



Release Notes for Cisco ONS 15530 for Cisco IOS Release 12.2(23)SV1

This document describes caveats for Cisco IOS Release 12.2(23)SV1 for the Cisco ONS 15530.

Date: July 31

Text Part Number: OL-4891-05

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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 Cisco ONS 15530 IOS Release 12.2(23)SV and includes the following sections:

- [Memory Requirements, page 2](#)
- [Hardware Supported, page 2](#)
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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 12](#).

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

| Component | Part Number | Description | Minimum Software Version Required |
|--------------------------|--------------------|---|--|
| 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 |
|--|--|---|-----------------------------------|
| 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 |
|---|---|---|-----------------------------------|
| 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 |
|--|--|--|-----------------------------------|
| 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 |
|--------------------------|-----------------|---|-----------------------------------|
| 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 |
|-----------|-----------------|--|-----------------------------------|
| | 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 |
|---|-----------------|--|-----------------------------------|
| 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 |
|--|-------------------|---|-----------------------------------|
| 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 |
| 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 |

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

| Component | Part Number | Description | Minimum Software Version Required |
|--------------------------|-------------------|--|-----------------------------------|
| 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 |
| 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 SFP optics | 15500-XVRA-10A1 | Low band (16 to 200 Mbps) variable rate, MM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-10B1 | Low band (16 to 200 Mbps) variable rate, SM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-11B1 | Mid band (200 to 1250 Mbps) variable rate, SM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-12B1 | High band (1.062 Gbps to 2.5 Gbps) variable rate, SM (1310 nm) with LC | 12.1(12c)EV3 |
| | 15500-XVRA-02C1 | Gigabit Ethernet ¹ , Fibre Channel (1 Gbps) ² , FICON (1 Gbps) | 12.1(12c)EV |
| | 15500-XVRA-03B1 | Gigabit Ethernet ³ , Fibre Channel (1 Gbps) ⁴ , FICON (1 Gbps), ISC-3 links compatibility mode | 12.1(12c)EV |
| | 15500-XVRA-03B2 | Fibre Channel (1-Gbps and 2-Gbps) | 12.1(12c)EV |
| | 15454-SFP-GEFC-SX | Fibre Channel (2-Gbps), Fibre Channel (1-Gbps), 1000BASE-LX Ethernet | 12.1(12c)EV |
| 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 |
|-------------------|------------------|--|-----------------------------------|
| 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. 1000BASE-SX
2. FC-0-100-M5-SN-S and FC-0-100-M6-SN-S standards
3. 1000BASE-LX
4. 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(23)SV
<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 |
| 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 | 12.1(12c)EV |

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

| Feature Set | Introduced in This Release |
|---|----------------------------|
| 1-Gbps IBM Sysplex Coupling Link aggregation into 2.5 Gbps | 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) | 12.2(18)SV |
| 2-Gbps ISC links peer mode protocol monitoring on transponder line cards | 12.2(22)SV |
| ISC-3 peer mode (1-Gbps and 2-Gbps) 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 |
| Support for 1-Gbps ISC links peer mode on the transponder line card | 12.2(23)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(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:

- ISC-3 1-Gbps (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 the current release.

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



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

- 2-Gbps FICON protocol monitoring
- 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.

Resolved Caveats in Release 12.2(23)SV1

- CSCef68324

Cisco Internetwork Operating System (IOS) software is vulnerable to a Denial of Service (DoS) and potentially an arbitrary code execution attack from a specifically crafted IPv6 packet. The packet must be sent from a local network segment. Only devices that have been explicitly configured to process IPv6 traffic are affected. Upon successful exploitation, the device may reload or be open to further exploitation.

Cisco has made free software available to address this vulnerability for all affected customers.

More details can be found in the security advisory that is posted at <http://www.cisco.com/warp/public/707/cisco-sa-20050729-ipv6.shtml>.

Open Caveats in Release 12.2(23)SV

- 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.

- 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.

- 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.

- 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.

- 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.

- 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 the errors, 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 applicable only if all of the following 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 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.
- If the peer card is a 4-port 1-Gbps/2-Gbps FC aggregation card, EXCESS_FRAME_ALM alarm is detected on the remote peer Cisco ONS 15530.
- If 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 the 4-port 1-Gbps/2Gbps 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/2Gbps FC aggregation card work well.

- 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.

- CSCin79007

Symptom: The client laser disables if an OIR is performed when keepalive timeout exists on the interface. The laser is enabled when the keepalive timeout condition is cleared, but disables whenever keepalive timeout condition is asserted. Ideally, the client laser shut down due to 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 interface of the 4-port 1-Gbps/2Gbps 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 back to the required encapsulation value.

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 software 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 you 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 events:

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 thresholds 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 due to 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: Issue a **no laser control safety** command and a **laser control safety enable** command on the OSC wave interface.

- 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 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 IOS and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP protocol is not enabled by default, and must be configured in order 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, please 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 IOS and enabled for the Border Gateway Protocol (BGP) is vulnerable to a Denial of Service (DOS) attack from a malformed BGP packet. The BGP protocol is not enabled by default, and must be configured in order 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, please 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 via FICON using 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 processor cards.

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 TLI 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 on the World Wide Web at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from 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 800 553-NETS (6387).

Documentation Feedback

You can submit e-mail 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, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

Cisco TAC Website

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

<http://www.cisco.com/tac>

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

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

Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

<http://www.cisco.com/tac/caseopen>

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case 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 listing of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—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.

Priority 2 (P2)—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.

Priority 3 (P3)—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.

Priority 4 (P4)—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. Go to this URL to visit the company store:
<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 online at this URL:
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:
<http://www.cisco.com/packet>
- *iQ Magazine* is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. 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>
- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:
<http://www.cisco.com/en/US/learning/index.html>

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