

HP Cluster Platform AC070A Cable Management Bracket Installation Guide

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1 Preparing for Installation

This chapter describes what you need to do before you begin installing an AC070A cable management bracket in an HP Rack 10000 Series cabinet. Note that such persons are expected to understand the hazards of working in this environment and to take suitable precautions to minimize danger to themselves and others.

This bracket is used to support cables on the following servers:

- DL585 G1 and DL585 G2 (Quadrics, Voltaire, and Cisco only)
- DL380 G5 riser cage A PCI-e (standard) in slot 5 (Quadrics, Voltaire, and Cisco only)
- DL385 G2 riser cage A PCI-e (standard) in slot 5 (Quadrics, Voltaire, and Cisco only)
- RX2660 riser cage A PCI-e (combination) in slot 1 (Quadrics, Voltaire, and Cisco only)

1.1 Intended Audience

This document describes how to attach an AC070A cable management kit bracket to an HP Rack 10000 Series cabinet. This bracket is designed to align and support cables that lead from a cluster's system interconnect to the PCI card installed in each cluster node (server). This bracket is also designed to support different types of cables and servers, as specified in the installation instructions for your cluster.

1.2 Documentation Resources

You can view and download the QuickSpecs and other documentation for components referenced in this installation guide from the following locations:

- HP Rack and Rack Options Web site:
<http://h10010.www1.hp.com/wwpc/pscmisc/vac/us/en/en/proliant/proliant-dl.html>
- HP ProLiant Server Products Web site:
<http://h18004.www1.hp.com/products/servers/proliantstorage/racks>
- HP Cluster Platform:
http://hp.com/techservers/clusters/xc_clusters.html
- High Performance Computing Documentation:
<http://www.docs.hp.com/en/highperfcomp.html>

1.3 Revision History

This document supersedes the *HP Cluster Platform Generic Cable Management Bracket Installation Guide* (part number AA-RW5VC-TE) published in October 2004.

1.4 Kit Description

The AC070A cable management bracket kit described in this document is designed to align and support cables that lead from a cluster's system interconnect to the PCI interface card installed in each server (node). The bracket provides strain relief for the PCI port and ensures a good connection. It also ensures the correct bend radius for the cable, and provides attachment points for cable routing and cable management. A kit is required for every server that contains a PCI interface card for the system interconnect.



Note:

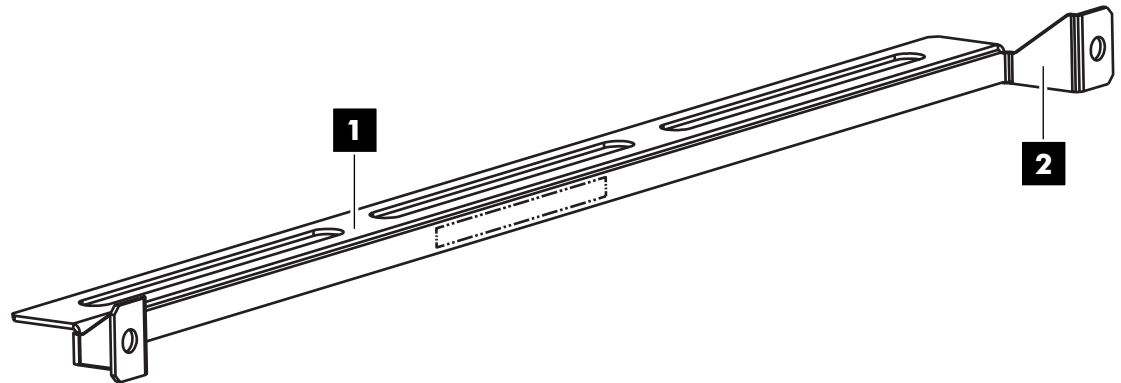
This bracket is designed to support different types of cables, from 5/16-inch (7.9-mm) minimum diameter to 5/8-inch (15.9-mm) maximum diameter. Refer to the documentation supplied with your cluster before installing the brackets and routing the cables.

1.5 Kit Contents

The AC070A cable management kit contains the following components:

- The bracket shown in Figure 1-1.

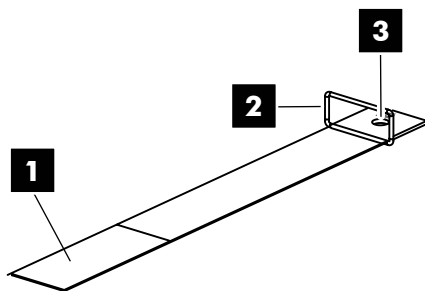
Figure 1-1 Bracket



The bracket is adaptable for use in several HP Cluster Platform configurations, and might also be applicable in other cable management applications (refer to your hardware installation documentation). The following bracket features are shown in Figure 1-1:

- **1** The mounting face, which contains three mounting slots. You attach cable management straps to this part of the bracket.
- **2** Mounting holes, which you use to attach the bracket to the rack, or to a server's rail kit.
- Two 3.5-inch (89-mm) fabric straps (see Figure 1-2) that mount on the bracket.

Figure 1-2 Fabric Strap



Each strap has a hook-and-loop fabric closure (callout 1) and a metal D-ring (callout 2) that is designed to secure a single interconnect cable. The straps are secured to the bracket through a metal grommet (callout 3).

- The fasteners that are specified in Table 1-1.

Table 1-1 Fastener Specifications

Qty.	Size	Format	Torque	Description
2	10-32 x .375-inch	Phillips (Posidrive)	30 in/lb	Machine screw, pan-head. For use with a threaded insert in the server's rail kit, or the 10-32 cage nuts.
4	M6 x 16 mm	Phillips (Posidrive)	30 in/lb	Machine screw, pan-head. For use with the cage nut.
4	M6	Square nut	N/A	Cage nut for M6 x 16-mm screw.
2	10-32	Square nut	N/A	Cage nut for 10-32 x .375-inch screw.

- Packaging and documentation.

To prevent screws from becoming loose due to vibration, HP recommends using an adjustable torque driver set to the torque specifications given in Table 1-1. Contact your HP sales representative if any parts are missing from your kit.

1.6 Required Resources

To install the generic cable management bracket kit, you need the following resources:

- Tools:
 - A 6-inch long #2 (medium) Phillips (Posidrive or cross-point) screwdriver, or #2 bit for a power screwdriver.
 - Cage-nut insertion tool (optional).
 - Marker pen or masking tape.
- Resources: A sample cable of the type used by the system interconnect.
- Environment:
 - A work surface adjacent to the rack.
 - A stable work platform or step stool that lets you safely reach the servers installed in the upper part of the rack.

2 Installing the Kit

At the time of publication, these installation instructions apply to the specific HP servers that are identified in the installation procedures in [Section 2.1](#). This bracket might also be adapted for other cable management uses, as specified in the installation documentation for HP Cluster Platform models.

2.1 Aligning the Bracket

Depending on the server model, the bracket installs in one of the following locations:

- ProLiant DL380 G5, DL385 G2, and RX2660

Use the bracket in an outward orientation for a horizontal installation. Attach the bracket to the rear rack columns of the HP Rack 10000 Series cabinet, as described in [Section 2.1.1](#).

- ProLiant DL585 G1 and ProLiant DL585 G2

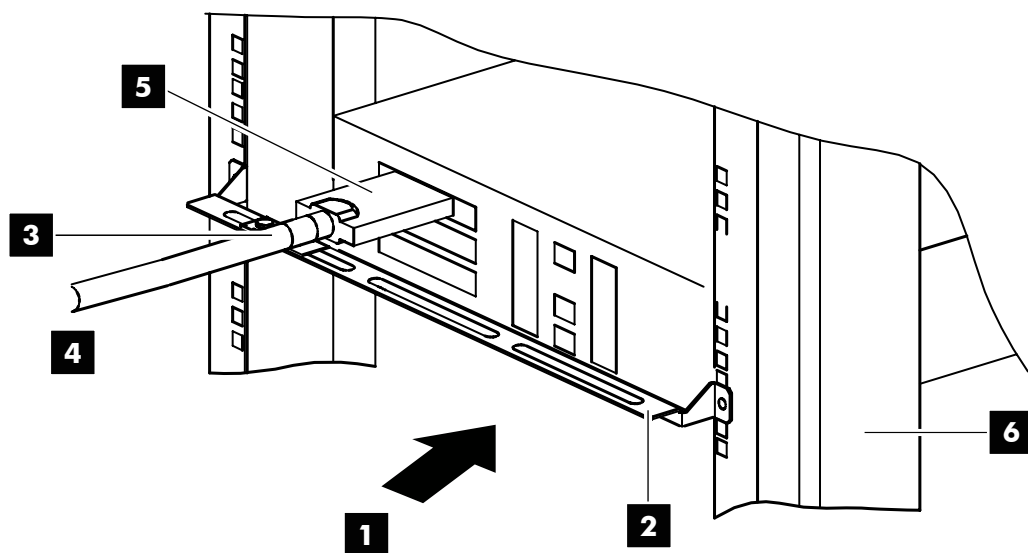
Use the bracket in an outward orientation for a vertical installation. Attach the bracket to the rear rack columns of the HP Rack 10000 Series cabinet, as described in [Section 2.1.2](#).

2.1.1 ProLiant DL380 G5, DL385 G2, and RX2660 Mounting Instructions

Use this procedure for the ProLiant DL380 G5, ProLiant DL385 G2, and RX2660, or as specified in the installation instructions for your system. Working from the rear of the rack, follow these steps to install the bracket:

1. Place the bracket against the rack columns so that it faces outward and upward.
2. Place the bracket horizontally along the rack columns so that it aligns with slot 5 of the DL380 G5 and DL385 G2 servers or slot 1 of the RX2660 server, as shown in [Figure 2-1](#). The bracket's face (containing the elongated slots) faces upward in this orientation.

Figure 2-1 Aligning the Bracket with the PCI Slot of a DL380 G5, DL385 G2, or RX2660 Series Server



The following features are identified by the callouts in [Figure 2-1](#):

- 1 The direction of view, toward the rear of the rack.
- 2 The bracket mounted in an outward-facing orientation.

- 3 The fabric support strap. The strap is attached to the bracket slot with a single cage nut and screw.
 - 4 The cable is routed to the cable management plate, and down to the interconnect.
 - 5 The cable connector (shown in slot 5 in this example for the DL380 G5 and DL385 G2 servers or slot 1 for the RX2660 server), which you must secure level and square to the HCA port to prevent EMI leakage.
 - 6 The rear right rack column.
3. The bracket's mounting holes should align with a square hole in each of the rear rack columns. (A minor vertical adjustment might be necessary, but the bracket must remain approximately aligned with the top of the PCI port). Mark the rack column holes with a marker pen or tape.
 4. Clip two cage nuts into back of each rack column, using the square holes that you marked in step 3. (Figure 2-2 shows an example on how to insert a cage nut.)
 5. Using a #2 Phillips screwdriver, secure the bracket to the rack column with two M6 x 16-mm fasteners.

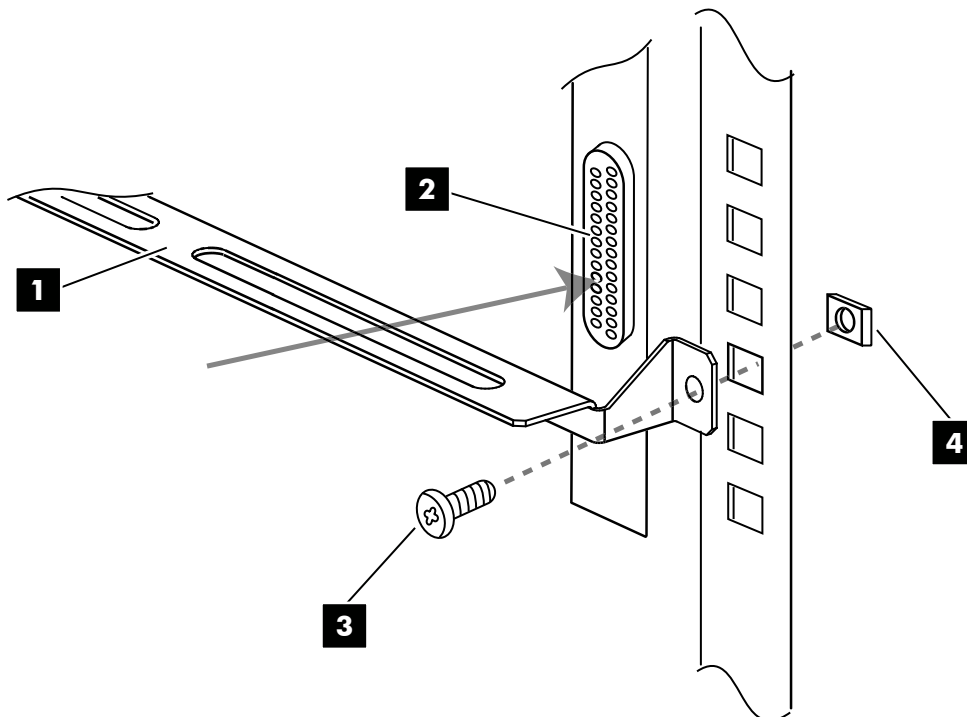
Proceed to Section 2.1.3.

2.1.2 ProLiant DL585 G1 and ProLiant DL585 G2 Mounting Instructions

Use this procedure for the ProLiant DL585 servers, or as specified in the installation instructions for your system. Working at the rear of the rack, follow these steps to install the bracket:

1. For systems with vertical PCI slots, such as the ProLiant DL585, align the top surface of the bracket (callout 1 in Figure 2-2) so that it is .25-inch (6 mm) below the center of the port (callout 2).

Figure 2-2 Aligning the Bracket with the Port of DL 585 Servers (Vertical PCI Slot)



This position ensures that the center of the cable aligns with the center of the port when you secure the cable with the strap.

Adjust the vertical position of the bracket until the two holes in the bracket align with two square holes in the rear rack columns. Mark the location of the square mounting holes and set the bracket aside.

2. Using a #2 Phillips screwdriver, secure the bracket to the rack column with two M6 x 16-mm screws (callout 3) and M6 cage nuts (callout 4), one on each side.

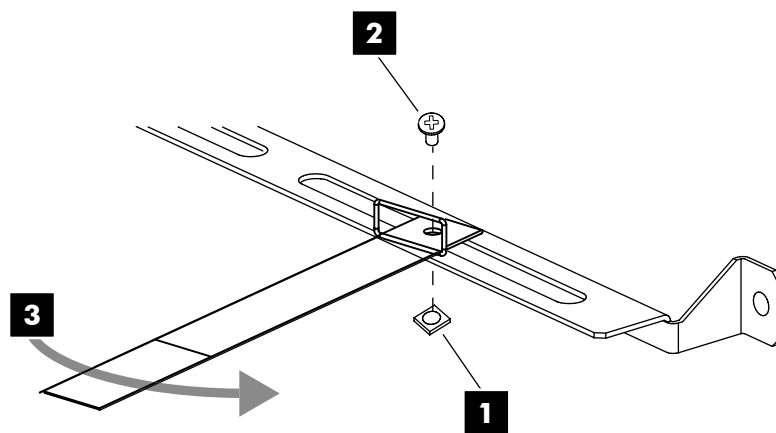
Proceed to Section 2.1.3.

2.1.3 Installing The Straps

To attach the first strap to the bracket, follow these steps:

1. Position the strap on the bracket, as shown in Figure 2-3, so that it is approximately adjacent to the interconnect card in the server's PCI slot.

Figure 2-3 Attaching the Strap



2. Clip a cage nut into the bottom of the bracket's slot, as indicated by callout 1.
3. Insert an M6 x 16-mm fastener (callout 2) through the metal grommet in the strap (callout 2).
4. Use a #2 (medium) Phillips screwdriver to secure the strap.
5. Perform this step only when fitting the first bracket:
Rotate the strap (callout 3) and align it with the port in the PCI card. Using a sample cable, align the strap so that the cable's connector (plug) is aligned correctly with the port. Use the location of this first strap to determine the correct strap mounting position for all subsequent bracket installations.

6. After aligning the strap, tighten the screw to its specified torque.

Repeat the installation procedure for subsequent bracket kits, using a marker pen or masking tape to transfer the correct location of the strap to each bracket.

Use the second fabric strap if power and signal cables are located on the same side of the server. The second strap allows the PCI cable to be routed to the opposite side. Consult the cabling instructions for your cluster model for more information on the second strap.

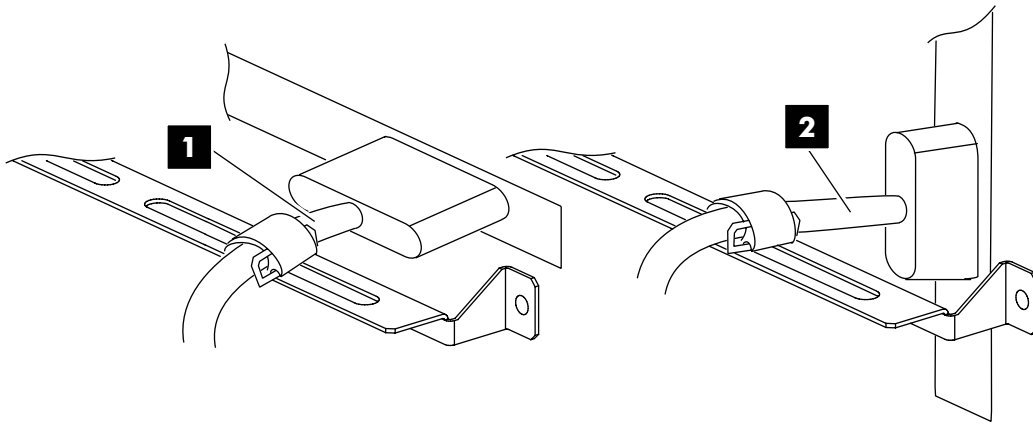
After installing all of the brackets, refer to the cabling instructions for your cluster model before starting the cabling procedure described in Section 2.2. (See Section 1.2 for the location of the online cluster documentation.)

2.2 Securing Cables Using the Straps

To secure a cable using the straps, follow these steps:

1. Connect the cable to the port in the PCI adapter and secure it mechanically by its clips, screws, or clamps.
2. Route the cable over the strap, loop the strap through its D-ring, and secure the strap by its hook-and-loop closure. Ensure that the cable is clamped tightly by the strap and that it cannot move.
3. If your cluster model requires two fabric straps for cable management, route the cable over the second strap and follow the procedure in step 2.
4. Verify that the cable is aligned correctly, as shown in [Figure 2-4](#). The cable is square and level with the port at the position indicated by callout 1 or callout 2, with no strain on the connection.

Figure 2-4 Correct Cable and Port Alignment



2.3 Adapting the Bracket for Other Server Models

Where approved by HP and described in the installation and service documentation for the HP Cluster Platform, you can adapt this bracket kit for use with other servers, subject to the following considerations:

- The server contains a PCI adapter card with a multipin port, supporting a multicore copper (parallel) cable. The straps are not suitable for thin cables, such as fiber-optic.
- If a threaded hole is provided in the server's rail kit, ensure that the fasteners described in [Table 1-1](#) are the correct size and thread. Use either of the supplied fasteners or use the fasteners that are shipped with the server's rail kit.
- If the fasteners do not work for the server's rail kit, attach the bracket to the rack columns instead, inverting it if necessary to obtain the correct alignment. Use the appropriate installation method described in [Section 2.1](#).
- When routing cables, ensure that cables remain within their bend radius specification, as defined in the documentation for your model of HP Cluster Platform.

2.4 Removing the Server for Servicing

Bring the component to an appropriate state for removal, and put the rack cabinet into a safe and stable state for component removal. You must ensure that you can reach the component easily and handle it safely. To remove the server, follow these steps:

1. Switch off the power supply from the rack's power distribution unit and disconnect the server's power cable.
2. Disconnect and remove each network cable until all networking ports are unplugged.

3. Unstrap the cable and remove its connector from the PCI card port. When disconnecting the cable, ensure that you do not bend it more than the recommended minimum bend radius. The cable specifications are provided in the documentation for your cluster type.
4. Unlock and slide the server all the way out of the rack, as described in the documentation for the server rack kit.



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