FS

S8050-20Q4C Switch

HIGH PERFORMANCE SPINE SWITCH FOR ENTERPRISES, DATA CENTERS, AND ISPS

Overview

The S8050-20Q4C is high performance Ethernet switch to meet next generation Metro, Data Center and Enterprise network requirements, which supports L2/L3/IPv6/Data Center/Metro features. The S8050-20Q4C switch comes with complete system software with comprehensive protocols and applications to facilitate rapid service deployment and management for both traditional L2/L3 networks and Data Center networks.

The S8050-20Q4C switch is well-suited for spine-leaf architecture. It is also ready for IPv6 deployment.

Benefits

- Completed IPv4/IPv6 Protocol Stack
- Multiple IPv4/IPv6 Tunnel Technique
- Data center DCB features (PFC/ECN/ETS)
- Ethernet OAM (IEEE802.3ah and IEEE802.1ag)
- MLAG (Multi-Chassis Link Aggregation)
- NVGRE/VXLAN/GENEVE
- RPC-API

Key Features

Comprehensive Network Security Policy

With the IEEE802.1ag and ITU-T Y.1731 end-to-end OAM, Ethernet service providers can monitor the services, survey the end-to end performance and ensure the service quality match the agreement.

The fault management technique includes CCM, LTM and LBM. Performance targets include measure for latency and jitter. Support remote management, network monitoring, network fault indication, remote loopback and MIB parameter retrieval according to the standard 802.3ah EFM.

Data Center Features

Support leading edge Data Center features: Priority Flow Control (PFC), explicit Congestion Notification (ECN) and Data Center TCP, etc.

Support MLAG (Multi-Chassis Link Aggregation) to aggregate links across different devices. MLAG can build an Active-Active system to improve the reliability of the network links from single board grade to device grade.

Support overlay technology (include NVGRE/VXLAN/GENEVE, etc.). Overlay can make layer 2 packets across the layer 3 networks by using NVGRE/VXLAN/GENEVE header to encapsulate the entire ethernet packets. Overlay resolves the problem of MAC table size limitation in traditional layer 2 networks, resolves the problem of VLAN id count limitation, and resolves the problem network dynamic adjustment which cannot achieve by VLAN/VPN. Support RPC-API.

High Reliability

Support 1+1 load-sharing AC power supplies and 3+1 redundant variable-speed fans as standard features, protecting the switch from a single power supply or fan failure. DC power options are also available.

Support real-time environment monitoring technology to detect the chipset temperature, status of fan and power, etc.

Support LACP/ECMP/VRRP/VARP/STP/RSTP/MSTP/Smart Link/BFD/ERPS/G.8031/G.8032/Load-Balancing, etc. to protect the network traffic all-around effectively.

Support patented technology "Sysmon" for CPU status monitoring can take action when system is error.

Outstanding QoS Control

Provide 13 hardware queues per-port (8 unicast queues, 4 multicast queues and 1 monitor queue).

Support multi-stage scheduling technology such as WDRR (Weighted Deficit Round Robin)/SP (Strict Priority) and TD (Tail Drop)/WRED (Weighted Random Early Detection) to prevent congestion.

Support flexible queue scheduling mechanism to do the shaping for queue or port traffic.

Support ingress and egress policer for intelligent bandwidth monitoring.

Support srTCM (Single Rate Three Color Marker) and trTCM (Two Rate Three Color Marker)

Triple-play Service Support

Offer high bandwidth for Triple-Play services such as IPTV, video monitoring. The built-in QoS capabilities and flexible queuing technologies guarantee high quality of services.

Support rich multicast protocol set (IGMP Snooping, IGMP v1/v2/v3、PIM-SM、PIM-SSM).

Support up to 2K multicast groups and 4K logical replications per group.

Key Features

Support IPTV service and multicast latency control

Comprehensive Network Security Policy

Support subscriber-class/switch-class/network-class security control.

The ACL based on IPv4/IPv6/MAC can filter IPv4/IPv6/Non-IP packet respectively. Besides that, extended IPv4/IPv6 ACL which can match Layer 2/Layer 3/Layer 4 information in one rule is available. The ACLs can apply to physical ports/vlan/port group/vlan group. The members of port group or vlan group share a set of ACLs and save the TCAM resource.

ARP Inspection and IP Source Guard features prevent network from malicious ARP attack.

Support CPU Traffic Protection, Storm Control and CPU load optimization features.

Support centralized 802.1x authentication feature to forbidden illegal user accessing network.

Convenient Management Features

Support varied management interfaces, including console port/inband network ports/outband network port/USB port. Support CLI (Command Line Interface), web management, Telnet and FTP connection.

Support SNMPv1/v2/v3, SSH2.0, SSL and OAM.

Technical Specification

S8050-20Q4C switch comes with advanced hardware architecture design and abundant L2 and L3 features. Here's a look at the details.

CHARACTERISTICS

	S8050-20Q4C
Ports	
Ports	4x 10Gb SFP+, 20x 40Gb QSFP+, 4x 100Gb QSFP28
Max. 100G Ports	4
Max. 40G Ports	24
Max. 10G Ports	96
Max. 1G Ports	80
Console Port	1
Ethernet Management Port	1
USB Port	1
Operating System	
OS	FSOS

CHARACTERISTICS

	S8050-20Q4C
Key Components	
CPU	Freescale PowerPC P1010
Performance	
Layer Type	Layer 3
Switching Capacity	2.4 Tbps
Forwarding Rate	1071.4 Mpps
Max./Min. Latency	0.635µs/0.6µs
DDRIII Capacity	1GB
Flash Memory	2GB
System Memory	1GB
RAM	1GB
Packet Buffer	9MB
Jumbo Frame	9.6KB
MLAG	Support
MAC Address	65K
Number of VLANs	4K
MTBF (Hours)	108822.22
Authentication Methods	AAA、Dot1X (802.1X)
Remote Management Protocol	SNMP, RMON, HTTP,Telnet、SSH
Status Indicators	SYS, FAN, PWR, MGMT, Interface

CHARACTERISTICS

	S8050-20Q4C
Power	
Input Voltage	100-240VAC, 50-60Hz
Typical Power Consumption	120W
Max. Power Consumption	160W
Physical and Environmental	
Dimensions (H x W x D)	1.72" x 17.32" x 18.5" (43.6 x 440 x 470mm)
Rack Space	1U
Hot-swappable Power Supplies	2 (1+1 Redundancy)
Hot-swappable Fans	3 +1 Redundancy
Airflow	Front-to-Back
Acoustic Noise	50dB
Operating Temperature	32°F to 113°F (0 to 45 ºC)
Storage Temperature	-40°F to 158°F (-40 to 70 ºC)
Operating Humidity	10 to 90% (Non-condensing)
Storage Humidity	0 to 95% (Non-condensing)
Weight	18lbs (8.3kg)
Warranty	
Warranty	5 Years

FEATURES

Functionality	Description
Ethernet Features	• Support full duplex, half duplex, and auto-negotiation duplex • Support auto-negotiation port speed • Support Jumbo Frame • Support Flow Control • Support Storm Control • Support Port-block • Support Port-isolate • Support L2 Protocol Tunneling
VLAN Features	• Support 4094 VLANs • Support VLAN access mode: Access/Trunk • Support Default VLAN • Support VLAN Classification • Support basic QinQ, selective QinQ and VLAN Mapping • Support VLAN statistics • Support Private VLAN • Support Guest VLAN • Support Voice VLAN
MAC Address Table	• Support static MAC address • Support dynamic MAC address learning and aging • Support hardware learning • Support black hole MAC address • Support MAC address drift detect
Link Aggregation	• Support static link aggregation • Support LACP • Support static load balancing (SLB)

FEATURES

Functionality	Description
Link Aggregation	• Support dynamic load balancing (DLB) • Support Round-Robin (RR) • Support Self-healing
Reliability Features	• Support STP/RSTP/MSTP protocol • Support STP Protocol Protection (BPDU Filter/Guard, Root Guard, Loop Guard, Anti TC-BPDU attack) • Support single ERPS ring/tangent ERPS rings/intersecting ERPS rings • Support ERPS compatible with RRPP • Support G.8031 • Support G.8032 • Support port Loopback Detect • Support BFD • Support VRRP • Support Multi-link • Support Smart-link • Support MLAG • Support Ethernet OAM (IEEE802.3ah and IEEE802.1ag) • Support Software class process monitoring (Sysmon) • Support Hardware Watch Dog
ARP Features	• Support static ARP • Support dynamic ARP leaning and aging • Support Gratuitous ARP • Support basic ARP-Proxy and local ARP-Proxy
IPv4 Forwarding	• Support IPv4 static routes • Support IPv4 static routes co-work with IP SLA • Support VRF • Support uRPF check • Support RIPv1, RIPv2 • Support OSPFv2 • Support IS-IS • Support BGP • Support Route-map and Prefix list • Support Policy-based Routing (PBR)

FEATURES

Functionality	Description
IPv4 Forwarding	• Support ICMP redirect • Support PMTU • Support ICMP unreachable message • Support RIPng • Support ECMP
IPv6 Forwarding	• Support ICMPv6 • Support NDP • Support PMTU • Support IPv6 static routes • Support IPv6 black hole routes • Support RIPng • Support OSPFv3 • Support IPv6 over IPv4 Tunnel • Support 6to4 Tunnel • Support ISTAP Tunnel • Support DHCPv6 • Support IPv6 prefix list • Support IS-IS
Multicast Features	• Support IGMP v1/v2/v3 • Support IGMP agent • Support IGMP SSM Mapping • Support PIM-SM,PIM-SSM,PIM-DM • Support MLDv1/v2, MLDv1/v2 snooping • Support MVR and MVR6 • Support PIM-SMv6
Data Center Features	• Support VARP • Support VXLAN • Support GRE Tunnel • Support NVGRE Tunnel • Support GENEVE Tunnel • Support DCBX • Support priority-based flow control (PFC) • Support EVPN

FEATURES

Functionality	Description
QoS Features	• Support traffic classification based on COS/DSCP (simple classification) • Support traffic classification based on ACL (complex classification) • Support queue scheduling based on traffic classification • Support Remark the priority fields(COS/DSCP) of the packet • Support flow redirection • Support flow mirror • Support traffic policing • Support traffic shaping • Support traffic statistics • Support SP (Strict Priority) scheduling • Support WDRR (Weighted Deficit Round Robin) scheduling • Support SP+WDRR mixed scheduling • Support TD (Tail Drop) • Support WRED (Weighted Random Early Detection) • Support ECN tags based on TD, WRED and shape rate
Security Features	• Support SSH • Support Radius • Support TACAS+ • Support AAA • Support port based dot1x and MAC based dot1x • Support configure dot1x Guest via command or Radius server • Support access control list (ACL) • Support traffic classification based on source and destination IP/source and destination MAC/source and destination layer for protocol num/VLAN ID • Support ACL matching User defined fields (UDF) • Support ACL active based on Time-Range • Support ARP inspection • Support IP source guard • Support port security to limit the MAC address learning on interface • Support VLAN security to limit the MAC address learning on interface • Support CPU Traffic Limit • Support Prevent DDOS attack • Support ACL filtering Telnet/SSH login • Support Link-Flapping detection

FEATURES

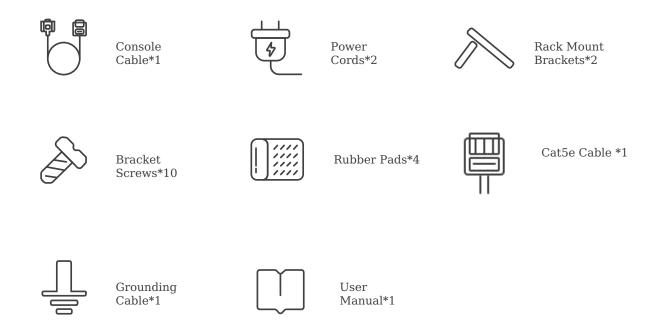| Functionality	Description
MPLS Features (With "ma" License)	• Support MPLS Forwarding • Support VPWS • Support VPLS • Support MPLS OAM • Support MPLS Stats • Support L3VPN • Support MPLS ACL • Support MPLS QoS
Configuration and Maintenance	• Support DHCP Server • Support DHCP Relay • Support DHCP Snooping • Support DHCP Client • Support DHCP Option82 • Support RMON • Support sFlow • Support IP SLA • Support IPFIX • Support Latency/Buffer Monitor • Support EFD (Elephant Flow Detection) • Support NTP • Support port Errdisable state detection and recovery • Support configure static DNS client • Support LLDP • Support port loopback • Support hardware loopback (internal/external) • Support to configure system time • Support to configure time zone
Debugging Features	• Support Debug based on modules • Support CPU/memory usage display and alarm • Support Device temperature/PSU/FAN/status display and alarm • Support user operation logs • Support Management of logs, alarms, and debugging information • Support VCT (Virtual Cable Test) • Support detailed diagnostic-information collection • Support reboot information logging

FEATURES

Functionality	Description
Debugging Features	• Support network diagnostics (ping/traceroute) • Support mirror: support use port/vlan/cpu as mirror source • Support use port/port group/vlan/cpu as mirror destination • Support ERSPAN • Support to CPU/From CPU packets statistics • Support L2 ping • Support UDLD (Unidirectional Link Detection)
Management Features	• Support inband and outband management ports • Support privileged user priority and privileged commands • Support Network management based on SNMPv1/v2c/v3 • Support Public and private MIB • Support Public and private Trap • Support Configuration and management based on WEB UI • Support Configuration and management based on RPC-API • Support SmartConfig (Automatically configuration when system start) • Support OVSDB • Support change the system specifications by choose different STM Profiles • Support feature configuration based on License • Support restore factory default configuration • Support manual/schedule reboot • Support upgrade with the local image file/remote TFTP server • Support online upgrade Uboot
File System	• Support file system to manage the files and directories • Support upload/download files via FTP/TFTP • Support transmit files via Xmodem

Management Support for S8050 Series Switch

Description	Specification	
	FS-8050-20Q4C.mib	OSPF-TRAP-MIB.mib
	BGP4.mib	P-BRIDGE-MIB.mib
	BRIDGE-MIB.mib	PIM-BSR-MIB.mib
	DIFFSERV-DSCP-TC.mib	PIM-STD-MIB.mib
	DIFFSERV-MIB.mib	Q-BRIDGE-MIB.mib
	IANA-ADDRESS-FAMILY-NUMBERS-MIB.mib	RIPv2-MIB.mib
	IANAifType-MIB.mib	RMON2.mib
	IANA-RTPROTO-MIB.mib	RMON-MIB.mib
	IEEE8021-PAE-MIB.mib	RSTP-MIB.mib
	ieee8023-lag.mib	SFLOW-MIB.mib
Management	IF-MIB.mib	SNMP-FRAMEWORK-MIB.mib
	INET-ADDRESS-MIB.mib	SNMP-MPD-MIB.mib
	INTEGRATED-SERVICES-MIB.mib	SNMP-NOTIFICATION-MIB.mib
	IP-FORWARD-MIB.mib	SNMP-TARGET-MIB.mib
	IP-MIB.mib	SNMP-USM-MIB.mib
	LAG-MIB.mib	SNMPv2-MIB.mib
	lldp.mib	SNMP-VACM-MIB.mib
	lldp_dot1.mib	TOKEN-RING-RMON.mib
	lldp_dot3.mib	VRRP-MIB.mib
	MGMD-STD-MIB.mib	
	OSPF-MIB.mib	

Accessories

Console Cable*1

Power Cords*2

Rack Mount Brackets*2

Bracket Screws*10

Rubber Pads*4

Cat5e Cable *1

Grounding Cable*1

User Manual*1

Ordering Information

ID	Description
#70288	Hot-swappable AC Power Module 400W, for S5850-48S6Q, S5850-48S2Q4C, S8050-20Q4C, T5850-48S6Q, T5850-48S2Q4C, and T8050-20Q4C
#108590	Hot-swappable DC Power Module 400W, for S5850-48S6Q, S5850-48S2Q4C, S8050-20Q4C, T5850-48S6Q, T5850-48S2Q4C, T8050-20Q4C
#70291	Hot-swappable Fan Module, Front-to-Back Airflow Through the S5850-48S6Q, S5850-48S2Q4C and S8050-20Q4C Switches Chassises
#100590	Metro Advanced License for S5800, S5850, S8050 Series Switches, Includes MPLS, VXLAN-BGP-EVPN, Permanent

United Kingdom   Russia

Germany

United States

China

Singapore

Australia

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