Techroutes NETWORK

DATASHEET

TR-S5700 Series

2.5 Gigabit Ethernet Switch Series

Product Overview

TR-S5700 series is a Techroutes-developed multi-gigabit Ethernet switch oriented for the next-generation IP metropolitan area network, large campus network, and enterprise network. TR-S5700 series adopts the cutting-edge hardware architecture and is equipped with the TROS operating system with Techroutes independent intellectual property rights. On the basis of providing high-performance L2/L3/L4 wire-speed switching services, TR-S5700 series further integrates various network services such as IPv6, MPLS VPN and network security. Combined with multiple high-reliability technologies such as uninterrupted upgrade, uninterrupted forwarding, graceful restart, and redundancy protection, TR-S5700 series ensures the long-term stable communication capability of the network.

TR-S5700 series has a variety of product specifications, supporting 48/24/8 2.5G access, 10G/40G high-speed uplink ports.

TR-S5700 series is widely used in high-end cyber cafes, E-sports hotels, and high-speed enterprise network.

Product Characteristics

Advanced hardware architecture, cutting edge processing capability

TR-S5700 series 1U pizza-box switch realizes the ultra-high port density of 48 2.5G TX ports, 4 10G SFP+ ports, and 2 40G QSFP ports. Equipped with high-performance ASIC switch chips, TR-S5700 series can meet the application requirements of various complex scenarios.

Innovative VSS

TR-S5700 series supports innovative Techroutes Virtual Switch System, which can virtualize multiple physical devices into one logical device with unparalleled performance, reliability, and management compared to stand-alone physical devices.

Doubled performance: The virtualized system makes full use of every link between physical devices, avoiding the link congestion of the traditional networking model Spanning Tree Protocol, making the best use of devices, doubling the performance, and protecting the original link investment to the greatest extent.

High reliability: Based on advanced distributed processing technology, the efficient cross-physical device link aggregation function separates the logical control plane, service control plane and service data plane, providing uninterrupted Layer 3 routing and forwarding and avoiding business interruption caused by the single failure. Therefore, the reliability of the virtual system is greatly improved.

Easy management: The entire virtual system realizes unified management of a single IP, and physical devices are visible to users, which simplifies the management of network devices and network topology, greatly improves operation efficiency, and effectively reduces operation and maintenance costs.

Carrier-level high reliability

Based on Hitless Protection System (HPS), the key components of the S5700 series, such as power supply modules, are redundant backup and hot-swappable, which supports seamless switchover in case of failure without manual intervention.

TR-S5700 series supports STP/RSTP/MSTP, VRRP, ring network protection, dual uplink active/standby link protection, LACP and other simple and efficient redundancy protection mechanisms.

TR-S5700 series supports In-Service Software Upgrade (ISSU), ensuring the unremitting data forwarding during system upgrade.

The ultra-high-precision BFD mechanism, through linkage with Layer 2 and Layer 3 protocols, realizes millisecond-level fault detection and service recovery, which greatly improves the reliability of the network system.

Perfect Ethernet OAM mechanism, supporting 802.3ah, 802.1ag and ITU-Y.1731, realizes rapid detection and location of faults through real-time monitoring of network operation status.

The high reliability hardware and software of the TR-S5700 series meet the fault recovery time requirement of 50ms for carrier-level services, and truly achieve the high reliability (99.999%) of carrier-class core devices.

Rich service features

Perfect Layer 2 and Layer 3 multicast routing protocols meet the access requirements of IPTV, multi-terminal high-definition video surveillance and video conferencing;

Complete Layer 3 routing protocols and large routing table capacity meet the needs of various network interconnection, and can built up ultra-large campus network, enterprise network and industry private network.

Comprehensive Layer 2 and Layer 3 MPLS VPN can built up a super-large MPLS VPN core network to meet the access needs of industry private network VPN users and enterprise network VPN users.

Comprehensive IPv6 Solutions

Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc.

Supports Ping, Traceroute, Telnet, SSH, ACL and so on, meeting IPv6 networks' device management and service control requirements.

Supports IPv6 multicast features such as MLD, MLD Snooping, IPv6 static routing, IPv6 Layer 3 routing protocols such as RIPng, OSPFv3, BGP4+, providing complete IPv6 Layer 2 and Layer 3 solutions.

Supports a wealth of IPv4 to IPv6 transition technologies, including: IPv6 manual tunnel, automatic tunnel, 6to4 tunnel, and ISATAP tunnel to ensure the smooth transition from IPv4 network to IPv6 network.

Perfect Security Mechanisms

Equipment-level security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions.

Perfect security authentication mechanisms: IEEE 802.1x, Radius and TACACS+.

Enhanced service security mechanism: Supports clear text or MD5 authentication of related routing protocols, and Unicast Reverse Path Forwarding (uRPF), which can effectively control illegal services; supports in-depth detection and filtering of control packets and data packets, thereby effectively isolating illegal data packets and improving the security of the network system.

Technical Specifications

Item		TR-S5754	TR-S5730	TR-S5712
Console		1 RJ45	1 RJ45	1 RJ45
Switching capacity		480Gbps	240Gbps	120Gbps
Forwarding rate		360Mpps	180Mpps	90Mpps
Service port		48x2.5G/GE TX ports	24x2.5G/GE TX ports	8x2.5G/GE TX ports
		4x10G/1G SFP+ ports	6x10G/1G SFP+ ports	4x10G/1G SFP+ ports
		2x40G QSFP ports	N/A	N/A
Chassis Dimensions (WxHxD) mm		440*180*44 (mm)	440*280*44 (mm)	280*180*44 (mm)
Package Dimensions (WxHxD) mm		576*448*94 (mm)	576*448*94 (mm)	350*268*94 (mm)
Power supply		AC: 100V-240V,50Hz±10%		
		DC: -36V~-72V		
		Hot-swappable dual-power redundant hot-standby	N/A	N/A
Power Consumption		<100W	<48W	<35W
Environment requirement		Operating temperature/humidity: 0℃-50℃, 10%-90% non-condensing		
		Storage temperature/humidity: -20℃-70℃; 5%-95% non-condensing		
Total output BTU (1000BTU/H=293W)		341.30	163.82	119.45
Noise@25°C(dBA)		55	45	45
MTBF(H)		>200,000	>200,000	>200,000
Forwarding mode		Store-forward	Store-forward	Store-forward
Flash		4(GB)	16(MB)	16(MB)
DRAM (GB)		2(GB)	512(MB)	256(MB)
MAC		64K	32K	16K
Buffer size (MB)		4.5	2	1.5
Jumbo frame		16K	9K	9K
Routing table	IPv4	16K	8K	512
	IPv6	8K	4K	128
ARP table	IPv4	16K	12K	2K
	IPv6	8K	2K	2K
Total SVI		1K	1K	63
MAC exchange		Static configuration and dynamic MAC learning		
		MAC browsing and removal		
		Configurable aging time of the MAC address		
		Limited number of learnable MAC addresses		
		MAC filtration		
		Black hole MAC entry		

VLAN	4K VLAN
	GVRP
	1:1 and N:1 VLAN Mapping
	Basic QinQ
	Flexible QinQ
	Private VLAN
STP	802.1D (STP), 802.1W (RSTP), 802.1S (MSTP)
	BPDU protection, root protection, loop protection
Multicast	IGMP v1/v2/v3
	IGMP Snooping
	IGMP Fast Leave
	Multicast group policy and multicast number limit
	Multicast filtering
	Multicast group policy and quantity limitation
	MVR
	IGMP snooping in certain port and VLAN
	Support for transparent passing of multicast traffic without IGMP
	snooping in certain port and VLAN
	PIM-SM/DM/SSM
IPv4	Static routing, RIP v1/v2, OSPF, BGP
	Policy Based Routing (PBR)
	ECMP
	BFD for static routing, RIP, OSPF, BGP
DHCP	DHCP server, client, relay, snooping
IPv6	IPv4/IPv6 dual Stack
	ICMPv6, DHCPv6, ACLv6, IPv6 Telnet
	IPv6 Neighbor discovery
	Path MTU discovery
	MLD v1
	MLD Snooping
	IPv6 static routing, RIPng, OSPFv3, BGP4+
	Manual Tunnel, ISATAP Tunnel, 6to4 Tunnel
QoS	Traffic classification of port/L2~4 protocol headers/VLAN/CoS/DSCP
	CAR traffic control
	802.1P/DSCP priority mapping and remark
	Multiple queuing algorithms such as SP, WRR or SP+WRR
	Tail-Drop and WRED
	Traffic supervision and traffic shaping
	8 queues per port
Security	DDoS attack prevention, TCP-SYN/UDP/ARP Flood attack prevention
	IEEE 802.1x authentication, multiple-user authentication, guest vlan
	L2~L4 ACL
	Anti-DOS/IP spoofing/TCP/ping/SYN/ICMP flood attacks

	Broadcast/multicast/unknown-unicast storm-control
	Port isolation
	Port Security, MAC address limitation, IP+MAC+ port binding
	DHCP Snooping, DHCP Option 82
	DAI (Dynamic ARP Inspection)
	IPSG (IP Source Guard)
	IEEE 802.1x certification
	MAC-based authentication AAA
	Radius, TACACS+
	Multiple user privileges
Reliability	802.3ad Static/LACP link aggregation
	EAPS
	G.8032 ERPS
	ISSU
	VRRP
	VSS virtual stacking system
	GR for OSPF and BGP
	BFD for OSPF and BGP
Management	CLI,Console, Telnet, SSHv1/2
	Web-GUI: HTTP, HTTPS/SSL
	SNMP v1/v2c/v3, RMON, SNMP alarm/inform/traps
	Upload and download of FTP/TFTP/SFTP files
	Debugging
	Syslog for alarm/notification/command/debug
	NTP
	SPAN, RSPAN (1:1 and N:1 mirror)
	LLDP, LLDP-MED
	sFLOW
	ZTP (Zero Touch Provisioning)
	Optical DDM
	Ethernet cable diagnosis
	802.3ah, 802.1ag
Green technology	IEEE 802.3az EEE (Energy Efficient Ethernet)

Ordering Information

Techroutes TR-S5700 Series	
Item	**Description**
TR-S5712	Multi-Gigabit Ethernet routing switch with (1 RJ45 CLI port, 8x2.5G/GE TX ports, 4x 10G/GE SFP+ ports; built-in AC220V power supply, 1U, standard 19-inch rack-mounted installation)
TR-S5730	Multi-Gigabit Ethernet routing switch with (1 RJ45 CLI port, 24x2.5G/GE TX ports, 6 10G/GE SFP+ ports; built-in AC220V power supply, 1U, standard 19-inch rack-mounted installation)
TR-S5754	Multi-Gigabit Ethernet routing switch with (1 RJ45 CLI port, 1 out-band optical port, 48 2.5G/GE TX ports, 4x10G/GE SFP+ ports, 2x40G QSFP ports; dual hot-swap power slots with single AC220V power supply; fan cooling, 1U, standard 19-inch rack-mounted installation)

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