



# Installing and Removing Exterior Cosmetic Components

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This chapter provides instructions on how to install and remove the Cisco CRS Carrier Routing System Fabric Card Chassis exterior cosmetic components.

This chapter presents the following topics:

- [Information about the Exterior Cosmetic Components, page 1](#)
- [Installing the Front \(SFC\) Side Cosmetic Components, page 4](#)
- [Removing the Front \(SFC\) Side Cosmetic Components, page 15](#)
- [Installing the Rear \(OIM\) Side Cosmetic Components, page 25](#)
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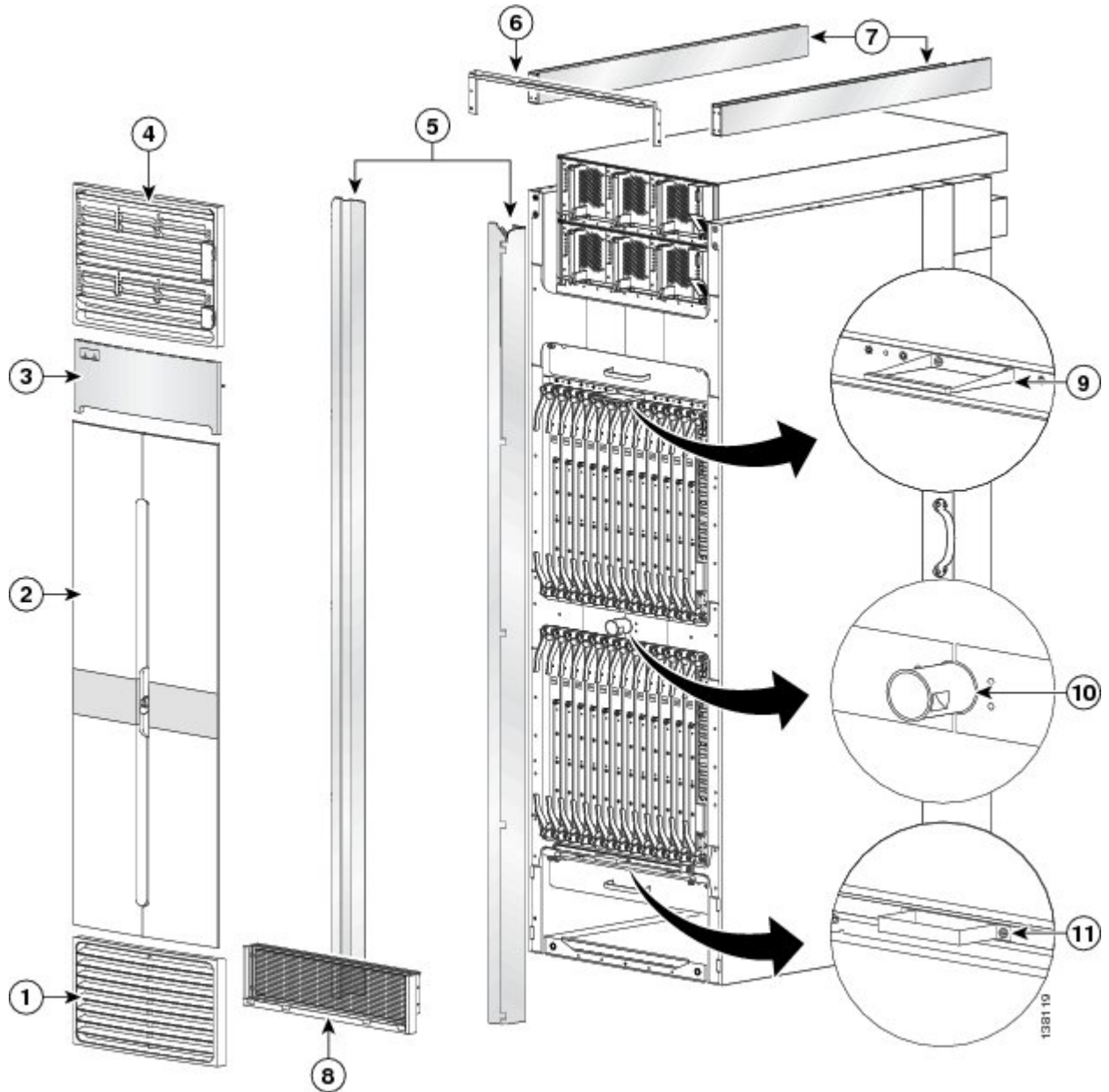
## Information about the Exterior Cosmetic Components

This section contains general information about the exterior cosmetic components.

The FCC is shipped with exterior cosmetic components for the front (SFC) and rear (OIM) side of the chassis.

The figure below shows the exterior cosmetics for the front (SFC) side of a chassis with fixed configuration power shelves installed. The front view of an FCC with modular configuration power shelves installed is similar.

**Figure 1: FCC Front (SFC) Side Exterior Cosmetic Components—Fixed Configuration Power Shown**

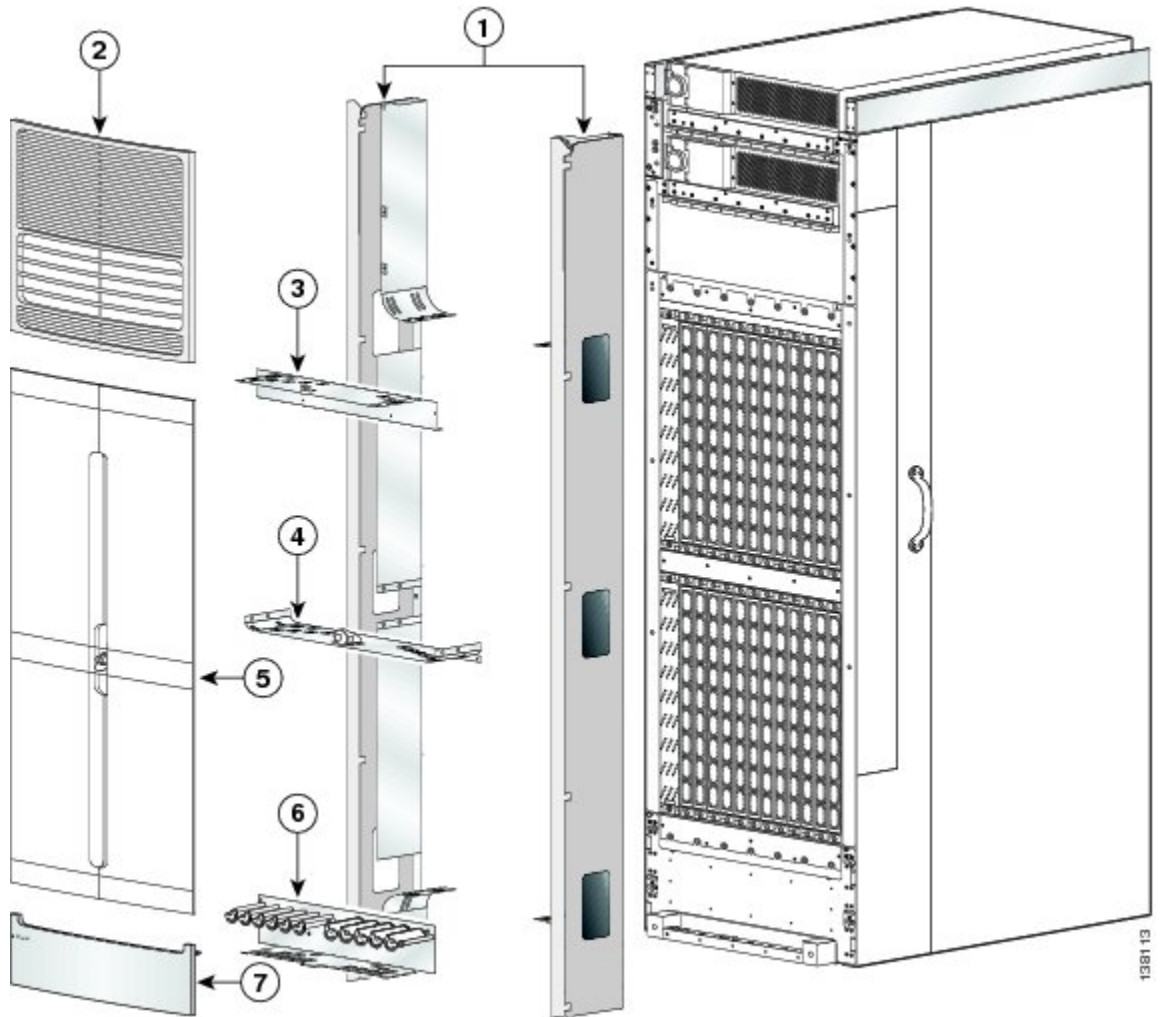


1	Lower grille	7	Unistruts
2	Doors	8	Lower grille screen and frame assembly

3	Logo bezel	9	Upper door stop
4	Upper grille (optional)	10	Strike tube
5	Vertical cable troughs	11	Lower door stop
6	Upper grille support		

The figure below shows the exterior cosmetics on the rear (OIM) side of an FCC with fixed configuration power shelves installed. The rear view of an FCC with modular configuration power shelves installed is similar.

**Figure 2: FCC Rear (OIM) Side Exterior Cosmetic Components—Fixed Configuration Power Shown**



1	Vertical cable troughs	5	Doors
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2	Upper grille	6	Lower horizontal cable guide assembly
3	Upper horizontal cable guide	7	Lower bezel
4	Middle horizontal cable guide with strike tube attached		

## Installing the Front (SFC) Side Cosmetic Components

This section describes how to install the front (SFC) side exterior cosmetic covers on the FCC. [Figure 1: FCC Front \(SFC\) Side Exterior Cosmetic Components—Fixed Configuration Power Shown](#), on page 2 shows the exterior cosmetics for the front (SFC) side of a chassis with fixed configuration power shelves installed. The front view of an FCC with modular configuration power shelves installed is similar.



### Note

While it is possible to install the various front exterior components on the chassis in a different order, it is easier to install them in the order outlined in this section.

This section describes how to perform the following tasks:

## Prerequisites

Before performing this task, you must first unpack and secure the chassis. See *Cisco CRS Carrier Routing System Fabric Card Chassis Unpacking, Moving, and Securing Guide*.

## Required Tools and Equipment

You need the following tools and part to perform this task:

- 8-in. long number 1 Phillips screwdriver—magnetic head preferable
- 10-mm hex key wrench
- 2-mm hex key wrench (for adjusting door set screws)
- Torque wrench with 10-mm hex key and rated accuracy at 40 to 50 in-lb. (4.52 to 5.65 N-m)
- Front cosmetic kit (Cisco product number: CRS-FCC-FRNT-CM=)
- Front doors (Cisco product number: CRS-FCC-DRS-FR=)

## Steps

To install the front (SFC) side exterior cosmetic components, perform the following steps:

## SUMMARY STEPS

1. Attach each unistrut to the top of the chassis by inserting the twelve M12 hex head bolts and washers, six for each strut, into the bolt holes on the inside of the strut and tightening with the 10-mm hex key wrench. The closed end of a unistrut faces the front [SFC] side of the chassis), see the figure below.
2. Attach the front upper grille support (number 1 in the figure below) to the unistruts by inserting four M4x14-mm flat head screws, two for each unistrut, through the holes at the top of the front vertical cable troughs and tightening them to the unistruts with the screwdriver.
3. Attach the power shelf shutoff extenders (number 2 in the figure below) by inserting the four M4 panhead screws, two for each power shelf shutoff extender, and tightening them with the screwdriver.
4. Attach the front vertical cable troughs—one on the right and one on the left—to the front (SFC) side of the chassis (see the figure below) by inserting the 10 M4x14-mm flat head screws (5 on each side). Use the screwdriver to fasten screws to attach the cable troughs firmly to the chassis.
5. Attach the front upper grille (optional) by carefully inserting the tabs on the grille into the hook hanger brackets on the top of the upper grille support (see the figure below).
6. Press the grille firmly against the grille support until it snaps onto the ball stud snaps on the front (SFC) side of the chassis.
7. Place the logo bezel (see the figure below) over the bezel support, and press firmly until the bezel snaps onto the ball stud snaps on the front (SFC) side of the chassis.
8. Using the screwdriver, loosen the four captive screws, two on each side, that secure the lower grille screen to its frame assembly; then carefully set the screen aside. See the figure below.
9. Attach the frame assembly to the chassis (see the figure below) by aligning the four screws, two on each side, on the frame to the screw holes on the chassis and tightening them with the screwdriver.
10. Reattach the inlet grille screen (see the above figure) to the frame assembly by aligning the four captive screws on the screen to the screw holes on the frame assembly and tightening the screws with the screwdriver.
11. Attach the lower grille to the chassis by carefully inserting the tabs on the grille into the hook hanger brackets. See the figure below.
12. Press the lower grille firmly until it snaps onto the ball stud snaps. See the figure below.
13. Orient the doors so that the keyhole slots are pointing upwards.
14. Align the doors vertically in their appropriate positions so you can determine where to thread the first two screws that are adjacent to the keyholes. See the figure below. Set the doors aside, and thread the two screws.
15. Place the doors on the screws in the keyhole positions, two for each door.
16. Insert four M4x8-mm wafer-head screws (two on each side) into the appropriate screw holes in the doors, and use the screwdriver to tighten fully.
17. Insert and fully tighten all screws.
18. Ensure that the doors are properly aligned.

## DETAILED STEPS

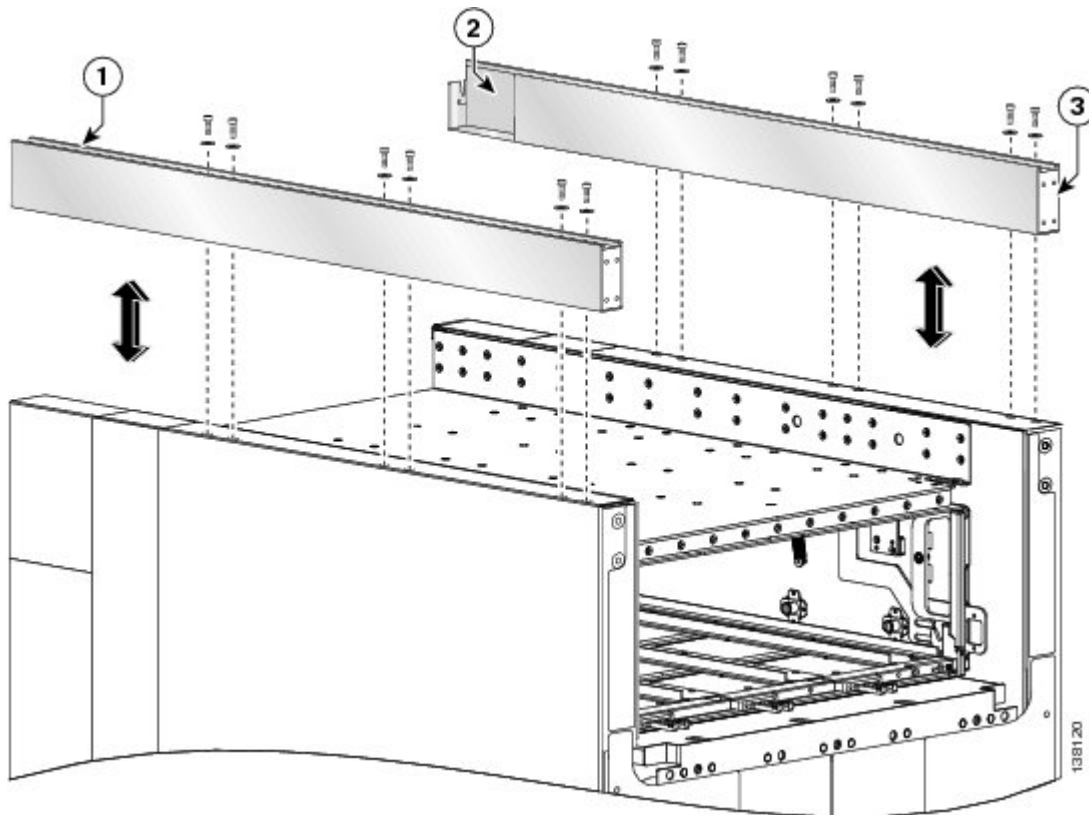
### Step 1

Attach each unistrut to the top of the chassis by inserting the twelve M12 hex head bolts and washers, six for each strut, into the bolt holes on the inside of the strut and tightening with the 10-mm hex key wrench. The closed end of a unistrut faces the front [SFC] side of the chassis), see the figure below.

**Note** The right unistrut (as you face the front [SFC] side of the chassis) has a cutaway in the rear to admit the chassis ground cable; the left strut does not.

**Caution** Cisco recommends an install torque range for the unistrut bolts between 40 and 50 in-lb. (between 4.52 N-m and 5.65 N-m).

**Figure 3: Attaching the Unistrut**



1	Left unistrut	3	Closed end at front of unistrut
2	Right strut with cutaway at rear		

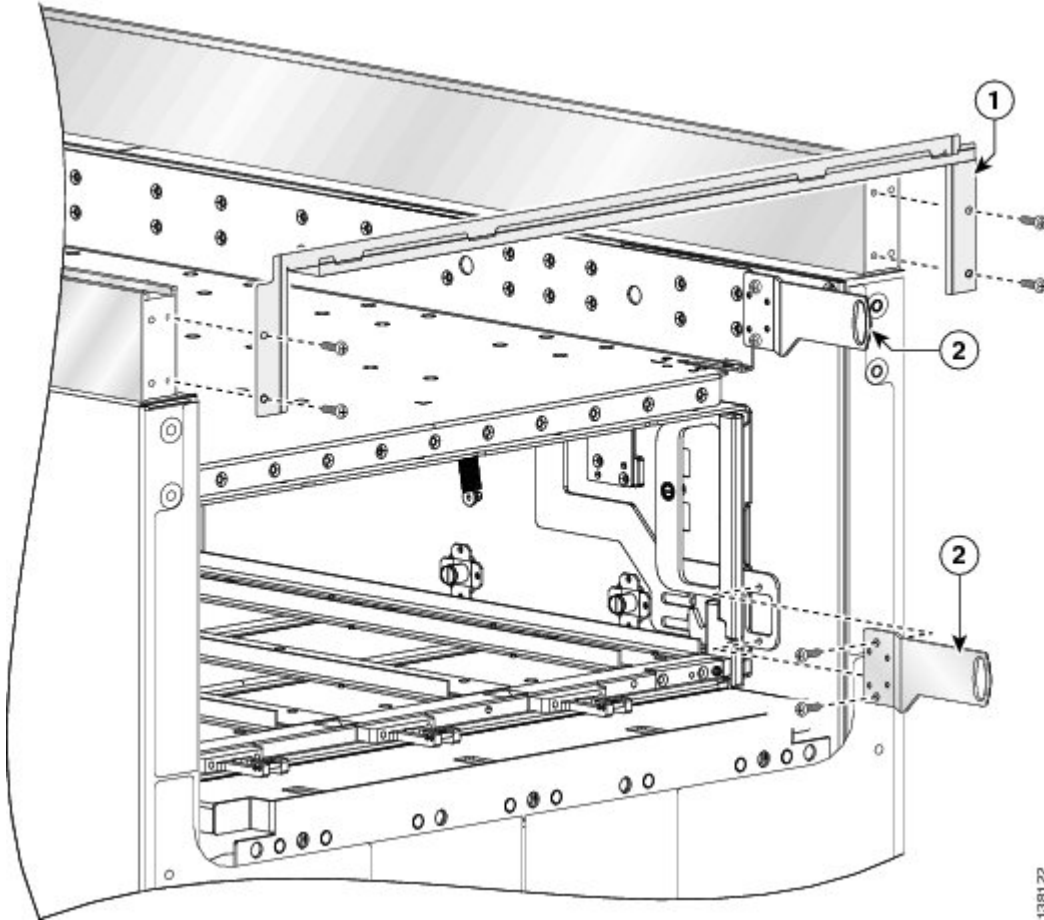
## Step 2

Attach the front upper grille support (number 1 in the figure below) to the unistruts by inserting four M4x14-mm flat head screws, two for each unistrut, through the holes at the top of the front vertical cable troughs and tightening them to the unistruts with the screwdriver.

**Note** Both fixed configuration power shelves must be installed in the chassis before installing the power shelf shutoff extenders. See the chapter *Installing and Removing Power Components* for more information.

**Step 3** Attach the power shelf shutoff extenders (number 2 in the figure below) by inserting the four M4 panhead screws, two for each power shelf shutoff extender, and tightening them with the screwdriver.

**Figure 4: Attaching the Front (SFC) Side Upper Grille Support and Power Shelf Shutoff Extenders**

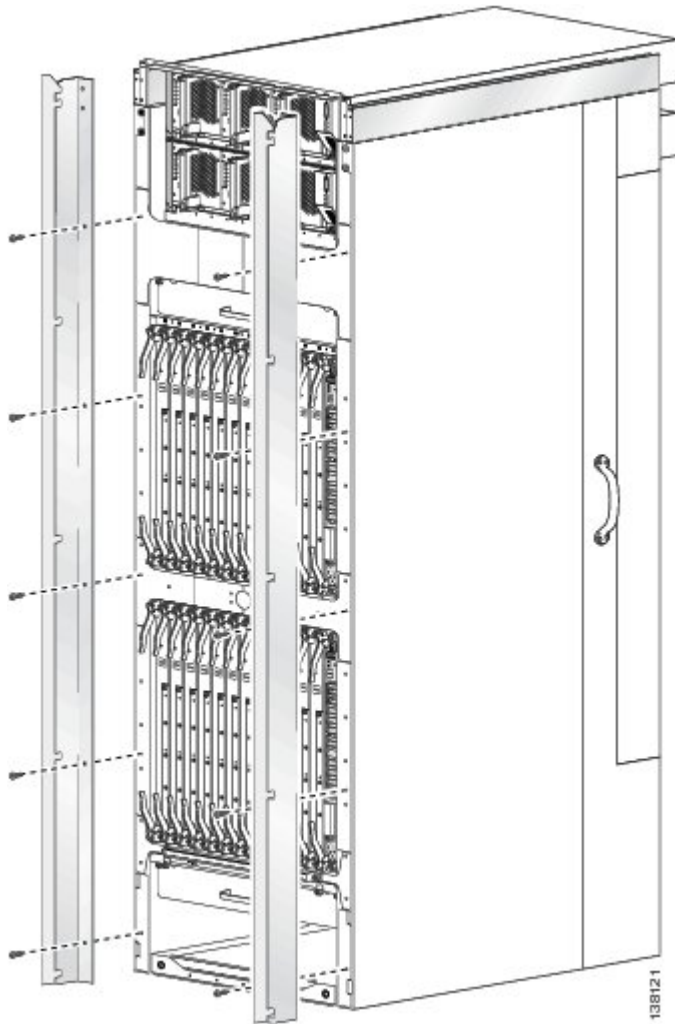


1	Front upper grille support	2	Power shelf shutoff extender
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**Step 4** Attach the front vertical cable troughs—one on the right and one on the left—to the front (SFC) side of the chassis (see the figure below) by inserting the 10 M4x14-mm flat head screws (5 on each side). Use the screwdriver to fasten screws to attach the cable troughs firmly to the chassis.

**Note** We recommend that you use two people to install the troughs, one person to hold the troughs in place while the other person inserts and tightens the screws.

**Figure 5: Attaching the Front (SFC) Side Vertical Cable Troughs—Fixed Configuration Power Shown**



**Step 5** Attach the front upper grille (optional) by carefully inserting the tabs on the grille into the hook hanger brackets on the top of the upper grille support (see the figure below).

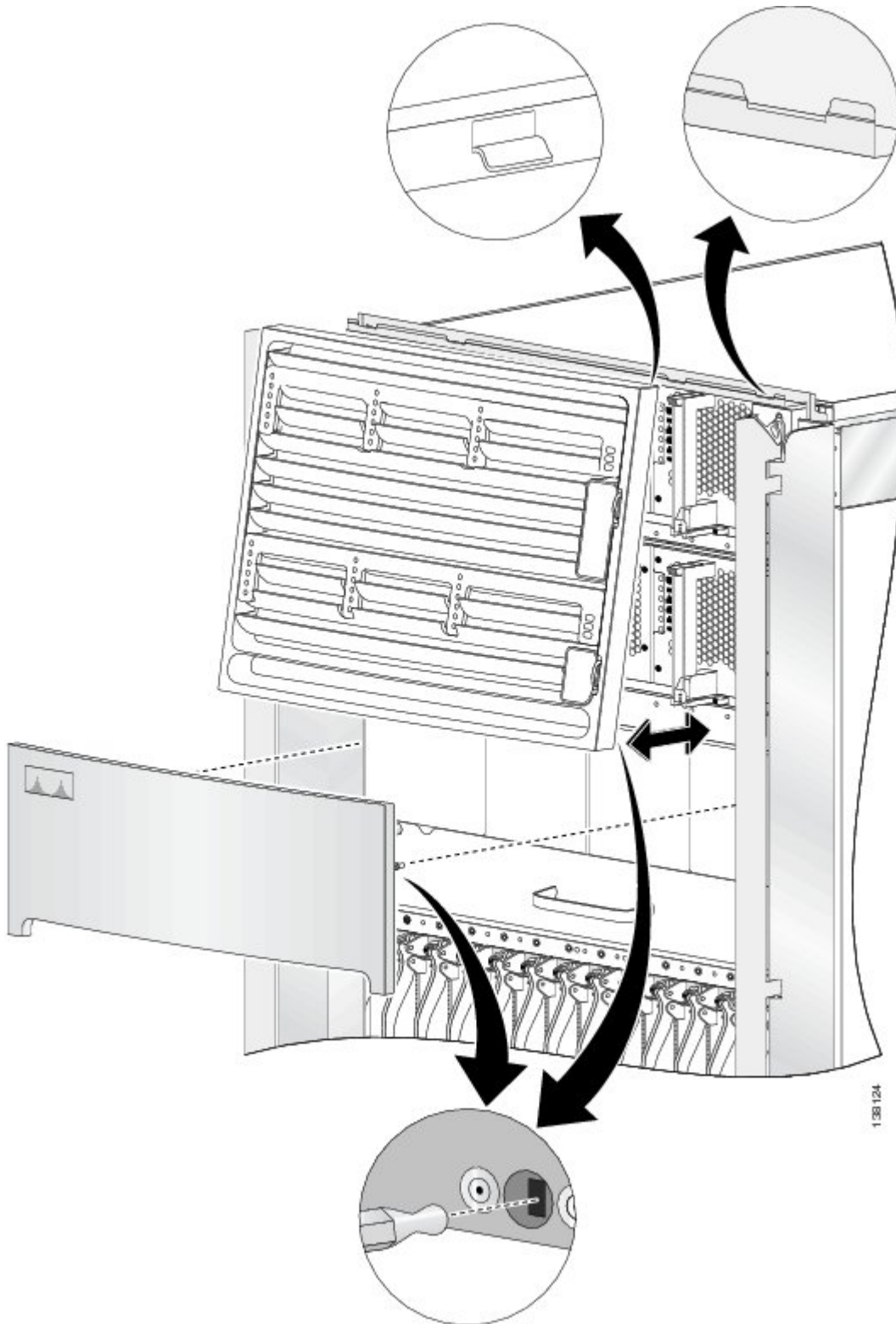
**Step 6** Press the grille firmly against the grille support until it snaps onto the ball stud snaps on the front (SFC) side of the chassis.

**Note** Before you attach the upper grille, you *must* have the power shutoff extenders installed (fixed configuration power only). See Step 3.



- Step 7** Place the logo bezel (see the figure below) over the bezel support, and press firmly until the bezel snaps onto the ball stud snaps on the front (SFC) side of the chassis.

***Figure 6: Attaching the Front (SFC) Side Upper Grille and Logo Bezel—Fixed Configuration Power Shown***



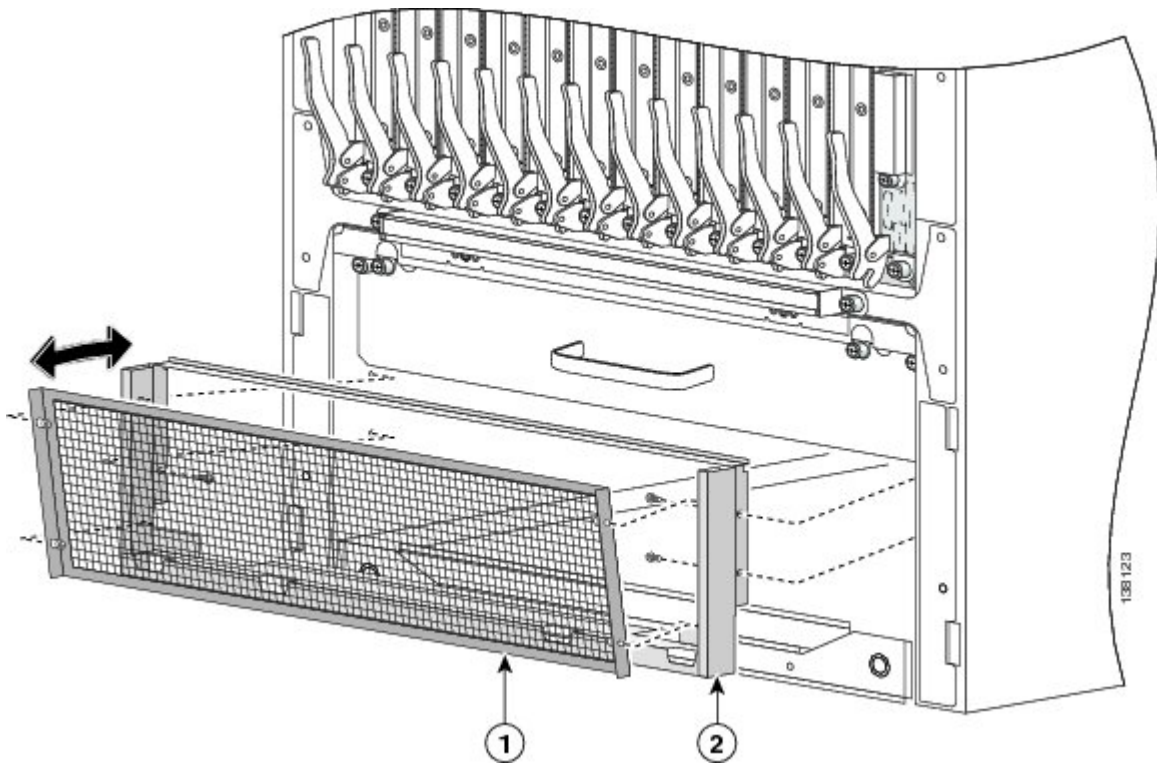
**Note** In this task, you must first remove the lower grille screen from the frame, because the screws that attach the frame assembly to the chassis are inboard of the screen—that is, the new screen is shipped already installed into the new frame assembly, but you cannot attach the new frame to the chassis until you remove the screen first.

When the new frame assembly is installed, you can reinstall the lower grille screen into the new frame.

**Step 8** Using the screwdriver, loosen the four captive screws, two on each side, that secure the lower grille screen to its frame assembly; then carefully set the screen aside. See the figure below.

**Step 9** Attach the frame assembly to the chassis (see the figure below) by aligning the four screws, two on each side, on the frame to the screw holes on the chassis and tightening them with the screwdriver.

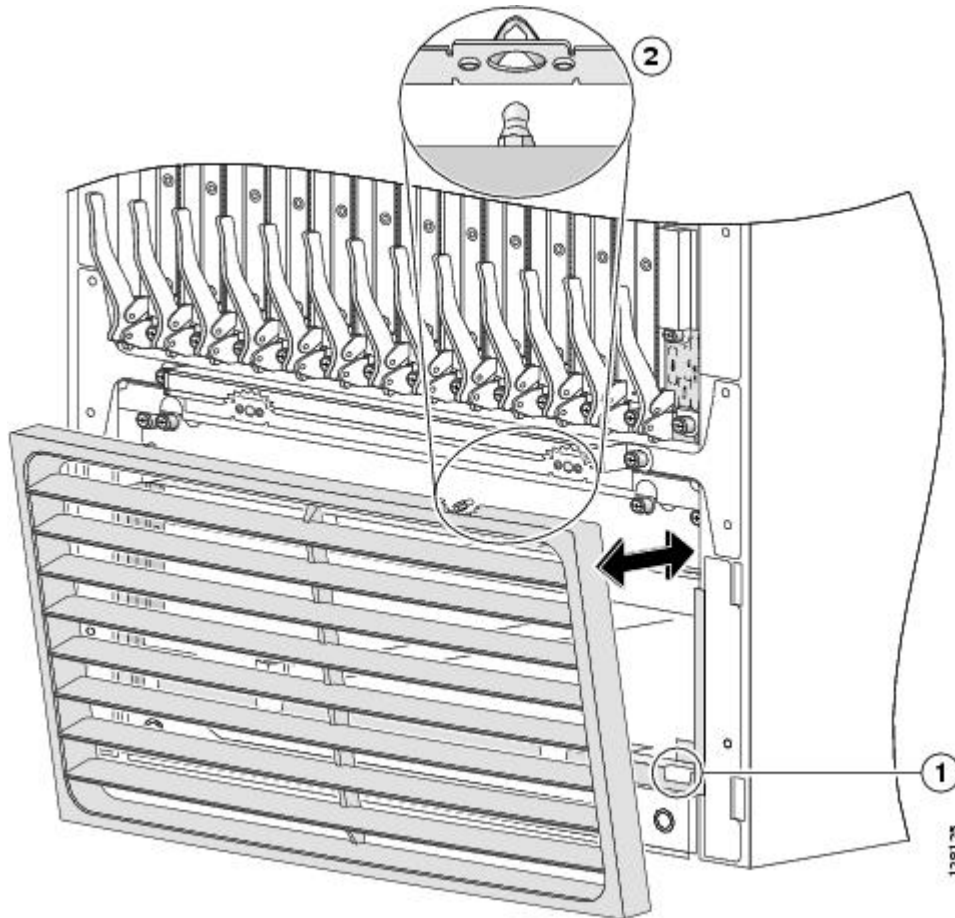
**Figure 7: Installing the Lower Grille Screen and Frame Assembly**



1	Lower grille screen	2	Lower grille screen frame assembly
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- Step 10** Reattach the inlet grille screen (see the above figure) to the frame assembly by aligning the four captive screws on the screen to the screw holes on the frame assembly and tightening the screws with the screwdriver.
- Step 11** Attach the lower grille to the chassis by carefully inserting the tabs on the grille into the hook hanger brackets. See the figure below.
- Step 12** Press the lower grille firmly until it snaps onto the ball stud snaps. See the figure below.

**Figure 8: Installing the Lower Grille**

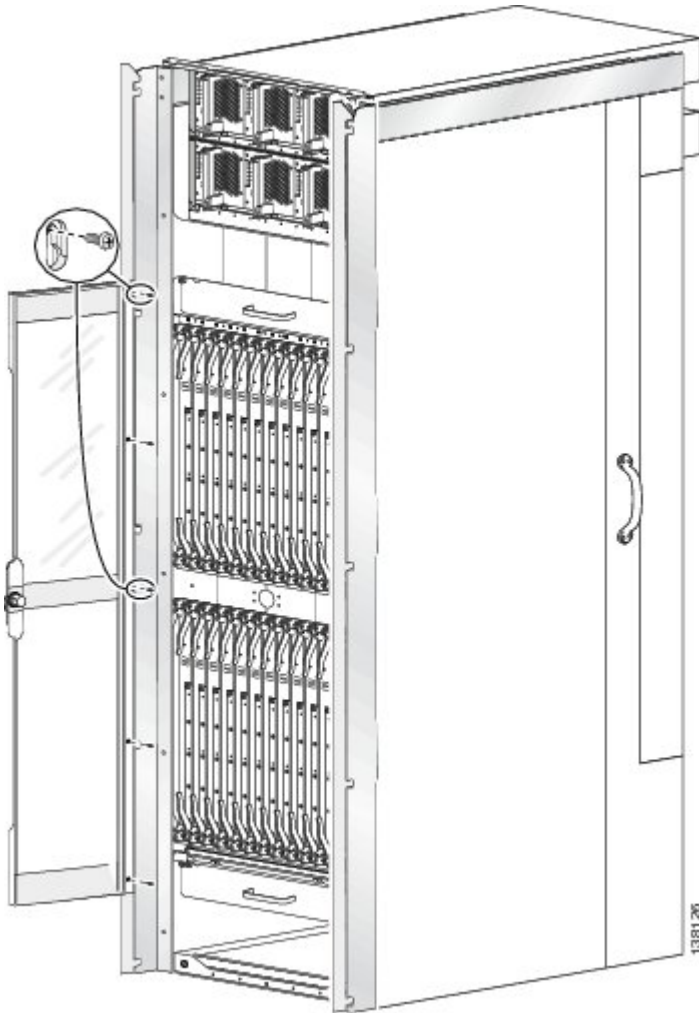


1	Hook hanger brackets	2	Ball stud
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- Step 13** Orient the doors so that the keyhole slots are pointing upwards.
- Step 14** Align the doors vertically in their appropriate positions so you can determine where to thread the first two screws that are adjacent to the keyholes. See the figure below. Set the doors aside, and thread the two screws.

**Caution** The doors scratch easily, so they should be handled with care.

**Figure 9: Attaching the Front (SFC) Side Exterior Doors**



**Step 15** Place the doors on the screws in the keyhole positions, two for each door.

**Step 16** Insert four M4x8-mm wafer-head screws (two on each side) into the appropriate screw holes in the doors, and use the screwdriver to tighten fully.

**Note** Verify that Step 13 was completed correctly to ensure proper orientation of doors. The screw locations vary depending on the door. If all screw holes for a door do not align with the screw holes on the front (SFC) side of the chassis, you need to use the other door.

**Step 17** Insert and fully tighten all screws.

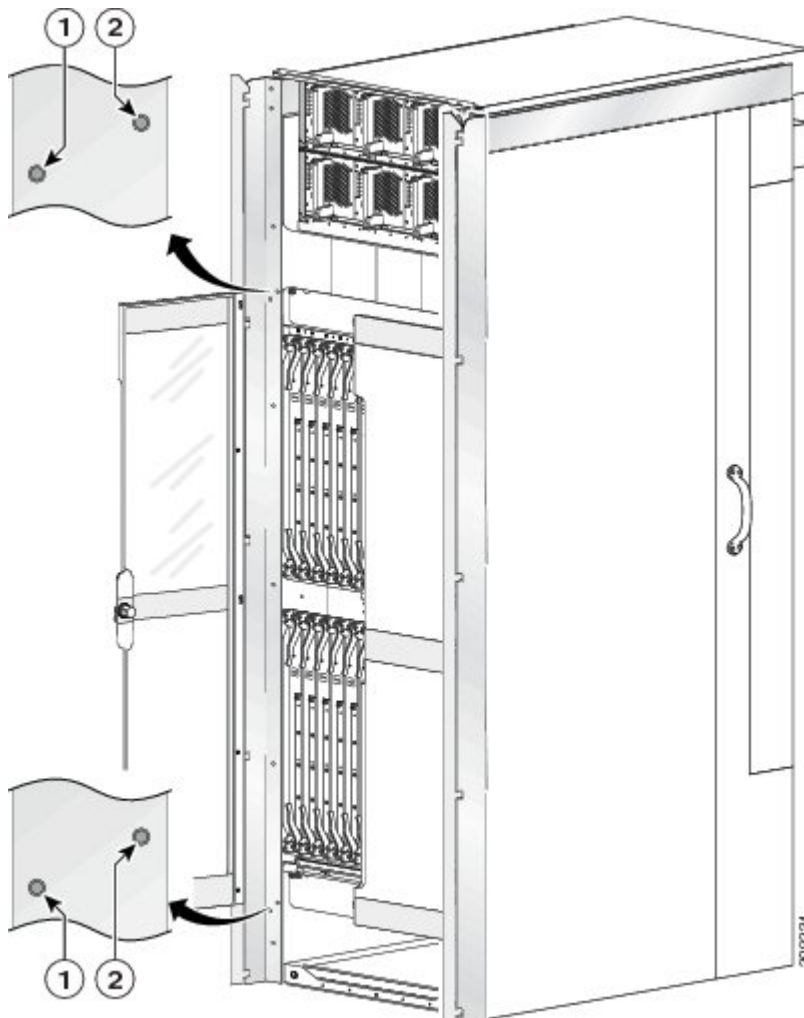
**Step 18** Ensure that the doors are properly aligned.

a) Check to see if the doors close without interfering with each other.

**Note** Typically, the doors will close without interfering with each other. However, you may need to adjust either the left or right door, or both, to align the doors properly. Adjust doors only if necessary.

- b) To decrease the door gap, loosen the five screws that secure the vertical trough to the chassis. Using the 2 mm hex key wrench, tighten the bottom set screws (number 1 in the figure below) one full turn. Snug the five screws that attach the vertical trough to the chassis and check the door alignment.
- c) To increase the door gap, loosen the five screws that secure the vertical trough to the chassis. Using the 2 mm hex key wrench, tighten the top set screws (number 2 in the figure below) one full turn. Snug the five screws that attach the vertical trough to the chassis and check the door alignment.

**Figure 10: Aligning the Door on the Front of the Chassis - Left Door Shown**



1	Bottom set screw	2	Top set screw
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- d) Repeat the procedure as necessary until the doors are properly aligned.
- e) Tighten the five screws that secure the vertical trough to the chassis.

## Removing the Front (SFC) Side Cosmetic Components

This section describes how to remove the front (SFC) side exterior cosmetic components, shown in [Figure 1: FCC Front \(SFC\) Side Exterior Cosmetic Components—Fixed Configuration Power Shown](#), on page 2, from the chassis. This section includes all the steps for you to remove *all* the front cosmetic parts from the chassis, but you are not required to do so. To remove a particular part, see the appropriate step or steps in the procedure that follows.

**Note**

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While it is possible to remove most of the front cosmetic components on the FCC separately, some parts (such as a unistrut) require that other parts be removed first.

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This section describes how to perform the following tasks:

### Prerequisites

No prerequisites exist for this task.

### Required Tools and Equipment

You need the following tools to perform this task:

- 8-in. long number 1 Phillips screwdriver—magnetic head preferable
- 10-mm hex key wrench

### Steps

To remove the front (SFC) side external cosmetic components, perform the following steps:

## SUMMARY STEPS

1. Ensure that you have all the original packaging material for the cosmetic components available.
2. Remove the front exterior doors by unscrewing all the screws except those adjacent to the keyholes (see the figure below); lift the doors, and set them carefully aside.
3. Remove the front lower grille (see the figure below) by unsnapping the top portion from the ball stud snaps on the grille frame.
4. Rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.
5. Remove the logo bezel (see the figure below) by unsnapping it from the ball stud snaps on either side of the bezel support, and then set it carefully aside.
6. Remove the upper grille (see the figure below) by unsnapping the bottom portion from the ball stud snaps on the logo bezel support assembly.
7. Rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.
8. Remove the front vertical cable troughs (see the figure below)—one right and one left—from the front (SFC) of the chassis:
9. Use the screwdriver to loosen the four captive screws, two on each side, that attach the inlet grille screen to the frame assembly. Remove the screen from the frame assembly. See the figure below.
10. Remove the four screws, two on each side, that attach the frame assembly to the chassis. See the figure below.
11. Rotate the assembly forward, lift it away from the front (SFC) side of the chassis, and set it aside.
12. Remove the power shelf shutoff extenders (number 2 in the figure below) by unscrewing the four screws, two screws per extender, and set the screws and the extenders aside.
13. Remove the front upper grille support (number 1 in the figure below) from the unistruts by unscrewing the four M4x14-mm flat head screws (two for each unistrut).
14. Set the screws aside, then lift the grille support away from the front (SFC) side of the chassis, and set it aside.
15. Use the 10-mm hex key wrench to remove the twelve M12 hex head bolts and washers, six on each unistrut, that attach the unistrut to the top of the chassis. See the figure below.

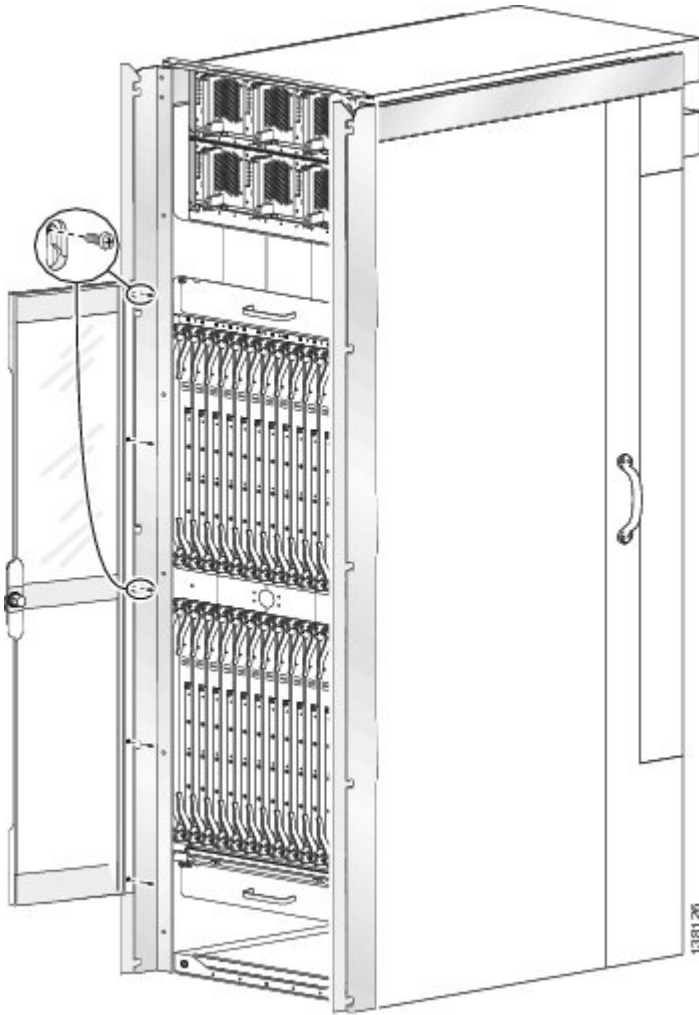
## DETAILED STEPS

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- Step 1** Ensure that you have all the original packaging material for the cosmetic components available.
- Step 2** Remove the front exterior doors by unscrewing all the screws except those adjacent to the keyholes (see the figure below); lift the doors, and set them carefully aside.



**Caution** The doors scratch easily, so they should be handled with care.

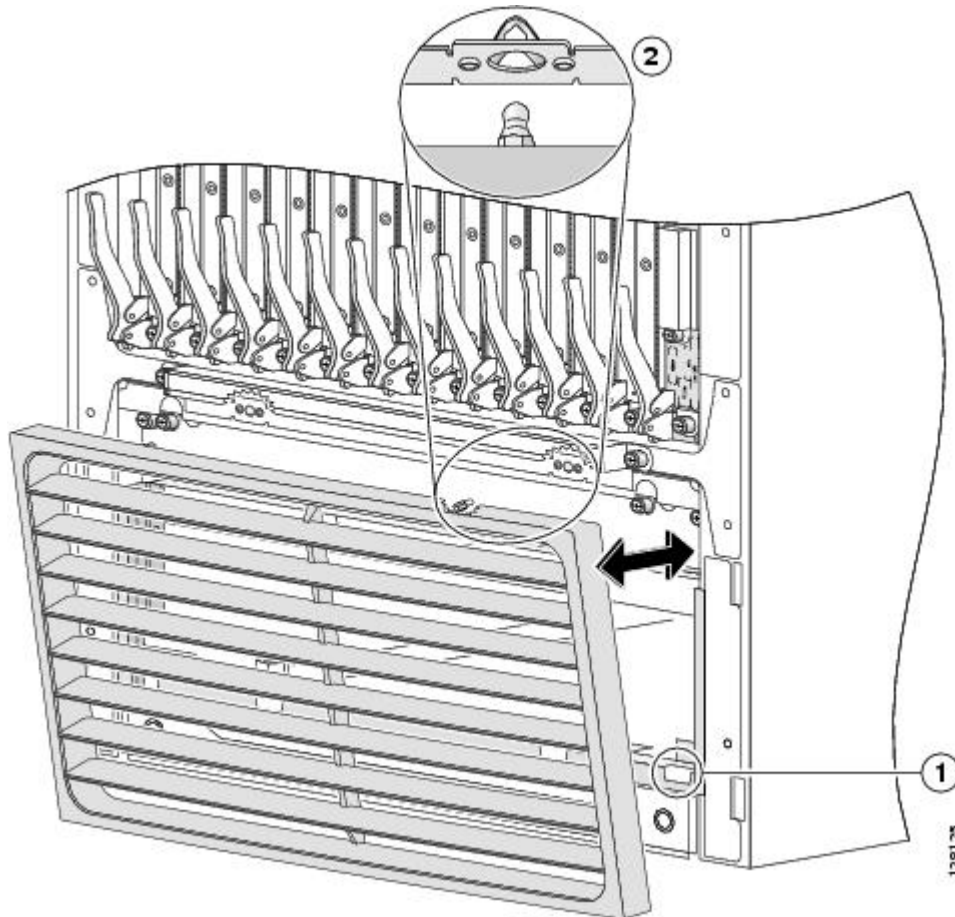
**Figure 11: Removing the Front (SFC) Side Exterior Doors**



**Step 3** Remove the front lower grille (see the figure below) by unsnapping the top portion from the ball stud snaps on the grille frame.

**Step 4** Rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.

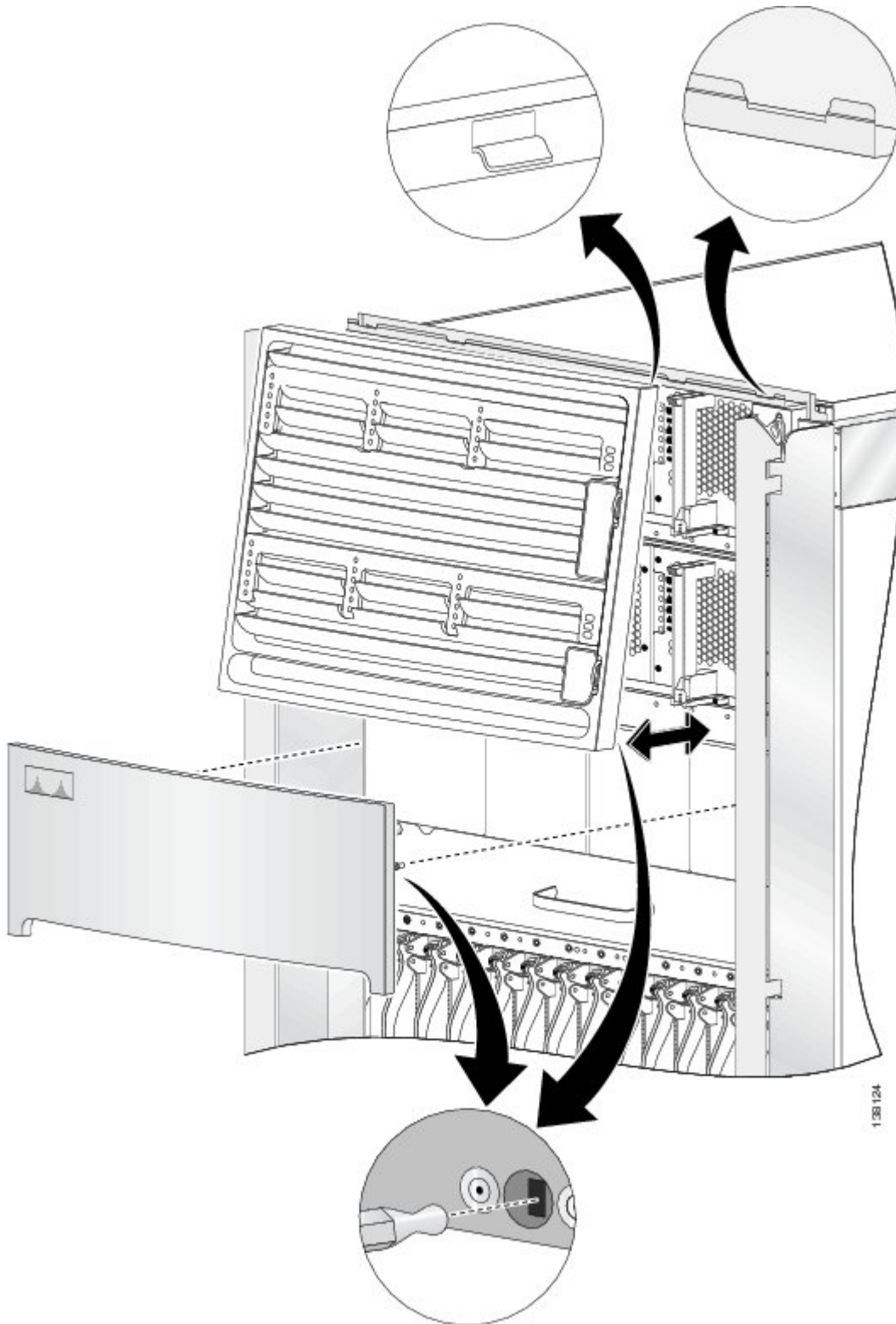
**Figure 12: Removing the Front (SFC) Side Lower Grille**



1	Hook hanger brackets		Ball stud
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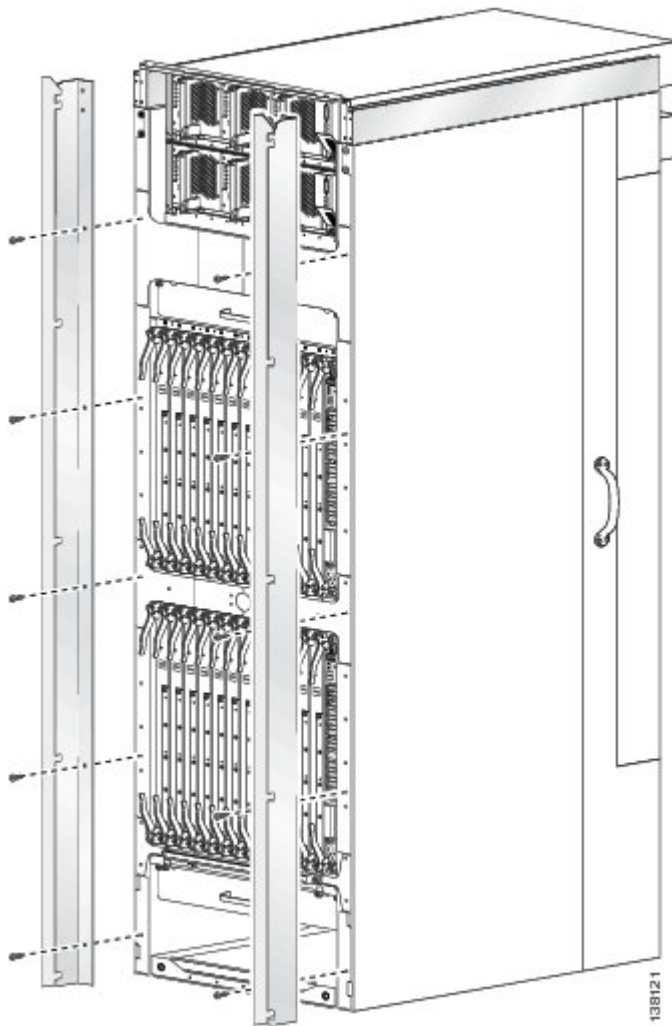
- Step 5** Remove the logo bezel (see the figure below) by unsnapping it from the ball stud snaps on either side of the bezel support, and then set it carefully aside.
- Step 6** Remove the upper grille (see the figure below) by unsnapping the bottom portion from the ball stud snaps on the logo bezel support assembly.
- Step 7** Rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.

***Figure 13: Removing the Logo Bezel and Front (SFC) Side Upper Grille—Fixed Configuration Power Shown***



- Step 8** Remove the front vertical cable troughs (see the figure below)—one right and one left—from the front (SFC) of the chassis:
- Use the screwdriver to remove the 10 flat-head screws (5 on each side) from the cable troughs, and set them aside.
  - Slide the cable troughs upward slightly to unhook them from the guide slots; lift them away from the chassis, and set them aside.
- Note** We recommend that you use two people to remove the troughs, one person to hold the troughs while the other person removes the screws.

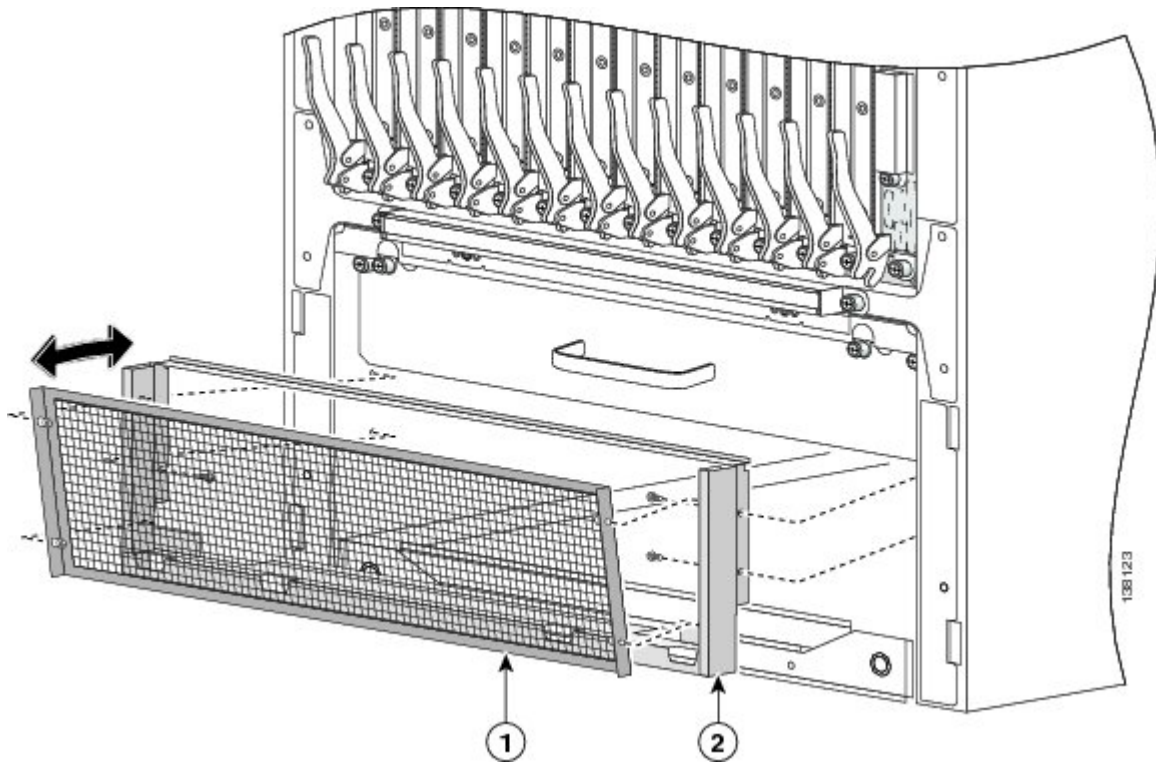
**Figure 14: Removing the Front (SFC) Side Vertical Cable Troughs—Fixed Configuration Power Shown**



**Step 9** Use the screwdriver to loosen the four captive screws, two on each side, that attach the inlet grille screen to the frame assembly. Remove the screen from the frame assembly. See the figure below.

**Step 10** Remove the four screws, two on each side, that attach the frame assembly to the chassis. See the figure below.

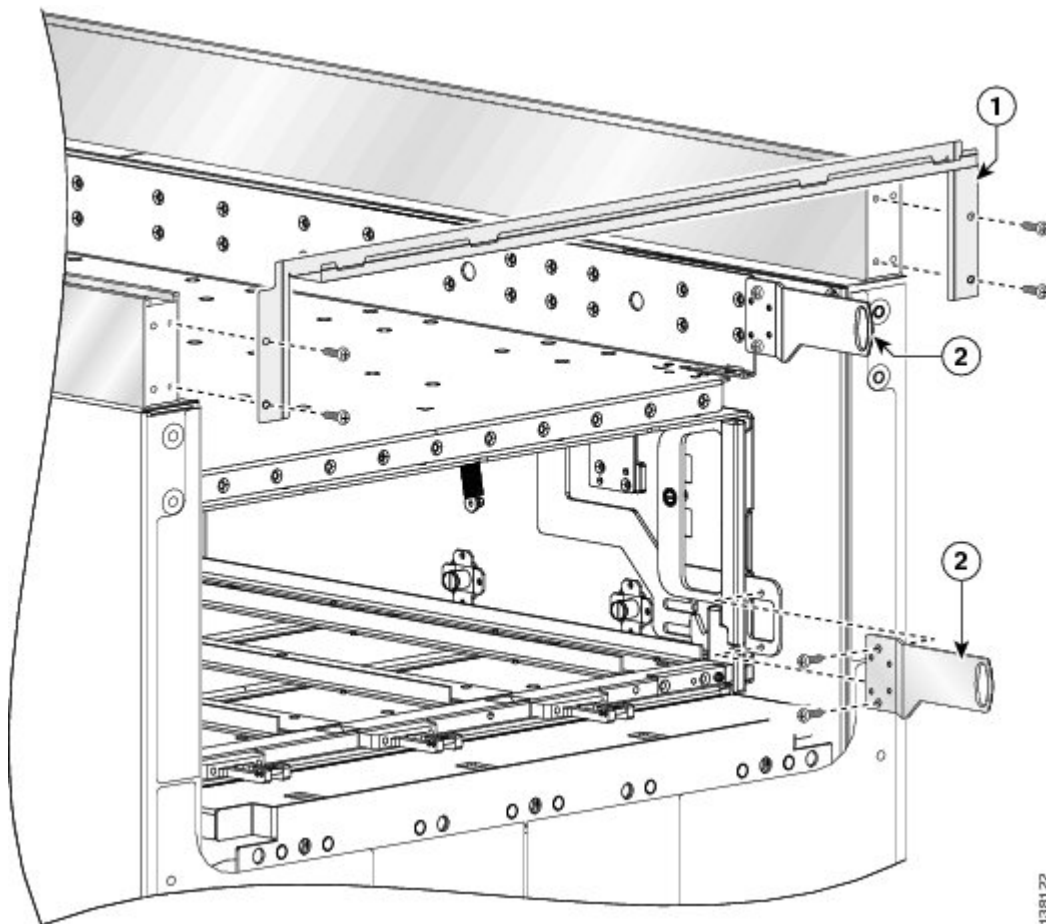
**Figure 15: Removing the Front (SFC) Side Inlet Screen and Lower Grille Frame Assembly**



1	Lower grille screen	2	Lower grille screen frame assembly
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- Step 11** Rotate the assembly forward, lift it away from the front (SFC) side of the chassis, and set it aside.
- Step 12** Remove the power shelf shutoff extenders (number 2 in the figure below) by unscrewing the four screws, two screws per extender, and set the screws and the extenders aside.
- Step 13** Remove the front upper grille support (number 1 in the figure below) from the unistruts by unscrewing the four M4x14-mm flat head screws (two for each unistrut).
- Step 14** Set the screws aside, then lift the grille support away from the front (SFC) side of the chassis, and set it aside.

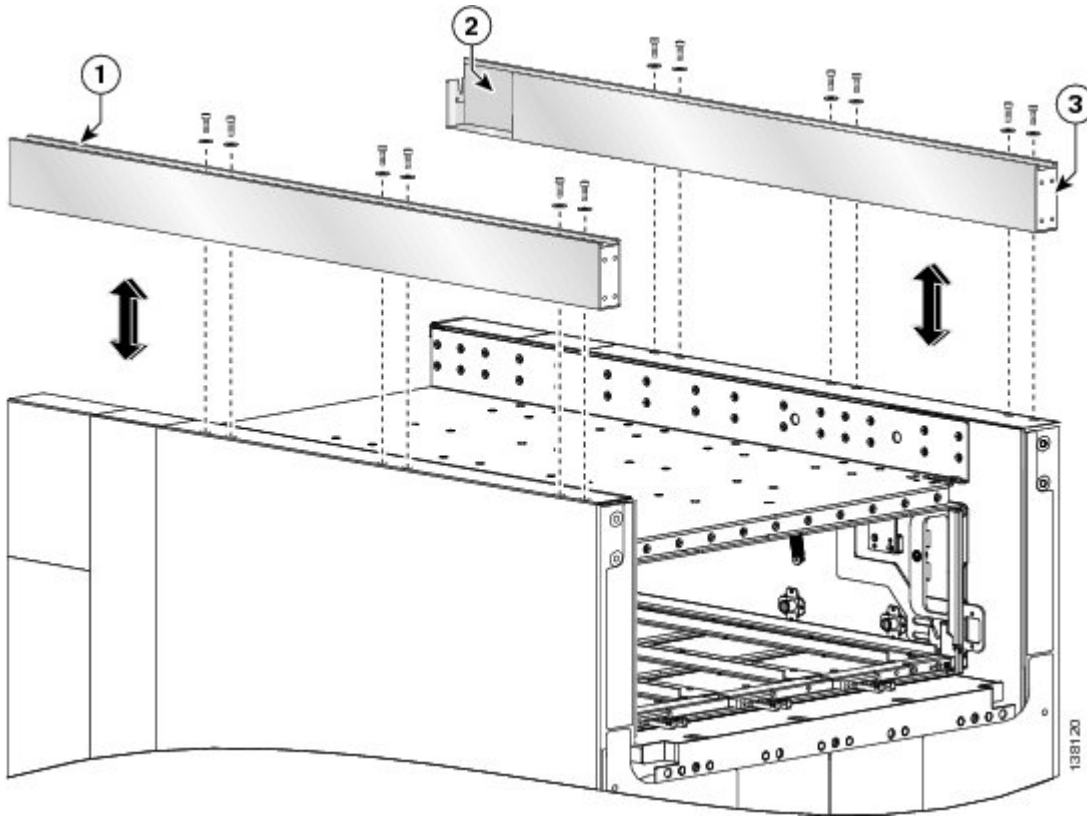
**Figure 16: Removing the Front (SFC) Side Upper Grille Support and Power Shutoff Extenders**



1	Front upper grille support	2	Power shutoff extender
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- Step 15** Use the 10-mm hex key wrench to remove the twelve M12 hex head bolts and washers, six on each unistrut, that attach the unistrut to the top of the chassis. See the figure below.

**Figure 17: Removing the Unistrut**



1	Left unistrut	3	Closed end at front of unistrut
2	Right unistrut with cutaway at rear		

### What to Do Next

Be sure that all parts have been carefully set aside and repackaged appropriately.



# Installing the Rear (OIM) Side Cosmetic Components

This section describes how to install the rear (OIM) side exterior cosmetic components, shown in [Figure 2: FCC Rear \(OIM\) Side Exterior Cosmetic Components—Fixed Configuration Power Shown](#), on [page 3](#), on the FCC.

**Note**

While it is possible to install the various exterior components on the chassis in a different order, it is easier to install them in the order outlined in this section.

This section describes how to perform the following tasks:

## Prerequisites

Before performing these tasks, you must first unpack and secure the chassis. See *Cisco CRS Carrier Routing System Fabric Card Chassis Unpacking, Moving, and Securing Guide*.

## Required Tools and Equipment

You need the following tools and part to perform this task:

- 8-inch long number 1 Phillips screwdriver—magnetic head preferable
- 2-mm hex key wrench
- Rear cosmetic kit (Cisco product number: CRS-FCC-REAR-CM=)
- Rear doors (Cisco product number: CRS-FCC-DRS-RR=)

## Steps

To install the rear exterior cosmetic components, perform the following steps:

**SUMMARY STEPS**

1. Ensure that the unistruts are installed. See the [Steps, on page 4](#).
2. Attach the rear vertical cable troughs—one right and one left—to the rear of the chassis (as shown in the figure below) by inserting the 10 M4x14-mm flat head screws (5 on each side) and using the screwdriver to fasten the screws to attach the cable troughs firmly to the chassis.
3. If applicable, remove blank covers and install cable pass-through accessory plates.
4. Remove the blank plates by unscrewing the four screws on each one. See the figure below.
5. Attach the inner cut-out plates, as shown in the figure below, using the four screws provided. See the figure *Inner Cut-out Plate—Fixed Configuration Power Shown*.
6. Attach the outer cut-out panel using the screws provided. See the figure below.
7. Attach the rear upper horizontal cable guides (see the figure below) by inserting five longer Phillips screws through the holes in the face of the brackets and into the chassis and tightening them to the chassis with the screwdriver.
8. Insert the four short Phillips screws (two on each side) that attach the bracket to the vertical cable trough support flange and tighten them to the troughs with the screwdriver.
9. Attach the rear mid-chassis horizontal cable guide and strike tube (see the figure below) by inserting the five longer Phillips screws through the holes in the face of the brackets and into the rear (OIM) side of the chassis and tightening them to the chassis with the screwdriver.
10. Insert the four short Phillips screws (two on each side) that attach the bracket to the inside of the vertical cable troughs, and tighten them to the troughs with the screwdriver.
11. Attach the rear lower horizontal cable guides (see the figure below) by inserting four longer Phillips screws through the holes in the face of the brackets and into the chassis and tightening them to the chassis with the screwdriver.
12. Insert the four short Phillips screws (two on each side) that attach the bracket to the vertical cable trough support flanges and tighten them to the troughs with the screwdriver.
13. Attach the rear upper grille by carefully hooking the tabs on the top of the grille over the hook supports on the top of the vertical cable troughs (see the figure below).
14. Press the grille firmly against the grille support until it snaps onto the ball stud snaps on the rear (OIM) side of the chassis.
15. Attach the rear lower bezel by carefully inserting the tabs on the grille into the hook hanger brackets on the lower bezel frame. Press the grille firmly against the grille frame until it snaps onto the ball stud snaps on the rear (OIM) side of the chassis (see the figure below).
16. Orient the doors so that the keyhole slots are pointing up.
17. Align the doors vertically in their appropriate positions so you can determine where to thread the first two screws that are adjacent to the keyholes. See the figure below. Set the doors aside, and thread the two screws.
18. Place the doors on the screws in the keyhole positions, two for each door.
19. Insert four M4x8-mm wafer-head screws (two on each side) into the appropriate screw holes in the doors, and use the screwdriver to fully tighten.
20. Insert and fully tighten all screws.
21. Ensure that the doors are properly aligned.

## DETAILED STEPS

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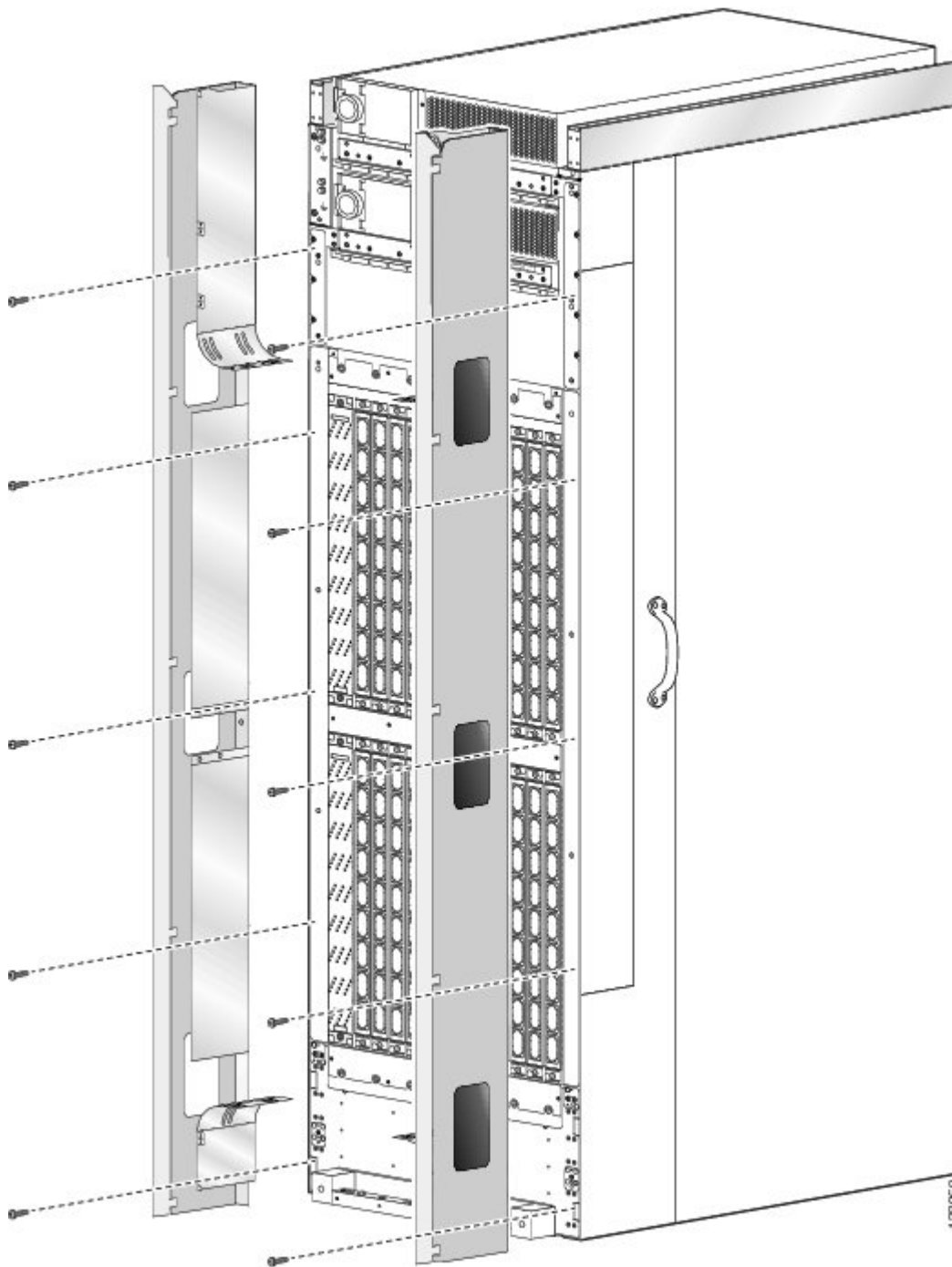
**Step 1** Ensure that the unistruts are installed. See the [Steps, on page 4](#).

**Step 2** Attach the rear vertical cable troughs—one right and one left—to the rear of the chassis (as shown in the figure below) by inserting the 10 M4x14-mm flat head screws (5 on each side) and using the screwdriver to fasten the screws to attach the cable troughs firmly to the chassis.

**Note** We recommend that you use two people to install the troughs, one person to hold the troughs in place while the other person inserts and tightens the screws.

**Step 3** If applicable, remove blank covers and install cable pass-through accessory plates.

**Figure 18: Installing Rear (OIM) Side Vertical Cable Troughs—Fixed Configuration Power Shown**

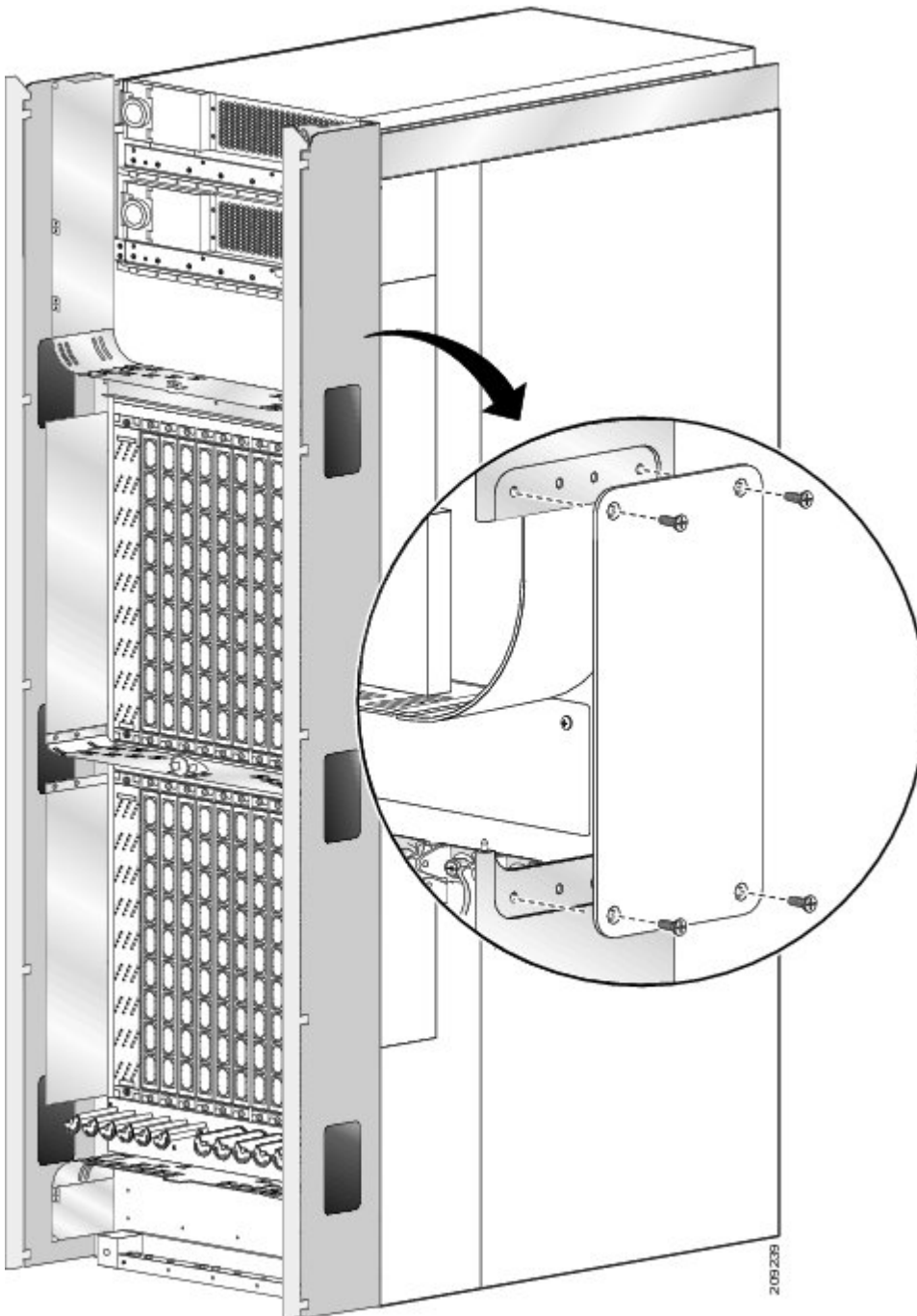


System growth and cable type will determine whether cable pass-through accessory plates are required to be installed.

- If the chassis is part of a multishelf system with vertical cabling, cable pass-through accessory plates are not required to be installed.
- If the chassis is part of a multishelf system with horizontal cabling, cable-pass-through accessory plates are required to be installed.
- If riser cable is installed on the chassis, cable-pass-through accessory plates are required to be installed.

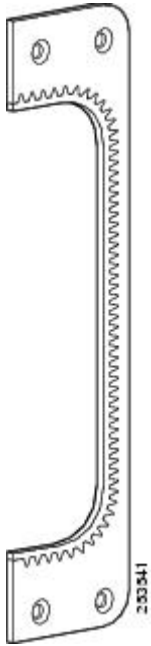
**Step 4** Remove the blank plates by unscrewing the four screws on each one. See the figure below.

**Figure 19: Removing Blank Plates from Cable Troughs—Fixed Configuration Power Shown**



- Step 5** Attach the inner cut-out plates, as shown in the figure below, using the four screws provided. See the figure *Inner Cut-out Plate—Fixed Configuration Power Shown*.

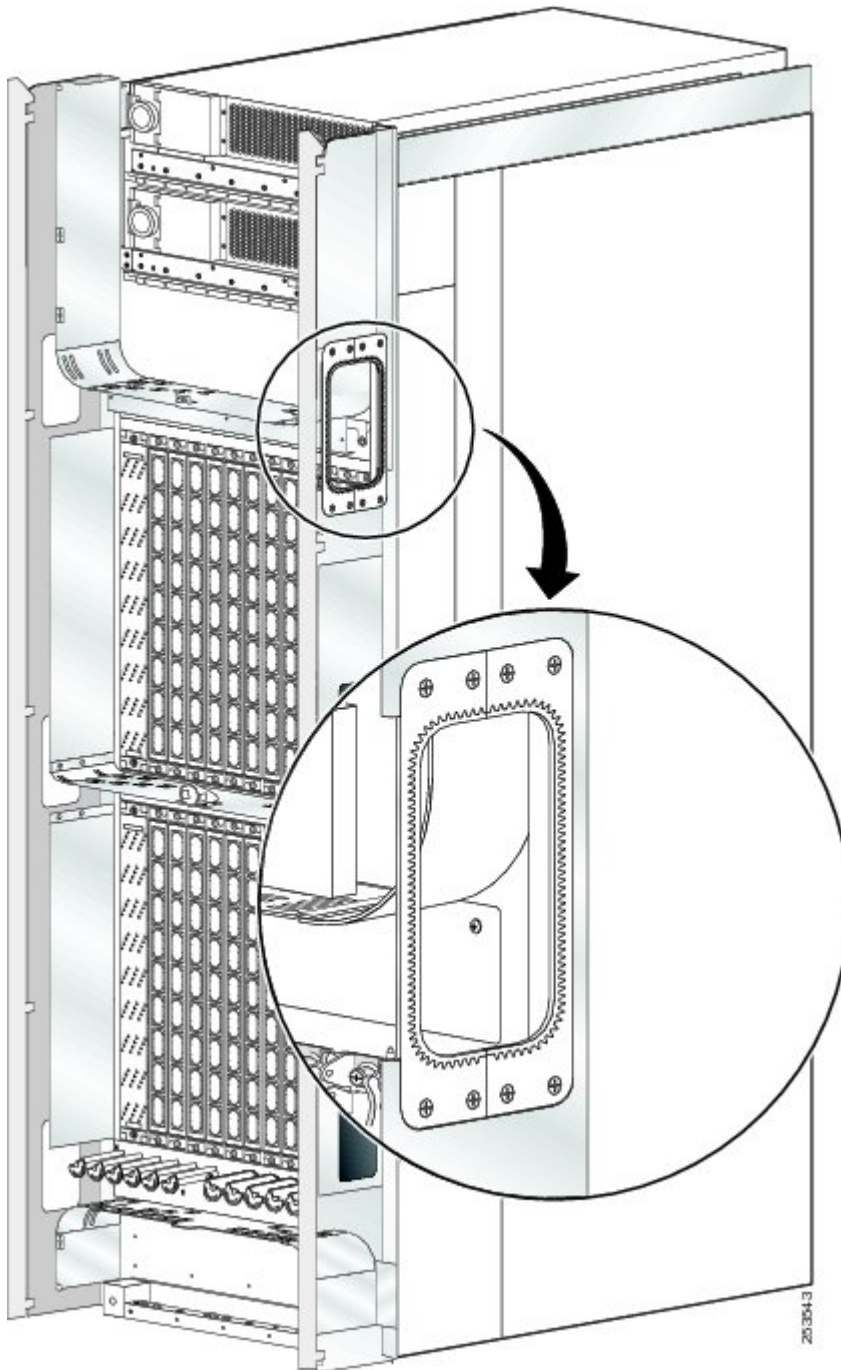
**Figure 20: Cut-out plate**



**Figure 21: Inner Cut-out Plate—Fixed Configuration Power Shown**

- Step 6** Attach the outer cut-out panel using the screws provided. See the figure below.

**Figure 22: Outer cut-out plate—Fixed Configuration Power Shown**

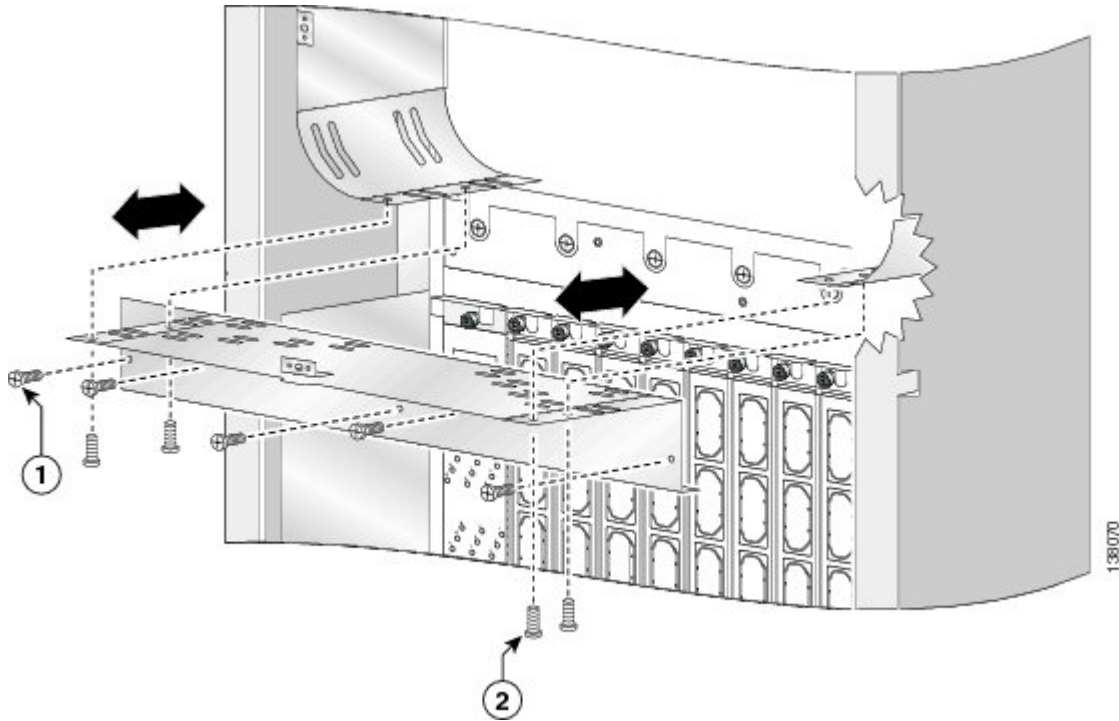


**Note** There are two different lengths of screws used to attach the horizontal cable guides; 4 mm long screws and 6 mm long. Extra screws are provided.



**Step 7** Attach the rear upper horizontal cable guides (see the figure below) by inserting five longer Phillips screws through the holes in the face of the brackets and into the chassis and tightening them to the chassis with the screwdriver.

**Figure 23: Attaching the Rear Upper Horizontal Cable Guide**



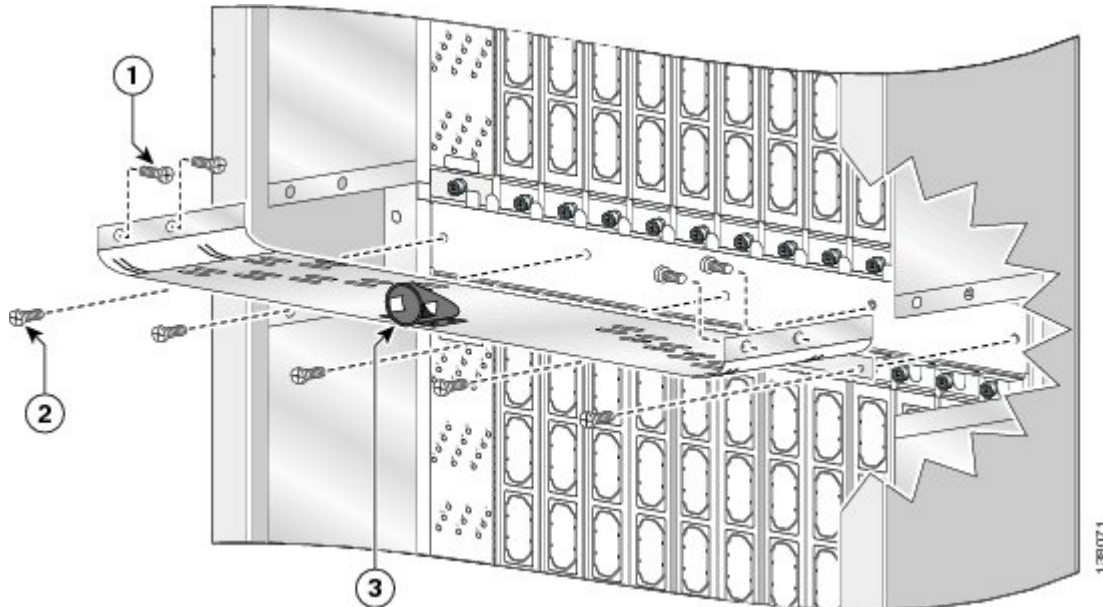
1	6 mm long screw attaching cable guide to chassis (quantity=5)
2	4-mm long screw attaching cable guide to vertical trough (quantity=4)

**Step 8** Insert the four short Phillips screws (two on each side) that attach the bracket to the vertical cable trough support flange and tighten them to the troughs with the screwdriver.

**Step 9** Attach the rear mid-chassis horizontal cable guide and strike tube (see the figure below) by inserting the five longer Phillips screws through the holes in the face of the brackets and into the rear (OIM) side of the chassis and tightening them to the chassis with the screwdriver.

**Caution** Ensure that the rear mid-chassis horizontal cable guide is installed with the strike tube on the upper surface.

**Figure 24: Attaching the Rear Mid-Chassis Horizontal Cable Guide and Strike Tube**

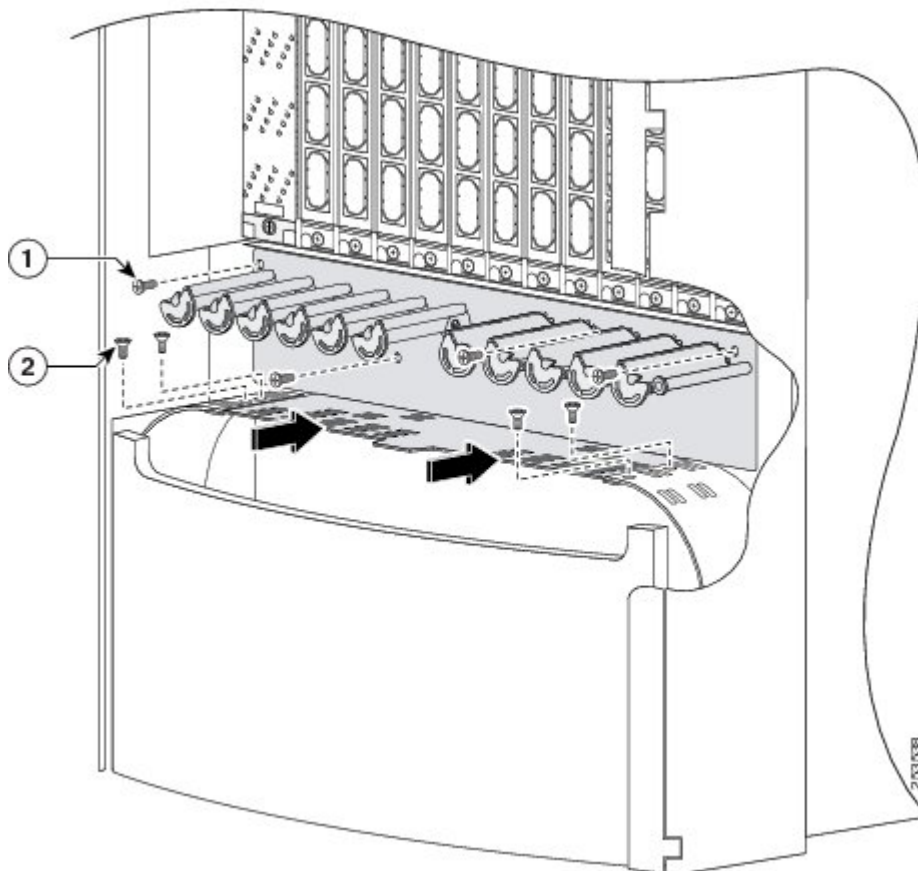


1	4 mm long screw attaching cable guide to vertical trough (quantity=4)
2	6 mm long screw attaching cable guide to chassis (quantity=5)
3	Strike tube on upper surface

**Step 10** Insert the four short Phillips screws (two on each side) that attach the bracket to the inside of the vertical cable troughs, and tighten them to the troughs with the screwdriver.

**Step 11** Attach the rear lower horizontal cable guides (see the figure below) by inserting four longer Phillips screws through the holes in the face of the brackets and into the chassis and tightening them to the chassis with the screwdriver.

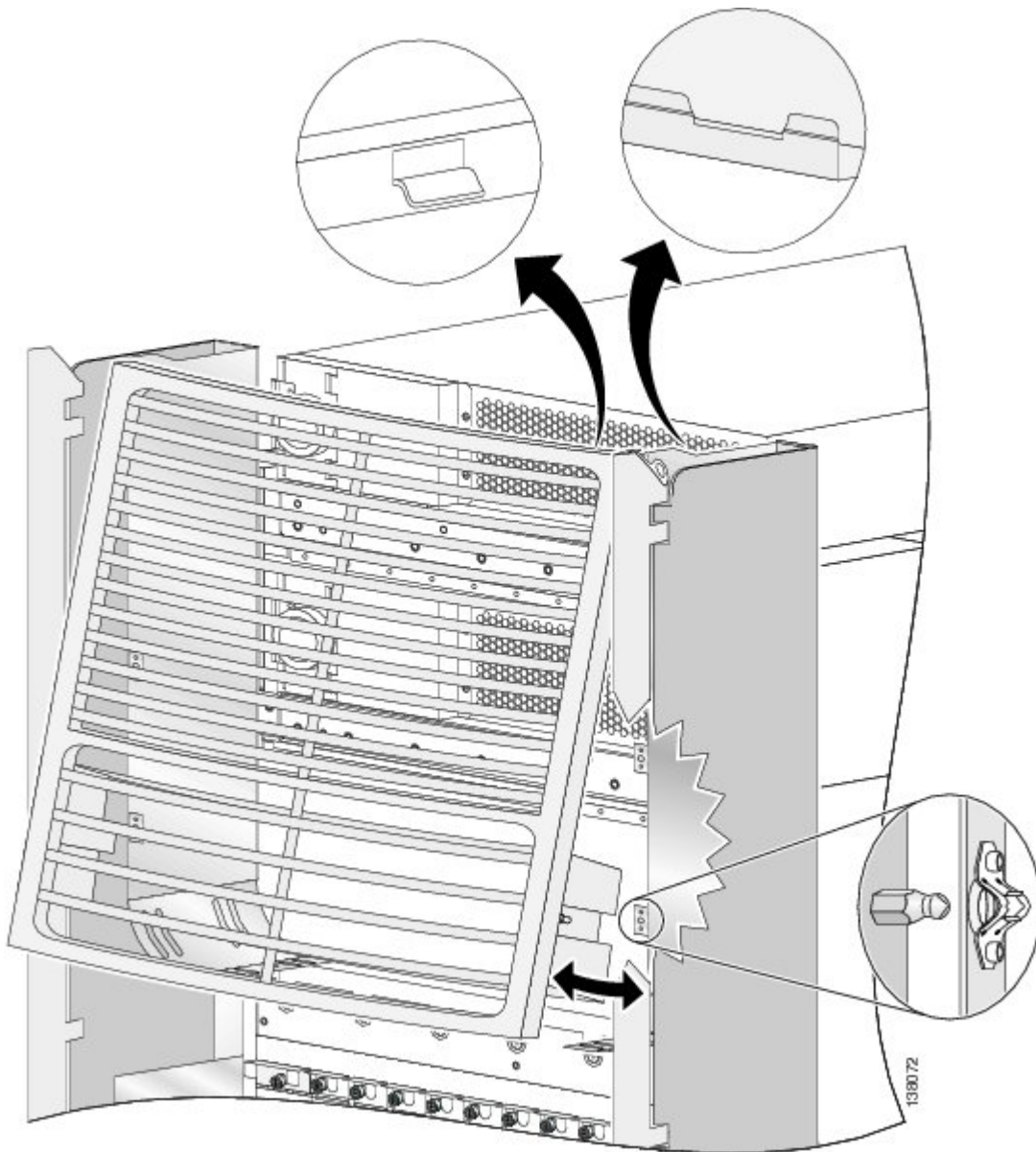
**Figure 25: Attaching the Rear Lower Horizontal Cable Guide**



1	6 mm long screw attaching cable guide to chassis (quantity=4)
2	4-mm long screw attaching cable guide to vertical trough (quantity=4)

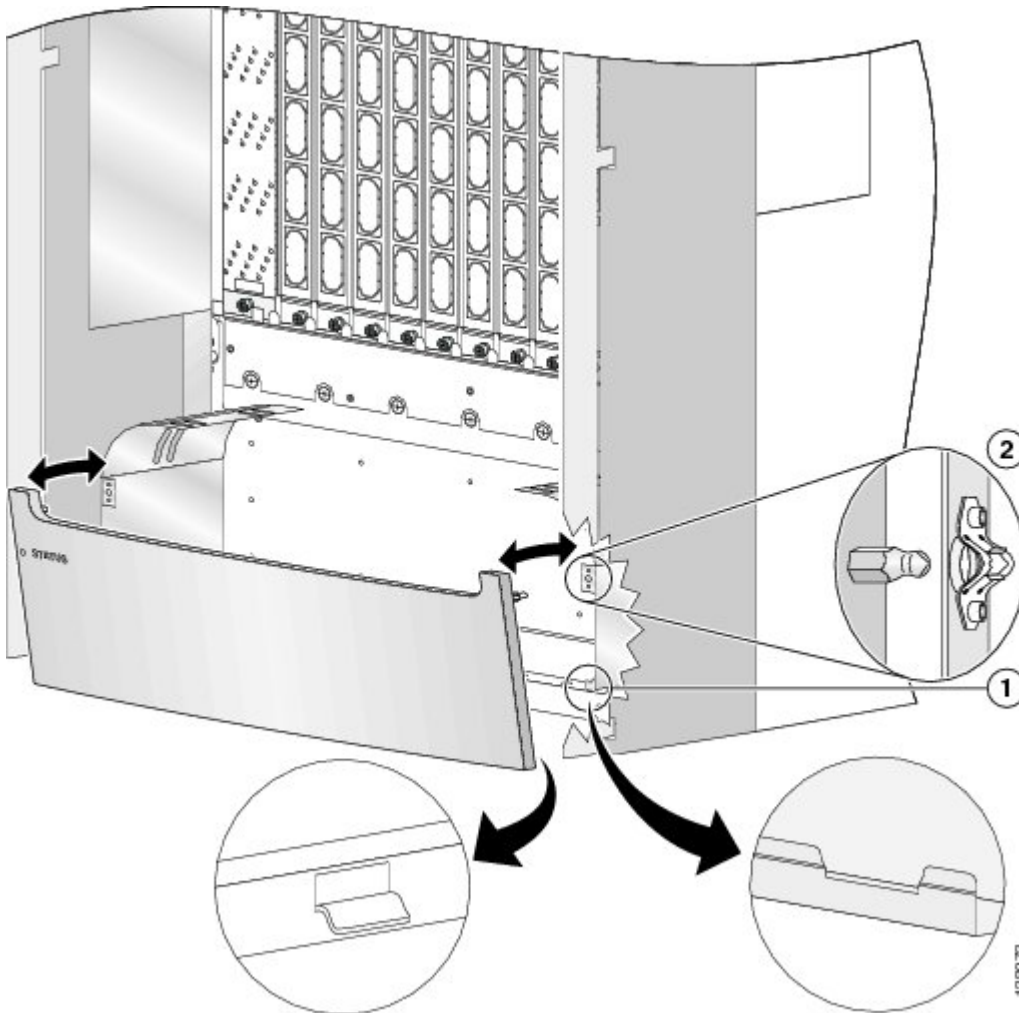
- Step 12** Insert the four short Phillips screws (two on each side) that attach the bracket to the vertical cable trough support flanges and tighten them to the troughs with the screwdriver.
- Step 13** Attach the rear upper grille by carefully hooking the tabs on the top of the grille over the hook supports on the top of the vertical cable troughs (see the figure below).

**Figure 26: Attaching the Rear (OIM) Side Upper Grille—Fixed Configuration Power Shown**



- Step 14** Press the grille firmly against the grille support until it snaps onto the ball stud snaps on the rear (OIM) side of the chassis.
- Step 15** Attach the rear lower bezel by carefully inserting the tabs on the grille into the hook hanger brackets on the lower bezel frame. Press the grille firmly against the grille frame until it snaps onto the ball stud snaps on the rear (OIM) side of the chassis (see see the figure below).

**Figure 27: Attaching the Rear (OIM) Side Lower Bezel**

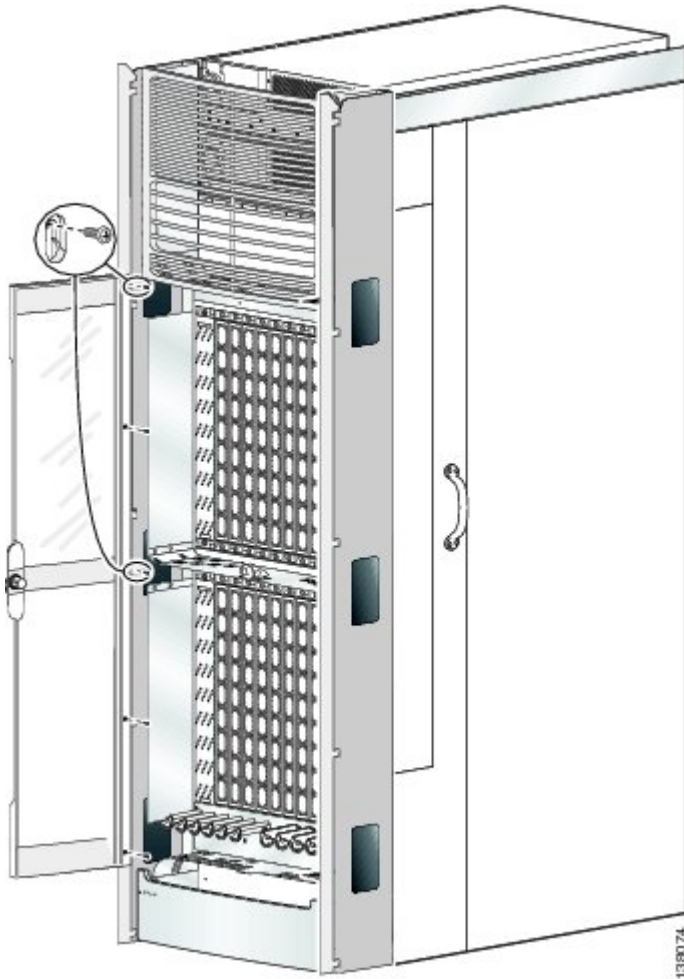


1	Hook hanger brackets	2	Ball stud
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- Step 16** Orient the doors so that the keyhole slots are pointing up.
- Caution** The doors scratch easily, so they should be handled with care.

- Step 17** Align the doors vertically in their appropriate positions so you can determine where to thread the first two screws that are adjacent to the keyholes. See the figure below. Set the doors aside, and thread the two screws.

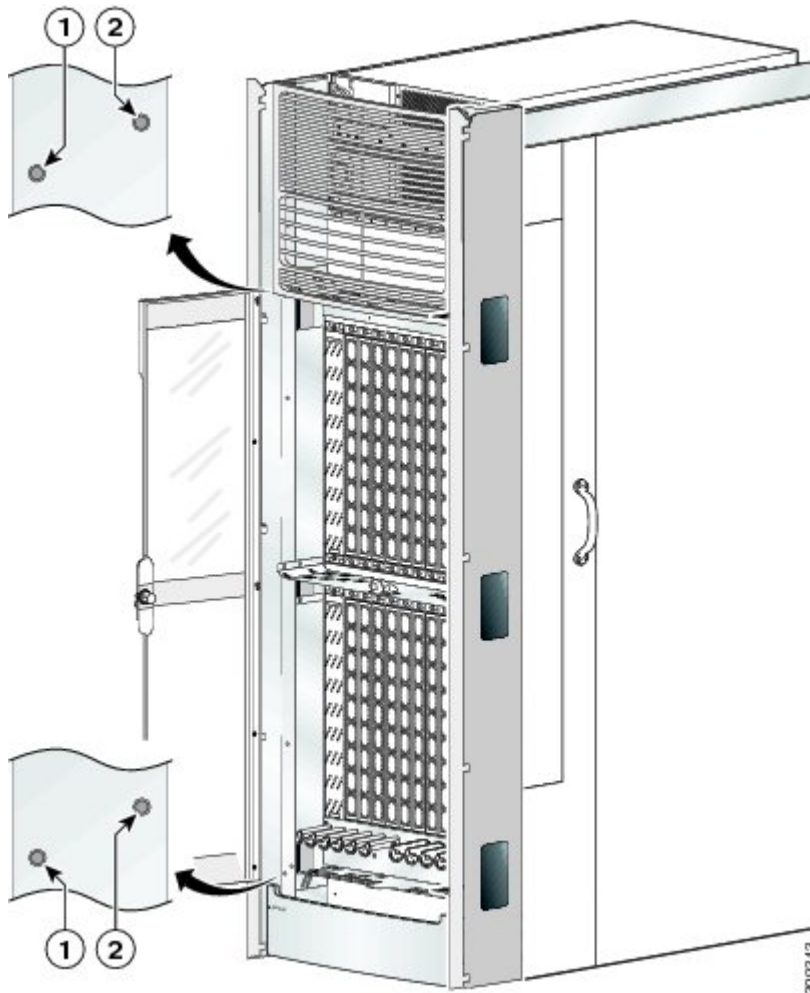
**Figure 28: Attaching the Rear (OIM) Side Exterior Doors**



- Step 18** Place the doors on the screws in the keyhole positions, two for each door.
- Step 19** Insert four M4x8-mm wafer-head screws (two on each side) into the appropriate screw holes in the doors, and use the screwdriver to fully tighten.
- Note** Verify that Step 16 was completed correctly to ensure proper orientation of doors. The screw locations vary depending on the door. If all screw holes for a door do not align with the screw holes on the front (SFC) side of the chassis, you need to use the other door.
- Step 20** Insert and fully tighten all screws.
- Step 21** Ensure that the doors are properly aligned.
- a) Check to see if the doors close without interfering with each other.
- Note** Typically, the doors will close without interfering with each other. However, you may need to adjust either the left or right door, or both, to align the doors properly. Adjust doors only if necessary.

- b) To decrease the door gap, loosen the five screws that secure the vertical trough to the chassis. Tighten the bottom set screws (number 1 in [Figure 10: Aligning the Door on the Front of the Chassis - Left Door Shown, on page 14](#)) one full turn. Snug the five screws that attach the vertical trough to the chassis and check the door alignment.
- c) To increase the door gap, loosen the five screws that secure the vertical trough to the chassis. Tighten the top set screws (number 2 in [Figure 10: Aligning the Door on the Front of the Chassis - Left Door Shown, on page 14](#)) one full turn. Snug the five screws that attach the vertical trough to the chassis and check the door alignment.

**Figure 29: Aligning the Door on the Rear of the Chassis**



1	Bottom set screw	2	Top set screw
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- d) Repeat the procedure as necessary until the doors are properly aligned.
- e) Tighten the five screws that secure the vertical trough to the chassis.

### What to Do Next

After performing this task, insert the rear horizontal Velcro cable bracket straps and install cabling that connects the FCC to the other components in the multishelf system. See the *Cisco CRS Carrier Routing System Multishelf System Interconnection and Cabling Guide* for more information.

This section describes how to remove the rear (OIM) side exterior cosmetic components, shown in [Figure 2: FCC Rear \(OIM\) Side Exterior Cosmetic Components—Fixed Configuration Power Shown](#), on page 3, from the FCC. This section includes all the steps for you to remove all the cosmetic parts from your chassis, but you are not required to do so. To remove a particular part, see the appropriate step in the *Steps* section that follows.

This section describes how to perform the following tasks:



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**Note**

While it is possible to remove most of the rear cosmetic parts on the FCC separately, some parts (such as a unistrut) require that other parts be removed first.

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## Prerequisites

Ensure that you have all the original packaging material for the cosmetic components available.

## Required Tools and Equipment

You need the following tools to perform this task:

- 8-in. long number 1 Phillips screwdriver—magnetic head preferable

## Steps

To remove the rear (OIM) side cosmetic components, perform the following steps:



## SUMMARY STEPS

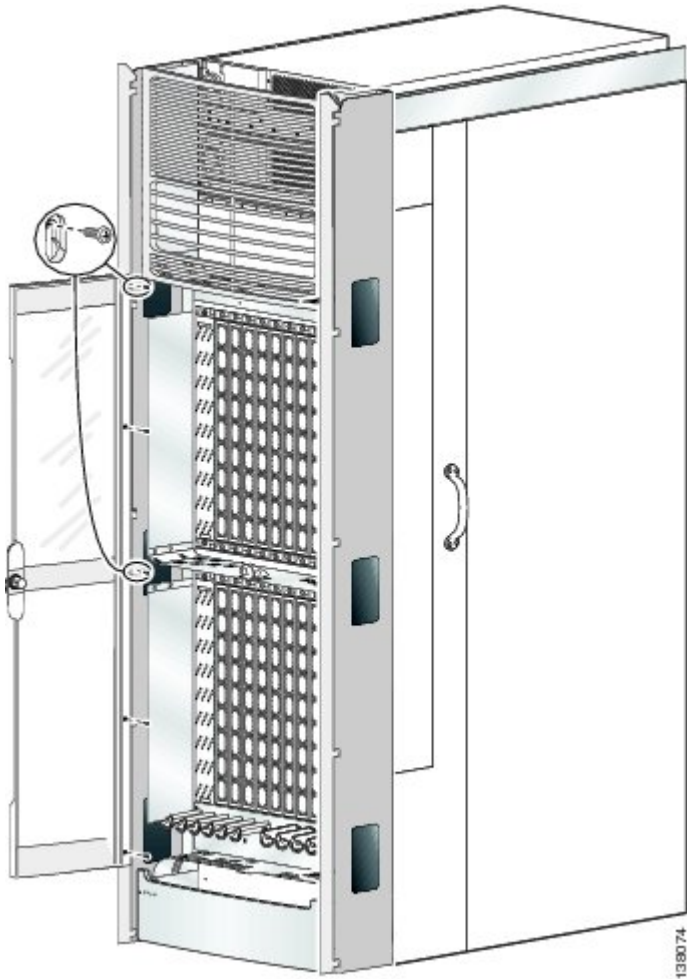
1. Remove the rear exterior doors by unscrewing all the screws except those adjacent to the keyholes (see the figure below); hold the doors to the chassis, lift the doors, and set them carefully aside.
2. Remove the rear lower bezel (see the figure below) by unsnapping the top portion from the ball stud snaps on the grille frame; rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.
3. Remove the rear upper grille (see the figure below) by unsnapping the bottom portion from the ball stud snaps on the logo bezel support assembly; rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.
4. Use the screwdriver to remove the four screws (two on each side) that attach the bracket to the vertical cable trough support flange (see the figure below), and set them aside.
5. Using the screwdriver, remove the five longer Phillips head screws that attach the face of the bracket to the chassis. Remove the cable guide and carefully set it aside. (see the figure below)
6. Use the screwdriver to remove the four flat head Phillips screws, two on each side, that attach the cable guide to the chassis, and set them aside. See the figure below.
7. Using the screwdriver, remove the five flat head Phillips screws that attach the cable guide to the chassis. Remove the cable guide and carefully set it aside. See the figure below.
8. Use the screwdriver to remove the four screws (two on each side) that attach the bracket to the vertical cable trough support flange, and set them aside. See the figure below.
9. Using the screwdriver, remove the four screws that attach the cable guide to the chassis. Remove the cable guide and carefully set it aside. See the figure below.
10. Remove the rear vertical cable troughs—one right and one left—from the rear of the chassis (see the figure below):

## DETAILED STEPS

- 
- Step 1** Remove the rear exterior doors by unscrewing all the screws except those adjacent to the keyholes (see the figure below); hold the doors to the chassis, lift the doors, and set them carefully aside.

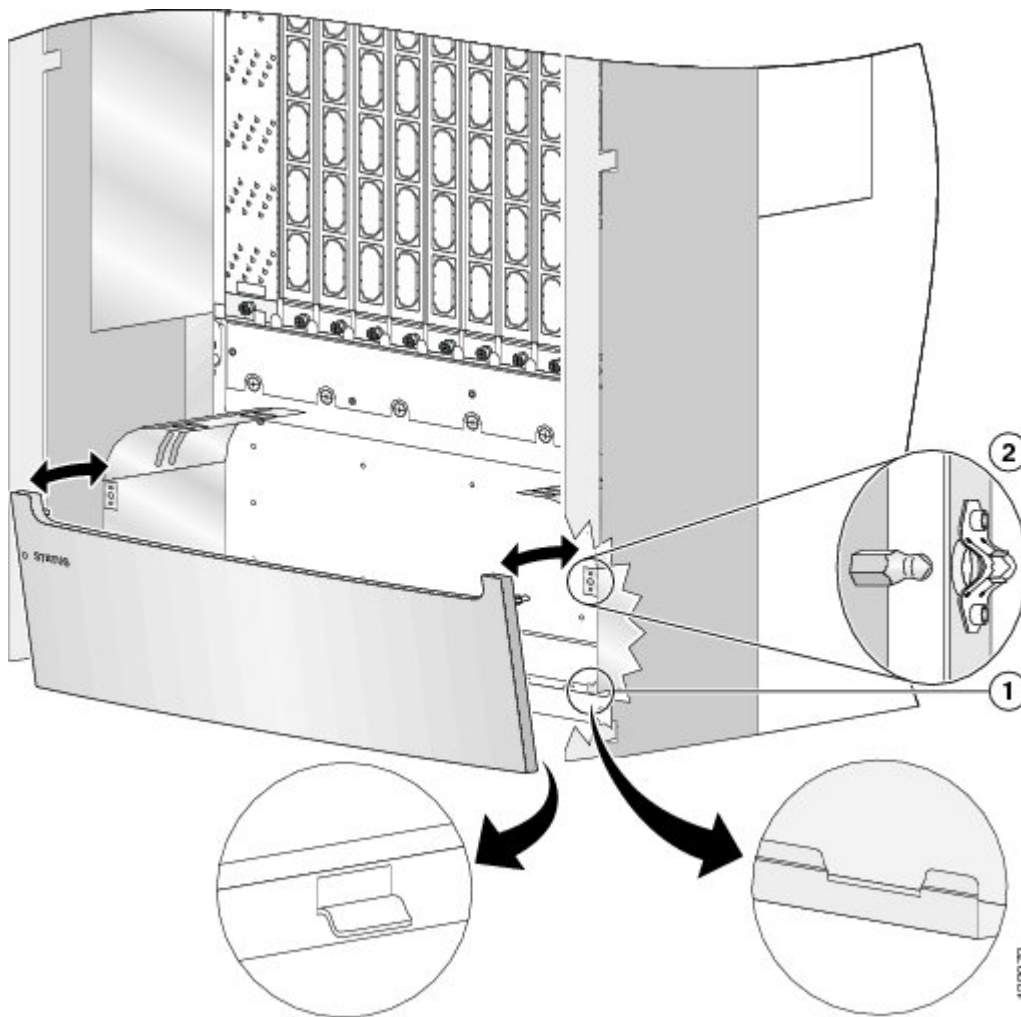
**Caution** The doors scratch easily, so they should be handled with care.

**Figure 30: Removing the Rear (OIM) Side Exterior Doors**



**Step 2** Remove the rear lower bezel (see the figure below) by unsnapping the top portion from the ball stud snaps on the grille frame; rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.

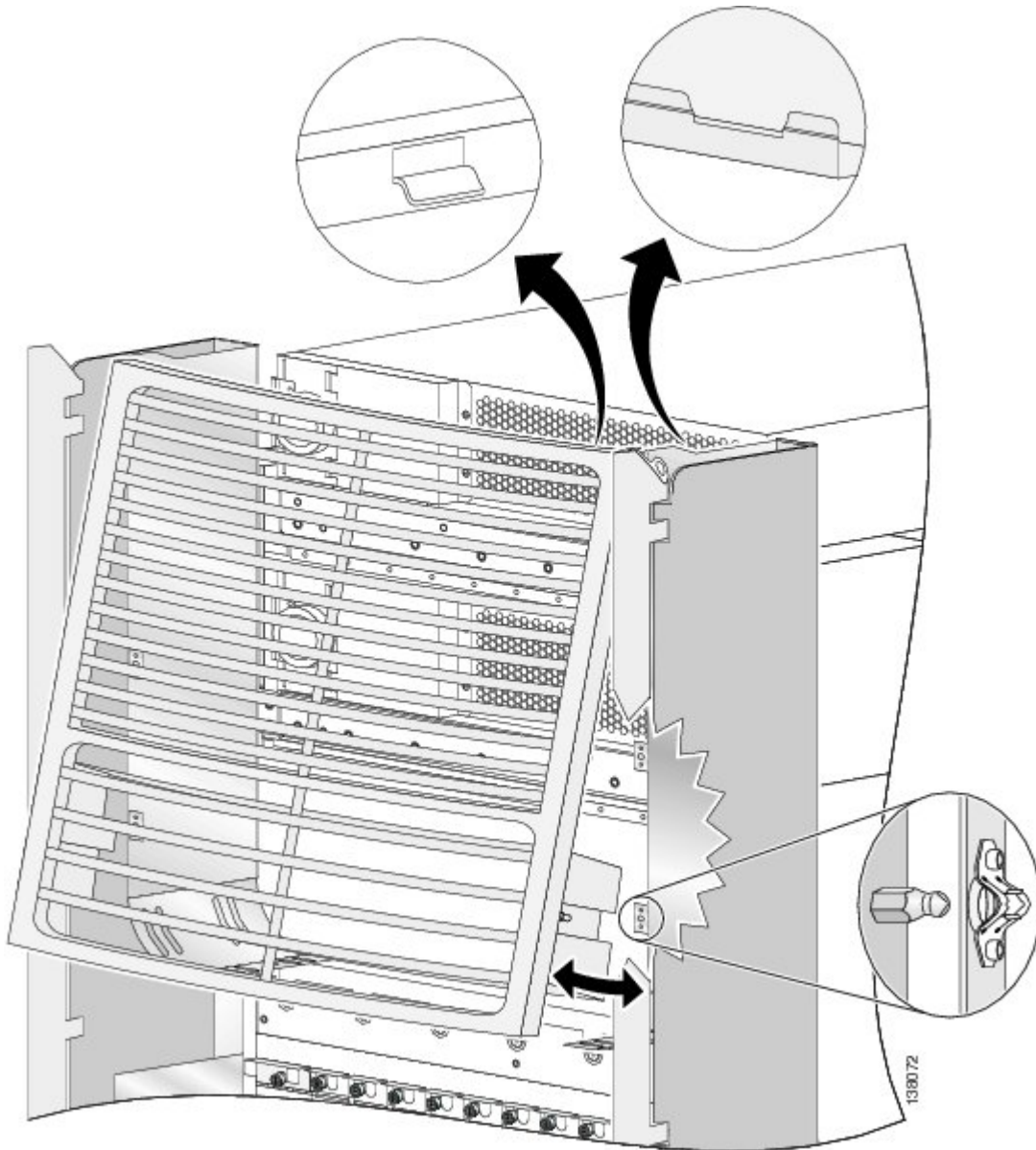
**Figure 31: Removing the Rear (OIM) Side Lower Bezel**



1	Hook hanger brackets	2	Ball stud
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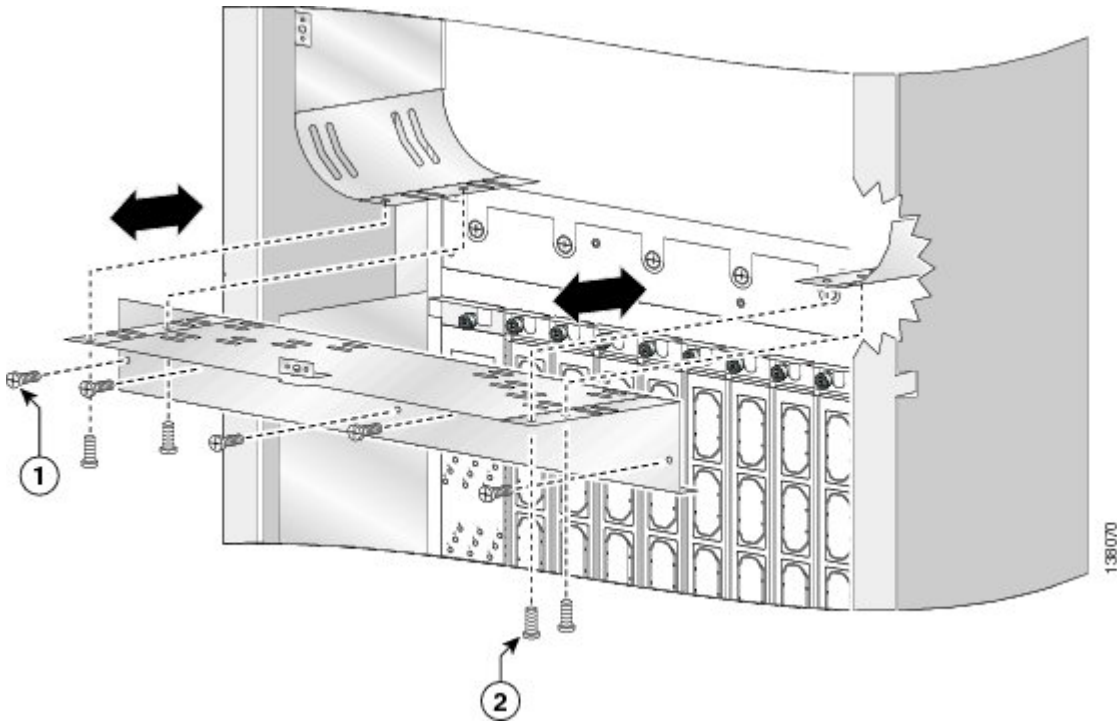
- Step 3** Remove the rear upper grille (see the figure below) by unsnapping the bottom portion from the ball stud snaps on the logo bezel support assembly; rotate the grille toward you on its hook hanger brackets, then lift it clear of the support, and set it carefully aside.

**Figure 32: Removing the Rear (OIM) Side Upper Grille—Fixed Configuration Power Shown**



- Step 4** Use the screwdriver to remove the four screws (two on each side) that attach the bracket to the vertical cable trough support flange (see the figure below), and set them aside.
- Step 5** Using the screwdriver, remove the five longer Phillips head screws that attach the face of the bracket to the chassis. Remove the cable guide and carefully set it aside. (see the figure below)

**Figure 33: Removing the Rear Upper Horizontal Cable Guide**

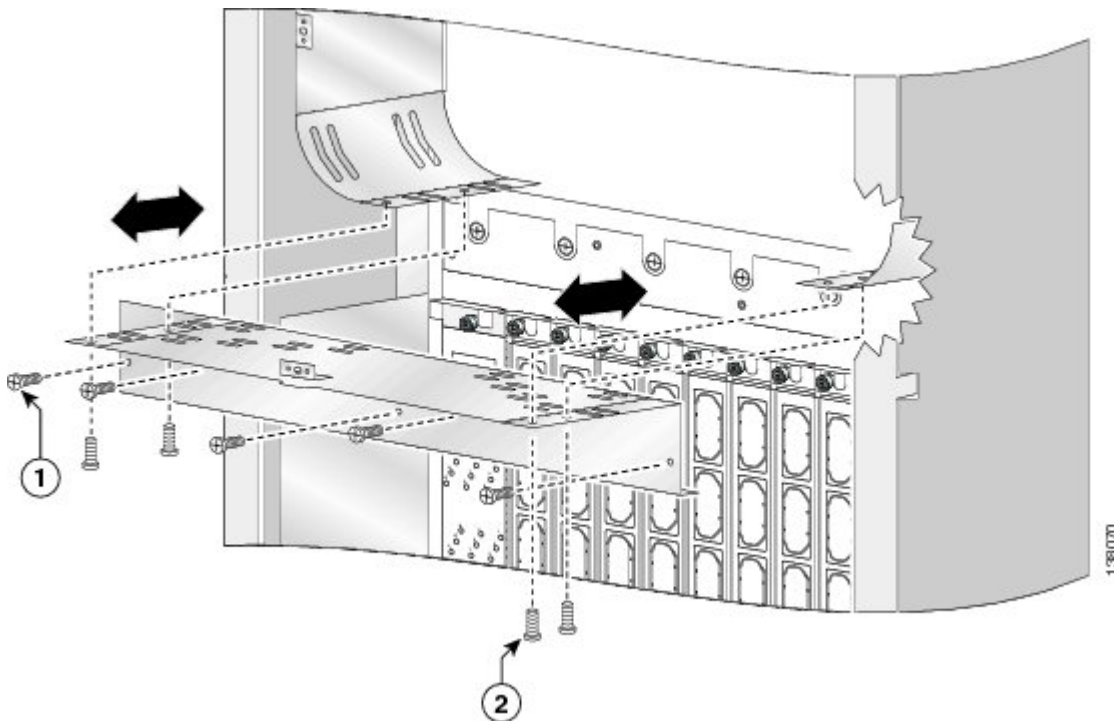


1	6 mm long screw attaching cable guide to chassis (quantity=5)
2	4-mm long screw attaching cable guide to vertical trough (quantity=4)

**Step 6** Use the screwdriver to remove the four flat head Phillips screws, two on each side, that attach the cable guide to the chassis, and set them aside. See the figure below.

**Step 7** Using the screwdriver, remove the five flat head Phillips screws that attach the cable guide to the chassis. Remove the cable guide and carefully set it aside. See the figure below.

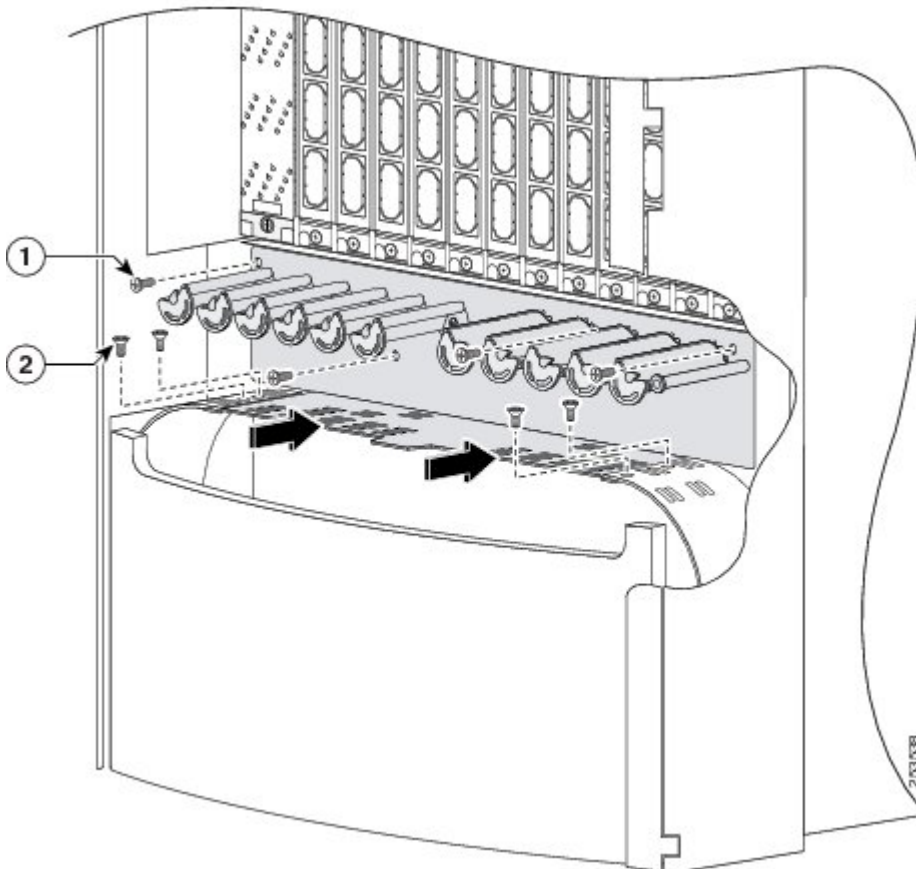
**Figure 34: Removing the Rear Mid-Chassis Horizontal Cable Guide and Strike Tube**



1	4 mm long screw attaching cable guide to vertical trough (quantity=4)
2	6 mm long screw attaching cable guide to chassis (quantity=5)
3	Strike tube on the upper surface

- Step 8** Use the screwdriver to remove the four screws (two on each side) that attach the bracket to the vertical cable trough support flange, and set them aside. See the figure below.
- Step 9** Using the screwdriver, remove the four screws that attach the cable guide to the chassis. Remove the cable guide and carefully set it aside. See the figure below.

**Figure 35: Removing the Rear Lower Horizontal Cable Guide**

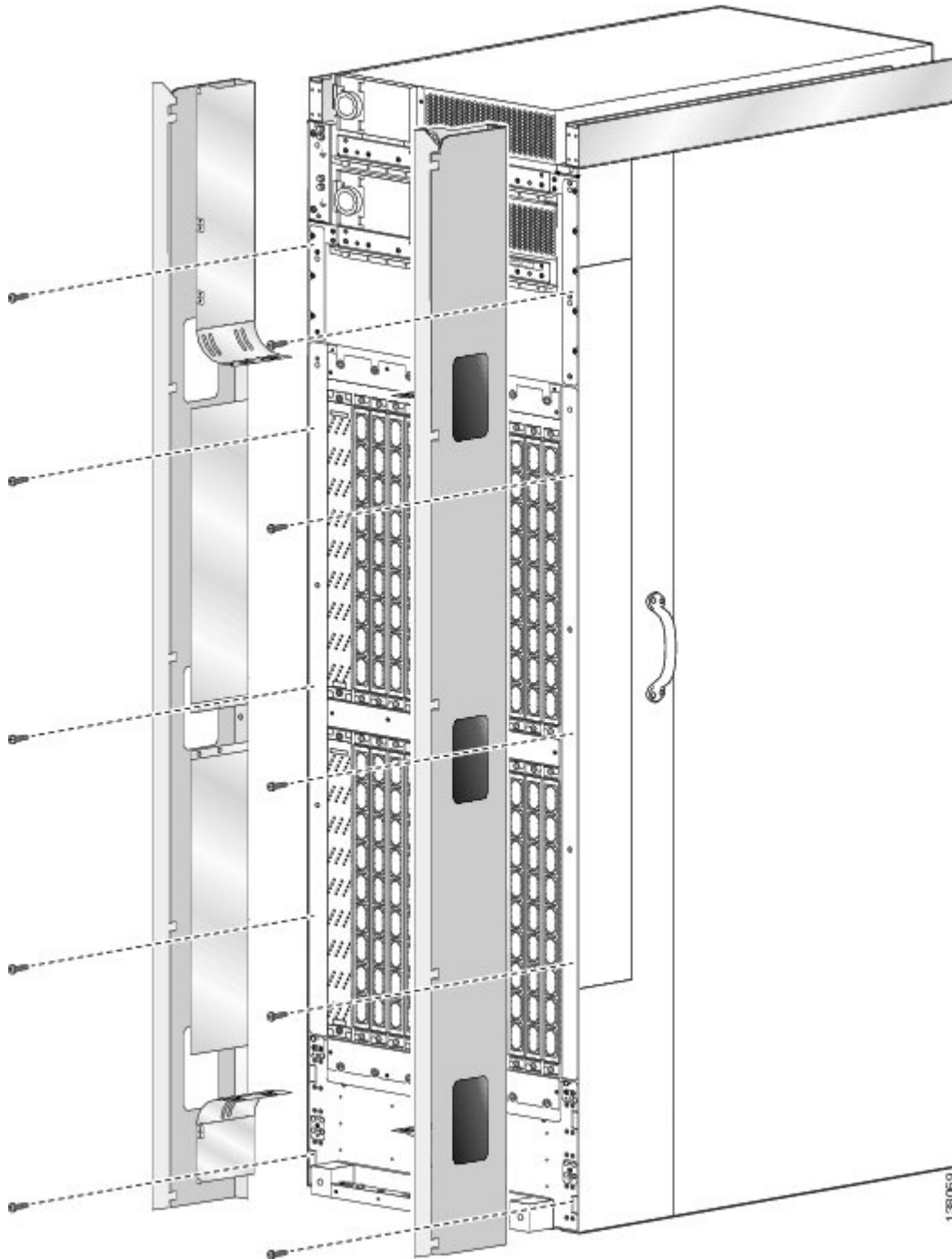


1	6 mm long screw attaching cable guide to chassis (quantity=4)
2	4-mm long screw attaching cable guide to vertical trough (quantity=4)

- Step 10** Remove the rear vertical cable troughs —one right and one left— from the rear of the chassis (see the figure below):
- Unscrew the 10 M4x14-mm flat head screws (5 on each side) that hold the troughs to the chassis, and set them aside.
  - Slide the cable troughs upward slightly to unhook them from the guide slots; lift them away from the chassis, and set them carefully aside.

**Note** We recommend that you use two people to remove the troughs, one person to hold the troughs while the other person removes the screws.

**Figure 36: Rear (OIM) Side Vertical Cable Troughs—Fixed Configuration Power Shown**





**What to Do Next**

Be sure that all parts have been carefully set aside and repackaged appropriately.

**What to Do Next**

Be sure that all parts have been carefully set aside and repackaged appropriately.

