FS

S3910 Series Switches

HIGH PERFORMANCE WITH WIDE RANGE OF ROUTING PROTOCOLS FOR BUSINESS

S3910 series switches are next-generation L2+ gigabit managed switches with 128Gbps/176Gbps switching capacity.

Overview

S3910 series switches are next-generation gigabit Ethernet switches. They support full gigabit downlink data exchange and fixed 1G/10G uplink data exchange. With the brand-new hardware architecture and FSOS, the S3910 series switches are capable of providing more resource entries, faster hardware processing, and better operation effects, thereby giving you a new experience. The switches also support a wide range of routing protocols, including static routing, Routing Information Protocol (RIP), and Open Shortest Path First (OSPF), which can fully meet requirements for convergence devices on networks of different scales.

Benefits

• Layer 2+ Switches

• BCM56150/BCM56152 Switch Chip

• Support up to 4 Units Stacking

• Industry-standard CLI & Web Management

• Sound Security Protection Policies

• IPv4/IPv6 Dual-stack Multi-layer Switching

• Support VRRP, OSPF, DHCP Server

• Green Ethernet, Energy Efficiency

Product Characteristics

Sound Security Protection Policies

Address Resolution Protocol (ARP) viruses or attacks are a type of common and influential network attack. The S3910 series switches support ARP spoofing prevention in multiple modes. Regardless of whether clients automatically obtain addresses from the DHCP server or use static IP addresses, the S3910 series switches record clients' authentic IP+MAC addresses and compare addresses in ARP packets with recorded IP+MAC addresses when switch ports receive the ARP packets from hosts. The switches forward only ARP packets whose addresses match the recorded IP+MAC addresses and discard fake ARP packets. In this way, ARP spoofing is shielded outside the network and network users are protected from ARP virus attacks.

The S3910 series switches are capable of actively defending against various Distributed Denial of Service (DDoS) attacks on networks. Computers may be infected with viruses due to network openness or attackers may launch attacks on network devices and servers for various purposes, resulting in network unavailability. The common ARP flooding attacks can lead to the failure of the gateway to respond to requests. ICMP flooding attacks can paralyze network devices due to high CPU load. DHCP request flooding attacks deplete addresses of the DHCP server, and users cannot obtain IP addresses for network access.

The S3910 series switches provide an industry-leading hardware CPU protection mechanism: CPU Protect Policy. It classifies data traffic sent to the CPU, processes the traffic by queue priority, and limits the bandwidth rate as required. This protection mechanism fully protects the CPU against illegitimate traffic occupancy, malicious attacks, and resource consumption, thereby ensuring the CPU security and protecting the switches.

The S3910 series switches adopt the innovative Network Foundation Protection Policy technology to limit the rate of ARP packets, ICMP requests, DHCP requests, and other packets sent to networks. The switches discard packets whose rate exceeds the threshold, identify attack behaviors, and isolate users launching attacks. In this way, the basic networks are protected from network attacks, and therefore the network stability is guaranteed.

DHCP snooping enables the S3910 series switches to receive DHCP responses only from trusted ports and prevent spoofing from unauthorized DHCP servers. With DHCP snooping, the switches dynamically monitor ARP packets, check users' IP addresses, and discard illegitimate packets that do not match bound entries, thereby effectively preventing ARP spoofing and source IP address spoofing.

Multiple Service Features

Supports line-rate IPv4/IPv6 dual-stack multi-layer switching. Networks can be planned and designed based on IPv6 network requirements and the switches can be used to flexibly create IPv6 network communication solutions.

Support a wide range of IPv4 routing protocols, including static routing, RIP, and OSPF. Users can select appropriate routing protocols based on network environments, to flexibly build networks.

Support abundant IPv6 routing protocols, including static routing, Routing Information Protocol next generation (RIPng), and OSPFv3. A routing protocol can be selected flexibly to either upgrade the existing network to an IPv6 network or build a new IPv6 network.

Stacking

The S3910 series switches support the stacking, in which multiple physical devices are connected and virtualized into one logical device. The devices use the same IP address, Telnet process, and command line interface (CLI) for management and support automatic version check and automatic configuration. Users need to manage only this logical device to enjoy the work efficiency and use experience brought by multiple devices.

Simplified management: Administrators can manage multiple switches in a unified manner, with no need to connect to each switch for configuration and management.

Simplified network topology: A stacking switch can connect to peripheral devices on a network through aggregate links. Therefore, no layer-2 loop exists and the Multiple Spanning Tree Protocol (MSTP) does not need to be configured.

Fault recovery within milliseconds: A stacking switch connects to peripheral devices through aggregate links. If one device or member link in the stacking malfunctions, data and services can be switched to another member link within only 50–200 milliseconds.

High scalability: User devices can be added to or removed from a virtualized network in a "hot swap" manner, without affecting normal operation of other devices.

Increase in return on investment: Aggregate links used for connecting the stacking switche to peripheral devices not only provide redundancy links but also implement load balancing. All network devices and bandwidth resources are fully leveraged. Any 10G port can be used to build a stacking network through data transmission cables. No additional cables and expansion cards are required, and the types of ports and cables are not limited. Therefore, the return on investment is maximized.

High Reliability

Support Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and MSTP. They help the S3910 series switches achieve fast convergence, improve the fault tolerance capability, and ensure stable network operation and load balance of links. The switches utilize network channels appropriately to raise the utilization of redundant links.

Support the Virtual Router Redundancy Protocol (VRRP), it helps the switches effectively ensure the network stability.

Support the Rapid Link Detection Protocol (RLDP), the switches can quickly detect the link connectivity and unidirectional optical fiber links. The port loop detection function helps the switches prevent network failures caused by loops resulting from unauthorized port connection to hubs.

Support the Ethernet Ring Protection Switching (ERPS) technology, it is an international layer-2 link redundancy backup protocol designed for the core Ethernet. The loop block and link recovery of ERPS are implemented on the controlling device, and non-controlling devices directly report their link status to the controlling device, without processing from other non-controlling devices. Therefore, loop disruption and recovery time of ERPS is faster than that of STP. Based on the above differences, ERPS supports link recovery within milliseconds in the ideal environment.

Support Rapid Ethernet Uplink Protection Protocol. When STP is disabled, the Rapid Ethernet Uplink Protection Protocol can still provide basic link redundancy and millisecond-level fault recovery faster than STP.

Conformal coating is applied to key parts of the products, to strengthen protection and product reliability in harsh environment. Ports on the S3910 series switches are able to defend against up to 10 kV lightning, guaranteeing stable operation of the devices under various harsh environments.

Energy Efficiency

The S3910 series switches support the port auto-power-down function. If a port is down for a period of time, the system automatically powers it down and enables it to enter the energy saving mode. The Energy Efficient Ethernet (EEE) is another highlight of the switches. If a port is always idle in a period of time, the system enables the port to enter the energy saving mode. When the port needs to receive or send a packet, the system resumes services on the port by using listening streams that are periodically sent, achieving energy efficiency.

The S3910 series switches comply with the RoHS in materials and security.

Easy Network Maintenance

The S3910 series switches support the Simple Network Management Protocol (SNMP), Remote Network Monitoring (RMON), log and configuration backup using USB flash drives, and Syslog for routine network diagnosis and maintenance. Administrators can also use CLI, Web-based management, telnet, and other methods to manage and maintain devices conveniently.

Technical Specification

S3910 series switches come with full gigabit downlink data exchange and fixed 10G uplink data exchange. Here's a look at the details.

CHARACTERISTICS

	S3910-24TS	S3910-48TS	S3910-24TF
Ports			
10/100/1000BASE-T RJ45	24	48	24
1G SFP	--	--	4
10G SFP+	4	4	--
Console Port	1	1	1

Notes:

RJ45 ports can be used as 10/100/1000BASE-T ports for Ethernet connection. SFP ports are used for 1G connection. SFP+ ports can be used for 1/10G connection.

	S3910-24TS	S3910-48TS	S3910-24TF
Operating System			
OS	FSOS	FSOS	FSOS
Key Components			
Switch Chip	BCM56150	BCM56150	BCM56152
CPU	ARM A9 Single-Core CPU, 1 GHz	ARM A9 Single-Core CPU, 1GHz	Single-Core CPU, 1GHz
Performance			
Layer Type	Layer 2+	Layer 2+	Layer 2+
Switching Capacity	128 Gbps	176 Gbps	56 Gbps
Forwarding Rate	96 Mpps	132 Mpps	42 Mpps
Flash Memory	256MB	256MB	256MB
SDRAM	512MB	512MB	512MB
Packet Buffer	1.5MB	1.5MB	1.5MB
Jumbo Frame	9216	9216	9216
Stackability	Up to 4 Units	Up to 4 Units	Up to 4 Units

CHARACTERISTICS

	S3910-24TS	S3910-48TS	S3910-24TF
MAC Address	16K	16K	16K
Number of VLANs	4K	4K	4K
Switch Method	Storage and forward	Storage and forward	Storage and forward
MTBF (Hours)	>200K	>200K	>200K
Authentication Methods	802.1X, AAA	802.1X, AAA	802.1X, AAA
ARP Table	1000	1000	1000
Ipv4 Routing Table	500	500	500
Ipv6 Routing Table	500	500	500
Remote Management Protocol	SNMP V1/V2/V3, RMON, Syslog, SFLOW	SNMP V1/V2/V3, RMON, Syslog, SFLOW	SNMP V1/V2/V3, RMON, Syslog, SFLOW
Status Indicators	Status, M1, M2, FAN, MGMT, ID	Status, M1, M2, FAN, MGMT, ID	Status
Power			
Max. Power Consumption	27W	48W	24W
Input Voltage	100-240VAC, 50-60Hz, 2A	100-240VAC, 50-60Hz, 2A	100-240VAC, 50-60Hz, 0.6A
Physical and Environmental			
Dimensions (HxWxD)	1.72"x17.32"x9.69" (43.6x440x246.1mm)	1.72"x17.32"x13.68" (43.6x440x347.6mm)	1.75"x17.44"x10.24" (44.5x443x260mm)
Rack Space	1U	1U	1U
Power Devices	2x Hot-swappable Power Supplies	2x Hot-swappable Power Supplies	1x Built-in Power Supply
Fan Number	1x Built-in Fan	1x Built-in Fan	Fanless
Airflow	Right-to-Left	Right-to-Left	--
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)
Operating Temperature	14°F to 140°F (-10ºC to 60ºC)	14°F to 140°F (-10ºC to 60ºC)	14°F to 140°F (-10ºC to 60ºC)
Storage Temperature	40°F to 158°F (-40ºC to 70ºC)	40°F to 158°F (-40ºC to 70ºC)	40°F to 158°F (-40ºC to 70ºC)
Temperature Alarm	Support	Support	Support
Lithium Battery	Yes	Yes	Yes

CHARACTERISTICS

	S3910-24TS	S3910-48TS	S3910-24TF
Warranty			
Warranty	5 Years	5 Years	5 Years

FEATURES

Functionality	Description
MAC Address Table	Static MAC addresses MAC address filtering
802.1Q VLAN	4K 802.1Q VLAN Port-based VLAN MAC-based VLAN Protocol-based VLAN Private VLAN Voice VLAN Private VLAN IP subnet-based VLAN GVRP
QinQ	Basic QinQ Flexible QinQ
Port Mirroring	One-to-one mirroring, many-to-one mirroring, one-to-many mirroring RSPAN, ERSPAN Flow-based mirroring
ACL	Standard IP ACLs (IP-based hardware ACLs) Extended IP ACLs (hardware ACLs based on IP addresses or TCP/UDP port IDs) MAC-based extended ACLs (hardware ACLs based on source MAC addresses, destination MAC addresses, and optional Ethernet type) Time-based ACLs Expert-level ACLs (hardware ACLs based on flexible combinations of the VLAN ID, Ethernet type, MAC address, IP address, TCP/UDP port ID, protocol type, and time) ACL 80 IPv6 ACLs Global ACLs ACL redirection

FEATURES

| Functionality	Description
QoS	Traffic Shaping Port traffic identification Port traffic rate limiting 802.1p/DSCP/ToS traffic classification Eight priority queues per port SP, WRR, DRR, SP+WRR, SP+DRR, RED/WRED queue scheduling mechanisms
DHCP	DHCP server DHCP client DHCP snooping DHCP relay IPv6 DHCP snooping IPv6 DHCP client IPv6 DHCP relay
Security Features	3-tuple binding (IP address, MAC address, and port) 3-tuple binding (IPv6 address, MAC address, and port) Filtering of invalid MAC addresses Port- and MAC-based 802.1x authentication MAB authentication Portal authentication and Portal 2.0 authentication ARP check DAI ARP packet rate limiting Gateway ARP spoofing prevention Broadcast storm suppression Hierarchical management of administrators and password protection RADIUS and TACACS+ AAA (IPv4/IPv6) for device login management SSH and SSH V2.0 BPDU guard IP source guard CPU Protection Policy, Network Foundation Protection Policy Port protection
Cable Detection	Support
EEE	Support for the standard EEE technology: When EEE is enabled, power consumption of ports is substantially reduced, achieving energy saving.

FEATURES

| Functionality	Description	
Port Sleeping	Support	
IP Routing	IPv4/IPv6 Static routing RIP, RIPng, OSPFv2, OSPFv3 Routing Policy	
IPv6 Basic Protocols	IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 ping, IPv6 Tracert	
Management Features	SNMP, CLI (telnet/console), RMON, SSH, Syslog, NTP/SNTP, FTP, TFTP, Web	
LACP	Support	
Power Supply	S3910-24TS/S3910-48TS AC input: Rated voltage range: 100-240V, 50-60Hz Maximum voltage range: 90-264V, 47-63Hz Rated current: 2A HVDC input: Rated voltage range: 240V Maximum voltage range: 192-288V Rated current: 2A DC input: Rated voltage range: -36~-72V Rated current: 3.15A	S3910-24TF AC input: Rated voltage range: 100V to 240V Maximum voltage range: 90V to 264V 50Hz-60Hz Rated current: 0.6A HVDC input: Rated voltage range: 240V Rated current: 0.1-1.5A

S3910-24TF Switch Accessories

Power Cord x1
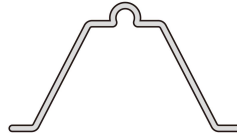
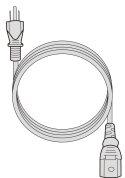Cable Clamps x1
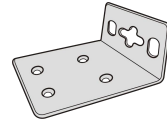
Mounting Bracket x2
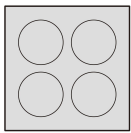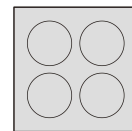
Rubber Pad x4

M4 Screw x6

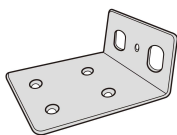Grounding Cable x1

S3910-24TS/S3910-48TS Switches Accessories

Power Cord x2

Grounding Cable x1

Rubber Pad x4

Mounting Bracket x2

M4 Screw x8

United Kingdom   Russia

Germany

United States

China

Singapore

Australia

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