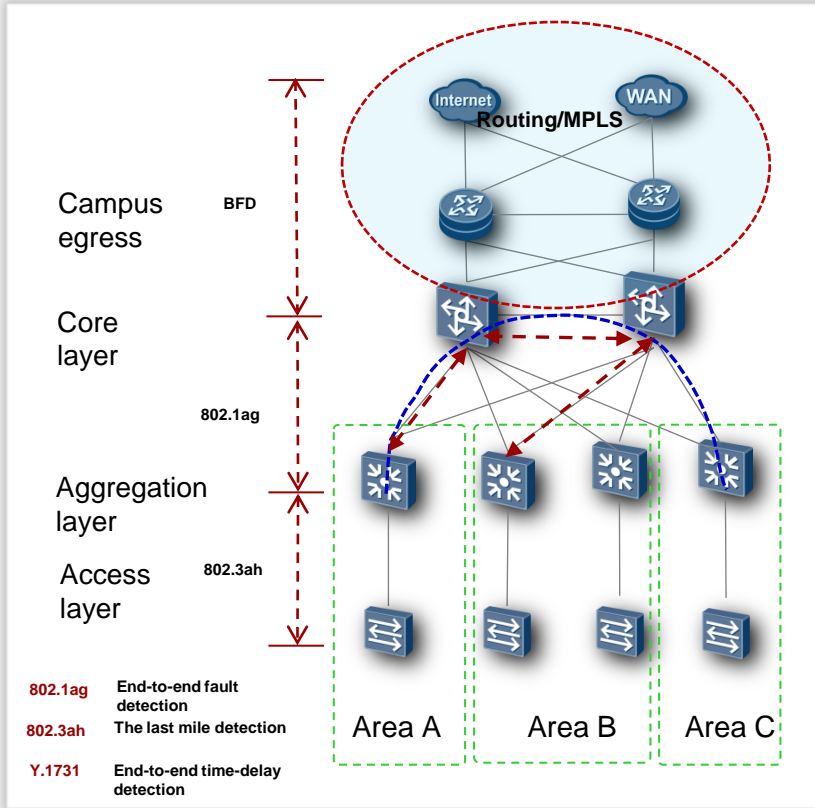


**Effect:** The Italian Telecommunication Executive Telab, the former ITU-T SG5 President Roberto and Professor Ricardo of Turin University worked together to develop "Surge Damage Assessment tools for Telecommunication Equipment". 6 kV Port Surge Protection Technology reduces the risk of FE port damage in the S5700 to 0.4% compared to the industry average of 3%. Additionally, the S5700 provides 8 times higher surge protection performance than the industry-average of 4 kV.



Only supported by 5700-HI

# Precise End-to-End L2/L3 Network Protection



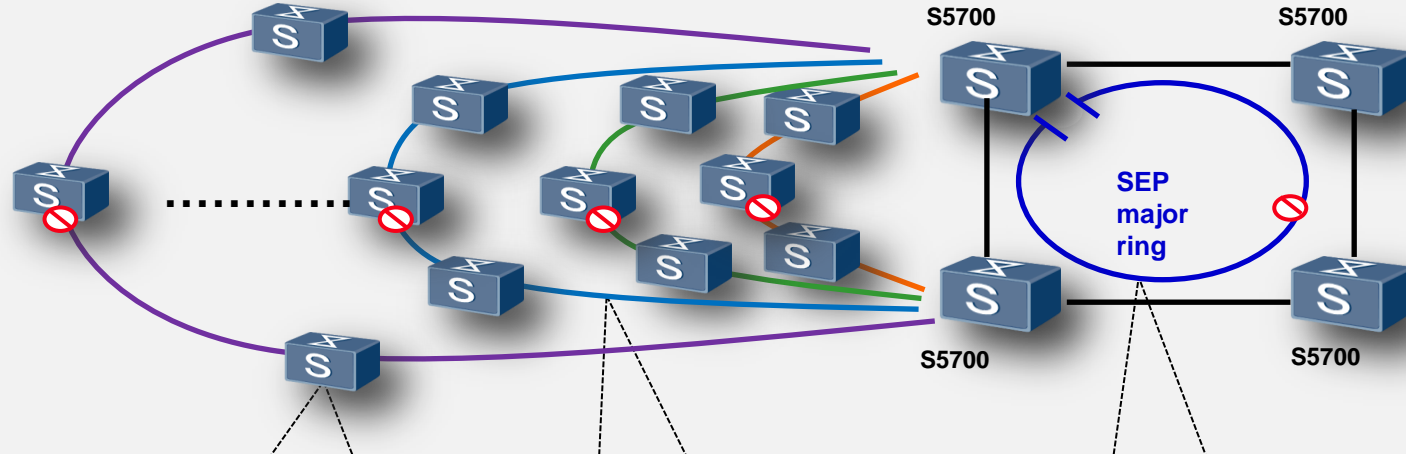
## Hardware-based

- Hardware-based detection, without occupying CPU resources
- Sending detection packets at 3.3 ms intervals
- 50 ms fast switchover
- 128 BFD sessions

## Full functions

- BFD for ISIS, BGP, OSPF, and static route
- BFD for VRRP
- BFD for MPLS
- BFD for PIM
- Y.1731 applied to delay-sensitive services to implement end-to-end delay detection and monitoring

# SEP, Next-Generation Ring Network Protection Technology



## Flexible networking

- Huawei proprietary technology which is interoperable with other vendors' devices. This facilitates easy network expansion and ensures network reliability.

## Scalability

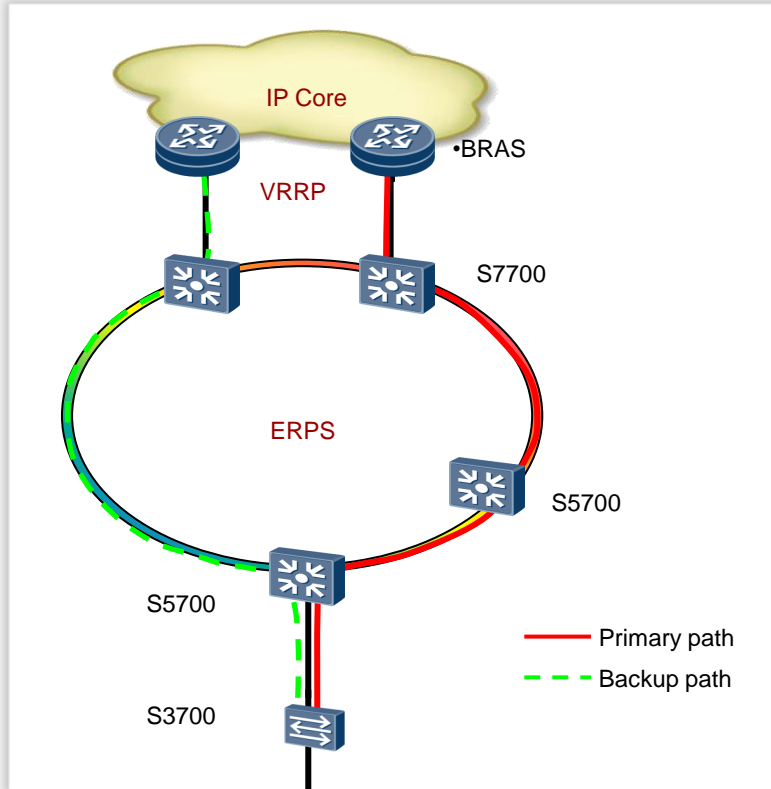
- Supports closed ring and open ring topologies and is compatible with STP and RRPP in open ring topologies.

## 50 ms convergence

- Quickly detect and report link failures and perform failover within 50 ms.

# G.8032, Latest Standard Ring Protection Protocol

All S5700 models except 5700S-L1



## Open standard

G.8032, also called Ethernet Ring Protection Switch (ERPS), was defined by the ITU-T in February 2008. ERPS is based on traditional Ethernet MAC and bridging functions. It uses mature Ethernet OAM and Ring Automatic Protection Switching (Ring APS or R-APS) technologies to implement fast protection switching on Ethernet.

## Advantages

- **50 ms** protection switching on ring networks
- Flexible networking at access, aggregation, and core layers
- Lower OPEX and CAPEX

# Comparison of Ring Protection Protocols

Protocol	G.8032	STP/RSTP/MSTP	SEP
Standardization and interworking	Standard protocol Interworking with non-Huawei devices supporting ERPS	Standard protocol, IEEE 802.1D, 802.1S, 802.1W Interworking with non-Huawei devices supporting STP	Huawei proprietary protocol
Configuration complexity	Medium You must specify the blocking port.	Low You only need to enable the protocol.	Medium Ring topologies are identified manually and the blocking port can be left unspecified.
Applicable scenario	V1 applies only to single-ring networks. V2 applies to open-ring and closed-ring networks (Huawei switches do not support V2).	The forwarding path is based on calculation.	Applies to open-ring and closed-ring networks, and places no limit on the number of subring layers. Networks with more than three sub-rings layers are not recommended.
Switchover time	50 ms	Millisecond-level switchover time (STP: 30s when there are less than 7 nodes)	50 ms
Recommended usage scenario	Large- and medium-scale networks with simple network topologies; strict convergence time requirements	Small- and medium-scale networks with complex and variable topologies or networks composed of devices from various vendors; low convergence time requirements (second-level convergence time is acceptable)	Large- and medium-scale networks with complex topologies (up to three layers of sub-rings); strict convergence time requirements

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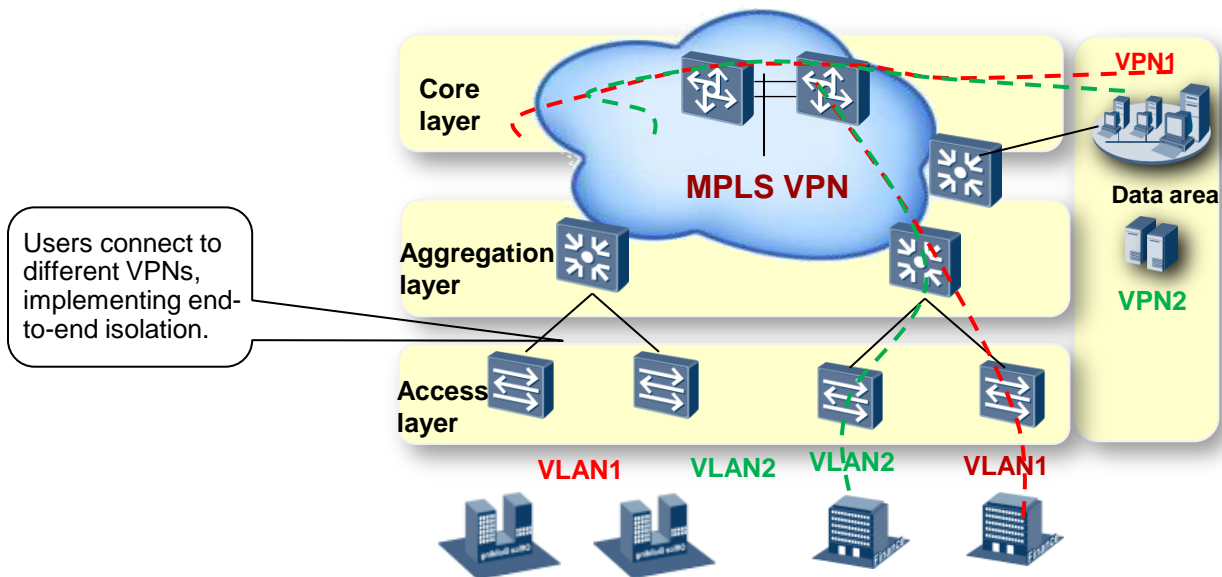
Mature IPv6 Technologies: Seamless Migration

EasyOperation: Centralized Operation and Maintenance

Innovative Internal Battery

# MPLS VPN, Building Virtualized Campus Network

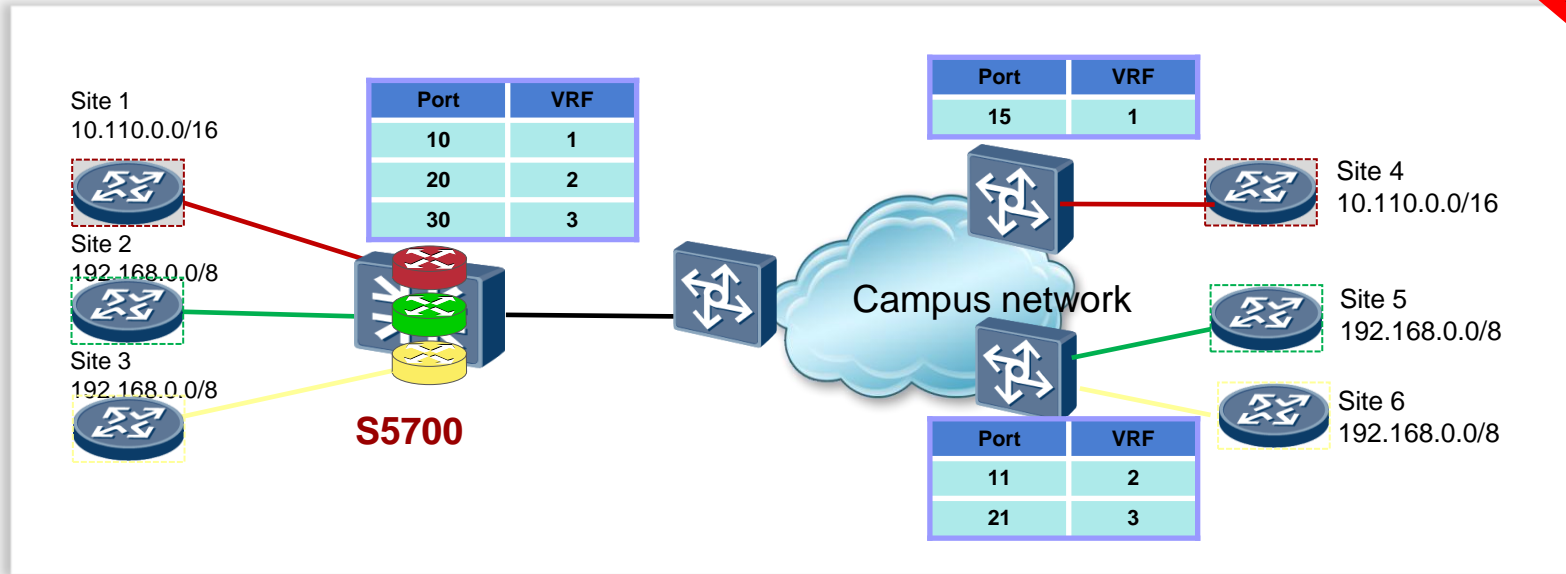
Supported by only  
5700-HI, 5710-EI



- MPLS VPN reduces configuration complexity, simplifies distributed management, and minimizes additional investments.
- Huawei Sx7 series switches provide a range of L2VPN/L3VPN functions.

# MCE: A Cost-effective VPN Solution

Only supported by 5700-HI, 5700-EI, and 5710-EI



- One MCE switch ensures service transmission and isolation for multiple sites, making the solution more cost-effective and secure.
- Fewer links are required on the upstream device, reducing equipment investment.

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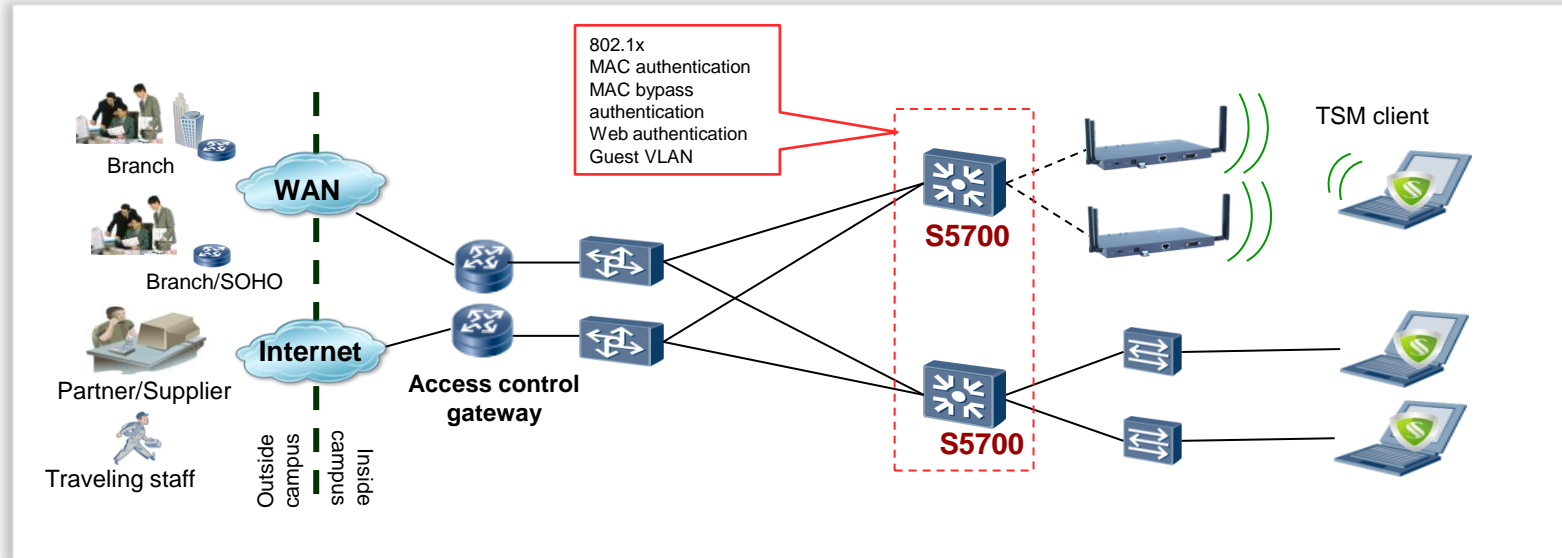
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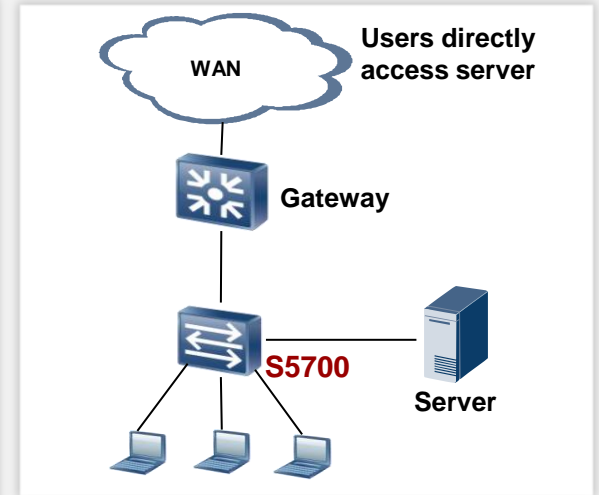
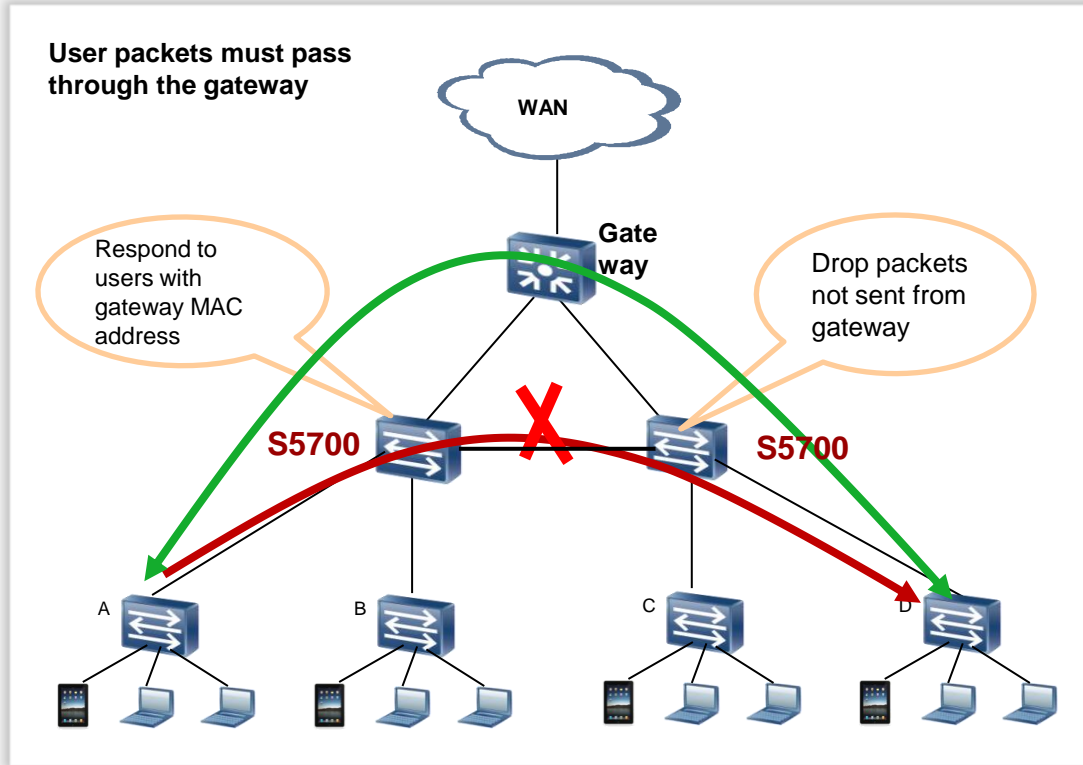


# NAC Protecting Information Security



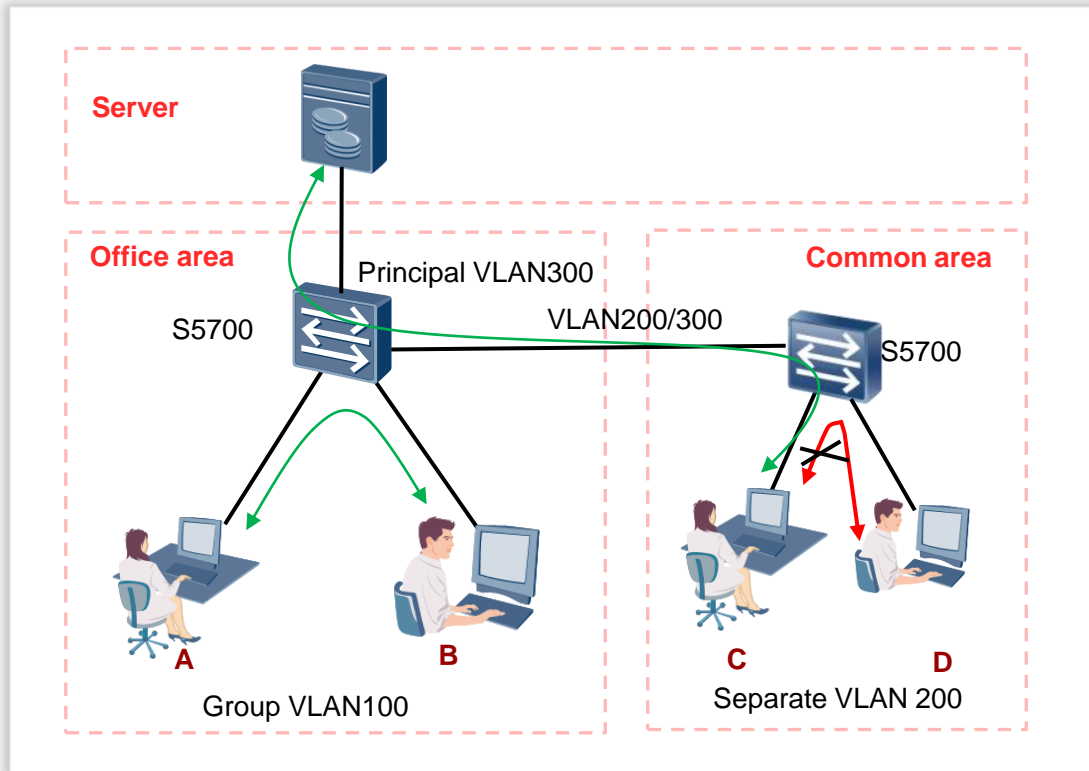
- Provides various employee behavior control functions in addition to traditional user authentication, security verification, and admission control.
- Provides several application behavior control measures to protect information security, such as USB port usage control, software usage control, document encryption and right management, document operation logging, and status monitoring of multiple network adapters.
- The unified management mode uniformly processes authentication and authorization of access of various types, implementing easy operation.
- Provides three authentication modes on interfaces and supports multiple user access.

# Standard MFF: Cost-effective L2 Traffic Isolation Solution



- ◆ Isolates L2 traffic and forwards L3 traffic.
- ◆ Saves bandwidth in multicast applications.
- ◆ Prevents wasted bandwidth caused by malicious attacks.
- ◆ Implements real-time traffic monitoring and accounting.

# Inter-device MUX VLAN for Flexible Access



## Applicable scenario

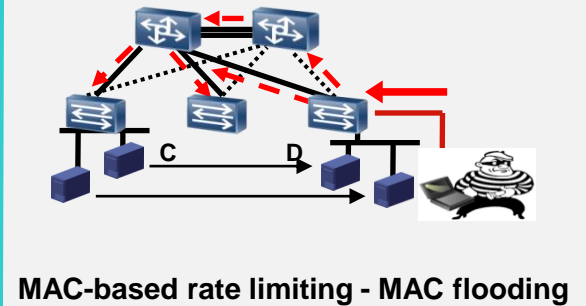
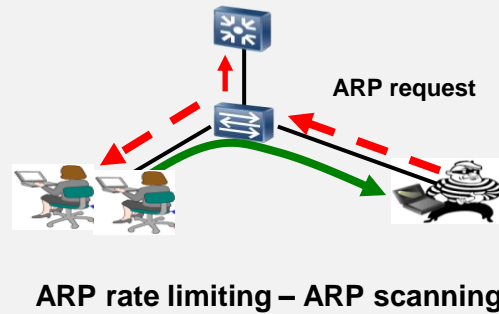
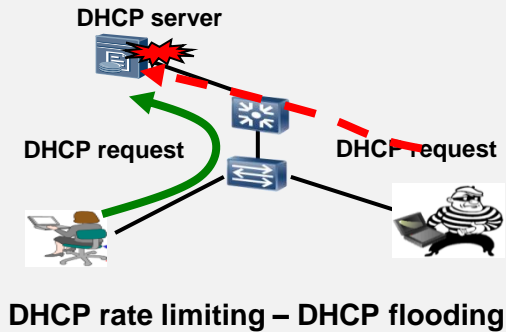
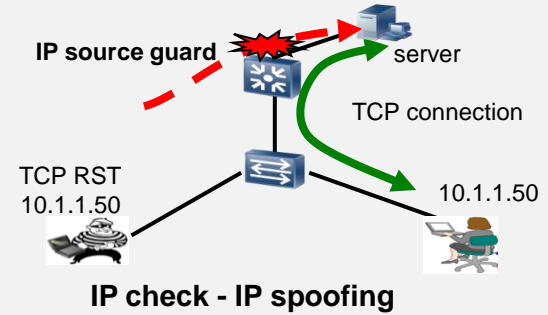
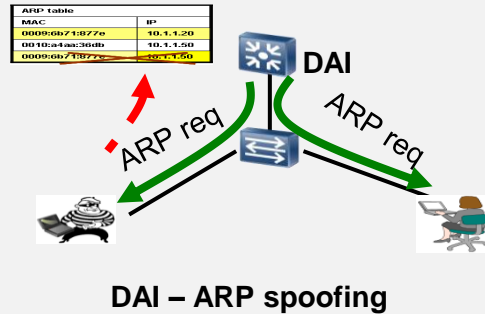
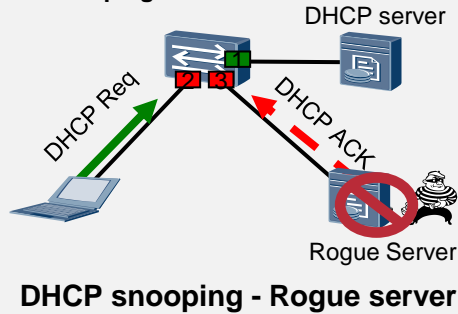
- ACLs are used to implement access control. However, ACL configuration is complex and ACL resources are limited.
- MUX VLAN provides simplified access control.

## MUX VLAN configuration

- MUX VLAN involves a principal VLAN and subordinate VLANs. Subordinate VLANs include separate VLANs and group VLANs.
- All users can access the server.
- Users A and B in the office area under group VLAN 100 can communicate.
- Users C and D in the common area under separate VLAN 200 cannot communicate.

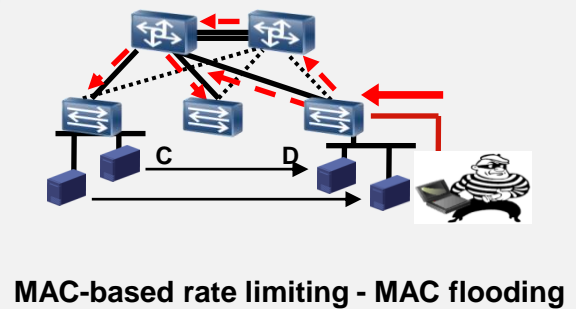
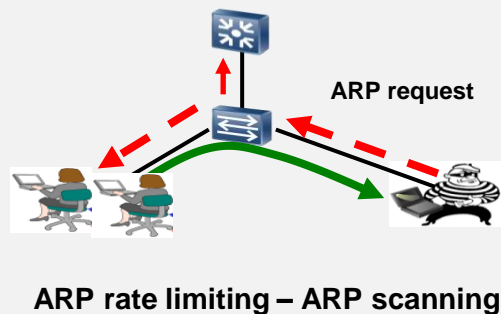
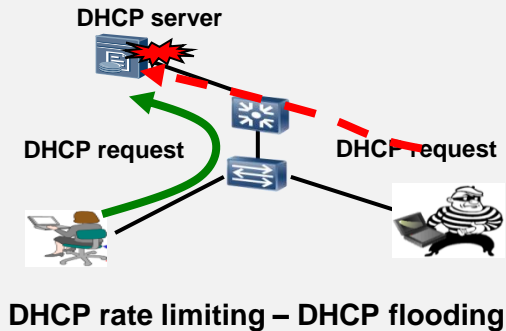
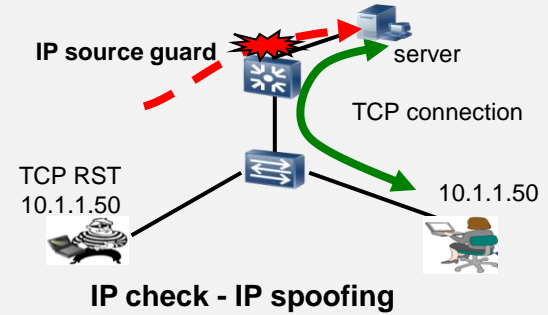
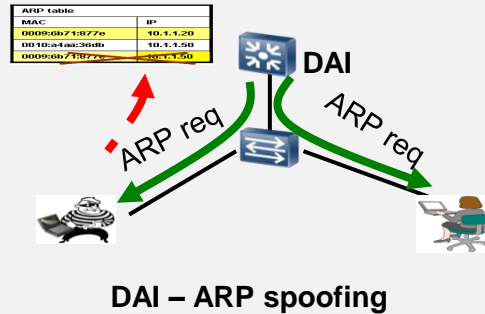
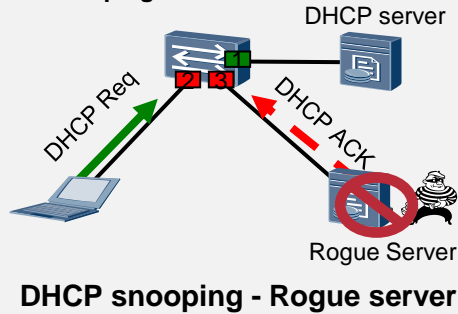
# Comprehensive Campus Border Protection

## DHCP Snooping



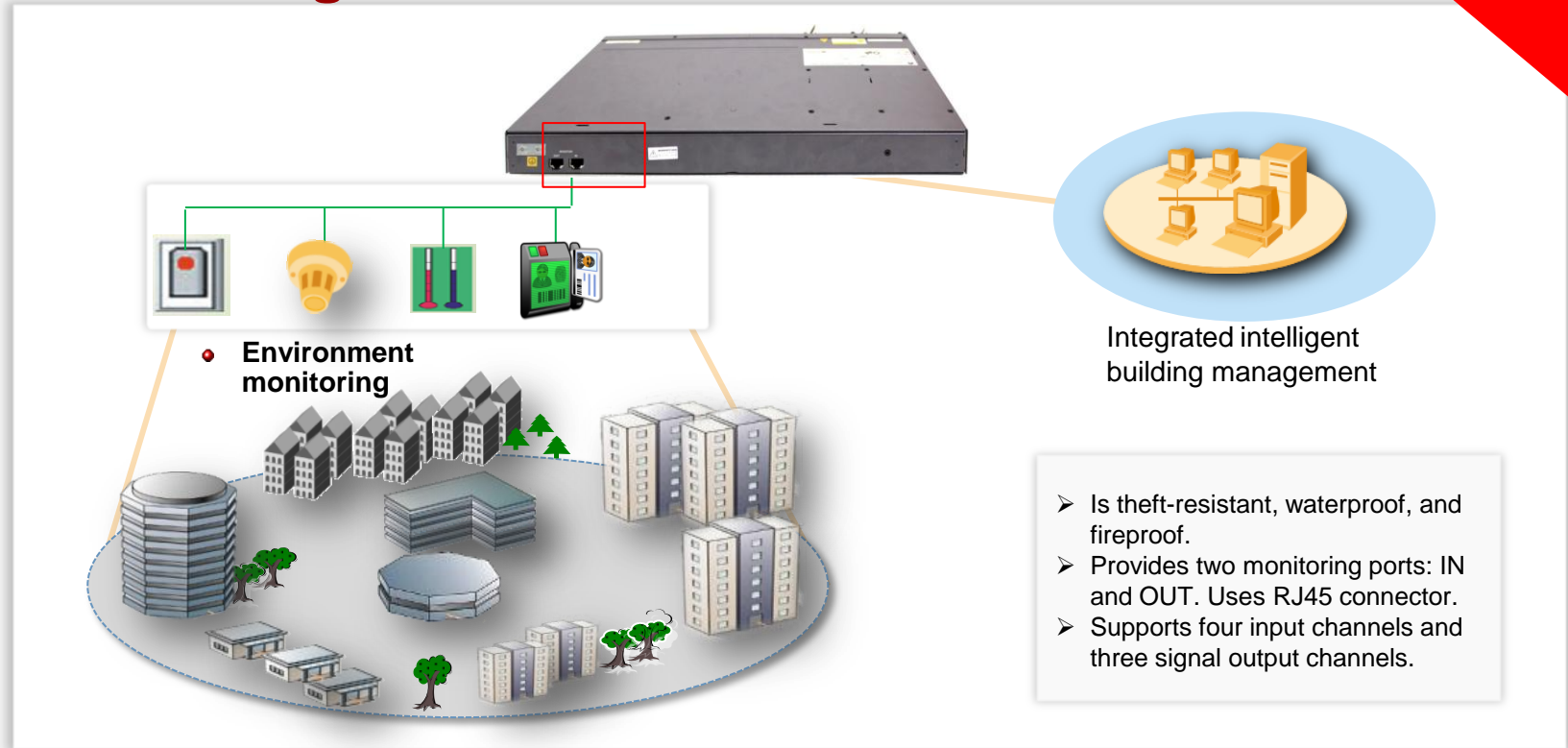
# Comprehensive Campus Border Protection

## DHCP Snooping



# Intelligent Monitoring Ports, Helping to Build Safeguard

Only supported by 5700-HI



Environment monitoring

Integrated intelligent building management

- Is theft-resistant, waterproof, and fireproof.
- Provides two monitoring ports: IN and OUT. Uses RJ45 connector.
- Supports four input channels and three signal output channels.

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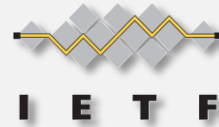
# Comprehensive IPv6 Solution for Next-Generation Network

## IPv4/IPv6 dual stack, smooth evolution



- S5700 supports IPv4/IPv6 dual-stack, and IPv4 networking, IPv6 networking, and IPv4/IPv6 hybrid networking.

Received IPv6 Ready Logo Phase 2 certification. Active participant and contributor in several standardization organizations.



- Industry-leading Huawei switches passed the certification of IPv6 Ready Logo Phase 2.
- Huawei has participated in the IETF/broadband forum/ITU/CCSI and made considerable contributions. In the IETF, Huawei contributed 16 RFCs and 8 WG drafts.



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Flexible Ethernet Networking: Stability and Reliability

Comprehensive VPN Technologies: Economical Leased Lines

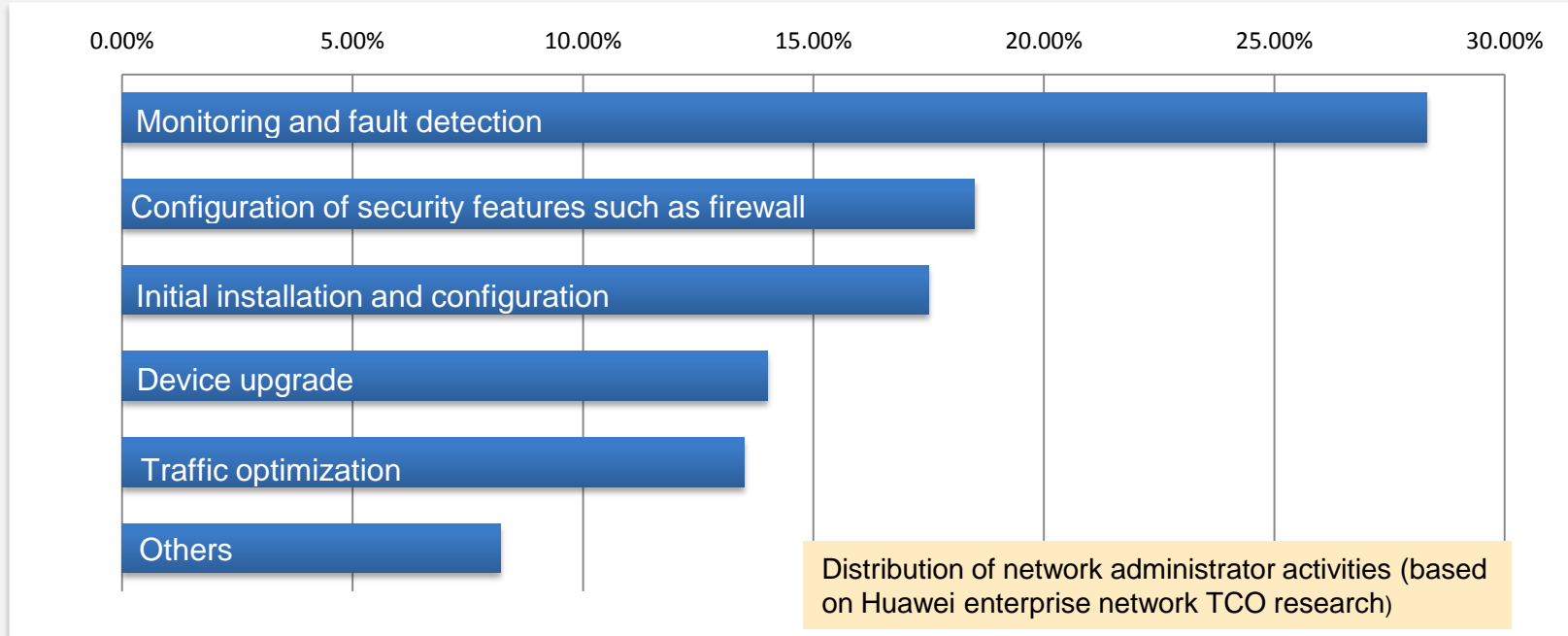
Diversified Security Control

Mature IPv6 Technologies: Seamless Migration

**EasyOperation: Centralized Operation and Maintenance**

Innovative Internal Battery

# EasyOperation: Background



A network administrator spends a significant amount of time on device installation, software upgrades, fault isolation, and device replacement. In addition, much of this work is repetitive and inefficient. Enterprise IT departments are in need of batch and automatic management tools for network devices to improve productivity and the complexity of network management.

# EasyOperation: Evolution

- EasyOperation simplifies operations and maintenance of Huawei x7 series switches.
- EasyOperation has undergone the following changes with each new version.

## Easy Install

- Zero –touch installation
- USB-based deployment
- On-demand upgrades

## Easy Configure

- Batch device configuration
- Automatic port identification and configuration
- Replacement of faulty devices without additional configuration

## Easy UI

Service template, GUI, optimized experience

## Easy Monitor

- Smart probe
- NQA&NTA

## Easy Troubleshooting

- Online detection
- Exception event detection with automatic pre-defined response operations

### Easy Operation 1.0 Simplified management (2013Q2)

- Zero-Touch installation
- USB-based deployment
- On-demand upgrades
- Batch device configuration
- Automatic terminal identification and configuration
- Replacement of faulty devices without additional configuration
- Smart probe
- Network quality analysis



### Easy Operation 2.0 Improved user experience (2014Q1)

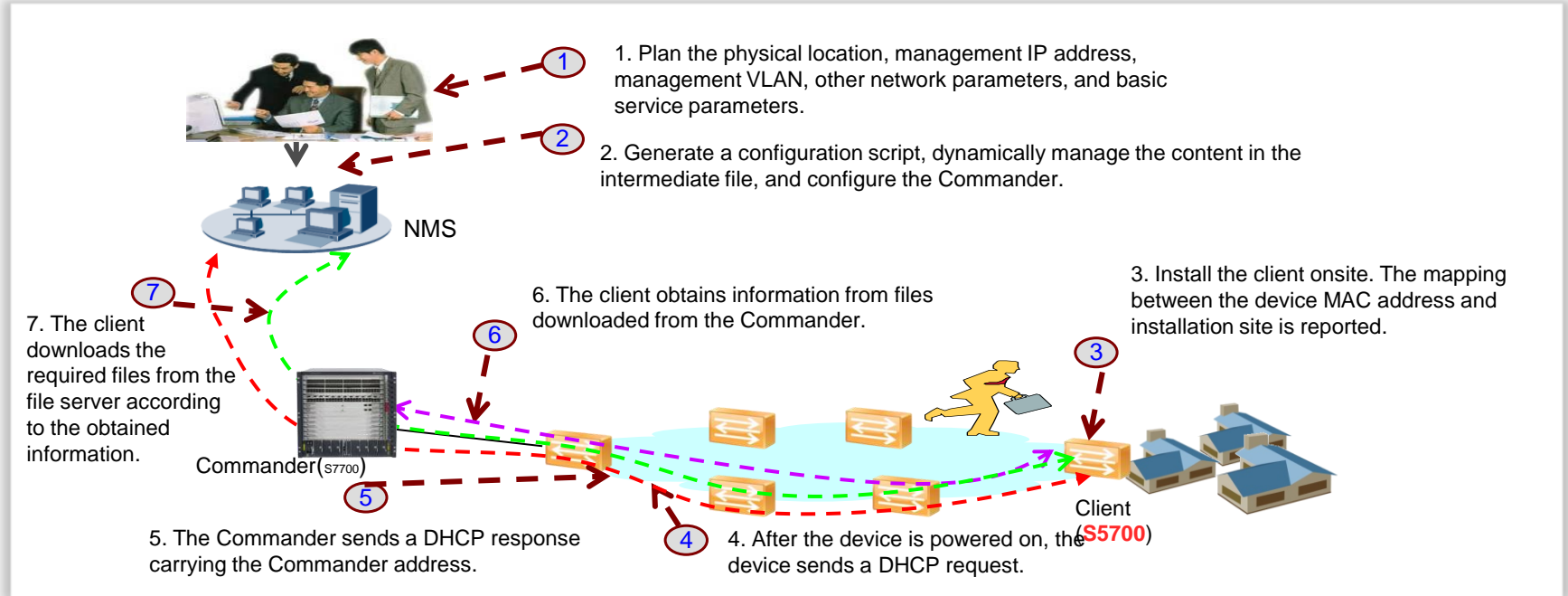
- Web-based NQA
- Customizing configuration templates based on user cases
- Network topology display based on iPhone/ iPad/Android



### Easy Operation 3.0 Smart management(2014Q4)

- Exception event detection with automatic pre-defined response operations
- Optimized configuration templates
- Configuration of macro instructions

# Zero Configuration: No Onsite Operations Required

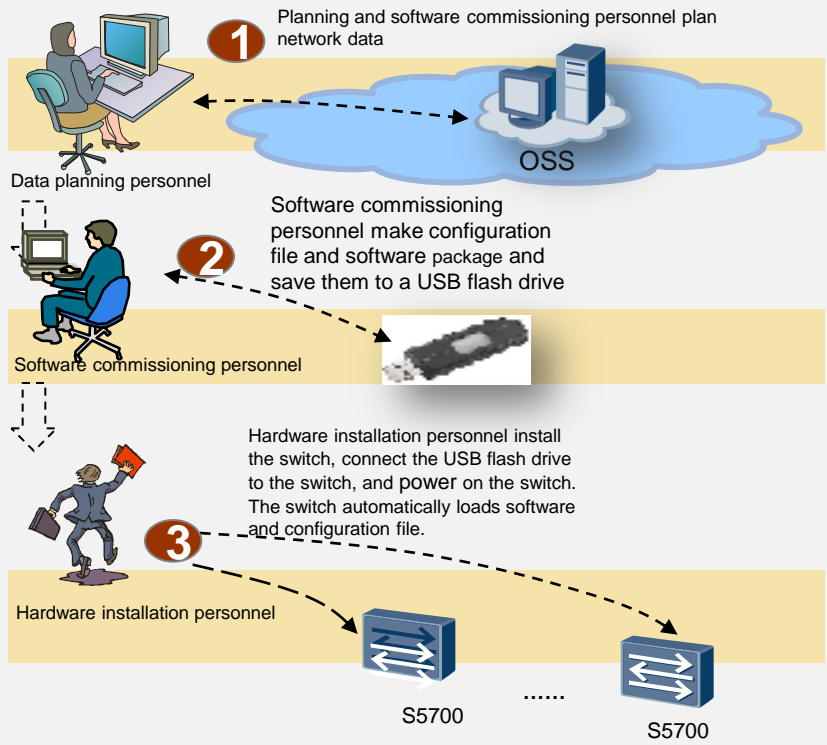


- One-stop deployment: Deployment personnel only need to visit the once. Once an unconfigured device is connected to the network, it can be configured automatically.
- Improved efficiency: Network planning, data preparation, and device installation can be performed simultaneously.

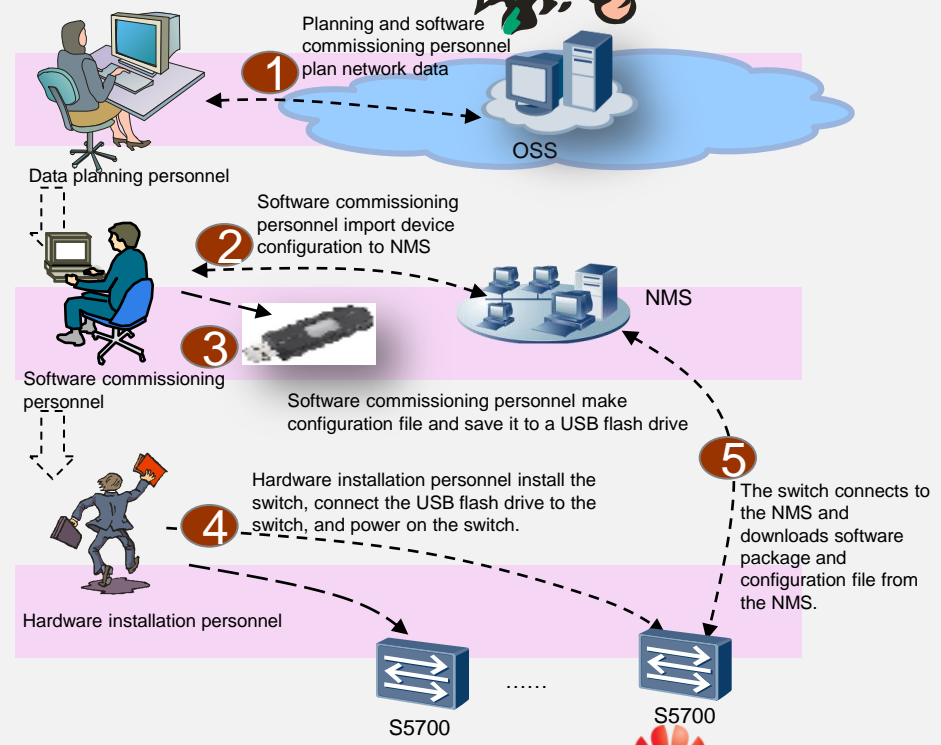
WAY  
S5700-SI, S5700-HI  
and S5710-EI only

# USB-based Deployment: Simplifying Device Deployment

## Without an NMS



## With an NMS



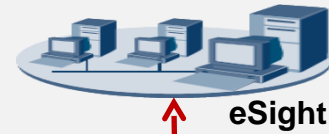
# Exception Handling, Fault Diagnosis



The wavelength of an optical transceiver is 780 nm to 1600 nm. A 120 km optical transceiver is a 3B laser product with a transmit power of 3.2 mW. Looking into the laser without eye protection will cause severe eye injury.

Automatic laser shutdown (ALS) technology enables the system to shut down a fiber's laser when a fiber break is detected. When the fiber connection is repaired, the system immediately restarts the laser.

**Laser safety standards:** EN 60825-2 Safety of optical fiber communication systems (OFCS) (Europe), ANSI Z136.2 Safe Use Of Optical Fiber Communication Systems (North America), NF C93-806 Laser modules used for telecommunication (France)



- After the switch is powered off, the built-in large-capacity capacitors provide power so that traps can be sent to the NMS.
- **Dying gasp** provides detailed alarm information for network administrators, saving time in fault locating.

# USB Console Port, Simplified Maintenance

Mini USB interface



## RJ45 Console



USB-to-DB9



DB9-to-RJ45

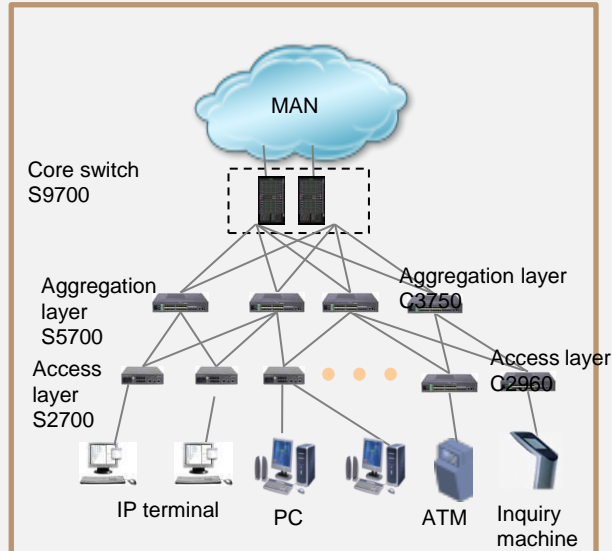


## USB Console



- S5700 provides the a mini USB port (DB9 adapter cable not included). You can log in to the console port to configure the switch.
- S5700 provides an RJ45 console port.

# Interworking: Control and Forwarding Planes



**Miercom**

**Lab Testing Summary Report**

March 2012  
Report SR120125

- Key findings and conclusions:**
- Huawei S5700-52C-PWR-EI enterprise switch has IPv6 migration support that includes dual-stack and IPv6 to IPv4 tunneling for increased flexibility
  - Supports PoE+, supplying 30W of power to endpoint devices from multiple vendors
  - Interoperable with many proprietary protocols used by multiple vendors
  - Clustering supports 48Gbps throughput and nine devices in a single cluster
  - Batch updating allows software upgrades en masse to switches

**Interworking in the forwarding plane:** Packets can be forwarded by interfaces on devices from different vendors. Huawei products are developed in strict compliance with IEEE802.3i (10BASE-T), IEEE 802.3u (100BASE-T), IEEE802.3ab (Gigabit Ethernet), Gigabit Ethernet (IEEE802.3z), and IEEE 802.3ae (10GE) protocols, and all their interfaces are interoperable with other devices.

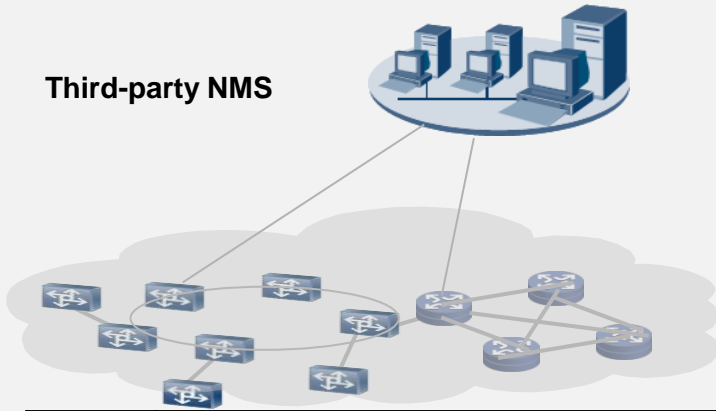
**Interworking in the control plane:** Interworking of Layer 2 and Layer 3 protocols prevents network flapping and ensures network stability. In some projects, such as the Lenovo network expansion project, Shanghai Bank of Communications, and Turkey AveA, S5700s were successfully connected together with Cisco devices to implement the following features: OSPF, BGP, RIP, LACP, STP, LLDP, OAM, STP, RSTP, MSTP, NTP, OSPF, LACP, VRR.

CDP	⇒	LLDP
UDLD	⇒	DLDP
Flexlink	⇒	SMARTLINK
PVST+	⇒	VBST+
HSRP	⇒	VRRP
VTP	⇒	VCMP
DTP	⇒	LNP
PAGP	⇒	LACP
IGRP/EIGRP	⇒	OSPF/ISIS



# Interworking: Management Plane

Third-party NMS



**Interworking at the management plane:** Devices of different vendors can be managed on the same network to reduce maintenance costs. Huawei switches support SNMP V1/2/3 and many standard MIBs. Therefore, it can be managed by non-Huawei NMSs that support standard MIB.

The following table lists four common MIBs supported by Huawei switches. Standard MIBs can only provide device management, alarm collection, and management of some basic protocols. To fully manage third-party devices, the switch must support proprietary MIBs developed by other vendors.

Vendor	Huawei device management capabilities
H3C	Supports management of Huawei devices. Some proprietary MIBs also support Huawei devices.
HP	Supports both standard MIBs and user-defined management functions.
Cisco	Supports standard MIBs, but does not support user-defined management functions.
ZTE	Supports standard MIBs.

Standard MIB	Function
RFC1213-mib	Management of common protocols such as IP, ICMP, TCP, and UDP
Entity-MIB	Management of entities including frames, slots, and ports
IF-MIB	Interface attribute management
SNMPv2-MIB	SNMP information statistics

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## S5700 Switch Highlights

iStack: Increased Bandwidth and Reliability

AHM: Energy and Cost Savings

Network Traffic Analysis: Precise Traffic Management

Flexible Ethernet Networking: Stability and Reliability

Comprehensive VPN Technologies: Economical Leased Lines

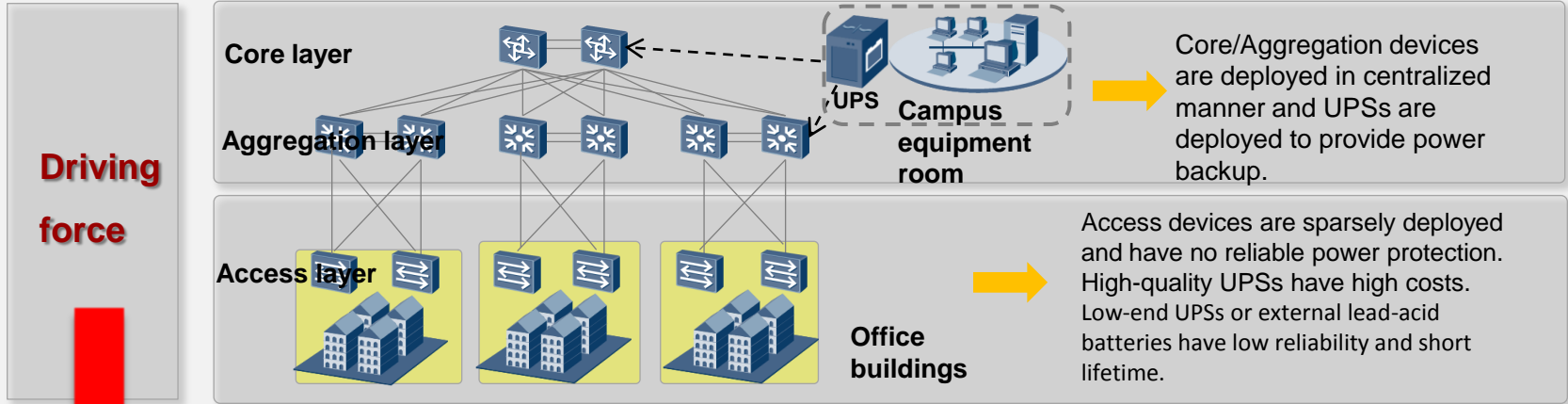
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# S5700-LI-BAT, Providing Service Endurance



**Huawei solution**

Storage battery + Charger + Common switch = S5700-LI-BAT battery LAN switch

- ◆ **High integration and simplified deployment and maintenance:** 4AH and 8AH lithium batteries can be used. The built-in batteries do not occupy extra space and are swappable, which facilitates maintenance and installation.
- ◆ **Intelligent battery management, high endurance, and long service life:** Technologies including advanced battery management algorithm, EEE, CPU frequency adjustment, and port sleeping save power and allows the battery LAN switch to work for 11 hours continuously. The lifespan of the battery is as long as over 4 years.
- ◆ **Visualized management of batteries and predictable battery lifespan:** The battery status is monitored uniformly. The battery can be replaced before the battery lifespan is reached. There is no need to replace batteries periodically. The battery status can be controlled according to the environment, which improves battery reliability.

# Highlight: Do More With Less

## MORE

### High port density

- ◆ 5710-HI supports up to 48\*GE(electrical) + 48\*GE(optical) + 8\*10GE + 4\*40GE or 96\*GE(electrical) + 12\*10GE
- ◆ Dual power supplies greatly improve device reliability.

## FAST

### Fast switchover

- ◆ 5700HI supports hardware-based ETH OAM and BFD, and 3.3 ms detection.
- ◆ 5700 supports SEP/ERPS, 50 ms switchover, and flexible networking.

## FLEXIBLE

### Rich and flexible services

- ◆ 5700-HI/5710-EI supports MPLS L2 VPN/MPLS L3 VPN.
- ◆ S5700 provides 30 W PoE and connects to various APs, helping implement BYOD.

## GREEN

### Energy-saving

- ◆ 5700-LI supports AHM and device sleeping. The S5700-LI consumes **63%** less power than similar products.
- ◆ S5700-28P-LI/S5700S-28P-LI/S5700-10P-LI-AC/S5700-10P-PWR-LI-AC uses a fanless design to reduce power consumption.

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S5700 Switch Highlights

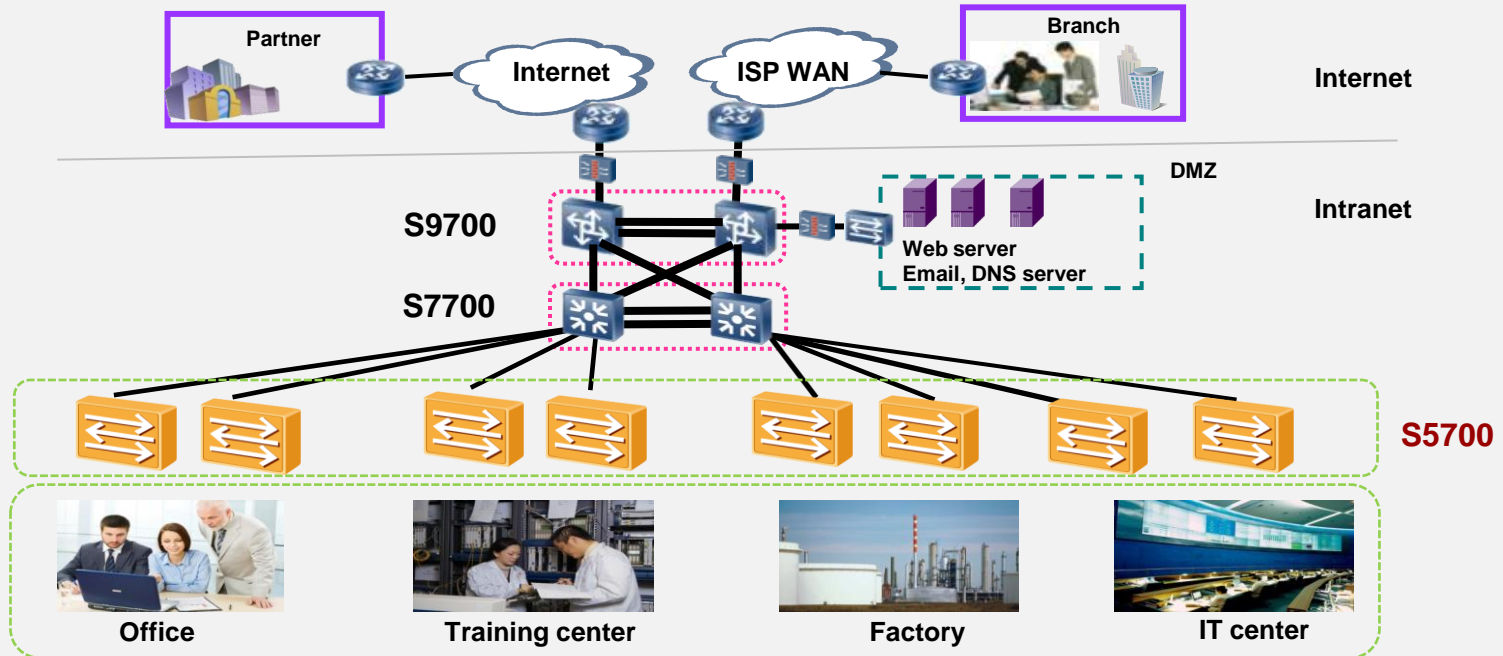
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S5700 Switch Application Scenarios

5

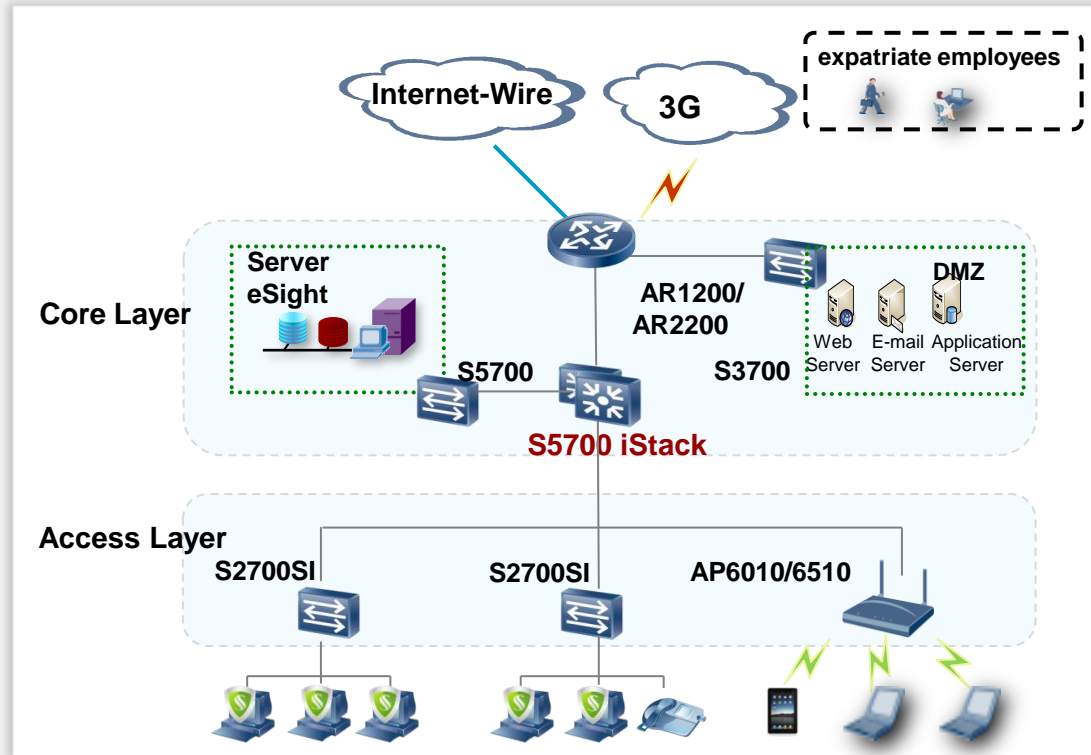
S5700 Switch Success Stories

# Application in Large-scale Enterprises



S5700 series switches can be used as access switches on large-scale enterprise networks to provide gigabit access. CSS technology is used to improve network reliability.

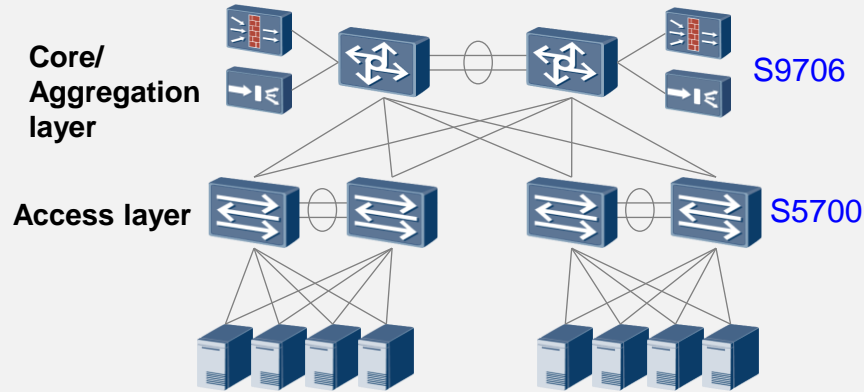
# Application in Small-scale Enterprises (or Branches)



➤ S5700 series switches can be used as core/aggregation switches in small- and medium-scale enterprises or branches of large enterprises. S2700 and S3700 switches can connect to S5700s as access switches.

➤ To improve reliability and simplify operations, multiple S5700s are configured with iStack to form a stack.

# Application in Small- and Medium-scale Data Centers



## Access layer

Active and standby network adapters of each server connect to different S5700s. The S5700 connect to the data center core device through 10GE uplink.

## Core/Aggregation layer

The S9700 uses CSS technology.

## Traffic bandwidth

4\*40GE uplink ports are connected.

Device	Desktop Data Center
Server	Less than 1800 servers
Core/Aggregation switch	Two S9706s
Access switch	76 S5700s (48GE+2*10GE)
Firewall	Two Eudemon devices



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S5700 Switch Success Stories

# Network Solution for Netherlands Overijssel Province

## Background

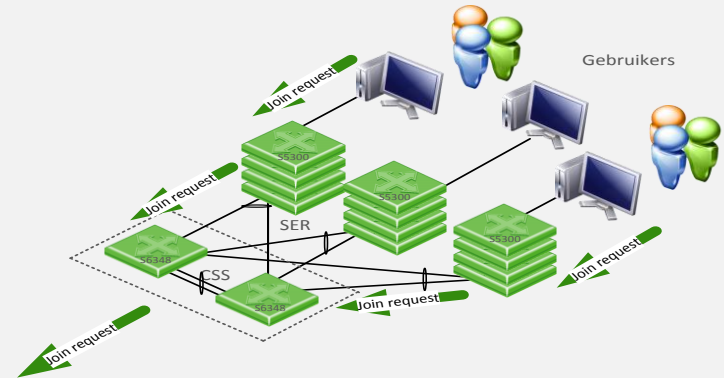
- Overijssel government needed to send information to its employees, the public, and other national governmental departments.
- Establishing a robust network was essential for communication and cooperation between governmental departments.

## Huawei Solution

- Huawei cooperated with TENICT to provide a switch-based network solution for the Overijssel province.
- The solution used S5700 switches with PoE and stacking functions.
- The S5700's PoE function complies with IEEE 802.3af and IEEE 802.3at. The S5700 provides a maximum of 30 W power per port.
- Two 10 G S6700 switches were deployed at the core/server layer, forming a stack system across two data centers. Each server connects to S5700's GE ports through several NICs for backup.

## Customers Benefits

- Unlike the devices on the original network, all Huawei access switches provided PoE functions to facilitate powered device management.
- The new LAN uses a highly scalable architecture and provides high availability at low cost.



# Jiangsu Institute of Standardization in China

## Background

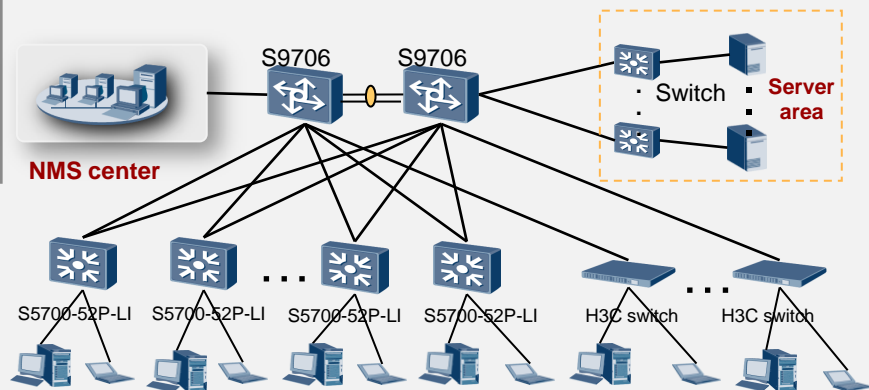
- The entire office building network of the Jiangsu Institute of Standardization uses H3C devices. H3C products and after-sale service are already in use by the customer.
- Since the original network was constructed long ago, devices on the live network are outdated, performance is low, and network faults are common. The customer concluded that core, aggregation, and access switches needed to be replaced, and chose to build a gigabit-to-desktop network to ensure reliability of services and applications and to reduce security risks.

## Huawei Solution

- The new building network uses 2 Huawei S9706 high-end switches and 10 S5700-52P-LI full series switches as corridor switches to replace H3C access switches. In some areas the H3C access switches were retained.
- Each S5700-52P-LI corridor access switch connects to the S9706s through two uplinks. VRRP is used to ensure high reliability.

## Customers Benefits

- Huawei's high-performance virtualized core switch S9706 allowed the network to extend the backbone network capacity to 10GE or even 40GE.
- The S5700-52P-LI provided the network with gigabit-to-desktop capabilities.
- This solution provided the Institute with the strong processing capabilities, service capacity, and smooth migration it required.



# Xinjiang "Gold Agriculture" Project

## Background

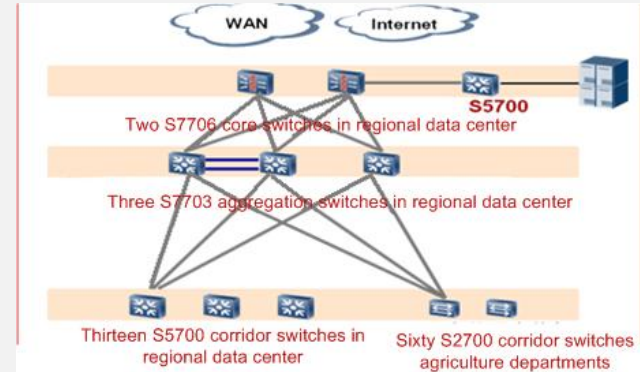
- Xinjiang autonomous region in China sought to build an agriculture e-government network based in the regional data center and covering all the agricultural departments in Xinjiang.
- The agriculture e-government network needed to collect and analyze agricultural data to help agricultural departments improve economic regulation, market supervision, and public service capabilities.
- Agricultural information needs to be shared throughout the entire autonomous region.

## Huawei Solution

- The agriculture e-government network uses 2 Huawei S7706s as core switches, 3 S7703s as aggregation switches, 13 S5700-24TP-SIs as data center access switches, and 60 S2700-26TP-EIs as access switches for each agricultural department.

## Customers Benefits

- Secure and reliable network
- Cost-effective network, simple configuration and maintenance
- An e-government system covering all agricultural departments in Xinjiang
- Data collection and sharing between agricultural departments, helping improve economic regulation, market supervision, and public service capabilities



# ICBC Europe Branch Project

## Background

■ ICBC start their new business in Europe and ask Huawei , a global vendor ,offer the ICT solution; ICBC Poland is the first branch. Huawei offer the integrated network solution to help them speed up the service

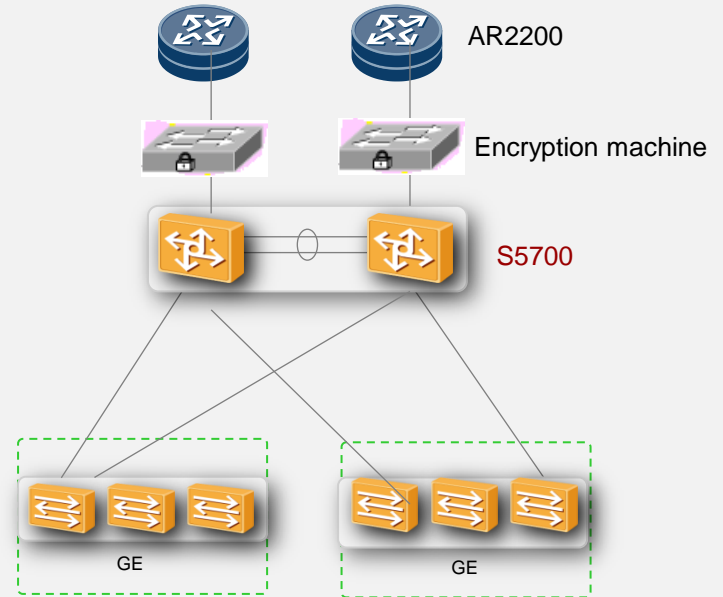
## Huawei Solution

- Two AR2200 work as the enterprise gateway which connect PBX by E1 interface.
- S5700E1 work at the aggregation layer with the 1+1 backup ;
- S5700E1 work as the edge of L3 and L2.
- The access switch dual connect S5700 in uplink.

## Customers Benefits

- the eSight NMS system offered as a uniform NMS to ICBC and it save lots of operation costs for the customer.
- Huawei ARG3 router integrate IP PBX and SRST function. Unified network for the data and voice service.

ICBC  中国工商银行



# Agricultural Bank of China Upgrading Level-Two Network for Branches

Finance

## Background & Requirements

- Agricultural Bank of China (ABC) is one of China's four state-owned integrated financial services providers. In 2011, ABC was elected no. 127 in the Fortune magazine's Global top 500.
- ABC has 23,461 domestic branches and three overseas branches and four overseas representative offices. The customer required a total solution to solve the business connection between all of branches and the headquarters.

## Huawei Solution

- Huawei made use of the link resources provided by local operators, and used the unified router and the campus switch to upgrade existing secondary network for the business connection the headquarters and branches.
- Carrier class reliability ensures data security and uninterrupted running businesses.
- S9300 series LAN switches 12 Tbps backplane guarantees good scalability and smooth upgrade.
- Product: S9300

## Benefits

- The Huawei Help Agricultural Bank of China to complete the secondary network upgrade for each the provincial branch.
- The network which had altered effectively support the smooth deployment of the new generation core banking.



One of four state-owned and comprehensive financial service providers in China , 127th in Fortune 500

# BovenIJ Hospital Project

## Requirements

- BovenIJ ziekenhuis is a public hospital in Netherlands. In 2010, the healthcare industry WAN bandwidth had upgraded from GE to ten GE, but most of hospitals had still used stale datacom devices.
- Today all the hospitals in the Netherlands need to upgrade their Core, aggregation and access switches step by step. The BovenIJ hospital that as a leader among the hospitals have decided to replace their core and aggregation switches with HUAWEI.

## Huawei Solution

Huawei and its partner TENICT designed the upgrading solution to replace their existing devices for BovenIJ hospital in 2011.

- Huawei offered S5700TP with PoE and stack possibilities to the access layer. The PoE work according the IEEE 802.3af and IEEE 802.3at standards with a max 30 watt per port.
- The core layer will replace by the 10Gbit switches (S6700), and two S6700 where in different area interconnect through the long-distance stack each other

## Benefits

- Huawei offered the switches with PoE and stack possibilities if compare to the existing network, this gives a lot of standardization in case of choice of switch type, configuration, capacity and stock management.
- The long distance iStack solution provide BovenIJ hospital high availability, the e-sight NMS system offered as a uniform NMS to BovenIJ and it save lots of operation costs for the customer.



# Data Center Upgrade of Phoenix Satellite Television

## Background & Requirements

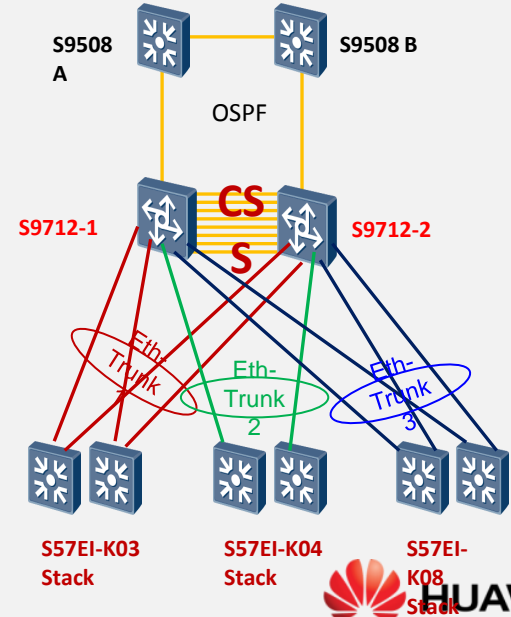
- Phoenix Satellite Television is now an international multi-media group that enjoys a global reputation.
- The widespread high-definition (HD) video resulted in that the current core LAN switches in the data center of Phoenix Satellite TV couldn't meet the requirements, more bandwidth and reliability, and more fluid experience were required urgently.

## Huawei Solution

- The strategy of Layer-II networking, cluster technology and stack technology created a loop-free network with reliability.
- High security and easy business isolation.
- The unique hardware probe of X7 series LAN switches monitored the real-time network quality, thereby controlling and managing the network more easily.
- The related Products: S9700/S5700.

## Benefits

- Huawei LAN switches (X7 series) upgraded the data center network of Phoenix TV, which satisfied the needs of high bandwidth for HD video editing and producing.
- High reliability inside the LAN switches guaranteed the real-time release and live broadcast of the news, and the character of low latency enhanced user experience with VoD services.





# Wey Elektronik-IP KVM Solution

## Background

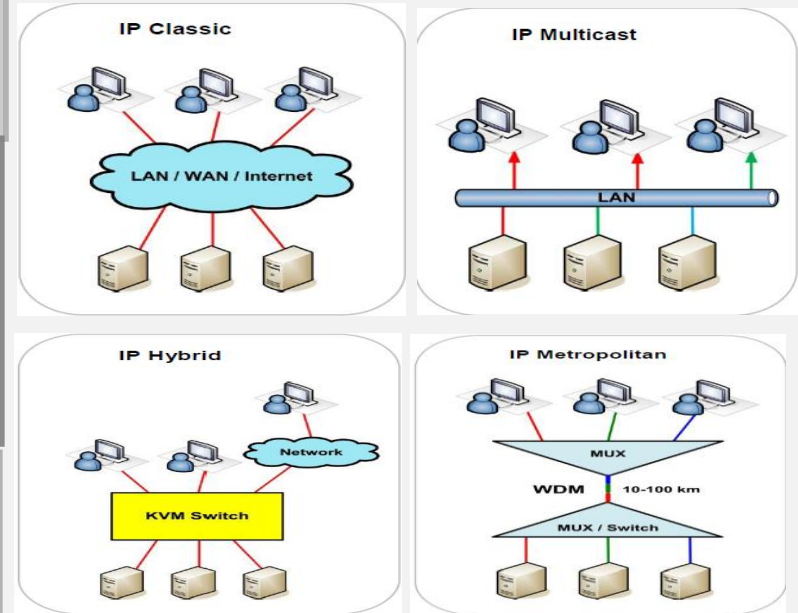
- The Wey group is an international provider of integrated solutions in the areas of commodity trading, security, control centers, and health care.
- The Wey group chose Huawei, a global IP product provider, to consolidate the IP KVM solution.
- The solution used switches and WDM devices.

## Huawei Solution

- The Wey Elektronik-IP KVM solution involved IP and WDM products. Huawei S9300 and S5700 series switches had passed the certification test and were used in the solution.
- The solution realized high reliability of the devices and the entire network.
- Huawei S9300 and S5700 series switches provided high port densities.
- Huawei provided technical support and services, including maintenance, training, spare parts, and TAC.

## Customers Benefits

- This end-to-end solution provides various multicast features, such as prompt leave, unknown multicast packet drop, and hardware-based flow control, to enhance service reliability.
- Huawei's fast delivery capabilities meet the customer's requirement for efficient network deployment and global technical support.
- Huawei switches provide high densities of GE optical/electrical ports, which are cost effective.





## HUAWEI ENTERPRISE ICT SOLUTIONS **A BETTER WAY**

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