

# S5850-48T4Q Switch

## 10GbE Base-T ToR/Leaf Switch for Data Center

The S5850-48T4Q is a high-performance ToR/Leaf switch for Data Center and Enterprise network requirements.



## Overview

The S5850-48T4Q provides full line-rate switching at L2/ L3 with 48 x 10GBase-T ports and 4 x 40Gb uplinks in a compact 1RU form factor. The S5850-48T4Q comes with the complete system software with comprehensive protocols and applications to facilitate the rapid service deployment and management for both traditional L2/L3 networks. With support for advanced features, including MLAG, VXLAN, NVGRE, SNMP etc, this switch is ideal for traditional or fully virtualized data center.

The S5850-48T4Q is cost-effective Ethernet aggregation platform to Data Center application and is ideally designed for demanding workloads. The S5850-48T4Q hardware provides high-availability features, including pluggable redundant fans and using high quality electronic components.

## Benefits

- Grade Hardware Design
- Metro Ethernet Network Features
- Open System Design
- Traffic Visibility and Trouble-shooting Oriented Design

## Technical Specification

Performance	S5850-48T4Q
Switch Fabric Capacity	1.28 Tbps
Forwarding Rate	952.32 Mpps
CPU	PowerPC P1010
Packet Buffer Memory	9 M
Flash Storage Memory	2GB (NAND)
System Memory	2 GB
Jumbo Frame	9600 Bytes
Typical/Max Power Draw	350 W
Switching Method	Store and Forwarding/ Cut Through
DDM	Support
Airflow Direction	Front-to-Back
Rack Mount	1 RU
Dimensions	440 x 420 x 44 mm (17.32 x 16.54 x 1.73")
Unit Weight	8.3 kg
Warranty	5 Years
Operating Temperature	0 to 45°C (Long term) -5 to 55°C (Short term)
Power Supply Range (AC)	Input Voltage: 100-240VAC, 50/60Hz Maximum Voltage: 90-264VAC, 47-63Hz
Power Supply Range (DC)	Input Voltage: 36-75VDC

## Features

Functionality	Description
Grade Hardware Design	<p>The temperature and status of fans and power supply are real-time monitored by the system</p> <p>The fan supports intelligent speed control function, green and energy-saving</p> <p>High quality electronic components</p> <p>Low power consumption and low latency</p>
Metro Ethernet Network Features	<p>Support QinQ and Vlan Translation</p> <p>Support MSTP and ERPS</p> <p>Support operating rates: 1Gbit/s, 10 Gbit/s, 40 Gbit/s, 100Gbit/s and auto-negotiation</p> <p>Support Port-Block and Storm Control (unicast/ broadcast/multicast)</p>
Open System Design	<p>Programmatic access to system state: Python</p> <p>Open API</p> <p>OpenStack Neutron(cloud agent)</p> <p>OVSDb(configure VLAN/Tunnel)</p>
Traffic Visibility and Troubleshooting Oriented Design	<p>CPU Traffic Limit</p> <p>Traffic classification based on the combination of the MAC address, IPv4 address, L2 protocol header, TCP, UTP, outgoing interface, and 802.1p field</p> <p>Traffic behaviors, including access control after traffic classification, traffic policing based on traffic classification (Policer), re-marking based on traffic classification (COS, DSCP) and class-based packet queuing</p>
VLAN	<p>Vlan access modes: access, trunk, and QinQ</p> <p>MAC based VLAN Classification</p> <p>IP based VLAN Classification</p> <p>Protocol based VLAN Classification</p> <p>QinQ(Basic QinQ and Selective QinQ)</p> <p>VLAN Translation</p> <p>Default VLAN</p> <p>VLAN mapping</p> <p>Voice Vlan</p> <p>Guest VLAN/ Private VLAN</p>

## Features

Functionality	Description
MAC	Automatic learning and aging of MAC addresses (Support HW learning)
	Static, dynamic, and blackhole MAC address entries
	Packet filtering based on source MAC addresses
	Limitation on MAC address learning on interfaces (Port Security)
MSTP	Limitation on MAC address learning on Vlans VLAN Security
	Support QinQ and Vlan Translation
	STP/ RSTP/ MSTP
	BPDU filter/ BPDU guard
ERPS	Root guard
	Partitioned STP and BPDU tunnel
	ERPS (Ethernet Ring Protection Switching)
	Single ERPS ring, tangent ERPS rings, and intersecting ERPS rings
Layer 2 Multicast	OVSDB(configure VLAN/Tunnel)
	Hybrid networking of ERPS rings and other ring networks
	IGMP snooping v1v2v3
	IGMP proxy
	Fast leave
	MAC based L2MC
ARP	Layer 2 Static Multicast
	MVR(Inter-VLAN multicast replication)
	Static and dynamic ARP entries
	Gratuitous ARP
Multicast Routing	Aging of ARP entries
	ARP
	ARP Proxy
Multicast Routing	IGMPv1/v2/v3
	PIM-SM/ PIM-SSM/ PIM-DM
	Static Multicast

## Features

Functionality	Description
Unicast Routing	Static Routes
	RIPv1&v2/ OSPF
	BGP(Basic iBGP/eBGP)
	ECMP/ ECMP self-healing
	ECMP-DLB (Dynamic Load Balance ECMP)
	Route Map
	Policy-Based Route (PBR)
	uRPF check
Traffic Classification	VRF
	Traffic classification based on the combination of the MAC address, IPv4/IPv6 address, L2 protocol header, TCP, UTP, outgoing interface, and 802.1p field
	Access control after traffic classification
	Traffic policing based on traffic classification (Policer)
	Re-marking based on traffic classification (COS, DSCP)
Queue Scheduling	Class-based packet queuing
	SP (8 Strict Priority)
	WDRR (Weighted Deficit Round Robin)
Congestion Avoidance	SP + WDRR
	Tail Drop, WRED (Weighted Random Early Detection)
Shapping	Shapping based on Interfaces and queues
Cloud Goodput	Explicit congestion notification(ECN) High bandwidth, Ultra Low Latency(HULL)(Virtual queuing to mark ECN)
Device Reliability	SmartLink
	SmartLink multi-instance
	MonitorLink
	VRRP
	BFD (for Static IPv4 Route/VRRP/OSPF/Track)
	Multi-Chassis Link Aggregation
	MLAG with Overlay(VXLAN, NVGRE, GENEVE)
	Switch Table Management (Flexible system profiles)

## Features

Functionality	Description
System Security	Hierarchical CLI protection to prevent unauthorized users from accessing Switch SSH v2.0 RADIUS and TACACS+ authentication ACL filtering (Standard ACL and extend ACL) ACL filtering (Inner header filter) DHCP packet filtering (Option 82) ARP Inspection IP Source Guard CPU Traffic Limit Prevent DDOS attack (ICMP Flood/Smurf/Fraggle/ LAND/SYN Flood) AAA 802.1X Telnet/SSH ACL filtering RSA Key Generate BHM (Beat Heart Monitor)
Terminal Service	Configurations through CLI (Command Line Interface) Help information Login through console and Telnet terminals
File System	File system Directory and file management Upload and download files through FTP or TFTP
IP Application	DHCP Server/ DHCP Relay/ DHCP Snooping/ DHCP Client DNS NTP
Device Management	UDLD (Unidirectional Link Detection) VCT (Virtual Cable Test) LLDP 802.3az EEE (Energy-Efficient Ethernet)

## Features

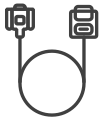
Functionality	Description
	Management of logs, alarms, and debugging information
	User operation logs
	Detailed debugging information for diagnosing network faults
	Network test tools (Such as traceroute and ping)
	Local Mirror (Port Mirror and VLAN Mirror)
Debugging and Maintenance	Remote Mirror
	Multi-destination Mirror
	L2 ping
	Port loopback
	Loopback Detection
	Smart Config
	Ping and Traceroute (IPv4)
	SNMPv1/v2c/v3 (IPv4)
	Standard MIB
Network Management	WEB UI
	RMON
	S-Flow
Version Upgrade	Online upgrade software image
	Online upgrade of the BootROM
Extensibility	Programmatic access to system state: Python
	Open API
	OpenStack Neutron (cloud agent)
	OVSDB (configure VLAN/Tunnel)
Virtualization Support	VARP
	VXLAN gateway
	VXLAN bridge
	VXLAN routing
	GENEVE
	NvGRE
	DCB: IEEE 802.1Qbb-PFC (Priority Flow Control)

## Management Support for S5850-48T4Q Switches

Description	Specification
	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
	IF-MIB.mib SNMP-FRAMEWORK-MIB.mib
Management	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
	OSPF-TRAP-MIB.mib



## Accessories



Console Cable\*1



Power Cords\*2



Rack Mount Brackets\*2



Bracket Screws\*8



Grounding Cable\*1



User Manual\*1

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## Get started today

Getting started with FS S5850 series switches is easy. In fact, you can explore and test them without spending too much time. Try FS S5850 series switches, they will lower the total cost of your ownership, and bring your network with high scalability and agility as well.



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