



Installing the Cisco Remote PHY Shelf 7200

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Installing the Chassis

The Cisco Remote PHY Shelf 7200 can be either mounted on the rack at the front or in the middle. Also, the router can be either mounted on a standard 19-inch wide four-post equipment rack unit or a two-post rack unit.



Note The Cisco Remote PHY Shelf 7200 fully configured system can weigh up to 271 lbs, components must be removed from the chassis to make the chassis lighter for rack installation. Remove all front power modules and front RPD cards for rack mounting to reduce the weight. The PIC cards and Fan Tray can remain in the system during rack mounting. For instructions on how to remove the components, see the monitoring sections.

Make sure that you place the cards and modules in an anti-static bag until you install the chassis in the rack.

Proceed with the installation if you have already unpacked your chassis and read all the site requirements for your new equipment.

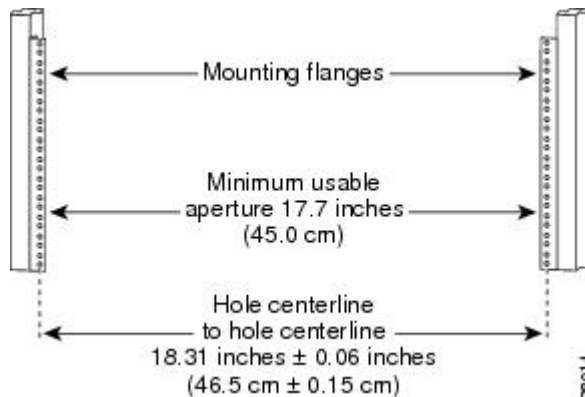
Required Tools and Equipment

- ESD-preventive wrist strap
- #2 Phillips torque screwdriver
- Flat-head screwdriver

Verifying Rack Dimensions

Before you install the chassis, measure the space between the vertical mounting flanges (rails) on your equipment rack to verify that the rack conforms to the measurements shown in the following figure.

Figure 1: Verifying Equipment Rack Dimensions



Step 1 Mark and measure the distance between two holes on the left and right mounting rails.

The distance should measure 18.31 inches \pm 0.06 inches (46.5 cm \pm 0.15 cm).

Note Measure for pairs of holes near the bottom, middle, and top of the equipment rack to ensure that the rack posts are parallel.

Step 2 Measure the space between the inner edges of the left front and right front mounting flanges on the equipment rack.

The space must be at least 17.7 inches (45 cm) to accommodate the chassis.

Installing the Chassis Installation Brackets

Each chassis is shipped with two chassis installation brackets in the accessory kit. These brackets aid in installing a chassis into a 19-inch rack. These brackets are used as a support base to vertically position and set the chassis before installing the rack mount screws.

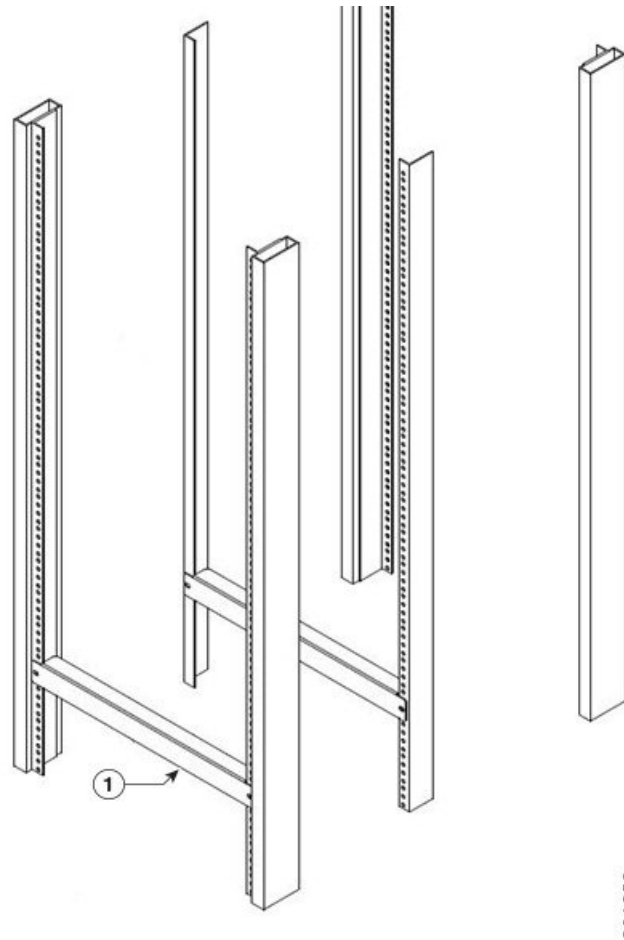
Step 1 Determine the position in the rack where you want to mount the chassis.

If you are mounting more than one chassis in the rack, start from the bottom or the center of the rack. Hold the chassis installation bracket, where the bottom of the chassis will be positioned vertically in the rack.

Step 2 Secure the chassis installation bracket to the front rails with rack-mount screws.

If a second internal rack rail is present which is not more than 23 inches from the front rail, position the second installation bracket to create a rear support for the chassis during installation.

Figure 2: Chassis Installation Bracket



1	Chassis Installation Bracket
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Note After you install the chassis and secure it to the rack, remove the chassis installation brackets from the rack. The chassis does not need these brackets for supporting the weight, after all rack mount screws are secured.

Attaching the Chassis Rack-Mount Brackets

The chassis is shipped with the rack mount brackets pre-installed in the front position. The rack mount brackets can be removed and reversed in the mid-mounting location on the chassis.



Note After you install the chassis in the rack, the rear RF cable-management brackets can be installed on the chassis.

Attach the rack-mounting brackets either in the front or the middle of the chassis.

- Front Rack-Mounting the system: The chassis is shipped with the rack-mount brackets installed in the front. Proceed to [Installing the Cisco Remote PHY Shelf 7200 in a Rack, on page 5](#).
- Mid Rack-Mounting the system: Install the mounting bracket in the middle of the chassis, so that you can access the chassis in the rack or install the chassis in a two-post rack unit.

To install the rack-mount brackets in the middle of the chassis, complete the following steps:

Before you begin

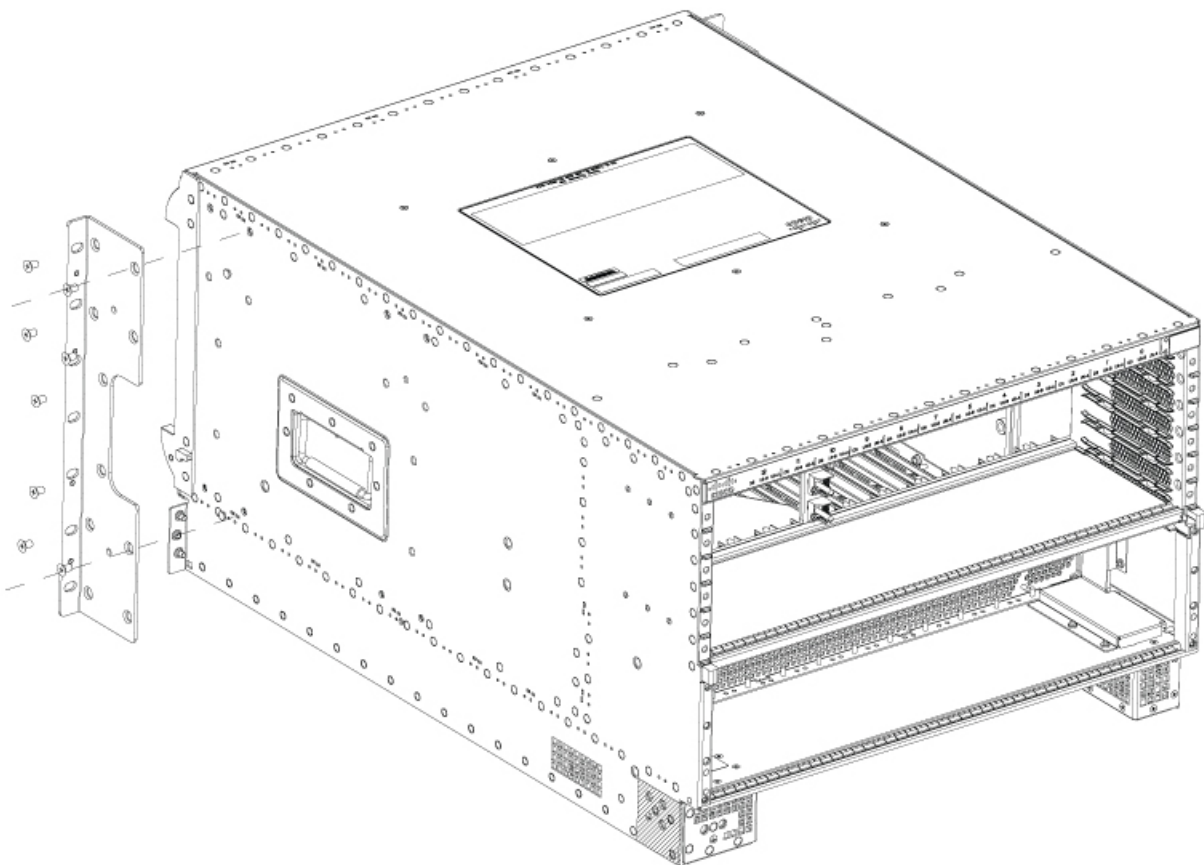
Required Tools and Equipment

- #2 Phillips torque screwdriver

Step 1 Remove the rack-mount brackets installed in the front of the chassis by unscrewing the M5 undercut flat-head screws using a #2 Phillips screwdriver.

Step 2 Locate the threaded holes at the middle on the side of the chassis that align with the holes in the rack-mount bracket.

Figure 3: Installing Rack-Mount Brackets in the front position

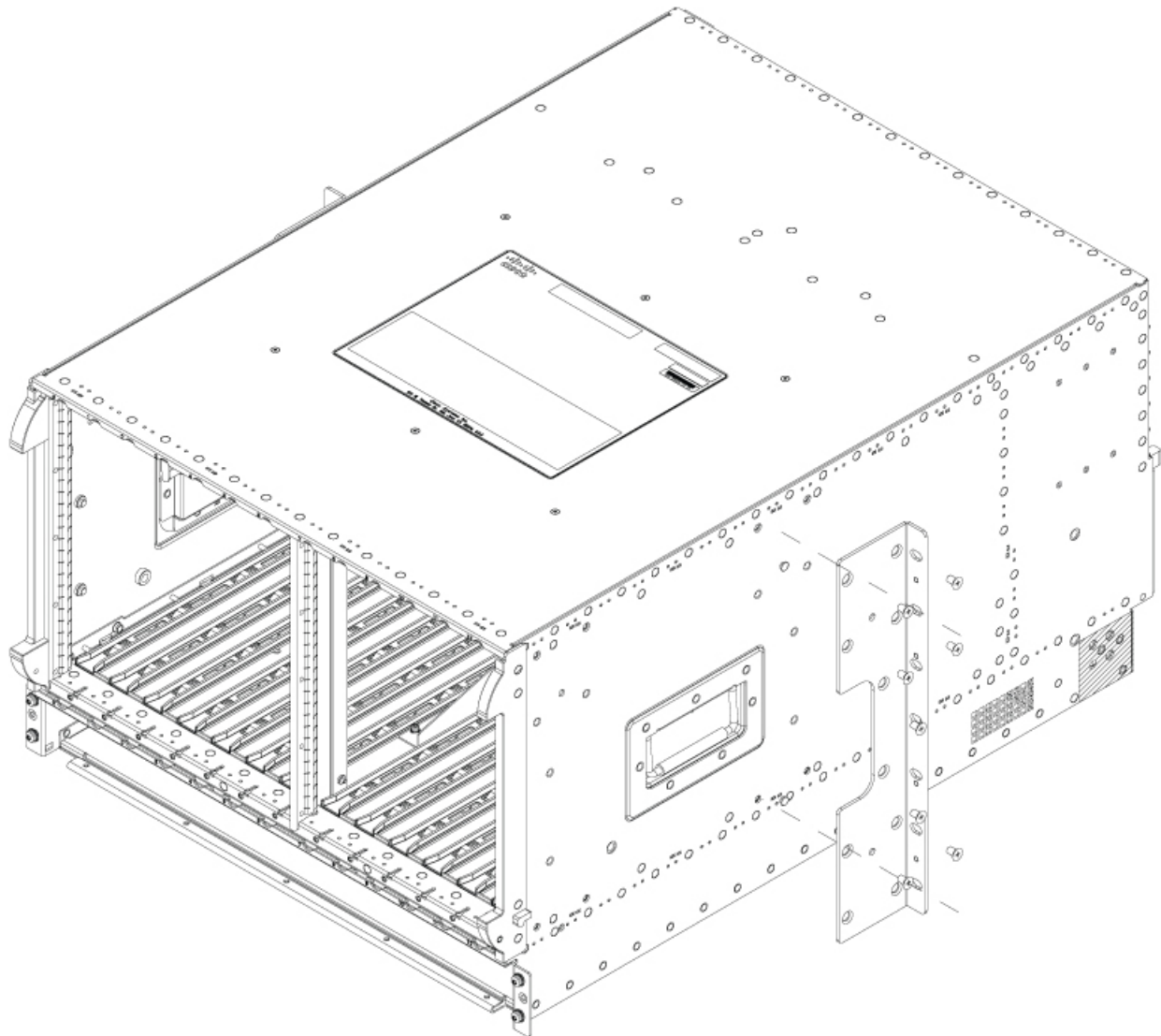


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Step 3 Install the 8 M5 undercut flat-head screws to secure each rack-mounting bracket to the chassis.

Note The bottom two holes on the rack-mount bracket in the power tray area are unused.

Figure 4: Installing rack-mount brackets mid mount



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Step 4 Repeat the steps 1, 2, and 3 on the other side of the chassis.

Installing the Cisco Remote PHY Shelf 7200 in a Rack

You can install the chassis in either a four-post rack unit or a two-post rack unit.

Before you begin

1. Verify rack dimensions.
2. Install chassis installation brackets.
3. Attach the chassis rack-mount brackets.



Warning To prevent physical 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:

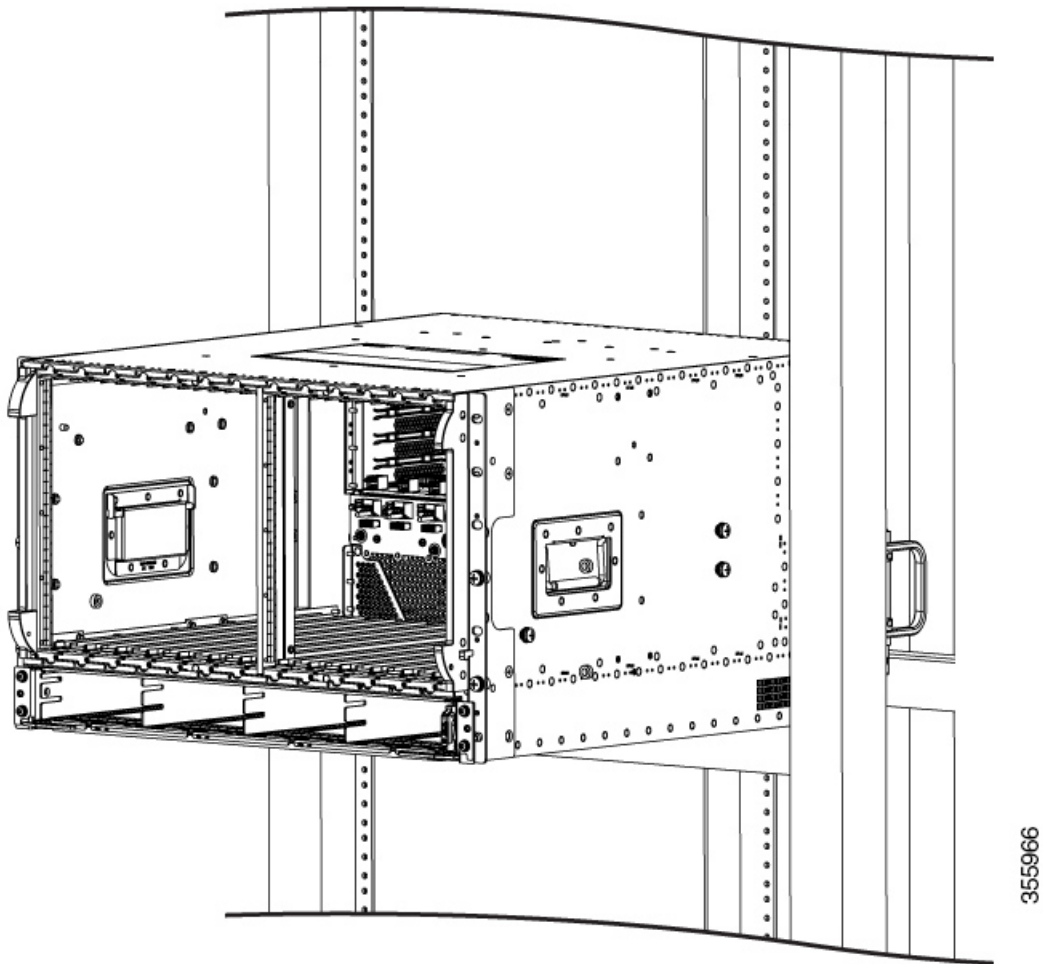
- If you have to mount only one unit in the rack, mount it at the bottom of the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Procedure

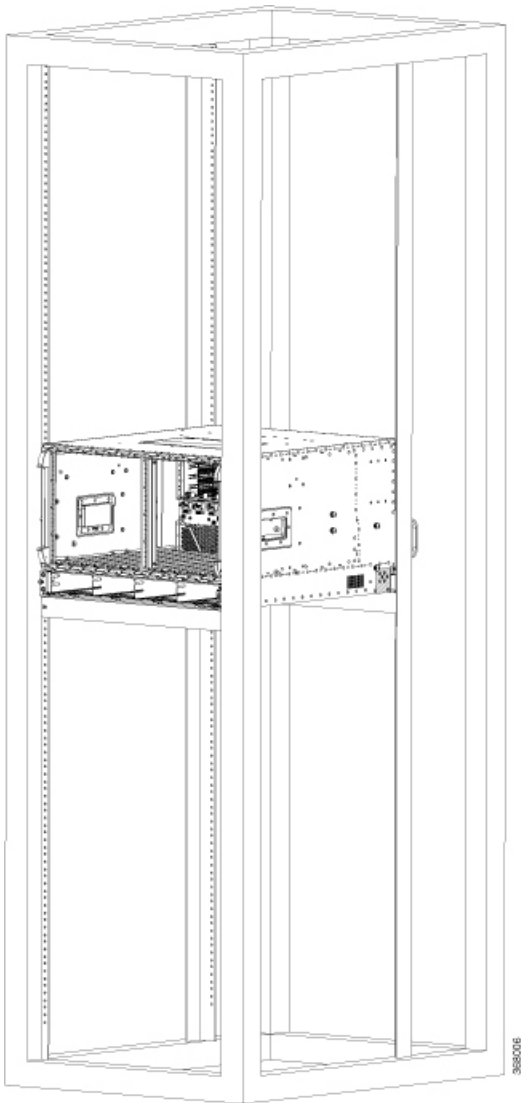
	Command or Action	Purpose
Step 1	Rack mount the chassis by securing the rack-mount brackets to two posts or mounting strips in the rack.	Use at least four rack-mount screws on each side to fasten the two rack-mount brackets to the rack posts because the rack-mount brackets support the weight of the entire chassis.

Installing the Cisco Remote PHY Shelf 7200 in a Four-Post Rack

- Step 1** Ensure that all screw-fasteners on the installed components are securely tightened on the chassis. It is recommended to remove the front Power Supplies and RPD's to lighten the chassis weight prior to installation.
- Step 2** Ensure that your path to the rack is unobstructed.
- If the rack is on wheels, ensure that the brakes are engaged or the rack is stabilized.
- Step 3** With two or more people, lift the chassis (partially unloaded) into position between the rack posts and rest it on the chassis installation bracket.
- In addition to the bottom and edges of the chassis, the chassis can be lifted using the two side handles on the chassis and the two large fan tray handles on the rear of the chassis.
- Note** Ensure that the rear Fan Tray handles are secured to the chassis with their 4 captive screws on the handles.
- Step 4** After the rear weight of the chassis is resting on the installation bracket, one person can hold it in place when the second person moves to the rear of the rack to slide it into place and hold the weight while the rack mount screws are tightened.



Step 5 Position the chassis until the rack-mounting flanges are flush against the mounting rails on the rack.



Step 6 Hold the chassis in position against the mounting rails and do the following:

- a) Insert a bottom screw into the rack mount ear on each side and use a hand-held screwdriver to tighten the screw to the rack rail.
- b) Insert a top screw into each side rack mount bracket and tighten the screw to the rack rail.
Insert a minimum of four screws per bracket on both sides of the chassis.

Note Install a minimum of 4 screws through each sides rack mount into the rack rails for proper support.

What to do next

- If necessary, remove the chassis installation brackets after ensuring that all screws are tightly secured to the rack unit.
- [Attaching the Cable-Management Bracket, on page 11.](#)

Installing the Cisco Remote PHY Shelf 7200 in a Two-Post Rack

You can install the Cisco Remote PHY Shelf 7200 in a two-post 19-inch (48.26 cm) rack either as a front mount or a mid-mount if the spacing between rails is at least 17.70 inches (44.96cm) wide. If the rack rail opening is narrower than this you can only use the mid mount option for mounting the chassis into the two post rack.

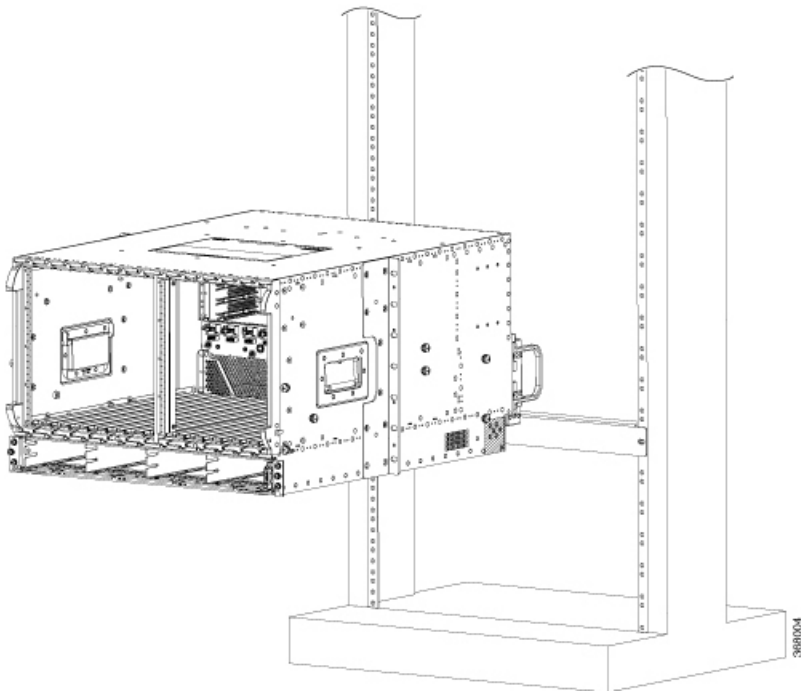
The procedure for front mounting a chassis in a two-post rack is similar to the procedure for front mounting in a four-post rack, except that you cannot use the second chassis installation bracket.



Caution If you are using a two-post rack, secure the rack to the floor surface to prevent tipping and physical injury, and avoid damage to the component.

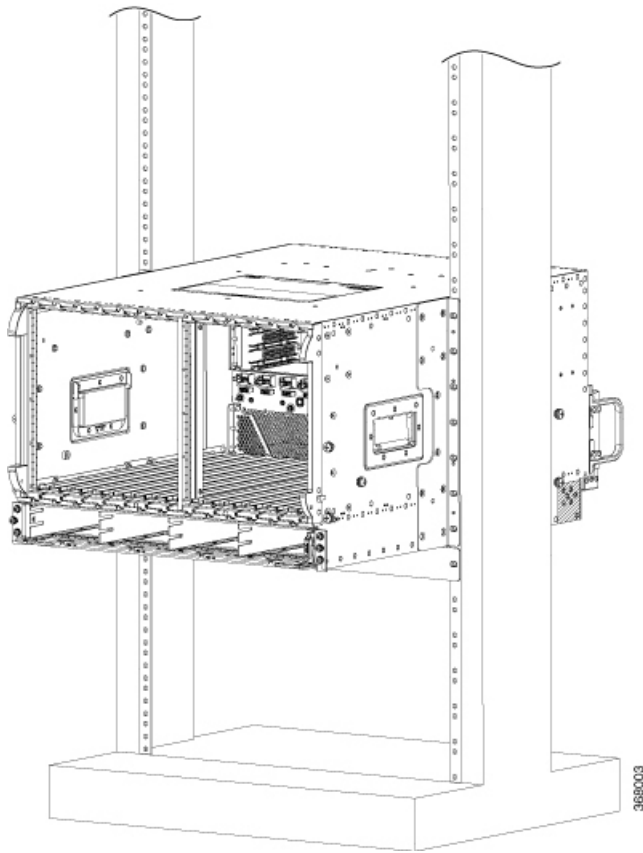
To mid-mount the chassis, follow these steps:

- Step 1** Ensure that all screw-fasteners on the installed components are securely tightened on the chassis. It is recommended to remove the front Power Supplies and RPD's to lighten the chassis weight prior to installation.
- Step 2** Ensure that your path to the rack is unobstructed.
- If the rack is on wheels, ensure that the brakes are engaged or the rack is otherwise stabilized.
- Step 3** Install the chassis installation bracket into the rack to support the chassis during installation when you secure it to the rack.
- Step 4** With two or more people, lift the chassis (partially unloaded) into position between the rack posts and rest it on the chassis installation bracket.
- The chassis can be lifted using the two large side handles and the rear Fan Tray Handles.
- Note** Ensure the rear Fan Tray handles are secured to the chassis with their 4 captive screws on the handles.
- Step 5** After the rear weight of the chassis is resting on the installation bracket, one person can hold it in place while the second person moves to the rear of the rack to help slide it into place and hold the weight while the rack mount screws are tightened.
- Step 6** Position the chassis until the rack-mounting flanges are flush against the mounting rails on the rack.

**Step 7**

Hold the chassis in position against the mounting rails and do the following:

- a) Insert a bottom screw into the rack mount ear on each side and use a hand-held screwdriver to tighten the screw to the rack rail.
- b) Insert a top screw into each side rack mount bracket and tighten the screw to the rack rail.
- c) Insert a minimum of four screws per bracket on both sides of the chassis.



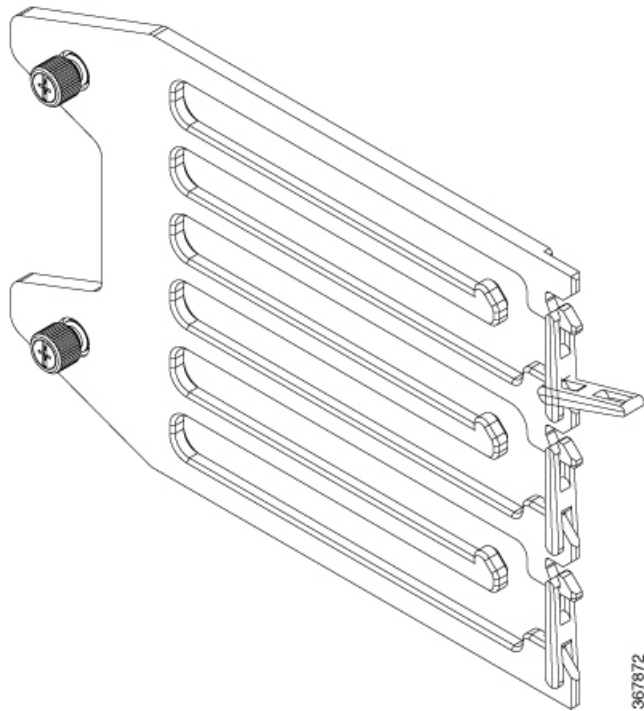
- Step 8** Ensure that all screws on each of the side rack-mount brackets are tightened to the equipment rack before the chassis installation bracket is removed from the rack.

What to do next

[Attaching the Cable-Management Bracket, on page 11.](#)

Attaching the Cable-Management Bracket

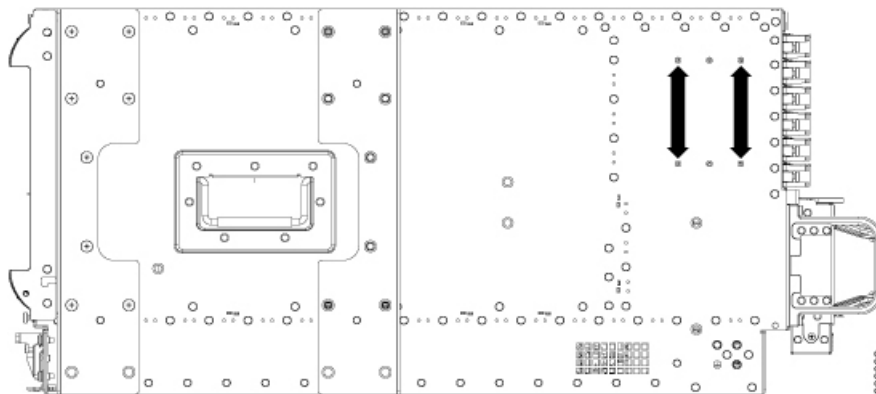
The rear RF cable management system is provided in the accessory kit. There is a right hand side and a left hand side for the chassis.



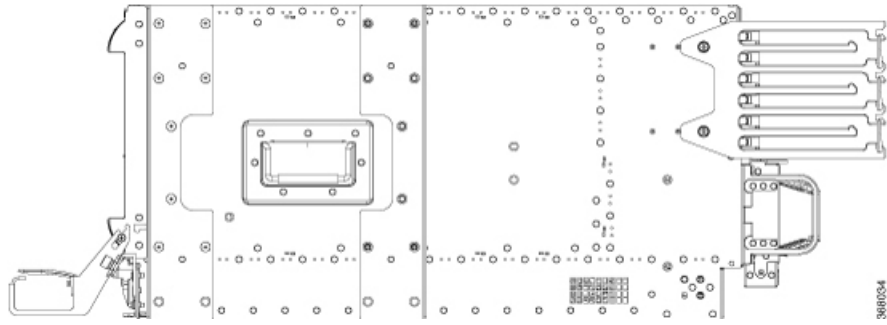
Note The chassis will not fit through a 19-inch rack rail opening with the cable management system pre-installed.

Complete the following steps to install the Cable-Management Bracket:

1. Install the chassis into the rack.
2. Align the RF left side RF cable management to a set of holes on the side of the chassis. There are three mounting positions on the chassis depending on the number of cables that are required to be supported.

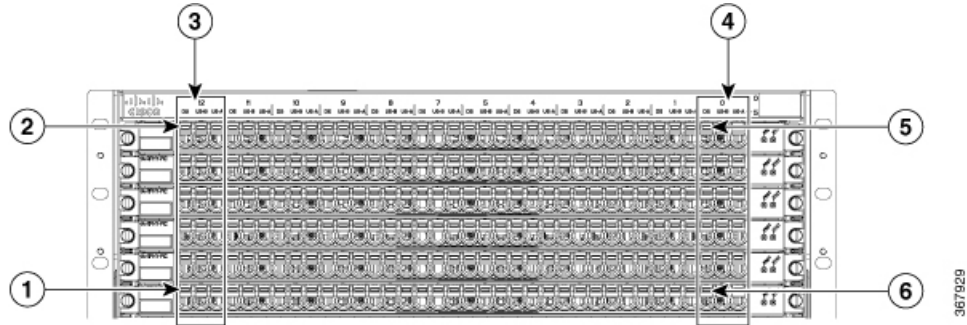


3. Secure the left side RF cable management using the thumb screws on the bracket.



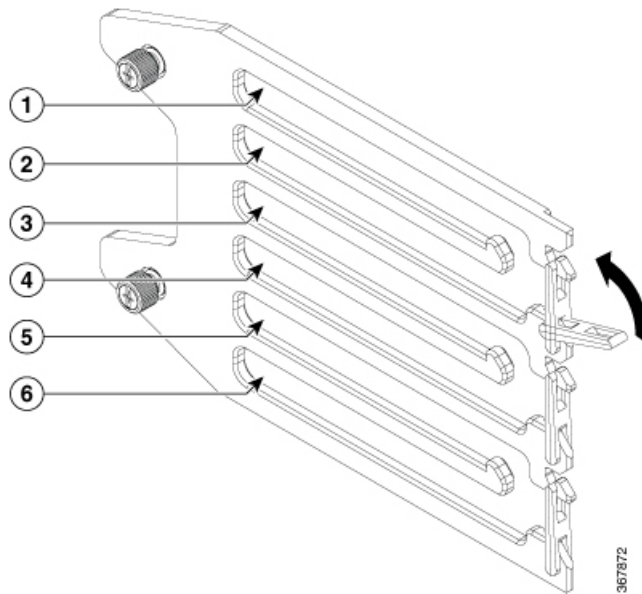
- Repeat steps 1-3 for the right side RF management bracket.

The Cisco Remote PHY Shelf 7200 has 216 ports, and the coax cable routing was designed for half the cables that are routed to either side of the system.



1	Slot12/DS5	2	Slot12/DS0
3	Slot 12	4	Slot 0
5	Slot0/DS0	6	Slot0/DS5

After routing the RF cables through the cable management, latches can be closed for retention of the cables. See the following image.



1	Cables from PIC0	2	Cables from PIC1
3	Cables from PIC2	4	Cables from PIC3
5	Cables from PIC4	6	Cables from PIC5

Attaching a Chassis Ground Connection

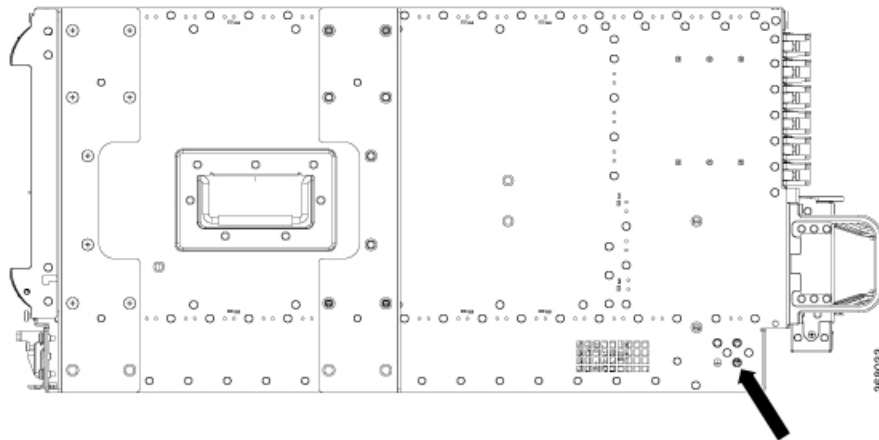
Before you begin



Warning

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. **Statement 1024**

Before you connect the power or turn on the power to the chassis, you must provide an adequate chassis ground (earth) connection for the chassis. A chassis ground connector is available at the rear, left side of each Cisco Remote PHY Shelf 7200 chassis.



Caution The grounding wire is always the first to be installed or connected and the last to be removed or disconnected.

Required Tools and Equipment

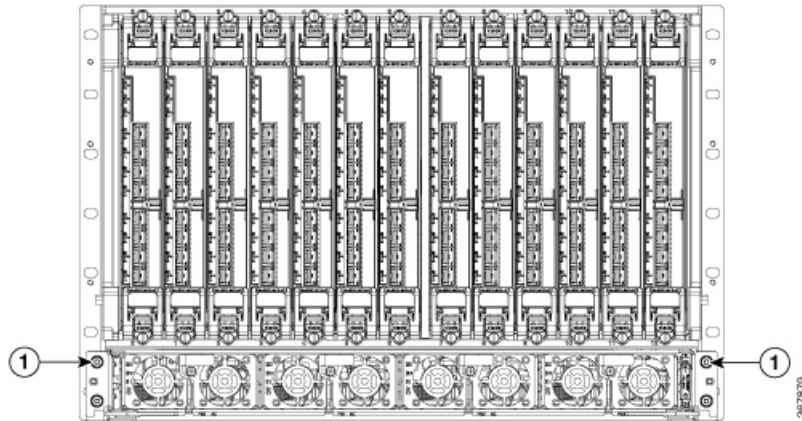
- Phillips Screwdriver
- ¼-20 Phillips pan head with a square cone lock washer (available in the accessory kit)
- 2 hole 4-AWG dual crimp compression lug (available in the accessory kit)
- 4 or 2 AWG grounding wire—The ground wire and lug must be always as large as the input gauge. For example, to use 2 AWG for the DC inputs, the ground lug and wire must be 2 AWG or bigger.
- Crimping tool for the ground lug

- Step 1** Use the wire stripper to strip one end of the AWG #4 wire approximately 1.12 inches (28.4 mm).
- Step 2** Insert the AWG #4 wire into the wire receptacle on the grounding lug.
- Step 3** Use the crimping tool to carefully crimp the wire receptacle around the wire; this step is required to ensure a proper mechanical connection.
- Step 4** Locate the chassis ground area on the rear lower left-side panel of your chassis.
- Step 5** Insert the two ¼-20 screws (available in the accessory kit) through the holes in the grounding lug, and tighten until the grounding lug is held firmly to the chassis.
- Note** The captive nuts are located on the rear lower left side of the chassis for attaching a two-hole ground lug. In addition, three nuts are available for attaching, so that you can mount the lug horizontally or vertically depending on the wire routing preferences.
- Step 6** Connect the opposite end of the grounding wire to the appropriate grounding point at your site to ensure an adequate chassis ground.

Installing the Optical Cable Management Kit (Optional)

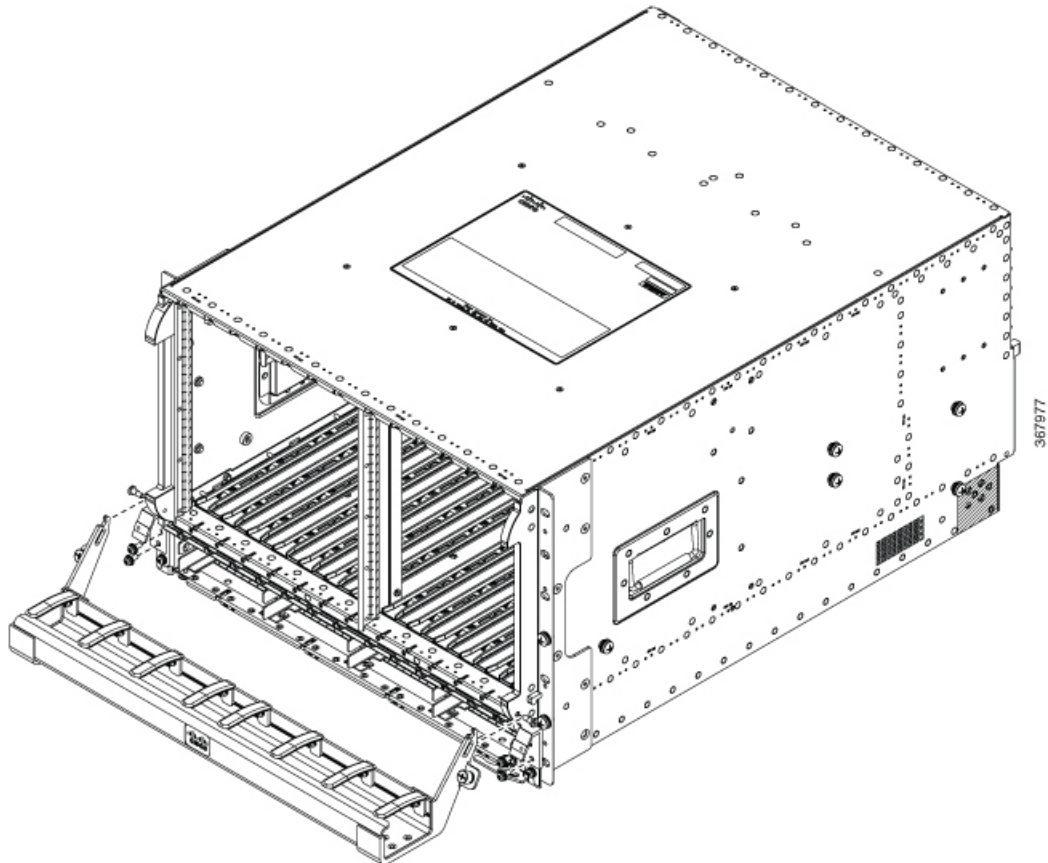
To install the optional Optical Cable Management (OCMG) Kit, complete the following steps:

1. Remove the top two screws from the power shelf flange ears. Keep the screws safe.

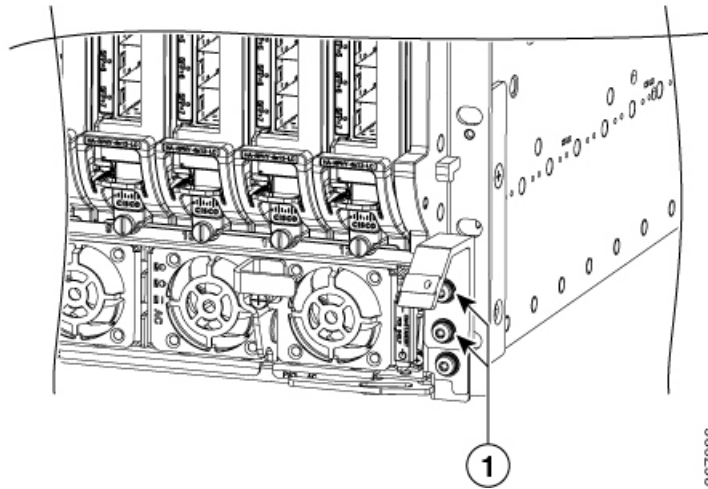


1	T15 Drive Screws
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2. Align the Optical Cable Management Kit to the chassis.



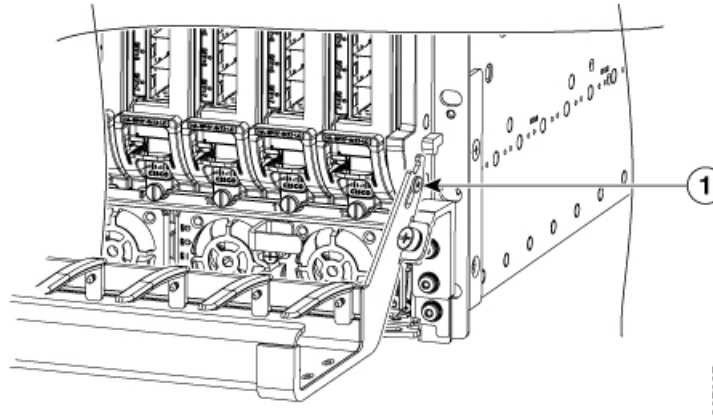
3. Install the right and left cable management support brackets onto the power shelf flanges as shown in the following image. Secure the bracket with four T15 Torx screws. Tighten to 6-8 Lb-In torque.



1	T15 Drive Screws
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4. Install the shoulder screws through the cable management tray slots and into the chassis side bezel threaded holes. Secure the shoulder screw using a T10 Torx screwdriver, tighten to 5-6 Lb-In torque.

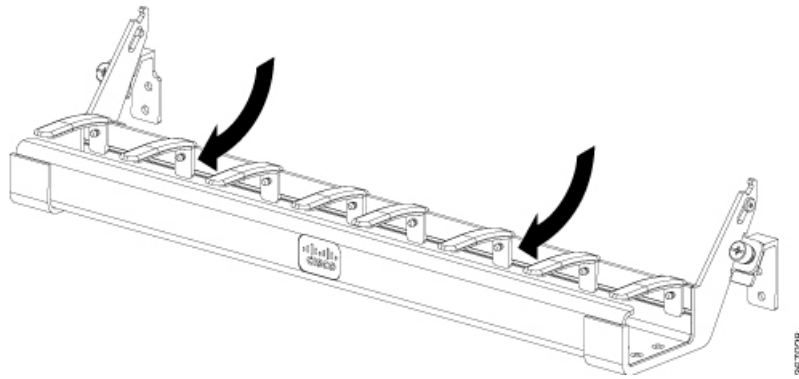
Figure 5:



1	Shoulder Screw
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5. Orient the cable tray and secure the two captive screws to the support brackets by hand.

You can feed the optical cables into the tray through the tray retaining fingers as shown in the following figure. Cables can be routed left or right through the tray.



Installing the Fan Tray

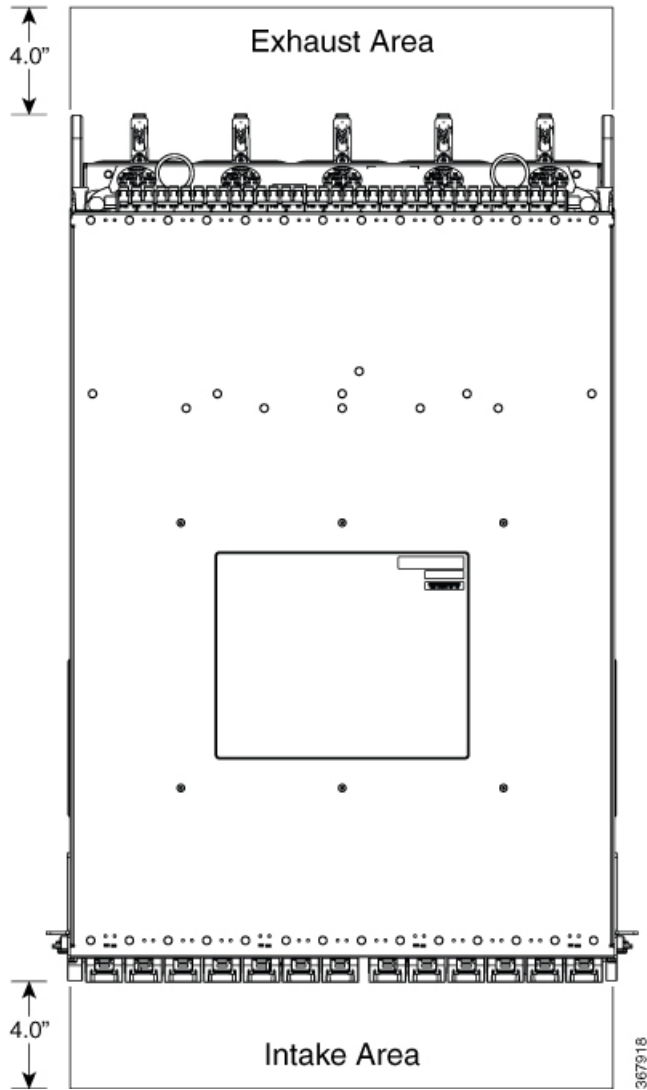
Before you begin

- Attach an ESD-preventive wrist strap to your wrist and connect the other end to the grounding lug connected to the chassis.
- **Minimum Keep Out Areas for Proper Cooling**

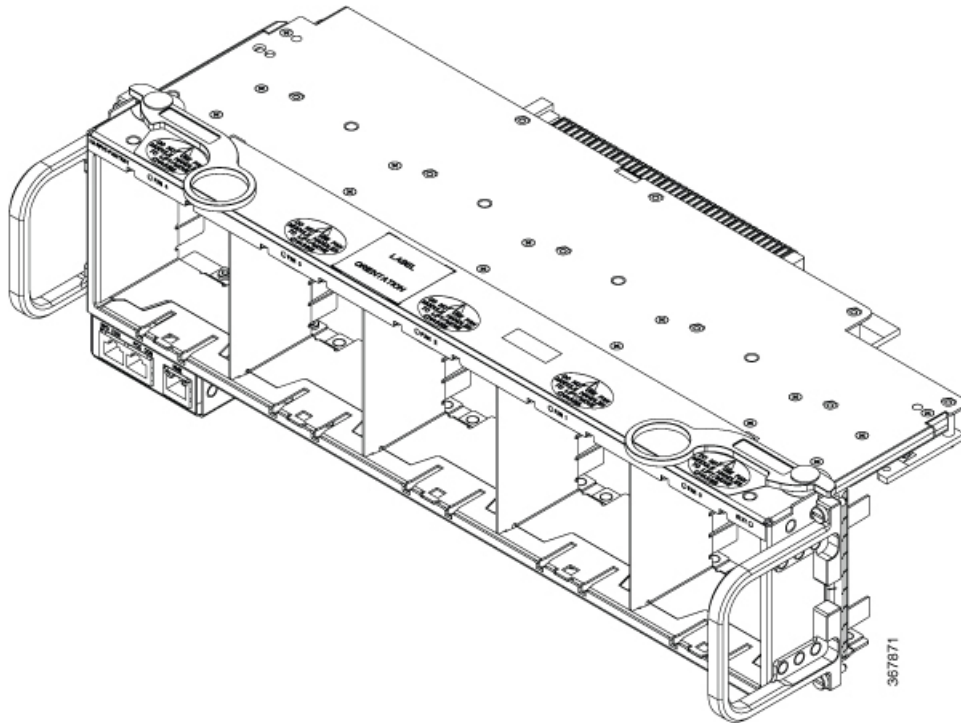
Air flows from the front to the rear of the chassis. Air enters through the chassis RDP front panels and power supply modules. Air is expelled from the rear of the chassis.

The keep-out areas are defined to ensure adequate space around the Cisco Remote PHY Shelf 7200 chassis. The space is necessary to ensure adequate air intake and exhaust. The figure shows the keep-out areas for the Cisco Remote PHY Shelf 7200 chassis.

Figure 6: Allow keep-Out Areas for the Cisco Remote PHY Shelf 7200 Chassis



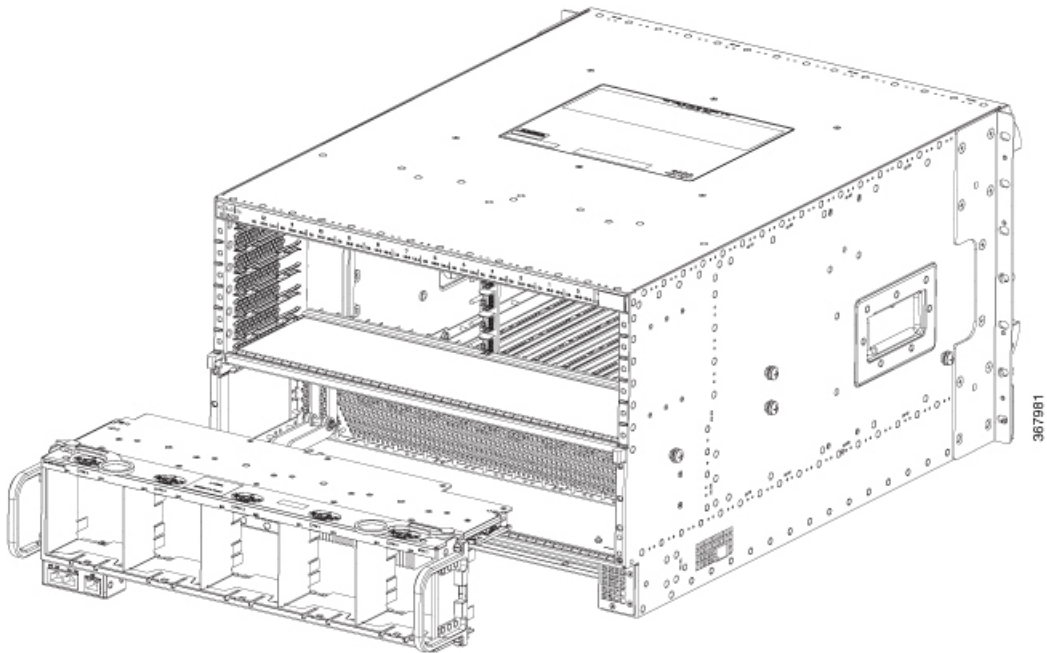
The Cisco Remote PHY Shelf 7200 Fan Tray is a Field Replaceable Unit without Fans.



Restrictions

- Do not boot the chassis unless all the Fan Modules are installed.
- Only one fan module should be removed at a time for servicing or replacement.
- Do not operate the chassis without the Fan Tray installed.

Step 1 Align the yellow Fan Tray sheetmetal tab to the chassis fan tray guides.

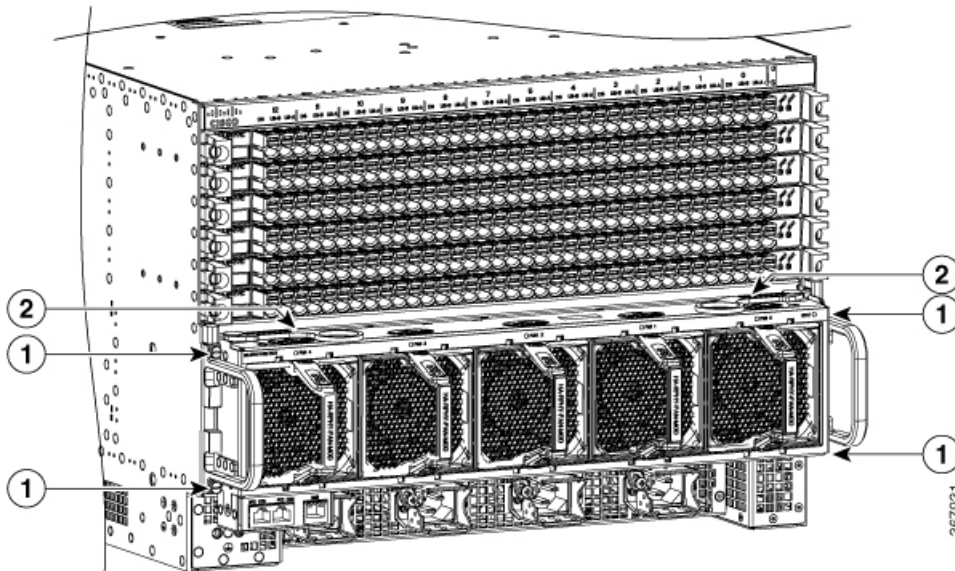


Step 2 Slide in the Fan Tray gently.

Step 3 Use both the ejectors at the same time to insert the Fan Tray.

Note Using only one ejector for Fan Tray installation could cause damage to the Fan Tray connector.

Step 4 Secure the 4 mounting screws on the Cisco Remote PHY Shelf 7200 Fan Tray to the chassis. Torque to 8 Lb-In.



1	Fan Tray Screws
2	Ejectors

Note The Cisco Remote PHY Shelf 7200 system should not be operating without a Fan Tray installed for more than 1-2 minutes or the system could experience thermal events, alarms, and potentially trip thermal protections that would shut down RPD cards.

What to do next

- Visually check if the fans are working.

Installing the Fan Module

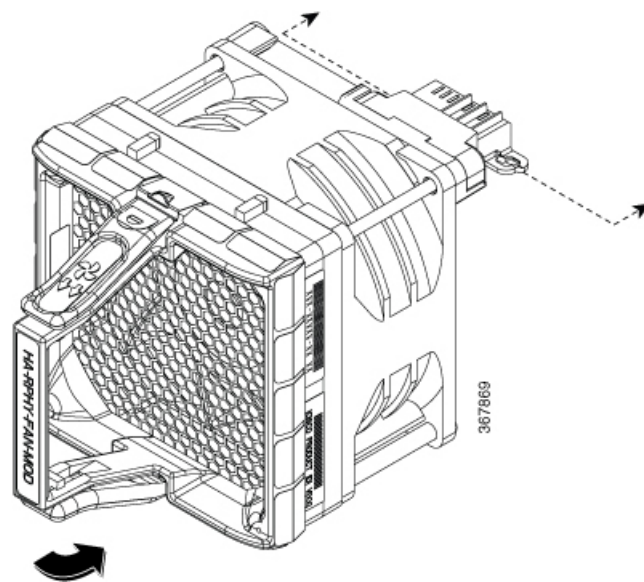
The Cisco Remote PHY Shelf 7200 Fan Module (HA-RPHY-FAN-MOD) is comprised of the fan, one handle structure, EMI containment, and connector to interface to the Cisco Remote PHY Shelf 7200 Fan Tray.

The Fan Module is keyed so it can only install in the proper orientation to the Fan Tray.

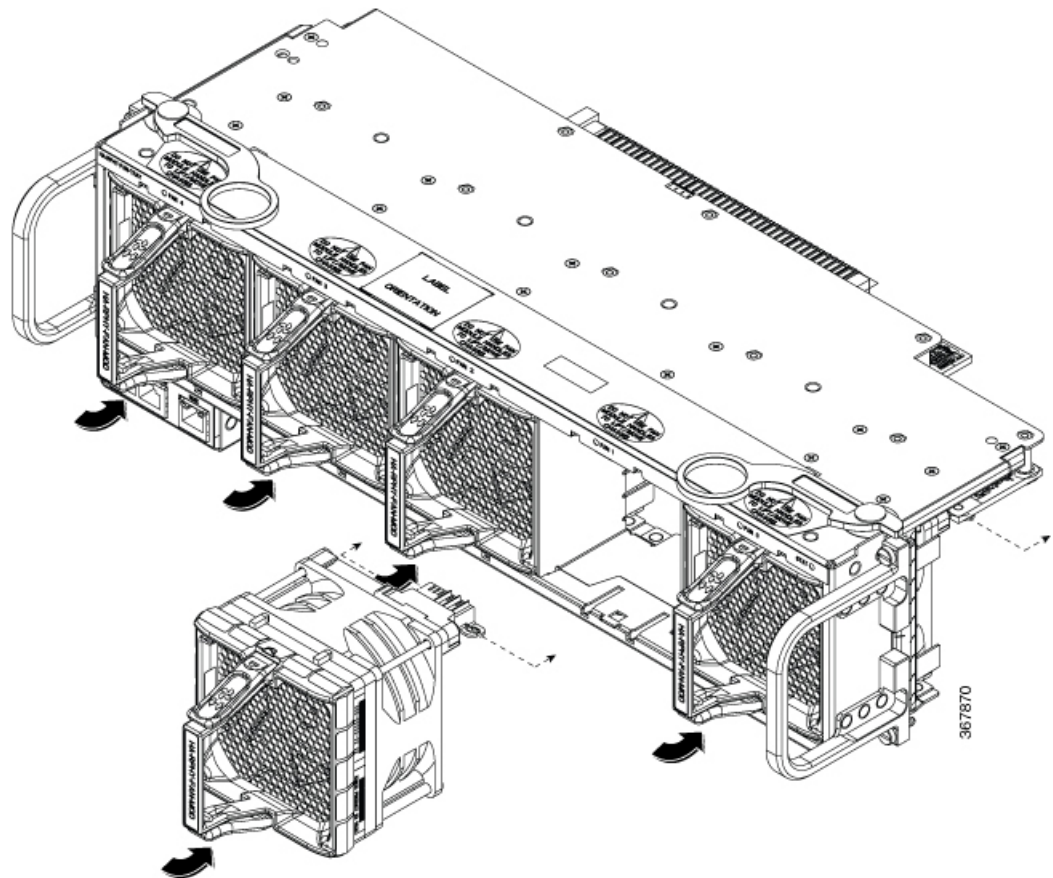
To install the Fan Module, complete the following steps:

1. Align the Fan Module to the Fan Tray.

Figure 7: Fan Module



2. Push the Fan Module into the Fan Tray bay until there are tactile and audible clicks of the Fan Module latches engaging to the Fan Tray top and bottom of the handle.



3. Ensure that the top and bottom Fan Module latches are engaged on every fan module to the fan tray sheetmetal bay.

Installing the Power Shelf

The chassis ships with an AC or DC Power Shelf installed depending on the configuration. In the future you may need to install a new Power Shelf or to swap the power system of the chassis.

Before you begin



Important

We recommend that you wire the chassis for the total 4200 W of power requirement from the facility.



Warning

If you are adding new hardware or upgrading the existing hardware, ensure that the power modules installed in the chassis are adequate to support the hardware.

**Warning**

When you install the module, the chassis ground connection must always be made first and disconnected last.
Statement 1046

- Be aware of the weight and size of the equipment. Handle it with care.

The chassis ships with the Power Module already installed.

Use this procedure to install the following modules in the chassis:

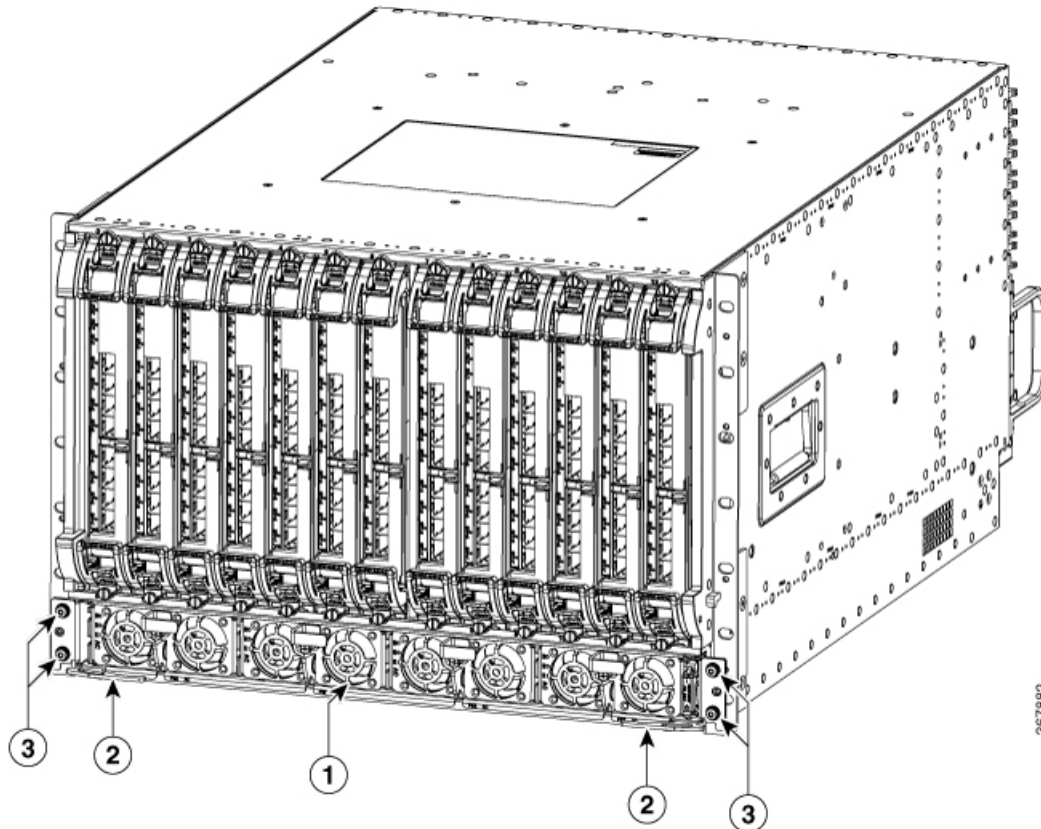
- AC Power Module
- DC Power Module

Required Tools and Equipment

- ESD-preventive wrist strap
- T15 Torx torque screwdriver

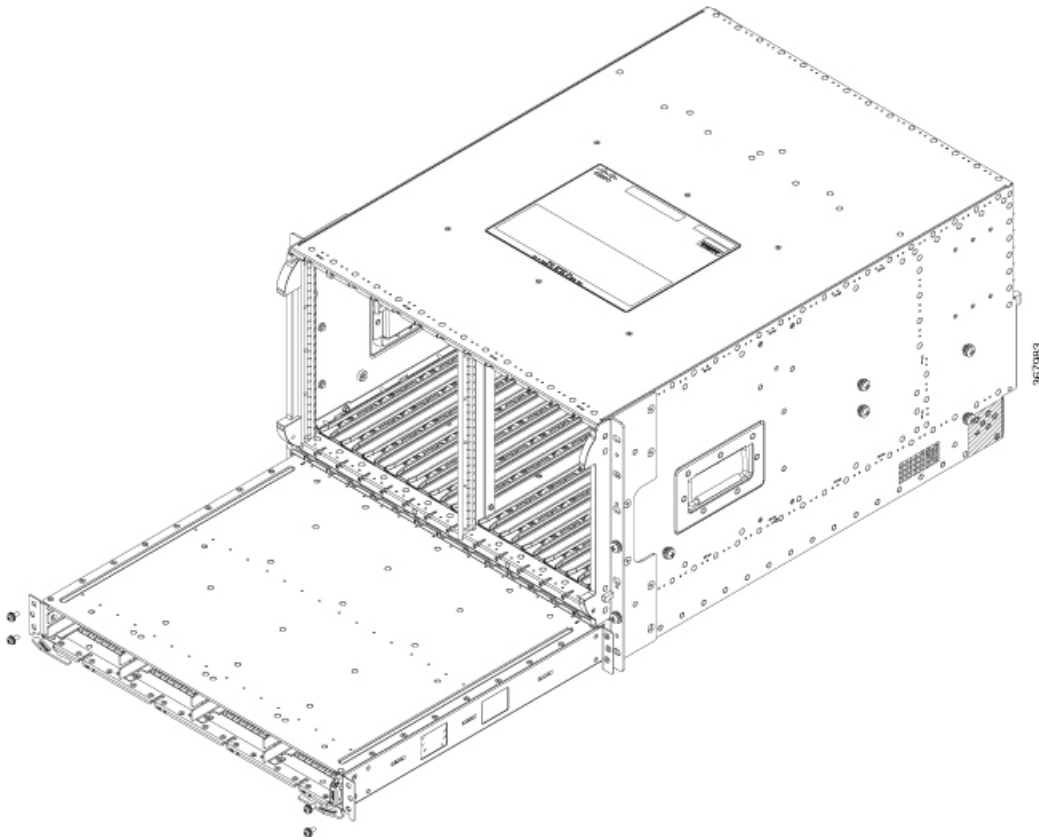
-
- Step 1** Turn off the system power switch on the front of the chassis in the lower front right corner of the power shelf.
- Step 2** Turn off power at the facility breaker panel and check that the connections are de-energized prior to accessing the power cables on the chassis.
- Step 3** Disconnect all power cables from the rear of the chassis.
- Step 4** Unfasten the captive screw on the front ejector lever of the power supply modules using a 3/16" flat head screwdriver or philips screw driver. Actuate the power supply ejector to remove each power supply in the system.

Figure 8: Removing the Front Power Shelf from the Chassis



1	4X AC or DC Power Modules	2	Power Shelf Ejectors
3	Power Shelf T15 Securing Screws		

- Step 5** Loosen and remove the four T15 screws on the front power shelf chassis mounting ears using a T15 torx screwdriver. Save these screws for installation of the new power shelf.



Step 6 Use the two Power Shelf ejectors to eject the Power Shelf from the chassis.

Note The Power Shelf to Power Modules are keyed AC modules to the AC Shelf and DC modules to the DC Shelf

Connecting Power to the AC-Powered Cisco Remote PHY Shelf 7200



Warning

Before connecting AC Power, the chassis ground connection must always be made first and disconnected last.

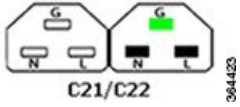


Warning

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

The HA-RPHY-AC-SHLF has four input connectors. Each input connector corresponds to the AC Power Module installed in the front of the chassis. They are IEC60320, C22 inlet connectors, which require facility power cords with a C21 style connector. These are similar to a standard C19/C20 combination, but they have

chamfers in the upper corners, which are used to distinguish them as rated for 155C instead of the typical 70C used on the C19/C20.

Configuration Female/Male	Rated Current International	Rated Current North America	Wires	Poles	Inlet	Connector
 <p>C21/C22 364423</p>	250 V 16 A	125/250 V 16 A	3	2	C22	C21

Description	Value
AC Power Modules per system	Up to four
Total AC input power per AC Power Module	3400 VAC facility input
Rated input voltage per AC Power Module	200-240 VAC nominal (range: 180 to 264 VAC) 220-240 VAC (UK)
Rated input line frequency	50/60 Hz nominal (range: 47 to 63 Hz) 50/60 Hz (UK)
Source AC service requirement	20 A North America; 16 A international; 13 A UK (IEC60320 C22 connector on the chassis input side)

Before you begin

- [Attaching a Chassis Ground Connection, on page 14.](#)

Required Tools and Equipment

- AC power cord
- #2 Phillips torque screwdriver

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- Step 1** Ensure that the power switch on the front lower right of the chassis power shelf is in off (down) position.
- Step 2** Connect the AC power cord to the receptacle on the rear of the AC power shelf.
- Step 3** Tighten the Phillips-head screw on the cable retaining bracket using a #2 Phillips torque screwdriver with a torque of 8-10 in-lb (0.90-1.13Nm).
- Step 4** Connect the other end of the AC power cord to the AC source receptacle.
- Step 5** Repeat [Step 2, on page 27](#) to [Step 4, on page 27](#) for all power connections.
-

Connecting Power to the DC-Powered Cisco Remote PHY Shelf 7200



Warning The terminal block covers are an integral part of the safety design of the product. Do not operate the unit without the covers installed. **Statement 1077**



Warning Before connecting DC Power to the Cisco Remote PHY Shelf 7200 DC Power Shelf, the ground connection must always be made first and disconnected last.



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



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

The DC Power Shelf provides terminal blocks for facility input connectivity. It has 4 sets of input terminal blocks to provide each power module with one facility connection.

The table below provides the common input range and circuit breaker requirements:

Table 1: Common DC Input Range and Circuit Breaker Requirements

DC Power	System Input Rating (in A)	Circuit Breaker (in A)		AWG # Wire	
		Minimum	Maximum		
DC	one feed of 60 A per DC Power Module	Always 60		AWG # 4 or AWG # 6	AWG # 2 ¹

¹ If AWG #2 wire is used for DC power module connections, the chassis ground wire must also be upgraded to an AWG #2 wire and connector .

Before you begin

- [Attaching a Chassis Ground Connection, on page 14.](#)
- The color coding of the DC-input power supply leads depends on the color coding of the DC power source at your site. Typically, green or green/yellow is used for ground (GND), black is used for -48V on negative (-) terminal and red is used for RTN on the positive (+) terminal. Ensure that the lead color coding you choose for the DC-input power supply matches lead color coding used at the DC power source.
- For DC input power cables, select the appropriate wire gauge based on the National Electrical Code (NEC) and local codes for 60-amp service at nominal DC input voltage (-48 VDC). Two pairs of cable

leads, source DC (-) and source DC return (+), can be used for each DC Power Module. These cables are available from any commercial cable vendor. All input power cables for the chassis must have the same wire gauge.

- Each DC input power cable is terminated at the rear of the Power Shelf on the terminal block by a cable lug (included in the accessory kit). The cable lugs must be dual-hole, and have a 90 degree tongue (reference Panduit LCD4-14AF-L). They must be able to fit over 1/4-20 terminal studs on 0.625 in (15.88 mm) centers and have a maximum tongue width of 0.6 inches.



Note DC input power cables must be connected to the Power Shelf terminal studs in the proper positive (+) and negative (-) polarity. Some DC cable leads are labeled, which is a relatively safe indication of the polarity. However, you must verify the polarity by measuring the voltage between the DC cable leads. When measuring the voltage, the positive (+) lead and the negative (-) lead must always match the (+) and (-) labels on the power distribution unit.

- To avoid hazardous conditions, all components in the area where DC input power is accessible must be properly insulated. Therefore, before installing the DC cable lugs, ensure to insulate the lugs according to the manufacturer's instructions.



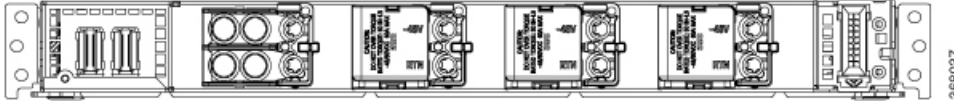
Caution Before installing the DC cable lugs, insulate the entire 90 degree portion of the lugs where the wire is crimped to avoid hazardous conditions where DC input power is accessible through the terminal block cover of the DC Power Shelf.

Required Tools and Equipment

- Insulating sleeving
- Torque wrench
- 7/16" hex socket
- Lugs for the cables
- Cables for positive and negative leads
- Crimping tool

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- Step 1** Ensure that the power switch on the DC power shelf is in off (down) position.
- Step 2** Attach the lug to the lead cable. Carefully crimp the receptacle around the cable using the crimping tool. Insulate the entire 90 degree portion of the lug with shrink sleeving for each lead wire.
- Step 3** Remove the terminal block cover on each terminal block by pushing down on the bottom tab then pivoting the bottom out.
- Step 4** Loosen the 1/4-20 terminal bolts using a torque wrench and 7/16" hex socket and remove them.
- Step 5** Connect the negative lead cable and secure it in place with the 1/4-20 terminal bolts using a torque wrench and 7/16" hex socket with a torque of 45-50 in-lb (5.08-5.65 Nm).

- Step 6** Connect the positive lead cable and secure it in place with the 1/4-20 terminal bolts using a torque wrench and 7/16" hex socket with a torque of 45-50 in-lb (5.08-5.65 Nm).
- Step 7** Repeat [Step 5, on page 29](#) and [Step 6, on page 30](#) for each terminal block connection.
- Step 8** Reinstall the terminal block covers by clipping them on the top edge of the terminal block housing and then rotating them down until they snap into place.



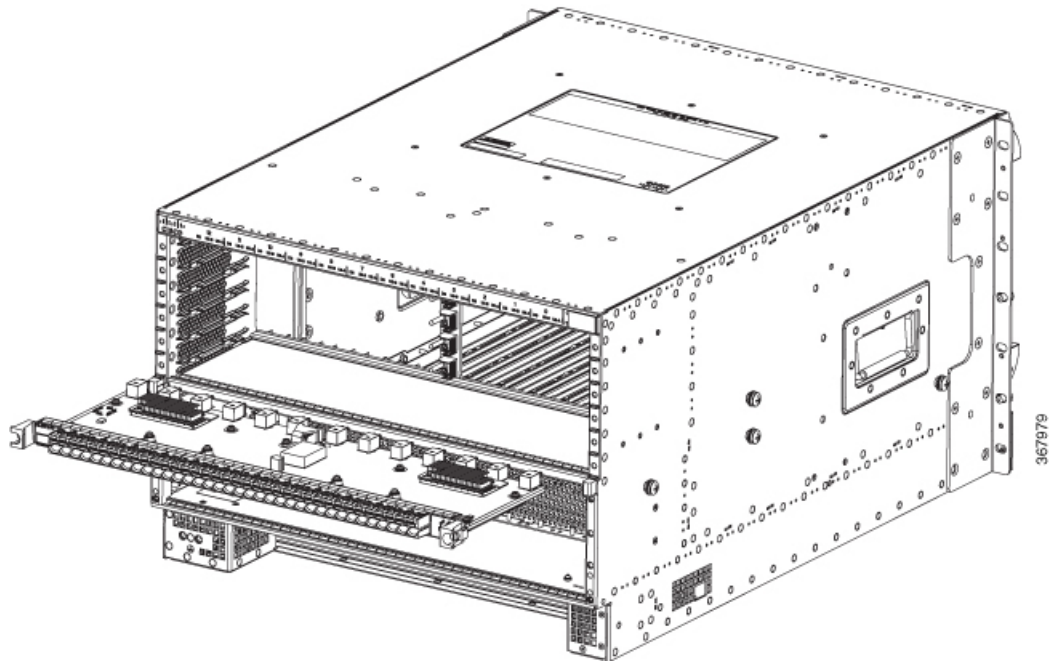
Installing the Cisco Remote PHY Shelf 7200 PIC



Note The Cisco Remote PHY Shelf 7200 PIC should be handled gently and carefully, to avoid damage to the RF connectors.

Complete the following steps to install the Cisco Remote PHY Shelf 7200:

1. Align the Cisco Remote PHY Shelf 7200-PIC PCB to the chassis PIC guides.



2. Insert the Cisco Remote PHY Shelf 7200-PIC PCB into the chassis guides and fully seat the faceplate against the chassis.
3. Secure PIC by tightening its faceplate captive screws.
4. Tighten captive screws to 8 Lb-In torque.

5. Install the RF cables into the port holes of the RF PIC.

The recommended cables and connectors to be used with the PIC cards are listed in the following table:

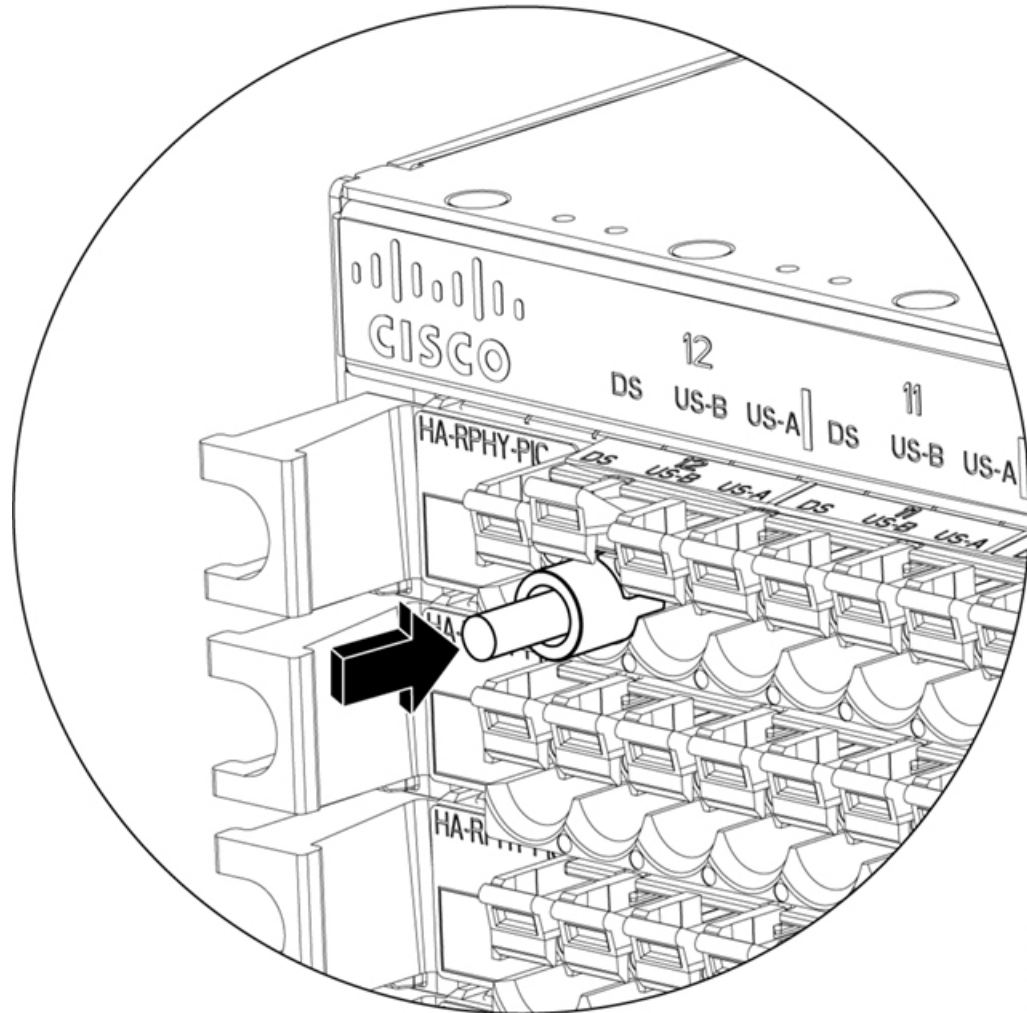
Connector/Cable	Description
75 Ohm compression MCX connectors	<ul style="list-style-type: none">• AMPHENOL 919-400P-71S• MOLEX 73366-6530
Conductor mini quad cable	<ul style="list-style-type: none">• It is recommended to use a 3 conductor cable (one red conductor and two blue).• AMPHENOL Times Fiber PN 075I99V12ZS41500ABR1
75 Ohm compression F connector for mini quad cable	<ul style="list-style-type: none">• AMPHENOL ASFPSLCQ• MOLEX 73356-3260

Installing the Connectors into the PIC Connector Latches

To install the connector into the PIC connector latch, complete the following steps:

1. Hold the cable 0.5-1” back of the rear of the compression connector.

Figure 9: Installing the connector into the PIC connector latches



2. Gently wiggle and push the connector into the panel port hole.
3. The latch will snap closed when the connector is fully seated.

Installing the RPDs

There are 13 RPD slots in the front of chassis on a 1.26" pitch (12+1).

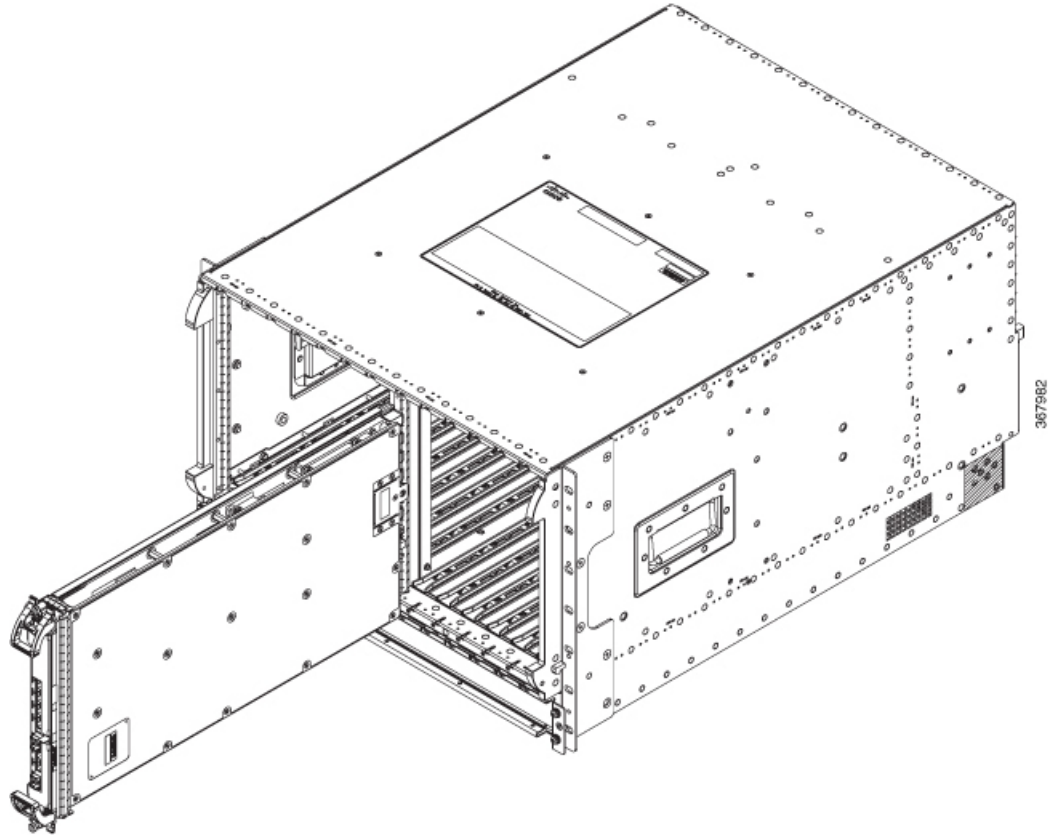


Note The connectors overhang the rear of the board. Handle the Line Cards with care so as to avoid damage to the RF and digital connectors on the rear of the card.

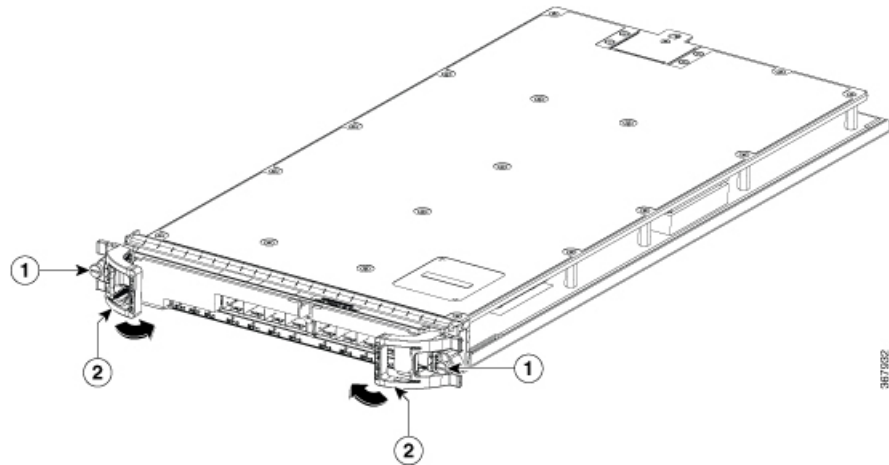
To install the RPD, complete the steps:

1. Align the rear carrier guide edges on the RPD to the yellow carrier guides in the chassis.

2. Gently slide the RPD into the chassis. Ensure that there is no binding of the card during installation.



3. Actuate the two ejectors together to finish the connector engagement of the RPD to the chassis.
4. Secure by tightening the two Captive Screws to 6-8 Lb-in torque.



1	Captive Screw	2	Ejector
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Installing the Air Filter

Required Tools and Equipment

- Air filter for the line card
- ESD-preventive Wrist Strap

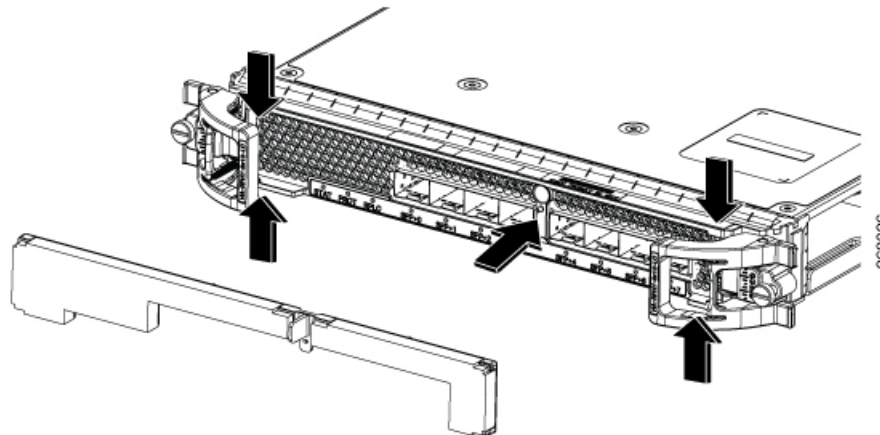


Note Attach an ESD-preventive wrist strap to your wrist and connect its end to the grounding lug that is connected to the chassis.

To install the Air Filter to the RPD, do the following steps:

1. Slide the Air Filter top and bottom into the slots on the RPD front panel bezels behind the ejectors.

Figure 10: Installing the Air Filter for the RPD



2. Locate the Form Hole beside the Pull Tab on the Air Filter. Gently press the Form Hole onto the faceplate protrusion feature.
3. Manipulate and tuck the Air Filter and frame around the SFP modules on the RPD faceplate.