



Release Notes for Cisco ONS 15530 8-Port FC/GE Aggregation Card Functional Image Release 2.27

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Cisco ONS 15530 8-port FC/GE aggregation card (15530-FCGE-8P) functional image release 2.27

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This document describes the features and caveats for the functional image, release 2.27, for the 8-port FC/GE aggregation cards used with the Cisco ONS 15530 DWDM multiservice aggregation platform.

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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 compatibility mode 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 supports FICON traffic at 1 Gbps.



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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 functionality for Fibre Channel and autonegotiation for Gigabit Ethernet.

For GE traffic, the Cisco ONS 15530 monitors CVRD error counts on the 8-port FC/GE aggregation card.

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 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      :3.6
RMA Number            :0x00
RMA Failure Code      :0x00
→ Functional Image Version:2.27
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>.



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 2.27

The following new features are available for functional image 2.27:

- Buffer credit functionality for Fibre Channel distance extension
- Autonegotiation for Gigabit Ethernet
- IBM coupling facility aggregation (Sysplex compatibility mode)

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](#)
- [Optical Transport Turn-Up and Test Guide](#)
- [Cisco ONS 15530 Configuration Guide and Command Reference](#)
- [Cisco ONS 15530 TLI Commands](#)
- [Cisco ONS 15530 System Alarms and Error Messages](#)
- [Cisco ONS 15530 Troubleshooting Guide](#)
- [Network Management for the Cisco ONS 15530](#)
- [Cisco ONS 15530 MIB Quick Reference](#)

Obtaining Documentation

Cisco provides several ways to obtain documentation, 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

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order monthly or quarterly subscriptions through the online Subscription Store:

<http://www.cisco.com/go/subscription>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

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

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

<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, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments 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

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages

- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

To obtain customized information and service, you can self-register on Cisco.com at this URL:

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

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The type of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration. There is little or no impact to your business operations.
- Priority level 3 (P3)—Operational performance of the network is impaired, but most business operations remain functional. You and Cisco are willing to commit resources during normal business hours to restore service to satisfactory levels.
- Priority level 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively impacted by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.
- Priority level 1 (P1)—An existing 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.

Cisco TAC Website

The Cisco TAC website provides online documents and tools to help troubleshoot and resolve technical issues with Cisco products and technologies. To access the Cisco TAC website, go to this URL:

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

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

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

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

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

If you have Internet access, we recommend that you open P3 and P4 cases online so that you can fully describe the situation and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

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

Before calling, please check with your network operations center to determine the Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

Obtaining Additional Publications and Information

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

- 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://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and the *Internetworking Design Guide*. 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/go/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/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

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

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