

# S3900 Series Switches

## FLEXIBLE ACCESS SWITCHES FOR CONVERGED ENTERPRISE NETWORKS

S3900 series switches are high-performance Gigabit Ethernet L2+( L3 Lite ) managed switches with 128Gbps/216Gbps switching capacity.



## Overview

S3900 series switches is a next-generation aggregation 10GE switch with 24 or 48 1G ports and 4 or 6 10G uplinks.

It is targeted at the IP MAN (metropolitan area network), government and enterprise networks. It supports functions such as powerful ACL, flexible QinQ, 1:1 or N:1 VLAN switching, Ethernet OAM, carrier-level QoS and industry-level 10GE Ether-ring, ensuring this switch series meets application requirements in all kinds of complicated sites.

It also supports layer-3 routing protocol.

## Benefits

- Layer 2+(Layer 3 Lite)
- 4 or 6 Built-in 10G SFP+ Ports for Stacking
- Industry-standard CLI & Web Management
- 1+1 Redundant Power Supply
- Green Ethernet, Low Power Consumption

## Product Characteristics

### Innovative Virtual Cluster Switching Technique

S3900 L3-lite Series virtualizes multiple physical devices into one. The performance, reliability and management of the virtual system are superior to the physical ones.

**Improved Performance:** Makes full use of each link in the physical devices, which avoids STP blocking the link and protects the original link to the maximum extent.

**High Reliability:** Based on the advanced distribution mechanism, the logic control plane, service control plane and service data plane are separated. Thus, S3900 L3-lite Series can support continuous layer-3 routing forwarding, avoiding service interruption as a result of a single point of failure.

**Easy Management:** Realizes single IP management, greatly improving the networking efficiency and lowering the operating cost.

### Industrial Ethernet Ring with Zero Delay and Zero Packet Loss

Supports industry-level EAPS and their protection shift time is less than 50ms. Their high reliability is represented by the null packet loss, which has been proved by many years of application in the Grid, rail transportation and defense systems.

### Telecom-Level Ethernet Switch

Supports the telecom-level Ethernet-ring protection protocol with a protection shift time of less than 50ms, STP/RSTP/MSTP, backup of active and standby uplinks and LACP link aggregation to cater to the requirements of high reliability of carriers.

Support Ethernet standard 802.3u, 802.3x, 802.3ad, 802.1d, 802.1p, 802.1q, 802.1w, 802.1ad.

Support system status LED, port dynamic LED Provides the perfect Ethernet OAM mechanism to monitor the network running status in real time for rapid trouble locating and detection.

Supports powerful ACL functions to access and control L2-L7 data based on physical port, VLAN, MAC, IP and protocol port ID, and providing carriers flexible and various policy control methods.

Supports In-Service Software Upgrade (ISSU) to ensure the unremitting data forwarding during system upgrade.

Supports various L2 multicast functions, including IGMP-Snooping, fast-leave and trans-vlan.

### Flexible and Convenient Management and Maintenance

Supports management modes such as the console port, Telnet, SSH, etc.

Supports the WEB management mode, which is easy and efficient so that it makes installation and debugging convenient.

Supports TFTP-patterned file upload/download management.

Supports ISSU (In-Service Software Upgrade).

Supports SNMP to realize automatic equipment discovery, network topology management, equipment configuration management, performance data statistics and analysis and trouble management.

## Carrier-Level QoS Policies

Supports priority retagging and complicated flow classification based on VLAN, MAC, source address, destination address, IP or priority to better streamline carrier's services.

Supports provides flexible bandwidth control policies and supports port-/flow-based flow limit, and ensuring the line speed forwarding of each port to make sure the high quality of video, audio and data service.

Supports 8 priority queues by each port.

Supports multiple queue schedule algorithms such as SP, WRR, or "P plus WRR".

## Versatile IPv6 Solutions

Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, etc.

Supports Ping, Traceroute, Telnet, SSH, ACL and so like on the basis of IPv6, meeting IPv6 networks' equipment management requirements and service control requirements.

## Perfect Security Mechanisms

Equipment-level security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents, broadcast storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions.

Supports perfect security authentication mechanisms: IEEE 802.1x, Radius and BDTacacs+.

Supports storm/multicast/unicast limit to ensure the normal running of equipment in harsh network conditions.

Supports a perfect ring detection mechanism to ensure the long-term stable running of network.

Supports port isolation within the same VLAN, DHCP-Snooping, and IP plus MAC plus Port binding for ensuring user data security.

## Technical Specification

S3900 series switches come with advanced hardware architecture design and abundant L2 and L2+ features. Here's a look at the details.

### CHARACTERISTICS

	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
<b>Ports</b>			
10/100/1000BASE-T RJ45	24	--	48
1G SFP	--	16	--
RJ45/SFP Combo	--	8	--
10G SFP+	4	4	6
Console Port	1	1	1

**Notes:** RJ45 ports can be used as 10M/100M/1G ports for Ethernet connection. SFP ports are used for 1G connection. SFP+ ports can be used for 1/10G connection. RJ45/SFP Combo ports support one port active at a time.

	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
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### Operating System

OS	FSOS	FSOS	FSOS
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### Performance

Layer Type	Layer 2+(Layer 3 Lite)	Layer 2+(Layer 3 Lite)	Layer 2+(Layer 3 Lite)
Switching Capacity	128 Gbps	128 Gbps	216 Gbps
Forwarding Rate	96 Mpps	96 Mpps	162 Mpps
Flash Memory	16MB	16MB	16MB
RAM	256 MB	256 MB	256 MB

## CHARACTERISTICS

	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
<b>Jumbo Frame</b>	9KB	9KB	9KB
<b>Number of VLANs</b>	4K	4K	4K
<b>MAC Address</b>	16K	16K	16K
<b>Packet Buffer</b>	1.5MB	1.5MB	1.5MB
<b>Stackability</b>	8	8	6
<b>Routing Table (IPv4/IPv6)</b>	502/132	512/129	512/152
<b>MTBF (Hours)</b>	>50,000	>50,000	>50,000
<b>Power</b>			
<b>Power Consumption (no-load)</b>	<24W	<20W	<27W
<b>Power Consumption (full-load)</b>	<37W	<40W	<42W
<b>Input Voltage (AC)</b>	100-240VAC, 50-60Hz;	100-240VAC, 50-60Hz;	100-240VAC, 50-60Hz;

**Notes:** S3900-24T4S-R&S3900-24F4S-R support 8 units hybrid-stacking together. S3900-48T6S-R supports 6 units stacking between same models

## CHARACTERISTICS

	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
<b>Physical and Environmental</b>			
<b>Dimensions (HxWxD)</b>	1.73" x 17.32" x 7.09" (44 x 440 x 180mm)	1.73" x 17.32" x 11.02" (44 x 440 x 280mm)	1.73" x 17.32" x 11.02" (44 x 440 x 280mm)
<b>Rack Space</b>	1U	1U	1U
<b>Power Devices</b>	2x Built-in Power Supplies	2x Built-in Power Supplies	2x Built-in Power Supplies
<b>Fan Number</b>	Fanless	2x Built-in Fans	2x Built-in Fans
<b>Acoustic Noise</b>	0dB	45dB	45dB
<b>Airflow</b>	--	Left to Right	Left to Right
<b>Weight</b>	5.73 lbs (2.6kg)	8.82 lbs (4kg)	9.48lbs (4.3kg)
<b>Operating Temperature</b>	-4°F to 149 °F (0°C to 65°C)	-4°F to 149 °F (0°C to 65°C)	-4°F to 149 °F (0°C to 65°C)
<b>Storage Temperature</b>	-4°F to 158°F (-20°C to 70°C)	-4°F to 158°F (-20°C to 70°C)	-4°F to 158°F (-20°C to 70°C)
<b>Operating Humidity</b>	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)
<b>Storage Humidity</b>	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)
<b>Warranty</b>			
<b>Warranty</b>	4 Years	4 Years	4 Years

## FEATURES

Functionality	Description
<b>VLAN</b>	<ul style="list-style-type: none"> <li>4K Active VLAN</li> <li>GVRP</li> <li>Voice VLAN</li> </ul>
<b>QoS</b>	<ul style="list-style-type: none"> <li>HQoS</li> <li>MAC/IP/TCP/UDP/VLAN/ COS/ DSCP/ TOS based QoS</li> <li>802.1P/ DSCP priority re-labeling</li> <li>SP, WRR, and "SP+WRR"</li> <li>Tail-Drop</li> <li>WRED</li> </ul>
<b>Reliability</b>	<ul style="list-style-type: none"> <li>Static/LACP link aggregation, supports 64 aggregation groups and each group can add up to 8 ports</li> <li>Interface backup</li> <li>EAPS and ERPS</li> <li>ISSU uninterrupted system upgrade BVSS, ups to 16-units per stack</li> </ul>
<b>Spanning Tree</b>	<ul style="list-style-type: none"> <li>802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP)</li> <li>BPDU guard, root guard and loopback guard</li> </ul>
<b>Multicast</b>	<ul style="list-style-type: none"> <li>IGMP v1/v2/v3</li> <li>IGMP Snooping</li> <li>IGMP Fast Leave</li> <li>MVR</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>Port isolation</li> <li>Port security</li> <li>"IP+MAC+port" binding</li> <li>MAC sticky DAI &amp; IP source guard</li> <li>PPPoE+</li> <li>IEEE 802.1x, AAA, Radius and BDTacacs+</li> <li>L2/L3/L4 ACL flow identification and filtration</li> <li>Anti-attack</li> <li>Broadcast/multicast/unknown unicast storm-control</li> </ul>

## FEATURES

Functionality	Description
<b>Management</b>	Console, Telnet, SSH v1/2, HTTP,HTTPS, SNMP v1/v2/v3, RMON TFTP, FTP, SFTP NTP ZTP SPAN RSPA
<b>IPv6</b>	ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet IPv6 neighbor discovery, Path MTU discovery MLD V1, MLD snooping IPv6 Static Routing, RIPng, OSPFv3
<b>DHCP</b>	DHCP server/relay DHCP snooping/option82
<b>QinQ</b>	QinQ & Selective QinQ

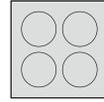
### S3900-24T4S-R Switch Accessories



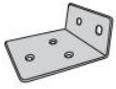
Power Cord x2



Grounding Cable x1



Rubber Pad x4



Mounting Bracket x2

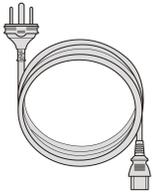


Console Cable x1



M3 Screw x6

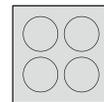
### S3900-24F4S-R Switch Accessories



Power Cord x2



Grounding Cable x1



Rubber Pad x4



Mounting Bracket x2



Console Cable x1



M3 Screw x8

## S3900-48T6S-R Switches Accessories



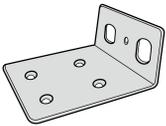
Power Cord x2



Grounding Cable x1



Rubber Pad x4



Mounting Bracket x2



Console Cable x1



M3 Screw x8



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