

HP BladeSystem c7000 Enclosure

Installation Poster



June 2006 (Second Edition)
Part Number 411762-002

Important Safety Information

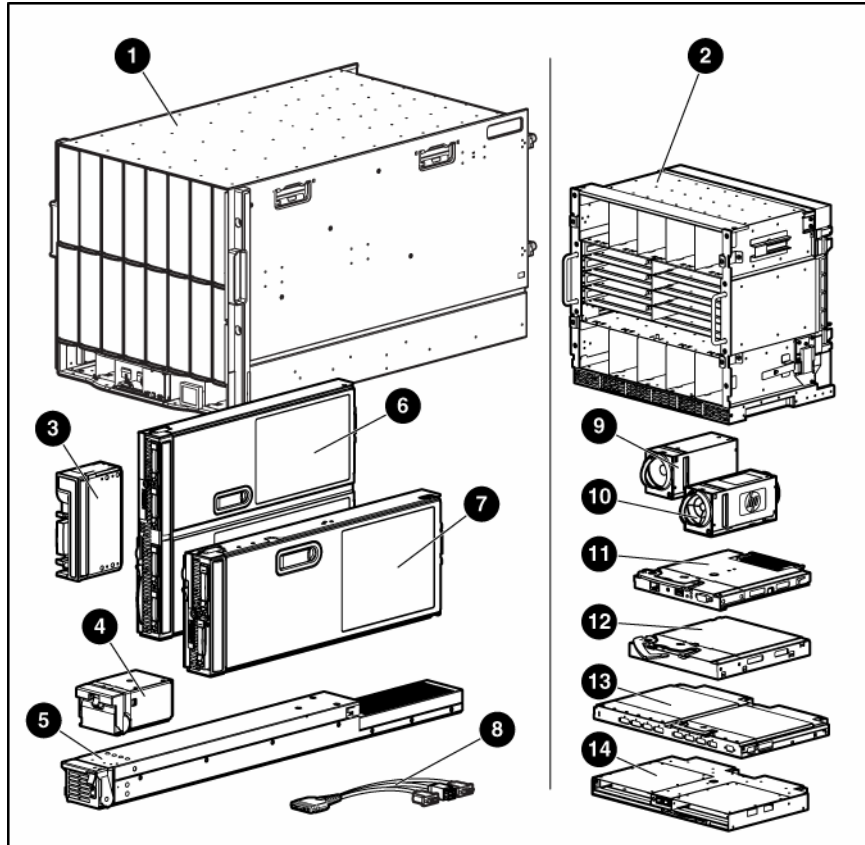
Before installation, read *Important Safety Information* on the Documentation CD.
.Documentation CD اقرأ معلومات هامة حول السلامة على القرص المضغوط قبل التثبيت.
Před instalací si přečtěte příručku *Důležité bezpečnostní informace* na disku CD.
安裝之前，請閱讀文檔 CD 上的重要安全信息。
安裝前，請閱讀說明文件光碟上的「重要的安全性資訊」。

Læs dokumentet *Vigtige sikkerhedsoplysninger* på dokumentations-cd'en, før produktet installeres.
Lesen Sie vor der Installation die *Sicherheitshinweise* auf der Documentation CD.
Enne installimist vt dokumentatsiooni CD-lt peatükki „*Tähtis ohutusteave*“.
Antes de la instalación, lea la sección *Información de seguridad importante* del CD Documentación.
Avant l'installation, lisez les *informations importantes relatives à la sécurité* CD Documentation.
Πριν την εγκατάσταση, διαβάστε *Σημαντικές πληροφορίες ασφαλείας* στο CD Documentation.
לפני ההתקנה, קרא את המידע הבטיחותי החשוב שב-Documentation CD (תקליטור התיעוד).
Prije ugradnje, pročitajte *Važne sigurnosne informacije* na dokumentacijskom CD-u.
Prima dell'installazione, leggere sul CD le Informazioni importanti sulla sicurezza.
インストール前に、Documentation CDの『安全に使用していただくために』をお読みください。
설치하기 전에 Documentation CD의 주요 안전 수칙을 읽으십시오.
Pirms instalācijas, izlasiet drošības informāciju dokumentācijas CD.
Prieš diegdami perskaitykite *Svarbią saugos informaciją* dokumentacijos CD.
Telepítés előtt olvassa el a dokumentációs CD *Fontos biztonsági tudnivalók* dokumentumát.
Lees de *Belangrijke veiligheidsinformatie* op de documentatie-cd voordat u de installatie uitvoert.
Les "Viktig sikkerhetsinformasjon" på dokumentasjons-CDen før du installerer dette produktet.
Przed instalacją przeczytaj *Ważne informacje dotyczące bezpieczeństwa* na dysku CD Documentation.
Antes da instalação, leia as *Informações Importantes sobre Segurança* no CD da Documentação.
Перед установкой ознакомьтесь с разделом *Указания по технике безопасности* на компакт-диске «Документация».
Pred inštaláciou si prečítajte časť *Dôležité bezpečnostné informácie* na disku Documentation CD.
Pred namestitvijo preberite *Pomembne varnostne informacije* na CD-ju Documentation.
Tärkeisiin turvatietoihin" Documentation CD -levyllä ennen tuotteen asentamista.
Läs dokumentet *Viktig säkerhetsinformation* på dokumentations-cd:n innan du installerar denna produkt.
Yüklemeden önce, Documentation CD'sindeki *Önemli Güvenlik Bilgileri*'ni okuyun.
Перед установкою прочитайте *Важливі відомості з безпеки* на CD документації.

Site requirements

Select an installation site that meets the detailed installation site requirements described in the server user guide on the Documentation CD.

1 Verifying the pallet contents



Item	Name	Description
1	HP BladeSystem c7000 Enclosure	The HP BladeSystem enclosure
2	Rear cage	The rear section of the enclosure, including the backlashes
3	Blade blank	A plastic cover installed in a device bay in place of a server blade
4	Power supply blank	A plastic cover installed in a power supply bay in place of a power supply
5	Enclosure hot-plug power supply (quantity as ordered)	The power supply for the enclosure
6	HP ProLiant full-height server blade (quantity as ordered)	The full-height server blade
7	HP ProLiant half-height server blade (quantity as ordered)	The half-height server blade
8	Local I/O cable	A cable with serial, USB, and video connectors. Connects to the I/O connector on the front of a server blade

Item	Name	Description
9	Fan blank	A plastic cover installed in a fan bay in place of a fan.
10	HP Active Cool Fan (quantity as ordered)	A fan used to cool the components installed in the enclosure
11	Optional Onboard Administrator module	A module used to control the components installed in the enclosure
12	Onboard Administrator module blank	A plastic cover installed in an Onboard Administrator bay in place of an Onboard Administrator module
13	Interconnect module (quantity and type as ordered)	Any of several components, such as pass-thrus or switches, that enable communication between the server blade and the enclosure.
14	Onboard Administrator tray	A tray that contains the entire management subsystem of the enclosure. This tray should only be removed by a qualified technician.
15*	Power retention ties (single-phase enclosures only; in the bag taped to the top of the enclosure)	Tie straps that help prevent single-phase power cables from disconnecting from the power connectors
16*	Documentation CD	The CD containing detailed documentation on using the enclosure
17*	SmartStart CD	A CD containing SmartStart software, a collection of software that optimizes single-server setup
18*	Hard copy installation instructions for blades, options, and interconnects	The printed installation instructions
19*	Installation checklist	A checklist to guide you through installation of the enclosure and its components

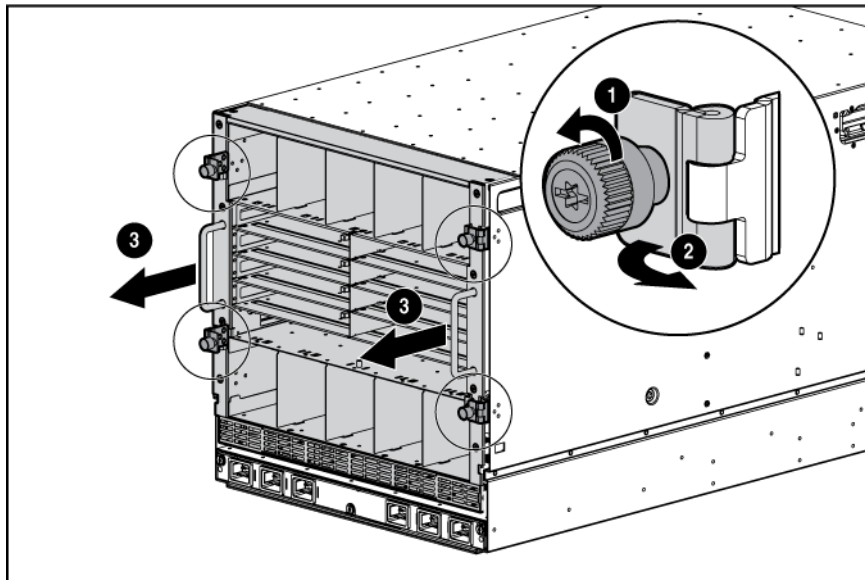
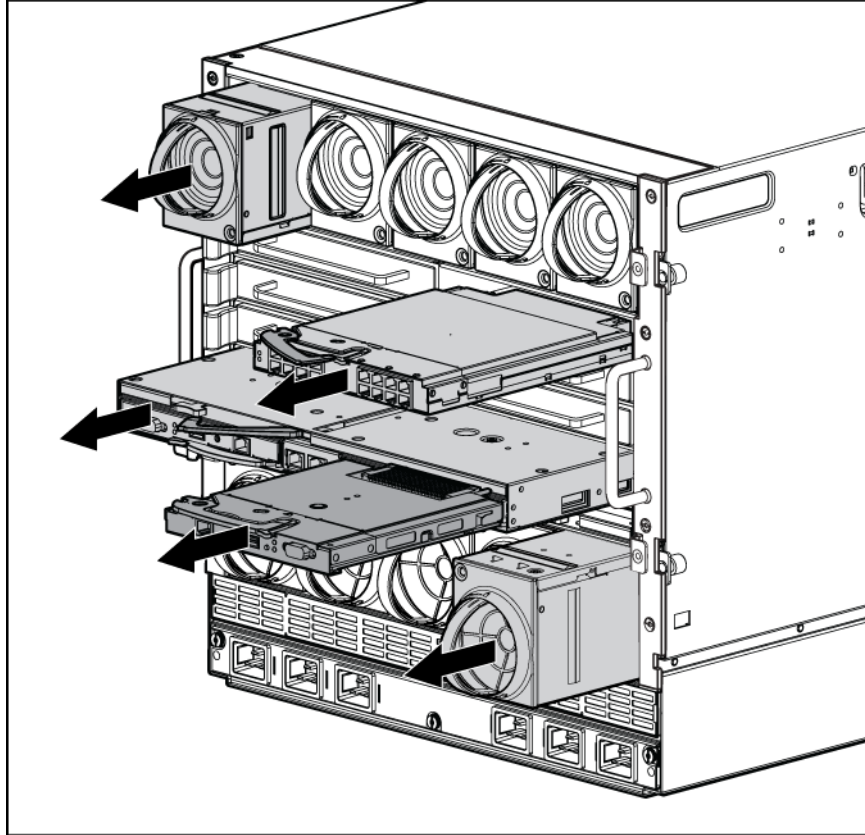
* Not shown

2 Installing the enclosure

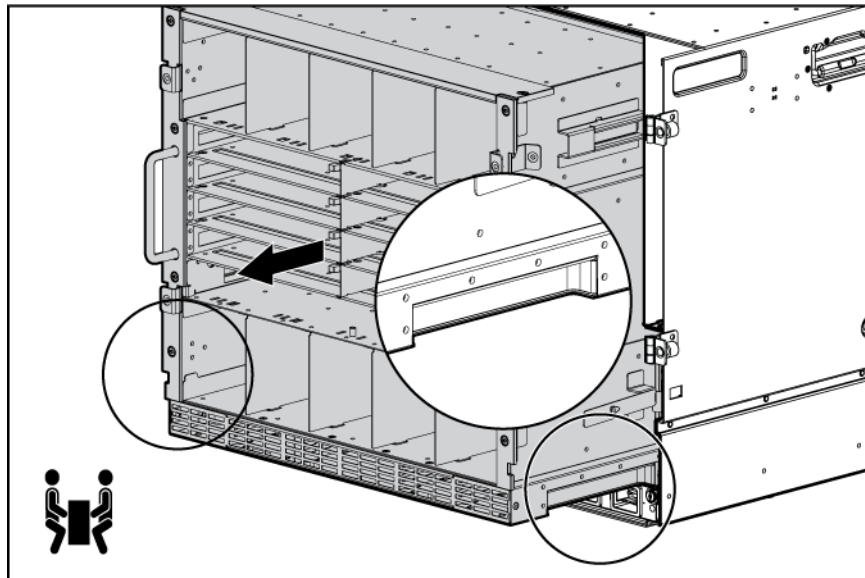
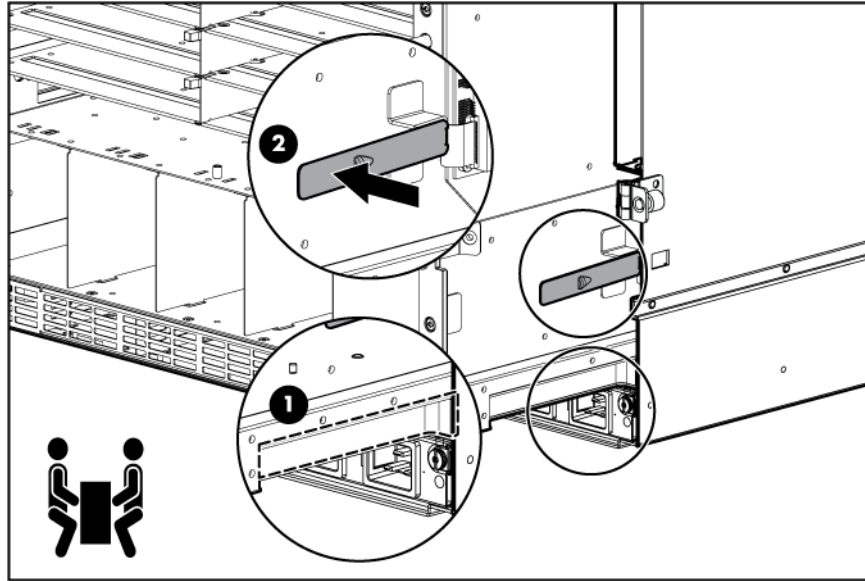
1. Select the proper location based on requirements detailed in the *HP BladeSystem c-Class Enclosure Setup and Installation Guide*. The enclosure can be installed in a rack or in a rack-free environment.

2. With the enclosure still on the pallet, remove all components from the enclosure, and then remove the rear cage.

⚠ WARNING: Because the fully-populated enclosure can weigh up to 217.7 kg (480 lb), remove all components and the rear cage from the enclosure before removing the enclosure from the pallet to reduce the risk of personal injury when moving the enclosure.

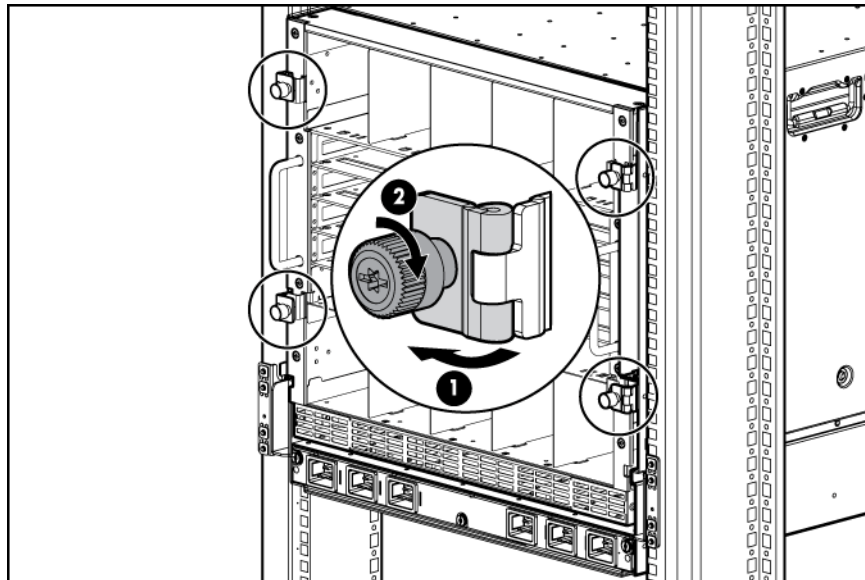
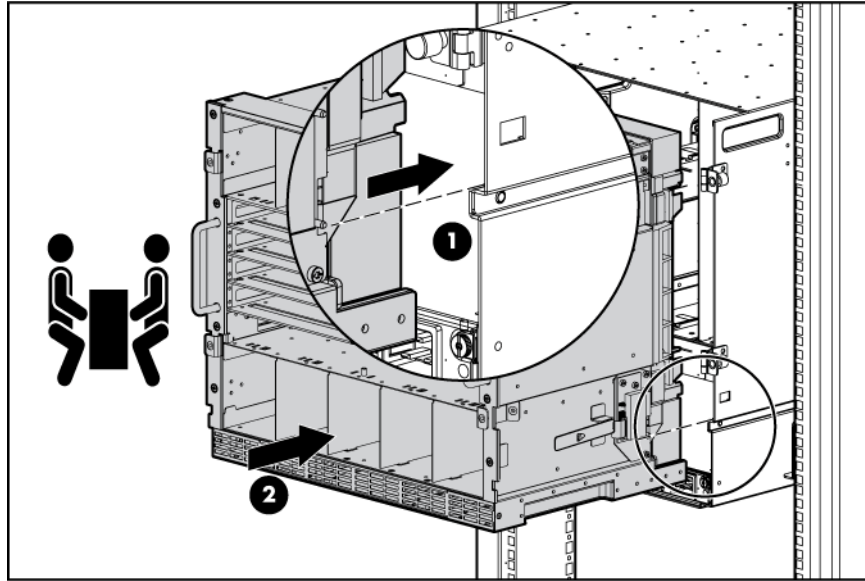


⚠ CAUTION: When removing the rear cage and midplane assembly, the connectors on the midplane assembly are susceptible to damage. Use caution to avoid damage to the pins and connectors.



3. To install the enclosure into a rack, see the *HP BladeSystem c7000 Enclosure Rack Template*. For rack-free installations, omit this step.
4. Install the rear cage into the enclosure, and then close the hinges and tighten the thumbscrews.

⚠ CAUTION: Be sure the hinges are completely open before installing the rear cage into the enclosure. Failure to do so can cause damage to pins and connectors.




3 Installing the front components

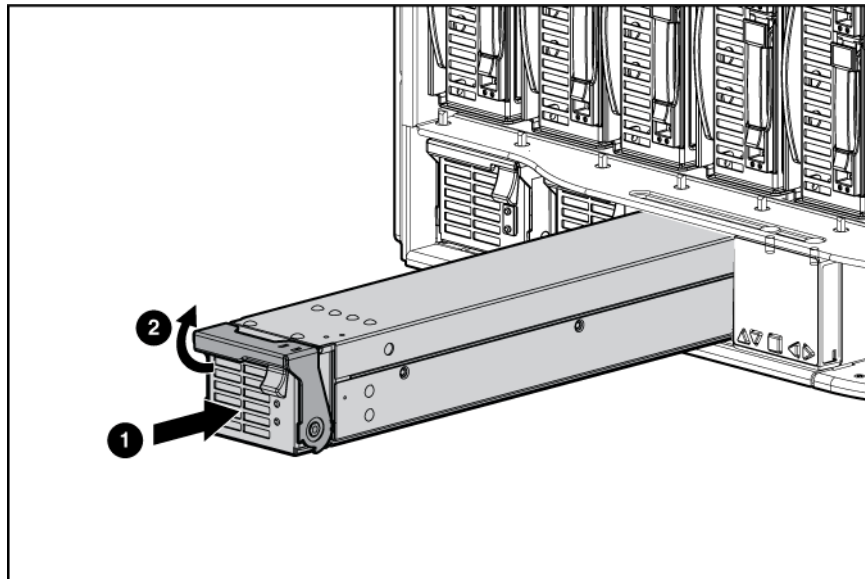
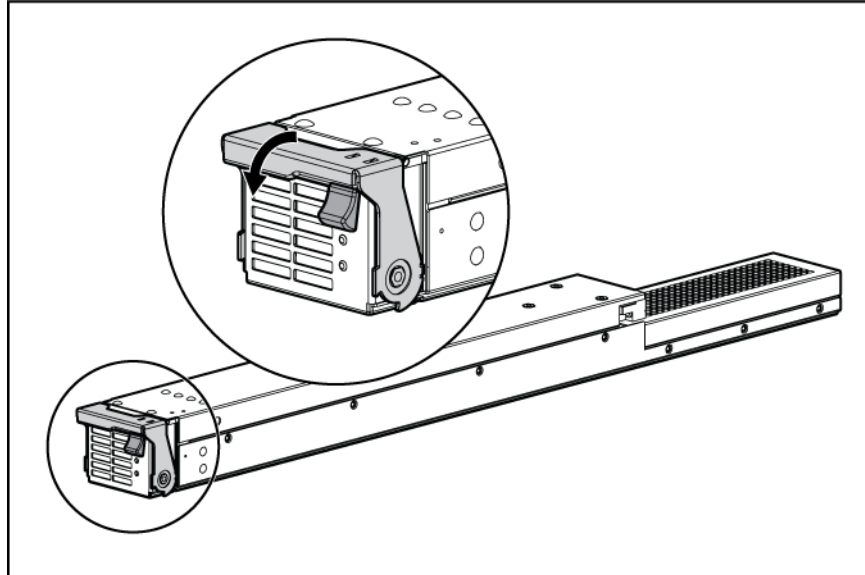
⚠ CAUTION: To prevent improper cooling and thermal damage, do not operate the enclosure unless all bays are populated with a component or a blank.

1. Install the power supplies based on the total number of supplies needed.
 - Two power supplies: Bays 1 and 4
 - Three power supplies: Bays 1, 2, and 4
 - Four power supplies: Bays 1, 2, 4, and 5
 - Five power supplies: Bays 1, 2, 3, 4, and 5
 - Six power supplies: One in each bay

Install power supply blanks in any unused power supply bays.

Power supplies are installed in this manner to provide maximum flexibility for redundancy and three-phase configuration options. To calculate how many power supplies are needed, see the HP power calculator (<http://www.hp.com/go/bladeSystem/powercalculator>).

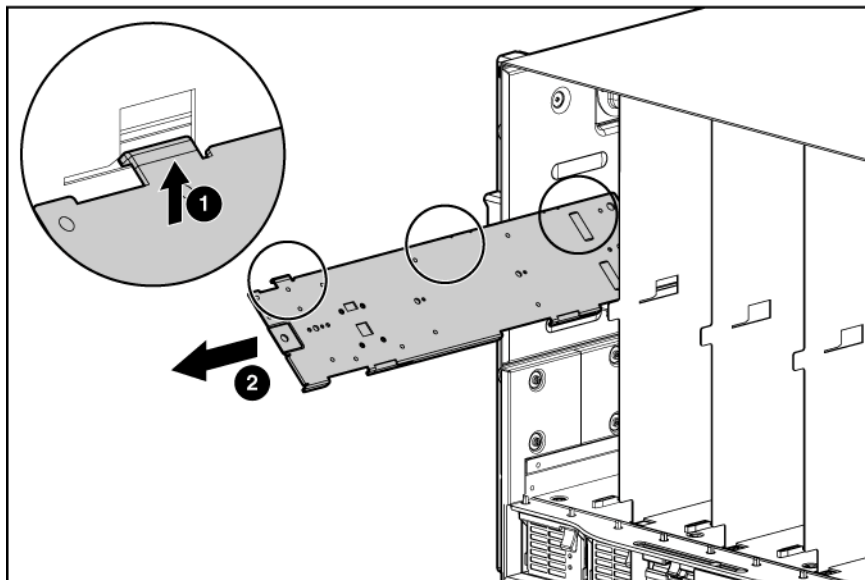
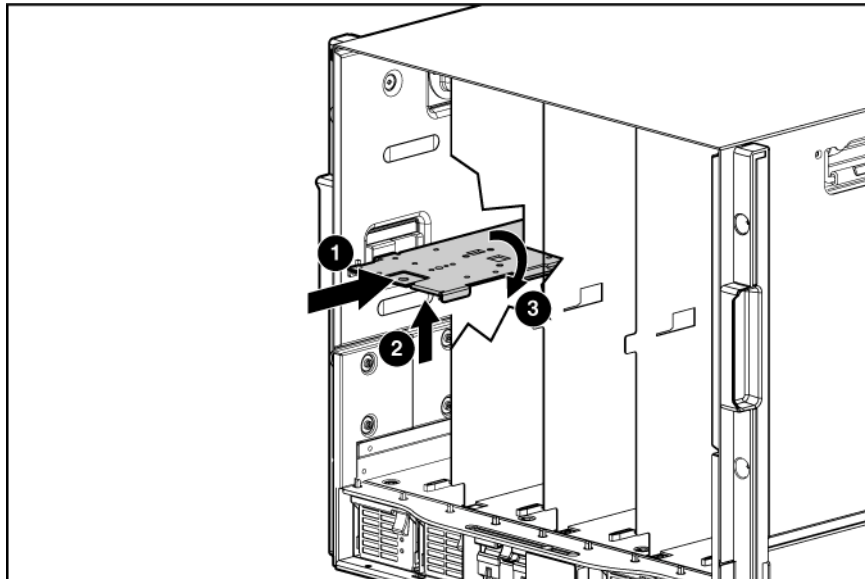
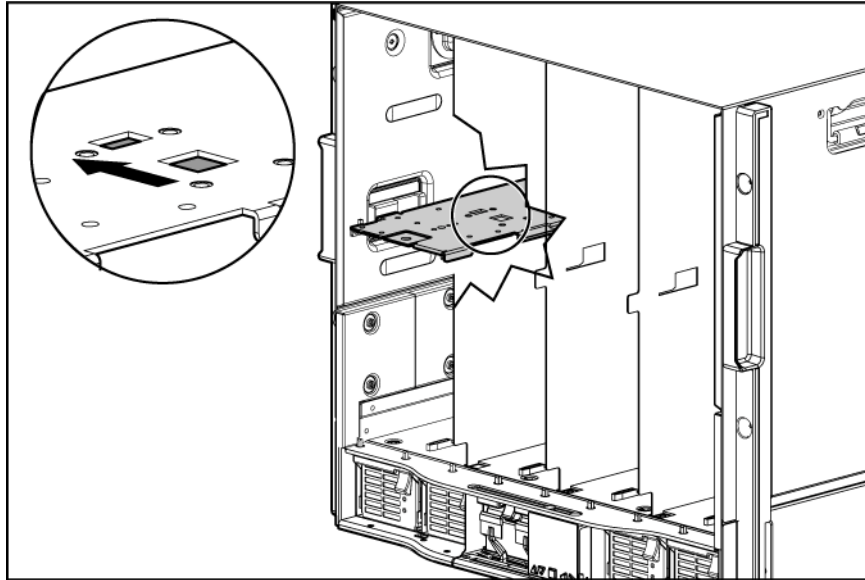
 **NOTE:** Slide the HP BladeSystem Insight Display to the right or left to gain access to all power supply bays.



2. Add any ordered options to each server blade

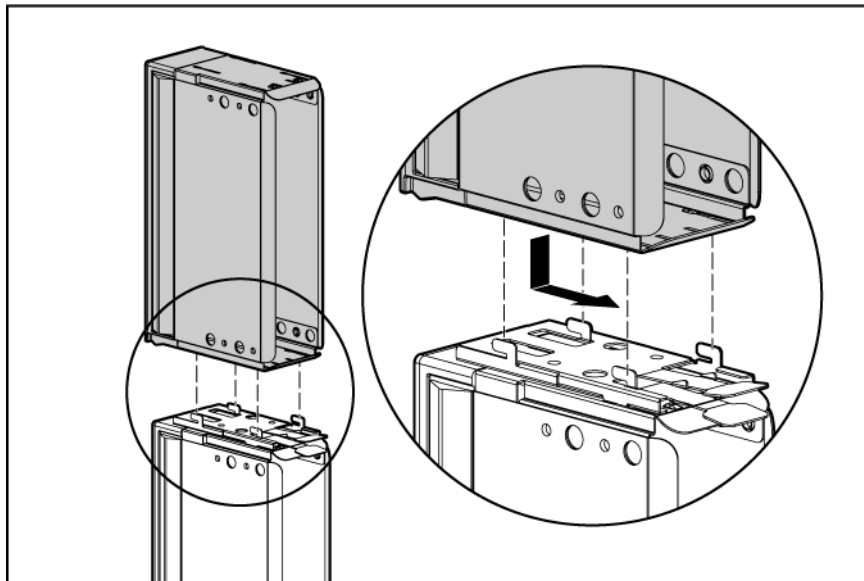
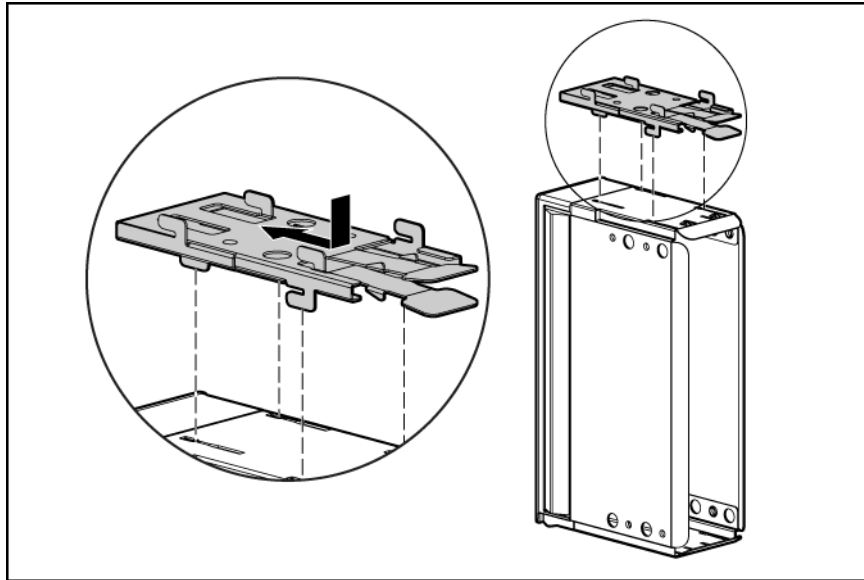
- Additional processor
- Additional memory
- Mezzanine option cards

3. If you are installing a full-height server blade, remove the half-height server blade shelf. If you are installing a half-height server blade, omit this step.



4. Remove the connector covers.
5. Install the server blades.
6. Install blade blanks into any unused device bays.

If the empty bays are configured for a full-height server, join two blade blanks to create a full-height blank.



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

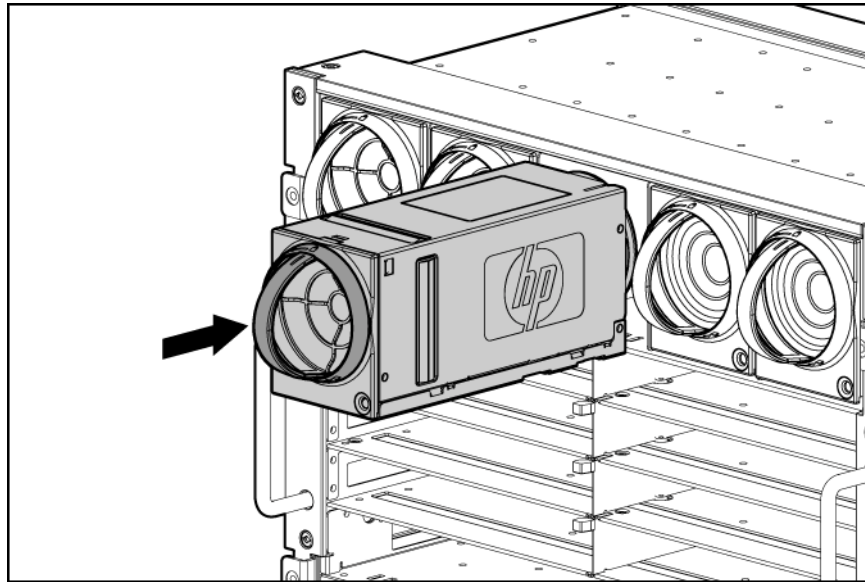
4 Installing the rear components

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

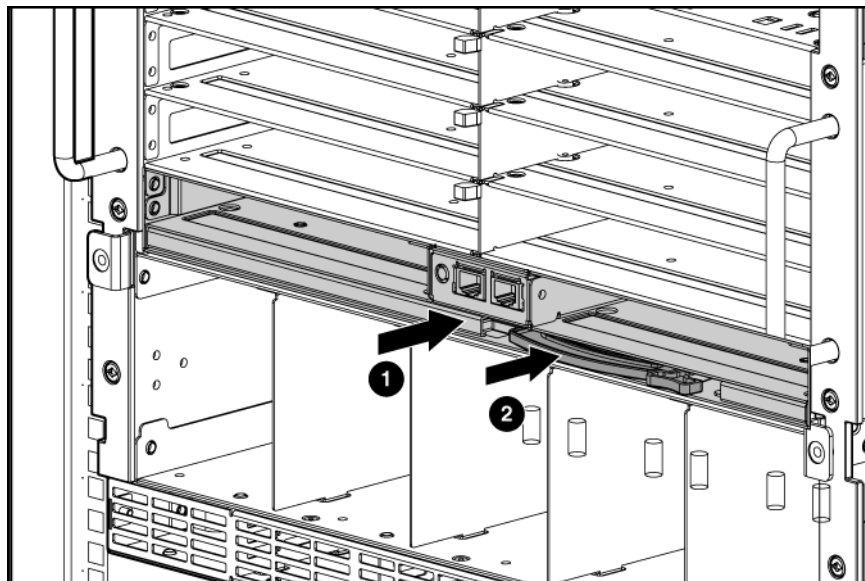
1. Install HP Active Cool Fans based on the total number of fans ordered.

- Four fans: Bays 4, 5, 8, and 9
- Six fans: Bays 3, 4, 5, 8, 9, and 10
- Eight fans: Bays 1, 2, 4, 5, 6, 7, 9, and 10
- Ten fans: All bays

Install fan blanks in any unused fan bays.

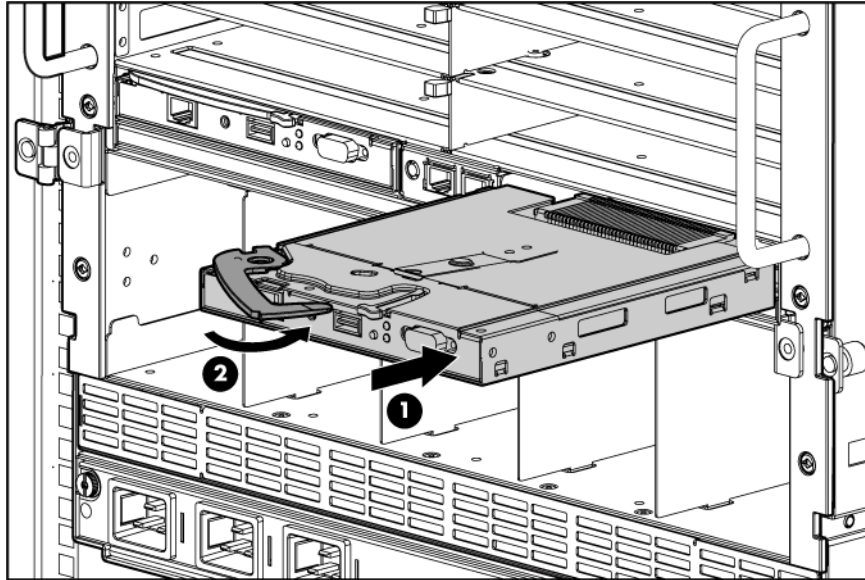


2. Install the Onboard Administrator tray into the enclosure.



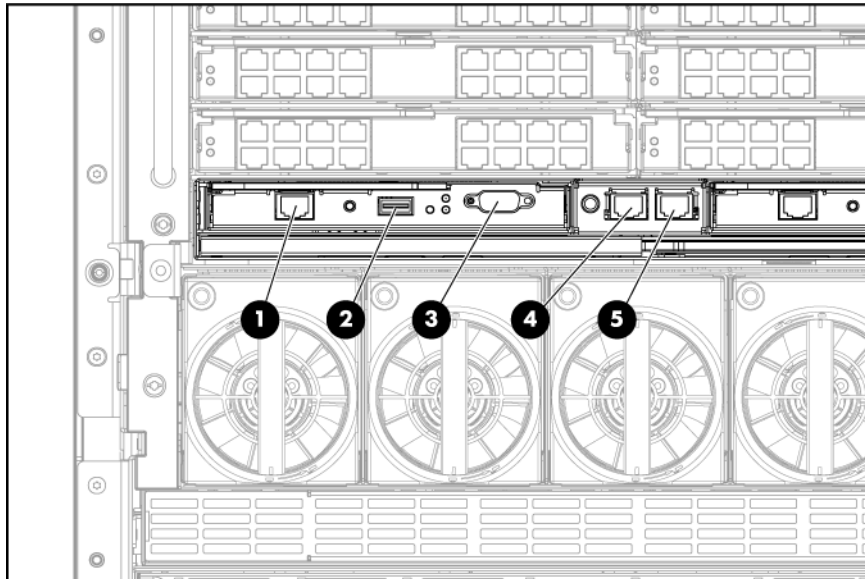
3. Install the Onboard Administrator modules into the Onboard Administrator tray based on the total number ordered.
 - One Onboard Administrator module: Bay 1
 - Two Onboard Administrator modules: Bays 1 and 2

Install an Onboard Administrator blank in an unused Onboard Administrator bay.



5 Connecting the cables

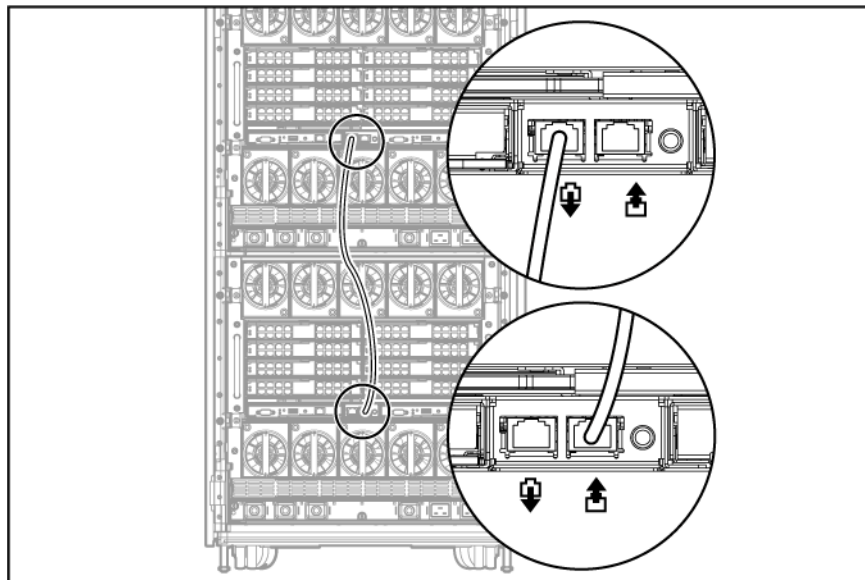
1. Identify all connectors.



Item	Connector	Description
1	OA/iLO	Onboard Administrator Ethernet connection. Use a CAT5 patch cable to connect to the management network. This is the connector for the IP address of the Onboard Administrator and for the iLO ports on each server blade.
2	USB	For future USB connections. Not currently supported.
3	Serial connector	Used for command line interface (CLI). Connects to a laptop or computer with a null-modem serial cable (RS232).

Item	Connector	Description
4	Enclosure link-down port	Connects to the enclosure link-up port on the enclosure below with a CAT5 patch cable.
5	Enclosure link-up port and service port	Connects to the enclosure link-down port on the enclosure above 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 functions as a service port.

2. Connect each installed Onboard Administrator module RJ-45 jack to the management network with a standard CAT5 patch cable.
3. Connect the management link cable.
4. If more than one enclosure is installed in the rack, use a CAT5 patch cable to connect the enclosure link-down port on the upper enclosure to the enclosure link-up port on the lower enclosure.




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

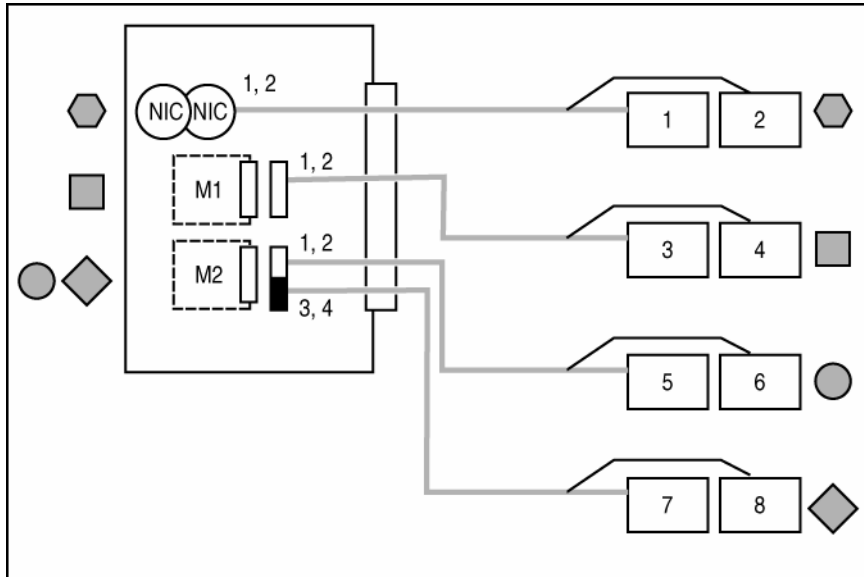
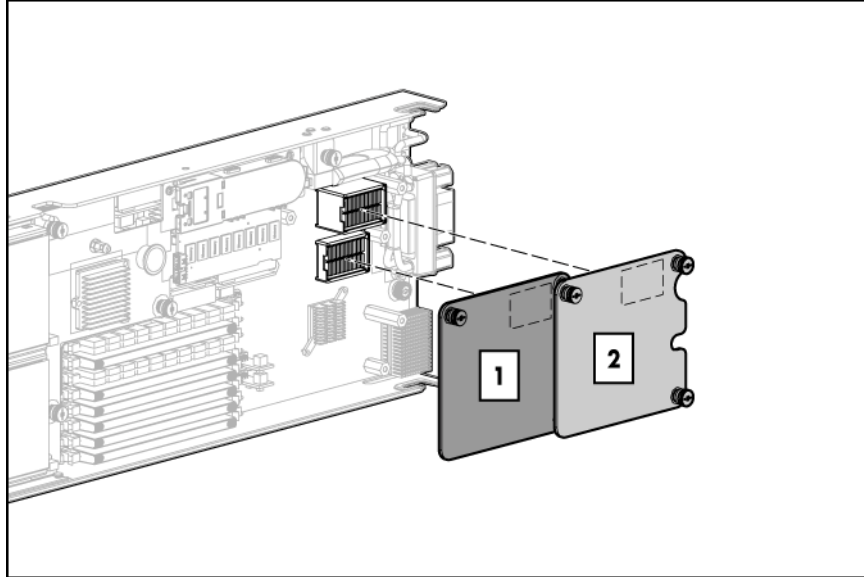
6 Mapping to interconnect ports

Several port types are referenced in the following tables.

- Examples of 1x ports are 1Gb Ethernet (1 GbE) Pass-thru modules and Fibre Channel (FC) interconnect modules.
- An example of a 2x port is a Serial Attached SCSI (SAS) interconnect module.
- Examples of 4x ports are 10Gb Ethernet (10 GbE) Pass-thru modules and InfiniBand 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.

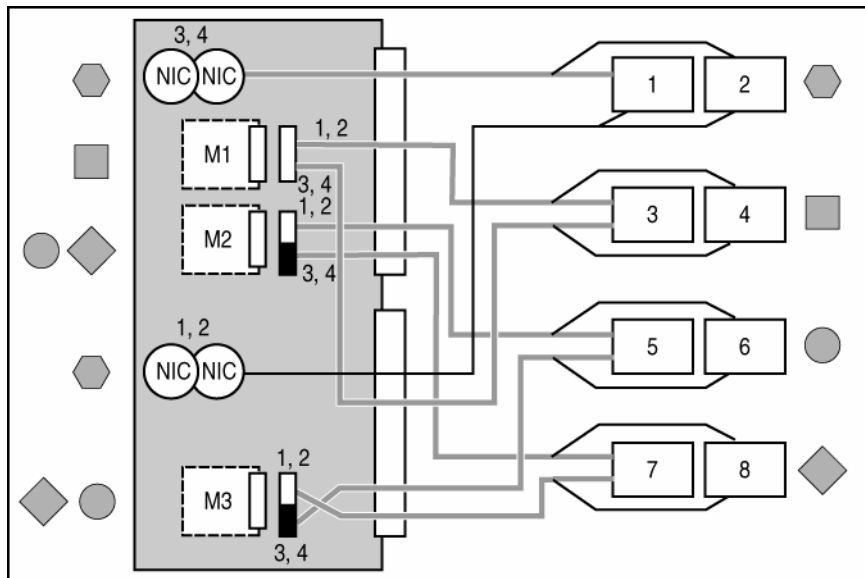
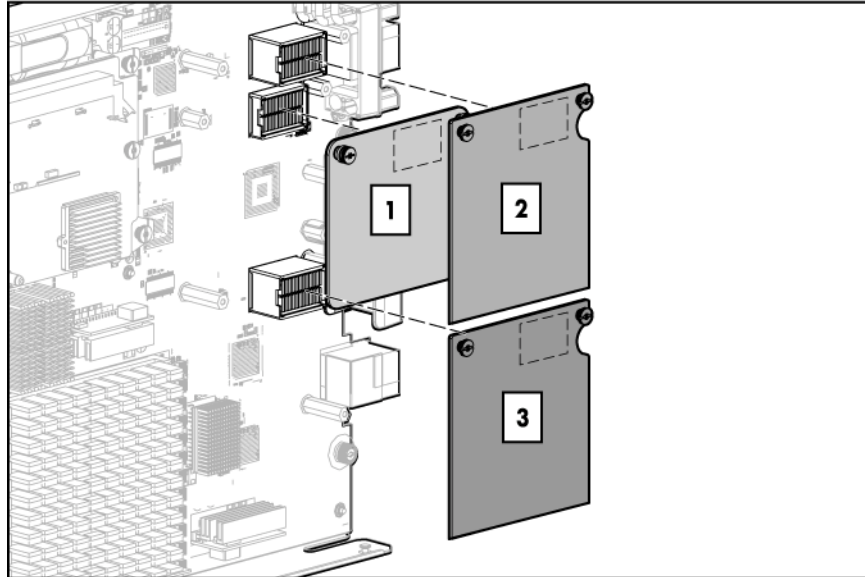
Mapping half-height server blades



Half-height server blade port	Port number	Connects to interconnect bay	Comments
NIC	NIC 1 NIC 2	1 2	For two single-wide Ethernet interconnect modules
Mezzanine slot 1, Option 1	1x/2x port 1 1x/2x port 2	3 4	For two single-wide interconnect modules
Mezzanine slot 1, Option 2	4x port 1	3 + 4 (together)	For one double-wide interconnect module

Half-height server blade port	Port number	Connects to interconnect bay	Comments
Mezzanine slot 2, Option 1	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	5 6 7 8	For four single-wide interconnect modules
Mezzanine slot 2, Option 2	4x port 1 4x port 2	5 + 6 (together) 7 + 8 (together)	For two double-wide interconnect modules

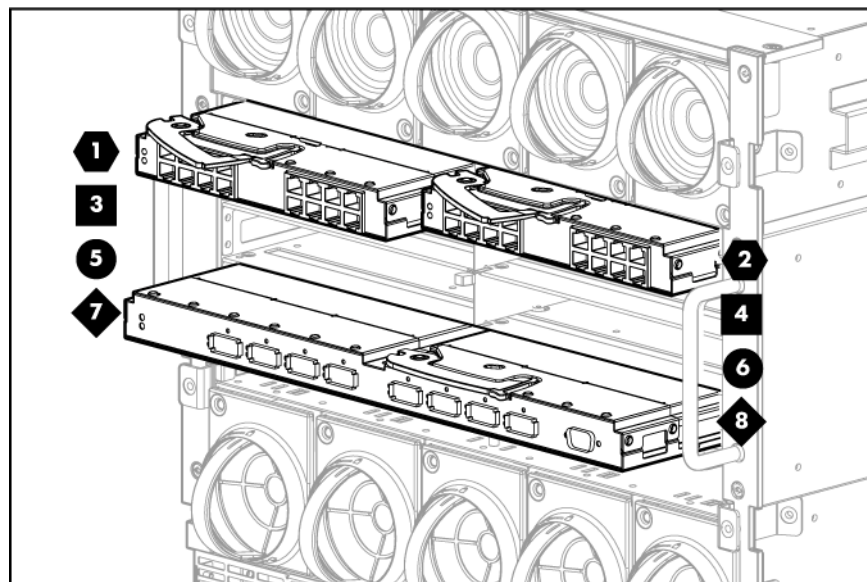
Mapping full-height server blades



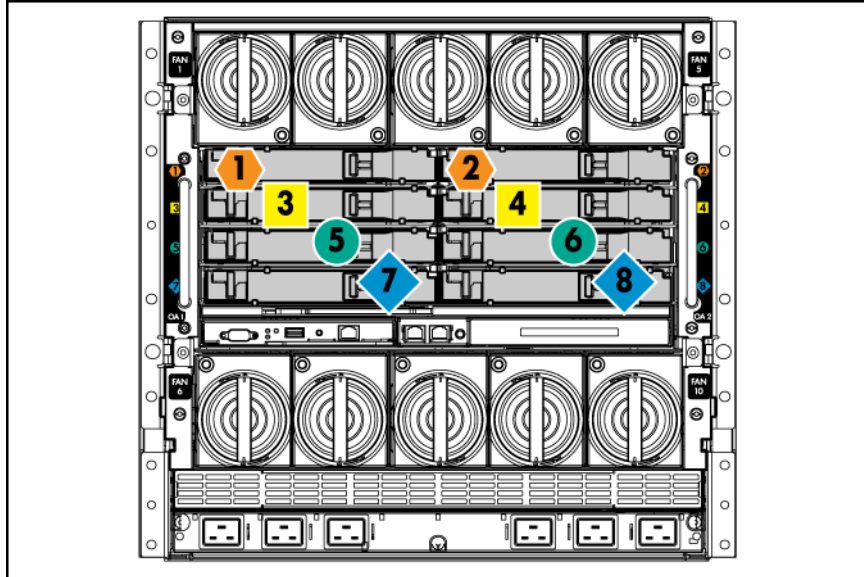
Full-height server blade port	Port number	Connects to interconnect bay	Comments
NIC	NICs 1 and 3 NICs 2 and 4	2 1	For two single-wide Ethernet interconnect modules

Full-height server blade port	Port number	Connects to interconnect bay	Comments
Mezzanine slot 1, Option 1	1x/2x port 1, 3 1x/2x port 2, 4	3 4	For two single-wide interconnect modules for four-port connectivity
Mezzanine slot 1, Option 2	4x port 1	3 + 4	For one double-wide interconnect module for one-port connectivity. Use Mezzanine slot 2 or 3 for two-port 4x connectivity.
Mezzanine slot 2, Option 1	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	5 6 7 8	For four single-wide interconnect modules
Mezzanine slot 2, Option 2	4x port 1 4x port 2	5 + 6 7 + 8	For two double-wide interconnect modules
Mezzanine slot 3, Option 1	1x/2x port 1 1x/2x port 2 1x/2x port 3 1x/2x port 4	7 8 5 6	For four single-wide interconnect modules
Mezzanine slot 3, Option 2	4x port 1 4x port 2	7 + 8 5 + 6	For two double-wide interconnect modules

I/O from the back of the enclosure



7 Installing interconnect modules



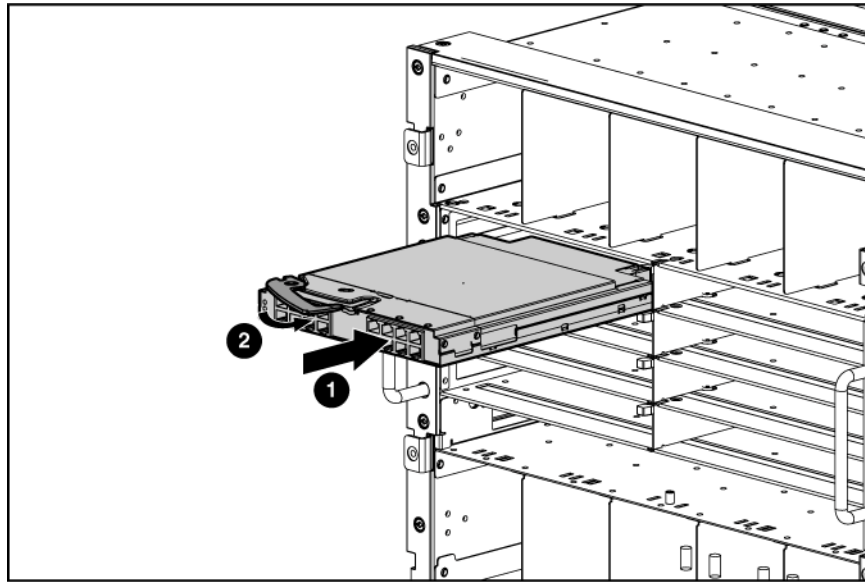
Server blade signal	Interconnect bay number	Interconnect bay label
NICs 1, 2, 3, and 4 (embedded)	1, 2	⬡
Mezzanine 1	3, 4	■
Mezzanine 2	5, 6 then 7, 8	● ◆
Mezzanine 3	7, 8 then 5, 6	◆ ●



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

1. Install the interconnect modules based on the number ordered and the number of fabrics in the configuration.

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.



2. Install interconnect module blanks in any unused interconnect bays.
3. Connect each installed interconnect module to the external connections with the appropriate cable.

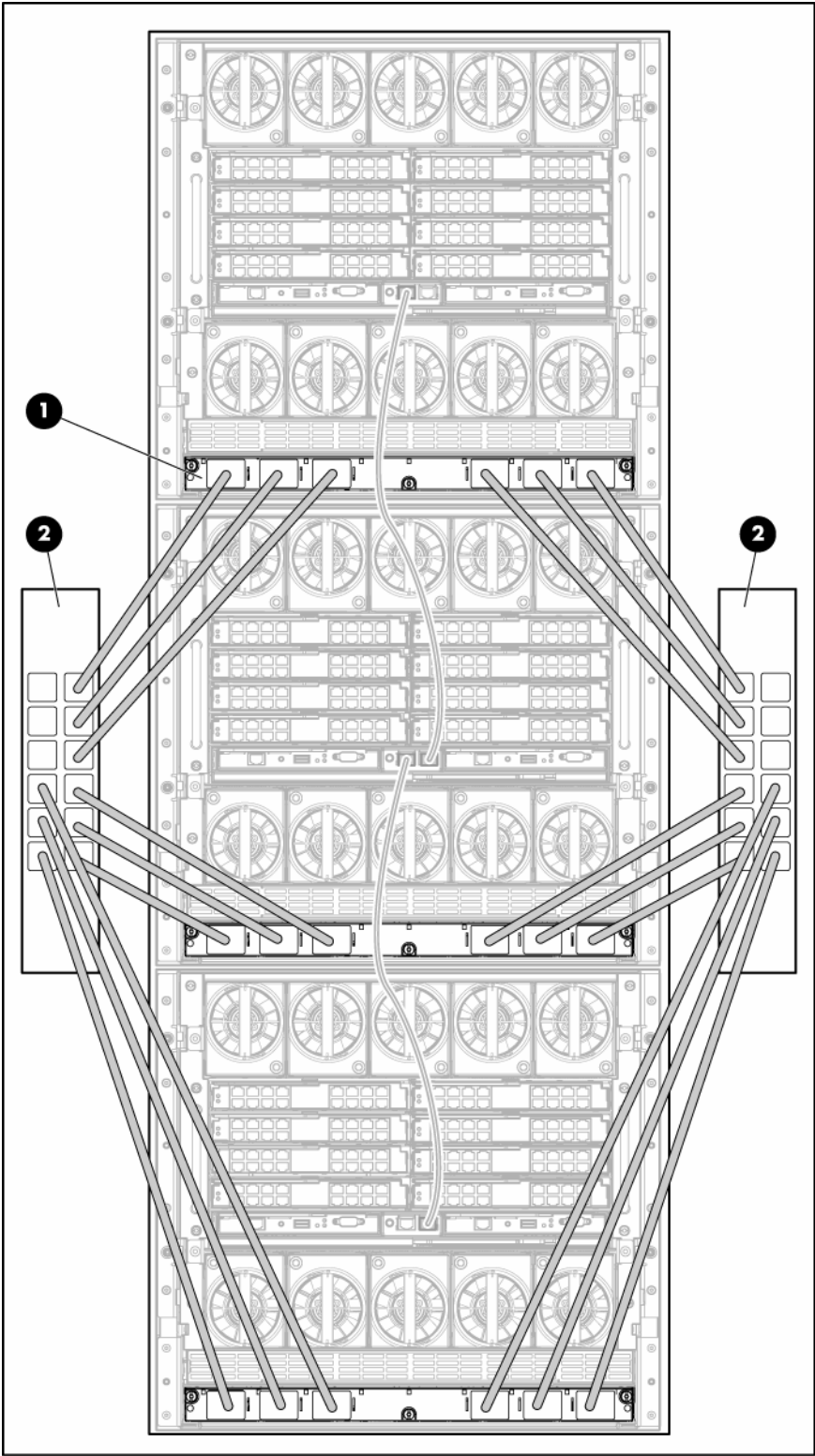
8 Powering up the enclosure

Single-phase power configuration

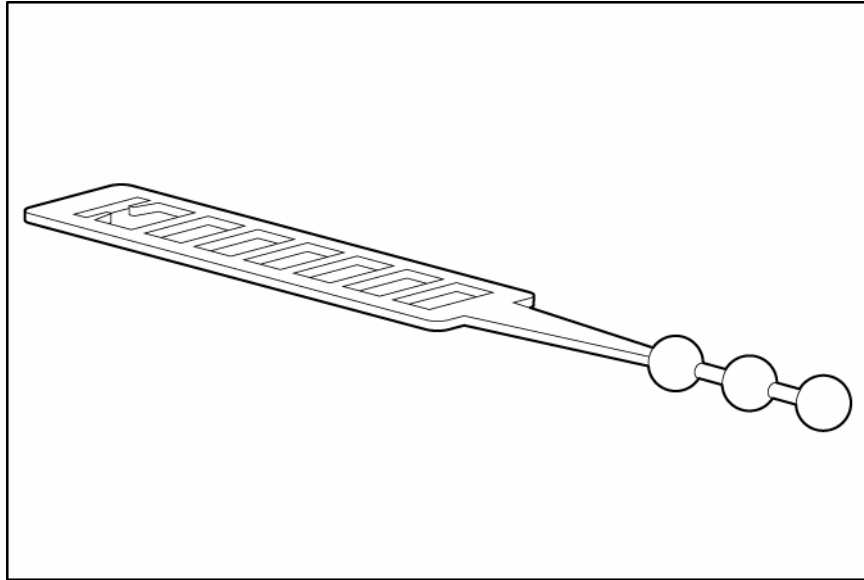
For a single phase power configuration:

1. Connect the AC power cables to the power connectors on the rear of the enclosure corresponding to the power supply that was populated on the front of the enclosure.
2. Connect the AC power cables to the AC power source or to an installed power distribution unit (PDU).

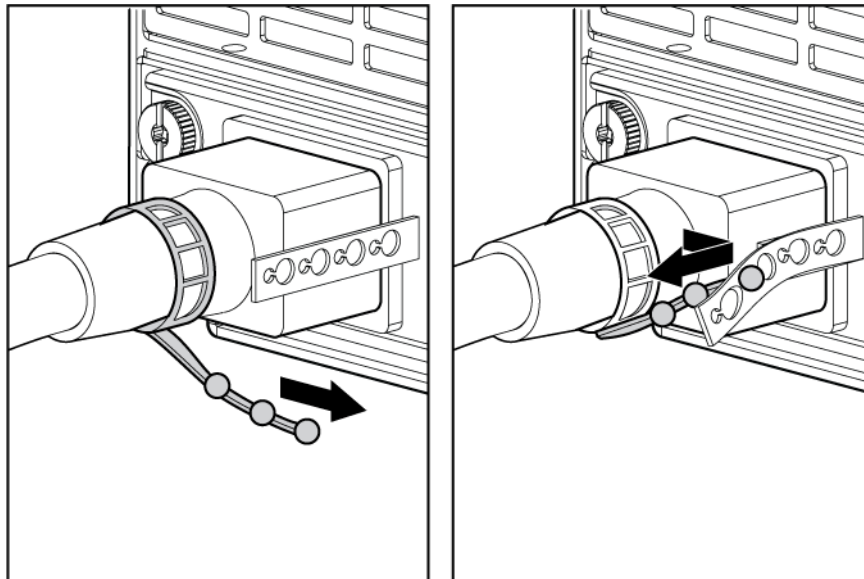
3. Turn on the AC circuit breakers for the enclosure.



4. Locate the bag of power retention ties that was taped to the top of the enclosure when it was shipped.



5. Be sure each power cable is securely attached to the power connectors.
6. Place a power retention tie around one of the power cables near the base of the plug, wrap it around the power cable, and then insert the plastic bead at one end of the power retention tie into the opening at the other end. Pull tightly.
7. Insert the plastic bead on the power retention tie into the cable retention strap located next to the power supply to secure the power cable tightly to the enclosure.



8. Repeat for each power cable attached to the enclosure.

Three-phase power configuration

For a three-phase power configuration:

1. The AC power cables are already attached to the enclosure.
2. Connect the AC power cables to the AC power source.
3. Turn on the AC circuit breakers for the enclosure.

9 Setting up the HP BladeSystem Insight Display

When the enclosure is powered up for the first time, the Insight Display launches an installation wizard to guide you through the configuration process. After configuring the enclosure, the Insight Display verifies that there are no installation or configuration errors.

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.

1. On the Enclosure Settings screen, confirm the default settings.
 - Use the navigation arrows to navigate to a particular setting, and press the **OK** button.
 - Navigate to the "?" box next to a setting and press the **OK** button to get help on that setting.
2. Confirm the Redundancy mode, which is typically AC Redundant, for the power supplies.
3. Set the Limit AC Input VA if the facility must limit AC power to the enclosure below what the power supplies can draw.
4. Enable Dynamic Power Savings to provide the highest power efficiency without affecting server performance.
5. Write down the OA1 and OA2 (if present) IP address. This information is needed when deploying the management software.
 - If 0.0.0.0., then the address must be set. Navigate to the address and press the **OK** button. Use the up/down arrows to select Static IP address. Use the up/down arrows on each field to set the IP, netmask, and gateway one octet at a time. Press the **OK** button when done, and then **OK** again on Accept to confirm the new IP address settings.
 - If the address is not 0.0.0.0., then write down the displayed address to use for remote login to the Onboard Administrator over the management network.
6. (Optional) Edit the Enclosure Name. The default value is the Onboard Administrator serial number.
7. (Optional) Edit the Rack Name. The default value is UnnamedRack.
8. Set the Insight Display PIN to prevent other users of the LCD from changing the settings.

9. Navigate to the Accept button at the bottom of the Enclosure Settings and press the **OK** button to Accept all the settings to continue. If you are setting up a single enclosure, proceed to step 11.

Enclosure Settings	
Redundancy	AC Redundant ?
Limit AC Input VA	Not Set ?
Power Savings	Disabled ?
OA1 IP Address	16.100.227.82 ?
OA2 IP Address	Not Present ?
Encl Name	1Z34AB789012 ?
Rack Name	UnnamedRack ?
Insight Display PIN#	Not Set ?
<input checked="" type="checkbox"/> Accept All	Settings Help

10. Navigate to Accept and press the **OK** button to apply the Enclosure Settings (Redundancy Mode, Limit AC, Power Savings, Rack Name, and Insight Display PIN) to other linked enclosures.

Check: Linked Enclosures
Use Up/Down to change value.
Then Right or OK to Nav Bar,
then press OK to Accept.
Pick: Yes or No

Linked Enclosures Detected.
Push Settings = **Yes**

Accept | Cancel | What is THIS?

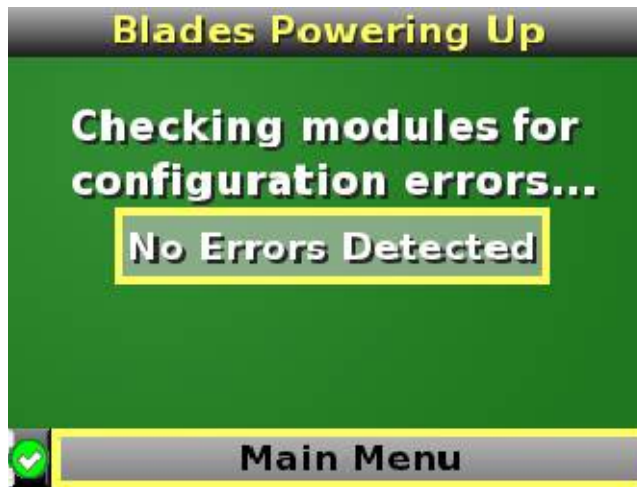
11. Follow the instructions on the next screen.

Check: Installation & Cables

Ensure that all blades and modules are plugged in, and that all cables are connected including power and networking

Continue | Back to Settings

12. Follow the instructions on the next screen.



13. 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.
14. 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.

The installation is complete.

10 For more information

For more detailed setup and configuration information, see the *HP BladeSystem c-Class Solution Overview* and the *HP BladeSystem c7000 Enclosure Setup and Installation Guide*. You can also find information on the HP website (<http://www.hp.com/go/bladesystem/documentation>).

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