

GTL-2891/GTL-2892

L3 Gigabit Ethernet Stackable Switch

Product Overview

The GTL-2891/2892 are a family of high-performance Gigabit Ethernet Layer 3 switches featuring 28 ports; with 24 10/100/1000BASE-T ports, 2 10G SFP+ ports, and one 10G dual port expansion slot. The switches are ideal for high-performance server aggregations, such as enterprise data centers, where they can connect high-end or network-attached files servers over fiber ports. They can also be deployed as a backbone upgrade, or to provide Gigabit-to-the-desktop for power users. These switches are packed with features and are a cost-effective solution that bring continuous availability, enhanced security, and advanced QoS to the network edge, while maintaining simplicity of management.

Key Features and Benefits

Performance and Scalability

The GTL-2891/2892 includes high-performance Gigabit Ethernet Layer 3 managed switches with 128 Gbps switching capacity. The switches deliver wire-speed switching performance on all Gigabit ports, taking full advantage of existing high-performance PCs by significantly improving the responsiveness of applications and file transfer times.

Continuous Availability

The IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence, ensuring a faster recovery from failed links and enhancing overall network stability and reliability.

The IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links for up to 32 instances.

The GTL-2891/2892 supports IEEE 802.3ad Link Aggregation Control Protocol (LACP). It increases bandwidth by automatically aggregating several physical links together as a logical trunk and offers load balancing and fault tolerance for uplink connections.

The GTL-2891/2892 supports G.8032 Ethernet Ring Protection Switching, with the ability for the network to detect and recover from incidents without impacting users, meeting the most demanding quality and availability requirements. Rapid recovery time when problems do occur is as low as 50 msec.

Comprehensive QoS

The GTL-2891/2892 offers advanced QoS for marking, classification, and scheduling to deliver best-in-class performance for data, voice, and video traffic at wire speed. Eight egress queues per port enable differentiated management of up to eight traffic types through the switch.

Traffic is prioritized according to 802.1p and DSCP to provide optimal performance for real-time applications. Weighted Round Robin (WRR) and strict priority ensure differential prioritization of packet flows and avoid congestion of ingress and egress queues.

Asymmetric bidirectional rate-limiting, per port or per traffic class, preserves network bandwidth and allows maximum control of network resources.

The GTL-2891/2892 supports Three Color Marker and Policing Single rate: Committed Information Rate (CIR) Two rate: CIR + Peak Information Rate (PIR) Traffic Policing: Which drop or remark the priority tags of packets when they exceed burst size.

Enhanced Security

Port Security limits the total number of devices using a switch port and protects against MAC flooding attacks.

IEEE 802.1X port-based or MAC-based access control ensures all users are authorized before being granted access to the network. When a user is authenticated, the VLAN, QoS, and security policy are automatically applied to the port where the user is connected, otherwise the port is grouped in a guest VLAN with limited access.

DHCP snooping allows a switch to protect a network from rogue DHCP servers to offer invalid IP address.

IP Source Guard prevents people from using IP addresses that were not assigned to them.

Access Control Lists (ACLs) can be used to restrict access to sensitive network resources by denying packets based on source and destination MAC addresses, IP addresses, or TCP/UDP ports. ACLs are hardware supported, so switching performance is not compromised.

Secure Shell and Secure Sockets Layer (SSL/HTTPS) encrypt Telnet and web access to the switch, providing secure network management.

Private VLANs (traffic segmentation per port) isolates edge ports to ensure user privacy.

DAI (Dynamic ARP Inspection) is a security feature that validates Address Resolution Protocol (ARP) packets in a network. DAI allows a network administrator to intercept, log, and discard ARP packets with invalid MAC-to-IP address bindings.

Simple Management

An industry-standard command-line interface (CLI), accessed through the console port or Telnet, provides a familiar user interface and command set for users to manage the switch.

Layer 3 Features IPv4 Static Route

The GTL-2891/2892 supports hardware-based IPv4 routing for maximum performance.

Routing protocols, such as RIP v1/v2, and static routes are supported.

Features

Product Model		GTL-2891	GTL-2892
Product Image			
Port	RJ-45 10/100/1000 Ports	24	0
	100/1000 SFP Ports	0	22
	10/100/1000 ComboPorts	0	2
	SFP+ 10 Gigabit Uplink Ports	2	2
	10G SFP+ Expansion Module Slots	1	1
	RJ-45 Console Port	O	O
Performance	Switching Capacity	128 Gbps	128 Gbps
	Forwarding Rate	95.23 Mpps	95.23 Mpps
	Flash Memory	128 MB	128 MB
	DRAM	256 MB	256 MB
	MAC Address Table Size	16 K	16 K
	Jumbo Frames	10 K	10 K
	Auto-negotiation, Auto-MDI/MDIX	O	O
PoE	Support on all Gigabit ports based on IEEE 802.3af	X	X
	PoE+ based on IEEE 802.3at	X	X
	Auto disable after exceeding power budget	X	X
	Dynamic Power Allocation	X	X
	PoE Power Budget	X	X
Mechanical	Rack Space	19"	19"
	Dimension (W x D x H) cm	44 x 31.5 x 4.4	44 x 31.5 x 4.4
	Weight	3.7 kg	3.8 kg
Power Supply	100-240 VAC, 50-60 Hz (Redundant Power)	O	O
	Max System Power Consumption (Watts)	35 W	42 W
Environmental	Operating Temperature	0°C to 45°C	0°C to 45°C
	Storage Temperature	-40°C to 70°C	-40°C to 70°C
	Operating Humidity (non-condensing)	10% to 90%	10% to 90%
	Storage Humidity (non-condensing)	10% to 90%	10% to 90%
	Environmental Regulation compliance: WEEE	O	O
	Environmental Regulation compliance: RoHS	O	O
Certification	FCC Class A	O	O
	CE	O	O
	Safety Compliance: CB	O	O
	Safety Compliance: UL	O	O

Features

L2 Features

Auto-negotiation for port speed and duplex mode

Flow Control:

- IEEE 802.3x for full-duplex mode
- Back-pressure for half-duplex mode

Spanning Tree Protocol:

- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- BPDU Guard
- BPDU filtering
- Root Guard
- Loopback detection
- Spanning Tree Fast Forwarding
- Auto Edge-Port
- BPDU Forward

Storm Control (broadcast/multicast/unknown unicast)

VLANs:

- Supports 4K IEEE 802.1Q VLANs
- Port-based
- GVRP/GARP
- VLAN Translation
- IEEE 802.1v Protocol-based VLANs
- MAC-based VLANs
- IP subnet-based VLAN
- Private VLAN (Community)
- Traffic Segmentation (port isolated)
- Guest VLAN
- Voice VLAN
- VLAN trunking
- Link Aggregation:
 - Static trunk
 - IEEE 802.3ad Link Aggregation Control Protocol
 - Trunk groups: 16
 - Trunk links: 2~8 ports for Gigabit Ethernet ports
 - 2~4 ports for 10 Gigabit Ethernet ports
- Load Balance: SA+DA, SA, DA, SIP+DIP, SIP, DIP

IGMP Snooping:

- IGMP v1/v2/v3 snooping
- IGMP Filtering
- IGMP Throttling
- IGMP Immediate Leave
- IGMP Querier v1/v2
- IGMP SNP Proxy (v1/v2/v3)
- IGMP Authentication
- Source Filtering Mode Data Forwarding

Non-STP loopback Detection

L2 Protocol Tunneling (CDP, PVST, STP, LLDP)

MVR (Multicast VLAN Registration)

Supports Q-in-Q

Supports select Q-in-Q

UDLD

G.8032 v2 (ERPS)

Supports jumbo frames up to 10KB

Supports Digital Diagnostic Monitoring (DDM)

Packet filtering of L2 control CDP/PVST

Cable diagnostics

HW Stacking

QoS Features

Priority Queues: 8 hardware queues per port

Traffic classification

- IEEE 802.1p CoS
- DSCP

Traffic Scheduling

- Strict Priority
- Weighted Round Robin
- Strict + WRR traffic scheduling

PHB (Per Hop Behavior – internal priority)

Port-based default priority

Diffserv

Rate Limiting (ingress and egress, per port base)

- GE: Resolution 64 Kbps ~ 1000 Mbps

Security Features

Port security

IEEE 802.1X port-based and MAC-based authentication

IEEE 802.1X EAPOL frames pass-through

IEEE 802.1X supplicant support

Dynamic VLAN assignment

Dynamic QoS assignment

MAC authentication, Web authentication

Voice VLAN, Guest VLAN

Access Control List

- L2/L3/L4
 - L2 ACL filter SA/DA/VLAN
 - L3 IP SA/DA, subnet based
 - L4 TCP/UDP port
 - IPv6
- Time-based (time range)

DHCP Snooping

DHCP Snooping Option 82

IP Source Guard

Dynamic ARP Inspection

Instruction lock (link detection)

PPPoE Intermediate Agent

RADIUS authentication and accounting

TACACS + authentication, authorization, and accounting

Management Security

- HTTP, HTTPS and SSL (secured Web)
- Denial of Service (DoS) protection
- SSH 1.5/V2.0 (secured telnet session)
- Management interface access filtering (SNMP, Web, Telnet)

Management

Switch Management:

- CLI via console port or Telnet
- Web management
- SNMP v1, v2c, v3

Firmware and Configuration:

- Firmware upgrade via TFTP server
- Supports dual image
- Supports auto configuration provision
- Supports auto firmware upgrade
- Multiple configuration files
- Software download/upgrade via TFTP or HTTP server
- Configuration file download/upgrade via TFTP or HTTP server

RMON (groups 1, 2, 3 and 9)

BOOTP, DHCP client for IP address assignment

SNTP, NTP, HTTP, HTTPS, SSH

IP clustering

Port mirroring

VLAN mirror

sFlow

Event/error log/syslog, remote log, SMTP

MIB I/II

LLDP (802.1ab)

Auto traffic control

DHCP: Relay, dynamic provision (via Option 66,67), DHCPINFO, SERVER

MAC-based mirror

ACL mirror

Remote port mirror (RSPAN)

DNS client, proxy

Link Layer Discovery Protocol (LLDP)

LLDP-MED (VoIP related)

OAM Features

IEEE 802.3ah link

IEEE 802.1ag Connectivity Fault Management (CFM)

ITU-T Y.1731 performance and throughput management

Features

IPv6 Features

IPv4/IPv6 dual protocol stack
 IPv6 address types (unicast/multicast only used internally)
 Native IPv6, ICMPv6 & ICMPv6 Redirect, Dual stack
 IPv6 Path MTU Discovery
 IPv6 NeighborDiscovery

- Duplicate address
- Static cache entry
- Address resolution
- Unreachable neighbor detection

 Manual configuration
 SNMP over IPv6
 HTTP over IPv6
 SSH over IPv6
 Ping over IPv6
 Traceroute over IPv6
 IPv6 Telnet support
 IPv6 DNS resolver IPv6
 Syslog
 IPv6 Sntp
 Static Routing
 RIPng
 IPv6 sFlow
 IPv6 OSPFv3
 IPv6 TFTP (CLI not support)
 Remote IPv6 Ping DHCPv6
 Snooping MVRv6
 IPv6 DiffServ
 IPv6 ACL support
 IPv6 Source Guard RA
 Guard
 IPv6 ND Snooping
 MLD Snooping v1/v2

L3 Features IPv4

Static Routing unicast routes
 Equal cost multipath routing (ECMP)
 RIP v1/v2
 OSPF
 BGP4+
 Multicast Routing PIM-DM
 IGMP v1/v2
 IGMP v1/v2 proxy
 IGMP v3
 IGMP v3 proxy
 PIM-SM
 Redundant VRRP
 Proxy ARP
 UDP Helper

L3 Features IPv6

PIM-DM6
 MLD v1/v2
 PIM-SM6
 IPv6 static route
 OSPFv3

IEEE Standard

IEEE 802.1p priority tags
 IEEE 802.1X port authentication
 IEEE 802.3x Ethernet frame start and stop requests and timers used for flow control on full-duplex links
 IEEE 802.3u CSMA/CD access method and physical layer specifications for 100BASE-TX Fast Ethernet
 IEEE 802.3z CSMA/CD access method and physical layer specifications for 1000BASE Gigabit Ethernet
 IEEE 802.1q Virtual LAN
 IEEE 802.1d Spanning Tree Protocol
 IEEE 802.3ad Link Aggregation Control Protocol
 IEEE 802.1s Rapid Spanning Tree Protocol
 IEEE 802.1w Multiple Spanning Tree Protocol

Regulatory

EMI
 CE Mark (EN55022 Class A)
 FCC Part 15 Class A
 EN61000-3-2/3
 VCCI Class A
 Immunity
 EN61000-4-2/3/4/5/6/8/11
 Safety
 UL 60950-1 & CSA 60950-1
 IEC 60950-1 & EN 60950-1
 UL/CUL
 Country of Origin: Taiwan (TAA Compliant)