The Foundation for the Next-Generation Transport Network

INTRODUCING THE CISCO CARRIER PACKET TRANSPORT SYSTEM

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If you are like many service providers, you are experiencing the need to profitably deliver more bandwidth to subscribers. This increase in demand for services is forcing the move from traditional time-division multiplexing (TDM) transport networks to packet transport networks. The ability to provide services using packet transport is becoming crucial in today's marketplace for a number of reasons:

- The traditional SONET/SDH transport network has reached its limit. The OC-768 standard limits the maximum data rate of this technology to 40 gigabits per second. For higher speeds and densities, service providers must look at newer, evolving technologies. These include dense wavelength-division multiplexing (DWDM), optical transport networks (OTNs), and Ethernet.
- The volume of traffic is increasing rapidly, and traffic patterns are changing. The Cisco Visual Networking Index forecasts traffic levels will reach three-quarters of a zettabyte by 2014. Over half of that traffic will be video. Dynamic services such as targeted ads, location-based services, mobile video, and videoconferencing are being introduced every day. These cloud, mobile, and video services are defining new, meshed traffic patterns and placing unprecedented demands on the network architecture.
- Today's services are delivered more efficiently using packet networks. By deploying packet transport networks, service providers can reap benefits such as statistical multiplexing, dynamic bandwidth allocation, and quality of service (QoS). They can enhance their revenues from existing transport services while positioning themselves for new service opportunities.

In short, service providers need a network that unifies both packet and transport domains. This converged network must be highly manageable, scalable, and flexible to support current, as well as new services. It must also be standards based to make it compatible and interoperable with existing deployed networks.

The Solution: The Cisco Carrier Packet Transport System

Service providers can realize significant benefits from the Cisco® Carrier Packet Transport (CPT) System. This is the industry's first, standards-based packet optical transport system (P-OTS) that unifies packet and transport technologies using Multiprotocol Label Switching-Transport Profile (MPLS-TP). The system:

- Provides standards-based transport technologies and familiar operational models. Service providers can use a single unified interface for point-and-click provisioning of wavelengths and MPLS-TP label switch paths.
- Simplifies the network by combining multiple functions into one. Service providers can reduce the number of network elements and interconnect ports by combining functions such as ROADM, TDM/OTN switching, Ethernet, and MPLS-TP in a single platform, drastically reducing space and power consumption, thus enabling greener networks.

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- Supports a comprehensive set of packet services for mobile backhaul, legacy TDM, Ethernet, and fiber services targeted at business and residential customers.
- Enables an integrated IP/MPLS and MPLS-TP architecture with a single control plane and forwarding mechanism. This provides OpEx savings and allows service providers to set up simple connection-oriented paths for point-to-point or point-to-multipoint connections with in-band operations, administration, and management (OAM) and sub-50 millisecond automatic protection switching.

The Cisco Carrier Packet Transport System comes in the following form factors:

- Cisco Carrier Packet Transport (CPT) 200: 160-gigabit switch capacity, in a 2RU chassis, supporting up to 176 Gigabit Ethernet ports.
- Cisco Carrier Packet Transport (CPT) 600: 480-gigabit switch capacity, in a 6RU chassis, supporting up to 352 Gigabit Ethernet ports.
- Cisco Carrier Packet Transport (CPT) 50 is a satellite shelf that offers up to 44 Gigabit Ethernet ports and 4 10 Gigabit Ethernet ports and complements either the CPT 200 or CPT 600. This satellite architecture provides very flexible and cost-effective port expansion. It can be deployed locally with the CPT 200 or CPT 600 or remotely up to 80 km away from the main chassis. In either case, it is managed as part of the same node, effectively as a virtual line card.

A Wide Range of Next-Generation Benefits

The Cisco Carrier Packet Transport System is built on standards-based MPLS-TP technology that fully interoperates with existing IP/MPLS networks. This results in a simpler architecture that efficiently maintains existing operational models while providing the flexibility to deliver new dynamic packet services.

Best of all, the Cisco Carrier Packet Transport System offers the following advantages:

- Greater trust, with a system that preserves robust and resilient transport delivery and familiar operational models. Superior comprehensive management for a converged infrastructure can be realized with zero overhaul.
- Outstanding cost savings, with more than 60 percent reduction in space and power requirements, this is an extremely eco-friendly P-OTS platform.
- Superior agility, which allows service providers the flexibility to improve profitability of established transport services and increase revenue with new packet-based services.

Why Cisco?

Cisco is uniquely qualified to help service providers realize the benefits of a combined packet and transport system. With more than 25 years of experience in DWDM, SONET/SDH, IP, and MPLS technologies, Cisco has the leadership and expertise to help service providers realize the efficiencies in building and deploying packet transport solutions.

Cisco can help service providers migrate to this new infrastructure through our Transformative Services, which include pilot and field trials, planning, design and implementation, training and knowledge, and optimized operations and deployment.

Find out more about the Cisco Carrier Packet Transport System and how it can help you improve your service offerings and increase profitability at www.cisco.com/go/cpt. Learn how this new platform provides the foundation for the next-generation transport network.

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