Installing the Switch Chassis

This chapter includes the following topics:

Installing a Rack or Cabinet

Before you install the switch, you must install a standard four-post, 19-inch EIA data center rack (or a cabinet that contains such a rack) Cabinet and Rack Requirements.

Step 1 Bolt the rack to the concrete subfloor before moving the chassis onto it.

Note 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.

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Step 2 If the rack has bonded construction, connect it to the earth ground. This action enables you to easily ground the switch and its components and to ground your electrostatic discharge (ESD) wrist strap to prevent damaging discharges when you handle ungrounded components before installing them.

Step 3 If you need access to the source power at the rack, include either AC power receptacles or a DC power interface unit (PIU) with the amperage required by the switch that you are installing. .

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 you connect it to the facility DC power.

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

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Note If you are using the combined power mode or power-supply redundancy, you need only one power source. If you are using input-source redundancy or full redundancy, you need two power sources.

Unpacking and Inspecting a New Switch

Before you install a new 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.

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Caution When you handle the 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.

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Tip Do not discard the shipping container when you unpack the switch. 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.

Step 1 Compare the shipment to the equipment list that is provided by your customer service representative and verify that you have received all of the ordered items.

The shipment should include boxes for the following:

- System chassis, which includes the following installed components:
    - 1 or 2 supervisor modules
    - 1 to 4 I/O modules
    - Up to 6 fabric modules
    - 3 fan trays
    - 1 to 4 power supply units

- Switch accessory kit

  To see a list of what is included in this kit, see Cisco Nexus 7706 Switch Accessory Kit.

- Cable management frames
    - Left and right side frames
    - Top frame
    - M4 x 12 mm flat-head Phillips screws (12)

• Front door kit — Optional (N77-C7706-FDK)

- Front door (1) (69-2532-01)

- M3 x 8 mm pan-head screws (2) (48-0393-01)

• Air filter kit — Optional (N77-C7706-AFLT)

- Air filter (1) for the front door

- Door-side brush filters (2)

- Cable-management frame brush filters (2)

- M4 x 12 mm flat-head Phillips screws (12)

Step 2 Check the contents of each box for damage.

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

• 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

Attaching Bottom-Support Rails to a Two-Post Rack

The bottom-support rails support the weight of the switch chassis in the rack or cabinet. To maximize the stability of the rack, you must attach these rails at the lowest possible rack unit (RU).

Warning 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.

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Before you begin

Before you can install the bottom support rails for the chassis, you must do the following:

• Verify that a two-post rack is installed and secured to the concrete subfloor (see Installing a Rack or Cabinet).

- If any other devices are stored in the rack or cabinet, verify that they are located below where you plan to install the switch. Also, verify that lighter devices in the same rack are located above where you plan to install this switch.

- Verify that the center-mount bottom-support rails kit (N77-C7706-CMK) was ordered and shipped with the chassis.

Step 1   Position one of the two bottom-support rails at the lowest possible RU in the rack or cabinet. Be sure there is at least 9 RU of vertical space above the rails to install the chassis.

Step 2   Use a manual Phillips torque screwdriver to attach the bottom-support rail to the rack using four M6 x 19 mm or 12-24 x 3/4 inch screws and tighten each screw to 40 in. lbs (4.5 N.m) of torque.

Figure 1: Attaching Bottom-Support Rails to a Rack
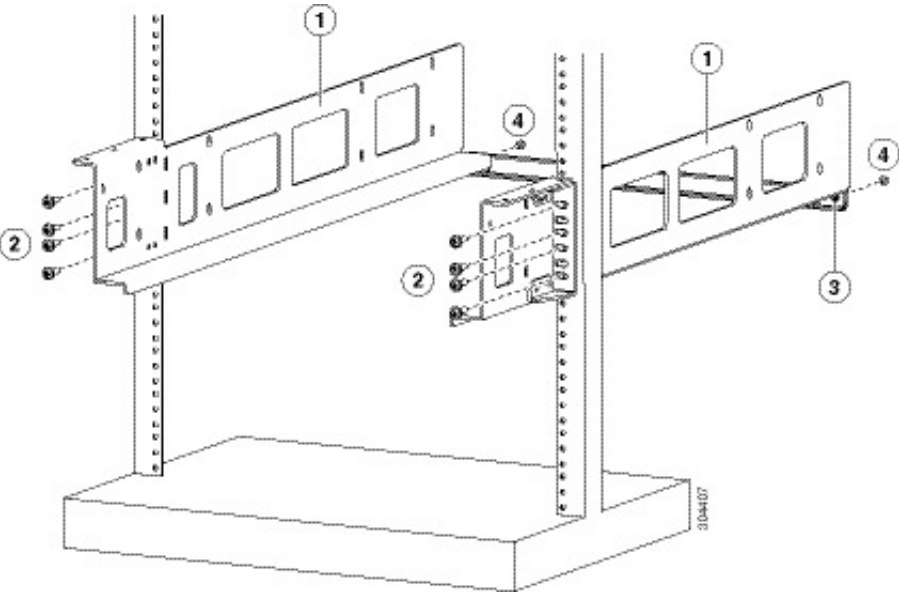
1	Adjustable bottom-support rails (2)	3	Cross bar aligned to the lower back of both rails
2	M6 x 19 mm (or 12-24 x 3/4 in.) Phillips screws (6 to 8 per rail)	3	M4 x 8 mm screws (1 for each of two ends of the cross bar)

Step 3   Repeat Steps 1 and 2 to attach the other bottom-support rail to the rack.

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

Step 4   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). See Callouts 3 and 4 in the previous figure for the placement of the crossbar and its screws.

What to do next

When the bottom-support rails are installed at the lowest possible RU and are level, you are ready to install the chassis in the rack or cabinet.

Attaching Bottom-Support Rails to a Four-Post Rack

The bottom-support rails support the weight of the switch chassis in the rack or cabinet. To maximize the stability of the rack, you must attach these rails at the lowest possible rack unit (RU).

Warning

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

Before you begin

Before you can install the bottom support rails for the chassis, you must do the following:

- Verify that a four-post rack or cabinet is installed and secured to the concrete subfloor (see Installing a Rack or Cabinet).

- If any other devices are stored in the rack or cabinet, verify that they are located below where you plan to install the switch. Also, verify that lighter devices in the same rack are located above where you plan to install this switch.

- Verify that the bottom-support rails kit is included in the switch accessory kit .

Step 1 Position one of the two adjustable bottom-support rails at the lowest possible RU in the rack or cabinet and adjust the length of the rail so that it stretches from the outer edges of the front and rear vertical mounting rails. Be sure there is at least 9 RU of vertical space above the rails to install the chassis (see the following figure).

You can expand the rail so that its mounting brackets are spaced between 24 to 32 inches (61.0 to 81.3 cm).

Figure 2: Positioning Bottom-Support Rails
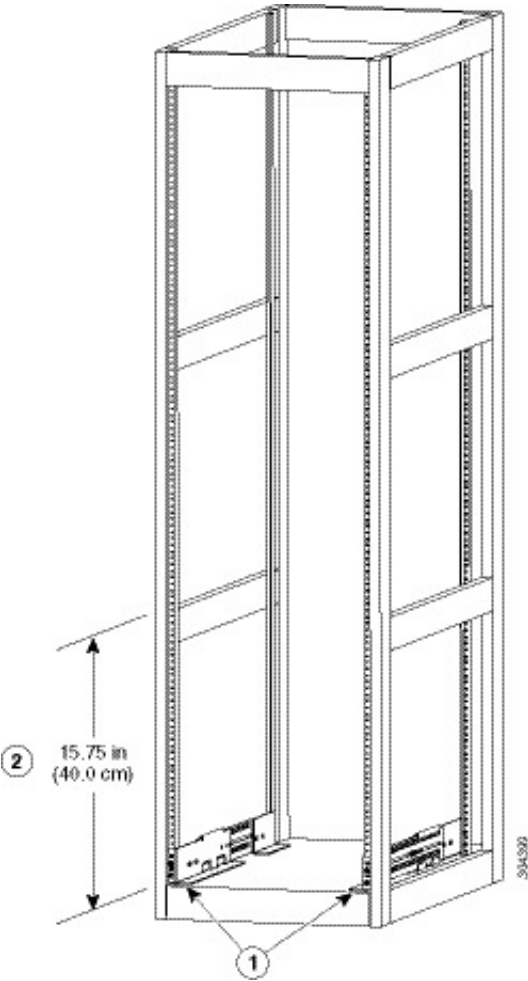
1	Position two bottom-support rails at the lowest RU on the rack.	2	Allow at least 15.75 inches (40.0 cm) (9 RU) for each chassis.

Step 2 Use a manual Phillips torque screwdriver to attach the bottom-support rail to the rack using at least three (four if possible) M6 x 19 mm or 12-24 x 3/4 inch screws for each end of the rail (using a total of 6 to 8 screws for the rail as shown in the following figure) and tighten each screw to 40 in. lbs (4.5 N.m) of torque.

Figure 3: Attaching Bottom-Support Rails to a Rack
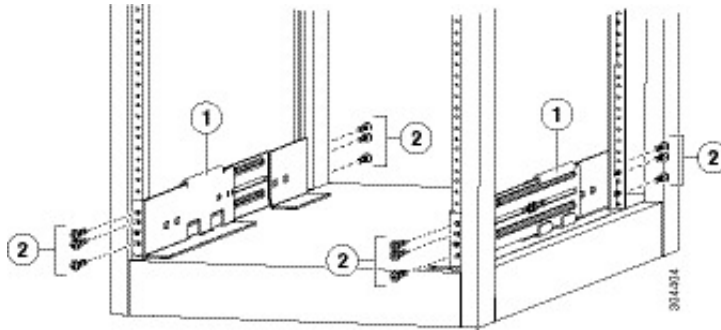
1	Adjustable bottom-support rails (2)	2	M6 x 19 mm (or 12-24 x 3/4 in.) Phillips screws (6 to 8 per rail)

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

Step 3   Repeat Steps 1 and 2 to attach the other bottom-support rail to the rack. The other rail/bracket need to be flipped 180 degrees and installed to the other side of the rack because both the left and right sides are the same rail/bracket.

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

What to do next

When the bottom-support rails are installed at the lowest possible RU and are level, you are ready to install the chassis in the rack or cabinet.

Installing the Chassis in a Two-Post Rack

Before you begin

• Verify that the chassis shipment is complete and undamaged.

• Verify that a two-post rack is installed and secured to the subfloor.

Warning   The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before installation or servicing. Failure to stabilize the rack can cause bodily injury.

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• Verify that the bottom-support rails have been attached to the lowest possible RU in the rack or cabinet and there is 9 RU (15.75 inches [40.0 cm]) of space above the rails to install the chassis.

- If there are other devices in the rack, verify that the devices that are heavier than this chassis are installed below where you are going to install the chassis and lighter devices are installed above where you are going to install the chassis.

- Verify that the data center ground is accessible where you are installing the chassis.

- Verify that you have the following tools and equipment:

  - Mechanical lift capable of lifting the full weight of the chassis and its installed modules

Note Fully loaded, the chassis can weigh up to 325 lb (147.5 kg). You can lighten the chassis for easier moving by removing its power supplies, fan trays, and fabric modules. To determine the full weight of the chassis and the appropriate weight rating for the mechanical lift, see Weights and Quantities for the Chassis, Modules, Fan Trays, and Power Supplies.

Caution You must use a mechanical lift or floor jack to elevate a switch weighing over 120 pounds (55 kg).

  - Manual Phillips-head torque screwdriver

Note You should also have at least two persons to push the chassis when you slide it onto the rack.

Warning 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.

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Step 1 If you need to make the chassis as light as possible for moving, you can optionally remove the fabric modules, fan trays, and power supplies.

- To remove a power supply, follow these steps:

  a. Push and hold the release handle on the power supply to the left.

  b. Pull the power supply about two inches (about 5 cm) out of the chassis.

    c. Place one hand under the power supply to support its weight and pull the power supply out of the chassis.

    d. Place the power supply on an antistatic surface.

• To remove a fan tray, follow these steps:

    a. Unscrew the four captive screws on the front of the fan tray (one captive screw in each corner of the front of the fan tray).

    b. Hold both handles on the fan tray with both of your hands and pull the fan tray out of the chassis.

    c. Place the fan tray on an antistatic surface.

• To remove a fabric module, follow these steps:

Note   Before you can remove a fabric module, you must remove the fan tray that is installed in front of it.

    a. Press the lever eject button found in the middle of the front of the module.

    b. Rotate both of the levers away from the fabric module.

    c. When the other end of each lever is no longer holding onto the chassis, pull the two levers to slide the module a couple inches out of the chassis.

    d. Rotate the two levers back to the fabric module. Each lever will click when locked in place.

    e. Place one hand on the front of the module and place your other hand under the module to support its weight.

    f. Slide the module out of the chassis and place the module on an antistatic surface.

Step 2   Load the chassis onto a mechanical lift or floor jack as follows:

a) Position the mechanical lift next to the shipping pallet that holds the chassis.

b) Elevate the lift platform to the level of the bottom of the chassis (or no more than 1/4 inch [0.635 cm] below the bottom of the chassis).

c) Use 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.

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

Step 3   Use the mechanical lift to move and align the rear of the chassis to the front of the rack or cabinet.

Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 1/4 inch (0.6 cm) above the rails.

Step 4   Push the chassis halfway onto the rack or cabinet.

Use two persons to push the chassis onto the bottom-support 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 is halfway onto the rack (see the following figure). Ensure that the chassis does not get caught on any of the expansion edges of the bottom-support rail.

Figure 4: Moving a Chassis onto a Rack or Cabinet
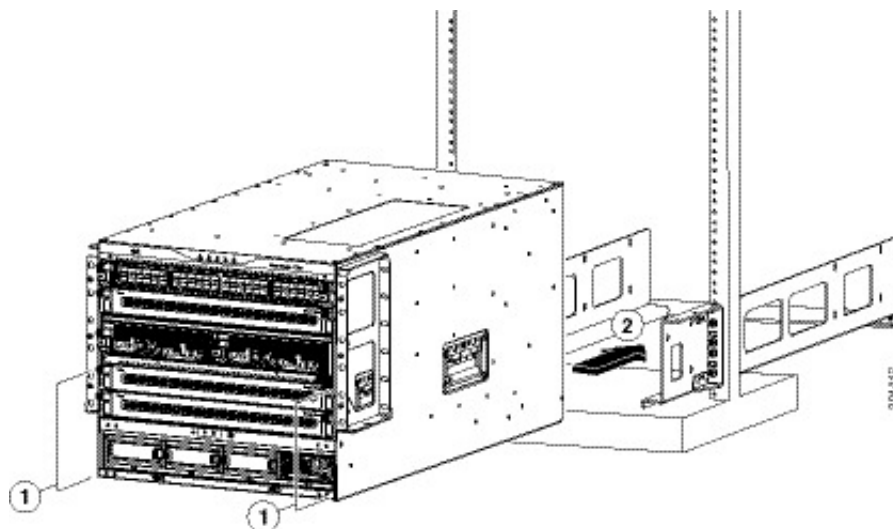
1	Push the sides of the lower half of the front side of the chassis.	2	Push the chassis into the rack until its mounting bracket touches the vertical mounting rails on the rack.

Tip   To adjust the placement of the chassis on the bottom-support rails, you can use the handles on the sides of the chassis.

Step 5   If the mechanical lift is raised above the height of the bottom-support rails, gently lower it to the level of the rails or no more than 1/4 inch (0.6 cm) below the rails.

This action helps to prevent the bottom of the chassis from getting caught on the bottom expansion edges of the bottom-support rails.

Step 6   Push the chassis all the way onto the rack so that the vertical mounting brackets on the chassis come in contact with the vertical mounting rails on the rack.

Step 7   Use seven M6 x 19 mm or 24 x 3/4-inch screws to attach each of the two vertical mounting brackets on the chassis to the two vertical mounting rails on the rack (total of 14 screws). See Callout 2 in the following figure.

Figure 5: Attaching the Chassis to the Rack
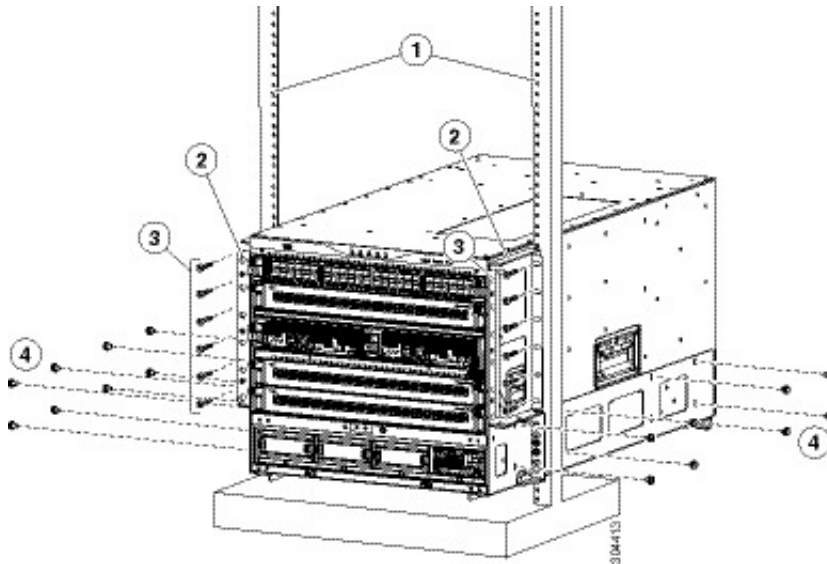
1	Vertical mounting rails on the rack	3	Six M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of 12 screws)
2	Mounting brackets for two-post racks	4	Eight M6 x 10 mm screws used to attach each bottom support rail to the chassis (use a total of 16 screws for both rails)

Step 8 Use eight M6 x 10 mm screws to attach the bottom-support rails to the chassis (use a total of 16 screws for both bottom support rails). See Callout 4 in the previous figure.

Step 9 If you removed any fabric modules before moving the chassis, replace each one in the chassis as follows:

a) Holding the front of the fabric module (the side with the LEDs), turn the module so that the front side is vertical.

Note The top of the module has an alignment bracket running from the rear to the front. The electrical connectors will be at the bottom.

b) Align the rear of the fabric module to an open fabric slot and insert the bracket on top of the module into the track at the top of the slot.

Note If there are only three fabric modules to install, install them in fabric slots 1, 3, and 5.

c) Slide the module part way into the slot.
d) Press the ejector button on the front of the module, to release the levers from the front of the module.
e) Rotate the levers away from the front of the module and hold them while sliding the module all the way into the slot.
f) Simultaneously rotate both levers to the front of the module. They click when locked to the front of the module.

Step 10 If you removed any fan trays before moving the chassis, reinstall each one in the chassis as follows:

a) Holding each of the two handles on the fan tray with your two hands, align the fan tray to an open fan tray slot.

Note The two alignment brackets on top of the fan tray should align to two tracks at the top of the slot.

b) Slide the fan tray into the slot until the front of the fan tray comes in contact with the rear of the chassis.

Note The two alignment pins on the fan tray (on the top and one on the bottom) should go into holes in the chassis and the four captive screws on the fan tray should align to screw holes in the chassis.

    c) Screw in the four captive screws to the chassis and tighten each screw to 8 in-lb (0.9 N·m).

Step 11 If you removed any power supplies before moving the chassis, reinstall each one as follows:

    a) Determine which power supply slots to fill and ensure that each of those slots is open.

    If you are using the combined or power supply redundancy mode, you can use any slot for the power supply that you are installing. If you are using the input-source or full redundancy mode, you must group the power supplies that are to be connected to the same grid on either the left or right power supply slots in the chassis (that is, place the power supplies for grid A in slots 1 or 2 or both slots and place the power supplies for grid B in slots 3 or 4 or both slots).

    b) Place one hand on the front of the power supply and place your other hand under it to support its weight.

    c) Align the power supply to an open power supply slot.

Note The alignment bracket on top of the power supply should align to a track at the top of the slot and a bar at the bottom of the power supply should be guided by a track at the bottom of the slot.

    d) Slide the power supply all the way into the slot until its release handle clicks and the module stops.

Installing the Chassis on a Four-Post Rack or Cabinet

Before you begin

- Verify that the chassis shipment is complete and undamaged.

- Verify that a rack or cabinet is installed and secured to the subfloor.

Warning The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before installation or servicing. Failure to stabilize the rack can cause bodily injury.

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- Verify that the bottom-support rails have been attached to the lowest possible RU in the rack or cabinet and there is 9 RU (15.75 inches [40.0 cm]) of space above the rails to install the chassis.

- If there are other devices in the rack, verify that the devices that are heavier than this chassis are installed below where you are going to install the chassis and lighter devices are installed above where you are going to install the chassis.

- Verify that the data center ground is accessible where you are installing the chassis.

- Verify that you have the following tools and equipment:

    - Mechanical lift capable of lifting the full weight of the chassis and its installed modules

Note   Fully loaded, the chassis can weigh up to 325 lb (147.5 kg). You can lighten the chassis for easier moving by removing its power supplies, fan trays, and fabric modules. To determine the full weight of the chassis and the appropriate weight rating for the mechanical lift, see Weights and Quantities for the Chassis, Modules, Fan Trays, and Power Supplies.

Caution   You must use a mechanical lift or floor jack to elevate a switch weighing over 120 pounds (55 kg).

- Phillips-head torque screwdriver

- Bottom-support rails kit (shipped with the accessory kit)

  Part of this kit has already been used to install the bottom-support rails. You should still have 14 12-24 x 3/4-inch or M6 x 19 mm Phillips screws, which are required for attaching the chassis to the rack.

Note   You should also have at least two persons to push the chassis when you slide it onto the rack.

Warning   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.

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Step 1   If you need to make the chassis as light as possible for moving, you can optionally remove the fabric modules, fan trays, and power supplies.

- To remove a power supply, follow these steps:

  a. Slide the handle in the middle of the ejector lever towards the end of the lever and rotate the lever away from the power supply.

  b. Pull the power supply a couple of inches (about 5 cm) out of the chassis.

  c. Place one hand under the power supply to support its weight and pull the power supply out of the chassis.

  d. Place the power supply on an antistatic surface.

• To remove a fan tray, follow these steps:

   a. Unscrew the four captive screws on the front of the fan tray (one captive screw in each corner of the front of the fan tray).

   b. Hold both handles on the fan tray with both of your hands and pull the fan tray out of the chassis.

   c. Place the fan tray on an antistatic surface.

• To remove a fabric module, follow these steps:

   Note   Before you can remove a fabric module, you must remove the fan tray that is installed in front of it.

   a. Press the lever eject button found in the middle of the front of the module.

   b. Rotate both of the levers away from the fabric module.

   c. When the other end of each lever is no longer holding onto the chassis, pull the two levers to slide the module a couple inches out of the chassis.

   d. Rotate the two levers back to the fabric module. Each lever will click when locked in place.

   e. Place one hand on the front of the module and place your other hand under the module to support its weight.

   f. Slide the module out of the chassis and place the module on an antistatic surface.

Step 2   Load the chassis onto a mechanical lift or floor jack as follows:

   a) Position the mechanical lift next to the shipping pallet that holds the chassis.

   b) Elevate the lift platform to the level of the bottom of the chassis (or no more than 1/4 inch [0.635 cm] below the bottom of the chassis).

   c) Use 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.

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

Step 3   Use the mechanical lift to move and align the rear of the chassis to the front of the rack or cabinet.

Make sure that the bottom of the chassis is elevated to the height of the bottom-support rails or no more than 1/4 inch (0.6 cm) above the rails.

Step 4   Push the chassis halfway onto the rack or cabinet.

Use two persons to push the chassis onto the bottom-support 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 is halfway onto the rack (see the following figure). Ensure that the chassis does not get caught on any of the expansion edges of the bottom-support rail.

Figure 6: Moving a Chassis onto a Rack or Cabinet
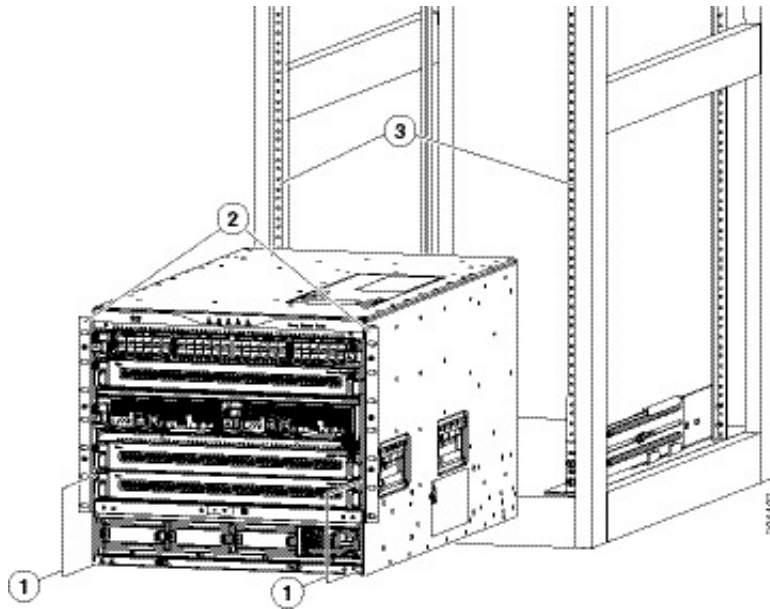
1	Push the sides of the lower half of the front side of the chassis.	3	Rack vertical mounting rails.
2	Chassis mounting brackets.		

Tip To adjust the placement of the chassis on the bottom-support rails, you can use the handles on the sides of the chassis.

Step 5 If the mechanical lift is raised above the height of the bottom-support rails, gently lower it to the level of the rails or no more than 1/4 inch (0.6 cm) below the rails.

This action helps to prevent the bottom of the chassis from getting caught on the bottom expansion edges of the bottom-support rails.

Step 6 Push the chassis all the way onto the rack so that the vertical mounting brackets on the chassis come in contact with the vertical mounting rails on the rack.

Step 7 Use seven M6 x 19 mm or 24 x 3/4-inch screws to attach each of the two vertical mounting brackets on the chassis to the two vertical mounting rails on the rack (total of 14 screws). See Callout 2 in the following figure.

Figure 7: Attaching the Chassis to the Rack
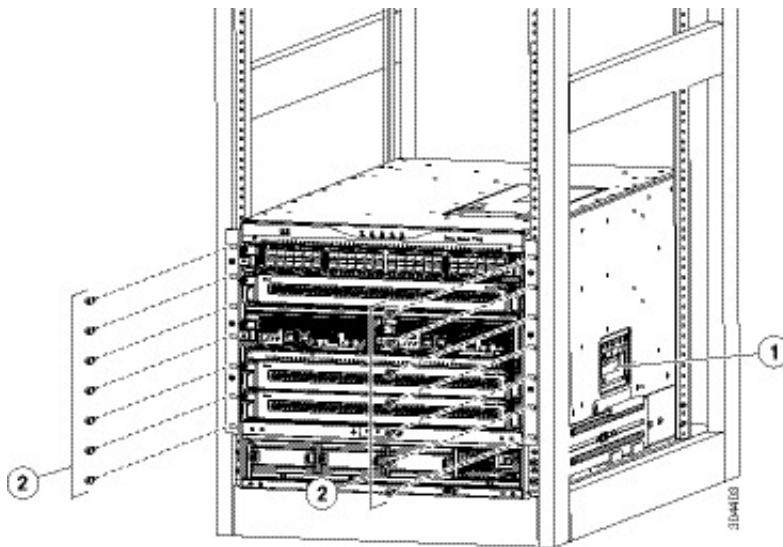
1	Handles used to adjust the chassis placement	2	Six M6 x 19 mm or 10-24 x 3/4 in. Phillips screws used to attach each side bracket to a front mounting rail (use a total of 12 screws)

Step 8   If you removed any fabric modules before moving the chassis, replace each one in the chassis as follows:

a) Holding the front of the fabric module (the side with the LEDs), turn the module so that the front side is vertical.

  Note   The top of the module has an alignment bracket running from the rear to the front. The electrical connectors will be at the bottom.

b) Align the rear of the fabric module to an open fabric slot and insert the bracket on top of the module into the track at the top of the slot.

  Note   If there are only three fabric modules to install, install them in fabric slots 1, 3, and 5.

c) Slide the module part way into the slot.
d) Press the ejector button on the front of the module, to release the levers from the front of the module.
e) Rotate the levers away from the front of the module and hold them while sliding the module all the way into the slot.
f) Simultaneously rotate both levers to the front of the module. They click when locked to the front of the module.

Step 9   If you removed any fan trays before moving the chassis, reinstall each one in the chassis as follows:

a) Holding each of the two handles on the fan tray with your two hands, align the fan tray to an open fan tray slot.

  Note   The two alignment brackets on top of the fan tray should align to two tracks at the top of the slot.

b) Slide the fan tray into the slot until the front of the fan tray comes in contact with the rear of the chassis.

  Note   The two alignment pins on the fan tray (on the top and one on the bottom) should go into holes in the chassis and the four captive screws on the fan tray should align to screw holes in the chassis.

c) Screw in the four captive screws to the chassis and tighten each screw to 8 in-lb (0.9 N·m).

Step 10   If you removed any power supplies before moving the chassis, reinstall each one as follows:

a) Determine which power supply slots to fill and ensure that each of those slots is open.

If you are using the combined or power supply redundancy mode, you can use any slot for the power supply that you are installing. If you are using input-source or full redundancy mode, you must group the power supplies that are to be connected to the same grid on either the left or right power supply slots in the chassis (that is, place the power supplies for grid A in slots 1 or 2 or both slots and place the power supplies for grid B in slots 3 or 4 or both slots).

b) Place one hand on the front of the power supply and place your other hand under it to support its weight.

c) Align the power supply to an open power supply slot.

Note   The alignment bracket on top of the power supply should align to a track at the top of the slot and a bar at the bottom of the power supply should be guided by a track at the bottom of the slot.

d) Slide the power supply all the way into the slot until it stops.

e) Slide the handle in the middle of the ejector lever toward the end of the lever and rotate the lever to the front of the power supply. Release the middle handle.

Note   The lever should grab the inside of the slot and push the power supply onto its mid plane connectors.

Note   If you are using the combined power or power-supply redundancy mode, you can fill any power supply slot with the power supplies. If you are using input-source or full redundancy modes, you must place half of the power supplies in slots 1 and 2, and you must place the other half of the power supplies in slots 3 and 4 (half will be used for available power and the other half will be used for redundant power).

f) Screw in the two captive screws on the front of the power supply to the chassis. Tighten each screw to 8 in-lb (0.9 N·m).

Grounding a Switch Chassis

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

• You connect the chassis to either a fully-bonded, grounded rack or to the data center ground.

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

• You connect the AC and HVAC/HVDC power supplies to the earth ground automatically when you connect an AC or HVAC/HVDC power supply to an AC or HVAC/HVDC power source.

Before you begin

Before you can ground the chassis, you must have a connection to the earth ground for the data center building. If you installed the switch 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 pad to the rack. Otherwise, you must connect the chassis grounding pad directly to the data center ground.

To connect the switch chassis to the data center 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 accessory kit.

- Grounding screws—Two M4 x 8 mm (metric) pan-head screws. These screws are shipped with the accessory kit.

- Grounding wire—Not supplied with the 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 manual Phillips-head torque screwdriver.

- Crimping tool to crimp the grounding wire to the grounding lug.

- Wire-stripping tool to remove the insulation from the grounding wire.

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 the following figure.

*Figure 8: Inserting a Grounding Wire in a Grounding Lug*
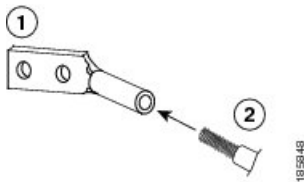
1	NRTL listed 45-degree grounding lug	2	Grounding cable with 0.75 in. (19 mm) of insulation stripped from one end

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

Step 4   Secure the grounding wire lug to the grounding pad with two M4 screws, and tighten the screws to 11.5 to 15 in-lb (1.3 to 1.7 N·m) of torque.

The following figure shows the location of the grounding pad on the front of the chassis. There is another grounding pad on the other side of the chassis.

Figure 9: Grounding Pad Location on the Front of the Cisco Nexus 7706 Chassis
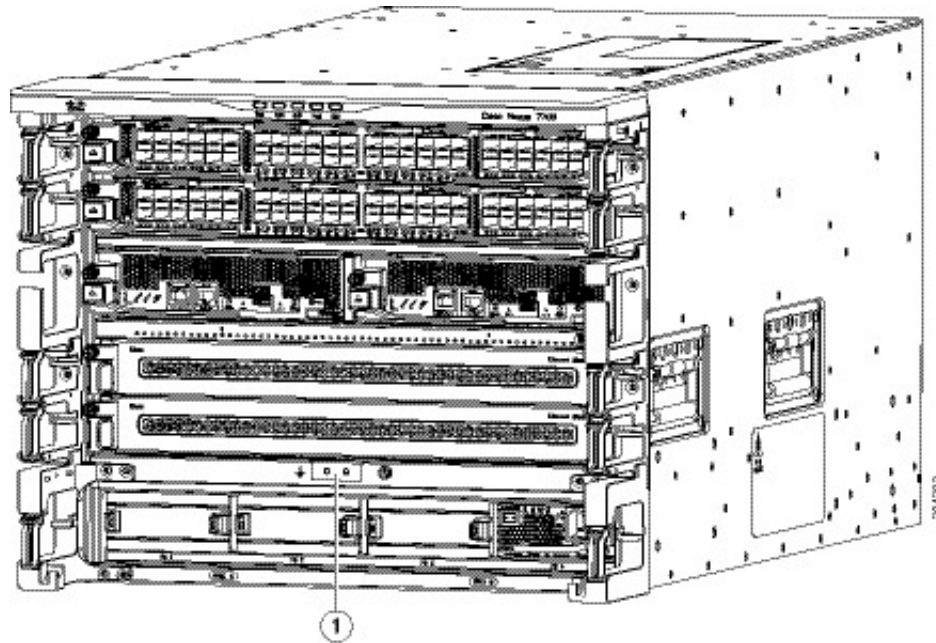
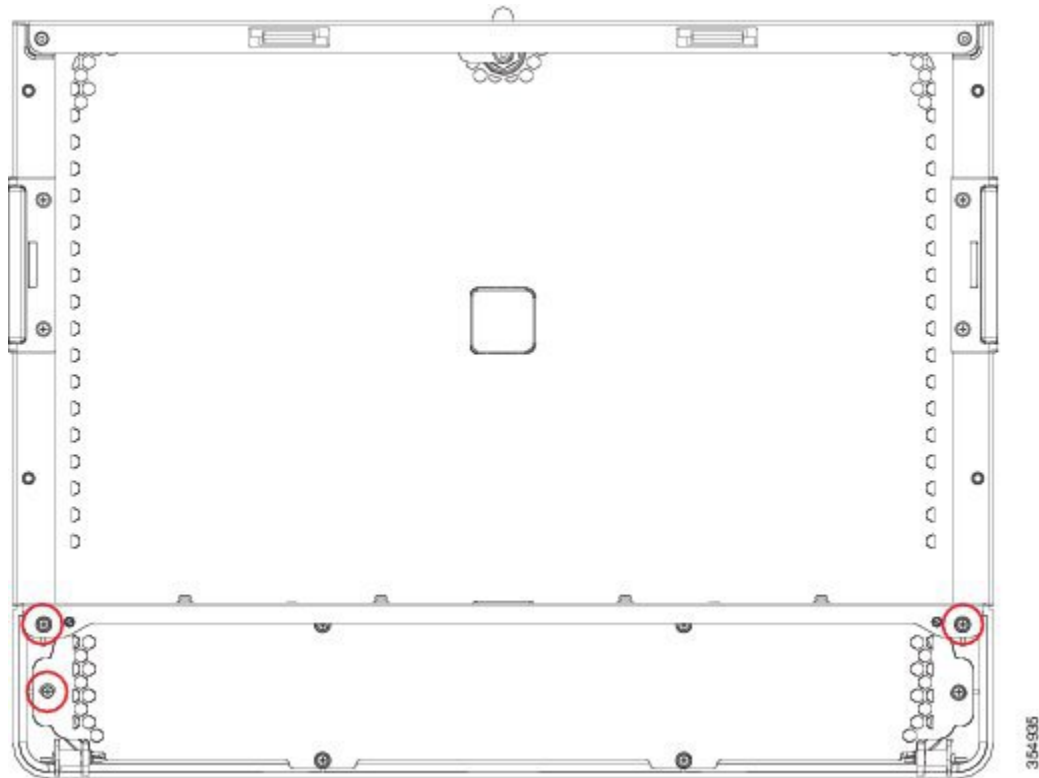| 1	Grounding pad		

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

Grounding the Front ID Door

Note   To comply with GR-1089, you have to bond the front ID door to the ground port on the chassis using the ground braid.

Step 1   Remove 3 screws from the front industrial design (ID) door.

The following figure shows the 3 screws (circled) that have to be removed.
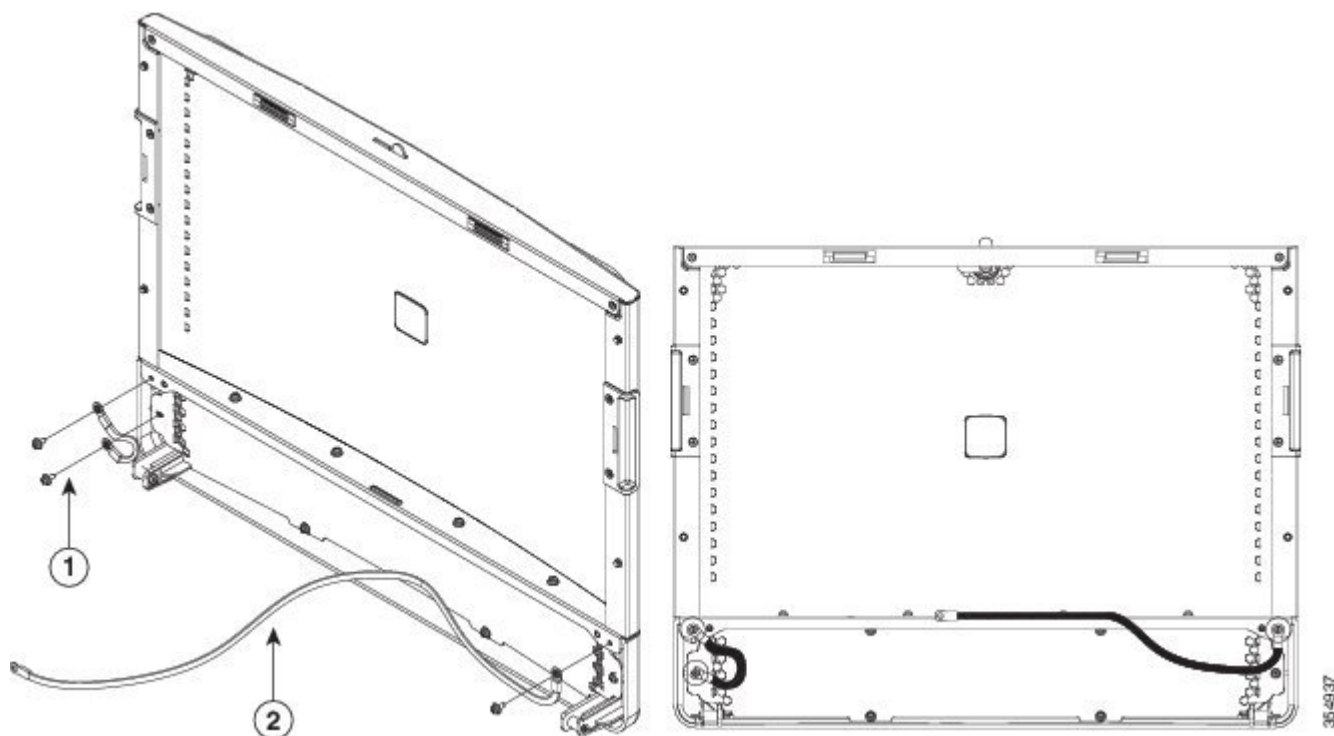
Figure 10: Front ID Door

Step 2   Add the grounding cable to the left side of the front ID door to connect the top and bottom metal plates.

Step 3   Tighten the screw to 7 in-lb (0.79 N-m) of torque to provide proper bonding.

Step 4   Install another grounding cable to the right side of the front ID door.

The following figure shows the location of the 2 grounding cables.

*Figure 11: Grounding Cable Location on the Front ID Door*

1	Grounding cable	2	Grounding cable

Step 5   Apply the star ring terminal end of the grounding cable to the front ID door.

Step 6   Connect the other round terminal of the grounding cable to the ground port on the chassis as shown in Figure 12. Tighten the M4 screw to 9 to 12 in-lb (1.01 to 1.35 N-m) of torque.

Figure 12: Connecting the Grounding Cable to the Ground Port on the Cisco Nexus 7706 Chassis
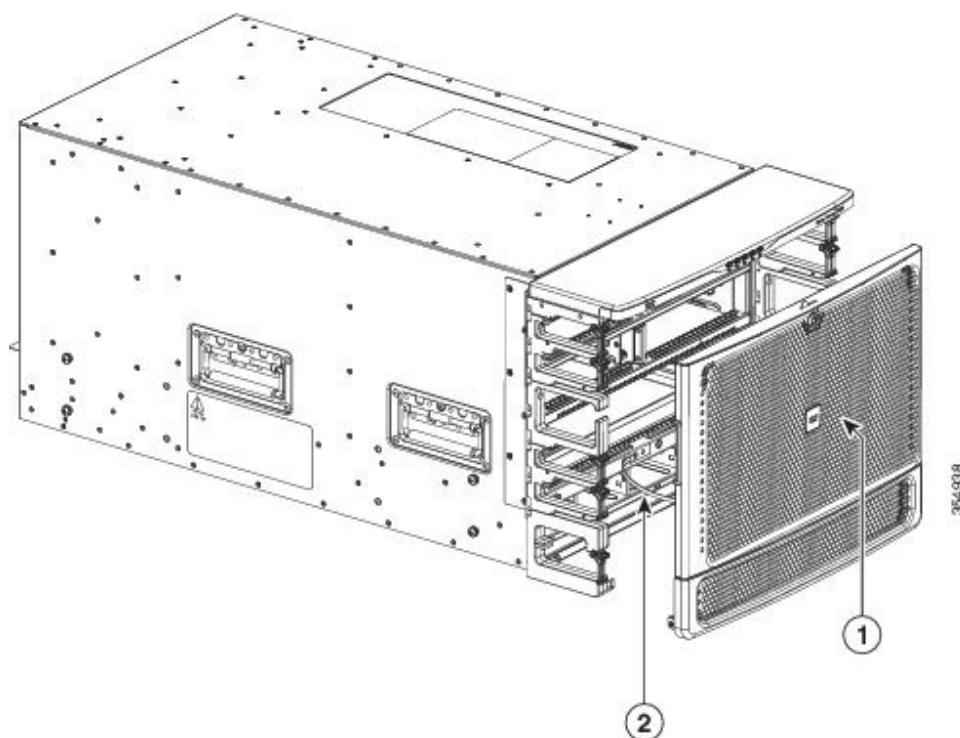
1	Front ID Door	2	Grounding Cable connected to Ground port on the chassis

Note   Use the ground port in the back of the Cisco Nexus 7706 chassis for primary earthing when you use the front ground port for grounding the removable door.

Installing Cable Management Frames onto the Chassis

Before you begin

- The chassis must be installed and secured to the rack.

- You must have the following tools and equipment:

    - Manual Phillips screwdriver with torque capability (customer supplied).

    - The following frames and screws (shipped with the switch):

        - Two cable management side frames

        - One cable management top hood frame

        - 22 M4 x 12-mm, flat-head, Phillips screws

Step 1   Attach the two cable management frames to the chassis as follows:

a) Position one of the cable management side frame assemblies on the vertical mounting bracket attached to one side of the front of the chassis so that the following screw holes align:

- Five screw holes in the assembly should align with the screw holes in five studs on the mounting bracket (see the following figure).

*Figure 13: Attaching a Cable Management Assembly to the Chassis*
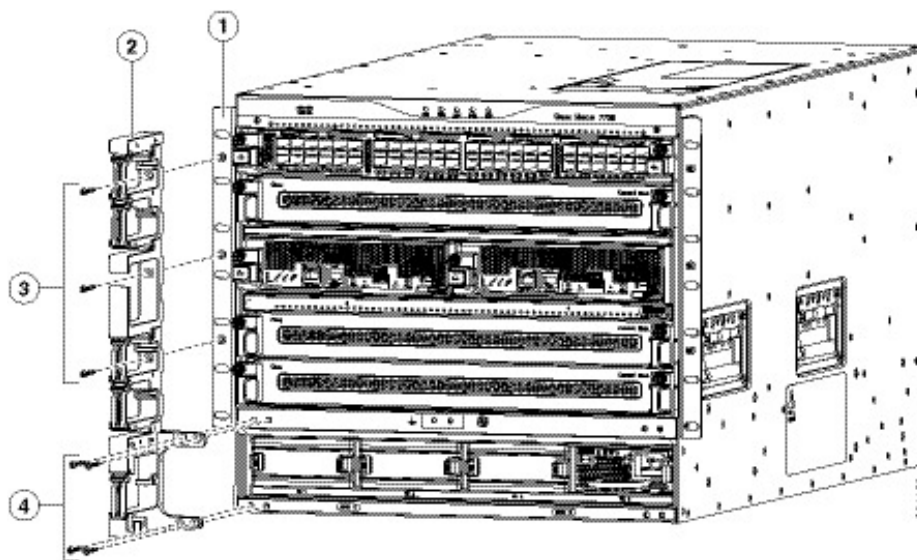
1	Vertical mounting bracket on the chassis	3	M4 x 12 mm screws (three) secure the upper portion of assembly to the mounting bracket
2	Cable management assembly	4	M4 x 12 mm screws (four) secure two angle brackets to the chassis

- Four screw holes in the two angled brackets on the assembly should align with the four screw holes in the chassis. If these screw holes do not align together or the angled brackets do not touch the chassis, try positioning the assembly on the opposite side of the chassis.

b) Secure the upper portion of the frame to the chassis vertical mounting bracket with three M4 x 12 mm, flat-head, Phillips screws. Tighten each screw to 11.5 to 15 in-lb (1.3 to 1.7 N·m) of torque.

c) Secure the bottom portion of the frame to the chassis using four M4 x 12 MM flat-head Phillips screws in the two angled brackets on the frame. Tighten each screw to 11.5 to 15 in-lb (1.3 to 1.7 N·m) of torque.

d) Repeat Steps 1a through 1c to attach the other cable management frame to the mounting bracket on the opposite side of the chassis.

Step 2   Attach the cable management top hood to the chassis and the tops of the two cable management side assemblies as follows:

a) Place the top hood (see Callout 1 in the following figure), with its brackets pointing down, on top of the two cable management side assemblies.

Figure 14: Attaching the Top Hood to the Chassis and Cable Management Assemblies
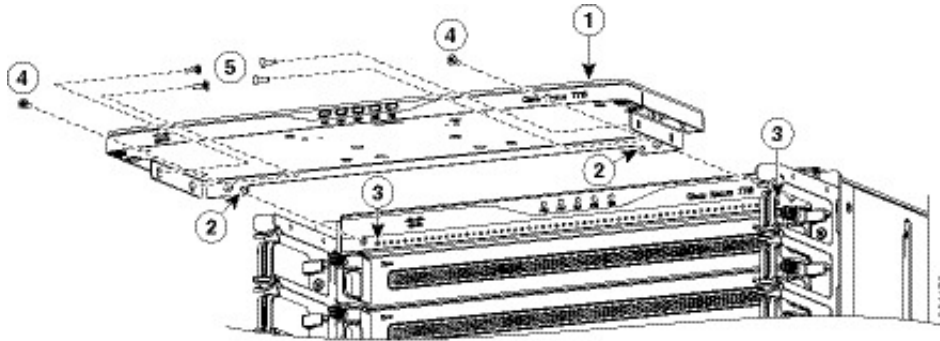
1	Top hood cable management frame	4	M4 x 13 mm screws (two) secure the top hood to the chassis
2	Alignment pins on the back side of the top hood frame	5	Four M4 x 13 mm screws (two per side) secure the top hood to each upper cable management frame
3	Alignment holes in the chassis		

b) Verify that two alignment pins on the back side of the hood (see Callout 2 in the previous figure) align with the two holes (see Callout 3 in the previous figure) in the front of the chassis. If they align, slide the hood to the front of the chassis.

The screw hole next to each alignment pin should align with a screw hole on the chassis, and two screw holes on each of two sides of the hood should align with two screw holes on the top of a cable management assembly.

c) Secure the top hood to the chassis using two M4 x 12 mm flat-head Phillips screws (see Callout 4 in the previous figure). Tighten each screw to 11.5 to 15 in-lb (1.3 to 1.7 N·m) of torque.

d) Secure the top hood to the two side assemblies by using four M4 x 12 mm flat-head Phillips screws (use two screws for each assembly) (see Callout 5 in the previous figure). Tighten each screw to 11.5 to 15 in-lb (1.3 to 1.7 N·m) of torque.

What to do next

You are ready to attach the optional door to the cable management frames.

Attaching the Front Door to the Chassis

Before you can attach the optional front door to the chassis, you must attach a door-stop bracket to the bottom of the cable management top hood.

Optionally, you can install an air filter inside the door and brush filters to the sides of the door and to the sides of the cable management assemblies (see Installing Cable Management Frames onto the Chassis , on page 22).

Before you begin

- Verify that the cable management frames are attached to the chassis.

- Verify that you have the following tools and equipment:

  - Optional front door kit

    - Door stop bracket
    - Front door

  - Number 1 manual Phillips torque screwdriver

Step 1 Attach the metal door-stop bracket to the top hood as follows:

a) Place the metal door bracket under the top hood of the cable management system and align with the two screws on the metal bracket with two holes on the bottom of the top hood (see the following figure).

Figure 15: Attaching the Door Stop
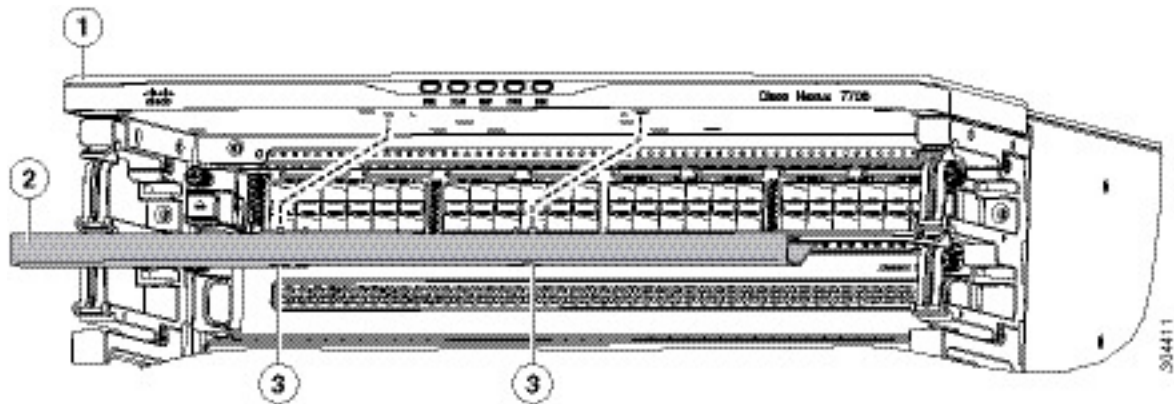
| 1	Top hood	3	Align the bracket screws to two screw holes in the top hood
2	Door stop bracket		

b) Secure the bracket to the hood by screwing in two captive screws on the bracket to the hood and tighten to each screw to 8 in-lb (0.9 N·m) of torque.

Step 2 Attach the front door as follows:

a) Place the two rollers at the bottom of the front door on the two holders at the bottom of the right and left cable management frames (see Callout 1 in the following figure).

Figure 16: Placing the Door on the Cable Management Frames
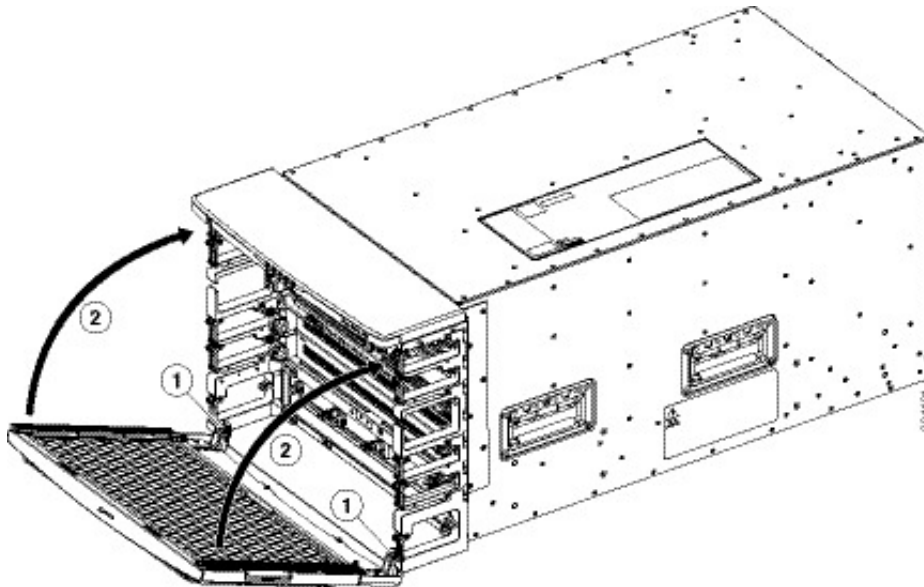
1	Place the two rollers on the bottom of the door on the holders (one holder at the bottom of each cable management side frame.	2	Rotate the top of the door to the top hood until the door is held in place magneticly.

b) With the door resting on the holders, rotate the top of the door to the metal door-stop bracket installed at the bottom of the top hood.

Magnets on the top of the door hold the door shut. If you need to lock the door in place, use the key that comes with the door.

Installing Air Filters

You can attach the optional air filters to the inside of the front door, the sides of the front door, and the cable management side frames.

✎

Note   We recommend that you change the air filter every 3 months. However, examine the air filter once a month (or more often in dusty environments) and replace it if it appears to be excessively dirty or damaged. To comply with Telecordia GR-63-Core standard air filter requirements for NEBS deployments, the air filter must be replaced, not cleaned.

Before you begin

• Verify that the cable management frames are installed on the chassis.

• Verify that the optional front door is installed or available for installation.

> • Verify that you have the following tools or equipment:
>
>> • Optional air filter kit is available for installation.
>>
>>> • Divider bracket
>>> • M3 x 8 mm screws (2)
>>> • Door filter
>>> • Narrow brush filters (2)
>>> • Cable management frame air filters (2)
>>> • M4 x 12 mm screws (4)
>>
>> • Manual Phillips torque screwdriver

Step 1 Attach the divider bracket to the left and right cable management side assemblies as follows:

a) Position the divider bracket between the right and left cable management assemblies between the bottom I/O module and the power supplies. The back edge of the divider bracket has two curved corners that should come in contact with the chassis.

b) Align the two slots on both sides of the bracket with the pins that stick out from the upper portion of the lower cable management frame (power-supply cable management frame) and lower the bracket past the pins until the bracket stops.

c) Push the bracket about 0.5 inches (1 cm) to the front of the chassis until it stops.

   A screw hole on each side of the divider bracket aligns with a screw hole in each cable management side assembly.

d) Secure the divider bracket to both cable management side assemblies using two M3 x 8 mm screws (one screw for each of two sides) and tightening the screws to 5 to 7 in-lb (0.56 to 0.79 N.m) of torque.

Step 2 Insert the door filter inside the back side of the door as follows:

a) Open the front door and pull it off of the chassis.

b) Place the front of the door on a table top so that the back (open) side is facing up.

c) Remove the largest air filter from its packaging, hold the side with the hexagonal shaped holes facing up, and insert the filter into the open back side of the door.

   If necessary, push in the spring clips on the side of the filter to push the filter into the door. The filter snaps into place on the door.

Step 3 Attach the two narrow brush filters to the sides of the door as follows:

a) Remove a long slender door-side filter from its packaging and align its two holes with two pins in the door.

b) Slide the filter down the door until it stops on the pins. Screw in the two captive screws on the filter to the door and tighten to 8 in-lb (0.9 N·m).

c) Repeat Steps 2a and 2b to attach the other door-side filter to the door.

Step 4 Attach the two air filters to the cable management frames as follows:

a) Remove a cable management air filter from its packaging and position it on the upper portion of one of the two cable management side frames so that its six holes align with six screw holes in the cable management frame.

b) Fasten the air filter to the cable-management assembly with the two M4 x 12 mm screws on top and four M3 x 12 mm screws below. Tighten the M4 screws to 11.5 to 15 in-lbs (1.3 to 1.7 N·m) of torque, and tighten the M3 screws to 5 to 7 in-lb (0.56 to 0.79 N.m) of torque.

c) Repeat Steps 3a and 3b to attach the other air filter to the cable management assembly on the other side of the chassis.