

H3C S3100 Series Intelligent Access Switches

H3C S3100 series intelligent Ethernet switches are wire-speed Layer 2 Ethernet switching products. They are intelligent network manageable switches designed for the network environments that require high performance, high port density and easy installation.

The S3100 series switches provide 10/100 Mbps downlink and 1000 Mbps uplink Ethernet ports. In enterprise networks, they can serve as access devices for 100 Mbps-to-desktop applications. In metropolitan area networks (MANs) or various industry networks, they connect end users or aggregate low end switches through 100 Mbps electrical interfaces in the downlink direction, and converge at an IP switching center or a large capacity Layer 3 switch in the uplink direction through GE interface or link aggregation.

Currently, the S3100 series switches include the following models: **S3100-8C-SI**, **S3100-16C-SI**, **S3100-26C-SI**, **S3100-8T-SI**, **S3100-16T-SI**, **S3100-26T-SI** and **S3100-26TP-SI**¹. **S3100-16C-SI**, **S3100-26C-SI**, **S3100-26T-SI** and **S3100-26TP-SI** are stackable and others are stand alone.



S3100-8T-SI



S3100-8C-SI



S3100-16T-SI



S3100-16C-SI



S3100-26T-SI



S3100-26C-SI



S3100-26TP-SI

¹ Special Mounting Angle Sets shall be ordered separately if S3100-8T-SI or S3100-8C-SI is installed into a standard 19-inch cabinet.

The S3100-8T-SI provides 8 10/100M BASE-TX Ethernet ports, 1 console port and 1 10/100/1000BASE-T ports.

The S3100-16T-SI provides 16 10/100M BASE-TX Ethernet ports, 1 console port and 1 10/100/1000BASE-T ports.

The S3100-26T-SI provides 24 10/100M BASE-TX Ethernet ports, 1 console port and 2 10/100/1000BASE-T ports.

The S3100-8C-SI provides 8 10/100M BASE-TX Ethernet ports, 1 console port and 1 extended module slots, including both AC and DC models.

The S3100-16C-SI provides 16 10/100M BASE-TX Ethernet ports, 1 console port and 2 extended module slots, including both AC and DC models.

The S3100-26C-SI provides 24 10/100M BASE-TX Ethernet ports, 1 console port and 2 extended module slots, including both AC and DC models.

The S3100-26TP-SI provides 24 10/100M BASE-TX Ethernet ports, 1 console port and 2 combo ports

Key Features and Benefits

➤ Full wire-speed layer 2 switching

All the S3100 series switches employ full wire-speed switching to ensure their capability to forward packets fast even in a heavy load. They can provide 10/100 Mbps downlink and 100 Mbps/1000 Mbps uplink Ethernet ports.

➤ High reliability

- The S3100 series switches support STP/RSTP/MSTP (Spanning Tree Protocol/Rapid Spanning Tree Protocol/Multiple Spanning Tree Protocol). The STP/RSTP features also support BPDU guard、Root guard、Loop guard、Edge-port and STP ignored per VLAN². Thus the redundancy back-up and error tolerance capability of the link can be greatly improved to guarantee the network stability.
- The S3100 series switches support link-aggregation, it is a simple and cheap way to expand the bandwidth of a switch port and balance the traffic among all the ports in a link aggregation. Moreover, it enhances the connection reliability.

➤ Comprehensive security control policies

- The S3100 series switches support Centralized MAC address authentication and user authentication at the local or with RADIUS servers that are based on 802.1x or its extension. 802.1x-based user authentications can be extended to dynamically assign a VLAN based on a specific user, regardless of where they connect on the network. With 802.1x with Guest VLAN, guests are allowed access the customer's internal network but cannot access to the Internet via the Guest VLAN.
- The S3100 series switches support binding of MAC addresses and ports to prevent illegal

² For detail information, please refer to S3100 series switches system description.

users from accessing the network effectively. MAC address black hole function allows switch drops the packet when the switch receives a packet with a source or destination MAC address in the black hole. MAC address learning limit function limits the number of MAC addresses learned by an Ethernet switch port while the static MAC addresses added on the port are not affected.

- The S3100 series switches also support remote switched port analyzer (RSPAN), which enhancing the monitoring of the network. SSH v2 is supported and secures the sessions using standard cryptographic mechanisms, thus providing high security. Port isolation prevents visiting between the ports, effectively controls unnecessary broadcasting and increases the network security.

➤ **QOS**

- The S3100 series switches support bidirectional port rate-limiting with the granularity of 64 Kbps, supporting finer bandwidth allocation. Port Mirroring is supported, when this function is applied, data packets on a mirroring port are copied to its monitor port for network test and troubleshooting.
- The S3100 series switches support the queue scheduling algorithms of Weighted Round Robin (WRR) and High-priority Queuing + WRR (HQ+WRR). On a switch of the S3100 series, each port supports four output queues. The port flow control is used by the S3100 series switches to reduce congestion on the network.
- The S3100 series switches support 3 priority criteria: IP-precedence priority, differentiated services codepoint priority (DSCP), and 802.1p priority. Customers can add packets to the output queue according to a priority criterion as needed.

➤ **Diversified management modes and maintenance**

- The S3100 series switches can support SNMP v1/v2/v3 and can be managed by Quidview NMS. They also support CLI, Web network management, Telnet to facilitate the equipment management.
- VCT³ (Virtual Cable Test) is supported, which is convenient for troubleshooting. Customers can start the VCT function to make the system test the cable connected to the current electrical Ethernet port. The test items include: whether short or open circuit exists in the Rx/Tx direction of the cable, and what is the length of the cable in normal status or the length from the port to the fault point of the cable.
- After enabling HGMP V2, the network administrator can manage several member switches through one command switch and only the command switch need a public network IP address, it can save public IP address greatly and manage the network more efficiently.

➤ **Easy to use and deployment**

- S3100-16C-SI or S3100-8C-SI can be a standard POE powered device, there is no need to do creative power budgeting or adding an external power shelf, reducing the cost and

³ For detail information, please refer to S3100 series switches system description.

complexity of IP Communications.

- S3100-16C-SI, S3100-26C-SI, S3100-26T-SI and S3100-26TP-SI are stackable, allowing network managers to build networks with high expansibility, high reliability and easy management.
- “Pay as you go” is the slogan of the S3100 series switches, offering a cost-effective path for meeting current and future service requirements of customers.

Specifications

Feature	S3100-26C-SI	S3100-16C-SI	S3100-8C-SI	S3100-26T-SI	S3100-16T-SI	S3100-8T-SI	S3100-26TP-SI
Fixed ports	(1)24 10/100 BASE-TX ports (2) 1 console port.	(1)16 10/100 BASE-TX ports (2) 1 console port.	(1)8 10/100 BASE-TX ports (2) 1 console port.	(1) 24 10/100 BASE-TX ports (2) 2 10/100/1000 BASE-T ports (3) 1 console port.	(1) 16 10/100BASE-T X ports (2) 1 10/100/1000 BASE-T port (3) 1 console port.	(1) 8 10/100BASE -TX ports (2) 1 10/100/1000 BASE-T port (3) 1 console port.	(1) 24 10/100 BASE-TX ports (2) 2 Combo ports (3) 1 console port.
Extended Slot	2	2	1	No			
Extended Module	(1)1*10/100/1000BASE-T:max transmission distance: 100 m (328 ft) (2)1*100BASE-SX: SC connector, 2 km (1.24 mi) (3)1*100BASE-LX: SC connector, 15 km (9.32 mi) (4)1*100BASE-LH40: SC connector, 40 km (24.86 mi) (5)1*1000BASE-SX: SC connector, 0.5km (0.31 mi) (6)1*1000BASE-LX: SC connector, 10 km (6.21 mi) (7)1*1000BASE-LH40: LC connector, 40 km (24.86 mi) (8)1*1000BASE-LH70: LC connector, 70 km (43.50 mi) (9)1*1000BASE-STACK (not supported by S3108C) (10)1*100BASE-TX PD (Powered Device) (not supported by S3126C)			No			
Performance							
Switching capacity	8.8 Gbps	7.2 Gbps	3.6 Gbps	8.8 Gbps	5.2 Gbps	3.6 Gbps	8.8 Gbps
Switching Fabric	19.2Gbps	19.2Gbps	19.2Gbps	19.2Gbps	19.2Gbps	19.2Gbps	19.2Gbps
Throughput	6.55 Mpps	5.36 Mpps	2.68 Mpps	6.55 Mpps	3.87Mpps	2.68 Mpps	6.55 Mpps
Stack (HGMP V2)	Yes	Yes	No	Yes	No	No	Yes
Max stack numbers	16	16	No	16	No	No	16
Stack bandwidth (bps)	4G	4G	No	4G	No	No	4G

POE (As PD)	No	Yes ⁴	Yes ⁵	No	No	No	No
latency	<10μs						
Layer 2 Switching							
MAC Address	Up to 8 K MAC addresses 1 K static MAC addresses Adding of dynamic/static unicast MAC address, multicast MAC address, and black hole MAC Address						
Port Mirroring	Many-to-one port mirroring (that is, multiple mirroring ports, and one monitor port) Remote switched port analyzer (RSPAN)						
Port Features	Port isolation Port self-loop detection Port loopback (internal/external test)						
VLAN	4k VLANs (IEEE 802.1Q) GVRP (GARP VLAN Registration Protocol) Port-based VLAN VLAN Tag Frame Extension						
Link Aggregation	Up to 3 maximum aggregation groups (2 FE groups and 1 GE group), each containing up to 8FE/2GE						
Traffic control	IEEE 802.3x full-duplex flow control Back-pressure based flow control (half duplex)						
STP/RSTP/MSTP	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)						
Multicast	MVR(Multicast VLAN Registration) 256 Multicast groups IGMP (Internet Group Management Protocol) snooping on Layer 2 interfaces						
Network protocol	DHCP Snooping (Dynamic Host Configuration Protocol Snooping) Support NTP (Network Time Protocol) ARP						
Convergence							
QoS(Quality of Service)	Four output queues on each port Support flexible queue scheduling algorithms: <ul style="list-style-type: none"> • WRR (Weighted Round Robin) • HQ+WRR (High-Priority Queuing + WRR) Support bi-directional port rate-limiting with the granularity of 64kbit/s Port bandwidth percentage-based Broadcast storm suppression Drop of unknown multicast packets						
Security							
Various Security	SSHv2 Guest VLAN MAC Black Hole DHCP Snooping Centralized MAC Address Authentication						
Network Login	Hierarchical user management and password protection Port-based and MAC-based 802.1X authentication Local authentication server PEAP/TLS (Protected Extensible Authentication Protocol/Transport Layer Security)						
Management							
System Configuration and Management	Support CLI (Command Line Interface) configuration mode Support Configuration via the console port Support Local/remote configuration via Telnet Support System configuration with SNMP v1, 2, and 3 Support RMON (Remote Monitoring) v1 1, 2, 3 and 9 groups of MIB Support Quidview and iManager N2000 network management system Support WEB management system Support Hierarchical alarms Support System log						

⁴ Only for S3100-16C-SI-DC input

⁵ Only for S3100-8C-SI-DC input

System maintenance	Debug information output Ping, traceroute, multicast traceroute Remote maintenance through Telnet VCT (Virtual Cable Test)						
Hardware configuration							
Outline dimensions (mm) (HxWxD)	42 x 436 x 240 mm (1.7 x 17.2 x 9.5 in)	42 x 436 x 200 mm (1.7 x 17.2 x 7.9 in)	42 x 326 x 200 mm (1.7 x 12.8 x 7.9 in)	42 x 436 x 240 mm (1.7 x 17.2 x 9.5 in)	42 x 436 x 200 mm (1.7 x 17.2 x 7.9 in)	42 x 326 x 200 mm (1.7 x 12.8 x 7.9 in)	42 x 436 x 240 mm (1.7 x 17.2 x 9.5 in.)
Weight	< 3.2kg (7.1 lb)						
Fan	No Fan						
Maximum system power consumption	20 W	12 W	10 W	20 W	12 W	10 W	20W
Input voltage	Two models of switches are available, one supports AC input and the other supports DC input. AC input: Rated voltage range: 100V~240V, 50/60 Hz Max voltage range: 90V~264V, 47~63 Hz DC input: Rated voltage range: -48V ~ -60V Max voltage range: -36V ~ -72 V			AC input AC: 100V~240V, 50/60 Hz Max Voltage Range: 90V~264V, 47~63 Hz			
MTBF	S3100-8C-SI: 59.25 years(519,030hours) S3100-16C-SI: 50.91 years (445,971hours) S3100-26C-SI: 41.45 years (363,102hours) S3100-8T-SI: 46.59 years (408,128hours) S3100-16T-SI: 46.59 years (408,128hours) S3100-26T-SI: 33.26 years (291,357hours) S3100-26TP-SI: 45.37 years (397,441hours)						
Environment	Working temperature: 0~45°C (32°F ~ 113°F) Storage temperature: -40 ~ 70°C (-40°F to 158°F) Relative humidity: 10%~90%, non-condensing Operating temperature: 0°C to 45°C (32°F to 113°F)						

Industry Standards Support

- **Ethernet Protocols**

IEEE 802.1D (STP)
IEEE 802.1p (CoS)
IEEE 802.1Q (VLANs)
IEEE 802.1w (RSTP)
IEEE 802.1s (MSTP)
IEEE 802.1X (Security)
IEEE 802.3i (10BASE-T)
IEEE 802.3u (Fast Ethernet)
IEEE 802.3x (Flow Control)
IEEE 802.3z (Gigabit Ethernet)

- **Administration Protocols**

RFC 1812 (IPv4)
RFC 826 (ARP)
RFC 959 (FTP)
RFC 783 (TFTP)
RFC 2474 (Diffserv)
RFC 2865 (Radius Authentication)
RFC 2866 (Radius Accounting)
RFC 2869 (RADIUS Extensions)

Safety and Compliance

- **Emissions / Agency Approvals**

CISPR 22 Class A
FCC Part 15 Class A
EN 55022 Class A
ICES-003 Class A
VCCI Class A
Korean EMI Class A
AS/NZS 3548 Class A
CNS 13438 Class A
EN 61000-3-2
EN 61000-3-3

- **Immunity**

Product conforms to:

EN 55024: 1998
EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-11

- **Safety Agency Certifications**

UL 60950 3rd ed.
IEC 60950: 1999, corr. Feb. 2000; all national deviations
EN 60950: 2000, ZB and ZC deviations

NOM-019 SCFI

Mexico, AS/NZS 60950:2000

Australia、 Russian GOST safety approval

Typical Applications

Application in Small Enterprise Networks

In the network of small enterprise, the S3100 series switch can serve as the access switches, which connect to the layer-3 switch through the GE port or expansion module. When the size of the enterprise increases, the network can also be easily expanded by using the stack technology supported by the S3100 series switches.

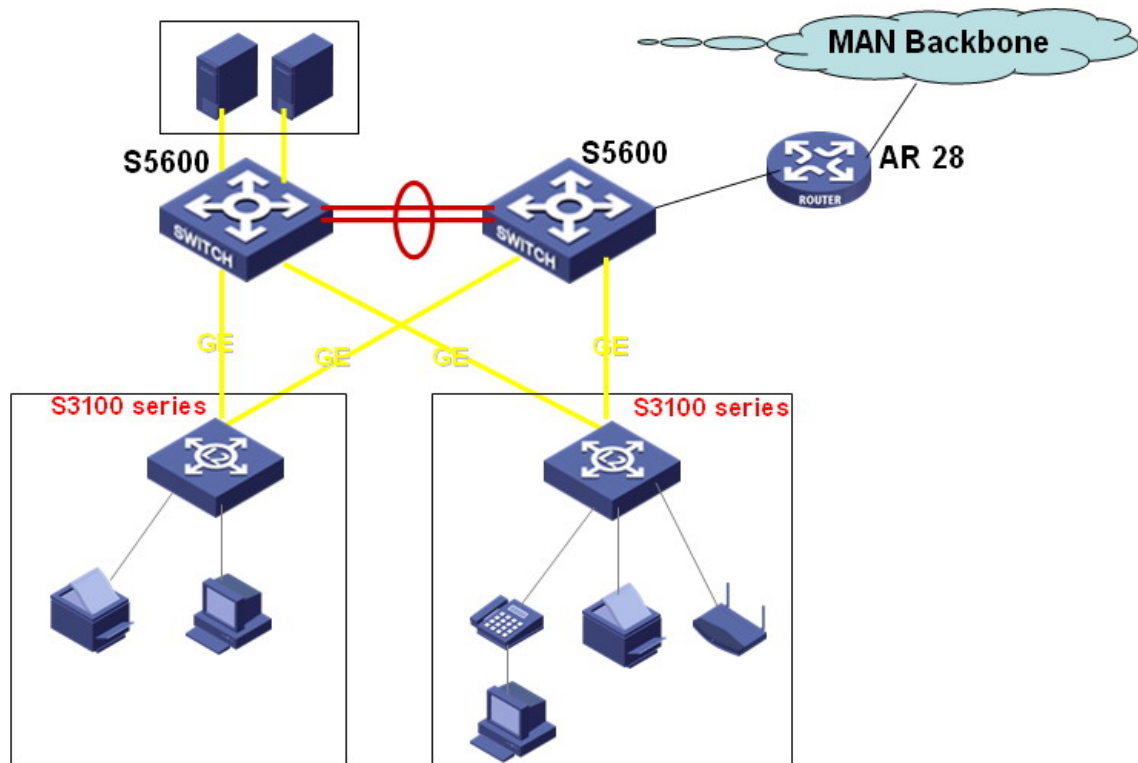


Figure 1: Small Enterprise Networks

Application in Education Networks

In a campus network, the S3100 series can serve as desktop switching devices at the access layer. They directly connect to users in education buildings through 100 Mbps downlink interfaces; and connect to the core switch in the campus through a 1000 Mbps uplink interface; the core switch further connects to the education network through a router. This enables the users in the campus to exchange information and share resources in the scope of the education network.

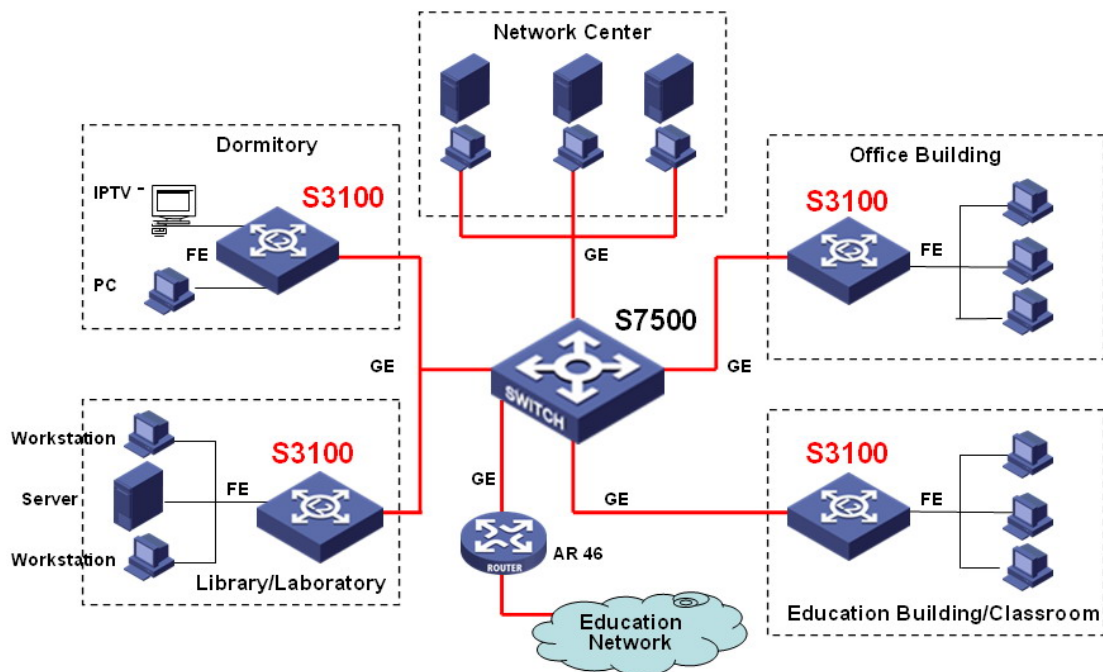


Figure 2: Education Networks

Huawei-3Com., Ltd.

Add: Liuhe Road
Zhijiang Science Park,
Hangzhou 310053, P.R. China

Tel: +86 86760000

Email: customer_service@huawei-3com.com

Version No. : GE-082230-20051201-BR-V4.0

Website : www.huawei-3com.com

Copyright@2005 by Huawei-3Com Co., Ltd.

All product photography in this literature is intended for reference only. All rights reserved. No part of this document may be reproduced or transmitted in any form or by any company and product names may be trademarks of their respective companies. While every effort is made to ensure the information given is accurate, Huawei-3Com Co., Ltd. Does not accept liability for any errors or mistakes which may arise. Specifications and other information in this document may be subject to change without notice.