

## TR-WGS-20G-Series



### Gigabit Ethernet Switch

#### Product Overview

Techroutes TR-WGS-20G-48GT-4X is a new-generation smart access switch designed for carrier's IP MAN and enterprise networks. Based on the new-generation high-performance hardware and TRROS platform, it supports functions such as ACL, QinQ and QoS.

#### Product Characteristics

##### Carrier-Class Ethernet Access Switch

Techroutes TR-WGS-20G-48GT-4X supports the telecom-level Ethernet-ring protection protocol with a protection shift time of less than 50ms, STP/RSTP/MSTP, backup of active and standby uplinks, and LACP link aggregation to cater to the requirements of high reliability of carriers;

Techroutes TR-WGS-20G-48GT-4X has powerful ACL functions to access and control L2-L3 data, providing carriers flexible and various policy control methods;

Techroutes TR-WGS-20G-48GT-4X supports various L2 multicast function, including user fast-leave mechanism and cross VLAN multicast replication function.

##### Rich QOS Policies

Techroutes TR-WGS-20G-48GT-4X supports complex traffic classification based on VLAN, MAC, source address, destination addresses, IP protocols and priorities. It also supports priority remark. These functions provide an effective way for users to optimize their businesses.

Techroutes TR-WGS-20G-48GT-4X provides with flexible bandwidth control policies, supporting port-/flow-based flow limit and ensuring the line speed forwarding of each port to make sure the high quality of video, audio and data services.

Techroutes TR-WGS-20G-48GT-4X also supports multiple queue grooming algorithms such as SP, WRR Or SP+WRR.

### Comprehensive IPv6 Solutions

Techroutes TR-WGS-20G-48GT-4X supports the IPv6 protocol suite, IPv6 neighbor discovery and ICMPv6.

Techroutes TR-WGS-20G-48GT-4X supports IPv6 based Ping, Traceroute, Telnet and SSH, meeting the need of IPv6 network equipment management and service control.

### Comprehensive Security Mechanism

Techroutes TR-WGS-20G-48GT-4X adopts advanced hardware architecture design, realizing the hierarchical scheduling and protection of the packet. It provides multiple security measures to defend against attacks from broadcast storm and mass flow of TCP. It also supports command line authority control based on user levels.

Comprehensive Security Certification: Techroutes TR-WGS-20G-48GT-4X complies with IEEE 802.1x, Radius & Tacacs+.

Techroutes TR-WGS-20G-48GT-4X supports the suppression of broadcast, multicast and unknown unicast packet, ensuring the equipment can operate normally in harsh network conditions.

Techroutes TR-WGS-20G-48GT-4X has the perfect loop detection mechanism.

Techroutes TR-WGS-20G-48GT-4X supports the port isolation in a same VLAN, DHCP-Snooping and IP+MAC+ port binding.

### Convenient Management and Maintenance

Techroutes TR-WGS-20G-48GT-4X supports multiple management styles such as Console, Telnet and SSH.

Techroutes TR-WGS-20G-48GT-4X supports WEB based management. The management is more simple and effective.

Techroutes TR-WGS-20G-48GT-4X supports upload and download of TFTP files.

Techroutes TR-WGS-20G-48GT-4X supports SNMP.

Items		TR-WGS-20G-48GT-4X
Interface		48xGE TX & 4x10G SFP+
Console (RJ45)		1
Backplane (Gbps)		176
Forwarding Rate (Mpps)		130
Chassis	Dimension (WxDxH)mm	440*300*44
	Weight (KG) Empty	4.4
Package	Dimension (WxDxH)mm	576x448x94
	Weight (KG) Empty	5.0
Power Consumption	No-Load	< 10W
	Full-Load	< 50W
Power Supply	AC: 100V-240V	Support
	DC: 48V	Support
Power Redundancy		Optional
Total output BTU (1000BTU/H=293W)		1486.84
Fan number		3
Noise@25°C(dBA)		<35db
MTBF(H)		> 50000
Forwarding mode		Store-forward
Flash		512M
DRAM		256M
MAC		16K
Buffer size		12M
Jumbo frame		10K
Port aggregation		GE port, 2.5GE,10G aggregation
		Static and dynamic aggregation
Port features	IEEE802.3x flow control, Port traffic statistics, port isolation	
	Network storm suppression based on port bandwidth percentage	
VLAN		Support access, trunk and hybrid mode
VLAN Classification	Mac Based VLAN	
	IP Based VLAN	
	Protocol Based VLAN	
QinQ	Basic QinQ (Port-based QinQ)	
	Flexible Q in Q(VLAN-based QinQ)	
	QinQ(Flow-based QinQ)	

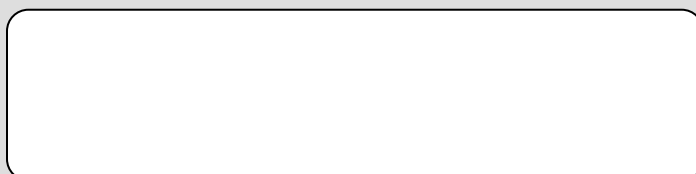
Port mirroring	Many to one (Port Mirroring)
Layer 2 ring network protocol	STP, RSTP, MSTP
	G.8032 ERPS protocol single ring, sub ring and other ring
DHCP	DHCP Server
	DHCP Client
	DHCP Snooping
Multicast	IGMP V1,V2,V3
	IGMP snooping
IPv4	ARP table aging
	IPv4/IPv6 static routing
IPv6	IPv6 Management
	IPv6 static routing
	ICMPv6 and IPv6 Telnet
	IPv6 neighbor discovery
	Path MTU discovery
ACL	IP Standard ACL
	MAC extend ACL
	IP extend ACL
QoS	QoS Class, Remarking
	SP, WRR queue scheduling
	Ingress Port-based Rate-limit
	Egress Port-based Rate-limit
	Policy-based QoS
Security	Dot1x, port authentication Mac authentication, RADIUS, Tacacs+ service
	Port-security
	IP source guard, IP/Port/MAC binding
	Arp-check and ARP packet filtering for illegal users
	Port isolation
Management and maintenance	LLDP
	User management and login authentication
	SNMP V1/V2/V3
	Web management, HTTP, HTTPS
	Syslog and alarm grading
	RMON (Remote Monitoring alarm, event and history record
	NTP
	Temperature monitoring
	Ping, Tracert
	Optical transceiver DDM function
	TFTP ,FTP

	Telnet
	SSH
	IPv6 Management
Power surge protection	6KV, IEC 61000-4-5 Level X (8/20us)
Ethernet ports surge protection	4KV, IEC 61000-4-5 Level 4 (10/700us)
Working Temperature & Humidity	Operating temperature and humidity: 0°C~50°C, 5%-95% non-condensing
Storage Temperature & Humidity	Storage temperature & humidity:-20°C ~ 70°C, 5%-95% non-condensing

## Ordering Information

Techroutes TR-WGS-20G Series	
Item	Description
TR-WGS-20G-48GT-4X	Layer 2 Ethernet switch with 48 GE TX ports and 4 10G SFP+ ports (1 console port, 48 GE TX ports, 4 10G SFP+ ports; 220VAC Power Supply, the cooling fan, 1U, standard 19-inch rack-mounted installation)
TR-WGS-20G-48GT-4X-2AC	Layer 2 Ethernet switch with 48 GE TX ports and 4 10G SFP+ ports (1 console port, 48 GE TX ports, 4 10G SFP+ ports; Dual Redundant 220VAC Power Supply, the cooling fan, 1U, standard 19-inch rack-mounted installation)
TR-WGS-20G-48GT-4X-DC	Layer 2 Ethernet switch with 48 GE TX ports and 4 10G SFP+ ports (1 console port, 48 GE TX ports, 4 10G SFP+ ports; 48VDC Power Supply, the cooling fan, 1U, standard 19-inch rack-mounted installation)
TR-WGS-20G-48GT-4X-2DC	Layer 2 Ethernet switch with 48 GE TX ports and 4 10G SFP+ ports (1 console port, 48 GE TX ports, 4 10G SFP+ ports; Dual Redundant 48VDC Power Supply, the cooling fan, 1U, standard 19-inch rack-mounted installation)

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