

DATA SHEET

3903x


Service Delivery Switch



Ciena's 3903x Service Delivery Switch is an advanced Ethernet business demarcation device in a cost-effective and compact form factor.

The 3903x is based on Ciena's field-proven Carrier Ethernet technology, which has been deployed worldwide by dozens of network operators. The software consists of the Service-Aware Operating System (SAOS) common to all of Ciena's service delivery and aggregation switches, and provides operational efficiency and consistent system and service attributes across the entire portfolio.

The 3903x includes Ciena's performance testing hardware engine to provide RFC2544 and Y.1564 benchmark performance test capabilities, enabling full line-rate customer traffic measurements end-to-end across the Ethernet Virtual Circuit (EVC). This dramatically lowers OPEX by eliminating the need for on-site personnel or adjunct test equipment. Ciena's performance testing also improves end-customer satisfaction by enabling the operators to be proactively responsive to potential service outages and provide increased visibility to metrics important to end-users. Coupled with Ciena's zero-touch provisioning techniques, the 3903x minimizes the Total Cost of Ownership (TCO) for high-scale Ethernet services up to 1 Gb/s.

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Customer Benefits

The small size and customer-friendly aesthetic design enable the 3903x to be deployed in small-office/home-office as well as traditional office environments. The fanless design eliminates noise to permit operation in even the closest of quarters.

Features and Benefits

- Provides advanced Carrier Ethernet services powered by Ciena's SAOS
- Supports two 100/1000Base-X SFP ports and a combo port supporting 100/1000 Base-X SFP and RJ-45 10/100/1000Base-T
- Creates the lowest TCO at scale using Ciena's zero-touch provisioning
- Incorporates on-board ITU-T Y.1564/RFC 2544 service activation and performance benchmark testing capabilities, enabling end-to-end SLA verification without a truck roll
- Features sophisticated OAM capabilities:
 - ITU-T Y.1564 and RFC 2544 generator and reflector for performance measurement
 - IEEE 802.3ah link layer OAM
 - IEEE 802.1ag connectivity fault management
 - ITU-T Y.1731 performance monitoring: delay, jitter, loss
 - IETF RFC 5618 TWAMP sender and responder for L3 SLA monitoring
- Fanless, silent operation

Technical Information

Interfaces

2 x 100/1000M SFP NNI/UNI ports
1 x 10/100/1000M RJ-45; 100/1000M SFP
NNI/UNI combo port
1 x Console Port (RJ-45, EIA-561)

Ethernet

IEEE 802.3 Ethernet
IEEE 802.3z Gigabit Ethernet
IEEE 802.3ab 1000Base-T
IEEE 802.3u 100Base-TX
IEEE 802.1D MAC Bridges
IEEE 802.1Q VLANs - Including .1p Priority
IEEE 802.1ad Provider Bridging (Q-in-Q) VLAN full
S-VLAN range
VLAN tunneling (Q-in-Q) for Transparent LAN
Services (TLS)
Per-Port MAC Learning Control
Rapid / Multiple Spanning Tree (RSTP/MSTP)
IEEE 802.3ad Link Aggregation Control Protocol
(LACP)
ITU-T G.8032 Ethernet Rings Protection Switching
Jumbo Frames to 9216 bytes
Layer 2 Control Frame Tunneling
Private Forwarding Groups
MEF CE 2.0 Compliant
E-LINE: EPL, EVPL
E-LAN: EP-LAN, EVP-LAN
E-Access: Access EPL, Access EVPL
E-Tree: EP-Tree, EVP-Tree

Carrier Ethernet OAM

IEEE 802.1ag Connectivity Fault Management
(CFM)
IEEE 802.3ah Ethernet in the First Mile (EFM)
IEEE 802.1AB Link Layer Discovery Protocol
(LLDP)
ITU-T Y.1731 Performance Monitoring
RFC 2544 Performance Benchmarking Test
Generation and Reflection up to 1GE
ITU-T Y.1564 Ethernet Service Activation Test
Methodology
RFC 5618 TWAMP Responder and Receiver
TWAMP Sender
TWAMP +/- 1ms timestamp accuracy

Quality of Service

8 Hardware Queues per Port
Committed, Excess Information Rate (CIR, EIR)
Classification based on
IEEE 802.1D priority
VLAN, source port, destination port
IP Precedence and IPDSCP

Layer 2, 3, 4 Quality of Service
Ingress metering per-port
Ingress metering per-port per-CoS
Ingress metering per-port per-VLAN
Up to 1,000 Ingress Meters per-port
Up to 1,000 Ingress Meters per-system
C-VLAN Priority to S-VLAN Priority Mapping
S-VLAN Priority based on C-VLAN ID
Per-VLAN Classification, Metering, and Statistics
Per-port, per-VLAN QoS with CIR and EIR traffic
on Egress Queues

Multicast Management

RFC 2236 IGMPv2 Snooping
IGMPv3 PDU support
IGMP Domains
IGMP Message Filtering
IGMP Inquisitive Leave
Broadcast/Multicast Storm Control
Unknown Multicast Filtering
Well-known Protocol Forwarding

Network Management

Enhanced CLI
CLI-based configuration files
SNMPv1/v2c/v3
SNMPv3 Authentication and Message Encryption
RFC 1213 SNMP MIB II
RFC 1493 Bridge MIB
RFC 1643 Ethernet-like Interface MIB
RFC 1573 MIB II interfaces
RFC 1757 RMON MIB - including persistent
configuration
RFC 2021 RMON II and RMON Statistics
Per-VLAN Statistics
RADIUS Client and RADIUS Authentication
RFC 2866 RADIUS Accounting
TACACS+ AAA
RFC 2131 DHCP Client
RFC 3315 DHCP for IPv6 (DHCPv6)
RFC 6221 Lightweight DHCPv6 Relay Agent
(LDRA)
RFC 1305 NTP Client
RFC 1035 DNS Client
Telnet Server
RFC 1350 Trivial File Transfer Protocol (TFTP)
RFC 959 File Transfer Protocol (FTP)
Secure File Transfer Protocol (SFTP)
Secure Shell (SSHv2)

Syslog with Syslog Accounting
Port State Mirroring
Virtual Link Loss Indication/Remote Link Loss
Forwarding (VLLI/RLLF)
Dual-Stack IPv4/IPv6 management plane
Local Console Port
Comprehensive Management via Ethernet
Services Manager
Remote Autoconfiguration via TFTP, SFTP
Software download/upgrade via TFTP, SFTP

Service Security

Common Criteria EAL2 compliant and certified
Egress Port Restriction
IEEE 802.1X Port-Based Network Access Control
(RADIUS/MD5)
Layer 2, 3, 4 Protocol Filtering
Broadcast Containment
User Access Rights
Per-port or per-VLAN Service Access Control
Hardware-based DOS Attack Prevention
MAC Address Table Capacity
16,000 MAC addresses

Power Requirements

External AC power supply
AC Input: 100V, 240V AC (nominal)
AC Frequency: 50/60 Hz

Agency Approvals

Agency Marks:

NRTL (Canadian Standards Association)
CE mark (European Union)
EMC Directive (2004/108/EC)
LVD Directive (2006/95/EC)
RoHS2 Directive (2011/65/EU)
Australia RCM (Australia/New Zealand)
VCCI (Japan)

Emissions:

FCC Part 15 Class B
Industry Canada ICES-003 Class B
VCCI Class B
CISPR 22 Class B
EN 55022

Immunity (EMC):

CISPR 24
EN 55024
EN 300 386

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Packet Networking solution



Safety:

EN 60950-1
CAN/CSA C22.2 No. 60950-1-07
UL 60950-1 2nd Ed
IEC 60950-1

Environmental:

RoHS2 Directive (2011/65/EU)
WEEE 2002/96/EC

Environmental Characteristics

Operating Temperature:
32°F to +104°F (0°C to +40°C)
Storage Temperature:
-40°F to +158°F (-40°C to +70°C)
Relative Humidity:
5% to 90% (non-condensing)

Physical Characteristics

Mounting: Wall, Desktop
Dimensions:
6.0"(W) x 6.8"(D) x 7.7"(H)
152mm(W) x 173mm(D) x 196mm(H)
Weight:
1.5lbs; 0.74kg (Platform)
0.4lbs; 0.2kg (External Power Supply)

Ordering Information	
Part Number	Product Description
170-3903-910	3903x, (2)100M/1G SFP, (1)100M/1G SFP/RJ45, (1) Slot External Pwr Sup, Includes 1 Ext Us Ac Psu
K70-3903-910	FG KIT, 3903X, (2)100M/1G SFP, (1)100M/1G SFP/RJ45, (1) Slot Ext Pwr Sup, Includes 1 Ext Global AC PSU
Software	
Required OS Base System Perpetual Software Licenses	
S70-0020-900	SAOS Advanced Ethernet Perpetual Software License for 3903 System
S70-0020-901	SAOS Advanced OAM Perpetual Software License for 3903 System
Optional OS Applications	
170-0204-900	SAOS Advanced Security Perpetual Software License for Use with SAOS 6.X
ESM Related	
S70-0021-900	ESM Carrier ED Right to Manage Perpetual Software License for 3903

