



Release Notes for Cisco ONS 15530 8-Port FC/GE Aggregation Card Functional Image Release 2.30

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Cisco ONS 15530 8-port FC/GE aggregation card (15530-FCGE-8P) functional image release 2.30

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This document describes the features and caveats for the functional image, release 2.30, for the 8-port FC/GE aggregation cards used with the Cisco ONS 15530 DWDM multiservice aggregation 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 15530 supports a line card specifically for FC (Fibre Channel), FICON (Fibre Connection), GE (Gigabit Ethernet), and ISC (InterSystem Channel) link traffic. The 8-port FC/GE aggregation card accepts up to eight SFP (small form-factor pluggable) optics for client traffic. Each SFP optic supports FC, FICON, GE, or ISC, depending on how the interface is configured in the CLI.

**Note**

The 8-port FC/GE aggregation card only supports FICON, FC, and ISC traffic at 1 Gbps.

The 8-port FC/GE aggregation card converts client signals from two adjacent port pairs (0-1, 2-3, 4-5, or 6-7) from optical form to electrical form, and then aggregates them into four 2.5-Gbps signals. These aggregated signals pass through the backplane and the switch fabric on the active CPU switch module to a 2.5-Gbps ITU trunk card, a 10-Gbps ITU trunk card, or a 10-Gbps uplink card. The cross connections between the two cards through the backplane and switch fabric is configured using the CLI. The 8-port FC/GE aggregation card has redundant connections over the backplane to the switch fabrics on the active and standby CPU switch modules.

The 8-port FC/GE aggregation card provides buffer credit based flow control functionality for Fibre Channel distance extension and autonegotiation for Gigabit Ethernet.

For GE traffic, the Cisco ONS 15530 monitors the following conditions on the 8-port FC/GE aggregation card:

- CVRD error counts (8b10b only)
- Tx/Rx frame counts
- Tx/Rx byte counts
- Tx/Rx CRC counts
- Rx giant packets
- Rx runt packets
- 5-minute input/output rates
- Loss of Sync
- Loss of Light

For FC and FICON traffic, the Cisco ONS 15530 monitors the following conditions on the 8-port FC/GE aggregation card:

- CVRD error counts
- Tx/Rx frame counts
- Tx/Rx byte counts
- Rx CRC errors
- Link failures
- Sequence protocol errors
- Invalid transmission words
- 5-minute input/output rates
- Loss of Sync
- Loss of Light

For ISC compatibility mode traffic, the system monitors the following conditions on the 8-port FC/GE aggregation card:

- CVRD error counts
- Loss of Light

Determining the Release of Your 8-Port FC/GE Aggregation Card Functional Image

This section describes the process you use to determine the existing functional image version installed on your 8-port FC/GE aggregation card.

To display the functional image version in an 8-port FC/GE aggregation card, use the following command in privileged EXEC mode:

Command	Purpose
show hardware linecard slot	Displays the functional image information.

Example

The following example shows the hardware version and the functional image information for the 8-port FC/GE aggregation card in slot 7:

```
Switch# show hardware linecard 7
-----
Slot Number           :7/*
Controller Type       :0x110A
On-Board Description  :ONS 15530 8-port Fibre Channel/Gigabit Ethernet Linecard
Orderable Product Number:15530-FCGE-8P=
Board Part Number     :73-7840-03
Board Revision        :03
Serial Number         :CAB06310X8Q
Manufacturing Date    :08/12/2002
→ Hardware Version    :4.6
RMA Number            :0x00
RMA Failure Code      :0x00
→ Functional Image Version:2.30
Function-ID           :0
```

Updating to a New Release

For detailed functional image upgrade instructions, refer to the [Cisco ONS 15530 Software Upgrade Guide](#). To download the 8-port FC/GE aggregation card functional image, go to the following URL:
<http://www.cisco.com/cgi-bin/tablebuild.pl/ons15530-fpga>.



Note

Download `fi-ons15530-8gefc.B.2-30.exe` for 15530-FCGE-8P hardware versions 8.0 and later. For earlier hardware versions, download `fi-ons15530-8gefc.A.2-30.exe`.



Caution

A functional image download cannot revert once the download is started. Do not interrupt the download procedure. Wait until it has finished before attempting any commands on the switch. Confirm that the download is done in binary mode and check file sizes before and after the download. A failure during reprogramming can result in the card being unusable.

New Features in Functional Image 2.30

The following new feature is available for functional image 2.30:

- Sysplex ISC peer mode 1-Gbps (when combined with Cisco IOS software Release 12.2(24)SV or later).

New Features in Functional Image 2.29

No new features are available for functional image 2.29.

New Features in Functional Image 2.27

The following new features are available for functional image 2.27, when combined with Cisco IOS software Release 12.2(18)SV or later:

- Buffer credit functionality for Fibre Channel distance extension
- Autonegotiation for Gigabit Ethernet
- Sysplex ISC compatibility mode

Caveats

This section lists the caveats for the 8-port FC/GE aggregation card functional image.

Use [Table 1](#) to determine the status of a particular caveat and its relevancy to your functional image release. In the table, “C” indicates a fixed caveat, “O” indicates an open caveat, and “NC” indicates the caveat is not applicable to the release.

Table 1 8-port FC/GE Aggregation Card Functional Image Release Caveat Reference

DDTS Number	Release 2.30	Release 2.29	Release 2.27	Release 2.24
CSCed28094	C	O	O	NA
CSCed91636	C	O	O	NA
CSCee22677	C	O	O	O
CSCee52145	C	C	O	O
CSCee93080	C	O	O	NA

Caveat Symptoms and Workarounds

This section describes the open and resolved caveats for this release of the 8-port FC/GE aggregation card functional image.

- [CSCed28094](#)

Symptom: Certain types of link defects such as a broken fiber from the 8-port FC/GE aggregation card to the client device are not propagated to the client at the far end because the autonegotiation feature on the 8-port FC/GE aggregation card is not end-to-end. This may cause upper layer processes that depend on bidirectional defect detection and propagation at the transport level to fail.

Workaround: None.

Resolution: Upgrade the functional image to version 2.30 or later.

- [CSCed91636](#)

Symptom: When an interface on the 8-port FC/GE aggregation card is configured for FC with flow control enabled, and a link event such as a link reset from the FC client causes flow control to go from an active state to a non-active state, data errors may temporarily be transmitted from the 8-port FC/GE aggregation card causing the client FC device to record transmission word errors.

Workaround: None.

Resolution: Upgrade the functional image to version 2.30 or later.

- [CSCee22677](#)

Symptom: If a Cisco ONS 15530 is connected to a Catalyst 4500 Series platform through the gigabitethernet interface of an 8-port FC/GE aggregation card that has FLC enabled and autonegotiation disabled, the link may not come back up after going down.

Workaround: None.

Resolution: Upgrade the functional image to version 2.30 or later.

- [CSCee52145](#)

Symptom: If an 8-port FC/GE aggregation card is cross-connected to a 10-Gbps ITU trunk card or 10-Gbps uplink card, CVRD errors (bit errors) may occur on the portgroup interface of the 8-port FC/GE aggregation card if the portgroup interface is carrying Gigabit Ethernet service for certain payload length, pattern, and rate.

Workaround: None

Resolution: Upgrade the functional image to version 2.29 or later.

- [CSCee93080](#)

Symptom: CRC error frames, dropped frames, out-of-order frames, or duplicated frames may be transmitted by 8-port FC/GE aggregation card ports with flow control configured and active, if the client device connected to the remote port is actually operating in asymmetric credit mode.

Asymmetric credit mode means the client FC device with lower buffer credit capability transmits bursts up to the full size of the peer's credit buffers rather than the lower of the two credit capabilities advertised at FC login. Most client FC devices burst up to the lower value only.

If the peer aggregation card is a 4-port 1-Gbps/2-Gbps FC aggregation card, an EXCESS_FRAME_ALM alarm message may be logged by the remote Cisco ONS 15530 when errors are transmitted from the 8-port FC/GE aggregation card.

This is applicable only if all of the following conditions are true:

- When flow control is disabled, the link runs error free.
- When flow control is enabled, the client device receives errors transmitted from the 8-port FC/GE aggregation card.
- If the peer card is a 4-port 1-Gbps/2-Gbps FC aggregation card, EXCESS_FRAME_ALM alarm is asserted on the peer Cisco ONS 15530.
- The buffer credit size on the client FC devices at both ends are not the same.

Workaround: When feasible, configure equal buffer credit size on the client devices at both ends of the FC/FICON link.

Resolution: Upgrade the functional image to version 2.30 or later, at both ends of the link.

Limitations and Restrictions

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

8-Port FC/GE Aggregation Card

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

The 8-port FC/GE aggregation card with functional release version 2-29 or higher will not inter operate with an 8-port FC/GE aggregation card with an earlier version of the functional image at the peer Cisco ONS 15530 for GE traffic, because of an incompatible data format at both ends.

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 Cleaning Procedures for Fiber Optic Connections](#)
- [Cisco ONS 15530 Optical Transport Turn-Up and Test Guide](#)
- [Cisco ONS 15530 Configuration Guide](#)
- [Cisco ONS 15530 Command Reference](#)
- [Cisco ONS 15530 CLI Commands](#)
- [Cisco ONS 15530 System Alarms and Error Messages](#)
- [Cisco ONS 15530 Troubleshooting Guide](#)
- [Network Management for the Cisco ONS 15530](#)
- [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:
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- 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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