Redefining Transport Networks  
for Hypergrowth and Dynamic Cloud Connectivity

EXPERIENCE, EXPERTISE, AND FOCUS

A fundamental transformation of transport networks is underway. At the root of this transformation is an unprecedented era of hypergrowth driven by concurrent demand for mobile, video, and cloud-based services and applications. Recent industry analyst reports underscore the formidable challenges service providers face from increased data growth, unpredictable traffic patterns, elastic compute/storage connectivity, and heightened end-user expectations for uninterrupted broadband service quality and assured SLAs. Traditional multi-layer (IP, Ethernet, optical) transport architectures and conventional service deployment models are simply incapable of addressing these challenges or harnessing the opportunities that hypergrowth represents. As service providers across the globe face the dynamic evolution of the new networked world, the industry is ripe for an innovative market leader with the experience, expertise, and focus to redefine transport networks for on-demand, cloud-centric connectivity.

CUSTOMER-FIRST VALUES BACKED BY INNOVATION AND SERVICE EXCELLENCE

With a distinguished heritage of advanced technology and service excellence, forged by over 35 years of experience and expertise in IP/data and packet optical networking, Coriant helps service providers and enterprises maximize the value of their transport networks as bandwidth demands explode and end-user needs evolve. Our state-of-the-art solutions are widely deployed in the largest and most demanding Tier 1 networks around the world. We are consistently chosen as the preferred supplier by leading mobile and fixed line service providers worldwide, based on an unmatched track record of delivering high-quality products backed by proven customer-first values and best-in-class service and support.

END-TO-END SOLUTIONS OPTIMIZED FOR HYPERGROWTH CHALLENGES AND OPPORTUNITIES

The Coriant end-to-end portfolio of intelligent multi-layer transport solutions enables network operators to reduce network complexity, increase service velocity, and improve resource utilization as transport networks scale in response to a new generation of dynamic services and applications. Coriant solutions include comprehensive multi-service (SDH/SONET, OTN, Carrier Ethernet, MPLS-TP, optical) transport and switching products from edge-to-core and smart (IP/MPLS) edge routers powered by Software Defined Networking (SDN) intelligence, automation, and control. We enable network operators to build resilient, flexible, and scalable (100G and beyond) transport networks optimized for the challenges and opportunities of the hypergrowth era.

YOUR STRATEGIC PARTNER FROM THE EDGE TO THE CORE AND INTO THE CLOUD

A proven culture of innovation and forward-looking vision for converged transport networks, combined with demonstrated technology leadership and financial strength, put Coriant in a unique position to extend our market lead and continue to be the preferred long-term commercial partner for network operators now and into the future. Coriant solutions align services, management, and versatility from the edge of the network to the core of your business and into the cloud of connectivity.
INTELLIGENT MULTI-LAYER TRANSPORT – SIMPLE, FLEXIBLE, SCALABLE

The Coriant solutions portfolio leverages industry-recognized leadership in metro packet optical networking, proven expertise in coherent optical transmission, and innovative edge routing technology optimized for LTE and LTE-A networks. Our end-to-end, multi-layer transport solutions span access, backhaul, metro, regional, and core transport applications and enable fixed line and mobile service providers to improve network efficiencies and maximize service value with multi-service architectures and highly automated operations. With a high-performance, end-to-end product portfolio and proven software-defined intelligence to optimize automation and control, Coriant is redefining multi-layer transport infrastructure for the new networked world.

CORIANT DYNAMIC OPTICAL CLOUD™ SOLUTION

As business and consumer demand for cloud-based connectivity increases and traffic loads in wide area networks become more and more unpredictable, service providers require an elastic end-to-end infrastructure that mirrors the flexibility, scalability, and programmability of compute and storage resources in the data center – for all services. To unleash the power of this Dynamic Optical Cloud, we introduced the Coriant Transcend™ SDN Solution, an innovative approach to helping service providers and enterprises leverage the true capabilities of SDN to reduce OPEX and CAPEX, while creating new revenue opportunities. This end-to-end and highly programmable infrastructure solution enables service providers to cost-effectively address a rapidly changing world of dynamic, virtualized, high-bandwidth applications and services.

BENEFITS OF SDN-ENABLED END-TO-END MULTI-LAYER TRANSPORT

Coriant solutions meet a broad range of application needs in different market segments, from mobile backhaul and transport SDN to long distance data center interconnect and submarine network optimization. Powered by software-defined intelligence, our end-to-end solutions portfolio enables fixed line and mobile network operators to:

- **Simplify** network evolution with future-proof technology from the metro core to the edge of the network
- **Reduce** network cost and complexity by maximizing service capabilities and efficiencies
- **Accelerate** time-to-deployment and time-to-revenue
- **Create** and sustain premier service differentiation with end-user service quality and SLAs
- **Enable** new revenue streams and protect network investments throughout the network lifecycle

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CORIANT® GLOBAL SERVICES

With a proven track record of delivering best-in-class support and service excellence to Tier 1 service providers around the world, Coriant offers a comprehensive range of high-value support solutions covering all phases of the network lifecycle – planning, designing, implementing, training, maintaining, and optimizing. Coriant® Global Services combine unrivaled expertise in end-to-end optical networking and network management, extensive in-house service capabilities, and an established network of global partners to help our customers meet their business objectives and maximize the value of their service infrastructure.
Coriant® hiT 7300 Multi-Haul Transport Platform
The Coriant® hiT 7300 is a high capacity and high performance optical/DWDM transport platform optimized for flexible and efficient transport in regional, long haul, and ultra-long haul networks. Widely deployed in the most demanding Tier 1 networks, the hiT 7300 delivers superior density and reach, photonic mesh resiliency and agility, and scalability to 100G and beyond. With unparalleled spectral efficiency, the hiT 7300 enables service providers to maximize utilization of their fiber infrastructure, while creating the resilient foundation for high capacity, low latency services. The hiT 7300 solution also maximizes network flexibility and service agility with the industry’s largest portfolio of ROADM offerings (up to CDC), proven flexi-grid technology, and adaptable super-channel capabilities that can be optimized for longest reach, largest capacity, or a pragmatic compromise between reach and capacity.

Key features and capabilities include:
- The industry’s greatest selection of ROADM configurations including CDC and flexi-grid
- Best-performing optical layer to minimize regeneration points and simplify operations
- Integrated amplification options including EDFA and Raman
- Advanced transmission technologies to support 100G, 200G, 400G, and 1T wavelengths
- 96 channels on 50Ghz spectrum and 176 channels with flexi-grid and super-channels

Coriant® mTera™ Universal Transport Platform
As a key component of the Coriant Dynamic Optical Cloud™ networking solution, the mTera™ Universal Transport Platform (UTP) transforms traditional transport networks from static and fixed resources to dynamic and software-defined service-enabling engines. The mTera™ UTP is an extremely versatile multi-terabit, multi-service switching platform with a hybrid packet fabric and integrated multi-haul optical transport capabilities.

Designed for efficient OTN/packet grooming as well as advanced ROADM-based optical networking flexibility on a single shelf, the mTera™ UTP supports a broad range of converged network and service applications, including metro core traffic aggregation and distribution and long haul traffic grooming. The mTera™ UTP serves as an efficient gateway between traditionally lower speed aggregation networks and dynamic, all-coherent core networks. In addition, the Coriant Transcend™ SDN controller can leverage the mTera™ UTP to deliver the full benefits of a truly programmable and agile transport network.

Key features and capabilities include:
- 7T of layer-agnostic switching in ½ rack
- Completely layer-agnostic switching – every port supports OTN and packet-based switching
- Universal architecture supports both switching and optical layer modules in any slot
- Hybrid configurations with both switching and ROADM modules in the same shelf
- Flexible ROADM configurations including broadcast and select, route and select, and CDC options
Coriant® 7100 Packet Optical Transport Solutions

The Coriant® 7100 Packet Optical Transport Solutions offer highly compact and integrated transport and multi-service delivery platforms for wireless, fixed line, and business services networks. The 7100 family includes the following shelf configurations:

7100 Optical Transport System (OTS) (13RU)
- 19 total slots with 16 interface slots
- Full shelf grooming of 240G non-blocking SDH/SONET, OTN, and packet supported via centralized common switching fabric modules

7100 Nano™ Packet Optical Transport Platform (5RU)
- 6 universal slots
- Full shelf grooming via a meshed backplane (no central switch modules required)
- Switch capacity: 552G packet, 120G OTN, 120G SDH/SONET

7100 Pico™ Packet Optical Transport Platform (2RU)
- 2 universal slots
- Full shelf grooming via a meshed backplane
- Integrated AC/DC power options

All of the 7100 shelf types use the same interface modules, which minimizes sparing and simplifies operations across the entire metro/regional network. With a strong foundation for metro-based dynamic optical networking, the 7100 family includes the following capabilities:

- Universal switching architectures for seamless SDH/SONET, OTN, and packet grooming
- High-density 10G and 100G transport
- All pluggable design for interface-by-interface grey light and DWDM configurations
- Support for 2.5G, 10G, 40G, and 100G transmissions
- Integrated, single slot, multi-degree ROADM-on-a-blade

Dynamic packet optical networking not only supports the needs of the current network, but also enables effortless deployment of additional nodes for future expansion via multi-degree ROADM technologies. The 7100 family offers enterprises fast, effective, and low-cost solutions to cope with user demand for mobile internet.

SOFTWARE DEFINED NETWORKING (SDN)

The Coriant Transcend™ SDN Solution unleashes the rich capabilities of SDN and NFV by delivering a truly multi-layer programmable and open application environment for maximum value in the new networked world – lower OPEX/CAPEX, new revenue sources, and service differentiation. Optimized for real-world use cases, the Coriant Transcend™ solution is comprised of the following components:

- The Coriant Transcend™ Transport Controller and Coriant Transcend™ Packet Controller
- The SDN enablement of the Coriant Dynamic Optical Cloud™ product and services portfolio, including industry-leading metro-to-core packet optical transport (mTera™ UTP, 7100 OTS/Nano/Pico, hiT 7300, 7090) and smart edge router (8600, 8800) offerings
- For demonstration and evaluation, the Coriant Transcend™ SDN Solution supports an OpenDaylight (ODL) based Orchestrator and applications that are available as a blueprint for business case and technology evaluation of SDN.
**Coriant® 7090 Packet Transport Platform**

As metro bandwidth requirements continue to grow, converting from static circuit-based metro edge networks (OTN, SDH, SONET) to a fully packet-based transport solution saves network operators significant amounts of CAPEX both in the transport network and in devices connected to the transport network. In addition to supporting packet grooming options on all of Coriant’s transport platforms, the Coriant® 7090 Packet Transport Platform family is specifically designed to facilitate the evolution to fully packet-based transport at the edge of the network.

The 7090 family provides a scalable Packet Transport Network (PTN) solution optimized for the explosive growth of IP traffic impacting carrier access and aggregation networks. Combining the best of TDM (SDH, OTN) and packet transport (MPLS-TP, Ethernet), the 7090 family enables fixed line and mobile network operators to achieve significant efficiencies with packet-based multi-service support while ensuring connection-oriented Quality of Service (QoS). In addition, the 7090 family supports MPLS-TP and features Carrier Ethernet 2.0 certification. The 7090 consists of small 5-30G edge NIDs, 150G pizza boxes, 200G dual-slot chassis, and large scalable switching platforms with up to 320G of switching capacity. All platforms in the family offer key transport features for OAM, reliable transport, and network-level protection options.

**Coriant® 7610 Service Edge Platform**

With the expanding role of cloud computing data centers located across broad geographic regions, reliable connectivity and secure high-speed communication are essential for the transmission of shared services and applications. Network design may require implementation of enhanced encryption at the transport layer to ensure the security of data transmissions. Encryption devices address security needs with a simple, state-of-the-art solution for payload transport and data center connection. The Coriant® 7610 Service Edge Platform offers advanced, all-in-one DWDM optical transport for payload encryption through the 7610 Crypto or 16G FC services through the 7610 SEP with a cost-effective and flexible mix of industry standard protocols.

**INTELLIGENT NETWORK MANAGEMENT**

**Coriant® Transport Network Management System (TNMS)**

The Coriant® Transport Network Management System (TNMS) is an end-to-end management platform (FCAPS) that enables operators to easily and cost-effectively manage multi-layer (PDH, SDH, IP/Ethernet, MPLS-TP, DWDM), multi-domain (access, metro, core), and multi-vendor networks. Coriant TNMS easily integrates into existing OSS environments and empowers a holistic approach to network and service management across a broad range of Coriant’s LH/ULH optical transport and metro packet optical transport products.

As a single management system for all equipment types and diverse technologies, TNMS offers supervision of services across all network elements and includes a dedicated GMPLS/ASON manager for enhanced multi-layer control and improved service resiliency. With a feature set field proven around the world, TNMS combines easy-to-understand network views and simple navigation with uniform fault, configuration, security, performance management, and service correlation functions. The scalable, pay-as-you-grow solution includes a standard and intuitive user interface to ensure straightforward operation and smooth integration into multi-vendor environments.
Coriant® 8000 Intelligent Network Manager
The Coriant® 8000 Intelligent Network Manager (INM) offers service providers full, end-to-end support for commissioning and monitoring services, initiating service changes, and troubleshooting. This single overarching management solution for Coriant data products simplifies network management and improves profitability and competitiveness through operational efficiency. An advanced graphical user interface (GUI), automated wizards, and plug-and-play features guide users through tasks and shorten service provisioning time. The results are faster time to revenue and a reduction in expenses.

Coriant® Network Health Monitor
Knowledge is often the key to effective planning and management of multi-layer transport networks. To provide critical insight and analysis into the most complex networks, Coriant offers the Network Health Monitor. Coupled with Coriant Professional Services, the Network Health Monitor provides powerful insight into bandwidth trends and potential bottlenecks across the entire transport network. Access to this information improves short and long term planning and improves overall utilization of existing resources for a more cost-effective and better performing network.

Coriant® TransNet/TransConnect Network Planning and Management
As hypergrowth traffic demands drive the need for increased operational simplicity across the network, Coriant® TransNet and TransConnect solutions deliver a new level of software-defined automation and intelligence for easy DWDM network design, planning, ordering, configuration, deployment, maintenance, and equipment management.

Coriant® 7196 Optical Planning Tool
The Coriant® 7196 Optical Planning Tool (OPT) enables network planners to implement new service requests and plan routes between the source and destination sites for the bandwidth required. The 7196 OPT simplifies metro DWDM network design using the Coriant® 7100 OTS. Engineering rules specific to the 7100 OTS are embedded in the 7196 OPT allowing the network planner to accurately deploy a minimum number of regenerating transponders with adequate margin to extend over the life of the product. The 7196 OPT offers valuable functionality to plan and track large networks with heavy traffic demands.

Coriant® 8600 Smart Router Series
The Coriant® 8600 Smart Router Series and 8000 Intelligent Network Manager provide an optimized solution for mobile operators to efficiently meet the demand for LTE and LTE-A mobile backhaul and fixed-mobile convergence. The 8600 Smart Router Series of scalable edge routers supports fast-growing data services and low latency voice and video in a wide range of consumer and enterprise applications. Coriant edge router solutions boost network performance, reduce operating costs, and empower new mobile services through innovative design. The 8600 Smart Router Series includes the industry’s smallest hardened cell site router, flexible and resilient 1G/10G aggregation, and a terabit speed multi-slot chassis for head-end network aggregation to 100G trunks for mobile packet core networks. Advanced network synchronization delivers proven performance to support LTE-A, LTE-TDD, Small Cell, and other demanding timing applications. Industry-leading network management enables network automation, node auto-configuration, and extensive fault and performance management tools. SDN-enabled Coriant routers are ready to support dynamic integration with carrier applications, network reconfigurations based on real time performance analytics, optimized network utilization, and automated service delivery.
EDGE ROUTING SOLUTIONS CONTINUED

Coriant® 8800 Smart Router Series
The Coriant® 8800 Smart Router Series offers mobile and fixed mobile convergence using any combination of technologies on a single platform. Widely deployed in leading service provider networks, the 8800 series supports legacy Frame Relay, ATM, and TDM/private leased-line services on a single platform. From business-class IP and Carrier Ethernet on one system to 2G, 3G, and 4G mobile services on a converged platform, the 8800 adds new opportunities to existing networks easily and cost-effectively.

MSPP SOLUTIONS

The Coriant Multi-Service Provisioning Platform (MSPP) provides efficient aggregation, switching, and transport of a broad range of circuit and packet services. Designed for seamless evolution, Coriant MSPP solutions enable fixed line and mobile operators to support legacy PDH/SDH while offering a flexible migration path to packet-centric services (IP/Ethernet) including Metro Ethernet Forum (MEF) certified carrier-class Ethernet. Coriant MSPP solutions include:

- hiT 70xx MSPP Series
- 6300 MSPP Series
- SN 9000 Multiservice Switch

OPTICAL CROSS-CONNECT SOLUTIONS

To meet the growing demand for network programmability and agile bandwidth driven by video, Internet data, and cloud computing, the Coriant® 5810 Optical Switching Platform (OSP) offers a high-density, protocol-agnostic, all-optical switching platform in a cost-effective small form factor. The 5810 OSP delivers power-efficient, high capacity switching and addresses a range of applications including data center connectivity, optical transport CO automation, CRAN, and subsea landing stations. The 5810 OSP family includes 160 and 320 port versions and supports any optical rate including 10G, 40G, 100G, and beyond on each port. Ideal for data center interconnect and service automation, the 5810-160 OSP and 5810-320 OSP enable enhanced restoration and protection, cloud storage and transmission, and simple end-to-end provisioning and migration of transport services.

HIGH VALUE CORIANT SOLUTIONS

In a wide variety of applications, Coriant's IP/data and packet optical aggregation, switching, and transport solutions help network operators maximize the value of their transport infrastructure, simplify network operations, and ensure the highest level of service quality for end-users.

- **Mobile Backhaul** - maximize cost and performance with tailored solutions to meet specific backhaul requirements, including edge routing for LTE/LTE-A evolution and MPLS-TP full packet backhaul (PTN) for voice and data convergence

- **Transport SDN** - simplify service planning, management, and control with the Coriant Dynamic Optical Cloud™ solution, including innovative extensions to the SDN framework and enhanced multi-layer interworking and service management

- **Multiservice Carriers** - ease network and service migration with a proven implementation of a full range of packet and optical technologies – SDH/SONET, MSPP, OTN, MPLS, IP/Ethernet, ASON/GMPLS, ROADM, WDM, photonic mesh

- **Data Center Interconnect** - ensure flexible, low latency transport and future-proof scalability to meet the demanding requirements of cloud computing applications and data center interconnect services

- **Carrier’s Carrier** - cost-effectively scale wholesale bandwidth services and ensure SLA performance requirements with field-proven network availability and service assurance

- **Submarine Networks** - simplify network design and reduce OPEX in hybrid subsea and terrestrial network applications with a single, future-proof transport platform managed under a single NMS

- **Converged IP Optical Transport Networks** - teaming with Juniper Networks, Coriant helps operators optimize multi-layer efficiencies with a powerful IP Optical solution that combines simplicity and resiliency to dramatically reduce TCO for transport networks
DIGITAL CROSS-CONNECT SOLUTIONS

Coriant also offers a range of Digital Cross-Connect (DCS) and broadband DCS solutions proven in Tier 1 fixed line and mobile networks around the world, as well as government, enterprise, transport, and utility networks. Addressing both core and access applications, these field-proven cross-connect solutions combine efficient aggregation, grooming, and switching with intelligent bandwidth management to help network operators reduce costs, simplify provisioning, and seamlessly migrate from circuit to packet-based service infrastructure. The Coriant portfolio of DCS/BB-DCS solutions includes:

- 5000 Digital Cross-Connect Series
- SN 16000 BB-DCS/Optical Switch
- 8100 Managed Access System
- DNX Cross-Connect Platform

ABOUT CORIANT

Coriant delivers innovative, dynamic networking solutions for a fast-changing business world. The Coriant portfolio of SDN-enabled, edge-to-core transport solutions enables network operators to reduce operational complexity, improve utilization of multi-layer network resources, and create new revenue opportunities. Coriant serves leading network operators around the world, including mobile and fixed line service providers, content providers, data center operators, cable MSOs, large enterprises, government agencies, financial institutions, and utility companies. With a distinguished heritage of technology innovation and service excellence, forged by over 35 years of experience and expertise in Tier 1 carrier networks, Coriant is helping its global customers maximize the value of their network infrastructure as demand for bandwidth explodes and the communications needs of businesses and consumers continue to evolve. Learn more at www.coriant.com.

For more information about our products and solutions, please contact your Coriant Sales Representative.