



AlphaServer ES45

Rackmount Installation Guide

Order Number: EK-ES450-RG. A01

This manual is for service providers and self-maintenance customers responsible for ES45 systems.

Compaq Computer Corporation

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Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards):

EN55022 (CISPR 22) - Electromagnetic Interference

EN50082-1 (IEC801-2, IEC801-3, IEC801-4) - Electromagnetic Immunity

EN60950 (IEC950) - Product Safety

Warning!

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung!

Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Attention!

Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

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Preface

Intended Audience

This manual is for service providers and managers for *Compaq AlphaServer* ES45 systems.

Document Structure

This manual uses a structured documentation design. Topics are organized into small sections, usually consisting of two facing pages. Most topics begin with an abstract that provides an overview of the section, followed by an illustration or example. The facing page contains descriptions, procedures, and syntax definitions.

This manual has one chapter.

- **Chapter 1, Installing a System Into a Cabinet**, contains procedures for installing an *AlphaServer* ES45 rackmount system into a cabinet.

Documentation Titles

Table 1 Compaq AlphaServer ES45 Documentation

Title	Order Number
User Documentation Kit	QA-6NUAB-G8
Owner's Guide	EK-ES450-UG
Documentation CD (6 languages)	AG-RPJ7A-BE
Maintenance Kit	QA-6NUAA-G8
Service Guide	EK-ES450-SV
Service Guide HTML CD (includes IPB)	AG-RPJ5A-BE

Information on the Internet

Visit the Compaq Web site at www.compaq.com for service tools and more information about the *AlphaServer* ES45 system.

Chapter 1

Installing a System Into a Cabinet

This chapter gives procedures for installing an *AlphaServer* ES45 rackmount system into a cabinet.



WARNING: The system is very heavy. Do not attempt to lift it manually. Use a material lift or other mechanical device to lift the system. At least two people are required to perform the installation.

You need the following tools for the installation:

#2 Phillips screwdriver

5/16-inch hex socket

Extension bar for socket

5/64-inch Allen head wrench

2.5 mm Allen head wrench

Material lift or lift table

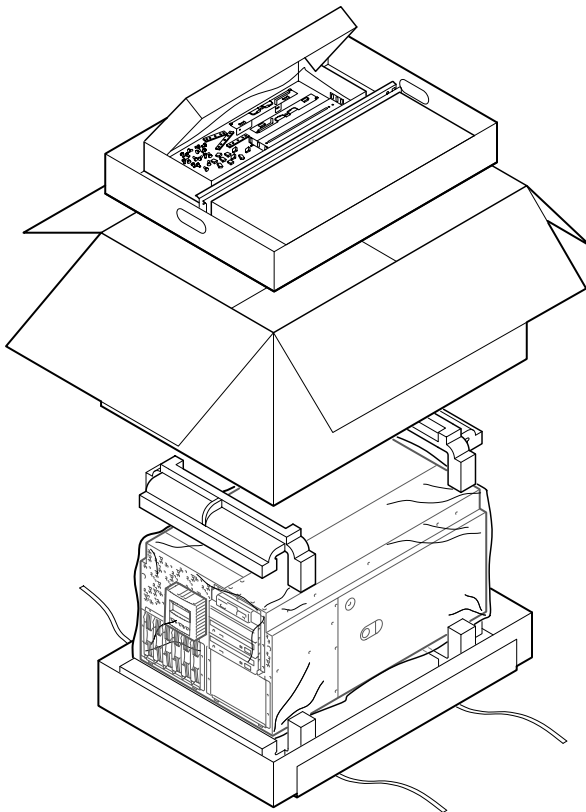
1.1 Shipment Contents

Remove the accessories box, then lift the cardboard from the system.



WARNING: Use a material lift or other mechanical device to move the system to the work area.

Figure 1-1 Unpacking the System



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Check the contents of the accessories box against the list in Table 1–1.

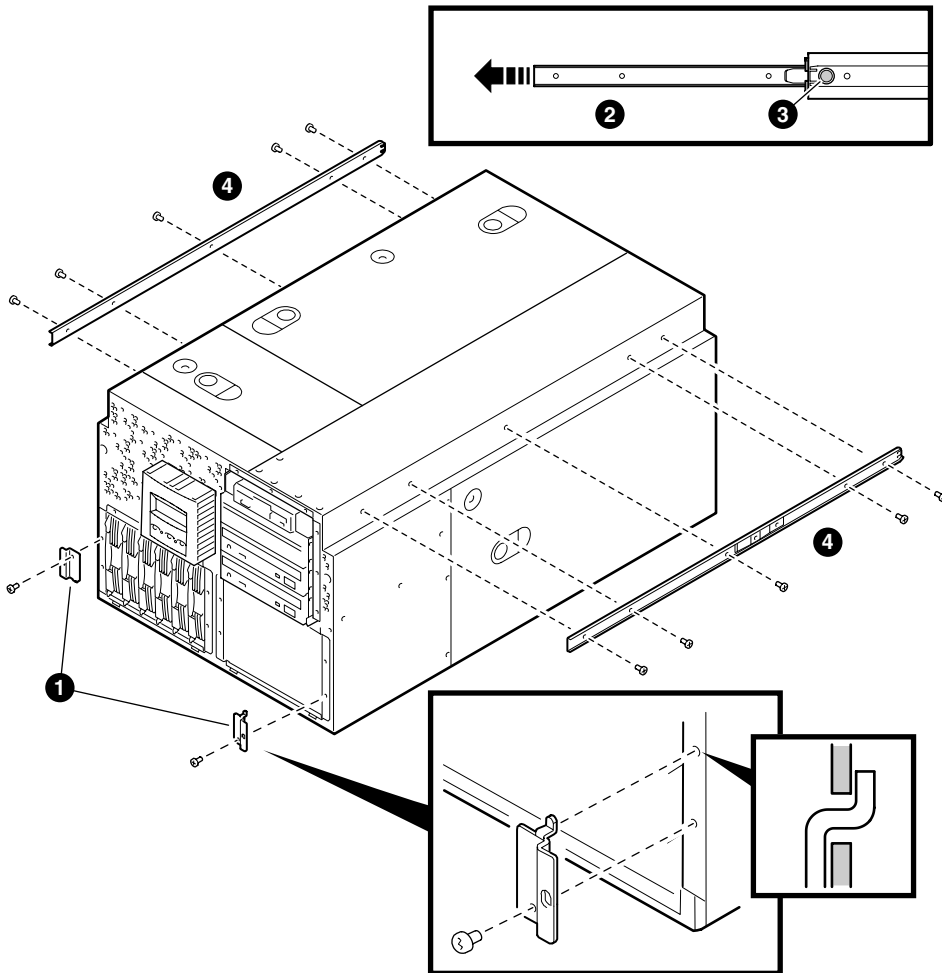
Table 1–1 Accessories List

	Part Number	Quantity
Accessories for Mounting		
Front bezel assembly	70-40129-03	1
Ball bearing slides	12-49881-02	1 set
Cable management arm	70-40177-06	1
Pivot rod stabilizer bracket	74-48996-01	1
Actuator latch	74-60579-01	1
Poly bag with mounting hardware (see below)		1
Mounting Hardware		
Slide brackets	74-53563-01	4
Front mounting brackets	74-53924-01	2
10-32, 5-hole nut bar	74-51531-01	2
10-32, 8-hole nut bar	74-46418-01	2
M4, 2-hole nut bar	74-60633-01	4
M4, 2-hole, 2 perforations, nut bar	74-60632-01	4
10-32 x 0.5 hex head screws	90-00061-44	16
10-32 U-nuts	90-07786-00	2
M4 x 10 mm socket button head cap screw	N/A	26
M3 x 10 mm pan head Phillips screw	90-09984-21	2
Plastic cable clamp	N/A	1

1.2 Attaching Mounting Brackets to the System

To prepare the system for installation, attach mounting brackets.

Figure 1-2 Attaching Mounting Brackets and Slides



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CAUTION: *The slides are lightly greased. Handle them carefully to avoid soiling your clothing.*

1. Attach a front mounting bracket ❶ along each edge, using one hex screw per bracket.

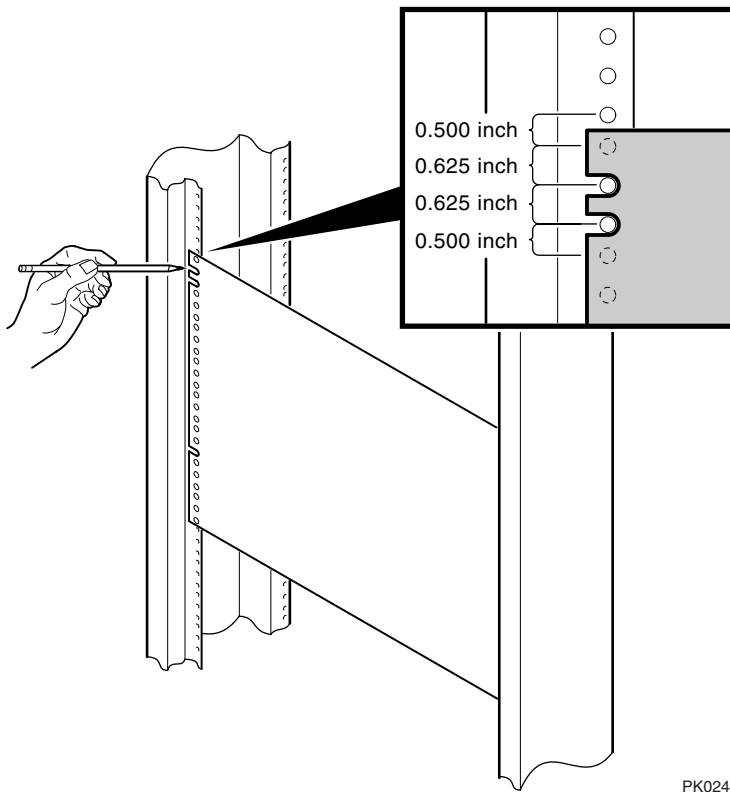
Make sure that on the right side, the tab on the bracket faces up and on the left side, it faces down.

2. Pull the narrow segment of the slide ❷ out and detach it completely by pressing the green release button ❸ and continuing to pull.
3. Attach the narrow segment of the slide to the system with five cap screws ❹.
4. Repeat the procedure for the other slide.

1.3 Marking the Cabinet Installation Area

Use the cardboard template to mark the holes where you will be mounting the hardware.

Figure 1-3 Hole Pattern



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The installation of the rackmount system requires 14 inches (8U) of vertical height in the cabinet.

NOTE: *If you do not have the cardboard template, see the AlphaServer M-Series cabinet documentation for hole numbers and instructions.*

Mark the Front of the Cabinet

1. Starting at the front of the cabinet, match the hole pattern.
2. Mark the six holes where you will be mounting hardware.
3. Turn the template over to mark the back of the system.

Mark the Back of the Cabinet

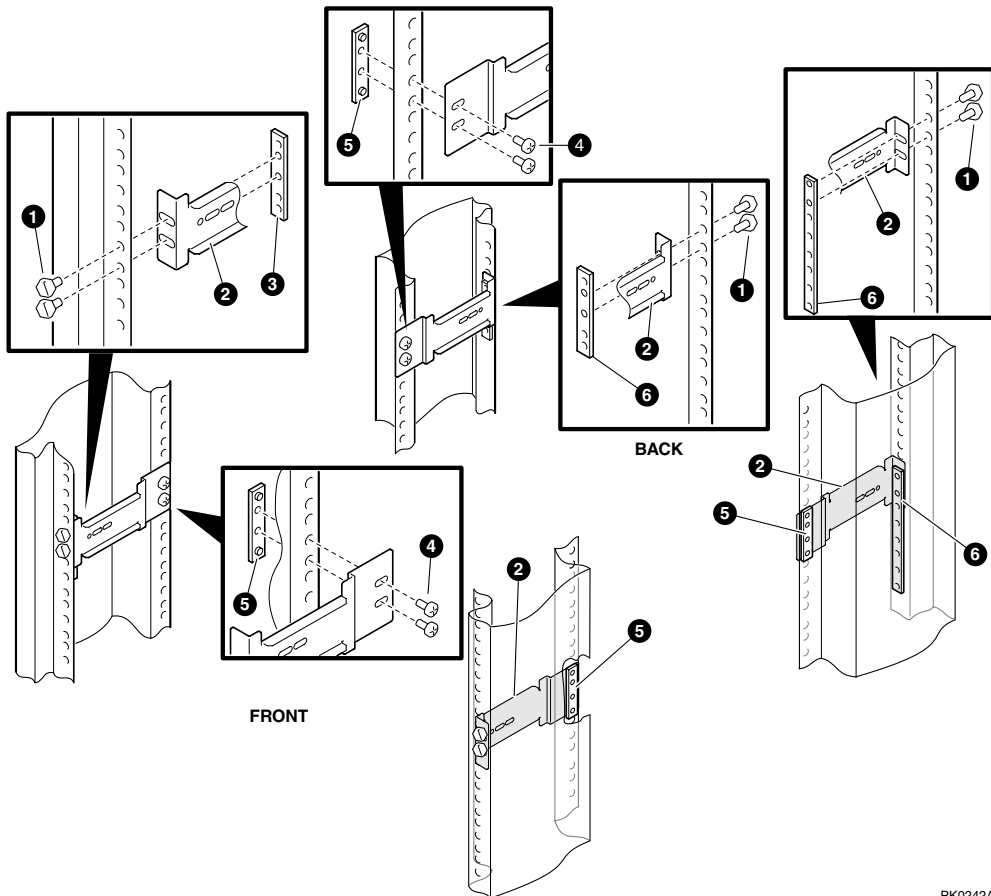
4. Make sure the first hole you mark on the back is at the same vertical location as the first hole you marked on the front.
5. Mark the six holes where you will be mounting hardware.

CAUTION: *After using the template to mark the holes, check your work. Count the holes to make sure you marked them correctly.*

1.4 Preparing the Cabinet

To prepare the cabinet, attach the slide brackets.

Figure 1-4 Attaching Slide Brackets



Front

1. Starting at the top marked hole, put two hex screws ❶ through the cabinet rail and the slide bracket ❷. Fasten with a 5-hole nut bar ❸ using the second and third holes from the top.
2. Insert two cap screws ❹ through the slide bracket and the cabinet rail. Fit the perforations of a 2-hole, 2-perforation nut bar ❺ into the holes in the cabinet rail and fasten.
3. Repeat the procedure for the other rail.

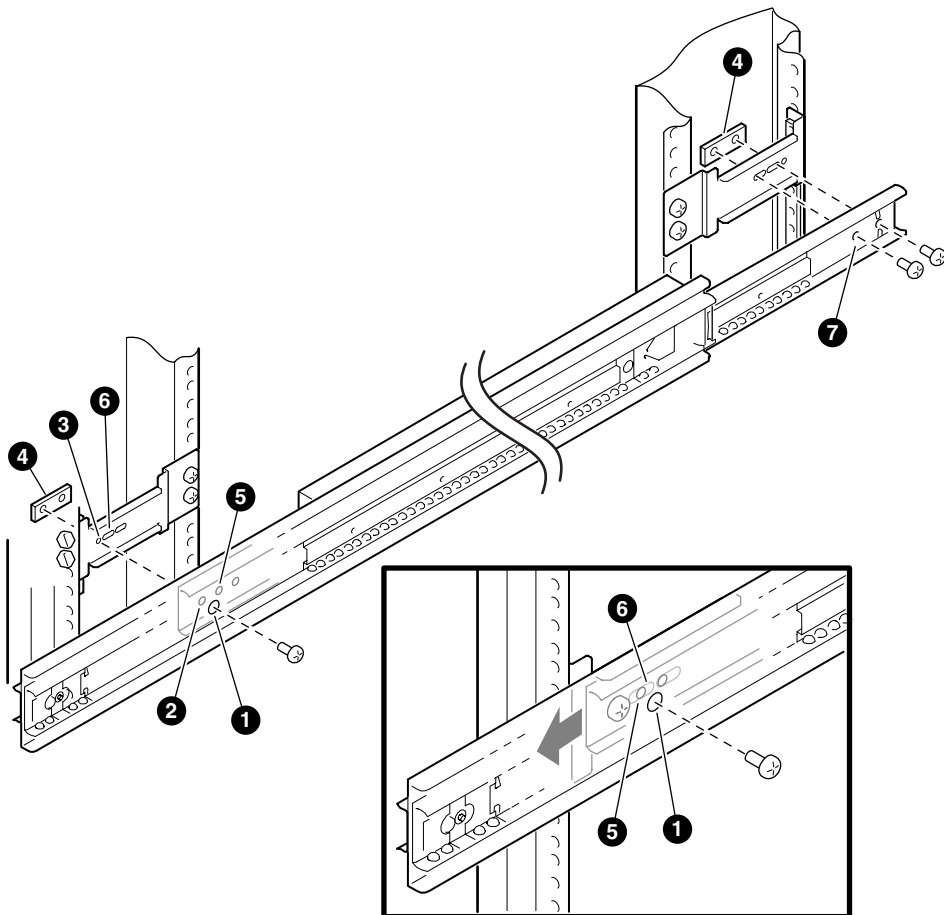
Back

1. Starting at the top marked hole, put two hex screws ❶ through the cabinet rail and the slide bracket ❷. Fasten with an 8-hole nut bar ❻ using the top two holes.
2. Insert two cap screws ❹ through the slide bracket and the cabinet rail. Fit the perforations of a 2-hole, 2-perforation nut bar ❺ into the holes in the cabinet rail and fasten.
3. Repeat the procedure for the other rail.

1.5 Attaching Slides

Attach slides to the cabinet.

Figure 1-5 Attaching Slides



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The sliding segment of the slide has an access hole ❶ that provides access to three mounting holes in the stationary segment. You use two of the mounting holes.

Front

1. Insert a cap screw through the access hole ❶ and the first (forward-most) mounting hole ❷ in the slide and through the hole ❸ in the slide bracket. Fasten with one two-hole nut bar ❹ and tighten.
2. Align the access hole with the second mounting hole ❺ in the slide.
3. Insert a cap screw through the access hole and the second hole ❺ in the slide and through a slot ❻ in the slide bracket. Fasten into the nut bar and tighten.

Back

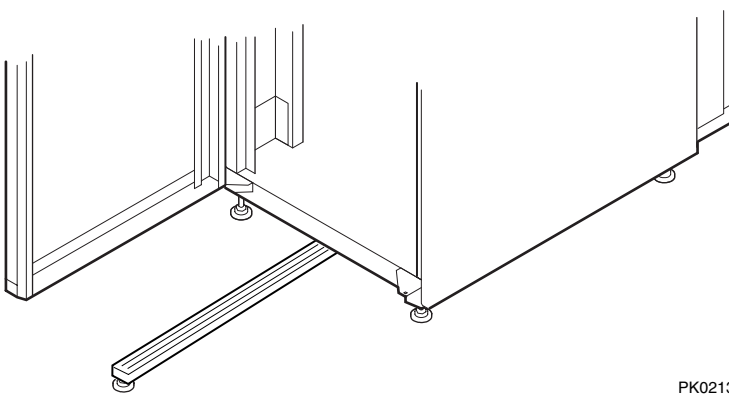
1. Insert a screw through the two holes ❼ in the stationary segment of the slide and through a slot in the slide bracket. Attach to a two-hole nut bar ❹.

Repeat the entire procedure for the other slide.

1.6 Stabilizing the Cabinet

Stabilize the cabinet before installing the system.

Figure 1-6 Activating the Stabilizer Foot



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The system is intended for installation in one of the following cabinets, which are equipped with a stabilizer bar:

- H9A10 M-Series Medium Cabinet
- H9A15 M-Series Tall Cabinet

Pull out the stabilizer bar and extend the leveler foot to the floor before installing the system.

If you are using a cabinet other than those listed above, install rack stabilizing feet or provide other means to stabilize the cabinet before installing the system.

1.7 Installing the System

Use a material lift or other mechanical device to install the system.

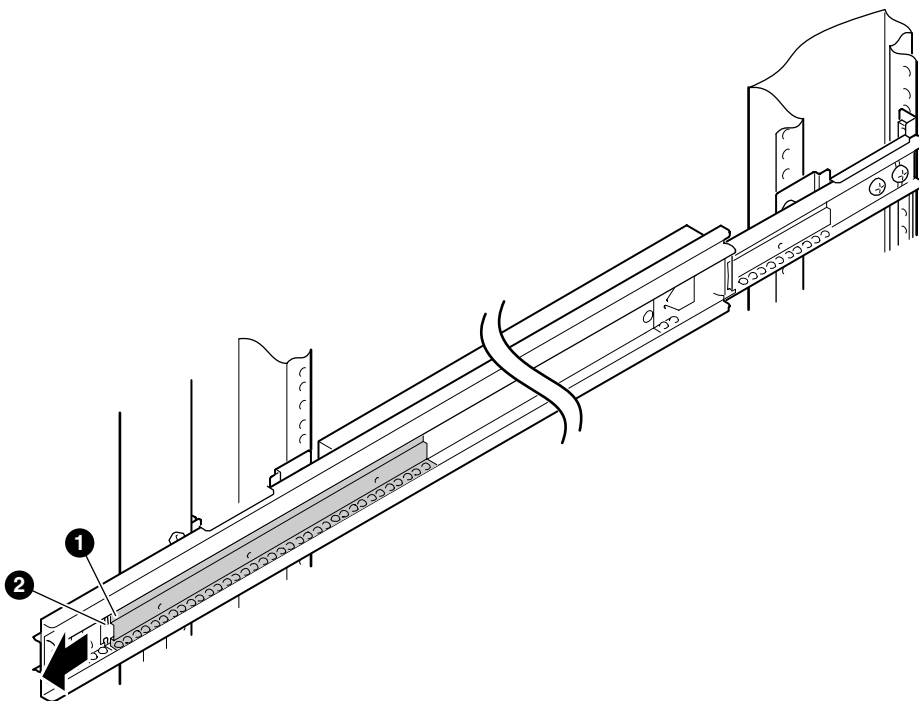


WARNING:

- 1. Make sure that all other hardware in the cabinet is pushed in and attached.**
 - 2. The system is very heavy. Do not attempt to lift it manually. Use a material lift or other mechanical device.**
 - 3. The inner race must be moved forward prior to installing the system. Failure to do so may cause bodily harm.**
-

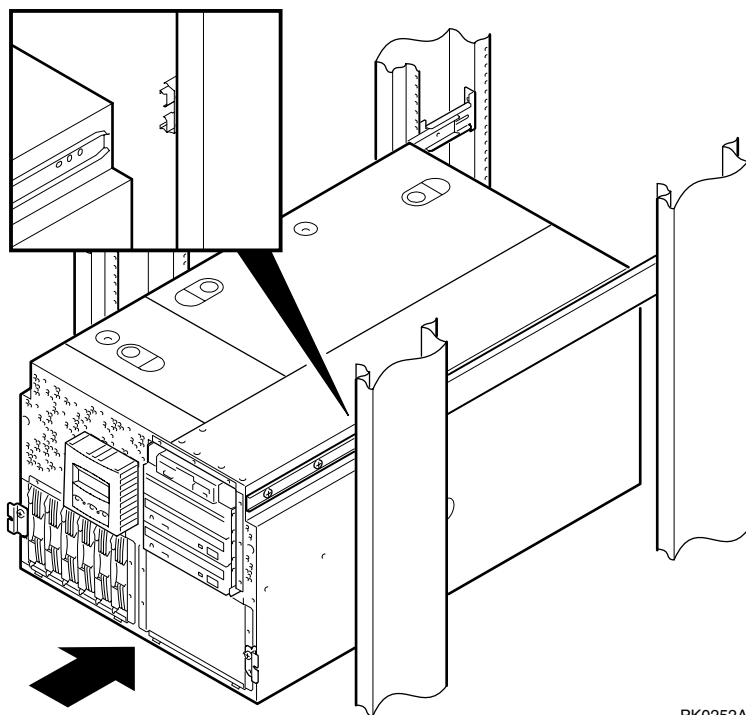
1. Move the inner race ❶ all the way forward so that it is touching the tabs ❷ on both rails as shown in Figure 1–7.
2. Align the narrow segment of the slides attached to the system with the slides attached to the cabinet.
3. Depress the green release button on each side and slide the system completely into the cabinet.

Figure 1-7 Moving the Inner Race



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Figure 1-8 Installing the System

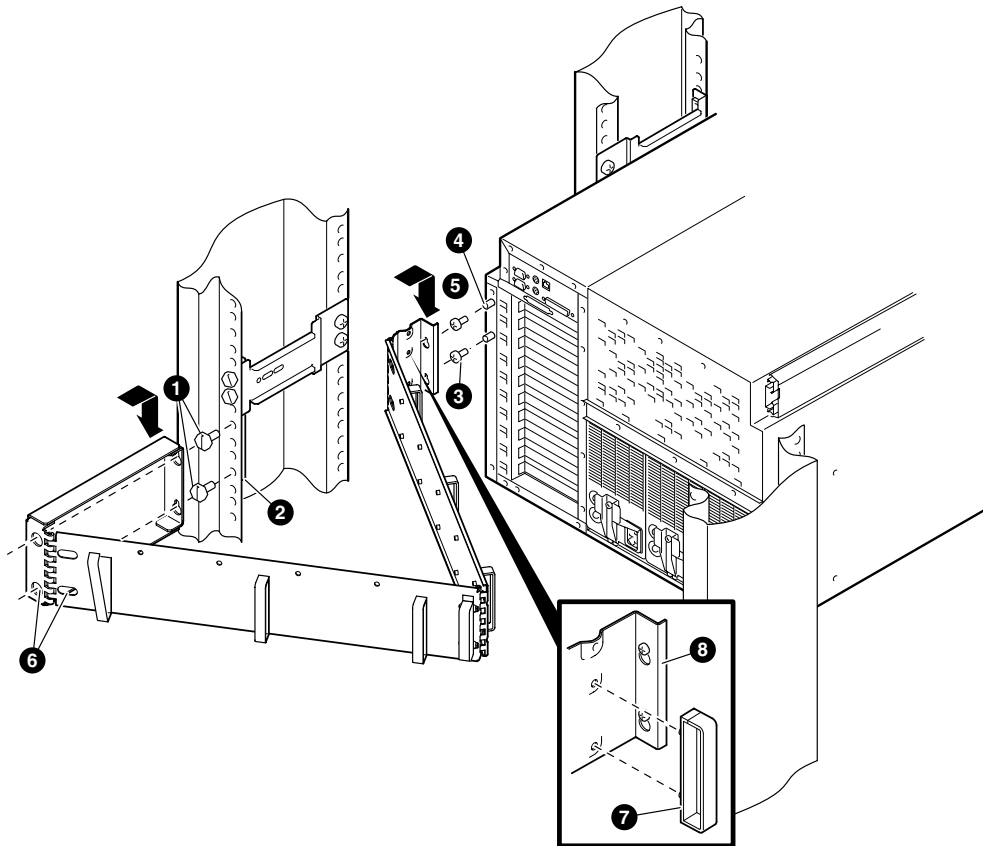


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1.8 Installing the Cable Management Arm

Attach the cable management arm to the rear rails of the cabinet.

Figure 1-9 Installing the Cable Management Arm



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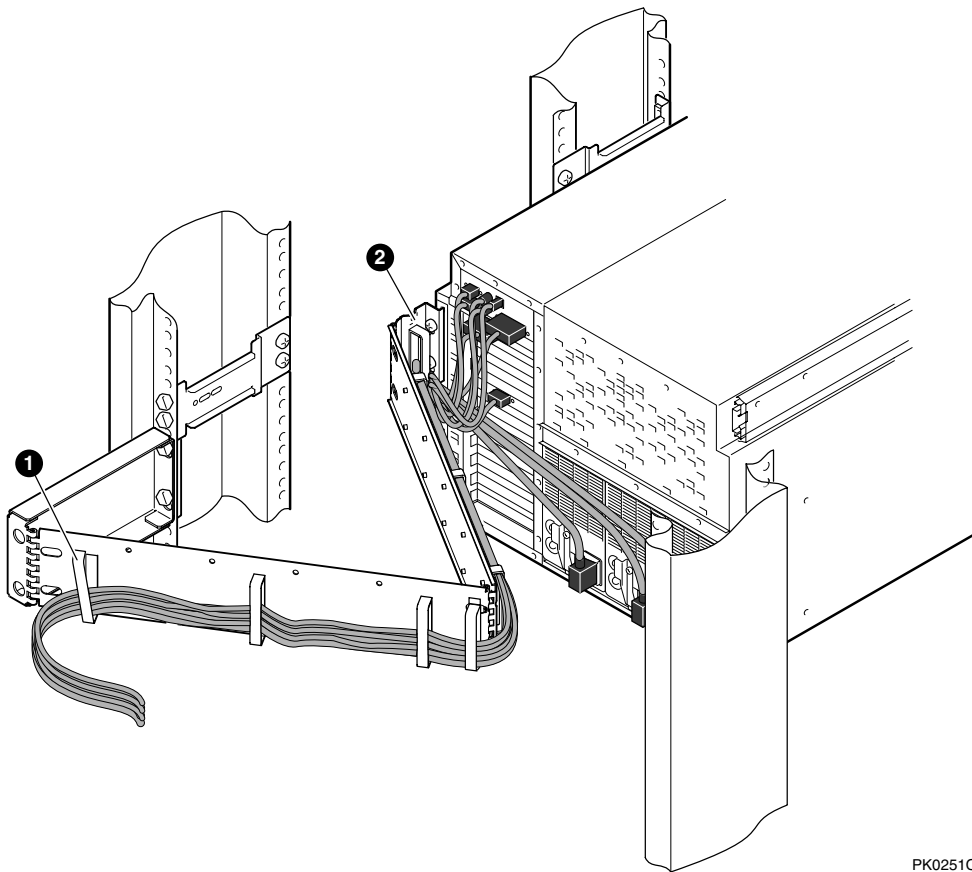
NOTE: *Be sure that you have attached all cables to the rear of the unit before installing the cable management arm.*

1. Attach all cables to the rear of the unit.
2. Start two hex screws ❶ into the two remaining marked holes on the left cabinet rail and into the 8-hole nut bar ❷.
3. Start two pan head screws ❸ into the rear standoffs ❹ on the system.
4. Place the cable management arm ❺ over the four screws and lower it into place.
5. Tighten the four screws through the access holes ❻.
6. Snap the cable clamp ❼ into the member ❸ of the cable management arm that is attached to the rear of the system.

1.9 Dressing the Cables

Dress the cables through the cable clamps on the cable retractor assembly at the rear of the system.

Figure 1-10 Dressing the Cables



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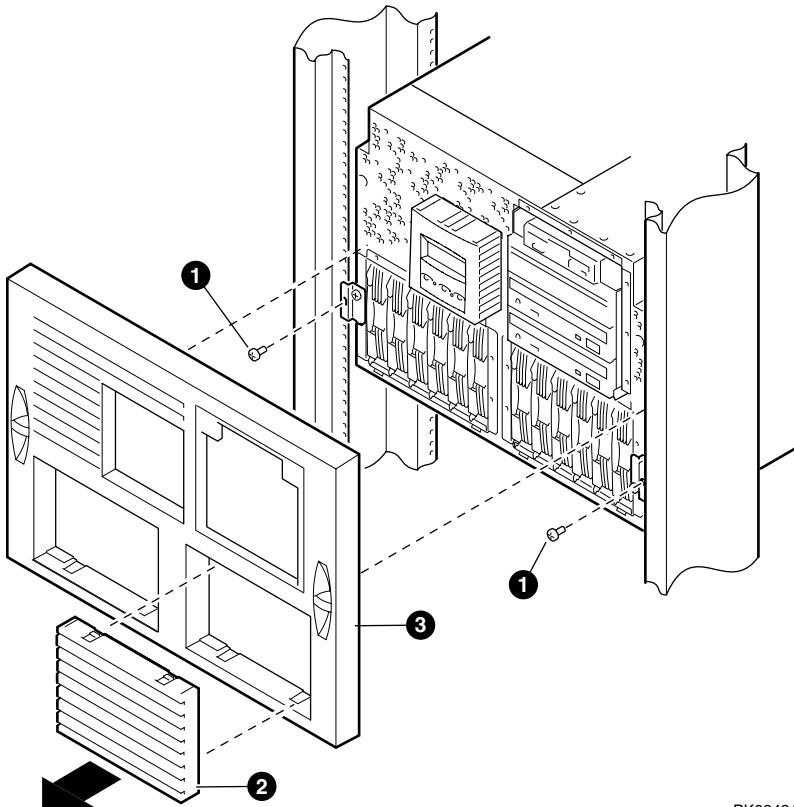
1. Dress the cables through the cable clamps ❶ or tie wrap them to the cable retractor assembly.
2. Attach all cables to the member of the cable management arm ❷ that is attached to the system.

CAUTION: *Failure to attach the cables to the attached member of the management arm can cause cables to become disconnected.*

1.10 Attaching the Front Bezel

To complete the installation, attach the front bezel.

Figure 1-11 Attaching the Front Bezel



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1. Attach the system to the cabinet rails with a hex screw **1** on each side.
2. If your system has a second disk cage, remove the filler bezel **2** from the front bezel **3**.
3. Align the front bezel with the front of the system and snap it into place.

