S3900-R Series Switches
Data Sheet

Contents

▌ Product overview

FS S3900-R 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 Ethering, ensuring this switch series meets application requirements in all kinds of complicated sites.

S3900-24T4S-R is an advanced Layer 2 Plus (Layer 3 Lite) Gigabit managed stackable switches with 24x 10/100/1000BASE-T and 4x 10Gb SFP+ uplinks, dual redundant power supplies and the fanless design guarantees the switch always working silently, and ensures that the power supply of the switch will not be interrupted even if it fails, providing improved ease of use, highly secure business operations, improved sustainability, and a borderless network experience.

S3900-24F4S-R is an advanced Layer 2 Plus (Layer 3 Lite) Gigabit managed stackable switches with 8x 1G RJ45/ SFP Combo, 16x SFP ports, 4x 10G SFP+ uplinks, dual
redundant power supplies and dual fans design guarantees the stable operation of the switch, providing improved ease of use, highly secure business operations, improved sustainability, and a borderless network experience.

S3900-48T6S-R is an advanced Layer 2 Plus (Layer 3 Lite) Gigabit managed stackable switches with 48x 10/100/ 1000BASE-T and 6x 10Gb SFP+ uplinks, dual redundant power supplies and dual fans design
ensures that the power supply of the switch will not be interrupted even if it fails, providing improved ease of use, highly secure business operations, improved sustainability, and a borderless network experience.

The S3900-R series switches support stacking capability with 1 and 10 Gigabit connectivity and advanced QoS to the network edge, while maintaining simple management. Ideal Gigabit access and aggregation switches designed for SMB, enterprise, midmarket, and branch office networks to provide lower total cost of ownership.

Product highlights

- No Broadcom Chip, Support Stacking Between S3900-R Series

- Dual Power Supplies for S3900-R Series

- Support QoS, LACP, ACL, VLANs, DHCP, ERPS, etc.

- IPv4/IPv6 Dual Protocol Stack

- Support CLI/WEB/SNMP/SSH for Flexible Operation

- Network Monitoring through Sampled Flow (sFlow)

- Support SSH, ACL, 802.1X, RADIUS, TACACS+, etc. for Security

- Comprehensive Layer 2+ Functionality with No License Required

▎ Platform details

Switch models and configurations

Figures 1 through 3 show the FS 3900-R series switches.

| ❶ CONSOLE | ❷ 24x 10/100/1000BASE-T RJ45 | ❸ 4x 10G SFP+ |

Figure 1.

S3900-24T4S-R, 24-Port Gigabit Ethernet L2+ Switch, 24 x Gigabit RJ45, with 4 x 10Gb SFP+ Uplinks, Stackable Switch, Fanless

| ❶ 8x RJ45/SFP Combo | ❷ 16x 1G SFP | ❸ 4x 10G SFP+ |

Figure 2.

S3900-24F4S-R, 16-Port Gigabit Ethernet L2+ Switch, 16x 1Gb SFP, with 8x Gigabit RJ45/SFP Combo, 4 x 10Gb SFP+ Uplinks, Stackable Switch

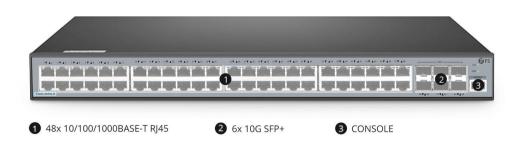| ❶ 48x 10/100/1000BASE-T RJ45 | ❷ 6x 10G SFP+ | ❸ CONSOLE |

Figure 3.

S3900-48T6S-R, 48-Port Gigabit Ethernet L2+ Switch, 48 x Gigabit RJ45, with 6 x 10Gb SFP+ Uplinks, Stackable Switch

Switch configurations and port density

Table 1 shows the FS S3900-R series configurations and port density.

Table 1.　　　Switch configuration and port density of S3900-R Series Switches

FS P/N	S3900-24T4S- R	S3900-24F4S- R	S3900-48T6S- R
Description	24- Port Gigabit Ethernet L2+ Lan Access Switch, 24 x Gigabit RJ45, with 4 x 10Gb SFP+	16- Port Gigabit Ethernet L2+ Lan Access Switch, 16x 1Gb SFP, with 8x Gigabit RJ45/SFP Combo, 4 x 10Gb SFP+	48- Port Gigabit Ethernet L2+ Lan Access Switch, 48 x Gigabit RJ45, with 6 x 10Gb SFP+
Port			
10/100/1000BASE-T RJ45 port density	24	-	48
1 G port density	-	16	-
Combo ports density	-	8 (RJ45/SFP)	-
10G port density	4	4	6
Console port	1	1	1
Memory and processor			
CPU	RTL9301-CG	RTL9301-CG	RTL9311-CG
OS	FSOS	FSOS	FSOS
RAM	256MB	256MB	512MB
Flash memory	16MB	16MB	16MB
Packet Buffer	1.5MB	1.5MB	2MB

Note:

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.

Power supplies and fans

The FS S3900-R Series switches ship with the dual AC power supply as default.

Table 2 provide more details on the FS S3900-R series power supplies and fan specifications.

Table 2. Power supply and fan specifications of S3900-R Series Switches

Description	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
Power supply	2 built-in power supplies	2 built-in power supplies	2 built-in power supplies
Fan number	Fanless	2 built-in fans	2 built-in Fans
Airflow	-	Left-to-Right	Left-to-Right
Acoustic noise	0dB	45dB	45dB
Maximum fan speed	6200±10%	6200±10%	6200±10%
Max. power consumption	25W	41W	51W
Power max rating	36W*2	36W*2	78W*2
Input-voltage range and frequency	• Rated voltage range: 100-240VAC; 50-60Hz		
Power supply efficiency	≥84%	≥84%	≥82%
Input current	1.2A	1.2A	2A
Output ratings	12V	12V	12V
Output holdup time	≥10ms	≥10ms	≥10ms
Power-supply input receptacles	C13	C13	C13
Power cord rating	250V 10A	250V 10A	250V 10A
Input current	1.2A	1.2A	2A
Output ratings	12V	12V	12V
Output holdup time	≥10ms	≥10ms	≥10ms
Power-supply input receptacles	C13	C13	C13
Power cord rating	250V 10A	250V 10A	250V 10A

Stacking

The FS S3900-R Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 384 access ports.

Table 3 list the supported stacking options.

Table 3.   Supported stacking options of S3900-R Series Switches

Part Name	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
Stacking ports	Port 25~28	Port 25~28	Port 49~54
Supported stack members	Stack with other S3900-24F4S-R with the same OS version	Stack with other S3900-24T4S-R with the same OS version	Stack with same models with the same OS version
Maximum number of VSL links	2	2	2
Number of members	8	8	8

Note:
DAC&AOC under 3 meters + fiber cables solutions are recommended while stacking between devices.

Switch performance

Table 4 show performance specifications for the FS S3900-R series switches.

Table 4.　　Performance specifications of S3900-R Series Switches

Performance for all S3900-R Series Switches	S3900-24T4S-R	S3900-24F4S-R	S3900-48T6S-R
Switching capacity	128 Gbps	128 Gbps	216 Gbps
Forwarding rate	96 Mpps	96 Mpps	162 Mpps
Total number of MAC addresses	16000	16000	32000
Total number of IPv4 routes (indirect routes)	502	502	502
Total number of IPv4 host routes (direct routes and ARP)	2040	2036	512
Total number of IPv6 routes (indirect routes)	132	129	152
Total number of IPv6 host routes (direct routes and NDP)	1000	2040	152
Total number of IPv4 multicast routes	1024	1024	1024
Total number of IPv6 multicast routes	1024	1024	1024
QoS ACL scale	1407	1150	2174
Security ACL scale	1407	1150	2174
VLAN IDs	4000	4000	4000
STP virtual ports (port* VLANs) for MST	28	28	54
Total switched virtual interfaces (SVIs)	63	63	63
Jumbo frame	9000 bytes	9000 bytes	9000 bytes

❘ Platform benefits

Table 5 lists the software spotlights for the FS S3900-R series switches.

Table 5.　　Software spotlights

Functionality	Description
VLAN	Support 4 K Active VLAN Support GVRP Support Voice VLAN
Virtual stacking for simplified management	up to 6 units stacking (Only for S3900 Series) up to 8 units stacking (Only for S3900-R Series) Simplified network management Fault recovery within milliseconds All 10 G ports support stacking
Sound security protection policies	Support Local/ Radius Authentication Support Port-based Authentication Support Mac-based Authentication HTTPS and SSL (v3) Support DHCP snooping Support IP Source guard Support DoS Protection
High reliability and energy efficiency	Support IEEE 802.1 D Spanning Tree Protocols (STPs) Support IEEE 802.1 w Rapid Spanning Tree Protocol (RSTP) Support IEEE 802.1 s Multiple Spanning Tree Protocol (MSTP) Support BPDU Guard/ filtering/ transparent Support Root Guard Support Loopback Detection Hardware architecture to reduce energy consumption and noise Variable-speed axial fans to intelligently control the fan speed
Perfect compatibility performance	Support the spanning tree protocols (STPs) Support virtual router redundancy protocol (VRRP) Support rapid link detection protocol (RLDP) Support rapid Ethernet uplink protection protocol (REUP) Support bidirectional forwarding detection (BFD)
Perfect compatibility performance	Support IEEE 802.3 standard protocols, enabling good interoperability with other brands of equipment at the forwarding level Compatible with standard protocols such as STP/ RSTP/ MSTP/ SNMP/ DHCP/ NTP of other equipment based on public agreement Compatible with market main stream AP/ camera/ IP phone/ optical module
Easy network maintenance	Support SNMP (Managed by Zabbix), RMON, HTTP, log Support Syslog, Web-based management, Telnet, SSH CLI style is similar to Cisco, easy to learn
IPv4/ IPv6 dual-stack multi-layer switching	Support line-rate IPv4/ IPv6 dual-stack multi-layer switching Support static routing Support QSPF (All three models are available: S3900-24F4S-R 、S3900-24T4S-R 、S3900-48T6S-R)
Access Control Lists (ACLs)	Robust L2/ L3/ L4 feature Support traffic statistics Support Global ACL Support IPv4/ IPv6/ MAC/ ARP ACL
Varied Service Support Capability	Support IGMP snooping Support IPv6 Neighbor Discovery Support IPv6 DHCP Snooping

Software requirements

The FS S3900-R Series Switches run on FS OS Software version.

Table 6 lists the latest software requirements for the switch models.

Table 6.   Latest software requirements

FS P/N	Description	Latest software requirements
S3900-24T4S-R	S3900-24T4S-R, 24-Port Gigabit Ethernet L2+ Switch, 24 x Gigabit RJ45, with 4 x 10Gb SFP+ Uplinks, Stackable Switch, Fanless	FSOS 2.2.0E 99013 Software
S3900-24F4S-R	S3900-24F4S-R, 16-Port Gigabit Ethernet L2+ Switch, 16x 1Gb SFP, with 8x Gigabit RJ45/SFP Combo, 4 x 10Gb SFP+ Uplinks, Stackable Switch	FSOS 2.2.0E 99013 Software
S3900-48T6S-R	S3900-48T6S-R, 48-Port Gigabit Ethernet L2+ Switch, 48 x Gigabit RJ45, with 6 x 10Gb SFP+ Uplinks, Stackable Switch	FSOS 2.2.0E 99729 Software

Note:
Since the V1.7.2 version of the software upgrades SSH and SSL to the latest one, a large number of new files have been added, making the size of the new version exceed the size limit of the 1.7.1 version of the software. Therefore, it is not possible to directly upgrade from version V.1.7.1 to version V1.7.2. The specific steps to upgrade are as follows:
-Upgrade from software version V1.7.1 to V1.7.2, you need to upgrade to the S3900-48T4S-UPGRADE.bin version transition, and then upgrade to the official version S3900-48T4S- MR-V0172.bin.
- The software version V1.7.1 is upgraded to V1.7.3, V1.7.4, and V1.7.5, all of which need to be upgraded to the official version of V1.7.2 first, and then upgraded to V1.7.3, V1.7.4, and V1.7.5.
- When uploading the latest software version, please make sure that only the current software version exists in the switch file, otherwise the upload will fail.

For upgrade details, refer to S3900 Series Switches FSOS Software Release Notes

▌ Product specifications

Table 7 show the product specifications for the FS S3900-R series switches.

Table 7.   Product specifications of S3900-R Series Switches

Description	S3900-24T4S- R	S3900-24F4S- R	S3900-48T6S- R
Environmental			
Operating temperature	0 to 50°C(32 to 122°F)	0 to 50°C (32 to 122°F)	0 to 50°C(32 to 122°F)
Weight	5.73 lbs (2.6kg)	8.82 lbs (4kg)	9.48lbs (4.3kg)
Distance	100M	100M	100M
Electrical			
Voltage (auto ranging)	100-240VAC	100-240VAC	100-240VAC
Frequency	50-60Hz	50-60Hz	50-60Hz
Current	1.2A	1.2A	2A
Storage temperature	-20 to 70°C(-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C(4 to 158°F)
Operating humidity	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)
Storage humidity	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)	5% to 95% (Non-condensing)
Temperature alarm	Supported	Supported	Supported
Acoustic noise	0dB	40dB	40dB
Dimensions (HxWxD)	1.73''x17.32''x7.09'' (44x440x180mm)	1.73''x17.32''x11.02'' (44x440x280mm)	1.73''x17.32''x11.02'' (44x440x280mm)
Rack units (RU)	1U	1U	1U

Description	S3900-24T4S- R	S3900-24F4S- R	S3900-48T6S- R
Weight	5.73 lbs (2.6kg)	8.82 lbs (4kg)	9.48lbs (4.3kg)
Distance	100M	100M	100M

Electrical

Voltage (auto ranging)	100-240VAC	100-240VAC	100-240VAC
Frequency	50-60Hz	50-60Hz	50-60Hz
Current	1.2A	1.2A	2A

Mean- time between failures

MTBF (hours)	>50,000	>50,000	>50,000

Connectors

Connectors and cabling	• 1/10GBASE-T ports: RJ-45 connectors, 4-pair Cat5E/Cat6/Cat6a UTP cabling • SFP transceivers: LC fiber connectors (single-mode or multimode fiber) • SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) • FS StackWise stacking ports: copper-based FS StackWise cabling • Ethernet management port: RJ-45 connectors, 4-pair Cat5 UTP cabling • Management console port: RJ-45-to- DB9 cable for PC connections • Customers can provide power to a switch by using the internal power at the back of the switch • Internal power supply connector: The internal power supply is an auto-ranging unit. It supports input voltages between 100 (115 for 1100WAC) and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet

Standards

Standards	802.1x, AAA, RMON, SNMPV1 V2 V3, HTTP Telnet, SSH