



## **Cisco Nexus 7000 Series Hardware Installation and Reference Guide**

**First Published:** 2022-08-10

**Last Modified:** 2017-05-04

### **Americas Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The following information is for FCC compliance of Class A devices: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

The following information is for FCC compliance of Class B devices: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the equipment causes interference to radio or television reception, which can be determined by turning the equipment off and on, users are encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications to this product not authorized by Cisco could void the FCC approval and negate your authority to operate the product.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

All printed copies and duplicate soft copies of this document are considered uncontrolled. See the current online version for the latest version.

Cisco has more than 200 offices worldwide. Addresses and phone numbers are listed on the Cisco website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on standards documentation, or language that is used by a referenced third-party product.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: <https://www.cisco.com/c/en/us/about/legal/trademarks.html>. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1721R)

© –2017 Cisco Systems, Inc. All rights reserved.



## CONTENTS

---

### PREFACE

<b>Preface</b>	<b>ix</b>
Audience	<b>ix</b>
Document Conventions	<b>ix</b>
Related Documentation	<b>xi</b>
Documentation Feedback	<b>xi</b>
Communications, Services, and Additional Information	<b>xi</b>

---

### CHAPTER 1

<b>Overview</b>	<b>1</b>
Cisco Nexus 7000 Series	<b>1</b>
Cisco Nexus 7004 Switch	<b>1</b>
Cisco Nexus 7009 Switch	<b>4</b>
Cisco Nexus 7010 System	<b>8</b>
Cisco Nexus 7018 System	<b>15</b>
Preparing the Site	<b>23</b>
Safety Guidelines	<b>23</b>
Installation and Connection Guidelines	<b>23</b>
Managing the System Hardware	<b>24</b>
Replacing Components	<b>24</b>

---

### CHAPTER 2

<b>Installing a Cisco Nexus 7004 Chassis</b>	<b>25</b>
Preparing to Install the Switch	<b>25</b>
Required Tools	<b>25</b>
Installing a Rack or Cabinet	<b>26</b>
Unpacking and Inspecting a New Switch	<b>26</b>
Installing the Chassis	<b>28</b>
Prerequisites for Installing the Chassis	<b>28</b>

Installing the Center-Mount Brackets	29
Installing the Chassis in a Rack	29
Grounding the Cisco Nexus 7004 Chassis	32
Prerequisites for Grounding the Chassis	32
Connecting the System Ground	33
Connecting Your ESD Wrist Strap to the Chassis	34
Installing the Cable Management Frames	34
Installing USB Storage Media in a Supervisor 2 or 2E Module	36
Installing the Air Filter	36

**CHAPTER 3****Installing a Cisco Nexus 7009 Chassis 37**

Preparing to Install the Switch	37
Required Tools	37
Installing a Rack or Cabinet	38
Unpacking and Inspecting a New Switch	39
Installing the Bottom-Support Rails on the Rack	40
Prerequisites for Attaching the Bottom-Support Rails	41
Required Tools and Equipment	41
Attaching the Front-Mount Bottom-Support Rails	42
Attaching the Center-Mount Bottom-Support Rails	45
Installing the Chassis	47
Prerequisites for Installing the Chassis	47
Required Tools and Equipment	48
Mounting the Chassis by its Front Brackets	49
Mounting the Chassis by its Center Brackets	51
Grounding the Cisco Nexus 7009 Chassis	54
Prerequisites for Grounding the Chassis	54
Required Tools and Equipment	54
Connecting the System Ground	55
Connecting Your ESD Wrist Strap to the Chassis	57
Installing the Cable Management Frames	58
Installing the Front Door and Air Intake Frame	59
Installing Storage Media in a Supervisor Module	66

---

<b>CHAPTER 4</b>	<b>Installing a Cisco Nexus 7010 Chassis</b>	<b>69</b>
	Preparing to Install the Switch	69
	Required Tools	69
	Installing a Four-Post Rack or Cabinet	70
	Unpacking and Inspecting a New Switch	71
	Installing the Bottom-Support Rails on the Rack	72
	Prerequisites for Attaching the Bottom-Support Rails	72
	Required Tools and Equipment	72
	Attaching the Bottom-Support Rails	73
	Installing the Chassis	75
	Prerequisites for Installing the Chassis	75
	Required Tools and Equipment	76
	Installing the Chassis	77
	Grounding the Cisco Nexus 7010 Chassis	79
	Prerequisites for Grounding the Chassis	79
	Required Tools and Equipment	80
	Connecting the System Ground	80
	Connecting Your ESD Wrist Strap to the Chassis	82
	Installing Storage Media in a Supervisor Module	84
	Installing the Front Doors and Frame Assembly	85
	Installing the Air Filter	92

---

<b>CHAPTER 5</b>	<b>Installing a Cisco Nexus 7018 Chassis</b>	<b>93</b>
	Preparing to Install the Switch	93
	Required Tools	93
	Installing a Four-Post Rack or Cabinet	94
	Unpacking and Inspecting a New Chassis	95
	Installing the Bottom-Support Rails on the Rack	96
	Prerequisites for Attaching the Bottom-Support Rails	96
	Required Tools and Equipment	96
	Attaching the Bottom-Support Rails	97
	Installing the Chassis	99
	Prerequisites for Installing the Chassis	99

- Required Tools and Equipment 100
- Installing the Chassis 101
- Grounding the Cisco Nexus 7018 Chassis 104
  - Prerequisites for Grounding the Chassis 105
  - Required Tools and Equipment 105
  - Connecting the System Ground 105
  - Connecting Your ESD Wrist Strap to the Chassis 107
- Installing the Cable Management Frame 108
- Installing the Front Door and Air Intake Frame 114
- Installing Storage Media in a Supervisor Module 125

---

**CHAPTER 6**

**Troubleshooting 127**

- Getting Started 127
- Troubleshooting the Fan Trays 128
- Troubleshooting an AC Power Supply Unit 128
- Troubleshooting a DC Power Supply Unit 130
- Troubleshooting an HVAC/HVDC Power Supply Unit 132
- Troubleshooting the Supervisor Modules 133
- Troubleshooting the Fabric Modules 134
- Troubleshooting the I/O Modules 135
- Contacting Customer Service 136

---

**CHAPTER 7**

**Technical Specifications 137**

- Environmental Specifications for the Cisco Nexus 7000 Series Systems 137
- Physical Specifications for the Cisco Nexus 7000 Series Chassis 138
- Power Specifications for the Cisco Nexus 7000 Series Switches 147
  - Power Requirements for Switch Components 148
  - Power Supply Configuration Modes 156
- Power Supply Cable Specifications 162
- Chassis Clearances 186
  - Cisco Nexus 7004 Chassis Clearances 187
  - Cisco Nexus 7009 Chassis Clearances 191
  - Cisco Nexus 7010 Chassis Clearances 197
  - Cisco Nexus 7018 Chassis Clearances 199

Facility Cooling Requirements 201

Chassis Airflow 201

---

**CHAPTER 8**

**Transceivers and Module Connectors 205**

100-Gigabit CFP Transceivers 205

100-Gigabit CPAK Transceivers 207

40-Gigabit CFP Transceivers 208

40-Gigabit QSFP+ Transceivers 209

10-Gigabit SFP+ Transceivers and Fabric Extender Transceivers 213

10BASE-X SFP+ Transceivers 214

10BASE-DWDM SFP+ Transceivers 218

10-Gigabit X2 Transceivers 218

10GBASE-X X2 Transceivers 220

10GBASE-DWDM X2 Transceivers 222

1-Gigabit SFP Transceivers 223

1000BASE-CWDM SFP Transceiver Cables 224

1000BASE-DWDM SFP Transceivers 225

1000BASE-T and 1000BASE-X SFP Transceivers 226

RJ-45 Module Connectors 228

---

**CHAPTER 9**

**Accessory Kits Contents 231**

Cisco Nexus 7004 Switch Accessory Kit 231

Cisco Nexus 7009 Switch Accessory and Optional Kits 234

Cisco Nexus 7009 Accessory Kit 234

Cisco Nexus 7009 Center-Mount Kit 237

Cisco Nexus 7009 Bottom Support Kit 237

Cisco Nexus 7009 Rack-Mount Kit 238

Cisco Nexus 7010 Switch Accessory Kits 238

Cisco Nexus 7018 Switch Accessory Kits 240

---

**CHAPTER 10**

**Chassis and Module LEDs 243**

Switch LEDs 243

Supervisor Module LEDs 244

I/O Module LEDs 246

NAM-NX1 Module LEDs 247

Fabric Module LEDs 248

Power Supply LEDs 249

Fan Tray LEDs 250

---

**CHAPTER 11**

**Site Preparation and Maintenance Records 251**

Site Preparation Checklist 251

Contact and Site Information 252

Chassis and Module Information 253





## Preface

---

This preface describes the audience, organization, and conventions of the Book Title. It also provides information on how to obtain related documentation.

This chapter includes the following topics:

- [Audience, on page ix](#)
- [Document Conventions, on page ix](#)
- [Related Documentation, on page xi](#)
- [Documentation Feedback, on page xi](#)
- [Communications, Services, and Additional Information, on page xi](#)

## Audience

This publication is for experienced network administrators who configure and maintain Cisco NX-OS on Cisco Nexus 7000 Series Platform switches.

## Document Conventions



---

### Note

- As part of our constant endeavor to remodel our documents to meet our customers' requirements, we have modified the manner in which we document configuration tasks. As a result of this, you may find a deviation in the style used to describe these tasks, with the newly included sections of the document following the new format.
- The Guidelines and Limitations section contains general guidelines and limitations that are applicable to all the features, and the feature-specific guidelines and limitations that are applicable only to the corresponding feature.

---

Command descriptions use the following conventions:

Convention	Description
<b>bold</b>	Bold text indicates the commands and keywords that you enter literally as shown.

Convention	Description
<i>Italic</i>	Italic text indicates arguments for which the user supplies the values.
[x]	Square brackets enclose an optional element (keyword or argument).
[x   y]	Square brackets enclosing keywords or arguments separated by a vertical bar indicate an optional choice.
{x   y}	Braces enclosing keywords or arguments separated by a vertical bar indicate a required choice.
[x {y   z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
<i>variable</i>	Indicates a variable for which you supply values, in context where italics cannot be used.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Examples use the following conventions:

Convention	Description
<code>screen font</code>	Terminal sessions and information the switch displays are in screen font.
<b>boldface screen font</b>	Information you must enter is in boldface screen font.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
<>	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.

This document uses the following conventions:



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



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

## Related Documentation

Documentation for Cisco Nexus 7000 Series Switches is available at:

- Configuration Guides

<http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-installation-and-configuration-guides-list.html>

- Command Reference Guides

<http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-command-reference-list.html>

- Release Notes

<http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-release-notes-list.html>

- Install and Upgrade Guides

<http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-installation-guides-list.html>

- Licensing Guide

<http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-licensing-information-listing.html>

Documentation for Cisco Nexus 7000 Series Switches and Cisco Nexus 2000 Series Fabric Extenders is available at the following URL:

<http://www.cisco.com/c/en/us/support/switches/nexus-2000-series-fabric-extenders/products-installation-and-configuration-guides-list.html>

## Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to [nexus7k-docfeedback@cisco.com](mailto:nexus7k-docfeedback@cisco.com). We appreciate your feedback.

## Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#).
- To get the business impact you're looking for with the technologies that matter, visit [Cisco Services](#).
- To submit a service request, visit [Cisco Support](#).
- To discover and browse secure, validated enterprise-class apps, products, solutions and services, visit [Cisco Marketplace](#).
- To obtain general networking, training, and certification titles, visit [Cisco Press](#).
- To find warranty information for a specific product or product family, access [Cisco Warranty Finder](#).

### **Cisco Bug Search Tool**

[Cisco Bug Search Tool](#) (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.



# CHAPTER 1

## Overview

---

This chapter provides an overview of the Cisco Nexus 7000 Series switch and includes the following sections:

- [Cisco Nexus 7000 Series, on page 1](#)
- [Preparing the Site, on page 23](#)
- [Safety Guidelines, on page 23](#)
- [Installation and Connection Guidelines, on page 23](#)
- [Managing the System Hardware, on page 24](#)
- [Replacing Components, on page 24](#)

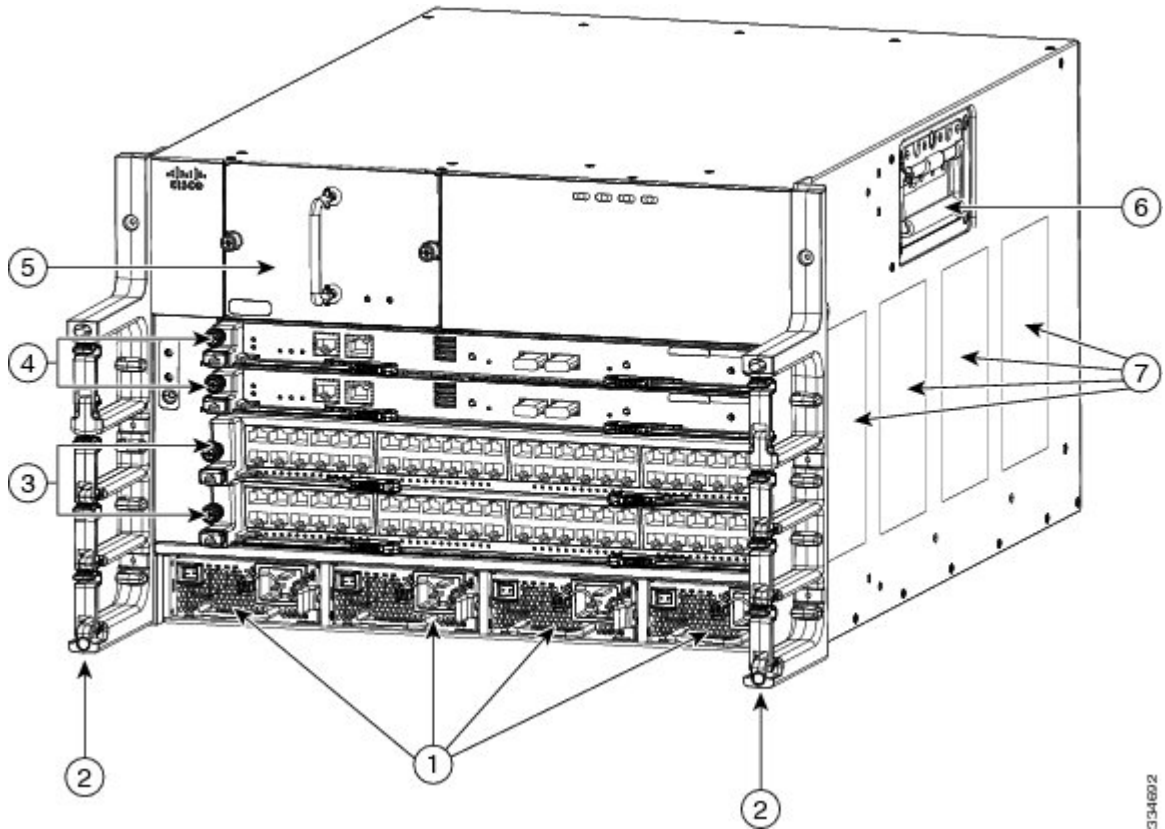
## Cisco Nexus 7000 Series

The Cisco Nexus 7000 Series switches are multiprotocol-capable, high-density, and high-performance switches that incorporate Ethernet/IP, virtualization, Layer 4 to Layer 7 services, and low-latency interconnect (LLI) technologies. The Cisco Nexus 7000 Series models are described in the following topics:

## Cisco Nexus 7004 Switch

The Cisco Nexus 7004 chassis has four slots that allow for one or two supervisor modules and up to two I/O modules. Additionally, the chassis holds a fan tray, up to four power supplies, and cable management frames. Optionally, you can include a door and air filter. [Figure 1: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7004 Chassis, on page 2](#) identifies these features as seen from the front of the chassis.

Figure 1: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7004 Chassis



1	Air intake areas for up to four AC or DC power supplies (N7K-AC-3KW/N7K-DC-3KW/N7K-HV-3.5KW) or blank filler plates in place of missing power supplies to maintain the designed airflow.	5	Fan tray
2	Cable management side frames	6	Handles used for moving the chassis (reduce the chassis weight to less than 120 lbs (54.4 kg) in order to use these handles to lift the chassis)
3	I/O or NAM modules (1 to 2 modules in slots 3 to 4).	7	Air intake areas for supervisor and I/O modules
4	Supervisor modules (1 or 2 modules in slots 1 and 2). These modules are of only one of the following types (if installing two supervisor modules, both modules must be the same type with the same amount of memory): <ul style="list-style-type: none"> <li>• Supervisor 2 (N7K-SUP2)</li> <li>• Supervisor 2 Enhanced (N7K-SUP2E)</li> </ul>		



**Note** Figure 1: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7004 Chassis, on page 2 shows the Cisco Nexus 7004 chassis as it appears when it is fully configured before including cables for management and network connections. The systems that are not fully configured with the maximum number of supervisor modules, I/O modules, or power supply units have blank panels installed in place of the missing components to maintain the designed airflow for system cooling.

The I/O module slots hold one or two of the following types of modules:

- F2 Series I/O modules
  - 48-port 1-/10-Gigabit SFP+ with XL option and FEX support (N7K-F248XP-25 and N7K-F248XP-25E<sup>1</sup>)
  - 48-port 1-/10-GBASE-T with XL option (N7K-F248XT-25E)
- F3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP/SFP+ (N7K-F348XP-25)
  - 12-port 40-Gigabit Ethernet QSFP+ (N7K-F312FQ-25)
  - 6-port 100-Gigabit Ethernet CPAK (N7K-F306CK-25)
- M1 Series I/O modules
  - 48-port 10/100/1000 with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet with XL option (N7K-M108X2-12L)
- M2 Series I/O modules
  - 24-port 10-Gigabit Ethernet with XL option and FEX support (N7K-M224XP-23L)
  - 6-port 40-Gigabit Ethernet with XL option (N7K-M206XP-23L)
  - 2-port 100-Gigabit Ethernet with XL option (N7K-M202XP-23L)
- M3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP+ (N7K-M348XP-25L)
  - 24-port 40-Gigabit Ethernet QSFP+ (N7K-M324FQ-25L)
- Network Analysis modules (N7K-SM-NAM-K9)



**Note** Starting with Cisco NX-OS Release 8.0(1), the following I/O modules are not supported:

- 48-port 1-/10-Gigabit SFP+ (N7K-F248XP-25)
- 48-port 10/100/1000 with XL option (N7K-M148GT-11L)
- 48-port 1-Gigabit Ethernet with XL option (N7K-M148GS-11L)
- 32-port 10-Gigabit Ethernet with XL option and FEX support (N7K-M132XP-12L)
- 8-port 10-Gigabit Ethernet with XL option (N7K-M108X2-12L)

<sup>1</sup> The Cisco Nexus F2-Series 48-port 1/10-Gigabit SFP+ module supports all of the standard features of F2 modules and it functions like an F2-series module with Layer 2 and Layer 3 enabled. These modules also support IPv6 DSCP-to-Queue mapping.

You must install the Cisco Nexus 7004 chassis in a two- or four-post 19-inch EIA rack that meets the following specifications:

- Mounting rails that conform to the English universal hole spacing as specified in ANSI/EIA-310-D-1992.
- The minimum vertical rack space is 12.25 inches (31.1 cm) or 7 rack units (RU) for a single chassis installation.

Install the Cisco Nexus 7004 chassis at the lowest possible RU on the rack for stability. If there are other devices in the rack, install the heavier chassis below the lighter chassis.



---

**Danger** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

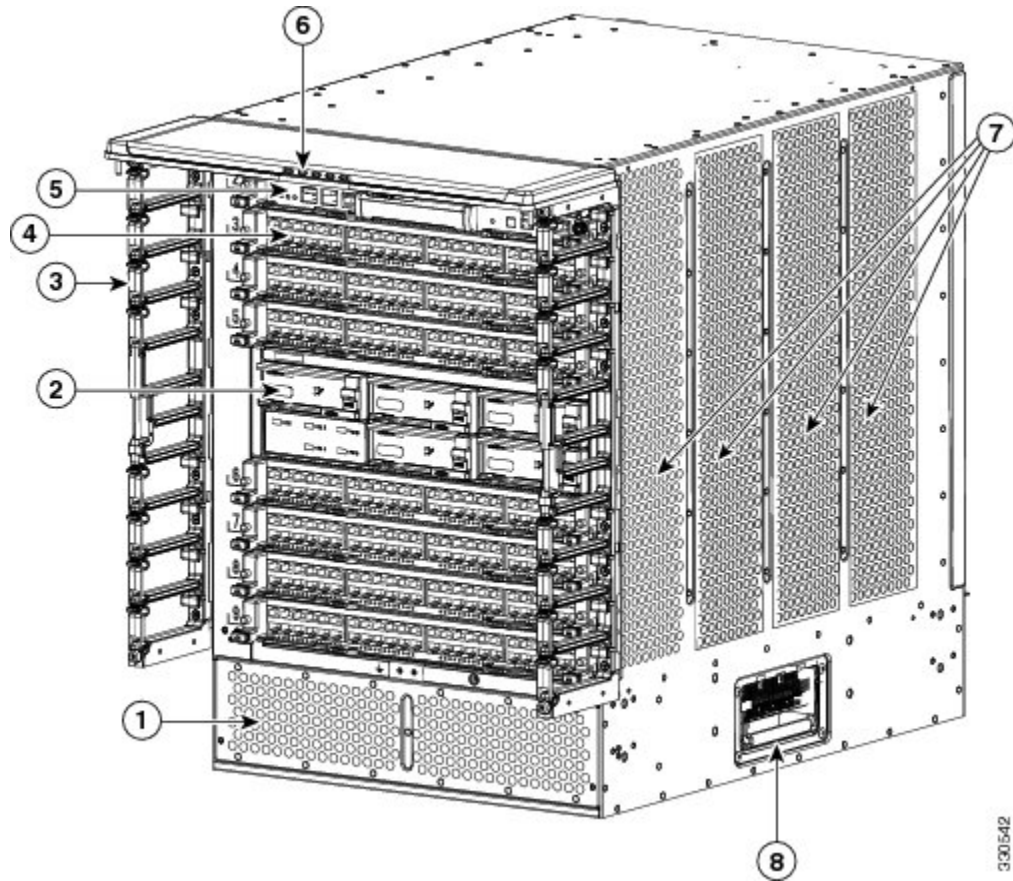
## Cisco Nexus 7009 Switch

The Cisco Nexus 7009 chassis has 9 slots that allow for one or two supervisor modules and up to seven I/O modules. Additionally, the chassis also holds up to five fabric modules, one fan tray, up to two power supplies, and cable management frames. The chassis also has a front-mount bracket (an alternative center-mount bracket can be ordered) and four positioning handles (two on each side) that you use to position the chassis after you place it on a mechanical lift or bottom-support brackets. Optionally, you can include a door and air intake frame.

[Figure 2: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7009 Chassis, on page 5](#) identifies the standard features on the front and sides of the Cisco Nexus 7009 chassis, and [Figure 3: Standard Hardware Features on the Rear of a Cisco Nexus 7009 Chassis, on page 6](#) identifies the standard features on the rear of the chassis.

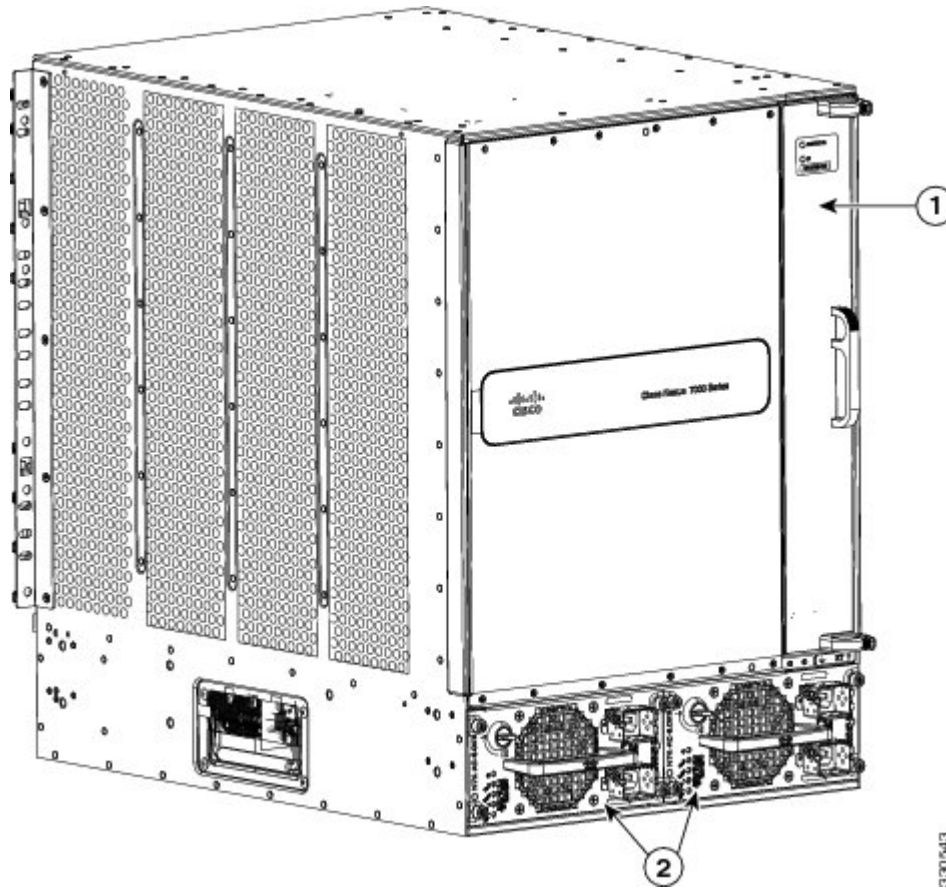


Figure 2: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7009 Chassis



1	Air intake area for power supply units	5	Supervisor modules (1 or 2 modules in slots 1 and 2). These modules are of only one of the following types (if installing two supervisor modules, both modules must be the same type with the same amount of memory): <ul style="list-style-type: none"> <li>• Supervisor 1 (N7K-SUP1)</li> <li>• Supervisor 2 (N7K-SUP2)</li> <li>• Supervisor 2 Enhanced (N7K-SUP2E)</li> </ul>
2	Fabric modules (up to 5) (N7K-C7009-FAB-2)	6	Cable management top hood with LEDs
3	Cable management side frame	7	Air intake areas for supervisor, I/O, and fabric modules
4	I/O or NAM modules (1 to 7 modules in slots 3 to 9).	8	Handles used for adjusting placement of chassis on mechanical lift

Figure 3: Standard Hardware Features on the Rear of a Cisco Nexus 7009 Chassis



1	Fan tray (1)	2 Power supplies (1 or 2)—these modules are a combination of the following: <ul style="list-style-type: none"> <li>• 6 kW AC power supply (N7K-AC-6.0KW)</li> <li>• 7.5 kW AC power supply (N7K-AC-7.5KW-INT [international plugs])(N7K-AC-7.5KW-US [US plugs])</li> <li>• 6 kW DC power supply (N7K-DC-6.0KW)</li> <li>• Blank filler plate (installed in place of a missing power supply to maintain the designed airflow)</li> </ul>
---	--------------	---



**Note** Figure 2: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7009 Chassis, on page 5 and Figure 3: Standard Hardware Features on the Rear of a Cisco Nexus 7009 Chassis, on page 6 show the Cisco Nexus 7009 chassis as it appears when it is fully configured before including cables for management and network connections. The systems that are not fully configured with the maximum number of supervisor modules, I/O modules, fabric modules, or power supplies have blank panels installed in place of the missing components to maintain the designed airflow for system cooling.

The I/O module slots hold one or two of the following types of modules:

- F1 Series I/O modules
  - 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
  - 48-port 1-/10-GBASE-T with XL option (N7K-F248XT-25E)
- F2 Series I/O modules
  - 48-port 1-/10-Gigabit SFP+ with XL option and FEX support (N7K-F248XP-25 and N7K-F248XP-25E<sup>2</sup>)
- F3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP/SFP+ (N7K-F348XP-25)
  - 12-port 40-Gigabit Ethernet QSFP+ (N7K-F312FQ-25)
  - 6-port 100-Gigabit Ethernet CPAK (N7K-F306CK-25)
- M1 Series I/O modules
  - 48-port 10/100/1000 I/O modules (N7K-M148GT-11)
  - 48-port 10/100/1000 I/O modules with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)
  - 48-port 1-Gigabit Ethernet I/O modules with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet I/O modules with FEX support (N7K-M132XP-12)
  - 32-port 10-Gigabit Ethernet I/O modules with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet I/O modules with XL option (N7K-M108X2-12L)
- M2 Series I/O modules
  - 24-port 10-Gigabit Ethernet I/O modules with XL option and FEX support (N7K-M224XP-23L)
  - 6-port 40-Gigabit Ethernet I/O modules with XL option (N7K-M206XP-23L)
  - 2-port 100-Gigabit Ethernet I/O modules with XL option (N7K-M202XP-23L)
- M3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP+ (N7K-M348XP-25L)
  - 24-port 40-Gigabit Ethernet QSFP+ (N7K-M324FQ-25L)
- Network Analysis Modules (NAMs) (N7K-SM-NAM-K9)




---

**Note** M3-Series I/O modules are not compatible with Sup-1 and Fab-1 modules. M3-Series I/O modules cannot be combined with M1-, F1- or F2-Series I/O modules in the same Cisco Nexus 7009 switch.

---




---

**Note** Starting with Cisco NX-OS Release 7.3(0)D1(1), the following I/O modules are not supported:

---

- 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
- 48-port 10/100/1000 I/O modules (N7K-M148GT-11)

<sup>2</sup> The Cisco Nexus F2-Series 48-port 1/10-Gigabit SFP+ module supports all of the standard features of F2 modules and it functions like an F2-series module with Layer 2 and Layer 3 enabled. These modules also support IPv6 DSCP-to-Queue mapping.

- 32-port 10-Gigabit Ethernet I/O modules with FEX support (N7K-M132XP-12)
- 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)
- Starting with Cisco NX-OS Release 8.0(1), the following I/O modules are not supported:
  - 48-port 1-/10-Gigabit SFP+ (N7K-F248XP-25)
  - 48-port 10/100/1000 with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet with XL option (N7K-M108X2-12L)

You must install the Cisco Nexus 7009 chassis in a two- or four-post 19-inch EIA rack that meets the following specifications:

- Mounting rails that conform to the English universal hole spacing as specified in ANSI/EIA-310-D-1992.
- The minimum vertical rack space is 24.5 inches (62.2 cm) or 14 rack units (RU) for a single chassis installation (15 RU if you use the bottom support rails, which are required for center-mount installations and optional for front-mount installations).

Install the Cisco Nexus 7009 chassis at the lowest possible RU on the rack for stability. If there are other devices in the rack, install the heaviest chassis below the lighter chassis.




---

**Danger**

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

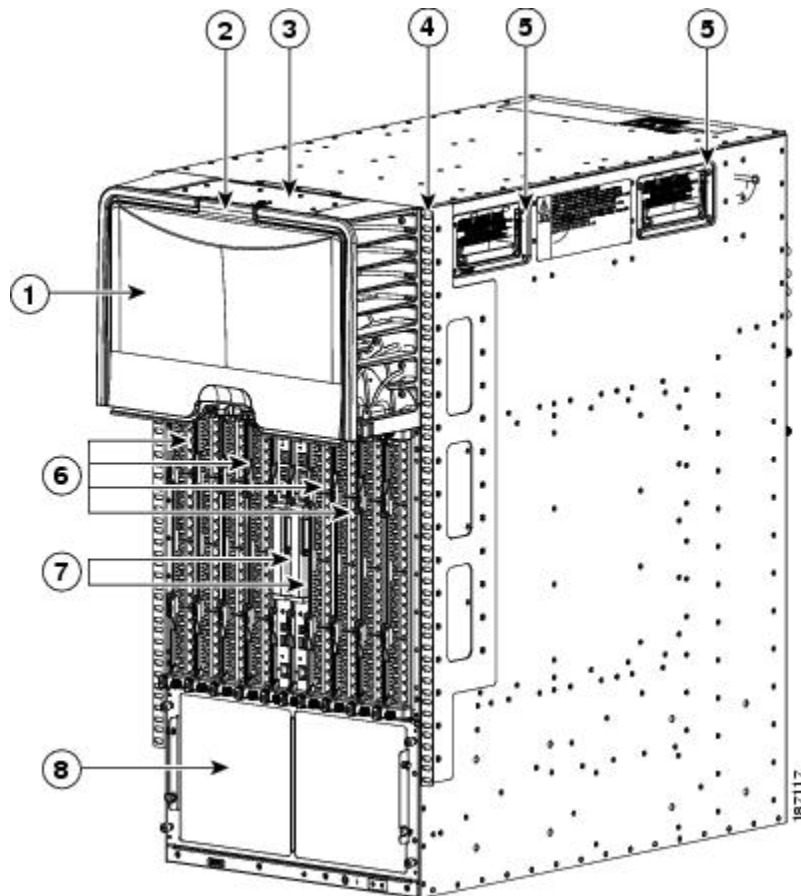
---

## Cisco Nexus 7010 System

The Cisco Nexus 7010 chassis has 10 slots that allow for two supervisor modules and up to eight I/O modules. Additionally, the chassis holds up to five fabric modules, two system fan trays, two fabric fan trays, up to three power supplies, and cable management frames. The chassis also has mounting brackets and four positioning handles (two on each side) that you use to install the chassis after you position it on a rack. Optionally, you can include an air filter and mid-frame doors.

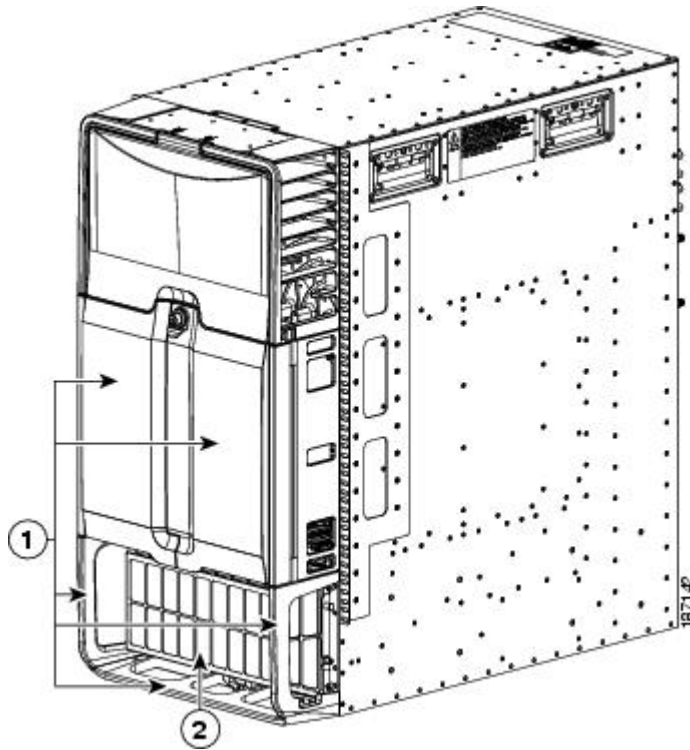
[Figure 4: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7010 Chassis, on page 9](#) identifies the standard features on the front and sides of the Cisco Nexus 7010 chassis, [Figure 5: Optional Hardware Features on the Front Side of the Cisco Nexus 7010 Chassis, on page 10](#) identifies the optional features on the front side of the chassis, and [Cisco Nexus 7010 System](#) identifies the standard features on the rear of the chassis.

Figure 4: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7010 Chassis

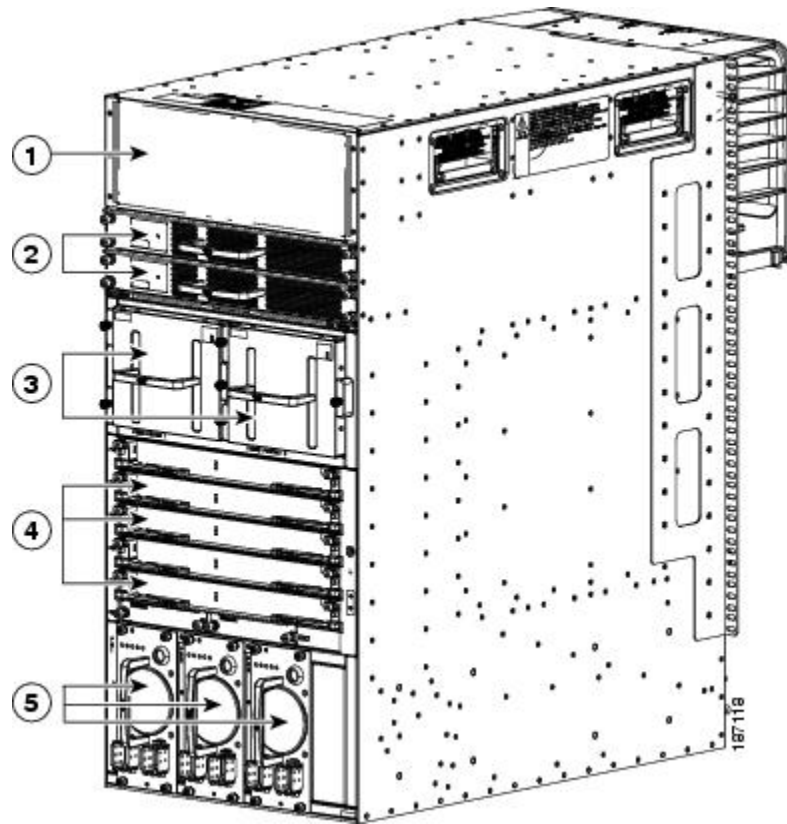


1	Door for the cable management area	5	Handles used to reposition the chassis (do not lift the chassis with these handles—use a mechanical lift)
2	System status LEDs	6	I/O or NAM modules (1 to 8 modules in slots 1 to 4 and 7 to 10).
3	Cable management area (upper routing portion can be removed if necessary)	7	Supervisor modules (1 or 2 modules in slots 5 and 6). These modules are of only one of the following types (if installing two supervisor modules, both modules must be the same type with the same amount of memory): <ul style="list-style-type: none"> <li>• Supervisor 1 (N7K-SUP1)</li> <li>• Supervisor 2 (N7K-SUP2)</li> <li>• Supervisor 2 Enhanced (N7K-SUP2E)</li> </ul>
4	Rack-mount bracket (2) (one on each side)	8	Air intake (shown without the optional air filter)

Figure 5: Optional Hardware Features on the Front Side of the Cisco Nexus 7010 Chassis



1	Mid-frame door assembly	2	Air filter
---	-------------------------	---	------------



1	Fan exhaust for the supervisor and I/O modules	4	Fabric modules (up to 5) [N7K-C7010-FAB-1 or N7K-C7010-FAB-2])
2	System fan trays (2) (N7K-C7010-FAN-S) and exhaust for the supervisor and I/O modules	5	Power supply units (up to 3) and exhaust for the power supply units—these modules are a combination of the following: <ul style="list-style-type: none"> <li>• 6 kW AC power supply (N7K-AC-6.0KW)</li> <li>• 7.5 kW AC power supply (N7K-AC-7.5KW-INT [international plugs] and N7K-AC-7.5KW-US [US plugs])</li> <li>• 6 kW DC power supply (N7K-DC-6.0KW)</li> <li>• Blank filler plate (replaces a missing power supply to maintain the designed airflow)</li> </ul>
3	Fabric fan trays (2) (N7K-C7010-FAN-F) and exhaust for the fabric modules		



**Note** [Figure 4: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7010 Chassis, on page 9](#) and [Figure 1-6](#) show the Cisco Nexus 7000 Series chassis as it appears when it is fully configured before including cables for connections to the Internet and the console. The systems that are not fully configured with the maximum number of supervisor modules, I/O modules, fabric modules, or power supplies have blank filler panels installed in place of the missing components to maintain the designed airflow for system cooling.

The I/O module slots hold one or two of the following types of modules:

- F1 Series I/O modules
  - 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
  - 48-port 1-/10-GBASE-T with XL option (N7K-F248XT-25E)
- F2 Series I/O modules
  - 48-port 1-/10-Gigabit SFP+ with XL option and FEX support (N7K-F248XP-25 and N7K-F248XP-25E<sup>3</sup>)
- F3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP/SFP+ (N7K-F348XP-25)
  - 12-port 40-Gigabit Ethernet QSFP+ (N7K-F312FQ-25)
  - 6-port 100-Gigabit Ethernet CPAK (N7K-F306CK-25)
- M1 Series I/O modules
  - 48-port 10/100/1000 I/O modules (N7K-M148GT-11)
  - 48-port 10/100/1000 I/O modules with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)
  - 48-port 1-Gigabit Ethernet I/O modules with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet I/O modules with FEX support (N7K-M132XP-12)
  - 32-port 10-Gigabit Ethernet I/O modules with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet I/O modules with XL option (N7K-M108X2-12L)
- M2 Series I/O modules
  - 24-port 10-Gigabit Ethernet I/O modules with XL option and FEX support (N7K-M224XP-23L)
  - 6-port 40-Gigabit Ethernet I/O modules with XL option (N7K-M206XP-23L)
  - 2-port 100-Gigabit Ethernet I/O modules with XL option (N7K-M202XP-23L)
- M3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP+ (N7K-M348XP-25L)
  - 24-port 40-Gigabit Ethernet QSFP+ (N7K-M324FQ-25L)
- Network Analysis Modules (NAMs) (N7K-SM-NAM-K9)




---

**Note** M3-Series I/O modules are not compatible with Sup-1 and Fab-1 modules. M3-Series I/O modules cannot be combined with M1-,F1- or F2-Series I/O modules in the same Cisco Nexus 7010 switch.

---




---

**Note** Starting with Cisco NX-OS Release 7.3(0)D1(1), the following I/O modules are not supported:

---

- 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
- 48-port 10/100/1000 I/O modules (N7K-M148GT-11)

<sup>3</sup> The Cisco Nexus F2-Series 48-port 1/10-Gigabit SFP+ module supports all of the standard features of F2 modules and it functions like an F2-series module with Layer 2 and Layer 3 enabled. These modules also support IPv6 DSCP-to-Queue mapping.



- 32-port 10-Gigabit Ethernet I/O modules with FEX support (N7K-M132XP-12)
- 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)
- Starting with Cisco NX-OS Release 8.0(1), the following I/O modules are not supported:
  - 48-port 1-/10-Gigabit SFP+ (N7K-F248XP-25)
  - 48-port 10/100/1000 with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet with XL option (N7K-M108X2-12L)

You must install the Cisco Nexus 7010 system chassis in a four-post 19-inch EIA rack that meets the following specifications:

- Mounting rails that conform to the English universal hole spacing as specified in ANSI/EIA-310-D-1992.
- The minimum vertical rack space is 36.75 inches (93.3 cm) or 21 rack units (RU) for a single chassis installation and 73.5 inches (186.6 cm) or 42 rack units for a dual-chassis installation. We recommend that you use a 45 RU rack for a dual-chassis installation.

If you install one chassis, install it at the lowest possible RU on the rack for stability, as shown in [Figure 6: One Cisco Nexus 7010 Chassis Installed in a Four-Post Rack, on page 14](#). If you install two chassis in the same rack, install the bottom chassis first and then install the other chassis on top as shown in [Figure 7: Two Cisco Nexus 7010 Chassis Installed in a Four-Post Rack, on page 15](#).



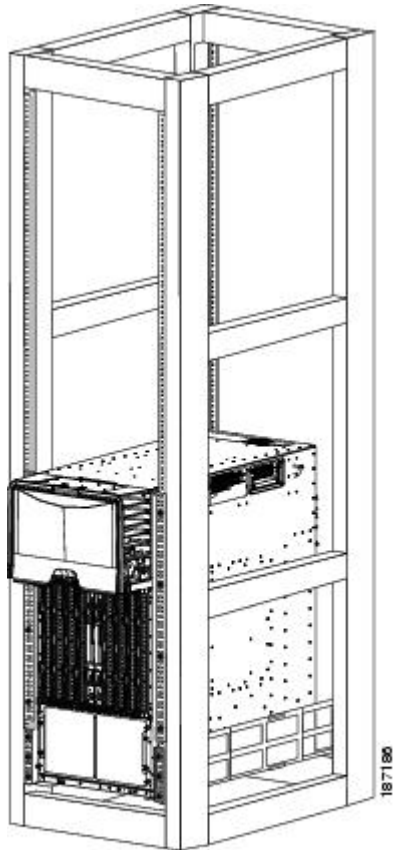
---

**Danger**

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

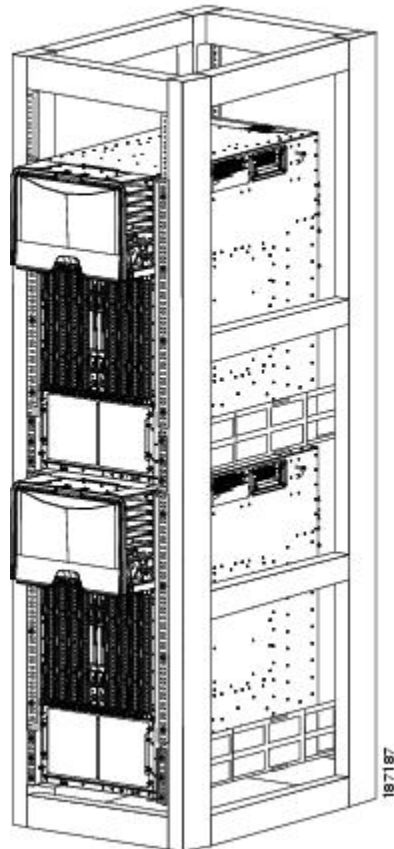
*Figure 6: One Cisco Nexus 7010 Chassis Installed in a Four-Post Rack*



Install the first chassis at the bottom of the rack for maximum stability.

**Figure 7: Two Cisco Nexus 7010 Chassis Installed in a Four-Post Rack**

Install a second chassis immediately above the first installed chassis.

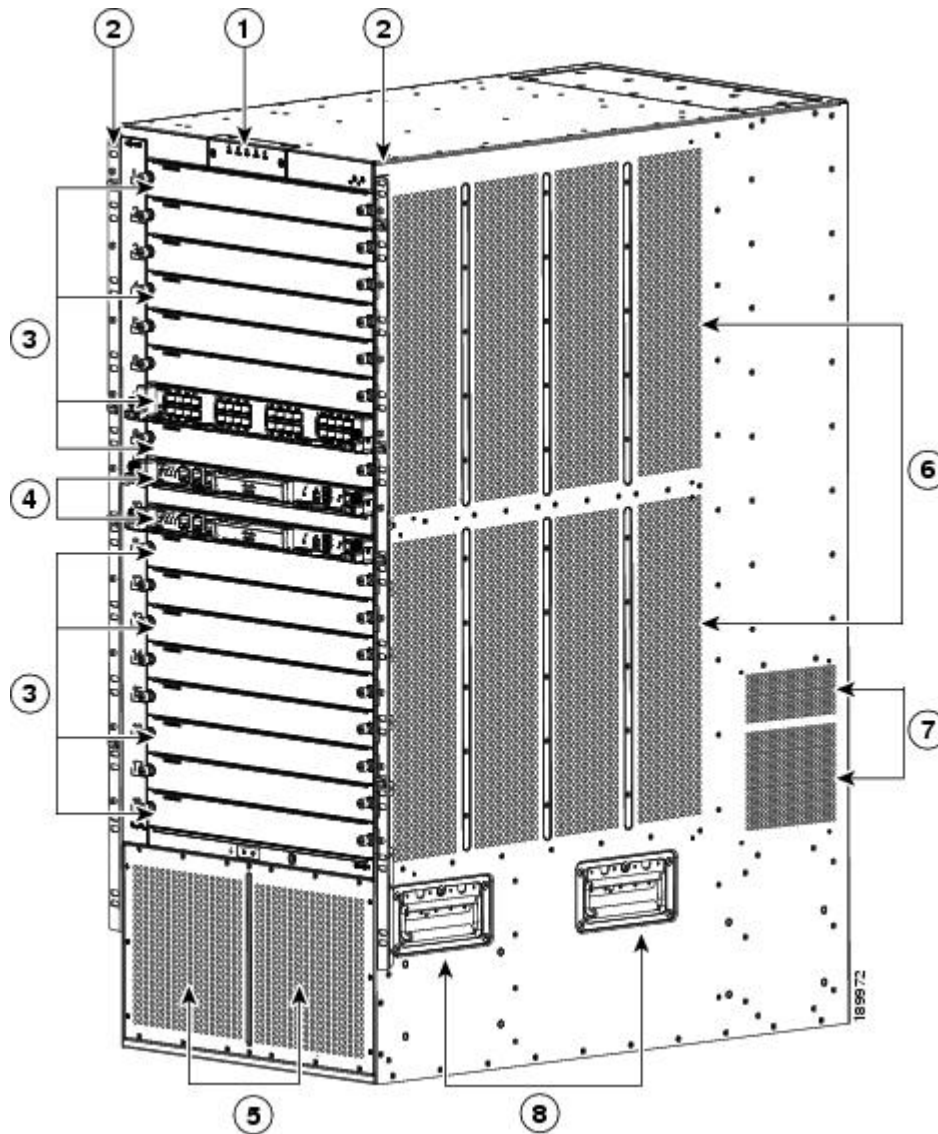


## Cisco Nexus 7018 System

The Cisco Nexus 7018 chassis has 18 slots that allow for two supervisor modules and up to 16 I/O modules. The chassis also holds up to five fabric modules, two fan trays, up to four power supplies, and a cable management system. The chassis also has a mounting bracket and four positioning handles (two on each side) that you use to install the chassis after you position it on a rack. Optionally, you can include a front door to protect the I/O cable connections.

[Figure 8: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7018 Chassis, on page 16](#) identifies the standard features on the front and sides of the Cisco Nexus 7018 chassis, [Figure 9: Cable Management System for the Cisco Nexus 7018 Chassis, on page 17](#) identifies the components of the cable management system, [Figure 10: Optional Front Door for the Cisco Nexus 7018 Chassis, on page 18](#) identifies the optional feature on the front side of the chassis, and [Figure 1-12](#) identifies the standard features on the rear of the chassis.

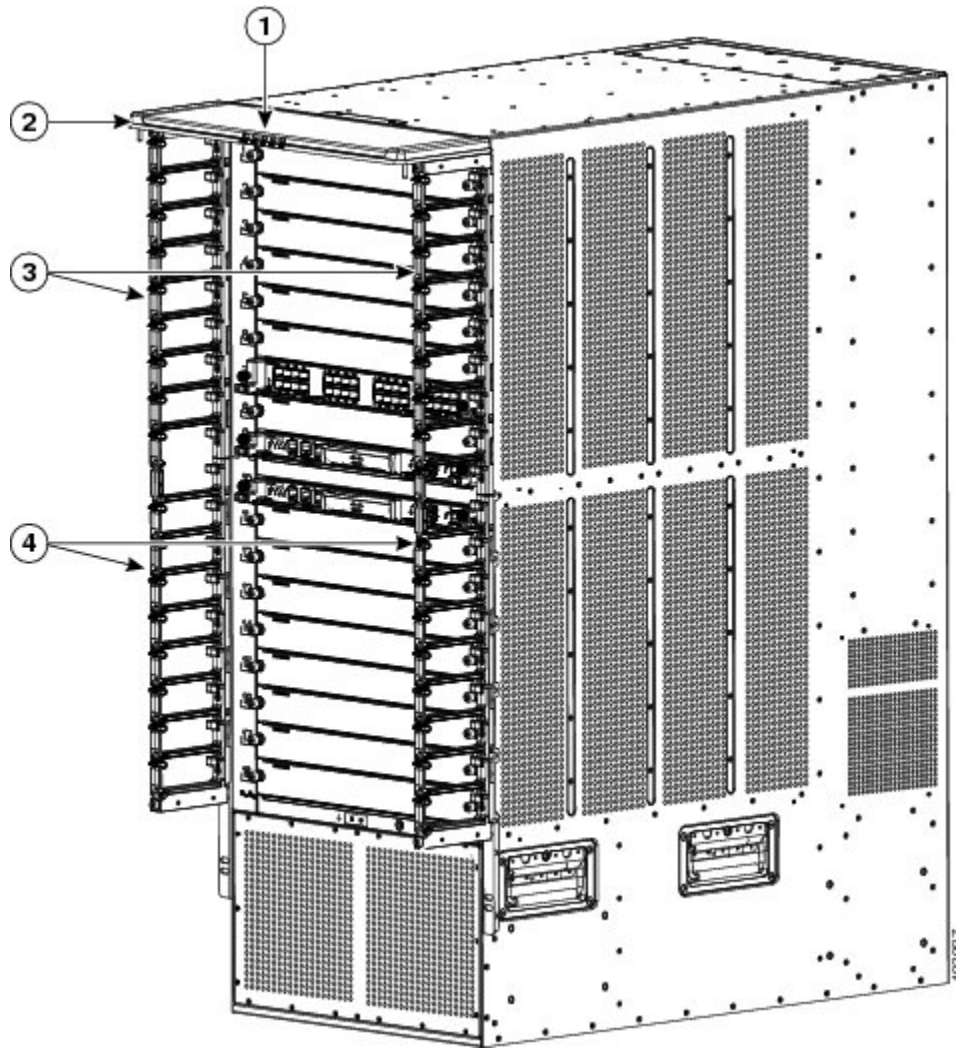
Figure 8: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7018 Chassis



1	System status LEDs	5	Air intake for power supply units
2	Rack-mount brackets (2)	6	Air intake for the supervisor modules and I/O modules
3	I/O or NAM modules (1 to 16 in slots 1 to 8 and slots 11 to 18).	7	Air intake for fabric modules

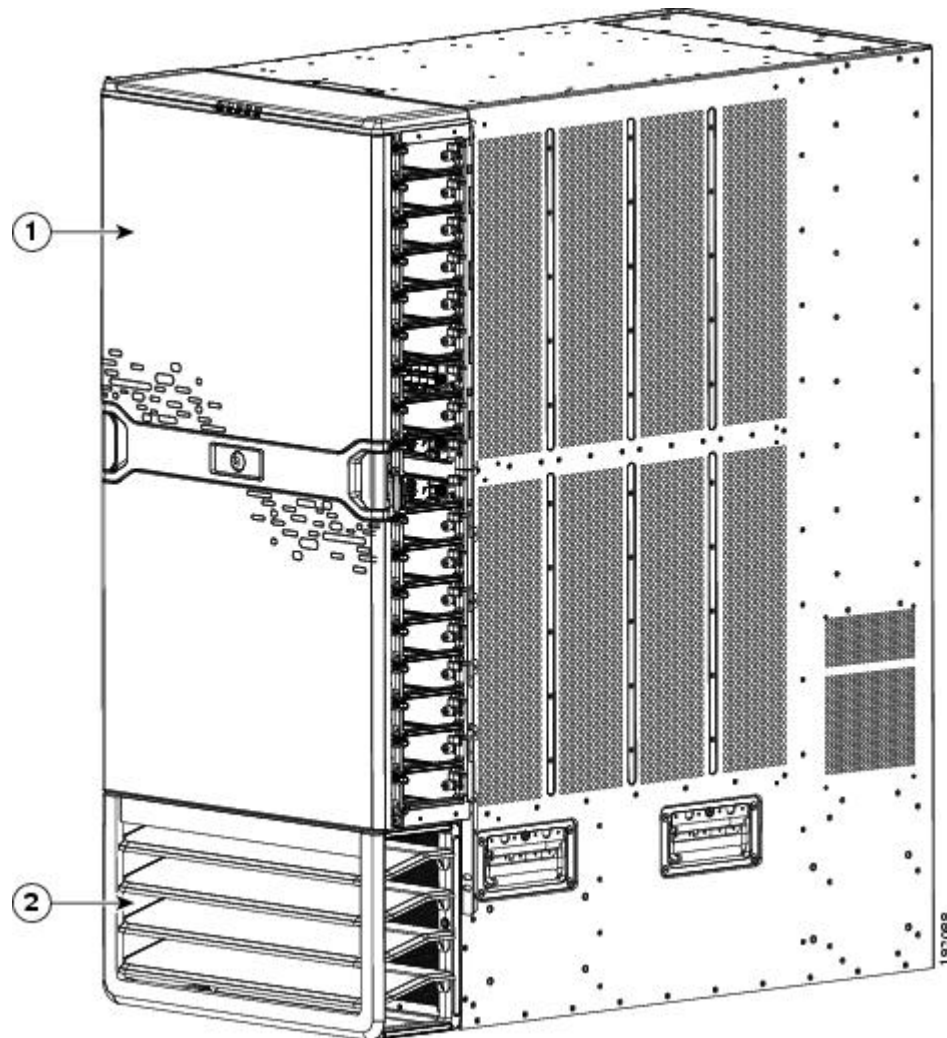
4	<p>Supervisor modules (1 or 2 modules in slots 9 and 10). These modules are of only one of the following types (if installing two supervisor modules, both modules must be the same type with the same amount of memory):</p> <ul style="list-style-type: none"> <li>• Supervisor 1 (N7K-SUP1)</li> <li>• Supervisor 2 (N7K-SUP2)</li> <li>• Supervisor 2 Enhanced (N7K-SUP2E)</li> </ul>	8	<p>Handles used to reposition the chassis (do not lift the chassis with these handles—use a mechanical lift)</p>
---	---	---	--

Figure 9: Cable Management System for the Cisco Nexus 7018 Chassis



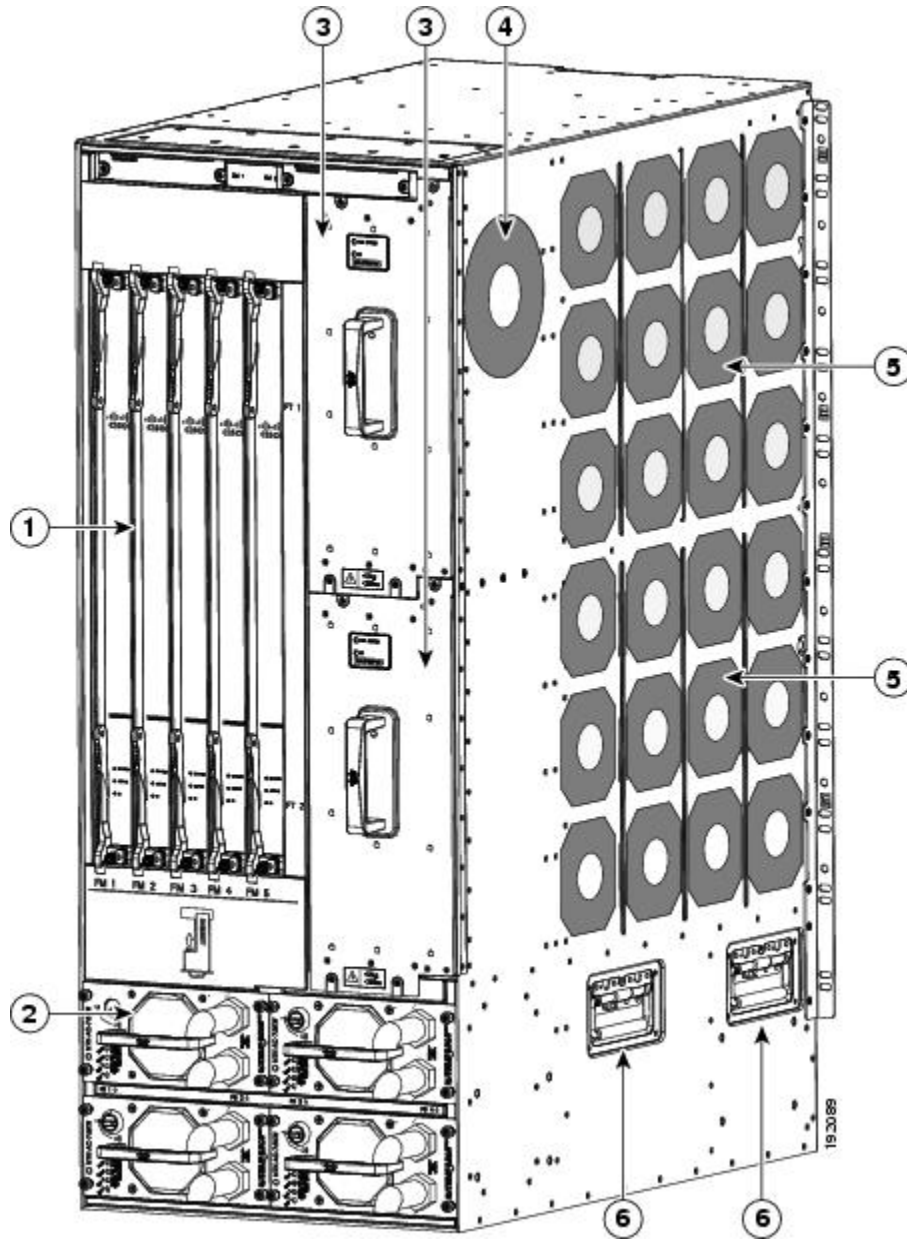
1	<p>System status LEDs (these LEDs show the system status displayed by the chassis LEDs)</p>	3	<p>Upper cable management assemblies</p>
2	<p>Top hood</p>	4	<p>Lower cable management assemblies</p>

Figure 10: Optional Front Door for the Cisco Nexus 7018 Chassis



1	Front doors	2	Air intake frame for power supply units
---	-------------	---	---

Figure 11: Standard Hardware Features on the Back of the Cisco Nexus 7018 Chassis



<p>1 Fabric modules (up to 5) (N7K-C7018-FAB-1 or N7K-C7018-FAB-2)</p>	<p>4 Fan exhaust for fabric modules</p>
--	---

2	Power supply units (up to 4)—these modules are a combination of the following: <ul style="list-style-type: none"> <li>• 6 kW AC power supply (N7K-AC-6.0KW)</li> <li>• 7.5 kW AC power supply (N7K-AC-7.5KW-INT [international plugs])(N7K-AC-7.5KW-US [US plugs])</li> <li>• 6 kW DC power supply (N7K-DC-6.0KW)</li> <li>• Blank filler plate (replaces missing power supplies to maintain the designed airflow)</li> </ul>	5	Fan exhaust for supervisor and I/O modules
3	Fan trays for cooling the supervisor, I/O, and fabric modules	6	Handles used to reposition the chassis (do not lift the chassis with these handles—use a mechanical lift)



**Note** [Figure 8: Standard Hardware Features on the Front and Sides of the Cisco Nexus 7018 Chassis](#), on page 16 and [Figure 1-12](#) show the Cisco Nexus 7018 chassis as it appears when it is fully configured before including cables for connections to the Internet and the console. The systems that are not fully configured with the maximum number of supervisor modules, I/O modules, fabric modules, or power supplies have blank panels installed in place of the missing components to maintain the designed airflow for system cooling.

The I/O module slots hold one or two of the following types of modules:

- F1 Series I/O modules
  - 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
  - 48-port 1-/10-GBASE-T with XL option (N7K-F248XT-25E)
- F2 Series I/O modules
  - 48-port 1-/10-Gigabit SFP+ with XL option and FEX support (N7K-F248XP-25 and N7K-F248XP-25E<sup>4</sup>)
- F3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP/SFP+ (N7K-F348XP-25)
  - 12-port 40-Gigabit Ethernet QSFP+ (N7K-F312FQ-25)
  - 6-port 100-Gigabit Ethernet CPAK (N7K-F306CK-25)
- M1 Series I/O modules
  - 48-port 10/100/1000 I/O modules (N7K-M148GT-11)
  - 48-port 10/100/1000 I/O modules with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)
  - 48-port 1-Gigabit Ethernet I/O modules with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet I/O modules with FEX support (N7K-M132XP-12)
  - 32-port 10-Gigabit Ethernet I/O modules with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet I/O modules with XL option (N7K-M108X2-12L)

<sup>4</sup> The Cisco Nexus F2-Series 48-port 1/10-Gigabit SFP+ module supports all of the standard features of F2 modules and it functions like an F2-series module with Layer 2 and Layer 3 enabled. These modules also support IPv6 DSCP-to-Queue mapping.



- M2 Series I/O modules
  - 24-port 10-Gigabit Ethernet I/O modules with XL option and FEX support (N7K-M224XP-23L)
  - 6-port 40-Gigabit Ethernet I/O modules with XL option (N7K-M206XP-23L)
  - 2-port 100-Gigabit Ethernet I/O modules with XL option (N7K-M202XP-23L)
- M3 Series I/O modules
  - 48-port 1-/10-Gigabit Ethernet SFP+ (N7K-M348XP-25L)
  - 24-port 40-Gigabit Ethernet QSFP+ (N7K-M324FQ-25L)
- Network Analysis Modules (NAMs) (N7K-SM-NAM-K9)




---

**Note** M3-Series I/O modules are not compatible with Sup-1 and Fab-1 modules. M3-Series I/O modules cannot be combined with M1-, F1- or F2-Series I/O modules in the same Cisco Nexus 7018 switch.

---




---

**Note** Starting with Cisco NX-OS Release 7.3(0)D1(1), the following I/O modules are not supported:

---

- 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
- 48-port 10/100/1000 I/O modules (N7K-M148GT-11)
- 32-port 10-Gigabit Ethernet I/O modules with FEX support (N7K-M132XP-12)
- 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)
- Starting with Cisco NX-OS Release 8.0(1), the following I/O modules are not supported:
  - 48-port 1-/10-Gigabit SFP+ (N7K-F248XP-25)
  - 48-port 10/100/1000 with XL option (N7K-M148GT-11L)
  - 48-port 1-Gigabit Ethernet with XL option (N7K-M148GS-11L)
  - 32-port 10-Gigabit Ethernet with XL option and FEX support (N7K-M132XP-12L)
  - 8-port 10-Gigabit Ethernet with XL option (N7K-M108X2-12L)

You can insert a maximum of ten 24-port 40-Gigabit Ethernet QSFP+ (N7K-M324FQ-25L) I/O modules in the Cisco Nexus 7018 switch. This I/O module uses 96 VQI per slot. The maximum VQI of a Cisco Nexus 7018 switch is 1024 and a total of eleven 24-port 40-Gigabit Ethernet QSFP+ I/O modules will require 1056 VQI. In such a scenario, the eleventh I/O module will attempt to come online 3 times and then will get powered down. During a reload of a switch with eleven 24-port 40-Gigabit Ethernet QSFP+ I/O modules, the I/O module that comes up last will be powered down.

You must install the Cisco Nexus 7018 chassis in a four-post 19-inch EIA rack that meets the following specifications:

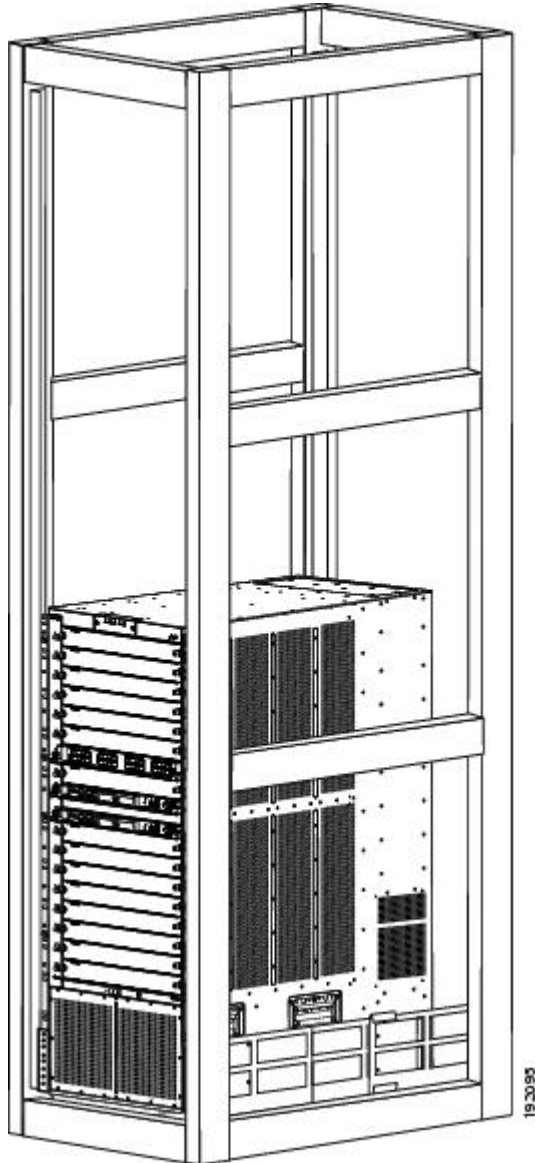
- Mounting rails that conform to the English universal hole spacing as specified in ANSI/EIA-310-D-1992.
- The minimum vertical rack space is 43.75 inches (111.1 cm) or 25 rack units (RU) for a single chassis installation and 87.5 inches (222.2 cm).

Install the Cisco Nexus 7018 chassis at the lowest possible RU on the rack for stability, as shown in [Figure 12: Cisco Nexus 7018 Chassis Installed in a Four-Post Rack](#), on page 22. If there is another device in the rack, install the heaviest one at the bottom.



**Danger** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

*Figure 12: Cisco Nexus 7018 Chassis Installed in a Four-Post Rack*



# Preparing the Site



---

**Danger** Installation of the equipment must comply with local and national electrical codes. Statement 1074

---

Before you can install a Cisco Nexus 7000 Series system, you must prepare the site for the installation. You must make sure that the altitude, temperature, humidity, air quality, airflow, electromagnetic and radio frequency interference, floor structure, power, and earth grounding of the installation site all meet the requirements of the Cisco Nexus 7000 Series system that you are installing. In addition, you must set up a rack or cabinet that can hold the number of chassis that you are installing. To see the general requirements for this system, see [Appendix A, “Technical Specifications.”](#) To see detailed information about preparing the data center for the installation, see the Cisco Nexus 7000 Series Site Preparation Guide.

# Safety Guidelines



---

**Danger** Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030

---

The prerequisites listed for any procedure are required conditions that you must verify before you start that procedure. If the prerequisites have not been met, you must satisfy those requirements before carrying out the procedure.

Safety warnings appear in this publication wherever procedures present conditions that could endanger you or others installing this system. Adhering to these warnings and following their recommended actions are required actions for these procedures. For regulatory compliance and safety information on these warnings, see the *Cisco Nexus 7000 Series Regulatory Compliance and Safety Information* document.

# Installation and Connection Guidelines

After you fully prepare the site as specified in the Cisco Nexus 7000 Series Site Preparation Guide, install a two-post 19-inch EIA rack for Cisco Nexus 7004 and 7009 chassis or a four-post 19-inch EIA rack for all chassis. To install the system, you must make sure that you have the proper mounting brackets (front-mount or center-mount brackets) installed on the chassis, move the chassis to the rack, elevate it to the lowest possible RU for that chassis, and fasten the chassis to the rack. With the chassis fastened to the rack, you can ground the chassis, install its cable management frames, install the optional door and optional air filter, and connect the switch to the console and network. For detailed instructions on installing a Cisco Nexus 7000 Series switch, see the following chapters:

For detailed instructions on connecting the switch to the console and network, see [Chapter 7, “Connecting the Cisco Nexus 7000 Series Switch to the Network”](#).



---

**Caution** Do not use the handles on the side of the chassis to lift the Cisco Nexus 7009, 7010, or 7018 chassis or a fully loaded Cisco Nexus 7004 chassis (you can use these handles to lift a Cisco Nexus 7004 chassis if you remove the power supplies so that the chassis weighs less than 120 pounds [52 kg]). For the Cisco Nexus 7009, 7010, and 7018, use these handles only for adjusting the position of the chassis while the chassis rests on a platform or bottom-support rails.

---

If you are replacing Fabric 1 modules with Fabric 2 modules (Cisco Nexus 7010 and 7018 models only), you must replace all of the Fabric 1 modules with Fabric 2 modules or the Fabric 2 modules will perform like Fabric 1 modules. If you power up a switch with both Fabric 1 and Fabric 2 modules installed, only the Fabric 2 modules will power up.



---

**Note** The Cisco NX-OS software may require 8 GB of memory, depending on the software version you use and the software features that you enable. If your switch has Supervisor 1 modules with only 4 GB of memory, then you might need to upgrade the modules to 8 GB of memory by using the 8 GB supervisor upgrade kit (N7K-SUP1-8GBUPG=). This upgrade is not needed for switches that have at least 8 GB of memory (which includes Supervisor 1 modules with 8 GB and all Supervisor 2 and Supervisor 2E modules). To verify the amount of memory installed in the supervisor modules or to upgrade the memory, see the [“Upgrading Memory for Supervisor 1 Modules”](#) section on page 10-31 .

---

## Managing the System Hardware

After the Cisco Nexus 7000 Series system is installed and operating, you can use the Cisco NX-OS operating system to manage the system hardware. These management functions include displaying system and module information, setting the power supply modes, and managing module functions. For more information about these functions, see [Chapter 8, “Managing the Switch Hardware.”](#)

## Replacing Components

While the Cisco Nexus 7000 Series system is operational, you can replace any one of the following components if they are redundant:

- Power supply
- Supervisor module
- Fabric module (Cisco Nexus 7009, 7010, and 7018 models only)
- I/O modules
- Fan trays

For detailed information on replacing these components, see [Chapter 10, “Installing or Replacing Components.”](#)



## CHAPTER 2

# Installing a Cisco Nexus 7004 Chassis

This chapter describes how to install a new or relocated Cisco Nexus 7004 chassis in a rack or cabinet. For information about installing other Cisco Nexus 7000 Series chassis or power supplies, see the following chapters:

- [Preparing to Install the Switch, on page 25](#)
- [Installing the Chassis, on page 28](#)
- [Grounding the Cisco Nexus 7004 Chassis, on page 32](#)
- [Installing the Cable Management Frames, on page 34](#)
- [Installing USB Storage Media in a Supervisor 2 or 2E Module, on page 36](#)
- [Installing the Air Filter, on page 36](#)

## Preparing to Install the Switch

This section includes the following topics:



---

**Note** You must set up one two- or four-post, 19-inch EIA rack or cabinet before you can install the Cisco Nexus 7004 chassis. Make sure that you order the rack or cabinet and have it delivered before installing the chassis.

---

## Required Tools

Before you install the Cisco Nexus 7004 chassis into a rack, make sure that you have the Cisco Nexus 7004 Accessory Kit (see the [“Cisco Nexus 7004 Switch Accessory Kit”](#) section on page C-1 for the contents list) and the following equipment, which are not provided by Cisco:

- Mechanical lift capable of lifting 150 pounds (68 kg)



---

**Note** This lift is required only if moving or lifting a fully loaded chassis that weighs at least 120 pounds (54.4 kg). If you remove the power supplies, the chassis weighs 93 pounds (42.2 kg) or less and you can manually lift it with two persons.

---

- Number 1 Phillips-head screwdriver with torque capability

- 3/16-inch flat-blade screwdriver
- Crimping tool
- Wire stripping tool
- Tape measure and level
- Grounding wire—Use a wire size that meets local and national installation requirements. Depending on the power supply and system, a 12 AWG to 6 AWG copper conductor is required for U.S. installations. We recommend that you use commercially available 6 AWG wire. The length of the grounding wire depends on the proximity of the switch to proper grounding facilities.




---

**Note** For a list of tools required to assemble and secure the two- or four-post rack or cabinet, see the documentation that the manufacturer shipped with the rack or cabinet.

---

## Installing a Rack or Cabinet

Before you install the Cisco Nexus 7004 chassis, you must install a standard two- or four-post, 19-inch EIA data center rack (or a cabinet that contains such a rack) that meets the requirements listed in the Cisco Nexus 7000 Series Site Preparation Guide. To maximize safety, you should do the following for the rack:

- Bolt the rack to the concrete subfloor before moving the Cisco Nexus 7004 chassis onto it.




---

**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

- If the rack has bonded construction, connect it to the earth ground to enable you to easily ground the system components that you install and to ground your ESD wrist strap. This step minimizes the chance of electrostatic discharge when you handle ungrounded components while working with them.

Be sure that the rack includes AC power receptacles with the amperage required for the power supplies that you will be installing in the chassis. For 3-kW power supplies, you must have 20-A circuits.




---

**Warning** Take care when connecting units to the supply circuit so that wiring is not overloaded. Statement 1018

---

For instructions on setting up the rack, see the documentation that the manufacturer shipped with the rack.

## Unpacking and Inspecting a New Switch




---

**Caution** When you handle the Cisco Nexus 7004 chassis or its components, you must follow ESD protocol at all times to prevent ESD damage. This protocol includes but is not limited to wearing an ESD wrist strap that you connect to the earth ground.

---

Before you install a new Cisco Nexus 7004 chassis, you need to unpack and inspect it to be sure that you have all the items that you ordered and verify that the switch was not damaged during shipment. If anything is damaged or missing, contact your customer representative immediately.



---

**Tip** Do not discard the shipping container when you unpack the Cisco Nexus 7004 system. Flatten the shipping cartons and store them with the pallet used for the system. If you need to move or ship the system in the future, you will need these containers. For repacking instructions, see [Appendix E, “Repacking the Cisco Nexus 7004 Switch.”](#)

---

To inspect the shipment, follow these steps:

---

**Step 1** Compare the shipment to the equipment list that is provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:

- System chassis, which includes the following installed components:
  - 2 supervisor modules
  - 1 or 2 I/O modules
  - 1 fan tray
  - 2 to 4 power supply units
  - Blank filler plates for any missing supervisor modules, I/O modules, or power supply modules
- Cisco Nexus 7004 system accessory kit

To see a list of what is in the accessory kit, see the [“Cisco Nexus 7004 Switch Accessory Kit”](#) section on page C-1 .

- Cable management frames
- Front door (optional)
- Air filter (optional)

**Step 2** Check the contents of each box or package for damage.

**Step 3** If you notice any discrepancies or damage, send the following information to your customer service representative by E-mail:

- Invoice number of the shipper (see the packing slip)
  - Model and serial number of the missing or damaged unit
  - Description of the problem and how it affects the installation
-

# Installing the Chassis

This section describes how to install the Cisco Nexus 7004 chassis in a rack or cabinet. These installation steps include checking for installation prerequisites, setting up the center-mount brackets if needed, removing the power supplies from the chassis if lifting the chassis manually, and installing the chassis in a rack. When you finish this task, you can connect the chassis to the earth ground, install the cable management frames, install the front door (optional), and reinstall any removed power supplies.



---

**Caution** You must use a mechanical lift whenever lifting a device over 120 pounds (54.4 kg). A fully loaded chassis can weigh up to 137 pounds (62 kg). If you prefer to lift the chassis manually, you must remove the power supplies and use at least two persons to lift it.

---

This section includes the following topics:

## Prerequisites for Installing the Chassis

Before you install the chassis, you must make sure that the following items are available for the installation:

- Data center ground is accessible where you are installing the Cisco Nexus 7004 chassis.
- Two- or four-post, 19-inch EIA rack or cabinet that includes such a rack.

For more information on the rack or cabinet, see the [Installing a Rack or Cabinet, on page 26](#).



---

**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

- Center-mount brackets (2) and M4 x 6 mm screws (12) if you need to center the chassis on the rack. If you are mounting the front of the chassis on to the rack (typical installation), then you do not need the center-mount brackets.



## Installing the Center-Mount Brackets

Before you install a Cisco Nexus 7004 chassis, you need to determine whether you need to mount the front of the chassis or the center of the chassis to the rack. The chassis is already set up for mounting its front to the rack, but you can include center-mount brackets to position the front of the chassis 5.7 inches (14.4 cm) in front of the rack.

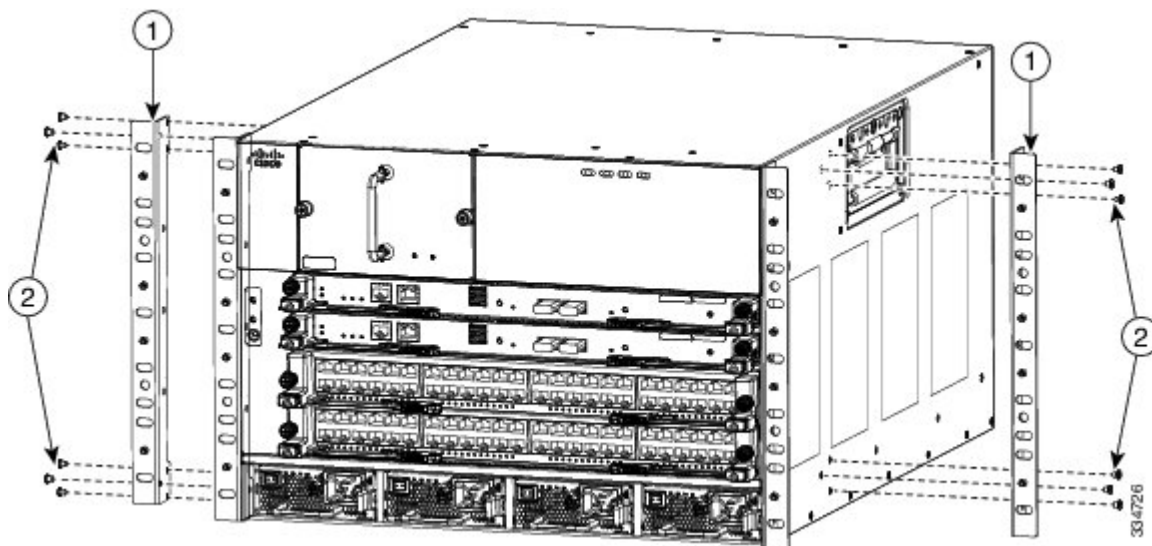


**Note** If you need to install the center-mount brackets, you must separately order the Cisco Nexus 7004 Rack Mount Kit (part number is N7K-C7004-RMK).

To install the center-mount brackets on the chassis, follow these steps:

**Step 1** Align one of two center-mount brackets so that its six screw holes align to six screw holes on the side of the chassis as shown in [Figure 13: Installing Center-Mount Brackets on the Chassis, on page 29](#).

*Figure 13: Installing Center-Mount Brackets on the Chassis*



1 Center mount bracket (left and right versions)	2 Six M4 x 6 mm screws for each bracket
--	---

**Step 2** Use a Phillips-head screw driver to secure the bracket to the chassis with the six M4 x 6 mm screws. Tighten each screw to 11.5 to 15 in-lbs (1.3 to 1.7 N·m).

**Step 3** Repeat steps 1 and 2 to install the other center-mount bracket on the other side of the chassis.

## Installing the Chassis in a Rack

Before you install the chassis in the rack, you must determine how you are going to lift the chassis to its position on the rack. You can either lift the chassis with a mechanical lift and slide it on top of another installed Cisco Nexus 7004 chassis, or you can lighten the chassis and lift it manually into position with a couple of

people. To lighten the chassis for lifting, you can remove the power supplies so that the chassis weighs no more than 93 pounds (42 kg) and can be lifted by two people.

After lifting the chassis into position, you fasten it to the rack, and replace any power supplies that you might have removed earlier.

To install a Cisco Nexus 7004 chassis in a two- or four-post rack or cabinet, follow these steps:

## SUMMARY STEPS

1. Prepare the chassis for moving by doing one of the following:
2. Lift the chassis to its position on a rack in one of the following ways:
3. Use five M6 x 19 mm screws (or 12-24 x 3/4 inch screws) to fasten each side of the chassis to the rack. Tighten each of the 10 screws to 40 in. lbs (4.5 N.m) (see [Figure 14: Mounting the Cisco Nexus 7004 Chassis on a Rack, on page 31](#)).
4. If you removed any power supplies, replace them as explained in one of the following sections:

## DETAILED STEPS

**Step 1** Prepare the chassis for moving by doing one of the following:

**Danger** To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit. Statement 1032

**Caution** To move the chassis, either use the chassis handles (one found on each side) or push on the sides or edges of the chassis without touching any of the modules or module handles.

- To move the chassis with a mechanical lift, position the lift at the elevation of the chassis on its shipping pallet (or no more than 0.25 inches [0.64 cm] below the level of the pallet) and use two persons to push the chassis fully onto the lift.
- To move the chassis manually, remove the power supplies as explained in one of the following sections and then use two persons to lift the chassis:
  - To remove an AC power supply, see the [“Removing a 3-kW AC Power Supply Unit During Operations”](#) section on page 10-3 .
  - To remove a DC power supply, see the [“Removing a 3-kW DC Power Supply Unit During Operations”](#) section on page 10-9 .
  - To remove an HVAC/HVDC power supply, see the [“Removing a 3.5-kW HVAC/HVDC Power Supply Unit During Operations”](#) section on page 10-16 .

**Note** We do not recommend that you remove any of the supervisor modules, I/O modules, or the fan tray to make the chassis easier to lift because that removal can put those modules at risk of being damaged. If you do remove any of those modules, be sure to have antistatic pads or antistatic bags to hold these modules until you are ready to reinstall them in the chassis.

**Step 2** Lift the chassis to its position on a rack in one of the following ways:

- If you use a mechanical lift, position the chassis next to the front of another Cisco Nexus 7004 chassis already installed in the rack, elevate the new chassis to the level of the installed chassis (or no more than 0.25 inches [0.64

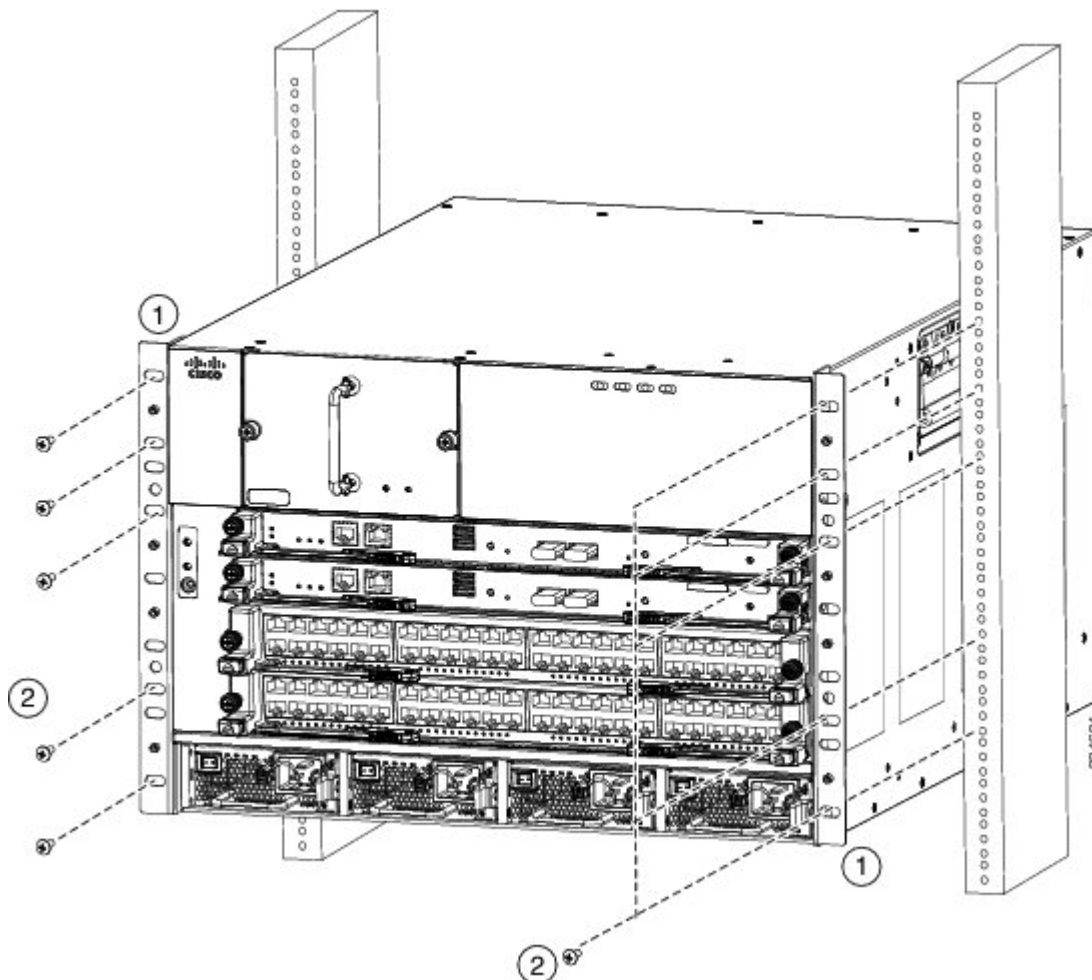
cm] above the installed chassis, use two persons to align the back side of the new chassis to the opening between the two front posts of the rack and push the chassis into the installed chassis until the chassis mounting brackets come in contact with the rack mounting rails.

- If you are lifting the chassis manually, use two or more persons to move the back end of the chassis through the front posts until the chassis mounting brackets come in contact with the mounting rails on the rack, lift the chassis to the lowest possible RU for it on the rack, and align the screw holes in the chassis mounting brackets to the rack mounting rails.

**Caution** Use two persons to lift the chassis by using the handle on each side of the chassis. Do not use the handles on any of the modules installed on the chassis to lift or move the chassis—these handles are for only removing or installing the modules.

**Step 3** Use five M6 x 19 mm screws (or 12-24 x 3/4 inch screws) to fasten each side of the chassis to the rack. Tighten each of the 10 screws to 40 in. lbs (4.5 N.m) (see [Figure 14: Mounting the Cisco Nexus 7004 Chassis on a Rack](#), on page 31).

**Figure 14: Mounting the Cisco Nexus 7004 Chassis on a Rack**



1 Handles used to adjust the chassis placement or to lift a chassis that weighs less than 120 pounds (54.4 kg).	2 Five M4 x 6 mm Phillips-head screws used to attach each front-mount or center-mount bracket to a mounting rail (use a total of 12 screws for two brackets).
---	---

**Step 4** If you removed any power supplies, replace them as explained in one of the following sections:

- To install an AC power supply unit, see the “Installing a 3-kW AC Power Supply Unit During Operations” section.
- To install a DC power supply unit, see the “Installing a 3-kW DC Power Supply Unit During Operations” section.
- To install a HVAC/HVDC power supply unit, see the “Installing a 3.5-kW HVAC/HVDC Power Supply Unit During Operations” section.

---

## Grounding the Cisco Nexus 7004 Chassis

The Cisco Nexus 7004 switch is fully grounded as soon as you connect the chassis and the power supplies to the earth ground in the following ways:

- You connect the chassis to either a grounded and fully bonded rack or to the data center ground. This ground connection is active even when the power supplies are not installed.



---

**Note** The system ground, also referred to as the network equipment building system (NEBS) ground, provides additional grounding for EMI shielding requirements and for the low-voltage supplies (DC-DC converters) on the modules. This grounding system is active even when the AC power cables are not connected to the system.

---

- You connect the AC power supplies to the earth ground automatically when you connect an AC power supply to an AC power source.
- You connect the DC power supplies to the earth ground before connecting the power supplies to the DC power source (see the [“Connecting a DC Power Supply Directly to DC Power Sources”](#) section on page 6-11 ).
- You automatically ground an HVAC/HVDC power supply when you connect the HVAC/HVDC power supply to a power source.

This section includes the following topics:

### Prerequisites for Grounding the Chassis

Before you can ground the chassis, you must have a connection to the earth ground for the data center building. If you installed the Cisco Nexus 7004 chassis into a bonded rack (see the rack manufacturer’s instructions for more information) that now has a connection to the data center earth ground, you can ground the chassis by connecting its grounding port to the rack. Otherwise, you must connect the chassis grounding port directly to the data center ground.

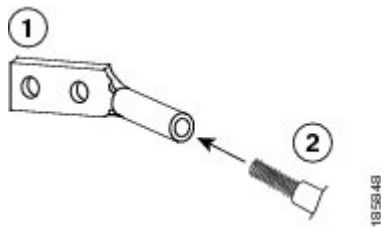
## Connecting the System Ground

After you have moved the chassis into the rack or cabinet, you are ready to connect the system to the data center earth ground. After you ground the chassis, you can ground your ESD wrist strap by connecting it to the chassis.

To connect the system ground to the data center earth ground, follow these steps:

- Step 1** Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire.
- Step 2** Insert the stripped end of the grounding wire into the open end of the grounding lug as shown in [Figure 15: Inserting the Grounding Wire in the Grounding Lug, on page 33](#).

*Figure 15: Inserting the Grounding Wire in the Grounding Lug*

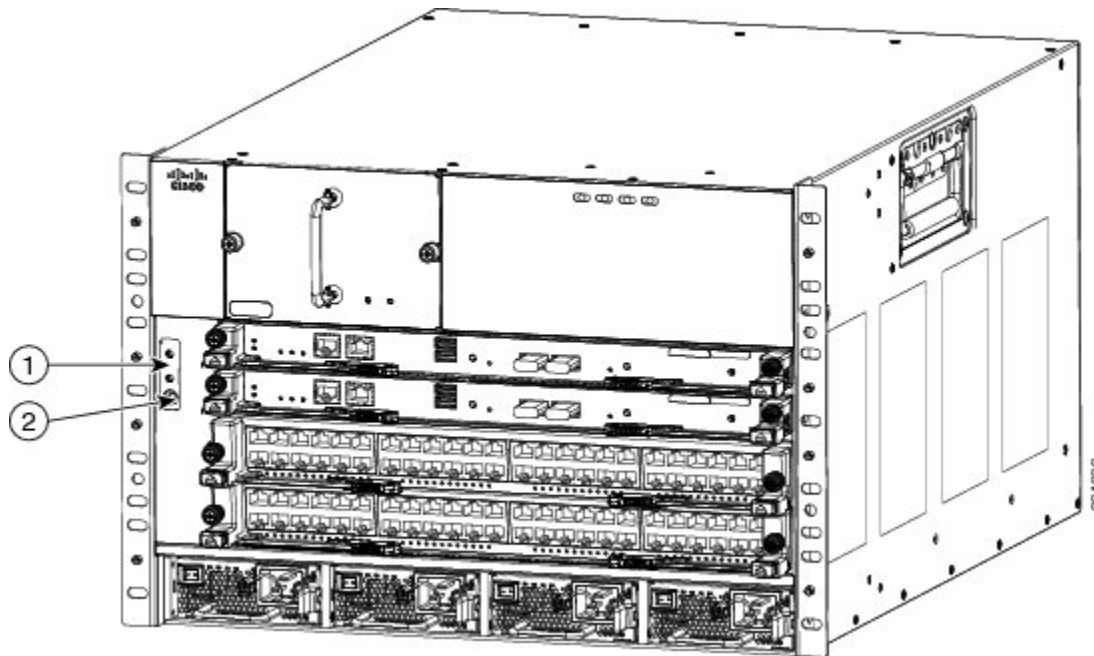


1 NRTL listed 45-degree grounding lug	2 Grounding cable with 0.75 in. (19 mm) of insulation stripped from the end
---------------------------------------	---

- Step 3** Use the crimping tool to crimp the lug to the grounding wire. Verify that the ground wire is securely attached to the ground lug by attempting to pull the wire out of the crimped lug.
- Step 4** Remove the adhesive label from the system grounding pad on the chassis, secure the grounding wire lug to the grounding pad with two M4 screws, and tighten the screws to 11.5 to 15 in-lb (1.3 to 1.7 N·m). Callout 1 in [Figure 16: Grounding Pad and ESD Port Locations on the Cisco Nexus 7004 Chassis, on page 34](#) shows the location of the grounding pad on the front side of the chassis.

**Note** Be sure that the grounding lug and wire do not block the ESD port by positioning the lug and wire connection above the grounding port.

Figure 16: Grounding Pad and ESD Port Locations on the Cisco Nexus 7004 Chassis



1	Grounding pad	2	ESD port
---	---------------	---	----------

- Step 5** Prepare the other end of the grounding wire and connect it to an appropriate grounding point in your site to ensure an adequate earth ground for the switch. If the rack is grounded, connect the grounding wire as explained in the documentation provided by the vendor for the rack.

## Connecting Your ESD Wrist Strap to the Chassis

After you connect the chassis to the data center earth ground, you can ground your ESD wrist strap by plugging it into the ESD port shown by Callout 2 in [Figure 16: Grounding Pad and ESD Port Locations on the Cisco Nexus 7004 Chassis, on page 34](#).

## Installing the Cable Management Frames

After you have fastened the chassis to the rack, you can fasten the cable management frames to the front of the chassis.

To fasten the cable management frames to the chassis, follow these steps:

### SUMMARY STEPS

1. Align the guide pin on one of the two cable management frames to a guide-pin hole of the same size on the front-mounting bracket that is already attached to the chassis. The top of the frame should be at the

same level as the top of the chassis (see [Figure 17: Installing the Cable Management Frames on a Cisco Nexus 7004 Chassis, on page 35](#)).

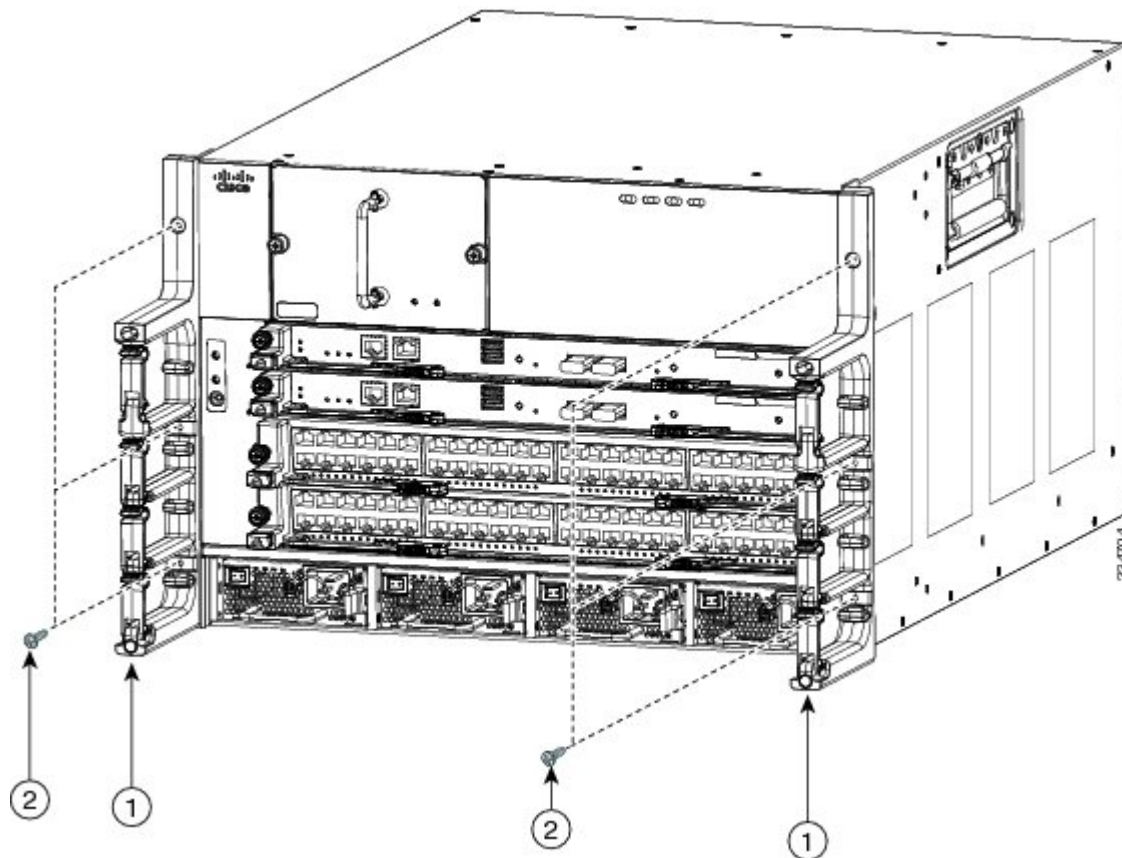
2. Fasten the frame to the chassis with three M3 x 10 mm screws (see Callout 2 in [Figure 17: Installing the Cable Management Frames on a Cisco Nexus 7004 Chassis, on page 35](#)). Tighten the screws to 5 to 7 in-lb (0.56 to 0.79 N.m).
3. Repeat Steps 1 and 2 to install the other cable management frame to the chassis.

## DETAILED STEPS

### Step 1

Align the guide pin on one of the two cable management frames to a guide-pin hole of the same size on the front-mounting bracket that is already attached to the chassis. The top of the frame should be at the same level as the top of the chassis (see [Figure 17: Installing the Cable Management Frames on a Cisco Nexus 7004 Chassis, on page 35](#)).

*Figure 17: Installing the Cable Management Frames on a Cisco Nexus 7004 Chassis*



1 Guide pins on the cable management frame aligned to two holes in the front-mount bracket.	2 Three M3 x 10 mm screws used to fasten the frame to the chassis (total of six screws for two frames).
---	---

### Step 2

Fasten the frame to the chassis with three M3 x 10 mm screws (see Callout 2 in [Figure 17: Installing the Cable Management Frames on a Cisco Nexus 7004 Chassis, on page 35](#)). Tighten the screws to 5 to 7 in-lb (0.56 to 0.79 N.m).

### Step 3

Repeat Steps 1 and 2 to install the other cable management frame to the chassis.

## Installing USB Storage Media in a Supervisor 2 or 2E Module

Each Supervisor 2 or 2E module on a Cisco Nexus 7004 switch has a USB drive installed in the LOG FLASH reader. The Slot0 port is left empty, but you can optionally install a USB drive in the that port. To allow this storage media to function with the USB port, you must make sure that it is either already formatted for the port before installing it or format it after installing it.



---

**Note** The LOG FLASH and Slot0 USB ports use different formats for their data.

---

To install storage media in a supervisor module, follow these steps:

---

**Step 1** Insert the USB drive in the LOG FLASH or SLOT0 port.

**Step 2** Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

- If you are installing a USB drive into the log flash reader, the message will end with "logflash:online."
- If you are installing a USB drive into the expansion flash reader, the message will end with "slot0:online."
- If you see an "offline" message or do not see a message, either the USB drive is not fully inserted or it is improperly formatted.

Make sure that the USB drive is fully inserted inside the reader. If it is fully inserted, either format the card (see the *Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide* ) or replace the USB drive with another that is properly formatted for the reader.

---

## Installing the Air Filter

The Cisco Nexus 7004 air filter is an optional feature (part number N7K-C7004-FAN=). To install an air filter, follow these steps:

---

**Step 1** Place the air filter over the air intake area on the right side of the chassis and align the eight screw holes in the filter to screw holes in the chassis.

**Step 2** Fasten the air filter to the chassis using eight M3 x 5 mm screws that came with the air filter. Tighten the screws to 5 to 7 in-lb (0.56 to 0.79 N.m).

---





## CHAPTER 3

# Installing a Cisco Nexus 7009 Chassis

This chapter describes how to install a new or relocated Cisco Nexus 7009 chassis in a rack or cabinet. For information about installing other Cisco Nexus 7000 Series chassis or power supplies, see the following chapters:

This chapter includes the following sections:

- [Preparing to Install the Switch, on page 37](#)
- [Installing the Bottom-Support Rails on the Rack, on page 40](#)
- [Installing the Chassis, on page 47](#)
- [Grounding the Cisco Nexus 7009 Chassis, on page 54](#)
- [Installing the Cable Management Frames, on page 58](#)
- [Installing the Front Door and Air Intake Frame, on page 59](#)
- [Installing Storage Media in a Supervisor Module, on page 66](#)

## Preparing to Install the Switch

This section includes the following topics:



---

**Note** You must set up a two- or four-post, 19-inch EIA rack or cabinet before you can install the Cisco Nexus 7009 chassis. Make sure that you order the rack or cabinet and have it delivered before installing the chassis.

---

## Required Tools

Before you install the Cisco Nexus 7009 chassis into a rack, make sure that you have the following tools and equipment:

- Mechanical lift capable of lifting 300 pounds (136 kg)
- Number 1 Phillips screwdriver with torque capability
- 3/16-inch flat-blade screwdriver
- Crimping tool
- Wire stripping tool

- Tape measure and level
- Grounding cable




---

**Note** These tools and equipment do not ship with the chassis.

---

Additional tools and equipment, such as an electrostatic discharge (ESD) wrist strap, that you will also need to install the Cisco Nexus 7009 chassis, are included in the Cisco Nexus 7009 accessory kit. To see what is included in the accessory kit, see the [“Cisco Nexus 7009 Switch Accessory and Optional Kits” section on page C-4](#).




---

**Caution** When you handle the Cisco Nexus 7009 chassis or its components, you must follow ESD protocol at all times to prevent ESD damage. This protocol includes but is not limited to wearing an ESD wrist strap that you connect to the earth ground.

---




---

**Note** For a list of tools required to assemble and secure the rack or cabinet, see the documentation that the manufacturer shipped with the rack or cabinet.

---

## Installing a Rack or Cabinet

Before you install the Cisco Nexus 7009 chassis, you must install a qualified two- or four-post, 19-inch EIA data center rack (or a cabinet that contains such a rack) that meets the requirements listed in the Cisco Nexus 7000 Series Site Preparation Guide. To maximize safety, you should do the following for the rack:

- Bolt the rack to the concrete subfloor before moving the Cisco Nexus 7009 chassis onto it.




---

**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

- If the rack has bonded construction, connect it to the earth ground to enable you to easily ground the system components that you install and to ground your ESD wrist strap. This step minimizes the chance of electrostatic discharge when you handle ungrounded components before you install them.

If you are using AC power, be sure that the rack includes AC power receptacles with the amperage required for the power supply units that you will be installing in the chassis. If you are installing 6-kW power supply units, you must have 20-A circuits. If you are installing 7.5-kW power supply units, you must have 30-A circuits.

If you are using DC power, be sure that the DC power supply is grounded and that there is direct access to the facility DC power or indirect access through a power interface unit (PIU). You must connect the DC power supply to the earth ground before connecting it to the facility DC power.



---

**Warning** Take care when connecting units to the supply circuit so that wiring is not overloaded. Statement 1018

---

For instructions on setting up the rack, see the documentation that the manufacturer shipped with the rack.

## Unpacking and Inspecting a New Switch

Before you install a new Cisco Nexus 7009 chassis, you need to unpack and inspect it to be sure that you have all the items that you ordered and verify that the switch was not damaged during shipment. If anything is damaged or missing, contact your customer representative immediately.



---

**Tip** Do not discard the shipping container when you unpack the Cisco Nexus 7009 system. Flatten the shipping cartons and store them with the pallet used for the system. If you need to move or ship the system in the future, you will need these containers.

---

To inspect the shipment, follow these steps:

### SUMMARY STEPS

1. Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:
2. Check the contents of each box or package for damage.
3. If you notice any discrepancies or damage, send the following information to your customer service representative by e-mail:

### DETAILED STEPS

---

**Step 1** Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:

- System chassis, which includes the following installed components:
  - 2 supervisor modules
  - 1 to 7 I/O modules
  - 3 to 5 fabric modules
  - 1 fan tray
- 1 to 2 power supply units

The power supply units are shipped with the chassis but are boxed separately.

- Cisco Nexus 7009 system accessory kit

To see a list of what is in the accessory kit, see the [“Cisco Nexus 7009 Switch Accessory and Optional Kits”](#) section on [page C-4](#).

- Cable management frames

- Left and right cable management frames
- Top hood
- Center-mount kit (optional—must be ordered separately for center-mount installations)
  - Left and right center-mount bottom-support rails
  - Left and right center-mount vertical mounting brackets
- Door and air intake frame (optional)

**Step 2** Check the contents of each box or package for damage.

**Step 3** If you notice any discrepancies or damage, send the following information to your customer service representative by e-mail:

- Invoice number of the shipper (see the packing slip)
- Model and serial number of the missing or damaged unit
- Description of the problem and how it affects the installation

## Installing the Bottom-Support Rails on the Rack

You can use the following two types of bottom-support rails to install and hold a Cisco Nexus 7009 chassis to its rack:

- Front-mount bottom-support rails
- Center-mount bottom-support rails (part number N7K-C7009-CMK)

Typically, you use the two front-mount bottom-support rails in the Bottom Support Kit (part of the Cisco Nexus 7009 Accessory Kit or ordered separately as part number N7K-C7009-BSK). If you additionally ordered the Center Mount Kit (part number N7K-C7009-CMK) for centering the chassis on a two-post rack, you will receive an additional kit with two center-mount bottom support rails and two center-mount rail mounting brackets. You must install either the front-mount bottom-support rails or the center-mount bottom-support rails before installing the chassis.



**Note** If you are installing three Cisco Nexus 7009 chassis with front-mount brackets in a 42-RU rack and you can safely position the bottom chassis at the lowest RU using a mechanical lift, you can fasten the chassis directly to the rack or cabinet with the maximum number of screws. After you install the bottom chassis, you can slide the additional chassis onto the fully installed lower chassis (without using additional bottom-support rails) and then fasten the upper chassis to the rack. This process enables you to install three 14-RU Cisco Nexus 7009 chassis in a 42-RU rack. If you do not need to install three chassis in a 42 RU rack, we recommend that you always install each chassis on its own set of bottom-support rails.



**Note** When you install a Cisco Nexus 7009 chassis with center-mount brackets, you must always install the chassis onto center-mount bottom-support rails.



**Caution** Do not remove the center-mount brackets when a chassis is installed on them. They are required at all times for holding a center-mount chassis to the rack.

The prerequisites, tools, and process for installing the bottom-support rails are included in the following topics:

## Prerequisites for Attaching the Bottom-Support Rails

Before you can attach the bottom-support rails, you must fully install the rack or cabinet and use bolts to anchor the rack to the concrete subfloor. To maximize the stability of the rack, install everything as low as possible on the rack with heavier items below lighter items. Be sure that there is 15 RU available for installing the Cisco Nexus 7009 chassis (14 RU) and its bottom-support rack (1 RU).

## Required Tools and Equipment

You need the following tools and equipment to attach the bottom-support rails:

- Number 1 Phillips-head screwdriver with torque capability.
- One of the following types of bottom-support rails:
  - Front-mount bottom-support rails (shipped with the Bottom-Support Kit, which is found in the accessory kit or ordered separately [part number N7K-C7009-BSK])
  - Center-mount bottom-support rails (not shipped with the chassis unless special ordered [part number N7K-C7009-CMK])

[Table 1: Bottom-Support Kit Contents, on page 41](#) lists the items in the Bottom-Support Kit and [Table 2: Center-Mount Kit Contents, on page 42](#) lists the items in the Center-Mount Kit.

**Table 1: Bottom-Support Kit Contents**

Part Description	Quantity
Front-mount bottom-support rails	2
Crossbar	1
12-24 x 3/4 in. Phillips screws	20
M6 x 19 mm Phillips screws	20
M4 x 8 mm Phillips screws	2

Table 2: Center-Mount Kit Contents

Part Description	Quantity
Center-mount rack mounting brackets	2
Center-mount bottom-support rails	2
Crossbar	1
12-24 x 3/4 in. Phillips screws	20
M6 x 19 mm Phillips screws	20
M4 x 8 mm Phillips screws	2

## Attaching the Front-Mount Bottom-Support Rails

To maximize the stability of the rack, you should install the chassis as low as possible on the rack. Install the heaviest chassis first at the bottom of the rack. If you install a second chassis in the same rack, install it immediately above the lower chassis if there is enough vertical space.

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

To attach the front-mount bottom-support rails to a two- or four-post EIA rack, follow these steps:

### SUMMARY STEPS

1. Position one of the two front-mount bottom-support rails at the lowest possible RU on the rack. If you are installing a chassis above another Cisco Nexus 7009 chassis, position the rail 26.25 inches (66.7 cm) (15 RU) above the bottom-support rails for the lower chassis as shown in [Figure 18: Positioning the Front-Mount Bottom-Support Rails, on page 44](#).
2. Use a Phillips screwdriver to screw in two or three (three are recommended if you have three screw holes) M6 x 19 mm or 12-24 x 3/4 in. Phillips screws on the front end of each bracket (using a total of 6 screws for both brackets) as shown in .
3. Align the crossbar to the lower back of the two bottom-support rails and use two M4 x 8 mm screws to attach it to each rail (one screw for each rail).

## DETAILED STEPS

---

**Step 1** Position one of the two front-mount bottom-support rails at the lowest possible RU on the rack. If you are installing a chassis above another Cisco Nexus 7009 chassis, position the rail 26.25 inches (66.7 cm) (15 RU) above the bottom-support rails for the lower chassis as shown in [Figure 18: Positioning the Front-Mount Bottom-Support Rails, on page 44](#).

**Note** When installing the chassis without bottom-support rails, you can skip this step.

*Figure 18: Positioning the Front-Mount Bottom-Support Rails*



1	For the heaviest Cisco Nexus 7009 chassis to be installed in the rack, position two front-mount bottom-support rails at the lowest RU on the rack.	3	The distance between the bottom-support rails must be at least 26.25 inches (66.7 cm) (15 RU) for each Cisco Nexus 7009 chassis.
2	For the next lightest Cisco Nexus 7009 chassis to be installed in the rack, position two front-mount bottom-support rails immediately above the first installed chassis.		

**Step 2** Use a Phillips screwdriver to screw in two or three (three are recommended if you have three screw holes) M6 x 19 mm or 12-24 x 3/4 in. Phillips screws on the front end of each bracket (using a total of 6 screws for both brackets) as shown in .

1	Left and right front-mount bottom-support rails positioned at the lowest possible RU	3	Crossbar
2	Two sets of two or three M6 x 19 mm Phillips screws or two sets of two or three 12-24 x 3/4 in. Phillips screws	4	M4 x 8 mm Phillips screws (2)

**Step 3** Align the crossbar to the lower back of the two bottom-support rails and use two M4 x 8 mm screws to attach it to each rail (one screw for each rail).

## Attaching the Center-Mount Bottom-Support Rails

To maximize the stability of the rack, you should install the chassis as low as possible on the rack. Install the heaviest chassis first at the bottom of the rack. If you install a second chassis in the same rack, install it immediately above the lower system if there is enough vertical space.

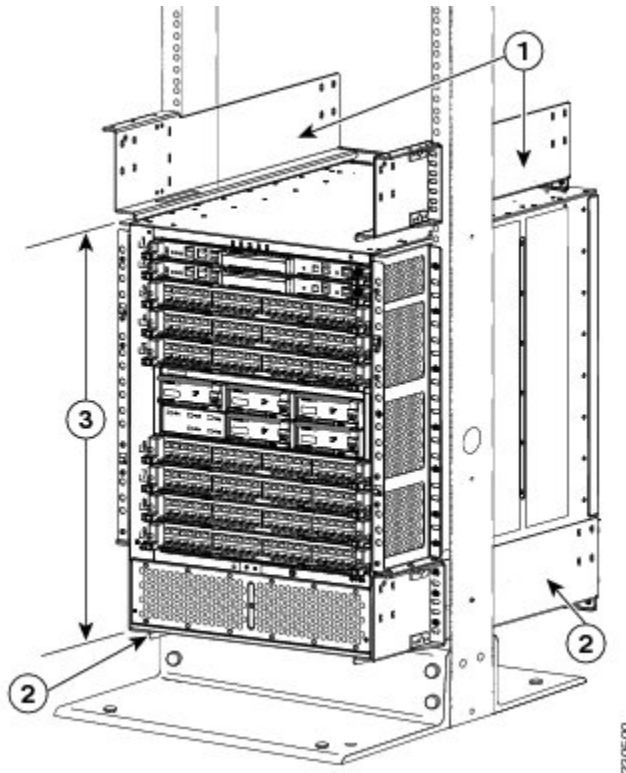
To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

To attach the center-mount bottom-support rails to a two- or four-post EIA rack, follow these steps:

**Step 1** Position one of the two center-mount brackets at the lowest possible RU. If you are installing a chassis above another Cisco Nexus 7009 chassis, position the rail 26.25 inches (66.7 cm) (15 RU) above the center-mount bottom-support rails for the lower chassis as shown in [Figure 19: Positioning the Center-Mounted Bottom-Support Rails, on page 46](#).

Figure 19: Positioning the Center-Mounted Bottom-Support Rails

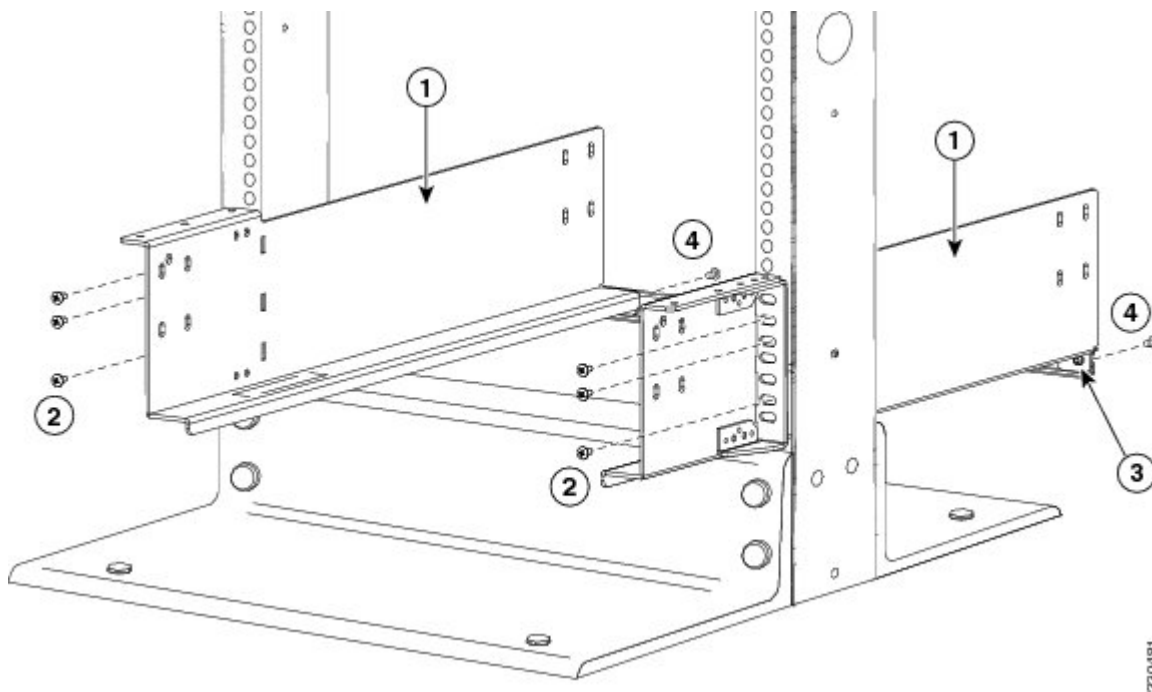


1 For the first and heaviest Cisco Nexus 7009 chassis installed in a rack, position two center-mount bottom-support rails at the lowest RU on the rack.	3 Allow at least 26.25 inches (66.7 cm) (15 RU) for each Cisco Nexus 7009 system.
2 For the second Cisco Nexus 7009 chassis installed in a rack, position two center-mount bottom-support rails immediately above the first installed switch.	

**Step 2**

Use a Phillips screwdriver to screw in two or three (three are recommended if you have three screw holes) M6 x 19 mm or 12-24 x 3/4 inch Phillips screws on each bracket (using a total of 6 screws for both brackets) as shown in [Figure 20: Attaching a Center-Mount Bottom-Support Rail to a Rack](#), on page 47.

Figure 20: Attaching a Center-Mount Bottom-Support Rail to a Rack



1	Left and right center-mount bottom-support rails	3	Crossbar
2	Two sets of 3 M6 x 19 mm Phillips screws or two sets of 3 12-24 x 3/4 in. Phillips screws	4	M4 x 8 mm Phillips screws (2) screws

**Step 3** Align the crossbar to the lower back of the two bottom-support rails and use two M4 x 8 mm screws to attach it to each rail (one screw for each rail).

## Installing the Chassis

This section describes how to install the Cisco Nexus 7009 chassis in a rack or cabinet. Depending on your data center requirements, you can choose to mount the front of the chassis to a rack or cabinet (standard method of mounting the chassis), or you can choose to mount the center of the chassis to a rack or cabinet. To mount the center of the chassis, you must order the center-mount brackets separately from the chassis.

This section includes the following topics:

### Prerequisites for Installing the Chassis

Before you install the chassis, you must make sure that the following items are available for the installation:

- Data center ground that is accessible where you are installing the Cisco Nexus 7009 chassis.

- Two- or four-post, 19-inch EIA rack or cabinet that includes such a rack. These installation instructions show how to install the chassis in a two-post rack. You follow the same steps for installing the chassis on the front two posts of a four-post rack or cabinet.

For more information on the rack or cabinet, see the [Installing a Rack or Cabinet, on page 38](#).




---

**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

- Bottom-support rails that are installed in the rack or cabinet—You must already have two front-mount bottom-support rails or two center-mount bottom-support rails attached to the lowest possible rack unit on the chassis.

For more information, see the [Installing the Bottom-Support Rails on the Rack, on page 40](#).

- Two front-mount brackets attached to the chassis. If you are mounting the chassis at its center to the rack or cabinet, you must also have two center-mount brackets, in the center-mount kit, which you order separately from the Cisco Nexus 7009 chassis.

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

- Cisco Nexus 7009 chassis and its components that are accounted for and undamaged.

For more information, see the [Unpacking and Inspecting a New Switch, on page 39](#).

## Required Tools and Equipment

You need the following tools and equipment to install the Cisco Nexus 7009 chassis:

- Mechanical lift capable of lifting at least 300 pounds (136 kg)




---

**Caution** You must use a mechanical lift whenever lifting a device over 120 pounds (55 kg).

---

- Number 1 Phillips-head screwdriver with torque capability
- Rack-mount kit (shipped with the Cisco Nexus 7009 system accessory kit)

[Table 3: Contents for the Rack-Mount Kit, on page 49](#) lists the items in the rack-mount kit.

**Table 3: Contents for the Rack-Mount Kit**

Part Description	Quantity
12-24 x 3/4 in. Phillips screws	20
M6 x 19 mm Phillips screws	20
Front-mount bottom-support rails	2
Crossbar	1
M4 x 8 mm Phillips screws	2



**Note** You should also have at least two persons to push the chassis, which can weigh up to 300 pounds (136 kg), onto and off the mechanical lift and rack.

- If you are going to mount the center of the chassis to the rack or cabinet, you must also have the optional center-mount kit. [Table 4: Contents for the Optional Center-Mount Kit, on page 49](#) lists the items in the center-mount kit.

**Table 4: Contents for the Optional Center-Mount Kit**

Part Description	Quantity
Center-mount bottom-support rails	2
Center-mount bracket	2

## Mounting the Chassis by its Front Brackets

To install a Cisco Nexus 7009 chassis by its front brackets to a rack or cabinet, follow these steps:

### Step 1

Load the chassis onto a mechanical lift as follows:

- Position the mechanical lift next to the shipping pallet that holds the chassis.
- Elevate the lift platform to the level of the bottom of the chassis (or no more than 0.25 inches [0.635 cm] below the bottom of the chassis).
- Use at least two persons to slide the chassis fully onto the lift so that the side of the chassis touches or is close to the vertical rails on the lift. Make sure that the front and rear of the chassis are unobstructed so you can easily push the chassis into the rack.

**Warning** To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit. Statement 1032

**Caution** To lift the chassis, use a mechanical lift. Use the handles on the side of the chassis for only repositioning the chassis after it is already on the mechanical lift or in the rack or cabinet.

## Mounting the Chassis by its Front Brackets

- Step 2** Use the mechanical lift to move and align the rear of the chassis to the front of the rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 0.25 inch (0.635 cm) above the bracket.
- Step 3** Use at least two persons to push the chassis onto the installed bottom-support rails until the front mount brackets come in contact with the rack rails. Push the lower half of the front side of the chassis so that the back side enters the rack first, and push until the chassis vertical front-mounting brackets or center-mounting brackets come in contact with the front of the rack. (See .)

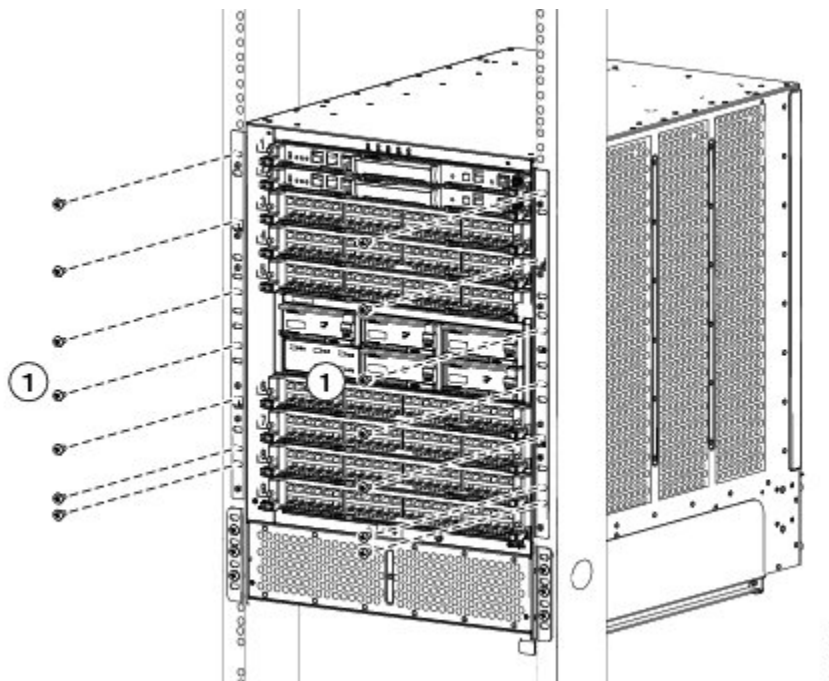
1	Push the lower half of the front side of the chassis	3	Rack with vertical mounting rails
2	Front-mounting brackets		

- Step 4** Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails.

**Tip** To adjust the placement of the chassis so that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails, use the chassis handles shown in [Figure 21: Attaching the Front of the Cisco Nexus 7009 Chassis to the Rack, on page 50](#).

- Step 5** Use a Phillips screwdriver to screw in seven to eight M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis vertical mounting brackets (use a total of 12 to 14 screws for each of two mounting brackets) as shown in [Figure 21: Attaching the Front of the Cisco Nexus 7009 Chassis to the Rack, on page 50](#).

**Figure 21: Attaching the Front of the Cisco Nexus 7009 Chassis to the Rack**



- |   |  |
|---|--|
| 1 | Seven to eight M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of eight screws) |
|---|--|

## Mounting the Chassis by its Center Brackets

To install a Cisco Nexus 7009 chassis by its optional center bracket to a rack or cabinet, follow these steps:

### SUMMARY STEPS

1. Follow these steps to replace the front-mount bracket on the chassis with center-mount brackets:
2. Load the chassis onto a mechanical lift as follows:
3. Use the mechanical lift to move and align the rear of the chassis to the front of the rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 0.25 inch (0.635 cm) above the bracket.
4. Use at least two persons to push the chassis onto the installed bottom-support rails until the front-mount brackets come in contact with the rack rails. Push the lower half of the front side of the chassis so that the back side enters the rack first, and push until the chassis vertical front-mounting brackets or center-mounting brackets come in contact with the front of the rack. (See [Figure 23: Moving a Cisco Nexus 7009 Chassis onto a Rack \(Center-Mount Installation\)](#), on page 53.)
5. Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails.
6. Use a Phillips screwdriver to screw in seven to eight M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis vertical mounting brackets (use a total of 12 to 14 screws for each of two mounting brackets) as shown in .

### DETAILED STEPS

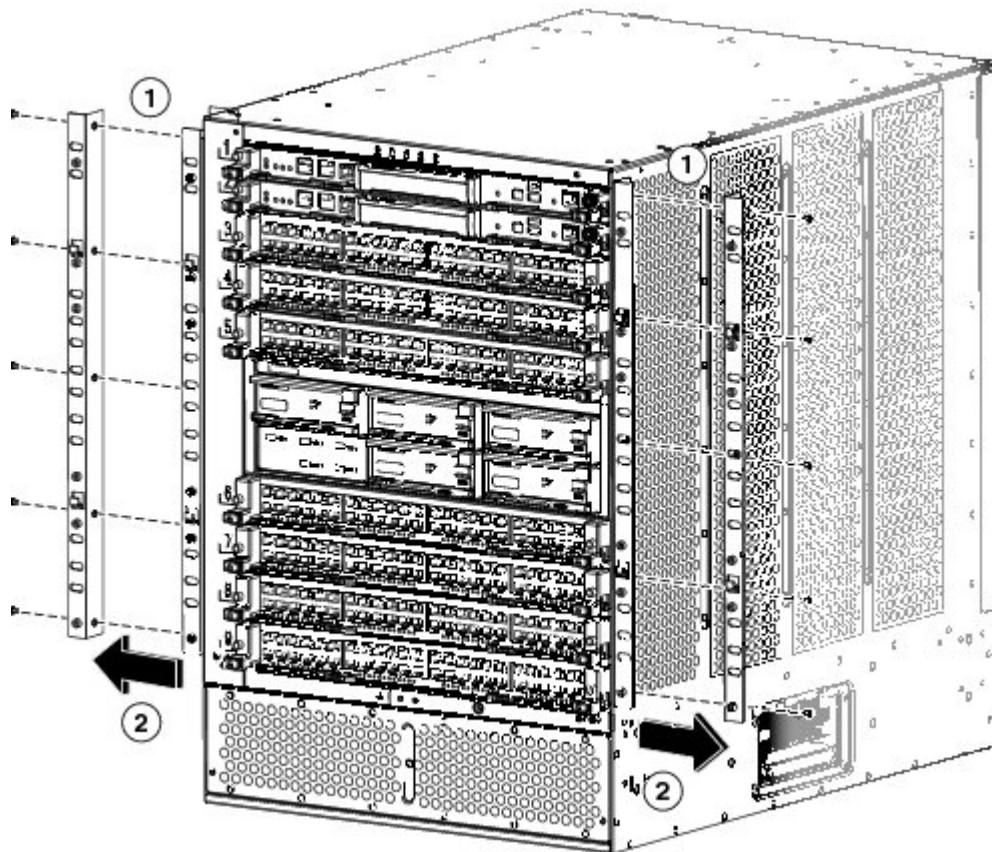
---

#### Step 1

Follow these steps to replace the front-mount bracket on the chassis with center-mount brackets:

- a) Remove the two front-mount brackets from the chassis by unscrewing the five screws that hold each bracket to the front sides of the chassis (see [Figure 22: Removing the Front-Mount Brackets](#), on page 52).

Figure 22: Removing the Front-Mount Brackets



1 Remove five screws from each bracket	2 Remove the bracket from the chassis
--	---------------------------------------

- b) Position the center-mount bracket so that its five screw holes are aligned to the five screw holes used for the front-mount bracket (see ).

1 Position the center-mount bracket with its five screw holes aligned to the five screw holes in the chassis.	2 Fasten the bracket to the chassis using five screws previously used to hold a front-mount bracket to the chassis.
---	---

- c) Fasten the bracket to the chassis with the five screws previously removed from the front-mount bracket.  
d) Repeat Steps b and c for attaching the other center-mount bracket to the other side of the chassis.

## Step 2

Load the chassis onto a mechanical lift as follows:

- Position the mechanical lift next to the shipping pallet that holds the chassis.
- Elevate the lift platform to the level of the bottom of the chassis (or no more than 0.25 inches [0.635 cm] below the bottom of the chassis).
- Use at least two persons to slide the chassis fully onto the lift so that the side of the chassis touches or is close to the vertical rails on the lift. Make sure that the front and rear of the chassis are unobstructed so you can easily push the chassis into the rack.



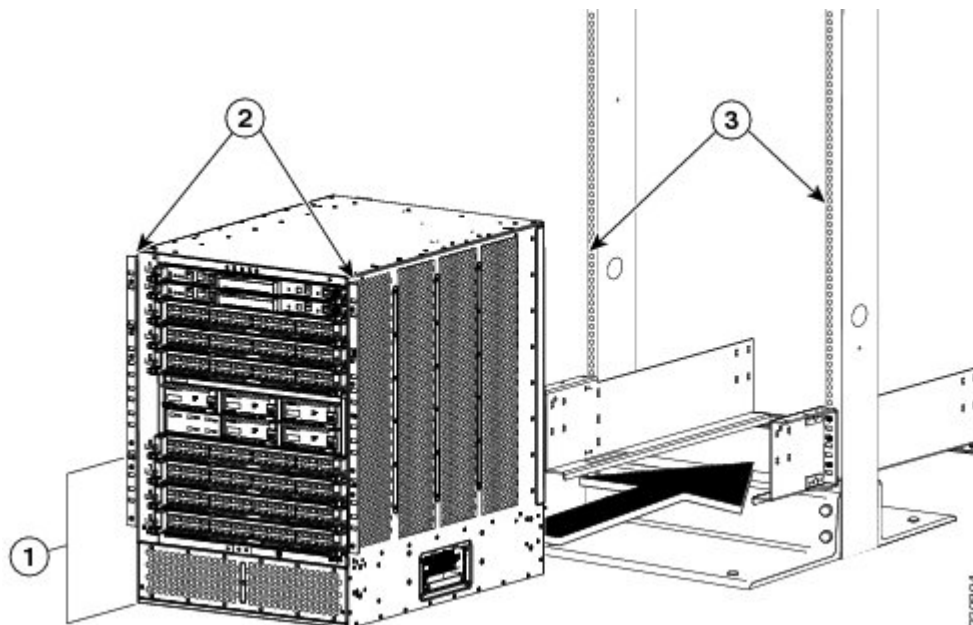
**Warning** To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit. Statement 1032

**Caution** To lift the chassis, use a mechanical lift. Use the handles on the side of the chassis for only repositioning the chassis after it is already on the mechanical lift or in the rack or cabinet.

**Step 3** Use the mechanical lift to move and align the rear of the chassis to the front of the rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 0.25 inch (0.635 cm) above the bracket.

**Step 4** Use at least two persons to push the chassis onto the installed bottom-support rails until the front-mount brackets come in contact with the rack rails. Push the lower half of the front side of the chassis so that the back side enters the rack first, and push until the chassis vertical front-mounting brackets or center-mounting brackets come in contact with the front of the rack. (See [Figure 23: Moving a Cisco Nexus 7009 Chassis onto a Rack \(Center-Mount Installation\)](#), on page 53.)

**Figure 23: Moving a Cisco Nexus 7009 Chassis onto a Rack (Center-Mount Installation)**



1	Push the lower half of the front side of the chassis	3	Rack with vertical mount rails
2	Center-mount brackets		

**Step 5** Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails.

**Tip** To adjust the placement of the chassis so that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails, use the chassis handles shown in .

**Step 6** Use a Phillips screwdriver to screw in seven to eight M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis vertical mounting brackets (use a total of 12 to 14 screws for each of two mounting brackets) as shown in .

- |   |  |
|---|--|
| 1 | Seven to eight M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of eight screws) |
|---|--|

## Grounding the Cisco Nexus 7009 Chassis

If you are using AC power supply units, the Cisco Nexus 7009 system is grounded through the AC power supply cables and one of two grounding connections on the chassis. The AC power supply cables provide a connection to an earth ground whenever you connect the AC power to the system. The system ground, also referred to as the network equipment building system (NEBS) ground, provides additional grounding for EMI shielding requirements and for the low-voltage supplies (DC-DC converters) on the modules. This grounding system is active even when the AC power cables are not connected to the system. You establish this ground by connecting one of the two grounding pads on the chassis to the rack (if it is connected to an earth ground) or directly to the earth ground for the data center building.

If you are using DC power supply units, you must connect each DC power supply unit to the earth ground before connecting the DC power source to the DC power supply units. You also connect the chassis to the NEBS ground for EMI shielding requirements and for the low-voltage supplies on the modules.

This section includes the following topics:

### Prerequisites for Grounding the Chassis

Before you can ground the chassis, you must have a connection to the earth ground for the data center building. If you installed the Cisco Nexus 7009 chassis into a bonded rack (see the rack manufacturer's instructions for more information) that now has a connection to the data center earth ground, you can ground the chassis by connecting its grounding ports to the rack. Otherwise, you must connect the chassis grounding ports directly to the data center ground.

### Required Tools and Equipment

To connect the system ground, you need the following tools and materials:

- Grounding lug—A two-holed standard barrel lug that supports up to 6 AWG wire. This lug is supplied with the Cisco Nexus 7009 system accessory kit.
- Grounding screws—Two M4 x 8 mm (metric) pan-head screws. These screws are shipped with the Cisco Nexus 7009 accessory kit.
- Grounding wire—Not supplied with the Cisco Nexus 7009 system accessory kit. This wire should be sized to meet local and national installation requirements. Depending on the power supply and system, a 12 AWG to 6 AWG copper conductor is required for U.S. installations. We recommend that you use commercially available 6 AWG wire. The length of the grounding wire depends on the proximity of the switch to proper grounding facilities.
- Number 1 Phillips-head screwdriver with torque capability.
- Crimping tool to crimp the grounding wire to the grounding lug.
- Wire-stripping tool to remove the insulation from the grounding wire.

## Connecting the System Ground

After you have moved the chassis into the rack or cabinet, you are ready to connect the system to the data center earth ground. After you ground the chassis, you can ground your ESD wrist strap by connecting it to the chassis.

To connect the system ground to the data center earth ground, follow these steps:

### SUMMARY STEPS

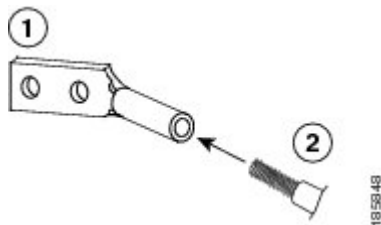
1. Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire.
2. Insert the stripped end of the grounding wire into the open end of the grounding lug as shown in [Figure 24: Inserting the Grounding Wire in the Grounding Lug, on page 55](#).
3. Use the crimping tool to crimp the lug to the grounding wire. Verify that the ground wire is securely attached to the ground lug by attempting to pull the wire out of the crimped lug.
4. Remove the adhesive label from one of the two system grounding pads, and secure the grounding wire lug to the grounding pad with two M4 screws. [Figure 25: Grounding Pad on the Front of the Cisco Nexus 7009 Chassis, on page 56](#) shows the location of the grounding pads on the front side of the chassis. Ensure that the grounding lug and the grounding wire do not interfere with other switch hardware or rack equipment.

### DETAILED STEPS

**Step 1** Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire.

**Step 2** Insert the stripped end of the grounding wire into the open end of the grounding lug as shown in [Figure 24: Inserting the Grounding Wire in the Grounding Lug, on page 55](#).

*Figure 24: Inserting the Grounding Wire in the Grounding Lug*

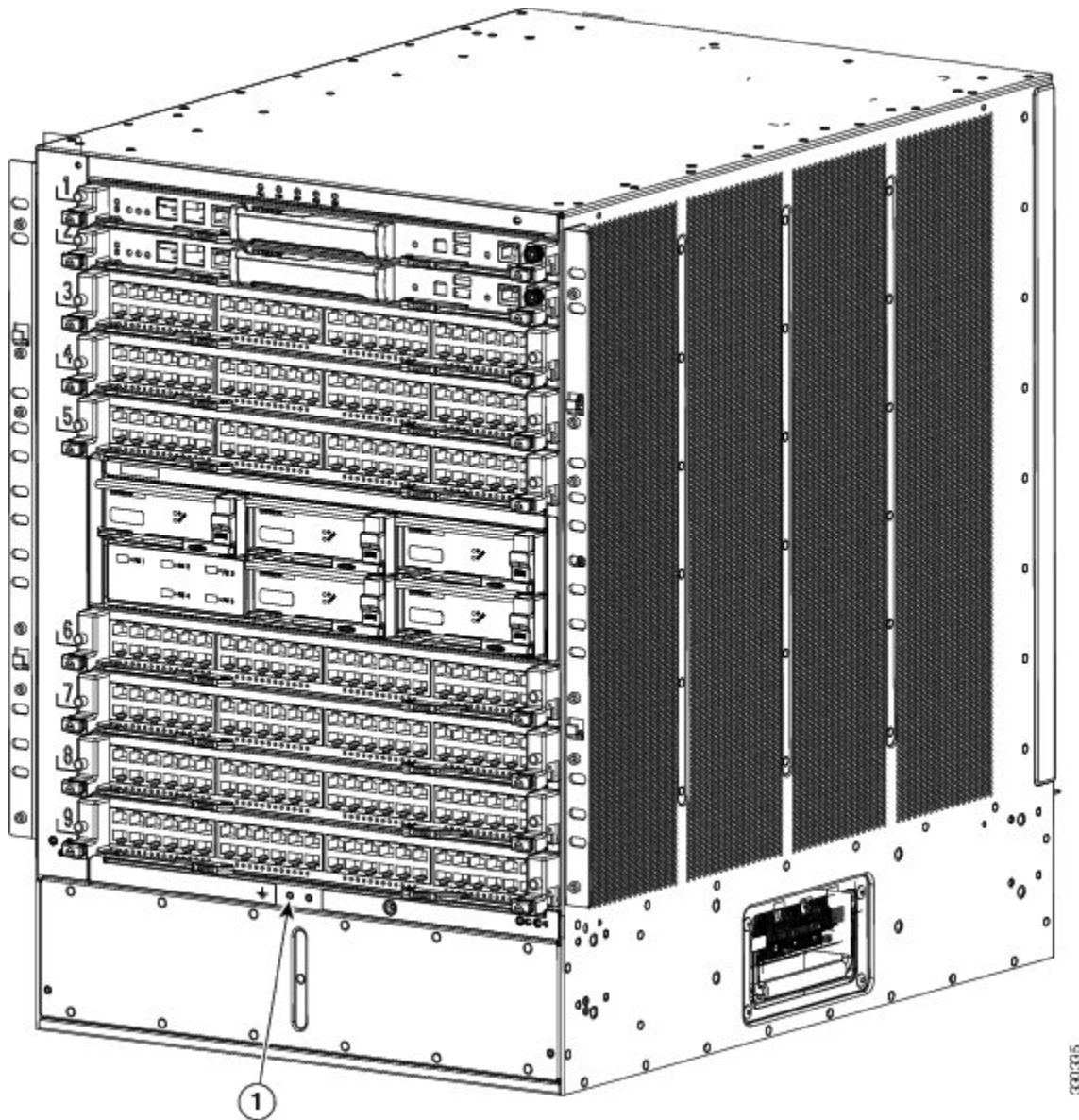


1	NRTL listed 45-degree grounding lug	2	Grounding cable with 0.75 in. (19 mm) of insulation stripped from the end
---	-------------------------------------	---	---

**Step 3** Use the crimping tool to crimp the lug to the grounding wire. Verify that the ground wire is securely attached to the ground lug by attempting to pull the wire out of the crimped lug.

**Step 4** Remove the adhesive label from one of the two system grounding pads, and secure the grounding wire lug to the grounding pad with two M4 screws. [Figure 25: Grounding Pad on the Front of the Cisco Nexus 7009 Chassis, on page 56](#) shows the location of the grounding pads on the front side of the chassis. Ensure that the grounding lug and the grounding wire do not interfere with other switch hardware or rack equipment.

Figure 25: Grounding Pad on the Front of the Cisco Nexus 7009 Chassis



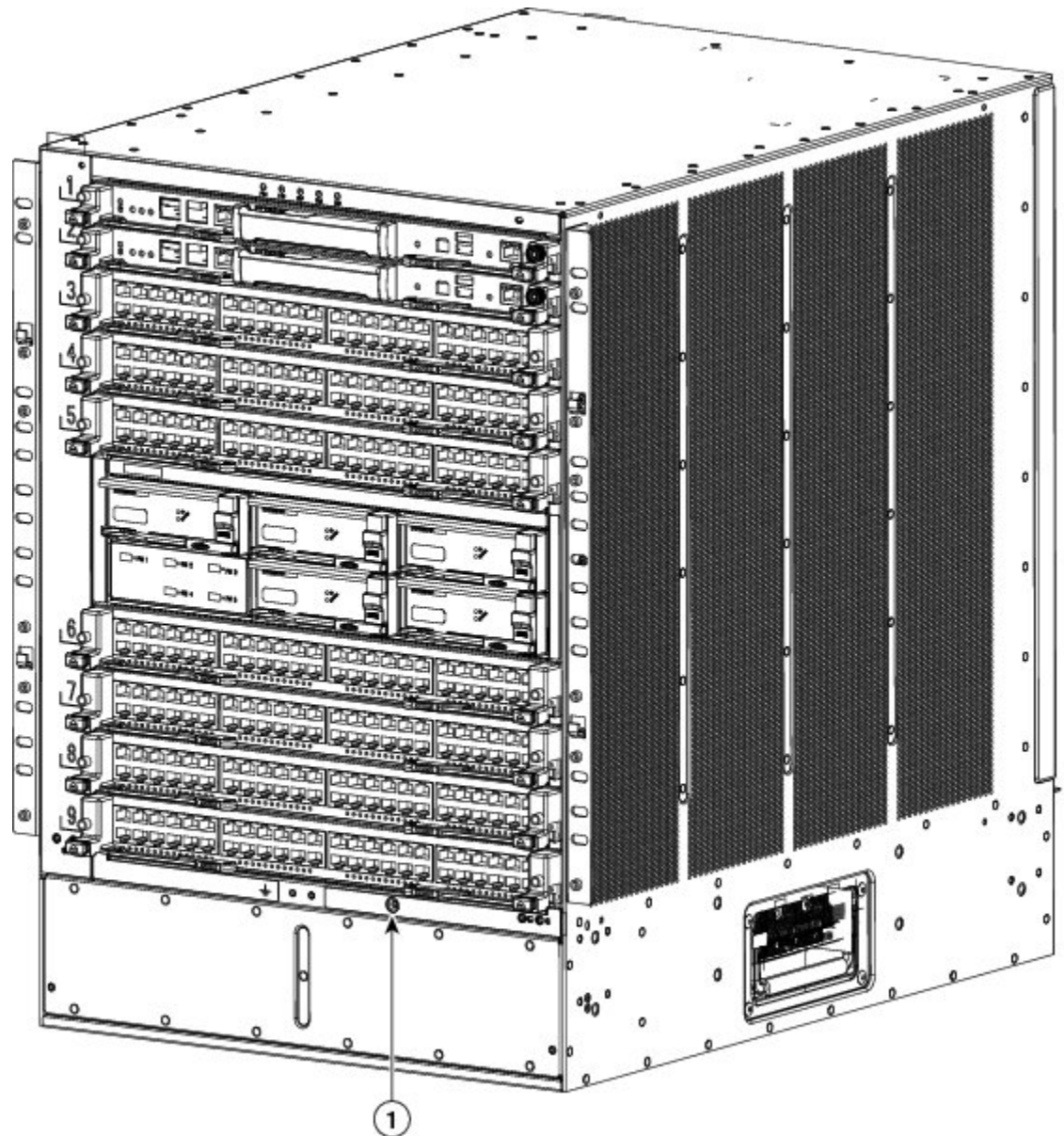
1 Grounding pad

Prepare the other end of the grounding wire and connect it to an appropriate grounding point in your site to ensure an adequate earth ground for the switch. If the rack is grounded, connect the grounding wire as explained in the documentation provided by the vendor for the rack.

## Connecting Your ESD Wrist Strap to the Chassis

After you connect the chassis to the data center earth ground, you can ground your ESD wrist strap by plugging it into an ESD port (shown in [Figure 26: ESD Grounding Port on the Front of the Cisco Nexus 7009 Chassis](#), on page 57).

**Figure 26: ESD Grounding Port on the Front of the Cisco Nexus 7009 Chassis**



1 ESD grounding port

# Installing the Cable Management Frames

After you have fully installed the Cisco Nexus 7009 switch chassis in the rack or cabinet (see the [Installing the Chassis, on page 47](#)), you can install the cable management frames on the front of the chassis.

When you install the cable management frames, you attach two side frames to the front-mount brackets on the chassis and then attach a top hood to the top of the two side frames and the chassis.



**Note** Chassis with center-mount brackets include front-mount brackets for holding the cable management frames.

To install the cable management frames on the Cisco Nexus 7009 switch chassis, follow these steps:

## SUMMARY STEPS

1. Attach a cable management frame (part number 800-33786) onto the two hooks that protrude from the lower half of the left front-mount bracket that is attached to the Cisco Nexus 7009 switch chassis, and loosely fasten the frame to the chassis with four flat-head M4x10 screws as shown in .
2. Repeat Step 1 to attach a cable management frame to the right side of the chassis.
3. Place the top hood (part number 800-33785-01) on top of the two cable management frames that are already installed. Push the top hood toward the chassis so that its alignment pins enter the alignment holes and the top hood rests against the chassis as shown in .
4. Use four M4x8 pan-head screws to loosely fasten the top hood to the chassis as shown in .
5. Use four M4x8 pan-head screws to loosely fasten the top hood to each of the two cable management frames as shown in .
6. Tighten each of the four screws that fasten the top hood to the cable management frames to 11 to 15 in-lb (1.2 to 1.7 N·m).
7. Tighten each of the eight screws that fasten the cable management frames to the rack-mount brackets to 11 to 15 in-lb (1.2 to 1.7 N·m).

## DETAILED STEPS

**Step 1** Attach a cable management frame (part number 800-33786) onto the two hooks that protrude from the lower half of the left front-mount bracket that is attached to the Cisco Nexus 7009 switch chassis, and loosely fasten the frame to the chassis with four flat-head M4x10 screws as shown in .

1	Cable management frame.	3	Position the frame so that the two lower hooks on the front-mount bracket fit inside the two holes on the frame and then slide the assembly down so that it is held by the hooks.
2	Front-mount bracket.	4	Loosely fasten the assembly to the front-mount bracket with four M4x10 screws. Do not tighten these screws.

**Step 2** Repeat Step 1 to attach a cable management frame to the right side of the chassis.

**Step 3** Place the top hood (part number 800-33785-01) on top of the two cable management frames that are already installed. Push the top hood toward the chassis so that its alignment pins enter the alignment holes and the top hood rests against the chassis as shown in .

1 Alignment pins	2 Alignment holes
------------------	-------------------

**Step 4** Use four M4x8 pan-head screws to loosely fasten the top hood to the chassis as shown in .

1 Four M4x8 pan-head screws that fasten the top hood to the left and right cable management assemblies (two screws for each side).
--

**Step 5** Use four M4x8 pan-head screws to loosely fasten the top hood to each of the two cable management frames as shown in .

**Step 6** Tighten each of the four screws that fasten the top hood to the cable management frames to 11 to 15 in-lb (1.2 to 1.7 N·m).

**Step 7** Tighten each of the eight screws that fasten the cable management frames to the rack-mount brackets to 11 to 15 in-lb (1.2 to 1.7 N·m).

## Installing the Front Door and Air Intake Frame

If you need to install the optional double-hinged door and air intake frame, you must install them after installing the cable management frame on the chassis.

To install the front door and air intake frame to the Cisco Nexus 7009 cable management system, follow these steps:

### SUMMARY STEPS

1. Position the left door stop on the middle of the left cable management frame and fasten it with two M3x10 pan-head screws as shown in [Figure 27: Attaching the Left Door Stop, on page 61](#). Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).
2. Place two bushings on the vertical post located half way up the right cable management frame (see [Figure 28: Placing Two Bushings on a Cable Management Frame Hinge Post, on page 62](#)). You must open each bushing to fit it around the post.
3. Assemble the two pieces of the right door stop over the bushings and post. Fasten the two pieces together with two M4 flathead screws (see [Figure 29: Assembling the Right Door Stop, on page 63](#)).
4. Position the hinge bracket at the bottom of the two cable management side frames and align two alignment pins on the hinge bracket (part number 700-31339-01) to two alignment holes in the chassis as shown in . Push the hinge bracket to the chassis so that the pins go into the chassis. Two screw holes in each of the cable management side frames should align to screw holes in the hinge bracket.
5. Attach the bracket to the chassis and cable management frames with eight loosely fastened M4x8 screws, as shown in .
6. Tighten the four M4x8 screws that fasten the hinge bracket to the chassis to 11 to 15 in-lb (1.2 to 1.7 N·m).
7. Tighten the four M4x8 screws that fasten the hinge bracket to the cable management frame to 11 to 15 in-lb (1.2 to 1.7 N·m).
8. Align the two captive screws on the air intake frame to the two screw holes below the cable management frames on the chassis as shown in [Figure 30: Positioning the Air Intake Frame on the Chassis, on page 64](#).

9. Fasten the captive screws on the air-intake frame to the chassis and tighten to 11 to 15 in-lb (95 to 130 N·m).
10. On the chassis door, pull the door handle open on one of the two sides of the door until the handle clicks (the handle clicks when you pull it about 30 degrees).
11. Move the side of the door with the opened handle onto the two hinge pins as shown in . Make sure that the top and bottom hinge pins on the hood and hinge bracket fit through the slots on the top and bottom of that side of the door. Position the door so that the hinge pins are located at the ends of the slots.
12. While holding the door on the hinge pins with one hand, use your other hand to press the locking button on the interior side of the door. See [Figure 31: Attaching the Left Side of the Door, on page 65](#). This action locks the latches around the hinge pins so that you no longer need to hold the door onto the chassis.
13. Open the door handle on the open side of the door until it clicks. This action opens the latches on the open side of the door. See .
14. Swing the door closed so that the unused hinge pins fit inside the slots on the top and bottom of the door. When you close the door, the door stopper automatically presses the lock button on the inside of the door so that the door is locked on the hinge pins. If the door stopper does not close the latches, press the door closed at the handle until you hear the latches click. Make sure that the door is fully secured to the frames on both sides.

## DETAILED STEPS

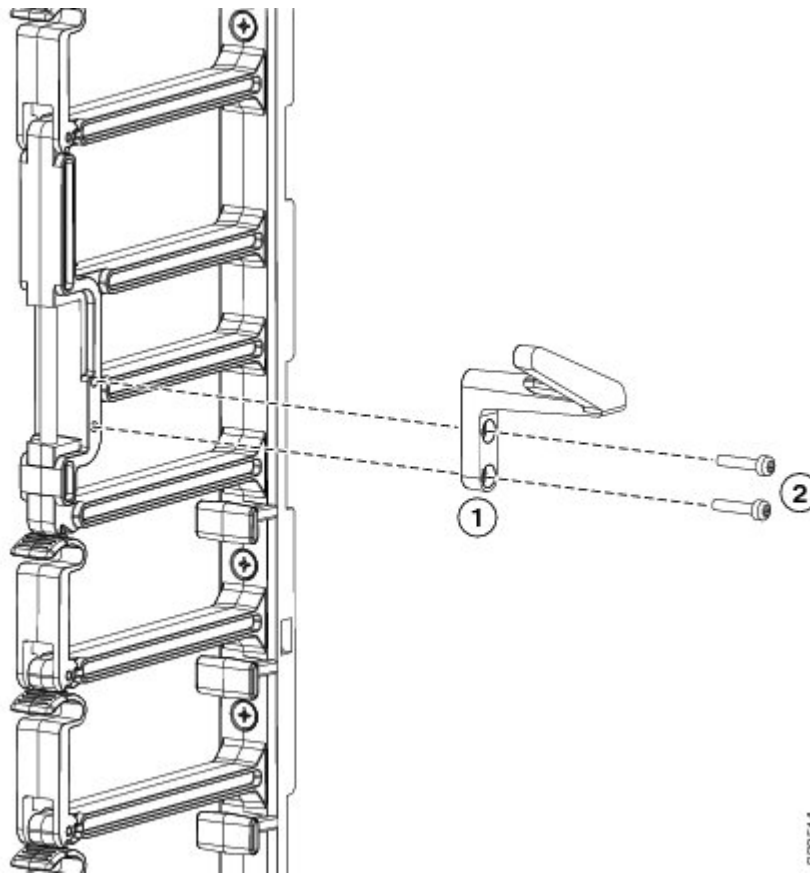
---

### Step 1

Position the left door stop on the middle of the left cable management frame and fasten it with two M3x10 pan-head screws as shown in [Figure 27: Attaching the Left Door Stop, on page 61](#). Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).



Figure 27: Attaching the Left Door Stop

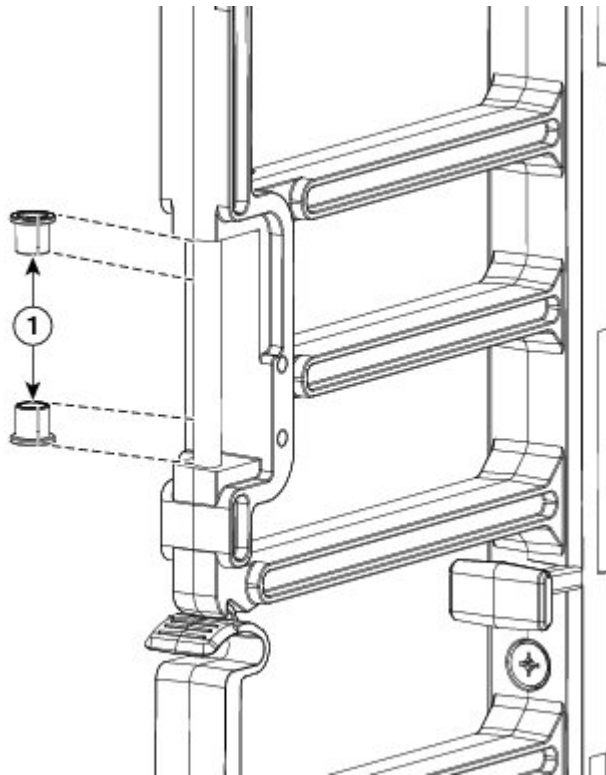


1 Align the left door stopper to the cable management frame.	2 Fasten the left door stopper to the frame with two M3 x 10 mm screws.
--	---

**Step 2**

Place two bushings on the vertical post located half way up the right cable management frame (see [Figure 28: Placing Two Bushings on a Cable Management Frame Hinge Post](#), on page 62). You must open each bushing to fit it around the post.

Figure 28: Placing Two Bushings on a Cable Management Frame Hinge Post

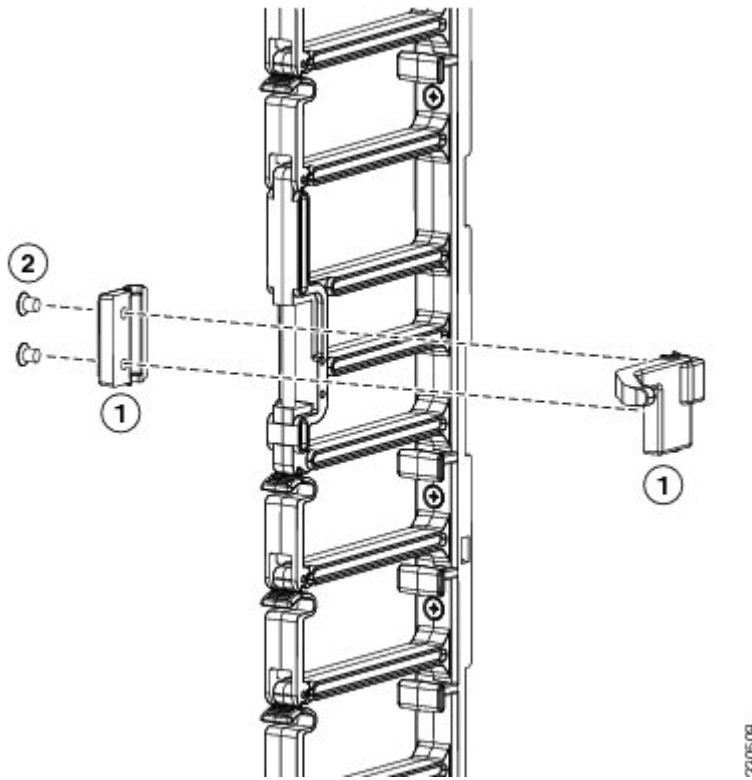


1 Split open the bushings and fit them around the cable management frame post.

**Step 3**

Assemble the two pieces of the right door stop over the bushings and post. Fasten the two pieces together with two M4 flathead screws (see [Figure 29: Assembling the Right Door Stop](#), on page 63).

Figure 29: Assembling the Right Door Stop



1 Assemble the right and left sides of the right door stop around the cable management post. Be sure that each bushing sticks out above or below the assembled door stop.	2 Use two M4 flat head screws to fasten the two door stop pieces together.
---	--

**Step 4** Position the hinge bracket at the bottom of the two cable management side frames and align two alignment pins on the hinge bracket (part number 700-31339-01) to two alignment holes in the chassis as shown in . Push the hinge bracket to the chassis so that the pins go into the chassis. Two screw holes in each of the cable management side frames should align to screw holes in the hinge bracket.

1 Alignment pins	2 Alignment holes
------------------	-------------------

**Step 5** Attach the bracket to the chassis and cable management frames with eight loosely fastened M4x8 screws, as shown in .

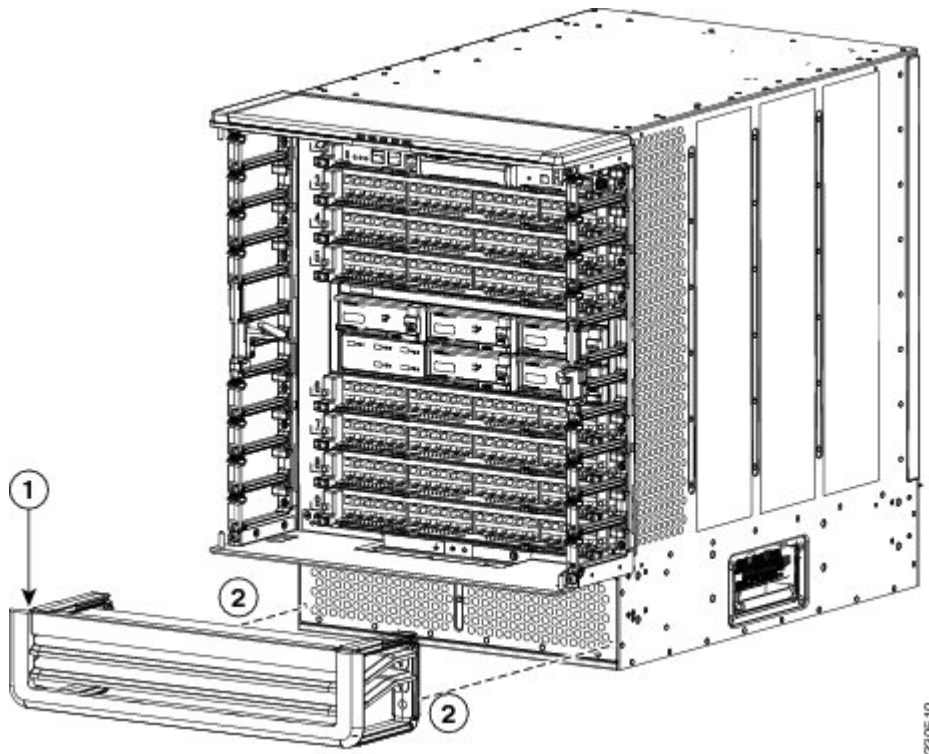
1 Four M4x8 pan-head screws that fasten the hinge bracket to the chassis.	2 Four M4x8 pan-head screws that fasten the hinge bracket to the left and right cable management assemblies.
---	--

**Step 6** Tighten the four M4x8 screws that fasten the hinge bracket to the chassis to 11 to 15 in-lb (1.2 to 1.7 N·m).

**Step 7** Tighten the four M4x8 screws that fasten the hinge bracket to the cable management frame to 11 to 15 in-lb (1.2 to 1.7 N·m).

**Step 8** Align the two captive screws on the air intake frame to the two screw holes below the cable management frames on the chassis as shown in [Figure 30: Positioning the Air Intake Frame on the Chassis, on page 64](#).

Figure 30: Positioning the Air Intake Frame on the Chassis



1 Air intake frame.	2 Align captive screws to their holes in the chassis and fasten them to the chassis.
---------------------	--

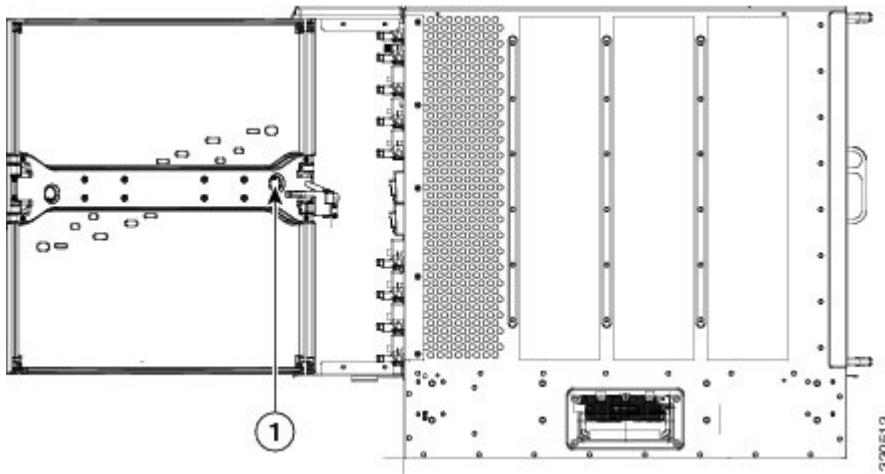
- Step 9** Fasten the captive screws on the air-intake frame to the chassis and tighten to 11 to 15 in-lb (95 to 130 N·m).
- Step 10** On the chassis door, pull the door handle open on one of the two sides of the door until the handle clicks (the handle clicks when you pull it about 30 degrees).
- Step 11** Move the side of the door with the opened handle onto the two hinge pins as shown in . Make sure that the top and bottom hinge pins on the hood and hinge bracket fit through the slots on the top and bottom of that side of the door. Position the door so that the hinge pins are located at the ends of the slots.

**Note** The double-hinge door can be installed and opened on either side. The figures in this procedure show how to install the door on the left side first, but you can use the instructions to install it on either side.

1 Double-hinged door	3 Hinge pins
2 Move one side to the hinge pins	4 Slot for hinge pin

- Step 12** While holding the door on the hinge pins with one hand, use your other hand to press the locking button on the interior side of the door. See [Figure 31: Attaching the Left Side of the Door, on page 65](#). This action locks the latches around the hinge pins so that you no longer need to hold the door onto the chassis.

Figure 31: Attaching the Left Side of the Door



- |   |  |
|---|--|
| 1 | Press the locking button to lock the door onto the hinge pins. |
|---|--|

**Note** Be sure that the door is firmly latched to the two hinge pins. If both of the hinge pins are not secured behind the door latch, hold the door securely with one hand while opening the door handle for the unsecured side until the handle clicks, press that side of the door so that the pins are positioned all the way inside the door slots, press the door latch button on the interior side of the door, and then make sure that the door is firmly secured to both hinge pins.

**Step 13** Open the door handle on the open side of the door until it clicks. This action opens the latches on the open side of the door. See .

1	Door handle pulled out until it clicks	3	Door closed onto the hinge pins
2	Hinge pins		

**Step 14** Swing the door closed so that the unused hinge pins fit inside the slots on the top and bottom of the door. When you close the door, the door stopper automatically presses the lock button on the inside of the door so that the door is locked on the hinge pins. If the door stopper does not close the latches, press the door closed at the handle until you hear the latches click. Make sure that the door is fully secured to the frames on both sides.

**Note** If a hinge pin is not secured behind a door latch, open the door handle for that side of the door until it clicks, open that side of the door, and then press the door closed so that the pins are positioned all the way inside the door slots. When you close the door, the door stopper automatically closes the door latches. If you do not hear the latches click, press the door at the handle to fully close it and to activate the latches. Test the door to make sure that it is fully secured to the four hinge pins.

### What to do next



**Tip** Whenever you need to open the door, pull one of the door handles open until it clicks and then swing that side of the door open.

# Installing Storage Media in a Supervisor Module

Each supervisor module on a Cisco Nexus 7000 Series switch is shipped with a CompactFlash card installed in the LOG FLASH reader (Supervisor 1 modules) or a USB drive installed in the LOG FLASH reader (Supervisor 2 and Supervisor 2E modules). The EXPANSION FLASH reader (Supervisor 1) or Slot0 port (Supervisor 2 and 2E) is left empty, but you can optionally install a card in that reader or a USB drive in the USB port. To allow this storage media to function with the reader or port, you must make sure that it is either formatted for the reader before installing it or format it after installing it.



**Note** The LOG FLASH and EXPANSION FLASH or Slot0 readers require different formats for their storage media.

To replace an installed CompactFlash card, see the [“Replacing Storage Media for a Supervisor Module” section on page 10-61](#).

To install storage media in a supervisor module, follow these steps:

## SUMMARY STEPS

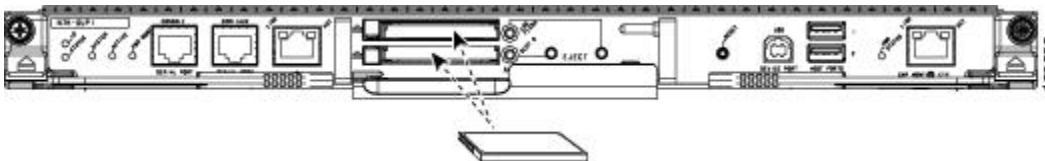
1. Align the storage media to its slot or port on the supervisor module as follows:
2. Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

## DETAILED STEPS

**Step 1** Align the storage media to its slot or port on the supervisor module as follows:

- For a Supervisor 1 module, align the card with the slot for the CompactFlash reader slot labeled LOG FLASH or EXPANSION FLASH as shown in [Figure 32: Aligning a CompactFlash Card to its Reader, on page 66](#). The grooves on the thin side of the card are on the end of the card that goes into the reader first. If the card does not fit easily into the reader, flip the card so that the bottom edge is on top, and try pushing the card into the reader.

**Figure 32: Aligning a CompactFlash Card to its Reader**



- For a Supervisor 2 or 2E module, insert the USB drive in the LOG FLASH or SLOT0 port.

**Step 2** Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

- If you are installing a card or USB drive into the log flash reader, the message will end with “logflash:online.”
- If you are installing a card or USB drive into the expansion flash reader, the message will end with “slot0:online.”
- If you see an “offline” message or do not see a message, either the card or USB drive is not fully inserted or it is improperly formatted.

Make sure that the card or USB drive is fully inserted inside the reader. If it is fully inserted, either format the card (see the Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide) or replace the storage media with another that is properly formatted for the reader.

---







## CHAPTER 4

# Installing a Cisco Nexus 7010 Chassis

This chapter describes how to install a new or relocated Cisco Nexus 7010 chassis in a rack or cabinet. For information about installing other Cisco Nexus 7000 Series chassis or power supplies, see the following chapters:

This chapter includes the following sections:

- [Preparing to Install the Switch, on page 69](#)
- [Installing the Bottom-Support Rails on the Rack, on page 72](#)
- [Installing the Chassis, on page 75](#)
- [Grounding the Cisco Nexus 7010 Chassis, on page 79](#)
- [Installing Storage Media in a Supervisor Module, on page 84](#)
- [Installing the Front Doors and Frame Assembly, on page 85](#)
- [Installing the Air Filter, on page 92](#)

## Preparing to Install the Switch

This section includes the following topics:



---

**Note** You must set up one four-post, 19-inch EIA rack or cabinet before you can install the Cisco Nexus 7010 chassis. Make sure that you order the rack or cabinet and have it delivered before installing the chassis.

---

## Required Tools

Before you install the Cisco Nexus 7010 chassis into a rack, make sure that you have the following tools and equipment:

- Mechanical lift capable of lifting 550 pounds (250 kg)
- Number 1 Phillips screwdriver with torque capability
- 3/16-inch flat-blade screwdriver
- Crimping tool
- Wire stripping tool

- Tape measure and level
- Grounding cable




---

**Note** These tools and equipment do not ship with the chassis.

---

Additional tools and equipment, such as an electrostatic discharge (ESD) wrist strap, that you will also need to install the Cisco Nexus 7010 chassis, are included in the Cisco Nexus 7010 accessory kit.




---

**Caution** When you handle the Cisco Nexus 7010 chassis or its components, you must follow ESD protocol at all times to prevent ESD damage. This protocol includes but is not limited to wearing an ESD wrist strap that you connect to the earth ground.

---




---

**Note** For a list of tools required to assemble and secure the four-post rack or cabinet, see the documentation that the manufacturer shipped with the rack or cabinet.

---

## Installing a Four-Post Rack or Cabinet

Before you install the Cisco Nexus 7010 chassis, you must install a standard four-post, 19-inch EIA data center rack (or a cabinet that contains such a rack) that meets the requirements listed in the Cisco Nexus 7000 Series Site Preparation Guide. To maximize safety, you should do the following for the rack:

- Bolt the rack to the concrete subfloor before moving the Cisco Nexus 7010 chassis onto it.




---

**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

---

- If the rack has bonded construction, connect it to the earth ground to enable you to easily ground the system components that you install and to ground your ESD wrist strap. This step minimizes the chance of electrostatic discharge when you handle ungrounded components before you install them.

Be sure that the rack includes AC power receptacles with the amperage required for the power supply units that you will be installing in the chassis. If you are installing 6-kW power supply units, you must have 20-A circuits. If you are installing 7.5-kW power supply units, you must have 30-A circuits.




---

**Warning** Take care when connecting units to the supply circuit so that wiring is not overloaded. Statement 1018

---

For instructions on setting up the rack, see the documentation that the manufacturer shipped with the rack.

## Unpacking and Inspecting a New Switch

Before you install a new Cisco Nexus 7010 chassis, you need to unpack and inspect it to be sure that you have all the items that you ordered and verify that the switch was not damaged during shipment. If anything is damaged or missing, contact your customer representative immediately.



---

**Tip** Do not discard the shipping container when you unpack the Cisco Nexus 7010 system. Flatten the shipping cartons and store them with the pallet used for the system. If you need to move or ship the system in the future, you will need these containers. For repacking instructions, see [Appendix E, “Repacking the Cisco Nexus 7000 Series Switch for Shipment.”](#)

---

To inspect the shipment, follow these steps:

### SUMMARY STEPS

1. Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:
2. Check the contents of each box or package for damage.
3. If you notice any discrepancies or damage, send the following information to your customer service representative by e-mail:

### DETAILED STEPS

---

**Step 1** Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:

- System chassis, which includes the following installed components:
  - 2 supervisor modules
  - 1 to 8 I/O modules
  - 3 to 5 fabric modules
  - 2 system fan trays
  - 2 fabric fan trays
- 2 to 3 power supply units

The power supply units are shipped with the chassis but are boxed separately.

- Cisco Nexus 7010 system accessory kit

To see a list of what is in the accessory kit, see the [Cisco Nexus 7010 System Accessory Kit Contents](#) document, which is included in the kit.

- Mid-chassis doors and frame (optional)
- Air filter (optional)

**Step 2** Check the contents of each box or package for damage.

**Step 3** If you notice any discrepancies or damage, send the following information to your customer service representative by e-mail:

- Invoice number of the shipper (see the packing slip)
- Model and serial number of the missing or damaged unit
- Description of the problem and how it affects the installation

## Installing the Bottom-Support Rails on the Rack

The bottom-support rails hold the Cisco Nexus 7010 chassis on the rack or cabinet. To maximize the stability of the rack, you must attach these rails at the lowest possible rack unit (RU).

The prerequisites, tools, and process for installing the bottom-support rails are included in the following topics:

### Prerequisites for Attaching the Bottom-Support Rails

Before you can attach the bottom-support rails, you must fully install the rack or cabinet, and should, for maximum stability, bolt the rack or cabinet to the concrete subfloor. If anything lighter than the Cisco Nexus 7010 system is already installed in the rack, you should make sure that it is positioned above where you will be installing the Cisco Nexus 7010 system. Also, you must have the bottom-support rail kit, which ships with the Cisco Nexus 7010 system accessory kit. The distance between the front and rear mounting brackets on the rack or cabinet must be between 24 and 32 inches (60.96 and 81.28 cm) to fit the bottom-support rails.

### Required Tools and Equipment

You need the following tools and equipment to attach the bottom-support rails:

- Number 1 Phillips-head screwdriver with torque capability.
- Rack-mount kit (shipped with the accessory kit). [Table 5: Contents for the Rack-Mount Kit, on page 72](#) lists the items in the rack-mount kit.

**Table 5: Contents for the Rack-Mount Kit**

Part Description	Quantity
12-24 x 3/4 in. Phillips screws	20
M6 x 19 mm Phillips screws	20
Adjustable bottom-support rails	2

## Attaching the Bottom-Support Rails

To maximize the stability of the rack, you should install the chassis as low as possible on the rack. Install the heaviest system first at the bottom of the rack. If you install a second system in the same rack, install it immediately above the lower system if there is enough vertical space.

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

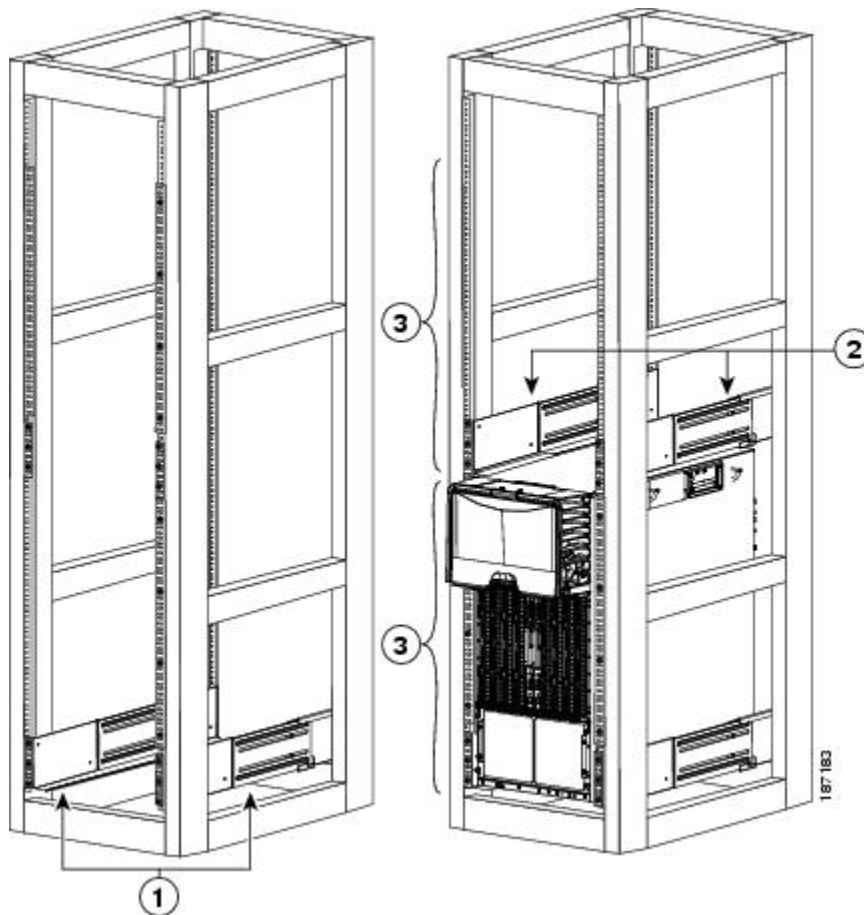
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

To attach the bottom-support rails to a four-post EIA rack, follow these steps:

### Step 1

Position one of the two adjustable bottom-support rails at the lowest possible RU. If you are installing a chassis above another Cisco Nexus 7010 chassis, position the rail 36.75 inches (93.4 cm) (21 RU) above the bottom-support rails for the lower chassis as shown in [Figure 33: Positioning the Bottom-Support Rails, on page 74](#). Adjust the length of the rail so that it stretches from the outer edges of the front and rear vertical mounting rails. You can expand the rail so that its mounting brackets are spaced between 24 to 32 inches (60.96 to 81.28 cm).

Figure 33: Positioning the Bottom-Support Rails



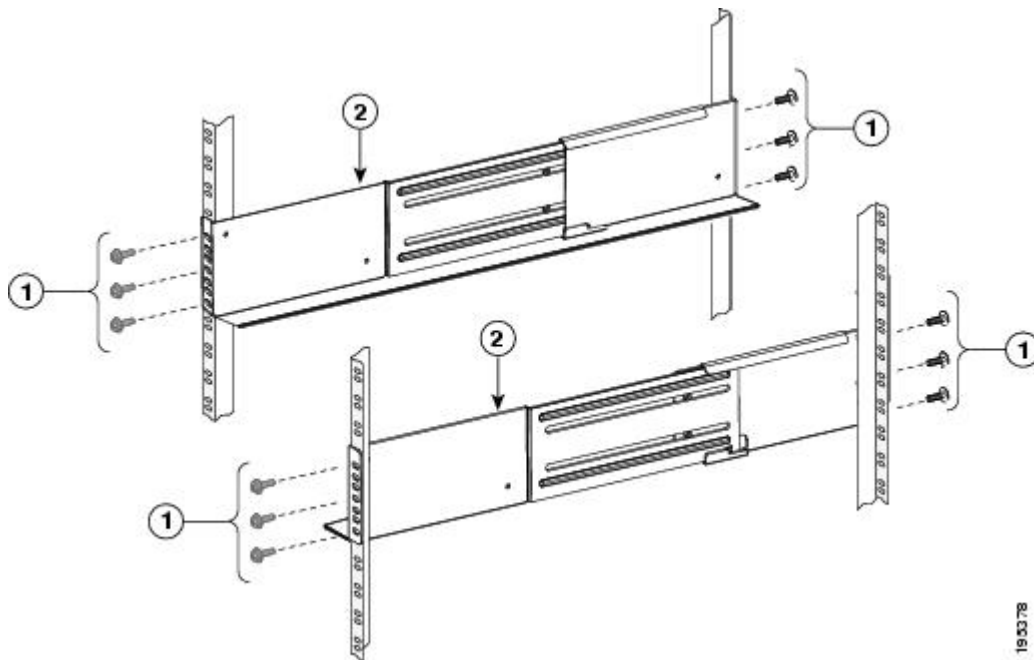
1 For the first and heaviest Cisco Nexus 7010 chassis installed in a rack, position two bottom-support rails at the lowest RU on the rack.	3 Allow at least 36.75 inches (93.4 cm) (21 RU) for each Cisco Nexus 7010 system.
2 For the second Cisco Nexus 7010 chassis installed in a rack, position two bottom-support rails immediately above the first installed switch.	

**Step 2**

Use a Phillips screwdriver to screw in three M6 x 19 mm or 12-24 x 3/4 in. Phillips screws on each end of each rail (using a total of 12 screws for both brackets) as shown in [Figure 34: Attaching a Bottom-Support Rail to a Rack, on page 75](#).

**Note** Three of the screw holes on each end of the bottom-support rail align to the screw holes in the mounting rail. Use a screw in each of these screw holes.

Figure 34: Attaching a Bottom-Support Rail to a Rack



1 Four sets of 3 M6 x 19 mm Phillips screws or four sets of 3 12-24 x 3/4 in. Phillips screws	2 Adjustable bottom-support rails (2)
---	---------------------------------------

## Installing the Chassis

This section describes how to install the Cisco Nexus 7010 chassis in a rack or cabinet. These installation steps include transporting the chassis, elevating the chassis to the rack using a mechanical lift, pushing the chassis onto the rack, and then securing the chassis to the rack.

This section includes the following topics:

### Prerequisites for Installing the Chassis

Before you install the chassis, you must make sure that the following items are available for the installation:

- Data center ground is accessible where you are installing the Cisco Nexus 7010 chassis.
- Four-post, 19-inch EIA rack or cabinet that includes such a rack.

For more information on the rack or cabinet, see the [Installing a Four-Post Rack or Cabinet, on page 70](#).



**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

- Bottom-support rails installed in the rack or cabinet—You must already have two bottom-support rails attached to the lowest possible rack unit on the chassis.

For more information, see the [Installing the Bottom-Support Rails on the Rack, on page 72](#).

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

- Cisco Nexus 7010 chassis and its components are accounted for and undamaged.

For more information, see the [Unpacking and Inspecting a New Switch, on page 71](#).

## Required Tools and Equipment

You need the following tools and equipment to install the Cisco Nexus 7010 chassis:

- Mechanical lift capable of lifting at least 550 pounds (250 kg)



**Caution** You must use a mechanical lift whenever lifting a device over 120 pounds (55 kg).

- Number 1 Phillips-head screwdriver with torque capability
- Bottom-support rails kit (shipped with the Cisco Nexus 7010 system accessory kit)

Part of this kit has already been used to install the bottom-support rails. [Table 6: Contents for the Rack-Mount Kit, on page 76](#) lists the items in the rack-mount kit.

**Table 6: Contents for the Rack-Mount Kit**

Part Description	Quantity
12-24 x 3/4 in. Phillips screws	20
M6 x 19 mm Phillips screws	20
Adjustable bottom-support rails	2





**Note** You should also have at least four persons to push the chassis, which can weigh up to 550 pounds (250 kg), onto and off the mechanical lift and rack.

## Installing the Chassis

To install a Cisco Nexus 7010 chassis in a four-post rack or cabinet, follow these steps:

### SUMMARY STEPS

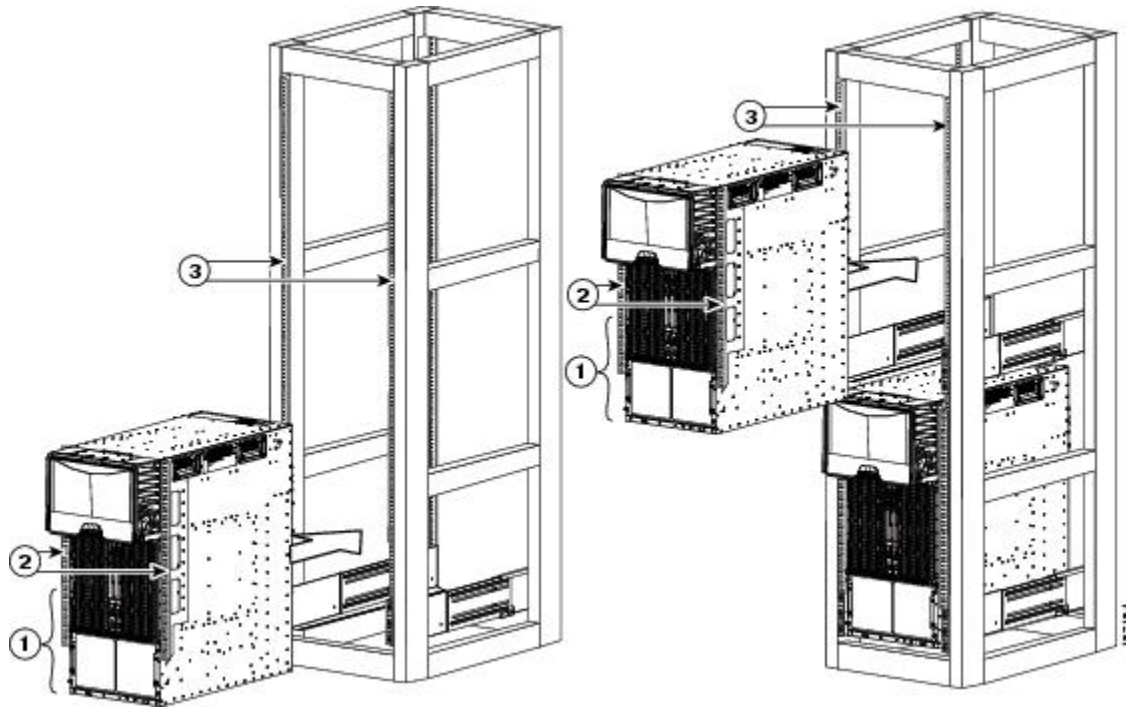
1. Load the chassis onto a mechanical lift as follows:
2. Use the mechanical lift to move and align the rear of the chassis to the front of the four-post rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 1/4 inch (0.635 cm) above the bracket.
3. Use at least four persons to push the chassis onto the installed bottom-support rails as shown in [Figure 35: Moving a Cisco Nexus 7010 Chassis onto a Rack, on page 78](#).
4. Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails.
5. Use a Phillips screwdriver to screw in four M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis mounting brackets (use a total of eight screws for two mounting brackets) as shown in [Figure 36: Attaching the Cisco Nexus 7010 Chassis to the Rack, on page 79](#).

### DETAILED STEPS

- Step 1** Load the chassis onto a mechanical lift as follows:
- a) Position the mechanical lift next to the shipping pallet that holds the chassis.
  - b) Elevate the lift platform to the level of the bottom of the chassis (or no more than 1/4 inch [0.635 cm] below the bottom of the chassis).
  - c) Use at least four persons to slide the chassis fully onto the lift so that the side of the chassis touches or is close to the vertical rails on the lift. Make sure that the front and rear of the chassis are unobstructed so you can easily push the chassis into the rack.
- Warning** To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit. Statement 1032
- Caution** To lift the chassis, use a mechanical lift, not the handles on the side of the chassis (the handles are not rated for lifting over 200 pounds [91 kg]). Use the side handles for only repositioning the chassis after it is already on the mechanical lift or in the rack or cabinet.
- Step 2** Use the mechanical lift to move and align the rear of the chassis to the front of the four-post rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 1/4 inch (0.635 cm) above the bracket.
- Step 3** Use at least four persons to push the chassis onto the installed bottom-support rails as shown in [Figure 35: Moving a Cisco Nexus 7010 Chassis onto a Rack, on page 78](#).

Push the lower half of the front side of the chassis so that the back side enters the rack first, and push until the chassis mounting brackets come in contact with the front vertical mounting rails on the rack.

**Figure 35: Moving a Cisco Nexus 7010 Chassis onto a Rack**



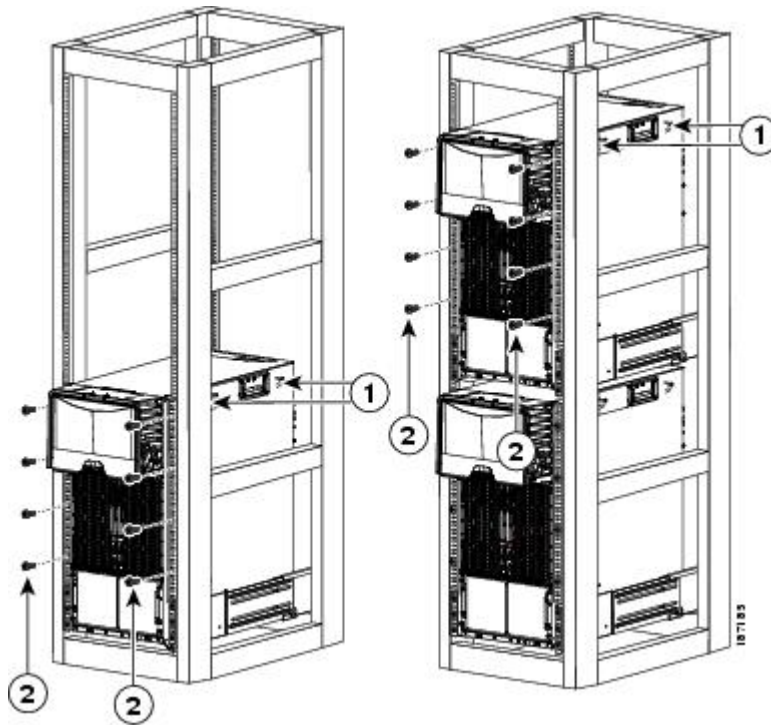
1	Push the lower half of the front side of the chassis	3	Rack vertical mounting rails
2	Chassis mounting brackets		

**Step 4** Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails. If you need to reposition the chassis to align the screw holes, you can use the handles on the sides of the chassis.

**Tip** To adjust the placement of the chassis so that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails, use the chassis handles shown in [Figure 36: Attaching the Cisco Nexus 7010 Chassis to the Rack, on page 79](#).

**Step 5** Use a Phillips screwdriver to screw in four M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis mounting brackets (use a total of eight screws for two mounting brackets) as shown in [Figure 36: Attaching the Cisco Nexus 7010 Chassis to the Rack, on page 79](#).

Figure 36: Attaching the Cisco Nexus 7010 Chassis to the Rack



1 Handles used to adjust the chassis placement	2 Four M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of eight screws)
--	--

## Grounding the Cisco Nexus 7010 Chassis

The Cisco Nexus 7010 system is grounded through the AC power supply cables and one of two grounding connections on the chassis. The AC power supply cables provide a connection to an earth ground whenever you connect the AC power to the system. The system ground, also referred to as the network equipment building system (NEBS) ground, provides additional grounding for EMI shielding requirements and for the low-voltage supplies (DC-DC converters) on the modules. This grounding system is active even when the AC power cables are not connected to the system. You establish this ground by connecting one of the two grounding pads on the chassis to the rack (if it is connected to an earth ground) or directly to the earth ground for the data center building.

This section includes the following topics:

### Prerequisites for Grounding the Chassis

Before you can ground the chassis, you must have a connection to the earth ground for the data center building. If you installed the Cisco Nexus 7010 chassis into a bonded rack (see the rack manufacturer's instructions for more information) that now has a connection to the data center earth ground, you can ground the chassis by

connecting its grounding ports to the rack. Otherwise, you must connect the chassis grounding ports directly to the data center ground.

## Required Tools and Equipment

To connect the system ground, you need the following tools and materials:

- Grounding lug—A two-holed standard barrel lug that supports up to 6 AWG wire. This lug is supplied with the Cisco Nexus 7010 system accessory kit.
- Grounding screws—Two M4 x 8 mm (metric) pan-head screws. These screws are shipped with the Cisco Nexus 7010 accessory kit.
- Grounding wire—Not supplied with the Cisco Nexus 7010 system accessory kit. This wire should be sized to meet local and national installation requirements. Depending on the power supply and system, a 12 AWG to 6 AWG copper conductor is required for U.S. installations. We recommend that you use commercially available 6 AWG wire. The length of the grounding wire depends on the proximity of the switch to proper grounding facilities.
- Number 1 Phillips-head screwdriver with torque capability.
- Crimping tool to crimp the grounding wire to the grounding lug.
- Wire-stripping tool to remove the insulation from the grounding wire.

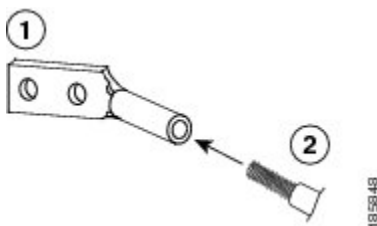
## Connecting the System Ground

After you have moved the chassis into the rack or cabinet, you are ready to connect the system to the data center earth ground. After you ground the chassis, you can ground your ESD wrist strap by connecting it to the chassis.

To connect the system ground to the data center earth ground, follow these steps:

- 
- Step 1** Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire.
- Step 2** Insert the stripped end of the grounding wire into the open end of the grounding lug as shown in [Figure 37: Inserting the Grounding Wire in the Grounding Lug, on page 80](#).

*Figure 37: Inserting the Grounding Wire in the Grounding Lug*



1	NRTL listed 45-degree grounding lug	2	Grounding cable with 0.75 in. (19 mm) of insulation stripped from the end
---	-------------------------------------	---	---

- Step 3** Use the crimping tool to crimp the lug to the grounding wire. Verify that the ground wire is securely attached to the ground lug by attempting to pull the wire out of the crimped lug.

- Step 4** Remove the adhesive label from one of the two system grounding pads, and secure the grounding wire lug to the grounding pad with two M4 screws. [Figure 38: Grounding Pad on the Front of the Cisco Nexus 7010 Chassis, on page 81](#) shows the location of the grounding pads on the front side of the chassis. [Figure 39: Grounding Pad on the Rear of the Cisco Nexus 7010 Chassis, on page 82](#) shows the location on the rear of the chassis. Ensure that the grounding lug and the grounding wire do not interfere with other switch hardware or rack equipment.

*Figure 38: Grounding Pad on the Front of the Cisco Nexus 7010 Chassis*

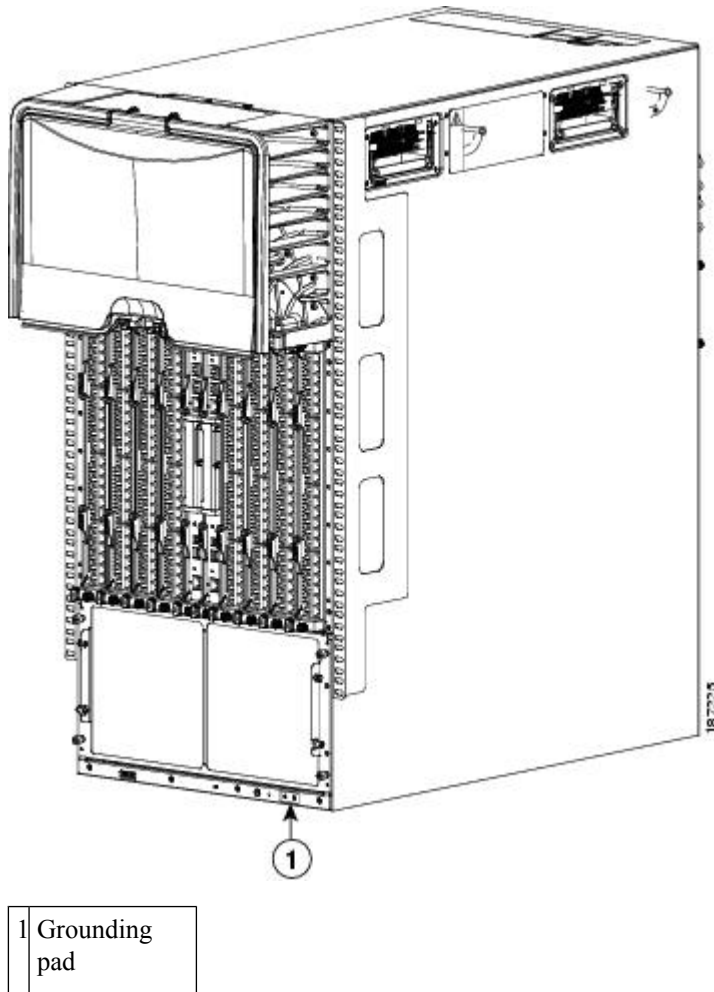
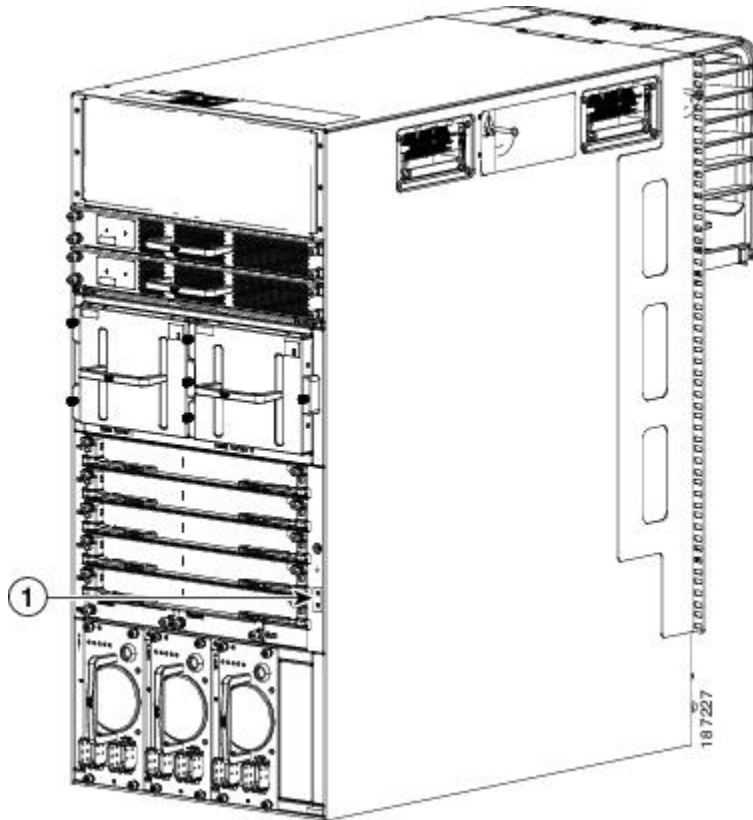


Figure 39: Grounding Pad on the Rear of the Cisco Nexus 7010 Chassis



1	Grounding pad
---	---------------

- Step 5** Prepare the other end of the grounding wire and connect it to an appropriate grounding point in your site to ensure an adequate earth ground for the switch. If the rack is grounded, connect the grounding wire as explained in the documentation provided by the vendor for the rack.

## Connecting Your ESD Wrist Strap to the Chassis

After you connect the chassis to the data center earth ground, you can ground your ESD wrist strap by plugging it into any one of three ESD ports shown in [Figure 40: ESD Grounding Ports on the Front of the Cisco Nexus 7010 Chassis, on page 83](#) (front of the chassis) or [Figure 41: ESD Grounding Port on the Rear of the Cisco Nexus 7010 Chassis, on page 84](#) (rear of the chassis).

Figure 40: ESD Grounding Ports on the Front of the Cisco Nexus 7010 Chassis

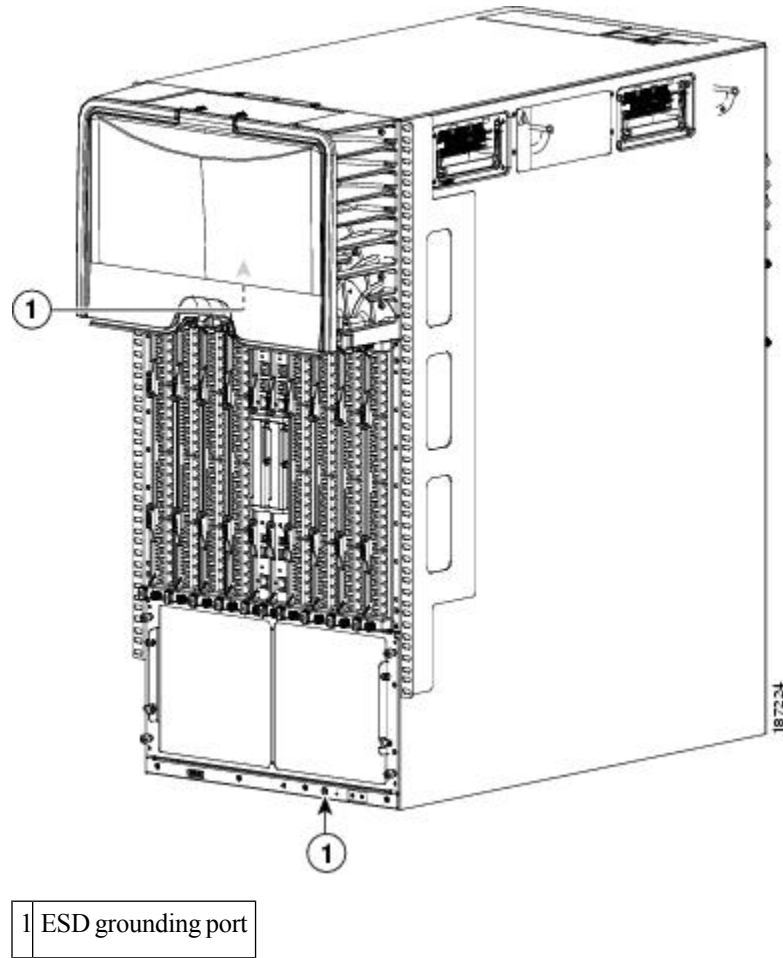
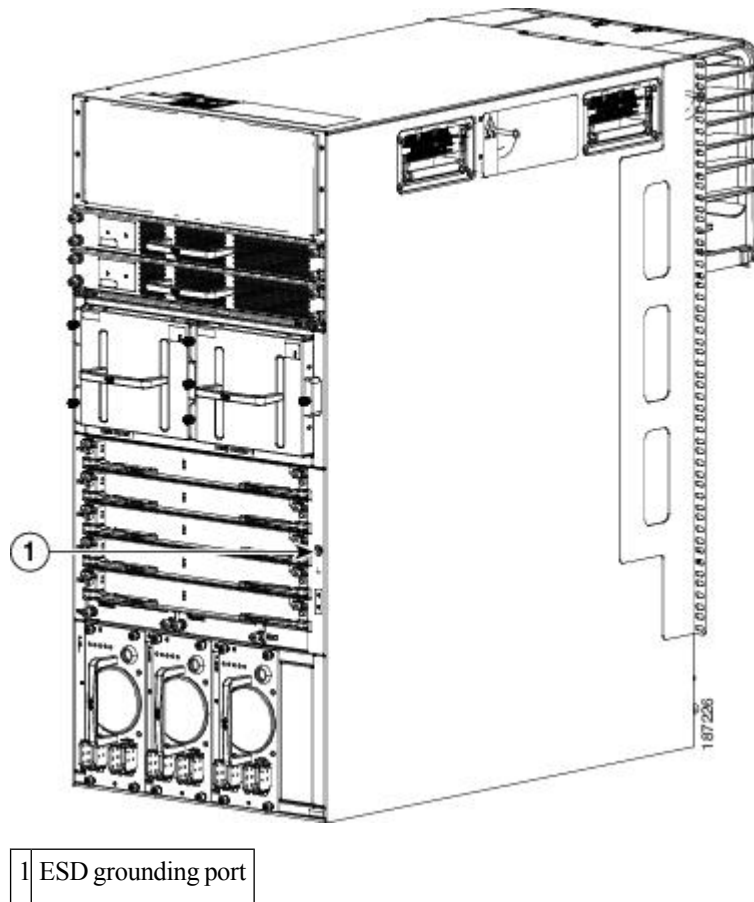


Figure 41: ESD Grounding Port on the Rear of the Cisco Nexus 7010 Chassis



1 ESD grounding port

## Installing Storage Media in a Supervisor Module

Each supervisor module on a Cisco Nexus 7000 Series switch is shipped with a CompactFlash card installed in the LOG FLASH reader (Supervisor 1 modules) or a USB drive installed in the LOG FLASH reader (Supervisor 2 and Supervisor 2E modules). The EXPANSION FLASH reader (Supervisor 1) or Slot0 port (Supervisor 2 and 2E) is left empty, but you can optionally install a card in that reader or a USB drive in the USB port. To allow this storage media to function with the reader or port, you must make sure that it is either formatted for the reader before installing it or format it after installing it.



**Note** The LOG FLASH and EXPANSION FLASH or Slot0 readers require different formats for their storage media.

To replace an installed CompactFlash card, see the [“Replacing Storage Media for a Supervisor Module” section on page 10-61](#).

To install storage media in a supervisor module, follow these steps:



**SUMMARY STEPS**

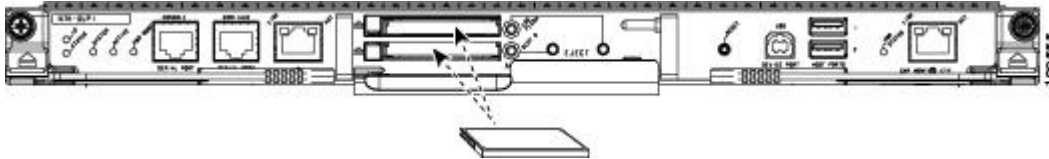
1. Align the storage media to its slot or port on the supervisor module as follows:
2. Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

**DETAILED STEPS**

**Step 1** Align the storage media to its slot or port on the supervisor module as follows:

- For a Supervisor 1 module, align the card with the slot for the CompactFlash reader slot labeled LOG FLASH or EXPANSION FLASH as shown in [Figure 42: Aligning a CompactFlash Card to its Reader, on page 85](#). The grooves on the thin side of the card are on the end of the card that goes into the reader first. If the card does not fit easily into the reader, flip the card so that the bottom edge is on top, and try pushing the card into the reader.

*Figure 42: Aligning a CompactFlash Card to its Reader*



- For a Supervisor 2 or 2E module, insert the USB drive in the LOG FLASH or SLOT0 port.

**Step 2** Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

- If you are installing a card or USB drive into the log flash reader, the message will end with “logflash:online.”
- If you are installing a card or USB drive into the expansion flash reader, the message will end with “slot0:online.”
- If you see an “offline” message or do not see a message, either the card or USB drive is not fully inserted or it is improperly formatted.

Make sure that the card or USB drive is fully inserted inside the reader. If it is fully inserted, either format the card (see the *Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide*) or replace the storage media with another that is properly formatted for the reader.

## Installing the Front Doors and Frame Assembly

After you have finished moving the chassis to its rack, you can install its optional front doors and frame assemblies.

To install the front doors and frame assemblies, follow these steps:

**SUMMARY STEPS**

1. Align the bottom frame assembly so that its four screw holes align to screw holes in the bottom of the chassis, and then screw in four M4 x 6 mm screws to attach the bottom frame to the chassis (see [Figure 43: Installing the Bottom Frame, on page 87](#)).

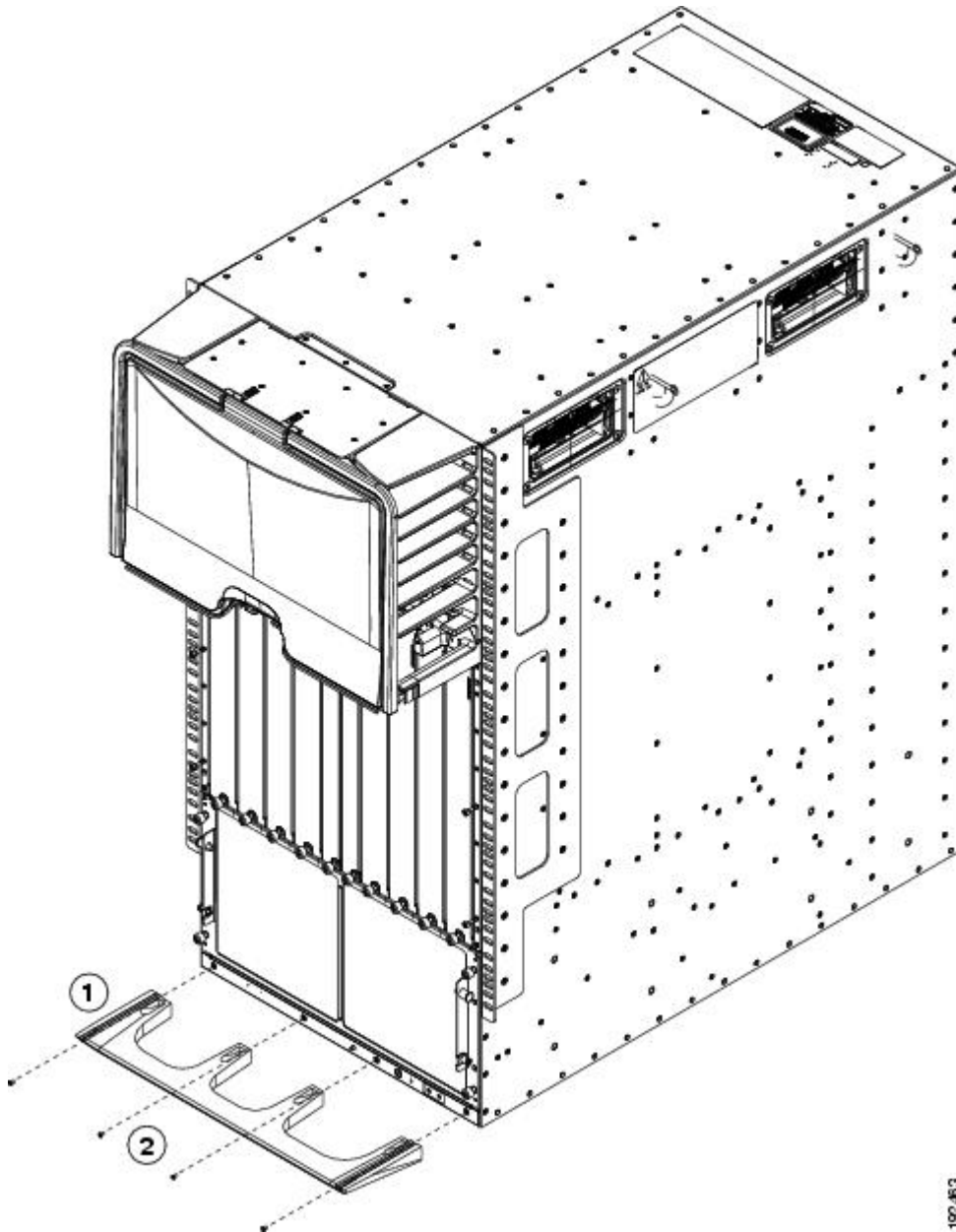
2. For each of the two front doors, match the two alignment pins on the door frame to the alignment holes on the chassis. Position each door frame immediately under the cable management area (see [Figure 44: Installing the Front Doors, on page 88](#)).
3. Tighten three screws for each door frame (see [Figure 45: Attaching the Door Frames to the Chassis, on page 89](#)).

## DETAILED STEPS

---

- Step 1** Align the bottom frame assembly so that its four screw holes align to screw holes in the bottom of the chassis, and then screw in four M4 x 6 mm screws to attach the bottom frame to the chassis (see [Figure 43: Installing the Bottom Frame, on page 87](#)).

Figure 43: Installing the Bottom Frame

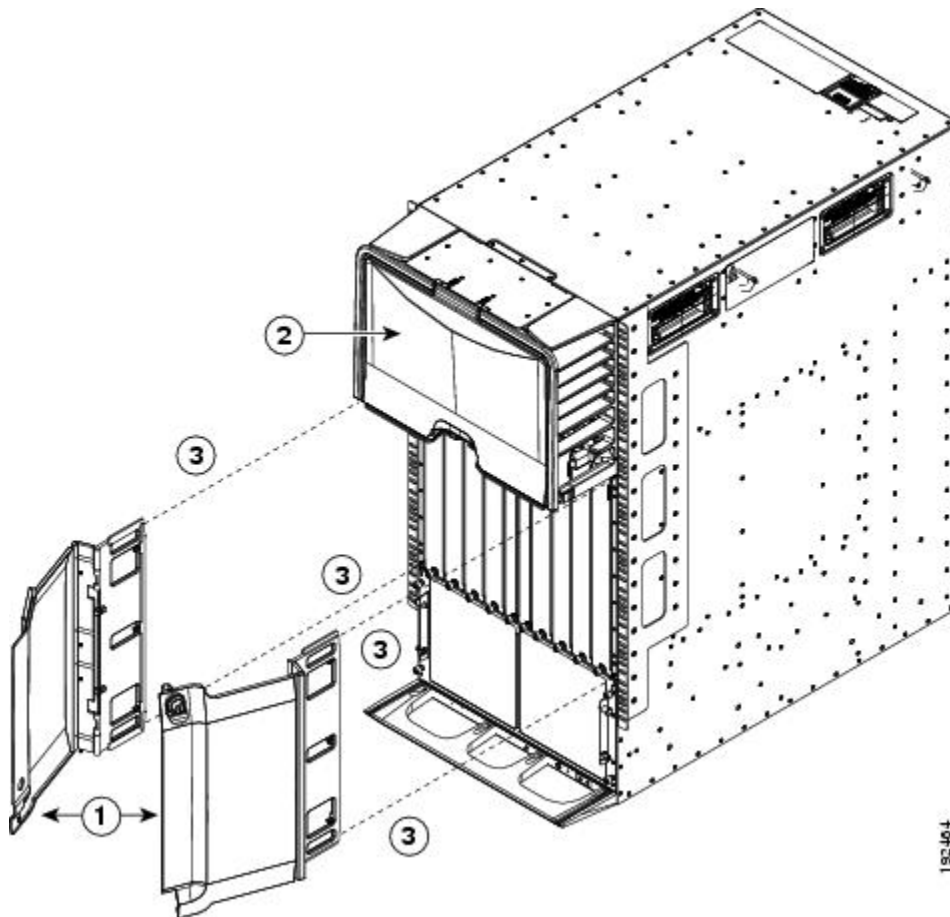


- |  |                         |
|--|-------------------------|
| 1 Bottom frame assembly with screw holes aligned to screw holes in chassis | 2 Four M4 x 6 mm screws |
|--|-------------------------|

**Step 2**

For each of the two front doors, match the two alignment pins on the door frame to the alignment holes on the chassis. Position each door frame immediately under the cable management area (see [Figure 44: Installing the Front Doors, on page 88](#)).

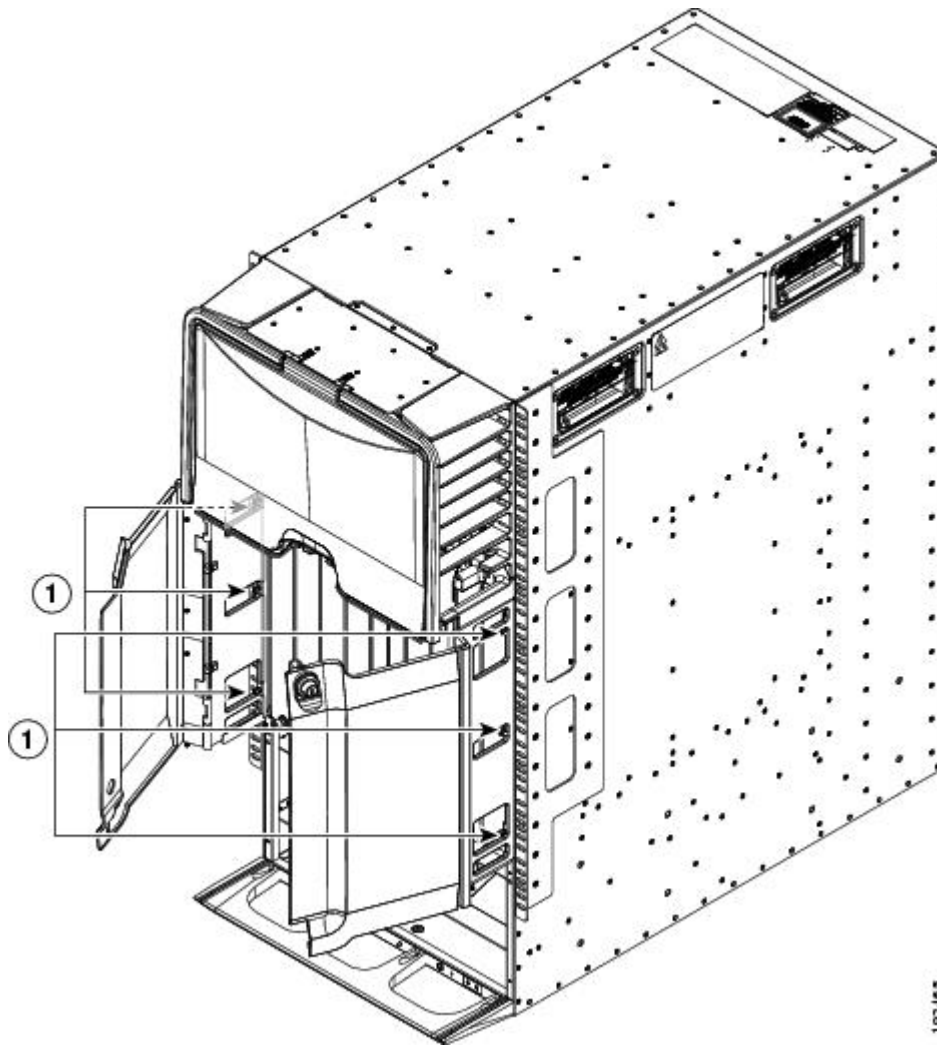
Figure 44: Installing the Front Doors



1 Front door frames.	3 Place door frame on front edge of chassis and immediately under the cable management area.
2 Cable management area.	

**Step 3** Tighten three screws for each door frame (see [Figure 45: Attaching the Door Frames to the Chassis, on page 89](#)).

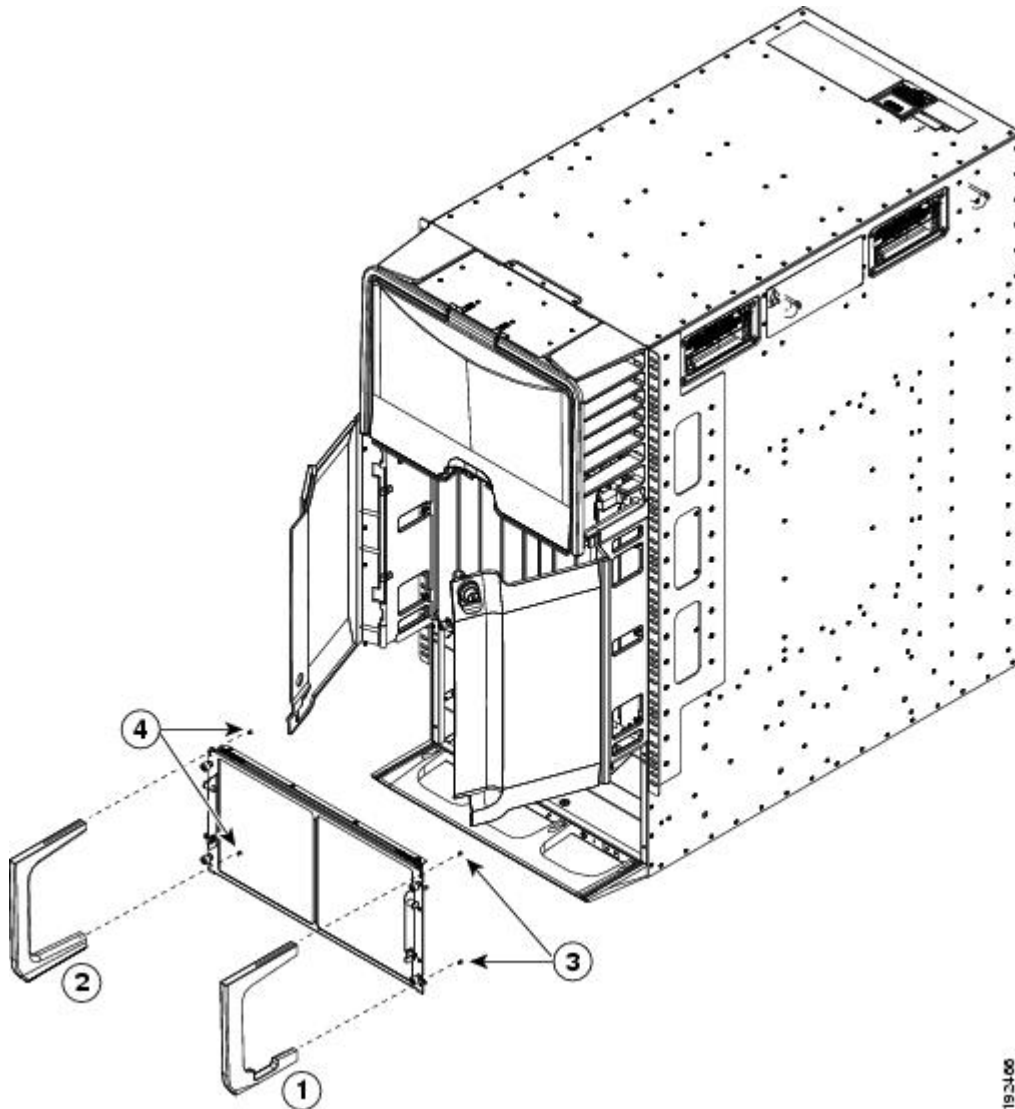
Figure 45: Attaching the Door Frames to the Chassis



1 For each of two door frames, tighten three captive screws to secure the frame to the chassis.

- a) Remove the EMI panel by unscrewing its four captive screws until each is free of the chassis (see [Figure 46: Removing the EMI Panel, on page 90](#)).

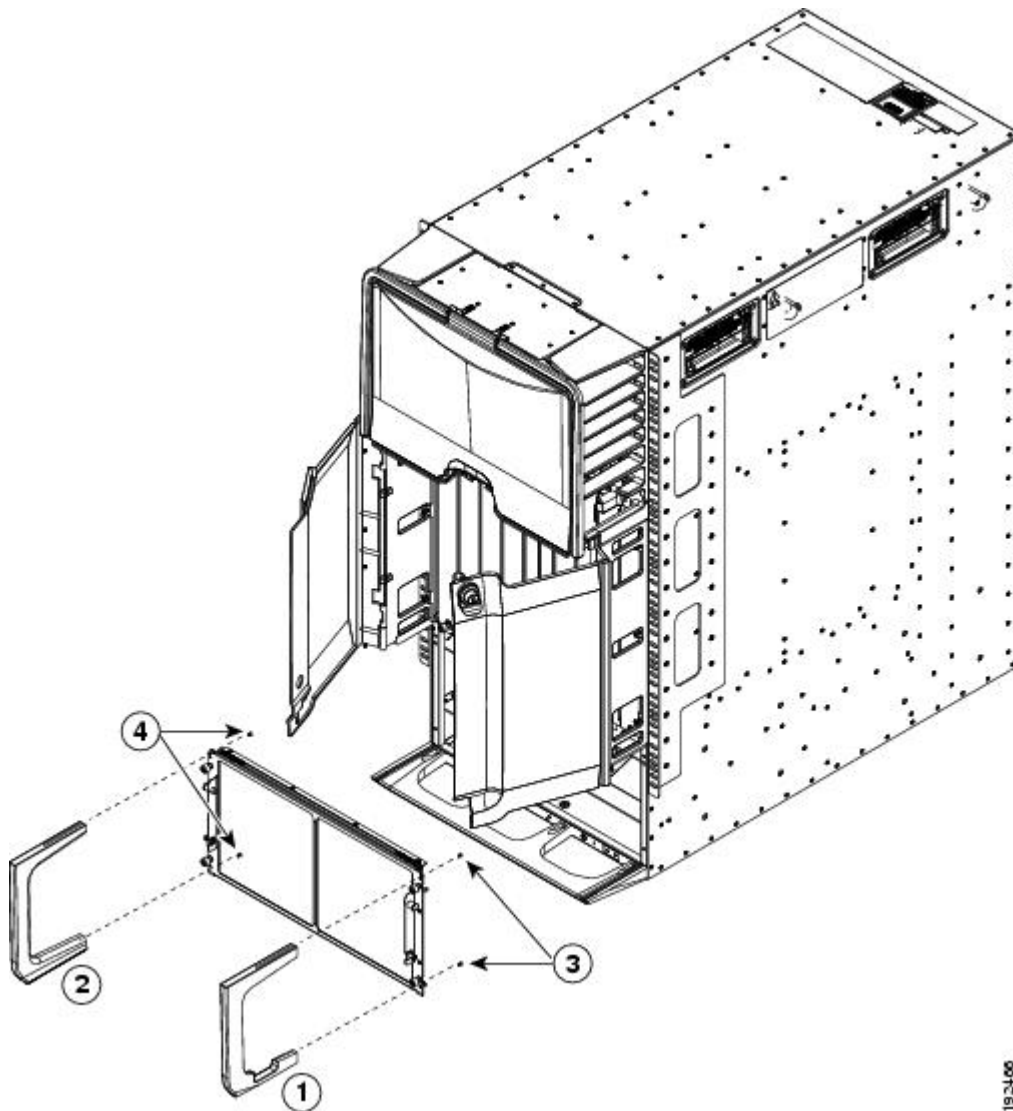
Figure 46: Removing the EMI Panel



- |   |  |
|---|--|
| 1 Unscrew four captive screws until they are each clear of the chassis. | 2 Remove the EMI panel from the chassis. |
|---|--|

- b) On each side of the EMI panel, align a side frame piece so that its two screw holes align to two screw holes on one side of the EMI panel. Screw in a screw in each of these two screw holes so that the side frame assembly is attached to the EMI panel. Repeat this step for the other side of the EMI panel. See [Figure 47: Attaching the Side Frame Assemblies to the EMI Panel](#), on page 91.

Figure 47: Attaching the Side Frame Assemblies to the EMI Panel



1 Right side frame.	3 Use two 6-32 x 1/2-inch flat-head screws to attach the right side frame to the right side of the EMI panel. Tighten the screws to 8 in-lb (0.9 N·m).
2 Left side frame.	4 Use two 6-32 x 1/2-inch flat-head screws to attach the left side frame to the left side of the EMI panel. Tighten the screws to 8 in-lb (0.9 N·m).

- c) Realign the EMI panel to the air intake area on the chassis, screw its four captive screws to the chassis, and tighten the captive screws to 8 in-lb (0.9 N·m).

# Installing the Air Filter

You can install the optional air filter while the Cisco Nexus 7000 Series system is operational.



---

**Note** Only the Cisco Nexus 7010 switch includes an optional air filter.

---

To install an air filter, follow these steps:

## SUMMARY STEPS

1. Align the air filter to the EMI panel, which covers the air intake area.
2. Use one hand on the air filter to hold it in place while you use the other hand to pull out the spring pin on one side of the air filter. Adjust the air filter so that the spring pin will be released into its hole in the EMI panel bracket.
3. Switch hands to hold the air filter on the EMI panel and use the free hand to pull out the other spring pin on the other side of the air filter. With the spring pin pulled out, position the air filter so that the pin will be released into its hole on the EMI panel bracket. Release the spring pin and make sure that it holds the air filter on to the EMI panel.
4. Screw in and tighten both captive screws, one on each side of the air filter.

## DETAILED STEPS

- 
- |               |  |
|---------------|--|
| <b>Step 1</b> | Align the air filter to the EMI panel, which covers the air intake area.   |
| <b>Step 2</b> | Use one hand on the air filter to hold it in place while you use the other hand to pull out the spring pin on one side of the air filter. Adjust the air filter so that the spring pin will be released into its hole in the EMI panel bracket.  |
| <b>Step 3</b> | Switch hands to hold the air filter on the EMI panel and use the free hand to pull out the other spring pin on the other side of the air filter. With the spring pin pulled out, position the air filter so that the pin will be released into its hole on the EMI panel bracket. Release the spring pin and make sure that it holds the air filter on to the EMI panel. |
| <b>Step 4</b> | Screw in and tighten both captive screws, one on each side of the air filter.  |
-





## CHAPTER 5

# Installing a Cisco Nexus 7018 Chassis

This chapter describes how to install a new or relocated Cisco Nexus 7018 chassis in a rack or cabinet. For information about installing other Cisco Nexus 7000 Series chassis or power supplies, see the following chapters:

This chapter includes the following sections:

- [Preparing to Install the Switch, on page 93](#)
- [Installing the Bottom-Support Rails on the Rack, on page 96](#)
- [Installing the Chassis, on page 99](#)
- [Grounding the Cisco Nexus 7018 Chassis, on page 104](#)
- [Installing the Cable Management Frame, on page 108](#)
- [Installing the Front Door and Air Intake Frame, on page 114](#)
- [Installing Storage Media in a Supervisor Module, on page 125](#)

## Preparing to Install the Switch

This section includes the following topics:



---

**Note** You must have one four-post, 19-inch EIA rack or cabinet before you can install the Cisco Nexus 7018 chassis. Make sure that you order the rack or cabinet and have it delivered before installing the chassis.

---

## Required Tools

Before you install the Cisco Nexus 7018 chassis into a rack, make sure that you have the following tools and equipment:

- Mechanical lift capable of lifting 700 pounds (318 kg)




---

**Note** Depending on the number of modules installed in the switch, you can minimize the amount of weight that you need to move. To determine the full weight of the switch chassis that you are moving, see [Table A-6 on page A-6](#)

---

- Number 1 Phillips-head torque screwdriver




---

**Note** Although manual torque screwdrivers are recommended, the screwdriver used (whether manual or powered), must be able to be set for the torque settings specified in these instructions.

---

- Crimping tool
- Wire stripping tool
- Tape measure and level
- Grounding cable




---

**Note** These tools and equipment do not ship with the chassis.

---

Additional tools and equipment, such as an electrostatic discharge (ESD) wrist strap, that you will also need to install the Cisco Nexus 7018 chassis, are included in the Cisco Nexus 7018 accessory kit.




---

**Caution** When you handle the Cisco Nexus 7018 chassis or its components, you must follow ESD protocol at all times to prevent ESD damage. This protocol includes but is not limited to wearing an ESD wrist strap that you connect to the earth ground.

---




---

**Note** For a list of tools required to assemble and secure the four-post rack or cabinet, see the documentation that the manufacturer shipped with the rack or cabinet.

---

## Installing a Four-Post Rack or Cabinet

Before you install the switch, you must install a standard four-post, 19-inch EIA data center rack (or in a cabinet that contains such a rack) that meets the requirements listed in the Cisco Nexus 7000 Series Site Preparation Guide. To maximize safety, you should do the following for the rack:

- Bolt the rack to the concrete subfloor before moving the Cisco Nexus 7018 chassis onto it.

**Warning**

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

- If the rack has bonded construction, connect it to the earth ground to enable you to easily ground the system components that you install and to ground your ESD wrist strap. This step minimizes the chance of electrostatic discharge when you handle ungrounded components before you install them.

Be sure that the rack includes AC power receptacles with the amperage required for the power supply units that you will be installing in the chassis. If you are installing 6-kW power supply units, you must have 20-A circuits. If you are installing 7.5-kW power supply units, you must have 30-A circuits.

**Warning**

Take care when connecting units to the supply circuit so that wiring is not overloaded. Statement 1018

For instructions on setting up the rack, see the documentation that the manufacturer shipped with the rack.

## Unpacking and Inspecting a New Chassis

Before you install a new Cisco Nexus 7018 chassis, you need to unpack and inspect it to be sure that you have all the items that you ordered and verify that the switch was not damaged during shipment. If anything is damaged or missing, contact your customer representative immediately.

**Tip**

Do not discard the shipping container when you unpack the Cisco Nexus 7018 system. Flatten the shipping cartons and store them with the pallet used for the system. If you need to move or ship the system in the future, you will need these containers. For repacking instructions, see [Appendix E, “Repacking the Cisco Nexus 7000 Series Switch for Shipment.”](#)

To inspect the shipment, follow these steps:

### SUMMARY STEPS

1. Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:
2. Check the contents of each box or package for damage.
3. If you notice any discrepancies or damage, send the following information to your customer service representative by e-mail:

### DETAILED STEPS

**Step 1**

Compare the shipment to the equipment list provided by your customer service representative and verify that you have received all of the ordered items. The shipment should include boxes for the following:

- System chassis, which includes the following installed components:
  - 2 supervisor modules

- 1 to 16 I/O modules
- 3 to 5 fabric modules
- 2 fan trays
  
- 2 to 4 power supply units

The power supply units are shipped with the chassis but are boxed separately.

- Cisco Nexus 7018 system accessory kit

To see a list of what is in the accessory kit, see the [Cisco Nexus 7018 System Accessory Kit Contents](#) document, which is included in the kit.

- Front door (optional)

**Step 2** Check the contents of each box or package for damage.

**Step 3** If you notice any discrepancies or damage, send the following information to your customer service representative by e-mail:

- Invoice number of the shipper (see the packing slip)
- Model and serial number of the missing or damaged unit
- Description of the problem and how it affects the installation

---

## Installing the Bottom-Support Rails on the Rack

The bottom-support rails hold the Cisco Nexus 7018 chassis on the rack or cabinet. To maximize the stability of the rack, you must attach these rails at the lowest possible rack unit (RU).

The prerequisites, tools, and process for installing the bottom-support rails are included in the following topics:

### Prerequisites for Attaching the Bottom-Support Rails

Before you can attach the bottom-support rails, you must fully install the rack or cabinet, and should, for maximum stability, bolt the rack or cabinet to the concrete subfloor. If anything lighter than the Cisco Nexus 7018 system is already installed in the rack, you should make sure that it is positioned above where you will be installing the Cisco Nexus 7000 Series system. Also, you must have the bottom-support rail kit, which ships with the Cisco Nexus 7000 Series accessory kit. The distance between the front and rear mounting brackets on the rack or cabinet must be between 24 and 32 inches (61.0 and 81.3 cm).

### Required Tools and Equipment

You need the following tools and equipment to attach the bottom-support rails:

- Number 1 Phillips-head screwdriver with torque capability.

- Rack-mount kit (shipped with the accessory kit). [Table 7: Contents for the Rack-Mount Kit, on page 97](#) lists the items in the rack-mount kit.

**Table 7: Contents for the Rack-Mount Kit**

Part Description	Quantity
12-24 x 3/4 in. Phillips screws	34
M6 x 19 mm Phillips screws	34
Adjustable bottom-support rails	2

## Attaching the Bottom-Support Rails

To maximize the stability of the rack, you should install the chassis as low as possible on the rack. Install the first system at the bottom of the rack. If you install a second system in the same rack, install it immediately above the lower system if there is enough vertical space. If you are planning to install another system in the rack, make sure that the heaviest system is installed first at the bottom of the rack.

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

To attach the bottom-support rails to a four-post EIA rack, follow these steps:

### SUMMARY STEPS

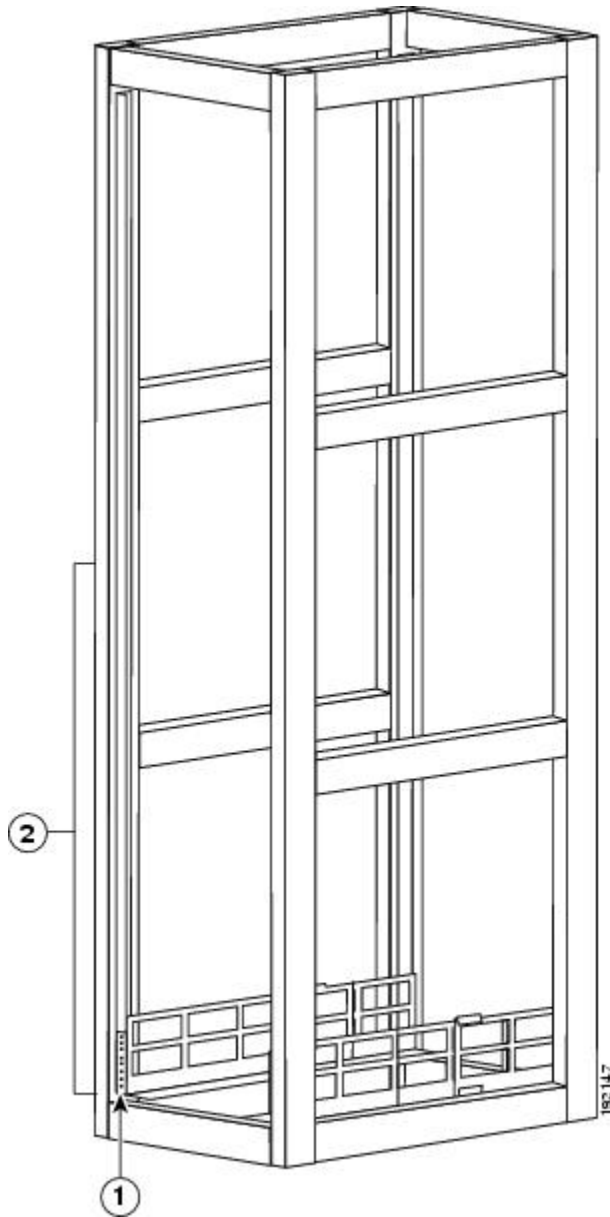
1. Position one of the two adjustable bottom-support rails at the lowest possible RU as shown in [Figure 48: Positioning the Bottom-Support Rails, on page 98](#). Adjust the length of the rail so that it stretches from the outer edges of the front and rear vertical mounting rails. You can expand the rail so that its mounting brackets are spaced between 24 to 32 inches (61.0 to 81.3 cm).
2. Use a Phillips torque screwdriver to screw in at least three (four if possible) M6 x 19 mm or 12-24 x 3/4 inch Phillips screws on each end of each rail (using a total of 16 screws for both brackets) as shown in [Figure 49: Attaching a Bottom-Support Rail to a Rack, on page 99](#). Tighten each screw to a maximum of 40 in-lb [4.5 N·m] of torque.

### DETAILED STEPS

- 
- Step 1** Position one of the two adjustable bottom-support rails at the lowest possible RU as shown in [Figure 48: Positioning the Bottom-Support Rails, on page 98](#). Adjust the length of the rail so that it stretches from the outer edges of the front and rear vertical mounting rails. You can expand the rail so that its mounting brackets are spaced between 24 to 32 inches (61.0 to 81.3 cm).

**Note** Make sure that the two bottom-support rails are level with one another. If they are not level, adjust the higher rail down to the level of the lower rail.

**Figure 48: Positioning the Bottom-Support Rails**

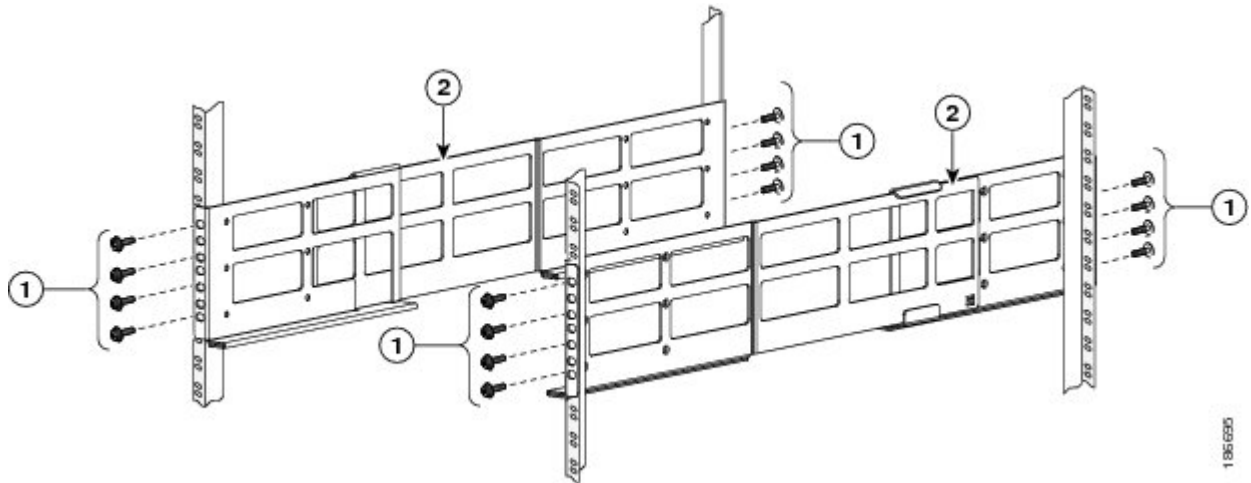


- |   |  |
|---|--|
| 1 For the first and heaviest chassis installed in a rack, position two bottom-support rails at the lowest RU on the rack. | 2 Allow at least 43.75 inches (111.1 cm) (25 RU) for each Cisco Nexus 7018 system. |
|---|--|

**Step 2** Use a Phillips torque screwdriver to screw in at least three (four if possible) M6 x 19 mm or 12-24 x 3/4 inch Phillips screws on each end of each rail (using a total of 16 screws for both brackets) as shown in [Figure 49: Attaching a Bottom-Support Rail to a Rack, on page 99](#). Tighten each screw to a maximum of 40 in-lb [4.5 N·m] of torque.

**Note** At least three of the screw holes on each end of the bottom-support rail align to the mounting rail. Use at least three screws (four if possible) on each end of each bottom support rail.

**Figure 49: Attaching a Bottom-Support Rail to a Rack**



1 Four sets of four M6 x 19 mm Phillips screws or four sets of four 12-24 x 3/4 in. Phillips screws (tightened to a maximum of 40 in-lb [4.5 N·m])	2 Adjustable bottom-support rails (2)
--	---------------------------------------

## Installing the Chassis

This section describes how to install the chassis (transporting and elevating the chassis to the rack using a mechanical lift, pushing it onto the rack, and then securing it to the rack).

This section includes the following topics:

### Prerequisites for Installing the Chassis

Before you install the chassis, you must make sure that the following items are available for the installation:

- Data center ground is accessible where you are installing the Cisco Nexus 7018 chassis.
- Four-post, 19-inch EIA rack or cabinet that includes such a rack.

For more information on the rack or cabinet, see the [Installing a Four-Post Rack or Cabinet, on page 94](#).



**Warning** Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

- Bottom-support rails installed in the rack or cabinet—You must already have two bottom-support rails attached to the lowest possible rack unit on the chassis.

For more information, see the [Installing the Bottom-Support Rails on the Rack, on page 96](#).

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

- Cisco Nexus 7018 chassis and its components are accounted for and undamaged.

For more information, see the [Unpacking and Inspecting a New Chassis, on page 95](#).

## Required Tools and Equipment

You need the following tools and equipment to install the Cisco Nexus 7000 Series chassis:

- Mechanical lift capable of lifting 700 pounds (318 kg)



**Caution** You must use a mechanical lift to lift a switch weighing over 120 pounds (55 kg).



**Note** Depending on the number of modules installed in the switch, you can minimize the amount of weight that you need to move. You can also remove the fan trays before moving the chassis. To determine the full weight of the switch chassis that you are moving, see [Table A-6 on page A-6](#).

- Number 1 Phillips-head torque screwdriver



**Note** Although manual torque screwdrivers are recommended, the screwdriver used (whether manual or powered), must be able to be set for the torque settings specified in these instructions.



**Caution** Do not use magnetic heads on the screwdriver.

- Bottom-support rails kit (shipped with the Cisco Nexus 7018 accessory kit)

Part of this kit has already been used to install the bottom-support rails. [Table 8: Contents for the Rack-Mount Kit, on page 101](#) lists the items in the rack-mount kit.



**Table 8: Contents for the Rack-Mount Kit**

Part Description	Quantity
12-24 x 3/4 in. Phillips screws	34
M6 x 19 mm Phillips screws	34
Adjustable bottom-support rails	2



**Note** You should also have at least two persons to push the chassis, which can weigh up to 700 pounds (318 kg) or, if you remove all fan trays and power supplies, it can weigh up to 500 pounds (227 kg), onto and off the mechanical lift and rack. We also recommend that you use a third person for guiding the chassis as it is being pushed.

## Installing the Chassis

To install a Cisco Nexus 7018 chassis in a four-post rack or cabinet, follow these steps:

### SUMMARY STEPS

1. To lighten the chassis, we recommend that you remove the fan trays from the chassis. The electronics on these modules are well sealed from damage but you must still be careful not to damage their connectors. To remove a fan tray, follow these steps:
2. Load the chassis onto a mechanical lift as follows:
3. Use the mechanical lift to move and align the rear of the chassis to the front of the four-post rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 1/4 inch (0.6 cm) above the bracket.
4. Use at least two persons to push the chassis half way onto the installed bottom-support rails as shown in [Figure 50: Moving a Cisco Nexus 7018 Chassis onto a Rack, on page 103](#) and a third person to guide the back of the chassis so that it does not get caught on anything as it is pushed into the rack.
5. Lower the lift until it is no more than 0.25 inches below the bottom support rails. This action ensures that the chassis is not pointing downwards in a way that might get it caught on the expansion edge of the bottom support rails.
6. With the chassis flat on the bottom support rails, use two persons to push evenly on each side of the chassis until it is fully loaded onto the rack (the two mounting brackets on the front of the chassis come into contact with the two vertical mounting rails on the front of the rack). Use a third person to guide the chassis so that the rear of the chassis (the side being pushed into the rack) does not get caught on any edges of the bottom support rails.
7. Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails.
8. Use a Phillips torque screwdriver to screw in nine M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis mounting brackets (use a total of 18 screws for two mounting brackets) as shown in [Figure 51: Attaching the Cisco Nexus 7018 Chassis to the Rack, on page 104](#). Tighten each screw to a maximum of 40 in-lb [4.5 N·m] of torque.

## DETAILED STEPS

---

**Step 1** To lighten the chassis, we recommend that you remove the fan trays from the chassis. The electronics on these modules are well sealed from damage but you must still be careful not to damage their connectors. To remove a fan tray, follow these steps:

- a) Unscrew the four captive screws on the front of the fan tray until they are no longer in contact with the chassis.
- b) Grab the fan tray handle and pull the fan tray part way out of the chassis.
- c) Place your other hand under the chassis to support its weight and pull the fan tray fully out of the chassis.
- d) Place the fan tray on an antistatic surface where nothing touches its connectors on the back of the module.
- e) If there are power supplies in the chassis, remove the power supplies to minimize the weight of the chassis. The chassis does not ship with power supplies installed, but if you are moving a previously installed chassis, be sure that the power supplies are removed (for instructions on removing power supplies, see the [“Removing a 6-kW or 7.5-kW AC Power Supply Unit During Operations”](#) section on page 10-4 ).

**Step 2** Load the chassis onto a mechanical lift as follows:

- a) Position the mechanical lift next to the shipping pallet that holds the chassis.
- b) Elevate the lift platform to the level of the bottom of the chassis (or no more than 1/4 inch [0.6 cm] below the bottom of the chassis).
- c) Use at least two persons to slide the chassis fully onto the lift so that the side of the chassis touches or is close to the vertical rails on the lift. Push only the lower half of the frame of the chassis (never push on the modules installed in the chassis and do not use their handles to guide the chassis).

**Tip** Use a third person to guide the chassis and to make sure that it does not collide with anything or tip over.

**Warning** To prevent personal injury or damage to the chassis, never attempt to lift or tilt the chassis using the handles on modules (such as power supplies, fans, or cards); these types of handles are not designed to support the weight of the unit. Statement 1032

**Caution** To lift the chassis, use a mechanical lift, not the handles on the side of the chassis (the handles are not rated for lifting over 200 pounds [91 kg]). Use the side handles for only repositioning the chassis after it is already on the mechanical lift or in the rack or cabinet.

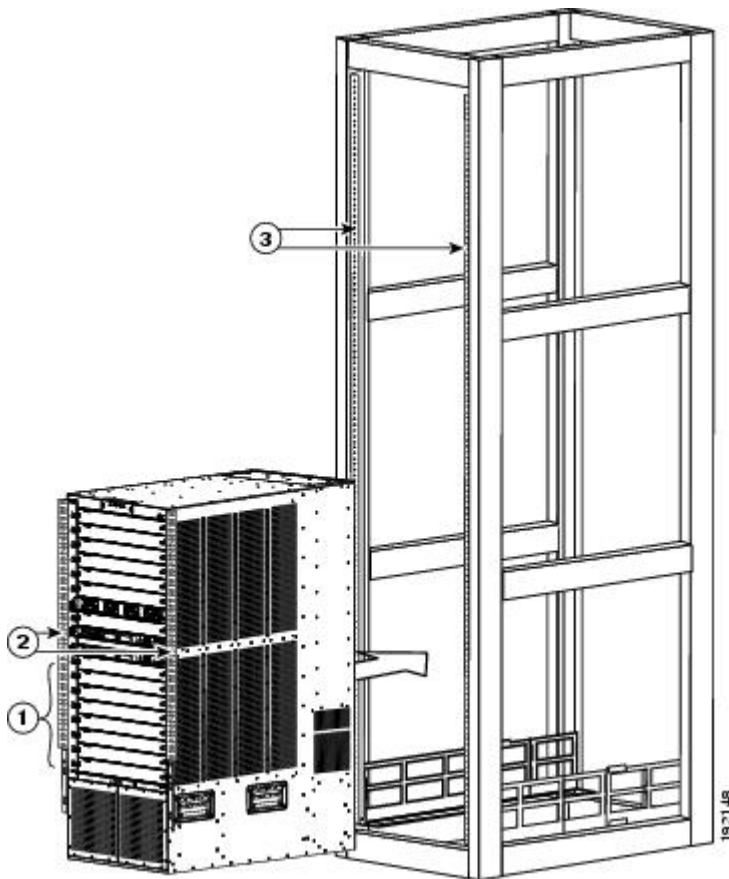
**Step 3** Use the mechanical lift to move and align the rear of the chassis to the front of the four-post rack or cabinet. Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 1/4 inch (0.6 cm) above the bracket.

**Step 4** Use at least two persons to push the chassis half way onto the installed bottom-support rails as shown in [Figure 50: Moving a Cisco Nexus 7018 Chassis onto a Rack, on page 103](#) and a third person to guide the back of the chassis so that it does not get caught on anything as it is pushed into the rack.

**Note** Push evenly on both sides of the lower half of the front side of the chassis so that the back side enters the rack first. and push until the chassis is half way onto the rack.

**Tip** Use the third person to be sure that the back end of the chassis does not get caught on the expansion edge of the bottom support rails.

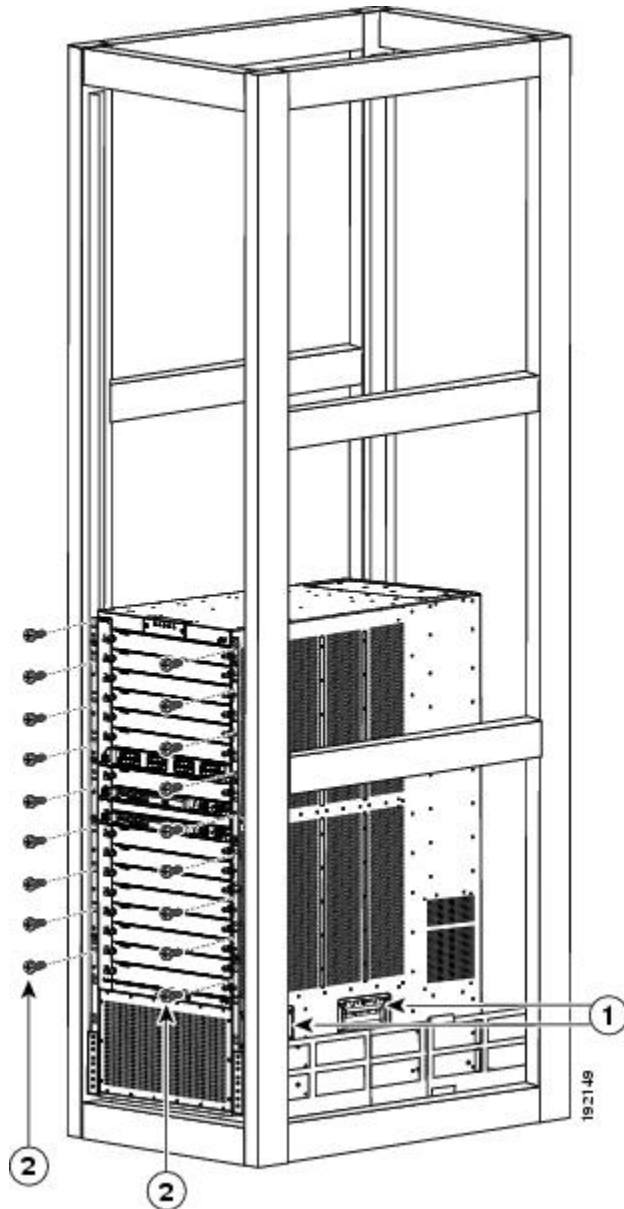
Figure 50: Moving a Cisco Nexus 7018 Chassis onto a Rack



1 Push the sides of the lower half of the front side of the chassis.	3 Rack vertical mounting rails.
2 Chassis mounting brackets.	

- Step 5** Lower the lift until it is no more than 0.25 inches below the bottom support rails. This action ensures that the chassis is not pointing downwards in a way that might get it caught on the expansion edge of the bottom support rails.
- Step 6** With the chassis flat on the bottom support rails, use two persons to push evenly on each side of the chassis until it is fully loaded onto the rack (the two mounting brackets on the front of the chassis come into contact with the two vertical mounting rails on the front of the rack). Use a third person to guide the chassis so that the rear of the chassis (the side being pushed into the rack) does not get caught on any edges of the bottom support rails.
- Step 7** Make sure that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails. If you need to reposition the chassis to align the screw holes, you can use the handles on the sides of the chassis.
- Tip** To adjust the placement of the chassis so that the screw holes in the chassis mounting brackets align with the screw holes in the vertical mounting rails, use the chassis handles shown in [Figure 51: Attaching the Cisco Nexus 7018 Chassis to the Rack, on page 104](#).
- Step 8** Use a Phillips torque screwdriver to screw in nine M6 x 19-mm or 12-24 x 3/4-inch screws in each of the two chassis mounting brackets (use a total of 18 screws for two mounting brackets) as shown in [Figure 51: Attaching the Cisco Nexus 7018 Chassis to the Rack, on page 104](#). Tighten each screw to a maximum of 40 in-lb [4.5 N·m] of torque.

Figure 51: Attaching the Cisco Nexus 7018 Chassis to the Rack



1 Handles used to adjust the chassis placement

2 Nine M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of 18 screws)

## Grounding the Cisco Nexus 7018 Chassis

The Cisco Nexus 7018 system is grounded through the AC power supply cables and one of two grounding connections on the chassis. The AC power supply cables provide a connection to an earth ground whenever

you connect the AC power to the system. The system ground, also referred to as the network equipment building system (NEBS) ground, provides additional grounding for EMI shielding requirements and for the low-voltage supplies (DC-DC converters) on the modules. This grounding system is active even when the AC power cables are not connected to the system. You establish this ground by connecting one of the two grounding pads on the chassis to the rack (if it is connected to an earth ground) or directly to the earth ground for the data center building.

This section includes the following topics:

## Prerequisites for Grounding the Chassis

Before you can ground the chassis, you must have a connection to the earth ground for the data center building. If you installed the Cisco Nexus 7018 chassis into a bonded rack (see the rack manufacturer's instructions for more information) that now has a connection to the data center earth ground, you can ground the chassis by connecting its ground ports to the rack. Otherwise, you must connect the chassis grounding ports directly to the data center ground.

## Required Tools and Equipment

To connect the system ground, you need the following tools and materials:

- Grounding lug—A two-holed standard barrel lug that supports up to 6 AWG wire. This lug is supplied with the Cisco Nexus 7018 system accessory kit.
- Grounding screws—Two M4 x 8 mm (metric) pan-head screws. These screws are shipped with the Cisco Nexus 7018 system accessory kit.
- Grounding wire—Not supplied with the Cisco Nexus 7018 system accessory kit. This wire should be sized to meet local and national installation requirements. Depending on the power supply and system, a 12 AWG to 6 AWG copper conductor is required for U.S. installations. We recommend that you use commercially available 6 AWG wire. The length of the grounding wire depends on the proximity of the switch to proper grounding facilities.
- Number 1 Phillips-head screwdriver with torque capability.
- Crimping tool to crimp the grounding wire to the grounding lug.
- Wire-stripping tool to remove the insulation from the grounding wire.

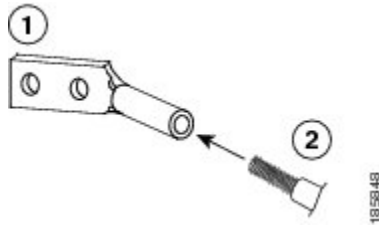
## Connecting the System Ground

After you have moved the chassis into the rack or cabinet, you are ready to connect the system to the earth ground. After you ground the chassis, you can ground your ESD wrist strap by connecting it to the chassis.

To connect the system ground to the earth ground, follow these steps:

- 
- Step 1** Use a wire-stripping tool to remove approximately 0.75 inch (19 mm) of the covering from the end of the grounding wire.
- Step 2** Insert the stripped end of the grounding wire into the open end of the grounding lug as shown in [Figure 52: Inserting the Grounding Wire in the Grounding Lug, on page 106](#).

**Figure 52: Inserting the Grounding Wire in the Grounding Lug**

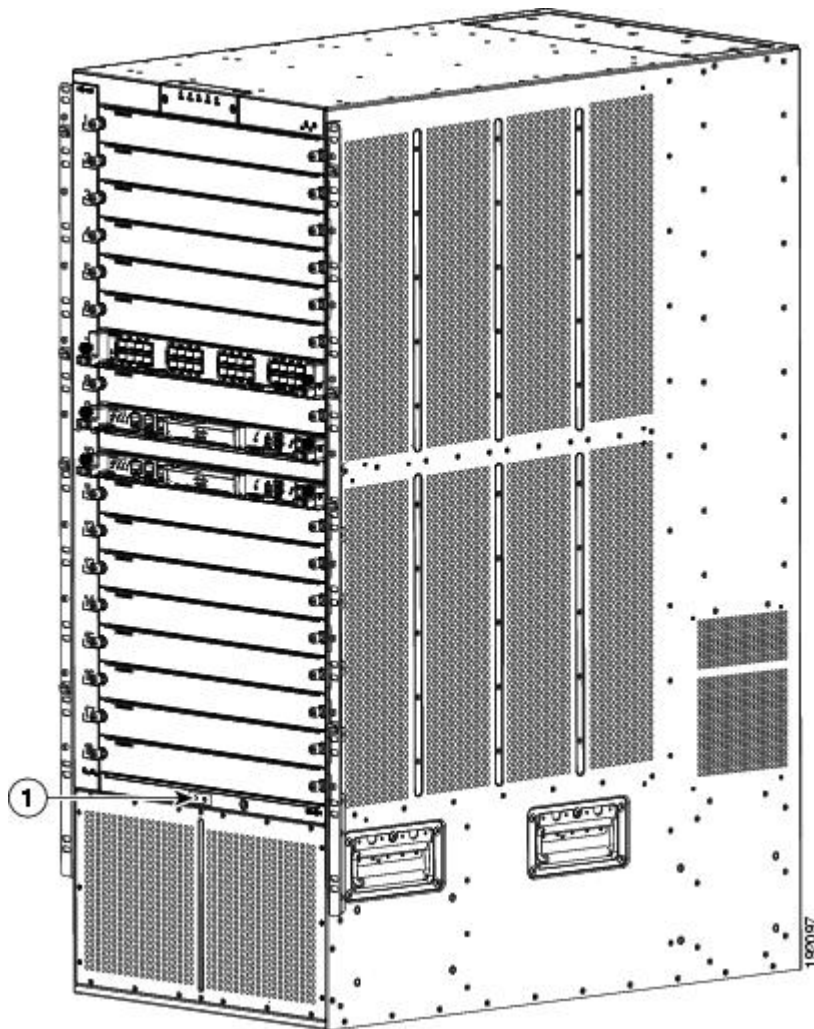


1	NRTL listed 45-degree grounding lug	2	Grounding cable with 0.75 in. (19 mm) of insulation stripped from the end
---	-------------------------------------	---	---

**Step 3** Use the crimping tool to crimp the lug to the grounding wire. Verify that the ground wire is securely attached to the ground lug by attempting to pull the wire out of the crimped lug.

**Step 4** Remove the adhesive label from one of the two system grounding pads, and secure the grounding wire lug to the grounding pad with two M4 screws. [Figure 53: Grounding Pad on the Cisco Nexus 7018 Chassis, on page 107](#) shows the location of the grounding pad on the front side of the chassis. Ensure that the grounding lug and the grounding wire do not interfere with other switch hardware or rack equipment.

Figure 53: Grounding Pad on the Cisco Nexus 7018 Chassis



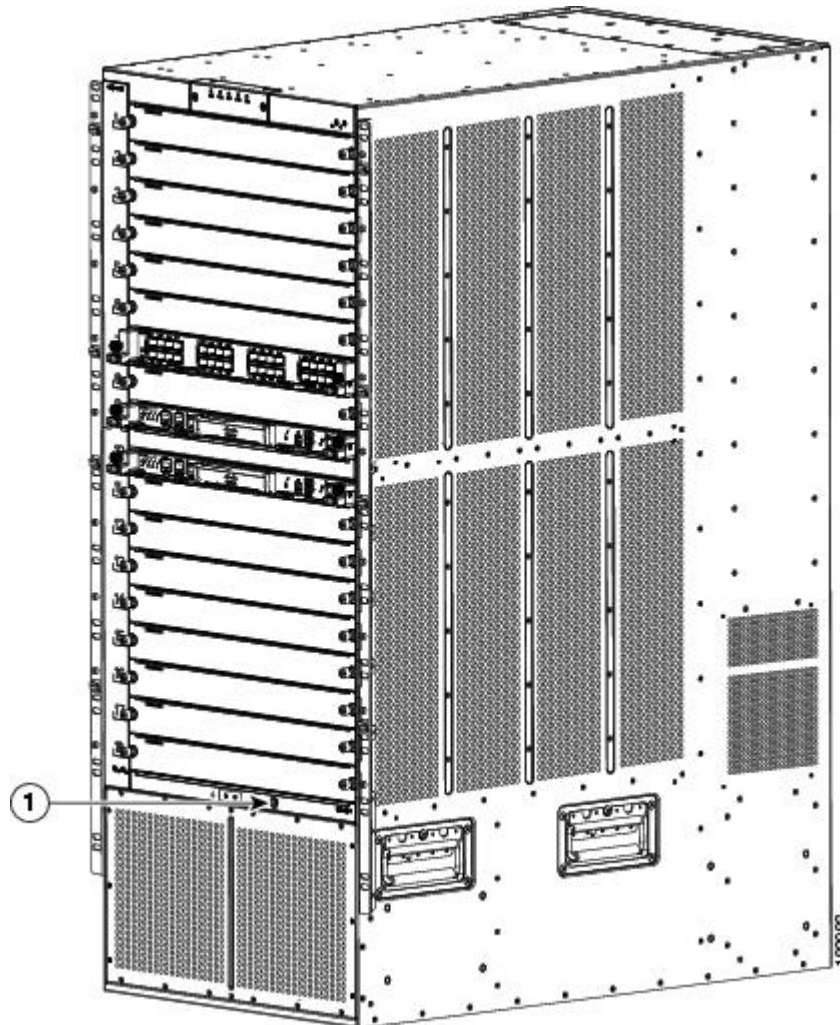
1	Grounding port
---	-------------------

- Step 5** Prepare the other end of the grounding wire and connect it to an appropriate grounding point in your site to ensure an adequate earth ground for the switch. If the rack is grounded, connect the grounding wire as explained in the documentation provided by the vendor for the rack.

## Connecting Your ESD Wrist Strap to the Chassis

After you connect the chassis to the earth ground, you can ground your ESD wrist strap by plugging it into the ESD port shown in [Figure 54: ESD Grounding Ports on the Front of the Cisco Nexus 7018 Chassis, on page 108](#).

Figure 54: ESD Grounding Ports on the Front of the Cisco Nexus 7018 Chassis



1 ESD grounding port

## Installing the Cable Management Frame

After you have fully installed the Cisco Nexus 7018 switch chassis in the rack or cabinet (see the [Installing the Chassis, on page 99](#)), you can install the cable management frame on the front of the chassis.

When you install the cable management frame, you attach four cable management assemblies to the chassis and then attach a top hood to the top two cable management assemblies and the chassis.

To install the cable management assemblies on the Cisco Nexus 7018 switch chassis, follow these steps:

### SUMMARY STEPS

1. Attach a lower cable management assembly (800-31343-01) onto the two hooks that protrude from the lower half of the left rack-mount bracket that is attached to the Cisco Nexus 7018 switch chassis, and



loosely fasten the assembly to the chassis with four flat-head M4x10 screws as shown in [Figure 55: Attaching a Lower Cable Management Assembly to a Rack-Mount Bracket, on page 110](#).

2. Repeat Step 1 to attach a lower cable management assembly to the right side of the chassis.
3. Attach an upper cable management assembly (800-31342-01) onto the two hooks that protrude from the upper half of the left rack-mount bracket that is attached to the Cisco Nexus 7018 switch chassis, and loosely fasten the assembly to the chassis with four flat-head M4x10 screws as shown in [Figure 56: Attaching a Left Cable Management Assembly to a Rack-Mount Bracket, on page 111](#).
4. Repeat Step 3 to attach an upper cable management assembly to the upper right side of the chassis. When completed, the chassis will appear as shown in [Figure 57: Cable Management Assemblies Attached to the Rack-Mount Brackets, on page 112](#).
5. Place the top hood (800-31269-01) on top of the two upper cable management assemblies that are already installed. Make sure that the side of the top hood that is closest to the chassis has two alignment pins that align with the alignment holes in the chassis as shown in [Figure 58: Positioning the Top Hood with the Upper Cable Management Assemblies and the Switch Chassis, on page 113](#). Push the top hood toward the chassis so that its alignment pins enter the alignment holes and the top hood rests against the chassis.
6. Use four M4x8 pan-head screws to loosely fasten the top hood to the chassis as shown in [Figure 59: Fastening the Top Hood to the Chassis and Cable Management Assemblies, on page 114](#).
7. Use four M4x8 pan-head screws to loosely fasten the top hood to each of the two upper cable management assemblies as shown in [Figure 58: Positioning the Top Hood with the Upper Cable Management Assemblies and the Switch Chassis, on page 113](#).
8. Tighten each of the four screws that fasten the top hood to the chassis to 11 to 15 in-lb (1.2 to 1.7 N·m).
9. Tighten each of the four screws that fasten the top hood to the cable management assemblies to 11 to 15 in-lb (1.2 to 1.7 N·m).
10. Tighten each of the 18 screws that fasten the upper and lower cable management assemblies to the rack-mount brackets to 11 to 15 in-lb (1.2 to 1.7 N·m).

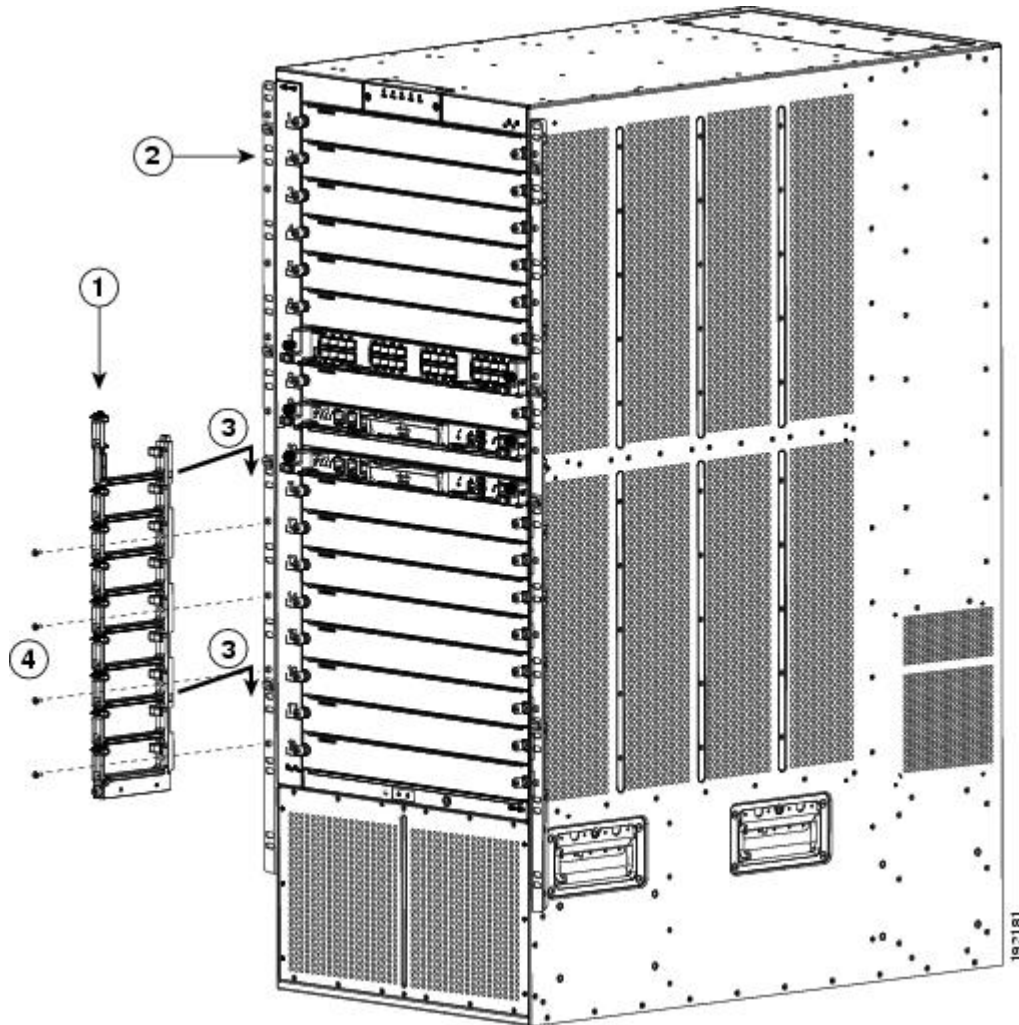
## DETAILED STEPS

### Step 1

---

Attach a lower cable management assembly (800-31343-01) onto the two hooks that protrude from the lower half of the left rack-mount bracket that is attached to the Cisco Nexus 7018 switch chassis, and loosely fasten the assembly to the chassis with four flat-head M4x10 screws as shown in [Figure 55: Attaching a Lower Cable Management Assembly to a Rack-Mount Bracket, on page 110](#).

Figure 55: Attaching a Lower Cable Management Assembly to a Rack-Mount Bracket



1 Lower cable management assembly.	3 Position the assembly so that the two lower hooks on the rack-mount bracket fit inside the two holes on the assembly, and then slide the assembly down so that it is held by the hooks.
2 Rack-mount bracket.	4 Loosely fasten the assembly to the rack-mount bracket with four M4x10 screws. Do not tighten these screws.

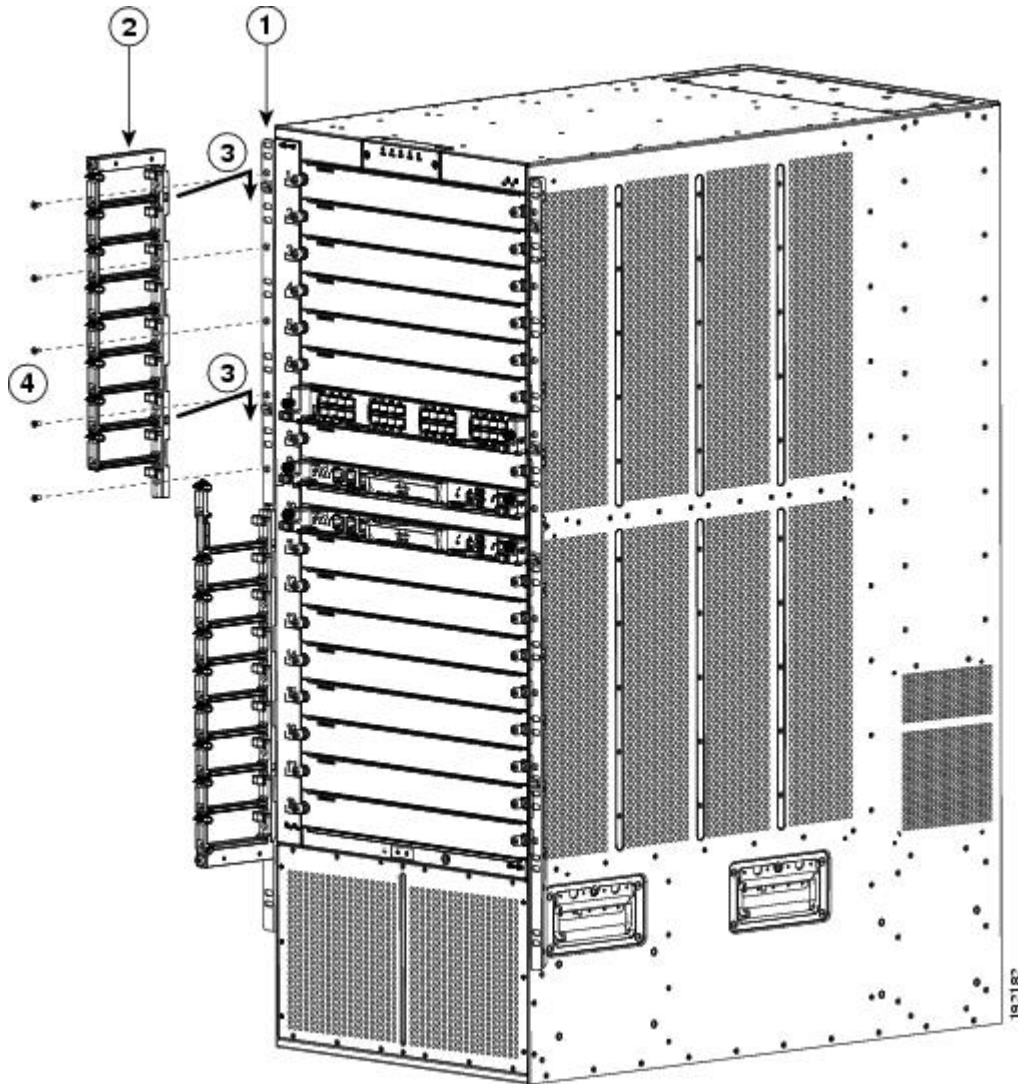
**Step 2**

Repeat Step 1 to attach a lower cable management assembly to the right side of the chassis.

**Step 3**

Attach an upper cable management assembly (800-31342-01) onto the two hooks that protrude from the upper half of the left rack-mount bracket that is attached to the Cisco Nexus 7018 switch chassis, and loosely fasten the assembly to the chassis with four flat-head M4x10 screws as shown in [Figure 56: Attaching a Left Cable Management Assembly to a Rack-Mount Bracket](#), on page 111.

Figure 56: Attaching a Left Cable Management Assembly to a Rack-Mount Bracket

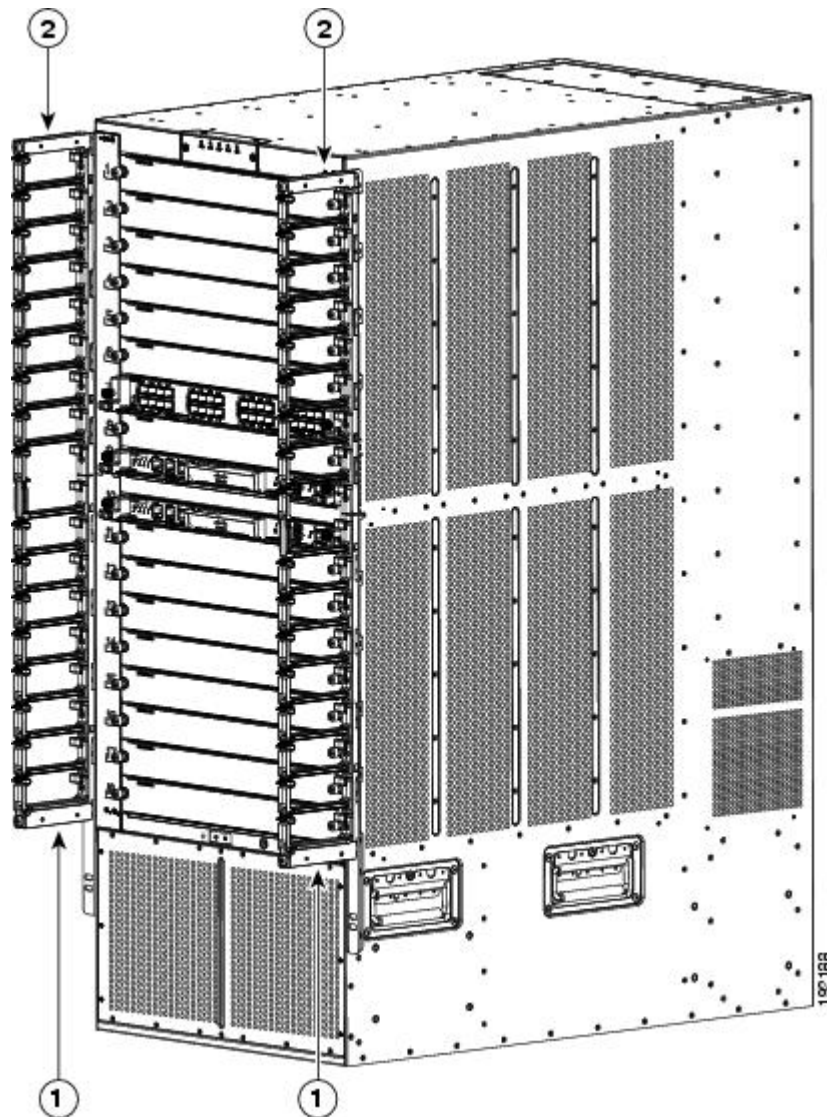


1 Rack-mount bracket.	3 Position the assembly so that the two upper hooks on the rack-mount bracket fit inside the two holes on the assembly, and then slide the assembly down so that it is held by the hooks.
2 Upper cable management assembly.	4 Loosely fasten the assembly to the rack-mount bracket with four M4x10 screws. Do not tighten these screws.

#### Step 4

Repeat Step 3 to attach an upper cable management assembly to the upper right side of the chassis. When completed, the chassis will appear as shown in [Figure 57: Cable Management Assemblies Attached to the Rack-Mount Brackets, on page 112](#).

Figure 57: Cable Management Assemblies Attached to the Rack-Mount Brackets

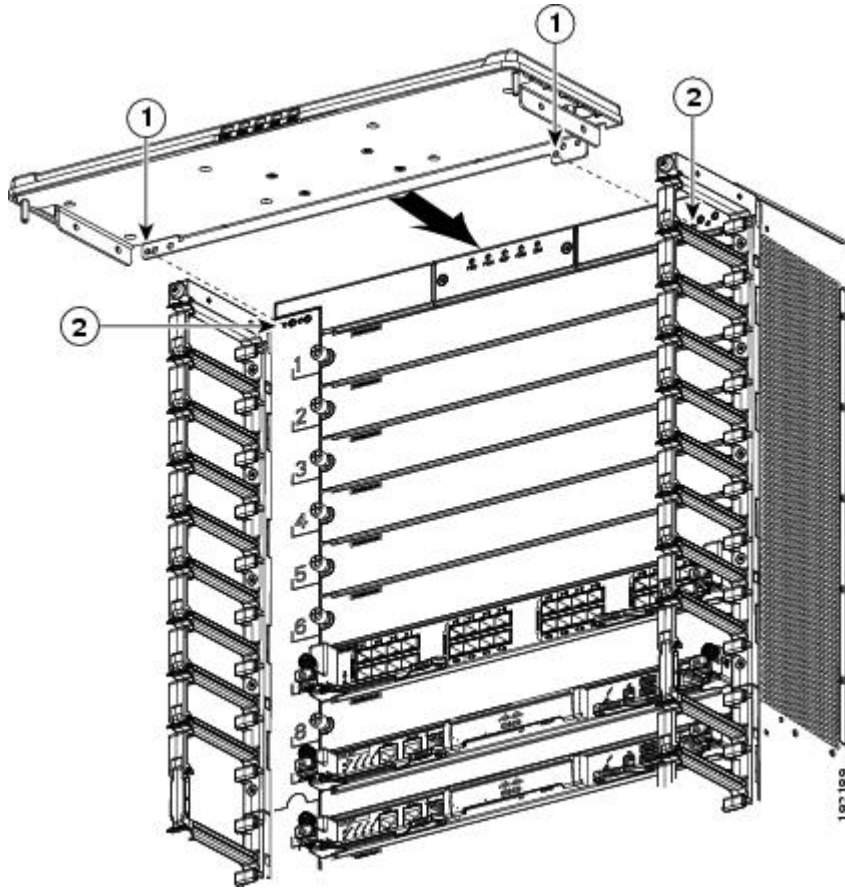


1 Lower cable management assembly	2 Upper cable management assembly
-----------------------------------	-----------------------------------

**Step 5**

Place the top hood (800-31269-01) on top of the two upper cable management assemblies that are already installed. Make sure that the side of the top hood that is closest to the chassis has two alignment pins that align with the alignment holes in the chassis as shown in [Figure 58: Positioning the Top Hood with the Upper Cable Management Assemblies and the Switch Chassis, on page 113](#). Push the top hood toward the chassis so that its alignment pins enter the alignment holes and the top hood rests against the chassis.

Figure 58: Positioning the Top Hood with the Upper Cable Management Assemblies and the Switch Chassis

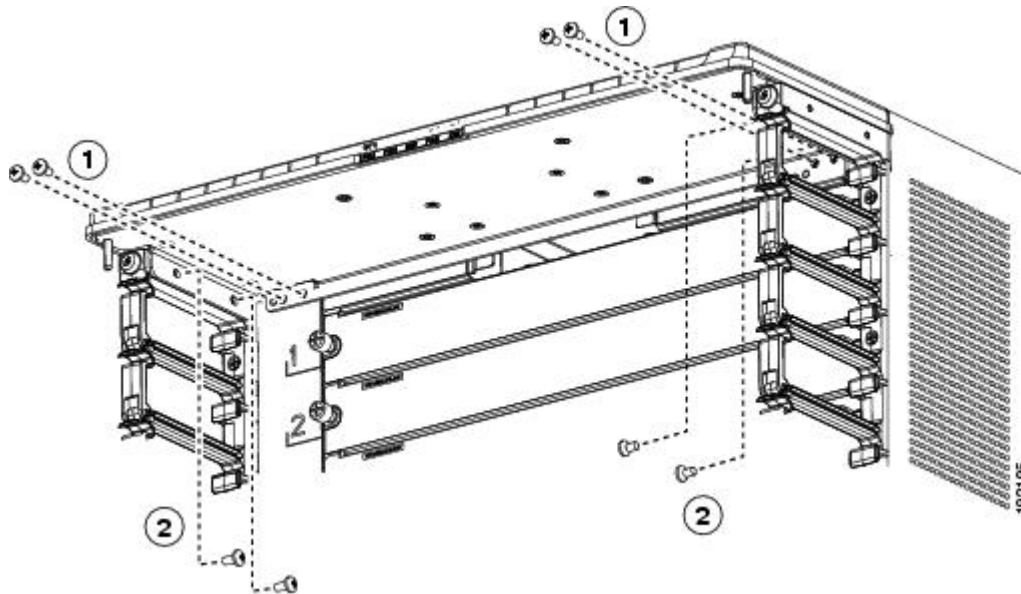


1 Alignment pins	2 Alignment holes
------------------	-------------------

**Step 6**

Use four M4x8 pan-head screws to loosely fasten the top hood to the chassis as shown in [Figure 59: Fastening the Top Hood to the Chassis and Cable Management Assemblies](#), on page 114.

Figure 59: Fastening the Top Hood to the Chassis and Cable Management Assemblies



1 Four M4x8 pan-head screws that fasten the top hood to the chassis.	2 Four M4x8 pan-head screws that fasten the top hood to the left and right cable management assemblies.
--	---

- Step 7** Use four M4x8 pan-head screws to loosely fasten the top hood to each of the two upper cable management assemblies as shown in [Figure 58: Positioning the Top Hood with the Upper Cable Management Assemblies and the Switch Chassis, on page 113](#).
- Step 8** Tighten each of the four screws that fasten the top hood to the chassis to 11 to 15 in-lb (1.2 to 1.7 N·m).
- Step 9** Tighten each of the four screws that fasten the top hood to the cable management assemblies to 11 to 15 in-lb (1.2 to 1.7 N·m).
- Step 10** Tighten each of the 18 screws that fasten the upper and lower cable management assemblies to the rack-mount brackets to 11 to 15 in-lb (1.2 to 1.7 N·m).

## Installing the Front Door and Air Intake Frame

If you need to install the optional double-hinged door and air intake frame, you must install them after installing the cable management frame on the chassis.



**Note** For the double-hinged door to easily open or close in either direction, make sure that the chassis is level. If necessary, remove the chassis from the rack and adjust the bottom-support rails so that the chassis is level. Also, make sure that the cable management frame is aligned to the vertical sides of the chassis and that the cable management hood is level when you install those components.

To install the front door and air intake frame to the Cisco Nexus 7018 cable management system, follow these steps:

## SUMMARY STEPS

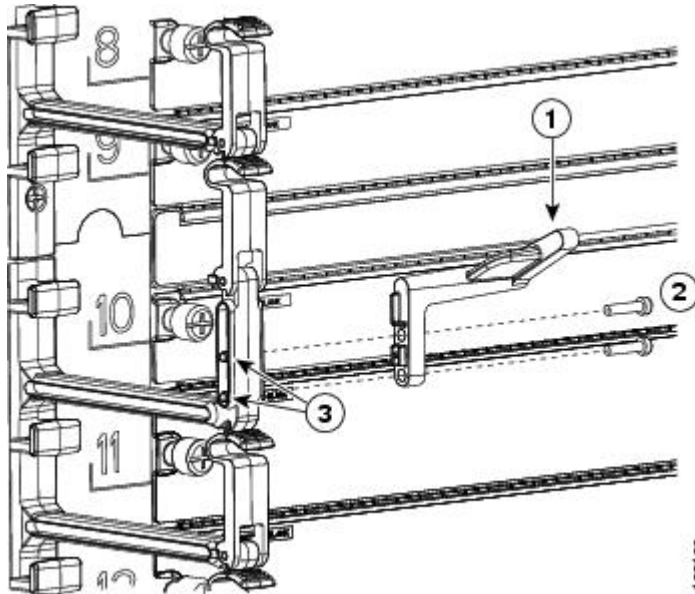
1. Position the left door stopper (700-27454-01) on the middle of the left cable management frame and fasten it with two M3x10 pan-head screws as shown in [Figure 60: Attaching the Left Door Stopper, on page 116](#). Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).
2. Position the right door stopper (700-27592-01) on the middle of the right side of the cable management frame and fasten it with two M3x10 pan-head screws as shown in [Figure 61: Attaching the Right Door Stopper, on page 117](#). Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).
3. Position the hinge bracket (700-28491-01) at the bottom of the cable management frame and the chassis as shown in [Figure 62: Positioning the Hinge Bracket to the Cable Management Frame and Chassis, on page 118](#).
4. Attach the bracket to the chassis with eight loosely fastened M4x8 screws, as shown in [Figure 63: Attaching the Hinge Bracket to the Cable Management Frame and Chassis, on page 119](#).
5. Tighten the four M4x8 screws that fasten the hinge bracket to the chassis to 11 to 15 in-lb (1.2 to 1.7 N·m).
6. Tighten the four M4x8 screws that fasten the hinge bracket to the cable management frame to 11 to 15 in-lb (1.2 to 1.7 N·m).
7. Fasten the four ball-point studs (51-5008-01), each one with a washer (49-0430-01), to the bottom portion of the chassis, one stud by each corner of the air intake area as shown in [Figure 64: Fastening Ball-Point Studs to the Air Intake Area, on page 120](#).
8. Align the air intake frame to the four ball-point studs and press the frame onto the chassis as shown in [Figure 65: Positioning the Air Intake Frame on the Chassis, on page 121](#). The captive screws on the air-intake frame should align with their screw holes in the chassis.
9. Fasten the captive screws on the air-intake frame to the chassis and tighten to 11 to 15 in-lb (95 to 130 N·m).
10. On the chassis door, pull the door handle open on one of the two sides of the door until the handle clicks (the handle clicks when you pull it about 30 degrees).
11. Move the side of the door with the opened handle onto the two hinge pins as shown in [Figure 66: Attaching One Side of the Door to the Chassis, on page 122](#). Make sure that the top and bottom hinge pins on the hood and hinge bracket fit through the slots on the top and bottom of that side of the door. Position the door so that the hinge pins are located at the ends of the slots.
12. While holding the door on the hinge pins with one hand, use your other hand to press the locking button on the interior side of the door. See [Figure 67: Attaching the Left Side of the Door, on page 123](#). This action locks the latches around the hinge pins so that you no longer need to hold the door onto the chassis.
13. Open the door handle on the open side of the door until it clicks. This action opens the latches on the open side of the door. See [Figure 68: Attaching the Right Side of the Door, on page 124](#).
14. Swing the door closed so that the unused hinge pins fit inside the slots on the top and bottom of the door. When you close the door, the door stopper automatically presses the lock button on the inside of the door so that the door is locked on the hinge pins. If the door stopper does not close the latches, press the door closed at the handle until you hear the latches click. Make sure that the door is fully secured to the frames on both sides.

## DETAILED STEPS

### Step 1

Position the left door stopper (700-27454-01) on the middle of the left cable management frame and fasten it with two M3x10 pan-head screws as shown in [Figure 60: Attaching the Left Door Stopper, on page 116](#). Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).

Figure 60: Attaching the Left Door Stopper



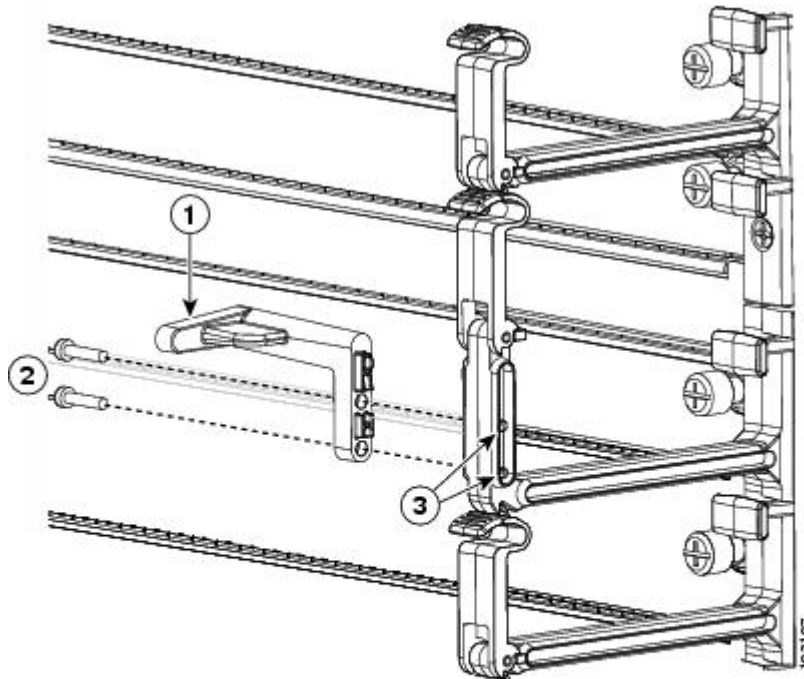
1 Left door stopper identified with an L on the bottom of the base.	3 Screw holes on the cable management frame.
2 Two M3x10 screws that fasten the stopper to the cable management frame.	

**Step 2**

Position the right door stopper (700-27592-01) on the middle of the right side of the cable management frame and fasten it with two M3x10 pan-head screws as shown in [Figure 61: Attaching the Right Door Stopper, on page 117](#). Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).



Figure 61: Attaching the Right Door Stopper

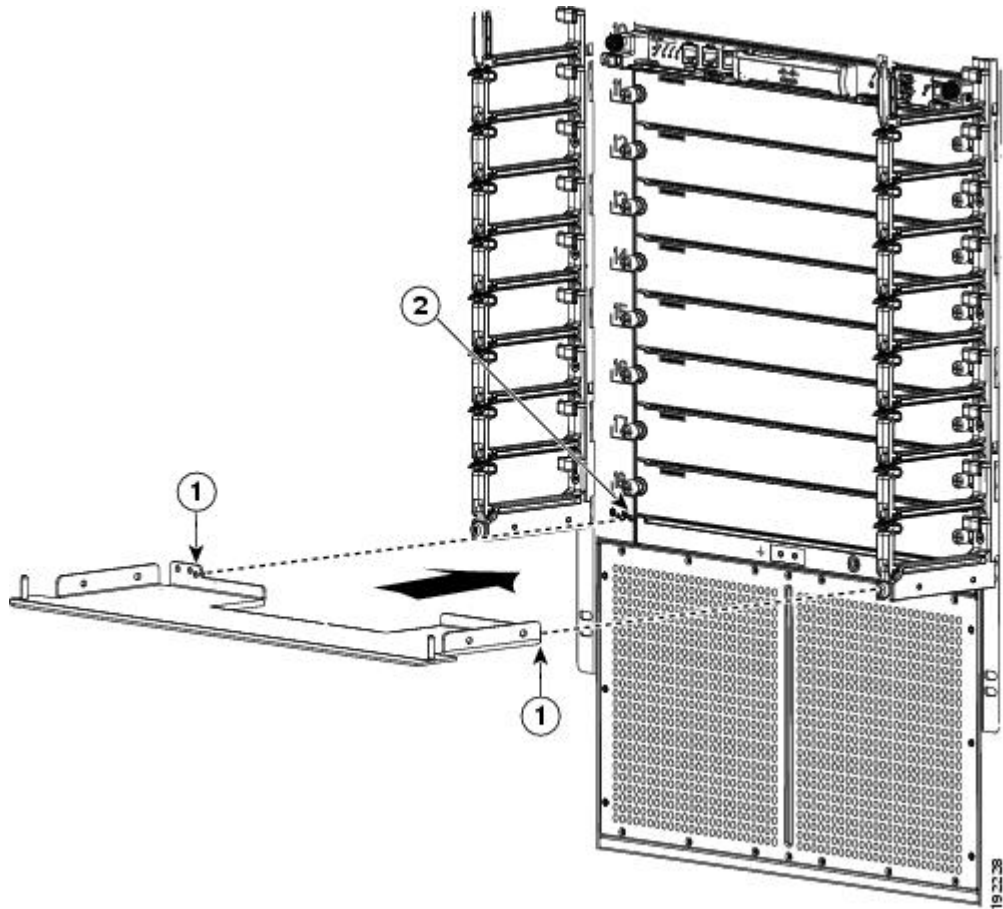


1 Right door stopper identified with an R on the bottom of the base.	3 Screw holes on the right side of the cable management frame.
2 Two M3x10 screws that fasten the stopper to the right side of the cable management frame.	

**Step 3**

Position the hinge bracket (700-28491-01) at the bottom of the cable management frame and the chassis as shown in [Figure 62: Positioning the Hinge Bracket to the Cable Management Frame and Chassis, on page 118.](#)

Figure 62: Positioning the Hinge Bracket to the Cable Management Frame and Chassis

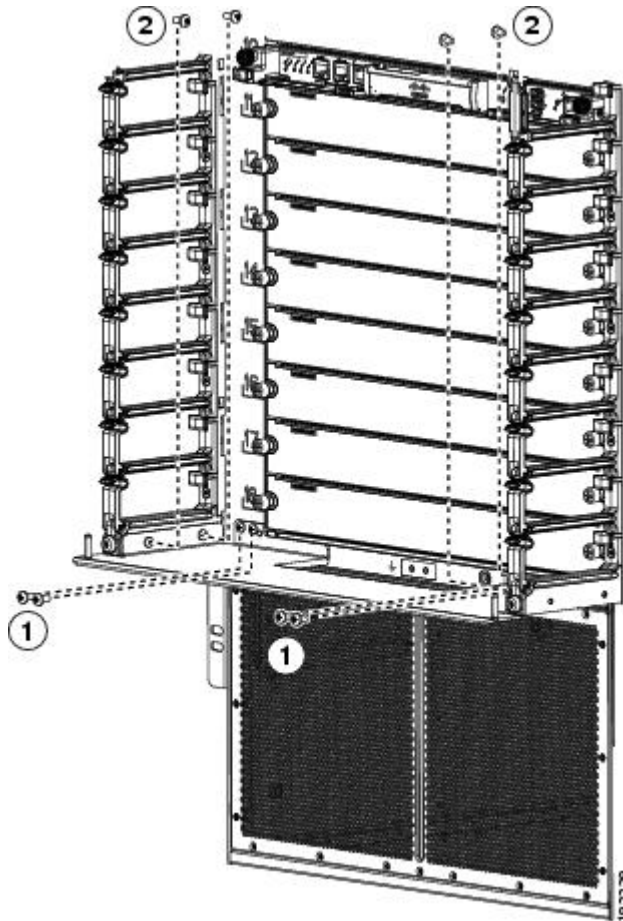


1 Alignment pins	2 Alignment holes
------------------	-------------------

**Step 4**

Attach the bracket to the chassis with eight loosely fastened M4x8 screws, as shown in [Figure 63: Attaching the Hinge Bracket to the Cable Management Frame and Chassis](#), on page 119.

Figure 63: Attaching the Hinge Bracket to the Cable Management Frame and Chassis



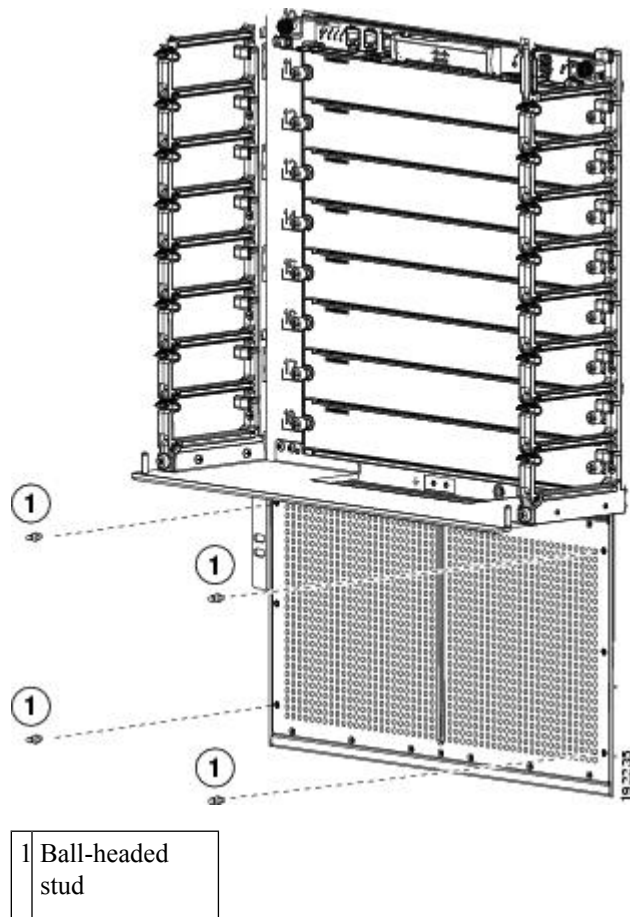
1 Four M4x8 pan-head screws that fasten the hood to the chassis.	2 Four M4x8 pan-head screws that fasten the hood to the left and right cable management assemblies.
--	---

**Step 5** Tighten the four M4x8 screws that fasten the hinge bracket to the chassis to 11 to 15 in-lb (1.2 to 1.7 N·m).

**Step 6** Tighten the four M4x8 screws that fasten the hinge bracket to the cable management frame to 11 to 15 in-lb (1.2 to 1.7 N·m).

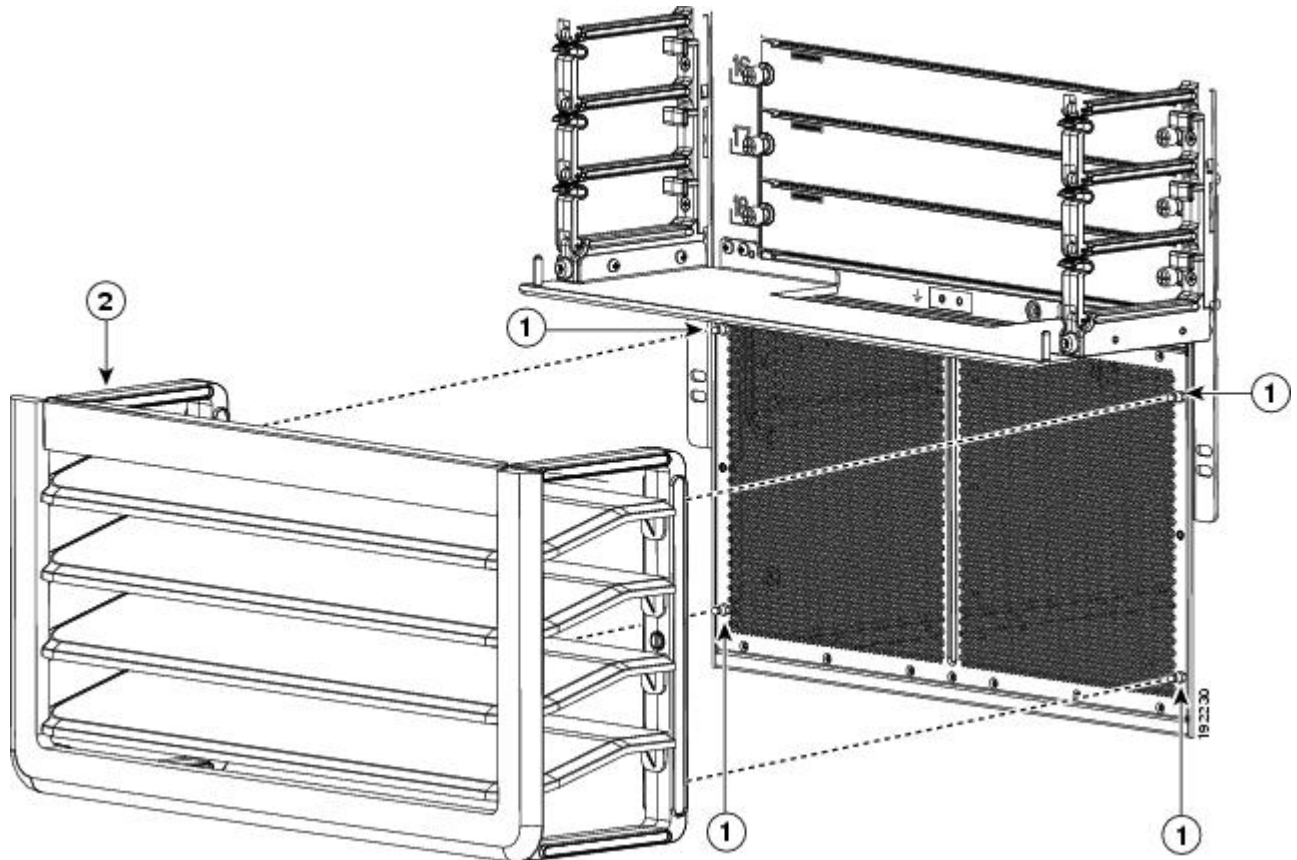
**Step 7** Fasten the four ball-point studs (51-5008-01), each one with a washer (49-0430-01), to the bottom portion of the chassis, one stud by each corner of the air intake area as shown in [Figure 64: Fastening Ball-Point Studs to the Air Intake Area, on page 120](#).

Figure 64: Fastening Ball-Point Studs to the Air Intake Area

**Step 8**

Align the air intake frame to the four ball-point studs and press the frame onto the chassis as shown in [Figure 65: Positioning the Air Intake Frame on the Chassis, on page 121](#). The captive screws on the air-intake frame should align with their screw holes in the chassis.

Figure 65: Positioning the Air Intake Frame on the Chassis



1	Ball-headed studs	2	Air-intake frame with holes to be aligned with the ball-headed studs
---	-------------------	---	--

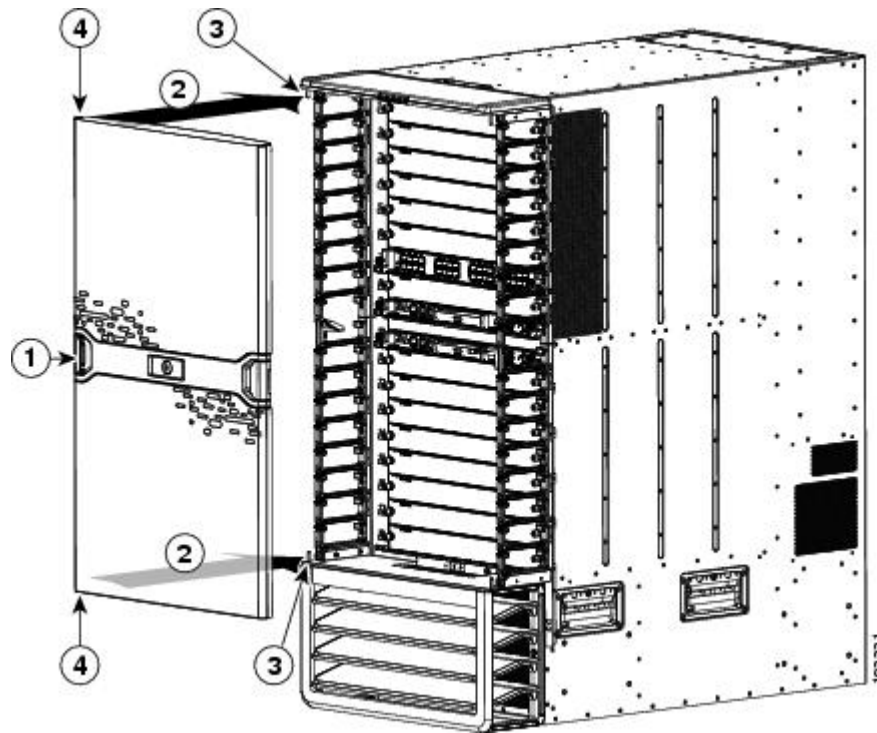
**Step 9** Fasten the captive screws on the air-intake frame to the chassis and tighten to 11 to 15 in-lb (95 to 130 N·m).

**Step 10** On the chassis door, pull the door handle open on one of the two sides of the door until the handle clicks (the handle clicks when you pull it about 30 degrees).

**Step 11** Move the side of the door with the opened handle onto the two hinge pins as shown in [Figure 66: Attaching One Side of the Door to the Chassis, on page 122](#). Make sure that the top and bottom hinge pins on the hood and hinge bracket fit through the slots on the top and bottom of that side of the door. Position the door so that the hinge pins are located at the ends of the slots.

**Note** The double-hinge door can be installed and opened on either side. The figures in this procedure show how to install the door on the left side first, but you can use the instructions to install it on either side.

Figure 66: Attaching One Side of the Door to the Chassis

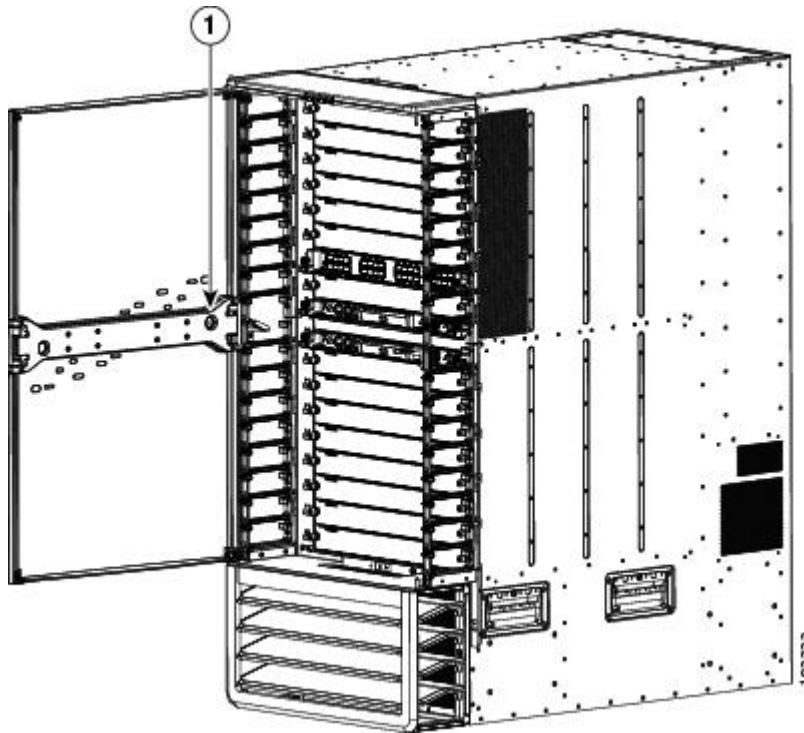


1	Double-hinged door	3	Hinge pins
2	Move one side to the hinge pins	4	Slot for hinge pin

**Step 12**

While holding the door on the hinge pins with one hand, use your other hand to press the locking button on the interior side of the door. See [Figure 67: Attaching the Left Side of the Door, on page 123](#). This action locks the latches around the hinge pins so that you no longer need to hold the door onto the chassis.

Figure 67: Attaching the Left Side of the Door

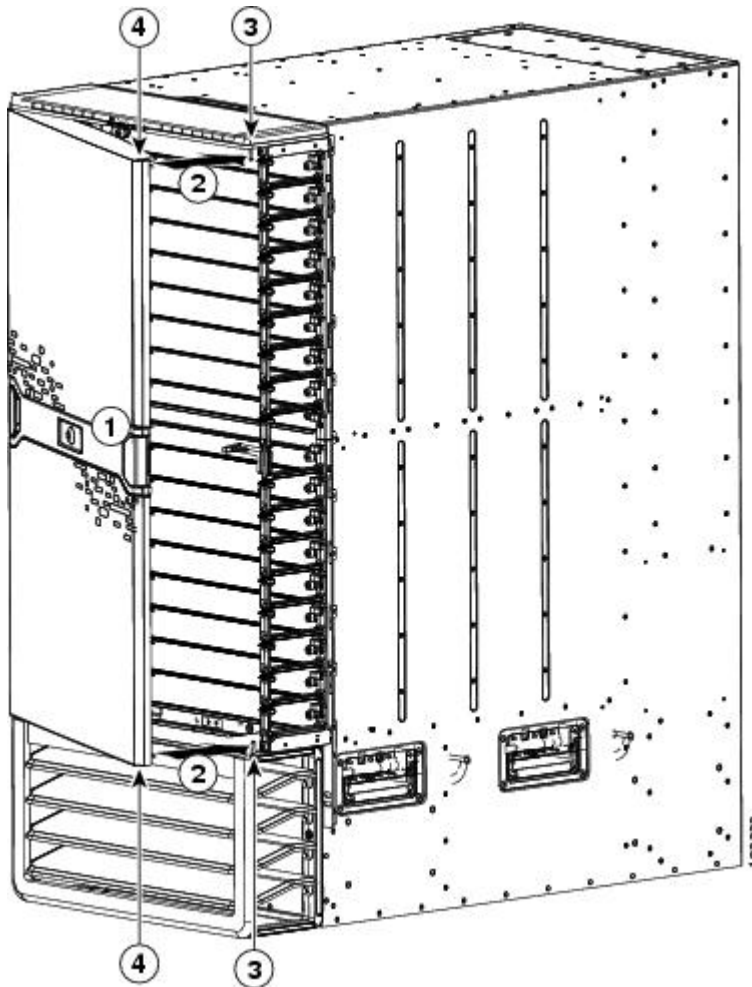


1 Press the locking button to lock the door onto the hinge pins.

**Note** Be sure that the door is firmly latched to the two hinge pins. If both of the hinge pins are not secured behind the door latch, hold the door securely with one hand while opening the door handle for the unsecured side until the handle clicks, press that side of the door so that the pins are positioned all the way inside the door slots, press the door latch button on the interior side of the door, and then make sure that the door is firmly secured to both hinge pins.

**Step 13** Open the door handle on the open side of the door until it clicks. This action opens the latches on the open side of the door. See [Figure 68: Attaching the Right Side of the Door, on page 124](#).

Figure 68: Attaching the Right Side of the Door



1 Door handle pulled out until it clicks	3 Hinge pins
2 Swing the door closed	4 Slots for hinge pins

**Step 14**

Swing the door closed so that the unused hinge pins fit inside the slots on the top and bottom of the door. When you close the door, the door stopper automatically presses the lock button on the inside of the door so that the door is locked on the hinge pins. If the door stopper does not close the latches, press the door closed at the handle until you hear the latches click. Make sure that the door is fully secured to the frames on both sides.

**Note** If a hinge pin is not secured behind a door latch, open the door handle for that side of the door until it clicks, open that side of the door, and then press the door closed so that the pins are positioned all the way inside the door slots. When you close the door, the door stopper automatically closes the door latches. If you do not hear the latches click, press the door at the handle to fully close it and to activate the latches. Test the door to make sure that it is fully secured to the four hinge pins.

**Tip** Whenever you need to open the door, pull one of the door handles open until it clicks and then swing that side of the door open.



**Note** If the double-hinged door and its holders are not level, it is possible that you will have some difficulty opening or closing the door on one or both sides. The door is not defective. Either push in the bottom portion of the door or slightly lift up the door on that side just before closing. If the problem persists, open the door from the other side, which should be free of this problem, or adjust the cable management system and hinge bracket so that they are level.

## Installing Storage Media in a Supervisor Module

Each supervisor module on a Cisco Nexus 7000 Series switch is shipped with a CompactFlash card installed in the LOG FLASH reader (Supervisor 1 modules) or a USB drive installed in the LOG FLASH reader (Supervisor 2 and Supervisor 2E modules). The EXPANSION FLASH reader (Supervisor 1) or Slot0 port (Supervisor 2 and 2E) is left empty, but you can optionally install a card in that reader or a USB drive in the USB port. To allow this storage media to function with the reader or port, you must make sure that it is either formatted for the reader before installing it or format it after installing it.



**Note** The LOG FLASH and EXPANSION FLASH or Slot0 readers require different formats for their storage media.

To replace an installed CompactFlash card, see the [“Replacing Storage Media for a Supervisor Module” section on page 10-61](#).

To install storage media in a supervisor module, follow these steps:

### SUMMARY STEPS

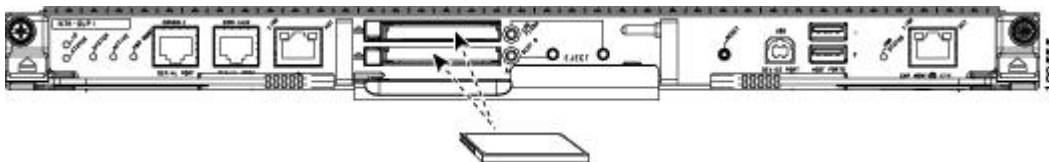
1. Align the storage media to its slot or port on the supervisor module as follows:
2. Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

### DETAILED STEPS

**Step 1** Align the storage media to its slot or port on the supervisor module as follows:

- For a Supervisor 1 module, align the card with the slot for the CompactFlash reader slot labeled LOG FLASH or EXPANSION FLASH as shown in [Figure 69: Aligning a CompactFlash Card to its Reader, on page 125](#). The grooves on the thin side of the card are on the end of the card that goes into the reader first. If the card does not fit easily into the reader, flip the card so that the bottom edge is on top, and try pushing the card into the reader.

**Figure 69: Aligning a CompactFlash Card to its Reader**



- For a Supervisor 2 or 2E module, insert the USB drive in the LOG FLASH or SLOT0 port.

**Step 2** Wait for the reader or port LED to turn green and for a message to appear on the console as follows:

- If you are installing a card or USB drive into the log flash reader, the message will end with “logflash:online.”
- If you are installing a card or USB drive into the expansion flash reader, the message will end with “slot0:online.”
- If you see an “offline” message or do not see a message, either the card or USB drive is not fully inserted or it is improperly formatted.

Make sure that the card or USB drive is fully inserted inside the reader. If it is fully inserted, either format the card (see the *Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide*) or replace the storage media with another that is properly formatted for the reader.

---



## CHAPTER 6

# Troubleshooting

This chapter describes how to troubleshoot Cisco Nexus 7000 Series hardware problems.

This chapter includes the following sections:

If your system has problems related to the Cisco NX-OS operating system, see the Cisco NX-OS Troubleshooting Guide. If you cannot isolate a system problem, contact the Cisco Technical Assistance Center (TAC).

- [Getting Started, on page 127](#)
- [Troubleshooting the Fan Trays, on page 128](#)
- [Troubleshooting an AC Power Supply Unit, on page 128](#)
- [Troubleshooting a DC Power Supply Unit, on page 130](#)
- [Troubleshooting an HVAC/HVDC Power Supply Unit, on page 132](#)
- [Troubleshooting the Supervisor Modules, on page 133](#)
- [Troubleshooting the Fabric Modules, on page 134](#)
- [Troubleshooting the I/O Modules, on page 135](#)
- [Contacting Customer Service, on page 136](#)

## Getting Started

Start the Cisco Nexus 7000 Series switch by turning on the power at the power supply units to send power to the system fans, supervisor module, fabric modules, and I/O modules. During the startup phase, the STATUS LEDs on the supervisor and I/O modules are amber to indicate that the initialization process is in progress. When the system is operational, the component LEDs indicate that either the system is operational or you need to troubleshoot for system problems.

The key to troubleshooting the system is to isolate a problem to a specific system component. First, you compare what the system is doing with what it should be doing. Look at the chassis LEDs to see if there are any critical problems detected with the system components. Green chassis LEDs indicate that all components of a type are operational while amber LEDs indicate that at least one component of a type has a critical problem that requires troubleshooting.

For a listing of the system LEDs and the conditions that they indicate, see [Table D-1 on page D-1](#).

Less critical problems, such as minor overtemperature conditions, are not indicated by the chassis LEDs. To find those problems, you must look for amber STATUS LEDs on the system modules.

Depending on the type of component that needs troubleshooting, see one of the following topics:

## Troubleshooting the Fan Trays

The following conditions indicate that there is a problem with one or more fan tray modules:

- The FAN LED on the chassis is amber.
- The STATUS LED on the fan tray is flashing red.

While the system is running, each fan tray module should be exhausting air and its STATUS LED should be green, which indicates that all of the fans in that tray are running above the threshold speed.

For a listing of the fan tray LEDs and the conditions that they indicate, see [Table D-7 on page D-7](#).

To troubleshoot a fan tray problem, follow these steps until the problem is resolved:

### SUMMARY STEPS

1. Check if the STATUS LED is flashing red or is not lit on each fan tray. If the LED is flashing red, at least one fan in the tray is running at a slow speed or not running. If the LED is not lit, no power is going to the fan tray.
2. Check if the power supply units are providing power to the chassis components. The Output LED on each power supply unit should be lit and green.
3. Make sure that the fan tray is properly seated in the chassis by following these steps:
4. Call Cisco TAC and describe the conditions that you are seeing with the fan tray. See the [Contacting Customer Service, on page 136](#).

### DETAILED STEPS

- 
- Step 1** Check if the STATUS LED is flashing red or is not lit on each fan tray. If the LED is flashing red, at least one fan in the tray is running at a slow speed or not running. If the LED is not lit, no power is going to the fan tray.
- Step 2** Check if the power supply units are providing power to the chassis components. The Output LED on each power supply unit should be lit and green.
- Step 3** Make sure that the fan tray is properly seated in the chassis by following these steps:
- a) Loosen the captive screws on the fan tray until they are no longer in the chassis.
  - b) Place one hand on the handle for the fan tray and pull the fan tray part way out of the chassis.
  - c) Push the fan tray back into the chassis until it is fully seated on the midplane and make sure that each captive screw on the fan tray is aligned with its hole in the chassis.
  - d) Securely tighten each captive screw (to 8 in-lb [0.90 N·m]) to the chassis.
- Step 4** Call Cisco TAC and describe the conditions that you are seeing with the fan tray. See the [Contacting Customer Service, on page 136](#).
- 

## Troubleshooting an AC Power Supply Unit

The following conditions indicate that you need to troubleshoot one or more AC power supply units:

- The PSU LED on the chassis is amber.
- The Input 1, Input 2, or Output LED on a power supply unit is not green.

- The Fault LED on a power supply unit is flashing red.

Also, when there are power problems with other modules or the supervisor module PWR MGMT LED is amber, you need to troubleshoot the power supply units or check the seating of the modules that are not receiving power.

For a listing of the power supply unit LEDs and the conditions that they indicate, see [Table D-6 on page D-6](#).

To troubleshoot a power supply problem, follow these steps:

## SUMMARY STEPS

1. Determine which power supply unit has a problem. Check to see which power supply unit does not have its Input and Output LEDs lit.
2. If one of the required Input LEDs is not lit, perform each of the following checks on the power cord used for that half of the power supply unit:
3. If the Output LED is not lit, verify that the power switch is turned on (ON or 1).
4. Make sure that the power supply unit is properly seated in the power supply bay by performing the following steps:
5. Verify that the power supply unit is functional by replacing it with another power supply (see the [“Replacing an AC Power Supply Unit During Operations” section on page 10-2](#) ) and plugging its power cords into the same AC source. If the Input and Output LEDs turn green on the replacement power supply unit, contact Cisco TAC (see the [Contacting Customer Service, on page 136](#)) to replace the defective power supply unit.

## DETAILED STEPS

- 
- Step 1** Determine which power supply unit has a problem. Check to see which power supply unit does not have its Input and Output LEDs lit.
- Step 2** If one of the required Input LEDs is not lit, perform each of the following checks on the power cord used for that half of the power supply unit:
- Make sure that the power cord is securely connected to the AC source.
  - For a 6-kW power supply unit, make sure that the power cord is securely connected to the power supply unit. Verify that the cable retention device on the power supply unit is securely holding the power cord.
  - Turn the power supply switch to standby (STBY or 0) and then disconnect the power cord from the AC source and reconnect with another AC source. After you connect to the AC source, turn the power switch on (ON or 1).
- Step 3** If the Output LED is not lit, verify that the power switch is turned on (ON or 1).
- Step 4** Make sure that the power supply unit is properly seated in the power supply bay by performing the following steps:
- a) Turn the power switch to standby (STBY or 0).
  - b) Loosen the four captive screws on the power supply unit so that they are no longer in contact with the chassis.
  - c) Pull the power supply unit part way out of the chassis and then push it back into the power supply bay. Make sure that the captive screws on the power supply unit align with their holes in the chassis.
  - d) Tighten the four captive screws to 8 in-lb (0.90 N·m).
  - e) Turn the power switch on (ON or 1).
- Step 5** Verify that the power supply unit is functional by replacing it with another power supply (see the [“Replacing an AC Power Supply Unit During Operations” section on page 10-2](#) ) and plugging its power cords into the same AC source. If

the Input and Output LEDs turn green on the replacement power supply unit, contact Cisco TAC (see the [Contacting Customer Service, on page 136](#)) to replace the defective power supply unit.

If you cannot determine the problem with the power supply or determine which power supply unit has the problem, contact TAC.

---

## Troubleshooting a DC Power Supply Unit

The following conditions indicate that you need to troubleshoot one or more DC power supply units:

- The PSU LED on the chassis is amber.
- The Input LEDs or Output LED on a power supply unit is not green.
- The Fault LED on a power supply unit is flashing red.

Also, when there are power problems with other modules or the supervisor module PWR MGMT LED is amber, you need to troubleshoot the power supply units or check the seating of the modules that are not receiving power.

For a listing of the power supply unit LEDs and the conditions that they indicate, see [Table D-6 on page D-6](#).

To troubleshoot a power supply problem, follow these steps:

### SUMMARY STEPS

1. Determine which power supply unit has a problem. Check to see which power supply unit does not have its Input and Output LEDs lit.
2. If the Output LED is not lit, verify that the power switch on the power supply unit is turned to ON. If not, turn it to ON and verify that the Output LED turns on.
3. If the required Input LEDs are not lit, test the power connections as follows:
4. If the required Input LEDs are still not lit, test the power source as follows:
5. If the Output LED is not lit, verify that the power switch on the power supply unit is turned to ON (or 1). If not, turn it to ON (or 1) and see if the LED turns on.
6. If the Output LED is not lit, verify that the power supply unit is properly seated in the power supply bay by performing the following steps:
7. If the Output LED is still not on, verify that the power supply unit is functional by replacing it with another power supply (see the [“Replacing a DC Power Supply Unit During Operations” section on page 10-9](#)) and plugging its power cords into the same DC source. If the Input and Output LEDs turn green on the replacement power supply unit, contact TAC (see the [Contacting Customer Service, on page 136](#)) to replace the defective power supply unit.

### DETAILED STEPS

---

**Step 1** Determine which power supply unit has a problem. Check to see which power supply unit does not have its Input and Output LEDs lit.

**Note** If a power supply unit has only one power cord attached to a DC source, only the Input LEDs (Input 1 and Input 2 or Input 3 and Input 4) for the connected half of the power supply unit should be lit.

**Step 2** If the Output LED is not lit, verify that the power switch on the power supply unit is turned to ON. If not, turn it to ON and verify that the Output LED turns on.

**Step 3** If the required Input LEDs are not lit, test the power connections as follows:

- a) Turn the power switch on the power supply unit to standby (STBY or 0).
- b) Turn off the DC circuit by manually shutting it down at the circuit breaker.

**Danger** Before performing any of the following procedures, ensure that power is removed from the DC circuit. Statement 1003

- c) Verify that the power cord is securely connected to the DC source or the DC power interface unit (PIU).

**Danger** Hazardous voltage or energy may be present on DC power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place. Statement 1075

- d) Verify that the power cord is securely connected to the power supply unit. Verify that the cable retention device on the power supply unit is securely holding the power cord.
- e) Turn on the power at the circuit breaker.
- f) Turn the power switch on the power supply unit to ON (or 1).
- g) Check the Input LEDs to see if they are on yet.

**Step 4** If the required Input LEDs are still not lit, test the power source as follows:

- a) Turn the power switch on the power supply unit to standby (STBY or 0).
- b) Turn off the DC circuit by manually shutting it down at the circuit breaker.

**Danger** Before performing any of the following procedures, ensure that power is removed from the DC circuit. Statement 1003

- c) Disconnect the power cord from the DC source, and reconnect with another powered down DC source.

**Danger** Hazardous voltage or energy may be present on DC power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place. Statement 1075

- d) Turn on the newly connected DC power source at the circuit breaker.
- e) Turn the power switch on the power supply unit to ON (or 1).
- f) Check the Input LEDs to see if they are on yet.
- g) If the Input LEDs are not on, call TAC.

**Step 5** If the Output LED is not lit, verify that the power switch on the power supply unit is turned to ON (or 1). If not, turn it to ON (or 1) and see if the LED turns on.

**Step 6** If the Output LED is not lit, verify that the power supply unit is properly seated in the power supply bay by performing the following steps:

- a) Turn the power switch on the power supply unit to standby (STBY or 0).
- b) Turn off the DC circuit by manually shutting it down at the circuit breaker.

**Danger** Before performing any of the following procedures, ensure that power is removed from the DC circuit. Statement 1003

- c) Pull the power supply unit part way out of the chassis and then push it back into the power supply bay. To remove a 6-kW power supply, you must first fully loosen its four captive screws. To remove a 3-kW, you must press and hold its release latch to the left. When you reinstall a 6-kW power supply, tighten its four captive screws to 8 in-lb (0.90 N·m).
- d) Turn on the DC power source at the circuit breaker.

- e) Turn the power switch to ON (or 1).
- f) Verify that the Output LED turns on.

**Step 7** If the Output LED is still not on, verify that the power supply unit is functional by replacing it with another power supply (see the [“Replacing a DC Power Supply Unit During Operations”](#) section on page 10-9 ) and plugging its power cords into the same DC source. If the Input and Output LEDs turn green on the replacement power supply unit, contact TAC (see the [Contacting Customer Service](#), on page 136) to replace the defective power supply unit.

If you cannot determine the problem with the power supply or determine which power supply unit has the problem, contact TAC.

## Troubleshooting an HVAC/HVDC Power Supply Unit

The following conditions indicate that you need to troubleshoot an HVAC/HVDC power supply unit:

- The PSU LED on the chassis is amber.
- The Input or Output LED on the power supply unit is not green.
- The Fault LED on the power supply unit is flashing red.

Also, when there are power problems with other modules or the supervisor module PWR MGMT LED is amber, you need to troubleshoot the power supply unit or check the seating of the modules that are not receiving power.

For a listing of the power supply unit LEDs and the conditions that they indicate, see [Table D-6 on page D-6](#).

To troubleshoot a power supply problem, follow these steps:

### SUMMARY STEPS

1. Check to see if the Input and Output LEDs are lit.
2. If the Input LED is not lit, perform each of the following checks on the power cord used for the power supply unit:
3. If the Output LED is not lit, verify that the power switch is turned on (1).
4. Make sure that the power supply unit is properly seated in the power supply bay.
5. Verify that the power supply unit is functional by replacing it with another power supply and plugging its power cords into the same power source.

### DETAILED STEPS

**Step 1** Check to see if the Input and Output LEDs are lit.

**Step 2** If the Input LED is not lit, perform each of the following checks on the power cord used for the power supply unit:

- Make sure that the power cord is securely connected to the power source.
- Turn the power supply switch to standby to 0 and then disconnect the power cord from the power source and reconnect with another power source. After you connect to the power source, turn the power switch on (1).

**Step 3** If the Output LED is not lit, verify that the power switch is turned on (1).

**Step 4** Make sure that the power supply unit is properly seated in the power supply bay.



**Step 5** Verify that the power supply unit is functional by replacing it with another power supply and plugging its power cords into the same power source.

If you cannot determine the problem with the power supply or determine which power supply unit has the problem, contact TAC.

---

## Troubleshooting the Supervisor Modules

The following conditions indicate a problem with one or more supervisor modules:

- The SUP LED on the chassis is amber.
- The STATUS LED on a supervisor module is amber, red, or not lit.
- The CMP STATUS LED on a supervisor 1 module is amber or red.
- An ACT LED on a supervisor module is not lit.

The SYSTEM and PWR MGMT LEDs on the supervisor modules indicate that there could be problems with the supervisor module or any of the other switch modules.

When you start up the switch, the supervisor module STATUS and CMP STATUS LEDs are amber while the module runs diagnostic tests. When the module passes the diagnostic tests and becomes operational, the STATUS and CMP STATUS LEDs become green. For switches that have two supervisor modules, the ACTIVE LED is green for the active supervisor module or amber for the standby supervisor module. When the SYSTEM and PWR MGMT LEDs are green, the switch does not detect any critical system problems. Amber, red, or unlit LEDs indicate system problems that you need to resolve, possibly with other system modules.

For a listing of supervisor module LEDs and the conditions that they indicate, see [Table D-2 on page D-2](#).

To troubleshoot for a hardware problem with the supervisor module, follow these steps until the problem is resolved:

### SUMMARY STEPS

1. Check if the STATUS LED (all supervisors modules) or CMP STATUS LED (Supervisor 1 modules only) is amber, red, or unlit on each supervisor module as follows:
2. If the STATUS LED (all supervisors modules) and CMP STATUS LED (Supervisor 1 modules only) are unlit, check the module seating and power connections as follows:
3. If the LOG FLASH or EXPANSION FLASH (Supervisor 1) or SLOT0 (Supervisor 2 or 2E) LED is not lit, a compact flash slot (Supervisor 1) or USB port (Supervisor 2 or Supervisor 2E) is empty. If you need to load storage media in the slot or port, make sure that the media is formatted correctly for the slot.
4. Contact TAC for assistance (see the [Contacting Customer Service, on page 136](#)).

### DETAILED STEPS

---

**Step 1** Check if the STATUS LED (all supervisors modules) or CMP STATUS LED (Supervisor 1 modules only) is amber, red, or unlit on each supervisor module as follows:

**Step 2** If the STATUS LED (all supervisors modules) and CMP STATUS LED (Supervisor 1 modules only) are unlit, check the module seating and power connections as follows:

- a) Loosen the captive screws on the module so that they are no longer in contact with the chassis.
- b) Unseat the module by pressing the ejector buttons on each end of the module and swinging out each ejector lever.
- c) Place one hand on the handle for the module and pull the module part way out of the chassis.
- d) Push the module back into the chassis until it is seated on the midplane.
- e) Rotate both ejector levers until they both touch the front of the module. Make sure that each captive screw on the fan tray is aligned with its hole in the chassis.
- f) Securely tighten each captive screw (to 8 in-lb [0.9 N·m]) to the chassis.
- g) Verify that the Output LED on each power supply is lit. If the Output LED is not lit, troubleshoot the AC power supply units (see the [Troubleshooting an AC Power Supply Unit, on page 128](#)) or DC power supply units (see the [Troubleshooting a DC Power Supply Unit, on page 130](#)).

**Step 3** If the LOG FLASH or EXPANSION FLASH (Supervisor 1) or SLOT0 (Supervisor 2 or 2E) LED is not lit, a compact flash slot (Supervisor 1) or USB port (Supervisor 2 or Supervisor 2E) is empty. If you need to load storage media in the slot or port, make sure that the media is formatted correctly for the slot.

**Step 4** Contact TAC for assistance (see the [Contacting Customer Service, on page 136](#)).

## Troubleshooting the Fabric Modules

The following conditions indicate problems with one or more fabric modules:

- The FAB LED on the chassis is amber.
- The STATUS LED on the fabric module is red.



**Note** Fabric modules are included with the Cisco Nexus 7009, 7010, and 7018 chassis but not with the Cisco Nexus 7004 chassis.

When you start up the switch or install a new fabric module, the STATUS LED on the module is amber while the module initializes. When the module becomes operational, the STATUS LED becomes green. If an overtemperature condition occurs, the STATUS LED flashes red.

For a listing of the fabric module LEDs and the conditions that they indicate, see [Table D-5 on page D-6](#).

To troubleshoot a fabric module hardware problem, follow these steps until the problem is resolved:

### SUMMARY STEPS

1. Check if a STATUS LED is flashing red or is unlit on each fabric module.
2. Check if the power supply units are providing power to the chassis components.
3. Make sure that the fabric module is properly seated in the chassis as follows:
4. Contact TAC for assistance (see the [Contacting Customer Service, on page 136](#)).

### DETAILED STEPS

**Step 1** Check if a STATUS LED is flashing red or is unlit on each fabric module.

**Step 2** Check if the power supply units are providing power to the chassis components.

- Step 3** Make sure that the fabric module is properly seated in the chassis as follows:
- Loosen the captive screws on the fabric module until they are no longer in the chassis.
  - Press the eject buttons on either end of the module and simultaneously rotate out both ejector levers until the module is unseated from the midplane.
  - Place one hand on the module handle and pull the module part way out of the chassis.
  - Push the module back into the chassis until it is seated on the midplane.
  - Simultaneously rotate both ejector levers until they both touch the front of the module. This action fully seats the module on the midplane.
  - Make sure that each of the captive screws on the module is aligned with its holes in the chassis.
  - Screw in each captive screw to the chassis and tighten to 8 in-lb (0.9 N·m).
- Step 4** Contact TAC for assistance (see the [Contacting Customer Service, on page 136](#)).
- 

## Troubleshooting the I/O Modules

The following conditions indicate that there are problems with one or more I/O modules:

- The IOM LED on the chassis is amber.
- The STATUS LED on an I/O module is red.

During initialization, the STATUS LED is amber while the I/O module powers up and performs diagnostic tests. When the diagnostic tests are complete, the STATUS LED becomes green. If an overtemperature condition occurs, the STATUS LED becomes amber. If the module is resetting, ejectors are out, or if there is a major overtemperature condition, the LED flashes red.

For a listing of the I/O module LEDs and the conditions that they indicate, see [Table D-3 on page D-4](#).

To troubleshoot an I/O module hardware problem, follow these steps until the problem is resolved:

### SUMMARY STEPS

- Determine which I/O module has a problem. Check if a STATUS LED that is flashing red or is not lit on a module.
- Check if the power supply units are providing power to the chassis components. See the [Troubleshooting the Fan Trays, on page 128](#).
- Make sure that the I/O module is properly seated in the chassis by following these steps:
- Contact TAC for assistance (see the [Contacting Customer Service, on page 136](#)).

### DETAILED STEPS

---

- Step 1** Determine which I/O module has a problem. Check if a STATUS LED that is flashing red or is not lit on a module.
- Step 2** Check if the power supply units are providing power to the chassis components. See the [Troubleshooting the Fan Trays, on page 128](#).
- Step 3** Make sure that the I/O module is properly seated in the chassis by following these steps:
- Loosen the captive screws on the I/O module until they are no longer in the chassis.
  - Press the eject buttons on either end of the module.
  - Simultaneously rotate out both ejector levers until the module is unseated from the midplane.

- d) Place one hand on the module handle and pull the module part way out of the chassis.
- e) Push the module back into the chassis until it is seated on the midplane.
- f) Simultaneously rotate both ejector levers to the front of the module to fully seat the module.
- g) Make sure that each of the captive screws on the module is aligned with its holes in the chassis.
- h) Securely tighten each captive screw (to 8 in-lb [0.9 N·m]) to the chassis.

**Step 4** Contact TAC for assistance (see the [Contacting Customer Service, on page 136](#)).

---

## Contacting Customer Service

If you cannot solve a startup problem after using the troubleshooting suggestions in this chapter, contact the Technical Assistance Center (TAC) for assistance and additional instructions. Provide the following information to help your TAC representative address your problem as quickly as possible:

- Date that you received the switch
- Chassis serial number (located on a label on the right of the rear panel of the chassis)
- Type of software and release number
- Maintenance agreement or warranty information
- Brief description of the problem
- Brief explanation of the steps that you have already taken to isolate and resolve the problem



---

**Note** If you have CLI access, enter the **show sprom all** command to display the backplane contents.

---

To contact TAC, go to <http://tools.cisco.com/ServiceRequestTool/create/launch.do>.



# CHAPTER 7

## Technical Specifications

This appendix describes the technical specifications for the Nexus 7000 system and includes these sections:

- [Environmental Specifications for the Cisco Nexus 7000 Series Systems, on page 137](#)
- [Physical Specifications for the Cisco Nexus 7000 Series Chassis, on page 138](#)
- [Power Specifications for the Cisco Nexus 7000 Series Switches, on page 147](#)
- [Power Supply Cable Specifications, on page 162](#)
- [Chassis Clearances, on page 186](#)
- [Facility Cooling Requirements, on page 201](#)
- [Chassis Airflow, on page 201](#)

## Environmental Specifications for the Cisco Nexus 7000 Series Systems

lists the environmental specifications for the Cisco Nexus 7000 Series systems.

**Table 9: Environmental Specifications for the Cisco Nexus 7000 Series Switches**

Description		Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010	Cisco Nexus 7018	
Temperature	Ambient operating	32 to 104°F (0 to 40°C)				
	Ambient nonoperating	−40 to 158°F (−40 to 70°C)				
Relative humidity	Ambient (noncondensing) operating	5 to 90% (45 to 50% recommended)				
	Ambient (noncondensing) nonoperating and storage	5 to 95%				
Altitude	Operating	−500 to 13,000 feet (−150 to 4,000 meters)				
	Storage	−1,000 to 30,000 feet (−305 to 9,144 meters)				
Noise	Sound pressure levels					
		Without air filter	70 dBA	63.6 dBA	67.2 dBA	65.0 dBA
		With air filter	—	—	70.2 dBA	—

Description		Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010	Cisco Nexus 7018
	Sound power levels				
	Without air filter	83 dBA	72.5 dBA	78.9 dBA	74.2 dBA
	With air filter	—	—	81.7 dBA	—

## Physical Specifications for the Cisco Nexus 7000 Series Chassis

The physical specifications differ for the Cisco Nexus 7000 Series chassis depending on the model that you are installing and the type of installation you are doing (you can front mount all models but you can optionally do a center mount of the Cisco Nexus 7004 and 7009 chassis). [Table 10: Physical Specifications for Cisco Nexus 7000 Series Chassis, on page 138](#) lists the physical specifications for each model and installation type.

**Table 10: Physical Specifications for Cisco Nexus 7000 Series Chassis**

Chassis	Width <sup>5</sup>	Front Depth <sup>6</sup>	Rear Depth <sup>7</sup>	Height <sup>8</sup>
Cisco Nexus 7004 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	24.0 inches (61.0 cm)	12.25 inches (31.1 cm) (7 RU)
Cisco Nexus 7009 (front mount)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	24.0 inches (61.0 cm)	24.5 inches (62.2 cm) (14 RU)
Cisco Nexus 7009 (center mount)	17.3 inches (43.9 cm)	13 inches (33.0 cm)	18.0 inches (45.8 cm)	24.5 inches (62.2 cm) (14 RU)
Cisco Nexus 7010 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	33.1 inches (84.1 cm)	36.75 inches (93.3 cm) (21.0 RU)
Cisco Nexus 7018 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	33.1 inches (84.1 cm)	43.75 inches (111.1 cm) (25.0 RU)

<sup>5</sup> Width is also the minimal clearance required between the two vertical mounting rails inside the rack or cabinet.

<sup>6</sup> Front depth is also the minimal clearance required between the front mounting rails and the inside of the front of the rack or cabinet. For all switches, this includes 7 inches (17.8 cm) of space for cabling. For the Cisco Nexus 7009 center-mounted chassis, this distance also includes 6 inches of the chassis which is offset to the front by the center-mount bracket.

<sup>7</sup> Rear depth is also the clearance required between the front-mounting rails and the inside of the rear of the rack or cabinet. For front mounted switches, this is the same as the depth of the chassis. For a center-mounted Cisco Nexus 7009 switch, this is 6 inches (15.2 cm) less than the depth of the chassis, which is offset to the front.

<sup>8</sup> Height is also the clearance required between the top of the bottom support bracket and the top of the chassis that you are installing. If you are installing another chassis above this chassis, its bottom-support brackets must be positioned above this clearance area.

The weights and quantities are listed in the following tables:

- Cisco Nexus 7004 switch (see [Table 11: Weights and Quantities for the Cisco Nexus 7004 Switch Components, on page 139](#))
- Cisco Nexus 7009 switch (see [Table 12: Weights and Quantities for the Cisco Nexus 7009 Switch Components, on page 141](#))

- Cisco Nexus 7010 switch (see [Table 13: Weights and Quantities for the Cisco Nexus 7010 Components](#), on page 143)
- Cisco Nexus 7018 switch (see [Table 14: Weights and Quantities for the Cisco Nexus 7018 Components](#), on page 145)

The weights in these tables do not include the rack or cabinet that holds the chassis or the interface and power cables. For those weights, see the documentation provided by the manufacturers of those components.

**Table 11: Weights and Quantities for the Cisco Nexus 7004 Switch Components**

Component		Weight per Unit	Quantity
Chassis		45.0 lb (20.0 kg)	1
Supervisor modules		—	1 or 2 (must be same model)
	Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
	Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	

Component		Weight per Unit	Quantity
F2 I/O Modules		—	1 or 2 (can mix I/O module types)
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)	15.0 lb (6.8 kg)	
	12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
	6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules		—	
	48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14 lb (6.4 kg)	
	48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
	32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
	8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules		—	
	24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
	6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
	2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
M3 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module with XL option (N7K-M348XP-25L)	12 lb (5.44 kg)	
	24-port 40-Gigabit Ethernet I/O module with XL option (N7K-M324FQ-25L)	12 lb (5.44 kg)	
Service Modules		—	0 or 1
	NAM (N7K-SM-NAM-K9)	17.9 lbs. (8.1 kg)	
Fan tray (N7K-C7004-FAN)		25.0 lb (11.3 kg)	1



Component		Weight per Unit	Quantity
Power Supplies		—	1 to 4 (can mix power supply types)
	3-kW AC power supply (N7K-AC-3KW)	11.0 lb (5.0 kg)	
	3-kW DC power supply (N7K-DC-3KW)	11.0 lb (5.0 kg)	
	3.5-kW HVAC/HVDC power supply (N7K-HV-3.5KW)	11.0 lb (5.0 kg)	
Optional Components		—	—
	Front door kit (N7K-C7004-FD-MB)	—	0 or 1
	Air filter (N7K-C7004-AFLT)	—	0 or 1

**Table 12: Weights and Quantities for the Cisco Nexus 7000 Switch Components**

Component		Weight per Unit	Quantity
Chassis		100 lb (45.0 kg)	1
Supervisor modules		—	1 or 2 (same type if using 2)
	Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	
	Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
	Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	

Component		Weight per Unit	Quantity
F1 I/O Modules		—	1 to 7 (can mix I/O module types)
	32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	
F2 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
	48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)	15.0 lb (6.8 kg)	
	12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
	6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules		—	
	48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14 lb (6.4 kg)	
	48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14 lb (6.4 kg)	
	48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
	48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
	32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
	32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
	8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules		—	
	24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
	6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
	2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
M3 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module with XL option (N7K-M348XP-25L)	12 lb (5.44 kg)	

Component		Weight per Unit	Quantity
	24-port 40-Gigabit Ethernet I/O module with XL option (N7K-M324FQ-25L)	12 lb (5.44 kg)	
Service Modules		—	0 or 1
	NAM (N7K-SM-NAM-K9)	17.9 lbs. (8.1 kg)	
Fabric Modules		—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
	Fabric-2 module (N7K-C7009-FAB-2)	5 lb (2.27 kg)	
Fan tray (N7K-C7009-FAN)		25.0 lb (11.3 kg)	1
Power Supplies		—	1 or 2 (can mix power supply types)
	6-kW AC power supply unit (N7K-AC-6.0KW)	18 lb (8.2 kg)	
	7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26 lb (11.8 kg)	
	6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
	DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components		—	—
	Door and air frame (optional)	—	0 or 1

Table 13: Weights and Quantities for the Cisco Nexus 7010 Components

Component		Weight per Unit	Quantity
Chassis		200 lb (90.9 kg)	1
Supervisor Modules		—	1 or 2 (same type if using 2)
	Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	
	Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
	Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	

Component	Weight per Unit	Quantity
F1 I/O Modules	—	1 to 8 (can mix I/O module types)
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)	15.0 lb (6.8 kg)	
12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
M3 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module with XL option (N7K-M348XP-25L)	12 lb (5.44 kg)	

Component		Weight per Unit	Quantity
	24-port 40-Gigabit Ethernet I/O module with XL option (N7K-M324FQ-25L)	12 lb (5.44 kg)	
Service Modules		—	0 or 1
	NAM (N7K-SM-NAM-K9)	17.9 lbs. (8.1 kg)	
Fabric Modules		—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
	Fabric-1 module (N7K-C7010-FAB-1)	4 lb (1.8 kg)	
	Fabric-2 module (N7K-C7010-FAB-2)	4 lb (1.8 kg)	
Fan Trays		—	—
	System fan tray (N7K-C7010-FAN-S)	20 lb (9.1 kg)	2
	Fabric fan tray (N7K-C7010-FAN-F)	5 lb (2.3 kg)	2
Power Supplies		—	2 to 3 (can mix power supply types)
	6-kW AC power supply unit (N7K-AC-6.0KW)	18 lb (8.2 kg)	
	7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26 lb (11.8 kg)	
	6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
	DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components		—	—
	Mid-frame doors and frame	—	0 or 1

Table 14: Weights and Quantities for the Cisco Nexus 7018 Components

Component		Weight per Unit	Quantity
Chassis		187 lb (85.0 kg)	1
Supervisor Modules		—	1 or 2 (same type if using 2)
	Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	
	Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
	Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	

Component		Weight per Unit	Quantity
F1 I/O Modules		—	1 to 8 (can mix I/O module types)
	32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	
F2 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
	48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)	15.0 lb (6.8 kg)	
	12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
	6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules		—	
	48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14 lb (6.4 kg)	
	48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14 lb (6.4 kg)	
	48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
	48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
	32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
	32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
	8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules		—	
	24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
		16.5 lb (7.5 kg)	

Component		Weight per Unit	Quantity
	6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		
	2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
M3 I/O Modules		—	
	48-port 1- and 10-Gigabit Ethernet I/O module with XL option (N7K-M348XP-25L)	12 lb (5.44 kg)	
	24-port 40-Gigabit Ethernet I/O module with XL option (N7K-M324FQ-25L)	12 lb (5.44 kg)	
Service Modules		—	0 or 1
	NAM (N7K-SM-NAM-K9)	17.9 lbs. (8.1 kg)	
Fabric Modules		—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
	Fabric-1 module (N7K-C7018-FAB-1)	7.5 lb (3.4 kg)	
	Fabric-2 module (N7K-C7018-FAB-2)	7.5 lb (3.4 kg)	
Fan tray (N7K-C7018-FAN)		25.8 lb (11.7 kg)	2
Power Supplies		—	2 to 4 (can mix power supply types)
	6-kW AC power supply unit (N7K-AC-6.0KW)	18 lb (8.2 kg)	
	7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26 lb (11.8 kg)	
	6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
	DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components		—	—
	Front door (optional)	25 lb (11.3 kg)	0 or 1

## Power Specifications for the Cisco Nexus 7000 Series Switches

The number of power supplies that a Cisco Nexus 7000 Series switch requires depends on the quantities and types of modules that you include in the switch chassis, the type of power supply unit that you are using, and the power redundancy mode that you are using.

The following topics explain how to calculate the switch power requirements and the amount of power available for each type of power supply configuration mode:

## Power Requirements for Switch Components

To determine the power requirements of the Cisco Nexus 7000 Series switches, add the power requirements of each of its components. For each component, multiply the number of its modules by its maximum or typical power requirement. To find the quantities and power requirements for each Cisco Nexus 7000 Series switch, see the following tables:

- Cisco Nexus 7004—see [Table 15: Power Requirements for the Cisco Nexus 7004 Switch](#), on page 148
- Cisco Nexus 7009—see [Table 16: Power Requirements for the Cisco Nexus 7009 Switch](#), on page 150
- Cisco Nexus 7010—see [Table 17: Power Requirements for the Cisco Nexus 7010 System Components](#), on page 152
- Cisco Nexus 7018—see [Table 18: Power Requirements for the Cisco Nexus 7018 System Components](#), on page 154

**Table 15: Power Requirements for the Cisco Nexus 7004 Switch**

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type is using 2)	—	—
Supervisor 2 (N7K-SUP2)		109 W	
Supervisor 2 Enhanced (N7K-SUP2E)		147 W	



Component	Quantity	Maximum	Typical
F2 I/O Modules	1 or 2	—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	400 W
48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)		340 W	325 W
12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		400 W	325 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
M3 I/O Modules		—	—
48-port 1-/10-Gigabit Ethernet I/O modules with XL option(N7K-M348XP-25L)		525 W	400 W
24-port 40-Gigabit Ethernet I/O modules with XL option(N7K-M324FQ-25L)		750 W	600 W
Fan Tray	1	650 W	185 W

Table 16: Power Requirements for the Cisco Nexus 7009 Switch

Component		Quantity	Maximum	Typical
Supervisor Modules		1 or 2 (same type if using 2)	—	—
	Supervisor 1 (N7K-SUP1)		210 W	190 W
	Supervisor 2 (N7K-SUP2)		300 W	109 W
	Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 7	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	400 W
48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)		340 W	325 W
12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		400 W	325 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
M3 I/O Modules		—	—
48-port 1-/10-Gigabit Ethernet I/O modules with XL option(N7K-M348XP-25L)		525 W	400 W

Component		Quantity	Maximum	Typical
	24-port 40-Gigabit Ethernet I/O modules with XL option(N7K-M324FQ-25L)		750 W	600 W
Fabric Modules		3 to 5	—	—
	Fabric-2 module (N7K-C7009-FAB-2)		70 W	55 W
Fan Trays		—	—	—
	All fan trays (total) (N7K-C7009-FAN)		650 W	190 W

Table 17: Power Requirements for the Cisco Nexus 7010 System Components

Component		Quantity	Maximum	Typical
Supervisor Modules		1 or 2 (same type if using 2)	—	—
	Supervisor 1 (N7K-SUP1)		210 W	190 W
	Supervisor 2 (N7K-SUP2)		300 W	109 W
	Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 8 (can mix types)	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	400 W
48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)		340 W	325 W
12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		400 W	325 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
M3 I/O Modules		—	—
48-port 1-/10-Gigabit Ethernet I/O modules with XL option(N7K-M348XP-25L)		525 W	400 W

Component		Quantity	Maximum	Typical
	24-port 40-Gigabit Ethernet I/O modules with XL option(N7K-M324FQ-25L)		750 W	600 W
Fabric Modules		3 to 5 (same type)	—	—
	Fabric-1 module (N7K-C7010-FAB-1)		60 W	55 W
	Fabric-2 module (N7K-C7010-FAB-2)		80 W	60W
Fan Trays (N7K-C7010-FAN-F and N7K-C7010-FAN-S)		—	—	—
	All fan trays (total)		2184 W	300 W

**Table 18: Power Requirements for the Cisco Nexus 7018 System Components**

Component		Quantity	Maximum	Typical
Supervisor Modules		1 or 2 (same type if using 2)	—	—
	Supervisor 1 (N7K-SUP1)		210 W	190 W
	Supervisor 2 (N7K-SUP2)		300 W	109 W
	Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 16 (can mix types)	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	400 W
48-port 1- and 10-GBASE-T I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F348XP-25)		340 W	325 W
12-port, 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port, 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		400 W	325 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
M3 I/O Modules		—	—
48-port 1-/10-Gigabit Ethernet I/O modules with XL option (N7K-M348XP-25L)		525 W	400 W

Component		Quantity	Maximum	Typical
	24-port 40-Gigabit Ethernet I/O modules with XL option(N7K-M324FQ-25L)		750 W	600 W
Fabric Modules		3 to 5 (same type)	—	—
	Fabric-1 module (N7K-C7018-FAB-1)		100 W	90 W
	Fabric-2 module (N7K-C7018-FAB-2)		150 W	110 W
Fan Trays (N7K-C7018-FAN)		2	—	—
	All fan trays (total)		1000 W	569 W

## Power Supply Configuration Modes

You can configure one of the following power modes to either use the combined power provided by the installed power supplies or to provide power redundancy when there is a power loss:

- **Combined mode**—Provides the maximum amount of available power by utilizing the combined power output from all installed power supplies for switch operations. This mode does not provide redundancy.
- **Power-supply redundancy mode**—Allows you to replace a power supply during switch operations. All power supplies are active. The available power is calculated as the least amount of power available from all but one of the power supplies (N+1). The reserve power is the amount of power output by the power supply that can output the most power. For example, if three power supplies output 3 kW, 6 kW, and 6 kW, the available power is 9 kW (3 kW + 6 kW) and the reserve power is 6 kW.
- **Input source redundancy mode**—Takes power from two electrical grids so that if one grid goes down, the other grid can provide the power needed by the switch. For the Cisco Nexus 7004 chassis, each grid powers half of the power supplies. For the Cisco Nexus 7009, 7010, and 7018 chassis, each grid powers half of each power supply (grid A is connected to the Input 1 receptacle on each power supply and grid B is connected to the Input 2 receptacle on each power supply). The available power is the amount of power output by the portions of the power supplies that are connected to the same grid. For example, if three power supplies are connected to a 110-V grid and a 220-V grid, each power supply outputs 1.2 kW for the 110-V grid and 3.0 kW for the 220-V grid. The available power would be 3.6 kW (1.2 kW + 1.2 kW + 1.2 kW) and the reserve power would be 9.0 kW (3.0 kW + 3.0 kW + 3.0 kW).
- **Full redundancy mode**—Provides both power-supply redundancy and input-source redundancy. This mode allows you to replace a power supply without interrupting switch operations or continue powering the switch if one of two grids goes down. The available power is the lesser amount of output power for power supply redundancy or input source redundancy.

The amount of power available for use with your Cisco Nexus 7000 Series switch depends on the number of power supplies, input voltage used, and the power mode used. To determine the amount of available power for the power supplies, see the following tables:

- For the 3-kW AC power supplies, see [Table 19: Power Availability for 3-kW AC Power Supplies](#), on page 157
- For the 6-kW AC power supplies, see [Table 21: Power Availability for 6-kW AC Power Supply Units](#), on page 158
- For the 7.5-kW AC power supplies, see [Table 22: Power Availability for 7.5-kW AC Power Supplies](#), on page 159



- For the 3-kW DC power supplies, see [Table 23: Power Availability for 3.0-kW DC Power Supplies](#), on page 160
- For the 6-kW DC power supplies, see [Table 25: Power Availability for 6.0-kW DC Power Supply Units](#), on page 161
- For the 3.5-kW HVAC/HVDC power supplies, see [Table 20: Power Availability for 3.5-kW Inputs \(AC\)](#), on page 157 and [Table 24: Power Availability for 3.5-kW Inputs \(DC\)](#), on page 161

**Table 19: Power Availability for 3-kW AC Power Supplies**

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply <sup>9</sup>				
220-V input				
1 power supply	3000 W	—	—	—
2 power supplies	6000 W	3000 W	3000 W	3000 W
3 power supplies	9000 W	6000 W	—	—
4 power supplies	12,000 W	9000 W	6000 W	6000 W
110-V input				
1 power supply	1450 W	—	—	—
2 power supplies	2900 W	1450 W	1450 W	1450 W
3 power supplies	4350 W	2900 W	—	—
4 power supplies	5800 W	4350 W	2900 W	2900 W

<sup>9</sup> The Cisco Nexus 7004 uses up to four 3.0 kW AC power supplies.

**Table 20: Power Availability for 3.5-kW Inputs (AC)**

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply <sup>10</sup>				
277-V input				
1 power supply	3500 W	—	—	—
2 power supplies	7000 W	3500 W	3500 W	3500 W
3 power supplies	10,500 W	7000 W	—	—
4 power supplies	14,000 W	10,500 W	7000 W	7000 W

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
220/230-V input				
1 power supply	3500 W	—	—	—
2 power supplies	7000 W	3500 W	3500 W	3500 W
3 power supplies	10,500 W	7000 W	—	—
4 power supplies	14,000 W	10,500 W	7000 W	7000 W
210-V input				
1 power supply	3100 W	—	—	—
2 power supplies	6200 W	3100 W	3100 W	3100 W
3 power supplies	9300 W	6200 W	—	—
4 power supplies	12,400 W	9300 W	6200 W	6200 W
110-V input				
1 power supply	1500 W	—	—	—
2 power supplies	3000 W	1500 W	1500 W	1500 W
3 power supplies	4500 W	3000 W	—	—
4 power supplies	6000 W	4500 W	3000 W	3000 W

<sup>10</sup> The Cisco Nexus 7004 uses up to four 3.5 kW inputs.

**Table 21: Power Availability for 6-kW AC Power Supply Units**

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
220-V and 220-V inputs				
1 power supply	6000 W	—	3000 W	—
2 power supplies	12,000 W	6000 W	6000 W	6000 W
3 power supplies	18,000 W	12,000 W	9000 W	9000 W
4 power supplies	24,000 W	18,000 W	12,000 W	12,000 W
<a href="#">11</a>				
220-V and 110-V inputs				

	<b>Combined Mode</b>	<b>Power Supply Redundancy Mode</b>	<b>Input Source Redundancy Mode</b>	<b>Full Redundancy Mode</b>
1 power supply	4200 W	—	1200 W	—
2 power supplies	8400 W	4200 W	2400 W	2400 W
3 power supplies	12,600 W	8400 W	3600 W	3600 W
4 power supplies	16,800 W	12,600 W	4800 S	4800 W
110-V and 110-V inputs				
1 power supply	2400 W	—	1200 W	—
2 power supplies	4800 W	2400 W	2400 W	2400 W
3 power supplies	7200 W	4800 W	3600 W	3600 W
4 power supplies	9600 W	7200 W	4800 W	4800 W
Single input per power supply				
220-V input				
1 power supply	3000 W	—	—	—
2 power supplies	6000 W	3000 W	—	—
3 power supplies	9000 W	6000 W	—	—
4 power supplies	12,000 W	9000 W	—	—
110-V input				
1 power supply	1200 W	—	—	—
2 power supplies	2400 W	1200 W	—	—
3 power supplies	3600 W	2400 W	—	—
4 power supplies	4800 W	3600 W	—	—

<sup>11</sup> The Cisco Nexus 7018 switch uses up to four 6-kW power supplies, the Cisco Nexus 7010 switch uses up to three 6-kW power supplies, and the Cisco Nexus 7009 uses up to two 6-kW power supplies.

**Table 22: Power Availability for 7.5-kW AC Power Supplies**

	<b>Combined Mode</b>	<b>Power Supply Redundancy Mode</b>	<b>Input Source Redundancy Mode</b>	<b>Full Redundancy Mode</b>
Dual inputs per power supply				
220-V and 220-V inputs				
1 power supply	7500 W	—	3750 W	—

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
2 power supplies	15,000 W	7500 W	7500 W	7500 W
3 power supplies	22,500 W	15,000 W	11,250 W	11,250 W
4 power supplies <a href="#">12</a>	30,000 W	22,500 W	15,000 W	15,000 W
Single input per power supply				
220-V input				
1 power supply	3750 W	—	—	—
2 power supplies	7500 W	3750 W	—	—
3 power supplies	11,250 W	7500 W	—	—
4 power supplies	15,000 W	11,250 W	—	—

<sup>12</sup> The Cisco Nexus 7018 switch uses up to four 7.5-kW power supplies, the Cisco Nexus 7010 switch uses up to three 7.5-kW power supplies, and the Cisco Nexus 7009 uses up to two 7.5-kW power supplies.

**Table 23: Power Availability for 3.0-kW DC Power Supplies**

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply <a href="#">13</a>				
1 power supply	3,000 W	—	—	—
2 power supplies	6,000 W	3,000 W	3,000 W	3,000 W
3 power supplies	9,000 W	6,000 W	3,000 W	3,000 W
4 power supplies	12,000 W	9,000 W	6,000 W	6,000 W

<sup>13</sup> The Cisco Nexus 7004 uses up to four 3.0 kW DC power supplies.

**Table 24: Power Availability for 3.5-kW Inputs (DC)**

Power Inputs	CombinedMode	Power SupplyRedundancyMode	Input SourceRedundancyMode	FullRedundancyMode
Dual inputs per power supply <a href="#">14</a> 380-V input 1 power supply 2 power supplies 3 power supplies 4 power supplies	3,500 W	—	—	—
	7,000 W	3,500 W	3,500 W	3,500 W
	10,500 W	7,000 W	3,500 W	3,500 W
	14,000 W	10,500	7,000 W	7,000 W
220/240-V input 1 power supply 2 power supplies 3 power supplies 4 power supplies	3,500 W	—	—	—
	7,000 W	3,500 W	3,500 W	3,500 W
	10,500 W	7,000 W	3,500 W	3,500 W
	14,000 W	10,500	7,000 W	7,000 W
210-V input 1 power supply 2 power supplies 3 power supplies 4 power supplies	3,100 W	—	—	—
	6,200 W	3,100 W	3,100 W	3,100 W
	9,300 W	6,200 W	3,100 W	3,100 W
	12,400 W	9,300 W	6,200 W	6,200 W

<sup>14</sup> The Cisco Nexus 7004 uses up to four 3.5 kW DC power supplies.

**Table 25: Power Availability for 6.0-kW DC Power Supply Units**

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply 1 power supply 2 power supplies 1 3 power supplies 1 4 power supplies 1	6,000 W	—	3,000 W	—
	12,000 W	6,000 W	6,000 W	6,000 W
	18,000 W	12,000 W	9,000 W	9,000 W
	24,000 W	18,000 W	12,000 W	12,000 W

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply	3,000 W	—	—	—
1 power supply	6,000 W	3,000 W	—	—
2 power supplies 1	9,000 W	6,000 W	—	—
3 power supplies 1	12,000 W	9,000 W	—	—
4 power supplies <a href="#">15</a>				

<sup>15</sup> The Cisco Nexus 7018 switch uses up to four 6-kW power supplies, the Cisco Nexus 7010 switch uses up to three 6-kW power supplies, and the Cisco Nexus 7009 uses up to two 6-kW power supplies.

## Power Supply Cable Specifications

For power supply cable specifications, see the following tables:



**Note** If you do not order the optional power cord with the system, you are responsible for selecting the appropriate power cord for the product. Using a non-compatible power cord with this product may result in electrical safety hazard. Orders delivered to Argentina, Brazil, and Japan must have the appropriate power cord ordered with the system.

**Table 26: 3-kW and 6-kW AC Power Supply Power Cords**

Locale	Power Cord Part Number	Cord Set Rating	Power Cord Reference Illustration
Australia and New Zealand	CAB-AC-16A-AUS	16A, 250 VAC	
Peoples Republic of China	CAB-AC-16A-CH	16A, 250 VAC	
Continental Europe	CAB-AC-2500W-EU	16A, 250 VAC	
International	CAB-AC-2500W-INT	16A, 250 VAC	
Israel	CAB-AC-2500W-ISRL	16A, 250 VAC	
Japan and North America (non locking) 200-240 VAC operation	CAB-9K16A-US1	16A, 250 VAC	
Japan and North America (locking) 200-240 VAC operation	CAB-AC-C6K-TWLK	16A, 250 VAC	
Japan and North America 100-120 VAC operation	CAB-7513AC	16A, 250 VAC	

Locale	Power Cord Part Number	Cord Set Rating	Power Cord Reference Illustration
Korea	CAB-9K16A-KOR	16A, 250 VAC	
Power distribution unit (PDU)	CAB-C19-CBN	16A, 250 VAC	
Switzerland	CAB-ACS-16	16A, 250 VAC	

Figure 70: CAB-AC-16A-AUS Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

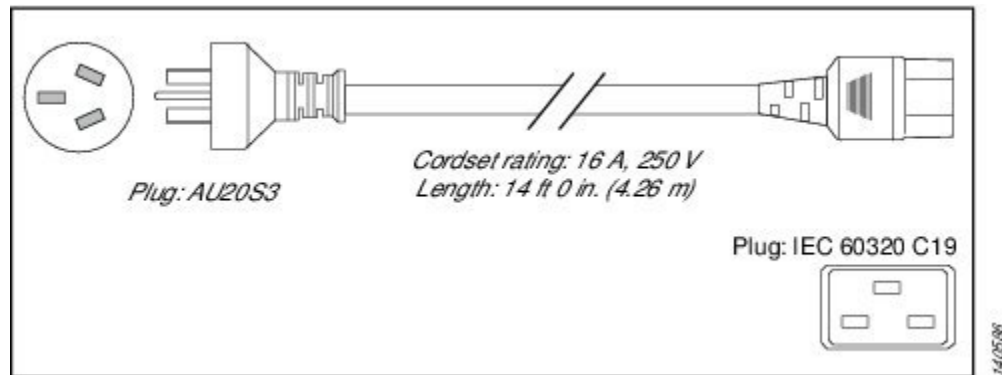


Figure 71: CAB-AC-16A-CH Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

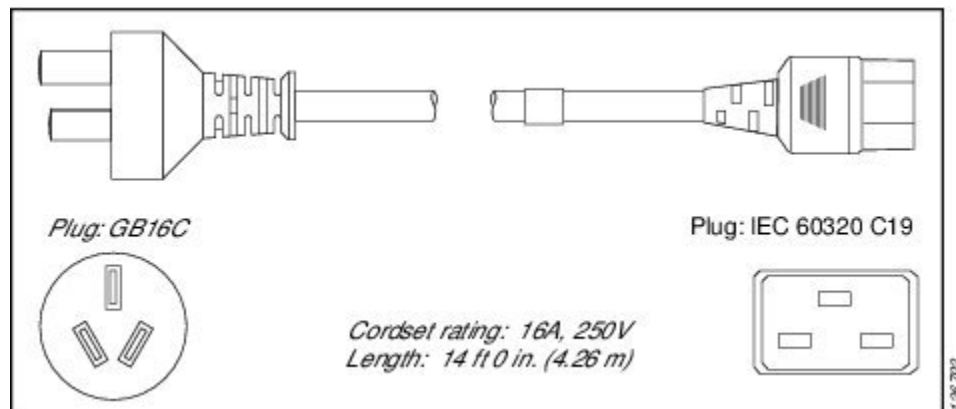


Figure 72: CAB-AC-2500W-EU Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

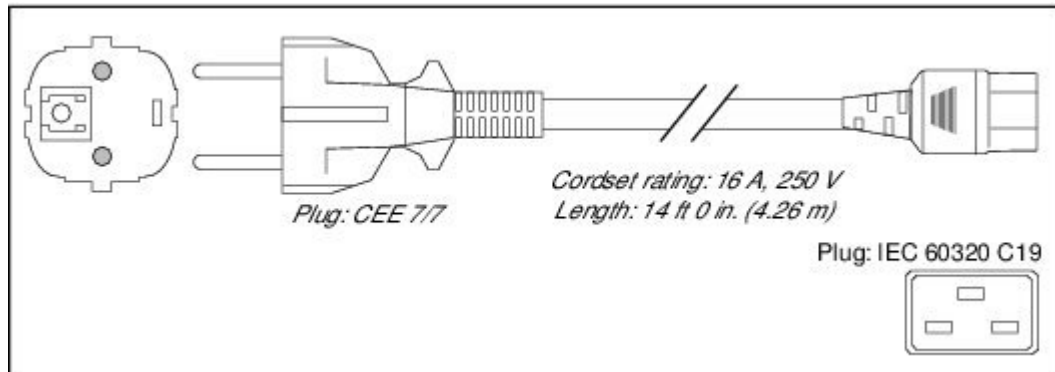


Figure 73: CAB-AC-2500W-INT Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

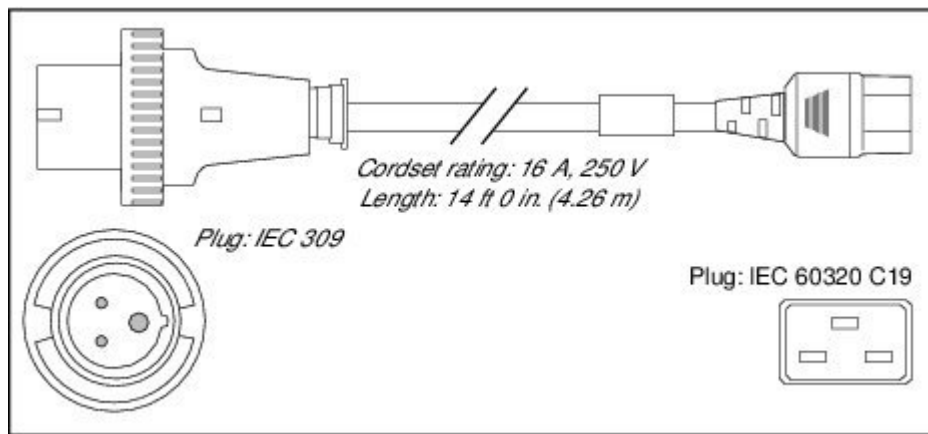
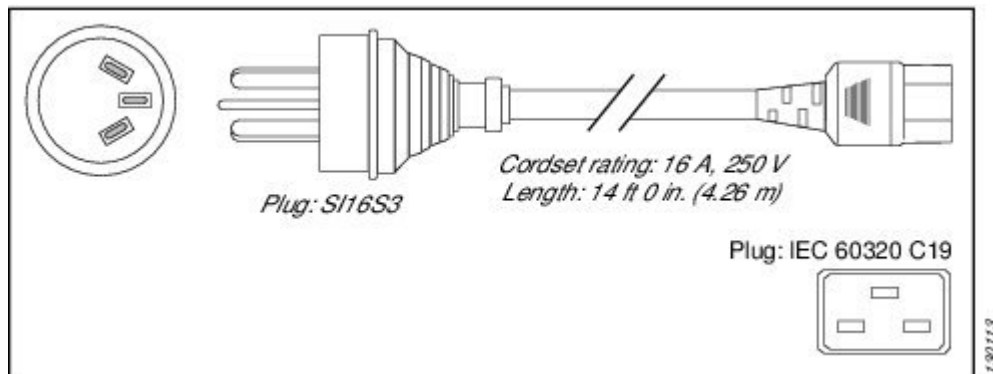
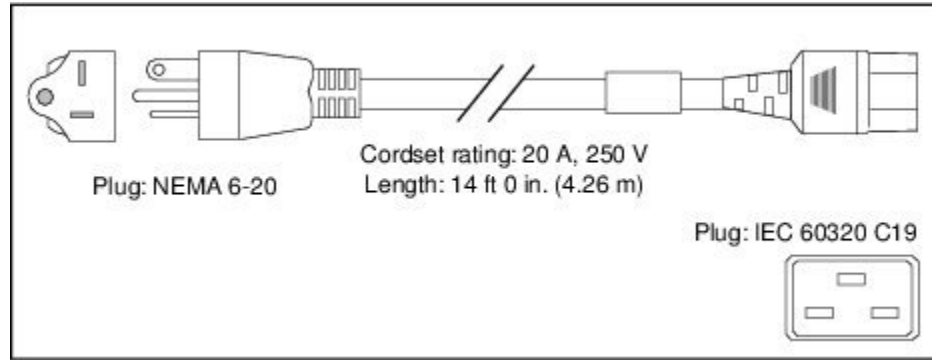


Figure 74: CAB-AC-2500W-ISRL Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit



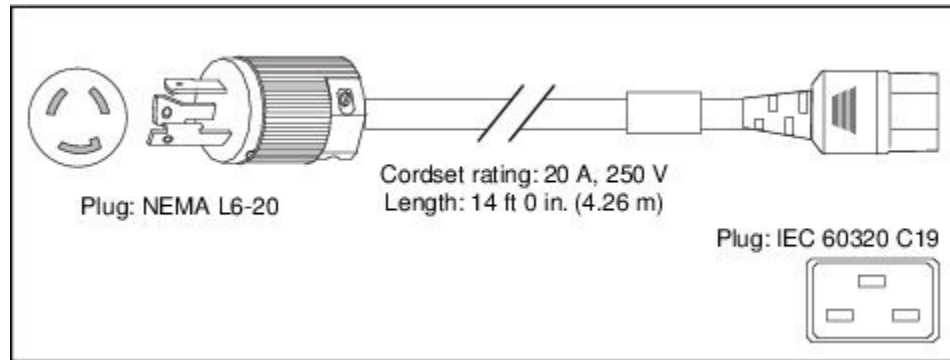


**Figure 75: CAB-9K16A-US1 Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit**



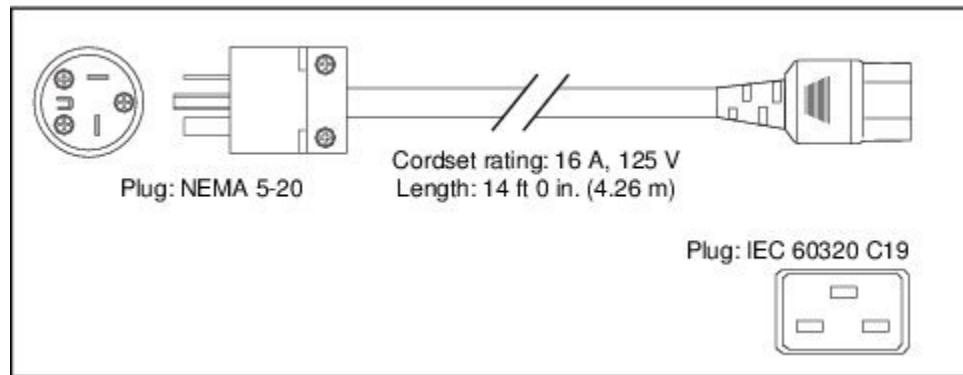
113362

**Figure 76: CAB-AC-C6K-TWLK Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit**



113363

**Figure 77: CAB-7513AC Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit**



331014

Figure 78: CAB-9K16A-KOR Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

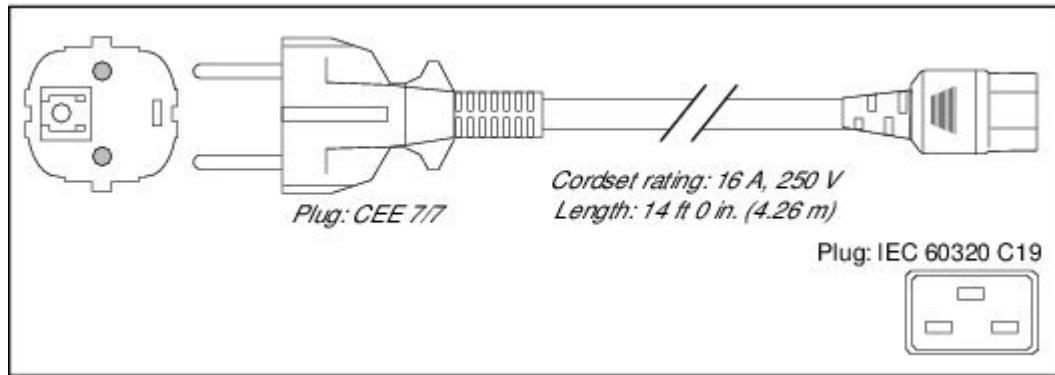


Figure 79: CAB-C19-CBN Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

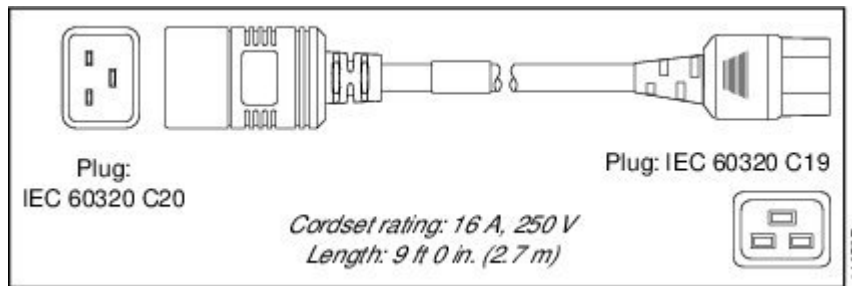


Figure 80: CAB-ACS-16 Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

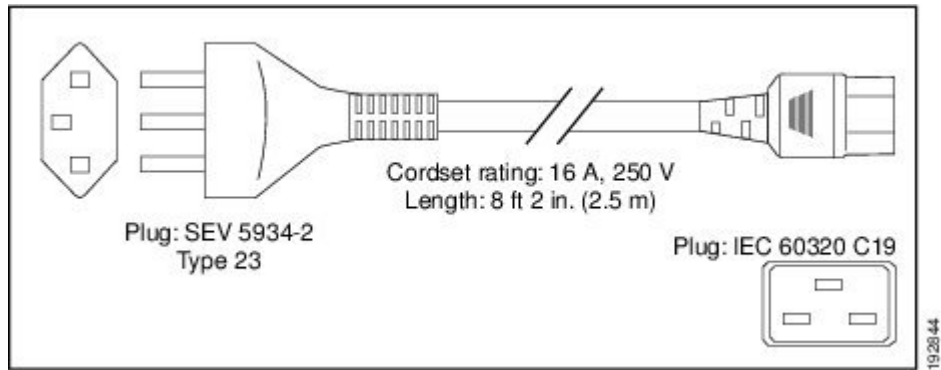


Figure 81: CAB-AC-16A-AUS Power Cord and Plugs for the 3-kW and 6-kW AC Power Supply Unit

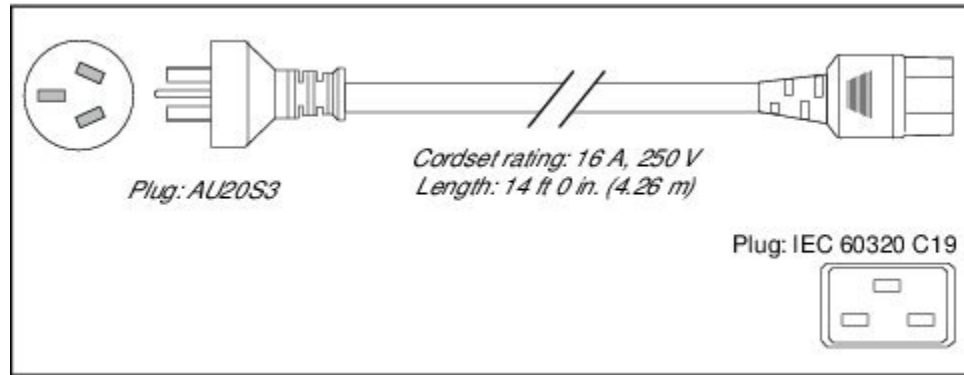
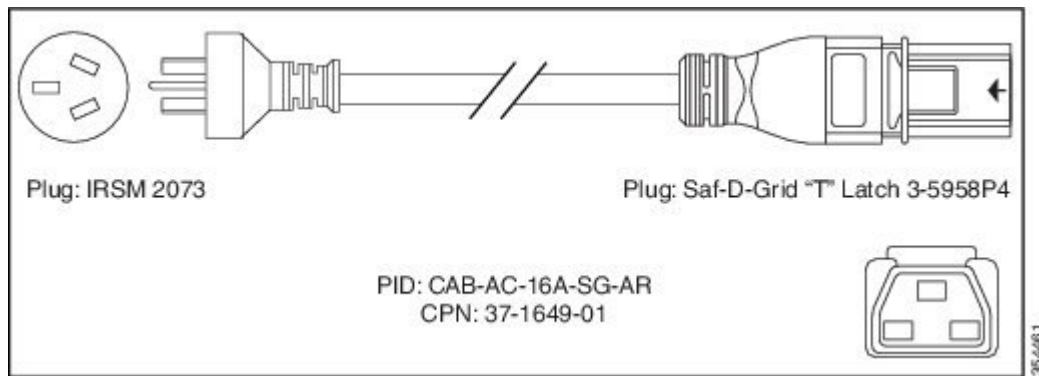


Table 27: 3.5-kW HVAC/HVDC Power Supply AC Power Cords

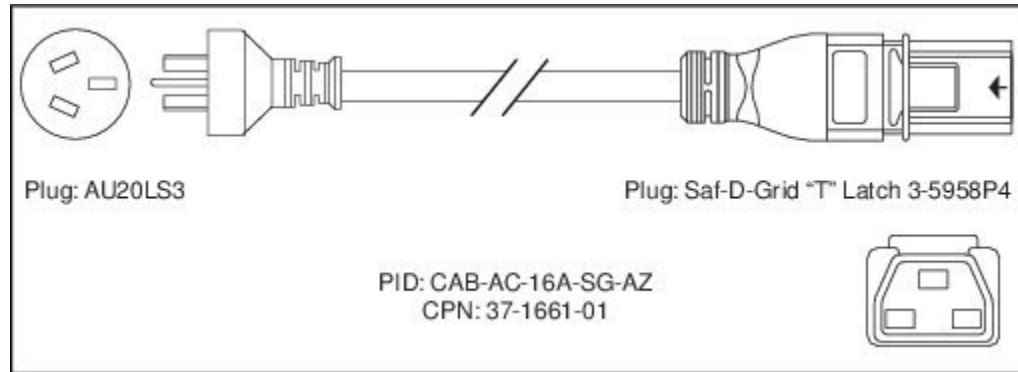
Locale	Power Supply Part Number	Cisco Part Number (CPN)	Length	Cord rating	Power cord reference illustration
Argentina	CAB-AC-16A-SG-AR	37-1649-01	14' 0" (4.26 m)	16A, 250 VAC	
Australia and New Zealand	CAB-AC-16A-SG-AZ	37-1661-01	14' 0" (4.26 m)	16A, 250 VAC	
Brazil	CAB-AC-16A-SG-BR	37-1650-01	14' 0" (4.26 m)	16A, 250 VAC	
Peoples Republic of China	CAB-AC-16A-SG-CH	37-1655-01	14' 0" (4.26 m)	16A, 250 VAC	
Continental Europe	CAB-AC-16A-SG-EU	37-1660-01	14' 0" (4.26 m)	16A, 250 VAC	
India	CAB-AC-16A-SG-IND	37-1648-01	14' 0" (4.26 m)	16A, 250 VAC	
International	CAB-AC-16A-SG-IN	37-1659-01	14' 0" (4.26 m)	16A, 250 VAC	
Israel	CAB-AC-16A-SG-IS	37-1658-01	14' 0" (4.26 m)	16A, 250 VAC	
Italy	CAB-AC-16A-SG-IT	37-1651-01	14' 0" (4.26 m)	16A, 250 VAC	
North America (non locking) 110 VAC operation	CAB-AC-20A-SG-US	37-1662-01	14' 0" (4.26 m)	20A, 110 VAC	
North America (locking) 125 VAC operation	CAB-AC-20A-SG-US1	37-1652-01	14' 0" (4.26 m)	20A, 125 VAC	
North America (non locking) 200-240 VAC operation	CAB-AC-20A-SG-US2	37-1657-01	14' 0" (4.26 m)	20A, 250 VAC	
North America (locking) 200-240 VAC operation	CAB-AC-20A-SG-US3	37-1656-01	14' 0" (4.26 m)	20A, 250 VAC	
North America 277 VAC operation	CAB-AC-20A-SG-US4	37-1645-01	14' 0" (4.26 m)	20A, 277 VAC	

Locale	Power Supply Part Number	Cisco Part Number (CPN)	Length	Cord rating	Power cord reference illustration
North America Cabinet Jumper Power distribution unit (PDU)	CAB-AC-20A-SG-C20	37-1653-01	14' 0" (4.26 m)	20A, 250 VAC	
South Africa	CAB-AC-16A-SG-SA	37-1647-01	14' 0" (4.26 m)	16A, 250 VAC	
Korea	CAB-AC-16A-SG-SK	37-1646-01	14' 0" (4.26 m)	16A, 250 VAC	
Switzerland	CAB-AC-16A-SG-SW	37-1654-01	14' 0" (4.26 m)	16A, 250 VAC	
International, IEC/EU, Ring Terminal source plug	CAB-HV-25A-SG-IN2	37-1640-01	14' 0" (4.26 m)	20A, 300 VAC/500 VDC	
International, IEC/EU	CAB-HV-25A-SG-IN3	37-100904-01	14' 0" (4.26 m)	20A, 300 VAC	
North America, Ring Terminal source plug	CAB-HV-25A-SG-US2	37-1641-01	14' 0" (4.26 m)	20A, 300 VAC/500 VDC	
North America	CAB-HV-25A-SG-US5	37-100903-01	14' 0" (4.26 m)	20A, 300 VAC	

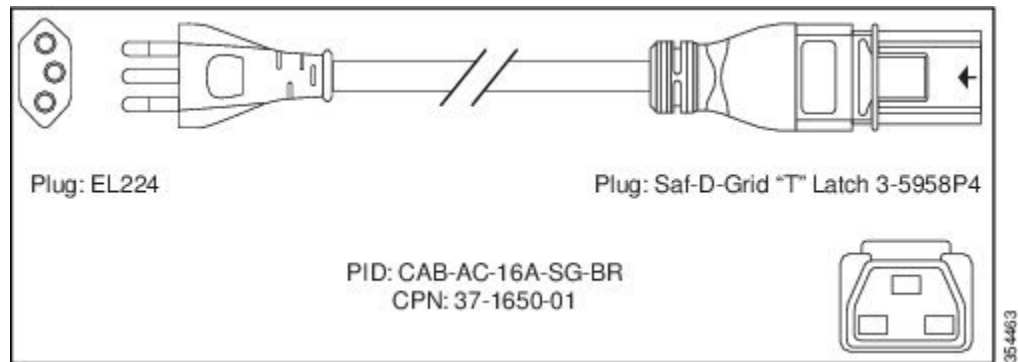
Figure 82: CAB-AC-16A-SG-AR Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit



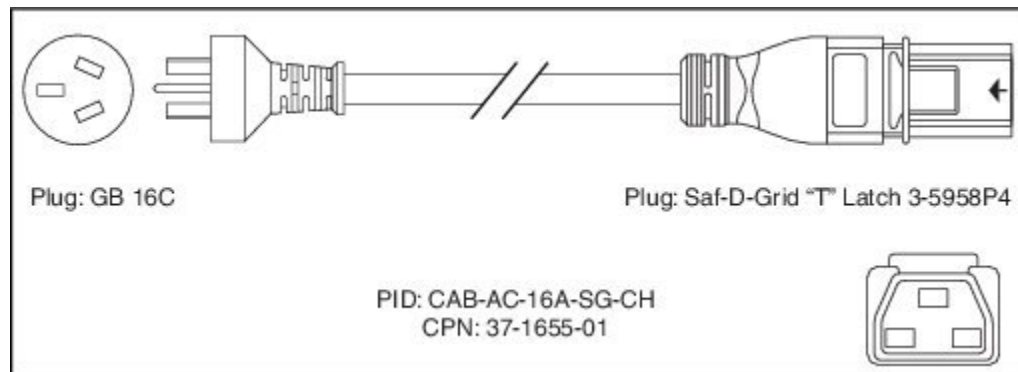
**Figure 83: CAB-AC-16A-SG-AZ Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



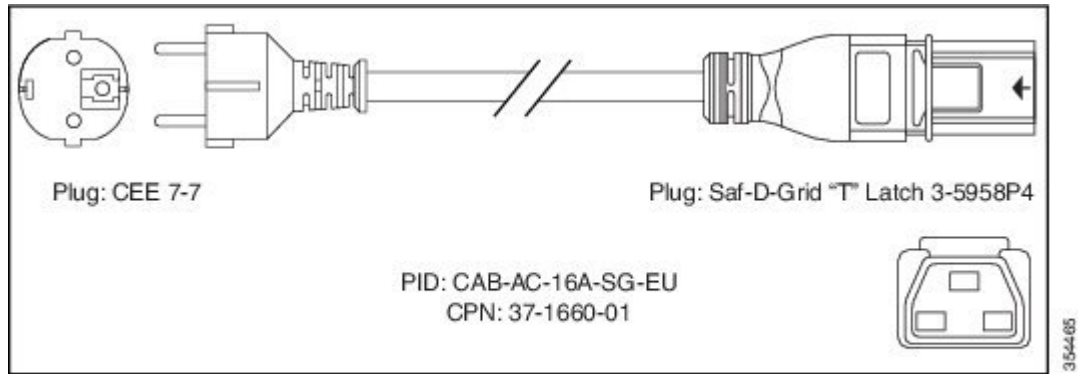
**Figure 84: CAB-AC-16A-SG-BR Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



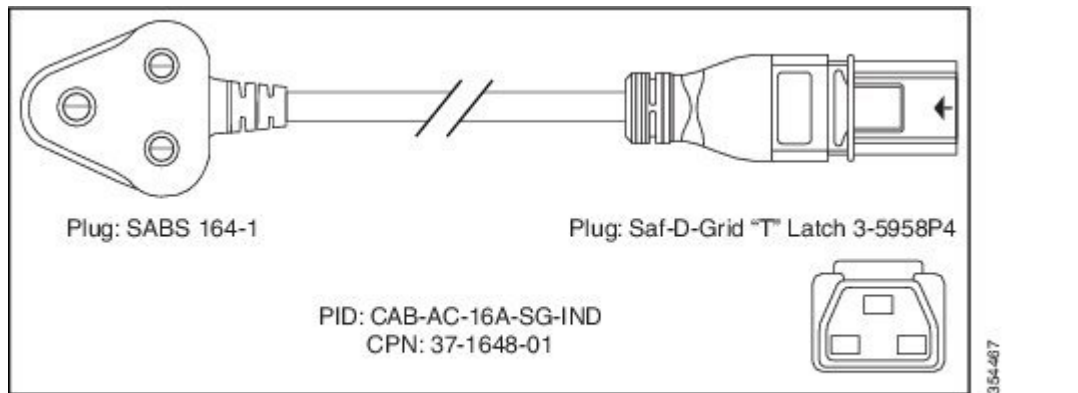
**Figure 85: CAB-AC-16A-SG-CH Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



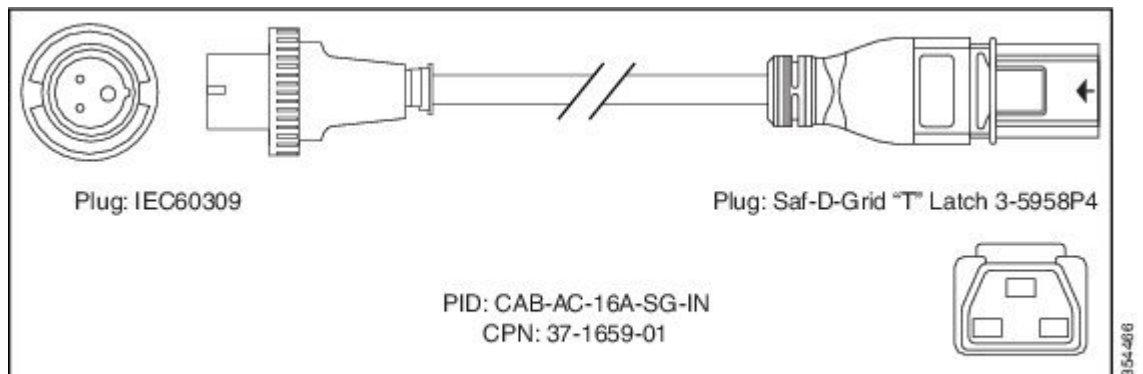
**Figure 86: CAB-AC-16A-SG-EU Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



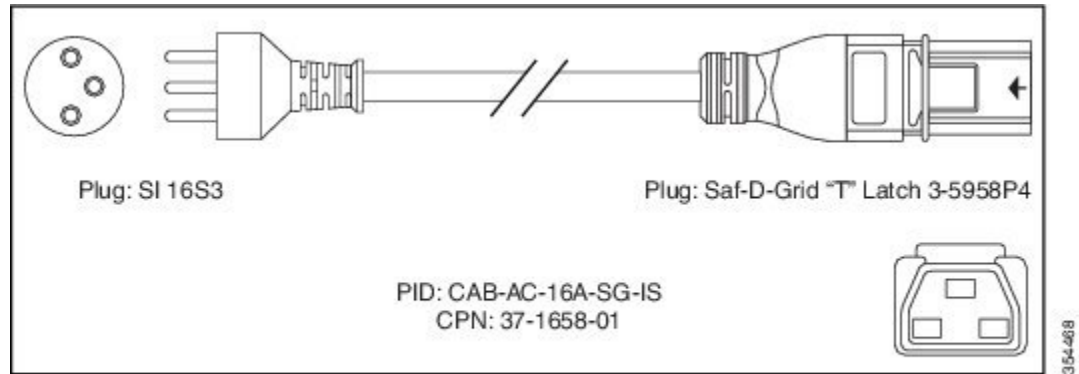
**Figure 87: CAB-AC-16A-SG-IND Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



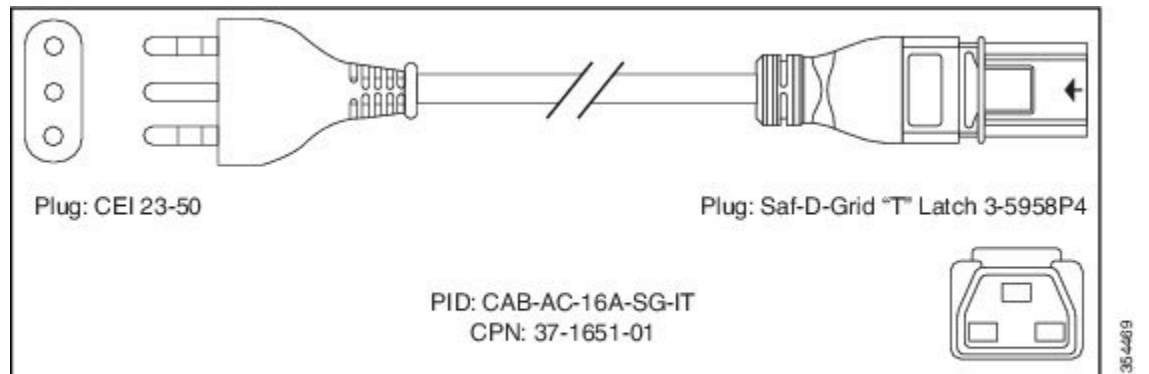
**Figure 88: CAB-AC-16A-SG-IN Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



**Figure 89: CAB-AC-16A-SG-IS Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



**Figure 90: CAB-AC-16A-SG-IT Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**



**Figure 91: CAB-AC-20A-SG-US Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit**

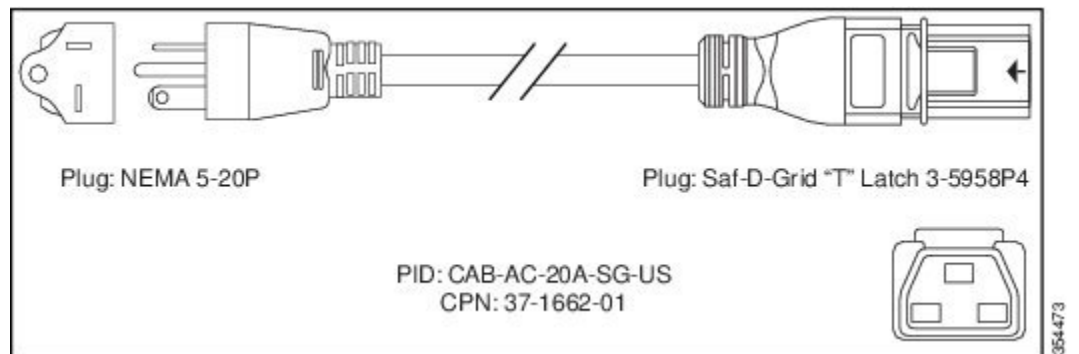


Figure 92: CAB-AC-20A-SG-US1 Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

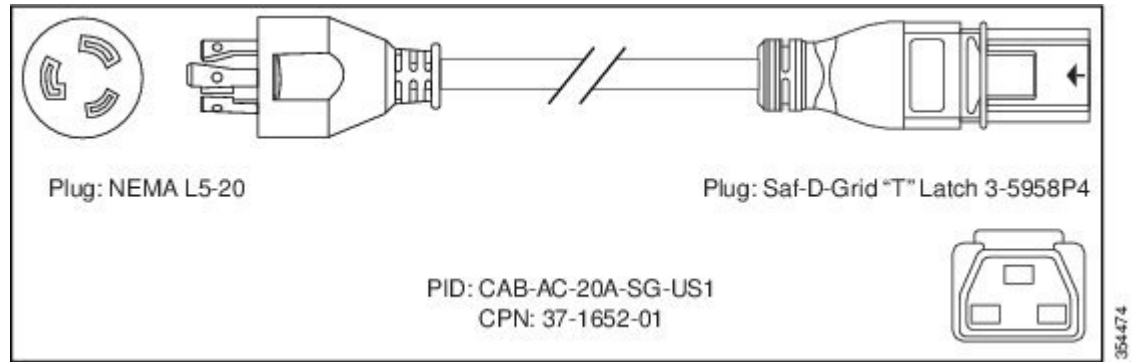


Figure 93: CAB-AC-20A-SG-US2 Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

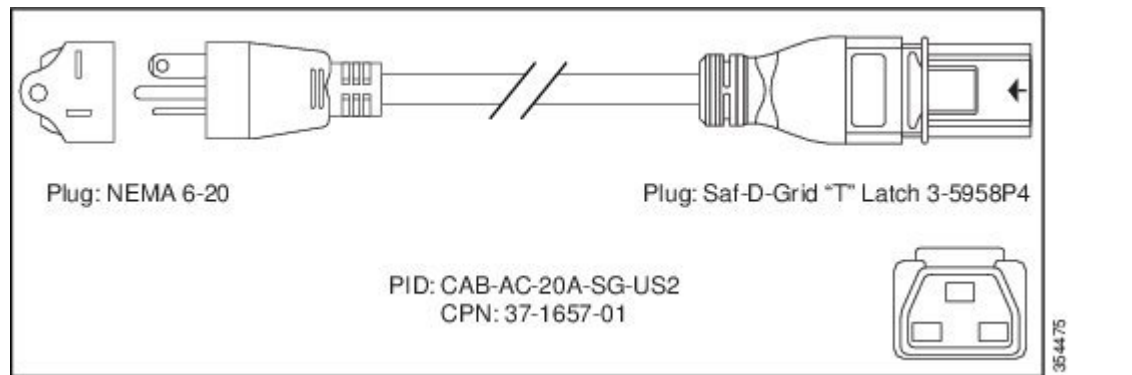


Figure 94: CAB-AC-20A-SG-US4 Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

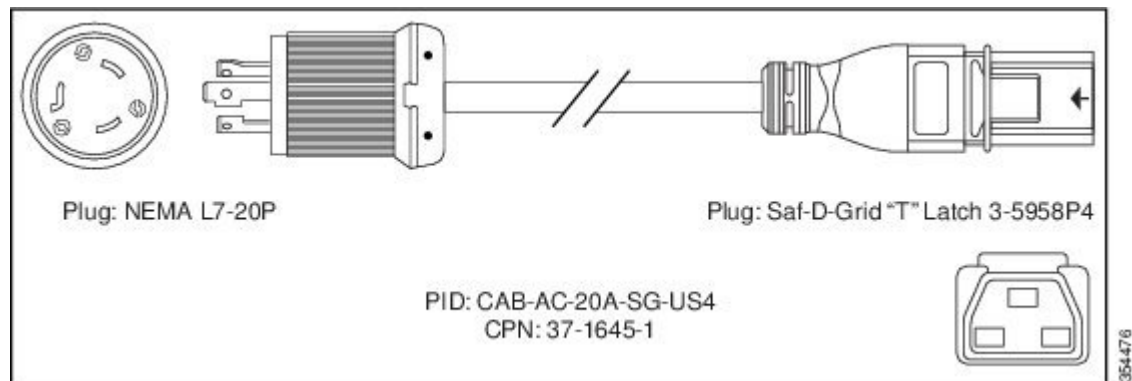




Figure 95: CAB-AC-20A-SG-C20 Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

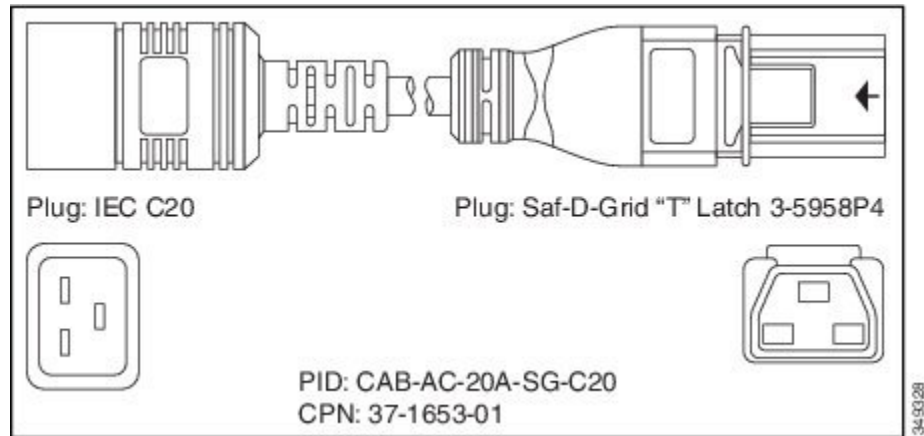


Figure 96: CAB-AC-16A-SG-SA Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

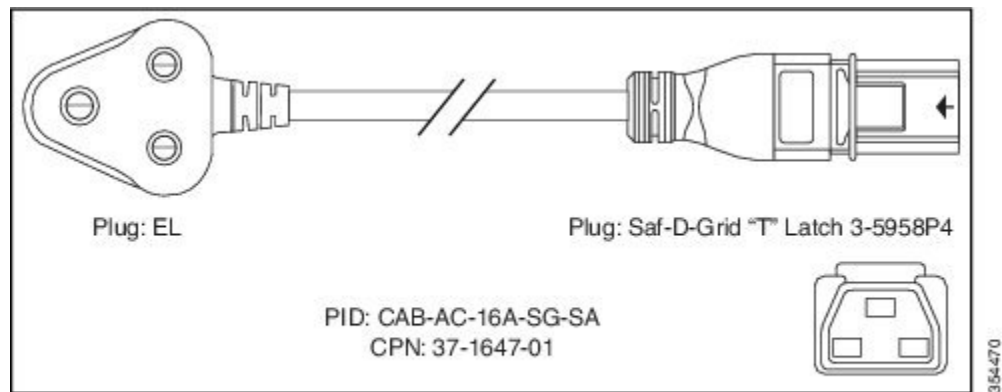


Figure 97: CAB-AC-16A-SG-SK Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

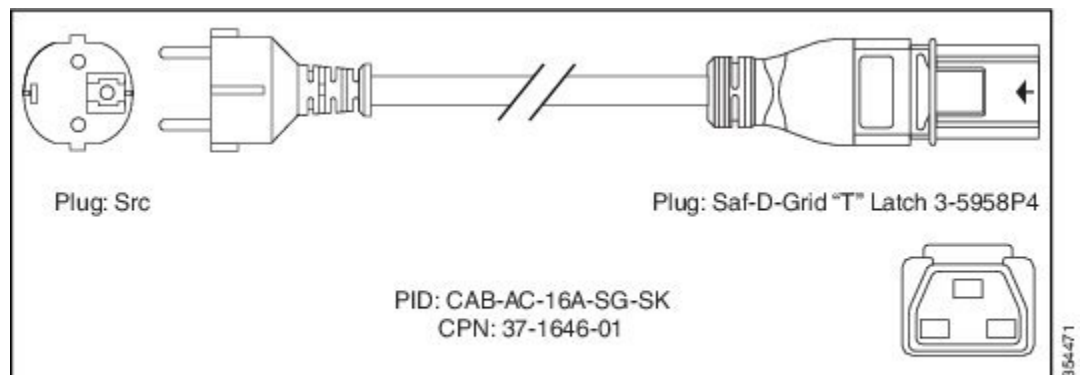


Figure 98: CAB-AC-16A-SG-SW Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit

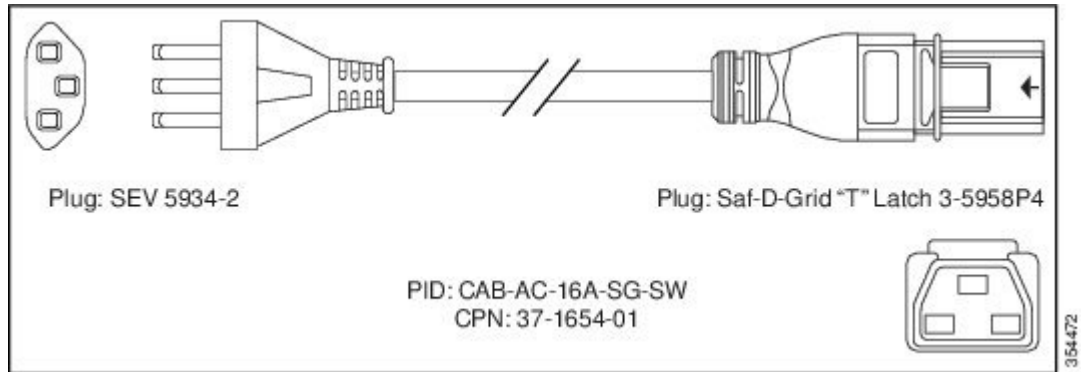
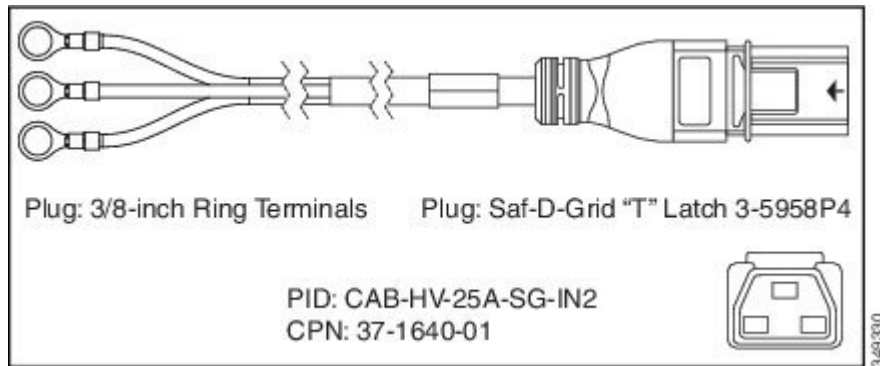
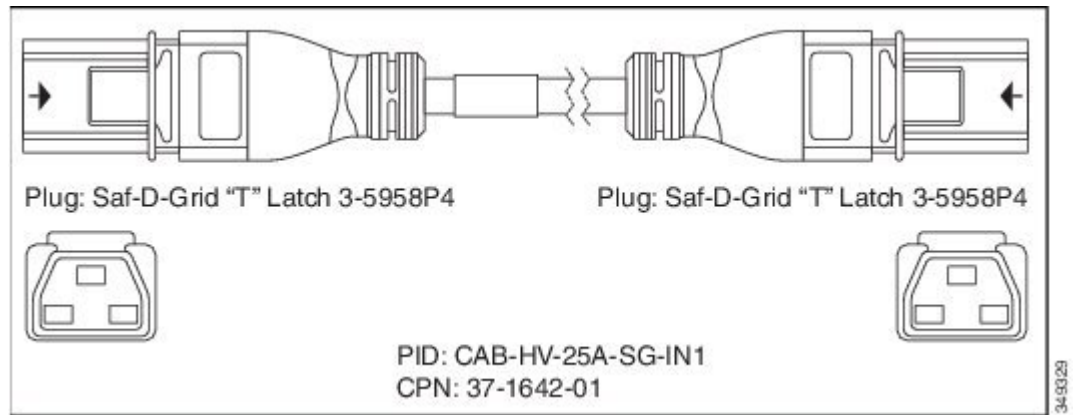
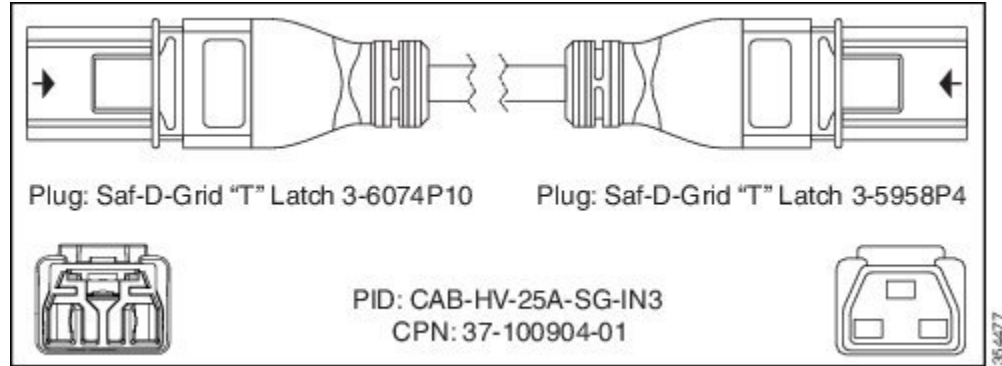


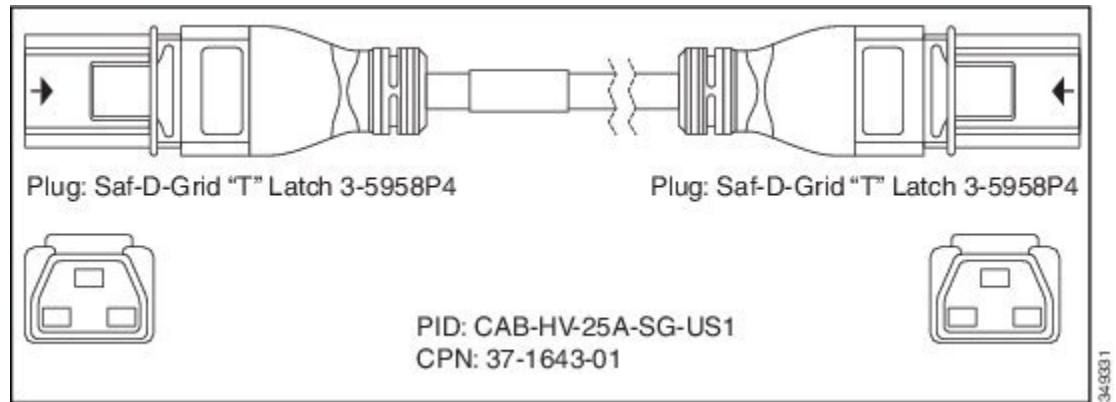
Figure 99: CAB-HV-25A-SG-IN1 Power Cord and Connectors for the 3.5-kW HCAC/HVDC Power Supply Unit



**Figure 100: CAB-HV-25A-SG- IN3 Power Cord and Connectors for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 101: CAB-HV-25A-SG- US1 Power Cord and Connectors for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 102: CAB-HV-25A-SG-US2 Power Cord and Connectors for the 3.5-kW HVAC/HVDC Power Supply Unit**

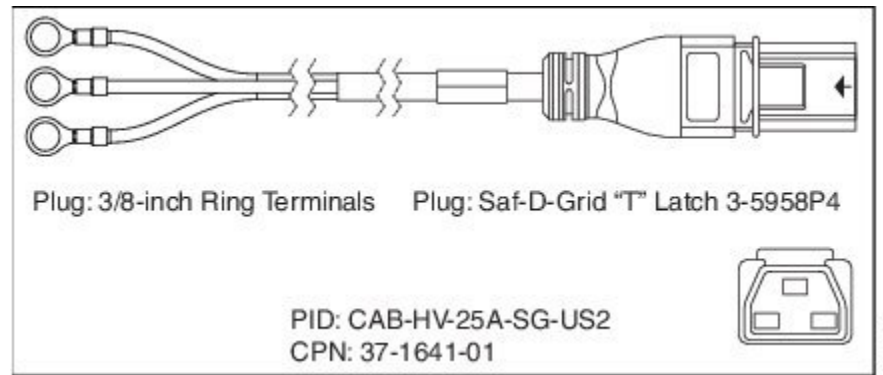


Figure 103: CAB-HV-25A-SG-US5 Power Cord and Connectors for the 3.5-kW HVAC/HVDC Power Supply Unit

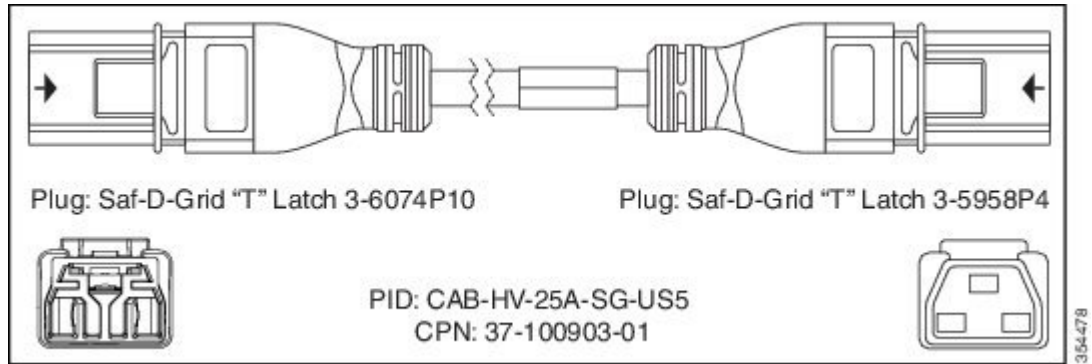


Figure 104: CAB-AC-16A-SG-AZ Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

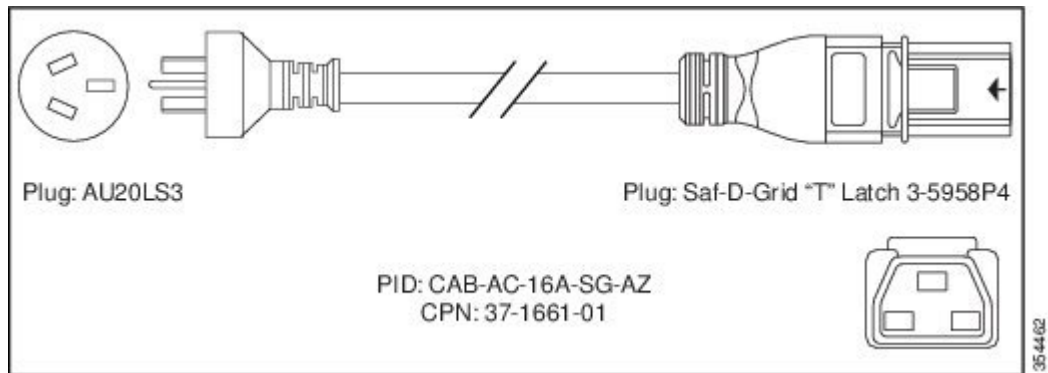
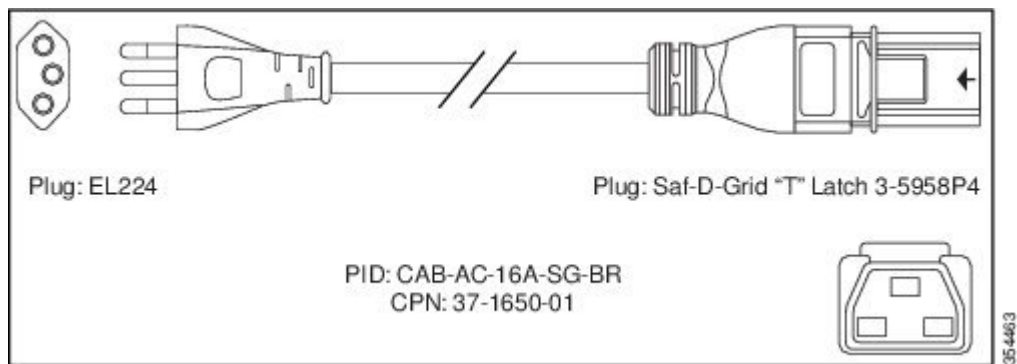
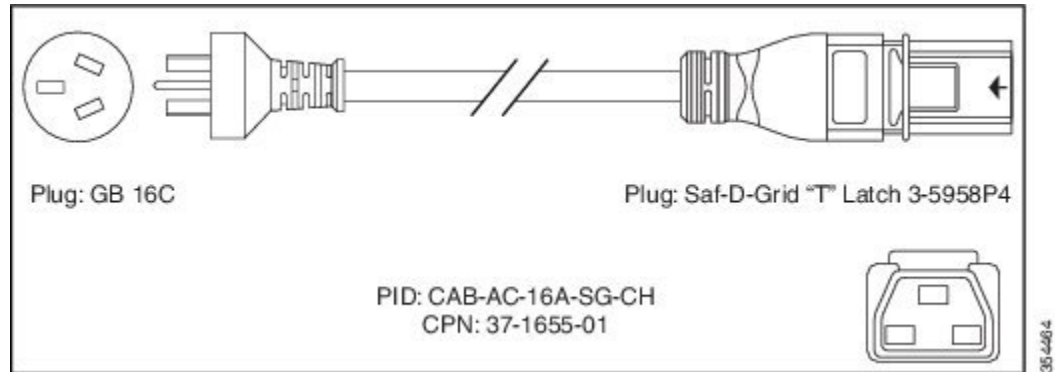


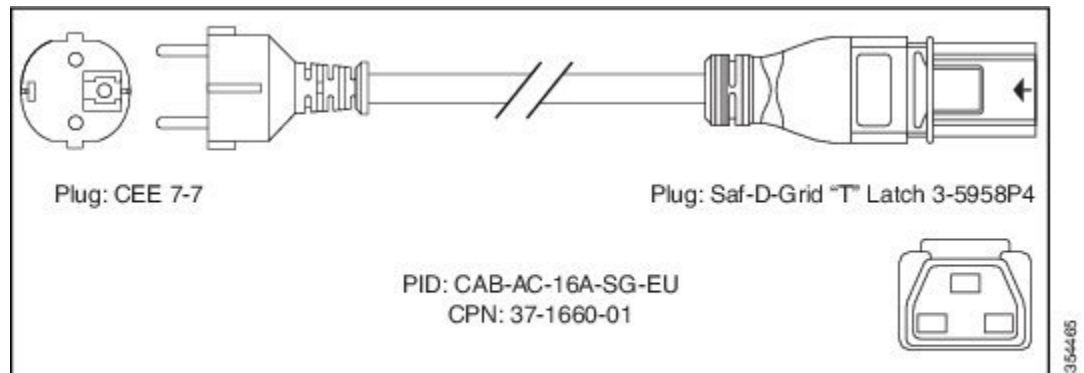
Figure 105: CAB-AC-16A-SG-BR Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit



**Figure 106: CAB-AC-16A-SG-CH Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 107: CAB-AC-16A-SG-EU Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 108: CAB-AC-16A-SG-IND Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**

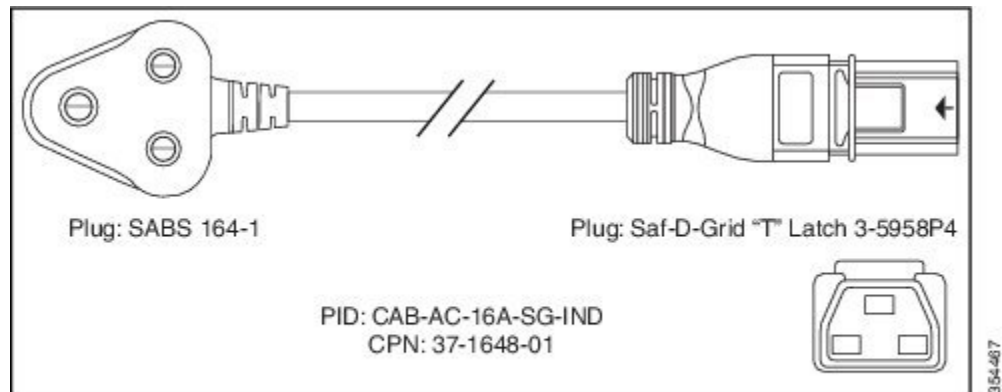


Figure 109: CAB-AC-16A-SG-IN Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

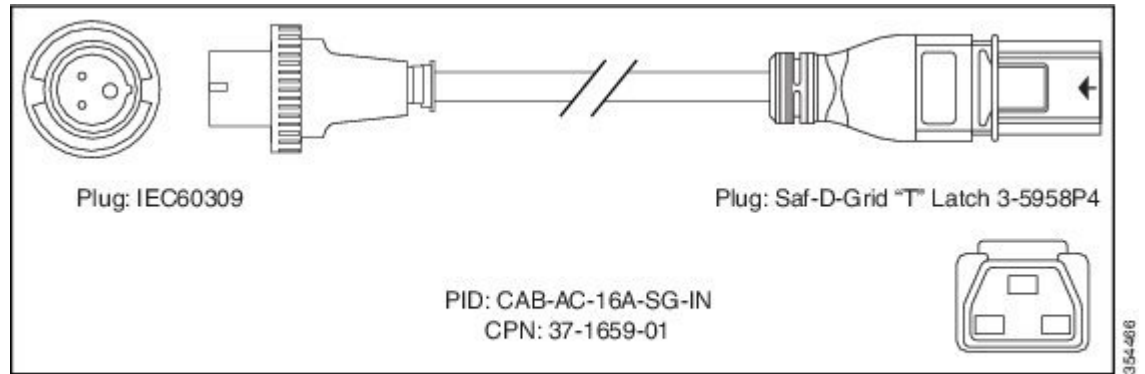


Figure 110: CAB-AC-16A-SG-IS Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

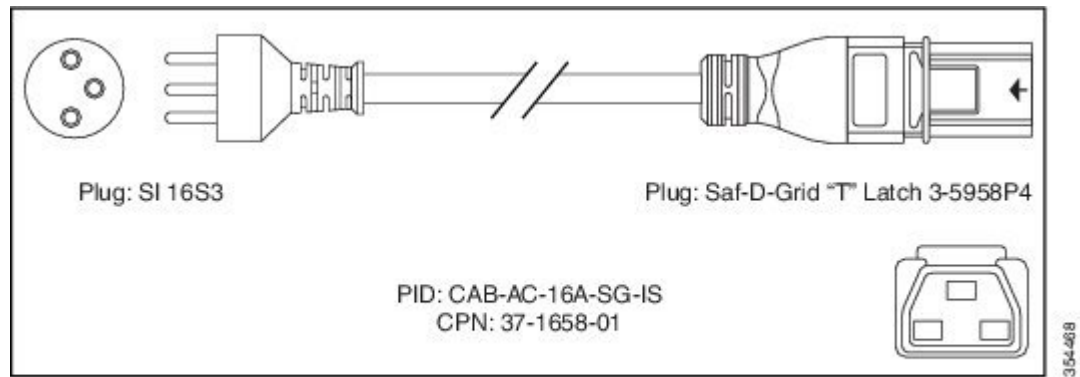
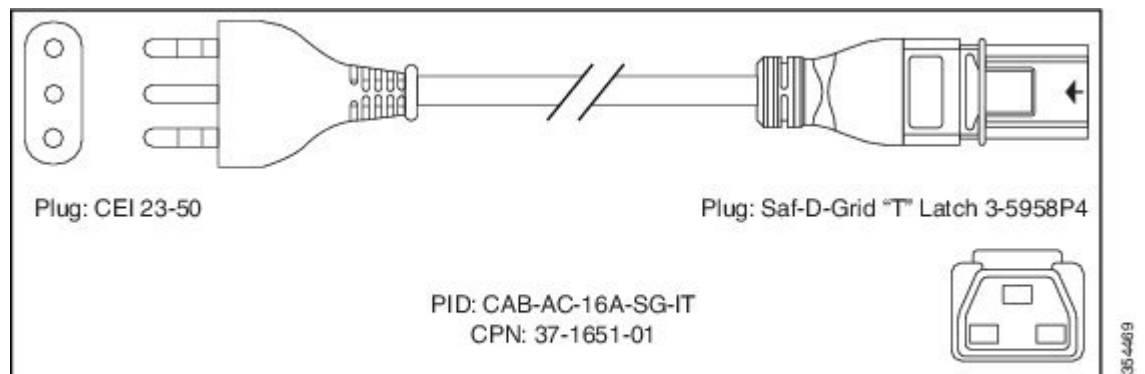
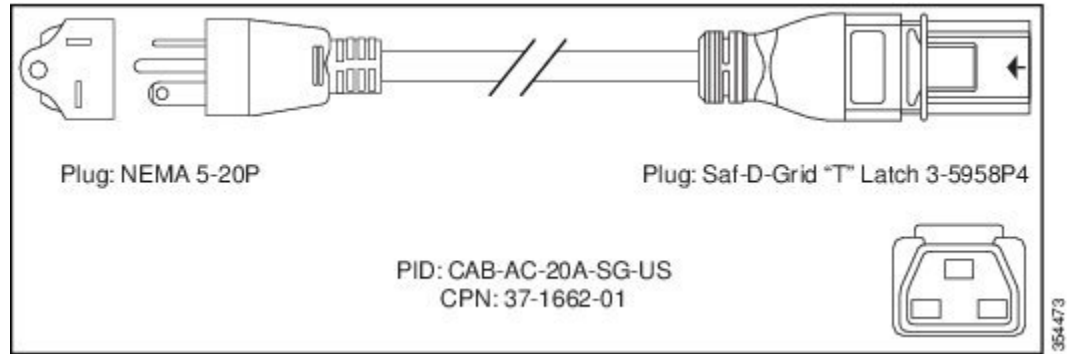


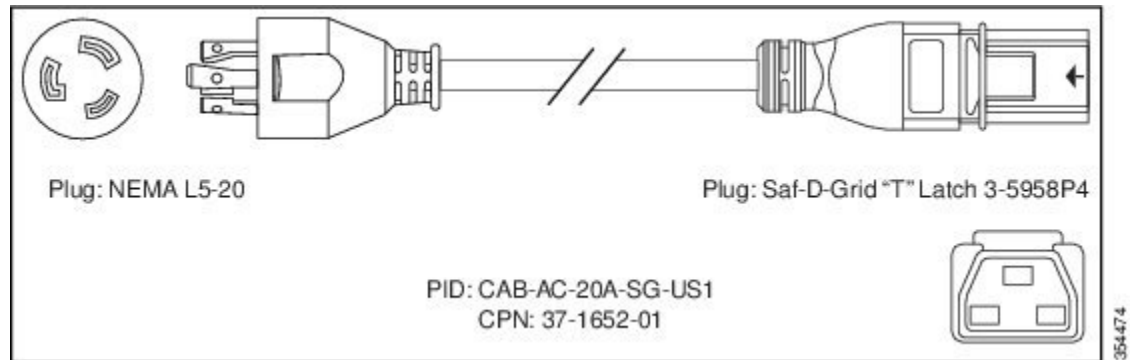
Figure 111: CAB-AC-16A-SG-IT Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit



**Figure 112: CAB-AC-20A-SG-US Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 113: CAB-AC-20A-SG-US1 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 114: CAB-AC-20A-SG-US2 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**

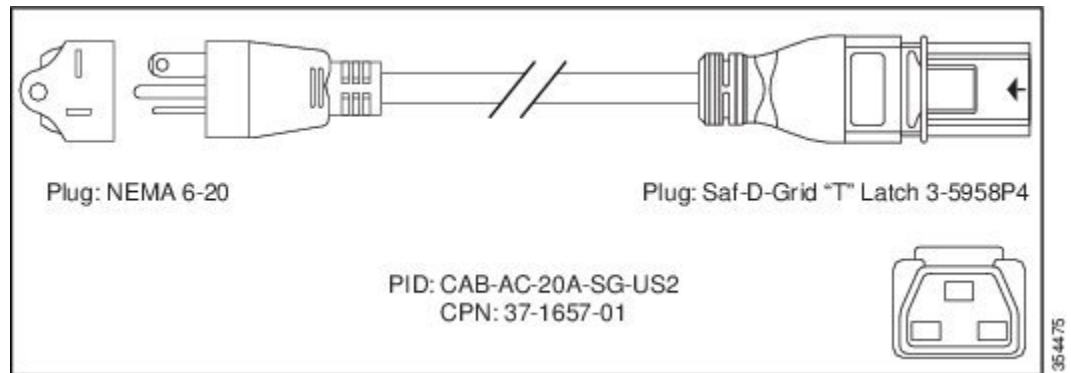


Figure 115: CAB-AC-20A-SG-US3 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

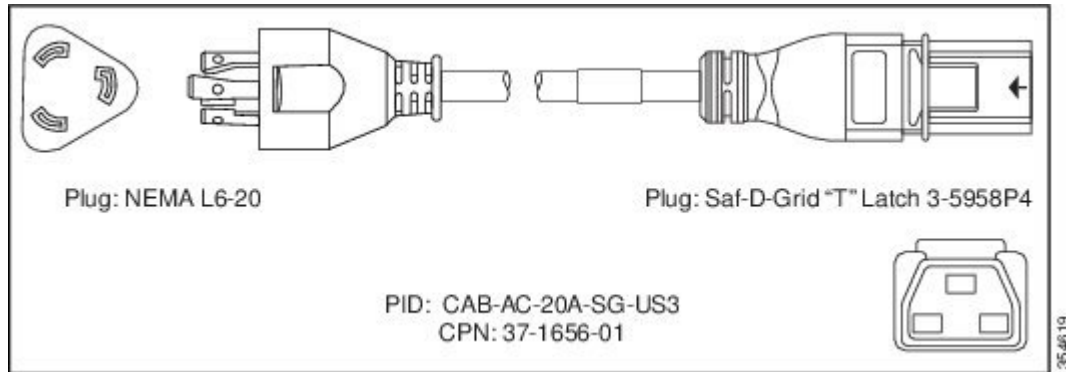


Figure 116: CAB-AC-20A-SG-US4 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

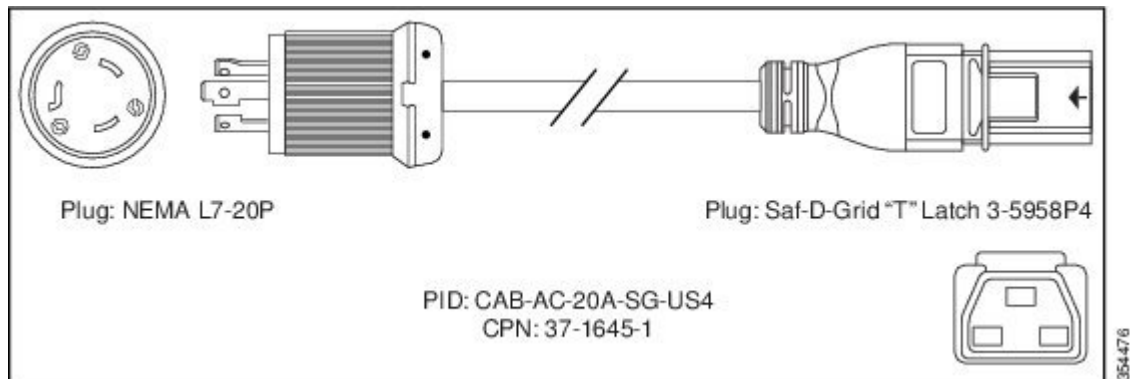
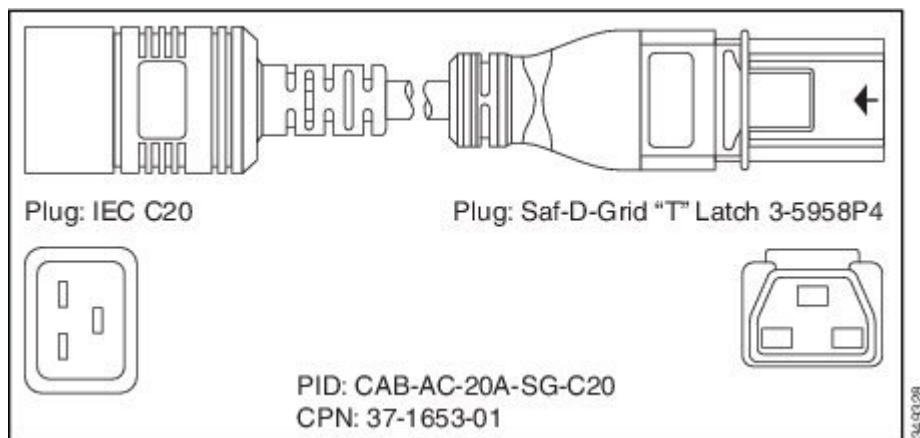
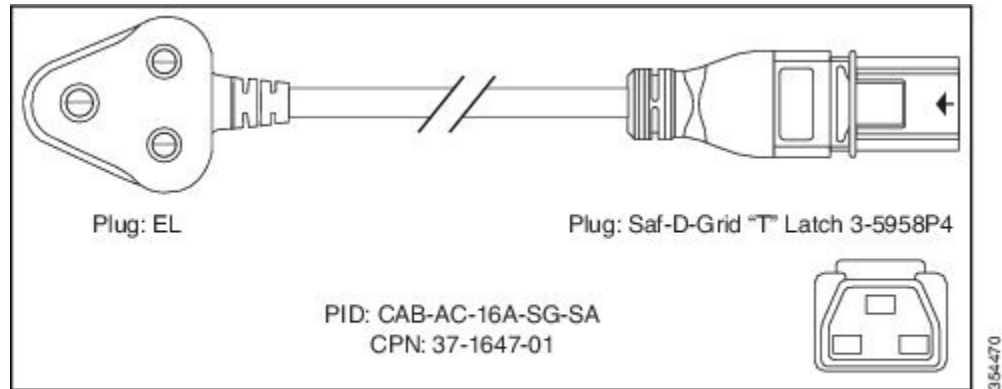


Figure 117: CAB-AC-20A-SG-C20 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

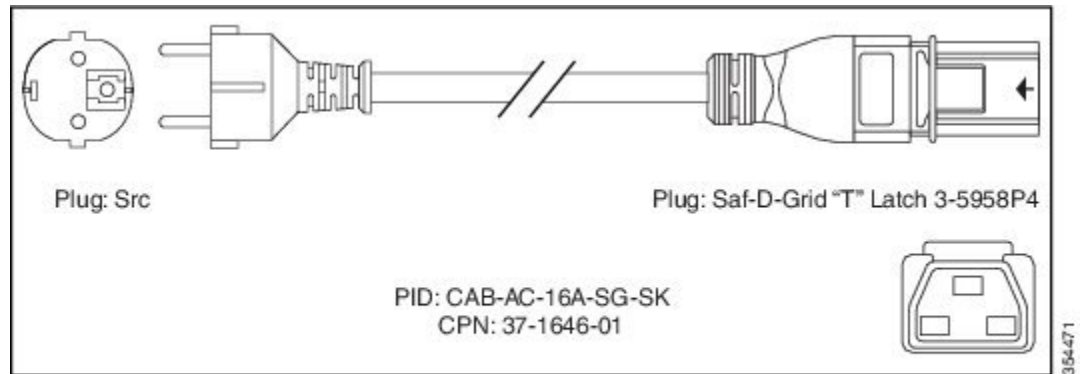




**Figure 118: CAB-AC-16A-SG-SA Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 119: CAB-AC-16A-SG-SK Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**



**Figure 120: CAB-AC-16A-SG-SW Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**

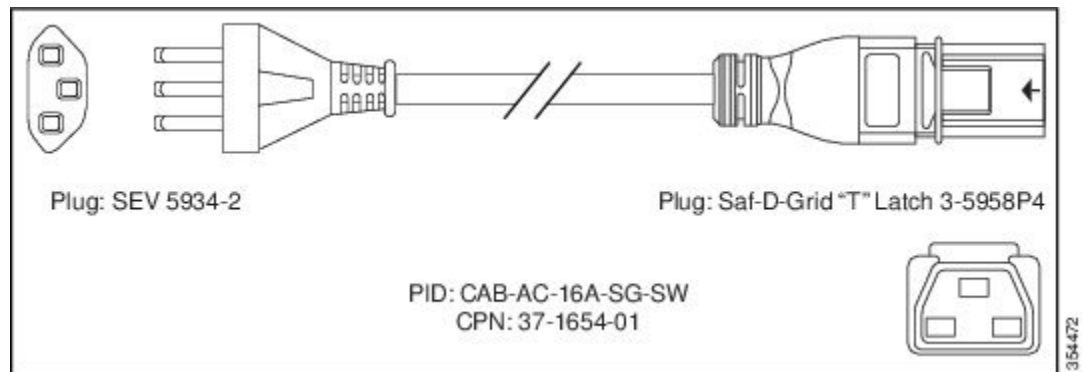


Figure 121: CAB-HV-25A-SG-IN2 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

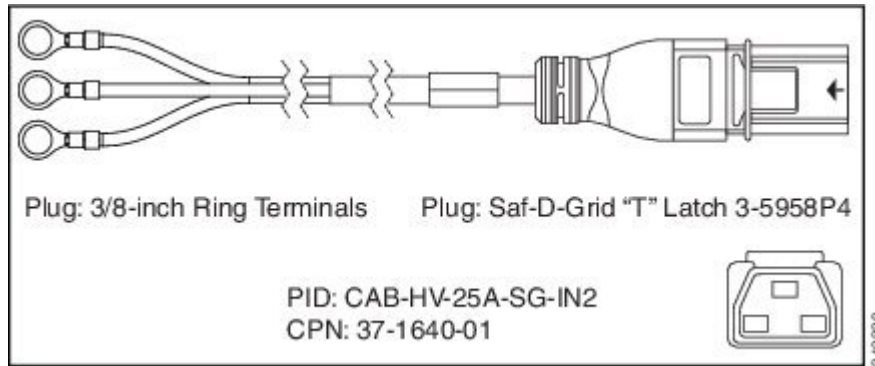


Figure 122: CAB-HV-25A-SG-IN3 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

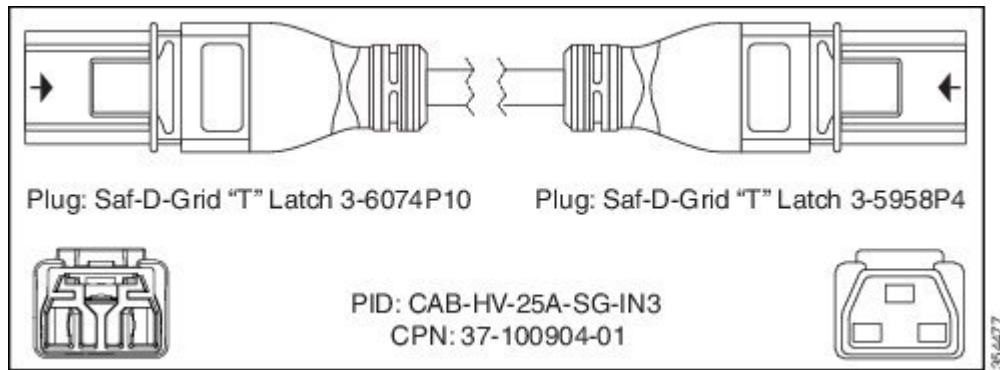


Figure 123: CAB-HV-25A-SG-US2 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

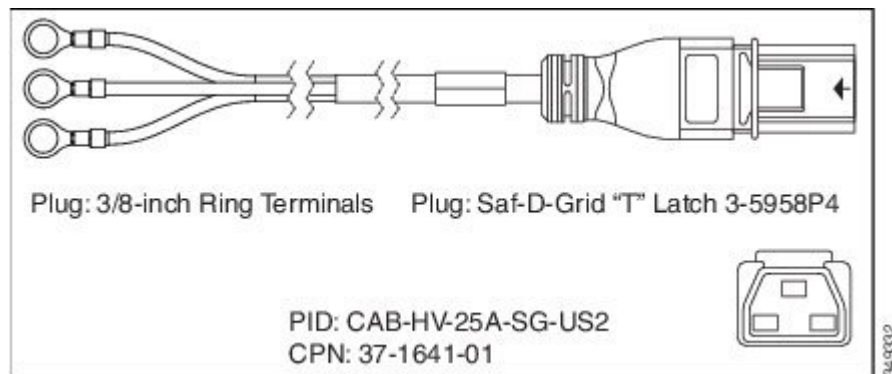


Figure 124: CAB-HV-25A-SG-US5 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit

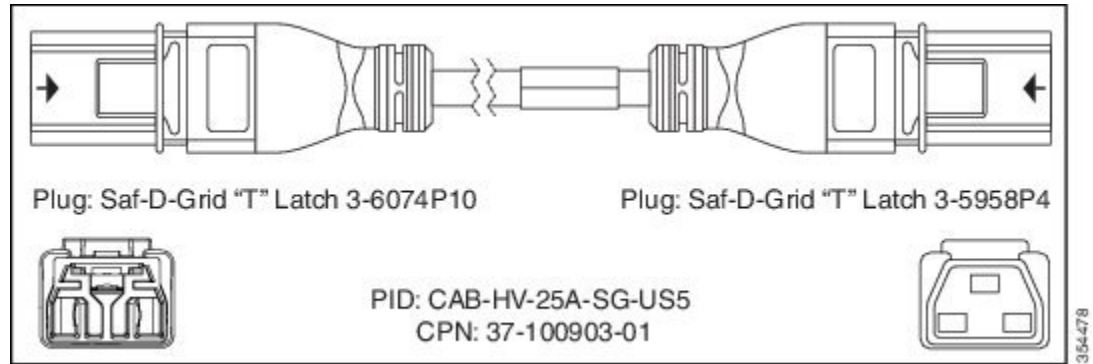


Table 28: 7.5-kW AC Power Supply Power Cord

Locale	Power Supply Part Number	Cord rating	Power cord reference illustration
Japan and North America	N7K-AC-7.5KW-US	30 A, 250 VAC	<a href="#">Figure 125: NEMA L6-30 Power Connector for the 7.5-kW AC Power Supply Unit, on page 183</a>
International	N7K-AC-7.5KW-INT	32 A, 250 VAC	<a href="#">Figure 126: IEC 603090 Power Connector for the 7.5-kW AC Power Supply Unit, on page 184</a>

Figure 125: NEMA L6-30 Power Connector for the 7.5-kW AC Power Supply Unit

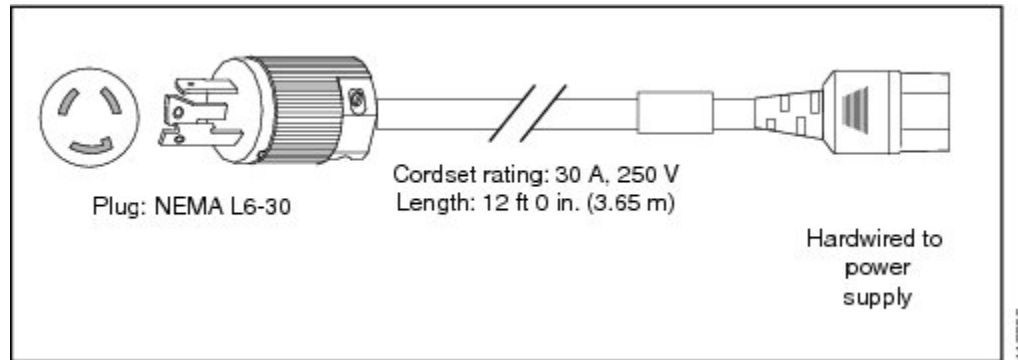


Figure 126: IEC 603090 Power Connector for the 7.5-kW AC Power Supply Unit

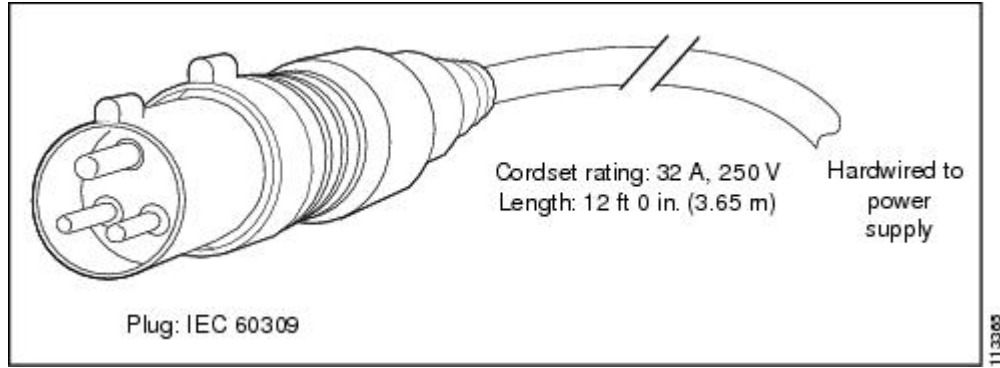


Table 29: 3-kW DC Power Supply Power Cord

Locale	Part Number	Cord Ratings	Power Cord Comments
All	— <sup>16</sup>	45 A	6 AWG

<sup>16</sup> Power cords used for the 3-kW DC power supply are supplied by the customer.

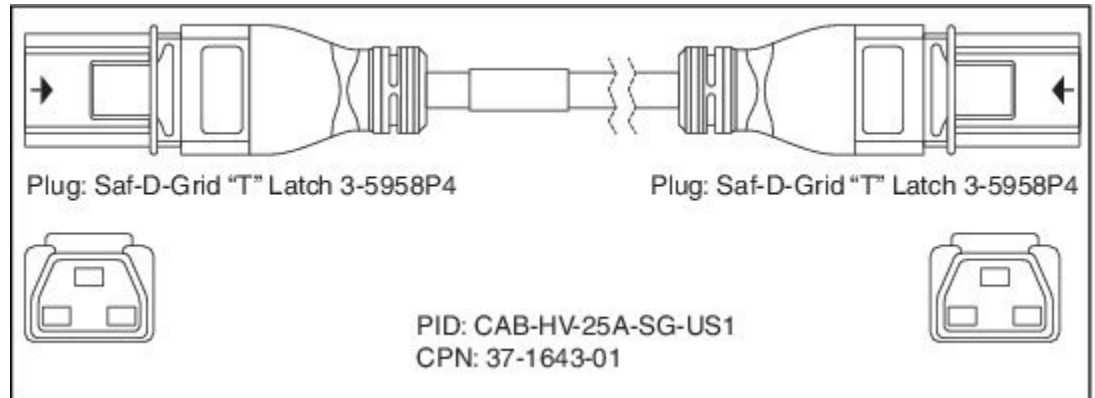
Table 30: 3.5-kW HVAC/HVDC Power Supply DC Power Cords

Locale	Part Number	Cisco Part Number (CPN)	Length	Cord Ratings	Power Cord Reference Illustration
North America	CAB-HV-25A-SG-US1	37-1643-01	14' 0" (4.26 m)	20 A, 400 VDC	<a href="#">Figure A-83</a>
North America, Ring Terminal source plug	CAB-HV-25A-SG-US2	37-1641-01	14' 0" (4.26 m)	20 A, 300 VAC/500 VDC	<a href="#">Figure A-84</a>
International	CAB-HV-25A-SG-IN1	37-1642-01	14' 0" (4.26 m)	20 A, 400 VDC	<a href="#">Figure A-85</a>
International, Ring Terminal source plug	CAB-HV-25A-SG-IN2	37-1640-01	14' 0" (4.26 m)	20 A, 300 VAC/500 VDC	<a href="#">Figure A-86</a>

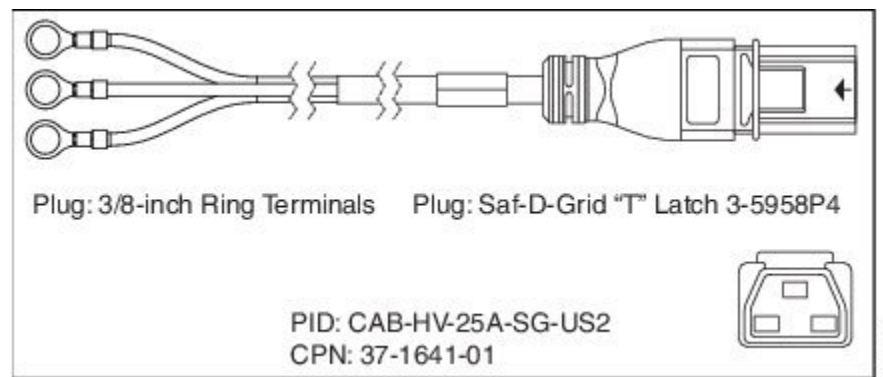


**Note** All cables will not be orderable at first customer shipment (FCS).

**Figure 127: CAB-HV-25A-SG-US1 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply**



**Figure 128: CAB-HV-25A-SG-US2 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply**



**Figure 129: CAB-HV-25A-SG-IN1 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply Unit**

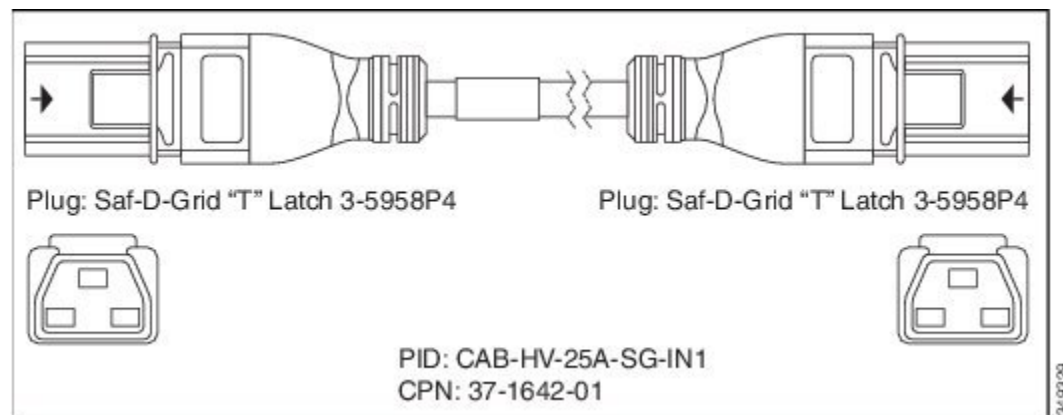


Figure 130: CAB-HV-25A-SG-IN2 Power Cord and Plugs for the 3.5-kW HVAC/HVDC Power Supply

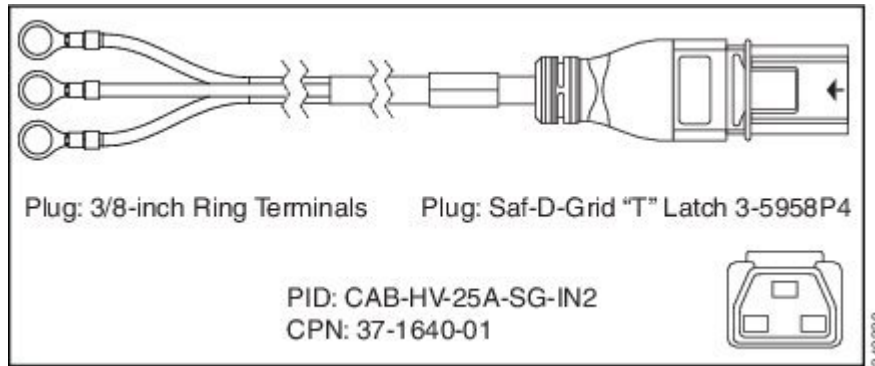
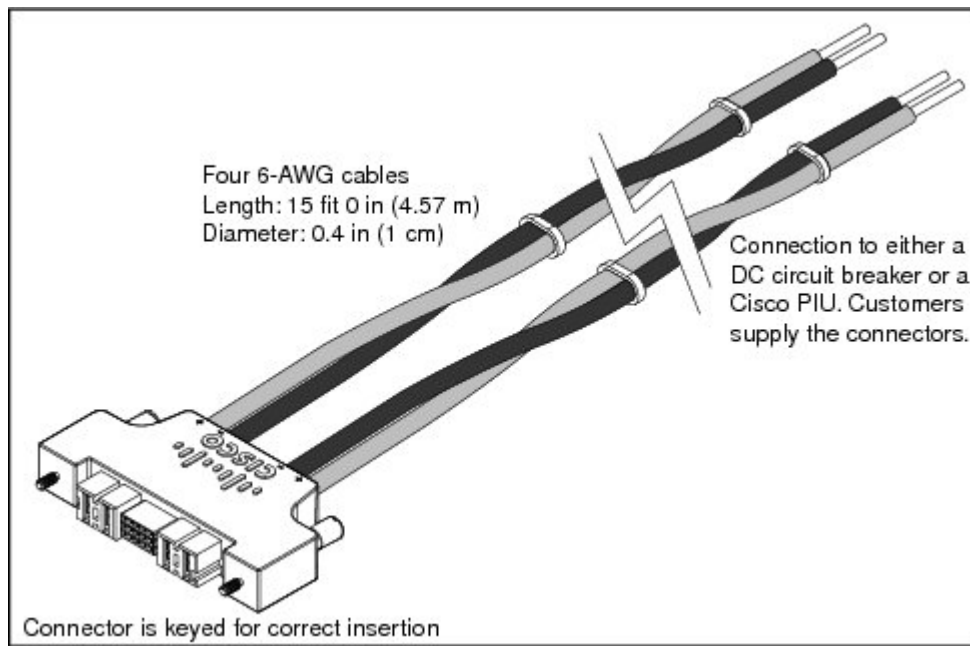


Table 31: 6-kW DC Power Supply Power Cord

Locale	Part Number	Cord Rating	Power Cord Reference Illustration
All	N7K-DC-CAB	40 A, 48V-48V	<a href="#">Figure 131: Power Connector for the 6.0-kW DC Power Supply Unit, on page 186</a>

Figure 131: Power Connector for the 6.0-kW DC Power Supply Unit



## Chassis Clearances

You must provide each Cisco Nexus 7000 Series switch with adequate clearance for installation, maintenance, cabling, and airflow. Installation clearance includes the cold aisle spacing required in front of the rack or cabinet to allow you to move the switch with a mechanical lift to its rack or cabinet. Maintenance clearance is the hot or cold aisle spacing required to replace supervisor, I/O, fabric, fan, and power supply modules.

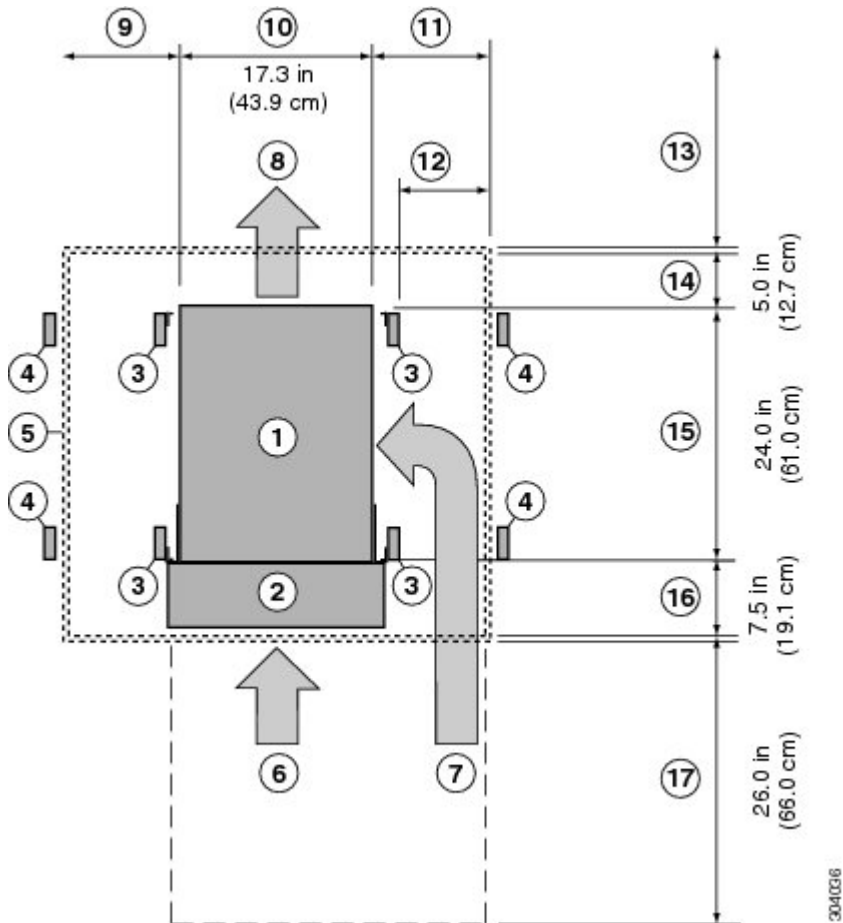
Cabling clearance provides the required space in front of the chassis (often within a cabinet) for cables to bend and connect to the chassis. Airflow clearance is typically the spacing on the left or right of the chassis for side-to-side airflow into and out of the chassis. If a chassis has front-to-back airflow, it uses the maintenance clearance for airflow instead of airflow clearance on the sides of the chassis.

This section includes the following topics:

## Cisco Nexus 7004 Chassis Clearances

The Cisco Nexus 7004 chassis requires front clearance for cable management and maintenance, right side clearance for cooling air intake, and an unobstructed rear for exhausting air to the hot aisle behind the chassis. For the front, the cable management frames require 7.5 inches (19.1 cm) of clearance in front of the mounting rails and an additional 26 inches (66.0 cm) in front of the cable management frames or the cabinet door for maintenance. If you install the chassis with the optional center-mount bracket in place of the standard front-mount bracket, you must add 5.7 inches (14.4 cm) to the front clearance in front of the mounting rails on the rack. For cabinet installations, we recommend a right-side clearance of 11 inches (27.9 cm) between the switch and the inside of the cabinet. For rack installations, we recommend a right-side clearance of either 6 inches (15.2 cm) between racks or 11 inches (27.9 cm) between the chassis and a wall. The rear of the chassis must be unobstructed and open to the hot aisle in back of the switch for airflow exhaust. [Figure 132: Clearances Required for the Cisco Nexus 7004 in a Four-Post Rack with Front-Mount Brackets, on page 188](#) shows the required clearances for a chassis in a four-post rack with a front-mount installation. [Figure 133: Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Front-Mount Brackets, on page 189](#) shows the required clearances for a chassis in a two-post rack with a front-mount installation. [Figure 134: Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Center-Mount Brackets, on page 190](#) shows the required clearances for chassis in a two-post rack with a center-mount installation.

Figure 132: Clearances Required for the Cisco Nexus 7004 in a Four-Post Rack with Front-Mount Brackets

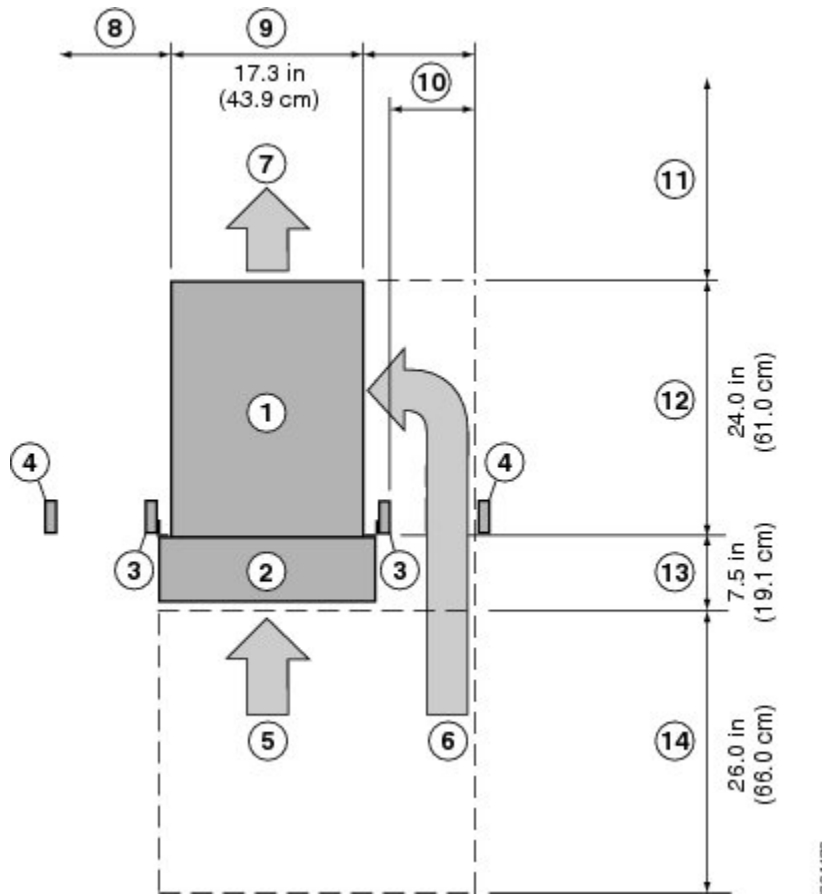


1	Chassis	10	Chassis width
2	Cable management frames	11	Right side clearance recommended for cabinet installations: <ul style="list-style-type: none"> <li>• Use 11 inches (27.9 cm).</li> </ul>
3	Vertical rack-mount posts	12	Right side clearance recommended for open rack installations: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm) between racks.</li> <li>• If next to a wall, use 11 inches (27.9 cm) between the chassis and the wall.</li> </ul>
4	Vertical rack-mount posts for neighboring rack	13	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Inside of cabinet (no left side clearance required)	14	Airflow clearance required between the chassis and inside of cabinet (if a cabinet is used)
6	Air intake from cold aisle for power supplies	15	Chassis depth



7	Air intake from cold aisle for the supervisor and I/O modules	16	Clearance required between the front of the chassis and the inside of the cabinet (if used) or the edge of the cold aisle (if no cabinet) for the cable management frames and the optional front doors
8	Air exhaust to hot aisle for all modules and power supplies	17	Front service clearance required for installing the chassis and replacing the modules
9	No left side clearance required (no airflow on left side)		

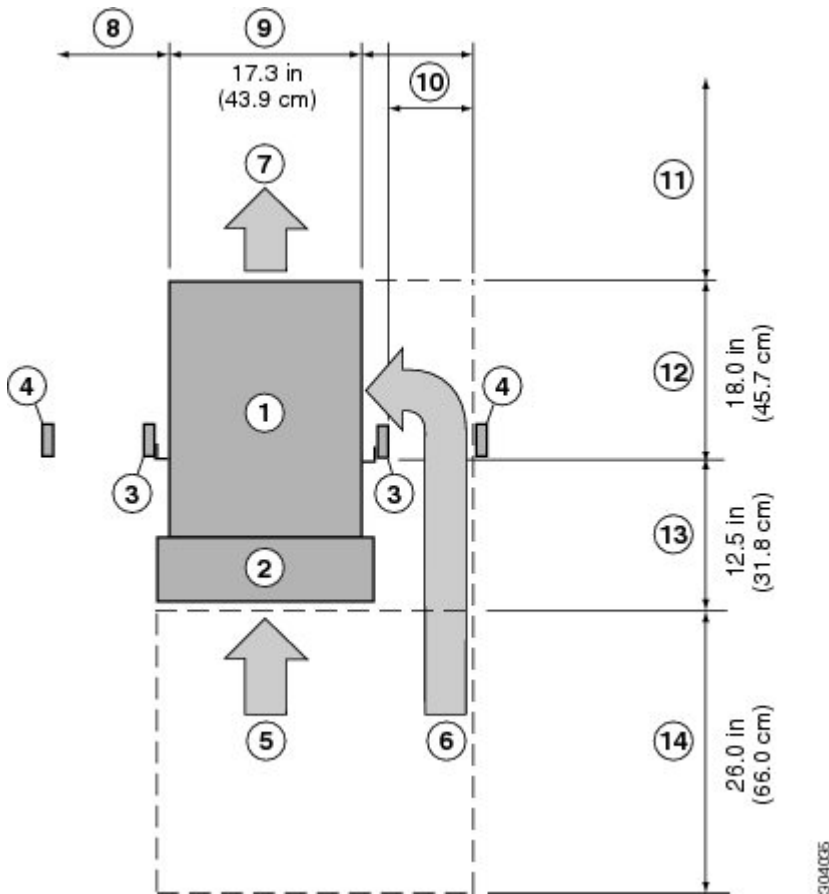
Figure 133: Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Front-Mount Brackets



1	Cisco Nexus 7004 chassis	8	No left side clearance required (no airflow on left side)
2	Cable management frames	9	Chassis width.

3	Vertical rack-mount posts	10	Right side clearance recommended for open rack installations: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm) between racks.</li> <li>• If next to a wall, use 11 inches (27.9 cm) between the chassis and the wall.</li> </ul>
4	Vertical rack-mount posts for neighboring racks	11	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Air intake from cold aisle for power supplies	12	Chassis depth
6	Air intake from cold aisle for the supervisor and I/O modules	13	Clearance required between the front of the chassis and the inside of the cabinet for the cable management frames and the optional front door
7	Air exhaust to hot aisle for all modules and power supplies	14	Front clearance required for installing the chassis and replacing the modules

Figure 134: Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Center-Mount Brackets



1	Cisco Nexus 7004 chassis	8	No left side clearance required (no airflow on left side)
---	--------------------------	---	---

2	Cable management frames	9	Chassis width
3	Vertical rack-mount posts	10	Right side clearance recommended for open rack installations: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm) between racks.</li> <li>• If next to a wall, use 11 inches (27.9 cm) between chassis and wall.</li> </ul>
4	Vertical rack-mount posts for neighboring rack	11	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Air intake from cold aisle for power supplies	12	Distance from front of vertical rack-mount posts to rear of chassis
6	Air intake from cold aisle for the supervisor and I/O modules	13	Clearance required between the front of the chassis and the inside of the chassis for the cable management frames and the optional front doors
7	Air exhaust to hot aisle for all modules and power supplies	14	Front service clearance required for installing the chassis and replacing the modules

## Cisco Nexus 7009 Chassis Clearances

The Cisco Nexus 7009 chassis has different clearance requirements for installations with four-post racks or cabinets, two-post racks with front-mount brackets, and two-post racks with center-mount brackets.

For four-post rack or cabinet installations, the chassis requires the following clearances (see [Figure 135: Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Four-Post Rack, on page 192](#)):

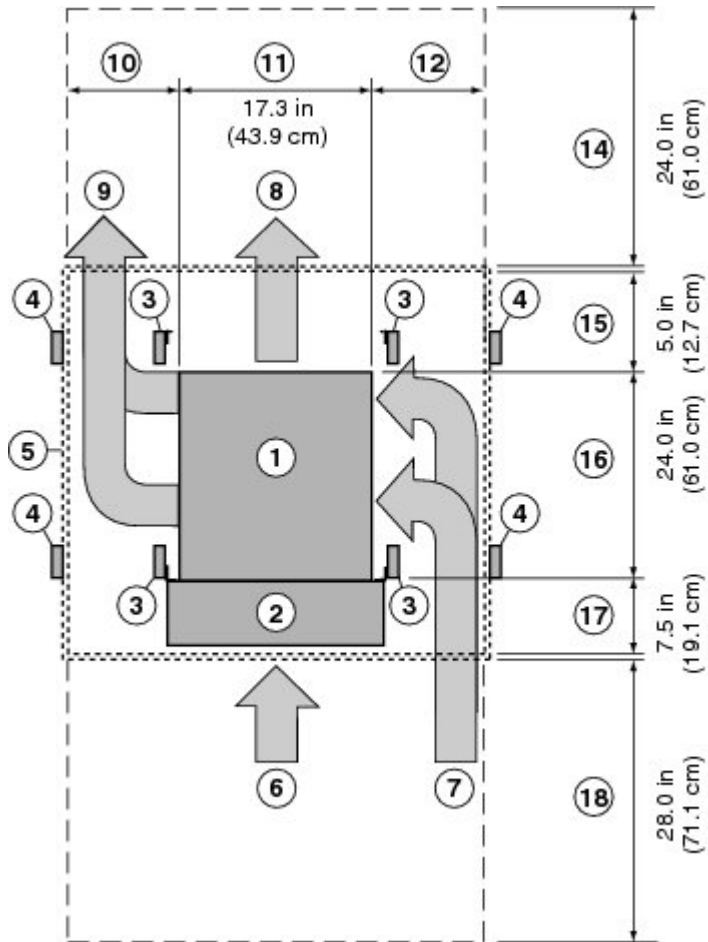
- Front clearance requires both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside surface of the cabinet or rack (this area can include the optional cable management frames)
  - Maintenance area of 24 inches (61.1 cm) between the front of the rack or cabinet and the next object in the cold aisle.



**Note** You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance includes both of the following:
  - Cabling area of 7 inches (17.8 cm) between the rear of the chassis and the inside surface of the cabinet or rack
  - Maintenance area of 24 inches (61.1 cm) between the rear of the rack or cabinet and the next object in the hot aisle
- Side clearance of 11 inches (27.9 cm) for air flow on each side of the chassis.

Figure 135: Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Four-Post Rack



1	Cisco Nexus 7009 chassis	10	Left side clearance required with an unobstructed opening to the hot aisle to exhaust air
2	Cable management frames	11	Chassis width
3	Vertical rack-mount post	12	Side clearance recommended for cabinet installations: • use 11 inches (27.9 cm)
4	Vertical rack-mount post for neighboring rack	13	Side clearance recommended for open rack installations: • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
5	Nearest object or inside of cabinet	14	Rear service clearance required to replace fan trays and fabric modules

6	Air intake from cold aisle for the power supplies	15	Airflow clearance required between the chassis rear and inside of cabinet (if used)
7	Air intake from cold aisle for the supervisor, fabric, and I/O modules	16	Chassis depth
8	Air exhaust to hot aisle for power supplies	17	Clearance required between the front of the chassis and the inside of the cabinet (if used) or edge of cold aisle (if no cabinet) for the cable management frames and the optional front doors
9	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	18	Front clearance required for installing the chassis and replacing the modules

For two-post rack installations with front-mount brackets, the chassis requires the following clearances (see [Figure 136: Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack, on page 194](#)):

- Front clearance requires both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the cold aisle (this area can include the optional cable management frames)
  - Maintenance area of 28 inches (71.1 cm) in front of the cabling area for installing the chassis and replacing modules



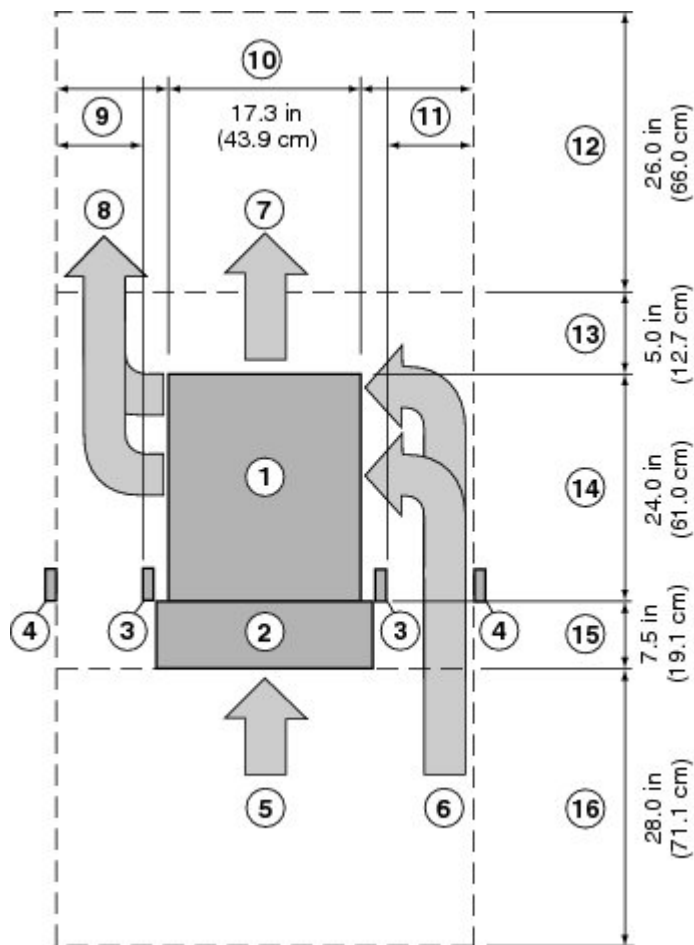

---

**Note** You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

---

- Rear clearance requires 26 inches (66.0 cm) behind the chassis for cable management and for replacing modules and power supplies
- Side clearance recommendation depends on whether you use a rack or cabinet for the installation as follows:
  - For cabinet installations, we recommend that you use 11 inches (27.9 cm) for airflow on each side of the chassis.
  - For rack installations, we recommend 11 inches (27.9 cm) between the chassis and a wall or 6 inches (15.2 cm) between racks.

Figure 136: Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack



1	Cisco Nexus 7009 chassis	9	Side clearance required for open rack installations: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm).</li> <li>• If next to a wall, use 11 inches (27.9 cm).</li> </ul>
2	Cable management frames	10	Chassis width
3	Vertical rack-mount post	11	Side clearance required for open rack installations: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm).</li> <li>• If next to a wall, use 11 inches (27.9 cm).</li> </ul>
4	Vertical rack-mount post for neighboring rack	12	Rear service clearance required to replace fan trays and fabric modules
5	Air intake from cold aisle for the power supplies	13	Airflow clearance required between the chassis and inside of cabinet (if used)

6	Air intake from cold aisle for the supervisor, fabric, and I/O modules	14	Chassis depth
7	Air exhaust to hot aisle for power supplies	15	Clearance required between the front of the chassis and edge of cold aisle for the cable management frames and the optional front doors
8	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	16	Front clearance required for installing the chassis and replacing the modules

For two-post rack installations with center-mount brackets, the chassis requires the following clearances (see [Figure 137: Clearances Required for a Center-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack, on page 196](#)):

- Front clearance of 37 inches (94.0 cm) for both of the following:
  - Cabling area of 13.5 inches (34.3 cm) between the front of the posts (posts are 6 inches (15.2 cm) behind the front of the chassis)
  - Maintenance area of 26 inches (66.0 cm) in front of the cabling area for installing the chassis and replacing modules.



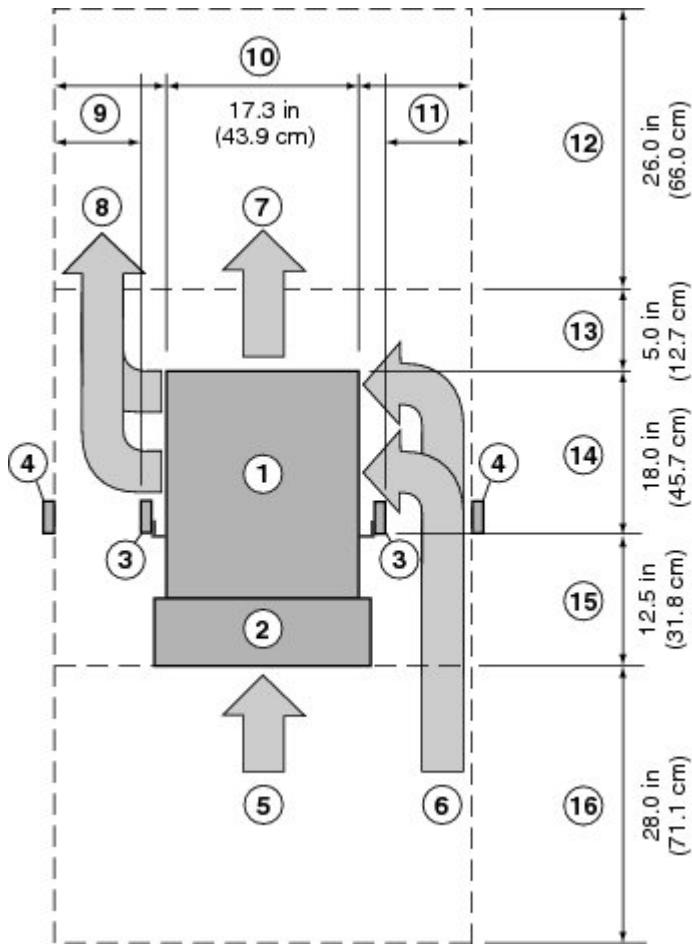

---

**Note** You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

---

- Rear clearance of 26 inches (66.0 cm) behind the chassis for cable management and for replacing the fan modules and power supplies.
- Side clearance of 11 inches (27.9 cm) for airflow on each side of the chassis.

Figure 137: Clearances Required for a Center-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack



1	Cisco Nexus 7009 chassis	9	Right side clearance (for rack installations) recommended to input air from the cold aisle: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm).</li> <li>• If next to a wall, use 11 inches (27.9 cm).</li> </ul>
2	Cable management frames	10	Chassis width
3	Vertical rack-mount posts	11	Right side clearance (for rack installations) recommended to input air from the cold aisle: <ul style="list-style-type: none"> <li>• If next to another open rack, use 6 inches (15.2 cm).</li> </ul> If next to a wall, use 11 inches (27.9 cm).
4	Vertical rack-mount post for neighboring rack	12	Rear service clearance required to replace fan trays and fabric modules



5	Air intake from cold aisle for power supplies	13	Airflow clearance required between the chassis and inside of cabinet (if used)
6	Air intake from cold aisle for the supervisor, fabric, and I/O modules	14	Chassis depth
7	Air exhaust to hot aisle for the power supplies	15	Clearance required between the front of the chassis and the front of the cable management frames and the optional front doors
8	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	16	Front service clearance required for installing the chassis and replacing the modules

## Cisco Nexus 7010 Chassis Clearances

The Cisco Nexus 7010 chassis requires the following clearances (see [Figure 138: Clearances Required for the Cisco Nexus 7010 Switch, on page 198](#)):

- Front clearance of 45.5 inches (115.6 cm) for both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside of the cabinet or front of the rack
  - Maintenance area of 38 inches (96.5 cm) of cold-aisle passageway in front of the rack or cabinet



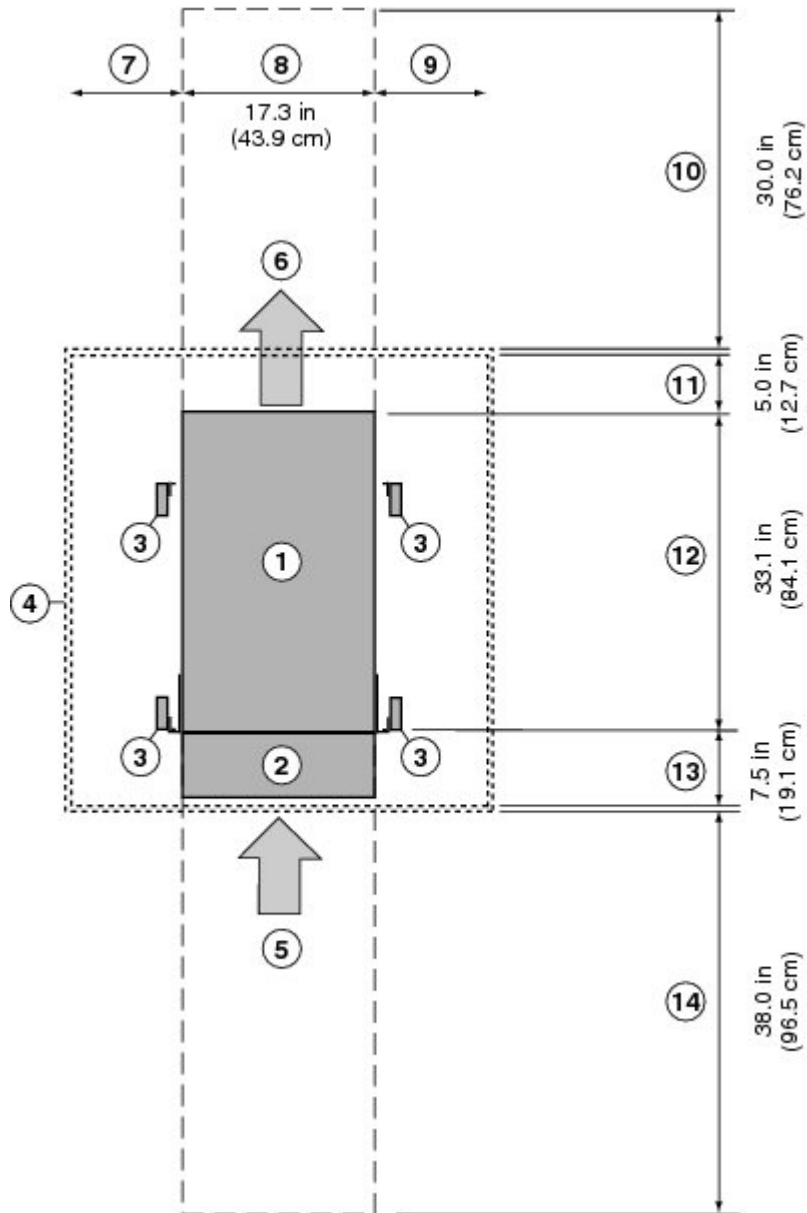

---

**Note** You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

---

- Rear clearance of 35 inches (88.9 cm) for both of the following:
  - Airflow area of 5 inches (12.7 cm) inside of the cabinet or rack
  - Maintenance area of 30 inches (76.2 cm) of hot-aisle passageway behind the rack or cabinet

Figure 138: Clearances Required for the Cisco Nexus 7010 Switch



1	Cisco Nexus 7010 chassis	8	Chassis width
2	Cable management system	9	No right side clearance required (no airflow on right side)
3	Vertical rack-mount posts	10	Rear service clearance required to replace fan trays and fabric modules
4	Inside of cabinet (no side clearance required)	11	Airflow clearance required between the chassis and inside of cabinet (if used)

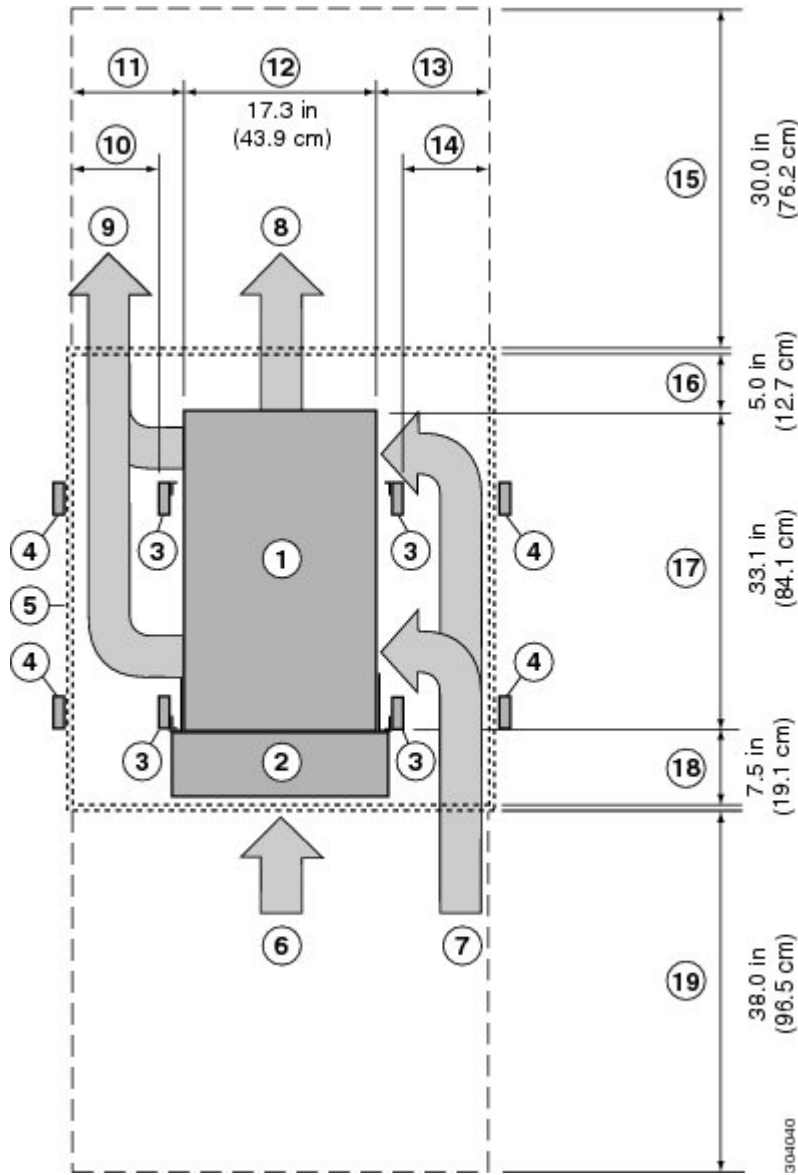
5	Air intake from cold aisle for all modules and power supplies	12	Chassis depth, which includes the fan tray handles at the rear of the chassis
6	Air exhaust to hot aisle for all modules and power supplies	13	Clearance required between the front of the chassis and the inside of the cabinet (if used) or edge of the cold aisle (if no cabinet) for the cable management frames and the optional front doors
7	No left side clearance required (no airflow on left side)	14	Front service clearance required for installing the chassis and replacing the modules

## Cisco Nexus 7018 Chassis Clearances

The Cisco Nexus 7018 chassis requires the following clearances (see [Figure 139: Clearances Required for the Cisco Nexus 7018 Switch, on page 200](#)):

- Front clearance of 45 inches (114.3 cm) for both of the following:
  - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside of the cabinet or front of the rack
  - Maintenance area of 38 inches (96.5 cm) between the front of the rack or cabinet and the next rack, cabinet, or wall in the cold aisle (additional area might be needed for a larger mechanical lift used to move the chassis)
- Rear clearance of 35 inches (88.9 cm) for both of the following:
  - Airflow area of 5 inches (12.7 cm) inside a cabinet (if used)
  - Maintenance area of 30 inches (76.2 cm) of hot-aisle passageway behind the rack or cabinet
- Side clearance recommendation depends on whether a cabinet or rack is used:
  - For cabinet installations, use 11 inches (27.9 cm) between the chassis and inside of the cabinet.
  - For rack installations, use either 11" (27.9 cm) between the chassis and a wall or 6" (15.2 cm) between racks.

Figure 139: Clearances Required for the Cisco Nexus 7018 Switch



1	Cisco Nexus 7018 chassis	11	Side clearance recommended for cabinet installations:: • Use 11 inches (27.9 cm)
2	Cable management frames	12	Chassis width
3	Vertical rack-mount post	13	Side clearance recommended for cabinet installations:: • Use 11 inches (27.9 cm)

4	Vertical rack-mount post for neighboring rack	14	Side clearance recommended for open rack installations:  • If next to another open rack, use 6 inches (15.2 cm). If next to a wall, use 11 inches (27.9 cm)
5	Nearest object or inside of cabinet (side clearance required for airflow)	15	Rear service clearance required to replace fan trays and fabric modules
6	Air intake from cold aisle for the power supplies	16	Airflow clearance required between the chassis and inside of cabinet (cabinet installations only)
7	Air intake from cold aisle for the supervisor, fabric, and I/O modules	17	Chassis depth
8	Air exhaust to hot aisle for the power supplies	18	Clearance required between the front of the chassis and the inside of the cabinet (cabinet installations) or edge of the cold aisle (rack installations) for the cable management frames and the optional front door
9	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	19	Front service clearance required for installing the chassis and replacing the modules
10	Side clearance recommended for open rack installations:  • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).		

## Facility Cooling Requirements

The Cisco Nexus 7000 Series switches dissipate considerable power that generates much heat. The following is the heat dissipation requirement for these switches:

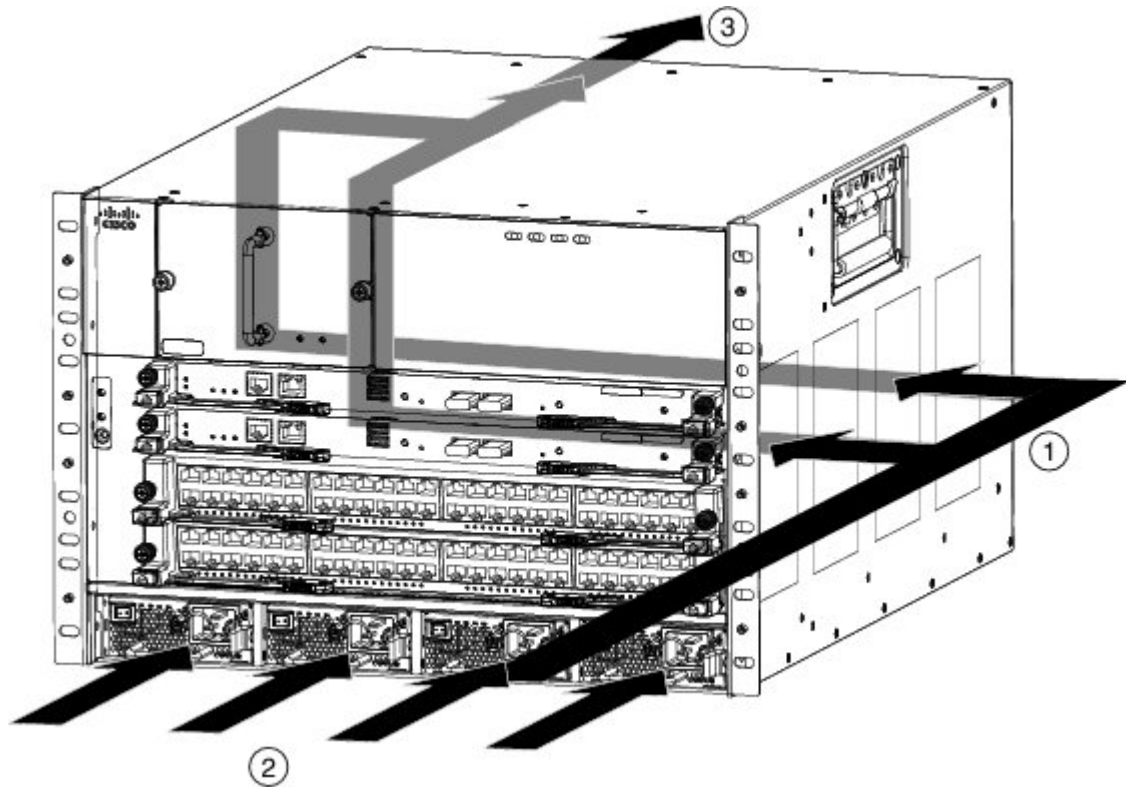
- Cisco Nexus 7004 dissipates up to 9737 BTUs per hour
- Cisco Nexus 7009 dissipates up to 28,101 BTUs per hour
- Cisco Nexus 7010 dissipates up to 35,162 BTUs per hour
- Cisco Nexus 7018 dissipates up to 51,195 BTUs per hour

## Chassis Airflow

The Cisco Nexus 7000 Series switches are designed to work in a hot-aisle/cold-aisle environment using front-to-back, side-to-side, or side-to-back airflow. Each of these switches uses one of the following airflow directions:

- The Cisco Nexus 7004 switch uses side-to-back airflow to cool its modules and front-to-back airflow to cool its power supplies as shown in [Figure 140: Airflow for the Cisco Nexus 7004 Chassis, on page 202](#). This switch requires right-side clearance for airflow into the chassis.
- The Cisco Nexus 7009 switch uses side-to-side airflow to cool its modules and front-to-back airflow to cool its power supplies as shown in [Figure 141: Airflow for the Cisco Nexus 7009 Chassis, on page 202](#). This switch requires right- and left-side clearance for airflow into and out of the chassis.
- The Cisco Nexus 7010 switch uses front-to-back airflow as shown in [Figure 142: Airflow for the Cisco Nexus 7010 Chassis, on page 203](#).
- The Cisco Nexus 7018 switch uses side-to-side airflow to cool its modules and front-to-back airflow to cool its power supply units as shown in [Figure 143: Airflow for the Cisco Nexus 7018 Chassis, on page 204](#). This switch requires right- and left-side clearance for airflow into and out of the chassis.

Figure 140: Airflow for the Cisco Nexus 7004 Chassis



1	Right side-to-rear airflow for cooling supervisor and I/O modules	3	Exhaust out the rear to the hot aisle
2	Front-to-rear airflow for cooling power supplies		

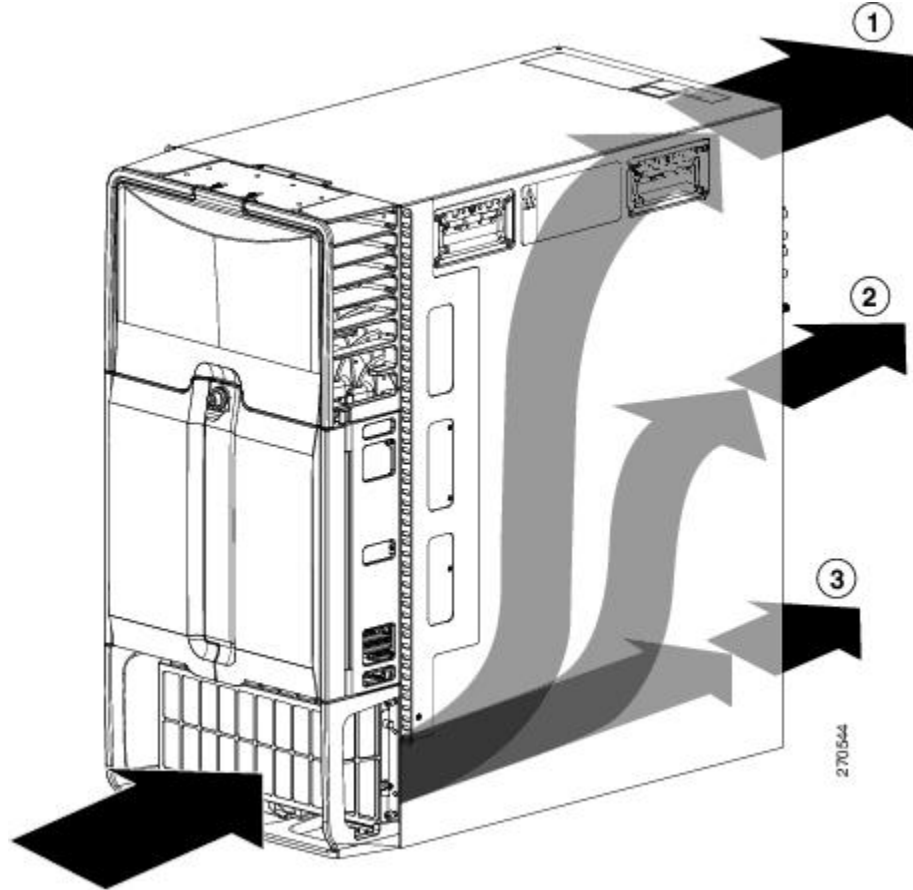
Figure 141: Airflow for the Cisco Nexus 7009 Chassis



need to insert 330517.jpg. this image is found in WEM and not in Astoria.

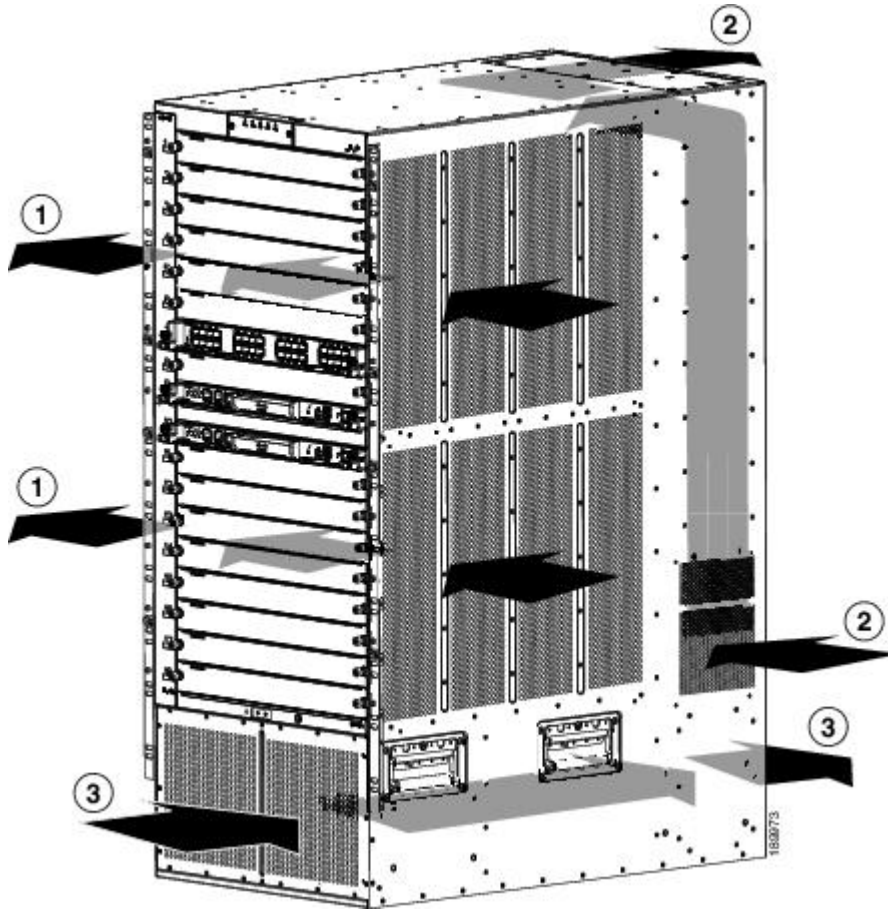
1	Airflow for cooling the supervisor modules, I/O modules, and fabric modules	2	Airflow for cooling the power supply units
---	---	---	--

Figure 142: Airflow for the Cisco Nexus 7010 Chassis



1	Airflow for cooling the supervisor and I/O modules	3	Airflow for cooling the power supply units
2	Airflow for cooling the fabric modules		

Figure 143: Airflow for the Cisco Nexus 7018 Chassis



1	Airflow for cooling the supervisor and I/O modules	3	Airflow for cooling the power supply units
2	Airflow for cooling the fabric modules		

For the Cisco Nexus 7004 switch, you can route cables on the left or right side without interfering with coolant airflow, which goes in on the right side. Be sure to otherwise leave the right side unblocked so that cool air can flow from the cold aisle in the front to the chassis.

To allow for the Cisco Nexus 7009 and 7018 switches to take in air from the cold aisle and floor on the right side, you should route cables on the left front side of the switch. If necessary, you can route cables on the upper right front side of the chassis, which leaves the lower right side open to cooling air from the cold aisle in front of the chassis. By having the cables on the left side and leaving the left rear side unobstructed, the exhaust is directed to the hot aisle in back.

For the clearances required on each side of the switch, see the [Chassis Clearances](#), on page 186.





## CHAPTER 8

# Transceivers and Module Connectors

This appendix specifies the transceivers and module connectors used with the Cisco Nexus 7000 Series switches.

This appendix includes the following sections:

- [100-Gigabit CFP Transceivers, on page 205](#)
- [100-Gigabit CPAK Transceivers, on page 207](#)
- [40-Gigabit CFP Transceivers, on page 208](#)
- [40-Gigabit QSFP+ Transceivers, on page 209](#)
- [10-Gigabit SFP+ Transceivers and Fabric Extender Transceivers, on page 213](#)
- [10-Gigabit X2 Transceivers, on page 218](#)
- [1-Gigabit SFP Transceivers, on page 223](#)
- [RJ-45 Module Connectors, on page 228](#)

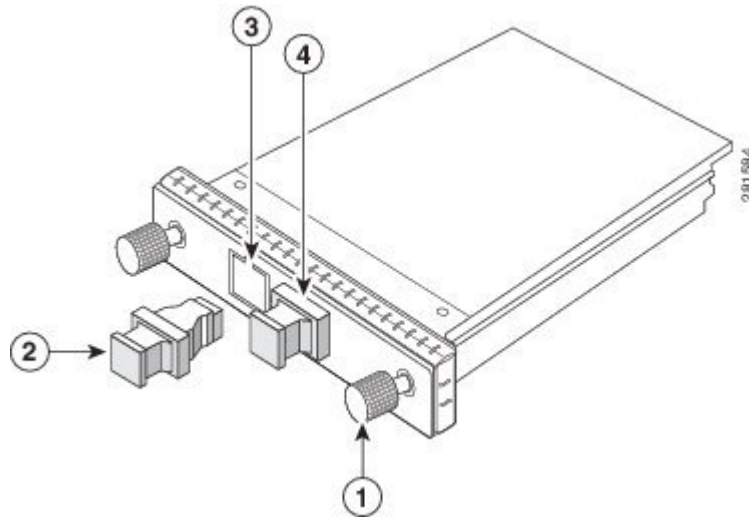
## 100-Gigabit CFP Transceivers

The following 100-Gigabit CFP transceivers are used with the M2-Series 100-Gigabit I/O module (N7K-M202CF-22L):

- CFP-100G-ER4
- CFP-100G-LR4
- CFP-100G-SR10

[Figure 144: CFP Transceivers, on page 206](#) identifies the major features of these transceivers. For the cable specifications that apply to these transceivers, see [Table 32: Cable Specifications for the CFP Transceivers, on page 206](#). For the optical specifications, see [Table 33: CFP Transceiver Optical Transmit and Receive Specifications, on page 206](#). For the environmental specifications, see [Table 34: Environmental and Power Specifications for CFP Transceivers, on page 207](#).

Figure 144: CFP Transceivers



1	Thumb screws	3	Transmit optical bore
2	Dust plug	4	Receive optical bore

Table 32: Cable Specifications for the CFP Transceivers

Transceiver	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
CFP-100G-ER4	SMF		1310	G.652	—	24.85 miles (40 km)
CFP-100G-LR4	SMF	Dual SC/PC	1310	G.652	—	6.21 miles (10 km)
CFP-100G-SR10	MMF	MPO/MTP	850	50.050.0	2000 (OM3)4700 (OM4)	328 feet (100 m)492 feet (150 m)

Table 33: CFP Transceiver Optical Transmit and Receive Specifications

Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
CFP-100G-ER4	100GBASE-ER4 CFP	2.9 (maximum per lane)–2.9 (minimum per lane)	4.5 (maximum per lane)–20.9 (minimum per lane)	Four lanes: 1295.6 nm, 1300.1 nm, 1304.6 nm, and 1309.1 nm
CFP-100G-LR4	100GBASE-LR4 CFP	4.5 (maximum per lane)–4.3 (minimum per lane)	4.5 (maximum per lane)–10.6 (minimum per lane)	Four lanes: 1295.6 nm, 1300.1 nm, 1304.6 nm, and 1309.1 nm
CFP-100G-SR10	100GBASE-SR10 CFP	–1.0 (maximum per lane)–7.6 (minimum per lane)	2.4 (maximum per lane)–9.5 (minimum per lane)	Ten lanes: 840 to 860 nm

**Table 34: Environmental and Power Specifications for CFP Transceivers**

Parameter	Specification
Storage temperature	−40 to 185°F (−40 to 85°C)
Operating temperature	32 to 158°F (0 to 70°C)
Case temperature	−40 to 158°F (−40 to 70°C)
Storage relative humidity	5 to 95 percent

## 100-Gigabit CPAK Transceivers

The following 100-Gigabit CPAK transceivers are used with the F3-Series 100-Gigabit I/O modules (N7K-F306CK-25):

- CPAK-100G-ER4L
- CPAK-100G-LR4
- CPAK-100G-SR10

For the cable specifications that apply to these transceivers, see [Table 35: Cable Specifications for the CPAK Transceivers, on page 207](#). For the optical specifications, see [Table 36: CPAK Transceiver Optical Transmit and Receive Specifications, on page 207](#). For the environmental specifications, see [Table 37: Environmental and Power Specifications for CPAK Transceivers, on page 208](#).

**Table 35: Cable Specifications for the CPAK Transceivers**

Transceiver	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
CPAK-100G-ER4L	SMF	SC Duplex	1310	G.652	—	15.53 miles (25 km)
CPAK-100G-LR4	SMF	SC Duplex	1310	G.652	—	6.21 miles (10 km)
CPAK-100G-SR10	MMF (OM3) MMF(OM4)	24-fiber MTP/MPO	850	50.050.0	2000 (OM3)4700 (OM4)	328 feet (100 m)492 feet (150 m)

**Table 36: CPAK Transceiver Optical Transmit and Receive Specifications**

Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
CPAK-100G-ER4L	100GBASE-ER4L	2.9 (maximum per lane)–2.9 (minimum per lane)	4.5 (maximum per lane)–14 (minimum per lane)	Four lanes: 1294.53 to 1296.59, 1299.02 to 1301.09, 1303.54 to 1305.63, 1308.09 to 1310.19
CPAK-100G-LR4	100GBASE-LR4	4.5 (maximum per lane)–4.3 (minimum per lane)	4.5 (maximum per lane)–10.6 (minimum per lane)	Four lanes: 1294.53 to 1296.59, 1299.02 to 1301.09, 1303.54 to 1305.63, 1308.09 to 1310.19

Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
CPAK-100G-SR10	100GBASE-SR10	-1.0 (maximum per lane) -7.6 (minimum per lane)	2.4 (maximum per lane) -9.5 (minimum per lane)	Ten lanes: 850 to 860 nm

Table 37: Environmental and Power Specifications for CPAK Transceivers

Parameter	Specification
Storage temperature	-40 to 185°F (-40 to 85°C)
Operating temperature	32 to 158°F (0 to 70°C)

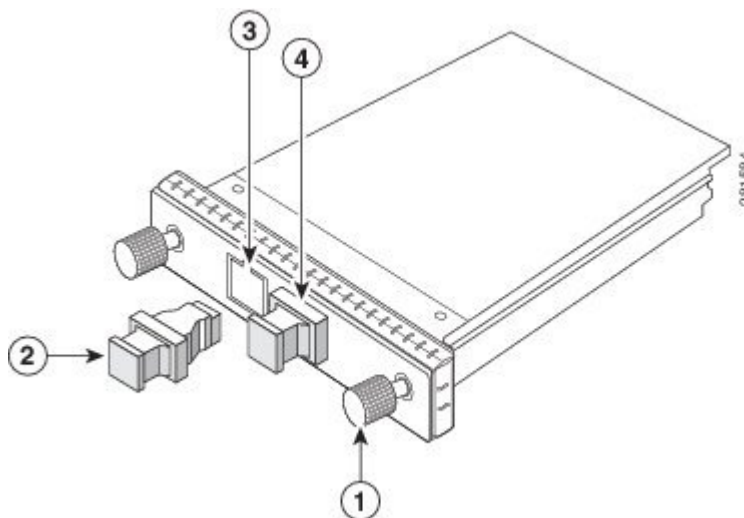
## 40-Gigabit CFP Transceivers

The following 40-Gigabit CFP transceivers are used with the M2-Series 100-Gigabit I/O modules (N7K-M202CF-22L):

- CFP-40G-SR4
- CFP-40G-LR4

Figure 145: CFP Transceivers, on page 208 identifies the major features of these transceivers. For the cable specifications that apply to these transceivers, see Table 38: Cable Specifications for the CFP Transceivers, on page 209. For the optical specifications, see Table 39: CFP Transceiver Optical Transmit and Receive Specifications, on page 209. For the environmental specifications, see Table 40: Environmental and Power Specifications for CFP Transceivers, on page 209.

Figure 145: CFP Transceivers



1	Thumb screws	3	Transmit optical bore
2	Dust plug	4	Receive optical bore

Table 38: Cable Specifications for the CFP Transceivers

Transceiver	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
CFP-40G-SR4	MMF	Dual SC/PC	850	50.050.050.0	500 (OM2)2000 (OM3)4700 (OM4)	98.4 feet (30 m)328.1 feet (100 m)492.1 feet (150 m)
CFP-40G-LR4	SMF	Dual SC/PC	1310	G.652	—	32.8 feet (10 km)

Table 39: CFP Transceiver Optical Transmit and Receive Specifications

Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
CFP-40G-SR4	40GBASE CFP	2.4 (maximum per lane)-7.6 (minimum per lane)	2.4 (maximum per lane)-9.5 (minimum per lane)	Four lanes: 840 to 860 nm
CFP-40G-LR4	40GBASE CFP	2.3 (maximum per lane)-7 (minimum per lane)	2.3 (maximum per lane)-13.7 (minimum per lane)	Four lanes: 1271 nm, 1291 nm, 1311 nm, and 1331 nm

Table 40: Environmental and Power Specifications for CFP Transceivers

Parameter	Specification
Storage temperature	-40 to 185°F (-40 to 85°C)
Operating temperature	32 to 158°F (0 to 70°C)
Case temperature	-40 to 158°F (-40 to 70°C)
Storage relative humidity	5 to 95 percent

## 40-Gigabit QSFP+ Transceivers

The 40-Gigabit Quad Small-Form Factor Pluggable Plus (QSFP+) transceivers are used with the F3-Series 40-Gigabit Ethernet (N7K-F312FQ-25), M2-Series 40-Gigabit Ethernet (N7K-M206FQ-23L) and M3-Series 40-Gigabit Ethernet (N7K-M324FQ-25L) I/O modules.

Figure 146: QSFP+ Transceiver, on page 209 identifies the major features of these transceivers. For the cable specifications that apply to these transceivers, see Table 41: Cable Specifications for the 40-Gigabit QSFP+ Transceivers, on page 211. For the optical specifications, see Table 42: QSFP+ Transceiver Optical Transmit and Receive Specifications, on page 212. For the environmental specifications, see Table 43: Environmental and Power Specifications for CFP Transceivers, on page 213.

Figure 146: QSFP+ Transceiver



1	Optical bore	2	Pull tab
---	--------------	---	----------

The following 40-Gigabit QSFP+ transceivers are used with the F3-Series 40-Gigabit Ethernet (N7K-F312FQ-25) I/O modules:

- CVR-QSFP-SFP10G
- FET-40G
- QSFP-40G-SR-BD
- QSFP-40G-SR4
- QSFP-40G-SR4-S
- QSFP-40G-CSR4
- QSFP-40G-LR4
- QSFP-40G-LR4-S
- QSFP-H40G-ACUxM
- QSFP-4X10G-ACxM
- QSFP-4X10G-LR-S
- QSFP-H40G-AOCxM
- QSFP-H40G-AOC15M
- QSFP-4X10G-AOCxM
- QSFP-40G-ER4
- WSP-Q40GLR4L

The following 40-Gigabit QSFP+ transceivers are used with the F3-Series 40-Gigabit Ethernet (N7K-M206FQ-23L) I/O modules:

- FET-40G
- QSFP-40G-SR-BD
- QSFP-40G-SR4
- QSFP-40G-SR4-S
- QSFP-40G-CSR4
- QSFP-40G-LR4
- QSFP-40G-LR4-S
- QSFP-H40G-ACUxM
- QSFP-4X10G-ACxM
- QSFP-H40G-AOCxM
- QSFP-H40G-AOC15M
- QSFP-4X10G-AOCxM
- QSFP-40G-ER4
- WSP-Q40-GLR4L

The following 40-Gigabit QSFP+ transceivers are used with the F3-Series 40-Gigabit Ethernet (N7K-M324FQ-25L) I/O modules:

- QSFP-H40G-ACUxM
- QSFP-H40G-AOCxM
- QSFP-4X10G-AC7M
- QSFP-4X10G-AC10M
- QSFP-4X10G-ACUxM
- QSFP-4X10G-AOC1M
- QSFP-4X10G-AOC2M
- QSFP-4X10G-AOC3M

- QSFP-4X10G-AOC5M
- QSFP-4X10G-AOC7M
- QSFP-4X10G-AOC10M
- QSFP-40G-CSR4
- QSFP-40G-ER4
- QSFP-4x10G-LR-S
- QSFP-40G-LR4
- QSFP-40G-LR4-S
- QSFP-40G-SR4
- QSFP-40G-SR4-S
- QSFP-40G-SR-BD

Table 41: Cable Specifications for the 40-Gigabit QSFP+ Transceivers

Transceiver	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
FET-40G <b>Note</b> FET-40G is not supported with N7K-M324FQ-25L.	MMF	QSFP+ to QSFP+	850	50.050.050.0	500 (OM2) 2000 (OM3) 4700 (OM4)	98.4 feet (30 meters) 328.1 feet (100 meters) 328.1 feet (100 meters)
QSFP-H40G-ACU <sub>x</sub> M	Direct attach copper, active	QSFP+ to QSFP+	—	—	—	23.0 feet (7 meters) 32.8 feet (10 meters)
QSFP-H40G-AOC <sub>x</sub> M	Active optical cable assembly	QSFP+ to QSFP+	—	—	—	3.3 feet (1 meter) 6.6 feet (2 meters) 9.8 feet (3 meters) 16.4 feet (5 meters) 23.0 feet (7 meters) 32.8 feet (10 meters) 49.2 feet (15 meters)
QSFP-4X10G-AC <sub>x</sub> M	Direct attach breakout copper, active	QSFP+ to four SFP+	—	—	—	23.0 feet (7 meters) 32.8 feet (10 meters)
QSFP-4X10G-ACU <sub>x</sub> M	Direct attach breakout copper, active	QSFP+ to four SFP+	—	—	—	23.0 feet (7 meters) 32.8 feet (10 meters)
QSFP-4X10G-AOC <sub>x</sub> M	Active optical breakout cable assembly	QSFP+ to four SFP+	—	—	—	3.3 feet (1 meter) 6.6 feet (2 meters) 9.8 feet (3 meters) 16.4 feet (5 meters) 23.0 feet (7 meters) 32.8 feet (10 meters)

Transceiver	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
QSFP-40G-CSR4	MMF	12-fiber MTP/MPO	850	62.550.050.050.0	200 (OM1)500 (OM2)2000 (OM3)4700 (OM4)	108.2 feet (33 m)269.0 feet (82 m)984.3 feet (300 m)132.3 feet (400 m)
QSFP-40G-ER4	SMF	LC	1310	G.652	—	40 km 4
QSFP-4x10G-LR-S	SMF	12-fiber MTP/MPO	1310	G.652		6.1 miles (10 km)
QSFP-40G-LR4	SMF	LC	1310	G.652	—	6.1 miles (10 km)
QSFP-40G-LR4-S	SMF	LC	1310	G.652	—	6.1 miles (10 km)
QSFP-40G-SR4	MMF	PC or UPC	850	50.050.050.0	500 (OM2)2000 (OM3)4700 (OM4)	98.4 feet (30 meters)328.1 feet (100 meters)(492.1 feet (150 meters)
QSFP-40G-SR4-S	MMF	12-fiber MPO	850	50.050.0	2000 (OM3)4700 (OM4)	100m 150 m 2
QSFP-40G-SR-BD	MMF	LC Duplex	850/900	50.050.050.0	500 (OM2)2000 (OM3)4700 (OM4)	98.4 feet (30 meters)328.1 feet (100 meters)(492.1 feet (150 meters)

Table 42: QSFP+ Transceiver Optical Transmit and Receive Specifications

Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
FET-40G	FEX	-1 (maximum per lane*6)-8.0 (minimum per lane)	-1 (maximum per lane)-9.9 (minimum per lane)	840 to 860
QSFP-40G-CSR4	40GBASE-CSR4	0 (maximum per lane)-7.3 (minimum per lane)	0 (maximum per lane*6)-9.9 (minimum per lane)	840 to 860
QSFP-40G-ER4	40GBASE-ER4	4.5 (maximum per lane)-2.7 (minimum per lane)	-4.5 (maximum per lane)-21.2 (minimum per lane)	Four lanes: 1271 nm, 1291 nm, 1311 nm, and 1331 nm
QSFP-4x10G-LR-S	4x10GBASE-LR	0.5 (maximum per lane)-8.2 (minimum per lane)	0.5 (maximum per lane)-14.4 (minimum per lane)	1260 to 1355



Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
QSFP-40G-LR4	40GBASE-LR4	2.3 (maximum per lane)–7.0 (minimum per lane)	2.3 (maximum per lane)–13.7 (minimum per lane)	Four lanes: 1271 nm, 1291 nm, 1311 nm, and 1331 nm
QSFP-40G-LR4-S	40GBASE-LR4	2.3 (maximum per lane)–7.0 (minimum per lane)	2.3 (maximum per lane)–13.7 (minimum per lane)	Four lanes: 1271 nm, 1291 nm, 1311 nm, and 1331 nm
QSFP-40G-SR4	40GBASE-SR4	–1.0 (maximum per lane)–7.6 (minimum per lane)	2.4 (maximum per line)–9.5 (minimum per line)	840 to 860
QSFP-40G-SR4-S	40GBASE-SR4	2.4 (maximum per lane)–7.6 (minimum per lane)	2.4 (maximum per line)–9.5 (minimum per line)	840 to 860
QSFP-40G-SR-BD	40GBASE-SR-BiDi	5 (maximum per lane)–4 (minimum per lane)	5 (maximum per line)–6 (minimum per line)	832 to 918

**Table 43: Environmental and Power Specifications for CFP Transceivers**

Parameter	Specification
Storage temperature	–40 to 185°F (–40 to 85°C)
Operating temperature	32 to 104°F (0 to 40°C)
Case temperature	–40 to 158°F (–40 to 70°C)
Storage relative humidity	5 to 95 percent

## 10-Gigabit SFP+ Transceivers and Fabric Extender Transceivers

The 10-Gigabit SFP+ transceivers are used with the following I/O modules:

- F1 Series 32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)
- F2 Series 48-port 1- and 10-Gigabit I/O module (N7K-F248XP-25 and N7K-F248XP-25E)
- F3 Series 48-port 1- and 10-Gigabit I/O module (N7K-F348XP-25)
- M1 Series 32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)
- M1 Series 32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)
- M1 Series 8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L) (requires the OneX Converter Module to adapt the SFP+ transceiver to the X2 ports on this I/O module)
- M2 Series 24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)
- M3 Series 48-port 1- and 10-Gigabit Ethernet I/O module with XL option (N7K-M348XP-25L)

The 10-Gigabit Fabric Extender Transceiver (FET) is used with only the following I/O modules when connecting them to the Cisco Nexus 2248TP, 2248TP-E, 2232PP, 2232TM, and 2224TP Fabric Extenders (FEXs):

- F2 Series 48-port 1- and 10-Gigabit I/O module (N7K-F248XP-25 and N7K-F248XP-25E)

- F3 Series 48-port 1- and 10-Gigabit I/O module (N7K-F348XP-25)
- M1 Series 32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)
- M1 Series 32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)
- M2 Series 24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)

Starting with Cisco NX-OS Release 8.1(1), the 10-Gigabit Fabric Extender Transceiver (FET) can be used with M3 Series 48-port 1- and 10-Gigabit Ethernet I/O modules with XL option (N7K-M348XP-25L) when connecting them to the Cisco Nexus 2248TP, 2248TP-E, 2232PP, 2232TM, and 2224TP Fabric Extenders (FEXs).

You can also use the SFP-10G-SR and SFP-10G-LR transceivers when connecting the 32-port 10-Gigabit Ethernet I/O modules to FEXs.

This section includes the following sections:

## 10BASE-X SFP+ Transceivers

To see which SFP+ transceivers are used with the F1 or F2 Series I/O modules, see [Transceivers and Module Connectors, on page 205](#). To see which SFP+ transceivers are used with the M1, M2 and M3 Series I/O modules, see [Table 45: SFP+ Transceivers Used with M1, M2 and M3 Series Modules, on page 215](#). To see information on the DWDM SFP+ transceivers, see the [10BASE-DWDM SFP+ Transceivers, on page 218](#).

**Table 44: SFP+ Transceivers Used with F1, F2 and F3 Series I/O Modules**

Transceiver	I/O Module		
	32-port 1- and 10-Gigabit (N7K-F132XP-15)	48-port 1- and 10-Gigabit (N7K-F248XP-25 and N7K-F248XP-25E)	48-port 1- and 10-Gigabit (N7K-F348XP-25)
DWDM-SFP10G-xx.xx	X	X	X
FET-10G		X 1	X 1
SFP-10G-ER	X	X	X
SFP-10G-LR	X <sup>17</sup>	X	X
SFP-10G-LRM	X	X	X
SFP-10G-SR	X	X	X
SFP-10G-ZR	X	X	X
SFP-H10GB-CU1M	X	X	X X
SFP-H10GB-CU3M	X	X	X
SFP-H10GB-CU5M	X	X	X
SFP-H10GB-ACU7M	X	X	X
SFP-H10GB-ACU10M	X	X	X

<sup>17</sup> Requires revision 2 of this transceiver.

**Table 45: SFP+ Transceivers Used with M1, M2 and M3 Series Modules**

Transceiver	8-port 10-Gigabit (N7K-M108X2-12L)	32-port 10-Gigabit (N7K-M132XP-12)	32-port 10-Gigabit with XL option (N7K-M132XP-12L)	24-Port 10-Gigabit (N7K-M224XP-23L)	48-Port 1-/10-Gigabit (N7K-M348XP-25L)
CWDM-SFP10G-1xxx					X
DWDM-SFP10G-xx.xx			X	X	X
FET-10G		X <sup>18</sup>	X 1	X 1	X <sup>19</sup>
SFP-10G-BXD-I					X
SFP-10G-BXU-I					X
SFP-10G-AOC1M			X	X	X
SFP-10G-AOC2M			X	X	X
SFP-10G-AOC3M			X	X	X
SFP-10G-AOC5M			X	X	X
SFP-10G-AOC7M			X	X	X
SFP-10G-AOC10M			X	X	X
SFP-10G-ER		X	X	X	X
SFP-10G-ER-S			X	X	X
SFP-10G-LR	X	X	X	X	X
SFP-10G-LR-S	X		X	X	X
SFP-10G-LRM (SMF)	X		X	X	X
SFP-10G-LRM (MMF)	X		X	X	
SFP-10G-SR	X <sup>20</sup>	X	X	X	X
SFP-10G-SR-S	X		X	X	X
SFP-10G-ZR		X 3	X 3	X 3	X
SFP-10G-ZR-S			X	X	X
SFP-H10GB-ACU7M		<sup>21</sup>	X	X	X
SFP-H10GB-ACU10M		X 3	X	X	X
SFP-H10GB-CU1M	X		X 3	X 3	X

Transceiver	8-port 10-Gigabit (N7K-M108X2-12L)	32-port 10-Gigabit (N7K-M132XP-12)	32-port 10-Gigabit with XL option (N7K-M132XP-12L)	24-Port 10-Gigabit (N7K-M224XP-23L)	48-Port 1-/10-Gigabit (N7K-M348XP-25L)
SFP-H10GB-CU1-5M			X	X	X
SFP-H10GB-CU2M			X	X	X
SFP-H10GB-CU2-5M			X	X	X
SFP-H10GB-CU3M	X		X 3	X 3	X
SFP-H10GB-CU5M	X		X 3	X 3	X

<sup>18</sup> The FET-10G transceiver is used only for connections with a Cisco Nexus 2248TP, 2248TP-E, 2232PP, 2232TM, and 2224TP Fabric Extender (FEX).

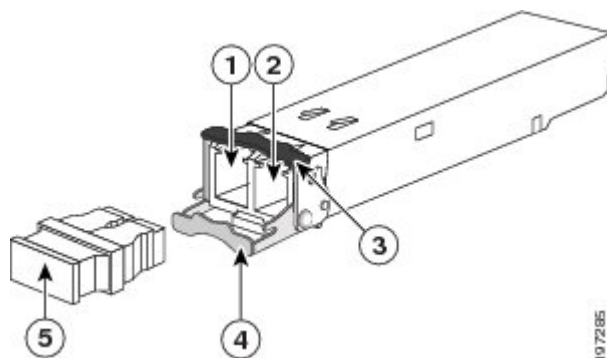
<sup>19</sup> Supported from Cisco NX-OS Release 8.1(1).

<sup>20</sup> Requires the OneX Converter Module (part number CVR-X2-SFP10G) when this transceiver is used with the 8-port 10-GB I/O module.

<sup>21</sup> Requires revision 2 of this transceiver.

Figure 147: SFP+ Transceivers and FETs, on page 216 identifies the major features of these transceivers. For the cable specifications that apply to SFP+ transceivers and FETs, see Table 46: Cable Specifications for the 10-Gigabit SFP+ Transceivers and FETs, on page 217. For the physical and environmental specifications, see Table 47: SFP+ Transceiver Optical Transmit and Receive Specifications, on page 217. For the environmental specifications that apply to these transceivers, see Table 48: Environmental and Power Specifications for the 10-Gigabit SFP+ Transceivers and FETs, on page 218.

Figure 147: SFP+ Transceivers and FETs



1	Receive optical bore	4	Clasp shown in open position
2	Transmit optical bore	5	Dust plug
3	Clasp shown in closed position		

Table 46: Cable Specifications for the 10-Gigabit SFP+ Transceivers and FETs

Transceiver	Cable Type	Connector Type	Wavelength(nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
FET-10G	MMF	Dual LC/PC	850	50 50	500 2000	82 feet (25 meters) 328 feet (100 meters)
SFP-H10GB-ACUxM	Twinax cable, active, 30-AWG cable assembly	—	—	—	—	22.8 feet (7 meters)32.5 feet (10 meters)
SFP-H10GB-CU1M	Twinax cable, passive, 30-AWG cable assembly	—	—	—	—	3.3 feet (1 meter)9.8 feet (3 meters)16.4 feet (5 meters)
SFP-10G-AOCxM	Active optical cable assembly	—	—	—	—	3.3 feet (1 meter)6.6 feet (2 meters)9.8 feet (3 meters)16.4 feet (5 meters)23.0 feet (7 meters)32.8 feet (10 meters)
SFP-10G-ER	SMF	Dual LC/PC	1550	G.652 fiber	—	24.9 miles (40 km)
SFP-10G-LR	SMF	Dual LC/PC	1310	G.652 fiber	—	6.2 miles (10 km)
SFP-10G-LRM	MMF SMF	Dual LC/PC	1310	62.5 50 50 G.652	500 400 500 —	722 feet (220 meters) 328 feet (100 meters) 722 feet (220 meters) 984 feet (300 meters)
SFP-10G-SR	MMF	Dual LC/PC	850	62.5 62.5 50.0 50.0 50.0	160 200 400 500 2000	85 feet (26 meters) 108 feet (33 meters) 216 feet (66 meters) 269 feet (82 meters) 984 feet (300 meters)

Table 47: SFP+ Transceiver Optical Transmit and Receive Specifications

X2 Transceiver Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
SFP-10G-ER	10GBASE-ER, 1550-nm SMF	4.0 (maximum) -4.7 (minimum)	-1.0 (maximum) -15.8 (minimum)	1530 to 1565
SFP-10G-LR	10GBASE-LR, 1310-nm SMF	0.5 (maximum) -8.2 (minimum)	0.5 (maximum) -14.4 (minimum)	1260 to 1355

X2 Transceiver Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
SFP-10G-LRM	10GBASE-LRM, 1310-nm MMF and SMF	0.5 (maximum) -6.5 (minimum)	0.5 (maximum) -8.4 (minimum) (in average) -6.4 (minimum) (in OMA) <sup>22</sup>	1260 to 1355
SFP-10G-SR	10GBASE-SR, 850-nm MMF	-1.2 (maximum) <sup>23</sup> -7.3 (minimum)	-1.0 (maximum) -9.9 (minimum)	840 to 860

<sup>22</sup> Both the average and the OMA specifications must be met simultaneously.

<sup>23</sup> The launch power shall be the lesser of the class 1 safety limit or the maximum receive power. Class 1 laser requirements are defined by IEC 60825-1:2001.

**Table 48: Environmental and Power Specifications for the 10-Gigabit SFP+ Transceivers and FETs**

Parameter	Specification
Storage temperature	-40 to 185°F (-40 to 85°C)
Operating temperature	32 to 158°F (0 to 70°C)
Case temperature	32 to 158°F (0 to 70°C)
Module supply voltage	3.1 to 3.5 V

## 10BASE-DWDM SFP+ Transceivers

The Dense Wavelength Division Multiplexing (DWDM) SFP+ transceivers are part of a DWDM optical network to provide high-capacity bandwidth across a fiber-optic network. There are 32 fixed-wavelength DWDM SFP+ transceivers that support the International Telecommunications Union (ITU) 100-GHz wavelength grid. These transceivers have duplex SC connectors. DWDM SFP+ transceivers can transmit and receive optical signals up to 50 miles (80 km) depending on the quality of the fiber-optic cable used.

DWDM SFP+ transceivers look like the typical 10GBASE-X SFP+ transceivers as shown in [Figure 147: SFP+ Transceivers and FETs, on page 216](#).

For the specifications that differentiate the 10GBASE-DWDM SFP+ transceivers, see the 10-Gigabit Ethernet Transceiver Modules Compatibility Matrix .

## 10-Gigabit X2 Transceivers



**Note** Starting with Cisco NX-OS Release 8.0(1), the 8-port 10-GB Ethernet (N7K-M108X2-12L) I/O modules are not supported.

The following 10-Gigabit X2 transceivers are used with the 8-port 10-GB Ethernet (N7K-M108X2-12L) I/O modules:

- DWDM-X2-xx.xx
- X2-10GB-CX4
- X2-10GB-ER
- X2-10GB-LR
- X2-10GB-LRM
- X2-10GB-LX4
- X2-10GB-SR
- X2-10GB-ZR

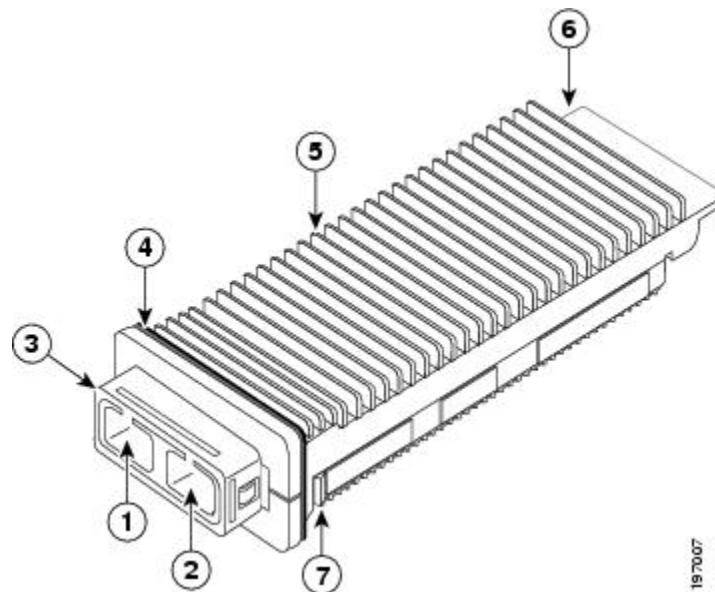
Additionally, you can use the following SFP+ transceivers with the OneX Converter Module (part number CVR-X2-SFP10G) that adapts SFP+ transceivers to X2 ports:

- SFP-10G-SR
- SFP-H10GB-CUxM

For information on the SFP+ 10GB transceivers, see the [10-Gigabit SFP+ Transceivers and Fabric Extender Transceivers](#), on page 213.

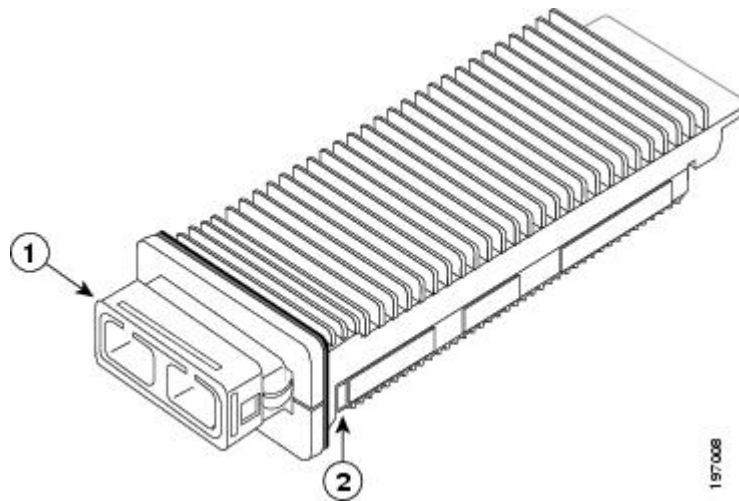
[Figure 148: 10-Gigabit X2 Transceiver \(Latching Sleeve Not Extended\)](#), on page 219 identifies the major features of the X2 transceivers, and [Figure 149: X2 Transceiver with Latching Sleeve Extended](#), on page 220 shows the transceiver with its latching sleeve extended (you pull the sleeve out to remove the transceiver from the I/O module).

**Figure 148: 10-Gigabit X2 Transceiver (Latching Sleeve Not Extended)**



1	Transmit optical bore	5	Transceiver heat sink
2	Receive optical bore	6	Module connector
3	Latching sleeve (retracted)	7	Latch (extended when sleeve is retracted)
4	EMI gasket		

Figure 149: X2 Transceiver with Latching Sleeve Extended



1	Latching sleeve (extended to remove transceiver)	2	Latch (retracted to enable you to remove the transceiver)
---	--	---	---

This section includes the following topics:

## 10GBASE-X X2 Transceivers

For the 10GBASE-X X2 transceiver cabling specifications, see [Table 49: X2 Transceiver Cabling Specifications](#), on page 220. For the optical transmit and receive specifications, see [Table 50: X2 Transceiver Optical Transmit and Receive Specifications](#), on page 221. For the physical and environmental specifications, see [Table 51: X2 Transceiver Physical and Environmental Specifications](#), on page 221.

Table 49: X2 Transceiver Cabling Specifications

X2 Transceiver Product Number	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cabling Distance <sup>24</sup>
X2-10GB-CX4	Copper		—	—	—	49.2 feet (15 meters)
X2-10GB-ER	SMF	SC duplex	1550	G.652 fiber	—	24.9 miles (40 km)
X2-10GB-LR	SMF	SC duplex	1310	G.652 fiber	—	6.2 miles (10 km)
X2-10GB-LRM	MMF	SC duplex	1310	62.5	500	722 feet (220 meters)
	SMF			50.0	400	328 feet (100 meters)
				50.0	500	722 feet (220 meters)
				G.652 fiber	—	984 feet (300 meters)



X2 Transceiver Product Number	Cable Type	Connector Type	Wavelength (nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cabling Distance <sup>24</sup>
X2-10GB-LX4	MMF		1300	62.5	500	984 feet (300 meters)
				50.0	400	787 feet (240 meters)
				50.0	500	984 feet (300 meters)
X2-10GB-SR	MMF	SC duplex	850	62.5	160	85 feet (26 meters)
				62.5	200	108 feet (33 meters)
				50.0	400	217 feet (66 meters)
				50.0	500	269 feet (82 meters)
				50.0	2000	984 feet (300 meters)
X2-10GB-ZR	SMF					49.3 miles (80 km)

<sup>24</sup> Cable distances are based on fiber loss. Additional factors, such as the number of splices and the optical quality of the fiber, can affect cabling distances.

Table 50: X2 Transceiver Optical Transmit and Receive Specifications

X2 Transceiver Product Number	Transceiver Type	Transmit Power (dBm)	Receive Power (dBm)	Transmit and Receive Wavelength (nm)
X2-10GB-ER	10GBASE-ER, 1550-nm SMF	4.0 (maximum) -4.7 (minimum)	-1.0 (maximum) -15.8 (minimum)	1530 to 1565
X2-10GB-LR	10GBASE-LR, 1310-nm SMF	0.5 (maximum) -8.2 (minimum)	0.5 (maximum) -14.4 (minimum)	1260 to 1355
X2-10GB-LRM	10GBASE-LRM, 1310-nm MMF and SMF	0.5 (maximum) -6.5 (minimum)	0.5 (maximum) -8.4 (minimum) (in average) -6.4 (minimum) (in OMA) <sup>25</sup>	1260 to 1355
X2-10GB-SR	10GBASE-SR, 850-nm MMF	-1.2 (maximum) <sup>26</sup> -7.3 (minimum)	-1.0 (maximum) -9.9 (minimum)	840 to 860

<sup>25</sup> Both the average and the OMA specifications must be met simultaneously.

<sup>26</sup> The launch power shall be the lesser of the class 1 safety limit or the maximum receive power. Class 1 laser requirements are defined by IEC 60825-1:2001.

Table 51: X2 Transceiver Physical and Environmental Specifications

Characteristic	Specification
Dimensions (H x W x D)	0.53 x 1.41 x 3.58 inches (13.46 x 36 x 91 mm)

Characteristic	Specification
Operating temperature	32° to 122°F (0° to 50°C)
X2-10GB-ER	32° to 122°F (0° to 50°C)
X2-10GB-LR	32° to 158°F (0° to 70°C)
X2-10GB-LRM	32° to 158°F (0° to 70°C)
X2-10GB-LX4	32° to 122°F (0° to 50°C)
X2-10GB-SR	32° to 122°F (0° to 50°C)
X2-10GB-ZR	
Storage temperature	−40° to 185° F (−40° to 85°C)

## 10GBASE-DWDM X2 Transceivers

The Dense Wavelength Division Multiplexing (DWDM) X2 transceivers are part of a DWDM optical network to provide high-capacity bandwidth across a fiber-optic network. As listed in [Table 52: DWDM X2 Transceivers](#), on page 222, there are 32 fixed-wavelength DWDM X2 transceivers that support the International Telecommunications Union (ITU) 100-GHz wavelength grid. These transceivers have duplex SC connectors. DWDM X2 transceivers can transmit and receive optical signals up to 50 miles (80 km) depending on the quality of the fiber-optic cable used.

DWDM X2 transceivers look like the typical 10GBASE-X X2 transceivers as shown in [Figure 148: 10-Gigabit X2 Transceiver \(Latching Sleeve Not Extended\)](#), on page 219.

For the specifications that differentiate the 10GBASE-DWDM X2 transceivers, see the [http://www.cisco.com/en/US/partner/docs/interfaces\\_modules/transceiver\\_modules/compatibility/matrix/OL\\_6974.html](http://www.cisco.com/en/US/partner/docs/interfaces_modules/transceiver_modules/compatibility/matrix/OL_6974.html).

**Table 52: DWDM X2 Transceivers**

Part Number	100-GHz ITU Channel	Description
DWDM-X2-60.61=	21	10GBASE-DWDM 1560.61 nm X2
DWDM-X2-59.79=	22	10GBASE-DWDM 1559.79 nm X2
DWDM-X2-58.98=	23	10GBASE-DWDM 1558.98 nm X2
DWDM-X2-58.17=	24	10GBASE-DWDM 1558.17 nm X2
DWDM-X2-56.55=	26	10GBASE-DWDM 1556.55 nm X2
DWDM-X2-55.75=	27	10GBASE-DWDM 1555.75 nm X2
DWDM-X2-54.94=	28	10GBASE-DWDM 1554.94 nm X2
DWDM-X2-54.13=	29	10GBASE-DWDM 1554.13 nm X2
DWDM-X2-52.52=	31	10GBASE-DWDM 1552.52 nm X2
DWDM-X2-51.72=	32	10GBASE-DWDM 1551.72 nm X2

Part Number	100-GHz ITU Channel	Description
DWDM-X2-50.92=	33	10GBASE-DWDM 1550.92 nm X2
DWDM-X2-50.11=	34	10GBASE-DWDM 1550.11 nm X2
DWDM-X2-48.51=	36	10GBASE-DWDM 1548.51 nm X2
DWDM-X2-47.72=	37	10GBASE-DWDM 1547.72 nm X2
DWDM-X2-46.92=	38	10GBASE-DWDM 1546.92 nm X2
DWDM-X2-46.12=	39	10GBASE-DWDM 1546.12 nm X2
DWDM-X2-44.53=	41	10GBASE-DWDM 1544.53 nm X2
DWDM-X2-43.73=	42	10GBASE-DWDM 1543.73 nm X2
DWDM-X2-42.94=	43	10GBASE-DWDM 1542.94 nm X2
DWDM-X2-42.14=	44	10GBASE-DWDM 1542.14 nm X2
DWDM-X2-40.56=	46	10GBASE-DWDM 1540.56 nm X2
DWDM-X2-39.77=	47	10GBASE-DWDM 1539.77 nm X2
DWDM-X2-38.98=	48	10GBASE-DWDM 1538.98 nm X2
DWDM-X2-38.19=	49	10GBASE-DWDM 1538.19 nm X2
DWDM-X2-36.61=	51	10GBASE-DWDM 1536.61 nm X2
DWDM-X2-35.82=	52	10GBASE-DWDM 1535.82 nm X2
DWDM-X2-35.04=	53	10GBASE-DWDM 1535.04 nm X2
DWDM-X2-34.25=	54	10GBASE-DWDM 1534.25 nm X2
DWDM-X2-32.68=	56	10GBASE-DWDM 1532.68 nm X2
DWDM-X2-31.90=	57	10GBASE-DWDM 1531.90 nm X2
DWDM-X2-31.12=	58	10GBASE-DWDM 1531.12 nm X2
DWDM-X2-30.33=	59	10GBASE-DWDM 1530.33 nm X2

## 1-Gigabit SFP Transceivers

The 1-Gigabit Ethernet SFP transceivers are used with the following 1-Gigabit Ethernet I/O modules:

- F1 Series 32-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F132XP-15)
- F2 Series 48-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F248XP-25 and N7K-F248XP-25E)
- F3 Series 48-port 1- and 10-Gigabit Ethernet I/O modules (N7K-F348XP-25)
- M1 Series 48-port 1-Gigabit Ethernet I/O modules (N7K-M148GS-11)

- M1 Series 48-port 1-Gigabit Ethernet I/O modules with XL option (N7K-M148GS-11L)
- M3 Series 48-port 1- and 10-Gigabit Ethernet I/O modules with XL option (N7K-M348XP-25L)

To see which of these transceivers are used with each of these I/O modules, see [Table 53: SFP Transceivers Used with Each I/O Module](#), on page 224.

**Table 53: SFP Transceivers Used with Each I/O Module**

Transceiver	I/O Modules					
	32-port 1- and 10-Gigabit (N7K-F132XP15)	48-port 1- and 10-Gigabit (N7K-F248XP-25 and N7K-F248XP-25E)	48-port 1- and 10-Gigabit (N7K-F348XP-25)	48-port 1-Gigabit (N7K-M148GS-11)	48-port 1-Gigabit with XL option (N7K-M148GS-11L)	48-port 1- and 10-Gigabit with XL option (N7K-M348XP-25L)
CWDM-BP-xxx	X	X	X	X	X	X
DWDM-BP-xxx	X	X	X	X	X	X
GLC-BX-D		X	X	X	X	X
GLC-BX-U		X	X	X	X	X
GLC-EX-SMD	X	X	X			X
GLC-HSMD	X	X	X	X	X	X
GLC-SX-MMD	X	X	X	X	X	X
GLC-TE	X	X	X	X	X	X
GLC-ZX-SMD	X	X	X	X	X	X
SFP-GE-L	X	X		X	X	
SFP-GE-S	X	X		X	X	
SFP-GE-T	X	X		X	X	
SFP-GE-Z	X	X		X	X	

This section includes the following topics:

## 1000BASE-CWDM SFP Transceiver Cables

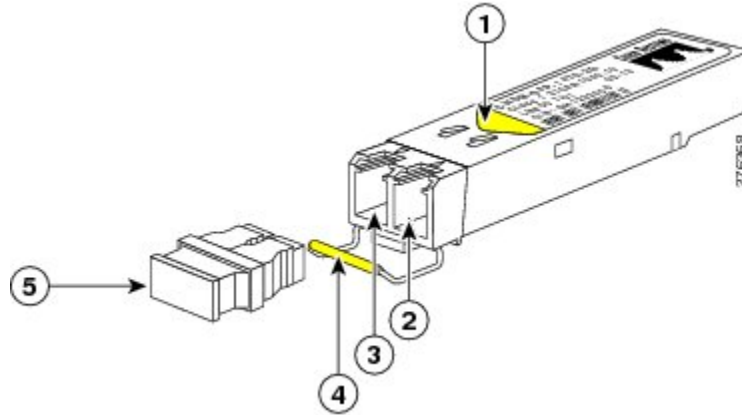
The Coarse Wavelength Division Multiplexing (CWDM) SFP transceivers are hot-swappable transceivers that you plug into SFP-compatible I/O modules. The CWDM SFP transceiver uses an LC optical connector to connect to single-mode fiber-optic (SMF) cable. You can connect the CWDM SFPs to CWDM passive optical system optical add/drop multiplexer (OADM) modules or multiplexer/demultiplexer plug-in modules using SMF cables. CWDM SFP transceivers can transmit and receive optical signals up to 61 miles (100 km) depending on the quality of the fiber-optic cable used.

CWDM SFP transceivers are color coded to indicate their designated optical wavelength. [Figure 150: CWDM SFP Transceiver \(Yellow Color Code\)](#), on page 225 shows the CWDM transceiver, which looks like a standard 1000BASE-X SFP transceiver with a colored arrow and bail clasp to indicate the designated wavelength.



**Note** Whenever the transceiver receive optical bores are not filled with optical cables, you should minimize the chance of contamination by plugging the transceiver with its dust plug.

*Figure 150: CWDM SFP Transceiver (Yellow Color Code)*



1	Colored arrow on label specifies the wavelength	4	Bail clasp
2	Receive optical bore	5	Dust plug
3	Transmit optical bore		

For the specifications that differentiate the 1000BASE-CWDM SFP transceivers, see the [Cisco Gigabit Ethernet Transceiver Modules Compatibility Matrix](#). For specifications and installation information that apply to all CWDM SFP transceivers, see the [Cisco SFP and SFP+ Transceiver Module Installation Notes](#).

## 1000BASE-DWDM SFP Transceivers

The Dense Wavelength Division Multiplexing (DWDM) SFP transceivers are part of a DWDM optical network to provide high-capacity bandwidth across a fiber-optic network. There are 40 fixed-wavelength DWDM SFP transceivers that support the International Telecommunications Union (ITU) 100-GHz wavelength grid. These transceivers have duplex SC connectors. DWDM SFP transceivers can transmit and receive optical signals up to 50 miles (80 km) depending on the quality of the fiber-optic cable used.

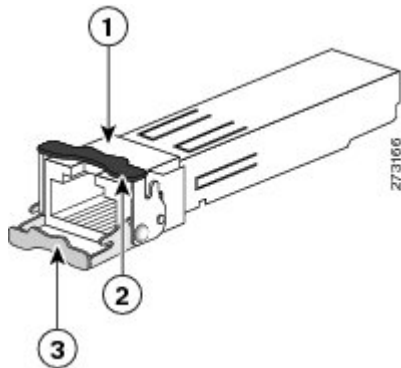
DWDM SFP transceivers look like the typical 1000BASE-X transceivers as shown in [Figure 152: 1000BASE-X SFP Transceiver](#), on page 226.

For the specifications that differentiate the 1000BASE-DWDM SFP transceivers, see the [Cisco Gigabit Ethernet Transceiver Modules Compatibility Matrix](#). For specifications and installation information that apply to all CWDM SFP transceivers, see the [Cisco SFP and SFP+ Transceiver Module Installation Notes](#).

## 1000BASE-T and 1000BASE-X SFP Transceivers

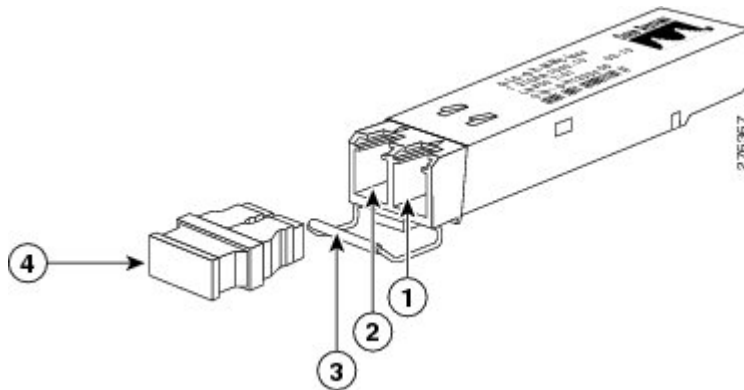
The 1000BASE-T and 1000BASE-X SFPs are hot-swappable transceivers that you plug into SFP-compatible I/O modules. The 1000BASE-T transceiver, shown in [Figure 151: 1000BASE-T SFP Transceiver, on page 226](#), provides an RJ-45 connection for copper cables, and the 1000BASE-X transceiver, shown in [Figure 152: 1000BASE-X SFP Transceiver, on page 226](#), provides an optical connection for fiber-optic cables.

**Figure 151: 1000BASE-T SFP Transceiver**



1	RJ-45 connector	3	Bail clasp shown in the open (unlocked) position
2	Bail clasp shown in the closed (locked) position		

**Figure 152: 1000BASE-X SFP Transceiver**



1	Receive optical bore	3	Bail clasp
2	Transmit optical bore	4	Dust plug

For the 1000BASE-T and 1000BASE-X transceiver cable specifications, see [Table 54: Cable Specifications for 1000BASE-X and 1000BASE-T SFP Transceivers](#), on page 227.

Table 54: Cable Specifications for 1000BASE-X and 1000BASE-T SFP Transceivers

Transceiver Type	Cable Type	Connector Type	Wavelength(nm)	Core Size (microns)	Modal Bandwidth (MHz-km)	Maximum Cable Distance
1000BASE-BX10 (GLC-BX-U)	SMF <sup>27</sup>	Single LC/PC	1310	G.652 4	—	6.2 miles (10 km)
1000BASE-BX10 (GLC-BX-D)	SMF 1	Single LC/PC	1490	G.652 4	—	6.2 miles (10 km)
1000BASE-SX (GLC-SX-MMD, GLC-SX-MM, and SFP-GE-S)	MMF <sup>28</sup>	LC duplex	850	62.5	160	722 feet (220 m)
				62.5	200	902 feet (275 m)
				50.0	400	1640 feet (500 m)
				50.0	500	1804 feet (550 m)
1000BASE-LX (GLC-LH-SMD, GLC-LH-SM, and SFP-GE-L)	MMF 2	LC duplex	1310	62.5	500	1804 feet (550 m) <sup>29</sup>
				50.0	400	1804 feet (550 m) 3
				50	500	1804 feet (550 m) 3
	SMF 1	LC duplex	1310	G.652 <sup>30</sup>	—	6.2 miles (10 km)
1000BASE-ZX (GLC-ZX-SM and SFP-GE-Z)	SMF 1	LC duplex	1550	G.652 2	—	Approximately 43.4 to 60 miles (70 to 100 km) depending on link loss
1000BASE-T (GLC-T and SFP-GE-T)	Category 5, 5E, or 6 UTP/FTP	RJ45	—	—	—	328 feet (100 meters)

<sup>27</sup> Single-mode fiber optic (SMF)<sup>28</sup> Multimode fiber optic (MMF)<sup>29</sup> You must use a mode-conditioning patch cord, as specified by the IEEE standard, regardless of the amount of span.<sup>30</sup> ITU-T G.652 SMF as specified by the IEEE 802.32 standard.

The transceivers that support Digital Optical Monitoring have a greater range of temperatures for operations, as shown in [Table 55: Environmental Specifications for 1000BASE-X and 1000BASE-T Transceivers](#), on [page 228](#).

Table 55: Environmental Specifications for 1000BASE-X and 1000BASE-T Transceivers

Transceiver Type	Part Number	Digital Optical Monitoring Support	Operating Temperature	Storage Temperature
1000BASE-SX	GLC-SX-MMD	Yes	EXT 2	-40 to 185°F (-40 to 85°C)
	GLC-SX-MM	No	COM <sup>31</sup>	
	SFP-GE-S	Yes	EXT <sup>32</sup>	
1000BASE-LX	GLC-LH-SMD	Yes	EXT 2	
	GLC-LH-SM	No	COM 1	
	SFP-GE-L	Yes	EXT 2	
1000BASE-ZX	GLC-ZX-SM	No	COM 1	
	SFP-GE-Z	Yes	EXT 2	
1000BASE-T	GLC-T	—	COM1	
	SFP-GE-T	—	EXT2	

<sup>31</sup> Commercial (COM) temperature range is 32 to 158°F (0 to 70°C).

<sup>32</sup> Extended (EXT) temperature range is 23 to 185°F (-5 to 85°C).

## RJ-45 Module Connectors

The RJ-45 connector connects Category 3, Category 5, Category 5e, Category 6, or Category 6A foil twisted-pair or unshielded twisted-pair cable from the external network to the following module interface connectors:

- Supervisor modules
  - CONSOLE port
  - COM1/AUX port
  - MGMT ETH port
  - CMP MGMT ETH port
- 48-port 10/100/1000 Ethernet I/O modules (N7K-M148GT-11 and N7K-M148GT-11L)
  - 10/100/1000 ports
- 48-port 1- and 10-GBASE-T I/O modules (N7K-F248XT-25E)
  - 1- and 10-GBASE-T ports
- Cisco Nexus 2248TP and 2248TP-E Fabric Extenders
  - 100/1000 downlink ports





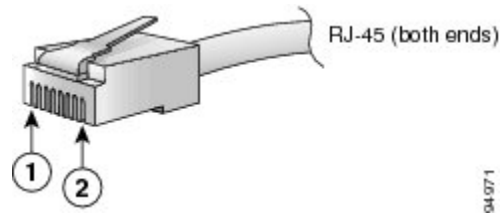
**Note** If you need to connect a host that operates at up to 10 Mbps to a FEX, you can connect the host to a Cisco Nexus 2248TP-E FEX, which has large port buffers that enable it to work at the slower 10-Mbps speed. If the 10-Mbps host that you are connecting cannot autonegotiate speeds, you must configure the host for 10 Mbps when connecting it to the Cisco Nexus 2248TP-E FEX.



**Caution** To comply with GR-1089 intrabuilding, lightning immunity requirements, you must use foil twisted-pair (FTP) cable that is properly grounded at both ends.

Figure 153: RJ-45 Connector, on page 229 shows the RJ-45 connector.

Figure 153: RJ-45 Connector



1	Pin 1	2	Pin 8
---	-------	---	-------





# CHAPTER 9

## Accessory Kits Contents

This appendix describes the contents of the Cisco Nexus 7000 Series accessory kits.

This appendix includes the following sections:

- [Cisco Nexus 7004 Switch Accessory Kit, on page 231](#)
- [Cisco Nexus 7009 Switch Accessory and Optional Kits, on page 234](#)
- [Cisco Nexus 7010 Switch Accessory Kits, on page 238](#)
- [Cisco Nexus 7018 Switch Accessory Kits, on page 240](#)




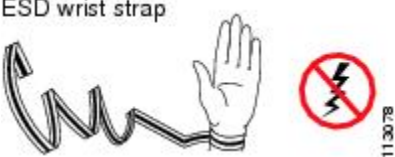
### Cisco Nexus 7004 Switch Accessory Kit

This section describes the contents of the accessory kit that you can order for the Cisco Nexus 7004 switch. The accessory kit is shipped with each Cisco Nexus 7004 chassis. You use that kit for mounting the chassis on a four-post or two-post rack. Typically, you mount the front of the chassis using the front-mount brackets, which are already attached to the chassis, but if you need to mount the center of the chassis, you use the center-mount brackets (order part number N7K-C7004-RMK), which you must order separately. The kit also includes the screws, grounding lug, and other equipment that you use for all installations of this chassis.

[Table 56: Cisco Nexus 7004 Switch Accessory Kit Contents](#), on page 231 lists and illustrates the contents for this kit.

**Table 56: Cisco Nexus 7004 Switch Accessory Kit Contents**

Illustration	Description	Quantity
	Chassis mounting screws <ul style="list-style-type: none"> <li>• 12-24 x 3/4-in. Phillips screws</li> <li>• M6 x 19 mm Phillips screws</li> </ul>	10 10
	RJ-45 rollover cable	1

Illustration	Description	Quantity
 190031	D B9F/RJ-45F PC terminal	1
 Ground lug kit 182847	Ground lug kit (includes the following parts): <ul style="list-style-type: none"> <li>• Two-hole lug</li> <li>• M4 x 8-mm Phillips pan-head screws</li> </ul>	1 kit 1 per kit 2 per kit
 334052	Cable ties, 8.5 inches	1 kit (3 pieces)
 ESD wrist strap 113078	ESD wrist strap (disposable)	1
Not applicable	Hazardous substances list for customers in China	1
Not applicable	Cisco Information Packet	1
Not applicable	1-Year Limited Warranty for Hardware	1
Not applicable	GR-1089 Installation and Caution Instructions	1



**Note** If you do not receive a part listed in this document, contact Cisco Technical Support at this URL: <http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>. If you purchased this product through a Cisco reseller, you might receive additional contents in your kit, such as documentation, hardware, and power cables.

The product shipment includes power cords for the following power supplies:

- 3-kW AC power supplies—one power cord per power supply
- 3-kW DC power supplies—no power cords supplied (you must supply a cable for 6 AWG and up to 45 A).

The shipped cables depend on your specification when placing a Cisco Nexus 7000 Series device order.

The available power cords for the 3-kW AC power supplies are as follows:

- CAB-AC-16A-AUS—power cord, 250-VAC 16A, C19, Australia
- CAB-AC16A-CH—power cord, 16-A, China
- CAB-AC-2500W-EU—power cord, 250-VAC 16A, Europe
- CAB-AC-2500W-INT—power cord, 250-VAC 16A, International

- CAB-AC-2500W-ISRL—power cord, 250-VAC 16-A, Israel
- CAB-9K16A-US1—power cord, 250-VAC 16A, Src Plug NEMA 6-20, US/Japan
- CAB-AC-C6K-TWLK—power cord, 250-VAC 16A, twist lock, NEMA L6-20
- CAB-7513AC—power cord, AC 110V North America
- CAB-C19-CBN—cabinet jumper power cord, 250-VAC, 16A, C20C
- CAB-ACS-16—power cord, 16-A, Switzerland
- CAB-L520P-C19-US—NEMA L5-20 to IEC-C19 6ft US

The available AC power cords for the 3.5-kW HVAC/HVDC power supplies are as follows:

- CAB-AC-16A-SG-AR—power cord, 250-VAC 16A, IRSM 2073Saf-D-Grid, Argentina
- CAB-AC-16A-SG-AZ—power cord, 250-VAC 16A, AU20LS3/Saf-D-Grid, Australia and New Zealand
- CAB-AC-16A-SG-BR—power cord, 250-VAC 16A, EL224/Saf-D-Grid, Brazil
- CAB-AC-16A-SG-CH—power cord, 250-VAC 16A, GB 16C/Saf-D-Grid, China
- CAB-AC-16A-SG-EU—power cord, 250-VAC 16A, CEE 7-7/Saf-D-Grid, Europe
- CAB-AC-16A-SG-IN—power cord, 250-VAC 16A, IEC60309/Saf-D-Grid, International
- CAB-AC-16A-SG-IND—power cord, 250-VAC 16A, SABS 164-1/Saf-D-Grid, India
- CAB-AC-16A-SG-IS—power cord, 250-VAC 16A, SI 16S3/Saf-D-Grid, Israel
- CAB-AC-16A-SG-IT—power cord, 250-VAC 16A, CEI 23-50/Saf-D-Grid to IEC-C19, Italy
- CAB-AC-16A-SG-SA—power cord, 250-VAC 16A, EL/Saf-D-Grid, South Africa
- CAB-AC-16A-SG-SK—power cord, 250-VAC 16A, Src/Saf-D-Grid, South Korea
- CAB-AC-20A-SG-US—power cord, 110-VAC 20A, straight blade, NEMA 5-20P/Saf-D-Grid, North America
- CAB-AC-20A-SG-US1—power cord, 125-VAC 20A, twist lock, NEMA L5-20/Saf-D-Grid, North America
- CAB-AC-20A-SG-US2—power cord, 250-VAC 20A, straight-blade, NEMA 6-20/Saf-D-Grid
- CAB-AC-20A-SG-US3—power cord, 250-VAC 20A, twist lock, NEMA L6-20/Saf-D-Grid
- CAB-AC-20A-SG-US4—power cord, 277-VAC 20A, NEMA L7-20P/Saf-D-Grid, North America
- CAB-AC-20A-SG-C20—cabinet jumper PDU power cord, 250-VAC, 20A, IEC C20/Saf-D-Grid, North America
- CAB-AC-16A-SG-SW—power cord, 250-VAC 16A, SEV 5934-2/Saf-D-Grid, Switzerland
- CAB-HV-25A-SG-US2—power cord, 300-VAC/500-VDC 20A, Ring Terminal/Saf-D-Grid, North America
- CAB-HV-25A-SG-US5—power cord, 300-VAC 20A, Saf-D-Grid P-10/Saf-D-Grid P4, North America
- CAB-HV-25A-SG-IN2—power cord, 300-VAC/500-VDC 20A, IEC/EU, Ring Terminal/Saf-D-Grid, International

- CAB-HV-25A-SG-IN3—power cord, 300-VAC 20A, Saf-D-Grid P-10/Saf-D-Grid P4, IEC/EU, International



---

**Note** All cables will not be orderable at first customer shipment (FCS).

---

The available DC power cords for the 3.5-kW HVAC/HVDC power supplies are as follows:

- CAB-HV-25A-SG-US1—power cord, 400-VDC 20A, Saf-D-Grid/Saf-D-Grid, North America
- CAB-HV-25A-SG-US2—power cord, 300-VAC/500-VDC 20A, Ring Terminal/Saf-D-Grid, North America
- CAB-HV-25A-SG-IN1—power cord, 400-VDC 20A, IEC/EU, Saf-D-Grid/Saf-D-Grid, International
- CAB-HV-25A-SG-IN2—power cord, 300-VAC/500-VDC 20A, IEC/EU, Ring Terminal/Saf-D-Grid, International



---

**Note** All cables will not be orderable at first customer shipment (FCS).

---

## Cisco Nexus 7009 Switch Accessory and Optional Kits

This section describes the contents of the Cisco Nexus 7009 accessory kits and the other kits that you can order for the Cisco Nexus 7009 switch. The accessory kit is shipped with each Cisco Nexus 7009 chassis. You use that kit for mounting the front of the chassis on a four-post or two-post rack. If you are centering the chassis on a two-post rack, you must also order the Cisco Nexus 7009 Center Mount Kit (part number N7K-C7009-CMK). If you need another bottom support bracket for front-mounting the chassis, order the Cisco Nexus 7009 Bottom Support Kit (part number N7K-C7009-BSK). If you need an additional set of brackets for mounting the front of the chassis to a rack, order the Cisco Nexus 7009 Rack Mount Kit (part number N7K-C7009-RMK).

This section includes the following topics:

### Cisco Nexus 7009 Accessory Kit

The Cisco Nexus 7009 Accessory Kit is shipped with each Cisco Nexus 7009 chassis. [Table 57: Cisco Nexus 7009 Switch Accessory Kit Contents](#), on page 235 lists and illustrates the contents for this kit.

Table 57: Cisco Nexus 7009 Switch Accessory Kit Contents

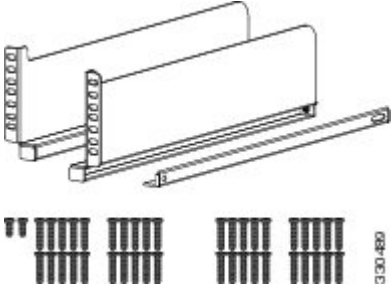
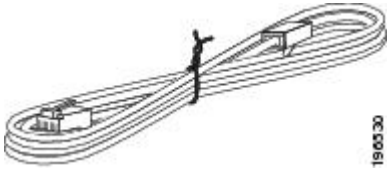


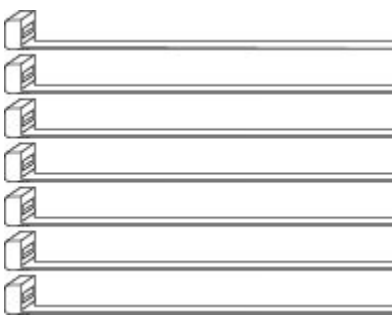
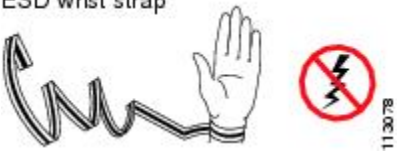
Illustration	Description	Quantity
	<p>Front-mount Bottom-Support Kit (available separately as N7K-C7009-BSK) includes the following parts:</p> <ul style="list-style-type: none"> <li>• Front-mount bottom support rails</li> <li>• Crossbar</li> <li>• 12-24 x 3/4-in. Phillips screws</li> <li>• M6 x 19-mm Phillips screws</li> <li>• M4 x 8-mm Phillips screws</li> </ul> <p><b>Note</b> This accessory kit does not include the center-mount bottom-support kit (part number N7K-C7009-CMK). If you ordered that kit, it is included separately with the switch shipment.</p>	<p>1 kit</p> <p>2 per kit</p> <p>1 per kit</p> <p>20 per kit</p> <p>20 per kit</p> <p>2 per kit</p>
	<p>RJ-45 rollover cable</p>	<p>1</p>
	<p>D B9F/RJ-45F PC terminal</p>	<p>1</p>
	<p>Ground lug kit (includes the following parts):</p> <ul style="list-style-type: none"> <li>• Two-hole lug</li> <li>• M4 x 8-mm Phillips pan-head screws</li> </ul>	<p>1 kit</p> <p>1 per kit</p> <p>2 per kit</p>
	<p>Cable ties, 8.5 inches</p>	<p>1 kit (7 pieces)</p>

Illustration	Description	Quantity
ESD wrist strap 	ESD wrist strap (disposable)	1
Not applicable	DCNM License for one Nexus 7000 Series chassis (optional)	1
Not applicable	Hazardous substances list for customers in China	1
Not applicable	Cisco Information Packet	1
	1-Year Limited Warranty for Hardware	1
Not applicable	GR-1089 Installation and Caution Instructions	1



**Note** If you do not receive a part listed in this document, contact Cisco Technical Support at this URL: <http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>. If you purchased this product through a Cisco reseller, you might receive additional contents in your kit, such as documentation, hardware, and power cables.

If your Cisco Nexus 7000 Series system includes 6 kW power supply units, the product shipment includes one or two country-specific power cords for each of those power supply units. The shipped cables depend on your specification when placing a Cisco Nexus 7000 Series device order. The available power cords for the 6 kW power supplies are as follows:

- CAB-AC-16A-AUS—power cord, 250-VAC 16A, C19, Australia
- CAB-AC16A-CH—power cord, 16-A, China
- CAB-AC-2500W-EU—power cord, 250-VAC 16A, Europe
- CAB-AC-2500W-INT—power cord, 250-VAC 16A, International
- CAB-AC-2500W-ISRL—power cord, 250-VAC 16-A, Israel
- CAB-9K16A-US1—power cord, 250-VAC 16A, Src Plug NEMA 6-20, US/Japan
- CAB-AC-C6K-TWLK—power cord, 250-VAC 16A, twist lock, NEMA L6-20
- CAB-7513AC—power cord, AC 110V North America
- CAB-C19-CBN—cabinet jumper power cord, 250-VAC, 16A, C20C
- CAB-ACS-16—power cord, 16-A, Switzerland
- CAB-L520P-C19-US—NEMA L5-20 to IEC-C19 6ft US



## Cisco Nexus 7009 Center-Mount Kit

The Cisco Nexus 7009 Center-Mount Kit is not included in the Cisco Nexus 7009 accessory kit, but, if you are centering the Cisco Nexus 7009 chassis on a two-post rack, you must order this kit (N7K-C7009-CMK) when you order the switch. [Table 58: Cisco Nexus 7009 Center-Mount Kit \(N7K-C7009-CMK\)](#), on page 237 lists the contents for this kit.

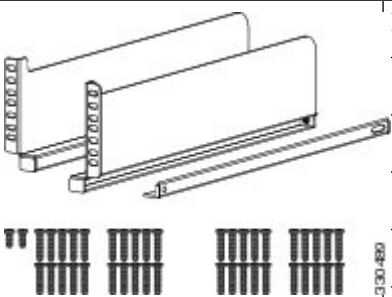
**Table 58: Cisco Nexus 7009 Center-Mount Kit (N7K-C7009-CMK)**

Description	Quantity
Center-Mount Kit includes the following parts:	1 kit
• Center-mount rack mounting brackets (right and left brackets)	2 per kit
• Center-mount bottom support rails (right and left rails)	2 per kit
• Crossbar	1 per kit
• 12-24 x 3/4-in. Phillips screws	20 per kit
• M6 x 19-mm Phillips screws	20 per kit
• M4 x 8-mm screws	2 per kit

## Cisco Nexus 7009 Bottom Support Kit

The Cisco Nexus 7009 Bottom Support Kit is included in the Cisco Nexus 7009 Accessory Kit for use in mounting the front of the chassis to a two-post or four-post rack. If you need to replace these parts, you can order this kit by using part number N7K-C7009-BSK. [Table 59: Cisco Nexus 7009 Bottom Support Kit \(N7K-C7009-BSK\)](#), on page 237 lists and illustrates the contents for this kit.

**Table 59: Cisco Nexus 7009 Bottom Support Kit (N7K-C7009-BSK)**

Illustration	Description	Quantity
	Front-mount Bottom Support Kit includes the following parts:	1 kit
	• Front-mount bottom support rails (right and left rails)	2 per kit
	• Crossbar	1 per kit
	• 12-24 x 3/4-in. Phillips screws	20 per kit
	• M6 x 19-mm Phillips screws	20 per kit
	• M4 x 8-mm Phillips screws	2 per kit

## Cisco Nexus 7009 Rack-Mount Kit

The Cisco Nexus 7009 switch ships with the front-mount rack mounting brackets assembled onto the chassis, but you can order the Cisco Nexus 7009 Rack-Mount Kit (order number N7K-C7009-RMK) if you need replacement parts. [Table 60: Cisco Nexus 7009 Rack-Mount Kit \(N7K-C7009-RMK\)](#), on page 238 lists and illustrates the contents for this kit.

**Table 60: Cisco Nexus 7009 Rack-Mount Kit (N7K-C7009-RMK)**

Description	Quantity
Rack-Mount Kit (available separately as N7K-C7009-RMK) includes the following parts:	1 kit
• Front-mount rack mounting brackets (right and left brackets)	2 per kit
• M4 x 6-mm Phillips screws	12 per kit

## Cisco Nexus 7010 Switch Accessory Kits

[Table 61: Cisco Nexus 7010 System Accessory Kit Contents](#), on page 238 lists and illustrates the accessory kit contents for the Cisco Nexus 7010 switch.

**Table 61: Cisco Nexus 7010 System Accessory Kit Contents**

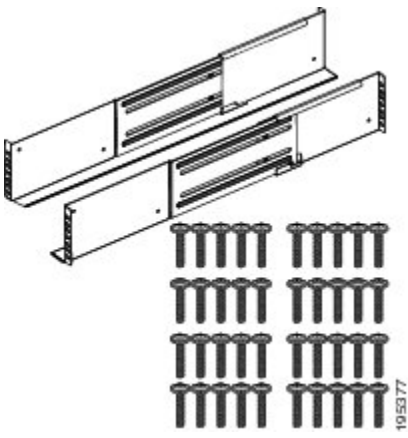
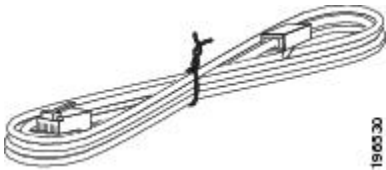


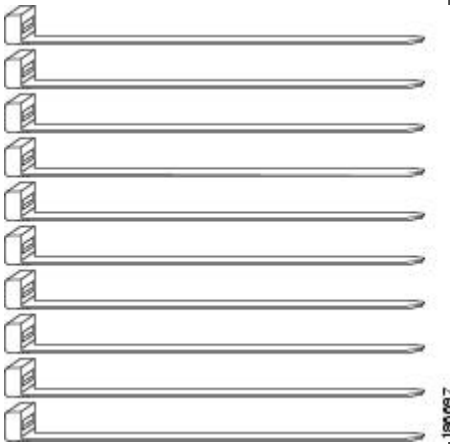
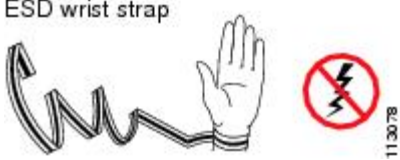
Illustration	Description	Quantity
	Bottom support rails kit (includes the following parts): <ul style="list-style-type: none"> <li>• 12-24 x 3/4-in. Phillips screws</li> <li>• M6 x 19-mm Phillips screws</li> <li>• Adjustable bottom support rails</li> </ul>	1 kit 20 per kit 20 per kit 2 per kit
	RJ-45 rollover cable	1
	DB-9F/RJ-45F PC terminal	1

Illustration	Description	Quantity
 <p>Ground lug kit</p>	Ground lug kit (includes the following parts): <ul style="list-style-type: none"> <li>• Two-hole lug</li> <li>• M4 x 8-mm Phillips pan-head screws</li> </ul>	1 kit 1 per kit 2 per kit
	Cable ties, 8.5 inches	1 kit (10 pieces)
 <p>ESD wrist strap</p>	ESD wrist strap (disposable)	1
Not applicable	DCNM License for one Nexus 7000 Series chassis (optional)	1
Not applicable	Hazardous substances list for customers in China	1
Not applicable	Cisco Information Packet	1
Not applicable	1-Year Limited Warranty for Hardware	1
Not applicable	GR-1089 Installation and Caution Instructions	1



**Note** If you do not receive a part listed in this document, contact Cisco Technical Support at this URL: <http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>. If you purchased this product through a Cisco reseller, you might receive additional contents in your kit, such as documentation, hardware, and power cables.

If your Cisco Nexus 7000 Series system includes 6 kW power supply units, the product shipment includes one or two country-specific power cords for each of those power supply units. The shipped cables depend on your specification when placing a Cisco Nexus 7000 Series device order. The available power cords for the 6 kW power supplies are as follows:

- CAB-AC-16A-AUS—power cord, 250-VAC 16A, C19, Australia
- CAB-AC16A-CH—power cord, 16-A, China

- CAB-AC-2500W-EU—power cord, 250-VAC 16A, Europe
- CAB-AC-2500W-INT—power cord, 250-VAC 16A, International
- CAB-AC-2500W-ISRL—power cord, 250-VAC 16-A, Israel
- CAB-9K16A-US1—power cord, 250-VAC 16A, Src Plug NEMA 6-20, US/Japan
- CAB-AC-C6K-TWLK—power cord, 250-VAC 16A, twist lock, NEMA L6-20
- CAB-7513AC—power cord, AC 110V North America
- CAB-C19-CBN—cabinet jumper power cord, 250-VAC, 16A, C20C
- CAB-ACS-16—power cord, 16-A, Switzerland
- CAB-L520P-C19-US—NEMA L5-20 to IEC-C19 6ft US

## Cisco Nexus 7018 Switch Accessory Kits

Table 62: Cisco Nexus 7018 Switch Accessory Kit Contents, on page 240 lists and illustrates the accessory kit contents for the Cisco Nexus 7018 switch.

Table 62: Cisco Nexus 7018 Switch Accessory Kit Contents

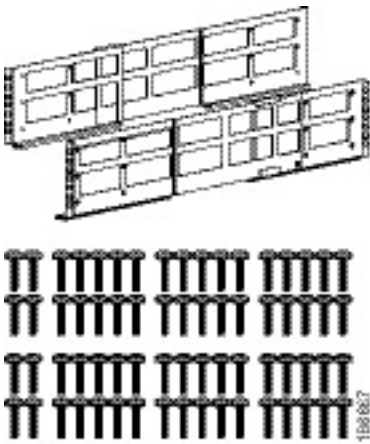
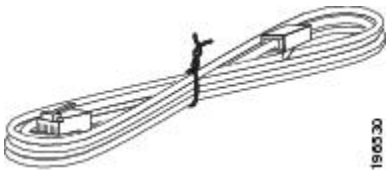


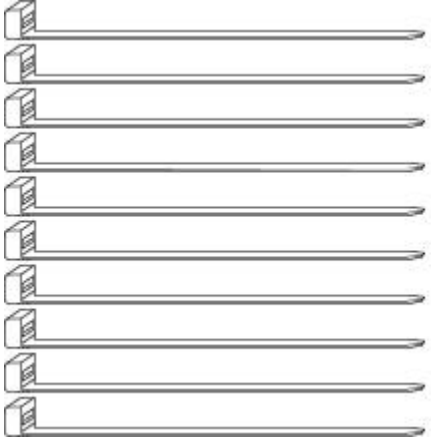
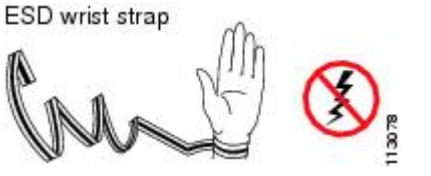
Illustration	Description	Quantity
	Bottom support rails kit (includes the following parts): <ul style="list-style-type: none"> <li>• 12-24 x 3/4-in. Phillips screws</li> <li>• M6 x 19-mm Phillips screws</li> <li>• Adjustable bottom support rails</li> </ul>	1 kit 34 per kit 34 per kit 2 per kit
	RJ-45 rollover cable	1
	D B9F/RJ-45F PC terminal	1
Ground lug kit 	Ground lug kit (includes the following parts): <ul style="list-style-type: none"> <li>• Two-hole lug</li> <li>• M4 x 8-mm Phillips pan-head screws</li> </ul>	1 kit 1 per kit 2 per kit

Illustration	Description	Quantity
	Cable ties, 8.5 inches	1 kit (10 pieces)
	ESD wrist strap (disposable)	1
Not applicable	DCNM License for one Nexus 7000 Series chassis (optional)	1
Not applicable	Hazardous substances list for customers in China	1
Not applicable	Cisco Information Packet 1-Year Limited Warranty for Hardware	1 1
Not applicable	GR-1089 Installation and Caution Instructions	1



**Note** If you do not receive a part listed in this document, contact Cisco Technical Support at this URL: <http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>. If you purchased this product through a Cisco reseller, you might receive additional contents in your kit, such as documentation, hardware, and power cables.

If your Cisco Nexus 7000 Series system includes 6 kW power supply units, the product shipment includes one or two country-specific power cords for each of those power supply units. The shipped cables depend on your specification when placing a Cisco Nexus 7000 Series device order. The available power cords for the 6 kW power supplies are as follows:

- CAB-AC-16A-AUS—power cord, 250-VAC 16A, C19, Australia
- CAB-AC16A-CH—power cord, 16-A, China
- CAB-AC-2500W-EU—power cord, 250-VAC 16A, Europe
- CAB-AC-2500W-INT—power cord, 250-VAC 16A, International
- CAB-AC-2500W-ISRL—power cord, 250-VAC 16-A, Israel
- CAB-9K16A-US1—power cord, 250-VAC 16A, Src Plug NEMA 6-20, US/Japan

- CAB-AC-C6K-TWLK—power cord, 250-VAC 16A, twist lock, NEMA L6-20
- CAB-7513AC—power cord, AC 110V North America
- CAB-C19-CBN—cabinet jumper power cord, 250-VAC, 16A, C20C
- CAB-ACS-16—power cord, 16-A, Switzerland
- CAB-L520P-C19-US—NEMA L5-20 to IEC-C19 6ft US



# CHAPTER 10

## Chassis and Module LEDs

This appendix lists the Cisco Nexus 7000 Series system LEDs and describes the conditions they indicate for the chassis and each type of module installed in the chassis.

This appendix includes the following sections:

- [Switch LEDs, on page 243](#)
- [Supervisor Module LEDs, on page 244](#)
- [I/O Module LEDs, on page 246](#)
- [NAM-NX1 Module LEDs, on page 247](#)
- [Fabric Module LEDs, on page 248](#)
- [Power Supply LEDs, on page 249](#)
- [Fan Tray LEDs, on page 250](#)

## Switch LEDs

[Table 63: Switch LEDs, on page 243](#) describes the switch LEDs that are located on the front of the chassis.

**Table 63: Switch LEDs**

LED	Color	Condition
PSU	Green	Power supply units are all operational.
	Amber	One of the following problems has occurred: <ul style="list-style-type: none"><li>• Any power supply unit LED is red.</li><li>• Any power supply unit is down.</li></ul>
FAN	Green	Fan tray modules are all operational.
	Amber	At least one fan tray module has a red STATUS LED.
	Red	Unknown
SUP	Green	Supervisor modules are all operational.
	Amber	At least one supervisor module has a red STATUS LED.

LED	Color	Condition
FAB	Green	Fabric modules are all operational.
	Amber	At least one fabric module has a red STATUS LED.
IOM	Green	The modules in the I/O slots are all operational.
	Amber	At least one module in the I/O slots has a red STATUS LED.

## Supervisor Module LEDs

Table 64: Supervisor Module LEDs , on page 244 describes the supervisor module LEDs.

Table 64: Supervisor Module LEDs

LED	Status	Description
STATUS	Green	All diagnostics pass. The module is operational (normal initialization sequence).
	Red	The module has detected a slot ID parity error and will not power on or boot up. or The module is not fully inserted and does not have a reliable connection to the midplane. or The diagnostic test has failed.
	Flashing red	The inlet air temperature of the system has exceeded the safe operating temperature limits of the module (a major environmental warning). The module has been shut down to prevent permanent damage. The system will be shut down after two minutes if this condition is not cleared. or The module is resetting, and both ejector levers are out.
	Off	The module is not receiving power.
ID	Flashing blue	The operator has activated this LED to identify this module in the chassis.
	Off	This module is not being identified.
SYSTEM	Green	All chassis environmental monitors are reporting okay.
	Amber	At least one power supply has failed or the power supply fan has failed.
	Red	The temperature of the supervisor engine major threshold has been exceeded.
	Off	The slot has detected a slot ID parity error.



LED	Status	Description
ACTIVE	Green	The supervisor module is operational and active.
	Amber	The supervisor module is in standby mode.
PWR MGMT	Green	Sufficient power is available for all of the installed modules.
	Amber	Insufficient power is available for all of the installed modules.
MGMT ETH	Green	The management port is operational.
	Amber	The management port link has been disabled through the software.
	Flashing Amber	The management port link is bad and has been disabled due to a hardware failure.
	Off	The module has not detected a signal.
LINK	Green	The module has detected a link.
	Off	The module does not detect a link.
ACT	Flashing green	The module is transmitting or receiving.
	Off	The module is not transmitting or receiving.
ACT LOG FLASH (Supervisor 1)	Green	The log flash CompactFlash or USB disk is being accessed. Do not remove the media until the LED is off.
LOG FLASH(Supervisor 2 and 2E)	Off	The expansion flash CompactFlash or USB disk is not being accessed. You can remove the media while this LED is off.
ACT EXPANSION FLASH(Supervisor 1) Slot 0(Supervisor 2 and 2E)	Green	The expansion flash CompactFlash or USB disk is being accessed. Do not remove the media until the LED is off.
	Off	The log flash CompactFlash or USB disk is not being accessed. You can remove the media while this LED is off.
CMP MGMT ETH (Supervisor 1 module only)	Green	The management port is operational.
	Amber	The management port link has been disabled through the software.
	Flashing amber	The management port link is bad and has been disabled due to a hardware failure.
	Off	The module does not detect a signal.

LED	Status	Description
CMP STATUS (Supervisor 1 module only)	Green	All diagnostics pass. The CMP is operational (normal initialization sequence).
	Amber	Sufficient power is not available for all modules.
	Flashing amber	The diagnostic test has failed. or The CMP is not operational because a fault has occurred during the initialization sequence.
	Red	The module has detected a slot ID parity error.
	Off	The CMP is not receiving power.
LINK (Supervisor 1 module only)	Green	The module has detected a link.
	Off	The module has not detected a link.
ACT (Supervisor 1 module only)	Flashing green	The module is transmitting or receiving.
	Off	The module is not transmitting or receiving.

## I/O Module LEDs

[Table 65: I/O Module LEDs](#), on page 246 describes the I/O module LEDs.

**Table 65: I/O Module LEDs**

LED	Status	Description
ID	Flashing blue	The operator has activated this LED to identify this module in the chassis.
	Off	This module is not being identified.

LED	Status	Description
Status	Green	All diagnostics pass. The module is operational (normal initialization sequence).
	Red	The module has detected a slot ID parity error and will not power on or boot up. or The module is not fully inserted, and it is not making a reliable connection with the supervisor. or The module has failed diagnostic tests and has powered down. <b>Note</b> While reloading an F3-Series or M3-Series I/O module, the status LED is Amber until the testing phase is complete. While reloading an F2e-Series or an M2-Series I/O module, the status LED blinks RED until the testing phase is complete.
	Flashing red	The switch has just been powered on, and the module is resetting. or The module is resetting and both ejector levers are out. or The module has been inserted during the initialization process. or The module could not power up because of insufficient power. or An overtemperature condition has occurred. A major temperature threshold has been exceeded during environmental monitoring.
	Off	The module is not receiving power.
Link (for each port)	Green	The port is active (the link is connected and active).
	Orange	The port is disabled by the operator or is not initializing.
	Flashing orange	The port is faulty and disabled.
	Off	The port is not active or the link is not connected.

## NAM-NX1 Module LEDs

Table 66: NAM-NX1 LEDs, on page 248 describes the LEDs on the NAM-NX1.

Table 66: NAM-NX1 LEDs

LED	Color	Condition
STATUS	Green	The NAM is operational.
	Orange	Indicates one of the following conditions: <ul style="list-style-type: none"> <li>• The module is booting up and running diagnostic tests.</li> <li>• The module is disabled and not in service.</li> <li>• The module is shutting down or coming up.</li> </ul>
	Red	Indicates one of the following conditions: <ul style="list-style-type: none"> <li>• The module is booting up and running diagnostic tests.</li> <li>• The module is disabled and not in service.</li> </ul> The module is shutting down or coming up.
	Off	The module is powered off.
ID	Blue	Identifies the module.
	Off	The module is not being identified.
Sync Link Status	Green	The port is active (link is connected).
	Off	The port is not active (link is not connected)
SAS Link Status LED	Green	The port is active (link is connected).
	Orange	The port is disabled by the operator or is not initializing.
	Flashing orange	The port is faulty and disabled.
	Off	The port is not active or the link is not connected.

## Fabric Module LEDs

Table 67: Fabric Module LEDs, on page 249 describes the fabric module LEDs.

Table 67: Fabric Module LEDs

LED	Status	Description
Status	Green	All diagnostics pass. The module is operational (normal initialization sequence).
	Red	The diagnostic test has failed. The module is not operational because a fault has occurred during the initialization sequence.  or  The inlet air temperature of the system has exceeded the safe operating temperature limits of the card (a major environmental warning). The card has been shut down to prevent permanent damage.
	Flashing red	The fabric module has just been inserted and is booting up.  or  An overtemperature condition has occurred and the module has powered down.  or  The power was turned off with a CLI command.  or  The module is resetting and both ejector levers are out.
ID	Flashing blue	The operator has activated this LED to identify this module in the chassis.
	Off	This module is not being identified.

## Power Supply LEDs

Table 68: [Power Supply LEDs](#), on page 249 describes the power supply unit LEDs. The Output, Fault, and ID LEDs have the same function for the AC, DC and HVAC/HVDC power supply units.

Table 68: Power Supply LEDs

LED	Color	Condition
Input 1	Green	The AC, HVAC/HVDC or DC input voltage is within the valid range.
	Off	The AC, HVAC/HVDC or DC input voltage is outside the valid range.
Input 2 (available only on DC power supply units)	Green	The DC input voltage is within the valid range.

LED	Color	Condition
	Off	The DC input voltage is outside the valid range.
Output	Green	The AC or DC output power is within the valid range.
	Off	The AC or DC output power is outside the valid range.
Fault	Off	The AC or DC output voltage and power supply unit tests are okay.
	Flashing red	Self-diagnostic tests have failed or another power supply failure has occurred.
ID	Flashing blue	The operator has activated this LED to identify this module in the chassis.
	Off	This module is not being identified.

## Fan Tray LEDs

Table 69: Fan Tray LEDs, on page 250 describes the fan tray LEDs.

**Table 69: Fan Tray LEDs**

LED	LED Indication	Condition
STATUS	Green	The fan tray is operational.
	Flashing red	One or more fans is running below the threshold speed. The fan tray is receiving insufficient power.
	Off	No power is going to the fan tray.
ID	Flashing blue	The operator has activated this LED to identify this module in the chassis.
	Off	This module is not being identified.



# CHAPTER 11

## Site Preparation and Maintenance Records

This appendix provides a site planning list to use when preparing your site for the Cisco Nexus 7000 Series switch and includes these sections:

- [Site Preparation Checklist, on page 251](#)
- [Contact and Site Information, on page 252](#)
- [Chassis and Module Information, on page 253](#)

### Site Preparation Checklist

Planning the location and layout of your equipment rack or cabinet is essential for successful switch operation, ventilation, and accessibility.

[Table 70: Site Planning Checklist, on page 251](#) lists the site planning tasks that we recommend that you complete before you install the Cisco Nexus 7000 Series switch. Your completion of each task ensures a successful switch installation.

**Table 70: Site Planning Checklist**

Planning Activity	Verification Time and Date
Space evaluation:	
<ul style="list-style-type: none"> <li>• Space and layout</li> <li>• Floor covering</li> <li>• Impact and vibration</li> <li>• Lighting</li> <li>• Physical access</li> <li>• Maintenance access</li> </ul>	
Environmental evaluation:	
<ul style="list-style-type: none"> <li>• Ambient temperature</li> <li>• Humidity</li> <li>• Altitude</li> <li>• Atmospheric contamination</li> <li>• Airflow</li> </ul>	

Planning Activity	Verification Time and Date
Power evaluation: <ul style="list-style-type: none"> <li>• Input power type</li> <li>• Power receptacles</li> <li>• Receptacle proximity to the equipment</li> <li>• Dedicated (separate) circuits for power redundancy</li> <li>• UPS for power failures</li> <li>• Grounding: proper gauge wire and lugs</li> <li>• Circuit breaker size</li> </ul>	
Grounding evaluation: <ul style="list-style-type: none"> <li>• Data center ground</li> </ul>	
Cable and interface equipment evaluation: <ul style="list-style-type: none"> <li>• Cable type</li> <li>• Connector type</li> <li>• Cable distance limitations</li> <li>• Interface equipment (transceivers)</li> </ul>	
EMI evaluation: <ul style="list-style-type: none"> <li>• Distance limitations for signaling</li> <li>• Site wiring</li> <li>• RFI levels</li> </ul>	

## Contact and Site Information

Use the following worksheet ([Table 71: Contact and Site Information](#), on page 252) to record contact and site information.

**Table 71: Contact and Site Information**

<b>Contact person</b>	
Contact phone	
Contact e-mail	
Building/site name	
Data center location	
Floor location	
Address (line 1)	
Address (line 2)	



<b>Contact person</b>
City
State
ZIP code
Country

## Chassis and Module Information

Use the following worksheets ([Table 72: Network-Related Information](#) , on page 253, [Table 74: Module Information for the Cisco Nexus 7009 Chassis](#) , on page 254, [Table 75: Module Information for the Cisco Nexus 7010 Chassis](#), on page 254, and [Table 76: Module Information for the Cisco Nexus 7018 Chassis](#) , on page 254) to record information about the chassis and modules.

### Contract Number

### Chassis serial number

### Product number>

**Table 72: Network-Related Information**

<b>Switch IP address</b>
Switch IP netmask
Hostname
Domain name
IP broadcast address
Gateway/router address
DNS address

**Table 73: Module Information for the Cisco Nexus 7004 Chassis**

Slot	Module Type	Module Serial Number	Notes
1	Supervisor		
2	Supervisor		
3			
4			

*Table 74: Module Information for the Cisco Nexus 7009 Chassis*

Slot	Module Type	Module Serial Number	Notes
1	Supervisor		
2	Supervisor		
3			
4			
5			
6			
7			
8			
9			

*Table 75: Module Information for the Cisco Nexus 7010 Chassis*

Slot	Module Type	Module Serial Number	Notes
1			
2			
3			
4			
5	Supervisor		
6	Supervisor		
7			
8			
9			
10			

*Table 76: Module Information for the Cisco Nexus 7018 Chassis*

Slot	Module Type	Module Serial Number	Notes
1			
2			
3			

Slot	Module Type	Module Serial Number	Notes
4			
5			
6			
7			
8			
9	Supervisor		
10	Supervisor		
11			
12			
13			
14			
15			
16			
17			
18			





## INDEX

- 1000BASE-CWDM SFP transceivers [224](#)
  - 1000BASE-DWDM transceivers [218, 222, 225](#)
  - 1000BASE-LX transceivers [226](#)
  - 1000BASE-SX transceivers [226](#)
  - 1000BASE-T transceivers [226](#)
  - 1000BASE-X transceivers [226](#)
  - 1000BASE-ZX transceivers [226](#)
  - 2-port 100-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 24-port 10-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 32-port 1- and 10-Gigabit Ethernet I/O module [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 32-port 10-Gigabit Ethernet I/O module [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 32-port 10-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 48-port 1- and 10-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 48-port 1-Gigabit Ethernet I/O module [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 48-port 1-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 48-port 10/100/1000 Ethernet I/O module [138, 148, 228](#)
    - power requirements [148](#)
    - RJ-45 connectors [228](#)
    - weight [138](#)
  - 48-port 10/100/1000 Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 6-kW AC power supply unit [128, 130, 132, 138, 249](#)
    - LEDs [249](#)
    - troubleshooting [128, 130, 132](#)
    - weight [138](#)
  - 6-kW DC power supply unit [128, 130, 132, 138, 249](#)
    - LEDs [249](#)
    - troubleshooting [128, 130, 132](#)
  - 6-kW DC power supply unit (*continued*)
    - weight [138](#)
  - 6-port 40-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
  - 7.5-kW AC power supply unit [128, 130, 132, 138, 249](#)
    - LEDs [249](#)
    - troubleshooting [128, 130, 132](#)
    - weight [138](#)
  - 8-port 10-Gigabit Ethernet I/O module with XL [138, 148](#)
    - power requirements [148](#)
    - weight [138](#)
- ### A
- air filter [36, 92](#)
    - installation (Cisco Nexus 7004) [36](#)
    - installation (Cisco Nexus 7010) [92](#)
  - air-intake frame installation [59, 114](#)
    - Cisco Nexus 7009 [59](#)
    - Cisco Nexus 7018 [114](#)
  - airflow [201](#)
    - Cisco Nexus 7009 [201](#)
    - Cisco Nexus 7010 [201](#)
    - Cisco Nexus 7018 [201](#)
- ### B
- bottom-support rails, installing [40, 72, 96](#)
    - Cisco Nexus 7009 [40](#)
    - Cisco Nexus 7010 [72](#)
    - Cisco Nexus 7018 [96](#)
- ### C
- cabinet [26, 32, 38, 42, 45, 54, 70, 73, 79, 94, 97, 104](#)
    - bolting [26, 38, 70, 94](#)
      - Cisco Nexus 7004 [26](#)
      - Cisco Nexus 7009 [38](#)
      - Cisco Nexus 7010 [70](#)
      - Cisco Nexus 7018 [94](#)
    - grounding [32, 54, 79, 104](#)
      - Cisco Nexus 7004 [32](#)
      - Cisco Nexus 7009 [54](#)

- cabinet (*continued*)
  - grounding (*continued*)
    - Cisco Nexus 7010 **79**
    - Cisco Nexus 7018 **104**
  - set up **26, 38, 70, 94**
    - Cisco Nexus 7004 **26**
    - Cisco Nexus 7009 **38**
    - Cisco Nexus 7010 **70**
    - Cisco Nexus 7018 **94**
  - shelf brackets **42, 45, 73, 97**
    - Cisco Nexus 7009 center-mount **45**
    - Cisco Nexus 7009 front-mount **42**
    - Cisco Nexus 7010 **73**
    - Cisco Nexus 7018 **97**
- cable management assembly installation **34, 58, 108**
  - Cisco Nexus 7004 **34**
  - Cisco Nexus 7009 **58**
  - Cisco Nexus 7018 **108**
- center-mount bottom-support rails **40**
- chassis **1, 4, 8, 15, 26, 28, 39, 47, 71, 75, 95, 99, 138, 187, 191, 197, 199, 201**
  - airflow **201**
  - Cisco Nexus 7004 **138**
    - weight **138**
  - Cisco Nexus 7009 **138**
    - weight **138**
  - Cisco Nexus 7010 **138**
    - weight **138**
  - Cisco Nexus 7018 **138**
    - weight **138**
  - clearance inside rack **187, 191, 197, 199**
    - Cisco Nexus 7004 **187**
    - Cisco Nexus 7009 **191**
    - Cisco Nexus 7010 **197**
    - Cisco Nexus 7018 **199**
  - clearance outside rack **187, 191, 197, 199**
    - Cisco Nexus 7004 **187**
    - Cisco Nexus 7009 **191**
    - Cisco Nexus 7010 **197**
    - Cisco Nexus 7018 **199**
  - inspecting **26, 39, 71, 95**
    - Cisco Nexus 7004 **26**
    - Cisco Nexus 7009 **39**
    - Cisco Nexus 7010 **71**
    - Cisco Nexus 7018 **95**
  - installing **28, 47, 75, 99**
    - Cisco Nexus 7004 **28**
    - Cisco Nexus 7009 **47**
    - Cisco Nexus 7010 **75**
    - Cisco Nexus 7018 **99**
  - mounting on rack **1, 4, 8, 15**
    - Cisco Nexus 7004 **1**
    - Cisco Nexus 7009 **4**
    - Cisco Nexus 7010 **8**
    - Cisco Nexus 7018 **15**
- Cisco Nexus 7004 **1, 4, 8, 15, 28, 138, 187**
  - chassis, installing **28**
  - clearances **187**
  - component weights **138**
  - components **1**
  - equipment **1**
  - installation **28**
  - NAM **1, 4, 8, 15**
  - overview **1**
- Cisco Nexus 7009 **1, 4, 47, 58–59, 138, 148, 191, 201**
  - airflow **201**
  - cable management assembly installation **58**
  - chassis dimensions **138**
  - chassis weight **138**
  - chassis, installing **47**
  - clearances **191**
  - component power requirements **148**
  - component weights **138**
  - components **4**
  - door installation **59**
  - equipment **4**
  - installation **47**
  - mounting on a rack **1, 4**
  - overview **4**
  - power specifications **148**
- Cisco Nexus 7010 **8, 75, 85, 138, 148, 197, 201**
  - airflow **201**
  - chassis dimensions **138**
  - chassis weight **138**
  - chassis, installing **75**
  - clearances **197**
  - component power requirements **148**
  - component weights **138**
  - components **8**
  - door installation **85**
  - equipment **8**
  - installation **75**
  - mounting on a rack **8**
  - overview **8**
- Cisco Nexus 7018 **15, 99, 108, 114, 138, 148, 199, 201**
  - airflow **201**
  - cable management assembly installation **108**
  - chassis dimensions **138**
  - chassis weight **138**
  - chassis, installing **99**
  - clearances **199**
  - component power requirements **148**
  - component weights **138**
  - components **15**
  - door installation **114**
  - equipment **15**
  - installation **99**
  - mounting on a rack **15**
  - overview **15**

clearances **186–187, 191, 197, 199**

- Cisco Nexus 7004 **187**
  - inside the rack **187**
  - outside the rack **187**

- Cisco Nexus 7009 **191**
  - inside the rack **191**
  - outside the rack **191**

- Cisco Nexus 7010 **197**
  - inside the rack **197**
  - outside the rack **197**

- Cisco Nexus 7018 **199**
  - inside the rack **199**
  - outside the rack **199**

- planning **186**

combined power mode **156**CompactFlash card installation **36, 66, 84, 125**

- Cisco Nexus 7004 **36**
- Cisco Nexus 7009 **66**
- Cisco Nexus 7010 **84**
- Cisco Nexus 7018 **125**

cooling requirements **201**CWDM transceivers **224****D**damage during shipping **26, 39, 71, 95**

- Cisco Nexus 7004 **26**
- Cisco Nexus 7009 **39**
- Cisco Nexus 7010 **71**
- Cisco Nexus 7018 **95**

DC Power Interface Unit **138**

- quantity **138**
- weight **138**

door installation **59, 85, 114**

- Cisco Nexus 7009 **59**
- Cisco Nexus 7010 **85**
- Cisco Nexus 7018 **114**

DWDM transceivers **218, 222, 225****E**electrostatic discharge. See ESD **107**ESD port **34, 57, 82, 107**

- Cisco Nexus 7004 **34**
- Cisco Nexus 7009 **57**
- Cisco Nexus 7010 **82**
- Cisco Nexus 7018 **107**

exhaust area for fan **8**expandable shelf brackets **42, 45, 73, 97**

- Cisco Nexus 7009 center-mount **45**
- Cisco Nexus 7009 front-mount **42**
- Cisco Nexus 7010 **73**
- Cisco Nexus 7018 **97**

expansion flash reader **36, 66, 84, 125****F**fabric fan trays (Cisco Nexus 7010) **138**  
weight **138**fabric modules **4, 8, 15, 134, 138, 148, 248**

- Cisco Nexus 7009 **4, 138, 148**
  - location **4**
  - power requirements **148**
  - weight **138**

- Cisco Nexus 7010 **8, 138, 148**
  - location **8**
  - power requirements **148**
  - weight **138**

- Cisco Nexus 7018 **15, 138, 148**
  - location **15**
  - power requirements **148**
  - weight **138**

LEDs **248**

- location **8**
- troubleshooting **134**

fan exhaust, location **8**fan trays **8, 128, 138, 148, 250**

- Cisco Nexus 7004 **138**
  - weight **138**
- Cisco Nexus 7009 **138, 148**
  - total power requirements **148**
  - weight **138**

- Cisco Nexus 7010 **138, 148**
  - total power requirements **148**
  - weight (total) **138**

- Cisco Nexus 7018 **138, 148**
  - power requirements **148**
  - weight **138**

fabric, location **8**LEDs **250**

- system, location **8**
- troubleshooting **128**

flash memory installation **36, 66, 84, 125**

- Cisco Nexus 7004 **36**
- Cisco Nexus 7009 **66**
- Cisco Nexus 7010 **84**
- Cisco Nexus 7018 **125**

front-mount bottom-support rails **40****G**grounding **32, 54, 79, 104**

- Cisco Nexus 7004 **32**
- Cisco Nexus 7009 **54**
- Cisco Nexus 7010 **79**
- Cisco Nexus 7018 **104**

grounding pad **33, 55, 80, 105**

- Cisco Nexus 7004 **33**
- Cisco Nexus 7009 **55**
- Cisco Nexus 7010 **80**
- Cisco Nexus 7018 **105**

grounding port **33, 55, 80, 105**  
 Cisco Nexus 7004 **33**  
 Cisco Nexus 7009 **55**  
 Cisco Nexus 7010 **80**  
 Cisco Nexus 7018 **105**

I/O modules **8, 15, 135, 138, 148, 246**  
 Cisco Nexus 7009 **138, 148**  
   power requirements **148**  
   weights **138**  
 Cisco Nexus 7010 **138, 148**  
   power requirements **148**  
   weights **138**  
 Cisco Nexus 7018 **138, 148**  
   power requirements **148**  
   weights **138**  
 LEDs **246**  
 location **8, 15**  
   Cisco Nexus 7010 **8**  
   Cisco Nexus 7018 **15**  
 troubleshooting **135**  
 input-source power redundancy **156**  
 inspecting the shipped switch **26, 39, 71, 95**  
 Cisco Nexus 7004 **26**  
 Cisco Nexus 7009 **39**  
 Cisco Nexus 7010 **71**  
 Cisco Nexus 7018 **95**  
 installation **25, 37, 69, 93, 127**  
 Cisco Nexus 7004 **25**  
 Cisco Nexus 7009 **37**  
 Cisco Nexus 7010 installation **69**  
   Cisco Nexus 7010 **69**  
 Cisco Nexus 7018 **93**  
 tools for Cisco Nexus 7009 **37**  
 tools for Cisco Nexus 7010 **69**  
 tools for Cisco Nexus 7018 **93**  
 troubleshooting **127**

## L

LEDs **243, 250**  
 fan trays **250**  
 STATUS (fan tray) **250**  
 system **243**  
 log flash reader **36, 66, 84, 125**

## M

missing components **26, 39, 71, 95**  
 Cisco Nexus 7004 **26**  
 Cisco Nexus 7009 **39**  
 Cisco Nexus 7010 **71**  
 Cisco Nexus 7018 **95**

modules **8**  
 fabric, locations **8**

## N

NAM **1, 4, 8, 15**  
 Cisco Nexus 7004 **1, 4, 8, 15**

## P

physical specifications **138**  
 power availability **156**  
 power modes **156**  
   combined **156**  
   full redundancy **156**  
   input-source redundancy **156**  
   power supply redundancy **156**  
 power requirements **148**  
 2-port 100-Gigabit Ethernet I/O module with XL **148**  
 24-port 10-Gigabit Ethernet I/O module with XL **148**  
 32-port 1- and 10-Gigabit Ethernet I/O module **148**  
 32-port 10-Gigabit Ethernet I/O module **148**  
 32-port 10-Gigabit Ethernet I/O module with XL **148**  
 48-port 1- and 10-Gigabit Ethernet I/O module **148**  
 48-port 1- and 10-Gigabit Ethernet I/O module with XL **148**  
 48-port 1-Gigabit Ethernet I/O module **148**  
 48-port 1-Gigabit Ethernet I/O module with XL **148**  
 48-port 10/100/1000 Ethernet I/O module **148**  
 48-port 10/100/1000 Ethernet I/O module with XL **148**  
 6-port 40-Gigabit Ethernet I/O module with XL **148**  
 8-port 10-Gigabit Ethernet I/O module with XL **148**  
 Cisco Nexus 7009 **148**  
   supervisor modules **148**  
 Cisco Nexus 7010 **148**  
   supervisor modules **148**  
 fabric modules **148**  
   Cisco Nexus 7009 **148**  
   Cisco Nexus 7010 **148**  
   Cisco Nexus 7018 **148**  
 fan tray **148**  
   Cisco Nexus 7009 **148**  
   Cisco Nexus 7010 **148**  
   Cisco Nexus 7018 **148**  
   supervisor modules **148**  
 power specifications **148**  
   Cisco Nexus 7009 **148**  
 power supply ground **32, 54, 79, 104**  
   Cisco Nexus 7004 **32**  
   Cisco Nexus 7009 **54**  
   Cisco Nexus 7010 **79**  
   Cisco Nexus 7018 **104**  
 power supply redundancy **156**  
   modes **156**  
 power supply units **8, 128, 130, 132, 138**  
   location **8**



power supply units (*continued*)  
 troubleshooting **128, 130, 132**  
 weights **138**

## R

rack **1, 4, 8, 15, 26, 32, 38, 42, 45, 54, 70, 73, 79, 94, 97, 104**

bolting **26, 38, 70, 94**

Cisco Nexus 7004 **26**

Cisco Nexus 7009 **38**

Cisco Nexus 7010 **70**

Cisco Nexus 7018 **94**

grounding **32, 54, 79, 104**

Cisco Nexus 7004 **32**

Cisco Nexus 7009 **54**

Cisco Nexus 7010 **79**

Cisco Nexus 7018 **104**

set up **26, 38, 70, 94**

Cisco Nexus 7004 **26**

Cisco Nexus 7009 **38**

Cisco Nexus 7010 **70**

Cisco Nexus 7018 **94**

shelf brackets **42, 45, 73, 97**

Cisco Nexus 7009 center-mount **45**

Cisco Nexus 7009 front-mount **42**

Cisco Nexus 7010 **73**

Cisco Nexus 7018 **97**

RJ-45 module connectors **228**

## S

safety **23**

service modules **1, 4, 8, 15, 138**

Cisco Nexus 7004 **1, 4, 8, 15, 138**

weight **138**

Cisco Nexus 7009 **138**

weight **138**

Cisco Nexus 7010 **138**

weight **138**

Cisco Nexus 7018 **138**

weight **138**

SFP transceivers **223**

SFP+ transceivers **213, 218**

shelf brackets **42, 45, 73, 97**

Cisco Nexus 7009 center-mount **45**

Cisco Nexus 7009 front-mount **42**

Cisco Nexus 7010 **73**

Cisco Nexus 7018 **97**

site preparation checklist **251**

STATUS LED (fan tray) **250**

supervisor modules **1, 4, 8, 15, 133, 138, 148, 244**

Cisco Nexus 7004 **1, 138**

location **1**

weight **138**

supervisor modules (*continued*)

Cisco Nexus 7009 **4, 138, 148**

location **4**

power requirements **148**

weight **138**

Cisco Nexus 7010 **8, 138, 148**

location **8**

power requirements **148**

weight **138**

Cisco Nexus 7018 **15, 138, 148**

location **15**

power requirements **148**

weight **138**

LEDs **244**

troubleshooting **133**

switch clearances **186**

switches **26, 39, 71, 95**

unpacking **26, 39, 71, 95**

Cisco Nexus 7004 **26**

Cisco Nexus 7009 **39**

Cisco Nexus 7010 **71**

Cisco Nexus 7018 **95**

system fan trays (Cisco Nexus 7010) **138**

weight **138**

system grounding **32, 54, 79, 104**

Cisco Nexus 7004 **32**

Cisco Nexus 7009 **54**

Cisco Nexus 7010 **79**

Cisco Nexus 7018 **104**

system LEDs **243**

## T

tools **25, 37, 69, 93**

installation **25, 37, 69, 93**

Cisco Nexus 7004 **25**

Cisco Nexus 7009 **37**

Cisco Nexus 7010 **69**

Cisco Nexus 7018 **93**

transceivers **213, 218, 222–226**

1000BASE-CWDM SFP **224**

1000BASE-DWDM SFP **218, 222, 225**

1000BASE-LX **226**

1000BASE-SX **226**

1000BASE-T **226**

1000BASE-X **226**

1000BASE-ZX **226**

SFP **223**

SFP+ **213, 218**

troubleshooting **127–128, 130, 132–135**

AC power supply units **128, 132**

Cisco Nexus 7000 Series **127**

DC power supply units **130**

fabric modules **134**

fan trays **128**

I/O modules **135**

troubleshooting (*continued*)

supervisor modules [133](#)

## W

weight [138](#)

Cisco Nexus 7004 [138](#)

2-port 100-Gigabit Ethernet I/O module with XL [138](#)

24-port 10-Gigabit Ethernet I/O module with XL [138](#)

32-port 10-Gigabit Ethernet I/O module with XL [138](#)

48-port 1-Gigabit Ethernet I/O module with XL [138](#)

48-port 10/100/1000 Ethernet I/O module with XL [138](#)

6-KW AC power supply unit [138](#)

6-KW DC power supply unit [138](#)

6-port 40-Gigabit Ethernet I/O module with XL [138](#)

8-port 10-Gigabit Ethernet I/O module with XL [138](#)

chassis [138](#)

supervisor modules [138](#)

system fan trays [138](#)

Cisco Nexus 7009 [138](#)

2-port 100-Gigabit Ethernet I/O module with XL [138](#)

24-port 10-Gigabit Ethernet I/O module with XL [138](#)

32-port 1- and 10-Gigabit Ethernet I/O module [138](#)

32-port 10-Gigabit Ethernet I/O module [138](#)

32-port 10-Gigabit Ethernet I/O module with XL [138](#)

48-port 1-Gigabit Ethernet I/O module [138](#)

48-port 1-Gigabit Ethernet I/O module with XL [138](#)

48-port 10/100/1000 Ethernet I/O module [138](#)

48-port 10/100/1000 Ethernet I/O module with XL [138](#)

6-KW AC power supply unit [138](#)

6-KW DC power supply unit [138](#)

6-port 40-Gigabit Ethernet I/O module with XL [138](#)

7.5-KW AC power supply unit [138](#)

8-port 10-Gigabit Ethernet I/O module with XL [138](#)

fabric modules [138](#)

supervisor modules [138](#)

system fan trays [138](#)

Cisco Nexus 7010 [138](#)

2-port 100-Gigabit Ethernet I/O module with XL [138](#)

24-port 10-Gigabit Ethernet I/O module with XL [138](#)

weight (*continued*)

Cisco Nexus 7010 (*continued*)

32-port 1- and 10-Gigabit Ethernet I/O module [138](#)

32-port 10-Gigabit Ethernet I/O module [138](#)

32-port 10-Gigabit Ethernet I/O module with XL [138](#)

48-port [138](#)

48-port 1-Gigabit Ethernet I/O module [138](#)

48-port 1-Gigabit Ethernet I/O module with XL [138](#)

48-port 10/100/1000 Ethernet I/O module [138](#)

48-port 10/100/1000 Ethernet I/O module with XL [138](#)

6-KW AC power supply unit [138](#)

6-KW DC power supply unit [138](#)

6-port 40-Gigabit Ethernet I/O module with XL [138](#)

7.5-KW AC power supply unit [138](#)

8-port 10-Gigabit Ethernet I/O module with XL [138](#)

fabric fan trays [138](#)

fabric modules [138](#)

supervisor modules [138](#)

system fan trays [138](#)

Cisco Nexus 7018 [138](#)

32-port 10-Gigabit Ethernet I/O module [138](#)

32-port 10-Gigabit Ethernet I/O module with XL [138](#)

48-port 1-Gigabit Ethernet I/O module [138](#)

48-port 1-Gigabit Ethernet I/O module with XL [138](#)

48-port 10/100/1000 Ethernet I/O module [138](#)

48-port 10/100/1000 Ethernet I/O module with XL [138](#)

6-KW AC power supply unit [138](#)

6-KW DC power supply unit [138](#)

7.5-KW AC power supply unit [138](#)

8-port 10-Gigabit Ethernet I/O module with XL [138](#)

fabric modules [138](#)

fan trays [138](#)

supervisor modules [138](#)

DC Power Interface Unit [138](#)

service modules [138](#)

Cisco Nexus 7004 [138](#)

Cisco Nexus 7009 [138](#)

Cisco Nexus 7010 [138](#)

Cisco Nexus 7018 [138](#)

supervisor modules [138](#)