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

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 though 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 5 lists the items in the Bottom-Support Kit and Table 2: Center-Mount Kit Contents, on page 6 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 .
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 1: Positioning the Front-Mount Bottom-Support Rails, on page 8.

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

Figure 1: 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 ortwo 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 2: Positioning the Center-Mounted Bottom-Support Rails*
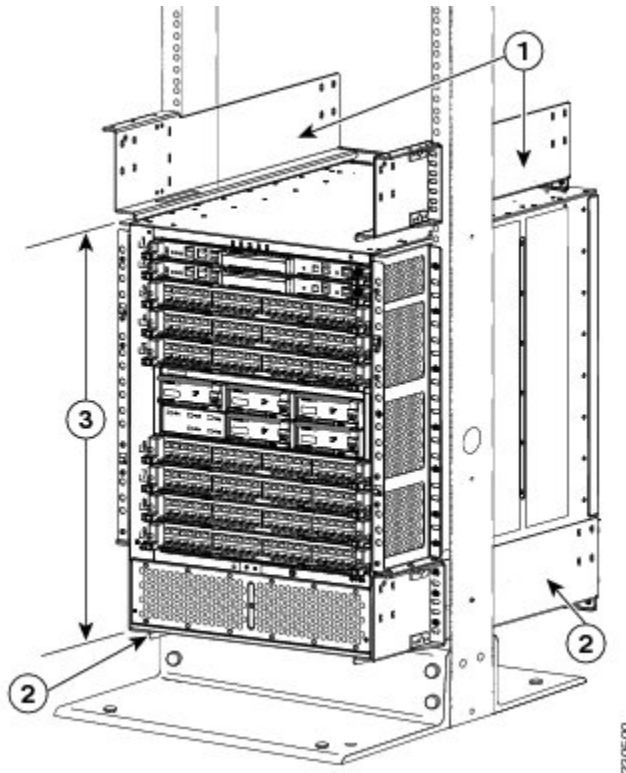
1	For the first and heaviest Cisco Nexus 7009 chassis installed in a rack, position two center-mount bottom-support rails at the lowest RU on the rack.	3	Allow at least 26.25 inches (66.7 cm) (15 RU) for each Cisco Nexus 7009 system.
2	For the second Cisco Nexus 7009 chassis installed in a rack, position 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 3: Attaching a Center-Mount Bottom-Support Rail to a Rack
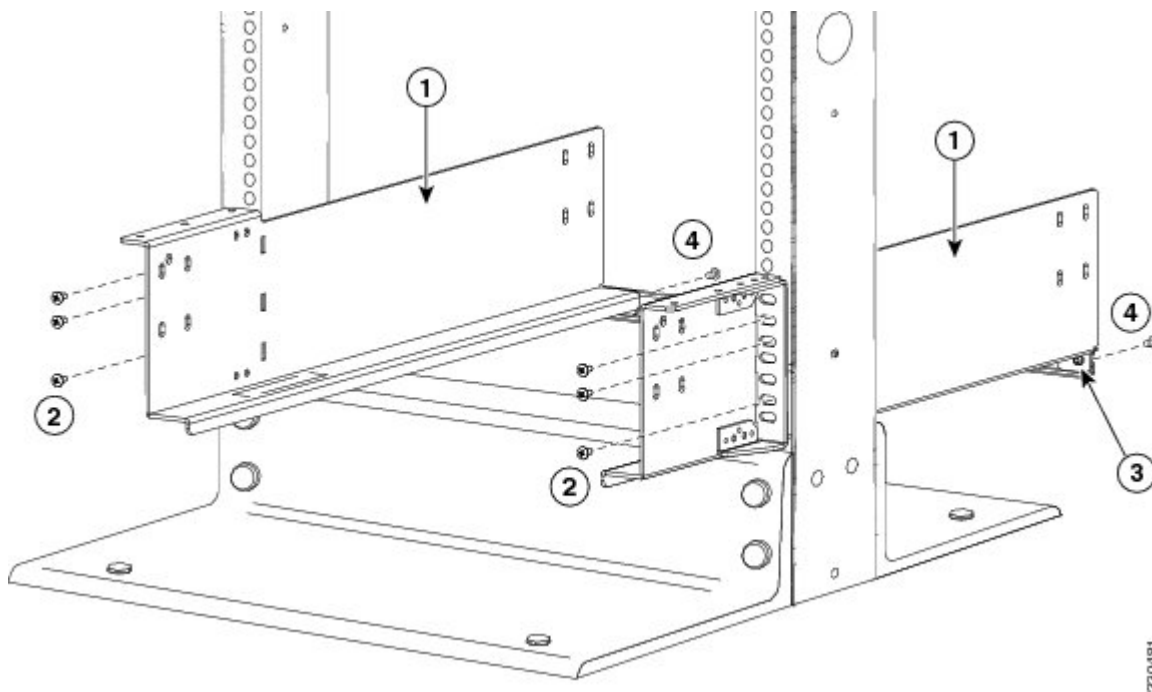
1	Left and right center-mount bottom-support rails	3	Crossbar
2	Two sets of 3 M6 x 19 mm Phillips screws ortwo sets of 3 12-24 x 3/4 in. Phillips screws	4	M4 x 8 mm Phillips screws (2)

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).

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 2.

⚠️

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 4.

- 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 3.

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 13 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 13 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:

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 0.25 inches [0.635 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. 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 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 4: Attaching the Front of the Cisco Nexus 7009 Chassis to the Rack, on page 14.

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 4: Attaching the Front of the Cisco Nexus 7009 Chassis to the Rack, on page 14.

Figure 4: Attaching the Front of the Cisco Nexus 7009 Chassis to the Rack
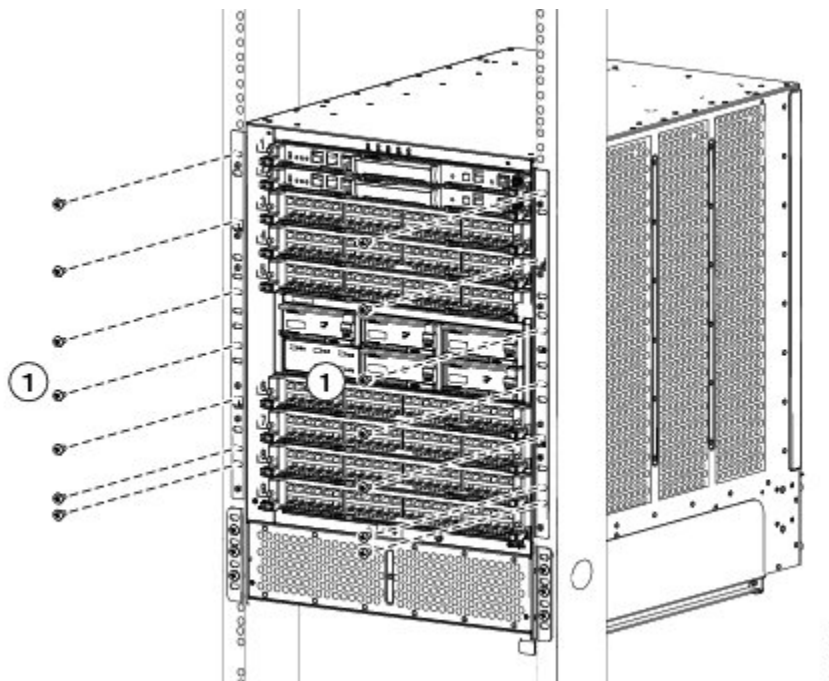
1	Seven to eight M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of eight screws)

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 6: Moving a Cisco Nexus 7009 Chassis onto a Rack (Center-Mount Installation), on page 17.)
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 .
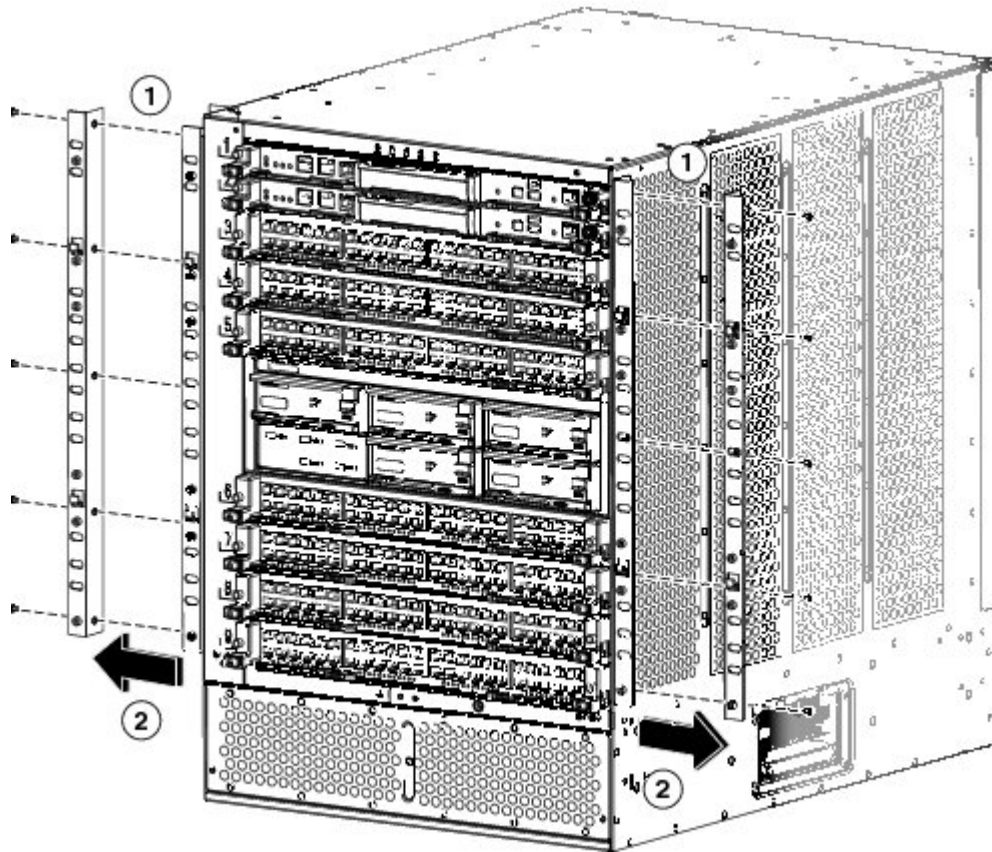
DETAILED STEPS

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 5: Removing the Front-Mount Brackets, on page 16).

Figure 5: 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:

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 0.25 inches [0.635 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. 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 6: Moving a Cisco Nexus 7009 Chassis onto a Rack (Center-Mount Installation), on page 17.)

Figure 6: Moving a Cisco Nexus 7009 Chassis onto a Rack (Center-Mount Installation)
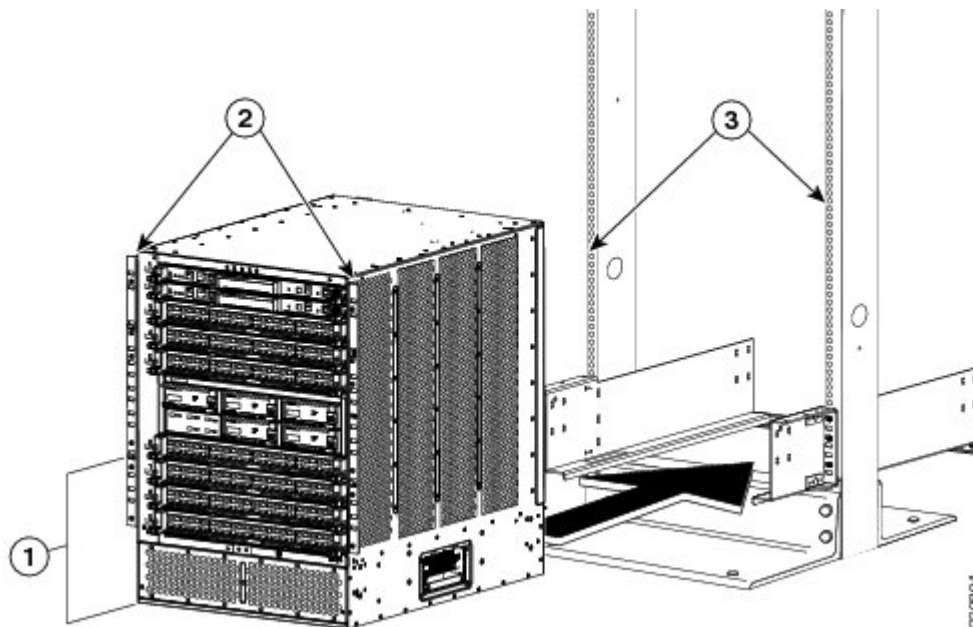
1	Push the lower half of the front side of the chassis	3	Rack with vertical mount rails
2	Center-mount brackets		

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 7: Inserting the Grounding Wire in the Grounding Lug, on page 19.
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 8: Grounding Pad on the Front of the Cisco Nexus 7009 Chassis, on page 20 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 7: Inserting the Grounding Wire in the Grounding Lug, on page 19.

*Figure 7: Inserting the Grounding Wire in the Grounding Lug*
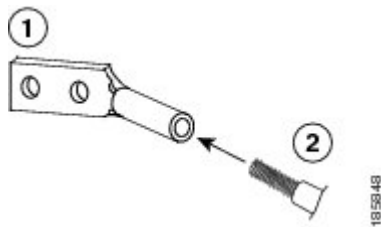
1	NRTL listed 45-degree grounding lug	2	Grounding cable with 0.75 in. (19 mm) of insulation stripped from the end

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 8: Grounding Pad on the Front of the Cisco Nexus 7009 Chassis, on page 20 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 8: Grounding Pad on the Front of the Cisco Nexus 7009 Chassis
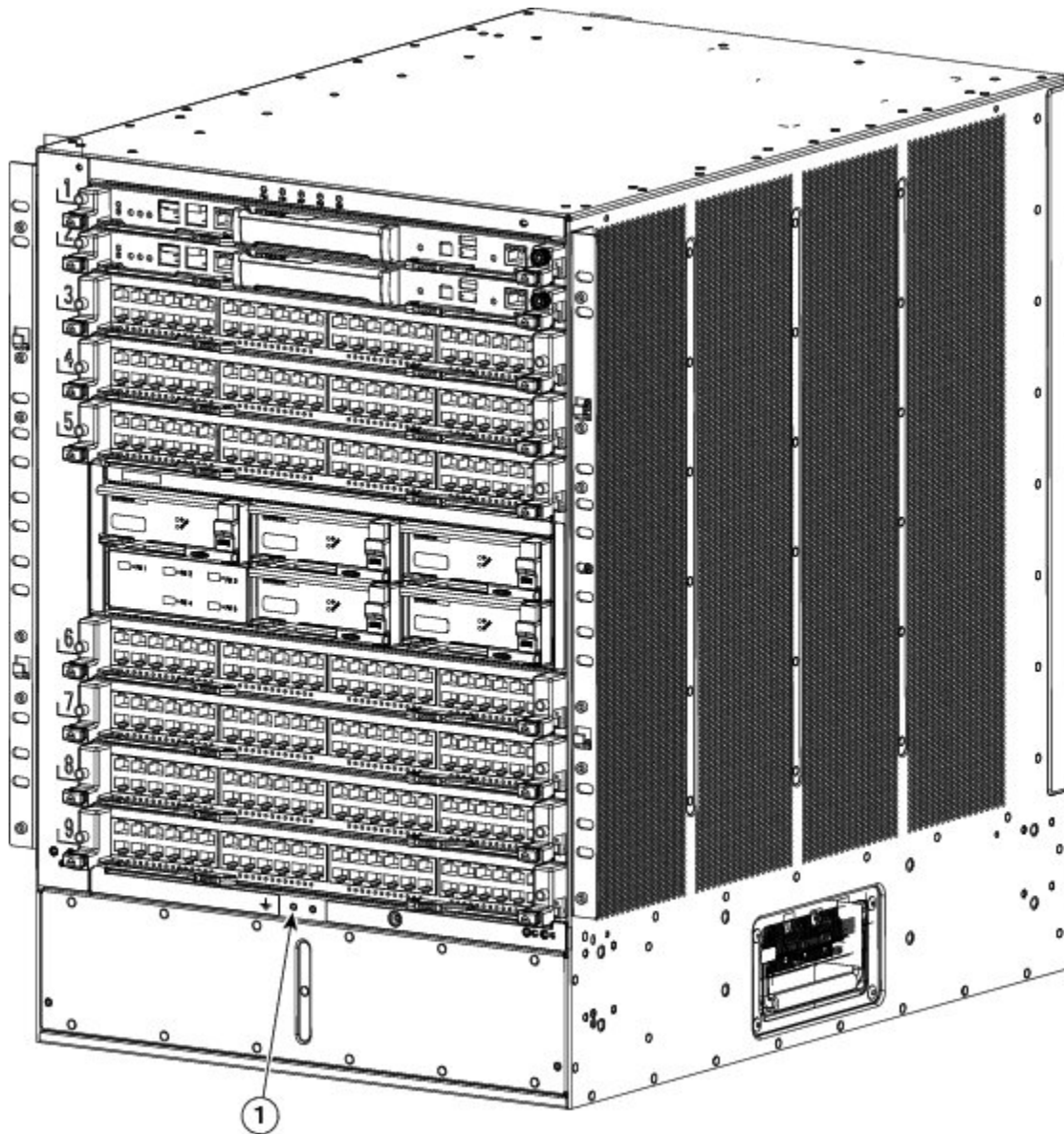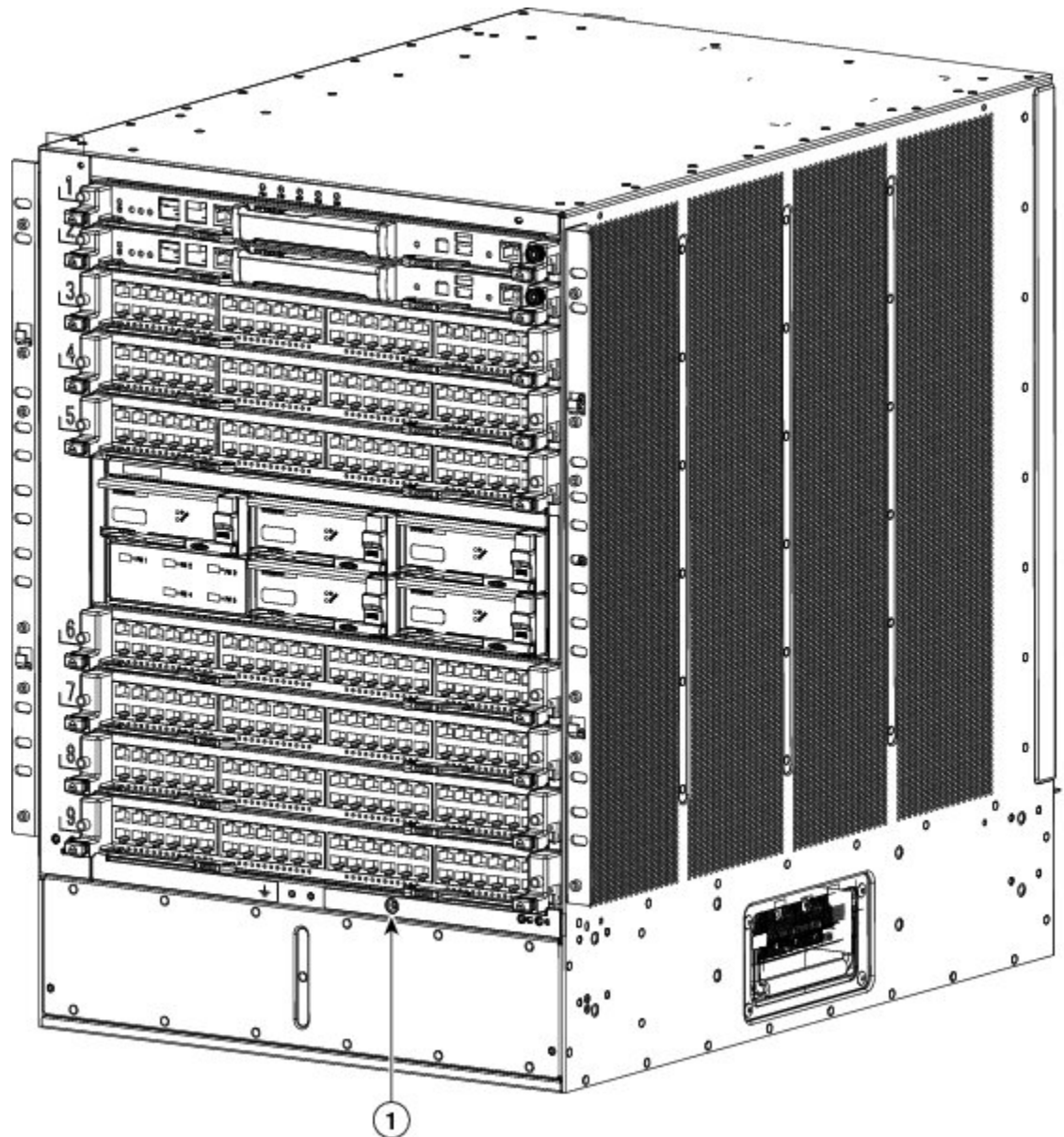

1	Grounding pad

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 9: ESD Grounding Port on the Front of the Cisco Nexus 7009 Chassis, on page 21).

Figure 9: 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 11), 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 10: Attaching the Left Door Stop, on page 25. 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 11: Placing Two Bushings on a Cable Management Frame Hinge Post, on page 26). 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 12: Assembling the Right Door Stop, on page 27).

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 13: Positioning the Air Intake Frame on the Chassis, on page 28.

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 14: Attaching the Left Side of the Door, on page 29. 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.
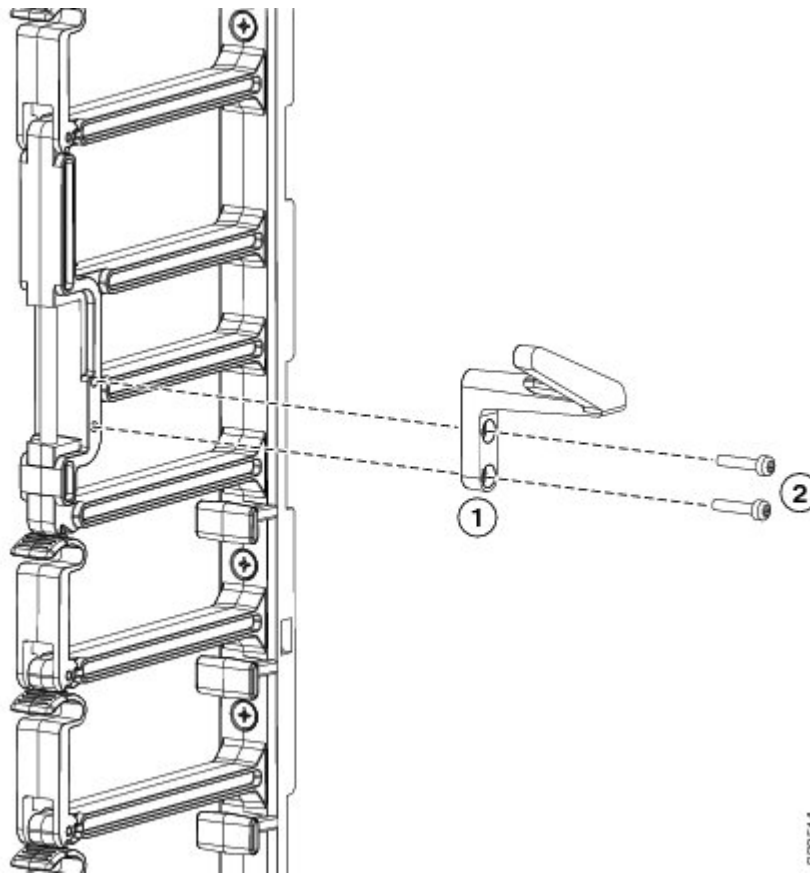
DETAILED STEPS

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 10: Attaching the Left Door Stop, on page 25. Tighten these two screws to 5 to 7 in-lb (0.6 to 0.8 N·m).

Figure 10: 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 11: Placing Two Bushings on a Cable Management Frame Hinge Post, on page 26). You must open each bushing to fit it around the post.

*Figure 11: Placing Two Bushings on a Cable Management Frame Hinge Post*
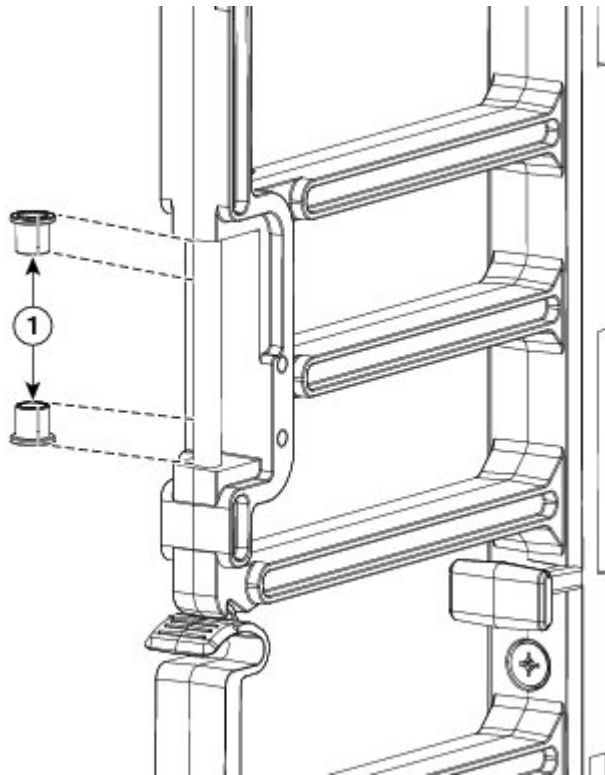
1	Split open the bushings and fit them around the cable management frame post.

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 12: Assembling the Right Door Stop, on page 27).

Figure 12: Assembling the Right Door Stop
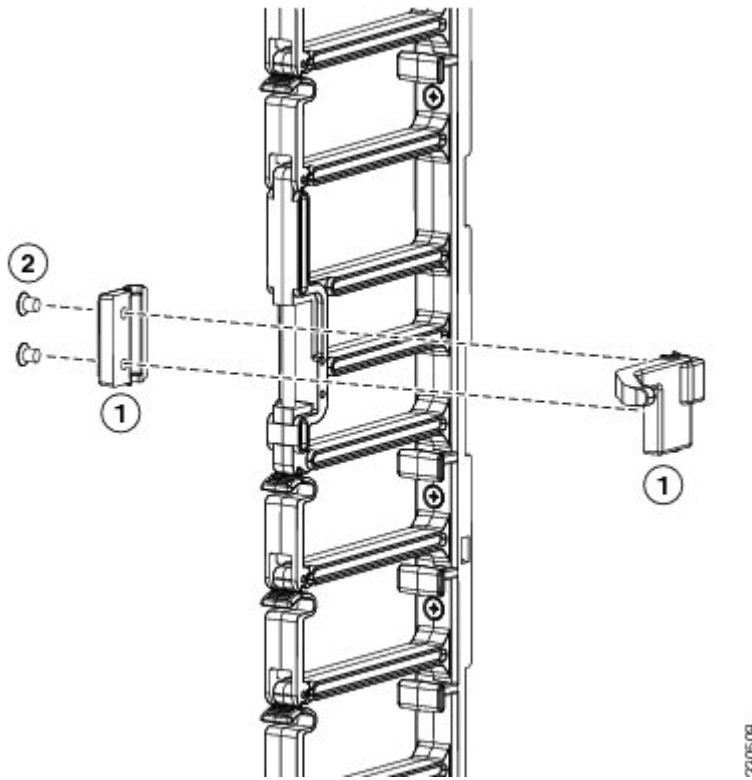
1	Assemble the right and left sides of the right door stop around the cable management post. Be sure that each bushing sticks out above or below the assembled door stop.	2	Use two M4 flat head screws to fasten the two door stop pieces together.

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 13: Positioning the Air Intake Frame on the Chassis, on page 28.

Figure 13: Positioning the Air Intake Frame on the Chassis
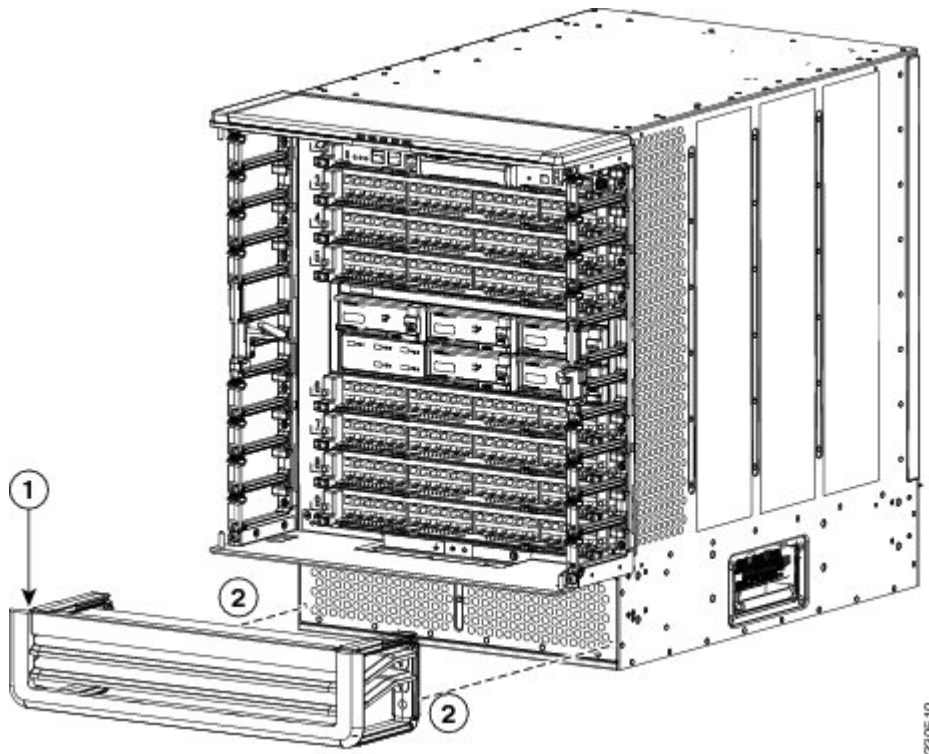
1	Air intake frame.	2	Align captive screws to their holes in the chassis and fasten them to the chassis.

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 14: Attaching the Left Side of the Door, on page 29. This action locks the latches around the hinge pins so that you no longer need to hold the door onto the chassis.

Figure 14: Attaching the Left Side of the Door
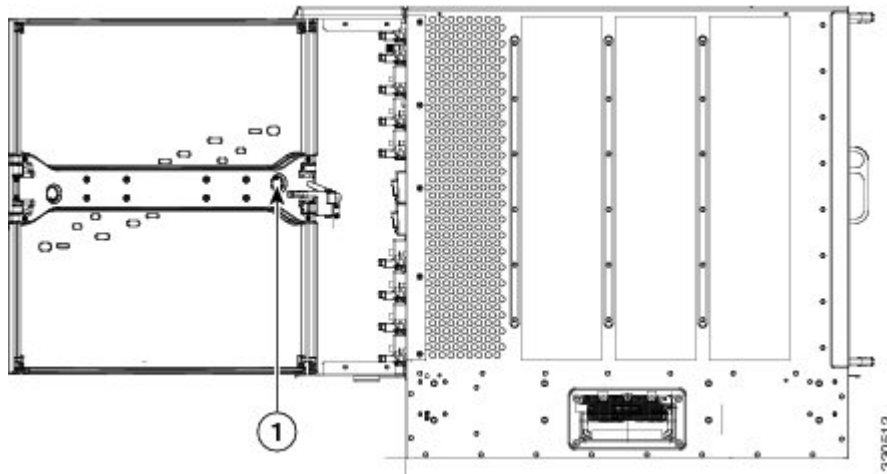
1	Press the locking button to lock the door onto the hinge pins.

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:
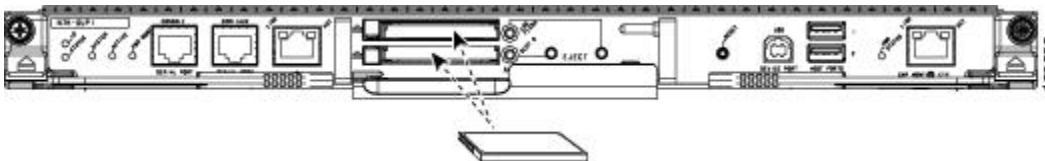
SUMMARY STEPS

   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 15: Aligning a CompactFlash Card to its Reader, on page 30. 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 15: 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.