

## TSR-2900-40-2AC



### Multiservice Switching Router

#### Product Overview

Techroutes TSR-2900-40-2AC Series is the next-generation multi-functional switching router switching engine. It is a well-adapted router.

Techroutes TSR-2900-40-2AC Series has supports the full switching function, USB2.0 expansion, service expansion and engineering maintenance.

Techroutes TSR-2900-40-2AC Series is equipped with TROS operating system, of which Techroutes has the independent intellectual property right. Techroutes TSR-2900-40-2AC Series builds a real multiservice broadband platform by providing rich software functions such as routing, switching, safety, VPN and LTE.

With its strong processing and expansion capability, rich software functions and hardware modules, Techroutes TSR-2900-40-2AC Series meet requirements of the government, financial institutions, the defense system, operators and enterprises in network construction.

#### Main Characteristics

##### Powerful Performance

Techroutes TSR-2900-40-2AC Series is driven by the 64-bit dual-core processor with specialized gigabit ASIC switching chip and FPGA components, which enables the whole hardware platform to run on the high-speed Ethernet frame. The innovative design endows TSR-2900-40-2AC with a super processing capability, providing a guarantee for upper-layer software functions.

### **High Expandability**

Because built on the basis of switching core, Techroutes TSR-2900-40-2AC Series can expand their external interfaces, slots and modules without any limitation from the total CPU resources. The switching chip guarantees that the whole Techroutes TSR-2900-40-2AC router is provided with sufficient and broadband internal channels, making the expansibility of Techroutes TSR-2900-40-2AC routers exceed that of traditional modularized routers.

### **Excellent Power-saving ability**

Techroutes TSR-2900-40-2AC Series adopts the new-generation hardware chip in consideration of energy saving while guaranteeing its strong processing capacity. Compared with the mainstream devices in the industry, power consumption of the TSR router is reduced by 15% to 20%, which both reduces the device maintenance cost and accords with the low-carbon idea. Techroutes TSR-2900-40-2AC Series is also equipped with the environment friendly maglev mute fan..

### **Various Protocol Support**

Techroutes TSR-2900-40-2AC Series supports Layer 2 link protocols including PPP and dot1q; static routing; policy routing; and dynamic routing such as RIP, OSPF and BGP. These routing protocols are well compatible with the devices manufactured by the mainstream vendors in the industry. Besides, TSR-2900-40-2AC Series supports integration of multiple services such as routing, switching, voice, safety and wireless, which meets the requirement of complicated network construction.

### **New Service**

Techroutes TSR-2900-40-2AC Series supports the MPLS characteristics and the MPLS-based layer-2/layer-3 VPN technology, which realize the transparent Ethernet transmission service and the flexible enterprise interconnection. Techroutes TSR-2900-40-2AC Series supports IPv6 data forwarding, routing protocols and multicast routing protocols; Techroutes TSR-2900-40-2AC Series also supports the IPv4/IPv6 protocol stack and the interconnection technology, which makes the existing networks smoothly upgrade to IPv6.

### **Secure Service Access**

Techroutes TSR-2900-40-2AC Series supports selective ACL firewall filtration technology, NAT, VPNs such as IPSec/L 2TP/PPTP/GRE, and security technologies such as AAA, Radius, PAP/CHAP.

### **Traffic management policy**

Techroutes TSR-2900-40-2AC Series supports varied queues including FIO, PQ, CQ, CBWFQ, LLQ, WFQ DSCP, IP Precedence, RTS, RSVP and CAR.

Techroutes TSR-2900-40-2AC Series supports its self-developed traffic control and service management policy (GBSC) which can better real-time arrange and monitor your data traffic.

### Flexible management and maintenance

Techroutes TSR-2900-40-2AC Series is convenient in managing and monitoring the network by using the in-band and out-band management tools such as Console, Telnet, SSH and SNMP;

### Complete Layer-2 Switching Capacity

Techroutes TSR-2900-40-2AC Series supports Layer-2 switching with the built-in high performance switching chip. It supports layer-2 protocols including STP/RSTP/MSTP, MAC learning and filter, anti-attack based on the chip, storm control and port mirroring.

### Technical Specification

Model	TSR-2900-40-2AC	
<b>Interface</b>		
Console	1	
USB2.0	1	
WAN	4xGE-TX & 4xGE SFP	
LAN	/	
POE	/	
SLOT	2xHIC	
RST	1	
Encryption Engine	Built-in	
<b>Performance</b>		
Throughput	2MPPS	
Flash	16MB	
DRAM	1GB	
NAT Concurrent Sessions	<400K	
Consumption	No Load	≤16W
	Full Load	≤22W
Total output BTU (note:1000 BTU/hr=293W)	75.09	
FAN	0	
Noise@25°C (dBA)	0	
Power Supply	100-240VAC (1+1) Power Backup	
<b>Software Features</b>		
LAN	ARP, ARP proxy, Gratuitous ARP	
WAN	PPP,HDLC, PPPoE (Client/Server)	
Routing	Static route, default route	
	RIPv1/v2, OSPFv2, BGPv4,IS-IS	
	Fast Switch, Load-Balance	
	PBR (Policy Based Routing)	
Multicast	IGMP V1,V2,V3	

		PIM-DM, PIM-SM
<b>IPv6</b>		IPv6 ND, IPv6 PMTU, IPv6 FIB, IPv6 ACL, IPv6 (authenticate through IPv6 Phasell)
		IPv6 QoS
		IPv6 transition: NAT-PT, IPv6 tunnel, 4over6
		IPv6 tunnel: IPSec v6, GRE, 6to4,
		ISATAP
		IPv6 route: IPv6 static route, RIPng, OSPFv3, BGP4+
<b>MPLS</b>		VPLS, MP-BGP, VRF
		L2VPN, L3VPN
<b>IP Service</b>		ICMP, TCP, UDP, IP Option
		NAT, PAT, Port-MAP, Private- Service, ALG
		Ping, Trace Route, Nslookup
		IP ACL, IMP filter, Fast-Access
		DHCP Client/Serv/Relay
		DNS, DNS host, DNS Proxy, DDNS (Peanut Hull/DynDNS/CTC)
		Helper-Address, UDP Helper
		IP unnumber, DDR
		Keep alive, PDP (compatible with CISCO)
		NetFlow, IP Accounting, IP SLA
		TFTP Client/Serv, FTP Client
		SNTP/NTP, job/schedule
		PNP
		ALIAS
	Reverse telnet, VTY binding	
<b>Switching</b>		802.1p CoS, 802.IQ VLAN
		STP, RSTP
		Keep alive, port mirror, broadcast/ multicast storm control
		PTP, IEEE1588v2 (Optional)
<b>Network Safety</b>	<b>AAA</b>	Authentication, Authorization, Accounting
		enable, local, Radius, Tacacs+
		PAP, CHAP, MS-CHAP
<b>Network Security</b>	<b>Firewall</b>	ACL, NAT
		ASPF state detection
		SYN flood, UDP flood or ICMP flood
		ARP attack protection, ARP-SCAN and DHCP-Snooping
		Prevention of Ping of Death, Tear-drop, Land-Based, WinNuke, PingSweep, ARP attack and IP-Spoofing
	<b>VPN</b>	IKE, IPSec, DMVPN, EZVPN
		L2TP, PPTP, GRE, EoGRE
VPN Stacking		

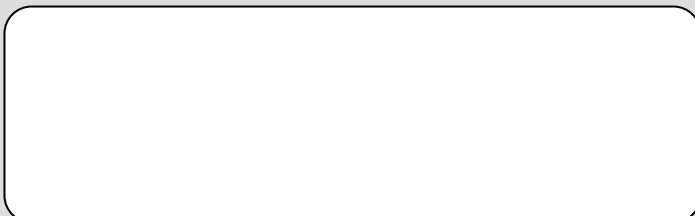
<b>Reliability</b>	<b>Backup Function</b>	Interface backup
		Route backup
		E-Backup, Keep alive Ethernet remote monitoring
		VRRP, HSRP
		Bandwidth based load sharing and backup
	Traffic based load balancing and backup	
	<b>BFD</b>	BFD for RIP, OSPF, BGP, MPLS and VRRP
<b>QOS</b>	<b>Congestion management</b>	FIFO, PQ, CQ, WFQ, CBWFQ
	<b>Congestion avoidance</b>	WRED/RED
	<b>Traffic shaping</b>	GTS (Generic Traffic Shaping)
	<b>Others</b>	GBSC, Layer7filter
	<b>Traffic classification</b>	ACL
		IP Precedence
		DSCP
		MAC
		802.1p
<b>4G</b>		TD-FDD & TD-LTE
<b>Management</b>		Console, Telnet, SSH, HTTP/HTTPS, SSL
		SNMP V1/V2/V3, SYSLOG, RMON, ZTP
<b>Appearance</b>		
<b>Chassis</b>	<b>Dimensions mm (WxDxH)</b>	440x300x88
	<b>Weight (kg,empty)</b>	4.4
<b>Package</b>	<b>Dimensions mm (WxDxH)</b>	560x560x230
	<b>Weight (kg)</b>	6.8
<b>Environmental Specifications</b>		
<b>Operating</b>	<b>Temperature</b>	-10°C~50°C
	<b>Humidity</b>	10%~85% (non-condensing)
<b>Storage</b>	<b>Temperature</b>	-40°C~85°C
	<b>Humidity</b>	10%~95% (non-condensing)
<b>Accessories</b>		
Console cable, Rack mount kits, Manual		
<b>Certificate</b>		
CE, FCC, RoHS, ISO		



**Order Information:**

<b>TSR-2900-40-2AC</b>	TSR-2900-40-2AC Multi-service Router (1 Console, 1 USB2.0, 4xGE-TX, 4xGE SFP Ports, 2 HIC slots; built-in encryption engine, dual Redundant 220VAC power supply)
<b>TSR HIC Modules</b>	
HIC-2E1B	Unchannelized Dual-Port E1 card
HIC-2TB	Dual-Port serial card (V28/V35)
HIC-4G-LTE	Single 4G Universal module
HIC-4E1	4-port unchannelized E1-F interface card
DIC-8GES-TX	Eight 10/100/1000M Base-T electrical interface card (RJ45)

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