



Cisco Network Convergence System 4000 Series Unpacking, Moving and Securing Guide

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Preface

This guide provides instructions for unpacking the Cisco Network Convergence System (NCS) 4016 chassis and its components, moving the chassis to its permanent location, and mounting the chassis in a rack.

- [Audience, on page v](#)
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- [Obtaining Documentation and Submitting a Service Request, on page vii](#)

Audience

This document is intended for those who unpack the Cisco NCS 4016 chassis and Cisco installation partners who are responsible for moving and securing the Cisco NCS 4016 chassis. No additional knowledge of routing or the Cisco IOS XR software is assumed.

Conventions

This document uses the following conventions:

Convention	Indication
bold font	Commands and keywords and user-entered text appear in bold font .
<i>italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
[]	Elements in square brackets are optional.
{x y z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Convention	Indication
courier font	Terminal sessions and information the system displays appear in courier 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.



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



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



Timesaver Means *the described action saves time* . You can save time by performing the action described in the paragraph.



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



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



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

Related Documentation

For complete planning and installation information, see the following documents:

- Cisco Network Convergence System 4000 Series Hardware Installation Guide

- Regulatory Compliance and Safety Information for the Cisco Network Convergence System 4000 Series Chassis

Changes to This Document

Table 1: [Changes to This Document](#) , on page vii lists the technical changes made to this document since it was first created.

Table 1: Changes to This Document

Date	Change Summary
May 2015	Initial release of this document.

Obtaining Documentation and Submitting a Service Request

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

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CHAPTER 1

Overview

This chapter provides pertinent information that you should know about the Cisco NCS 4016 chassis before unpacking and moving it into a rack.

The Cisco NCS 4016 chassis contains two slots for route processor (RP) cards, sixteen slots for line cards (LC), and four slots for fabric cards (FC). The Cisco NCS 4016 chassis is rack mountable. It is compatible with the following standard rail spacing:

- ANSI 19-inch or 23-inch (2 or 4-post)
- ETSI



Note For the ANSI 19-inch rack, the minimum front opening must be 17.72 inches (450 mm) to allow for chassis insertion.

- [Chassis Packaging, on page 1](#)
- [Verifying the Securing Location, on page 2](#)
- [Safety Guidelines, on page 3](#)

Chassis Packaging

The Cisco NCS 4016 chassis arrives on the primary system pallet with a label that describes the contents. Cards are shipped on a separate card pallet. The complete details on the contents of each pallet reflect the customer's sale order, which is reported on the parts identification label on the pallet or shipping manifest.

The primary system pallet contains the chassis, which is covered with a corrugated shipper packing crate held together with plastic bands.

The chassis is shipped with the following components already installed:

- Fan trays
- Power trays (AC or DC)
- Power modules
- External connection unit (ECU)
- Craft panel
- Cosmetic door



Note The RP, LC, and FC card slots are populated with filler cards.

The card pallet contains the route processor cards (RPs), fabric cards (FCs), and line cards (LCs).

The Cisco NCS 4016 chassis is shipped in a double-wall carton on a standard shipping pallet. Always transport the chassis in its original packaging and make sure that the system is transported and stored in an upright position. If you plan to store system components before the installation, be sure to store the components carefully and in their original shipping containers to prevent accidental damage.

Verifying the Securing Location

Before moving the chassis into position, make sure that you have properly prepared the site so that there is sufficient room for installation and maintenance. Verifying the recommended space ensures that you have enough space available to perform the initial installation of the chassis and its components.

The floor plan for the Cisco NCS 4016 chassis must include enough space to install the chassis in the equipment rack and allow sufficient airflow for the system. The floor plan must also provide enough room to access chassis components for maintenance (for example, to remove fan trays, power modules, cables, and air filters).

For chassis installation, make sure that enough room exists in front of the chassis to accommodate installation personnel and the lifting device used to hold the chassis in the rack while it is bolted to the rack.

Front and Rear Clearances

The site requires the following front and rear clearances for chassis installation and maintenance access:

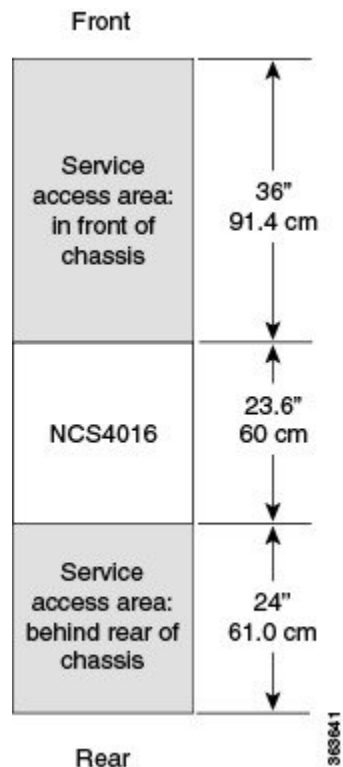
- To install the chassis in the equipment rack: approximately 23.6 inches (60 cm)
- To service components and allow system airflow in front of the chassis: 36 inches (91.4 cm)
- To service components and allow system airflow behind the chassis: 24 inches (61 cm)

If the chassis is installed in a cabinet with doors, note the following restrictions:

- The chassis can be placed in a cabinet with the front and rear doors at least 80% open in front of the inlet and exhaust openings of the chassis.
- The distance between the inlet/exhaust and the door can be as small as 6 inches, but the door should be facing to an open aisle.
- A foot of clearance at front and back should be maintained from the inlet/exhaust and a solid object.

The following figure shows the service area flooring in a lab from the top of the chassis.

Figure 1: Cisco Lab Service Area—Top View



For details on making your site ready for the chassis, see the Regulatory Compliance and Safety Information for the Cisco Network Convergence System 4000 Series Chassis.

Safety Guidelines



Caution Before you perform any procedure in this document, review the safety guidelines in this section to avoid injuring yourself or damaging the equipment.

The following guidelines are for your safety and to protect equipment. Guidelines do not include all hazards. Be alert.



Note Review the safety warnings listed in Regulatory Compliance and Safety Information for the Cisco NCS Network Convergence System 4000 Series before installing, configuring, or troubleshooting any installed card.

- Never attempt to lift an object that might be too heavy for you to lift by yourself.
- Keep the work area clear and dust free during and after installation. Do not allow dirt or debris to enter into any laser-based components.
- Keep tools and chassis components away from walk areas.

- Do not wear loose clothing, jewelry, and other items that could get caught in the chassis while working with the chassis and its associated components.
- Use Cisco equipment in accordance with its specifications and product-usage instructions.
- Do not work alone if potentially hazardous conditions exist.

Preventing Electrostatic Discharge

Electrostatic discharge (ESD) damage, which can occur when electronic cards or components are improperly handled, results in complete or intermittent failures. We recommend use of an ESD-preventive strap whenever you handle network equipment or one of its components.

Follow these guidelines for preventing ESD damage:

- Always use an ESD-preventive wrist or ankle strap, and ensure that it makes good skin contact. Connect the equipment end of the connection cord to an ESD jack or bare metal surface on the chassis.
- Handle a card by its ejector levers, when applicable, or its metal carrier only; avoid touching the board or connector pins.
- Place a removed card board side up on an antistatic surface or in a static-shielding bag. If you plan to return the component to the factory, immediately place it in a static-shielding bag.
- Avoid contact between the card and clothing. The wrist strap protects the board from only ESD voltage on the body; ESD voltage on clothing can still cause damage.



Caution

When unpacking and setting parts aside, it is important to set them either in their original antistatic packaging or on an antistatic mat to avoid ESD damage.



CHAPTER 2

Unpacking the Chassis

This chapter describes how to unpack the Cisco NCS 4016 chassis.



Caution Use the complete Cisco Systems packaging for shipment of product or components. Failure to properly use Cisco packaging may result in damage or loss of the product.

- [Unpacking the Chassis, on page 5](#)

Unpacking the Chassis

The chassis is shipped on a pallet by itself and is enclosed in a corrugated box, held in place by plastic bands.

Prerequisites

Before performing this task, be sure to have sufficient room around the chassis pallet for unpacking.

Required Tools and Equipment

- Cutters to cut strapping (plastic bands)

Steps

To unpack the Cisco NCS 4016 chassis, follow these steps:

SUMMARY STEPS

1. Carefully move the pallet containing the Cisco NCS 4016 chassis to the staging area where you plan on unpacking it.
2. Cut the plastic bands holding the chassis shipping box in place.
3. Remove the six plastic clips on the outer sleeve using a flat head screw driver.
4. Remove the accessories, corrugated accessory tray and the top foam cap.
5. Leave the chassis on the pallet until you are ready to move and install the chassis in a rack.

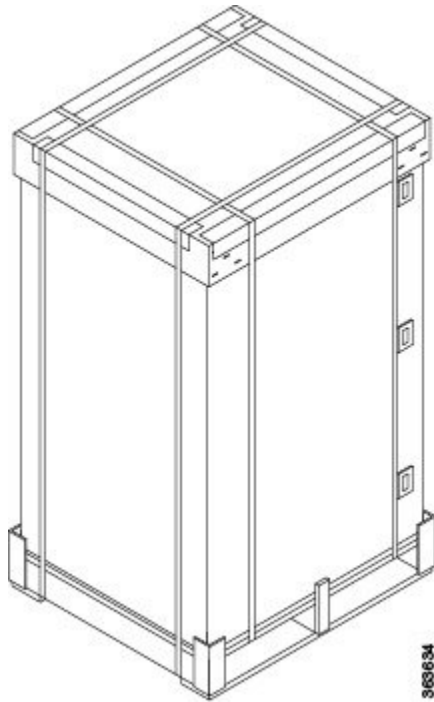
DETAILED STEPS

Step 1 Carefully move the pallet containing the Cisco NCS 4016 chassis to the staging area where you plan on unpacking it.

Caution The Cisco NCS 4016 chassis with pallet should be handled carefully to eliminate the risk of tipping over the package.

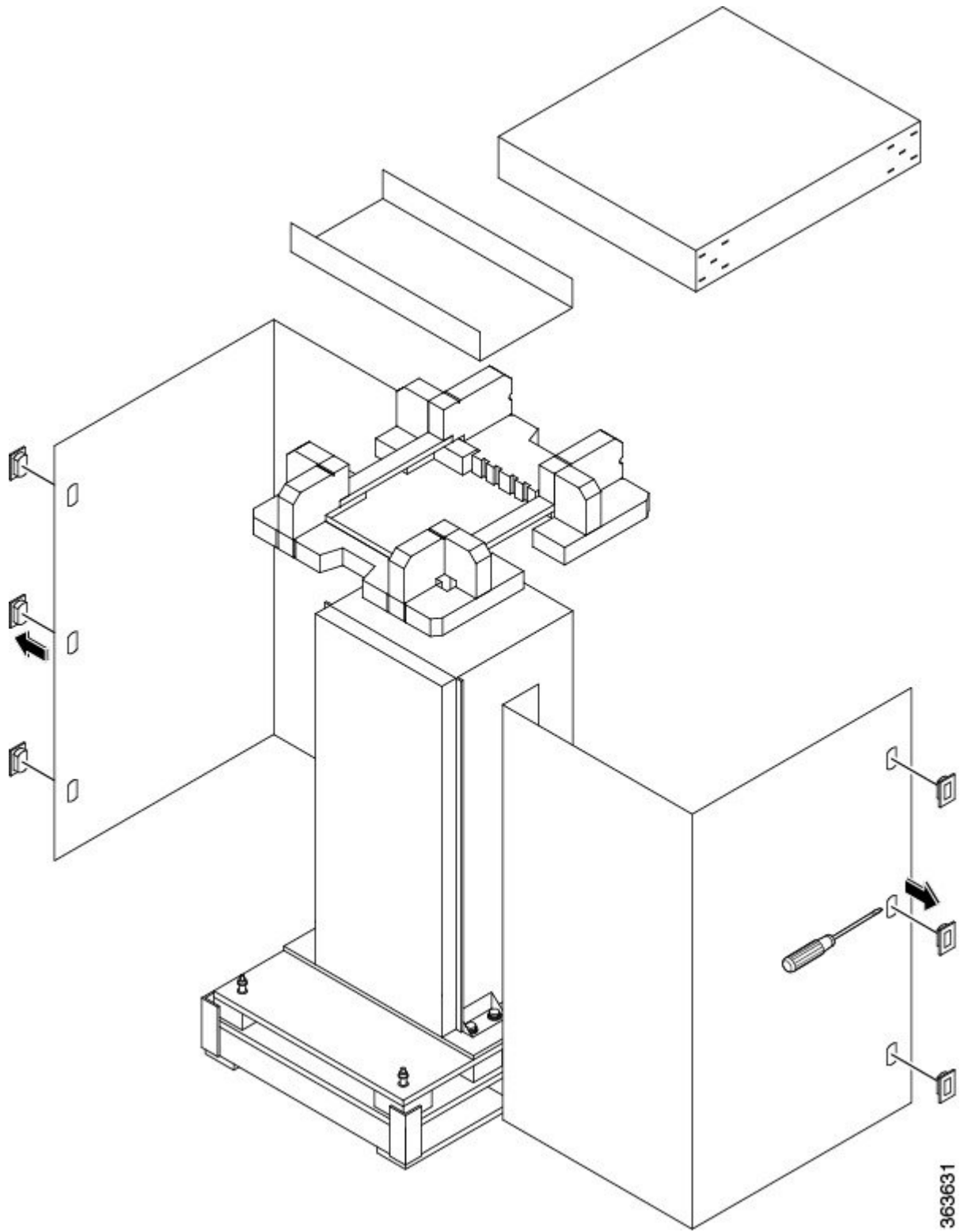
Step 2 Cut the plastic bands holding the chassis shipping box in place.

Figure 2: Chassis Shipping Box



Step 3 Remove the six plastic clips on the outer sleeve using a flat head screw driver.

Figure 3: Chassis in Original Packaging



Step 4 Remove the accessories, corrugated accessory tray and the top foam cap.

Step 5 Leave the chassis on the pallet until you are ready to move and install the chassis in a rack.

Tip Be sure to save the packaging in case you need to return any of the components.

What to do next

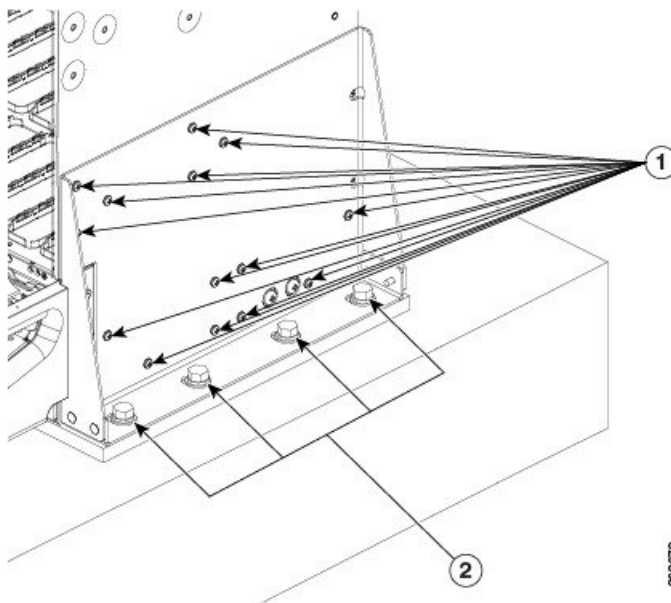
What to Do Next

After performing this task, go to the [Removing the Chassis from the Pallet, on page 8](#).

Removing the Chassis from the Pallet

This procedure describes how to remove the support brackets that secure the chassis to the pallet.

Figure 4: Hardware Locations for Support Brackets



1	28 M4 screws (14 on each side)	2	8 bolts with washers (4 on each side)
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Required Tools and Equipment

- Number 1 and number 2 Phillips screwdrivers
- 3/8-in. socket wrench or 3/8-in. drive ratchet wrench

Steps

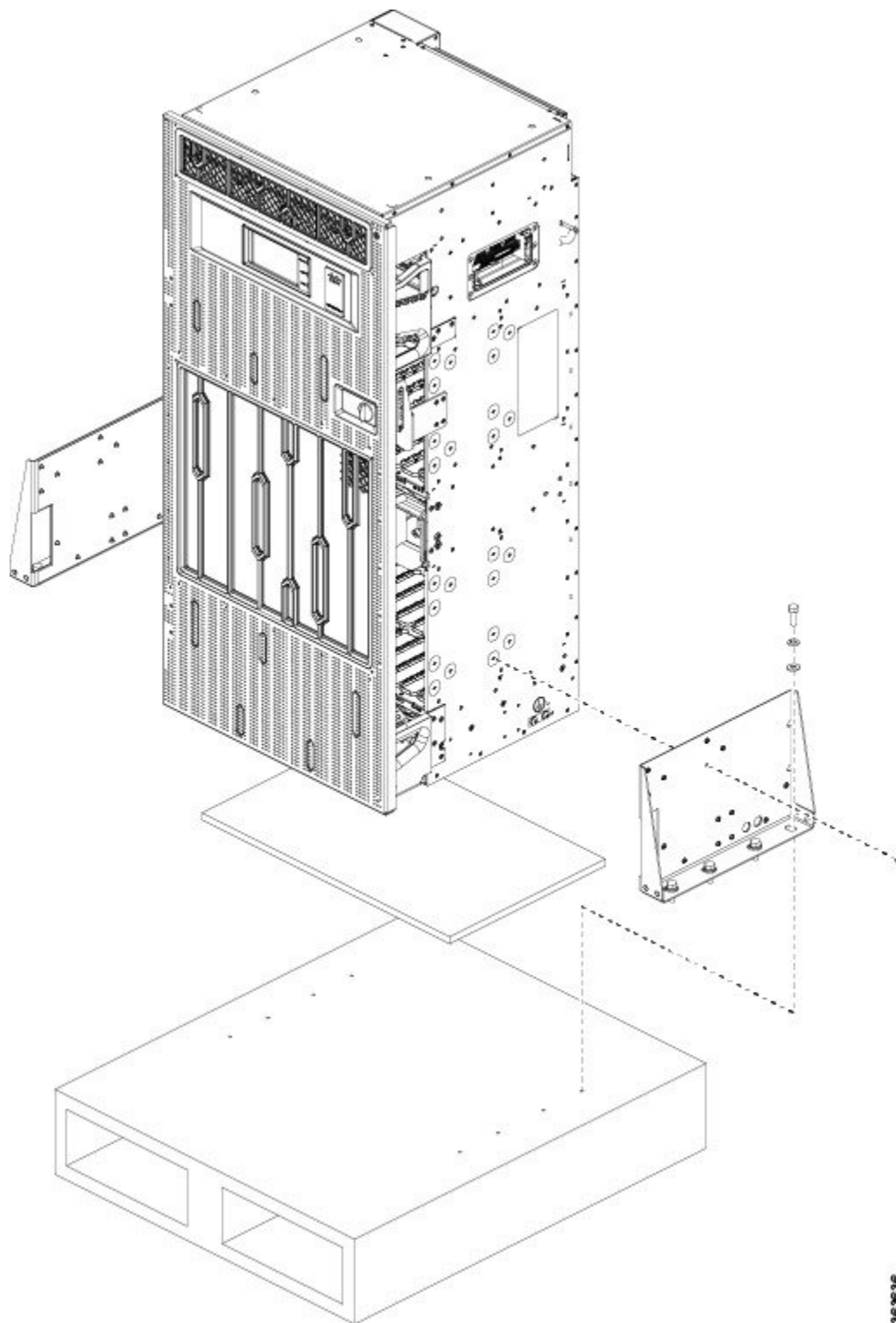
To remove the chassis from the pallet and then transfer the chassis to a moving device, follow these steps:

SUMMARY STEPS

1. Using the Phillips #2 screwdriver, remove the fourteen M4 screws that connect the right support bracket to the chassis.
2. Using the 3/8-in. socket wrench, remove the 4 hex cap bolts that connect the right support bracket to the pallet.
3. Set the support bracket aside carefully.
4. Repeat Step 1 through Step 3 for the left support bracket.

DETAILED STEPS

- Step 1** Using the Phillips #2 screwdriver, remove the fourteen M4 screws that connect the right support bracket to the chassis.

Figure 5: Removing the Chassis Support Brackets

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Step 2 Using the 3/8-in. socket wrench, remove the 4 hex cap bolts that connect the right support bracket to the pallet.

- Step 3** Set the support bracket aside carefully.
- Step 4** Repeat Step 1 through Step 3 for the left support bracket.
-

What to do next

What to Do Next

After you have removed the support brackets that secure the chassis to the pallet, go to the [Transferring the Chassis to a Mechanical Lifting Device, on page 13](#).



CHAPTER 3

Moving the Cisco NCS 4016 Chassis

This section describes the procedures required to move the Cisco NCS 4016 chassis to its final location. This section contains the following topics:



Note The installation of a Cisco NCS 4016 chassis may require space, floor loading, power, and cooling modifications to your facility. Site planning should have been performed well in advance of the scheduled delivery of your system. See the Cisco Network Convergence System 4000 Series Site Planning Guide .

- [Transferring the Chassis to a Mechanical Lifting Device, on page 13](#)
- [Moving the Cisco NCS 4016 Chassis, on page 16](#)

Transferring the Chassis to a Mechanical Lifting Device

This section describes how to put the chassis on the lift and transfer the chassis to a lifting device. We recommend that at least two people perform this procedure.



Caution Exercise extreme caution during this procedure. The chassis is unstable when not secured to the pallet or rack. The chassis should always remain upright and should not be bumped or dropped. Because of the high chassis weight, you should not attempt to move or lift it without a mechanical lifting device.

Prerequisites

- Before moving the chassis from the shipping pallet to a lifting device, you must remove the front door.
- Before moving the chassis from the shipping pallet to a lifting device, you must ensure that the filler cards, line cards, route processor cards, and fan trays are properly screwed.

Steps

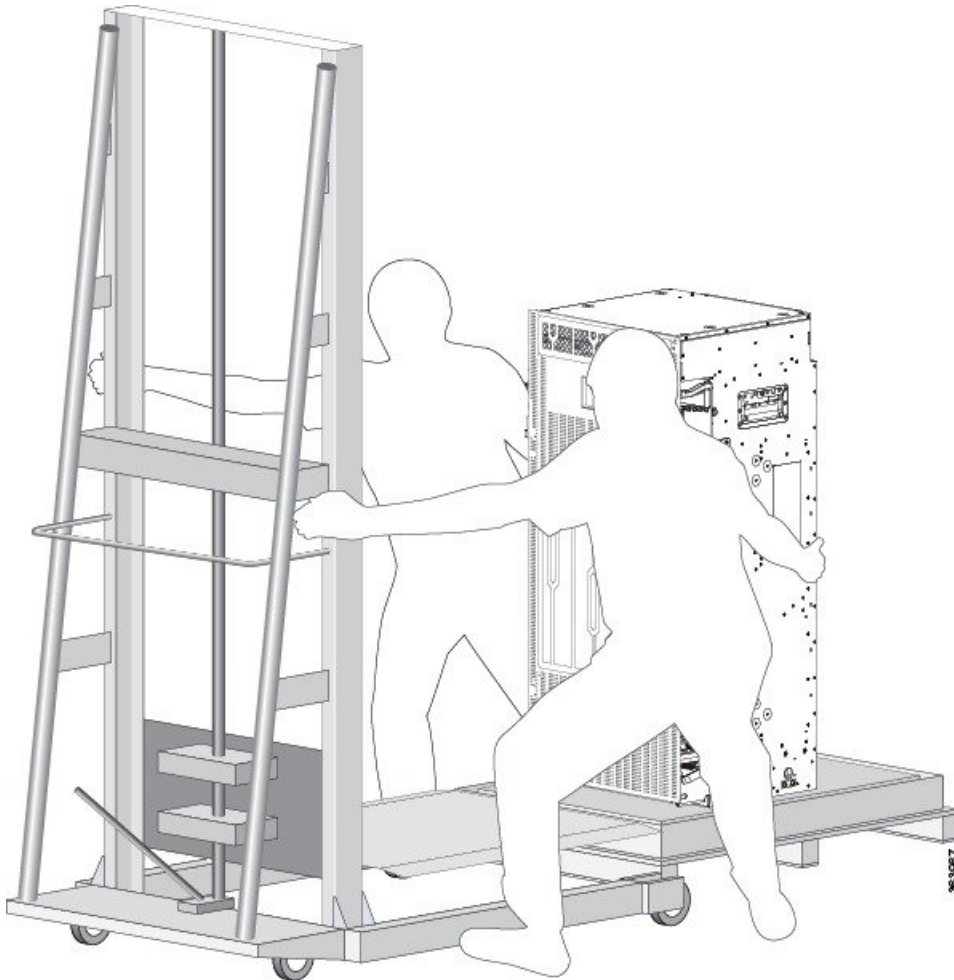
SUMMARY STEPS

1. Place the mechanical lifting device on the side of the chassis on the pallet.
2. Prepare to use the mechanical lifting device by placing a piece of plywood or Masonite on the surface of the lift (to prevent damaging the lower air plenums).
3. With at least two people, move the chassis carefully from the pallet onto the lifting device as shown in the figure, below. The chassis has lifting handles at either side.

DETAILED STEPS

Step 1 Place the mechanical lifting device on the side of the chassis on the pallet.

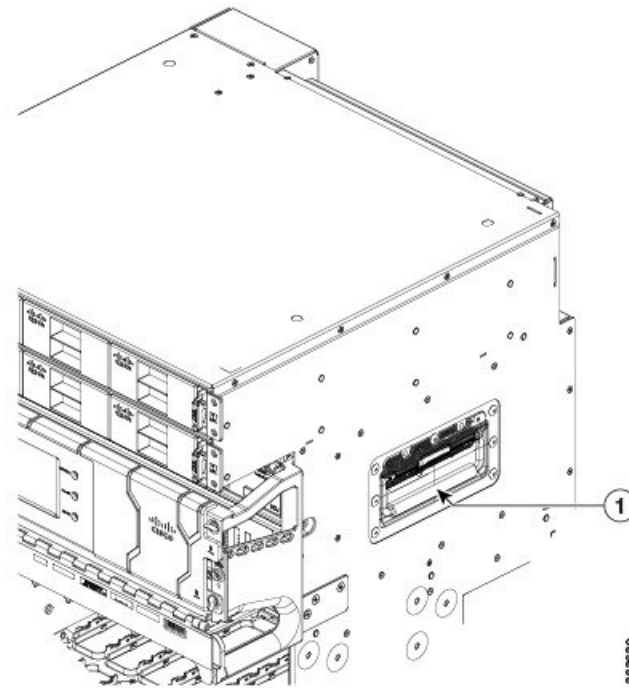
Figure 6: Aligning the Lifting Device in Front of the Chassis on the Pallet



Step 2 Prepare to use the mechanical lifting device by placing a piece of plywood or Masonite on the surface of the lift (to prevent damaging the lower air plenums).

Step 3 With at least two people, move the chassis carefully from the pallet onto the lifting device as shown in the figure, below. The chassis has lifting handles at either side.

Figure 7: Chassis Handle



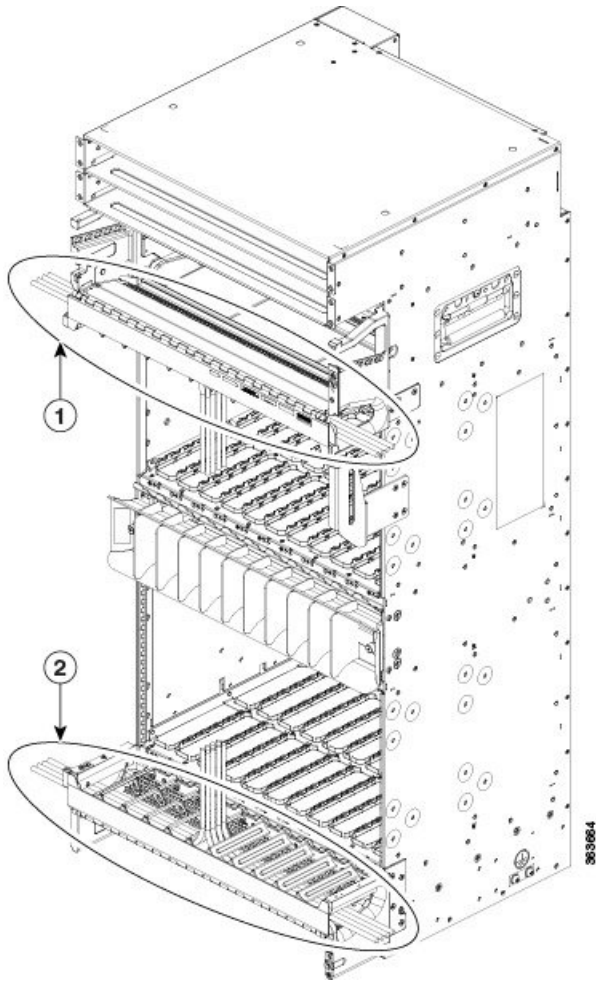
1	Chassis handle
---	----------------

Note Other resources might be required to ensure a safe chassis transfer. We recommend using as many people as required to move the chassis at your site safely. Always follow safety precautions when moving a chassis.

Caution When moving or mounting the chassis, be careful not to apply pressure to the horizontal fiber management areas on the chassis, or they may bend or break.

The figure below, shows the location of the fiber management areas on the chassis.

Figure 8: Location of Fiber Management Areas



1	Fiber management top area	2	Fiber management bottom area
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What to do next

What to Do Next

After performing this task, move the chassis to its final location.

Moving the Cisco NCS 4016 Chassis

This section describes the procedures required to move the Cisco NCS 4016 chassis to its final location. This section contains the following topics:



Note The installation of a Cisco NCS 4016 chassis may require space, floor loading, power, and cooling modifications to your facility. Site planning should have been performed well in advance of the scheduled delivery of your system. See the Cisco Network Convergence System 4000 Series Site Planning Guide .

Moving Guidelines for the Cisco NCS 4016 Chassis

We recommend that at least two people move the as-shipped chassis from the shipping dock to the installation site. Make sure that you have at least three people to transport the chassis up and down a ramp. We also recommend that you leave the as-shipped chassis attached to its pallet for moving. Follow these guidelines:

- Chassis installation location must be identified.
- Packaging should be removed while leaving the chassis firmly secured to the pallet.



Note To ensure that the chassis has proper access to the installation location, see the Cisco Network Convergence System 4000 Series Site Planning Guide .

- Identify the type of suitable moving device that will be used to move the as-shipped chassis from the loading dock or staging area to the installation site.
- Make certain all doorways and hallways are wide and tall enough for the moving the as-shipped chassis. The Cisco NCS 4016 chassis needs an aisle of approximately 60 inches in width.
- Make sure that you have at least one person on each side of the chassis.
- *When transporting the as-shipped chassis on a ramp* , follow these guidelines:
 - Make sure that you have at least three people to transport the chassis up and down a ramp. One person in the rear pushing, one person at the front pulling, and one steering the chassis.
 - Exercise extreme caution when moving chassis up an incline of any angle.



Caution If the route to the installation site has any ramps, use a moving device other than a scissor lift to move the chassis over the ramps, and then transfer the chassis onto a suitable lifting device such as a scissor lift for installation. Leave the filler cards in place in empty card slots while you move or install the chassis in the rack. The filler cards provide support to keep the chassis square during movement and installation.

Moving the Chassis to the Final Location

This section describes how to move the as-shipped Cisco NCS 4016 chassis.



Caution The chassis is shipped with filler cards per the configuration ordered. Leave these in place to maintain chassis stiffness and integrity during moving.

To move the Cisco NCS 4016 chassis to its installation location, follow these steps:

SUMMARY STEPS

1. Make sure you have a suitable lifting device to move the Cisco NCS 4016 chassis.
2. Move the chassis to its installation location.

DETAILED STEPS

Step 1 Make sure you have a suitable lifting device to move the Cisco NCS 4016 chassis.

Step 2 Move the chassis to its installation location.

What to do next**What to Do Next**

After moving the chassis to the room or area where you will install it, begin the procedure to mount the chassis into the rack.



CHAPTER 4

Securing the Chassis

This chapter describes how to secure the Cisco NCS 4016 chassis in the rack.



Note To install two Cisco NCS 4016 chassis in a single rack, you will need to have a minimum vertical opening of 48 RU. If you are using the DC Power Front Connection Adapter, only one chassis will fit into the rack.

- [Preparing the Rack for Chassis Installation, on page 19](#)
- [Preparing to Mount the Chassis in a Rack, on page 21](#)
- [Mounting the Chassis into a Rack, on page 35](#)
- [Attaching the Chassis Door, on page 40](#)
- [Unpacking Chassis Component Shipping Pallets, on page 40](#)

Preparing the Rack for Chassis Installation

Install the Cisco NCS 4016 chassis into one of the following standard racks:

- ANSI 19-inch or 23-inch (2- or 4-post)
- ETSI



Note For the ANSI 19-inch rack, the minimum front opening must be 17.72 inches (450 mm) to allow for chassis insertion.

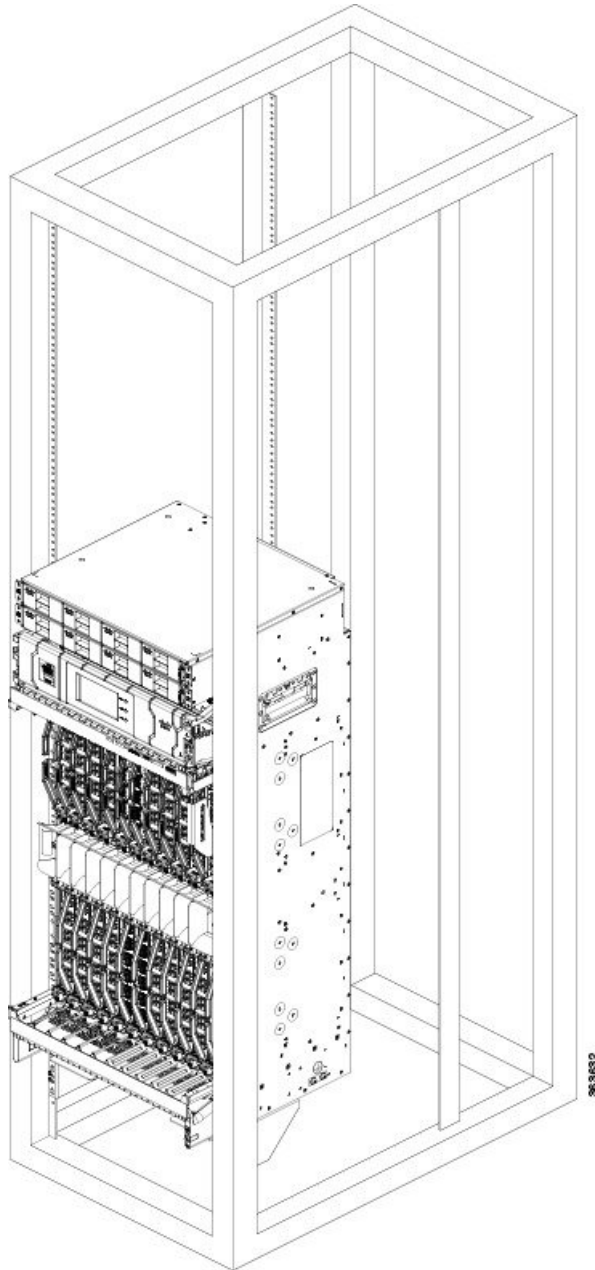
If you are installing a single chassis in a rack, the chassis must go in the middle or bottom portion of the rack or follow your company chassis mounting practices.



Note At the bottom of the rack, keep 1 rack unit free to allow for removal of the bottom fan tray.

To bolt the rack to the floor, a floor bolt kit (also called an *anchor embedment kit*) is required. For information on bolting the rack to the floor, consult a company that specializes in floor mounting kits (such as Hilti; see Hilti.com for details). Make sure that floor mounting bolts are accessible, especially if annual re-torquing of bolts is required.

Figure 9: Single Cisco NCS 4016 Chassis Mounted in Rack



Before you move the chassis or mount the chassis into the rack, we recommend that you do the following:

SUMMARY STEPS

1. Place the rack where you plan to install the Cisco NCS 4016 chassis.
2. Secure the rack to the floor.

DETAILED STEPS

Step 1 Place the rack where you plan to install the Cisco NCS 4016 chassis.

Step 2 Secure the rack to the floor.

Warning The chassis should be mounted on a rack that is permanently affixed to the building. Statement 1049

Preparing to Mount the Chassis in a Rack

Before you mount the Cisco NCS 4016 chassis into a rack, it is critical that the installation site be prepared properly to handle the chassis weight, power requirements, cooling needs, and other requirements.

Because a fully-configured chassis weight can be up to 412 lb (187 kg), you should review the rack specifications from the manufacturer to determine whether the racks you have are appropriate to handle the weight of the chassis. For specifications on the chassis, see *the* Cisco Network Convergence System 4000 Series Hardware Installation Guide .



Caution To avoid tipping the chassis and possible injury when installing it, take care to properly position the chassis in the rack when you are mounting it.

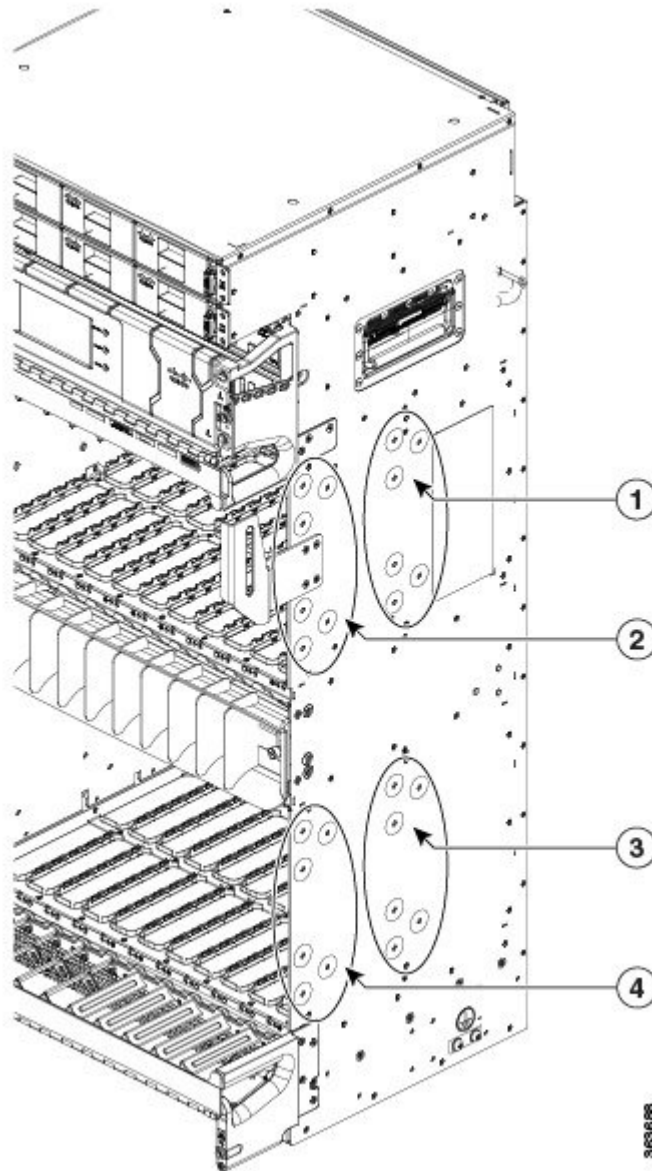
Before mounting the chassis in the rack, perform the following steps:

Installing the Mounting Brackets

This section explains how to install the top and bottom mounting brackets for the specific type of rack you are using.

- For 2-post ANSI racks, the brackets are installed in the middle position.
- For 4-post ANSI racks and ETSI cabinets, the brackets are installed in the front position.

Figure 10: Positioning for Mounting Bracket Installation



1	Top bracket area, middle position	2	Top bracket area, front position
3	Bottom bracket area, middle position	4	Bottom bracket area, front position

Prerequisites

Make sure that you have the correct type of mounting brackets to suit your rack type. There are three different types of mounting brackets for the three types of racks (ANSI 19-inch or 23-inch or ETSI).

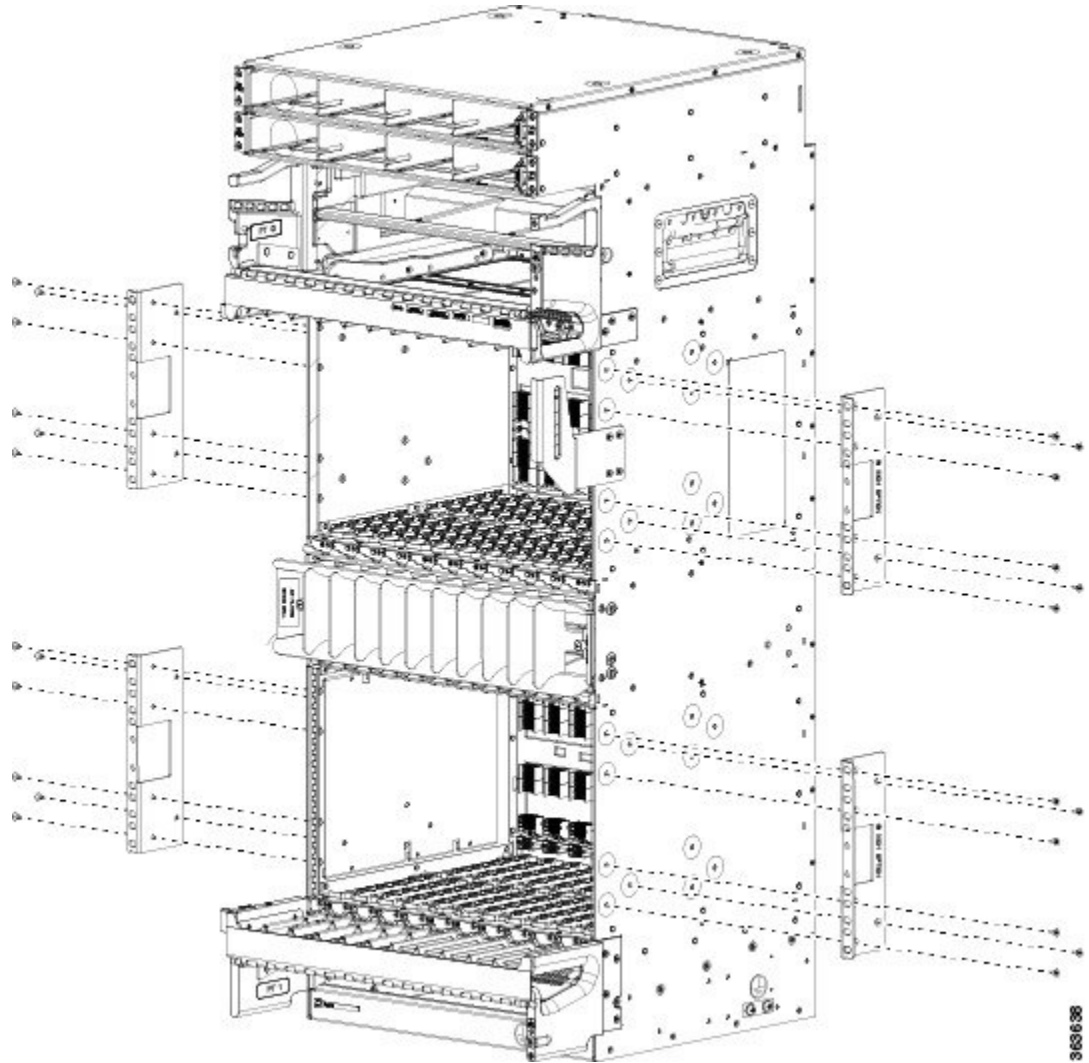
Required Tools and Equipment

- Number 1 Phillips screwdriver
- Cisco NCS 4016 installation kit (NCS4K-INST-KIT=)

Installing the Mounting Brackets

To attach the mounting brackets, simply fix each bracket onto the chassis using six screws as shown in the figure, below.

Figure 11: Attaching Chassis Mounting Brackets



Various types of bracket installation are shown in these illustrations:

Figure 12: Attaching ANSI 19-Inch Brackets to Front (4-Post Rack) or Middle (2-Post Rack)

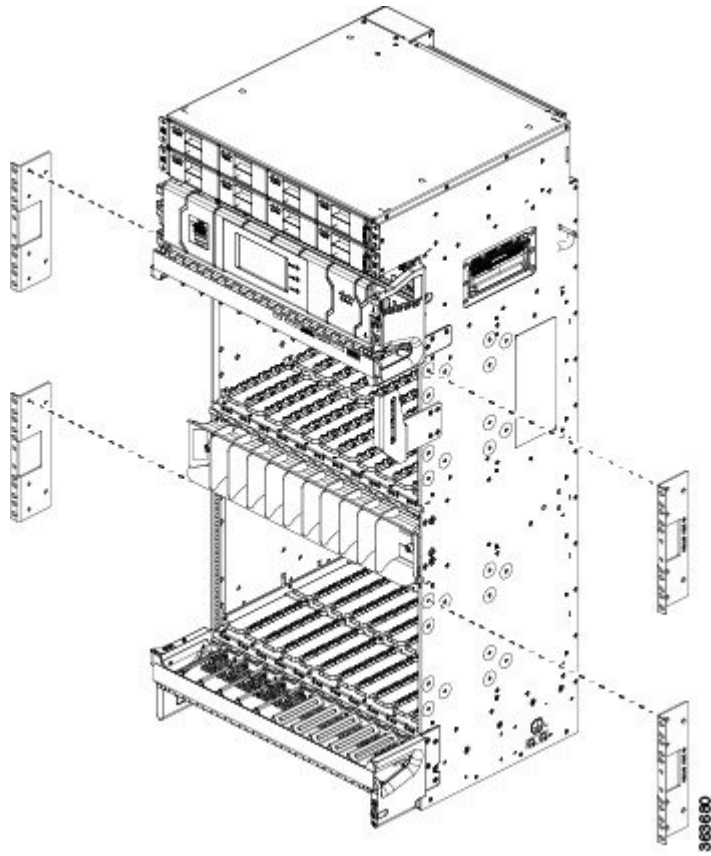


Figure 13: Attaching ANSI 23-Inch Brackets to Front (4-Post Rack) or Middle (2-Post Rack)

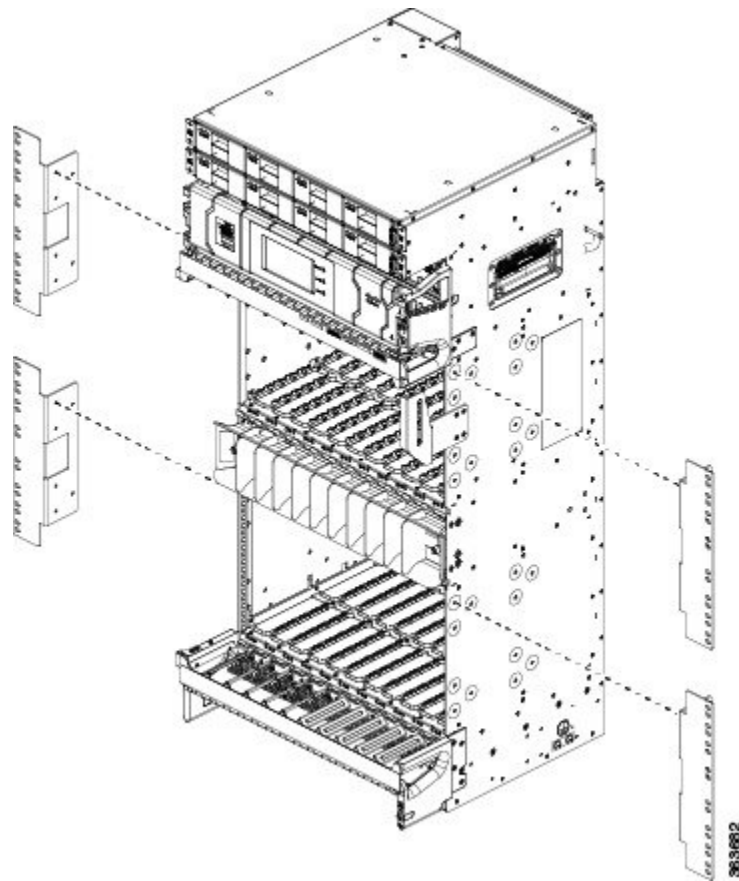
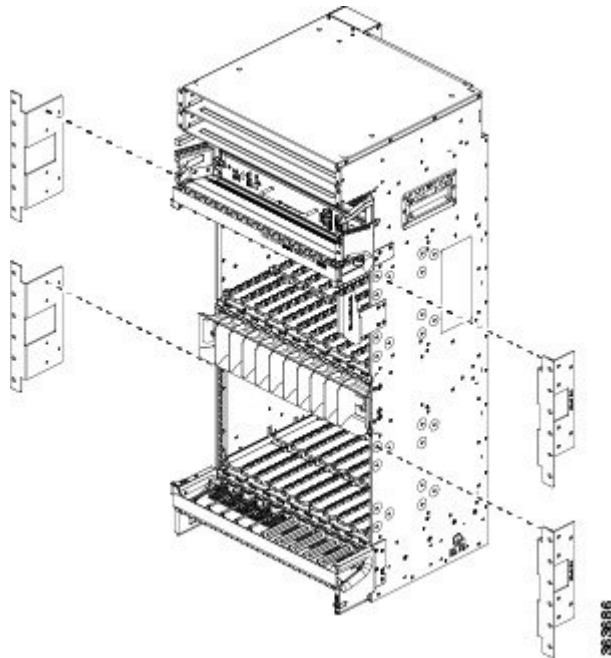


Figure 14: Attaching ETSI Brackets to Front



Installing the Aid Brackets

This section explains how to install the aid brackets onto the rack. The aid brackets hold the weight of the chassis while you secure it in the rack.

Prerequisites

Identify the position of the chassis inside the rack to define the aid brackets position.

Required Tools and Equipment

- Number 1 Phillips screwdriver
- Cisco NCS 4016 installation kit (NCS4K-INST-KIT=)

Steps

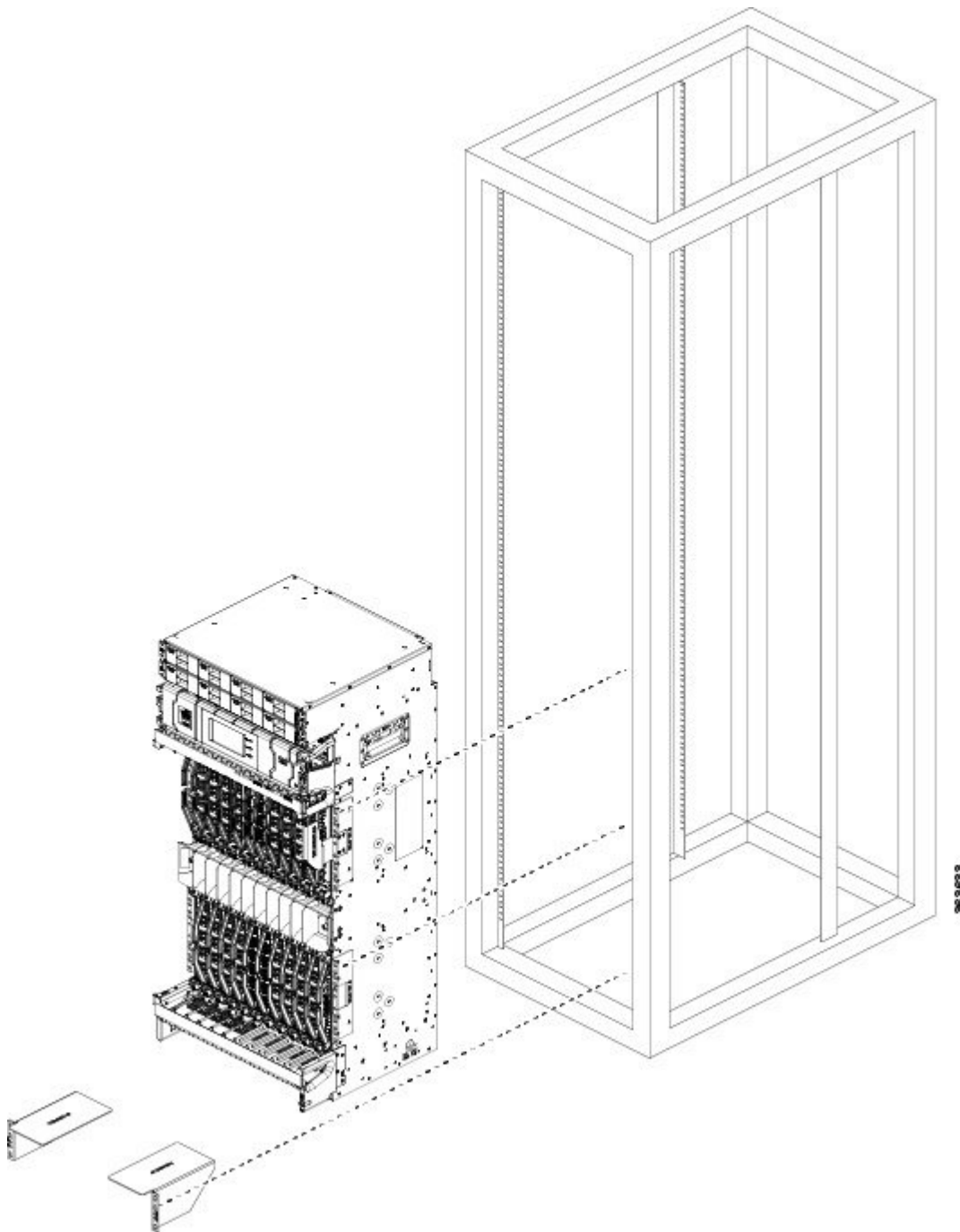
SUMMARY STEPS

1. Attach the aid brackets to the rack below where the chassis will sit. Tighten the two screws to firmly attach the brackets to the rack.
2. Once the chassis has been installed, remove the aid brackets. Loosen the two screws from the aid brackets and take off the rack.

DETAILED STEPS

-
- Step 1** Attach the aid brackets to the rack below where the chassis will sit. Tighten the two screws to firmly attach the brackets to the rack.

Figure 15: Attaching Aid Brackets to the Rack



Step 2

Once the chassis has been installed, remove the aid brackets. Loosen the two screws from the aid brackets and take off the rack.

Tip

Keep the aid brackets in case of future chassis relocation.

What to do next

To accommodate equipment racks with different mounting hole patterns, the aid brackets have groups of screw holes on either side.

The mounting holes in the aid brackets are spaced so that one mounting hole in each hole group aligns with a corresponding hole in the equipment rack. By using the corresponding mounting hole (in the same hole group) on the opposite side of the rack, you can keep both the aid brackets leveled.



Caution When you are installing the chassis in a rack, leave the filler cards in place to provide the chassis with enough support to keep it square during the procedure.



Caution Because of the chassis size and weight, it is unsafe to lift the chassis without mechanical assistance.

Removing the Chassis Door

Before installing the chassis in a rack, remove the front door of the chassis to ensure that the door is not damaged in any way.

Required Tools and Equipment

- ESD-preventive wrist strap
- Number 2 Phillips screwdriver, medium and small slot-head screwdrivers

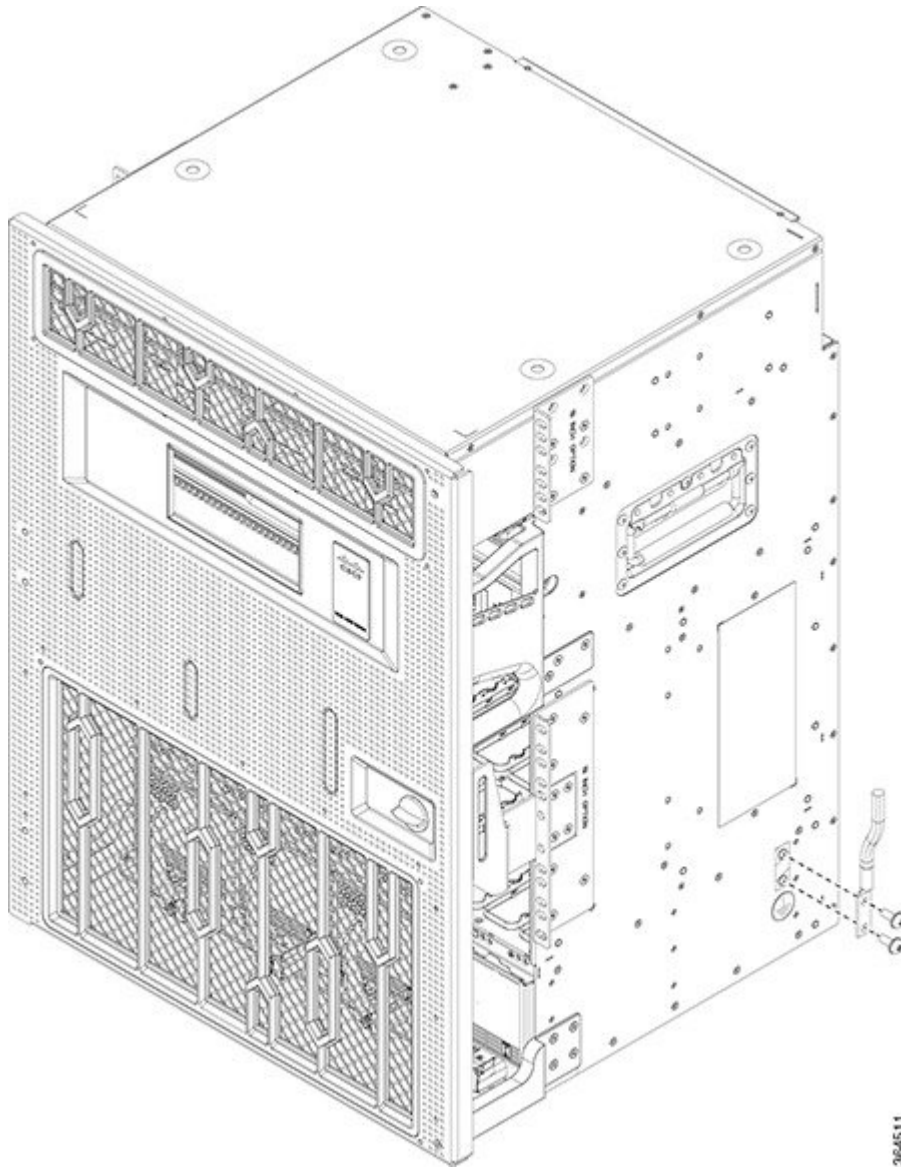
Steps**SUMMARY STEPS**

1. Turn the knob to unlock the door.
2. Open the door.
3. Loosen the screw to disconnect the ground cable.
4. Move down the pin to release the door from the chassis hinge.
5. Move up the door to release the bottom hinge pin.

DETAILED STEPS

Step 1 Turn the knob to unlock the door.

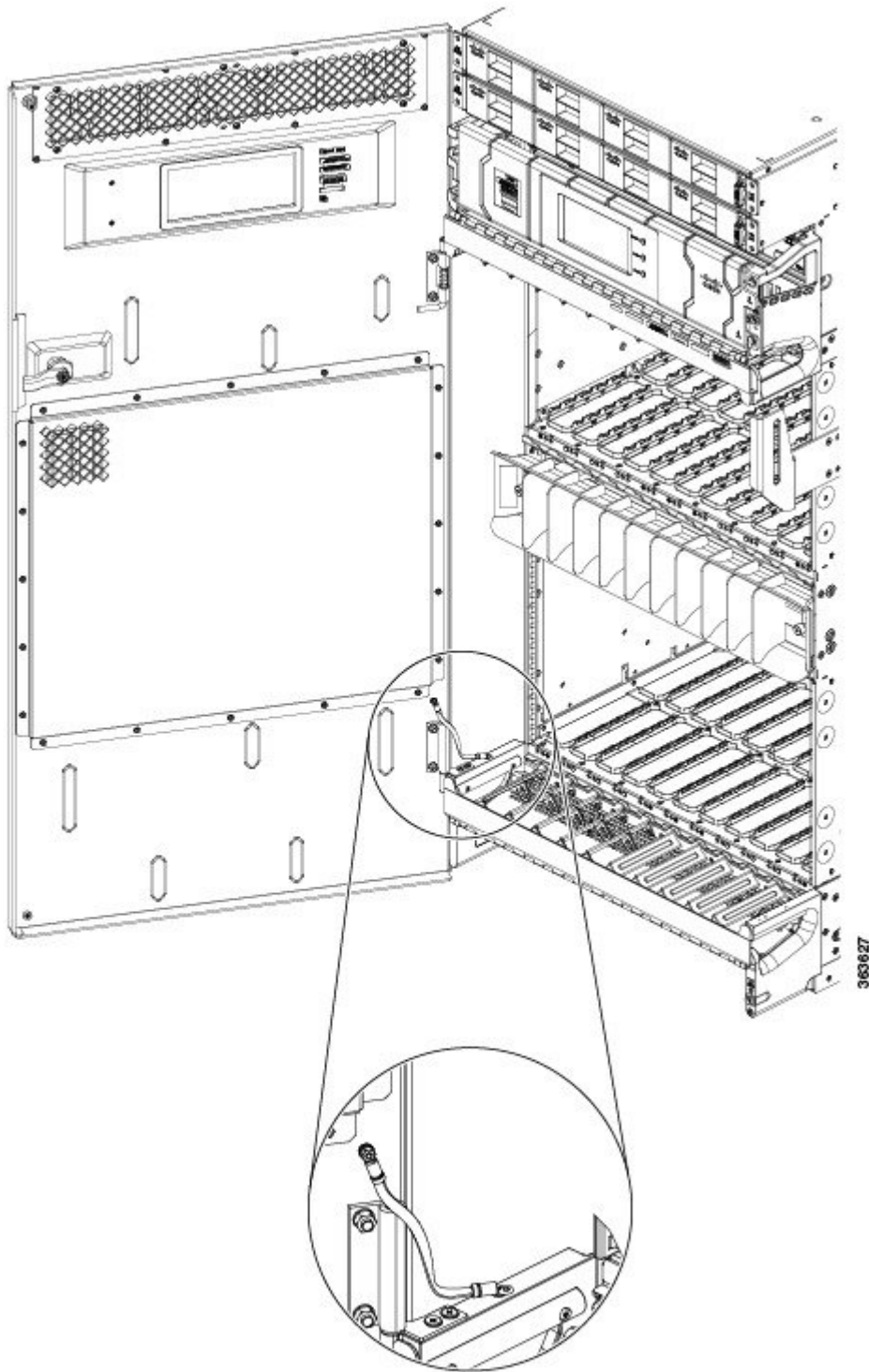
Figure 16: Knob to Unlock Door



Step 2 Open the door.

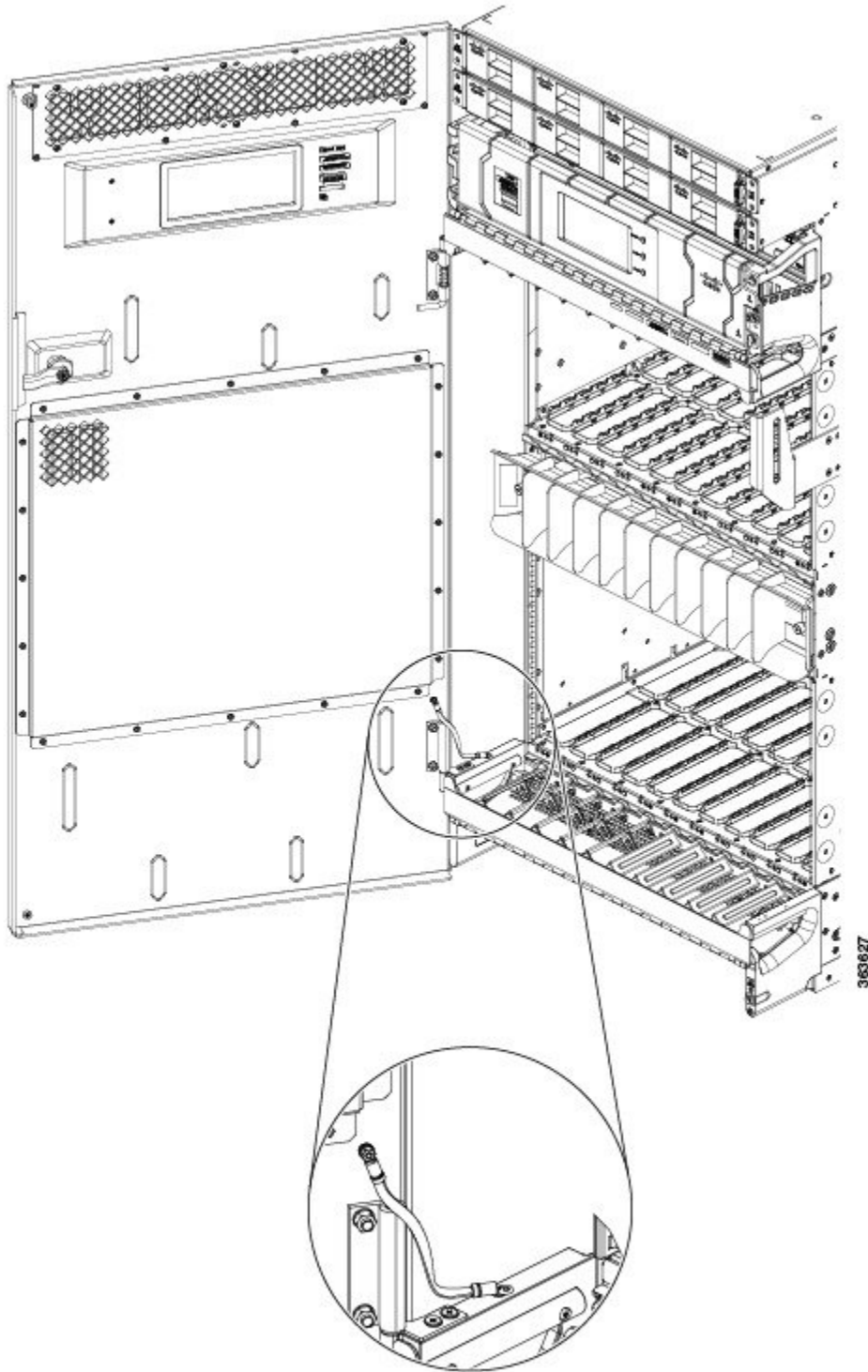
Step 3 Loosen the screw to disconnect the ground cable.

Figure 17: Disconnecting the Ground Cable



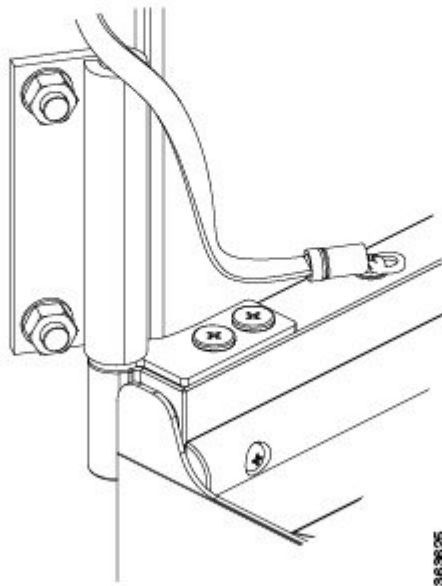
Step 4 Move down the pin to release the door from the chassis hinge.

Figure 18: Pin to Release Door from Hinge



Step 5 Move up the door to release the bottom hinge pin.

Figure 19: Releasing the Bottom Hinge Pin

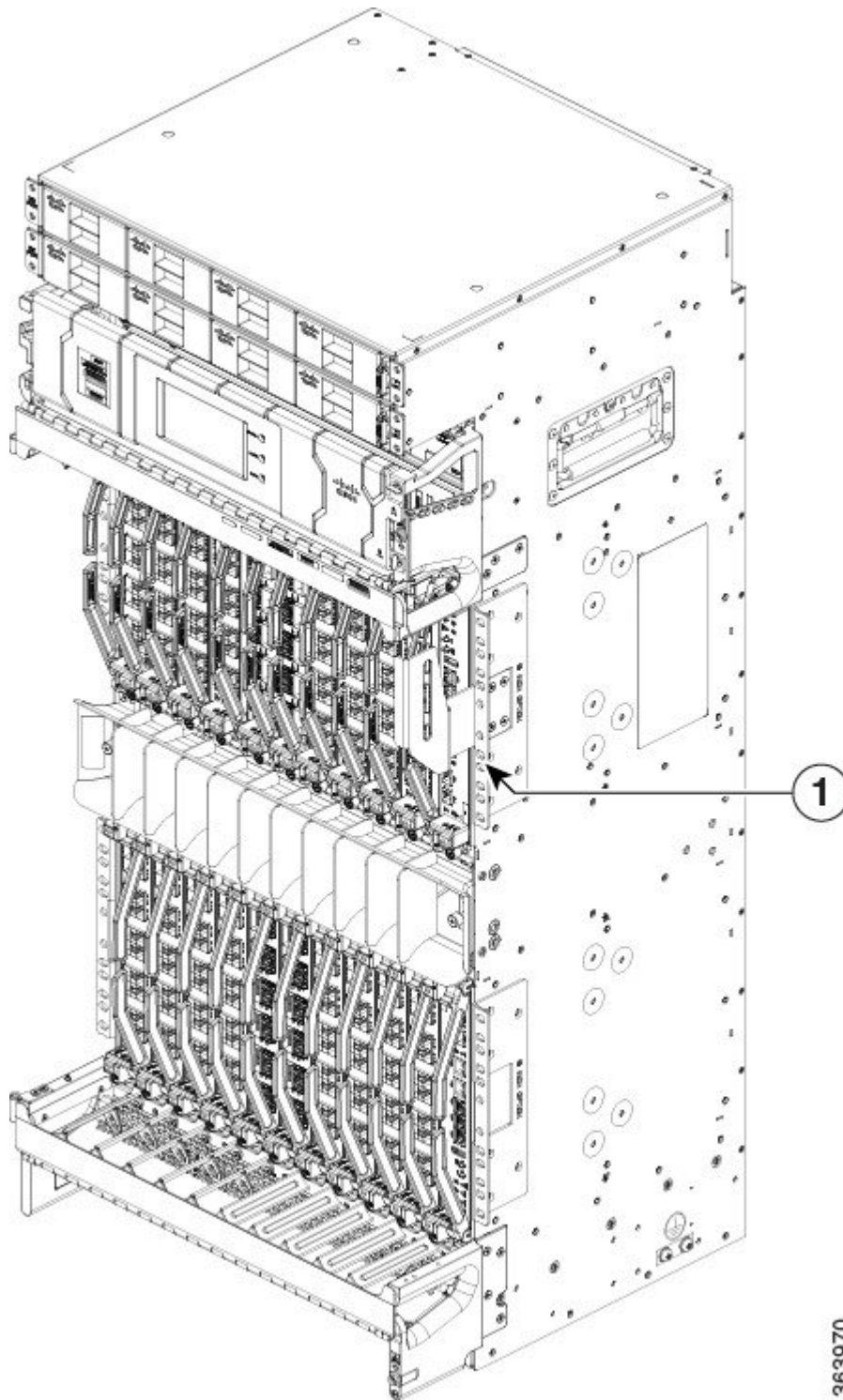


Mounting the Chassis into a Rack

This section describes how to mount the Cisco NCS 4016 chassis *into a rack* .

The figure below, shows the chassis mounting hardware ready for rack mounting.

Figure 20: Chassis Mounting Hardware Ready for Rack Mounting



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Prerequisites

- Make sure that the rack is level and bolted to the floor.

- Make sure that the mounting brackets are installed on the chassis.
- Make sure that the aid brackets are installed on the rack.

Required Tools and Equipment

- Number 1 Phillips screwdriver
- Mechanical lifting device, such as a scissor lift or other suitable lifting device
- Installation kit, shipped with the chassis, contains installation aid brackets and screws (Cisco product number NCS4K-INST-KIT=)

Steps

To mount the chassis in the rack, follow these steps:

SUMMARY STEPS

1. With the chassis on the lift, align the chassis with the rack.
2. Using your mechanical lift, raise the chassis to the height of the rack's installation aid brackets.
3. Move the chassis. With at least two people, stand in front of the chassis and carefully push the chassis into the rack.
4. Move the lift aid away from the front of the chassis.
5. Push carefully until the mounting brackets contact the rack mounting bracket with the vertical rack posts. Someone should be in the rear guiding the chassis into the rack.
6. Insert and partially tighten the 16 screws (8 on each side) to attach the chassis mounting brackets to the rack mounting brackets.
7. Use the screwdriver to fully tighten the screws.

DETAILED STEPS

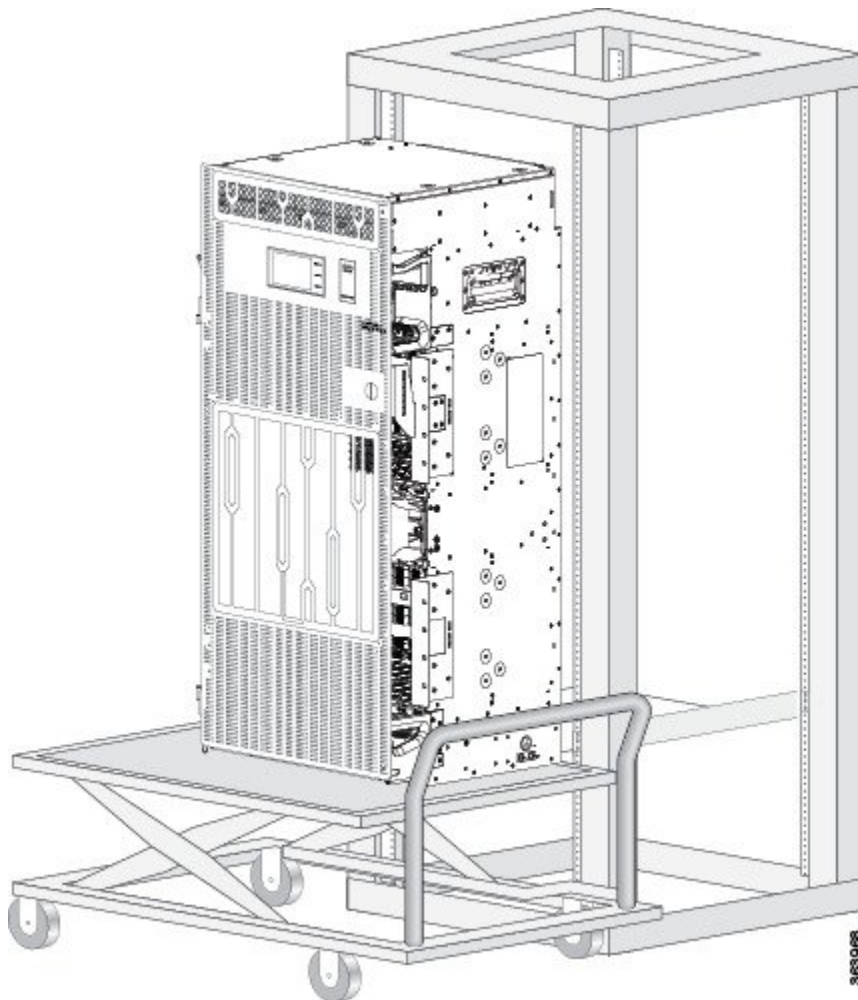
Step 1 With the chassis on the lift, align the chassis with the rack.

Step 2 Using your mechanical lift, raise the chassis to the height of the rack's installation aid brackets.

As an example of a suitable lifting device, the figure below, shows a scissor lift raising the chassis.

Note Take extra care when aligning the bottom of the chassis with the installation aid brackets.

Figure 21: Example—Using a Scissor Lift to Position the Chassis in the Rack



- Step 3** Move the chassis. With at least two people, stand in front of the chassis and carefully push the chassis into the rack.
- Step 4** Move the lift aid away from the front of the chassis.
- Step 5** Push carefully until the mounting brackets contact the rack mounting bracket with the vertical rack posts. Someone should be in the rear guiding the chassis into the rack.
- Step 6** Insert and partially tighten the 16 screws (8 on each side) to attach the chassis mounting brackets to the rack mounting brackets.

Figure 22: Chassis Mounting Holes

Note To accommodate equipment racks with different mounting-hole patterns, the chassis mounting brackets have groups of screw holes on either side. The mounting holes in these rails are spaced so that one hole in each hole group aligns with a hole in the equipment rack or the optional center-mount bracket. Use the corresponding mounting hole (in the same hole group) on the opposite side of the chassis to level the chassis in the rack.

Step 7 Use the screwdriver to fully tighten the screws.

Attaching the Chassis Door

If the front door was removed earlier, install it after the chassis is installed on the rack. For door installation details, see the “Replacing the Front Door” section in the Cisco Network Convergence System 4000 Series Hardware Installation Guide .

Unpacking Chassis Component Shipping Pallets

The remaining shipping boxes and pallets are now ready to be delivered from receiving/shipping dock to the final location of the chassis.

Steps

To unpack the pallets, follow these steps:

SUMMARY STEPS

1. If possible, move the pallets to the same location as the unpacked and secured chassis. If not possible, move the individual boxes containing the various components to the chassis location.
2. Unpack all primary pallet parts from the packaging, and set the parts carefully aside for installation.
3. Unpack all secondary pallet parts from packaging, and set the parts carefully aside for installation.
4. Unpack all power components from the packaging, and set the parts carefully aside on an electrostatic discharge (ESD)-immune surface for installation.
5. Unpack all cosmetic parts from the packaging and set the parts carefully aside.

DETAILED STEPS

Step 1 If possible, move the pallets to the same location as the unpacked and secured chassis. If not possible, move the individual boxes containing the various components to the chassis location.

Step 2 Unpack all primary pallet parts from the packaging, and set the parts carefully aside for installation.

Note Take appropriate precautions for the sensitive optical components that are shipped with the chassis.

Step 3 Unpack all secondary pallet parts from packaging, and set the parts carefully aside for installation.

Note Do not unpack individual cards until you are ready to install the cards in the chassis.

Step 4 Unpack all power components from the packaging, and set the parts carefully aside on an electrostatic discharge (ESD)-immune surface for installation.

Step 5 Unpack all cosmetic parts from the packaging and set the parts carefully aside.

What to do next

What to Do Next

You can now install any additional chassis components, line cards, route processor cards, and fabric cards. See the Cisco Network Convergence System 4000 Series Hardware Installation Guide .

