



Release Notes for Cisco ONS 15540 ESP for Cisco IOS Release 12.2(26)SV

This document describes caveats for Cisco IOS Release 12.2(26)SV for the Cisco ONS 15540 ESP (Extended Services Platform).

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Introduction

The Cisco ONS 15540 ESP is an optical transport platform that employs DWDM (dense wavelength division multiplexing) technology. With the Cisco ONS 15540 ESP, users can take advantage of the availability of dark fiber to build a common infrastructure that supports data, SAN (storage area



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networking), and 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 15540 ESP Planning Guide](#).

System Requirements

This section describes the system requirements for the Cisco ONS 15540 ESP and includes the following sections:

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Memory Requirements

The DRAM memory configuration is 128 MB, which is the default for the Cisco ONS 15540 ESP.

Hardware Supported

[Table 1](#) lists the hardware components supported on the Cisco ONS 15540 ESP and the minimum software version required. See the [“Determining the Software Version”](#) section on page 6.

Table 1 Cisco ONS 15540 ESP Supported Hardware Modules and Minimum Software Requirements

Component	Part Number	Description	Minimum Software Version Required
Chassis	15540-CHSA		12.1(7a)EY2
Power supplies	15540-PWR-AC	120 to 240 VAC power supply	12.1(7a)EY2
	15540-CAB-AC	Custom AC-input power entry cable	12.1(7a)EY2
	15540-CAB-AC	North America	12.1(7a)EY2
	15540-CAB-ACA	Australia	12.1(7a)EY2
	15540-CAB-ACE	Europe	12.1(7a)EY2
	15540-CAB-CU	UK	12.1(7a)EY2
	15540-CAB-ACI	Italy	12.1(7a)EY2
	15540-CAB-ACR	Argentina	12.1(7a)EY2
Filler motherboards and filler modules	15540-COV-01	Mux/demux motherboard blank panel	12.1(7a)EY2
	15540-COV-02	Mux/demux module	12.1(7a)EY2
	15540-COV-03	Line card motherboard blank panel	12.1(7a)EY2
	15540-COV-04	Transponder module blank panel	12.1(7a)EY2
	15540-COV-06	Processor card cover panel	12.1(7a)EY2

Table 1 Cisco ONS 15540 ESP Supported Hardware Modules and Minimum Software Requirements (Continued)

Component	Part Number	Description	Minimum Software Version Required
Fans	15540-FTMP	Fan tray module populated with eight fans	12.1(7a)EY2
Processor cards	15540-CPU	Processor card without switch fabric	12.1(7a)EY2
Mux/demux motherboards	15540-MMMB-0100	Supports mux/demux modules with OSC	12.1(7a)EY2
	15540-MMMB-0200	Supports mux/demux modules without OSC	12.1(7a)EY2
Mux/demux modules without OSC	15540-MDXA-04A0	4-channel Band A	12.1(7a)EY2
	15540-MDXA-04B0	4-channel Band B	12.1(7a)EY2
	15540-MDXA-04C0	4-channel Band C	12.1(7a)EY2
	15540-MDXA-04D0	4-channel Band D	12.1(7a)EY2
	15540-MDXA-04E0	4-channel Band E	12.1(7a)EY2
	15540-MDXA-04F0	4-channel Band F	12.1(7a)EY2
	15540-MDXA-04G0	4-channel Band G	12.1(7a)EY2
	15540-MDXA-04H0	4-channel Band H	12.1(7a)EY2
	15540-MDXA-08A0	8-channel Band AB	12.1(7a)EY2
	15540-MDXA-08B0	8-channel Band CD	12.1(7a)EY2
	15540-MDXA-08C0	8-channel Band EF	12.1(7a)EY2
	15540-MDXA-08D0	8-channel Band GH	12.1(7a)EY2
	15540-MDXA-16EH	16-channel Band EH	12.1(7a)EY2
Mux/demux modules with OSC	15540-MDXA-04A0	4-channel Band A	12.1(7a)EY2
	15540-MDXB-04B0	4-channel Band B	12.1(7a)EY2
	15540-MDXB-04C0	4-channel Band C	12.1(7a)EY2
	15540-MDXB-04D0	4-channel Band D	12.1(7a)EY2
	15540-MDXB-04E0	4-channel Band E	12.1(7a)EY2
	15540-MDXB-04F0	4-channel Band F	12.1(7a)EY2
	15540-MDXB-04G0	4-channel Band G	12.1(7a)EY2
	15540-MDXB-04H0	4-channel Band H	12.1(7a)EY2
	15540-MDXB-08A0	8-channel Band AB	12.1(7a)EY2
	15540-MDXB-08B0	8-channel Band CD	12.1(7a)EY2
	15540-MDXB-08C0	8-channel Band EF	12.1(7a)EY2
	15540-MDXB-08D0	8-channel Band GH	12.1(7a)EY2
	15540-MDXB-16AD	16-channel Band AD	12.1(7a)EY2
Line card motherboards	15540-LCMB-0100	Supports four transponders with protection	12.1(7a)EY2
	15540-LCMB-0200	Supports four transponders -East	12.1(7a)EY2
	15540-LCMB-0201	Supports four transponders -West	12.1(7a)EY2

Table 1 Cisco ONS 15540 ESP Supported Hardware Modules and Minimum Software Requirements (Continued)

Component	Part Number	Description	Minimum Software Version Required
MM transponder modules	15540-TSP1-01A3	Ch 1-2 —1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-03A3	Ch 3-4 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-05A3	Ch 5-6 —1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-07A3	Ch 7-8 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-09A3	Ch 9-10 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-11A3	Ch 11-12 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-13A3	Ch 13-14 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-15A3	Ch 15-16 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-17A3	Ch 17-18 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-19A3	Ch 19-20 — 1310nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-21A3	Ch 21-22 — 1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-23A3	Ch 23- 24—1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-25A3	Ch 25-26—1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-27A3	Ch 27-28—1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
	15540-TSP1-29A3	Ch 29-30—1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2
15540-TSP1-31A3	Ch 31-32—1310-nm MM 16 to 622 Mbps with SC	12.1(7a)EY2	
SM transponder modules	15540-TSP1-01B3	Ch 1-2—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-03B3	Ch 3-4—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-05B3	Ch 5-6—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-07B3	Ch 7-8—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-09B3	Ch 9-10—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-11B3	Ch 11-12—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-13B3	Ch 13-14— 1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-15B3	Ch 15-16—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-17B3	Ch 17-18—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-19B3	Ch 19-20—1310nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-21B3	Ch 21-22—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-23B3	Ch 23- 24—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-23B3	Ch 23- 24—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-25B3	Ch 25-26—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
	15540-TSP1-27B3	Ch 27-28—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2
15540-TSP1-29B3	Ch 29-30 —1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2	
15540-TSP1-31B3	Ch 31-32—1310-nm SM 16 Mbps to 2.5 Gbps with SC	12.1(7a)EY2	

Table 1 Cisco ONS 15540 ESP Supported Hardware Modules and Minimum Software Requirements (Continued)

Component	Part Number	Description	Minimum Software Version Required
Type 2 extended range transponder modules	15540-TSP2-0100	Ch 1-2	12.1(11b)E
	15540-TSP2-0300	Ch 3-4	12.1(11b)E
	15540-TSP2-0500	Ch 5-6	12.1(11b)E
	15540-TSP2-0700	Ch 7-8	12.1(11b)E
	15540-TSP2-0900	Ch 9-10	12.1(11b)E
	15540-TSP2-1100	Ch 11-12	12.1(11b)E
	15540-TSP2-1300	Ch 13-14	12.1(11b)E
	15540-TSP2-1500	Ch 15-16	12.1(11b)E
	15540-TSP2-1700	Ch 17-18	12.1(11b)E
	15540-TSP2-1900	Ch 19-20	12.1(11b)E
	15540-TSP2-2100	Ch 21-22	12.1(11b)E
	15540-TSP2-2300	Ch 23-24	12.1(11b)E
	15540-TSP2-2500	Ch 25-26	12.1(11b)E
	15540-TSP2-2700	Ch 27-28	12.1(11b)E
	15540-TSP2-2900	Ch 29-30	12.1(11b)E
15540-TSP2-3100	Ch 31-32	12.1(11b)E	
Fixed rate SFP optics for Type 2 extended range transponder modules	15500-XVRA-01A2	ESCON and OC-3 1310-nm MM MT-RJ	12.1(11b)E
	15500-XVRA-03B1	Gigabit Ethernet and Fibre Channel (1 Gbps) 1310-nm SM MTLC	12.1(11b)E
	15500-XVRA-03B2	1-Gbps Fibre Channel and 2 Gbps Fibre Channel 1310-nm SM MTLC	12.1(11b)E
	15500-XVRA-02C1	Gigabit Ethernet and Fibre Channel (1 Gbps) 850-nm MM MTLC	12.1(11b)E
	15500-XVRA-02C2	Fibre Channel (1 Gbps and 2 Gbps) 850-nm SM MTLC	12.1(11b)E
	15500-XVRA-06B1	SONET OC-12 1310-nm SM MTLC	12.1(11b)E
	15500-XVRA-07B1	SONET OC-48 1310-nm SM MTLC	12.1(11b)E
Variable rate 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-11A1	Mid band (200 to 622 Mbps) variable rate, MM (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

Determining the Software Version



Note

We strongly recommend that you use the latest available software release for all Cisco ONS 15540 ESP hardware.

To determine the version of Cisco IOS software currently running on a Cisco ONS 15540 ESP 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-15540 Software (ONS15540-I-M), Version 12.2(26)SV
<Information deleted>
```

Upgrading the System Image

To ensure proper system functioning, follow the system image upgrading procedure described in the *Cisco ONS 15540 ESP Software Upgrade Guide*.



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 15540 ESP.

Table 2 *Feature Sets Supported by the Cisco ONS 15540 ESP*

Feature Set	Introduced in This Release
Gigabit Ethernet	12.1(7a)EY2
Fast Ethernet	12.1(7a)EY2
Ethernet	12.1(7a)EY2
ATM OC-3/STM-1, OC-12/STM-4, and OC-48/STM-16	12.1(7a)EY2
SONET ¹ /SDH ²	12.1(7a)EY2
POS ³	12.1(7a)EY2
Coupling link	12.1(7a)EY2
Fibre Channel (1 Gbps)	12.1(7a)EY2

Table 2 Feature Sets Supported by the Cisco ONS 15540 ESP (Continued)

Feature Set	Introduced in This Release
Fibre Channel (2 Gbps)	12.1(7a)EY2
FDDI ⁴	12.1(7a)EY2
ESCON ⁵ SM (200 Mbps)	12.1(7a)EY2
FICON ⁶ (800 Mbps)	12.1(7a)EY2
FICON (1 Gbps)	12.1(12c)EV3
Token Ring	12.1(7a)EY2
SNMP	12.1(7a)EY2
CiscoView	12.1(7a)EY2
Cisco Transport Manager	12.1(7a)EY2
IP packets	12.1(7a)EY2
OSCP ⁷	12.1(7a)EY2
APS ⁸ protocol packets	12.1(7a)EY2
Point-to-point	12.1(7a)EY2
Hubbed ring	12.1(7a)EY2
Meshed ring	12.1(7a)EY2
IBM GDPS ⁹ ETR/CLO ¹⁰	12.1(7a)EY2
IBM GDPS ⁹ coupling link	12.1(7a)EY2
2-Gbps Fibre Channel protocol monitoring on transponder modules	12.2(18)SV
2-Gbps FICON protocol monitoring on transponder modules	12.2(18)SV
Functional image version diagnostics	12.2(18)SV
2-Gbps ISC links peer mode protocol monitoring on 2.5-Gbps transponder modules	12.2(22)SV
1-Gbps ISC links peer mode protocol monitoring on transponder modules	12.2(23)SV
SSHv1 client and server support	12.2(24)SV
SNMPv3 support	12.2(24)SV
Counter preservation on processor card switchovers	12.2(24)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. GDPS = Geographically Dispersed Parallel Sysplex
10. 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)SV

There are no new features for this release.

New Features in Release 12.2(25)SV

There are no new features for this release.

New Features in Release 12.2(24)SV

The following new software features are available for the Cisco ONS 15540 ESP in Cisco IOS Release 12.2(24)SV:

- SSHv1 client and server support
- SNMPv3 support
- Counter preservation on processor card switchovers

New Features in Release 12.2(23)SV

The following new software feature is available for the Cisco ONS 15540 ESP in Cisco IOS Release 12.2(23)SV:

- 1-Gbps ISC links peer mode protocol monitoring on the transponder module

New Features in Release 12.2(22)SV

The following new software feature is available for the Cisco ONS 15540 ESP in Cisco IOS Release 12.2(22)SV:

- 2-Gbps ISC links peer mode protocol monitoring on 2.5-Gbps transponder modules.



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

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 15540 ESP in Cisco IOS Release 12.2(18)SV:

- 2-Gbps Fibre Channel protocol monitoring on 2.5-Gbps transponder modules



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

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



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

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

Caveats

This section describes open and resolved severity 1 and 2 caveats and certain 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)SV

- CSCeb79990

Symptom: The **patch** commands saved on the system are not compatible with CTM (Cisco Transport Manager).

Workaround: Remove the **patch** commands that show up out of order after the configuration is saved. Then reset the active processor card or switch to the standby processor card and reenter the **patch** commands.

- CSCed74239

Symptom: In a point-to-point network with y-cable based APS configured, the protection path does not automatically come up if the working path is down.

Workaround: Put a loopback on the client side to restore traffic to the protection path.

- CSCee70825

Symptom: During normal operation, an outage may result when trying to connect through the console port. The console port issues error messages. These can be routine messages relating to Loss of Light on wave ports that were enabled. Interface alarm flapping may cause a hardware watchdog timeout that failed to switchover to the standby processor card.

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 Cisco ONS 15540 .

- CSCef12108

Symptom: The Cisco ONS 15540 might not allow you to connect to the standby processor card 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 processor card.

Workaround: None.

- CSCef83146

Symptom: During a processor card switchover, an extended range transponder might experience a temporary traffic interruption until the switchover is completed. The issue is intermittent and not all transponders in a given chassis may be affected. This interruption may potentially happen for the following types of protocol encapsulations:

- ETR/CLO
- 100-Mbps Fast Ethernet / FDDI
- 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)

Workaround: None.

- CSCef86045

Symptom: The system does not detect individual cards and requires a reboot to restart communication to the cards.

Workaround: None.

- CSCin81343

Symptoms: During a processor card switchover, an extended range transponder might experience a temporary traffic interruption may occur. When the switchover is complete, traffic resumes. This symptom is intermittent and may not affect all transponders in a chassis.

The traffic interruption may occur for the following types of encapsulation:

- 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)

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.

- CSCsa51395

Symptom: The client Laser on the ten gig interface goes down for around 4 to 5 seconds, when the FLC is configured on the waveethernetphy interface and PSM APS switchover happens on an ONS 15540 setup with a combination of 10GE transponder and PSM APS.

Workaround: Disable FLC on Waveethernetphy interface.

Resolved Caveats in Release 12.2(26)SV

- CSCeg84037

Symptom: When a CPU switchover is performed 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.

- 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.

Condition: ONS 15530 and 15540 CPU cards manufactured upto 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 upto 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.

- CSCin88118

Symptom: PSM APS switchover may rarely occur on an ONS 15540 system due to false low alarms reported for the wdmsplit interfaces.

Condition: This occurs rarely when spurious low alarms are seen for the PSM wdm split interfaces.

Workaround: None.

- 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.

Resolved Caveats in Release 12.2(25)SV

- CSCee71928

Symptom: The optical link fails to come up between two 8-port GBIC modules through the ONS15540 PSM DWDMs when forward laser control (FLC) is enabled.

Workaround: Use a 16-port GBIC module or deactivate FLC.

- 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.

- CSCin80680

Symptom: The system crashes when the functional image reprogramming is in progress for any of the line cards and the command **show upgrade-information functional-image** is issued at the same time through vty lines.

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 the functional image and software image.

Workaround: None.

- CSCec45305

Symptom: If the transparent interface on a multimode transponder module 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.

- CSCec55713

Symptom: The Prot Switch Byte Failure - In Effect alarm message appears on the console.

Workaround: None.

- CSCec55713

Symptom: The Prot Switch Byte Failure - In Effect alarm message appears on the console.

Workaround: None.

- 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.

- 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 Cisco ONS 15540.

- CSCin69960

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

Workaround: None.

Resolved Caveats in Release 12.2(23)SV

- CSCec31146

Symptom: If monitoring is disabled, Loss of Light on the local transparent interface results in Loss of Sync on the far side wave interface.

Workaround: Enable monitoring on the transparent interface.

- 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 module. Link initialization failures and bit errors may occur.

Workaround: None.

- CSCee34107

Symptom: APS behavior for the **aps clear** command is inconsistent with the standard behavior if 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.

- 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.

Resolved Caveats in Release 12.2(22)SV

- CSCeb18103
Symptom: The OSC wave interface does not come back up after resolving a trunk fiber break if laser safety control was configured after the trunk fiber break occurred.
Workaround: None.
Resolution: Upgrade the Cisco ONS 15540 mux/demux motherboard functional image to release 2.67 or later.
- 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.
- CSCin67971
Symptom: If a one-way patch configuration is removed between a thru interface and a wdm interface, the system hangs for a long time and eventually crashes.
Workaround: Configure two-way patches between the thru and wdm interfaces.

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.
- CSCed22589
Symptom: Link initialization failure due to Loss of Lock might occur for ESCON traffic on some transponder modules due to a transient failure of the clock recovery unit. Only some transponder modules 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

- CSCec28182
Symptom: Tracebacks related to processor hog issues are seen when reprogramming the 2.5-Gbps transponder module functional image.
Workaround: None.
- CSCec59409
Symptom: Issuing a **Ctrl-U** when connected to a raw TL1 port causes the system to crash.
Workaround: If a TL1 port is unused, apply an IP ACL to the management Ethernet interface that blocks the incoming TCP connections to that port.

Resolved Caveats for 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>.

- 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>.

- CSCeb61427

Symptom: The system crashes when the user exits from the console after the active processor card has been removed and inserted online and is switched back to being the active processor card.

Workaround: None.

- CSCeb72528

Symptom: Client Tx fault alarm is asserted when an SFP optics is inserted or upon a y-cable switchover.

Workaround: Upgrade to Cisco IOS Release 12.1(12c)EV3 and transponder functional image version 1.A2 or higher.

- CSCec05746

Symptom: In a point-to-point network topology setup where bidirectional PSM trunk fiber protection APS is configured, and the CDL (Converged Data Link) is configured for dcc and the controller type of the mux/demux module is 0x1104 (4-channel mux/demux module without OSC), APS cannot track a valid ethernetdcc interface. Therefore the group cannot be associated.

Workaround: Do not configure CDL as dcc for PSM APS if the corresponding mux/demux module does not have OSC ports (controller type 0x1104).

- CSCec22377

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

Workaround: None.

- CSCec31503

Symptom: Unable to disable APS group through SNMP. The console or Telnet session hangs indefinitely after configuration mode is entered using the SNMP **set** command.

Workaround: Do not disable the APS group through SNMP.

- CSCec31512

Symptom: When you enter the **send break** command on the active processor and keep the active processor in the ROM monitor (ROMMON) mode for a long time, the standby processor may reload because of a bus error exception.

Workaround: None.

Limitations and Restrictions

This section provides limitations and restrictions for Cisco ONS 15540 ESP hardware and software.

Transponder Modules

This section contains limitations and restrictions that apply to transponder modules.

- When you insert the standby transponder module in a y-cable protected configuration, remove the cable from the transponder module before inserting the transponder module into the shelf. Failure to remove the cable might result in errors that can affect the performance of the active signal received by the client equipment.
- CRC errors may 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.

Related Documentation

Refer to the following documents for more information about the Cisco ONS 15540 ESP:

- [Regulatory Compliance and Safety Information for the Cisco ONS 15500 Series](#)
- [Cisco ONS 15540 ESP Planning Guide](#)
- [Cisco ONS 15540 ESP Hardware Installation Guide](#)
- [Cisco ONS 15540 ESP Optical Transport Turn-Up and Test Guide](#)
- [Cisco ONS 15540 ESP Configuration Guide](#)
- [Cisco ONS 15540 ESP Command Reference](#)
- [Cisco ONS 15540 ESP System Alarms and Error Messages](#)

- *Cisco ONS 15540 ESP Troubleshooting Guide*
- *Network Management for the Cisco ONS 15540 ESP*
- *Cisco ONS 15540 ESP CLI Command Reference*
- *MIB Quick Reference for the Cisco ONS 15500 Series*
- *Cisco ONS 15540 ESP 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>

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

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You can find instructions for ordering documentation at this URL:

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

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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:

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- 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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