



# AlphaServer ES40

## Rackmount System Installation Guide

Order Number: EK-ES240-RG. B01

**This guide is for service providers and self-maintenance customers who are installing an AlphaServer ES40 system into an M-Series cabinet.**

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# Preface

## Intended Audience

This manual is for service providers or self-maintenance customers who are installing a Compaq AlphaServer ES40 system into an AlphaServer M-Series cabinet.

## Document Structure

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

## Description

This document gives instructions for installing an AlphaServer ES40 system into one of the following AlphaServer M-Series cabinets:

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

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

A cardboard template is included in your shipment for marking the holes where you will be mounting hardware. If you do not have the template, use the H9A10 or H9A15 M-Series documentation, listed in Table 1, to determine the mounting holes. The M-Series documentation also provides configuration rules.

Additional information on the AlphaServer M-Series cabinets is available on the World Wide Web:

<http://www.digital.com/alphaserver/products/m-series.html>

**Table 1 Compaq AlphaServer ES40 Documentation**

Title	Order Number
<b>User Documentation Kit</b>	<b>QZ-01BAA-GZ</b>
Owner's Guide	EK-ES240-UG
User Interface Guide	EK-ES240-UI
Basic Installation	EK-ES240-PD
Release Notes	EK-ES240-RN
Documentation CD (6 languages)	AG-RF9HA-BE
<b>Maintenance Kit</b>	<b>QZ-01BAB-GZ</b>
Service Guide	EK-ES240-SV
Service Guide HTML Diskette	AK-RFXDA-CA
Illustrated Parts Breakdown	EK-ES240-IP
<b>Loose Piece Items</b>	
Rackmount Installation Guide	EK-ES240-RG
Rackmount Installation Template	EK-ES4RM-TP
<b>Cabinet Documentation</b>	
H9A10 M-Series Cabinet Interconnect	B-IC-H9A10-5-DBM
H9A10 M-Series Cabinet Configurations	B-IB-H9A10-5-DBM
H9A10 M-Series Cabinet Illustrated Parts Breakdown	EK-H9A10-IP
H9A15 M-Series Cabinet Interconnect	B-IC-H9A15-5-DBM
H9A15 M-Series Cabinet Configurations	B-IB-H9A15-5-DBM
H9A15 M-Series Cabinet Illustrated Parts Breakdown	EK-H9A15-IP



# Chapter 1

## Installing a System into a Cabinet

This chapter gives procedures for installing an AlphaServer ES40 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

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

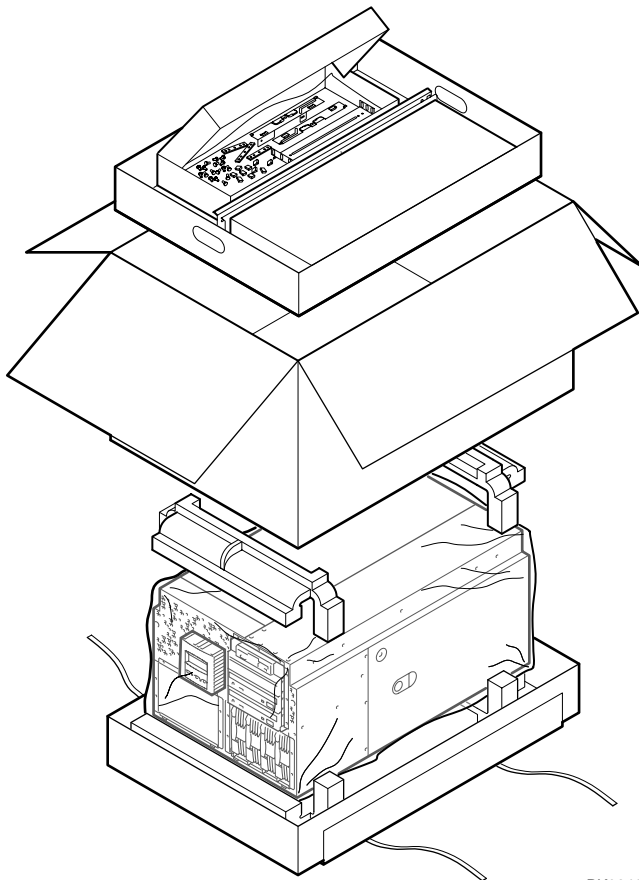
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**WARNING: Use a material lift or other mechanical device to move the system to the work area.**

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Figure 1-1 Unpacking the System



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

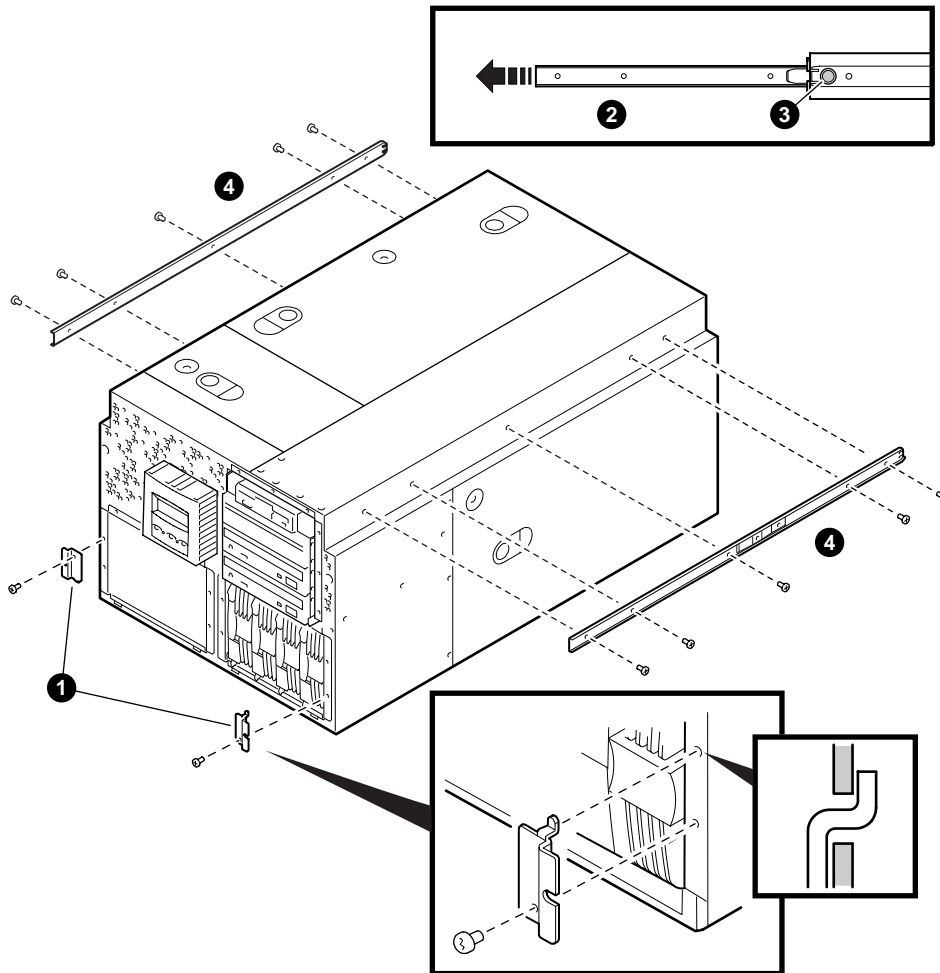
**Table 1-1 Accessories List**

	Part Number	Quantity
<b>Accessories for Mounting</b>		
Front bezel assembly	70-40129-01	1
Ball bearing slides	12-49881-01	1 set
Cable management arm	70-40177-01	1
Pivot rod stabilizer bracket	74-48996-01	1
Actuator latch	74-60579-01	1
Poly bag with mounting hardware (see below)		1
<b>Mounting Hardware</b>		
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.

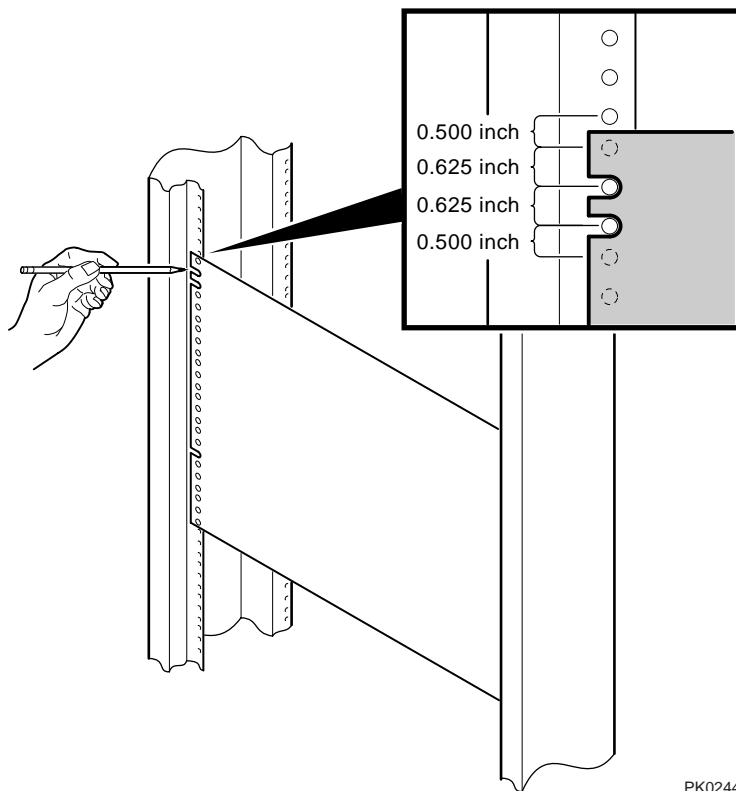
## 1.3 Marking the Cabinet Installation Area

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

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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.

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**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 eight holes where you will be mounting hardware.

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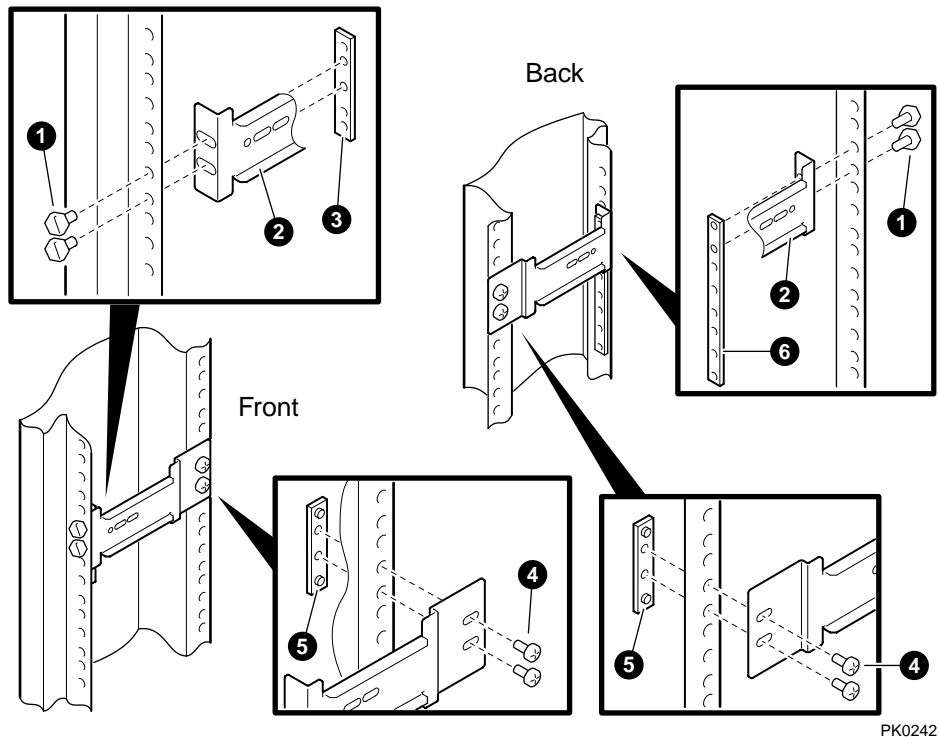
**CAUTION:** *After using the template to mark the holes, check your work. Count the holes to make sure you marked them correctly.*

---

## 1.4 Preparing the Cabinet

To prepare the cabinet, attach the slide brackets.

Figure 1-4 Attaching Slide Brackets



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### 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.

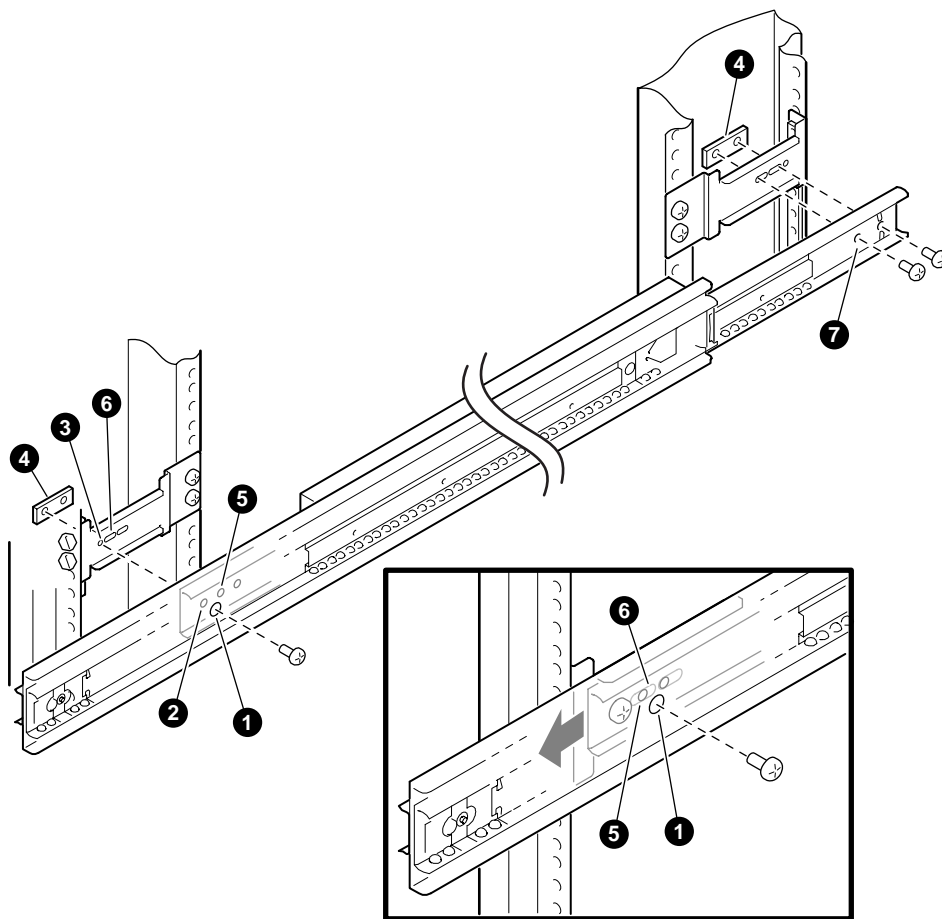
### Back

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 ❸ 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.

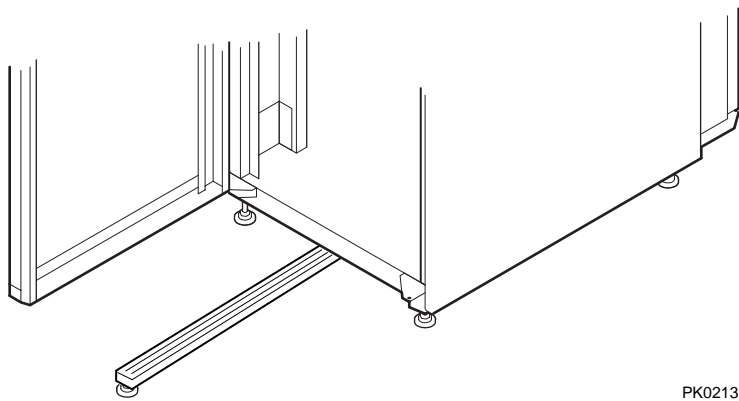
## 1.6 Stabilizing the Cabinet

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**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.

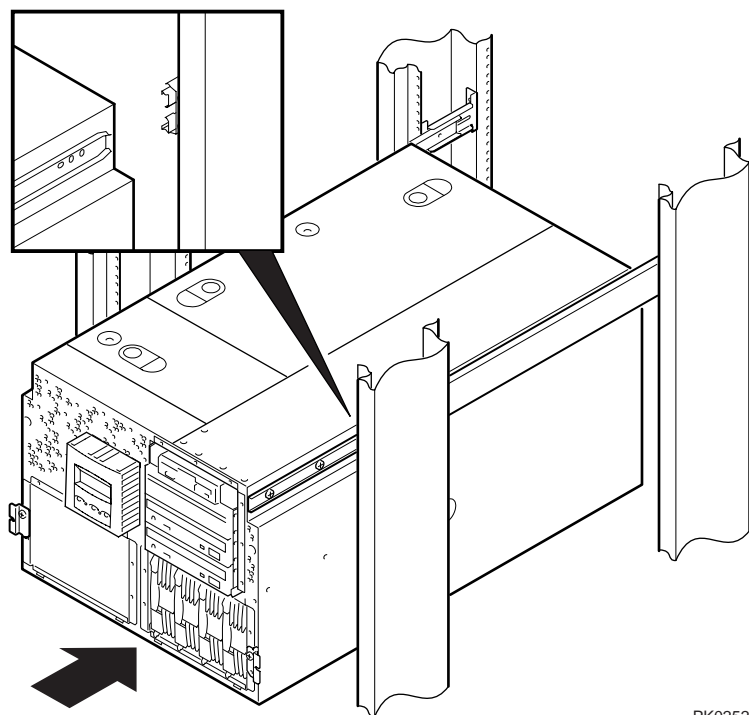
## 1.7 Installing the System

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

---

Figure 1-7 Installing the System



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**WARNING:**

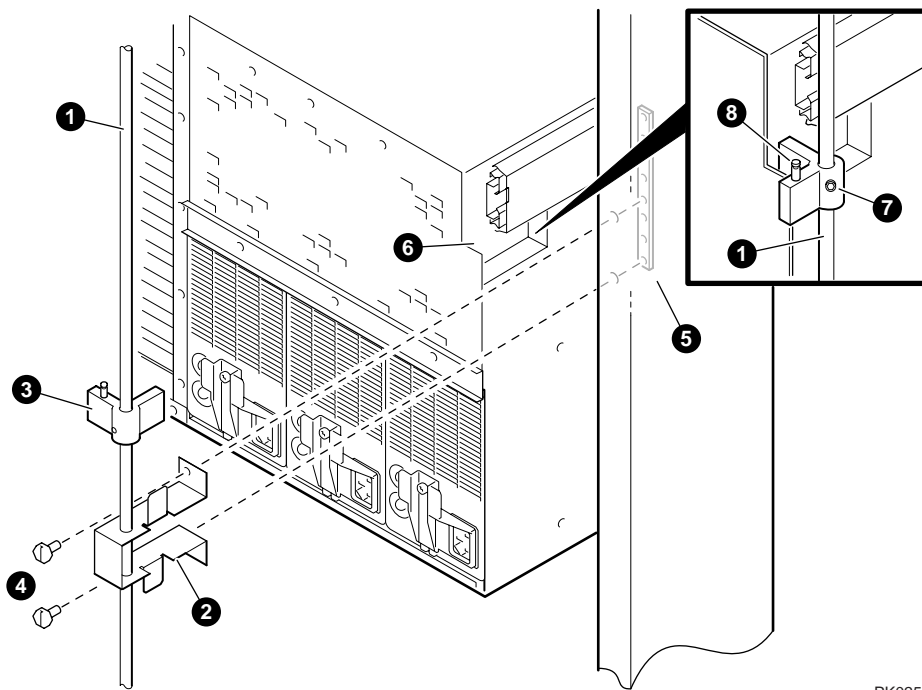
- 1. Make sure that all other hardware in the cabinet is pushed in and attached.**
  - 2. The system is very heavy. Do not attempt to lift it manually. Use a material lift or other mechanical device.**
- 

1. Align the narrow segment of the slides attached to the system with the slides attached to the cabinet.
2. Depress the green release button on each side and slide the system completely into the cabinet.

## 1.8 Installing the Interlock System

**The interlock system ensures cabinet stability by allowing only one system drawer at a time to be pulled out of the cabinet. The stabilizer bracket and actuator latch only work in a cabinet equipped with the interlock system.**

Figure 1-8 Installing the Interlock System



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**CAUTION:** *If you are installing a cabinet that does not have the interlock system, you must ensure cabinet stability by installing rack stabilizing feet or by some other means.*

---

1. At the back of the cabinet, release the vertical bar ❶ of the interlock system.
2. Insert the stabilizer bracket ❷ and the actuator latch ❸ into the vertical bar so that the actuator latch is above the stabilizer bracket.
3. Reinstall the vertical bar.
4. Secure the stabilizer bracket to the two remaining marked holes on the right cabinet rail with two hex screws ❹. Tighten into the nut bar ❺.
5. Vertically position the actuator latch ❸ such that the trip mechanism ❻ in the system aligns with the actuator latch.
6. Rotate the actuator latch to orient it like the other actuator latches on the vertical bar.
7. Tighten the Allen screws ❼ on the actuator latch.

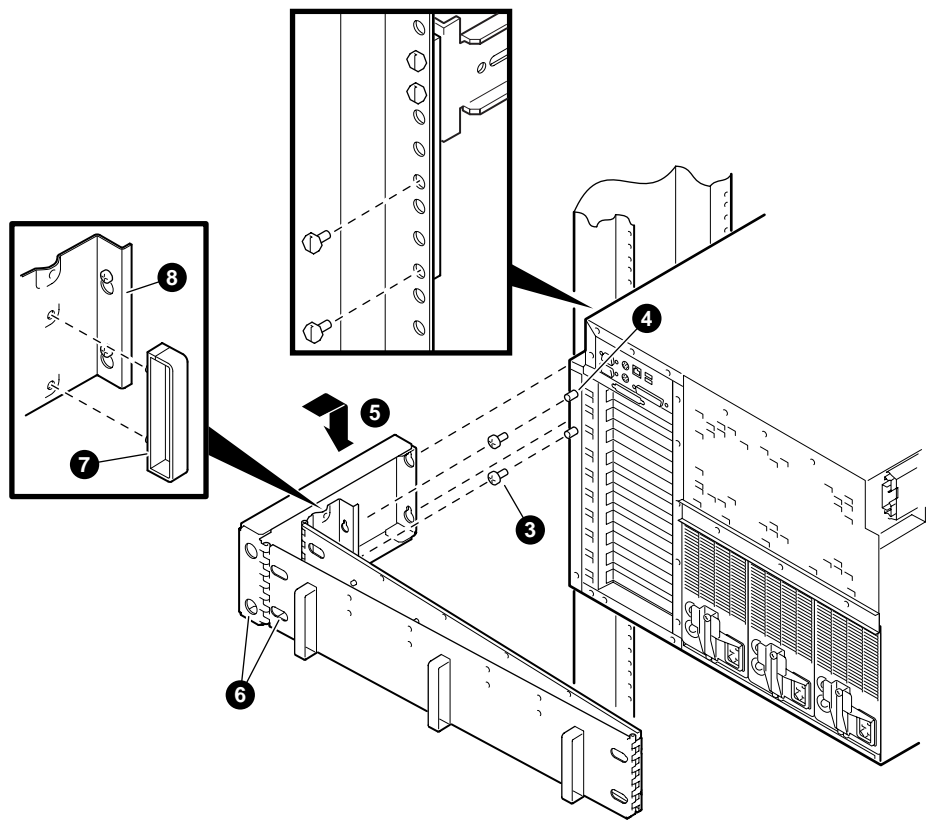
#### H9A10 Four-System Configuration

A pin ❸ in the actuator latch is provided for attaching the spring of the interlock system. The pin is needed for the top system of a four-system configuration in an H9A10 cabinet only. The vertical rod ❶ may need to be trimmed.

## 1.9 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



---

**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.

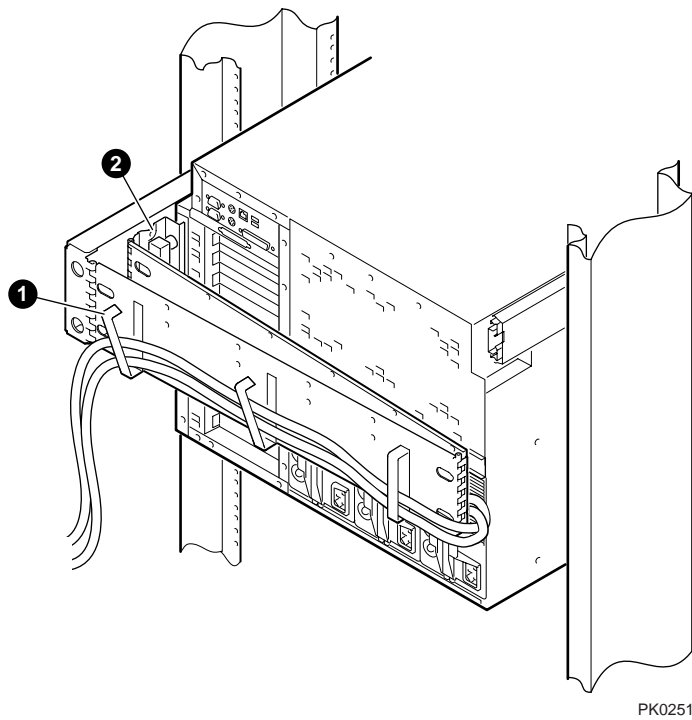
## 1.10 Dressing the Cables

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**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.

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

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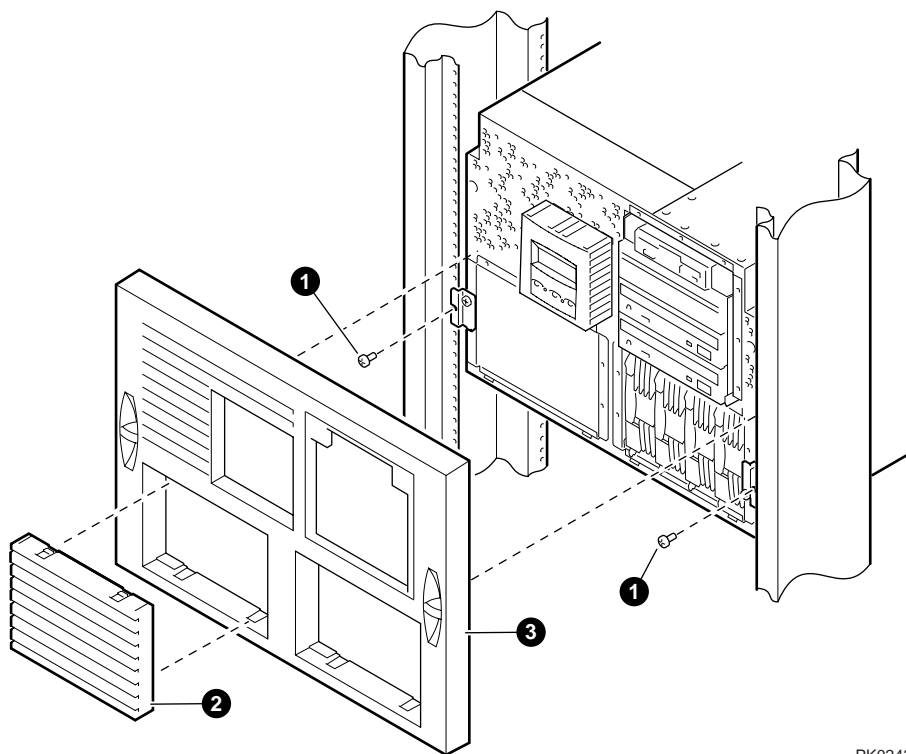
## 1.11 Attaching the Front Bezel

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**To complete the installation, attach the front bezel.**

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Figure 1-11 Attaching the Front Bezel



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

