# Release Notes for Cisco ONS 15530 for Cisco IOS Release 12.2(26)SV1

This document describes caveats for Cisco IOS Release 12.2(26)SV1 for the Cisco ONS 15530.

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## Contents

This document includes the following information:



## Introduction

The Cisco ONS 15530 is a DWDM multiservice aggregation platform that maximizes the carrying capacity of fiber by performing service aggregation of protocols such as ESCON, Fibre Channel, FICON, and Gigabit Ethernet. With the Cisco ONS 15530, users can take advantage of the availability of dark fiber to build a common infrastructure that supports data, SAN (storage area networking), and

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TDM (time-division multiplexing) traffic. For more information about DWDM technology and applications, refer to the *Introduction to DWDM Technology* publication and the *Cisco ONS 15530 Planning Guide*.

# System Requirements

This section describes the system requirements for the Cisco ONS 15530 and includes the following sections:



## Memory Requirements

The DRAM memory configuration is 64 MB, which is the default for the Cisco ONS 15530.

## Hardware Supported

Table 1 lists the hardware components supported on the Cisco ONS 15530 and the minimum software version required. See the "Determining the Software Version" section on page 14.

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| Chassis | 15530-CHAS-N | 15530-CHAS-N chassis, NEBS version | 12.1(10)EV1 |
| | 15530-CHAS-E | 15530-CHAS-E chassis, ETSI version | 12.1(10)EV1 |
| Power supplies | 15530-PWR-AC | 120 to 240 VAC power supply | 12.1(10)EV1 |
| | 15530-PWR-DC | Power supply –48 VDC | 12.1(10)EV1 |
| CPU switch module | 15530-CPU | ONS 15530 CPU switch module | 12.1(10)EV1 |
| Carrier motherboard | 15530-LCMB-0100 | Carrier motherboard (supports OSC, WB-VOA, and PB-OE modules) | 12.1(10)EV1 |
| OADM modules without OSC | 15530-MDXA-04A0 | 4-channel Band A | 12.1(10)EV1 |
| | 15530-MDXA-04B0 | 4-channel Band B | 12.1(10)EV1 |
| | 15530-MDXA-04C0 | 4-channel Band C | 12.1(10)EV1 |
| | 15530-MDXA-04D0 | 4-channel Band D | 12.1(10)EV1 |
| | 15530-MDXA-04E0 | 4-channel Band E | 12.1(10)EV1 |
| | 15530-MDXA-04F0 | 4-channel Band F | 12.1(10)EV1 |
| | 15530-MDXA-04G0 | 4-channel Band G | 12.1(10)EV1 |
| | 15530-MDXA-04H0 | 4-channel Band H | 12.1(10)EV1 |
| OADM modules with OSC | 15530-MDXB-04A0 | 4-channel Band A | 12.1(10)EV1 |
| | 15530-MDXB-04B0 | 4-channel Band B | 12.1(10)EV1 |
| | 15530-MDXB-04C0 | 4-channel Band C | 12.1(10)EV1 |
| | 15530-MDXB-04D0 | 4-channel Band D | 12.1(10)EV1 |
| | 15530-MDXB-04E0 | 4-channel Band E | 12.1(10)EV1 |
| | 15530-MDXB-04F0 | 4-channel Band F | 12.1(10)EV1 |
| | 15530-MDXB-04G0 | 4-channel Band G | 12.1(10)EV1 |
| | 15530-MDXB-04H0 | 4-channel Band H | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| MM transponder line cards with splitter | 15530-TSP1-0111 | Ch 1-2—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0311 | Ch 3-4—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0511 | Ch 5-6—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0711 | Ch 7-8—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0911 | Ch 9-10—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1111 | Ch 11-12—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1311 | Ch 13-14—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1511 | Ch 15-16—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1711 | Ch 17-18—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1911 | Ch 19-20—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2111 | Ch 21-22—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2311 | Ch 23- 24—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2511 | Ch 25-26—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2711 | Ch 27-28—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2911 | Ch 29-30—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-3111 | Ch 31-32—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| MM transponder line cards without splitter | 15530-TSP1-0121 | Ch 1-2—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0321 | Ch 3-4—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0521 | Ch 5-6—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0721 | Ch 7-8—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0921 | Ch 9-10—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1121 | Ch 11-12—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1321 | Ch 13-14—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1521 | Ch 15-16—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1721 | Ch 17-18—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1921 | Ch 19-20—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2121 | Ch 21-22—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2321 | Ch 23- 24—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2521 | Ch 25-26—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2721 | Ch 27-28—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2921 | Ch 29-30—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-3121 | Ch 31-32—1310-nm MM 16 to 622 Mbps with SC | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| SM transponder line cards with splitter | 15530-TSP1-0112 | Ch 1-2—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0312 | Ch 3-4—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0512 | Ch 5-6—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0712 | Ch 7-8—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0912 | Ch 9-10—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1112 | Ch 11-12—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1312 | Ch 13-14— 1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1512 | Ch 15-16—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1712 | Ch 17-18—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1912 | Ch 19-20—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2112 | Ch 21-22—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2312 | Ch 23- 24—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2512 | Ch 23- 24—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2712 | Ch 25-26—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2912 | Ch 27-28—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-3112 | Ch 29-30 —1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| SM transponder line cards without splitter | 15530-TSP1-0122 | Ch 1-2—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0322 | Ch 3-4—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0522 | Ch 5-6—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0722 | Ch 7-8—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-0922 | Ch 9-10—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1122 | Ch 11-12—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1322 | Ch 13-14—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1522 | Ch 15-16—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1722 | Ch 17-18—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-1922 | Ch 19-20—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2122 | Ch 21-22—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2322 | Ch 23- 24—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2522 | Ch 23- 24—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2722 | Ch 25-26—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-2922 | Ch 27-28—1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| | 15530-TSP1-3122 | Ch 29-30 —1310-nm SM 16 Mbps to 2.5 Gbps with SC | 12.1(10)EV1 |
| Aggregation cards | 15530-LCMB-0200 | ONS 15530 10-port ESCON aggregation card | 12.1(10)EV1 |
| | 15530-FCGE-8P | ONS 15530 8-port Fibre Channel/Gigabit Ethernet aggregation card | 12.1(12c)EV |
| | 15530-FC-4P | ONS 15530 4-port 1-Gbps/2-Gbps FC aggregation card | 12.2(23)SV |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| Muxponders | 15530-MSMP-0112 | Multi service muxponder splitter ch 1/2 | 12.2(25)SV |
| | 15530-MSMP-0122 | Multi service muxponder nsplitter ch 1/2 | 12.2(25)SV |
| | 15530-MSMP-0312 | Multi service muxponder splitter ch 3/4 | 12.2(25)SV |
| | 15530-MSMP-0322 | Multi service muxponder nsplitter ch 3/4 | 12.2(25)SV |
| | 15530-MSMP-0512 | Multi service muxponder splitter ch 5/6 | 12.2(25)SV |
| | 15530-MSMP-0522 | Multi service muxponder nsplitter ch 5/6 | 12.2(25)SV |
| | 15530-MSMP-0712 | Multi service muxponder splitter ch 7/8 | 12.2(25)SV |
| | 15530-MSMP-0722 | Multi service muxponder nsplitter ch 7/8 | 12.2(25)SV |
| | 15530-MSMP-0912 | Multi service muxponder splitter ch 9/10 | 12.2(25)SV |
| | 15530-MSMP-0922 | Multi service muxponder nsplitter ch 9/10 | 12.2(25)SV |
| | 15530-MSMP-1112 | Multi service muxponder splitter ch 11/12 | 12.2(25)SV |
| | 15530-MSMP-1122 | Multi service muxponder nsplitter ch 11/12 | 12.2(25)SV |
| | 15530-MSMP-1312 | Multi service muxponder splitter ch 13/14 | 12.2(25)SV |
| | 15530-MSMP-1322 | Multi service muxponder nsplitter ch 13/14 | 12.2(25)SV |
| | 15530-MSMP-1512 | Multi service muxponder splitter ch 15/16 | 12.2(25)SV |
| | 15530-MSMP-1522 | Multi service muxponder nsplitter ch 15/16 | 12.2(25)SV |
| | 15530-MSMP-1712 | Multi service muxponder splitter ch 17/18 | 12.2(25)SV |
| | 15530-MSMP-1722 | Multi service muxponder nsplitter ch 17/18 | 12.2(25)SV |
| | 15530-MSMP-1912 | Multi service muxponder splitter ch 19/20 | 12.2(25)SV |
| | 15530-MSMP-1922 | Multi service muxponder nsplitter ch 19/20 | 12.2(25)SV |
| | 15530-MSMP-2112 | Multi service muxponder splitter ch 21/22 | 12.2(25)SV |
| | 15530-MSMP-2122 | Multi service muxponder nsplitter ch 21/22 | 12.2(25)SV |
| | 15530-MSMP-2312 | Multi service muxponder splitter ch 23/24 | 12.2(25)SV |
| | 15530-MSMP-2322 | Multi service muxponder nsplitter ch 23/24 | 12.2(25)SV |
| | 15530-MSMP-2512 | Multi service muxponder splitter ch 25/26 | 12.2(25)SV |
| | 15530-MSMP-2522 | Multi service muxponder nsplitter ch 25/26 | 12.2(25)SV |
| | 15530-MSMP-2712 | Multi service muxponder splitter ch 27/28 | 12.2(25)SV |
| | 15530-MSMP-2722 | Multi service muxponder nsplitter ch 27/28 | 12.2(25)SV |
| | 15530-MSMP-2912 | Multi service muxponder splitter ch 29/30 | 12.2(25)SV |
| | 15530-MSMP-2922 | Multi service muxponder nsplitter ch 29/30 | 12.2(25)SV |
| | 15530-MSMP-3112 | Multi service muxponder splitter ch 31/32 | 12.2(25)SV |
| | 15530-MSMP-3122 | Multi service muxponder nsplitter ch 31/32 | 12.2(25)SV |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| 2.5-Gbps ITU trunk cards | 15530-ITU3-0110 | ONS 15530 Ch 1/2 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-0310 | ONS 15530 Ch 3/4 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-0510 | ONS 15530 Ch 5/6 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-0710 | ONS 15530 Ch 7/8 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-0910 | ONS 15530 Ch 9/10 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-1110 | ONS 15530 Ch 11/12 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-1310 | ONS 15530 Ch 13/14 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-1510 | ONS 15530 Ch 15/16 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-1710 | ONS 15530 Ch 17/18 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-1910 | ONS 15530 Ch 19/20 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-2110 | ONS 15530 Ch 21/22 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-2310 | ONS 15530 Ch 23/24 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| | 15530-ITU3-2510 | ONS 15530 Ch 25/26 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-2710 | ONS 15530 Ch 27/28 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-2910 | ONS 15530 Ch 29/30 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-3110 | ONS 15530 Ch 31/32 2.5-Gbps ITU trunk card MU with splitter | 12.1(12c)EV |
| | 15530-ITU3-0120 | ONS 15530 Ch 1/2 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-0320 | ONS 15530 Ch 3/4 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-0520 | ONS 15530 Ch 5/6 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-0720 | ONS 15530 Ch 7/8 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-0920 | ONS 15530 Ch 9/10 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-1120 | ONS 15530 Ch 11/12 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-1320 | ONS 15530 Ch 13/14 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-1520 | ONS 15530 Ch 15/16 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-1720 | ONS 15530 Ch 17/18 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-1920 | ONS 15530 Ch 19/20 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-2120 | ONS 15530 Ch 21/22 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-2320 | ONS 15530 Ch 23/24 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-2520 | ONS 15530 Ch 25/26 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-2720 | ONS 15530 Ch 27/28 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-2920 | ONS 15530 Ch 29/30 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |
| | 15530-ITU3-3120 | ONS 15530 Ch 31/32 2.5-Gbps ITU trunk card MU without splitter | 12.1(12c)EV |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| 10-Gbps ITU trunk cards with splitter (1550 nm) | 15530-ITU2-0110 | CH 1—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0210 | CH 2—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0310 | CH 3—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0410 | CH 4—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0510 | CH 5—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0610 | CH 6—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0710 | CH 7—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0810 | CH 8—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-0910 | CH 9—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1010 | CH 10—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1110 | CH 11—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1210 | CH 12—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1310 | CH 13—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1410 | CH 14—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1510 | CH 15—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1610 | CH 16—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1710 | CH 17—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1810 | CH 18—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-1910 | CH 19—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2010 | CH 20—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2110 | CH 21—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2210 | CH 22—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2310 | CH 23—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2410 | CH 24—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2510 | CH 25—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2610 | CH 26—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2710 | CH 27—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2810 | CH 28—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-2910 | CH 29—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-3010 | CH 30—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-3110 | CH 31—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |
| | 15530-ITU2-3210 | CH 32—10-Gbps ITU trunk card with splitter | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| 10-Gbps ITU trunk cards without splitter (1550 nm) | 15530-ITU2-0120 | CH 1—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0220 | CH 2—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0320 | CH 3—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0420 | CH 4—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0520 | CH 5—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0620 | CH 6—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0720 | CH 7—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0820 | CH 8—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-0920 | CH 9—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1020 | CH 10—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1120 | CH 11—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1220 | CH 12—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1320 | CH 13—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1420 | CH 14—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1520 | CH 15—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1620 | CH 16—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1720 | CH 17—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1820 | CH 18—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-1920 | CH 19—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2020 | CH 20—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2120 | CH 21—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2220 | CH 22—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2320 | CH 23—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2420 | CH 24—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2520 | CH 25—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2620 | CH 26—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2720 | CH 27—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2820 | CH 28—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-2920 | CH 29—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-3020 | CH 30—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-3120 | CH 31—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |
| | 15530-ITU2-3220 | CH 32—10-Gbps ITU trunk card without splitter | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| 10-Gbps ITU tunable trunk cards with splitter (1550 nm) | 15530-10G-4CHA10 | Band A—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHB10 | Band B—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHC10 | Band C—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHD10 | Band D—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHE10 | Band E—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHF10 | Band F—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHG10 | Band G—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| | 15530-10G-4CHH10 | Band H—10-Gbps ITU tunable trunk card with splitter | 12.2(26)SV |
| 10-Gbps ITU tunable trunk cards without splitter (1550 nm) | 15530-10G-4CHA20 | Band A—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHB20 | Band B—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHC20 | Band C—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHD20 | Band D—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHE20 | Band E—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHF20 | Band F—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHG20 | Band G—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| | 15530-10G-4CHH20 | Band H—10-Gbps ITU tunable trunk card without splitter | 12.2(26)SV |
| 10-GE uplink card | 15530-10GE-UPLINK | ONS 15530 10-Gbps uplink, 1310nm with SC | 12.1(10)EV1 |
| WB-VOA module | 15500-VOA-0100 | Single wide-band variable optical attenuator | 12.1(10)EV1 |
| | 15500-VOA-0200 | Dual wide-band variable optical attenuator | 12.1(10)EV1 |
| Single-band PB-OE module | 15500-PEQ-01A0 | Single-band optical equalizer Band A | 12.1(10)EV1 |
| | 15500-PEQ-01B0 | Single-band optical equalizer Band B | 12.1(10)EV1 |
| | 15500-PEQ-01C0 | Single-band optical equalizer Band C | 12.1(10)EV1 |
| | 15500-PEQ-01D0 | Single-band optical equalizer Band D | 12.1(10)EV1 |
| | 15500-PEQ-01E0 | Single-band optical equalizer Band E | 12.1(10)EV1 |
| | 15500-PEQ-01F0 | Single-band optical equalizer Band F | 12.1(10)EV1 |
| | 15500-PEQ-01G0 | Single-band optical equalizer Band G | 12.1(10)EV1 |
| | 15500-PEQ-01H0 | Single-band optical equalizer Band H | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| Dual-band PB-OE module | 15500-PEQ-02AB | Dual band optical equalizer Band AB | 12.1(10)EV1 |
| | 15500-PEQ-02CD | Dual band optical equalizer Band CD | 12.1(10)EV1 |
| | 15500-PEQ-02EF | Dual band optical equalizer Band EF | 12.1(10)EV1 |
| | 15500-PEQ-02GH | Dual band optical equalizer Band GH | 12.1(10)EV1 |
| Protection switch module | 15530-PSM-01 | ONS 15530 protection switch module | 12.1(12c)EV |
| Pluggable SFPs | 15500-XVRA-08D1 | T1 1.544-Mbps | 12.2(25)SV |
| | 15500-XVRA-09D1 | E1 2.048-Mbps | 12.2(25)SV |
| | 15500-XVRA-10A1 | Low band (16 to 200 Mbps) variable rate, MM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-10A2 | HT[2] low band 8 to 200 Mbps | 12.2(25)SV |
| | 15500-XVRA-10B1 | Low band (16 to 200 Mbps) variable rate, SM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-10B2 | HT low band 8 to 200-Mbps | 12.2(25)SV |
| | 15500-XVRA-10E11 | SDI & DVB-ASI | 12.2(25)SV |
| | 15500-XVRA-11A2 | HT mid band 200 to 622-Mbps | 12.2(25)SV |
| | 15500-XVRA-11B1 | Mid band (200 to 1250 Mbps) variable rate, SM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-11B2 | HT mid band 200 to 1.25-Gbps | 12.2(25)SV |
| | 15500-XVRA-12B1 | HT high band 1.062 to 2.488 Gbps | 12.1(12c)EV3 |
| | 15500-XVRA-02C1 | Gigabit Ethernet[3], Fibre Channel (1 Gbps)[4], FICON (1 Gbps), MM | 12.1(12c)EV |
| | 15500-XVRA-03B1 | Gigabit Ethernet[5], Fibre Channel (1 Gbps)[6], FICON (1 Gbps), ISC-3 links compatibility mode, SM | 12.1(12c)EV |
| | 15500-XVRA-03B2 | Fibre Channel (1-Gbps and 2-Gbps), SM | 12.1(12c)EV |
| | 15454-SFP-GEFC-SX | Fibre Channel (2-Gbps), Fibre Channel (1-Gbps), 1000BASE-LX Ethernet, MM | 12.2(25)SV |
| | 15500-XVRA-11D1 | Fast Ethernet (125 Mbps) Gigabit Ethernet (1.25 Gbps) | 12.2(25)SV |
| SFP cable | SMB/BNC | MINISMB/BNC= | 12.2(25)SV |
| AC cables | 15500-CAB-AC= | AC North America (spare) | 12.1(10)EV1 |
| | 15500E-CAB-ACA= | ONS 15530 ETSI AC cable, Australia (spare) | 12.1(10)EV1 |
| | 15500E-CAB-ACE= | ONS 15530 ETSI AC cable, Europe (spare) | 12.1(10)EV1 |
| | 15500E-CAB-ACU= | ONS 15530 ETSI AC cable, UK (spare) | 12.1(10)EV1 |
| | 15500E-CAB-ACI= | ONS 15530 ETSI AC cable, Italy (spare) | 12.1(10)EV1 |
| | 15500E-CAB-ACR= | ONS 15530 ETSI AC cable, Argentina (spare) | 12.1(10)EV1 |

*Table 1 Cisco ONS 15530 Supported Hardware and Minimum Software Requirements (Continued)*

| Component | Part Number | Description | Minimum Software Version Required[1] |
|---|---|---|---|
| Blank panel cover | 15530-COV-MUX= | OADM blank panel cover | 12.1(10)EV1 |
| | 15530-COV-SLOT= | Full slot panel cover | 12.1(10)EV1 |
| | 15530-COV-PWR= | Power supply blank panel cover | 12.1(10)EV1 |
| | 15530-COV-OSC= | OSC blank panel cover | 12.1(10)EV1 |
| Fan assembly | 15530-FT01= | Fan assembly (spare) | 12.1(10)EV1 |
| Air ramp baffle | 15530-BAF-E= | Air baffle (spare) for 15530-CHAS-E chassis | 12.1(10)EV1 |
| CompactFlash card | MEM-15530FLC32M= | CompactFlash card 32 MB | 12.1(10)EV1 |
| Rack mount kit | 15530-RKMT-E= | Chassis rack mount kit for 15530-CHAS-E | 12.1(10)EV1 |
| | 15530-RKMT-N23= | Chassis rack mount kit for 15530-CHAS-N (23 inch rack) | 12.1(10)EV1 |
| | 15530-RKMT-N19= | Chassis rack mount kit for 15530-CHAS-N (19 inch rack) | 12.1(10)EV1 |

1. The software version listed might be deferred.
2. HT = high temperature.
3. 1000BASE-SX.
4. FC-0-100-M5-SN-S and FC-0-100-M6-SN-S standards.
5. 1000BASE-LX.
6. FC-0-100-SM-LC-S standard.

# Determining the Software Version

**Note** We strongly recommend that you use the latest available software release for all Cisco ONS 15530 hardware.

To determine the version of Cisco IOS software currently running on a Cisco ONS 15530 system, log in to the system and enter the **show version** EXEC command. The following sample output is from the **show version** command. The software version number is shown on the second line of the sample output.

```
Switch# show version
Cisco Internetwork Operating System Software
IOS (tm) ONS-15530 Software (ONS15530-I-M), Version 12.2(26)SV1
<Information deleted>
```

# Upgrading the System Image

To ensure proper system functioning, follow the system image upgrading procedure described in the *Cisco ONS 15530 Software Upgrade Guide*.

You can find the system images for the Cisco ONS 15530 at the following URL:

http://www.cisco.com/kobayashi/sw-center/sw-optical.shtml

**Note** Always set the configuration register to 0x2102 when upgrading the system image using the **config-reg 0x2102** command in configuration mode.

**Caution** Improper system image upgrades can affect system functioning and redundancy. Always follow the recommended upgrade procedures.

# Feature Set Table

The Cisco IOS Release software is packaged in feature sets (also called software images) depending on the platform. Each feature set contains a specific set of Cisco IOS features. Table 2 lists the Cisco IOS software feature sets available for the Cisco ONS 15530.

***Table 2 Feature Sets Supported by the Cisco ONS 15530***

| Feature Set | Introduced in This Release |
|---|---|
| Inband message channel | 12.1(10)EV2 |
| Gigabit Ethernet | 12.1(10)EV2 |
| Fast Ethernet | 12.1(10)EV2 |
| Ethernet | 12.1(10)EV2 |
| ATM OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16 | 12.1(10)EV2 |
| SONET[1]/SDH[2] | 12.1(10)EV2 |
| POS[3] | 12.1(10)EV2 |
| IBM Sysplex coupling link | 12.1(10)EV2 |
| Fibre Channel (1 Gbps) | 12.1(10)EV2 |
| Fibre Channel (2 Gbps) | 12.1(10)EV2 |
| FDDI[4] | 12.1(10)EV2 |
| ESCON[5] aggregation (2.5 Gbps) | 12.1(10)EV2 |
| FICON[6] (1 Gbps) | 12.1(10)EV2 |
| FICON (2 Gbps) | 12.1(10)EV2 |
| Token ring | 12.1(10)EV2 |
| SNMP | 12.1(10)EV2 |
| CiscoView | 12.1(10)EV2 |
| Cisco Transport Manager | 12.1(10)EV2 |
| IP packets | 12.1(10)EV2 |
| OSCP[7] | 12.1(10)EV2 |
| APS[8] channel protocol | 12.1(10)EV2 |
| Point-to-point | 12.1(10)EV2 |
| Hubbed ring | 12.1(10)EV2 |

*Table 2 Feature Sets Supported by the Cisco ONS 15530 (Continued)*

| Feature Set | Introduced in This Release |
|---|---|
| Meshed ring | 12.1(10)EV2 |
| IBM Sysplex ETR/CLO[9] | 12.1(10)EV2 |
| 1-Gbps Fibre Channel/FICON aggregation into 2.5 Gbps transponder modules | 12.1(12c)EV |
| 1-Gbps IBM Sysplex Coupling Link aggregation into 2.5 Gbps transponder modules | 12.2(18)SV |
| Gigabit Ethernet aggregation (2.5 Gbps) | 12.1(12c)EV |
| Buffer credit support on the 8-port FC/GE aggregation card | 12.2(18)SV |
| 2-Gbps Fibre Channel protocol monitoring on transponder line cards | 12.2(18)SV |
| 2-Gbps FICON protocol monitoring on transponder line cards | 12.2(18)SV |
| Functional image version diagnostics | 12.2(18)SV |
| Autonegotiation for Gigabit Ethernet between the 8-port FC/GE aggregation card and the client equipment | 12.2(18)SV |
| ISC links compatibility mode aggregation (2.5 Gbps) for the 8-port FC/GE aggregation card | 12.2(18)SV |
| 2-Gbps ISC links peer mode protocol monitoring on transponder line cards | 12.2(22)SV |
| ISC links compatibility mode aggregation (2.5 Gbps) on the 4-port 1-Gbps/2-Gbps FC aggregation card | 12.2(23)SV |
| 1-Gbps and 2-Gbps ISC-3 peer mode support on the 4-port 1-Gbps/2-Gbps FC aggregation card | 12.2(23)SV |
| 2-Gbps Fibre Channel/FICON aggregation into 2.5-Gbps signals on 4-port 1-Gbps/2-Gbps FC aggregation cards | 12.2(23)SV |
| Buffer credit support on the 4-port 1-Gbps/2-Gbps FC aggregation card | 12.2(23)SV |
| 1-Gbps ISC links peer mode on the transponder line card | 12.2(23)SV |
| SSHv1 client and server support | 12.2(24)SV |
| SNMPv3 support | 12.2(24)SV |
| Counter preservation on CPU switch module switchovers | 12.2(24)SV |
| 1-Gbps peer mode ISC-3 on the 8-port FC/GE aggregation card | 12.2(24)SV |
| 8-port multi-service muxponder | 12.2(25)SV |
| 10-Gbps ITU tunable trunk card, which can be tuned to four channels | 12.2(26)SV |

1. SONET = Synchronous Optical Networking
2. SDH = Synchronous Digital Hierarchy
3. POS = Packet over SONET
4. FDDI = Fiber Distributed Data Interface
5. ESCON = Enterprise Systems Connection
6. FICON = Fiber Connection
7. OSCP = Optical Supervisory Channel Protocol
8. APS = Automatic Protection Switching
9. ETR/CLO = external timer reference/control link oscillator

# New and Changed Information

This section lists new features that appear in this and previous releases of Cisco IOS Release 12.2. The new features are sorted by release number.

## New Features in Release 12.2(26)SV1

There are no new features for this release.

## New Features in Release 12.2(26)SV

The following new hardware is available for the Cisco ONS 15530 in Cisco IOS Release 12.2(26)SV:

- 10-Gbps ITU tunable trunk card, with four channel tunability

## New Features in Release 12.2(25)SV

The following new hardware is available for the Cisco ONS 15530 in Cisco IOS Release 12.2(25)SV:

- 8-port multi-service muxponder

## New Features in Release 12.2(24)SV

The following new software features are available for the Cisco ONS 15530 in Cisco IOS Release 12.2(24)SV:

- SSHv1 client and server support
- SNMPv3 support
- Counter preservation on CPU Switchovers
- ISC-3 1-Gbps (peer mode) support on the 8-port FC/GE aggregation card

## New Features in Release 12.2(23)SV

The following new hardware is available for the Cisco ONS 15530 in Cisco IOS Release 12.2(23)SV:

- 4-port 1-Gbps/2-Gbps FC aggregation card

The following new software feature is available for the Cisco ONS 15530 in Cisco IOS Release 12.2(23)SV:

- 1-Gbps ISC-3 peer mode support on all ISC interfaces, except the 8-port FC/GE aggregation card

## New Features in Release 12.2(22)SV

The following new software feature is available for the Cisco ONS 15530 in Cisco IOS Release 12.2(22)SV:

- 2-Gbps ISC peer mode protocol monitoring on 2.5-Gbps transponder line cards

## New Features in Release 12.2(18)SV2

No new features are available for this release.

## New Features in Release 12.2(18)SV1

No new features are available for this release.

## New Features in Release 12.2(18)SV

The following new software features are available for the Cisco ONS 15530 in Cisco IOS Release 12.2(18)SV:

- Autonegotiation between the 8-port FC/GE aggregation card and the client equipment for Gigabit Ethernet traffic

  **Note** The 8-port FC/GE aggregation card does not support end-to-end pass through of autonegotiation parameters in functional image release 2.29 or earlier. End-to-end negotiation is supported in functional image release 2.30 or later.

- ISC links compatibility mode aggregation (2.5 Gbps)
- Buffer credits for Fibre Channel distance extension
- 2-Gbps Fibre Channel protocol monitoring on 2.5-Gbps transponder modules

  **Note** 2-Gbps Fibre Channel protocol monitoring requires transponder functional image release 1.A3.

- 2-Gbps FICON protocol monitoring on 2.5-Gbps transponder modules

  **Note** 2-Gbps Fibre Channel protocol monitoring requires transponder functional image release 1.A3.

- Data file with upgrade information for the ROMMON and functional images
- **show upgrade-info functional-image** command
- **negotiation auto** command
- **flow control** command

# Caveats

This section describes open and resolved severity 1 and 2 caveats and some severity 3 caveats. The “Open Caveats” section lists open caveats that apply to the current release and may apply to previous releases. The “Resolved Caveats” sections list caveats resolved in a particular release, but open in previous releases.

# Open Caveats in Release 12.2(26)SV1

- CSCsb26802

  **Symptom**: When a client or trunk laser fails, the **show facility-alarm status** command displays the `Line laser failure detected` error message. However, this error message does not indicate which laser has failed.

  **Condition**: This symptom is observed on Cisco ONS15530 and ONS15540 cards when there are transparent transponders.

  **Workaround**: None.

- CSCdz59146

  **Symptom**: The ethernetdcc interface loses connectivity when splitter protection is configured and the waveethernetphy interface is shut down while the protection wavepatch interface is active and the working wavepatch interface is down.

  **Workaround**: Do not shut down the waveethernetphy interface when the working wavepatch interface is down.

- CSCec25368

  **Symptom**: The values returned for entPhysicalVendorType and entPhysicalName are wrong when a low-band single-mode SFP is present in an ESCON aggregation card. The values returned show a low-band multimode SFP instead.

  **Workaround**: None.

- CSCee56524

  **Symptom**: Tracebacks related to CPU switch module hog issues occur after installing an 8-port multi-service muxponder after booting up the box.

  **Workaround**: Reboot the system after the muxponder is inserted.

- CSCee70185

  **Symptom**: An informational warning is issued instead of a critical alarm when the line cards are shut down in response to a multiple fan failure event after issuing the **environment-monitor shutdown fan** command.

  **Workaround**: None.

- CSCee84190

  **Symptom**: CRC-errored, dropped, out-of-order, or duplicated frames might be transmitted by ports on 4-port 1-Gbps/2-Gbps FC aggregation cards that have symmetric-mode flow-control configured and active if the client device connected to the remote port is operating in asymmetric credit mode.

  The remote peer Cisco ONS 15530 logs the EXCESS_FRAME_ALM alarm message during or prior to the occurrence of the errors if conditions with potential to cause the error are detected on the link.

  **Conditions**: This defect note is only applicable if all of the following conditions are true:

  – Flow control is disabled and the link runs error-free.

  – Flow control is enabled and the client device sees errors transmitted from the port on the 4-port 1-Gbps/2-Gbps FC aggregation card.

  – Symmetric mode is configured on the 4-port 1-Gbps/2-Gbps FC aggregation card, and you see flow-control (symmetric) in the **show interface** command output.

  – The peer card is a 4-port 1-Gbps/2-Gbps FC aggregation card, and the EXCESS_FRAME_ALM alarm is detected on the remote peer Cisco ONS 15530.

- Buffer credit sizes are configurable and readable on the end clients, and the credit numbers on both ends are not the same.
- The transmitted errors are not traceable to Tx CRC errors on the interface.
- The transmitted errors are not traceable to hardware data parity errors (`QDR PARITY error count`) in the **show controller** command output.

**Workaround**: Configure asymmetric mode on all of the 4-port 1-Gbps/2-Gbps FC aggregation card ports in the affected link. (Symmetric mode is the factory default.) Or, wherever feasible, configure equal buffer credits on the client devices at both ends of the FC/FICON link. Either symmetric or asymmetric mode configuration on the 4-port 1-Gbps/2-Gbps FC aggregation card work well.

- CSCef74226

  **Symptom**: When upgrading from Cisco IOS Release 12.1(10)EV4 or Cisco IOS Release 12.1(12c)EV to a later image using standard CPU switch module switchover procedure, the high water mark threshold for the ESCON aggregation card is not programmed to the new value. This might cause higher than expected delays on ESCON streams.

  **Workaround**: Use the **escon write** *<slot_no> 0x1C4 0x40* command to set the high water mark to the correct value for all ports on the ESCON aggregation card. Use the **show controller** *port x/y/z* command to display the new value.

- CSCef12108

  **Symptom**: The Cisco ONS15530 might not allow you to connect to the standby CPU switch module due to an authentication failure. This occurs when AAA or a local database is used for user authentication as this information (AAA or local database) is not replicated from the active to the standby CPU switch module.

  **Workaround**: None.

- CSCef18814

  **Symptom**: Higher than expected delays are seen when operations are performed over an end-to-end DWDM link using the Cisco ONS 15530 system and the ESCON aggregation card. This condition is seen when using the Cisco IOS Release 12.1(10)EV4 image. It may also be seen when migrating from Release 12.1(10)EV4 to later Cisco IOS images.

  **Workaround**: Upgrade the software image and program the correct value by using the following procedure:

  1. Read register 0x1C4 by issuing the **escon read <slot> 0x1C4** command for each 10-port ESCON aggregation card.

  2. Write the correct value of 0x40 to register 0x1C4 by issuing the **escon write <slot> 0x1C4 0x40** commands for each 10-port ESCON aggregation card.

  3. Re-read 0x1C4 (as done in Step 1) to verify that the register was properly programmed.

  ```
  Switch# escon read <slot> 0x1C4
  ```

- CSCef87165

  **Symptom**: An end-to-end link will remain down even if the initial condition that caused the fault is rectified if speed negotiation is enabled on the Fibre Channel switches, FLC is enabled on the corresponding multirate interfaces, and if the link between any one of the multirate interfaces and the FC switch goes down

  **Workaround**:Disable FLC on the multirate interfaces.

- CSCeg02766

  **Symptom**: The standby CPU switch module crashes in the scheduler.

**Workaround**: None.

- CSCeg06084

  **Symptom**: When autonegotiation is enabled on the CuFE multirate port and the peer device is hardcoded to 100 Mbps full duplex, the link might not come up.

  **Workaround**: Issue the **no negotiation auto** command to disable autonegotiation on the CuFE port on the 8-port multi-service muxponder.

- CSCeg09522

  **Symptom**: When migrating from Release 12.2(23)SV to Release 12.2(25)S1 the following may be seen:

  – Cross-connect connections to waveethernetphy subinterfaces are replaced by cross-connections to non-exsistant tengigphy subinterfaces.

  – The cross-connections might not be removeable using the Cisco IOS CLI.

  **Workaround**: If you are not able to remove the invalid cross-connect configuration, perform the following steps:

  1. OIR the client card.

  2. Issue the **write memory** command to save the configuration.

  3. Reload the switch.

  4. Insert the card after the switch boots up.

  5. Configure the cross-connection.

- CSCeg23905

  **Symptom**: A terminal loopback on a multirate interface might not work if the interface is in Loss of Light condition.

  **Workaround**: Clear the Loss of Light condition and then configure terminal loopback.

- CSCeg27643

  **Symptom**: After a CPU switch module switchover, the trunk trasmit laser comes up even if it was shut down before the switchover. The laser shutdown configuration is present in the running configuration, but the laser is still enabled.

  **Workaround**: Issue the **laser shutdown** command again after the switchover.

- CSCeg32098

  **Symptom**: The AMI linecoding and the line build out options to sepecify the cable length are not available for T1 and E1 encapsulations of multirate interfaces.

  **Workaround**: None.

- CSCin79007

  **Symptom**: Even though forward laser control is not configured, the client laser is disabled if an OIR is performed when a keepalive timeout exists on the twogigabitphy interface. The laser is enabled when the keepalive timeout condition is cleared, but it is disabled whenever a keepalive timeout condition is asserted. The client laser shuts down because the keepalive timeout should only be seen under the following conditions:

  – The portgroup is not cross-connected to a trunk port.

  – Forward laser control (FLC) is configured on the client interface.

**Condition**: This behavior is seen only on the x/0/0 twogigabitphy interface of the 4-port 1-Gbps/2-Gbps FC aggregation card if it is removed and reinserted when the interface is in keepalive timeout condition.

**Workaround**: Change the encapsulation to a different value and then change back to the required encapsulation value.

**Workaround**: None.

- CSCin81028

  **Symptom**: Terminal and facility loopback do not work on the multirate interfaces after a CPU switch module switchover.

  **Workaround**: Reconfigure the client encapsulation.

- CSCin82637

  **Symptom**: Version compatibility check is not performed on the mux/demux modules and PSM. No warning is issued if there is a version mismatch in hardware and software.

  **Workaround**: None.

- CSCin83351

  **Symptom**: A change in the line vty password on a Cisco ONS 15530 active CPU switch module might not be reflected on the standby CPU switch module.

  **Workaround**: Reload the standby CPU switch module after the configuration change.

- CSCin84283

  **Symptom**: The **show facility-alarm** command output shows the "Unknown SFP" alarm, even though the SFP inserted is valid and traffic is not impacted.

  **Workaround**: None.

- CSCin86897

  **Symptom**: A temporary traffic interruption in 2.5G transparent transponders during ONS 15540 and 15530 CPU switchover. This depends on the software versions of the Active CPU before and after the switchover.

  **Conditions**: This can occur when switching from a CPU that is running on IOS software without the fix for CSCec64326, to a CPU running on IOS software with the fix for CSCec64326. The fix for CSCec64326 involves changes to hardware settings, causing the temporary datahit.

  **Workaround**: None. The problem will be fixed in a future release of IOS software.

- CSCin87284

  **Symptom**: When 15530-FC-4P card in FibreChannel flow-control-enabled configuration transitions from flow-control Active to flow-control Not-Active state (due to link events such as Link Reset from the FibreChannel client), errored data may temporarily get transmitted from the FC-4P card causing the client FC device to record Transmission Word Errors.

  These errors are temporary and should settle back to a clean state after re-login of the link.

  This problem is first noticed with fcge-8p and found to be present in FC-4P too.

  **Conditions**: This occurs only with the flow-control enabled scenario.

  **Workaround**: None.

- CSCsa50433

  **Symptom**: An extra APS switch-over may occur when trunk fiber pull operations are performed in a particular sequence with 2.5G transponder splitter APS configured in an ONS15530 system.

  **Condition**: Pull out the working fiber connected to active wavepatch, with protect fiber inserted. The APS state is work-down (standby) and protect-up (active).

  Insert working fiber. Wait for six to eight seconds. Pull the protect cable and then insert it back within 2 secs.

  **Workaround**: None

- CSCsa57880

  **Symptom**: The client laser of 8-port gefc card interface connected to the ITU trunk card goes down momentarily on an ONS 15530 system, when splitter protection switching occurs on the itu trunk card.

  **Conditions**: This occurs when the Forward Laser Control is enabled on the gigabitphy interface of the 8-port gefc card.

  **Workaround**: None.

- CSCsa75221

  **Symptom**: On an ONS15530 system, the cross connections belonging to a 4-Port FC card are lost during software upgrade. This is found when upgrading from any IOS image released before 12.2(25)SV, to any IOS image released in or after 12.2(25)SV.

  **Workaround**: None

- CSCsa99359

  **Symptom**: For 15530 multirate cards, the 'encap mismatch' alarm asserts if the encapsulation configured on a multirate interface doesn't match with the encapsulation configured on the peer multirate interface. This alarm is not reported on the 'sh facility-alarm status ' output.

  **Workaround**: None

- CSCsb01894

  **Symptom**: In ONS 15530, the standby CPU gets reloaded while downgrading from 12.2(26)SV to 12.2(24)SV, if the counter syncing feature in the 8p-GEFC card is enabled.

  **Workaround**: Disable counter syncing on the primary CPU that runs on 12.2(26)SV and then reload 12.2(24)SV on the standby CPU.

# Resolved Caveats in Release 12.2(26)SV1

- CSCei61732

  Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

  Cisco has made free software available that includes the additional integrity checks for affected customers.

  This advisory is posted at http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml.

- CSCuk58617

  **Symptom**: The physical Performance Monitoring (PM) statistics may not be collected correctly.

**Condition:** This symptom is observed on a Cisco ONS15500 series card that is configured for SNMP when optical monitoring traps are enabled.

**Workaround:** None.

- CSCei25594

  **Symptom**: Memory leak may occur when CiscoView is used to monitor a router.

  **Condition:** This condition may be seen on routers running 12.2(26)SV.

  **Workaround:** None.

# Resolved Caveats in Release 12.2(26)SV

- CSCec73572

  **Symptom**: Duplicate frames may be delivered to clients on the ONS15530, in the case of manual aps switchover (by operator command) with line card aps, from one trunk linecard to another.

  **Conditions**: This could occur when the switchover is made from a trunk connected through shorter path to a trunk connected through longer path.

  **Workaround**: None.

- CSCef97070

  **Symptom**: The APS switch time is greater than 50 ms.

  **Condition**: Several APS switching between w and p in a row.

  **Workaround**: None.

- CSCeg02811

  **Symptom**: The power-on diagnostics loopback tests of a Cisco ONS 15530 8-port FC/GE aggregation card (15530-FCGE-8P) may report failure.

  **Conditions**: This symptom is observed very rarely when the Cisco ONS 15530 is booted immediately after a power-cycle.

  **Workaround**: None. However, it does not affect any functionality.

- CSCeg11241

  **Symptom**: The variable rate high-band single mode SFP (15500-XVRA-12B1) is reported as "unknown" in the system status outputs such as **show interface** and **show controller**. The Cisco IOS software allows the interface configuration to proceed normally and traffic is not affected. Traffic flows normally once the port configuration is completed.

  **Conditions**: This symptom is observed in 15500-XVRA-12B1 (10-1844-xx) SFP transceiver, on 15530-FCGE-8P and 15530-FC-4P linecards. It is also observed with Cisco IOS versions up to and including 12.2(24)SV and 12.2(25)S1.

  **Workaround**: None.

- CSCeg38355

  **Symptom**: The standby CPU switch module might reload when you upgrade from Release 12.2(24)SV to Release 12.2(25)SV if you are using an 8-port GE/FC aggregation card with the counter synchronization feature enabled.

  **Workaround**: Disable counter synchronization on the primary CPU switch module running Release 12.2(24)SV and then download Release 12.2(25)SV onto the standby CPU switch module.

- CSCeg84037

**Symptom**: When a CPU switchover is performed (or triggered) on an ONS 15540 or ONS 15530 system, the memory utilization on the new primary increases by 10MB. In such a case, the memory utilization may go up to 85%. This problem is seen only with 12.2 based images.

**Workaround**: None

- CSCin81342

  **Symptom**: During a CPU switch module switchover, transparent transponders might experience temporary traffic interruption until the switchover is completed. The behavior is intermittent and not all transponders in a given chassis may be affected. This interruption might happen for the following types of protocol encapsulations:

  – ETR/CLO

  – 100 Mbps Fast Ethernet / FDDI

  – ESCON/SBCON

  – 1-Gbps FC/FICON

  – 1-Gbps ISC ((ISC-1, ISC-3 peer mode, 1 Gbps)

  – 2-Gbps FC/FICON

  – 2-Gbps ISC (ISC-3 peer mode, 2 Gbps).

- CSCin86185

  **Symptom**: The received and transmit frame counts are not displayed for Gigabit Ethernet encapsulation on ONS 15530 8-port GigE/FC card.

  **Workaround**: None.

- CSCin87211

  **Symptom**: In ONS 15530 and 15540 systems, the reading shown by the temperature sensor device attached to CPU cards may get stuck and do not change. Large differences between the temperature readings of the active and standby CPUs, or more than 10degree C difference between the readings of Inlet and Outlet sensors on the same CPU, are indicative of this stuck state on one or more sensors.

  **Conditions**: ONS 15530 and 15540 CPU cards manufactured up to March 2005 may have the older version sensor part and are potentially affected. Some cards produced before this affected date do have new sensor parts and are therefore not affected.

  Date of manufacture of the CPU card can be displayed using the **show hardware detail** command from IOS.

  For cards manufactured up to the fixed date, it is not possible to identify affected CPU boards based on version or serial number. It can only be checked by running a software utility (Please see resolution section below).

  The failure is rarely found. The CPU temperature sensor may function normally after power up, and thereafter enter the stuck state at a later point during runtime.

  **Workaround**: None. Removing and reinserting the CPU card or power-cycling the chassis may help recover from this error.

  **Resolution**: This issue has been fixed in a later version of the temperature sensor device, and hence a CPU replacement is needed for a permanent fix. At this time the necessary logistics are being worked out to:

  – provide a software utility to customers to identify whether a sensor is already stuck on the CPU, or has a potential of getting stuck [old version].

– arrange for sufficient CPUs to be provided to replace affected CPUs in the field.

**Impact**: The command **show environment** will return incorrect temperature values. Minor, Major and Critical alarms that are based on temperature will not function.

- CSCsa45294

  **Symptom**: Traffic is disrupted for one to two seconds on ONS 155xx transponders configured with Forward Laser Control, when a protection switchover occurs on a trunk Protection Switch Module (PSM). This exceeds the specification of 50ms maximum failover time for the optical transport layer.

  **Workaround**: Disable FLC on trunk-to-client direction of transponder, if feasible for the service. This workaround does not apply for ISC, ETR or CLO services.

  **Resolution**: This will be fixed in the future release of IOS software on ONS15530 and ONS15540, with a caveat that the following configuration will not be supported on the platform:

  – Transponder motherboard or linecard with on-board optical splitter module (even if the optical splitter is disabled by configuration)

  – Trunk protection with Protection Switch Module

  – Forward Laser Control enabled on transponder

- CSCsa46389

  **Symptom**: On an ONS 15540/15530 system with Protection Switch Module, if a CPU switch occurs with the APS state such that protect interface is active and working interface is standby, then after the new CPU comes up there will be an extra APS switch to working. This is seen with all ONS15540 and ONS15530 software based on 12.1 and 12.2.

  **Workaround**: None

- CSCsa89956

  **Symptom**: On an ONS 15530 system, the system may stop responding and reload, when a threshold group is configured on the waveethernetphy interface of an itu trunk card.

  **Conditions**: This occurs only when the traffic is flowing with crc errors.

  **Workaround**: None

# Resolved Caveats in Release 12.2(25)SV

- CSCin76822

  **Symptom**: If a failed subcard is replaced by a new one, the **show diag online** output continues to indicate that there was a 'previous failure' for this subcard. This should have been cleared when the new card was inserted. This is specific to subcards, for motherboards the older failures are cleared when a new card is inserted.

  **Workaround**: None.

# Resolved Caveats in Release 12.2(24)SV

- CSCdz82276

**Symptom**: A warning is issued if the card has an unknown functional image. Version compatibility checks need to be performed during system initialization. The hardware version compatibility should identify any mismatch between functional image versions and hardware versions. The software version compatibility should identify any mismatch between functional image and software image.

- CSCea52092

  **Symptom**: After booting the system, optical power coming out of the OSC module seems to be null even though the laser is enabled.

  **Workaround**: Perform an online removal and insertion of the OSC module or carrier motherboard.

- CSCec45305

  **Symptom**: If the transparent interface on a multimode transponder line card is configured for Sysplex ETR traffic (**encap sysplex etr** command), the **show interfaces transparent** command output shows that forward laser control is set to off. Forward laser control is automatically enabled for Sysplex ETR.

  **Workaround**: Add client input traffic and the trunk side laser will function.

- CSCec78648

  **Symptom**: The **show redundancy** command is not valid on specific versions of the Cisco ONS 15530 software but the choice still exists.

  **Workaround**: Use the **show redundancy summary** command.

- CSCed28094

  **Symptom**: End-to-end GE autonegotiation is not supported by the 8-port FC/GE aggregation card.

  Link defects such as a broken fiber from the 8-port FC/GE aggregation card to the client device at one end, which are not directly detected by the Cisco ONS 15530 and cause the client at one end to initiate autonegotiation, are not propagated to the client at the other end.

  Any upper-layer processes that depend on bidirectional defect detection and propagation at the transport level might fail for certain classes of link defects.

  **Workaround**: None.

  **Resolution**: Upgrade the 8-port FC/GE aggregation card functional image to Release 2.30 or later.

- CSCee22677

  **Symptom**: When a Cisco ONS 15530 is connected to a Catalyst 450x through the gigabitphy interface of the 8-port FC/GE aggregation card, it is possible that the link will remain down after the link goes down on any reason. Conditions for this to happen are as follows:

  – Auto negotiation is disabled on both the GE interfaces, the Catalyst 4000 interface and the gigabitphy interface of the 8-port FC/GE aggregation card on the Cisco ONS 15530.

  – FLC is enabled on the gigabitphy interface.

  **Workaround**: Enable autonegotiation on the GE interface level of the Catalyst 4500 at no speed nonegotiate and at negotiation auto for the Cisco ONS 15530.

- CSCee50294

  **Symptom**: Cisco IOS® devices running branches of Cisco IOS version 12.2S that have Dynamic Host Configuration Protocol (DHCP) server or relay agent enabled, even if not configured, are vulnerable to a denial of service where the input queue becomes blocked when receiving specifically crafted DHCP packets. Cisco is providing free fixed software to address this issue. There are also workarounds to mitigate this vulnerability. This issue was introduced by the fix included in CSCdx46180 and is being tracked by Cisco Bug ID CSCee50294.

This advisory is available at

http://www.cisco.com/warp/public/707/cisco-sa-20041110-dhcp.shtml.

**Workaround**: None.

- CSCee75578

  **Symptom**: The GE optical link fails to come up between two Catalyst 65xx 8-port GBIC modules through the Cisco ONS155xx transparent transponders when Forward Laser Control (FLC) is enabled on the system. The link fails to come up irrespective of the type of protection scheme.

  **Workaround**: Use a 16-port GBIC module on the Catalyst 65xx or deactivate FLC on the ONS155xx.

- CSCef28950

  **Symptom**: The frame and bit 5-minute input and output rates are missing in the **show interface** command output of twogigabitphy interfaces on the 4-port 1-Gbps/2-Gbps FC aggregation cards configured for encapsulation for Sysplex ISC.

  **Workaround**: None.

- CSCef28967

  **Symptom**: Tx CRC counts are displayed in the **show interface** command output of twogigabitphy interfaces on the 4-port 1-Gbps/2-Gbps FC aggregation cards configured for encapsulation for Sysplex ISC, even though these counts are not monitored.

  **Workaround**: Ignore the Tx CRC count in the **show interface** command output for ISC encapsulation.

- CSCin69960

  **Symptom**: A receive failure might display a message that the laser if shut due to forward laser control.

  **Workaround**: None.

# Resolved Caveats in Release 12.2(23)SV

- CSCed38657

  **Symptom**: DWDM links set at a 196.608-Mbps rate, or an uncommon rate close to this, may not work properly on the 2.5-Gbps transponder line card. Link initialization failures and bit errors may occur.

  **Workaround**: None.

- CSCee24673

  **Symptom**: High capacity counters are not implemented but are needed.

  **Workaround**: None.

- CSCee34107

  **Symptoms**: APS behavior for the **aps clear** command is inconsistent with the standard behavior when the following conditions occur:

  – Traffic runs from the working link (link A) and you perform a manual switch to the protected link (link B), causing traffic to switch to link B.

  – You enter the **aps clear** command for the aps-group; link A becomes active, regardless of whether the APS group is configured revertively or nonrevertively.

**Workaround**: None.

- CSCee59383

  **Symptom**: The entitySensorMIB is not implemented.

  **Workaround**: None.

- CSCeb70408

  **Symptom**: The IDPROM values from the high band single-mode SFPs are not readable. The SFPs cannot be configured and cannot be used.

  **Workaround**: None.

- CSCin73872

  **Symptom**: The command for configuring optical thresholds on a voain interface is broken in Cisco IOS Release 12.2(22)SV for the Cisco ONS 15530. The command should be in the form:

  **optical threshold power receive after-attenuation [low|high] [alarm|warning] <val>**

  But in Cisco IOS release 12.2(22)SV only the following command can be specified in the interface configuration mode:

  **optical threshold power receive [low|high] [alarm|warning] <val>**

  The command is stored in an earlier format in the running configuration for the interface; hence upon reloading the chassis these threshold configurations are lost.

  **Workaround**: Configure the optical threshold using this format:

  **optical threshold power receive [low|high] [alarm|warning] <val>**

  If the chassis has to be reloaded, then reconfigure the threshold command again when the box is rebooted.

- CSCin78329

  **Symptom**: Power-on diagnostics may fail the credit-buffer-memory test for the 8-port FC/GE aggregation card on the first boot after power cycling the box. Subsequent reboots without power cycling pass the test. These test failures are spurious and can be ignored.

  **Workaround**: Upgrade your Cisco ONS 15530 software to Cisco IOS Release 12.2(23)SV or later.

# Resolved Caveats in Release 12.2(22)SV

- CSCec14447

  **Symptom**: The 8-port GE/FC aggregation card laser is not in the proper state when a Tx-CRC threshold has been exceeded and FLC is configured.

  **Workaround**: Issue the **shutdown**/**no shutdown** command sequence on the affected interface.

- CSCec42573

  **Symptom**: In a y-cable APS configuration, interfaces on the 8-port GE/FC aggregation card configured for FICON encapsulation change to GE encapsulation when the saved configuration file is copied to the running configuration.

  **Workaround**: Change the encapsulation back to FICON.

- CSCed33451

  **Symptom**: After configuring a patch between a wavepatch interface and a wdmrelay interface, issuing a **show connect intermediate** command results in spurious memory access.

  **Workaround**: Do not issue the **show connect intermediate** command when a patch between a wavepatch interface and a wdmrelay interface is configured.

- CSCed33852

  **Symptom**: The system might reload unexpectedly when a faulty optical add/drop multiplexer (OADM) module is present in the chassis.

  **Workaround**: Replace the faulty OADM module.

- CSCin64935

  **Symptom**: A system might reload unexpectedly when you perform an online removal and reinsertion of a wide-band variable optical attenuator (WB-VOA) module.

  **Workaround**: Do not remove and reinsert a WB-VOA module.

- CSCin65618

  **Symptom**: The system might reload unexpectedly when you configure the alarm threshold on a waveethernetphy interface of a 2.5-Gbps ITU trunk card.

  This symptom occurs after the following steps:

  1. Configure an alarm threshold list with code violation running disparity (CVRD) signal degrade and failure thresholds and apply it to the waveethernetphy interface.
  2. Remove the 2.5-Gbps ITU trunk card, remove the threshold configurations from the threshold list, and reinsert the 2.5-Gbps ITU trunk card.
  3. Remove the 2.5-Gbps ITU trunk card again, configure a CVRD degrade threshold, remove the threshold list, and reinsert the 2.5-Gbps ITU trunk card.

  After you have performed these steps, the shelf reloads.

  **Workaround**: None.

- CSCin66424

  **Symptom**: An APS switchover from a working interface to a protect interface might not occur for the following modules:

  – 10-Gbps uplink card

  – 10-Gbps ITU trunk card

  – 2.5-Gbps ITU trunk card

  This symptom occurs with the following configurations:

  – The card is configured for switch fabric based line card protection.

  – The interfaces of the card have threshold groups that are configured for converged data link header error checksum (CDL HEC) errors or cyclic redundancy check (CRC) errors, or both.

  – The CDL HEC error thresholds or CRC error thresholds, or both, are exceeded.

  **Workaround**: Do not configure CDL HEC error thresholds, CRC error thresholds, or both. Instead, configure code violation running disparity (CVRD) error thresholds. In a configuration in which an APS switchover of a working interface to a protect interface is based on CDL HEC error thresholds, CRC error thresholds, or both, there is no workaround.

- CSCin68117

  **Symptom**: The CLI does not support patch configurations between oscfilter interfaces and voaout interfaces.

  **Workaround**: None.

- CSCeb18103

  **Symptom**: OSC wave interface that is configured for laser safety control does not recover when the OSC link is down because of Loss of Light.

  This occurs after the following sequence of events:

  – The OSC wave interface is not configured with laser safety control.

  – The OSC wave interface goes down with a Loss of Light condition.

  – The OSC wave interfaces at both ends are configured for LSC, with more than 3 seconds elapsed between the configurations.

  – The Loss of Light failure is resolved.

  This problem does not appear if laser safety control is configured when the OSC wave interface is up.

  **Workaround**: None.

  **Resolution**: Upgrade the Cisco ONS 15540 mux/demux motherboard functional image to release 2.67 or later.

- CSCea52092

  **Symptom**: An optical supervisory channel (OSC) module may not provide power even though the laser is enabled after you have booted the shelf.

  **Workaround**: Remove and reinsert the carrier motherboard.

- CSCin60562

  **Symptom**: If a row is created in cApsChanConfigTable using createAndWait, a set operation on an instance of cApsChanConfigIfIndex might modify another instance of that object.

  **Workaround**: Use createAndGo to create the row.

# Resolved Caveats in Release 12.2(18)SV2

- CSCeb87507

  **Symptom**: In some instances the system crashes when it attempts to parse IP SNMP related commands.

  **Workaround**: None.

- CSCed05346

  **Symptom**: Bidirectional APS fails when the ethernetdcc interface is used as a message channel for trunk based protection if the PSM is connected directly to a wavepatch interface on an ITU trunk card or transponder line card rather than to the wdm interface on an OADM module.

  **Workaround**: None.

- CSCed22589

**Symptom**: Link initialization failure due to Loss of Lock might occur for ESCON traffic on some transponder line cards due to a transient failure of the clock recovery unit. Only some transponder line cards are susceptible to this failure and not all. This is an initialization failure and not a run-time failure.

**Workaround**: None.

# Resolved Caveats in Release 12.2(18)SV1

- CSCdz64021

  **Symptom**: While performing an online removal and insertion of a protection card in a y-cable configuration, the local and remote working ports are flooded with CRC errors.

  **Workaround**: Disconnect the standby branch of the y-cable configuration during the insertion of the standby line card or SFP optics.

- CSCec28182

  **Symptom**: Tracebacks related to CPU switch module hog issues are seen when reprogramming the 2.5-Gbps transponder line card functional image.

  **Workaround**: None.

- CSCec36614

  **Symptom**: Performing an online removal and insertion on a tengigethernetphy interface or waveethernetphy interface when loopback is configured causes a loss of the loopback information on the hardware. However, the loopback CLI configuration is still present in the software.

  **Workaround**: Remove and reinsert the line card, and then issue the **loopback** command.

- CSCec59409

  **Symptom**: Issuing a **Ctrl-U** when connected to a raw TL1 port causes the system to crash.

  **Workaround**: If a TL1port is unused, apply an IP ACL to the management Ethernet interface that blocks the incoming TCP connections to ports 3082 and 3083.

- CSCec88050

  **Symptom**: Power-on diagnostics fail on the CPU switch module if a 2.5-ITU trunk card is installed in slot 1.

  **Workaround**: None.

# Resolved Caveats in Release 12.2(18)SV

- CSCdu53656

  A Cisco device running Cisco IOS software and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP is not enabled by default, and must be configured to accept traffic from an explicitly defined peer. Unless the malicious traffic appears to be sourced from a configured, trusted peer, it would be difficult to inject a malformed packet. BGP MD5 is a valid workaround for this problem.

Cisco has made free software available to address this problem. For more details, refer to this advisory, available at http://www.cisco.com/warp/public/707/cisco-sa-20040616-bgp.shtml.

- CSCdz89270

  **Symptom**: OFC (open fibre control) is not supported with Fibre Channel on the 8-port FC/GE aggregation card. The link might not initialize if an 8-port FC/GE aggregation card is used with older Fibre Channel equipment that employ OFC laser safety mechanisms.

  **Workaround**: None.

- CSCea28131

  A Cisco device running Cisco IOS software and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP is not enabled by default, and must be configured to accept traffic from an explicitly defined peer. Unless the malicious traffic appears to be sourced from a configured, trusted peer, it would be difficult to inject a malformed packet. BGP MD5 is a valid workaround for this problem.

  Cisco has made free software available to address this problem. For more details, refer to this advisory, available at http://www.cisco.com/warp/public/707/cisco-sa-20040616-bgp.shtml.

- CSCeb19410

  **Symptom**: An 8-port FC/GE aggregation card client interface laser may be off when it is configured in a disabled y-cable APS group.

  **Workaround**: Enable and then disable the APS group. This activates the client interface laser.

- CSCec03715

  **Symptom**: If the flow identifier on an esconphy interface is changed without deleting the old flow identifier, both the old and the new flow identifiers are present in the lookup table of the ESCON aggregation card. As a result, the old flow identifier cannot be reused on this ESCON aggregation card.

  **Workaround**: Perform an online removal and insertion of the ESCON aggregation card or issue the following sequence of commands in interface configuration mode:

  1. **no cdl flow identifier**
  2. **cdl flow identifier** [OLD IDENTIFIER]
  3. **no cdl flow identifier**
  4. **cdl flow identifier** [NEW IDENTIFIER]

- CSCec34628

  **Symptom**: Continuous optical power monitoring alarms cause memory leaks that lead to bus error exceptions and an unexpected reload.

  **Workaround**: None.

# Limitations and Restrictions

This section provides limitations and restrictions for Cisco ONS 15530 hardware and software.

## Transponder Line Cards

This section contains limitations and restrictions that apply to transponder line cards.

- CRC errors might occur with 2-Gbps Fibre Channel on single-mode transponders when high input power levels are received from the client laser sources.

  Data errors or link-down conditions for 2-Gbps Fibre Channel might occur when used with certain client laser sources. Transmitters in some client GBIC and SFP transceiver units might send large overshoots in optical power with signal bit transitions, causing momentary overload conditions on the transponder client side receiver. The average transmitted power level from the GBIC does not violate the overload specification of the transponder client side receiver, so a power meter does not detect the overload.

  The workaround is to attenuate the signal from the client equipment to a recommended level of -12 dBm when transmitting 2-Gbps Fibre Channel services.

- Error-free transmission of some D1 video signals (defined by the SMPTE 259M standard) and test patterns (such as Matrix SDI) cannot be guaranteed by the Cisco 15500 Series because of the pathological pattern in D1 video. This well-known limitation is usually overcome by the D1 video equipment vendor, who uses a proprietary, second level of scrambling. No standards exist at this time for the second level of scrambling.

## 8-Port FC/GE Aggregation Card

This section contains limitation and restrictions that apply to 8-port FC/GE aggregation cards.

- IFCCs (InterFace Control Checks) are generated while extending the distance between an IBM mainframe and IBM 9032 Model 5 ESCON Director through FICON using an 8-port FC/GE aggregation card on a Cisco ONS 15530. These IFCCs are seen on the host side. They occur when the port is configured for FICON without flow control enabled.

  The FICON bridge port (on the ESCON Director) expects to be connected directly to an N_Port of the host. Therefore, the bridge port expects the N_Port to send a minimum of six primitive signals (Idles and R_RDYs) between frames. Anything less than six primitive signals causes IFCCs to be generated on the ESCON Director, which in turn are logged on the host. The 8-port FC/GE aggregation card is pure transport and needs to delete and insert one IPG for frequency compensation. Hence, depending on the card, sometimes either five or seven idles are sent between frames. The 8-port FC/GE aggregation card cannot maintain six idles between every frame if the card is on slower side of the clock.

  The workaround is to enable flow control using the **flow control** command on the gigabitphy interfaces.

## CPU Switch Modules

This section contains limitations and restrictions that apply to CPU switch modules.

- If both CPU switch modules are removed, all aggregation cards, OSC modules, transponder line cards, ITU trunk cards, and uplink cards are shut down.

  **Note** Traffic on pass through optical channels (which passively pass through the OADM modules) are not affected by the removal of the CPU switch modules.

# Related Documentation

Refer to the following documents for more information about the Cisco ONS 15530:

- *Regulatory Compliance and Safety Information for the Cisco ONS 15500 Series*
- *Cisco ONS 15530 Planning Guide*
- *Cisco ONS 15530 Hardware Installation Guide*
- *Cisco ONS 15530 Optical Transport Turn-Up and Test Guide*
- *Cisco ONS 15530 Cleaning Procedures for Fiber Optic Connections*
- *Cisco ONS 15530 Configuration Guide*
- *Cisco ONS 15530 Command Reference*
- *Cisco ONS 15530 System Alarms and Error Messages*
- *Cisco ONS 15530 Troubleshooting Guide*
- *Network Management for the Cisco ONS 15530*
- *Cisco ONS 15530 TL1 Commands*
- *MIB Quick Reference for the Cisco ONS 15500 Series*
- *Cisco ONS 15530 Software Upgrade Guide*

# Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

## Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

## Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

# Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

# Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

## Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

**Note** Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID

or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

# Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

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This document is to be used in conjunction with the documents listed in the "Related Documentation" section.