

TSR 2800-20-Series Next Generation Routers



Multi Service Switching Routers

Product Overview

Techroutes TSR series is the Next-generation Multi Service Switching Router platform, designed for growing customer requirement of real time applications and high bandwidth requirement. The router platform designed with a 64bit multi-core processor with Gigabit Switching integration so that it can give excellent performance up to 2 Mpps.

The Router comes with HIC Slots with a wide range of Modules to achieve user specific interface options. to cater different networking requirements of internet service provider, government, financial institutions, military, enterprises or operators.

Powerful Performance

TSR series is driven by the 64-bit dual-core processor, the private gigabit ASIC switching chip and FPGA components, enabling the whole hardware platform of the router to run on the hi-speed Ethernet frame. This innovative design attributes TSR with an inherent extra powerful processing ability, to enhance the upper-layer software functions.

High expandability

Because built on the basis of switching core, TSR routers can expand their external interfaces, slots and modules without any limitation from the total CPU resources. The switching chip guarantees that the whole TSR router is provided with sufficient and broadband internal channels, making the expandability of TSR routers exceed that of traditional modularized routers.

Excellent power-saving ability

TSR routers adopt the new-generation hardware chip which can guarantee the powerful processing ability and meanwhile save power. The power consumption of a whole TSR router is reduced by 15% to 20% compared with the mainstream devices in this industry. The long-term users can save the maintenance cost, which carries out the nationally advocated low-carbon idea. Additionally, TSR series also supports redundant power sources.

Various protocols Support

This series supports the link-layer protocols such as FR, PPP, ISDN and HDLC, and dynamic routing protocols including RIP, OSPF, BGP and ISIS, the static route and policy based routing, so this series can interconnect with any industry standard products. Further more, this series supports the integration of multiple services like routing, switching, voice, security and wireless, so they can meet the requirements of complicated network establishment.

New services

The MPLS characteristics, and the MPLS-based layer-3 VPN technology are supported so that the transparent Ethernet transmission service and the flexible enterprise interconnection are achieved. IPv6 data forwarding, routing protocols and multicast routing protocols are all supported; also the IPv4/IPv6 protocol stack and the interconnection technology are supported, so the existing networks can be smoothly upgraded to the IPv6 networks.

High security

This series supports flexible ACL, firewall filtration technology, NAT, multiple VPN technologies such as IPSec/L2TP/PPTP/GRE, and multiple security methods such as AAA, Radius, TACACS+, PAP and CHAP.

Traffic management policy

Various QoS mechanism are supported such as FIFO, PQ, CQ, CBWFQ, LLQ, WFQ, RED, WRED, DSCP, IP Precedence, RTS, RSVP and CAR, so key services can be guaranteed with a reliable bandwidth and users' bandwidth will be utilized more efficiently.

Flexible management and maintenance

This series provides a lot of inband and outband management tools such as Console and Telnet, SNMP, RMON, Syslog, etc. so the management and monitoring of network can be efficient

Model		TSR2800-20	TSR2800-20-E
Standard interfaces	Console	1	1
	USB	1	1
	Gigabit Ethernet	2*TX/SFP Combo, 4*TX Ports	2*TX/SFP Combo Ports
	Gigabit Ethernet Switching Ports	N/A	4*TX Switching Ports
Expanded slot	HIC	2	2
	Hardware encryption	Built in	Built in
Memory	Boot ROM	512K	
	Flash	32M	
	SDRAM	512 MB by default, expandable to 1G	
	Size	19-inch standard cabinet and 1U chassis	
Temperature/Humidity	Working temperature and humidity	0°C ~ 50°C; 10% ~ 85% no condensation	
	Storage temperature and humidity	-20°C ~ 65°C; 5% ~ 95% no condensation	
Power characteristics	voltage	100-240VAC or -36 ~ -72VDC power supply	
	Power Consumption	≤30W	

Features and Functions Supported

Link interconnection	LAN protocols	ARP, agent ARP, free ARP
	WAN protocols	PPP, Multilink-PPP, PPPoE (Client/Server)
		ISDN BRI/PRI, SLIP
		Frame Relay, FR Switch
		HDLC, LLC2, SDLC, DLSW-SSP
Network protocols	Routing Protocols	Static route, directly-connected route and default route
		RIPv1/v2, OSPFv2, BGPv4, IS-IS
		PBR policy-based routing
		Fast Switch, Load-Balance
	Multicast routing	IGMP
		PIM-DM, PIM-SM, DVMRP
	IP function	ICMP, TCP, UDP, IP Option
		NAT, PAT, Port-MAP, Private-Service, ALG
		Ping, Trace Route, NS Lookup
		IP ACL, IMP filter, Fast-Access
		DHCP Client/Server/Relay
		DNS, DNS host, DNS Proxy, DDNS (PeanutHull/DynDNS/CTC)
		Helper-Address, UDP Helper
		IP unnumbered, DDR
		Keep-alive, PDP (compatible with CISCO)
		Net Flow, IP Accounting
		TFTP Client/Server, FTP Client
		SNTP, job/schedule
		PNP
		ALIAS
		Reverse telnet, VTY binding
	MPLS	AToM, VPLS, MP-BGP, VRF
		L2VPN, L3VPN
		MPLS TE**
	Ipv6	Ipv6 ND, Ipv6 PMTU, Ipv6 FIB, Ipv6 ACL (Passing Phase II authentication)
		Ipv6 transition : NAT-PT, Ipv6 tunnel, 4over6
		Ipv6 tunnel: manual tunnel, automatic tunnel, GRE tunnel, 6to4, ISATAP
		Ipv6 route: Ipv6 static route, RIPng, OSPFv3, IS-Isrv6, BGP4+
Reliability	Backup function	Supporting interface backup
		Supporting the backup of the floating route of the line
		Supporting the E-backup and keep-alive of Ethernet
		Supporting VRRP and HSRP
		Supporting bandwidth-based load bearing and backup
		Supporting the flow-based load balance and backup
	BFD cooperative work	Supporting the rapid link detection of BFD and working together with RIP, OSPF, BGP, MPLS and VRRP to realize the fast switchover of route and link

...Features and Functions Supported

QoS	Congestion control	FIFO, PQ, CQ, WFQ, CBWFQ
	Congestion avoidance	WRED/RED
	Flow shaping	Support GTS (Generic Traffic Shaping)
	Reservation	RSVP
	Others	GBSC, Layer7 filter
	Flow classification	Support the classification of ACL flows
		Support the classification of the IP Precedence flows
		Support the classification of DSCP flows
		Support the classification of MAC addresses
		Support the 802.1P classification
Switching	switching	802.1p CoS, 802.1Q VLAN, 802.1x authentication
		STP, RSTP, PVST
		Keep-alive, port mirror, broadcast/multicast storm limitation
Network security	AAA	Authentication, Authorization, Accounting
		Support Local, Radius, Tacacs+
		PAP, CHAP, MS-CHAP
	Firewall	ACL, NAT
		Detecting the ASPF state
		Supporting the prevention of SYN flood, UDP flood or ICMP flood
		Supporting ARP attack prevention, ARP-Scan and DHCP snooping
		Supporting the prevention of attacks from all kinds of network packets such as Ping of Death, Tear-drop, Land-Based, WinNuke, PingSweep, ARP attack and IP-Spoofing
	VPN	IKE, IPSec, DMVPN, EZVPN
L2TP, PPTP, GRE, SSL		
Supporting VPN cascading		
VoIP	Interface	FXS/FXO/E&M
	Protocol stack	H.323 MGCP SIP
	Codec	G.711A law, G.711U law, G.723R53, G.723R63, G.729a, G.729R8
3G wireless	Supported mode	WCDMA, CDMA2000, TD-SCDMA
Management and maintenance	Network management	SNMP/MIB/SYSLOG/RMON/HTTP management
	Local management	CLI management and file system management
	Logon mode	Support console/Telnet/VTY/SSH logon mode

Ordering Information

TSR Chassis	
TSR2800-20	Modularized multi-service TSR2800-20 router (1 console port, 2 Gigabit TX/SFP combo ports, 4 Gigabit TX ports, 1 built-in encryption engine, and 2 HIC slots)
TSR2800-20E	Modularized multi-service TSR2800-20 router (1 console port, 2 Gigabit TX/SFP combo ports, 4 Gigabit Switching ports, 1 built-in encryption engine, and 2 HIC slots)

TSR HIC modules	
HIC-1GE-TX	Single Port gigabit-Ethernet card (RJ45)
HIC-1GE-SFP	1-path 1000M optical interface card (SFP)
HIC-1GE-TX/SFP	1-path 10/100/1000M electric/optical interface card (RJ45/SFP)
HIC-2GE-TX+SFP	2-port 100/1000M interface card (RJ45+SFP)
HIC-1E1B	Unchannelized Single-Port E1 card
HIC-2E1B	Unchannelized Dual-Port E1 card
HIC-1T1	Single-Port T1 card
HIC-2T1	Dual-Port T1 card
HIC-1TB	Single-Port serial card (V28/V35)
HIC-2TB	Dual-Port serial card (V28/V35)
HIC-8ASY	8-Port asynchronous serial card
HIC-2FXS	Dual-Port FXS audio card
HIC-4G-LTE	Single 4G Universal module
HIC-2FXO	Dual-Port FXO audio card
HIC-1B-S/T	1-port ISDN BRI (2B+D) interface card

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