

CORIANT IS NOW PART OF INFINERA

8609 Smart Router

Modular Access Router with Extensive Switching and Interface Capacity for LTE and Multiservice Support

The Coriant® 8609 Smart Router provides a cost-efficient, seamless way to convert a mobile access network from an E1/T1 TDM network to an Ethernet-based packet network without the need to update any of the radio access network equipment. Versatile service capabilities of the 8609 Smart Router including Ethernet, TDM, ATM, and HDLC connectivity along with IP VPN, MPLS switching, IP routing, and VLAN switching enable the migration of 3G ATM and 2G TDM and Ethernet or IP-based networks into a single network infrastructure. In addition to these capabilities, the compact 1RU 8609 Smart Router can be installed at sites where rack space is limited. The 8609 Smart Router is ideal for the access network and cell sites that handle large amounts of mobile traffic.

DELIVERING OPTIMAL FEATURES FOR CELL AND AGGREGATION SITES

The 8609 Smart Router has a packet-based forwarding architecture with QoS awareness enabling network optimization for voice and data services in LTE and 3G networks. The advanced QoS features provide the differentiation of real-time voice and video services from premium and best effort data services. The Ethernet OAM, Two Way Active Measurement Protocol (TWAMP), and Packet Loop Test features, which are all part of the Coriant® Smart Router product portfolio, in conjunction with the Coriant Transcend™ Chorus for Packet network management system, help to analyze delay, jitter, throughput, and connectivity parameters. Environmentally hardened and optimal for cell and aggregation sites, the 8609 Smart Router offers 12 fixed Gigabit Ethernet ports and 2 slots for interface modules providing throughput up to 7.5 Gbps and 5.5 Gbps with Simple IMIX packet size distribution.

IMPLEMENTING AN OPEN, PROGRAMMABLE, AUTOMATED SDN SOLUTION

The 8609 Smart Router is fully supported by the Coriant Transcend™ Symphony for Packet multi-vendor SDN controller. Transcend Symphony is an integral component of the overall Coriant Transcend™ Solution, a modular SDN software suite that combines the benefits of open, programmable, and automated multi-layer (Layer 0-3) SDN architecture and a proven portfolio of IP/MPLS edge routing and packet optical transport solutions to enable dynamic, end-to-end network control.

SUPPORTING ROBUST SYNCHRONIZATION

The 8609 Smart Router supports a high quality Oven Controlled Crystal Oscillator (OCXO), which provides excellent temperature stability for IEEE 1588v2 and adaptive timing recovery. The OCXO also offers a highly stable node clock holdover. In addition to adaptive timing and IEEE 1588v2 clock recovery mechanisms, node timing can be obtained from a BITS or GPS source, any PDH, SONET/SDH interface, or any of the synchronous Ethernet interfaces. The 8609 Smart Router supports the transition from TDM to packet synchronization in a controlled way by verifying the packet synchronization performance with professional tools.

BENEFITS OF THE CORIANT® 8609 SMART ROUTER

- Deliver switching and routing capacity of up to 7.5 Gbps
- Install in a standard 19-inch rack, ideal for access network and cell sites
- Support an extensive range of multiple service types
- Deliver network optimization for voice and data services in LTE and 3G networks
- Reduce operational expenses with intelligent network management
- Deploy a range of synchronization options



By eliminating the need for separate E1/T1s used only for synchronization at every cell site, the 8609 Smart Router provides a cost-optimized solution independent from the legacy network. In addition, the 8609 Smart Router supports IEEE 1588v2 Boundary Clock for phase synchronization, which is required for LTE Time-Division Duplex (LTE-TDD) and LTE Advanced (LTE-A). Phase synchronization can also be provided using the innovative Coriant® Integrated GPS (GNSS) SFP receiver supported by the 8609 Smart Router.

The Coriant® Smart Router Series

The Smart Router series offers versatile and scalable solutions for mobile backhaul from small aggregation sites to controller and gateway sites. In addition, Smart Routers serve fixed and mobile convergence and cloud computing networking needs. These solutions are designed to meet the ever-growing requirements of data hungry mobile and enterprise users. All of the Smart Routers are LTE-ready and provide an extensive Ethernet and IP/MPLS feature set. Simultaneous support for multiservice applications in access and aggregation networks protects earlier network investments. The Smart Router Series is supported by the Coriant Transcend™ Chorus for Packet, an easy-to-use end-to-end network management solution that minimizes operational and maintenance costs and scales up to tens of thousands of network elements.

TECHNICAL SPECIFICATIONS

Physical Dimensions

- 441 x 44 x 300 mm / 17.36 x 1.73 x 11.81 in (W x H x D)
- Standard 19-inch, 23-inch, or ETSI 600 mm rack mounting
- 3.0 kg / 6.6 lb without fan, power, and line modules
- 1RU high

Power and Cooling

- Power feed options
 - User-changeable dual feed wide range (-48 Vdc to +24 Vdc) power module (one per element)
 - Hot swappable single feed -48 Vdc power module (up to 2 per element)
- Power consumption: typical 70 W, maximum 100 W
- Hot swappable air filter and fan module

Forwarding Plane

- IPv4 and IPv6 routing
- MPLS switching (LSR and LER)
- Ethernet MAC switching

Functionality

- IP VPN (RFC 4364)
- 6vPE support
- Ethernet/VLAN, SAToP, CESoPSN, ATM, and HDLC pseudowires
- Single and multi-segment pseudowires

- 802.1ad QinQ
- Seamless MPLS
- MPLS-TP Bidirectional LSP
- MPLS-TP 1:1 Linear Protection
- MPLS-TP OAM
- TDM cross connection
- ATM VP/VC switching
- ATM cell concatenation
- ATM IMA
- MC / ML-PPP, PPPmux
- Y.1731 frame loss, frame delay, and frame delay variation measurement
- IEEE 802.1ag Ethernet OAM loopback, continuity check, ping, and link trace
- Two Way Active Measurement Protocol (TWAMP)
- BFD (Static routes, OSPF, ISIS, RSVP-TE)
- IP Multicast

Forwarding Capacity

- Up to 7.5 Gbps, 5.5 Gbps with Simple IMIX

Chassis Configuration

- Two slots for power feed modules
- Two slots for user-changeable Line Modules (LMs)
- Twelve fixed Gigabit Ethernet Ports: four 10BASE-T/100BASE-TX/1000BASE-T and eight 100/1000BASE-X SFP

- Local management port (RS-232 type)
- External alarm interface
- Station Clock Input (SCI)
- Station Clock Output (SCO)
- Pulse-per-Second (PPS) clock input and output
- Time-of-Day input

Line Modules (LM)

- 8 x chE1/chT1 LM
- 8 x 10/100BASE-TX LM

Resiliency and Load Balancing

- Ethernet Link Aggregation
- 1:1 RSVP-TE LSP protection
- Fast Reroute (FRR)
- Pseudowire redundancy (Ethernet, TDM)
- IP load balancing (Equal Cost Multipath [ECMP])
- BGP multipath for load balancing
- IPv4 and IP VPN load balancing to RSVP-TE tunnels

Security

- L3/L4 Access Control Lists
- Denial of service protection
- RADIUS and TACACS+ authentication and accounting
- SSH-2 for FTP and Telnet
- MD5, SHA-1 authentication

TECHNICAL SPECIFICATIONS

Synchronization

- ITU-T [G.813] option 1
- ITU-T [G.8262]
- Telcordia [GR-1244] Stratum 3
- Station Clock Input and Output ports
- Pulse per Second (PPS) input and output
- Time-of-Day input
- E1/T1 line synchronization
- Synchronous Ethernet
- SSM over Ethernet [G.8264]
- Adaptive synchronization from SAToP and CESoPSN pseudowires
- IEEE 1588v2 Slave Clock for frequency sync
- IEEE 1588v2 Boundary Clock for phase sync
- SyncE assist
- Support for the Integrated GPS (GNSS) SFP receiver

Routing and MPLS Label Distribution Protocols

- OSPF-TE, ISIS-TE, BGP, and MP-BGP
- LDP, RSVP-TE
- PIM-SM and PIM-SSM

Traffic Management

- DiffServ support for up to 7 traffic classes
- DiffServ aware MPLS Traffic Engineering (DS-TE)
- IEEE 802.1P/Q mapping to IP or MPLS
- Policing and shaping
- Port, VLAN group, and VLAN shaping
- RED/WRED queue management
- Access Control Lists (ACL)
- ATM service categories: CBR, rt-VBR, nrt-VBR, UBR+, UBR
- ATM VC queuing/shaping

Management

- CLI with SSH2, FTP with SSH2
- SNMPv1 and SNMPv2 monitoring
- Coriant Transcend™ Chorus for Packet
- Coriant Transcend™ Symphony for Packet
- Smart Router autoconfiguration based on DHCP client
- RADIUS and TACACS+ authentication and accounting

Standards

- Safety: EN 60950-1:2006 and IEC60950-1:2005
- EMC:
 - EN 300 386:2008
 - FCC 47 CFR Part 15, Subpart B, Class A
- RTTE Directive 1999/5/EC

Environmental Conditions

- Storage: ETSI EN 300 019-1-1, Class 1.1
 - Temperature: -5°C to 45°C / 23°F to 113°F
- Transportation: ETSI EN 300 019-1-2 Class 2.3
 - Temperature: -40°C to 70°C / -40°F to 158°F
- Operating conditions: ETSI EN 300 019-1-3 Class 3.2 (non-condensing)
 - Temperature: -40°C to 65°C / -40°F to 149°F
 - Relative humidity: 5% to 95%
- Minimum cold boot-up temperature: -20°C / -4°F

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