WovenSystems

Woven Systems TRX 100 Ethernet Switch

Scalable, high-performance server aggregation

The Woven Systems TRX 100 Ethernet Switch is a high-performance, managed Ethernet solution ideally suited for "top of rack" server aggregation in data centers. As an edge switch connected to the Woven EFX 1000 Ethernet Fabric Switch, the TRX 100 enables unprecedented scaling and performance, significantly reducing the cost of connecting servers in the data center.

Supporting up to 48 servers with Gigabit Ethernet (GE) connections, the switch includes four 10 GE uplinks to minimize oversubscription to the next layer of switching. The TRX 100 delivers all the performance available from today's quad-core processors, further extending the massively scalable 10 GE fabric with Woven EFX 1000 switches at its core.

The TRX 100 Ethernet Switch features forty-eight Gigabit Ethernet ports and four 10 Gigabit Ethernet ports.

Addressing data center rack space and power budget challenges, the compact TRX 100 chassis is one rack unit in height and less than 12 inches in depth, compatible with all standard single and dual-sided equipment racks.

The TRX 100 includes standard RJ-45 connections for GE ports and offers two options for 10 GE connections. For lowest cost, latency, and power consumption, the switch supports powered CX4 10 GE connections with either passive or active CX4 cables. Active optical CX4 cables can support 10 GE connections at up to 200 meters. The TRX 100 may be configured with short reach or long reach SFP+ fiber optic interfaces at distances up to 10 kilometers.

To ensure availability, the TRX 100 features standard input power redundancy supporting an AC line input plus DC power input. Optional Layer 3 software supports a variety of routing protocols and multicast features. And, a robust security implementation supports industry-standard authentication and protection methods.

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Physical Ports
- 48 one Gigabit Ethernet RJ-45 ports
- 4 CX4 10 Gigabit Ethernet ports or 4 SFP+ 10 Gigabit Ethernet ports
- 1 RJ-45 console port
- 1 RJ-45 AUX port

LEDs
- Per port: speed, link, activity
- Per device: power, status

User Interfaces
- Command-line interface via console port
- Web-based management via web browser
- Telnet remote login
- SNMP v1/v2c/v3

L2 Features
- Auto MDI/MDIX on all 10/100/1000 BASE-T ports
- 10/100/1000 BASE-T ports supporting auto-sensing, auto-negotiation
- Jumbo frame up to 9 KB
- Wire speed L2 switching performance
- Up to 8K MAC address entries
- Flow control
  - IEEE802.1x for full duplex mode
  - Back-pressure flow control in half duplex mode
- Store-and-forward scheme
- Broadcast, unicast, multicast storm protection
- IGMP snooping
- VLAN
  - IEEE 802.1Q VLAN
  - GARP/GVRP/GMRP
  - Up to 512 VLANs, out of 3965 VLAN IDs
  - Port-based VLAN
  - Protocol-based VLAN
- Spanning tree
  - STP, IEEE 802.1d
  - RSTP, IEEE 802.1w
  - MSTP, IEEE 802.1s
- Link aggregation
  - Up to 6 trunk groups
  - Up to 8 ports per trunk group
  - 802.3ad link aggregation and LACP
  - Cisco ether-channel (static trunk)
  - Load balance for unicast and multicast traffics
- Port mirror (many-to-1)

Routing Features (optional L3 license)
- RIP v1 and v2
- OSPF v1/v2
- Router discovery (IRDP)
- VLAN routing
- VRRP
- IP routing
- Route redistribution
- Route preferences

Multicast (optional L3 license)
- PIM-DM and PIM-SM
- DVMRP
- IGMP v1/v2/v3

Security
- User/password protected system management
- L2/L3/L4 ACL (access control list)
- RADIUS client
- TACACS client
- SSH v1/v2
- SSL v3/TLS v1
- IEEE 802.1x
- Port MAC lock

Quality of Service
- 802.1p-based CoS
- 8 priority queues per port
- IP TOS/precedence-based CoS
- DSCP-based CoS
- Policy-based Diffserv

Management
- 1 RJ-45 console interface
- 1 RJ-45 auxiliary interface
- BOOTP and DHCP for IP address assignment
- DHCP relay function
- Software upload/download via XMODEM or TFTP
- Dual firmware images
- Configuration upload/download via XMODEM or TFTP
- Up to three configuration files including factory default
- SSH v1/v2 switch management
- SSL v3/TLS v1 switch management
- SSH/SSL/TLS keys download via XMODEM or TFTP
- Simple Network Time Protocol (SNTP)
- IPv6 packet forwarding
- Ping function
- Trace route function
- Telnet function
- DNS client and DNS relay functions
- Message/event/error/trap logs
- Logging to local file and syslog server
- Common Command Line Interface (CLI) switch management
- Web switch management
- SNMP v1, v2c, and v3 switch management
- Private Enterprise MIB
- RMON groups 1, 2, 3, and 9
- Port mirror (many-to-1)

Physical Specifications
- Dimensions (w x d x h):
  - 440 x 285.8 x 42.4 mm
  - 17.32 x 11.25 x 1.67 in
- Weight: 3.1 kg (6.69 lbs)

Network Protocol and Standards Compatibility
- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TRX
- IEEE 802.3z 1000BASE-SX
- IEEE 802.3x Flow Control
- IEEE 802.3ad Link Aggregation
- IEEE 802.1v Protocol VLAN and Port VLAN
- IEEE 802.1d Spanning Tree Protocol
- IEEE 802.1w Rapid Spanning Tree Protocol
- IEEE 802.1s Multiple Spanning Tree Protocol

System Parameters
- Number of VLANs — 512
- Maximum VLAN ID — 3965
- Maximum RADIUS servers — 3
- Maximum RADIUS accounting servers — 1
- Maximum TACACS servers — 3
- Maximum IP filter addresses — 5
- Maximum telnet or SSH sessions — 5
- Maximum WEB sessions — 8
- Number of 802.1p traffic classes — 8
- Number of trunk groups — 6
- Number of member ports per trunk group — 8
- Number of MSTP instances — 5
- Number of routing table entries — 512
- Number of ACL — 100
- Number of rules in an ACL — 10
- Maximum classes — 32
- Maximum rules per class — 7
- Maximum member classes per policy — 10
- Maximum attributes per class — 1
- Maximum service interfaces — 96

Performance Specifications
- Forwarding modes: Store-and-forward
- Switch latency: less than 20 microseconds for 64-byte frames
- System memory: 256 MB
- Flash size: 32 MB
- Mean Time Between Failures (MTBF): 175,699 hours

Environmental Specifications
- Operating temperature: 10° to 50° C
- Operating humidity: 80% maximum relative humidity

Power Specifications
- 100—240VAC auto-sensing, 156 watts
- 12 VDC, 13 amps

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