

Cisco ONS 15454 MSTP Release 8.0

PB386390

Product Overview

The Cisco® ONS 15454 Multiservice Transport Platform (MSTP) allows a metropolitan (metro) or regional dense wavelength-division multiplexing (DWDM) system to become as intelligent and flexible as the highly successful Cisco ONS 15454 Multiservice Provisioning Platform (MSPP), including a wide service interface mix, service transparency, a flexible topology, a completely reconfigurable traffic pattern, and simplified operations.

Metro and regional DWDM networks must be able 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, allowing a single solution to be provisioned for the network. The ultimate topology flexibility is achieved through a fully reconfigurable optical add/drop multiplexer (ROADM). The Cisco ONS 15454 MSTP offers ROADM functions that allow zero to 40 channels of pass-through or add/drop; A–Z wavelength provisioning; and full, real-time power monitoring of each wavelength.

The Cisco ONS 15454 MSTP offers the following capabilities:

- Wide service interface mix – Each wavelength in the system can be configured to transport aggregated lower-rate time-division multiplexing (TDM) services, SONET/SDH wavelength and aggregated services, data services, storage services, or video services.
- Service transparency – 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 – Taking advantage of ROADM and optical amplifier types availability, MSTP can offer network topology and reach flexibility to deliver metro access, metro core, regional, and long-haul solutions.
- Simplified, cost-effective operation – With innovative technology, a metro-optimized Cisco 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 (CapEx) and operating expenses (OpEx) for today's metro and regional networks.

Features of Cisco ONS 15454 MSTP Release 8.0

Tables 1 and 2 outline new hardware and software features provided by the Cisco ONS 15454 SONET MSTP Release 8.0.

Table 1. Cisco ONS 15454 MSTP Release 8.0 Hardware Features

Feature	Description
40-channel ROADMs	Release 8.0 expands Cisco's wavelength capacity on a single ROADM card with the Cisco 40-Channel Wavelength Selective Switch (15454-40-WSS-C) and the Cisco 40-Channel Wavelength Demultiplexer (15454-40-DMX-C). By taking advantage of the Release 8.0 MSTP feature set and configuration flexibility, a Cisco DWDM network can manage up to 112 channels of composite DWDM traffic.
Wavelength cross-connect (WXC)	The new WXC hardware (double-width card) and software capability provides multidegree wavelength deployment beyond the standard east and west (2-degree) DWDM capability, expanding carrier options to 4 and 8 degrees or direction at a single site without the requirement of converting each wavelength from the optical domain to the electrical domain and back to the optical domain (optical-electrical-optical [OEO]). Also referred to as mesh or multiring support, this capability significantly reduces the need for costly transponder conversion (typically 2 transponders per add/drop channel or wavelength). This capability allows carriers to more cost-effectively (from both a CapEx and OpEx perspective) build more secure and efficient transport networks that can scale with their growing bandwidth and interconnect needs. The Cisco approach to DWDM gives carriers the freedom and option to reevaluate and alter their wavelength budgets and forecasts that were the basis for their initial deployment design as service demands grow and business concentrations emerge – without suffering the heavy price typically associated with redesigning and mapping DWDM networks.
Cisco MSPP-on-a-Blade	The Cisco MSPP-on-a-Blade combines ADM and transponder functions using multirate Small Form-Factor Pluggable (SFP) (client) and 10-Gbps XFP (XFP) (trunk) configurable interfaces to consolidate many of the aggregation functions that are traditionally performed on a MSPP with multiple service blades and common cards. The blade includes high-order SONET and Ethernet-over-SONET/SDH (EoS) traffic grooming and aggregation. Release 8.0 consolidates all these functions onto a single, double-width card – and the result is reduced cost, footprint, and inventory requirements. With one blade, carriers can aggregate OC-3, OC-12, OC-48, and Gigabit Ethernet signals (on a user-definable port-by-port basis) onto a single-wavelength trunk circuit.
Gigabit Ethernet and 10 Gigabit Ethernet Crossponder	And finally, leading innovation in DWDM technology, Cisco introduces a new approach to efficient Gigabit Ethernet and 10 Gigabit Ethernet transport over DWDM with the crossponder (double-width) service blade. Available in two versions (20 Gigabit Ethernet client ports and two 10 Gigabit Ethernet trunk ports), the crossponder provides unprecedented flexibility to map Gigabit Ethernet ports onto a 10 Gigabit Ethernet wavelength performing a variety of Layer 1 or Layer 2 functions. This new approach provides efficiencies and flexibilities not previously associated with wavelength transport. The benefit is more efficient use of available bandwidth and unprecedented Gigabit Ethernet-over-DWDM mapping and traffic policing flexibility.
17-dB gain booster amplifier	This product is a flexible amplifier that can be used as a preamplifier or as a booster amplifier. It integrates an optical service channel splitter/combiner to allow the optical supervisory channel (OSC) to be sent to and received from the optical service channel module (OSCM) card.

Table 2. Cisco ONS 15454 MSTP Release 8.0 Software Features

Feature	Description
Data-Connection Network (DCN) extension	DCN extension allows to remove OSC necessity from certain applications while Intelligent transmission SW runs over a separated DCN along the link. This feature is useful for single long span application where OSC power budget limits the overall network performance. Implementation of these functions is fully compliant with the ITU-T G.798 recommendation.
View all facilities	This feature provides a view for all the ports in the DWDM node at the same time. The user is no longer required to browse back and forth on card view levels to see the various ports.
Automatic node turn-up	This feature, for networks composed of regular nodes and spans, allows self-provisioning of the node without Cisco Transport Planner. Design Tool indicates if this feature is applicable or not to a defined network. The node auto-learns optical span losses and derives its provisioning parameters from these parameters.

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 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/sdhrelnt/index.htm>.

Cisco ONS 15454 MSTP Release 8.0 features are incremental additions to the Cisco ONS 15454 MSTP. Previously supported Cisco ONS 15454 MSTP hardware and software features will continue to be supported unless specified in the release notes, user documentation, or previously announced end-of-sales product bulletins.

Upgrade Paths

Direct software upgrades to Cisco ONS 15454 MSTP Release 8.0 are supported from Cisco ONS 15454 MSTP Releases 4.6.2, 5.0.2, 5.0.3, 5.0.4, 5.0.5, 6.0.0, 7.0.1, 7.0.2, 7.0.3, and 7.2.0 if the system is presently operating with the Cisco ONS 15454 Timing, Communications, & Control Version 2-Series Card (TCC2). For details about 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	Fan Tray	Cisco ONS 15454 MSPP Cross-Connect Card	Cisco ONS 15454 MSTP Shelf Assembly
40-channel ROADMs	Release 8.0	TCC2P or TCC2	CC-FTA and FTA-3	Any	SA-HD-DDR, SA-HD and SA-ETSI
40-channels wavelength cross-connect	Release 8.0	TCC2P or TCC2	CC-FTA and FTA-3	Any	SA-HD-DDR, SA-HD and SA-ETSI
Gigabit Ethernet crossponder	Release 8.0	TCC2P or TCC2	CC-FTA	Any	SA-HD-DDR, SA-HD, and SA-ETSI
10 Gigabit Ethernet crossponder	Release 8.0	TCC2P or TCC2	CC-FTA	Any	SA-HD-DDR, SA-HD, and SA-ETSI
Cisco MSPP-on-a-Blade	Release 8.0	TCC2P or TCC2	CC-FTA	No	SA-HD-DDR and SA-HD,
17-dB gain Optical amplifier	Release 8.0	TCC2P or TCC2	CC-FTA and FTA-3	Any	SA-HD-DDR, SA-HD, and SA-ETSI
DCN extension	Release 8.0	TCC2P or TCC2	CC-FTA and FTA-3	None	NA
View all facilities	Release 8.0	TCC2P or TCC2	CC-FTA and FTA-3	Any	NA
Automatic node turn-up	Release 8.0	TCC2P or TCC2	CC-FTA and FTA-3	Any	NA

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 or components; please contact your Cisco sales representative for more details.

Ordering Information

The Cisco ONS 15454 MSTP Release 8.0 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 8.0

Part Number	Description
15454-R8.0.0SWK9= 15454E-R8.0.0SWK9=	System software, Release 8.0.0, Cisco ONS 15454, CD-ROM
15454-LIC-R8.0.0K9 15454E-LIC-R8.0.0K9	System software, Upgrade License for R8.0.0, Right To Use License
SF15454-R8.0.0K9 SF15454E-R8.0.0K9	System software, Release 8.0.0, Cisco ONS 15454, ordered with TCC2 / TCC2P cards (preloaded)
15454-DOC8.0.0PP 15454E-DOC8.0.0PP	User document, Cisco ONS 15454, Release 8.0.0, Cisco ONS 15454, paper version
15454-DOC8.0.0CD 15454E-DOC8.0.0CD	User document, Cisco ONS 15454, Release 8.0.0, Cisco ONS 15454, CD version
15454-40-DMX-C=	40Chs Demultiplexer – C-band – Odd
15454-40-DMX-CE=	40Chs Demultiplexer – C-band – Even
15454-40-MUX-C=	40Chs Multiplexer – C-band – Odd
15454-40-WSS-C=	40Chs Wavelength Selective Switch – C-band – Odd
15454-40-WSS-CE=	40Chs Wavelength Selective Switch – C-band – Even
15454-40-WXC-C=	40Chs Broadcast Wavelength Cross-Connect – C-band- Odd
15454-ADM-10G=	ADM on a Blade OC192 3/12/48/GE 16-Client
15454-10GE-XP=	4x10GE Ethernet CrossPonder
15454-GE-XP=	20xGE / 2x10GE Ethernet CrossPonder
15454-OPT-AMP-17C=	ONS 15454 Optical Amplifier – 17dB Gain – C-Band
15454-MPO-MPO-2=	Multi-fiber patchcord – MPO to MPO – 2m
15454-MPO-MPO-4=	Multi-fiber patchcord – MPO to MPO – 4m
15454-MPO-MPO-6=	Multi-fiber patchcord – MPO to MPO – 6m
15454-MPO-MPO-8=	Multi-fiber patchcord – MPO to MPO – 8m
15454-PP-80-LC=	2RU 80 Ports LC Patch Panel
15454-PP-MESH-4=	2RU 4-Degree Mesh Patch Panel
15454-PP-MESH-8=	2RU 8-Degree Mesh Patch Panel
ONS-SC-2G-33.4=	OC-48/STM16, SFP, 1533.47, 100 GHz, LC
ONS-SC-2G-41.3=	OC-48/STM16, SFP, 1541.35, 100 GHz, LC
ONS-SC-2G-49.3=	OC-48/STM16, SFP, 1549.32, 100 GHz, LC
ONS-SC-2G-57.3=	OC-48/STM16, SFP, 1557.36, 100 GHz, LC
ONS-SE-GE-ZX=	SFP – 1000BASE-ZX Gigabit Ethernet, 1550, SM, EXT-TEMP
ONS-SE-Z1=	OC48IR1,12/3SR1,GE LX STM S-16.1,I-4,I-1 EXT
ONS-SE-ZE-EL=	SFP – 10/100/1000 Ethernet BaseT Multi-rate Copper RJ45
ONS-SI-155-L2=	OC3/STM1 LR, 1550 nm, , Small Form Pluggable (SFP), ITEMP
ONS-SI-155-SR-MM=	OC3/STM1, IR1/S1.1.,1310 nm, Multi Mode , Small Form Pluggable (SFP), I Temp
ONS-SI-2G-L2=	OC48/STM16, LR2, 1550nm, Small Form Pluggable (SFP), Itemp
ONS-SI-2G-S1=	OC48/STM16, SR1, 1310nm, Small Form Pluggable (SFP),I-Temp
ONS-SI-622-I1=	OC12/STM4 and OC3/STM1 IR, 1310 nm, SFP ITEMP
ONS-SI-GE-ZX=	SFP – 1000BASE-ZX Gigabit Ethernet, 1550, SM, I-Temp
ONS-XC-10G-30.3=	OC-192/STM64/10GE, XFP, 1530.33, 100 GHz, LC
ONS-XC-10G-31.1=	OC-192/STM64/10GE, XFP, 1531.12, 100 GHz, LC

Part Number	Description
ONS-XC-10G-31.9=	OC-192/STM64/10GE, XFP, 1531.90, 100 GHz, LC
ONS-XC-10G-32.6=	OC-192/STM64/10GE, XFP, 1532.68, 100 GHz, LC
ONS-XC-10G-33.4=	OC-192/STM64/10GE, XFP, 1533.47, 100 GHz, LC
ONS-XC-10G-34.2=	OC-192/STM64/10GE, XFP, 1534.25, 100 GHz, LC
ONS-XC-10G-35.0=	OC-192/STM64/10GE, XFP, 1535.04, 100 GHz, LC
ONS-XC-10G-35.8=	OC-192/STM64/10GE, XFP, 1535.82, 100 GHz, LC
ONS-XC-10G-36.6=	OC-192/STM64/10GE, XFP, 1536.61, 100 GHz, LC
ONS-XC-10G-37.4=	OC-192/STM64/10GE, XFP, 1537.40, 100 GHz, LC
ONS-XC-10G-38.1=	OC-192/STM64/10GE, XFP, 1538.19, 100 GHz, LC
ONS-XC-10G-38.9=	OC-192/STM64/10GE, XFP, 1538.98, 100 GHz, LC
ONS-XC-10G-39.7=	OC-192/STM64/10GE, XFP, 1539.77, 100 GHz, LC
ONS-XC-10G-40.5=	OC-192/STM64/10GE, XFP, 1540.56, 100 GHz, LC
ONS-XC-10G-41.3=	OC-192/STM64/10GE, XFP, 1541.35, 100 GHz, LC
ONS-XC-10G-42.1=	OC-192/STM64/10GE, XFP, 1542.14, 100 GHz, LC
ONS-XC-10G-42.9=	OC-192/STM64/10GE, XFP, 1542.94, 100 GHz, LC
ONS-XC-10G-43.7=	OC-192/STM64/10GE, XFP, 1543.73, 100 GHz, LC
ONS-XC-10G-44.5=	OC-192/STM64/10GE, XFP, 1544.53, 100 GHz, LC
ONS-XC-10G-45.3=	OC-192/STM64/10GE, XFP, 1545.32, 100 GHz, LC
ONS-XC-10G-46.1=	OC-192/STM64/10GE, XFP, 1546.12, 100 GHz, LC
ONS-XC-10G-46.9=	OC-192/STM64/10GE, XFP, 1546.92, 100 GHz, LC
ONS-XC-10G-47.7=	OC-192/STM64/10GE, XFP, 1547.72, 100 GHz, LC
ONS-XC-10G-48.5=	OC-192/STM64/10GE, XFP, 1548.51, 100 GHz, LC
ONS-XC-10G-49.3=	OC-192/STM64/10GE, XFP, 1549.32, 100 GHz, LC
ONS-XC-10G-50.1=	OC-192/STM64/10GE, XFP, 1550.12, 100 GHz, LC
ONS-XC-10G-50.9=	OC-192/STM64/10GE, XFP, 1550.92, 100 GHz, LC
ONS-XC-10G-51.7=	OC-192/STM64/10GE, XFP, 1551.72, 100 GHz, LC
ONS-XC-10G-52.5=	OC-192/STM64/10GE, XFP, 1552.52, 100 GHz, LC
ONS-XC-10G-53.3=	OC-192/STM64/10GE, XFP, 1553.33, 100 GHz, LC
ONS-XC-10G-54.1=	OC-192/STM64/10GE, XFP, 1554.13, 100 GHz, LC
ONS-XC-10G-54.9=	OC-192/STM64/10GE, XFP, 1554.94, 100 GHz, LC
ONS-XC-10G-55.7=	OC-192/STM64/10GE, XFP, 1555.75, 100 GHz, LC
ONS-XC-10G-56.5=	OC-192/STM64/10GE, XFP, 1556.55, 100 GHz, LC
ONS-XC-10G-57.3=	OC-192/STM64/10GE, XFP, 1557.36, 100 GHz, LC
ONS-XC-10G-58.1=	OC-192/STM64/10GE, XFP, 1558.17, 100 GHz, LC
ONS-XC-10G-58.9=	OC-192/STM64/10GE, XFP, 1558.98, 100 GHz, LC
ONS-XC-10G-59.7=	OC-192/STM64/10GE, XFP, 1559.79, 100 GHz, LC
ONS-XC-10G-60.6=	OC-192/STM64/10GE, XFP, 1560.61, 100 GHz, LC
ONS-XC-10G-61.4=	OC-192/STM64/10GE, XFP, 1561.43, 100 GHz, LC

The product names and new Common Language Equipment Identifier (CLEI) codes for the Cisco ONS 15454 MSTP products are available online at:

http://cisco.com/cgi-bin/front.x/clei/code_search.cgi.

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 Cisco account representative.



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