5171

Ciena's 5171 Platform empowers advanced access networks with 100GbE packet services beyond the Central Offices and POP sites, enabling deployment into street cabinets and other uncontrolled locations. The 5171 addresses the increasing need for 100GbE services and high-density 10GbE aggregation and delivers high-bandwidth enterprises, MBH, and MSO services with WaveLogic™ 5 DWDM.

Driving the industry toward 10GbE and 100GbE service delivery

Continued annual growth in metro network bandwidth demand is driving a change in the mix of connections and services, from 1GbE aggregation to 10GbE, and 10GbE aggregation to 100GbE. In addition, demand for high-speed 100GbE UNI services and the shift from 10GbE to 25GbE server connections is steadily increasing. This shift toward higher-bandwidth services means metro and regional Ethernet networks, once optimized for lower 1GbE rates, are no longer aligned to changing metro network traffic trends.

Dense, compact form-factor platform

Efficient use of real estate assets is a growing concern for network operators, who either host their own network equipment or lease power and space in collocation facilities. As services multiply, operators have been forced to stack 10G-capable equipment, incurring additional collocation rental and power costs. The 5171's sleek, shallow depth and front access enable cabinet and controlled environmental vault deployment. In addition, extended temperature range can be used for uncontrolled environments for outdoor aggregation of 1/10/25/100/200GbE, enabling high capacity at the outdoor edge.

Space is increasingly limited and expensive, and network operators face substantial capital expenditures to activate new locations or must retire active equipment to free space for service delivery. Addressing bandwidth demand growth by deploying more and larger equipment is simply not a sustainable business model—economically or environmentally. Ciena's 5171 cost-effectively offers dense 100GbE service delivery in

Features and Benefits

- Temperature-hardened (-40C to +65C) with 10"/254mm depth for temperature-challenged or space-constrained locations

- Two flexible slots provide maximum port speeds and capacities – 200G, 100G, 40G, 25G and 10G

- 4 x 25G/10G/1G and 36 x 10G/1G fixed ports

- Hardware-assisted packet OAM scaled to deliver 100GbE services with guaranteed SLA differentiation

- Advanced QoS with Hierarchical Egress Shaping and Ingress Metering

- Carrier Ethernet, IP routing, and MPLS

- Secure Zero-Touch Provisioning (SZTP) for rapid, secure, and error-free turn-up of services

- Advanced Synchronization including built-in GPS receiver

- Built-in RFC2544 and Y.1564 SAT with 100 Gb/s traffic generation and analysis

- Ciena's MCP multi-layer support for end-to-end network management control and planning

- Low power consumption

- Redundant or simplex AC or DC power
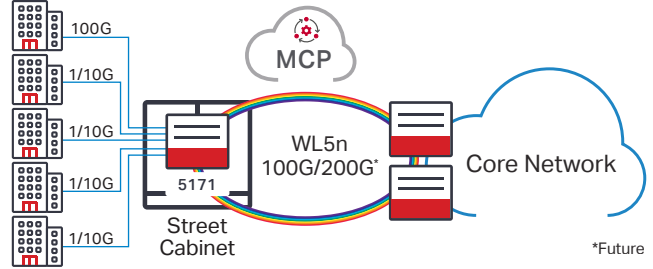
100G Cell Router
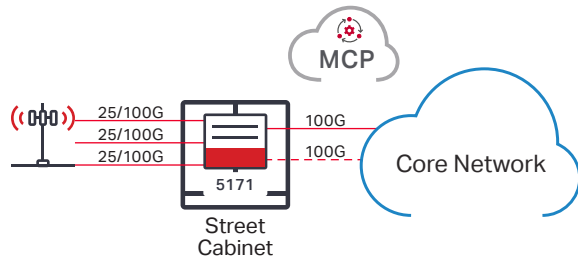
Remote Aggregation

Figure 1. 5171 Outside service delivery and aggregation functions

2RU, 254mm deep, fixed form factor with dual pluggable power supplies, optics, and coherent optics to minimize any downtime.

Differentiation through accelerated service velocity

Service velocity has become a critical competitive advantage for network operators. In many cases, service velocity is the determining factor in winning new service sales. The 5171 implements Ciena's unique ZTP capabilities, allowing network operators to rapidly deploy new packet-based services in a fully automated manner. By reducing or eliminating costly and time-consuming manual intervention, provisioning errors are eliminated via ZTP. Most importantly, ZTP improves service deployment velocity and significant competitive advantage.

Rich packet Operations, Administration, and Maintenance (OAM) suite of capabilities

As network operators and their customers increasingly rely on new packet-based networks, providers must maintain guaranteed service levels. Packet networks must support a broad array of packet OAM capabilities to ensure network operators can proactively and reactively maintain and report on the ongoing health of their metro Ethernet networks and services. The 5171 also supports a comprehensive set of hardware-assisted packet OAM capabilities. It is architected to power Service Level Agreement (SLA) metrics and OAM at a high scale, enabling operators to take full advantage of the port density and 800 Gb/s fabric for delivering the maximum number of services at the lowest cost. Additionally, the 5171 has an embedded line-rate Service Activation Test (SAT) engine (RFC2544, Y.1564) with traffic generation to a full 100 Gb/s to guarantee strict, market-differentiating SLAs, without relying on costly external test equipment.

Simplified multi-layer management and control

Ciena's Manage, Control and Plan (MCP) software offers a unique and comprehensive solution for the administration of mission-critical networks that span access, metro, and core domains, and provides unprecedented multi-layer visibility from the photonic to the packet layers. With this innovative management approach, MCP supports a programmable and automatable solution that provides a fully open approach to installing, manipulating, and monitoring service behaviors in an SDN environment.

Advanced QoS support

The 5171 supports fine-grained SLA monitoring and enforcement techniques to help operators successfully deliver on stringent SLA guarantees. These capabilities enable greater revenue generation by optimizing available asset utilization. The platform offers deep buffers managed by Ciena's Service-Aware Operating System (SAOS) to adapt to specific application requirements. Sophisticate VLAN tag manipulation and control supports innovative customer traffic separation approaches alongside a rich set of classification-of-service flows through the platform's fabric.

Ingress metering can be configured for packet, offering the ultimate in flexible flow control based on Layer 2, 3, and 4 classification. In addition, egress bandwidth shaping on a per-EVC basis is built to allow fine-tuning delay and buffering efficiency within the platform. The 5171 also provides deep buffers to maximize traffic throughput and reliability by enabling operators to optimize and/or adjust buffer depths to match service types and SLA requirements, such as minimizing latency or maximizing packet delivery.
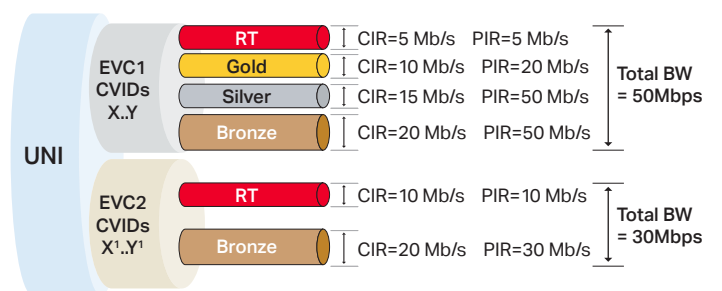

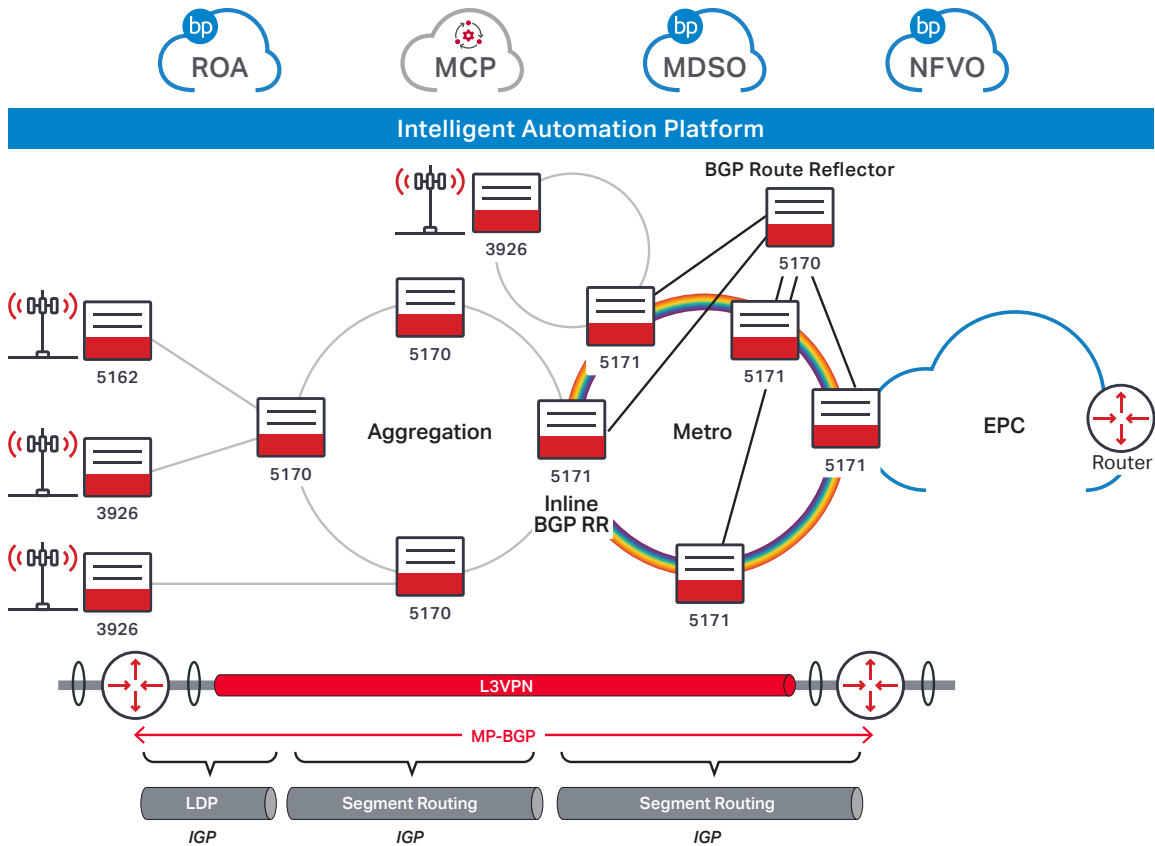Figure 2. Hierarchical QoS supports multiple services

Figure 3. Ciena's Adaptive IP™ solution supporting mobile network evolution

IP Router Configuration (SAOS 10.x)

When configured with SAOS software stream 10.x, the 5171 operates as an IP router supporting NETCONF/YANG to enable an open SDN environment with full visibility via telemetry and automated provisioning using open APIs. The 5171 is purpose-built to provide Layer 2 and Layer 3 services over carrier-grade infrastructure by supporting a rich suite of Ethernet, IP/MPLS, BGP, IS-IS, OSPF, and Segment Routing.

Universal Aggregation Configuration (SAOS 8.x)

When configured with the SAOS 8.x software stream, the 5171 supports a wide range of service offerings, including MEF CE-compliant E-Line, E-LAN, E-Tree, and E-Access services, over a carrier-grade, connection-oriented infrastructure. It also supports a rich suite of L2 Ethernet, MPLS, OAM, Sync, ACL, and QoS capabilities to support a broad range of applications.

Technical information (SAOS 10.x) – Router Configuration

Ethernet

IEEE 802.1ad Provider Bridging (Q-in-Q) VLAN full S-VLAN range

IEEE 802.1D MAC Bridges

IEEE 802.1p Class of Service (CoS) prioritization

IEEE 802.1Q VLANs

IEEE 802.3 Ethernet

IEEE 802.3ab 1000Base-T via copper SFP

IEEE 802.3ad Link Aggregation Control Protocol (LACP)

IEEE 802.3ba-2010 40GbE and 100GbE

IEEE 802.3z Gigabit Ethernet Layer 2 Control Frame Tunneling

Link Aggregation (LAG): Active/Active; Active/ Standby

Jumbo frames to 9216 bytes

VLAN tunneling (Q-in-Q) for Transparent LAN Services (TLS)

MEF CE 3.0 Compliant*

E-Access: Access EPL, Access EVPL

E-LAN: EP-LAN, EVP-LAN

E-LINE: EPL, EVPL

E-Tree: EP-Tree, EVP-Tree

Carrier Ethernet OAM

Dying Gasp with Syslog and SNMP Traps

IEEE 802.1ab Link Layer Discovery Protocol (LLDP)

IEEE 802.1ag Connectivity Fault Management (CFM)

ITU-T Y.1731 Performance Monitoring (SLM; DMM)

Synchronization

External Timing Interfaces:
• BITS in or out (1.544 Mb/s, 2.048MHz and 2 Mb/s)
• Frequency in or out (1.544MHz, 2.048MHz, and 10MHz)
• 1pps and ToD in or out

IEEE 1588v2 PTP

Line Timing Interfaces:
• 1GbE/10GbE In and Out
• 40GbE/100GbE In and Out
• 100GbE/200GbE* In and Out

ITU-T G.8262/G.8264 EEC option1 and option2

ITU-T G.8262 Synchronous Ethernet Stratum 3E oscillator

Technical information (SAOS 10.x) – Router Configuration continued

Networking Protocols

ISO10598 IS-IS intra-domain routing protocol
RFC1195 Use of OSI Is-Is for Routing in TCP/IP and Dual Environments

RFC1321 The MD5 Message-Digest Algorithm

RFC1654 A Border Gateway Protocol 4 (BGP-4)

RFC1655 Application of the Border Gateway Protocol in the Internet

RFC1656 BGP-4 Protocol Document Roadmap and Implementation Experience

RFC1771 (BGP-4)

RFC1772 BGP basic functions support

RFC1812 Requirements for IP Version 4 Routers

RFC1930 Guidelines for creation, selection, and registration of an Autonomous System (AS)

RFC1966 BGP Route-Reflection

RFC1997 BGP Community Attribute

RFC1998 An Application of the BGP Community Attribute in Multi-home Routing
RFC2270 Using a Dedicated AS for Sites Homed to a Single Provider

RFC2283 Multiprotocol Extensions for BGP-4

RFC2328 OSPF Version 2 BGP Prefix Independent Convergence draftietf-rtgwg-bgp-pic-08.txt; EVPN VPWS Flexible Cross-Connect Service; draft-ietf-bess-evpn-vpws-fxc-01.txt

RFC2439 BGP Route Flap Damping

RFC2474 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers

RFC2475 An Architecture for Differentiated Services

RFC2519 A Framework for Inter-Domain Route Aggregation

RFC2547 BGP/MPLS VPNs

RFC2597 Assured Forwarding PHB Group

RFC2697 A Single Rate Three Color Marker

RFC2698 A Two Rate Three Color Marker

RFC2764 A Framework for IP Based Virtual Private Networks

RFC2842 Capabilities Advertisement with BGP-4

RFC2858 Multiprotocol Extensions with BGP-4

RFC2873 TCP Processing of the IPv4 Precedence Field

RFC2917 A Core MPLS IP VPN Architecture

RFC2918 Route Refresh Capability for BGP-4

RFC2966 route leak support

RFC2796 Route Reflection

RFC2865 Remote Authentication Dial in User Service (RADIUS)

RFC2917 A Core MPLS IP VPN Architecture

RFC3031 Multiprotocol Label Switching Architecture

RFC3032 MPLS label stack encoding

RFC3037 LDP Applicability

RFC3107 Support BGP carry Label for MPLS
RFC3215 LDP State Machine

RFC3247 Supplemental Information for the New Definition of the EF PHB

RFC3260 New Terminology and Clarifications for Diffserv

RFC3277 IS-IS Transient Blackhole Avoidance

RFC3359 Reserved Type, Length and Value (TLV) Codepoints in Intermediate System to Intermediate System

RFC3392 Support BGP capabilities advertisement

RFC3443 MPLS TTL processing

RFC3719 Recommendations for Interoperable Networks using IS-IS

RFC3787 Recommendations for Interoperable IP Networks using IS-IS

RFC3906 Calculating Interior Gateway Protocol (IGP) Routes

RFC4250 Protocol Assigned Numbers

RFC4251 The Secure Shell (SSH) Protocol Architecture

RFC4252 The Secure Shell (SSH) Authentication Protocol

RFC4253 The Secure Shell (SSH) Transport Layer Protocol

RFC4250 Protocol Assigned Numbers

RFC4251 The Secure Shell (SSH) Protocol Architecture

RFC4252 The Secure Shell (SSH) Authentication Protocol

RFC4253 The Secure Shell (SSH) Transport Layer Protocol

RFC4254 The Secure Shell (SSH) Connection Protocol

RFC4271 A Border Gateway Protocol 4 (BGP-4)

RFC4344 The Secure Shell (SSH) Transport Layer Encryption Modes SSH File Transfer Protocol, Draft 13 RFC1812 Requirements for IP Version 4 Routers

RFC4360 BGP Extended Communities Attribute

RFC4364 BGP/MPLS IP Virtual Private Networks (VPNs)

RFC4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP)

RFC4486 Subcodes for BGP Cease Notification Message

RFC4632 Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan

RFC4684 Constrained Route Distribution for Border Gateway Protocol/Multiprotocol Label Switching (BGP/MPLS) Internet Protocol (IP) Virtual Private Networks (VPNs)

RFC4760 Multiprotocol Extensions for BGP-4

RFC4762 Virtual Private LAN Service (VPLS) Using Label Distribution Protocol (LDP) Signaling (HVPLS)

RFC4893 BGP Support for Four-octet AS Number Space

RFC5004 Avoid BGP Best Path Transitions from One External to Another

RFC5036 LDP Specification

RFC5037 Experience with the LDP protocol

RFC5301 Dynamic Hostname Exchange Mechanism for IS-IS

RFC5302 Domain-Wide Prefix Distribution with Two-Level IS-IS

RFC5303 Three-Way Handshake for IS-IS Point-to-Point Adjacencies

RFC5309 Point-to-Point Operation over LAN in Link State Routing Protocols

RFC5396 Textual Representation of Autonomous System (AS) Numbers

RFC5398 Autonomous System (AS) Number Reservation for Documentation Use

RFC5462 Multiprotocol Label Switching (MPLS) Label Stack Entry: "EXP" Field Renamed to "Traffic Class" Field

RFC5492 Capabilities Advertisement with BGP-4

RFC5561 LDP Capabilities

RFC5668 4-Octet AS Specific BGP Extended Community

RFC5681 TCP Congestion Control

RFC6241 Network Configuration Protocol (NETCONF)

RFC6310 Pseudowire (PW) Operations, Administration, and Maintenance (OAM) Message Mapping

RFC6793 BGP Support for Four-Octet Autonomous System (AS) Number Space

RFC7737 Label Switched Route (LSP) Ping and Traceroute Reply Mode Simplification

SR-MPLS TI-LFA Topology Independent Fast Reroute using Segment Routing draft-ietfrtgwg-segment-routing-ti-lfa-01

RFC8572 Secure Zero Touch Provisioning (SZTP)

RFC7911 Advertisement of Multiple Paths in BGP

RFC8214 Virtual Private Wire Service Support in Ethernet VPN

Network Management

Alarm Management and Monitoring Configuration

Comprehensive Management via CLI

Event and Alarm Notification/Generation

gRPC base Telemetry

IPv4 and IPv6 Management Support

Management via NetConf/YANG Models

RADIUS, AAA

Remote Auto configuration via TFTP, SFTP

Remote Link Loss Forwarding (RLLF)

RFC1350 Trivial File Transfer Protocol (TFTP)

RFC2131 DHCP Client

RFC5905 NTP Client

Secure File Transfer Protocol (SFTP)

Secure Shell (SSHv2)

Software upgrade via FTP, SFTP

Syslog Accounting

TACACS + AAA

Zero Touch Provisioning

Technical Information (SAOS 8.x) – Universal Aggregation Configuration

Ethernet

Hierarchical Quality of Service (HQoS) including Ingress Metering/Egress shaping Private Forwarding Groups

IEEE 802.1ad Provider Bridging (Q-in-Q) VLAN full S-VLAN range

IEEE 802.1D MAC Bridges

IEEE 802.1p Class of Service (CoS) prioritization IEEE 802.1Q VLANs

IEEE 802.3 Ethernet

IEEE 802.3ab 1000Base-T via copper SFP IEEE 802.3ad Link Aggregation Control Protocol (LACP)

IEEE 802.3ba-2010 40GbE and 100GbE

IEEE 802.3z Gigabit Ethernet

Jumbo frames to 10,222 bytes

Layer 2 Control Frame Tunneling

Link Aggregation (LAG): Active/Active; Active/Standby

MEF 10.2 Egress Bandwidth Shaping per EVC per COS

Multi-chassis LAG (MC-LAG) Active/Standby

Per-VLAN MAC Learning Control Private Forwarding Groups

VLAN tunneling (Q-in-Q) for Transparent LAN Services (TLS)

MEF 3.0 Certified[*]

E-Access: Access EPL, Access EVPL

E-LAN: EP-LAN, EVP-LAN

E-LINE: EPL, EVPL

E-Tree: EP-Tree, EVP-Tree

Carrier Ethernet OAM

Dying Gasp with Syslog and SNMP Traps EVC Ping (IPv4)

Generation and Reflection at 100GbE

IEEE 802.1ab Link Layer Discovery Protocol (LLDP)

IEEE 802.1ag Connectivity Fault Management (CFM)

IEEE 802.3ah EFM Link-fault OAM

ITU-T Y.1564 Ethernet Service Activation Test Methodology

ITU-T Y.1731 Performance Monitoring (SLM; DM) with simultaneous session

RFC2544 Benchmarking Methodology for Network Interconnect Device

RFC5618 TWAMP Responder and Receiver TWAMP Sender

Synchronization

External Timing Interfaces:
- BITS in or out (1.544 Mb/s, 2.048MHz and 2 Mb/s)
- Frequency in or out (1.544MHz, 2.048MHz, and 10MHz)
- 1pps and ToD in or out

IEEE 1588v2 PTP

Line Timing Interfaces:
- 1GbE/10GbE In and Out
- 40GbE/100GbE In and Out
- 100GbE/200GbE[*] In and Out

ITU-T G.8262/G.8264 EEC option1 and option2

ITU-T G.8262 Synchronous Ethernet Stratum 3E oscillator

Networking Protocols

Alarm Indication Signaling (AIS) with Link Down Indication (LDI) and Remote Defect Indication (RDI)

Control Channel types CC1, CC2, CC4

Connectivity Verification types 1, 2

DHCPv4 Relay Agent with Option 82

G.8032/IGMP interworking

DHCPv6

IGMPv3 with SSM IGMP over MPLS-TP

IS-IS Route Summarization

ITU-T G.8032 v1, v2, v3 Ethernet Ring Protection Switching

Layer 2 Control Frame Tunneling over MPLS Virtual Circuits

LSP Dynamic provisioning 1:1 Tunnel protection

MPLS AIS-LDI with Signal Degrade

MPLS Label Switch Path (LSP) Tunnel Groups

MPLS Label Switch Path (LSP) Tunnel

MPLS Multi-Segment Pseudo wires

MPLS Static VC Shaping Automatic

MPLS Virtual Private Wire Service (VPWS)

OSPF/IS-IS for Dynamic MPLS-TP Control Plane

Pseudowire Reversion

Redundancy Topology LDP

RFC2205 RSVP IS-IS L1/L2

RFC3031 MPLS architecture

RFC3209 RSVP-TE: Extensions to RSVP for LSP

RFC3630 OSPF-T

RFC4447 Pseudo wire Setup and Maintenance using Label Distribution Protocol (LDP)

RFC4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks (PW over MPLS)

RFC4664 Framework of L2VPN (VPLS/VPWS)

RFC4665 Service Requirement of L2 VPN

RFC4762 VPLS (Virtual Private LAN Service) and Hierarchical VPLS (H-VPLS)

RFC5654 MPLS-Transport Profile (TP) LSP Static provisioning

RFC5884 LSP Bidirectional Forwarding Detection (BFD) via GAL/G-Ach channels

RFC6215 MPLS Transport Profile User-to-Network and Network-to-Network Interfaces

RFC6426 MPLS On-demand Connectivity Verification and Route Tracing

RFC6428 LSP and PW Connectivity Verification and Trace Route Static ARP and MAC Destination Address Resolution

VCCV (Virtual Circuit Continuity Check) Ping and Trace Route VCCV BFD based PW Pseudo wire Switchover Multicast

Network Management

Alarm Management and Monitoring Configuration

Event and Alarm Notification/Generation

IPv4 & IPv6 Management Support

Integrated Firewall

Local Console Port

Per-VLAN Statistics Port State Mirroring

RADIUS, AAA

RADIUS Client and RADIUS Authentication

Remote Auto configuration via TFTP, SFTP

Remote Link Loss Forwarding (RLLF)

RFC1213 SNMP MIB II

RFC1350 Trivial File Transfer Protocol (TFTP)

RFC1493 Bridge MIB

RFC1573 MIB II Interfaces

RFC1643 Ethernet-like Interfacing MIB

RFC1757 RMON MIB-including persistent configuration

RFC2021 RMON II and RMON Statistics

RFC2131 DHCP Client

RFC2877 Alarm MIB

RFC4291 IPv6 addressing (for management plane)

RFC4443 ICMPv6

RFC4862 Stateless address auto-configuration

RFC5905 NTP Client

Secure File Transfer Protocol (SFTP)

Secure Shell (SSHv2)

SNMP v1/v2c/v3

SNMP v3 authentication and Message Encryption

Software upgrade via FTP, SFTP

Syslog Accounting

TACACS + AAA

Telnet Server

Virtual Link Loss Indication (VLLI)

Zero Touch Provisioning

Technical information (Common)

Interfaces
Fixed Ethernet Ports:
4 x 1G/10G/25G SFP28+
36 x 1G/10G SFP+
2 x Module Slots:
2 x 40G/100G QSFP28
1 x 40G/100G QSFP28 + 100G CFP2
8 x 25G SFP28*
Other:
1 x 10//100/1000M RJ-45 mgmt. port
1 x serial console (RJ-45, EIA-561)
1 x USB
1 x RJ45 BITS
1 x Mini coax frequency in or out
1 x Mini coax 1 PPS in or out
1 x coax GNSS antenna

Agency Approvals
Anatel (Brazil)
Australia RCM (Australia/New Zealand)
CE mark (EU)
EMC Directive (2014/30/EU)
ETSI 300 019 Class 1.2, 2.2, 3.2
GR-1089 Issue 6 – NEBS Level 3, Zone 4 Earthquake
GR-63-CORE, Issue 4 – NEBS Level 3
LVD Directive (2006/95/EC)

NOM (Mexico)
NRTL (NA)
RoHS2 Directive (2011/65/EU)
VCCI (Japan)

Service Security
Broadcast Containment Egress Port Restriction
Hardware-based DOS Attack Prevention Layer 2, 3, 4 Protocol Filtering
User Access Rights Local user authorization

Physical Characteristics
Dimensions:
17.5"(W) x 10"(D) x 3.5"(H);
444mm (W) x 254mm (D) x 88mm (H)
Weight: 34.2 lb (15.5kg)

*Feature targeted for 1H 2020 availability

Standards Compliance
Emissions:
CISPR 22 Class A CISPR 32 Class A EN 300 386
EN 55032
FCC Part 15 Class A
GR-1089 Issue 6
Industry Canada ICES-003 Class A
VCCI Class A

Environmental:
RoHS2 Directive (2011/65/EU)
WEEE 2002/96/EC
GR-3108 Issue 2 Network Equipment in the Outside Plant (OSP) Class 2
Operating Temperature:
-40 F to + 149 F (-40 C to + 65C)
Storage Temperature:
-40 F to + 158 F (-40 C to + 70C)
Immunity (EMC):
GR-1089 Issue 6 Power:
CISPR 24
EN 300 386
EN 55024
Power:
ETSI EN 300 132-2
ETSI EN 300 132-3
Safety:
ANSI/UL 60950-1 2nd edition 2007
CAN/CSA C22.2 No. 60950-1-07
EN 60950-1
IEC 60825-1 2nd edition (2007)
IEC 60825-2 3rd edition (2004)

Visit the Ciena Community
Answer your questions

Ordering information (SAOS 10.x) – Router Configuration	
Part Number	Description
170-5171-910	5171,(36)10/1G SFP+,(4)25/10/1G SFP28,(2)SLOTS 200G MODULES,SAOS 10.X,SYNC, EXT. TEMP,(2) SLOTS AC OR DC PLUG POWER SUPPLY
170-0310-900	5171,DC PLUGGABLE POWER SUPPLY, -48V
170-0311-900	5171,AC PLUGGABLE POWER SUPPLY, WIDE RANGE 120/240V
170-0312-900	5171,MODULE, (2)100G/40G QSFP28
170-0313-900	5171,MODULE, (2)100G/40G CFP2
170-0314-900	5171,MODULE, (1)200G/100G/40G CFP2
170-0316-900	5171,MODULE, (8)25G/10G SFP28
170-0315-900	5171,MODULE, (1)100G/40G CFP2,(1)100G/40G QSFP28
170-0317-900	5171,PLUGGABLE SPARE FAN MODULE
170-0318-900	5171,FILLER COVER
Required OS Base System Perpetual Software Licenses	
S75-LIC-5171EO-P	SAOS ETHERNET & OAM PERPETUAL SOFTWARE LICENSE FOR 5171
Optional OS Applications	
S75-LIC-5171MPLS-P	SAOS IP/MPLS APPLICATION PERPETUAL SOFTWARE LICENSE FOR 5171
S75-LIC-5171SYNC-P	SAOS SYNCHRONIZATION PERPETUAL SOFTWARE LICENSE FOR 5171
S75-LIC-5171100G-P	SAOS 100G PERPETUAL SOFTWARE LICENSE FOR 5171
S75-LIC-5171SEC-P	SAOS SECURITY PERPETUAL SOFTWARE LICENSE FOR 5171
S75-LIC-5171HOST-P	SAOS APPLICATION HOSTING SOFTWARE LICENSE FOR 5171, PERPETUAL
S75-LIC-5171BNDL01-P	SAOS-AE-OAM,MPLS,SYNCH,SECURITY,APP HOST,100G LICENSE FOR 5171, PERPETUAL
S75-LIC-5171BNDL01-T	SAOS-AE-OAM,MPLS,SYNCH,SECURITY,APP HOST,100G LICENSE FOR 5171, 90 DAY TRIAL

Ordering information (SAOS 8.x) – Universal Aggregation Configuration	
Part Number	Description
170-5171-910	5171,(36)10/1G SFP+,(4)25/10/1G SFP28,(2)SLOTS 200G MODULES,SAOS 10.X,SYNC, EXT. TEMP,(2)SLOTS AC OR DC PLUG POWER SUPPLY
170-0310-900	5171,DC PLUGGABLE POWER SUPPLY, -48V
170-0311-900	5171,AC PLUGGABLE POWER SUPPLY, WIDE RANGE 120/240V
170-0312-900	5171,MODULE, (2)100G/40G QSFP28
170-0313-900	5171,MODULE, (2)100G/40G CFP2
170-0314-900	5171,MODULE, (1)200G/100G/40G CFP2
170-0316-900	5171,MODULE, (8)25G/10G SFP28
170-0315-900	5171,MODULE, (1)100G/40G CFP2,(1)100G/40G QSFP28
170-0317-900	5171,PLUGGABLE SPARE FAN MODULE
170-0318-900	5171,FILLER COVER
Required OS Base System Perpetual Software Licenses	
S70-0050-900	SAOS ADVANCED ETHERNET & OAM PERPETUAL SOFTWARE LICENSE FOR 5171
Optional OS Applications	
S70-0050-902	SAOS ADVANCED MPLS APPLICATION SOFTWARE LICENSE FOR 5171, PERPETUAL
S70-0050-903	SAOS ADVANCED SYNCHRONIZATION PERPETUAL SOFTWARE LICENSE FOR 5171
S70-0050-904	SAOS ADVANCED 100G PERPETUAL SOFTWARE LICENSE FOR 5171
S70-0050-905	SAOS ADVANCED SECURITY PERPETUAL SOFTWARE LICENSE FOR USE WITH 5171
S70-0051-900	ESM CARRIER ED RIGHT TO MANAGE PERPETUAL SOFTWARE LICENSE FOR 5171

ciena

Ciena 5171 Part #170-5171-900

Includes Part # 170-0313-900 CFP2

ciena.

180-2111-900 | XCVR-TFEC01
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