

7090-45 CE Packet Transport Platform

10 Gigabit Carrier-Class Ethernet Switch for Cost-Effective Ethernet Transport and Service Delivery

The Coriant™ 7090-45 CE Packet Transport Platform is a carrier-class Layer 2 switch supporting delivery of business Ethernet, broadband data and Internet access services in a cost-effective platform. With 10G Ethernet interfaces, the 7090-45 CE efficiently supports the rapidly increasing bandwidth requirements of today's networks. The product supports metro Ethernet networking with the latest Ethernet Operations, Administration, and Maintenance (OAM) capabilities and comprehensive traffic management features. This product is an optimal solution for aggregation offices in which service providers want to dramatically increase the bandwidth in the network at competitive price points, while also leveraging the carrier-class design for operational efficiency and network reliability.

The 7090-45 CE is part of the 7090 Series and an integral component of Coriant's Carrier Ethernet Solutions. By combining the 7090-45 CE with the Coriant™ 7100 Packet Optical Transport Platform, the Coriant™ mTera™ Universal Transport Platform, the Coriant™ hiT 7300 Multi-Haul Transport Platform, and the Coriant™ 8600/8800 Smart Router Series, operators can design, scale and deliver cost-effective and reliable networks that meet users' varying service needs. The 7090-45 CE can be managed by the Coriant™ 8000 Intelligent Network Manager (INM) or Coriant™ Transport Network Management System (TNMS) as part of a larger Coriant solution. This provides end-to-end provisioning and support.

FEATURES

- Small footprint providing up to 88 Gbps (88G) port capacity in only two Rack Units (RU)
- Interface support for 10 Mbps through 10G Ethernet
- Flexible deployment configurations with XFP/SFP-based interfaces
- Multiple service profiles supporting a range of service offerings
- Full Ethernet OAM capabilities for service monitoring and verification
- Temperature-hardened
- Redundant power supplies with redundant power feeds
- Synchronous Ethernet
- IGMP Snooping
- G.8031 Ethernet Linear Protection Switching
- G.8032 Ethernet Ring Protection Switching
- Carrier Ethernet 2.0 Certified by the MEF 1/29/2013 (E-LAN, E-Line and E-Access)
- Flexible management options with command-line interface, 7191 Craft Station, and 8000 INM and TNMS

BENEFITS OF THE CORIANT™ 7090-45 CE

- **Provide** scalable and efficient packet transport aggregation
- **Upgrade existing** SONET/SDH Networks to cost-effective and efficient 10G packet-based transport networks
- **Enable** new revenue-generating MEF CE 2.0 services
- **Extend** the powerful packet optical networking capabilities of the Coriant 7100 Packet Optical Transport Platform, mTera™ Universal Transport Platform, and hiT 7300 Multi-Haul Transport Platform
- **Simplify** provisioning and troubleshooting with fully MEF-certified OAM capabilities
- **Accelerate** network deployments with Zero Touch Provisioning of nodes



Sophisticated services are supported with extensive traffic management and Quality of Service (QoS) features. Classification of traffic is supported with a range of Layer 2 and Layer 3 options including port, Media Access Control (MAC) address, Virtual Local Area Network (VLAN) ID and Differentiated Services Code Point (DSCP). Dual rate policing with tri-color marking supports enforcement of conformance to a service contract and is a means to manage traffic allocation in the network. Class-based queuing with strict priority and deficit-weighted round robin scheduling options enable service providers to provide the appropriate fairness algorithms for provided services.

Carrier-class OAM capabilities comply with the latest industry OAM standards. The 7090-45 CE supports 802.3ah link layer OAM, 802.1ag Ethernet connectivity fault management and ITU-T Y.1731 end-to-end OAM. These capabilities support rapid notification of network faults while providing a reporting mechanism to help ensure that Service Level Agreements (SLAs) are being met.

The 7090-45 CE is offered in a pluggable chassis that supports redundant and non-redundant configurations, allowing service providers to determine the level of reliability the network will support. Network resiliency is supported via Multiple Spanning Tree Protocol (MSTP) and Rapid Spanning Tree Protocol (RSTP) and link resiliency is supported with link aggregation.

The 7090-45 CE supports network scalability. With its large switch fabric, the high-density nature of the 7090-45 CE will support present and future bandwidth demands in network aggregation and distribution layers. Sophisticated traffic management and QoS capabilities support a multitude of services – mobile backhaul, xDigital Subscriber Line (xDSL), Voice over Internet Protocol (VoIP), Internet Protocol Television (IPTV), etc. – that exist in service provider networks and help ensure that each service is given the required priority for a high-quality, reliable end-user experience.

TECHNICAL SPECIFICATIONS

Ethernet

- 24/48 SFP-based 10/100/1000 Mbps ports
- Up to four 10GbE XFP ports
- All/any port may be configured as UNI or NNI
- CWDM XFP Support
- 802.1D – MAC Bridging
 - STP/RSTP
 - Includes xSTP enhancements such as link flap monitoring to prevent spurious topology changes
- 802.1Q – VLAN Bridging
 - MSTP
- 802.1ad – Provider Bridging
 - VLAN Switching/stacking
 - Q-in-Q support
- G.8031 – Ethernet Linear Protection Switching
- G.8032 – Ethernet Ring Protection Switching
- Dedicated EP-Line, EP-LAN, and EP-Access Ethernet services
- Multiplexed EVP-Line, EVP-LAN, and EVP-Access Ethernet services
- 802.3ad – Link Aggregation Control Protocol (LACP)
- 802.3ah – Link OAM

- 802.1ag – Ethernet Connectivity OAM
- Y.1731 – Service Layer OAM
- Jumbo frames
- 40 Gbps switching capacity
- 32K MAC addresses
- 4K VLANs
- Port Mirroring
- VLAN Mirroring
- Resilient VLAN Tunneling (RVT)

Multicast Support

- 1K Multicast groups
- IGMP Snooping

Synchronization

- G.8261-2006, G.8262 - Synchronous Ethernet on all ports
- G.8264 - Sync Status Messaging (SSM)
- Stratum-3 timing holdover
- E1/T1 BITS timing reference input and output

Fault Management

- Supports a variety of link fault detection and fault propagation features
 - Link fault notifications
 - Link/VLAN RDI (T-RDI and 802.1ag RDI)
 - Link fault propagation over port level service via automatic laser shut off

802.3ah Link OAM

- Link loopback
- Unidirectional link fault detection
- Threshold-based monitoring and notification
- 802.1ag end-to-end Service OAM and CFM
 - Supports eight levels of maintenance domains and Maintenance End Points (MEP)
 - 64 Maintenance Associations
 - Connectivity Check Messages (CCM)
 - Remote Defect Indication (RDI)
 - Link Trace
 - Diagnostic loopback (Layer 2 ping)
- Y.1731 Alarm Indication Signal (AIS)
- Sub 50ms Failover Protection Switching

Traffic Management

- Layer 2 and Layer 3 traffic classification
- Eight Class of Service (CoS) queues per port
- Traffic prioritization based on:
 - 802.1p QoS
 - Type of Service (ToS)
 - DSCP
 - Layer 2 Control Protocol (L2CP)
- QoS metering per Port, VLAN, or CoS flow

TECHNICAL SPECIFICATIONS (CONTINUED)

- Flexible scheduling – strict priority and deficit-weighted round robin
- Ingress policing and egress rate shaping
- IGMP Snooping
- Single Rate Three Color Marking (srTCM) – RFC 2697
- Two Rate Three Color Marking (trTCM) – RFC 2698
- MEF policing, color aware and unaware, with coupling flag
- Hierarchical Policing

Performance Test & Monitoring

- Y.1731 Performance Monitoring
 - Frame delay
 - Frame delay variation (jitter)
 - Frame loss
 - Strong MIP support for fault isolation
 - Support for MEPs and MIPs on the CVLAN Component

Node Management & Security

- Local console port
- In-band management VLAN
- Flexible management tools:
 - Command Line Interface (CLI)
 - Craft Station GUI (7191 Craft Interface)
 - 8000 Intelligent Network Manager
 - TNMS
- Integrated Troubleshooting Tools
- Secure Shell (SSH)

- Simple Network Management Protocol (SNMP)
- Simple Network Management Protocol Version 2 (SNMPv2)
- Simple Network Management Protocol Version 3 (SNMPv3)
- Remote monitoring (RMON) – RFC 2819
- Network Time Protocol (NTP) – RFC 1305
- System Logging
- Security
 - Access control lists
 - Control protocol filtering
 - User login access rights
- Central Office alarm contact inputs and outputs
- Remote Authentication Dial In User Server (RADIUS)

Physical and Environmental

Dimensions

- 89mm x 445mm x 267mm / 3.5" x 17.5" x 10.5" (H x W x D)
- ETSI Cabinet Compliant
- 19-inch NEBS Rack Compliant

Weight

- 17 lbs. (7.7kg)

Operating Temperature and Humidity

- -40° C to +65° C (-40° F to +149° F)
- 5% – 95% Relative Humidity (non-condensing)
- ETSI EN 300 019-1-3

Storage Temperature

- -40° C to +70° C (-40° F to +158° F)
- ETSI EN 300 019-1-1

Power and Cooling

- -38V to -60V DC
- 100V to 240V AC with external AC adapter
- 250 Watts (max) with 48 SFPs and 4 XFPs
- Replaceable fan tray and filter

Regulatory & Standards Compliance

- FCC Part 15, Class A n UL 60950 1st Edition n IEC 60950
- CSA C22.2 60950
- NEBS Level 3 compliant
- RoHS
- DOT-QM-333
- WEEE
- IEC 60825-1 and 60825-2 Laser Safety
- Ethernet UNI Type 1 (MEF 13)
- MEF 9 and MEF 14 certified compliant
- Ethernet Services Definition (MEF 6 and MEF 10.1)
- Carrier Ethernet 2.0 Certified

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