

# HP BladeSystem c3000 Enclosure Setup and Installation Guide

## Abstract

This document is for the person who installs, administers, and troubleshoots servers and storage systems. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.



Part Number: 446987-005  
February 2013  
Edition: 5

© Copyright 2007, 2013 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

---

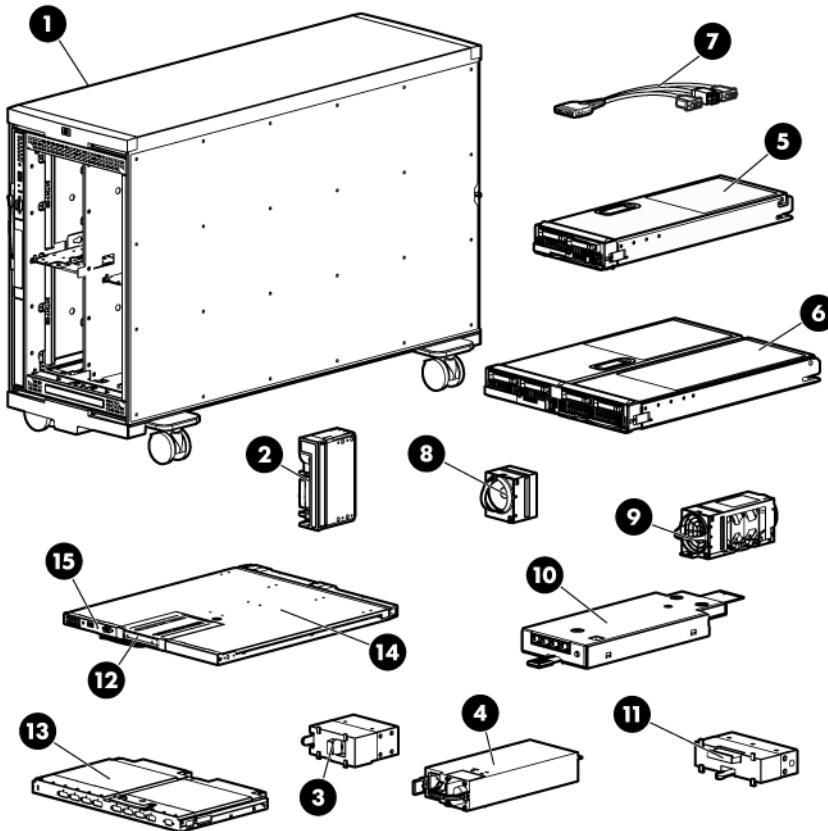
# Contents

Planning the installation .....	5
Pallet contents .....	5
Platinum features .....	6
Rack requirements .....	6
Rack-free environment requirements .....	7
Warning, caution, and important messages .....	7
Temperature requirements .....	9
Space and airflow requirements .....	9
Power requirements .....	10
Grounding requirements .....	10
Identifying components and LEDs .....	12
Enclosure front components .....	12
Device bay numbering .....	12
HP BladeSystem Insight Display components .....	14
HP BladeSystem Onboard Administrator connectors and LEDs .....	14
Enclosure rear components .....	15
Fan bay numbering .....	16
Fan LEDs .....	16
Power supply bay numbering .....	17
Power supply LED .....	17
Interconnect bay numbering .....	18
Installing components .....	19
Installation overview .....	19
Disassembling the enclosure .....	19
Rack-free installation .....	22
Rack installation .....	22
Measuring with the rack template .....	23
Installing the rack rails .....	23
Installing the enclosure in a rack .....	24
Installing the front cage into the enclosure .....	25
Component installation .....	26
Installing a power supply .....	26
Installing a full-height blade .....	27
Installing a half-height blade .....	33
Installing fans .....	37
Installing a KVM module .....	39
Installing interconnect modules .....	42
Installing the enclosure/Onboard Administrator link module .....	50
Connecting locally to a server blade with video and USB devices .....	50
Cabling and powering up the enclosure .....	53
Cabling the enclosure .....	53
Cabling the HP BladeSystem Onboard Administrator .....	53
Enclosure link cabling .....	54
Cabling a PC to the enclosure service port .....	55

Cabling the network to the enclosure .....	55
Installing a PDU .....	56
Powering up the enclosure.....	56
<b>Using the HP BladeSystem Insight Display .....</b>	<b>57</b>
Insight Display overview .....	57
Installing and configuring the Insight Display.....	57
Accessing the HP BladeSystem Insight Display.....	63
Navigating the Insight Display .....	64
Health Summary screen .....	65
Enclosure Settings screen .....	66
Enclosure Info screen .....	67
Blade or Port Info screen .....	68
Turn Enclosure UID On/Off screen.....	69
View User Note screen.....	70
Chat Mode screen .....	70
USB Menu screen .....	71
KVM Menu screen .....	72
<b>Troubleshooting .....</b>	<b>76</b>
Troubleshooting resources .....	76
Important safety information.....	76
Symbols on equipment .....	76
Warnings and cautions .....	77
Insight Display errors .....	78
Power errors .....	78
Cooling errors.....	78
Location errors .....	79
Configuration errors.....	79
Device failure errors.....	79
<b>Support and other resources .....</b>	<b>80</b>
Before you contact HP.....	80
HP contact information.....	80
Customer Self Repair .....	80
<b>Regulatory information .....</b>	<b>88</b>
Safety and regulatory compliance .....	88
Turkey RoHS material content declaration.....	88
Ukraine RoHS material content declaration.....	88
Warranty information .....	88
<b>Electrostatic discharge .....</b>	<b>89</b>
Preventing electrostatic discharge .....	89
Grounding methods to prevent electrostatic discharge.....	89
<b>Acronyms and abbreviations.....</b>	<b>90</b>
<b>Documentation feedback .....</b>	<b>91</b>
<b>Index.....</b>	<b>92</b>

# Planning the installation

## Pallet contents



Item	Name	Description
1	HP BladeSystem c3000 Enclosure	The HP BladeSystem tower enclosure
2	Device bay blank	A mandatory insert installed in any unused device bay
3	Power supply blank	A mandatory insert installed in any unused power supply bay
4	Power supply (quantity as ordered)	The power supply for the enclosure
5	Half-height device (quantity as ordered)	A half-height server or storage blade
6	Full-height device (quantity as ordered)	A full-height server or storage blade
7	HP c-Class blade SUV cable (local I/O cable)	A cable with serial, USB, and video connectors that attaches to the I/O connector on the front of a blade
8	Fan blank	A mandatory insert installed in any unused fan bay
9	HP Active Cool 100 Fan (quantity as ordered)	A fan that cools the components installed in the enclosure

Item	Name	Description
10	Enclosure/Onboard Administrator link module	The module used to provide enclosure-link connectivity and Onboard Administrator/iLO/interconnect management access
11	Module blank	A mandatory cover installed in the reserved module bay
12	HP BladeSystem Insight Display	A display that provides information about the health and operation of the enclosure
13	Interconnect module (quantity and type as ordered)	Any of several components such as pass-thrus or switches that enable communication between the blade and the enclosure
14	Onboard Administrator tray	A removable tray that houses the Onboard Administrator module and Insight Display
15	Onboard Administrator module	The module used to manage the components installed in the enclosure. The module is built into the Onboard Administrator tray for a single Onboard Administrator.
16*	Onboard Administrator blank	A mandatory cover installed in any unused Onboard Administrator bay
17*	Interconnect blank	A mandatory insert installed in any unused interconnect bay
18*	Documentation CD	A CD containing detailed documentation about using the enclosure
19*	SmartStart CD	A CD containing SmartStart software that optimizes single-server setup
20*	Printed installation instructions	Instructions for blades, options, and interconnects
21*	Installation checklist	A checklist that guides you through installation of the enclosure and its components

\* Not shown

## Platinum features

The HP BladeSystem c3000 Platinum Enclosure has the following features that are not available on previous generations of c3000 enclosures:

- Intelligent infrastructure that includes:
  - HP 1200W platinum hot-plug power supply (80 plus certified)
  - HP BL single-phase intelligent power module
- Support for HP Insight Control 7.2 and higher releases when using the HP 1200W platinum hot-plug power supply (80 plus certified). For more information, see the HP website (<http://www.hp.com/go/insightcontrol>).

## Rack requirements

The enclosure is compatible with the following racks:

- All HP 10000 and 10000G2 Series racks.

---

**NOTE:** The system is optimized for 10000G2 Series racks.

---

- Telco racks
- Third-party rack cabinets that meet the following requirements:
  - Width—48.3 cm (19 in)
  - Depth—88.9 cm (35 in) maximum clearance between front and rear RETMA rails; 62.7 cm (24.7 in) minimum clearance for round-hole racks and 63.5 cm (25 in) minimum clearance for square-hole racks
  - Clearance—7.6 cm (3 in) minimum clearance between rear RETMA rails and rear rack door to accommodate system cabling
  - Clearance—4.5 cm (1.75 in) minimum clearance between rack face and inside of front rack door
  - Open area—Minimum of 65 percent open area to provide adequate airflow through any rack front or rear doors

---

**NOTE:** You can install up to seven 6U enclosures in a 42U rack. If you are installing more than one enclosure, install the first enclosure in the bottom of the rack, and then install additional enclosures by moving up the rack to the next available opening. Plan rack installations carefully because it is difficult to change the location of components after they are installed.

---

## Rack-free environment requirements

The HP BladeSystem c3000 Enclosure (referred to as the enclosure) can be used in a rack-free environment. The following conditions must be met when performing a rack-free installation:

- A fully-populated enclosure can weigh up to 131.5 kg (290 lb). The object supporting the enclosure must be able to withstand this weight.
- The enclosure should be supported by a sturdy, flat surface.



**WARNING:** To reduce the risk of personal injury or damage to the equipment in a rack-free environment:

- Never stack the enclosure on top of another enclosure.
  - Never place equipment on top of the enclosure.
  - Never place the enclosure on a surface that cannot support up to 131.5 kg (290 lb).
- 

## Warning, caution, and important messages




**WARNING:** To reduce the risk of personal injury or damage to equipment, heed all warnings and cautions throughout the installation instructions.


---





**WARNING:** To reduce the risk of personal injury or damage to the equipment, be sure that:


- The leveling jacks are extended to the floor.
  - The full weight of the rack rests on the leveling jacks.
  - The stabilizing feet are attached to the rack if it is a single-rack installation.
  - The racks are coupled together in multiple-rack installations.
  - Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.
-


- 
-  **WARNING:** To reduce the risk of personal injury or equipment damage when unloading a rack:
- At least two people are needed to safely unload the rack from the pallet. An empty 42U rack can weigh as much as 115 kg (253 lb), can stand more than 2.1 m (7 ft) tall, and might become unstable when being moved on its casters.
  - Never stand in front of the rack when it is rolling down the ramp from the pallet. Always handle the rack from both sides.
- 

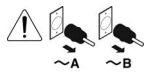
-  **WARNING:** The enclosure is very heavy. To reduce the risk of personal injury or damage to the equipment:
- Observe local occupational health and safety requirements and guidelines for manual material handling.
  - Remove all installed enclosure components from their enclosures before installing or moving the enclosures.
  - Use caution and get help to lift and stabilize enclosures during installation or removal, especially when the enclosure is not fastened to the rack.
- 

-  **WARNING:** To reduce the risk of personal injury or damage to the equipment, you must adequately support enclosures during installation and removal.
- 

-  **WARNING:** Always use at least two people to lift an enclosure into the rack. If the enclosure is being loaded into the rack above chest level, a third person must assist with aligning the enclosure with the rails while the other two people support the weight of the enclosure.
- 

-  **WARNING:** Before installing an enclosure in the rack, be sure that all hot-plug power supplies, server blades, and interconnects are removed from the enclosure. Blanks can be left in the enclosure.
- 


-  **WARNING:** Be sure to install enclosures starting from the bottom of the rack and work your way up the rack.
- 




These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.






**WARNING:** To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.

- Each enclosure has two or more power supply cords. A single rack or cabinet may contain more than one enclosure. Power may be supplied in a redundant fashion. Removing any single source of power does not necessarily remove power from any portion of the system. When performing any service other than hot-plug module replacement, you must completely disconnect all power to that portion of the system.
  - When performing service procedures on enclosures, shut off the circuit breakers to both A and B AC power feeds and then disconnect all power cords from the outlets before servicing.
- 

-  **WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.
- 

-  **WARNING:** To reduce the risk of electric shock or damage to the equipment, enter enclosures or perform service on system components only as instructed in the user documentation.
-




- 
-  **WARNING:** A risk of electric shock from high leakage current exists. Before connecting the AC supply to the power enclosures, be sure that the electrical outlets are properly grounded (earthed). When installed in a rack, the enclosure must be used with an internal rack mount power distribution unit (PDU) or uninterruptible power supply (UPS) that uses an industrial style wall plug (for example, locking type NEMA or IEC 309 pin and sleeve configuration) which insures a reliable protective earth ground connection.
- When installed in a rack-free environment, the area must be designated as a restricted access area, and the enclosure must be used with a dedicated uninterruptible power supply (UPS) that uses an industrial style wall plug (for example, locking type NEMA or IEC 309 pin and sleeve configuration) which insures a reliable protective earth ground connection.
- Installation and maintenance must be performed by trained service personnel.
- 
-  **CAUTION:** Always be sure that equipment is properly grounded and that you follow proper grounding procedures before beginning any installation procedure. Improper grounding can result in ESD damage to electronic components. For more information, refer to, "Electrostatic discharge (on page 89)."
- 
-  **CAUTION:** When performing non-hot-plug operations, you must power down the server blade and/or the system. Use caution when performing other operations, such as hot-plug installations or troubleshooting.
- 
-  **CAUTION:** Protect the equipment from AC power fluctuations and temporary interruptions with a regulating facility UPS device. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the system in operation during a power failure.
- 
-  **IMPORTANT:** Data on the dimensions and weights of HP BladeSystem c-Class components can be found in the *HP BladeSystem c-Class Maintenance and Service Guide*. The same data can be determined by using the online HP BladeSystem c-Class Sizing Utility.
- 

## Temperature requirements

To ensure continued safe and reliable equipment operation, install or position the rack in a well ventilated, climate-controlled environment.

The operating temperature inside the rack is always higher than the room temperature and is dependent on the configuration of equipment in the rack. Check the TMRA for each piece of equipment before installation.

-  **CAUTION:** To reduce the risk of damage to the equipment when installing third-party options:
- Do not permit optional equipment to impede airflow around the enclosure or to increase the internal rack temperature beyond the maximum allowable limits.
  - Do not exceed the manufacturer's TMRA.
- 

## Space and airflow requirements

To enable servicing and ensure adequate airflow, observe the following spatial requirements when deciding where to install an HP branded, Compaq branded, telco, or third-party rack:

- Leave a minimum clearance of 63.5 cm (25 in) in front of the rack.
- Leave a minimum clearance of 76.2 cm (30 in) in back of the rack.

- Leave a minimum clearance of 121.9 cm (48 in) from the back of the rack to the rear of another rack or row of racks.

HP BladeSystem servers draw cool air in through the front and expel warm air through the rear of the enclosure. Therefore, the front of the rack enclosure must be adequately ventilated to enable ambient room air to enter the enclosure, and the rear of the enclosure must be adequately ventilated to enable the warm air to escape from the enclosure.



---

**IMPORTANT:** Do not block the ventilation openings.

---

If the front of the rack is not completely filled with components, the remaining gaps between the components can cause changes in the airflow, which can adversely affect cooling within the rack. Cover these gaps with blanking panels.



---

**CAUTION:** Always use blanking panels to fill empty vertical spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

---

In high density configurations, the HP 10000 Series Rack Airflow Optimization Kit (AF090A) should be installed to prevent airflow from the rear of the rack to the front the rack via gaps in the rack frame.

HP 10000 Series and 10000 G2 Series racks provide proper server cooling from flow-through perforations in the front and rear doors that provide 65 percent open area for ventilation.



---

**CAUTION:** Always use blanks to fill empty spaces in enclosures. This arrangement ensures proper airflow. Using an enclosure without the proper blanks results in improper cooling that can lead to thermal damage.

---

## Power requirements

Installation of this equipment must comply with local and regional electrical regulations governing the installation of IT equipment by licensed electricians. This equipment is designed to operate in installations covered by NFPA 70, 1999 Edition (National Electric Code) and NFPA-75, 1992 (code for Protection of Electronic Computer/Data Processing Equipment). For electrical power ratings on options, refer to the product rating label or the user documentation supplied with that option.



---

**WARNING:** To reduce the risk of personal injury, fire, or damage to the equipment, do not overload the AC supply branch circuit that provides power to the rack. Consult the electrical authority having jurisdiction over wiring and installation requirements of your facility.

---



---

**CAUTION:** Protect the enclosure from power fluctuations and temporary interruptions with a regulating UPS. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the enclosure in operation during a power failure.

---

## Grounding requirements

This equipment must be grounded properly for proper operation and safety. In the United States, you must install the equipment in accordance with NFPA 70, 1999 Edition (National Electric Code), Article 250, as well as any local and regional building codes.

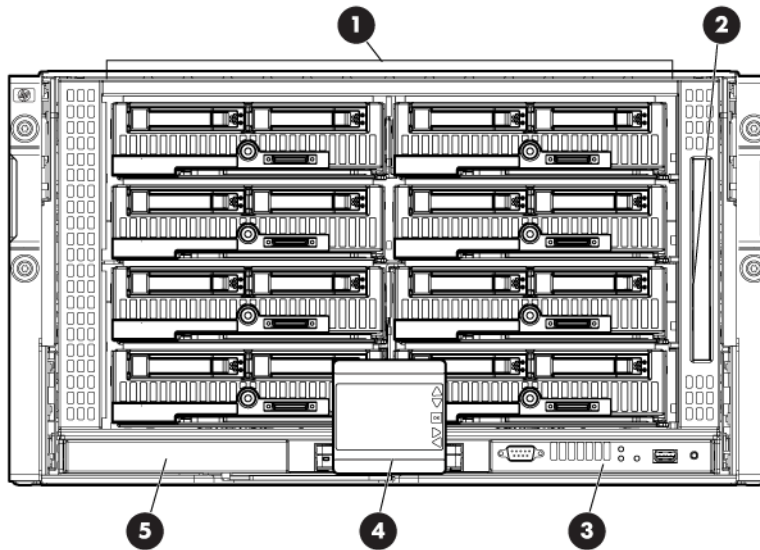
In Canada, you must install the equipment in accordance with Canadian Standards Association, CSA C22.1, Canadian Electrical Code.

In all other countries, you must install the equipment in accordance with any regional or national electrical wiring codes, such as the International Electrotechnical Commission (IEC) Code 364, parts 1 through 7. Furthermore, you must be sure that all power distribution devices used in the installation, such as branch wiring and receptacles, are listed or certified grounding-type devices.

Because of the high ground-leakage currents associated with this equipment, HP recommends the use of a PDU that is either permanently wired to the building's branch circuit or includes a nondetachable cord that is wired to an industrial-style plug. NEMA locking-style plugs or those complying with IEC 60309 are considered suitable for this purpose. Using common power outlet strips to supply power to this equipment is not recommended.

# Identifying components and LEDs

## Enclosure front components



Item	Description
1	Device bays ("Device bay numbering" on page 12)
2	CD/DVD-ROM drive
3	Onboard Administrator tray containing Onboard Administrator 2
4	Insight Display
5	Onboard Administrator tray containing Onboard Administrator 1 or an Onboard Administrator blank

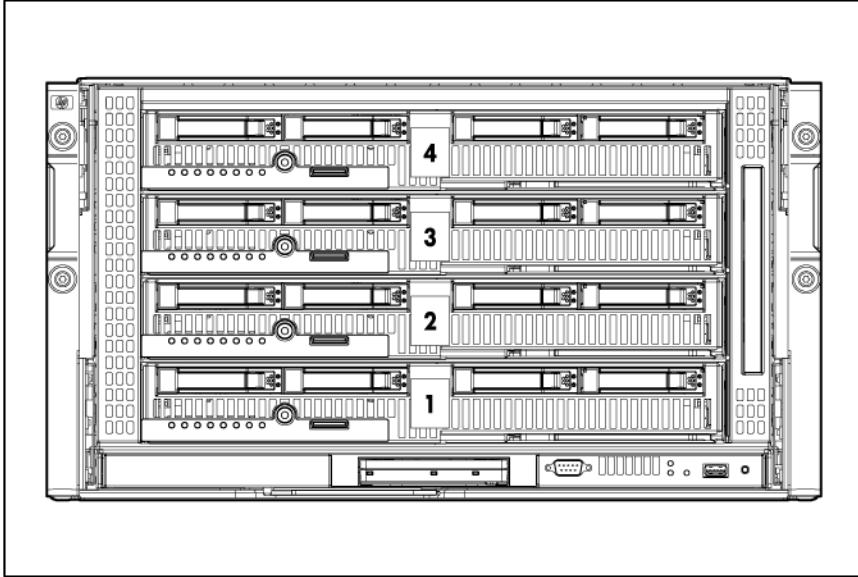
## Device bay numbering

Each enclosure requires interconnects to provide network access for data transfer. Interconnects reside in bays located on the rear of the enclosure. Be sure to review device bay numbering to determine which external network connections on the interconnects are active.

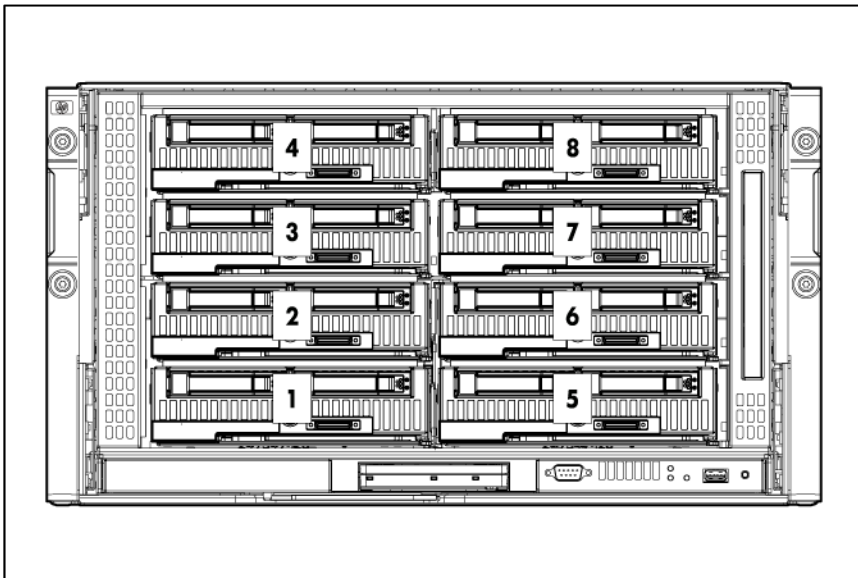


**IMPORTANT:** When looking at the rear of the enclosure, front device bay numbering is reversed.

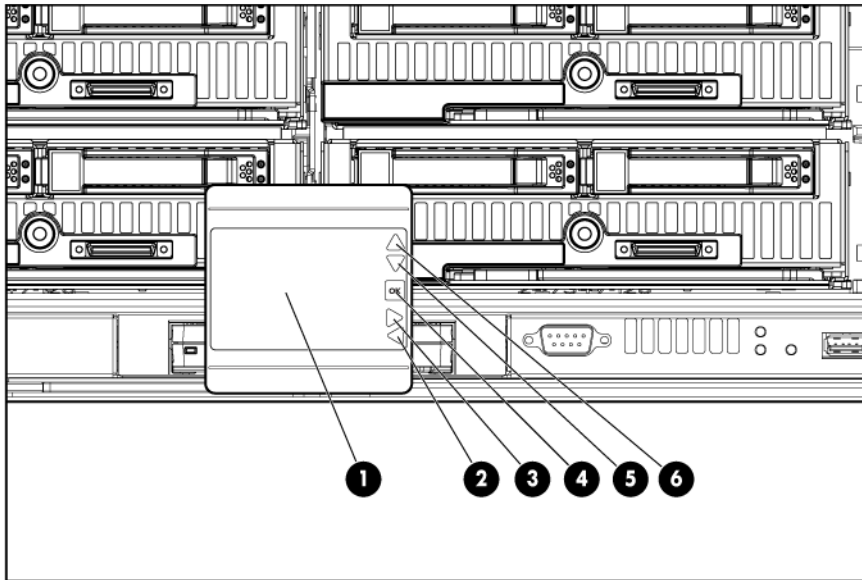
## Full-height device bay numbering



## Half-height device bay numbering

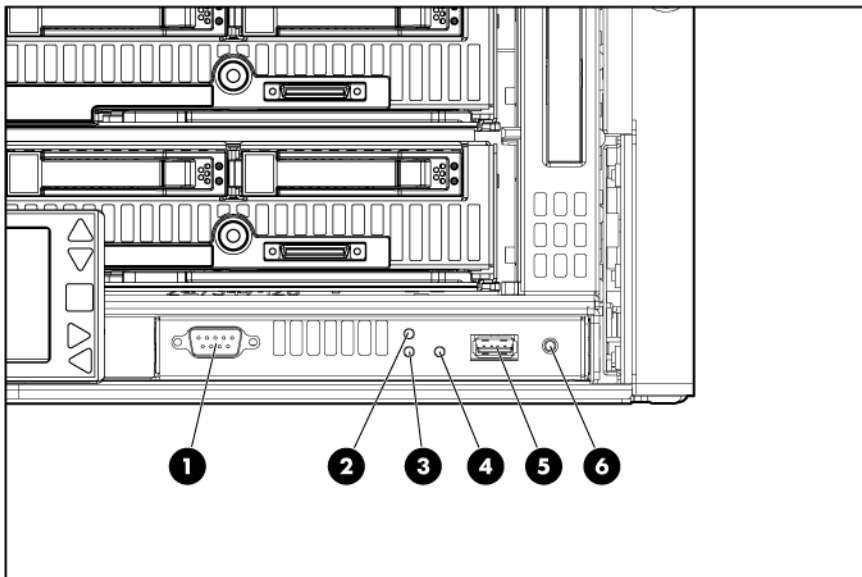


## HP BladeSystem Insight Display components



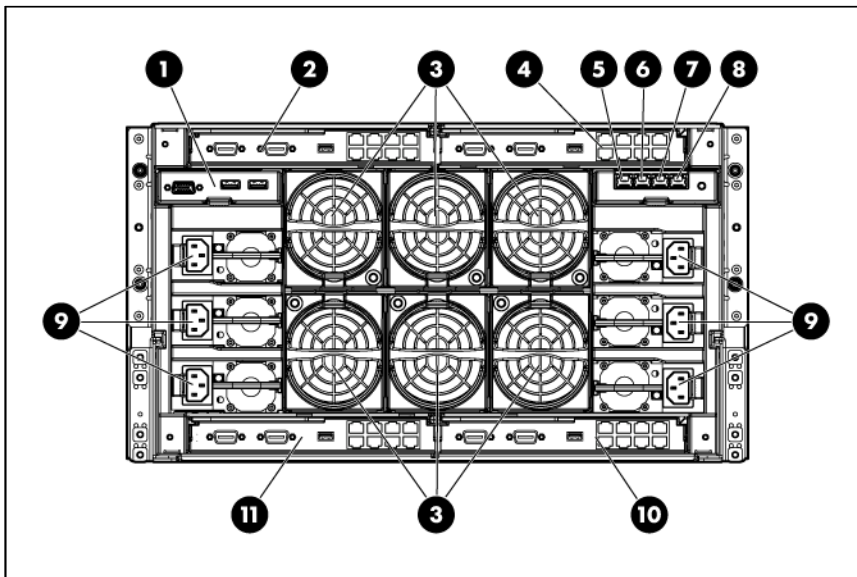
Item	Description	Function
1	Insight Display screen	Displays Main Menu error messages and instructions
2	Left arrow button	Moves the menu or navigation bar selection left one position
3	Right arrow button	Moves the menu or navigation bar selection right one position
4	OK button	Accepts the highlighted selection and navigates to the selected menu
5	Down arrow button	Moves the menu selection down one position
6	Up arrow button	Moves the menu selection up one position

## HP BladeSystem Onboard Administrator connectors and LEDs



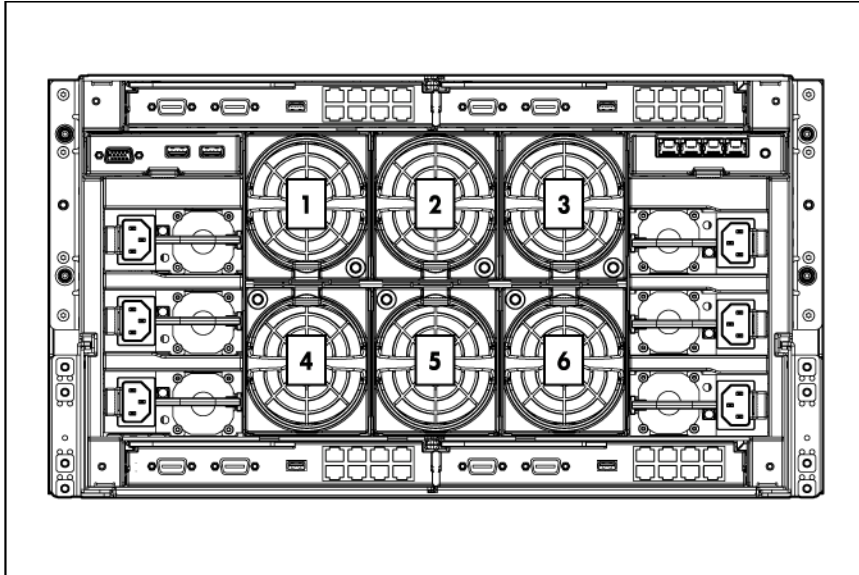
Item	Description	Status
1	Serial connector	Serial RS232 DB-9 connector with PC standard pinout
2	UID LED	Blue = UID on Dark = UID off
3	Active Onboard Administrator LED	An LED that indicates which Onboard Administrator is active
4	Health LED	Green = OK Red = Critical error
5	USB	A USB 2.0 Type A connector that connects supported USB devices
6	Reset button	—

## Enclosure rear components

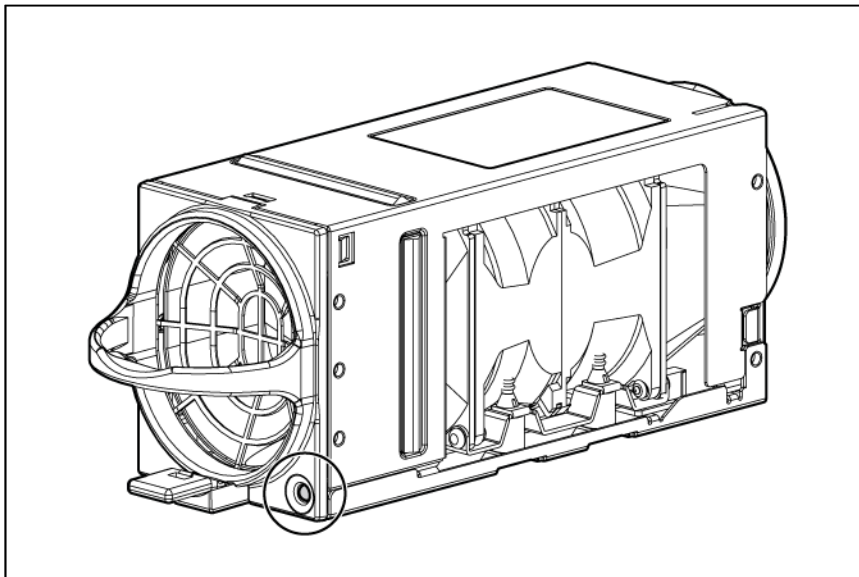


Item	Description
1	KVM module bay
2	Interconnect bay 1
3	Fan bays ("Fan bay numbering" on page 16)
4	Interconnect bay 2
5	Enclosure link-down port
6	Enclosure link-up port
7	Onboard Administrator 1/iLO port
8	Onboard Administrator 2/iLO port
9	Power supply bays
10	Interconnect bay 4
11	Interconnect bay 3

## Fan bay numbering



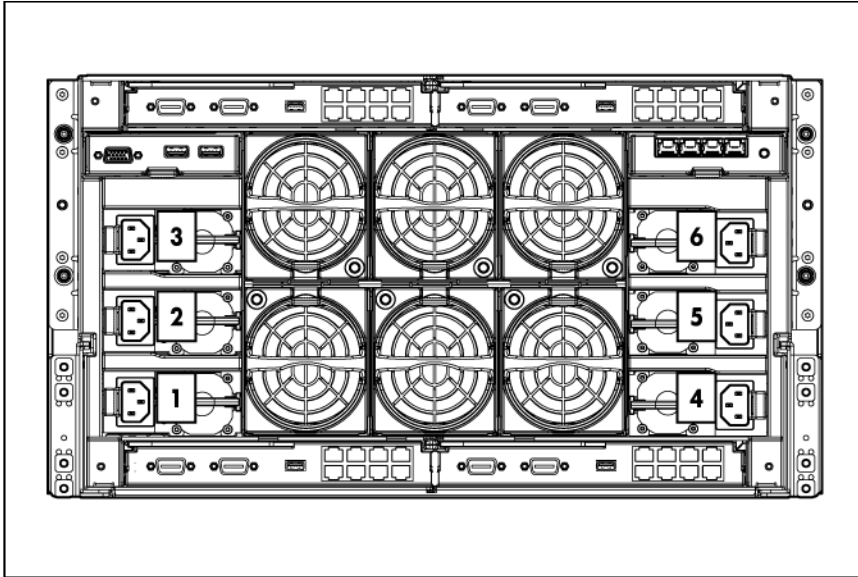
## Fan LEDs



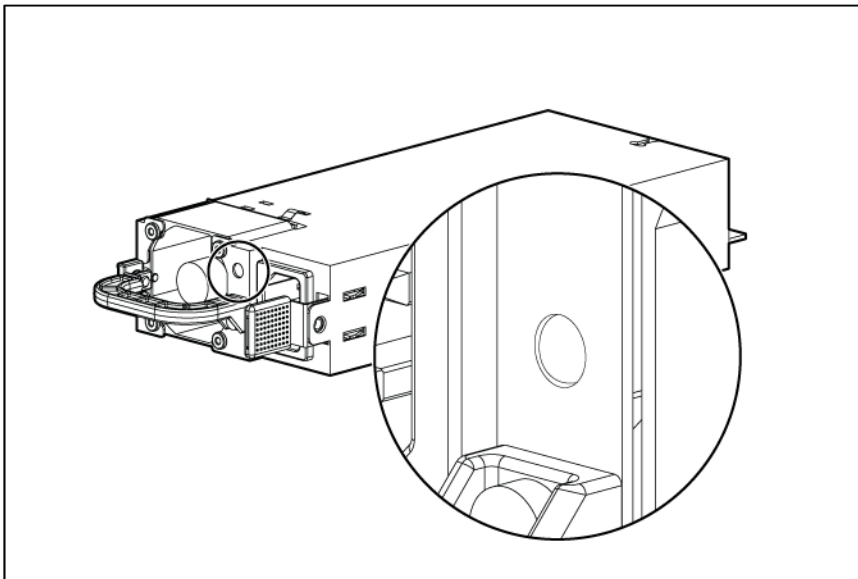
LED color	Fan status
Solid green	The fan is working.
Solid amber	The fan has failed.
Flashing amber	See the Insight Display screen.



## Power supply bay numbering



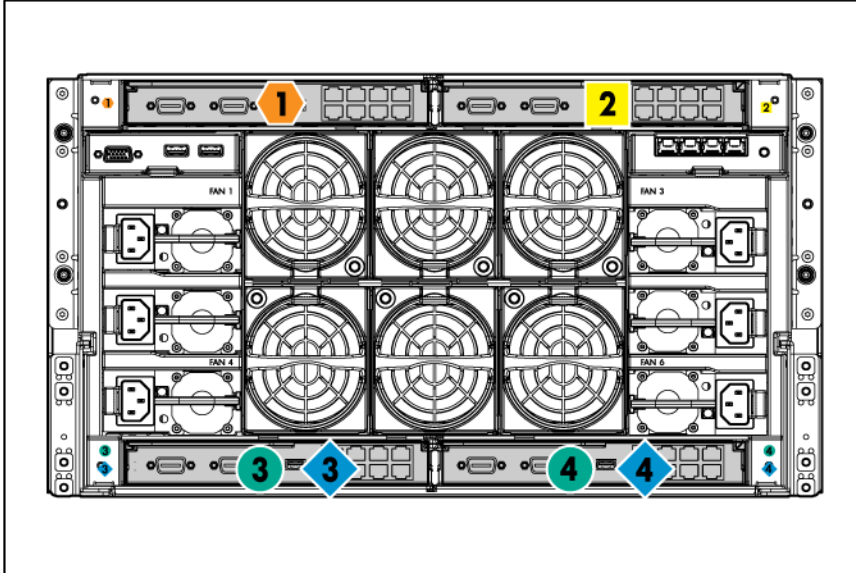
## Power supply LED



Power LED	Status
Off	No AC power to power supply units
Green	AC is present. Standby output is on, output is disabled.
Green	AC is present. Standby output is on, power supply DC output is on and OK.
Off	Power supply failure (includes overvoltage and overtemperature)

## Interconnect bay numbering

To support network connections for specific signals, install the interconnect module in the appropriate bay.



Server blade signal	Interconnect bay number	Interconnect bay label	Notes
NICs 1, 2, 3, and 4 (embedded)	1	●	—
Mezzanine 1	2	■	Four port cards connect to bay 2
Mezzanine 2	3,4	● ◆	<ul style="list-style-type: none"> <li>• Four port cards</li> <li>• Ports 1 and 3 connect to bay 3</li> <li>• Ports 2 and 4 connect to bay 4</li> </ul>
Mezzanine 3	3,4	● ◆	<ul style="list-style-type: none"> <li>• Four port cards</li> <li>• Ports 1 and 3 connect to bay 3</li> <li>• Ports 2 and 4 connect to bay 4</li> </ul>

**NOTE:** For information on the location of LEDs and ports on individual interconnect modules, see the documentation that ships with the interconnect module.

For more information, see "Mapping to interconnect ports (on page 43)."

---

# Installing components

## Installation overview

To setup and install the enclosure:

1. Disassemble the enclosure.
2. For a rack-free installation (on page 22), set up the enclosure on an appropriate surface, then reassemble the enclosure.
3. For a rack installation, install the enclosure in the rack ("Installing the enclosure in a rack" on page 24), then reassemble the enclosure.
4. Install the enclosure components ("Component installation" on page 26) into the enclosure.
5. Connect the enclosure components ("Cabling and powering up the enclosure" on page 53) in the enclosure.
6. Connect the AC power cables and power up the enclosure.
7. Configure the enclosure using the Insight Display.

## Disassembling the enclosure

Before installing the enclosure into the rack, you must disassemble the enclosure. Because a fully-populated enclosure can weigh up to 131.5 kg (290 lb), remove the components and the front cage from the enclosure to make moving and installing the enclosure easier. Two people should work together to remove the front cage from the enclosure.

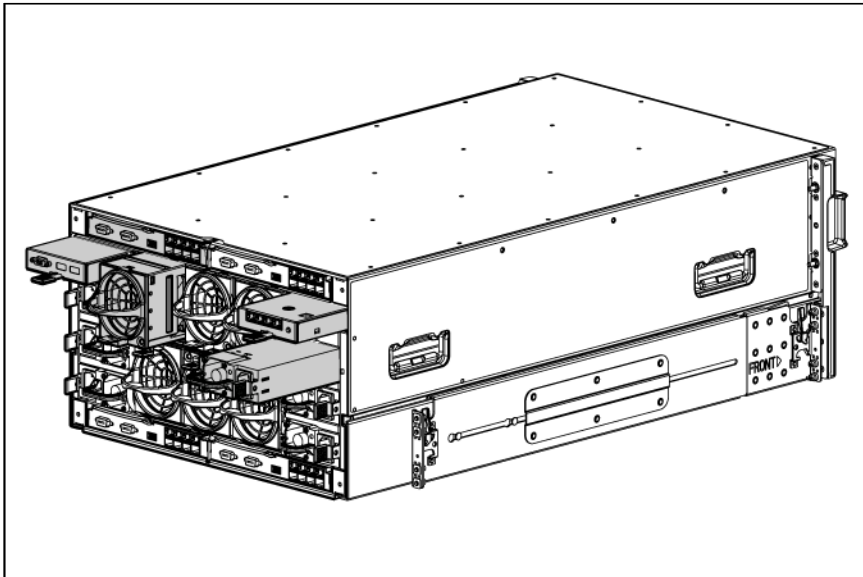
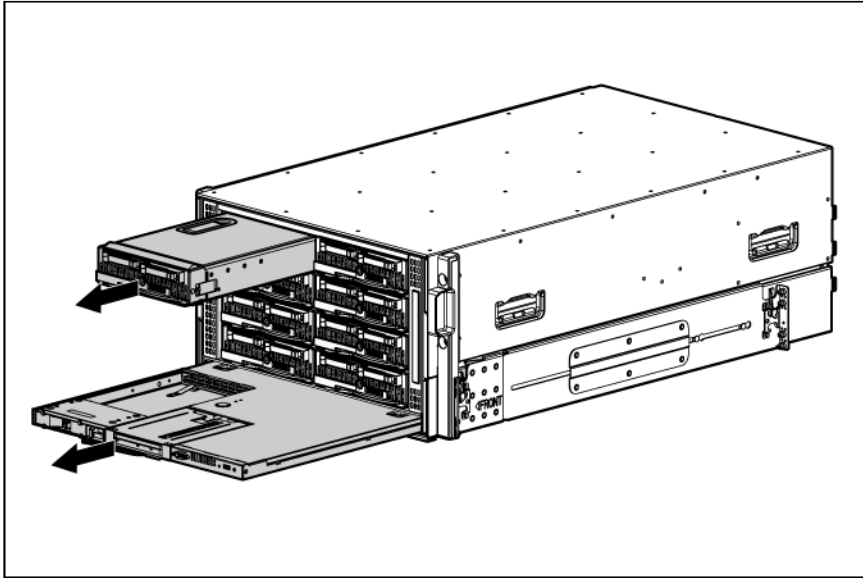
The empty enclosure with the front cage installed weighs 52.9 kg (116.5 lb). When the enclosure is disassembled, the empty enclosure without the front cage installed weighs 30.2 kg (66.5 lb). The empty front cage weighs 22.7 kg (50 lb).



**WARNING:** To reduce the risk of personal injury or equipment damage, at least two people are needed to safely move the enclosure or the front cage.

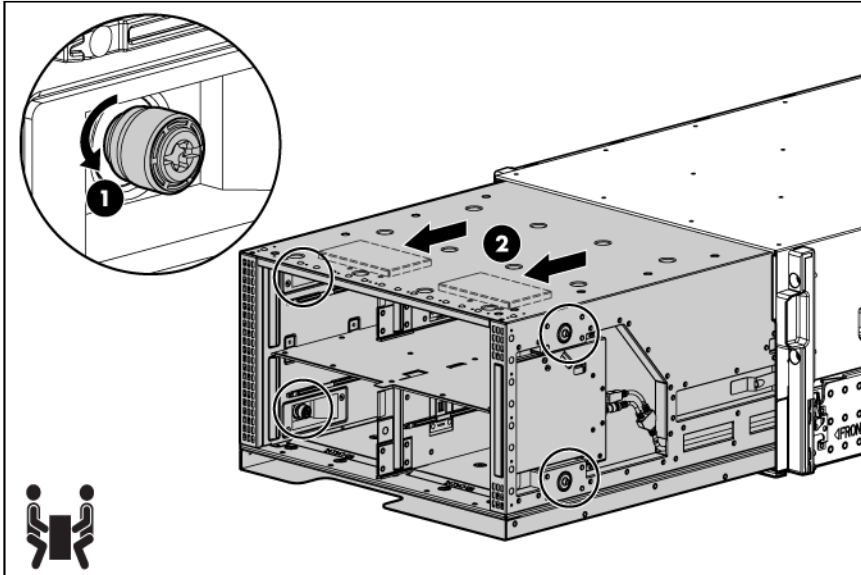
---

1. With the enclosure still on the pallet, remove all components from the front and rear of the enclosure.

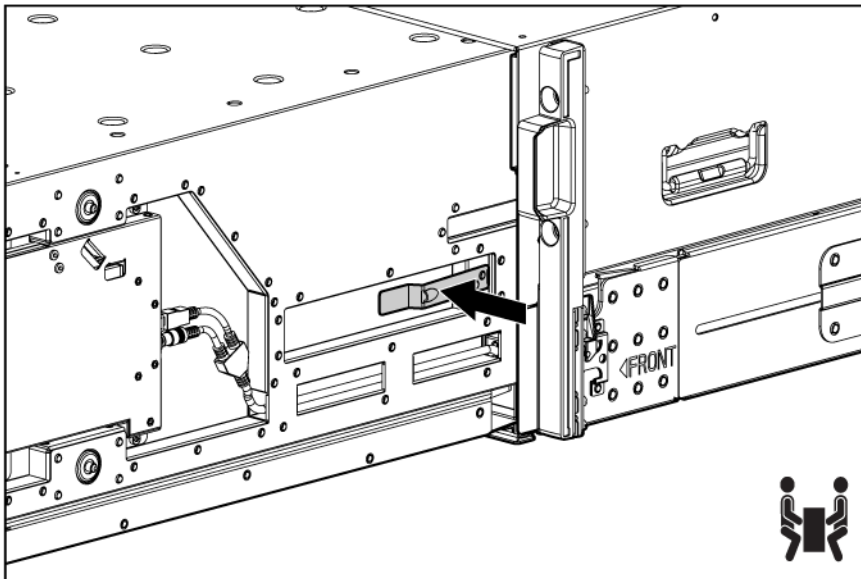


2. Remove the front cage:
  - a. Loosen the four thumbscrews inside the front cage assembly and open the hinges completely.

- b. Use the handles on the top of the enclosure to extend the front cage until it hits the safety stops.

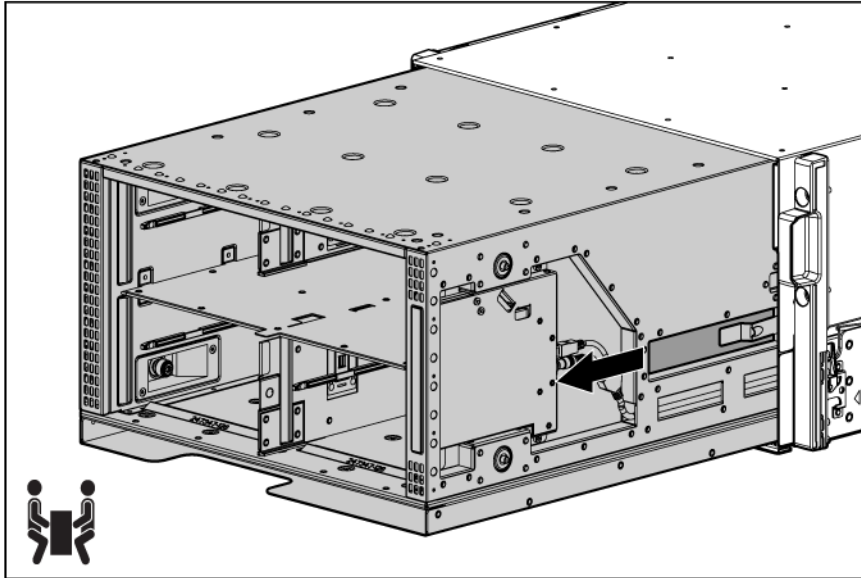


- c. Grasp the handholds on the sides of the enclosure. The release levers are located inside the handholds.
- d. Disengage the release levers on both sides of the front cage.



- 
- WARNING:** When removing and lifting the front cage, always grasp the handholds as far forward as possible. The front end of the front cage is heavy and the handholds provide a more balanced location to distribute the weight of the cage during lifting.
- 
- CAUTION:** When removing the front cage, the connectors on the midplane assembly are susceptible to damage. Use caution to avoid damage to the pins and connectors.
-

- e. Use the handholds to extend and remove the front cage from the enclosure.



## Rack-free installation

To set up the enclosure in a rack-free environment:

1. Select the location for the enclosure. For more information, see "Rack-free environment requirements (on page 7)."

---

**⚠ WARNING:** To reduce the risk of personal injury or damage to the equipment in a rack-free environment:

- Never stack the enclosure on top of another enclosure.
  - Never place equipment on top of the enclosure.
  - Never place the enclosure on a surface that cannot support up to 131.5 kg (290 lb).
- 

2. Place the enclosure on a flat, sturdy surface to support the enclosure.
3. Install the enclosure components ("Component installation" on page 26) into the enclosure.

## Rack installation

---

**⚠ CAUTION:** Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first, and continue to populate the rack from the bottom to the top.

---

**NOTE:** You can install up to seven 6U enclosures in a 42U rack. If you are installing more than one enclosure, install the first enclosure in the bottom of the rack, and then install additional enclosures by moving up the rack to the next available opening. Plan rack installations carefully because it is difficult to change the location of components after they are installed.

---

To install an enclosure into the rack:

1. Use the rack template ("Measuring with the rack template" on page 23) to mark the locations for the rack rails.
2. Install the rack rails ("Installing the rack rails" on page 23) for each enclosure.

3. Install the enclosure into the rack ("Installing the enclosure in a rack" on page 24).

## Measuring with the rack template

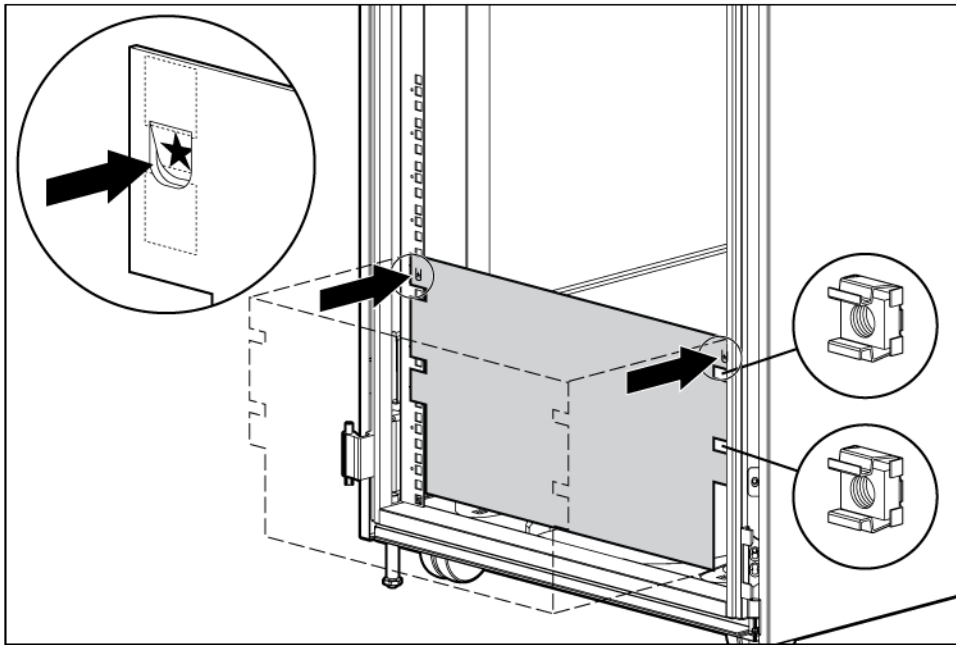
The rack template ships with the rack rail kit and provides detailed instructions on where to position the enclosure rack rails and where to install the four cage or clip nuts. Each enclosure kit includes the rack rails recommended for that enclosure.

---

**NOTE:** Four cage nuts and four clip nuts are included with the enclosure. Cage nuts should be used in racks with square holes. Clip nuts should be used in racks with round holes.

---

When installing multiple enclosures, install the rack rails and cage or clip nuts for one enclosure, and then install the enclosure. Repeat for each additional enclosure.



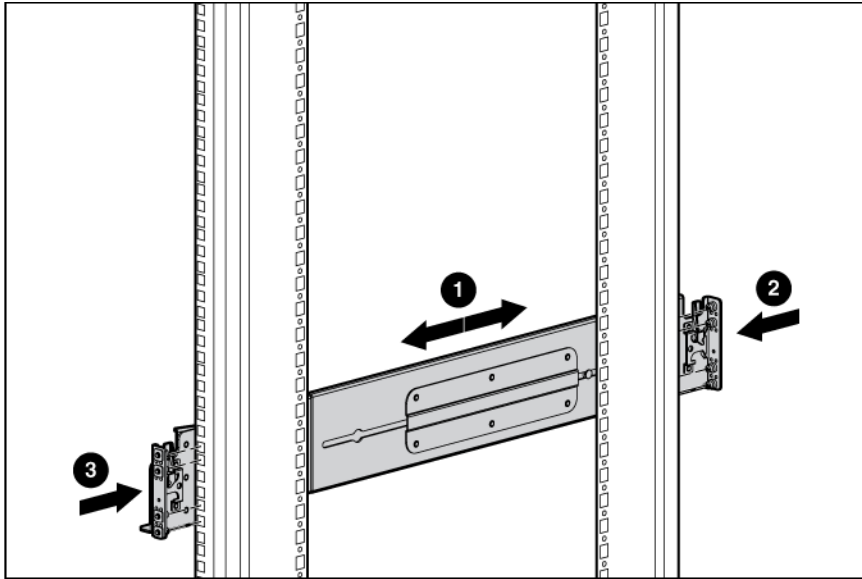
## Installing the rack rails

The rack rails are marked for easy identification. The left rack rail is marked "L" and the right rack rail is marked "R."

To install the rack rails:

1. Begin with the left rack rail. Align the end of the rail with the rear rack column.
2. Slide the rack rail closed until the end of the rail is locked in place, wrapping behind the rear rack column.

3. Slide the front end of the rail to the rack front column. When fully seated, the rack rail will lock into place.



4. Repeat the procedure for the right rack rail.

## Installing the enclosure in a rack

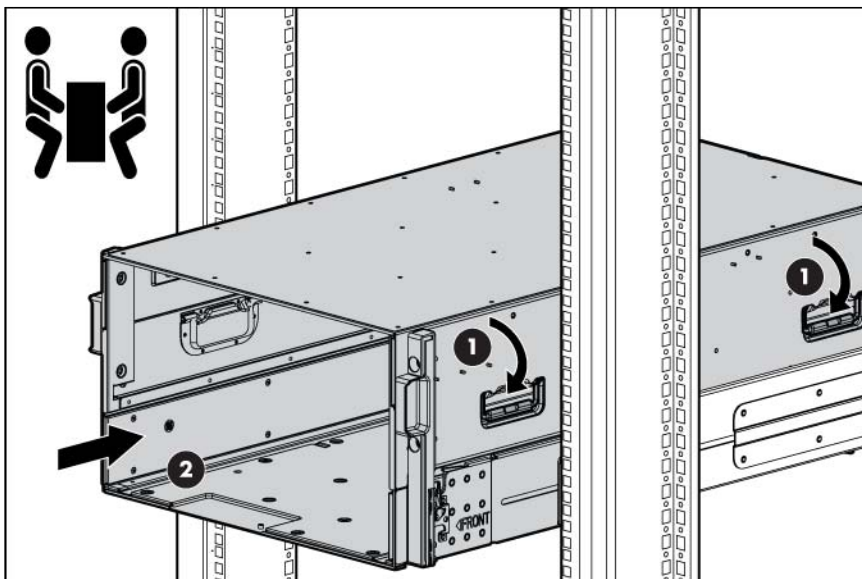
**⚠ WARNING:** Always use at least two people to lift an enclosure into the rack. If the enclosure is being loaded into the rack above chest level, a third person must assist with aligning the enclosure with the rails while the other two people support the weight of the enclosure.

1. At the front of the rack, lift and align the enclosure guiding fins with the guiding groove in the rack rails.



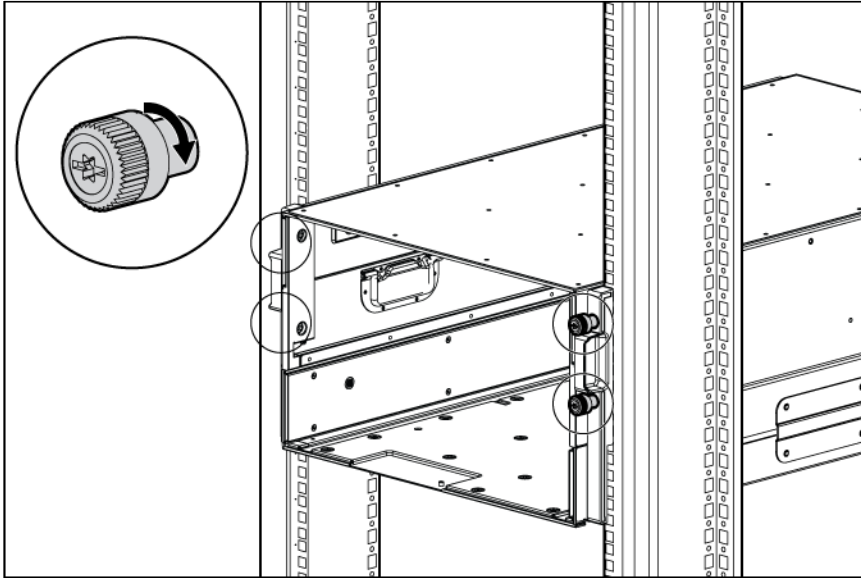
**IMPORTANT:** Be sure that the guiding fins on the enclosure seat properly in the guiding groove on the rack rail.

2. Push the handles down on each side of the enclosure, and slide the enclosure fully into the rack.





3. Tighten the thumbscrews to secure the enclosure to the rack.



4. Repeat the procedure for the remaining enclosures.

---

**NOTE:** You can install up to seven 6U enclosures in a 42U rack. If you are installing more than one enclosure, install the first enclosure in the bottom of the rack, and then install additional enclosures by moving up the rack to the next available opening. Plan rack installations carefully because it is difficult to change the location of components after they are installed.

---

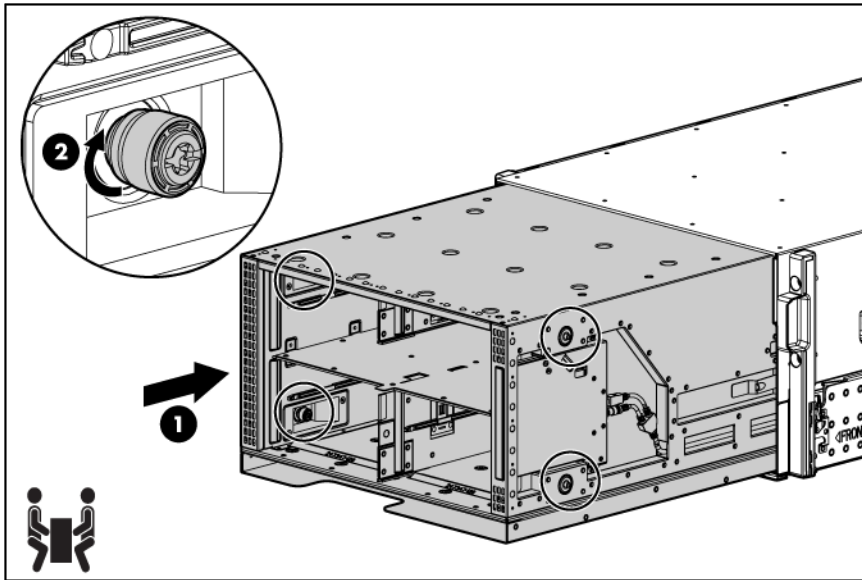
## Installing the front cage into the enclosure

1. Position the front cage at the front of the enclosure, and align the front cage guiding fins with the guiding groove in the rack rails.
2. Slide the front cage fully into the enclosure, then tighten the thumbscrews.



**CAUTION:** Do not touch or bump front cage connector pins when installing the front cage into the enclosure.

---

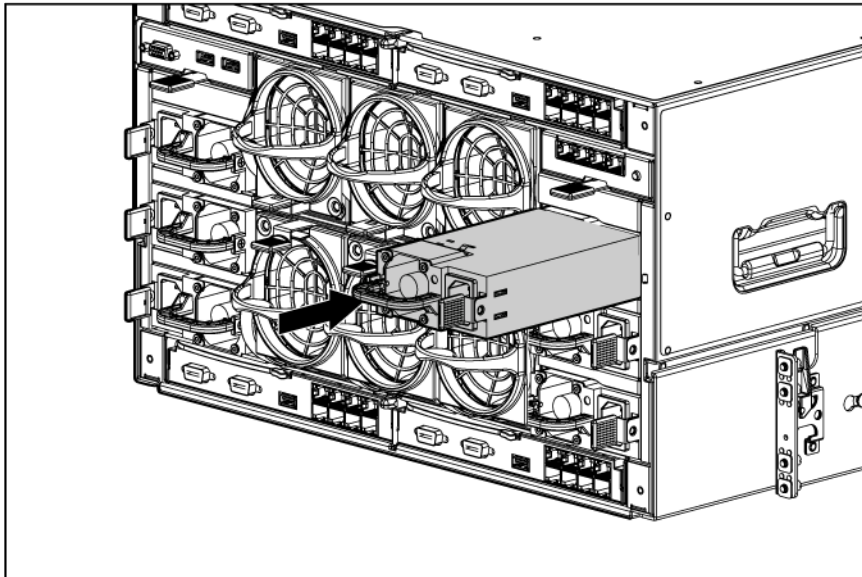


## Component installation

The following sections contain installation instructions for the individual enclosure components. All components must be installed and cabled before you power up the enclosure. There is no specific installation order requirement for the enclosure components.

### Installing a power supply

1. Slide the power supply into the power supply bay until the device locks into place. Repeat this step for each required power supply.



**NOTE:** When installing a power supply in power supply bay 1, 2, or 3, orient the power supply so the plug is on the left side. When installing a power supply in power supply bay 4, 5, or 6, orient the power supply so the plug is on the right side.

2. Install power supply blanks in any unused power supply bay.

## Populating power supply bays

For AC redundant (N+N power supplies) configurations, an even number of power supplies is required. For this configuration, where N is the number of power supplies being used, populate the power supply bays as shown.

<b>N + N</b>	<b>Populate the following power supply bays</b>
1 + 1	1 and 4
2 + 2	1, 2, 4, and 5
3 + 3	Populate all bays

For power supply redundant (N+1 power supplies) configurations, where N is the number of power supplies being used, populate the power supply bays as shown.

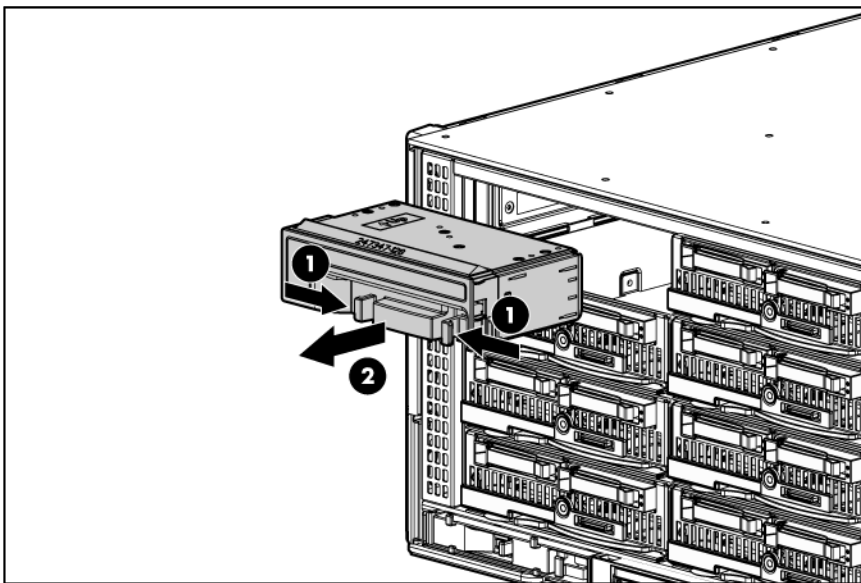
<b>N + 1</b>	<b>Populate the following power supply bays</b>
1 + 1	1 and 4
2 + 1	1, 4, and 2
3 + 1	1, 4, 2, and 5
4 + 1	1, 4, 2, 5, and 3
5 + 1	Populate all bays

## Installing a full-height blade

The enclosure ships with device bay shelves to support half-height devices. To install a full-height device, remove the device bay shelf and the corresponding blanks.

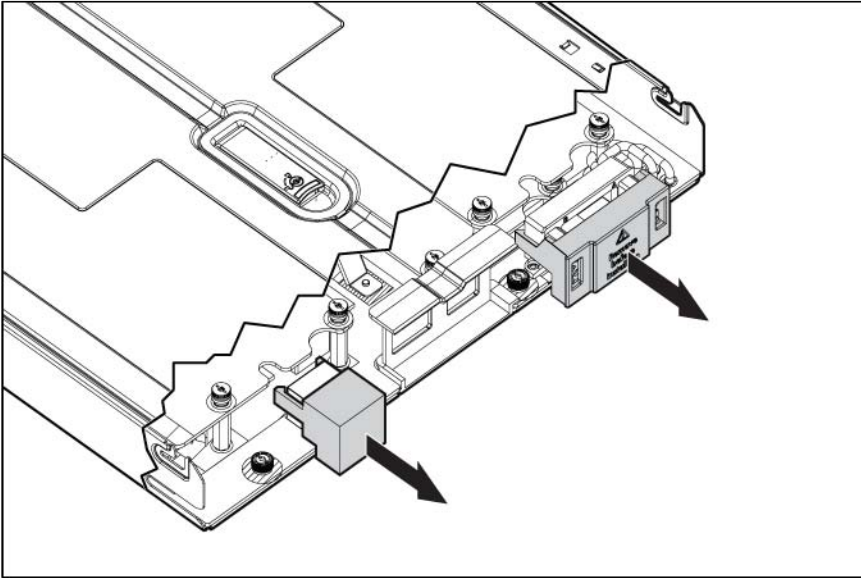
To install a full-height blade:

1. Remove the blank.

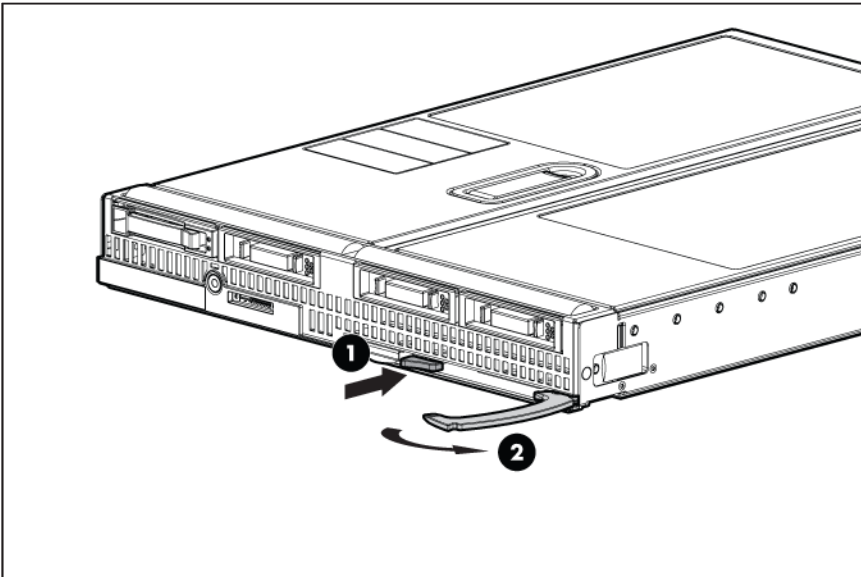


2. Remove the three adjacent blanks.
3. Remove the device bay shelf.

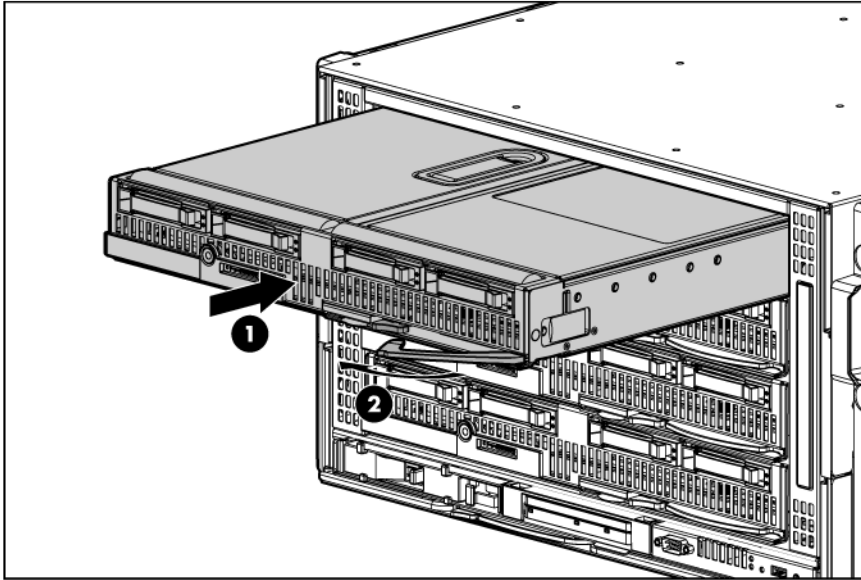
4. Remove the connector covers.



5. Prepare the blade for installation.



6. Install the blade in the empty bay.



**NOTE:** If you plan to install four HP Active Cool Fans, you can install up to two full-height blades. Populate device bay 1 first, then populate device bay 2. If you plan to install six HP Active Cool Fans, blades can be installed in any configuration.

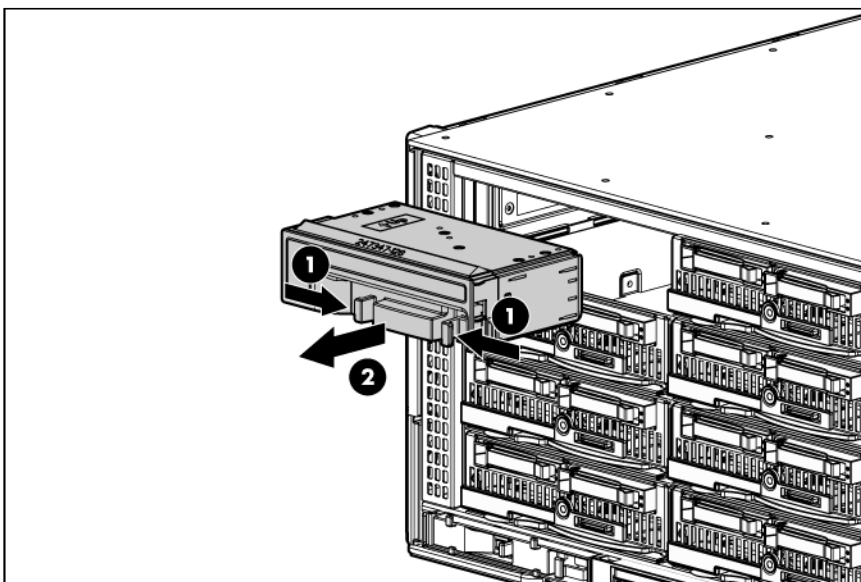
For more information, see "Installing fans (on page 37)" and "Full-height device bay numbering (on page 13)."

**CAUTION:** To prevent improper cooling and thermal damage, do not operate the blade or the enclosure unless all drive and device bays are populated with either a component or a blank.

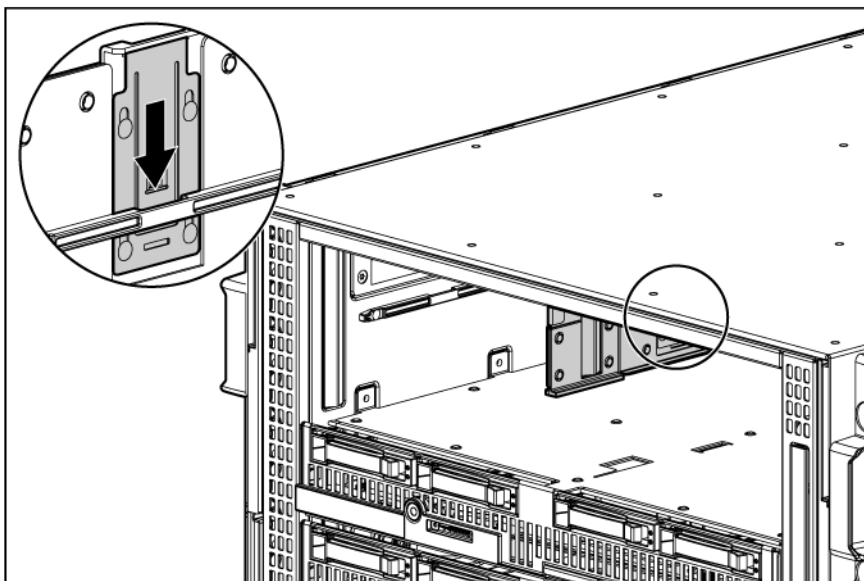
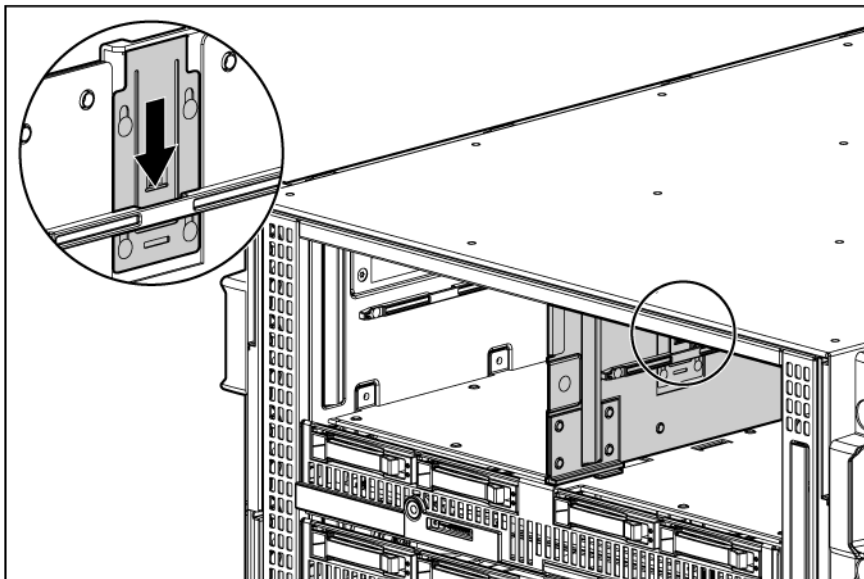
7. Install blanks in any empty bays.

## Removing the device bay dividers

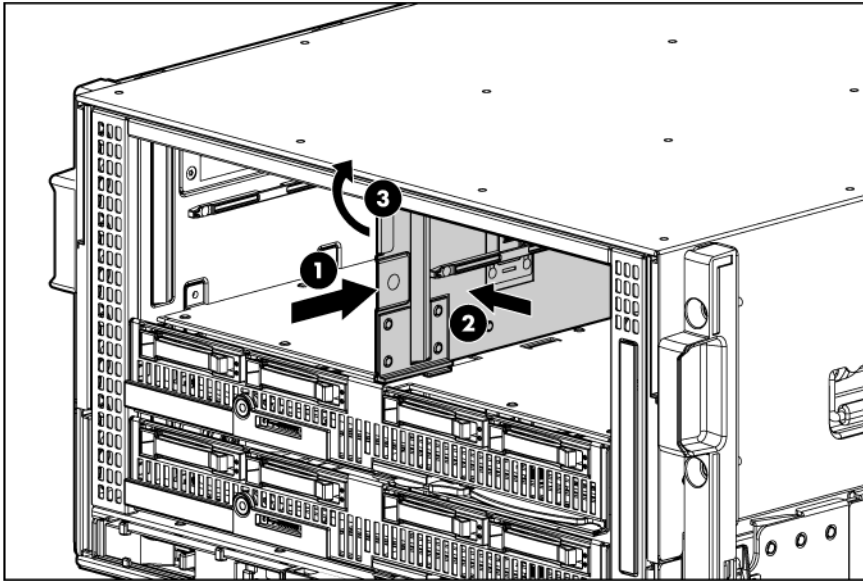
1. Remove the blank.



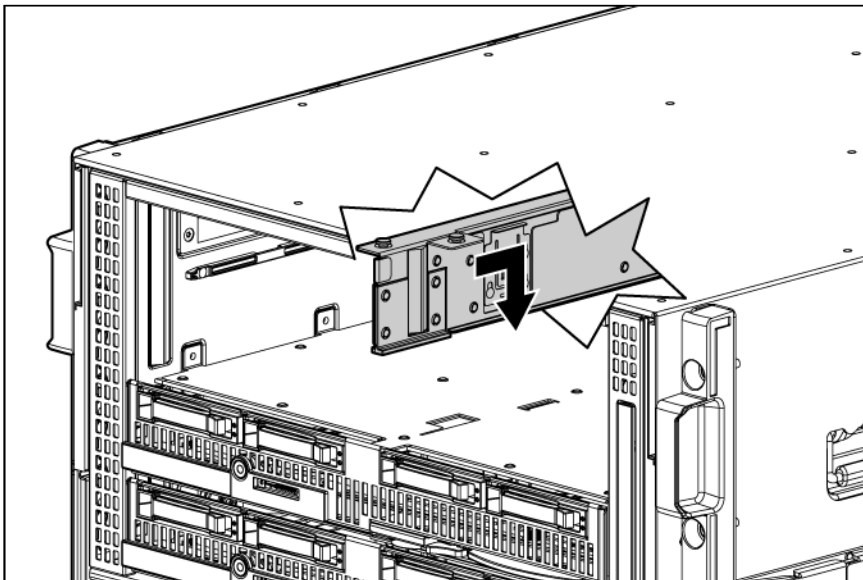
2. Slide the divider locking tab down:



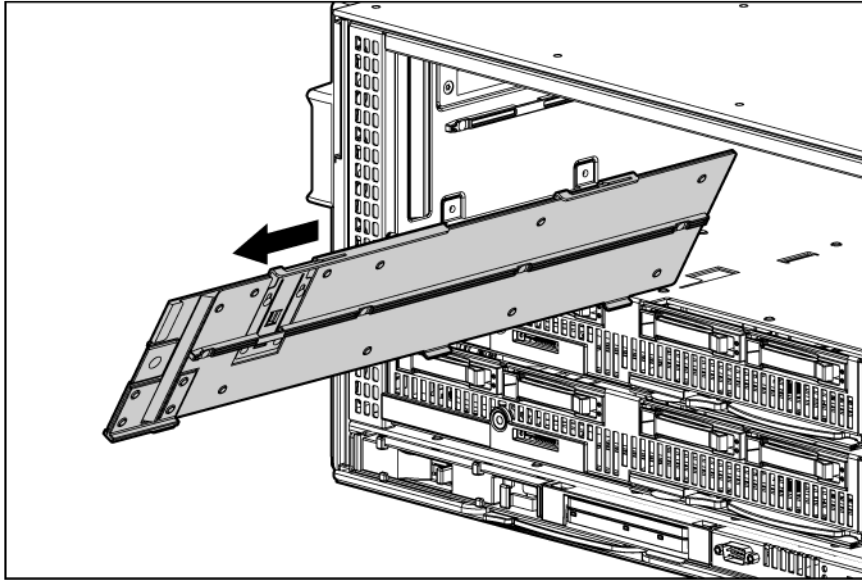
3. For the half-height divider, push the divider toward the back of the enclosure until the divider stops. Slide the divider to the left to disengage the tabs from the divider wall, and then rotate the divider clockwise.



For the mini divider, push the divider toward the back of the enclosure until the divider drops out of the chassis.

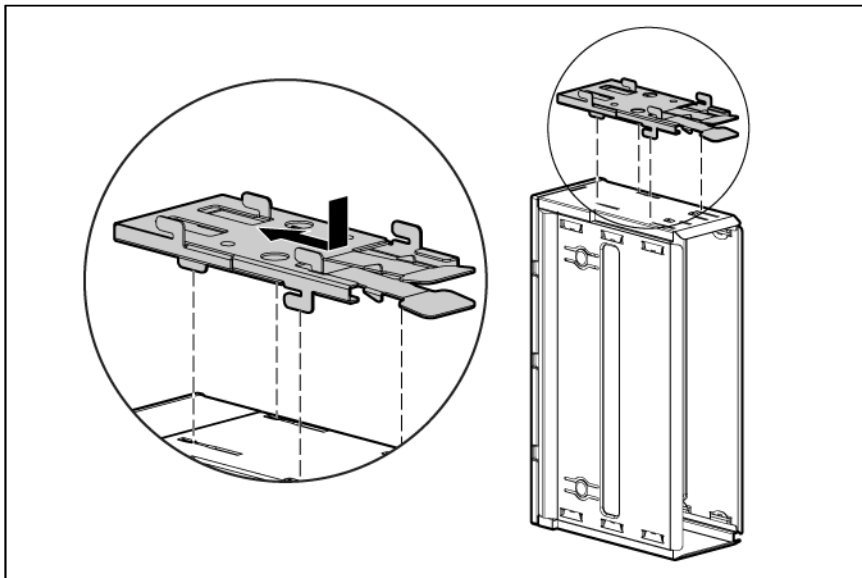


4. Remove the device bay divider from the enclosure.



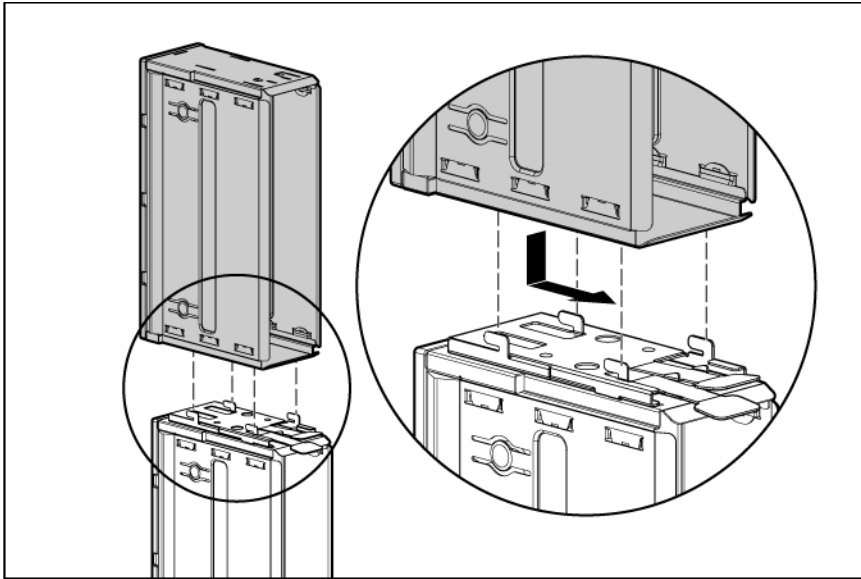
## Creating a full-height device bay blank

1. Obtain the coupler plate:
  - o If you are using a device bay blank that came with the enclosure, the coupler plate can be found with the contents of the full-height device shipping box.
  - o If you are using a device bay blank that you purchased as an option, remove the coupler plate from inside the blank.
2. Fit the coupler plate into the slots on top of the blank, and then slide the coupler plate back until it snaps into place.





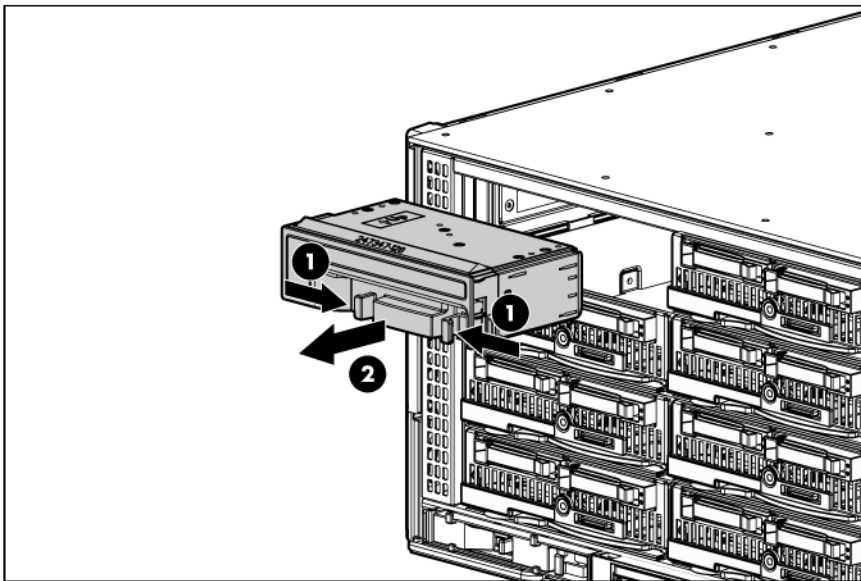
3. Fit the slots on the bottom of the second blank on to the tabs on the coupler plate, and then slide the second blank forward until it snaps in place.



4. Install the full-height blank into the device bay.

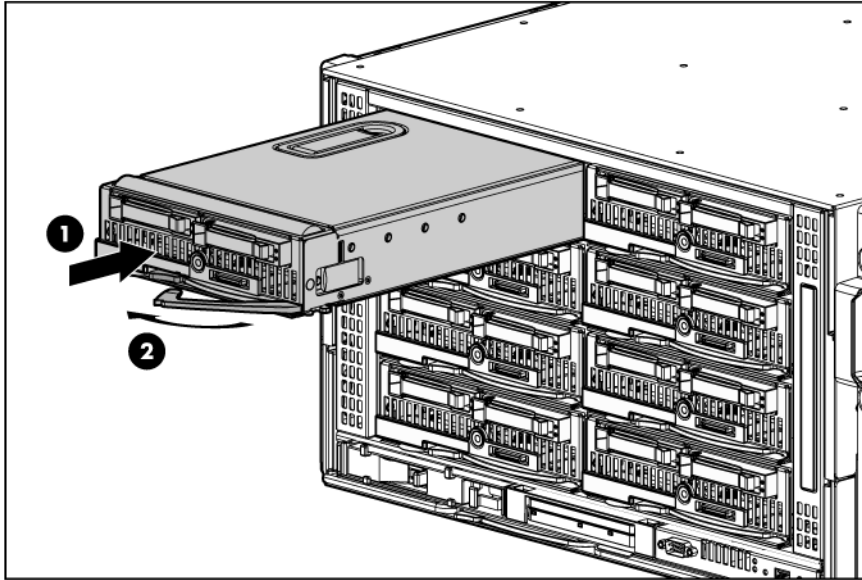
## Installing a half-height blade

1. Remove the blank.



2. Install the device bay shelf, if applicable.

3. Install the blade in the empty bay.



---

**NOTE:** If you plan to install four HP Active Cool 100 Fans, you can install up to four half-height blades. Populate the device bays in the following order: 1, 2, 5, 6.  
If you plan to install six HP Active Cool 100 Fans, blades can be installed in any configuration.

---

For more information, see "Installing fans (on page 37)" and "Half-height device bay numbering (on page 13)."

---

**CAUTION:** To prevent improper cooling and thermal damage, do not operate the blade or the enclosure unless all hard drive and device bays are populated with either a component or a blank.

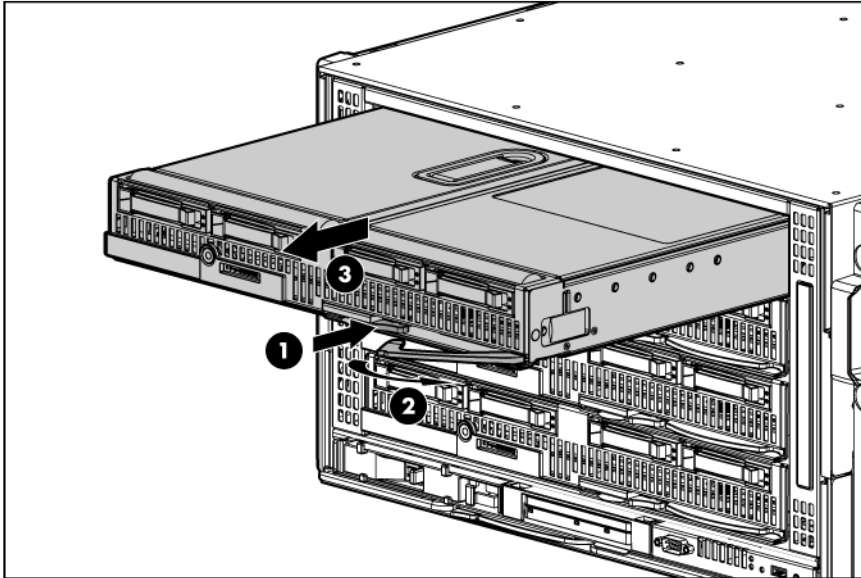
---

4. Install blanks in any empty bays.

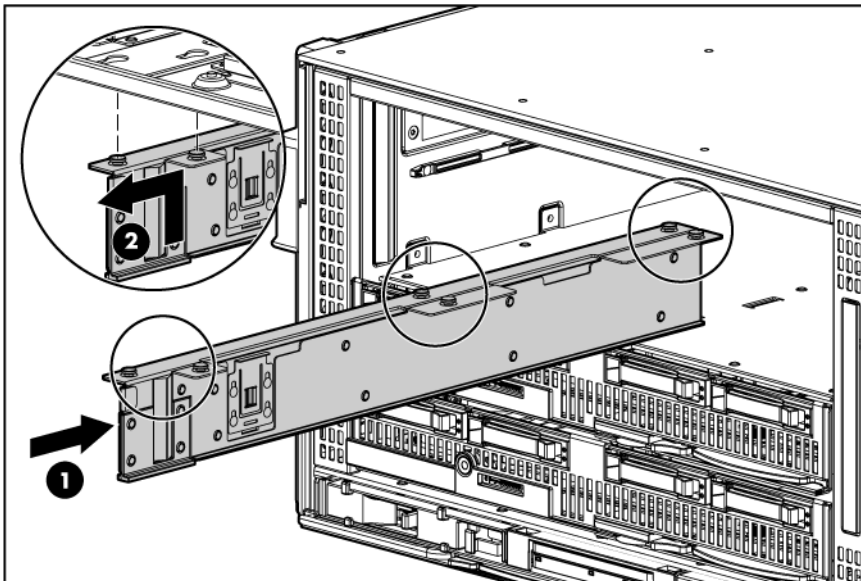
## Installing dividers

You must install dividers to support half-height devices. The half-height divider adds support for four adjacent half-height devices. The mini divider adds support for two half-height and one full-height adjacent devices.

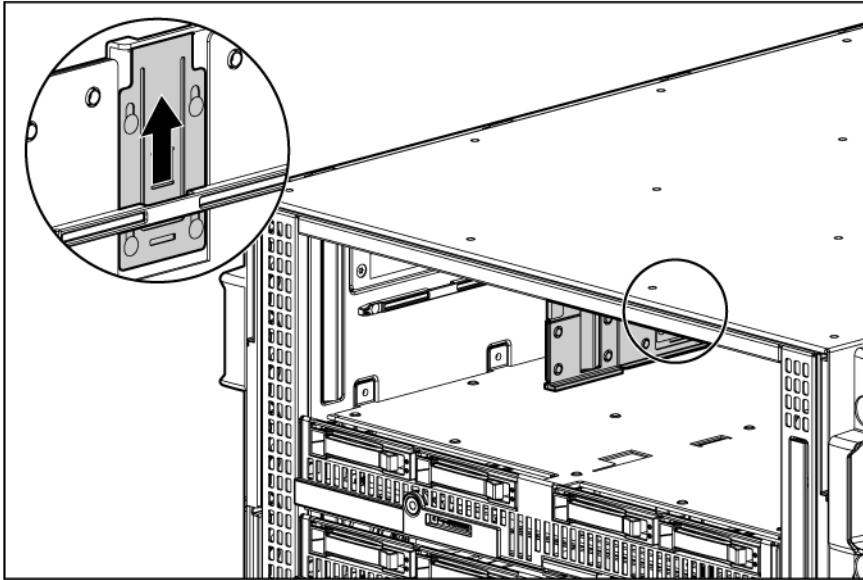
1. Remove the full-height blade, storage blade, or device bay blank.



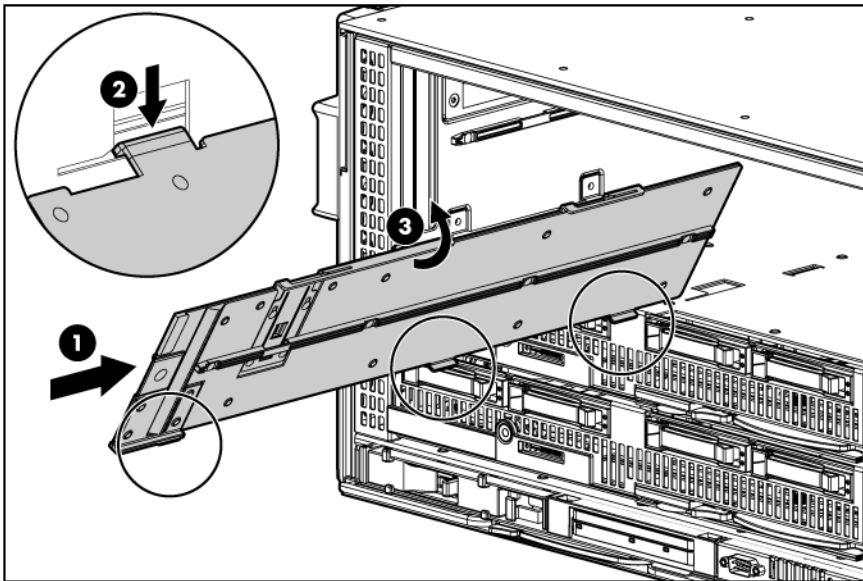
2. Install the divider or proceed to step 3 to install the half-height divider.
  - a. Align the three tabs on the top edge of the divider with the openings in the enclosure, and then slide the divider straight back.
  - b. Push the divider up, and then pull it forward until it stops.



- c. Slide up the divider locking tab to lock it.

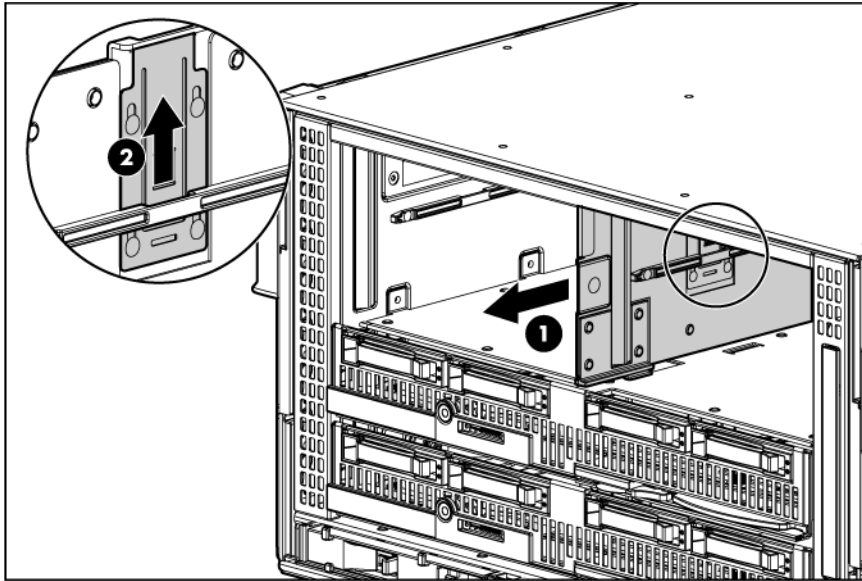


- 3. Install the half-height divider.
  - a. Slide the divider locking tab down:
  - b. Align the three tabs on the bottom edge of the divider with the openings in the enclosure, and rotate the divider counter-clockwise.



**CAUTION:** Be sure that all five tabs (three on the bottom edge of the divider and two on the top edge of the divider) are fully inserted before sliding the divider forward to complete the installation. Failure to do so can cause damage to the blade connectors during installation.

- c. Pull the half-height divider forward until it stops and slide the half-height divider locking tab up to lock it.



## Installing fans

---

**NOTE:** The HP BladeSystem c3000 Enclosure ships with four HP Active Cool 100 fans and supports up to six fans. Install fans based on the number of storage or server blades installed:

- For one to four half-height storage or server blades or one to two full-height storage or server blades, install four fans in bays 2, 4, 5, and 6.
- For additional storage or server blades, install six fans using all bays.

---

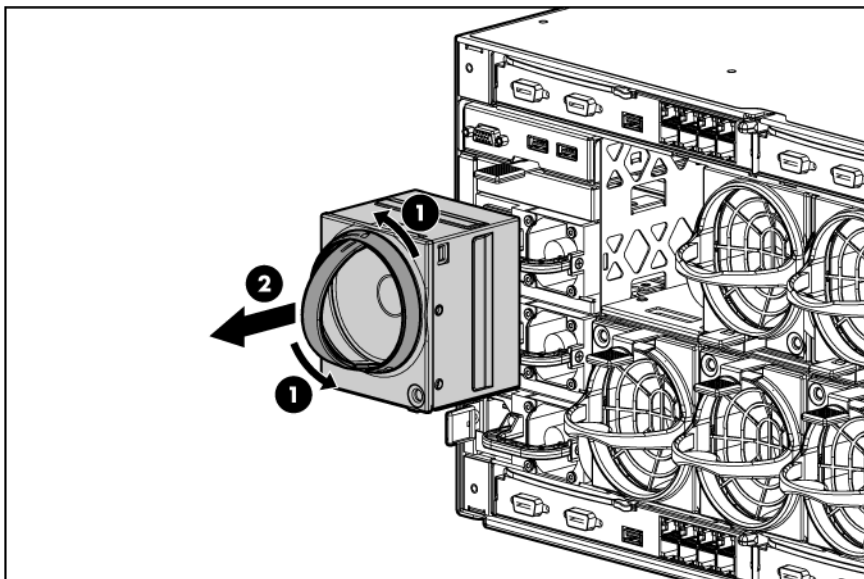
For more information, see "Fan bay numbering (on page 16)."

---

**NOTE:** You cannot install HP Active Cool 100 fans and HP Active Cool 200 fans in the same enclosure. The Onboard Administrator sends an error message, and you must remove the type of fan with the least number of units installed.

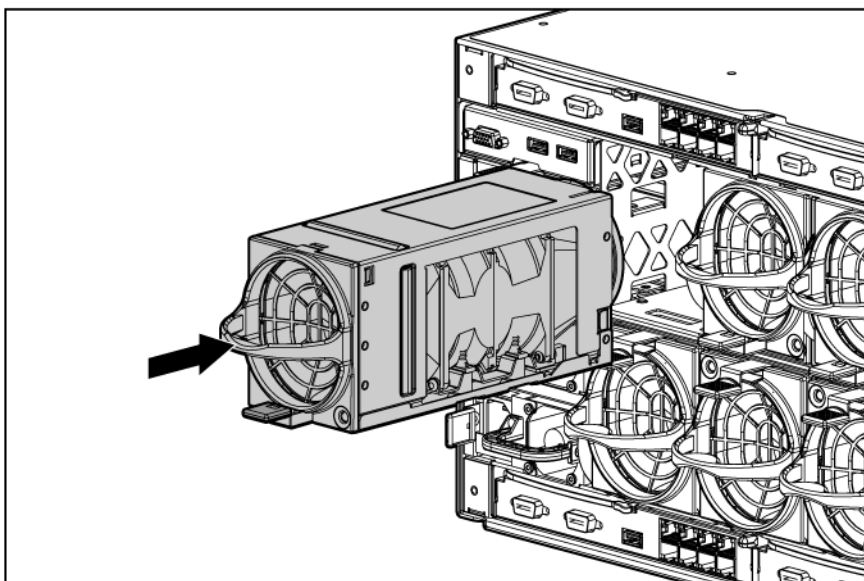
---

1. Turn the handle counterclockwise to the unlock position, and pull the fan or fan blank from the enclosure.

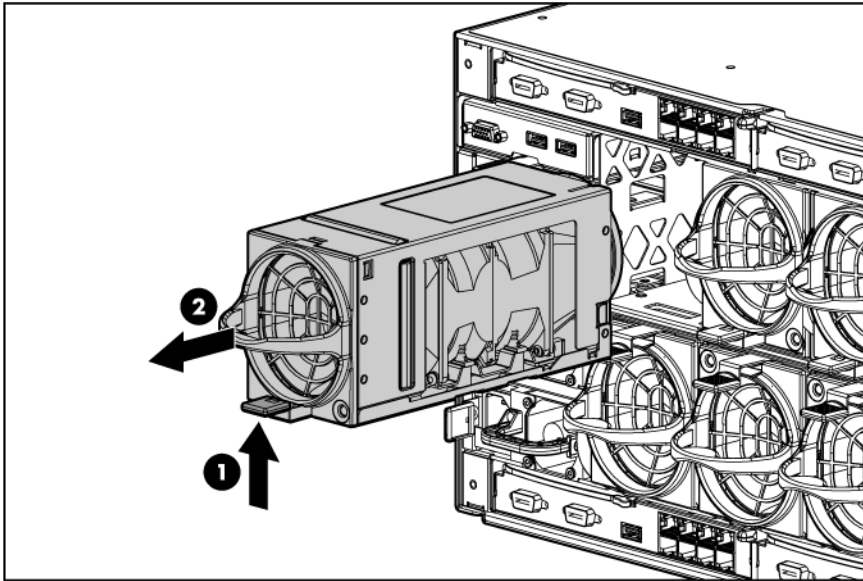


2. Slide the fan into the enclosure until it locks in place.

**NOTE:** When installing a fan in the top row of fan bays, orient the fan so that the LED is in the lower right corner. When installing a fan in the bottom row of fan bays, orient the fan so the LED is in the upper left corner.



To remove a fan, turn the handle counterclockwise to the unlock position, and pull the fan out of the enclosure.



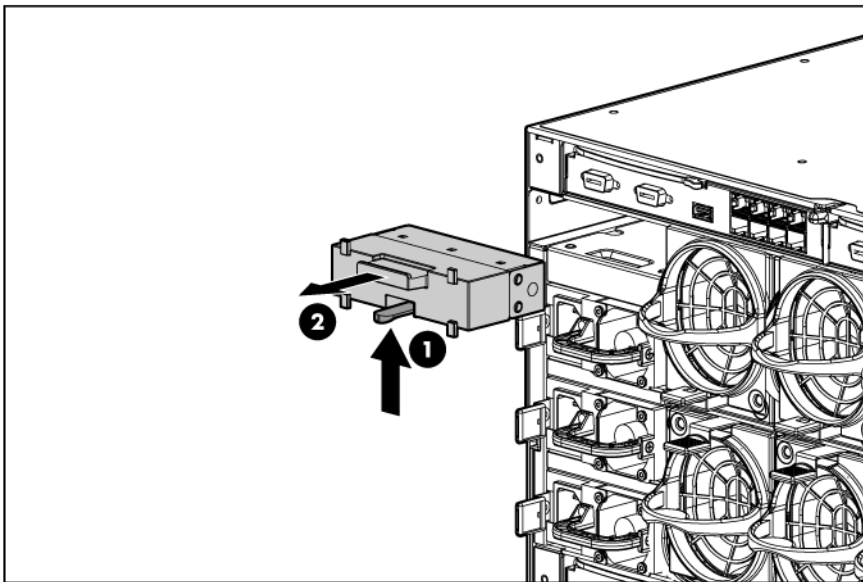
## Installing a KVM module

You can use the optional HP BladeSystem c3000 KVM Module to connect the enclosure to a USB keyboard, video monitor, and USB mouse (KVM). You can also connect the KVM module to the HP Server Console Switch or HP IP Console Switch using the HP USB Interface Adapter.

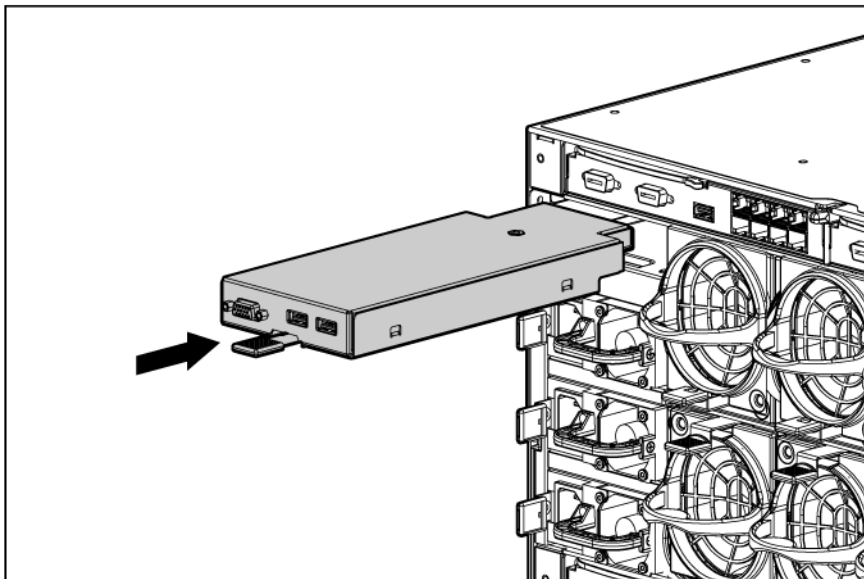
To use the KVM module, you must have HP BladeSystem Onboard Administrator version 2.10 or later installed. For more information on using the KVM module software, see the *HP BladeSystem Onboard Administrator User Guide*.

To install a KVM module:

1. Press the tab, and then pull the KVM module blank from the enclosure.



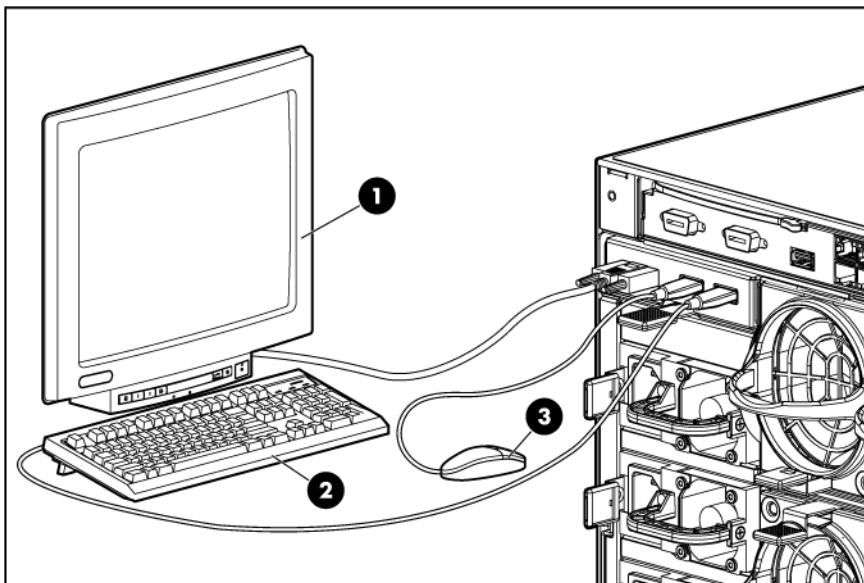
2. Slide the c3000 KVM module into the bay. When fully inserted, the device locks into place.



## Attaching components to HP BladeSystem c3000 KVM module

For local access to the enclosure:

1. Connect a monitor to the video connector on the c3000 KVM module.
2. Connect a USB keyboard and mouse to the USB connectors on the c3000 KVM module. The USB connectors are interchangeable.

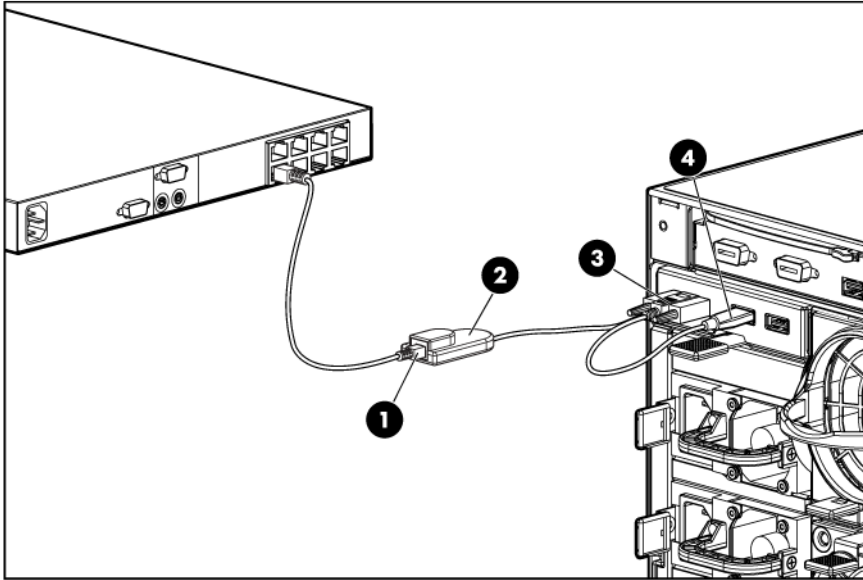


To connect the c3000 KVM module to an HP Server Console Switch or an HP IP Console Switch:

1. Connect the optional USB interface adapter to the video connector and to one of the USB connectors on the c3000 KVM module.

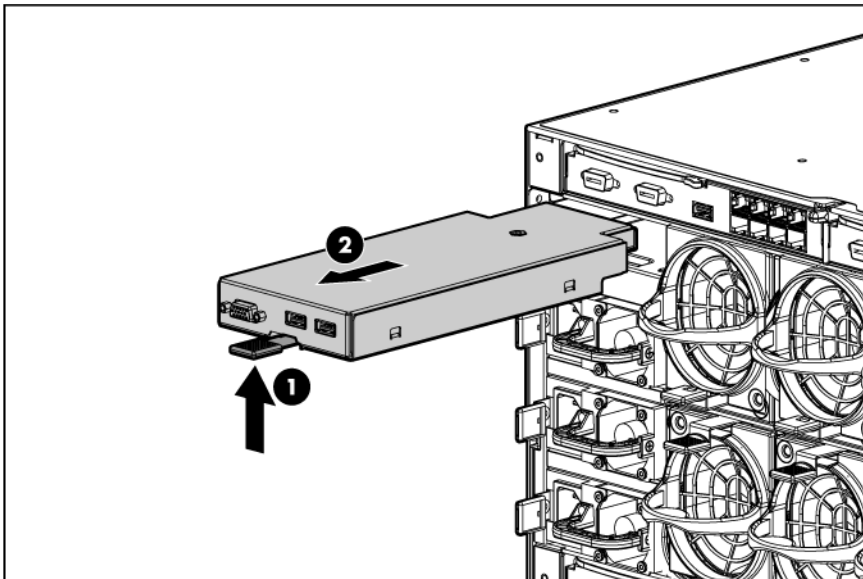


2. Connect the CAT5 end of the KVM interface adapter to an optional HP Console Switch.

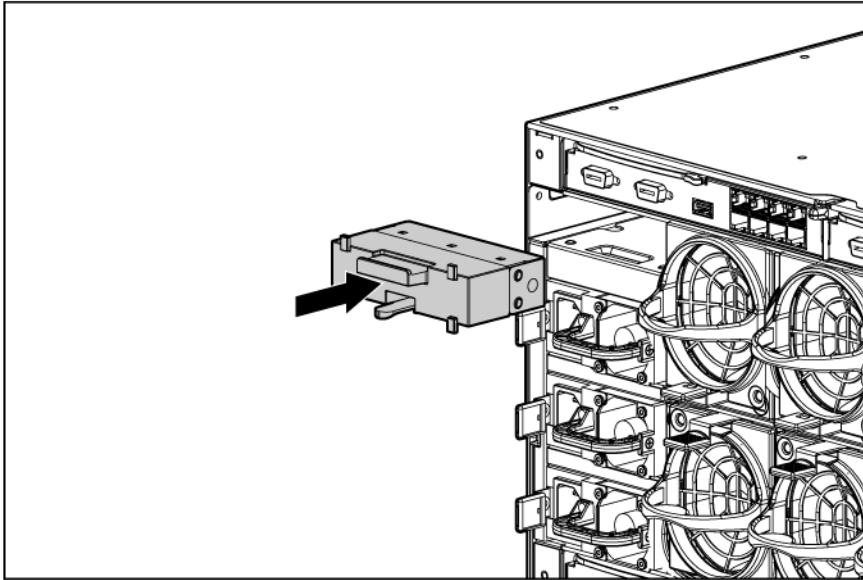


## Removing the HP BladeSystem c3000 KVM module

1. Disconnect all cables from the c3000 KVM module.
2. Press the tab, and then pull the c3000 KVM module from the enclosure.



3. Install a blank in an unused KVM module bay. When fully inserted, the device locks into place.



## Installing interconnect modules

There are four single-wide interconnect bays in the enclosure. Interconnect bay 1 is reserved for a gigabit Ethernet switch or pass-through. Installation into the remaining interconnect bays depends on the type and location of the mezzanine card installed in the server blade.

To verify compatibility with the enclosure, see the documentation that ships with the interconnect module.



---

**IMPORTANT:** If the mezzanine card is not installed properly or the interconnect module installation does not coincide with the mezzanine card installation, the ports on the interconnect module will not function.

---

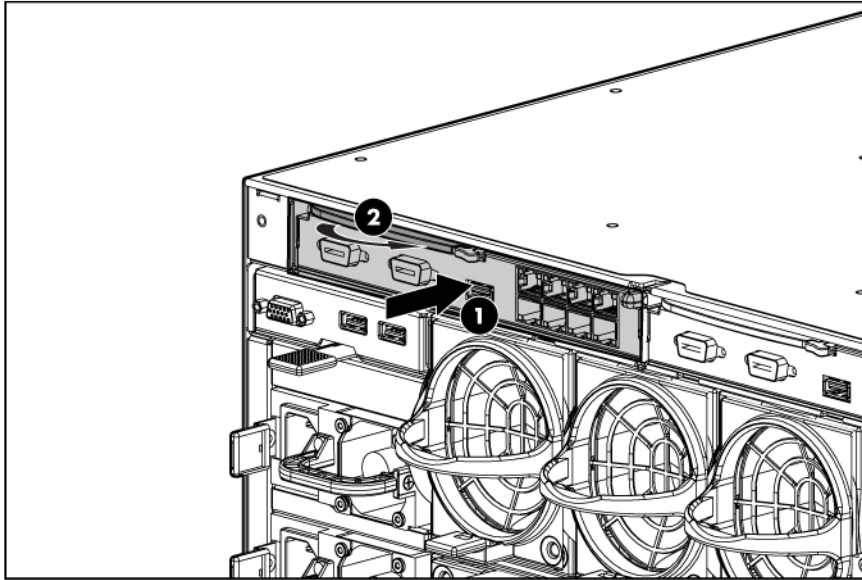
**NOTE:** For more information on how and where to install mezzanine cards, see the server-specific user guide.

---

To install an interconnect module:

1. Remove the interconnect blank.
2. If you are installing a double-wide interconnect module, remove the interconnect bay dividers ("[Removing interconnect bay dividers](#)" on page 49).

3. Install the interconnect module in the enclosure.



## Mapping to interconnect ports

Several port types are referenced in the following tables.

- Examples of 1x ports are 1-Gb Ethernet (1 GbE) switch modules and Fibre Channel interconnect modules.
- An example of a 2x port is a Serial Attached SCSI (SAS) interconnect module. (Reserved for future use.)
- Examples of 4x ports are 10-Gb Ethernet (10 GbE) interconnect modules.

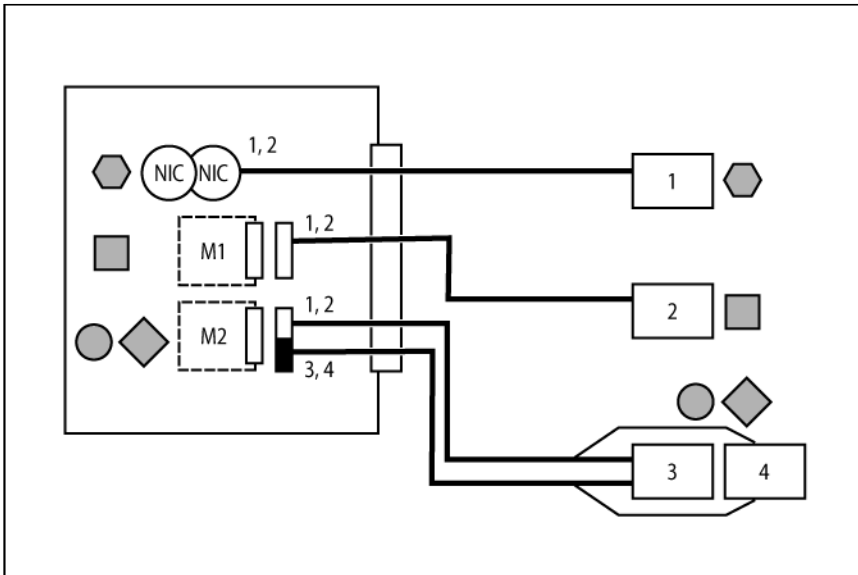
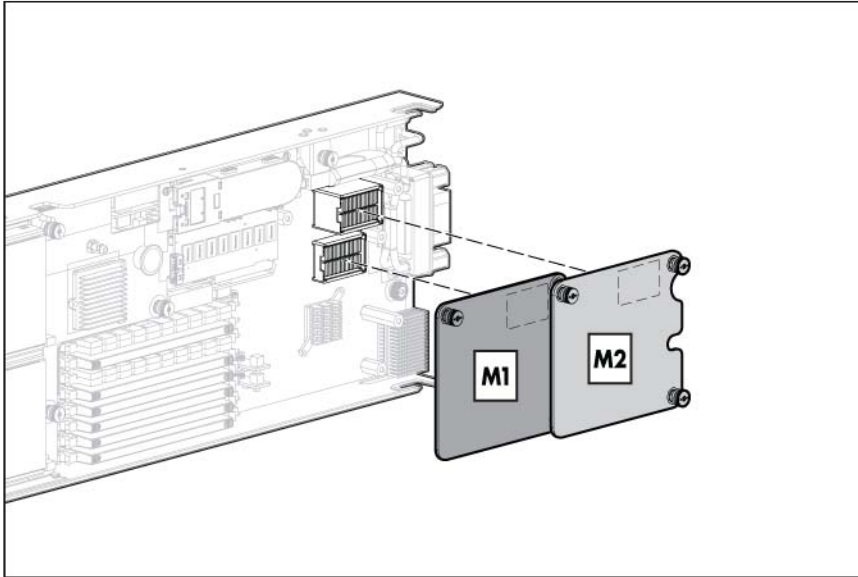
---

**NOTE:** 1x and 2x port mezzanine cards interface with single-wide interconnect modules. 4x port mezzanine cards interface with double-wide interconnect modules.

---

The term "1x/2x" refers to the number of interconnect lanes per port provided by the controller. The more lanes provided per port, the higher the data transmission rate coming from that port.

## Mapping half-height blades

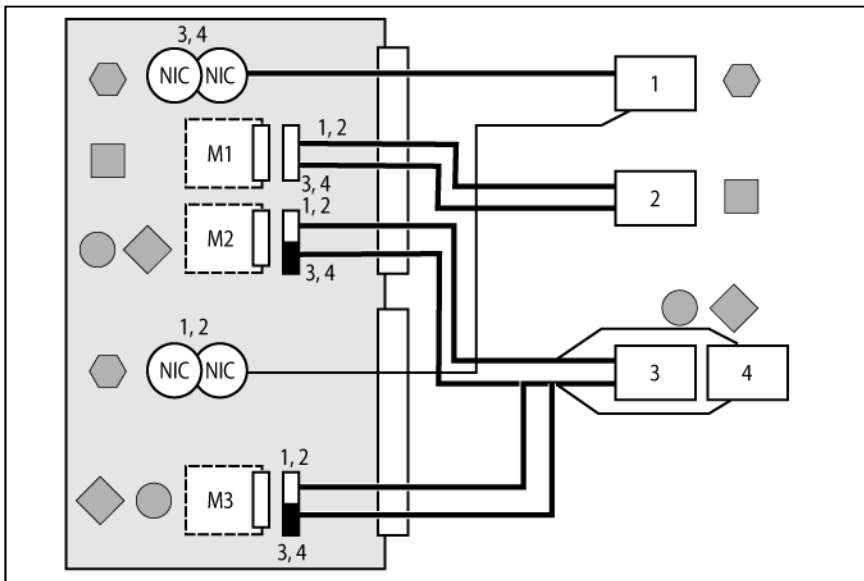
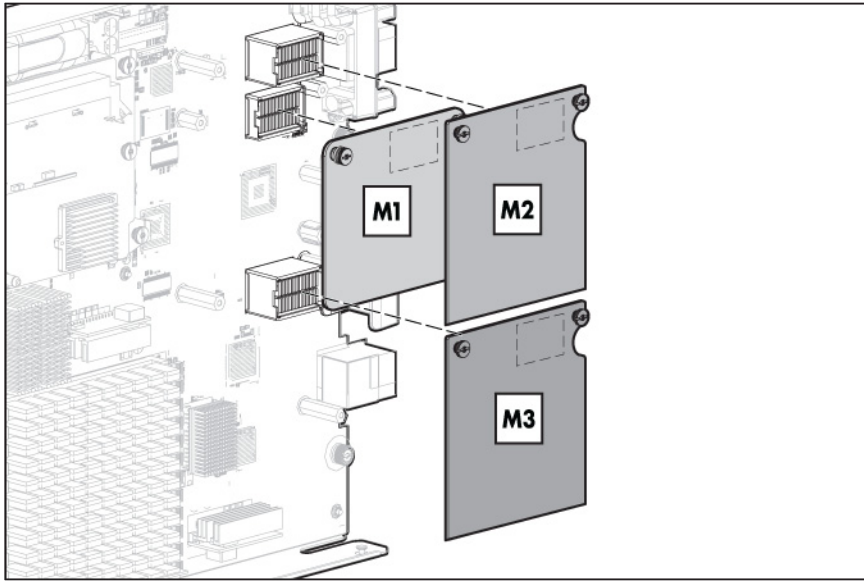


The following table lists the available configurations for half-height devices installed in device bay N (1–8)

Connection	Port number	Connects to interconnect bay/port	Comments
Embedded NIC	NIC 1 NIC 2	1/Port N 1/Port N+8	One single-wide Ethernet interconnect module
Mezzanine slot 1—1x or 2x cards (4x cards are not supported in this slot)	1x/2x port 1 1x/2x port 2	2/Port N 2/Port N+8	<ul style="list-style-type: none"> <li>• One single-wide interconnect module</li> <li>• Only two ports will be connected.</li> <li>• Four port cards will only connect the first two ports.</li> </ul>

Connection	Port number	Connects to interconnect bay/port	Comments
Mezzanine slot 2—1x or 2x cards	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	3/Port N 4 Port N 3/Port N+8 4/Port N+8	One or two single-wide interconnect modules
Mezzanine slot 2—4x cards	4x port 1 4x port 2	3/Port N 3/Port N+8	One double-wide interconnect module

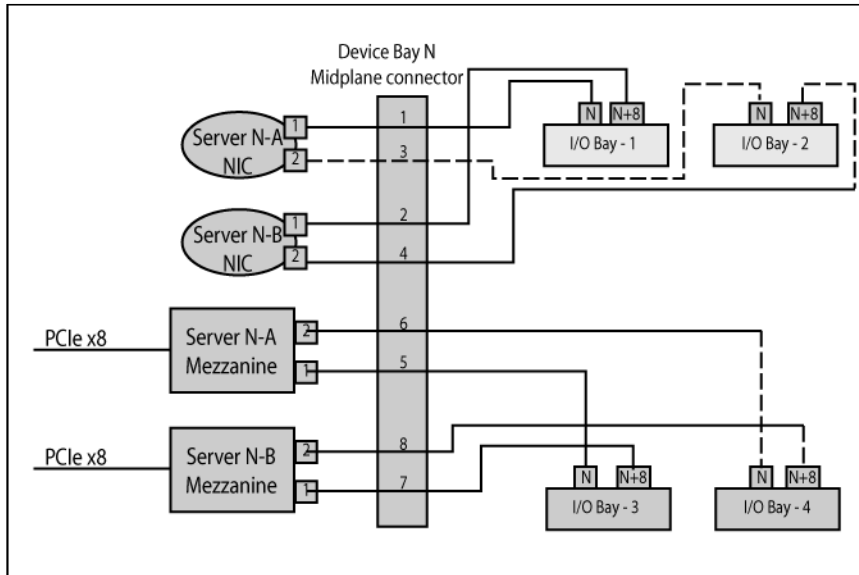
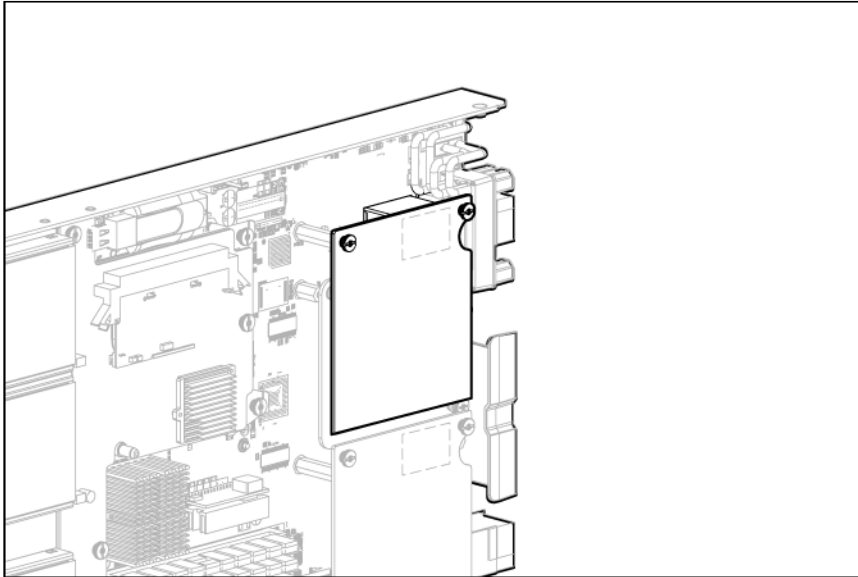
### Mapping full-height blades



The following table lists the available configurations for full-height devices installed in device bay N (1–4)

Connection	Port number	Connect to interconnect bay/port	Comments
Embedded NIC	NIC 1 NIC 2 NIC 3 NIC 4	1/Port N+4 1/Port N+12 1/Port N 1/Port N+8	One single-wide Ethernet interconnect module
Mezzanine slot 1—1x or 2x cards (4x cards are not supported in this slot)	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	2/Port N 2/Port N+8 2/Port N+4 2/Port N+12	One single-wide interconnect module
Mezzanine slot 2—1x or 2x cards	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	3/Port N 4/Port N 3/Port N+8 4/Port N+8	One or two single-wide interconnect modules
Mezzanine slot 2—4x cards	4x port 1 4x port 2	3/Port N 3/Port N+8	One double-wide interconnect module
Mezzanine slot 3—1x or 2x cards	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	3/Port N+12 4/Port N+12 3/Port N+4 4/Port N+4	One or two single-wide interconnect modules
Mezzanine slot 3—4x cards	4x port 1 4x port 2	3/Port N+12 3/Port N+4	One double-wide interconnect module

## Mapping BL2x220c blades



To support network connections for specific signals, install an interconnect module in the bay corresponding to the embedded NIC or mezzanine signals.

Connection	Port number	Connects to interconnect bay/port	Comments
Embedded NIC	Server A: NIC 1 Server A: NIC 2 Server B: NIC 1	1/Port N 2/Port N 1/Port N+8 2/Port N+8	Two single-wide Ethernet interconnect modules

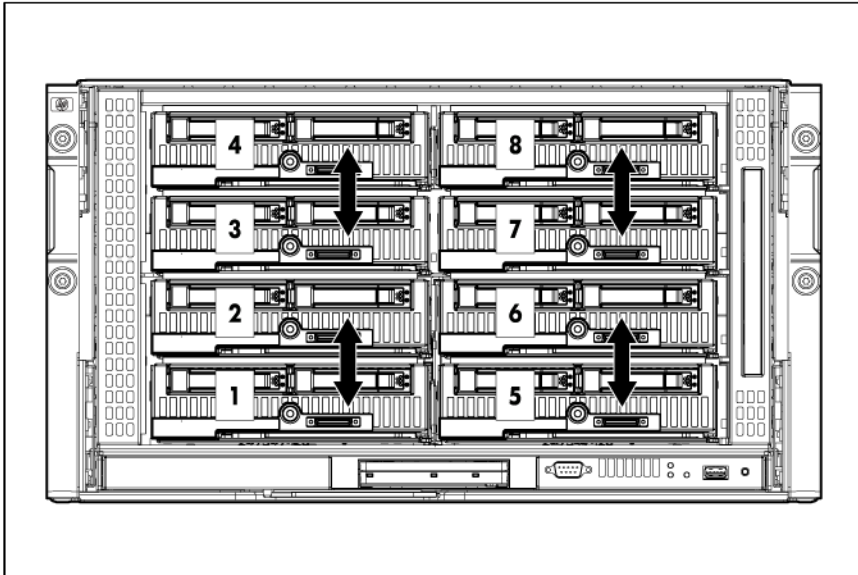
Connection	Port number	Connects to interconnect bay/port	Comments
Mezzanine slot 1—1x, 2x, or 4x cards	Server A: Mezz port 1 Server A: Mezz port 2 Server B: Mezz port 1 Server B: Mezz port 2	3/Port N 4/Port N 3/Port N+8 4/Port N+8	<ul style="list-style-type: none"> <li>• Two single-wide modules or one double-wide interconnect module</li> <li>• Only two ports will be connected.</li> <li>• Four port cards will only connect the first two ports.</li> </ul>

## Bay-to-bay crosslinks

For bay-to-bay communication, the enclosure midplane provides four-trace SerDes signals between adjacent bays.

### Device bay crosslinks

Device bay crosslinks are wired between adjacent horizontal device bay pairs.

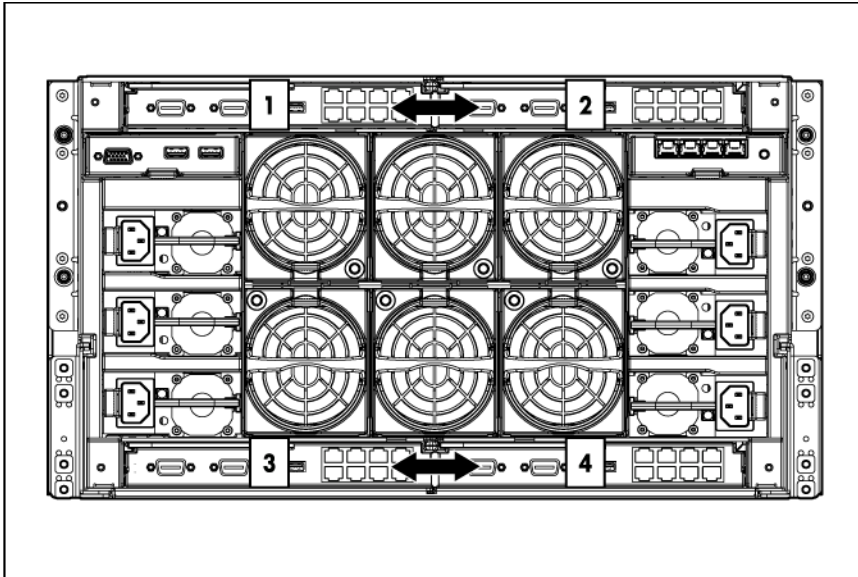


For half-height blades, these signals are used to connect a four-lane PCIe module to a partner blade such as a tape blade or a PCI expansion blade. For full-height blades, these signals are used to connect a PCIe module to a partner blade in the lower adjacent bay and require a PCIe pass-through mezzanine card installed in mezzanine connector 3. Onboard Administrator disables the device bay crosslinks in instances where they cannot be used, such as when two blades reside in adjacent device bays.



## Interconnect bay crosslinks

Interconnect bay crosslinks are wired between adjacent interconnect bay pairs.



You can enable these signals to provide module-to-module connections. Onboard Administrator disables the interconnect bay crosslinks in instances where the crosslinks cannot be used, such as when two different modules reside in adjacent horizontal interconnect bays.

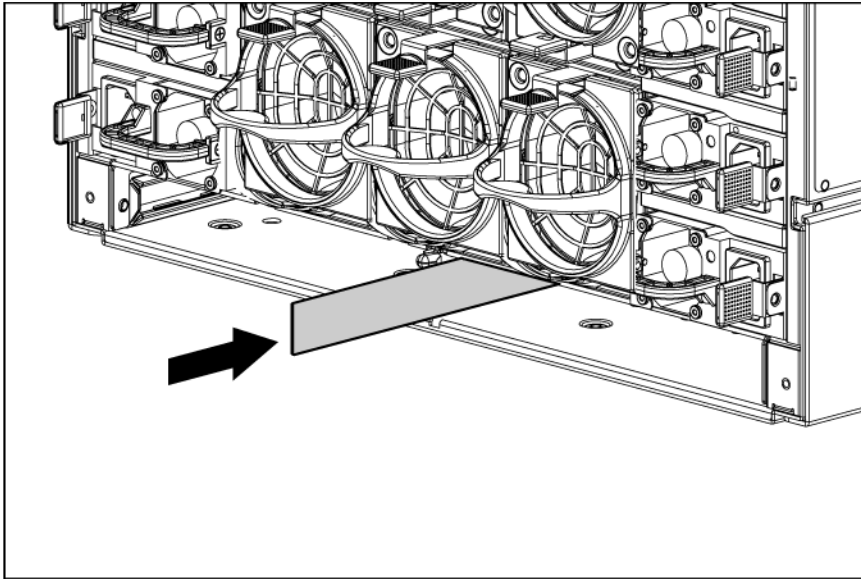
## Removing interconnect bay dividers

The enclosure ships with interconnect bay dividers installed. The interconnect bay dividers must be removed before installing double-wide interconnect modules. To remove an interconnect bay divider, press the release tab, and pull the interconnect bay divider out of the enclosure.

## Installing interconnect bay dividers

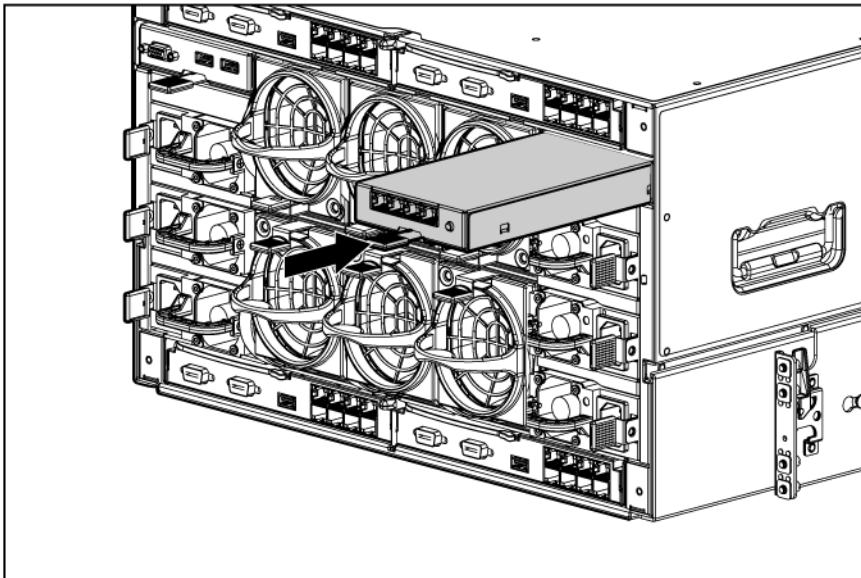
The enclosure ships with interconnect bay dividers installed. The interconnect bay dividers must be installed to use single-wide interconnect modules.

To reinstall an interconnect bay divider, align the interconnect bay divider with the rail, and slide the divider into the enclosure until it locks into place.



## Installing the enclosure/Onboard Administrator link module

1. Slide the enclosure/Onboard Administrator link module into the bay until the device locks into place.



## Connecting locally to a server blade with video and USB devices

Use the local I/O cable to connect a monitor and any of the following USB devices:

- USB hub
- USB keyboard
- USB mouse
- USB CD/DVD-ROM drive

- USB diskette drive

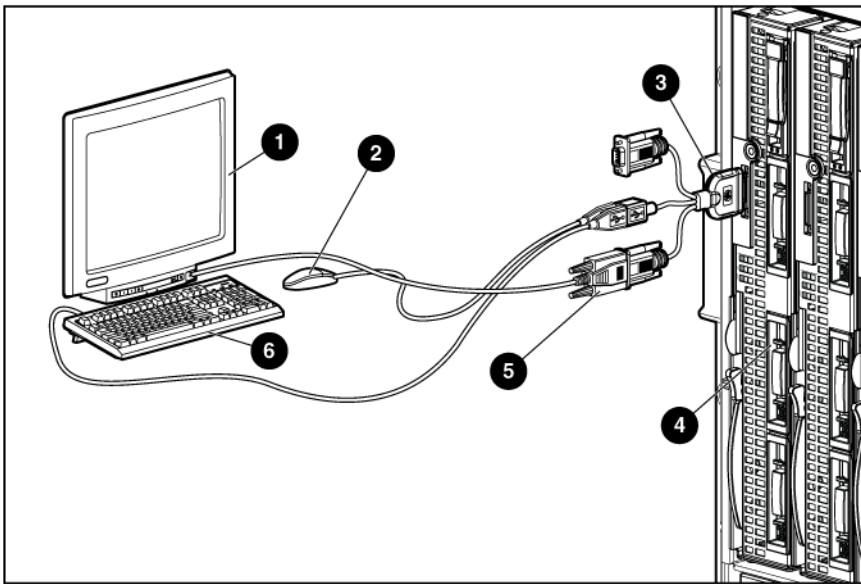
Numerous configurations are possible. This section offers two possible configurations.

## Accessing a server blade with local KVM

For this configuration, a USB hub is not necessary. To connect additional devices, use a USB hub.

**CAUTION:** Before disconnecting the SUV cable from the connector, always squeeze the release buttons on the sides of the connector. Failure to do so can result in damage to the equipment.

1. Connect the SUV cable to the blade.
2. Connect the video connector to a monitor.
3. Connect a USB mouse to one USB connector.
4. Connect a USB keyboard to the second USB connector.



Item	Description
1	Monitor
2	USB mouse
3	HP c-Class Blade SUV cable
4	Server blade
5	Video connector
6	USB keyboard

## Accessing local media devices

Use the following configuration when configuring a blade or loading software updates and patches from a USB CD/DVD-ROM or a USB diskette.

1. Connect the local I/O cable to the blade.
2. Connect the video connector to a monitor.
3. Connect a USB hub to one USB connector.
4. Connect the following to the USB hub:

- USB CD/DVD-ROM drive
- USB keyboard
- USB mouse
- USB diskette drive

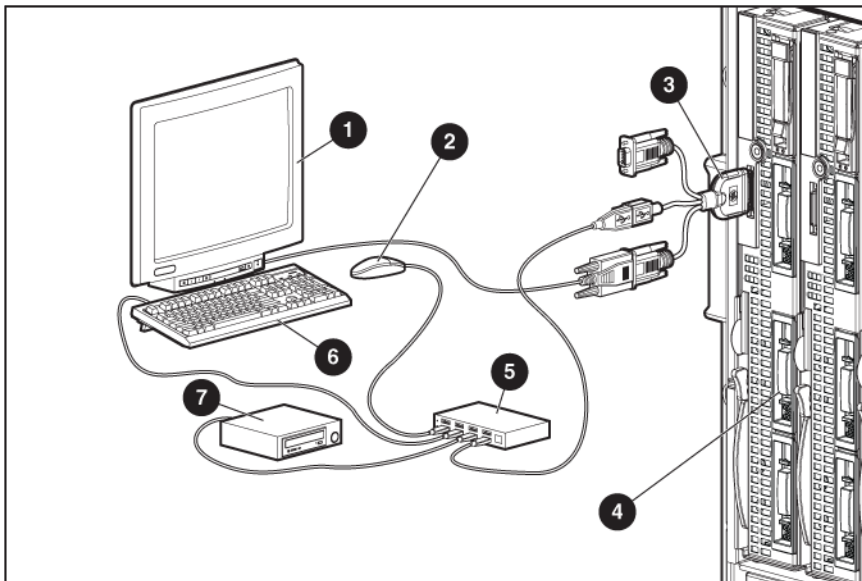
---

**NOTE:** Use a USB hub when connecting a USB diskette drive and/or USB CD-ROM drive to the blade. The USB hub provides additional connections.

---

**NOTE:** The Onboard Administrator with version 2.0 or greater firmware supports attaching a CD or DVD to any or all iLOs using the optional enclosure DVD drive or an external HP DVD drive for operating system installation or software updates. See "Enclosure Settings screen (on page 66)" in this guide for more information on using this feature

---



Item	Description
1	Monitor
2	USB mouse
3	Local I/O cable
4	Server blade
5	USB hub
6	USB keyboard
7	USB CD/DVD-ROM drive or diskette drive

# Cabling and powering up the enclosure

## Cabling the enclosure

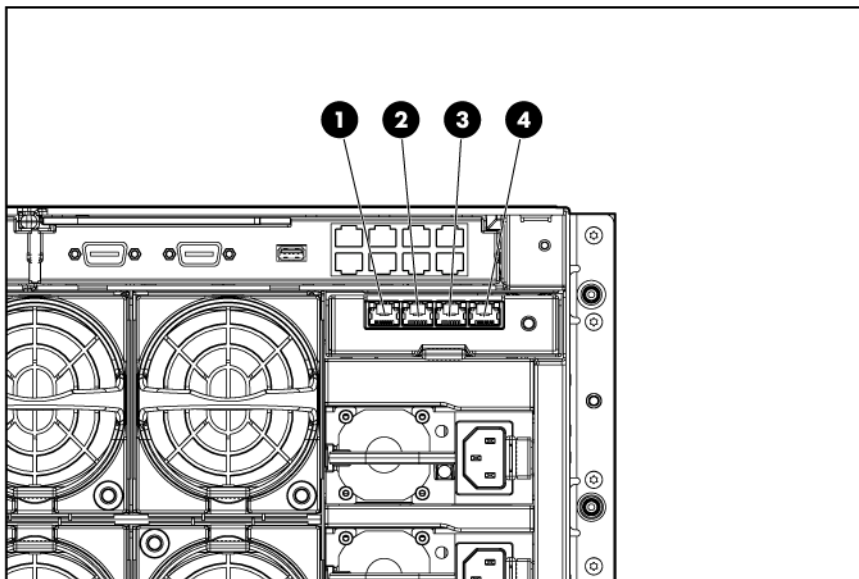
After all system hardware is installed, cable the components. See the *HP ProLiant BladeSystem c-Class Site Planning Guide* on the Documentation CD or the HP website (<http://www.hp.com>) for additional cabling and site planning requirements.

- ⚠ WARNING:** To reduce the risk of electric shock or injury due to high-current electrical energy, be sure that all power is completely disconnected at the source before beginning any power connections to the power bus bars or power bus box.
- ⚠ WARNING:** Be sure that all circuit breakers are locked in the off position before connecting any power components.

To cable the system:

1. Connect the Onboard Administrator modules.
2. Connect the network cables to the interconnect modules. See the documentation that ships with the interconnect modules, or the *HP ProLiant BladeSystem c-Class Site Planning Guide* on the Documentation CD or the HP website (<http://www.hp.com/go/bizsupport>).
3. Connect to the AC or DC power source in your facility and power up the enclosure.

## Cabling the HP BladeSystem Onboard Administrator



Item	Connector	Description
1	Enclosure link-down port	Connects to the enclosure link-up port on the enclosure beneath it with a CAT5 patch cable.

Item	Connector	Description
2	Enclosure link-up port and service port	Connects to the enclosure link-down port on the enclosure above it with a CAT5 patch cable. On a stand-alone enclosure or the top enclosure in a series of linked enclosures, the top enclosure link-up port can function as a service port.
3	OA1/iLO	Onboard Administrator 1000BaseT or 100BaseT RJ45 Ethernet connection for the HP c3000 Dual Onboard Administrator module. Use a CAT5 patch cable to connect to the management network. If the c3000 Dual Onboard Administrator module is the active Onboard Administrator, connect to this port to remotely communicate with the Onboard Administrator, all iLO ports on each blade, and supporting interconnect module management parts.
4	OA2/iLO	Onboard Administrator 1000BaseT or 100BaseT RJ45 Ethernet connection for the HP c3000 DDR2 Onboard Administrator module. Use a CAT5 patch cable to connect to the management network. If the c3000 DDR2 Onboard Administrator module is the active Onboard Administrator, connect to this port to remotely communicate with the Onboard Administrator, all iLO ports on each blade, and supporting interconnect module management parts.

## Enclosure link cabling

Two enclosure link ports are provided on the rear of the enclosure. Link multiple enclosures installed in one rack to:

- Allow any active Onboard Administrator module to access the linked enclosures.
- Use the enclosure link-up port on the top enclosure for temporary connection to a PC using the enclosure service port ("[Cabling a PC to the enclosure service port](#)" on page 55) to provide quick access to any Onboard Administrator module, iLO, or interconnect module with Ethernet management ability.
- Allow enclosure settings to be shared between enclosures, which simplifies deployment of multiple enclosures.

---

**NOTE:** The enclosure link ports are designed only to support c-Class enclosures in the same rack. The enclosure link-up port on the top enclosure is the service port, and the enclosure link-down port on the bottom linked enclosure is unused.

---

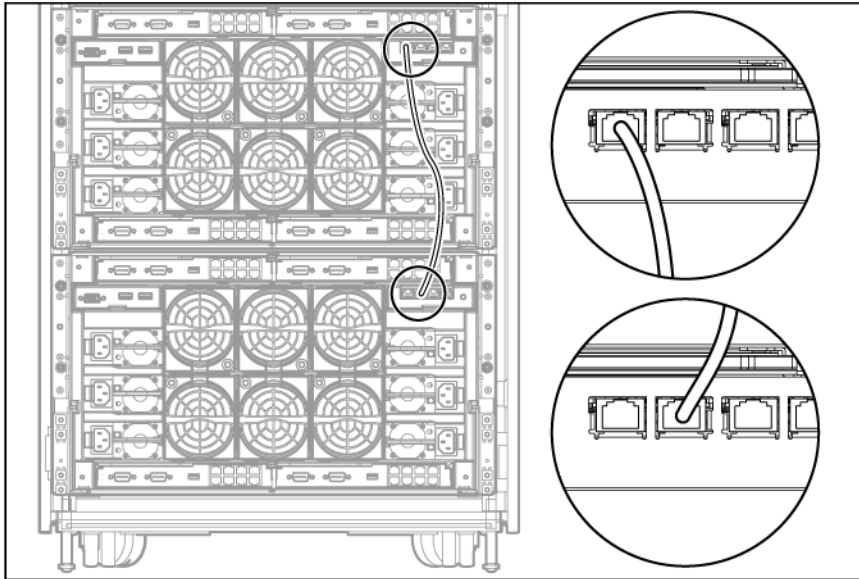
**NOTE:** If more c-Class enclosures are added to the rack at a later time, the open enclosure link-up port on the top enclosure can be used to link the new enclosure.

---

**NOTE:** The HP BladeSystem c-Class enclosure link ports are not compatible with the HP BladeSystem p-Class enclosure link ports.

---

To link the enclosures, use a standard Category 5 (CAT5) patch cable to connect the enclosure link-down port on the first enclosure to the enclosure link-up port on the second enclosure.



## Cabling a PC to the enclosure service port

A PC can be temporarily connected to the enclosure to access the Onboard Administrator modules, iLO, and interconnect modules with Ethernet management ability. When enclosures in the same rack are linked, connecting a PC to the service port enables you to access the Onboard Administrator modules, iLO, and interconnect modules for all linked c-Class enclosures in that rack.

---

**NOTE:** The service port is the enclosure link-up port on the **top** enclosure in a group of linked enclosures. If the enclosures are not linked together, each enclosure has a service port.

---

Only one PC at a time can be connected to a group of linked enclosures using the service port.

1. Use the Insight Display on the enclosure you are logging into to obtain the Service IP address of that active Onboard Administrator module on the Enclosure Info screen. The Service IP address can be found in the Enclosure Settings ("[Enclosure Settings screen](#)" on page 66) screen.
2. Connect the laptop or PC 10/100Mb Ethernet port configured for DHCP addressing to the available link-up port on the top enclosure in the rack using a standard CAT5 patch cable. A Windows PC automatically obtains an IP address. If no IP address is obtained, configure the PC Ethernet port for static addressing using the IP address 169.254.1.254 with a netmask of 255.255.0.0.
3. Open a web browser on the PC and enter the active Onboard Administrator module Service IP address found in the Enclosure Info screen in step 2.
4. Log into the Onboard Administrator. For more information on using Onboard Administrator, see the *HP BladeSystem Onboard Administrator User Guide*.

## Cabling the network to the enclosure

Cable the interconnect modules to the enclosure. See "[Mapping to interconnect ports \(on page 43\)](#)" and the supporting documentation that came with your interconnect modules for specific details on cabling the interconnect modules.

# Installing a PDU

The PDU can be installed in either a 1U or a 0U configuration. See the installation instructions that came with the PDU for specific details on installing the PDU into the rack.

---

**NOTE:** Total VA load of the attached enclosures should not exceed the VA capacity of the PDU. Do not exceed the rated current on circuit breakers.

---

To connect power to the PDU:

1. Connect the power cables to the power supplies.
2. Connect the AC power cables to the installed PDU.
3. Continue powering up the enclosure.

# Powering up the enclosure



---

**WARNING:** Be sure that all circuit breakers are locked in the off position before connecting any power components.

---

1. Connect the power cables to the power supplies.
2. Connect the power cables to the power source or to an installed PDU.
3. Turn on the AC circuit breakers that power the power cables installed in the enclosure.

When the enclosure powers up for the first time, several minutes might pass before all blades are initialized and recognized by the Onboard Administrator. Complete initialization depends on the number of blades configured in the enclosure. Blades are powered up incrementally, starting from device bay 1.

When first initialized, the Onboard Administrator programs the mezzanine cards on the blades during discovery. After the mezzanine cards are programmed, powering up the enclosure takes only 1 to 2 minutes.

The enclosure and the Insight Display now have power. Configure the enclosure using the Insight Display.



---

# Using the HP BladeSystem Insight Display

## Insight Display overview

The Insight Display enables the rack technician to configure the enclosure initially. It also provides information about the health and operation of the enclosure. See the *HP BladeSystem Onboard Administrator User Guide* for additional information.

The Insight Display background color varies with the condition of the enclosure health:

- **Blue**—The Insight Display background illuminates blue when the enclosure UID is active. The enclosure UID is automatically turned on when the enclosure is powered up for the first time and can be turned on by selecting **Turn Enclosure UID On** from the Main Menu or by pressing the enclosure UID button on the rear of the enclosure.

When the enclosure UID is on, the Insight Display flashes after 2 minutes of inactivity. Pressing any button on the Insight Display stops the flashing and reactivates the screen.

- **Green**—The Insight Display background illuminates green when no error or alert conditions exist and the enclosure is operating normally. After 2 minutes of inactivity, the Insight Display light turns off. Pressing any button on the Insight Display reactivates the screen.
- **Amber**—The Insight Display background illuminates amber when the Onboard Administrator detects an error or alert condition. Depending on the error, the component is displayed in red or yellow on the Health Summary screen.

After 2 minutes of inactivity, the Insight Display background flashes amber, indicating an error or alert condition exists. If the enclosure UID is on and an error or alert condition exists, the Insight Display illuminates blue because the enclosure UID takes priority over the alert. Pressing any button on the Insight Display reactivates the screen.

- **Dark (no power)**—The Insight Display has a 2-minute inactivity period. If no action is taken and no alert condition exists, the enclosure UID is off, or the chat mode has not been activated, the screen light turns off after 2 minutes. Pressing any button on the Insight Display reactivates the screen.

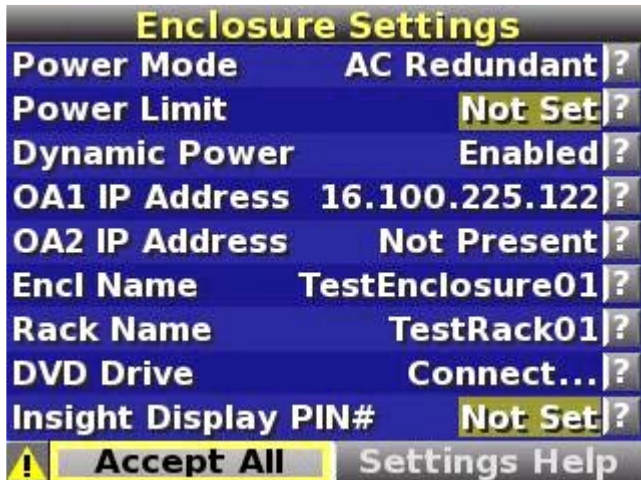
The Enclosure Health icon is located on the bottom left corner of every screen, indicating the enclosure health. To access the Health Summary screen from any Insight Display screen, navigate the cursor to the Enclosure Health icon and press **OK**.

For information on driver and firmware updates, see the HP website (<http://www.hp.com/go/blades/>).

## Installing and configuring the Insight Display


To identify the enclosure, the rear enclosure UID light and the background of the Insight Display are illuminated blue when the enclosure is powered on initially. When the enclosure is powered up for the first time, the Insight Display launches an installation wizard to guide you through the configuration process. At the beginning of the installation, the wizard automatically powers on the enclosure UID. After the installation is complete, the wizard powers off the enclosure. After configuring the enclosure, the Insight Display verifies that there are no installation or configuration errors. If errors are present, the Insight Display guides you through the process of correcting the errors.

The Enclosure Settings screen (on page 66) is the first screen to appear.



1. Review each setting on the Enclosure Settings screen (on page 66) for accuracy.
2. To change any value, move the cursor to the menu option to be edited and press the **OK** button.
3. Change the setting to the appropriate value, move the cursor to **Accept**, and press **OK** to return to the Enclosure Settings menu. Repeat this step until all options on the Enclosure Settings menu are accurate.

 **TIP:** Select the ? icon to access detailed help information about each setting or topic.

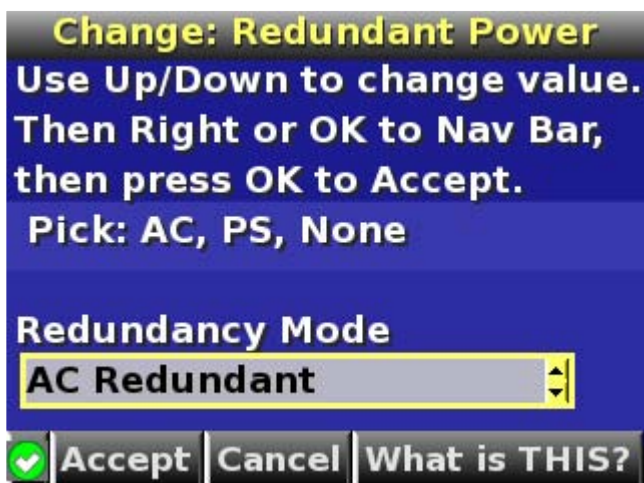
 **TIP:** Within any menu option, navigate the cursor to **What is This**, and press the **OK** button to view additional information about each setting, option, or alert.

4. When all settings on the Enclosure Settings menu are accurate, move the cursor to **Accept All**, and press **OK** to accept the current settings.

You can change the following options in the Enclosure Settings screen:

**Power Mode**—The default setting is AC Redundant. The following selections are valid:

- AC Redundant
- Power Supply Redundant
- None



**Power Limit**—The default setting is Not Set. You can change the limit by increments of 50 Watts.

**CAUTION:** When calculating the Power Limit Watts AC value, derate the circuit to 80% of the maximum to prevent tripping the circuit breaker (United States only).

**CAUTION:** If your facility cannot support the calculated peak Watts AC, set the Power Watts AC value to match the capability of your facility.

**Dynamic Power**—The default setting is Enabled. The following selections are valid:

- o **Enabled**—Some power supplies can be placed on standby to automatically increase overall enclosure power subsystem efficiency.
- o **Disabled**—All power supplies share the load. The power subsystem efficiency varies based on load.

**OA1 IP Addr**—The default setting is DHCP. If no IP address is received, the IP address is 0.0.0.0. The IP address, mask, and gateway are set within this option.

**OA2 IP Addr**—If this module is present, the default setting is DHCP. If no IP address is received, the IP address is 0.0.0.0. If only one Onboard Administrator module is installed, the screen will display "Not Present."

**Enclosure Name**—The default setting is a unique factory-assigned name. The accepted character values are 0–9, A–Z, a–z, -, \_ and .  is used to signal the end of the name.

**NOTE:** Do not use the  symbol in the middle of a text field. Entries in text fields will be truncated to the last character before the  symbol.

**TIP:** Select **Clear** from the navigation bar to quickly clear entries in text fields up to the  symbol.

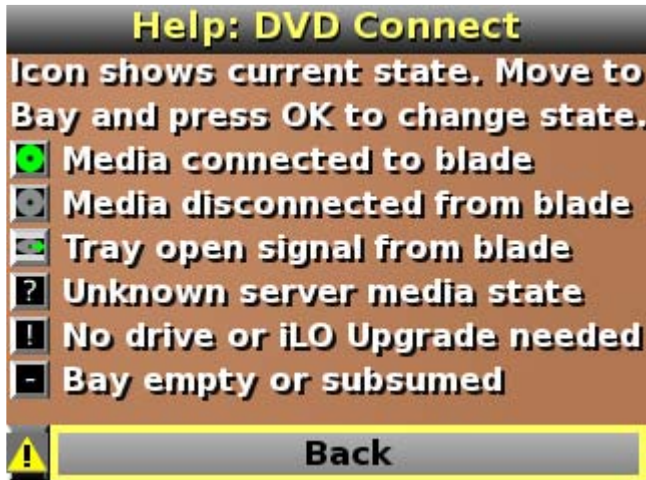
**Rack Name**—The default setting is UnnamedRack The accepted character values are 0–9, A–Z, a–z, -, \_ and .  is used to signal the end of the name.

**DVD Drive**—The default setting is Disconnected on all blades. The DVD Connect Status menu displays the current DVD connection status with an icon.

Select a DVD icon on the DVD Connect menu to navigate to the Blade DVD Connection menu.



Select the Help button to view the various DVD Connect icons and their meanings.

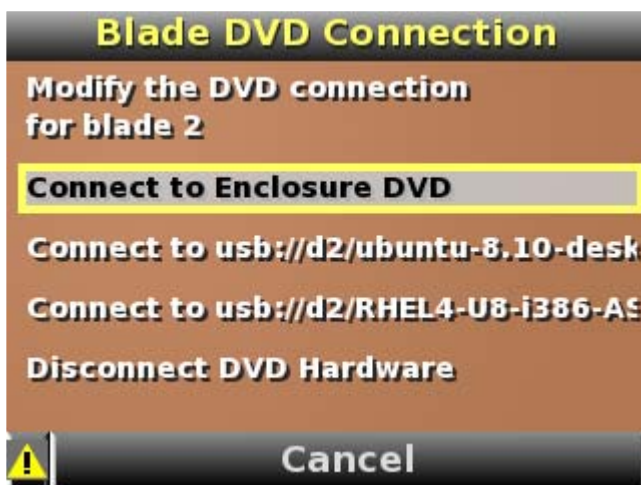


If the Insight Display PIN# is set, the DVD Drive menu is LCD PIN protected. You must enter the correct PIN at the LCD to view or change the Enclosure DVD settings.

To connect any blade to a CD, DVD, or ISO file, navigate to either an individual server DVD icon or the **All Blades** button and press **OK**.

The Blade DVD Connection menu indicates whether an Enclosure DVD or ISO file on a USB key is available to connect to the selected servers on the DVD Connect Status menu. If multiple ISO files are found on the USB key, there might be more than one page of options. Select the **Next Page** button to view the next page of connection options.

- **Connect to**—Select one of the currently available options and click **OK** to select that option and navigate to the **Connect: Blade DVD** menu to select whether to reboot the server with this media connected or leave the servers in the existing power state.
- **Disconnect DVD Hardware**—Disconnects the current media connection and returns to the **DVD Connect Status** menu.



The following selections are valid:

- **No Power Change**—Connects the selected media to the server only.

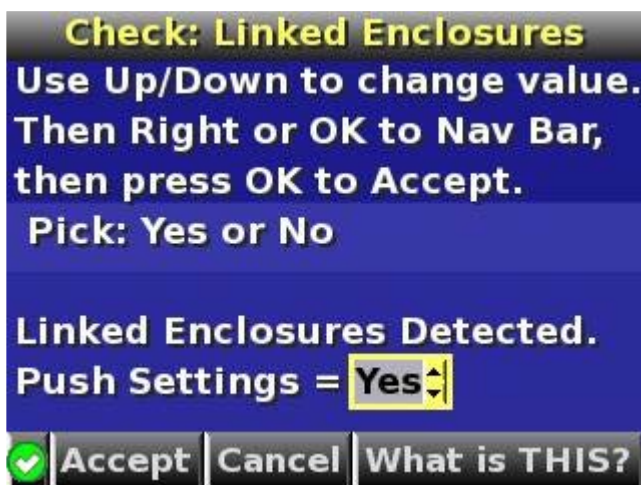
- **Connect and Reboot**—Connect the selected media to the selected servers and reboots selected servers.



5. Navigate to the **Accept All** button at the bottom of the Enclosure Settings screen, and press **OK** to accept all the settings and continue.  
If the Onboard Administrator module detects other enclosures, the message "Linked enclosures detected" appears.
6. Use the up and down arrow buttons to change **Push Settings** = to one of the following values:
  - **Yes**—Copy the configured power settings, rack name, and LCD Lockout PIN (if set) from the Enclosure Settings screen to the detected enclosures.
  - **No**—Continue configuring the current enclosure only. The Insight Display installation wizard must run on each detected enclosure. Select this option if each enclosure requires different power settings.

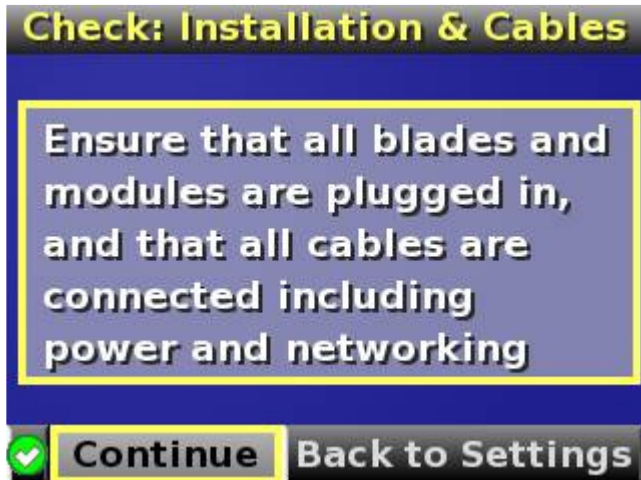


**IMPORTANT:** If your facility uses Static IP addressing for the Onboard Administrator modules, you must manually enter those IP addresses into the Insight Display for each Insight Display separately. You can enter those Onboard Administrator module IP addresses before you send the settings to adjacent enclosures. You can return to the Enclosure Settings menu after the Installation Wizard completes to change the Onboard Administrator module IP addresses, if necessary.



7. Move the cursor to **Accept**, and press the **OK** button.

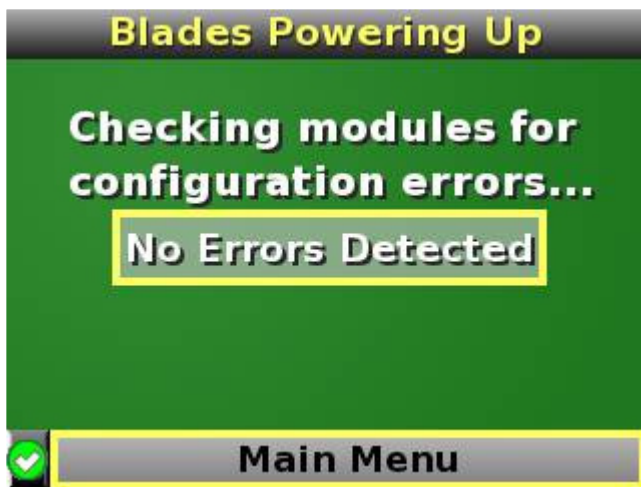
The installation wizard displays the Check: Installation and Cables screen.



8. Verify all components are installed and connected.
9. Select **Continue**, and press **OK** to begin checking for configuration and installation errors. When Continue is selected, the enclosure UID automatically powers off. If **Push Settings = Yes**:
  - o The enclosure settings are pushed to adjacent enclosures
  - o The installation wizards run on each adjacent enclosure
  - o The enclosure UID powers off on the adjacent enclosures

If no errors are detected, the rear enclosure UID powers off, and the Insight Display screen illuminates green.

10. Press **OK** to return to the Main Menu. Enclosure and blade hardware setup and configuration is complete.



**IMPORTANT:** If errors are detected, the Insight Display screen illuminates amber, and the Health Summary screen displays. For more information on troubleshooting configuration errors, see "Insight Display errors (on page 78)."

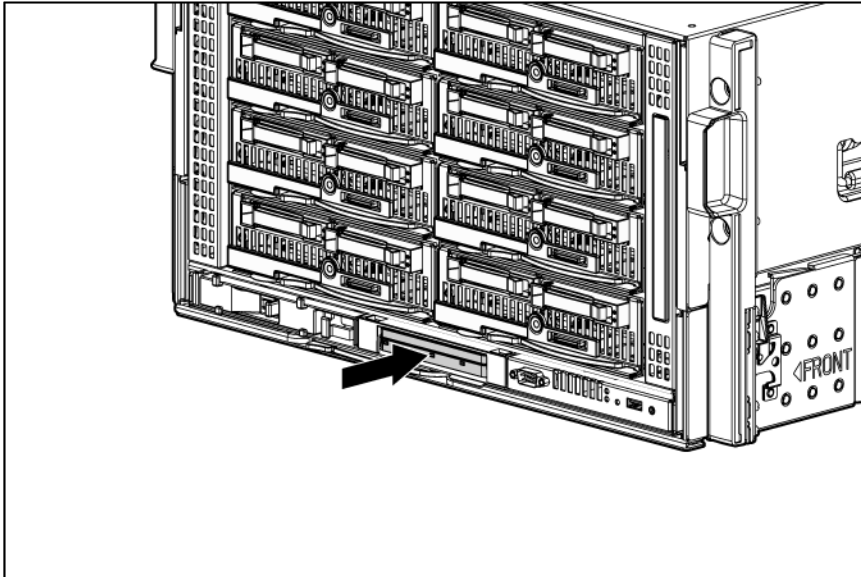
All configuration errors prevent the operation of the enclosure and should be corrected immediately.

11. Open a browser and connect to the active Onboard Administrator module using the Onboard Administrator IP address that was configured during the Insight Display installation wizard process.

12. Enter the user name and password from the tag supplied with the Onboard Administrator module to access the remote Onboard Administrator web interface and complete the Onboard Administrator first time installation wizard.

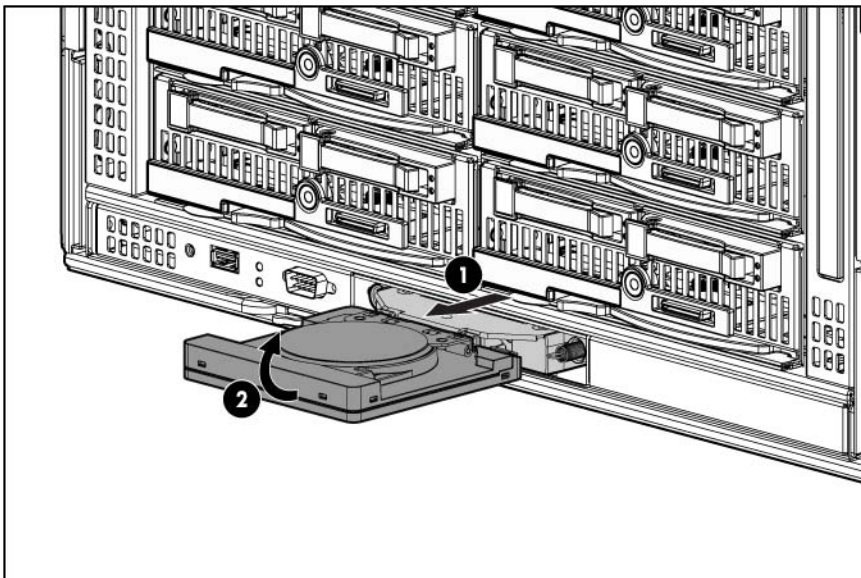
## Accessing the HP BladeSystem Insight Display

1. To access the Insight Display, push on the exposed end.

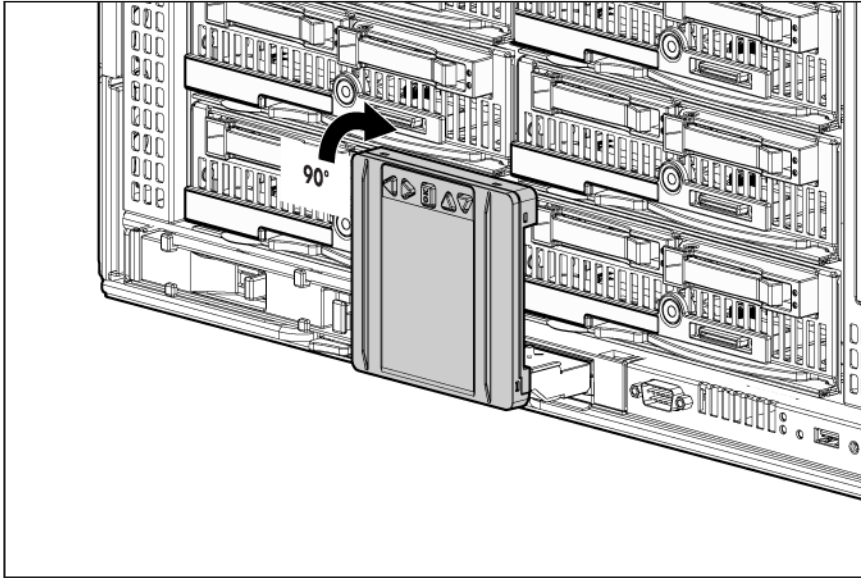


**IMPORTANT:** The length of HP ProLiant Gen8 server blades is longer than previous generations, and these server blades protrude slightly from the edge of the enclosure. The initial stopping point of the Insight Display allows for the screen to be flush with previous generation servers. There is an additional stopping point that allows you to pull the Insight Display out to accommodate the longer Gen8 server blades.

2. Pull the Insight Display out of the chassis to lock it into place, and then tilt it up.



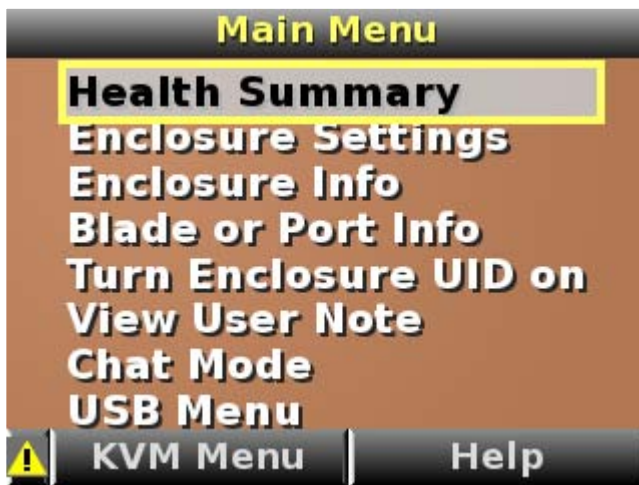
3. Rotate the Insight Display 90 degrees to view the display.



## Navigating the Insight Display

Navigate through the menus and selections by using the arrow buttons on the Insight Display panel. Use the arrow buttons to move the selection box to a menu item, and then press **OK** to go to selected screen.

The Main Menu appears:



The Main Menu of the Insight Display has the following menu options:

- Health Summary ("Health Summary screen" on page 65)
- Enclosure Settings
- Enclosure Info ("Enclosure Info screen" on page 67)
- Blade or Port Info ("Blade or Port Info screen" on page 68)
- Turn Enclosure UID on/off ("Turn Enclosure UID On/Off screen" on page 69)
- View User Note ("View User Note screen" on page 70)



- Chat Mode ("[Chat Mode screen](#)" on page [70](#))
- USB Menu ("[USB Menu screen](#)" on page [71](#))—This option is available on Onboard Administrator version 2.30 and later.
- KVM Menu ("[KVM Menu screen](#)" on page [72](#))—This option is available if the enclosure supports KVM.



**TIP:** Within any menu option, navigate the cursor to **What is This**, and press the **OK** button to view additional information about each setting, option, or alert.

---

The navigation bar contains options to:

- Navigate forward and backward through alert screens
- Return to the main menu
- Accept changes to current settings
- Cancel changes to current settings
- Access the Health Summary screen from any screen by selecting the Health Summary icon on the navigation bar

## Health Summary screen

The Health Summary screen displays the current condition of the enclosure. The Health Summary screen can be accessed by:

- Selecting **Health Summary** from the main menu
- Selecting the **Health Summary icon** from any Insight Display screen

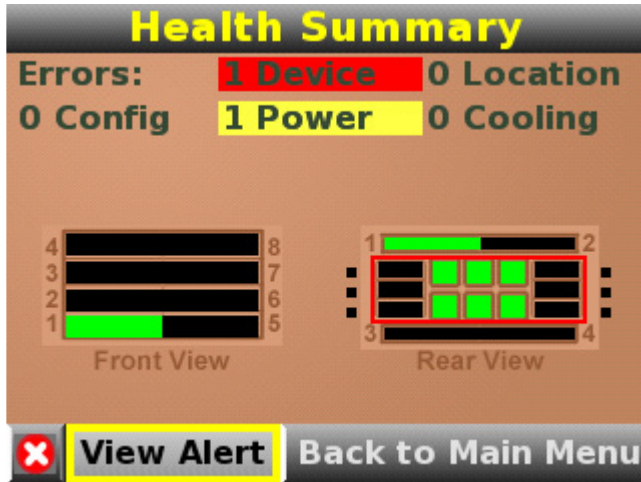
When an error or alert condition is detected, the Health Summary screen displays the total number of error conditions and the error locations.

Select **Next Alert** from the navigation bar, and press the **OK** button to view each individual error condition. The Insight Display displays each error condition in the order of severity. Critical alerts display first (if one exists), followed by caution alerts.

When the enclosure is operating normally, the Health Summary screen displays green. The bright green rectangles are components that are installed and on. A light green rectangle represents a component that is installed but powered off with no errors.

The only option active on the navigation bar is Back to Main Menu. Select **Back to Main Menu**, and press the **OK** button to return to the main menu.

If there is a configuration error between the blade and the interconnect module, the error will be highlighted in yellow.



Select **View Alert** and press the OK button to display the errors.

Select **Details** to view the details of the error.

## Enclosure Settings screen

The Enclosure Settings screen displays the following setting information about the enclosure:

- Power Mode setting
- Power Limit setting
- Power Savings mode setting
- Active and Standby OA IP addresses
- Enclosure Name
- Rack Name
- DVD Drive
- Insight Display PIN#

---

**NOTE:** The DVD Drive setting can attach or detach a CD or DVD loaded in the optional c3000 enclosure DVD drive to any or all blades in the enclosure. This feature can be used to install an operating system or software on the blade(s). If the optional DVD drive is not present, an external HP USB DVD drive can be used with this feature instead.

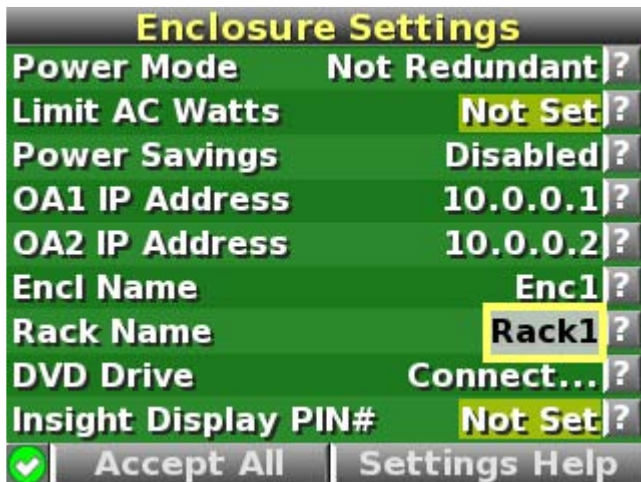
---



**TIP:** Set a PIN to protect the enclosure settings from changes.

---

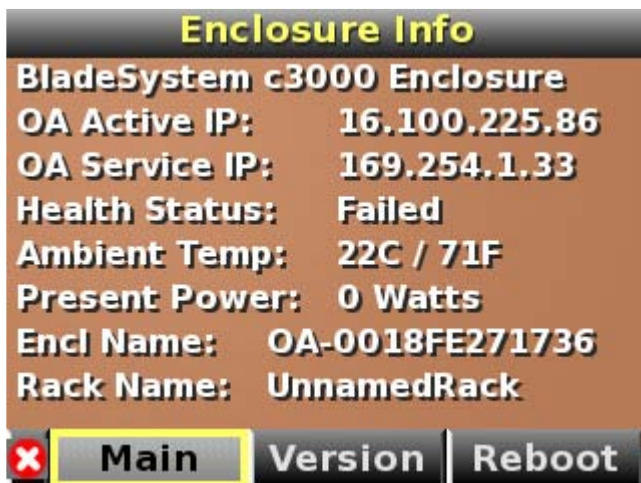
Navigate the cursor to a setting or to the ?, and press OK to change the setting or get help on that setting.



## Enclosure Info screen

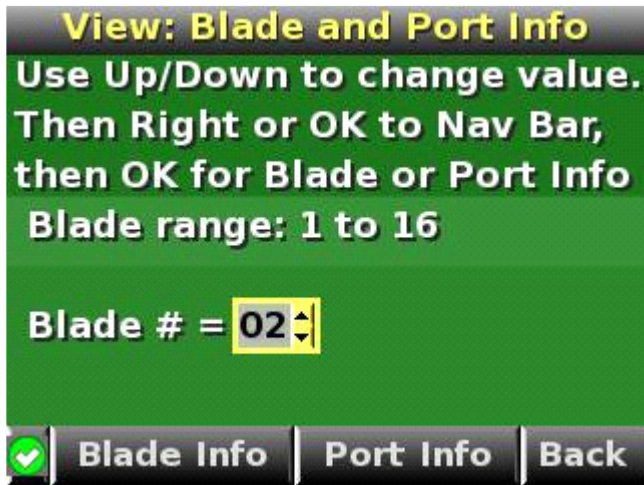
The Enclosure Info screen displays information about the enclosure, including:

- Active OA IP address
- Active OA Service IP address
- Current health status of the enclosure
- Current enclosure ambient temperature
- Current AC input power to the enclosure
- Enclosure name
- Rack name

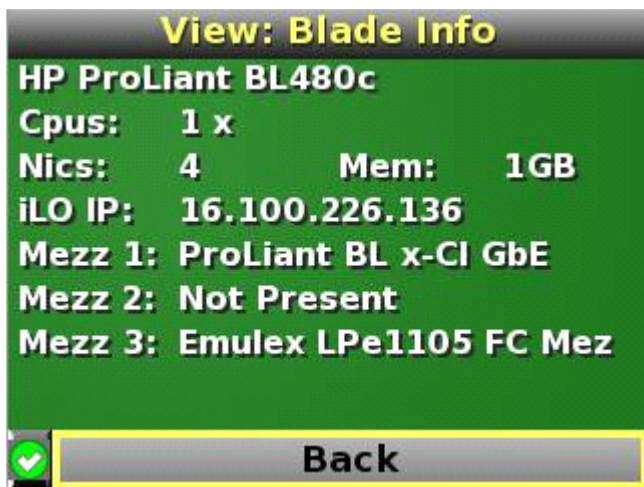


## Blade or Port Info screen

The Blade or Port Info screen displays information about a specific blade. On the first screen, select the blade number, then press the OK button. Select **Blade Info** or **Port Info**, and press the OK button.

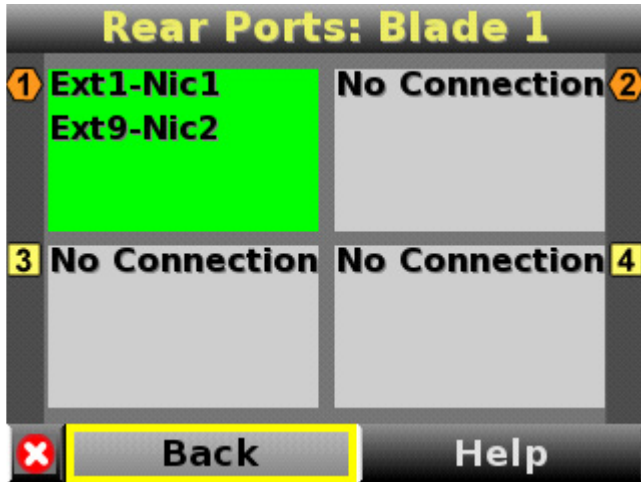


To view information about the blade, select **Blade Info** and press the OK button.



To view the ports used by a specific blade, select **Port Info** and press the OK button.

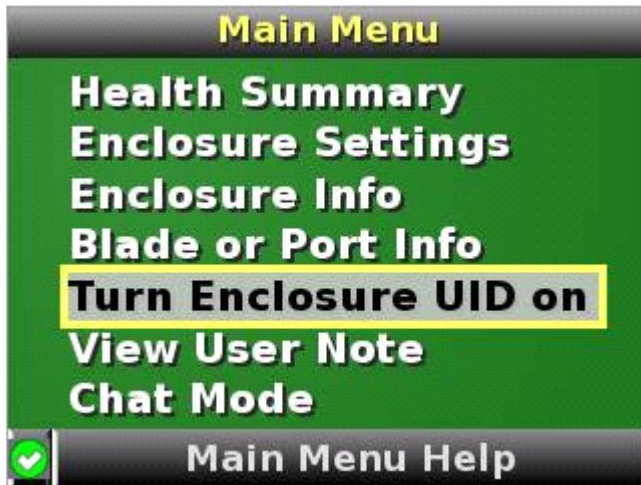
On the full-height blade shown below, there are two embedded NICs. The other interconnect bays are empty. The two embedded NICs are connected to particular port numbers on the interconnect modules.



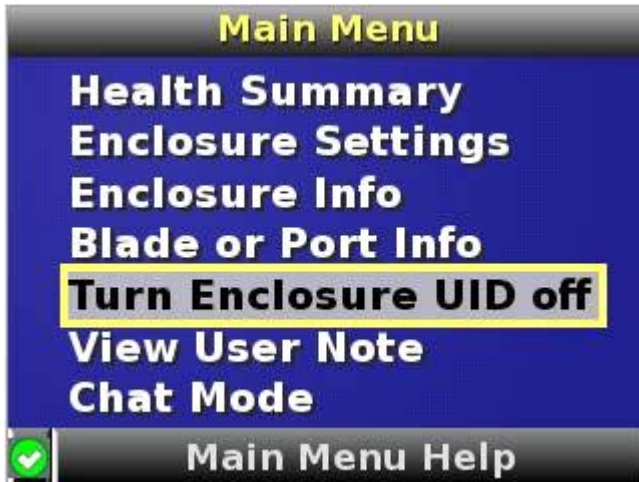
## Turn Enclosure UID On/Off screen

The main menu option displays "Turn Enclosure UID Off" when the enclosure UID is active, and displays "Turn Enclosure UID on" when the enclosure UID is off.

Selecting **Turn Enclosure UID On** from the main menu turns on the rear enclosure UID LED and changes the color of the Insight Display screen to blue.

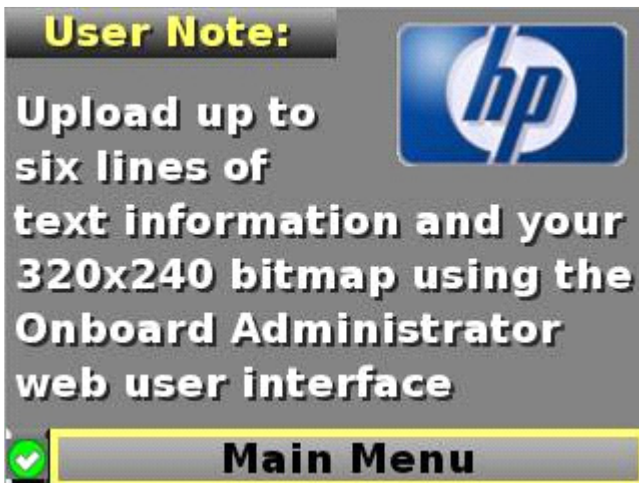


Selecting **Turn Enclosure UID Off** from the main menu turns off the rear enclosure UID LED and changes the color of the Insight Display screen to the current condition ("[Insight Display overview](#)" on page 57).



## View User Note screen

The View User Note screen displays six lines of text, each containing a maximum of 16 characters. Use this screen to display helpful information such as contact phone numbers or other important information. Change this screen using the remote Onboard Administrator user web interface. Both the background bitmap and the text can be changed.



## Chat Mode screen

The Chat Mode screen is used by the remote administrator who uses the web interface to send a message to an enclosure Insight Display. The technician uses the Insight Display buttons to select from a set of prepared responses, or dials in a custom response message on the ? line. To send a response back to the Administrator, navigate the cursor to **Send**, then press the **OK** button.

The Chat Mode screen has top priority in the Insight Display and will remain on the screen until **Send** is selected. The technician can leave this chat screen temporarily and use the other Insight Display screens, then return to the Chat Mode screen from the Main Menu to send a response. After the response, the Chat Mode screen is cleared. Both the A and ? responses are then displayed to the remote Administrator on the web interface for LCD Chat.



## USB Menu screen

Onboard Administrator firmware version 2.30 and later offers added support for the following USB key options:

- Updating OA firmware
- Restoring OA configuration
- Saving OA Configuration

Onboard Administrator supports USB keys formatted for FAT32 or EXT2 file systems. You can use either the port located on the active Onboard Administrator module on the front of the enclosure or a USB port on the optional KVM module.

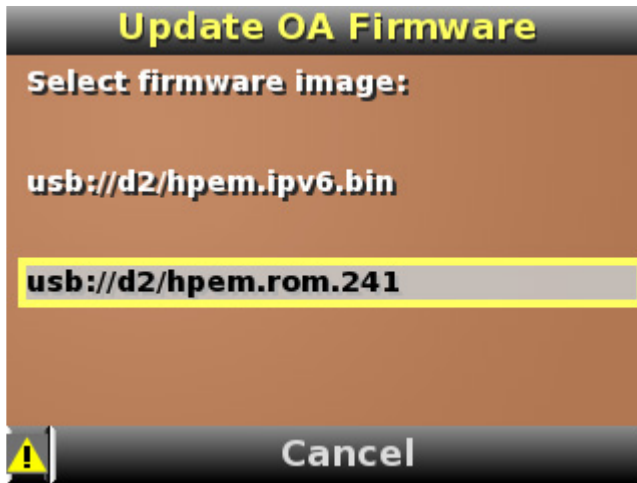
To access the USB Menu:

1. Insert a USB key into Onboard Administrator.
2. From the Main Menu, select **USB Menu**.



The following selections are available on the USB Menu:

- **Update OA Firmware**—Select this option to upgrade the firmware. The USB key must contain an Onboard Administrator firmware image with a BIN file extension.



- **Restore Configuration**—Select this option to upload an enclosure configuration file with .CFG extension.

The Restore OA Configuration menu lists all the files on the attached USB key with .CFG file extensions. Select the desired configuration file and press **OK** to apply that configuration to the enclosure.

Because the configuration file can modify settings like the Onboard Administrator IP address, be sure to only apply the same file to multiple enclosures if the settings are generic, such as SNMP or LDAP server addresses. Do not apply the same file to multiple enclosures if it contains Onboard Administrator IP address configuration commands or EBIPA IP address commands.



- **Save Configuration**—Select this option to save the enclosure configuration to a file on the USB key.

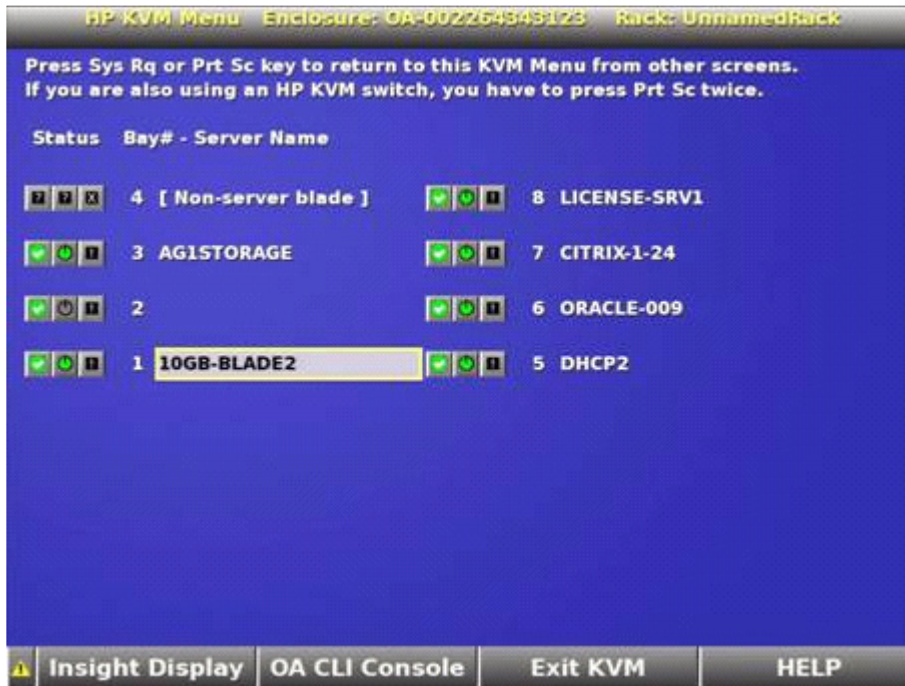
## KVM Menu screen

If the optional c3000 KVM module is installed, the Insight Display Main Menu displays a **KVM Menu** button. Select this button to deactivate the Insight Display and activate the VGA connector on the KVM module. Only one of the two interfaces can be active at a time.

1. Access the KVM Menu by choosing one of the following options:



- From a USB keyboard connected to the KVM module, press **PrtSc** or **SysReq** on the USB keyboard.
  - If the KVM module is connected to an HP rack KVM switch using a VGA or USB adapter, press **PrtSc** to activate the HP rack KVM selection menu.
2. Select the HP rack KVM port connected to the enclosure and press **Enter** to select that Enclosure KVM Menu. If the screen is blank, touch any key on the keyboard to activate the KVM Menu and deactivate the enclosure Insight Display.

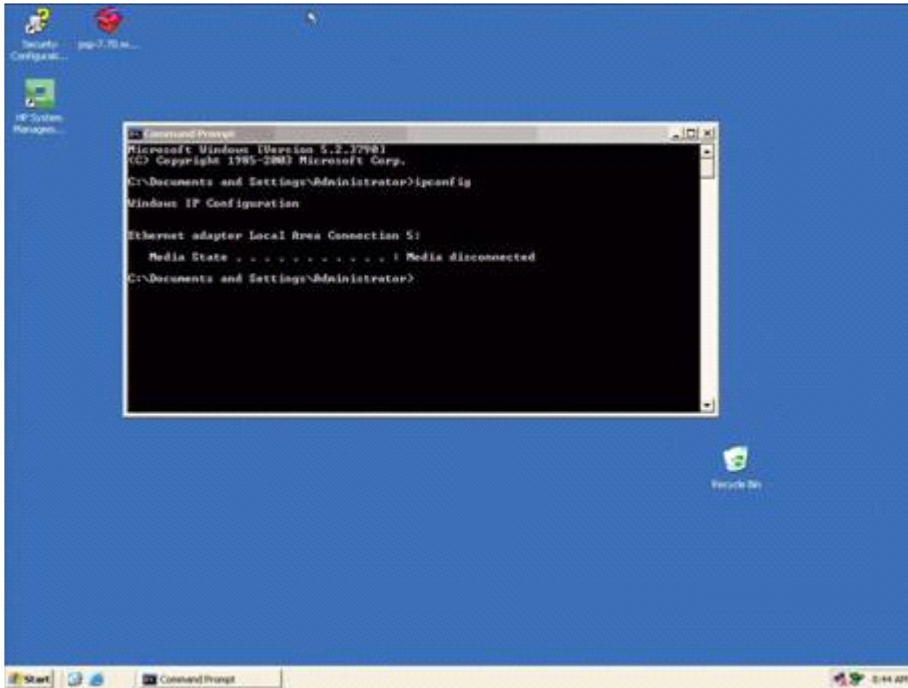


3. Press the **PrtSc** key on the USB keyboard to return from a server console, Insight Display, or the OA CLI display to the KVM Menu.

If the LCD PIN is set, all the server power and server DVD controls are LCD PIN protected. Server Console and OA CLI are protected by user logins.

The KVM Menu contains the following options:

- **Server Console**—Select a server console by selecting the server name. The selected server console is full screen graphics or text based on the current environment on that server. All KVM keyboard keystrokes except **PrtSc** are sent to the server, along with the KVM mouse. Press **PrtSc** to exit the server console and return to the KVM Menu.



- **Server Power**—Select this power icon for a server to change the server power state.
- **Server DVD**—Select this DVD icon for a server to change the enclosure DVD connection for this server.
- **Server Health**—Select this Health icon to display the current health state for that server.
- **Insight Display**—Select the Insight Display button to access Insight Display screens from the KVM Menu.

- **OA CLI**—Select the OA CLI button to launch the OA CLI. Log in to the Onboard Administrator using the KVM keyboard. This launches a full screen text console to the active OA CLI. Press **PrtSc** to exit the OA CLI console and return to the KVM Menu.

```

HP BladeSystem Onboard Administrator
(C) Copyright 2006-2008 Hewlett-Packard Development Company, L.P.

Type 'HELP' to display a list of valid commands.
Type 'HELP <command>' to display detailed information about a specific command.
Type 'HELP HELP' to display more detailed information about the help system.

OA-002264343171> show oa network

Onboard Administrator #2 Network Information:
  Name: OA-002264343171
  DHCP: Enabled - Dynamic DNS
  IP Address: 16.84.189.156
  Netmask: 255.255.252.0
  Gateway Address: 16.84.188.1
  Primary DNS: 16.110.135.51
  Secondary DNS: 16.110.135.52
  MAC Address: 00:22:64:34:31:71
  Link Settings: Auto-Negotiation, 100 Mbit, Full Duplex
  Link Status: Active
  Enclosure IP Mode: Disabled

OA-002264343171> _

```

- **Help**—Select **Help** to view the KVM help information.

**HP c-Class Enclosure KVM Help**

KVM Help	Status Help
<ul style="list-style-type: none"> <li>- Select a server console by using KVM keyboard cursor arrow keys to highlight a server, then press KVM keyboard Enter key to select.</li> <li>- Use keyboard Print Screen key to:               <ul style="list-style-type: none"> <li>- Switch to KVM Selection Menu from any other KVM screen.</li> </ul> </li> <li>- Highlight and select Insight Display to view/interact on KVM screen.</li> <li>- Highlight and select Enclosure OA CLI console to view/interact on KVM screen.</li> <li>- Highlight and select Exit KVM to exit KVM mode.</li> </ul>	<ul style="list-style-type: none"> <li> The first icon to the left of a</li> <li> server is the server health icon.</li> <li> This icon is for information only.</li> <li> </li> <li>Power icon can be changed.</li> <li> - This icon shows the current</li> <li> state of power for that server.</li> <li> </li> <li>DVD icon can be changed.</li> <li> - DVD connected to this server</li> <li> - DVD not connected</li> <li> - DVD connected - OS eject</li> <li> - No DVD drive or no DVD disc or iLO upgrade needed</li> <li> - Unknown media state</li> <li> </li> <li>Power and DVD are protected by LCD/KVM PIN# if set</li> </ul>

**Return to KVM Menu**

---

# Troubleshooting

## Troubleshooting resources

The *HP BladeSystem c-Class Enclosure Troubleshooting Guide* provides procedures and solutions for troubleshooting HP BladeSystem c-Class enclosures. This guide explains how to use the Insight Display to troubleshoot enclosures, and it includes a flowchart to help you navigate the troubleshooting process. To view the guide, see the HP website ([http://www.hp.com/support/BladeSystem\\_Enclosure\\_TSG\\_en](http://www.hp.com/support/BladeSystem_Enclosure_TSG_en)).

## Important safety information

Familiarize yourself with the safety information in the following sections before troubleshooting the server.

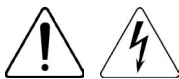


### Important safety information

Before servicing this product, read the *Important Safety Information* document provided with the server.

## Symbols on equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

**WARNING:** To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.



This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

**WARNING:** To reduce the risk of injury from electric shock hazards, do not open this enclosure.



This symbol on an RJ-45 receptacle indicates a network interface connection.

**WARNING:** To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



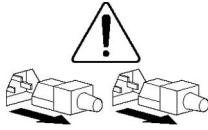
This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

**WARNING:** To reduce the risk of injury from a hot component, allow the surface to cool before touching.



This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

**WARNING:** To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.



These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

**WARNING:** To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.

## Warnings and cautions



**WARNING:** Only authorized technicians trained by HP should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.



**WARNING:** To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling feet are extended to the floor.
- The full weight of the rack rests on the leveling feet.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.



**WARNING:** To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.



**WARNING:** To reduce the risk of personal injury or damage to the equipment:

- Observe local occupation health and safety requirements and guidelines for manual handling.
- Obtain adequate assistance to lift and stabilize the chassis during installation or removal.
- The server is unstable when not fastened to the rails.
- When mounting the server in a rack, remove the power supplies and any other removable module to reduce the overall weight of the product.



**CAUTION:** To properly ventilate the system, you must provide at least 7.6 cm (3.0 in) of clearance at the front and back of the server.



---

**CAUTION:** The server is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

---

## Insight Display errors

The enclosure installation is successful when all errors are corrected. The errors in the following sections are specific to installation and initial configuration of the enclosure. To clear errors that occur after initial powerup and configuration, see the *HP BladeSystem Onboard Administrator User Guide* for information.

The following types of errors can occur when installing and configuring the enclosure:

- Power errors (on page 78)
- Cooling errors (on page 78)
- Location errors (on page 79)
- Configuration errors (on page 79)
- Device failure errors (on page 79)

When the enclosure UID LED is off, the Insight Display is illuminated amber when any error condition exists. The navigation bar displays the following selections when an error condition exists:

- Health summary icon—Displays the Health Summary screen.
- Fix THIS—Suggests corrective action to clear the current error.
- Next Alert—Displays the next alert, or if none exist, displays the Health Summary screen.
- Previous Alert—Displays the previous alert.

## Power errors

Power errors can occur because of insufficient power to bring up an enclosure. Power errors can occur on blades, storage blades, or interconnect modules.

To correct a power error:

1. Use the arrow buttons to navigate to **Fix This**, and press **OK**.
2. Review and complete the corrective action suggested by the Insight Display. In most cases, you must either add power supplies to the enclosure or remove the indicated components.

## Cooling errors

Cooling errors occur when too few fans are installed in the enclosure or when the existing fans are not installed in an effective configuration. Cooling errors can occur on blades, storage blades, or interconnect modules.

To correct a cooling error:

1. Use the arrow buttons to navigate to **Fix This**, and press **OK**.
2. Review and complete the corrective action suggested by the Insight Display. In most cases, you must either add fans to the enclosure, correct the fan configuration, or remove the indicated components.

## Location errors

Location (installation) errors occur when the component is not installed in the appropriate bay. Location errors can occur on blades, storage blades, power supplies, and fans.

To correct a location error:

1. Use the arrow buttons to navigate to **Fix This**, and press **OK**.
2. Review and complete the corrective action suggested by the Insight Display. Remove the indicated component, and install it into the correct bay. The Insight Display will indicate the correct bay number.

## Configuration errors

Configuration errors can occur if the interconnect modules are installed in the wrong bays or if mezzanine cards are installed in the wrong connectors in the blade. Configuration errors can occur on blades and interconnect modules.

To correct a configuration error:

1. Use the arrow buttons to navigate to **Fix This**, and press **OK**.
2. Review and complete the corrective action suggested by the Insight Display. Depending on the error received, do one of the following:
  - Remove the indicated interconnect module and install it into the correct bay (the Insight Display indicates the correct bay).
  - Remove the blade to correct the mezzanine card installation (the Insight Display will indicate the correct bay). For information on installing the mezzanine card, see the server-specific user guide on the Documentation CD.

## Device failure errors

Device failure errors occur when a component has failed. Device failure errors can occur on all components, including:

- Server blades
- Storage blades
- Power supplies
- Interconnect modules
- Onboard Administrator modules
- Fans
- AC power inputs

To correct a device failure error:

1. Use the arrow buttons to navigate to **Fix This**, and press **OK**.
2. Review and complete the corrective action suggested by the Insight Display. In most cases, you must remove the failed component to clear the error.
3. Replace the failed component with a spare, if applicable.

---

**NOTE:** If the device failure error is an AC power input failure error, you must have the failed AC input repaired to clear the error.

---

---

# Support and other resources

## Before you contact HP

Be sure to have the following information available before you call HP:

- Active Health System log (HP ProLiant Gen8 or later products)  
Download and have available an Active Health System log for 3 days before the failure was detected. For more information, see the *HP iLO 4 User Guide* or *HP Intelligent Provisioning User Guide* on the HP website (<http://www.hp.com/go/ilo/docs>).
- Onboard Administrator SHOW ALL report (for HP BladeSystem products only)  
For more information on obtaining the Onboard Administrator SHOW ALL report, see the HP website (<http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?lang=en&cc=us&objectID=c02843807>).
- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

## HP contact information

For United States and worldwide contact information, see the Contact HP website (<http://www.hp.com/go/assistance>).

In the United States:

- To contact HP by phone, call 1-800-334-5144. For continuous quality improvement, calls may be recorded or monitored.
- If you have purchased a Care Pack (service upgrade), see the Support & Drivers website (<http://www8.hp.com/us/en/support-drivers.html>). If the problem cannot be resolved at the website, call 1-800-633-3600. For more information about Care Packs, see the HP website (<http://pro-aq-sama.houston.hp.com/services/cache/10950-0-0-225-121.html>).

## Customer Self Repair

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period HP (or HP service



providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that HP replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

**NOTE:** Some HP parts are not designed for customer self repair. In order to satisfy the customer warranty, HP requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the telephone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

For more information about HP's Customer Self Repair program, contact your local service provider. For the North American program, refer to the HP website (<http://www.hp.com/go/selfrepair>).

## Réparation par le client (CSR)

Les produits HP comportent de nombreuses pièces CSR (Customer Self Repair = réparation par le client) afin de minimiser les délais de réparation et faciliter le remplacement des pièces défectueuses. Si pendant la période de diagnostic, HP (ou ses partenaires ou mainteneurs agréés) détermine que la réparation peut être effectuée à l'aide d'une pièce CSR, HP vous l'envoie directement. Il existe deux catégories de pièces CSR:

Obligatoire - Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à HP de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

Facultatif - Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à HP de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.

**REMARQUE:** Certaines pièces HP ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, HP exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention "Non" dans le Catalogue illustré.

Les pièces CSR sont livrées le jour ouvré suivant, dans la limite des stocks disponibles et selon votre situation géographique. Si votre situation géographique le permet et que vous demandez une livraison le jour même ou dans les 4 heures, celle-ci vous sera facturée. Pour bénéficier d'une assistance téléphonique, appelez le Centre d'assistance technique HP. Dans les documents envoyés avec la pièce de rechange CSR, HP précise s'il est nécessaire de lui retourner la pièce défectueuse. Si c'est le cas, vous devez le faire dans le délai indiqué, généralement cinq (5) jours ouvrés. La pièce et sa documentation doivent être retournées dans l'emballage fourni. Si vous ne retournez pas la pièce défectueuse, HP se réserve le droit de vous facturer les coûts de remplacement. Dans le cas d'une pièce CSR, HP supporte l'ensemble des frais d'expédition et de retour, et détermine la société de courses ou le transporteur à utiliser.

Pour plus d'informations sur le programme CSR de HP, contactez votre Mainteneur Agréé local. Pour plus d'informations sur ce programme en Amérique du Nord, consultez le site Web HP (<http://www.hp.com/go/selfrepair>).

## Riparazione da parte del cliente

Per abbreviare i tempi di riparazione e garantire una maggiore flessibilità nella sostituzione di parti difettose, i prodotti HP sono realizzati con numerosi componenti che possono essere riparati direttamente dal cliente (CSR, Customer Self Repair). Se in fase di diagnostica HP (o un centro di servizi o di assistenza HP) identifica il guasto come riparabile mediante un ricambio CSR, HP lo spedisce direttamente al cliente per la sostituzione. Vi sono due categorie di parti CSR:

**Obbligatorie** – Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad HP, deve sostenere le spese di spedizione e di manodopera per il servizio.

**Opzionali** – Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad HP, potrebbe dover sostenere spese aggiuntive a seconda del tipo di garanzia previsto per il prodotto.

**NOTA:** alcuni componenti HP non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, HP richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un "No" nel Catalogo illustrato dei componenti.

In base alla disponibilità e alla località geografica, le parti CSR vengono spedite con consegna entro il giorno lavorativo seguente. La consegna nel giorno stesso o entro quattro ore è offerta con un supplemento di costo solo in alcune zone. In caso di necessità si può richiedere l'assistenza telefonica di un addetto del centro di supporto tecnico HP. Nel materiale fornito con una parte di ricambio CSR, HP specifica se il cliente deve restituire dei componenti. Qualora sia richiesta la resa ad HP del componente difettoso, lo si deve spedire ad HP entro un determinato periodo di tempo, generalmente cinque (5) giorni lavorativi. Il componente difettoso deve essere restituito con la documentazione associata nell'imballo di spedizione fornito. La mancata restituzione del componente può comportare la fatturazione del ricambio da parte di HP. Nel caso di riparazione da parte del cliente, HP sostiene tutte le spese di spedizione e resa e sceglie il corriere/vettore da utilizzare.

Per ulteriori informazioni sul programma CSR di HP contattare il centro di assistenza di zona. Per il programma in Nord America fare riferimento al sito Web HP (<http://www.hp.com/go/selfrepair>).

## Customer Self Repair

HP Produkte enthalten viele CSR-Teile (Customer Self Repair), um Reparaturzeiten zu minimieren und höhere Flexibilität beim Austausch defekter Bauteile zu ermöglichen. Wenn HP (oder ein HP Servicepartner) bei der Diagnose feststellt, dass das Produkt mithilfe eines CSR-Teils repariert werden kann, sendet Ihnen HP dieses Bauteil zum Austausch direkt zu. CSR-Teile werden in zwei Kategorien unterteilt:

**Zwingend** – Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von HP vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.

**Optional** – Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von HP vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

**HINWEIS:** Einige Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem HP Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No“ bzw. „Nein“ gekennzeichnet.

CSR-Teile werden abhängig von der Verfügbarkeit und vom Lieferziel am folgenden Geschäftstag geliefert. Für bestimmte Standorte ist eine Lieferung am selben Tag oder innerhalb von vier Stunden gegen einen Aufpreis verfügbar. Wenn Sie Hilfe benötigen, können Sie das HP technische Support Center anrufen und sich von einem Mitarbeiter per Telefon helfen lassen. Den Materialien, die mit einem CSR-Ersatzteil geliefert werden, können Sie entnehmen, ob das defekte Teil an HP zurückgeschickt werden muss. Wenn es erforderlich ist, das defekte Teil an HP zurückzuschicken, müssen Sie dies innerhalb eines vorgegebenen Zeitraums tun, in der Regel innerhalb von fünf (5) Geschäftstagen. Das defekte Teil muss mit der zugehörigen Dokumentation in der Verpackung zurückgeschickt werden, die im Lieferumfang enthalten ist. Wenn Sie das defekte Teil nicht zurückschicken, kann HP Ihnen das Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt HP für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

Weitere Informationen über das HP Customer Self Repair Programm erhalten Sie von Ihrem Servicepartner vor Ort. Informationen über das CSR-Programm in Nordamerika finden Sie auf der HP Website unter (<http://www.hp.com/go/selfrepair>).

## Reparaciones del propio cliente

Los productos de HP incluyen muchos componentes que el propio usuario puede reemplazar (*Customer Self Repair*, CSR) para minimizar el tiempo de reparación y ofrecer una mayor flexibilidad a la hora de realizar sustituciones de componentes defectuosos. Si, durante la fase de diagnóstico, HP (o los proveedores o socios de servicio de HP) identifica que una reparación puede llevarse a cabo mediante el uso de un componente CSR, HP le enviará dicho componente directamente para que realice su sustitución. Los componentes CSR se clasifican en dos categorías:

- **Obligatorio:** componentes para los que la reparación por parte del usuario es obligatoria. Si solicita a HP que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.
- **Opcional:** componentes para los que la reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que HP realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

**NOTA:** Algunos componentes no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, HP pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra "No" en el catálogo ilustrado de componentes.

Según la disponibilidad y la situación geográfica, los componentes CSR se enviarán para que lleguen a su destino al siguiente día laborable. Si la situación geográfica lo permite, se puede solicitar la entrega en el mismo día o en cuatro horas con un coste adicional. Si precisa asistencia técnica, puede llamar al Centro de asistencia técnica de HP y recibirá ayuda telefónica por parte de un técnico. Con el envío de materiales para la sustitución de componentes CSR, HP especificará si los componentes defectuosos deberán devolverse a HP. En aquellos casos en los que sea necesario devolver algún componente a HP, deberá hacerlo en el periodo de tiempo especificado, normalmente cinco días laborables. Los componentes defectuosos deberán devolverse con toda la documentación relacionada y con el embalaje de envío. Si no enviara el componente defectuoso requerido, HP podrá cobrarle por el de sustitución. En el caso de todas

sustituciones que lleve a cabo el cliente, HP se hará cargo de todos los gastos de envío y devolución de componentes y escogerá la empresa de transporte que se utilice para dicho servicio.

Para obtener más información acerca del programa de Reparaciones del propio cliente de HP, póngase en contacto con su proveedor de servicios local. Si está interesado en el programa para Norteamérica, visite la página web de HP siguiente (<http://www.hp.com/go/selfrepair>).

## Customer Self Repair

Veel onderdelen in HP producten zijn door de klant zelf te repareren, waardoor de reparatieduur tot een minimum beperkt kan blijven en de flexibiliteit in het vervangen van defecte onderdelen groter is. Deze onderdelen worden CSR-onderdelen (Customer Self Repair) genoemd. Als HP (of een HP Service Partner) bij de diagnose vaststelt dat de reparatie kan worden uitgevoerd met een CSR-onderdeel, verzendt HP dat onderdeel rechtstreeks naar u, zodat u het defecte onderdeel daarmee kunt vervangen. Er zijn twee categorieën CSR-onderdelen:

**Verplicht:** Onderdelen waarvoor reparatie door de klant verplicht is. Als u HP verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.

**Optioneel:** Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter HP verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

**OPMERKING:** Sommige HP onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".

Afhankelijk van de leverbaarheid en de locatie worden CSR-onderdelen verzonden voor levering op de eerstvolgende werkdag. Levering op dezelfde dag of binnen vier uur kan tegen meerkosten worden aangeboden, indien dit mogelijk is gezien de locatie. Indien assistentie gewenst is, belt u een HP Service Partner om via de telefoon technische ondersteuning te ontvangen. HP vermeldt in de documentatie bij het vervangende CSR-onderdeel of het defecte onderdeel aan HP moet worden geretourneerd. Als het defecte onderdeel aan HP moet worden teruggezonden, moet u het defecte onderdeel binnen een bepaalde periode, gewoonlijk vijf (5) werkdagen, retourneren aan HP. Het defecte onderdeel moet met de bijbehorende documentatie worden geretourneerd in het meegeleverde verpakkingsmateriaal. Als u het defecte onderdeel niet terugzendt, kan HP u voor het vervangende onderdeel kosten in rekening brengen. Bij reparatie door de klant betaalt HP alle verzendkosten voor het vervangende en geretourneerde onderdeel en kiest HP zelf welke koerier/transportonderneming hiervoor wordt gebruikt.

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van HP. Informatie over Service Partners vindt u op de HP website (<http://www.hp.com/go/selfrepair>).

## Reparo feito pelo cliente

Os produtos da HP são projetados com muitas peças para reparo feito pelo cliente (CSR) de modo a minimizar o tempo de reparo e permitir maior flexibilidade na substituição de peças com defeito. Se, durante o período de diagnóstico, a HP (ou fornecedores/parceiros de serviço da HP) concluir que o reparo pode ser efetuado pelo uso de uma peça CSR, a peça de reposição será enviada diretamente ao cliente. Existem duas categorias de peças CSR:

**Obrigatória** – Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a HP substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

Opcional – Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a HP as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

**OBSERVAÇÃO:** Algumas peças da HP não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a HP exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca "No" (Não), no catálogo de peças ilustrado.

Conforme a disponibilidade e o local geográfico, as peças CSR serão enviadas no primeiro dia útil após o pedido. Onde as condições geográficas permitirem, a entrega no mesmo dia ou em quatro horas pode ser feita mediante uma taxa adicional. Se precisar de auxílio, entre em contato com o Centro de suporte técnico da HP para que um técnico o ajude por telefone. A HP especifica nos materiais fornecidos com a peça CSR de reposição se a peça com defeito deve ser devolvida à HP. Nos casos em que isso for necessário, é preciso enviar a peça com defeito à HP dentro do período determinado, normalmente cinco (5) dias úteis. A peça com defeito deve ser enviada com a documentação correspondente no material de transporte fornecido. Caso não o faça, a HP poderá cobrar a reposição. Para as peças de reparo feito pelo cliente, a HP paga todas as despesas de transporte e de devolução da peça e determina a transportadora/serviço postal a ser utilizado.

Para obter mais informações sobre o programa de reparo feito pelo cliente da HP, entre em contato com o fornecedor de serviços local. Para o programa norte-americano, visite o site da HP (<http://www.hp.com/go/selfrepair>).

## カスタマーセルフリペア

修理時間を短縮し、故障部品の交換における高い柔軟性を確保するために、HP製品には多数のCSR部品があります。診断の際に、CSR部品を使用すれば修理ができるとHP（HPまたはHP正規保守代理店）が判断した場合、HPはその部品を直接、お客様に発送し、お客様に交換していただきます。CSR部品には以下の2通りがあります。

- **必須** - カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。
- **任意** - カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHPに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

**注：** HP製品の一部の部品は、カスタマーセルフリペア用ではありません。製品の保証を継続するためには、HPまたはHP正規保守代理店による交換作業が必須となります。部品カタログには、当該部品がカスタマーセルフリペア除外品である旨が記載されています。

部品供給が可能な場合、地域によっては、CSR部品を翌営業日に届くように発送します。また、地域によっては、追加費用を負担いただくことにより同日または4時間以内に届くように発送することも可能な場合があります。サポートが必要なときは、HPの修理受付窓口へ電話していただければ、技術者が電話でアドバイスします。交換用のCSR部品または同梱物には、故障部品をHPに返送する必要があるかどうかが表示されています。故障部品をHPに返送する必要がある場合は、指定期限内（通常は5営業日以内）に故障部品をHPに返送してください。故障部品を返送する場合は、届いた時の梱包箱に関連書類とともに入れてください。故障部品を返送しない場合、HPから部品費用が請求されます。カスタマーセルフリペアの際には、HPは送料および部品返送費を全額負担し、使用する宅配便会社や運送会社を指定します。

## 客戶自行維修

HP 產品提供許多客戶自行維修 (CSR) 部件，以尽可能縮短維修時間和在更換缺陷部件方面提供更大的靈活性。如果在診斷期間 HP (或 HP 服務提供商或服務合作夥伴) 確定可以通過使用 CSR 部件完成維修，HP 將直接把該部件發送給您進行更換。有兩類 CSR 部件：

- **強制性的** — 要求客戶必須自行維修的部件。如果您請求 HP 更換這些部件，則必須為該服務支付差旅費和人工費用。
- **可選的** — 客戶可以選擇是否自行維修的部件。這些部件也是為客戶自行維修設計的。不過，如果您要求 HP 為您更換這些部件，則根據為您的產品指定的保修服務類型，HP 可能收取或不再收取任何附加費用。

**注：**某些 HP 部件的設計並未考慮客戶自行維修。為了滿足客戶保修的需要，HP 要求授權服務提供商更換相關部件。這些部件在部件圖解目錄中標記為“否”。

CSR 部件將在下一個工作日發運（取決於備貨情況和允許的地理範圍）。在允許的地理範圍內，可在當天或四小時內發運，但要收取額外費用。如果需要幫助，您可以致電 HP 技術支持中心，將會有技術人員通過電話為您提供幫助。HP 會在隨更換的 CSR 部件發運的材料中指明是否必須將有缺陷的部件返還給 HP。如果要求您將有缺陷的部件返還給 HP，那麼您必須在規定期限內（通常是五 (5) 個工作日）將缺陷部件發給 HP。有缺陷的部件必須隨所提供的發運材料中的相關文件一起返還。如果未能送還有缺陷的部件，HP 可能會要求您支付更換費用。客戶自行維修時，HP 將承擔所有相關運輸和部件返回費用，並指定快遞商/承運商。

有關 HP 客戶自行維修計劃的詳細信息，請與您當地的服務提供商聯繫。有關北美地區的計劃，請訪問 HP 網站 (<http://www.hp.com/go/selfrepair>)。

## 客戶自行維修

HP 產品設計了許多「客戶自行維修」(CSR) 的零件以減少維修時間，並且使得更換瑕疵零件時能有更大的彈性。如果在診斷期間 HP (或 HP 服務供應商或維修夥伴) 辨認出此項維修工作可以藉由使用 CSR 零件來完成，則 HP 將直接寄送該零件給您作更換。CSR 零件分為兩種類別：

- **強制的** — 客戶自行維修所使用的零件是強制的。如果您要求 HP 更換這些零件，HP 將會向您收取此服務所需的外出費用與勞動成本。
- **選購的** — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 HP 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

**備註：**某些 HP 零件沒有消費者可自行維修的設計。為符合客戶保固，HP 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

基於材料取得及環境允許的情況下，CSR 零件將於下一個工作日以快遞寄送。在環境的允許下當天或四小時內送達，則可能需要額外的費用。若您需要協助，可致電「HP 技術支援中心」，會有一位技術人員透過電話來協助您。不論損壞的零件是否必須退回，HP 皆會在與 CSR 替換零件一起運送的材料中註明。若要將損壞的零件退回 HP，您必須在指定的一段時間內（通常為五 (5) 個工作天），將損壞的零件寄回 HP。損壞的零件必須與寄送資料中隨附的相關技術文件一併退還。如果無法退還損壞的零件，HP 可能要向您收取替換費用。針對客戶自行維修情形，HP 將負責所有運費及零件退還費用並指定使用何家快遞/貨運公司。

如需 HP 的「客戶自行維修」方案詳細資訊，請連絡您當地的服務供應商。至於北美方案，請參閱 HP 網站 (<http://www.hp.com/go/selfrepair>)。

## 고객 셀프 수리

HP 제품은 수리 시간을 최소화하고 결함이 있는 부품 교체 시 더욱 용통성을 발휘할 수 있도록 하기 위해 고객 셀프 수리(CSR) 부품을 다량 사용하여 설계되었습니다. 진단 기간 동안 HP(또는 HP 서비스 공급업체 또는 서비스 협력업체)에서 CSR 부품을 사용하여 수리가 가능하다고 판단되면 HP는 해당 부품을 바로 사용자에게 보내어 사용자가 교체할 수 있도록 합니다. CSR 부품에는 두 가지 종류가 있습니다.

- **고객 셀프 수리가 의무 사항인 필수 부품.** 사용자가 HP에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.
- **고객 셀프 수리가 선택 사항인 부품.** 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 HP에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

**참고:** 일부 HP 부품은 고객 셀프 수리가 불가능하도록 설계되었습니다. HP는 만족스러운 고객 보증을 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다. 이러한 부품들은 Illustrated Parts Catalog에 "No"라고 표시되어 있습니다.

CSR 부품은 재고 상태와 지리적 조건이 허용하는 경우 다음 영업일 납품이 가능하도록 배송이 이루어집니다. 지리적 조건이 허용하는 경우 추가 비용이 청구되는 조건으로 당일 또는 4시간 배송이 가능할 수도 있습니다. 도움이 필요하시면 HP 기술 지원 센터로 전화하십시오. 전문 기술자가 전화로 도움을 줄 것입니다. HP는 결함이 발생한 부품을 HP로 반환해야 하는지 여부를 CSR 교체 부품과 함께 배송된 자료에 지정합니다. 결함이 발생한 부품을 HP로 반환해야 하는 경우에는 지정된 기간 내(통상 영업일 기준 5일)에 HP로 반환해야 합니다. 이 때 결함이 발생한 부품은 제공된 포장 재료에 넣어 관련 설명서와 함께 반환해야 합니다. 결함이 발생한 부품을 반환하지 않는 경우 HP가 교체 부품에 대해 비용을 청구할 수 있습니다. 고객 셀프 수리의 경우, HP는 모든 운송 및 부품 반환 비용을 부담하며 이용할 운송업체 및 택배 서비스를 결정합니다.

HP 고객 셀프 수리 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오. 북미 지역의 프로그램에 대해서는 HP 웹 사이트(<http://www.hp.com/go/selfrepair>)를 참조하십시오.

---

## Regulatory information

### Safety and regulatory compliance

For safety, environmental, and regulatory information, see *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the HP website (<http://www.hp.com/support/Safety-Compliance-EnterpriseProducts>).

### Turkey RoHS material content declaration

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

### Ukraine RoHS material content declaration

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

### Warranty information

HP ProLiant and X86 Servers and Options (<http://www.hp.com/support/ProLiantServers-Warranties>)

HP Enterprise Servers (<http://www.hp.com/support/EnterpriseServers-Warranties>)

HP Storage Products (<http://www.hp.com/support/Storage-Warranties>)

HP Networking Products (<http://www.hp.com/support/Networking-Warranties>)



---

# Electrostatic discharge

## Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

## Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm  $\pm$ 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

---

# Acronyms and abbreviations

## CSA

Canadian Standards Association

## CSR

Customer Self Repair

## ESD

electrostatic discharge

## IEC

International Electrotechnical Commission

## iLO

Integrated Lights-Out

## PDU

power distribution unit

## RETMA

Radio Electronics Television Manufacturers Association (rack spacing)

## TMRA

recommended ambient operating temperature

## UID

unit identification

## UPS

uninterruptible power system

## USB

universal serial bus

---

# Documentation feedback

HP is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (<mailto:docsfeedback@hp.com>). Include the document title and part number, version number, or the URL when submitting your feedback.

---

# Index

## A

- accessing a server blade with local KVM 51
- accessing HP BladeSystem Insight Display 63
- accessing local media devices 51
- airflow requirements 9
- alerts 57, 65, 78, 79
- authorized reseller 80

## B

- battery replacement notice 88
- bay numbering, fan 16
- bay numbering, full-height device 13
- bay numbering, half-height device 13
- bay numbering, interconnect 18
- bay numbering, power supply 17
- bay to bay crosslinks 48
- BL2x220c blades, mapping 47
- Blade and Port Info screen 64, 68
- BSMI notice 88

## C

- cable configuration 53, 55
- cables 53
- cables, overview 53
- cabling network to enclosure 55
- cabling, Onboard Administrator module 53
- cabling, service port 55
- Canadian notice 88
- cautions 7, 64, 65, 77, 78
- Chat Mode screen 70
- components, front panel 12, 14
- components, identification 12
- components, installation 19, 26
- configuration errors 79
- configuring Onboard Administrator 71
- configuring the enclosure with HP BladeSystem Insight Display 57
- cooling errors 78
- creating a full-height device bay blank 32
- critical alerts 64, 65, 78
- crosslinks, bay to bay 48
- CSR (customer self repair) 80

- customer self repair (CSR) 80

## D

- Declaration of Conformity 88
- device bay numbering 13
- device bay shelf, removing 29
- device failure errors 79
- diagnosing problems 76
- dividers, installing 34

## E

- electrical grounding requirements 10
- electrostatic discharge 89
- Enclosure Info screen 67
- enclosure LEDs 69
- enclosure link module, installing 50
- enclosure link-down port 55
- enclosure link-up port 55
- Enclosure Settings screen 66
- enclosure, configuring 57
- enclosure, disassembling 19
- enclosure, installing into rack 22
- enclosure, powering up 56
- errors, Insight Display 78
- Ethernet switches 42
- European Union notice 88

## F

- fan bay numbering 16
- fan errors 78
- fan LED 16
- fans, installing 37
- Federal Communications Commission (FCC) notice 88
- firmware, updating 71
- front cage, installing 25
- front cage, removing 19
- front components 12, 14
- full-height device bay blank, creating 32
- full-height device bay numbering 13
- full-height server blades, mapping 45

## G

- grounding methods 89
- grounding requirements 10

## H

- half-height device bay numbering 13
- half-height server blade, installing 33
- half-height server blades, mapping 44
- Health Summary icon 64, 65
- Health Summary screen 64, 65
- HP BladeSystem Insight Display components 14
- HP BladeSystem Insight Display errors 78, 79
- HP BladeSystem Insight Display screen 14, 57, 64
- HP BladeSystem Insight Display, accessing 63
- HP BladeSystem Insight Display, navigating 14, 64
- HP BladeSystem Insight Display, overview of 57
- HP BladeSystem Insight Display, using 57
- HP technical support 80
- HP, contacting 80

## I

- Important Safety Information document 76
- important 7
- Insight Display screen, Blade or Port Info 68
- Insight Display screen, Chat Mode 70
- Insight Display screen, Health Summary 65
- Insight Display screen, Turn Enclosure UID On/Off 69
- Insight Display screen, View User Note 70
- installation errors 79
- installation overview 5
- installation, rack 22
- installation, rack-free 7, 22
- installing dividers 34
- installing fans 37
- installing front cage 25
- installing interconnect bay dividers 49
- installing interconnect modules 42
- installing KVM module 39
- installing Onboard Administrator modules 50
- installing PDU 56
- installing power supplies 26
- installing the rails 22, 23
- interconnect bay dividers, installing 42, 49
- interconnect bay dividers, removing 42, 49
- interconnect bay numbering 18
- interconnect modules, double-wide 49
- interconnect ports, mapping to 43

## J

- Japanese notice 88

## K

- KVM Menu screen 72
- KVM module, attaching components 40
- KVM module, installing 39
- KVM module, overview 39
- KVM module, removing 41

## L

- LED identification 12
- LEDs 16, 17, 64, 69
- LEDs, fan 16
- LEDs, power supply 17
- LEDs, unit identification (UID) 57, 69, 78
- link-down port 55
- link-up port 55
- local media devices, accessing 51
- location errors 79

## M

- mapping BL2x220c blades 47
- mapping full-height server blades 45
- mapping half-height server blades 44
- mapping to interconnect ports 43
- measuring rack with template 23
- mezzanine card 43
- minimum requirements 9, 10
- modifications, FCC notice 88

## N

- NIC (network interface card) 44, 45
- numbering, device bay 13
- numbering, fan bays 16
- numbering, full-height device bays 13
- numbering, half-height device bays 13
- numbering, interconnect bays 18
- numbering, power supply bays 17

## O

- Onboard Administrator module 50
- Onboard Administrator module, cabling 53

## P

- pallet contents 5
- PDU (power distribution unit) 10, 56

- phone numbers 80
- populating power supply bays 27
- port types 43
- power configurations 26
- power cord 77
- power distribution unit (PDU) 10, 56
- power errors 78
- power requirements 10, 26
- power supplies 26
- power supply bay numbering 17
- power supply bays, populating 27
- power supply LEDs 17
- powering up the enclosure 53, 56
- preparation procedures 5
- problem diagnosis 76

## R

- rack installation 22, 24
- rack options 7
- rack requirements 6
- rack stability 77
- rack template 23
- rack warnings 77
- rack-free environment requirements 7
- rack-free installation 7, 22
- rails, installing 23
- rear components 15
- regulatory compliance identification numbers 88
- regulatory compliance information 88
- regulatory compliance notices 88
- removing a KVM module 41
- removing interconnect bay dividers 49
- required information 80
- requirements, airflow 9
- requirements, electrical grounding 10
- requirements, minimum 9, 10
- requirements, power 10
- requirements, rack 6
- requirements, rack-free environment 7
- requirements, space 9
- requirements, temperature 9

## S

- safety considerations 76, 88
- series number 88
- server blade installation 27, 33
- service port cabling 55
- space requirements 9
- specifications 9, 10

- static electricity 89
- support 80
- supported servers 76
- symbols on equipment 76

## T

- Taiwan battery recycling notice 88
- technical support 80
- telephone numbers 80
- temperature requirements 9
- troubleshooting 76
- Turn Enclosure UID On/Off screen 69

## U

- UID LED 57, 69, 78
- updating firmware 71
- USB devices 50
- USB Menu screen 71

## V

- video devices 50
- View User Note screen 70

## W

- warnings 7, 77