



## Preface

---

This preface explains the objectives, intended audience, and organization of *Cisco Carrier Routing System 16-Slot Line Card Chassis Installation Guide* and describes the conventions that convey instructions and other information.

This installation guide describes how to install components into and remove them from a line card chassis. This installation guide does not provide background information and basic theory-of-operation for anyone wanting to understand the Cisco Carrier Routing System (CRS).



---

**Note** Throughout the remainder of this installation guide, the Cisco CRS 16-Slot Line Card Chassis is referred to as the LCC.

---

- [Audience, on page i](#)
- [Documentation Conventions, on page i](#)
- [Related Documentation, on page iii](#)
- [Changes to This Document, on page iii](#)
- [Obtaining Documentation and Submitting a Service Request, on page iv](#)

## Audience

This guide is intended for LCC installers and Cisco installation partners who are responsible for installing the LCC components. The chassis installers are expected to have installed networking hardware in the past. No additional knowledge of routing or the Cisco IOS XR software is assumed.

## Documentation Conventions

This document uses the following conventions:

Convention	Description
<b>bold font</b>	Commands and keywords and user-entered text appear in <b>bold font</b> .
<i>Italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .

Convention	Description
[ ]	Elements in square brackets are optional.
{x   y   z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x   y   z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<code>courier font</code>	Terminal sessions and information the system displays appear in <code>courier font</code> .
	Indicates a variable for which you supply values, in context where italics cannot be used.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.



**Note** *Means reader take note.* Notes contain helpful suggestions or references to material not covered in the manual.



**Tip** *Means the following information will help you solve a problem.* The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.



**Caution** *Means reader be careful.* In this situation, you might perform an action that could result in equipment damage or loss of data.



**Warning** IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS

**Warning**

Statements using this symbol are provided for additional information and to comply with regulatory and customer requirements.

## Related Documentation

For complete planning, installation, and configuration information, refer to the following documents:

- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis Unpacking, Moving, and Securing Guide](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis Site Planning Guide](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis System Description](#)
- [Cisco CRS 3-Phase AC Power Distribution Unit Installation Guide](#)
- [Cisco CRS Fiber-Optic Cleaning Kit Quick Start Guide](#)
- [Cisco CRS Carrier Routing System Hardware Documentation Guide](#)
- [Cisco CRS Carrier Routing System 16-Slot Line Card Chassis Hardware Operations and Troubleshooting Guide](#)
- [Cisco CRS Carrier Routing System Regulatory Compliance and Safety Information](#)
- [Cisco CRS Carrier Routing System Ethernet Physical Layer Interface Module Installation Note](#)
- [Cisco CRS Carrier Routing System Packet-over-SONET/SDH Physical Layer Interface Module Installation Note](#)

For a complete listing of software documentation available, refer to *About Cisco IOS XR Software Documentation*, available online at

[http://cisco.com/en/US/products/ps5763/tsd\\_products\\_support\\_series\\_home.html](http://cisco.com/en/US/products/ps5763/tsd_products_support_series_home.html)

## Changes to This Document

The table lists the technical changes made to this document since it was first printed.

**Table 1: Changes to This Document**

Date	Change Summary
March 2015	Added recommendation to use modular power supplies with CRS-X line cards.
December 2014	Added support for the CRS-MSC-X-L and CRS-FP-X-L line cards.
July 2014	Added support for new 2x100GE-FLEX-40 PLIM. Added updates to support the Cisco CRS-X back-to-back and multishelf systems, which include new CRS-16-FC400/M switch fabric card.
January 2014	Added updates to support the Cisco CRS-X, which includes new line cards, switch fabric cards, and PLIMs.
November 2011	Added new procedures for installing and removing modular configuration power module slot covers.
September 2011	Updated product IDs and technical specifications

Date	Change Summary
July 2011	Added new modular configuration AC cord clamps. Added information about new CRS-LSP Label Switch Processor (LSP). Technical updates and minor editorial changes were also made.
April 2011	Added information about new CRS-16-PRP-6G and CRS-16-PRP-12G Performance Route Processor (PRP) cards. Technical updates and minor editorial changes were also made.
December 2010	Updated document with technical corrections and updates to grounding and modular configuration power sections.
October 2010	Added information about the new MSC140 and FP140 line cards; FQ123-140G switch fabric card; 20-port, 14-port, 8-port, and 4-port 10-GE XFP PLIMs; and the 1-port 100-GE CFP PLIM. Minor editorial and technical changes were also made.
September 2010	Added new procedures on installing and removing modular configuration power components.
January 2010	Added new procedures for installing and removing a new trough and cut-out plate.
May 2008	Added new procedures on installing and removing a pillow block.
February 2008	Updated document with technical corrections.
July 2007	Made technical updates to power components chapter.
January 2007	Added a description of the input-power-present LEDs. Added “Installing the Inlet Grille Screen,” “Installing the Exhaust Bag and Removing Exterior Cosmetic Components.”
April 2006	Removed Chapter 2, “Unpacking and Securing the Line Card Chassis”, transferred the information to the <i>Cisco CRS 16-Slot Line Card Chassis Unpacking, Moving, and Securing Guide</i>
December 2005	Updated Chapter 2, “Unpacking and Securing the Line Card Chassis” to include information supporting the new dolly design.
July 2005	<ul style="list-style-type: none"> <li>• Added multishelf information to document.</li> <li>• Updated Chapter 2, “Unpacking and Securing the Line Card Chassis” to include the alternate mounting outrigger kit installation information.</li> <li>• Updated <i>Installing and Removing Exterior Cosmetic Components</i> to include information about the new rear cosmetic kit.</li> </ul>
July 2004	Initial release of the document

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*, at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation as an RSS feed and delivers content directly to your desktop using a reader application. The RSS feeds are a free service, and Cisco currently supports RSS Version 2.0.

