



Q & A

NEW AND ENHANCED CISCO EDGE, METRO, AND CORE MULTISERVICE OPTICAL SOLUTIONS

OVERVIEW

Q. What is the Cisco® Optical Solutions Release 5.0?

A. Cisco Systems® is launching new and enhanced solutions for edge, metropolitan-area, and core multiservice optical networks, as part of its Cisco Optical Release 5.0 solutions:

- Edge—Cisco is introducing a new edge/access platform the Cisco ONS 15310-CL SONET Multiservice Platform, for customer locations. *Also*, enhanced Ethernet capabilities are being introduced for the Cisco ONS 15302/ONS 15305 SDH Multiservice Provisioning Platform (MSPP). For the Cisco ONS 15302, this enhancement is achieved via an upgraded chassis. For the Cisco ONS 15305, this enhancement is achieved via new Ethernet modules.
- Metro—New Carrier Ethernet functionality and high-density DS-3 solutions are available for the Cisco ONS 15454 MSPP.
- Core—A new any-service-any-port (ASAP) line card that enables software-selectable bandwidth and protocol options is now available for the Cisco ONS 15600 MSSP. The product also supports faster broadband-switching capability.

Together, these new product introductions will enable customers to deploy an end-to-end, Carrier Ethernet (efficient and resilient data services) network, higher density TDM (voice) solutions for metro/access networks, and advanced switching and software-tunable bandwidth flexibility and protocol options for core networks.

Q. There is a great deal of material in this announcement. What are the three primary customer benefits?

A. For the edge, Cisco Systems is offering new SONET and enhanced SDH edge platforms that support expandable/scalable DS-1/E1 and DS-3/E3 TDM services as well as optimized data services through Carrier Ethernet functionality supporting GFP, VCAT, and LCAS and advanced Layer 1 and Layer 2 features. Customers can deploy compact (1RU) multiservice edge/access devices that deliver profitable triple play services (voice, video, and data) more economically and efficiently than previous Cisco solutions or competitive offerings.

In the metro, Carrier Ethernet (Link Capacity Adjustment Scheme [LCAS], virtual concatenation [VCAT], and Generic Framing Procedure [GFP]) and high-density DS-3 line cards have been added to the Cisco ONS 15454 MSPP. This allows carriers to deliver TDM services more cost effectively and to migrate to optimized data services from one platform.

In the core network, the new Cisco ONS 15600 ASAP line card provides unmatched software-selectable rate and protocol options through Small Form-Factor Pluggable (SFP) optics (OC-3 to OC-192, Gigabit Ethernet bandwidth from one platform). This new solution gives customers greater bandwidth flexibility and reduces cost by eliminating the need to purchase various single bandwidth line cards and spares. Service providers also get faster core cross-connect capability—320 Gbps (does not require a transponder) from the new Cisco ONS 15600 SSXC cross-connect card.

Cisco is the only next-generation optical vendor to provide an integrated network-management system that allows customers to provision, monitor, and manage nodes from the edge to the core network—Cisco Transport Manager.

Q. What is the additional cost of the Release 5.0 enhancements for customers who already have Cisco ONS 15454s or Cisco ONS 15600s installed?

A. The new interface modules for the Cisco ONS 15454 and Cisco ONS 15600 are fully compatible with the current product chassis. Customers will simply need to purchase the line cards and install Release 5.0 system software. The future-proof design and functionality of Cisco multiservice optical platforms enable customers to upgrade/enhance their systems much less expensively, with greatly reduced service-

affecting ramifications (no truck-rolls necessary). Pricing and availability information for Cisco products and services is available to Cisco partners and customers who already have access to Cisco Internet Commerce tools (log in to find pricing information).

Q. How much international traction has Cisco optical technology achieved and who are Cisco major international customers?

A. Cisco continues to enhance its robust SDH multiservice transport and Metro DWDM product portfolio with solutions that are designed for global networks. Recent publicly announced global optical Cisco sales include [Mediaset](#) (Italy), [Ethiopia Telecom](#), [PowerTel](#) (Australia), [CKW](#) (Switzerland), and [BankThai](#) (Thailand).

Q. What is the Cisco current global optical strategy?

A. Cisco will continue to develop its already robust SDH multiservice transport and Metro DWDM product portfolio for global applications. Release 5.0 also includes support for the Japan automatic protection switching (APS) protocol, further enhancing the readiness of Cisco multiservice solutions in international networks. Ethernet capability will continue to be an important feature of the Cisco global portfolio as international providers look to deploy “triple-play services” (voice, video, and data) over Ethernet-based infrastructures. [Dansk Bredbaand](#), a Danish carrier, is a good example of this business model.

NETWORK EDGE AND ACCESS

Q. What are the main customer benefits of the new Cisco ONS 15310-CL?

A. It is suitable for remote terminal and customer locations, and is interoperable with existing non-Cisco SONET infrastructures and with the Cisco ONS 15454, Cisco ONS 15327 SONET Multiservice Platform, and Cisco ONS 15600. It provides ease of installation and operation, as well as network troubleshooting through remote access and performance monitoring support. Resilient Packet Ring (RPR), VCAT, LCAS, and GFP support brings added economies of scale and interoperability.

Q. What are the list prices for the Cisco ONS 15310-CL and its Ethernet expansion modules?

A. Pricing and availability information for Cisco products and services is available to Cisco partners and customers who already have access to Cisco Internet Commerce tools (log in to find pricing information).

Q. What customers do you expect to be early adopters of the Cisco ONS 15310-CL?

A. Early adopters will include multiple system operators (MSOs), cable operators, enterprise customers, and local exchange carriers (LECs) that are seeking a low price point and want customer-located equipment that provides integrated data and TDM service and combines the proven multiservice power and flexibility of the Cisco ONS 15454.

Q. Will the Cisco ONS 15310-CL replace the Cisco ONS 15327? Are there any end-of-life plans for the Cisco ONS 15327?

A. No, there are no plans to discontinue the Cisco ONS 15327.

Q. What is the difference between the Cisco ONS 15310-CL and the Cisco ONS 15327?

A. The Cisco ONS 15310-CL is a non-redundant single processing system (for cross-connect, timing, and synchronization) expressly designed for use at the customer location. The Cisco ONS 15327 is an edge/access, redundant, dual-processor system that is capable of both customer-located and metro-access deployments (including those that require redundancy). Additionally, the Cisco ONS 15327 can provide OC-48 services to the edge, while the Cisco ONS 15310-CL is OC-3 to OC-12 only.

Q. Will there be Telcordia Operations Systems Modification of Intelligent Network Elements (OSMINE) support for the Cisco ONS 15310 CL?

A. Yes, the Cisco ONS 15310-CL is OSMINE supported.

Q. What are the list prices for the new modules and features of the Cisco ONS 15302 and Cisco ONS 15305 multiservice over SDH access platforms?

A. Pricing and availability information for Cisco products and services is available to Cisco partners and customers who already have access to Cisco Internet Commerce tools (log in to find pricing information).

Q. What new functions does the Cisco ONS 15305 8-Port 10/100 Ethernet Module provide?

A. The module provides eight ports for Layer 1 or Layer 2 switched transport of Ethernet and Fast Ethernet traffic over SDH networks using standard GFP, VCAT, and LCAS.

Q. What new functions does the Cisco ONS 15305 2-Port Gigabit Ethernet Module provide?

A. The module provides two ports for Layer 1 or Layer 2 switched transport of up to line rate Gigabit Ethernet traffic over SDH networks using standard GFP, VCAT, and LCAS.

Q. Since their launch in March 2003, have the Cisco ONS 15302 and Cisco ONS 15305 had any market traction?

A. The Cisco ONS 15302 and Cisco ONS 15305 have already been deployed by over 70 customers in more than 30 different countries, helping Cisco increase their success in the multiservice over SDH market. Additionally, the Cisco ONS 15302 and Cisco ONS 15305 complement the Cisco ONS 15454 SDH platform as a fully-compatible edge/access solution.

METRO AND REGIONAL NETWORK

Q. Are the differences between the Release 4.7 and the Release 5.0 enhancements to the Cisco ONS 15454 really all that significant? What have you seen with respect to customer demand for this platform?

A. The Release 5.0 high-density 48-port DS-3/EC-1 and 12-port DS-3 transmultiplexer cards will further strengthen the Cisco ONS 15454 as the leader in interface aggregation and flexibility by facilitating support for a large quantity of DS-3 interfaces while requiring very few shelf slots. This frees up shelf slots to support additional revenue-generating multiservice cards, including the Carrier Ethernet line card, Cisco ONS 15454 ML-Series Ethernet card with industry-leading Layer 2 and Layer 3 capabilities, or any other of the TDM, storage area network (SAN), or optical interface cards.

In terms of traction and customer interest, Cisco optical solutions have been very well received and Cisco has publicly announced several new Cisco ONS 15454 MSPP and Cisco ONS 15454 MSTP customers.

- OneNet Deploys Cisco Intelligent DWDM Technology—September 28, 2004. [Click here for full text.](#)
- Mediaset Tunes into Cisco Systems for Next-Generation TV Production Network—September 13, 2004. [Click here for full text.](#)
- OARnet Deploys Cisco Optical Equipment and High-End Routers to Support Advanced Networking Technologies and Academic Research—September 8, 2004. [Click here for full text.](#)
- PowerTel Ltd Upgrades Optical and Core Network with Cisco Solution—August 22, 2004. [Click here for full text.](#)
- Ethiopia Revamps Telecoms with Cisco Optical Equipment—July 8, 2004. [Click here for full text.](#)

Q. How does Cisco position the various Ethernet solutions that are now available for the Cisco ONS 15454 and Cisco ONS 153xx edge platforms? When should a customer use a particular solution?

A. There are essentially two types of Ethernet services, private line which is a Layer 1 physical transport option and switched/routed services where each data packet is switched and aggregated at every point along the network.

Private Line (PL) Ethernet services involves a simple mapping of data traffic into SONET/SDH payloads for transport between two locations. Carriers like this point to point transport mechanism as it offers the same look and feel as they are used to in terms of traditional private line DS_n TDM services. Virtual Concatenation (VCAT), a recent technology innovation enables better bandwidth utilization when creating these point-to-point connections. Link Capacity Adjustment Scheme (LCAS) allows the dynamic re-sizing of these connections,

reducing OpEx. Generic Framing Procedure (GFP) offers a standard mechanism for encapsulating the Ethernet traffic into SONET/SDH, thus promoting interoperability between vendor's private line Ethernet products. Cisco markets these PL Ethernet solutions as Carrier Ethernet (CE) and is proud to introduce 10/100 Private Line Carrier Ethernet solutions across access (Cisco ONS 15310-CL) and metro networks (Cisco ONS 15454).

Switched Ethernet services are based on Layer 2 technologies and enable packet aggregation to occur at each point of the network architecture. As such, efficient multipoint service delivery and oversubscription of network bandwidth can be provided, thus reducing OpEx. Cisco enables efficient switched services with RPR and enhanced QoS capabilities via its ML-Series family of line cards for the Cisco ONS 15454 (10/100 and GE) and now, the Cisco ONS 15310-CL (10/100 Mbps) access platform. Cisco ONS is committed to expanding its data development within the context of the CE and/or ML product families.

Q. Is the Cisco reconfigurable optical add/drop multiplexer (ROADM) solution generally available now?

A. Yes, the Cisco ONS 15454 MSTP and ROADM solution (Release 4.7), which launched at Supercomm 2004 (June 2004), is generally available. Cisco has achieved significant traction in the worldwide Metro DWDM market based largely on this platform. Various independent analysts currently rank Cisco as the number-two vendor in terms of worldwide Metro DWDM revenue.

CORE NETWORK

Q. Are the differences between the Release 4.7 and the Release 5.0 enhancements to the Cisco ONS 15600 Series really all that significant? What have you seen with respect to customer demand for this platform?

A. For the Cisco ONS 15600 Series, the new ASAP card allows for lowest first cost and lowest scaling cost. For example, customers may start their networks with one OC-12 ring, 1 OC-3 ring, 1 OC-48 ring, 1 Gigabit Ethernet ring or whatever mix of transport services their customer base requires. The initial or current deployment can be changed to OC-48 or Gigabit Ethernet without additional cost (reducing CapEx) or hands-on maintenance or modification to the Cisco ONS 15600 chassis (for lower OpEx). Customers can make bandwidth selections through software (Cisco Transport Manager).

The new single-slot cross-connect (SSXC) card requires less power, generates less heat, and supports 2-fiber, bidirectional line switched rings/multiplex section-shared protection rings (2F BLSRs/MS-SPRs). This enhanced solution allows customers to deploy 50 percent of the Cisco ONS 15600 Series available OC-3, OC-12, and OC-48 ports for BLSR (up from 25 percent using the current core cross-connect solution). Finally, the innovative SSXC cross-connect card's design will be priced 65-percent lower than the current core cross-connect card, providing customers with additional savings.

In terms of traction and customer interest, Cisco optical solutions have been very well received and Cisco has publicly announced several new Cisco ONS 15600 series customers. For more information, please refer to the following:

- [US Signal Selects Cisco Optical Multiservice Switching Platform for Evaluation](#) (September 16, 2002)
- [Enventis Telecom Deploys Cisco ONS 15600 Multiservice Switches for New Metro Ethernet Rollout](#) (March 15, 2004)
- [Kentucky Data Link Deploys Cisco ONS 15600 to Increase Provisioning Speed and Operational Efficiencies across the Network](#) (February 23, 2004)

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