



# Release Notes for Cisco ONS 15540 ESP for Cisco IOS Release 12.1(7a)EY2

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This document describes caveats for Cisco IOS Release 12.1(7a)EY2 for the Cisco ONS 15540 ESP (Extended Services Platform).

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Corporate Headquarters:  
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

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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 network), 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 and Design Guide*.

## System Requirements

This section describes the system requirements for Cisco IOS Release 12.1(7a)EY2, and includes the following sections:

- [Memory Requirements, page 2](#)
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## Memory Requirements

The DRAM memory configuration is 128MB, 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 for information on determining your software version.

**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	120-240 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

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

Component	Part Number	Description	Minimum Software Version Required
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
Fans	15540-FTMP	Fan tray module populated with 8 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
	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

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

Component	Part Number	Description	Minimum Software Version Required
Mux/demux modules with OSC	15540-MDXB-04G0	4-channel Band G	12.1(7a)EY2
	15540-MDXB-04H0	4-channel Band H	12.1(7a)EY2
Mux/demux modules with OSC	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 motherboard	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
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

**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-TSP1-25A3	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— 310 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

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

Component	Part Number	Description	Minimum Software Version Required
SM transponder modules	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

## 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), Experimental Version 12.1(20010613:2
13834) [koj-1h 132]
```

## 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	12.1(7a)EY2
Gigabit Ethernet	X
Fast Ethernet	X
Ethernet	X
ATM OC3/STM1, OC12/STM4, and OC48/STM16	X
SONET <sup>1</sup> /SDH <sup>2</sup>	X
POS <sup>3</sup>	X
Coupling link	X
Fibre Channel (1 Gbps)	X

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

Feature Set	12.1(7a)EY2
Fibre Channel (2 Gbps)	X
FDDI <sup>4</sup>	X
ESCON <sup>5</sup> SM (200 Mbps)	X
FICON <sup>6</sup> (800 Mbps)	X
Token Ring	X
SNMP	X
CiscoView	X
Cisco Transport Manager	X
IP packets	X
OSCP <sup>7</sup>	X
APS protocol packets	X
Point-to-point	X
Hubbed ring	X
Meshed ring	X
Sysplex	X
GDPS	X

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 = OSC Protocol

## Software Features in Release 12.1(7a)EY2

The Cisco ONS 15540 ESP system offers the following software functionality:

- Cisco IOS software on the processor.
- Autoconfiguration at startup.
- Autodiscovery of network neighbors.
- Online diagnostics.
- Processor redundancy provided by arbitrations of processor status and switchover in case of failure without loss of connections.
- Autosynchronization of startup and running configurations.
- Support for in-service software upgrades.
- Support for per-channel APS (automatic protection switching) in point-to-point and ring topologies using redundant subsystems that monitor link integrity and signal quality.
- Unidirectional and bidirectional 1+1 path switching.

- System configuration and management through the CLI (command-line interface), accessible through an Ethernet connection or console terminal.
- Optical power monitoring on the transport side, digital monitoring on both client and transport side, and per-channel transponder in-service and out-of-service loopback (client and transport sides).
- Optional out-of-band management of other Cisco ONS 15540 systems on the network through the OSC (optical supervisory channel).
- Support for network management systems that use SNMP. Its capabilities include configuration management, fault isolation, topology discovery, and path trace.

## Caveats

This section describes the caveats in the Cisco ONS 15540 ESP.

- CSCdv29322

**Symptom:** Sysplex Timer protocol encapsulation does not function correctly if APS protection is configured on the interface with unidirectional path switching.

**Workaround:** Configure bidirectional path switching on interfaces that have Sysplex Timer protocol encapsulation and APS protection.

- CSCdv33165

**Symptom:** If you attempt to change or edit a threshold in the threshold-list that is already associated with an interface, the threshold is applied to that interface even when no changes are made to it.

**Workaround:** None.

- CSCdv37024

**Symptom:** If CiscoView files are extracted to the SanDisk (disk0 and disk1), the package does not work.

**Workaround:** Install CiscoView on other PCMCIA cards (slot0 and slot1).

- CSCdv42846

**Symptom:** If you enter the **show connect intermediate** command while the transmit or receive trunk cable only is disconnected with bidirectional APS configured to work over OSCP, spurious memory access occurs and the following messages appear:

```
%ALIGN-3-SPURIOUS: Spurious memory access made at 0x601511F8 reading 0x2C 00:03:16:
%ALIGN-3-TRACE: -Traceback= 601511F8 60152180 6037D0E4 6037D2E4 6037DF18 6005A064
60066ADC 600BFBOC 00:03:16: %ALIGN-3-TRACE: -Traceback= 601511F8 60152180 6037D0E4
6037D378 6037DF18 6005A064 60066ADC 600BFBOC
```

This is a timing problem that does not happen often. This does not impact any functionality and is a self-correcting situation.

**Workaround:** None

- CSCdw26675

**Symptom:** Upon switchover, the active processor card can become nonresponsive. The processor card's Active LED will remain on, even though it is no longer actively controlling the system.

**Workaround:** None

Remove and reinsert the processor card to correct the fault.



# 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 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 on single-mode transponders 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.

- If both processor cards are removed, traffic through the system is affected as follows:
  - For Type 2 extended range transponder modules, traffic is shut down.
  - For 10-GE transponder modules, traffic is shut down.
  - Type 1 SM transponder modules and MM transponder modules do not operate reliably. The traffic might be affected.
  - In the shutdown state, the Status LED on the line card motherboard turns orange.



Note

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Traffic on pass through optical channels (which passively pass through the mux/demux modules) are not affected by the removal of the processor cards.

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## Related Documentation

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

- [Cisco ONS 15540 ESP Planning and Design Guide](#)
- [Regulatory Compliance and Safety Information for the Cisco ONS 15540 ESP](#)
- [Cisco ONS 15540 ESP Hardware Installation Guide](#)
- [Cisco ONS 15540 ESP Configuration Guide and Command Reference](#)
- [Cisco ONS 15540 ESP Troubleshooting Guide](#)
- [Cisco ONS 15540 ESP MIB Quick Reference](#)
- [Glossary of Optical Networking Terms](#)

# Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

## World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

## Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription. [huli\\_folau](mailto:huli_folau)

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[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)
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We appreciate your comments.

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### Cisco.com

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To access Cisco.com, go to the following website:

<http://www.cisco.com>

### Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

### Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

## Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

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This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

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