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Coriant Transcend™ Symphony for Transport

Open, Programmable, and Automated for On-Demand, Application-Centric Service Agility

Carrier networks have been under pressure for years to evolve to more dynamic operational approaches to meet challenges like those posed by cloud-based OTT application providers who quickly develop and deploy new services. Cloud-based applications lead to massive traffic growth and fluctuating traffic patterns driven by streaming video services, IPTV, music downloads, and online services such as cloud storage. Furthermore, distributed processing by Network Function Virtualization (NFV) and 5G radio networks adds requirements for traffic agility and capacity.

Carriers also face additional business challenges with network evolution and are forced to implement OpEx optimized workflows due to flat or decreasing margins. Moreover, traditional network deployment methodologies that rely on long planning cycles lead to relatively static network design and fail to provide flexibility to accommodate high velocity service introduction, agile service reconfiguration, and customer-centric business offerings. To address these issues, the Coriant Transcend™ Symphony for Transport solution gives network operators a powerful toolkit to drive down network costs and address the operational challenges of the competitive carrier environment.

ENABLING DYNAMIC NETWORK CONTROL WITH ADVANCED SYSTEM ARCHITECTURE

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

With the Coriant Transcend™ Symphony Solution, network operators can leverage an integrated solution composed of Coriant's portfolio of network equipment as well as NMS and network planning and optimization tools. In addition, the Coriant Transcend™ Symphony Solution provides pre-integration with open source platforms such as OpenDaylight and, on request, with other commercially available platforms.

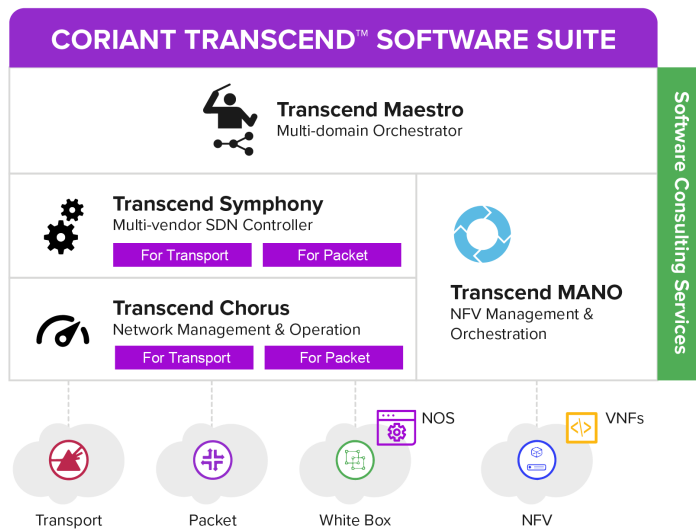
SIMPLIFYING APPLICATION DEPLOYMENT TO GENERATE REVENUE

The Transport Controller provides a simple but powerful OIF standard-based northbound REST interface (NBI) and an IETF standard REST/YANG controller-to-controller (east/west) interface. This feature combination enables efficient development of applications to bring new revenue-generating opportunities to market quickly.

BENEFITS OF THE CORIANT TRANSCEND™ SYMPHONY

- **Real-time Symphony programmability and automation** unleash new, efficient, and innovative applications
- **Open and standards-based Symphony interfaces** give full application control of network services
- **Intent-based end-to-end service provisioning** ensures service delivery in the most efficient network configuration
- **Automatic multi-layer optimization** offers the best network reliability at the lowest network cost
- **Network virtualization and slicing** enable multi-tenancy for cost-efficient, multi-purpose networks
- **Orchestrator agnostic design** provides easy integration into customer-defined environment





Coriant Transcend™ Symphony Solution Architecture – modular design to support easy and flexible integration

Typical applications include:

- Bandwidth-on-demand of Layer 2 to Layer 0 services
- Multi-layer optimization of IP-over-optical transport
- Service and network defragmentation
- Performance and application aware services
- Network slicing
- Service restoration
- SLA-based service assurance
- Dynamic bandwidth control

KEY FEATURES OF THE TRANSPORT CONTROLLER

- Open standard interfaces expose network primitives for network control
- De-coupled control and data planes enable each plane to evolve quickly and independently
- Network virtualization with different network abstraction levels enables support for multi-tenancy and multi-purpose networks
- End-to-end multi-layer service control with scheduling exposes a simplified but powerful control method for transport network services
- Built-in Path Computation Element (PCE) with optical impairment awareness delivers cost-effective routes that meet a rich set of defined SLA parameters across multiple transport layers and technologies
- Service layer protection and restoration
 - Simplified provisioning of SNC protection over diverse routes
 - Automated restoration of services to meet predefined performance objectives, either fully driven by the controller or under application control
- Layer 2 service support following MEF definitions provides tunnel agnostic control of E-Line and E-LAN types of services, including setting bandwidth/QoS parameters
- Network topology synchronization with NMS simplifies network discovery and installation of new nodes
- Shared Risk Link Groups (SRLGs) bring awareness of existing network resource risks to the service route computation providing increased diversity and resiliency
- SLA monitoring reports and enforces:
 - End-to-end service status monitoring to manage all network events
 - Service performance records to track fulfilled SLA conditions
- Diverse set of logs keeps track of relevant activities and events for accounting purposes
- Deployment in a virtualized platform provides fast and simple horizontal scaling

TECHNICAL SPECIFICATIONS

Network Technologies

- Ethernet and TDM services
- WDM/OTN transport
- Carrier Ethernet and MPLS-TP transport

Equipment Supported

- hiT 7300 Multi-Haul Transport Platform
- 7100 Optical Transport System, 7100 Pico™ Packet Optical Transport Platform, and 7100 Nano™ Packet Optical Transport Platform
- mTera® Universal Transport Platform
- 7090 Packet Transport Solutions
- Coriant Groove™ G30 DCI Platform

External Interfaces

- OIF Topology REST API
- OIF Call REST API
- OIF PCE REST API
- MEF based Network Resource Provisioning REST API
- RESTCONF/YANG based topology and service APIs according to IETF standards
- OpenDaylight integration through MD-SAL plugin

Operating Platforms

- x86/x64 servers
- CentOS Linux and Red Hat Enterprise Linux
- Windows Server 2008/2012
- Oracle Database
- Virtualization environments with VMware or KVM virtualization

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