



Cisco ONS 15454 Multiservice Transport Platform 7.0

Product Overview

The Cisco® ONS 15454 Multiservice Transport Platform (MSTP) offers a unique solution for delivering any wavelength to any location in a metropolitan-area (metro) or regional DWDM network. Its intelligence and flexibility is similar to that of the highly successful Cisco ONS 15454 Multiservice Provisioning Platform (MSPP).

Metro and regional DWDM networks need to support point-to-point as well as ring topologies with complex traffic patterns, which may also extend across multiple networks. The Cisco ONS 15454 MSTP can be configured to support any metro or regional DWDM topology. Superior topology flexibility is achieved through a fully reconfigurable optical add/drop multiplexer (ROADM). The Cisco ONS 15454 MSTP offers ROADM functionality that allows zero to 32 channels of passthrough or add/drop, A–Z wavelength provisioning, and full real-time power monitoring of each individual wavelength.

The Cisco ONS 15454 MSTP delivers the following important capabilities:

- **Wide service interface mix** – Each wavelength in the DWDM system can be configured to transport aggregated lower-rate TDM services, SONET/SDH wavelength and aggregated services, data services, storage services, or video services.
- **Service transparency** – The Cisco ONS 15454 MSTP offers the choice of multiservice aggregation, wavelength aggregation, wavelength transport, or direct interconnection with DWDM interfaces on Layer 3, Layer 2, or storage area network (SAN) devices.
- **Topology flexibility** – Utilizing ROADM and different optical amplifier types, the Cisco ONS 15454 MSTP has the flexibility to deliver metro access, metro core, and regional solutions.
- **Simplified, cost-effective operation** – With innovative technology, the Cisco ONS 15454 MSTP introduces intelligence to metro and regional DWDM transmission while addressing the continued need for increased bandwidth. Combining multiple services and intelligent DWDM, the Cisco ONS 15454 MSTP significantly reduces both capital expenditures and operational expenses for today’s metro and regional networks.

Release 7.0 Features

Table 1 and Table 2 outline new hardware and software features provided by the Cisco ONS 15454 SONET MSTP Release 7.0.

Table 1. Cisco ONS 15454 MSTP 7.0 Hardware Features

Feature	Description
10-Gbps EFEC multirate data muxponder card (full-band tunable)	This new data muxponder card can aggregate Gigabit Ethernet (GE), 1-Gbps and 2-Gbps Fibre Channel/FICON, 4-Gbps Fibre Channel, ISC-1, and ISC-3 services in a single 10-Gbps ITU colored DWDM trunk signal. Up to 8 client signals can be aggregated using SONET/SDH framer with GFP-T encapsulation (G.7041). DWDM trunk side can be tuned across the whole band over the 50-GHz ITU grid. G.709 and EFEC/FEC operation can be software-provisioned on the card. Distance-extension capabilities are provided for aggregation and transport of SAN services. Two different versions of the card exist, one operating in C band and another one operating in L band.

Feature	Description
10-Gbps EFEC multirate transponder card (full-band tunable)	<p>This new multirate transponder card can transport OC-192/STM-64, 10 GE LAN PHY, 10 GE WAN PHY, and 10-Gbps Fibre Channel services over a single 10-Gbps ITU colored DWDM trunk signal. DWDM trunk side can be tuned across the whole band over the 50-GHz ITU grid. G.709 and EFEC/FEC operation can be software-provisioned on the card.</p> <p>Two different versions of the card exist: one operating in C band and another one operating in L band.</p>
4x 2.5-Gbps/10-Gbps EFEC muxponder card (full-band tunable)	<p>This new SONET/SDH muxponder card can aggregate OC-48/STM-16 services in a single 10-Gbps ITU colored DWDM trunk signal. Up to 4 client signals can be aggregated using ODU multiplexing scheme (G.709). DWDM trunk side can be tuned across the whole band over the 50-GHz ITU grid. EFEC/FEC operation can be software-provisioned on the card.</p> <p>Two different versions of the card exist: one operating in C band and another one operating in L band.</p>
Mesh/multiring upgrade scalability support	<p>The mesh/multiring upgrade (MMU) card provides a simple, reliable, and cost-effective solution to upgrade a Degree-2 ROADM node to support additional flexibility and to route, without service interruptions, wavelengths and services across more than 2 directions in the future (Degree-N ROADM).</p> <p>The MMU card can operate in both the C band and the L band and is compatible with 100-GHz and 50-GHz channel spacing.</p>
L band DWDM transport solution	<p>The Cisco ONS 15454 MSTP supports a fully flexible, ROADM-based solution to cope with fiber types (such as DSF – G.653) with poor transport capabilities in C band and operating much better in the L band region of the optical spectrum.</p> <p>The optical amplifier (OPT-AMP-L) card can be configured to operate as a Pre-amplifier or as a Booster amplifier and features up to 20 dBm total output power, supporting Mid Access Loss for Chromatic Dispersion compensation units and embedded OSC Combining and Separation functionalities.</p> <p>The optical booster (OPT-BST-L) card features up to 17 dBm total output power and embedded OSC Combining and Separation functionalities.</p> <p>The ROADM (32-WSS-L and 32-DMX-L) cards can remotely and automatically provision a wavelength to bypass or be added to any node of the network. Per-channel optical path selection is also completely automated through Wavelength Path Provisioning (WPP) at the network level, featuring end-to-end, point-and-click wavelength provisioning and an easy SONET/SDH-like wavelength management.</p>

Table 2. Cisco ONS 15454 MSTP Release 7.0 Software Features

Feature	Description
Network-level alarm correlation	<p>Enhances and simplifies management and troubleshooting for a Cisco ONS 15454 MSTP-based DWDM network, reporting to the management interfaces (TL1, SNMP, Cisco Transport Controller) only the root cause of any possible failure in the system.</p> <p>Implementation of these functionalities is fully compliant with ITU-T G.798 Recommendation.</p>
Multishelf management	<p>Provides a single node name/TID/IP address for all the shelves belonging to an MSTP node. This new feature allows centralized provisioning and management for a DWDM node, independently on the number of shelves and cards in the node, and is supported by a new Cisco Transport Controller GUI, layered at node, rack, shelf, and unit level.</p>
End-to-end circuit provisioning and management, from client to client (Optical Channel Client Connection – OCHCC)	<p>Extends capabilities already supported by Optical Channel Network Connection (OCHNC), allowing the client-to-client provisioning and management on muxponder and transponder cards.</p>
ESCON support on 2.5-Gbps Data Muxponder cards	<p>New software image for the 2.5-Gbps data muxponder cards allows multiplexing ESCON services on existing and installed hardware.</p> <p>A new Small Form-Factor Pluggable (SFP) has been made available to support ESCON services on the 2.5-Gbps data muxponder cards.</p>

More detailed information about the ANSI platform is available in the release notes for the Cisco ONS 15454 at:
<http://www.cisco.com/univercd/cc/td/doc/product/ong/15400/454reInt/index.htm>.

More detailed information about the ETSI platform is available in the release notes for the Cisco ONS 15454 at:
<http://www.cisco.com/univercd/cc/td/doc/product/ong/15454sdh/sdhreInt/index.htm>.

Cisco ONS 15454 MSTP Release 7.0 features are incremental additions to the Cisco ONS 15454 MSTP. Previously supported hardware and software features will continue to be supported unless specified in the release notes, user documentation, or previously announced end-of-sale product bulletins.

Upgrade Paths

Direct software upgrades to Cisco ONS 15454 MSTP 7.0 are supported from Cisco ONS 15454 MSTP Release 4.6.x, 5.0.x, and 6.0.x if the system is presently operating with the Cisco ONS 15454 Timing, Communications, and Control Version 2 card (TCC2). For details on the upgrade procedures, please review the appropriate upgrade guide at:

http://www.cisco.com/en/US/products/hw/optical/ps2006/prod_installation_guides_list.html.

Compatibility Information

Table 3 outlines Cisco ONS 15454 MSTP system deployment requirements for hardware and software functions being announced with this bulletin.

Table 3. Cisco ONS 15454 MSTP System Requirements

Feature	Cisco ONS 15454 MSTP Software	Cisco ONS 15454 MSTP TCC Card	Cisco ONS 15454 MSPP Cross-Connect Card	Cisco ONS 15454 MSTP Shelf Assembly
10-Gbps EFEC multirate data muxponder cards (full-band tunable)	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
10-Gbps EFEC multirate transponder cards (full-band tunable)	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
4 x 2.5-Gbps/10-Gbps EFEC muxponder cards (full-band tunable)	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
Mesh/multiring upgrade scalability support	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
L band DWDM transport solution	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
Network-level alarm correlation	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
Multishelf management	Release 7.0	TCC2P or TCC2	None	SA-HD, SA-ANSI SA-ETSI
End-to-end circuit provisioning and management, from client to client (OCHCC)	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI
ESCON support on 2.5-Gbps data muxponder cards	Release 7.0	TCC2P or TCC2	Any	SA-HD, SA-ANSI SA-ETSI

Before inserting a new node into an operating network, all existing Cisco ONS 15454 nodes connected with active optical section-data-communication-channel (SDCC) interfaces should be upgraded to a consistent level of system software to ensure proper operation.

Availability

The Cisco ONS 15454 MSTP products outlined in Table 4 are currently orderable. Shipment starting date depends on the specific unit and components; please contact your Cisco Systems® sales representative for more details.

Ordering Information

The Cisco ONS 15454 MSTP 7.0 can be ordered from your Cisco sales representative or through the Cisco.com online ordering tool. Table 4 lists specific product codes and descriptions.

Table 4. Ordering Information for Cisco ONS 15454 MSTP Release 7.0

Part Number	Description
15454-R7.0.0SWK9= 15454E-R7.0.0SWK9=	System software, Release 7.0.0, Cisco ONS 15454, CD-ROM
15454-LIC-7.0.0K9 15454E-LIC-7.0.0K9	System software, Upgrade License for Release 7.0.0, Right-To-Use License
SF15454-R7.0.0K9 SF15454E-R7.0.0K9	System software, Release 7.0.0, Cisco ONS 15454, ordered with TCC2/TCC2P cards (preloaded)
15454-DOC7.0.0PP 15454E-DOC7.0.0PP	User document, Cisco ONS 15454, Release 7.0.0, Cisco ONS 15454, paper version
15454-DOC7.0.0CD 15454E-DOC7.0.0CD	User document, Cisco ONS 15454, Release 7.0.0, Cisco ONS 15454, CD version
15454-10DME-C=	10-Gbps EFEC data muxponder card, 8 SFP-based client interfaces, full C-band tunable on 50-GHz ITU wavelengths DWDM line with LC connectors
15454-10DME-L=	10-Gbps EFEC data muxponder card, 8 SFP-based client interfaces, full L-band tunable on 50-GHz ITU wavelengths DWDM line with LC connectors
ONS-SE-G2F-LX=	GE, Fibre Channel (1- and 2-Gbps) and HDTV SFP, long-reach, 1310-nm, single-mode, LC connectors
ONS-SE-G2F-SX=	GE and Fibre Channel (1- and 2-Gbps) SFP, short-reach, 850-nm, multimode, LC connectors
ONS-SE-4G-SM=	4-Gbps Fibre Channel SFP, 1310-nm, single-mode, LC connectors
ONS-SE-4G-MM=	4-Gbps Fibre Channel SFP, 850-nm, multimode, LC connectors
15454-10E-L1-C=	10-Gbps EFEC multirate transponder card, XFP-based client interface, full C-band tunable on 50-GHz ITU wavelengths DWDM line with LC connectors
15454-10E-L1-L=	10-Gbps EFEC multirate transponder card, XFP-based client interface, full L-band tunable on 50-GHz ITU wavelengths DWDM line with LC connectors
15454-10ME-L1-C=	4x OC-48/STM-16 EFEC muxponder card, 4 SFP-based client interfaces, full C-band tunable on 50-GHz ITU wavelengths DWDM line with LC connectors
15454-10ME-L1-L=	4x OC-48/STM-16 EFEC muxponder card, 4 SFP-based client interfaces, full L-band tunable on 50-GHz ITU wavelengths DWDM line with LC connectors
15454-MMU=	Mesh/multiring upgrade unit, C band and L band (for use with 32-WSS/32-DMX or 32-WSS-L/32-DMX-L), LC connectors, includes one 2-meter LC/LC fiber-optic cables
15454-OPT-AMP-L=	Optical amplifier, can be configured as preamplifier or booster, L-band, 64 channel, 50-GHz compatible, LC connectors, midstage access, includes one 4-dB LC/LC attenuated loopback (to be used if DCU is not required) and two 2-meter LC/LC fiber-optic cables

Part Number	Description
15454-OPT-BST-L=	Optical booster amplifier, L-band, 64 channel, 50-GHz compatible, LC connectors, includes two 2-meter LC/LC fiber-optic cables
15454-32-WSS-L=	32-channel wavelength-selective switch, L-band, MPO connectors for add path, LC connectors for interconnection, includes two 2-meter LC/LC fiber-optic cables
15454-32-DMX-L=	32-channel demultiplexer 100-GHz (for use with 32-WSS), L-band, MPO connectors for drop path, LC connectors for interconnection, includes one 2-meter LC/LC fiber-optic cable
15454-MS-ISC-100T=	Integrated 100BASE-T Ethernet switch for multishelf management
15454-EAP-MF=	Mechanical frame for Ethernet adapter panel
15454-EAP=	Ethernet adapter panel (to be used with MS-ISC-100T to allow proper cable management)
15454-MEC=	Multiple Ethernet cable to replicate the MS-ISC-100T Ethernet ports on the EAP unit
ONS-SE-200-MM=	ESCON SFP, short-reach, 1310-nm, multimode, LC connectors

The product names and new Common Language Equipment Identifier (CLEI) codes for the Cisco ONS 15454 MSTP products are available online at <http://tools.cisco.com/emco/pnclei/prsc/cleiMain.do>.

For More Information

For more information about the Cisco ONS 15454 MSTP, visit <http://www.cisco.com/en/US/products/hw/optical/ps2006/ps5320/index.html> or contact your local account representative.

**Corporate Headquarters**

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the **Cisco Website at www.cisco.com/go/offices.**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica
Croatia • Cyprus • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR
Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico
The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia
Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan
Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

All contents are Copyright © 1992–2005 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0502R) Pa/LW9883 12/05

