



BladeCenter H Rack Installation Instructions

Review the documentation that comes with your rack cabinet for safety and cabling information. Before you install your BladeCenter® unit in a rack cabinet, review the following guidelines:

- Three or more people are required to install the BladeCenter in a rack.
- Do not leave any unused open space within a rack cabinet. Blank filler panels must be installed to prevent the recirculation of warm air.
- Plan the device installation starting from the bottom of the rack cabinet.
- Install the heaviest devices in the bottom of the rack cabinet.
- Do not extend more than one device out of the rack cabinet at the same time.
- Remove the rack cabinet doors and side panels to provide easier access during installation.
- The BladeCenter unit's power cords must be connected to a 220-volt power distribution unit (PDU) or to a properly grounded 220-volt power outlet.
- When installing multiple devices in the rack cabinet, be sure not to overload the power outlet.
- Install your BladeCenter unit in a rack cabinet that meets the following requirements:
 - Minimum depth of 70 mm (2.76 in.) between the front mounting flange and inside of the front door.
 - Minimum depth of 157 mm (6.18 in.) between the rear mounting flange and inside of the rear door.
 - Minimum depth of 559 mm (22 in.) and maximum depth of 762 mm (30 in.) between the front and rear mounting flanges.
 - Install your BladeCenter unit only in a rack cabinet with perforated front and rear doors or in a rack cabinet equipped with the IBM Rear Door Heat eXchanger.

Rack Safety Information, Statement 2



DANGER

- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet.
- Always install servers and optional devices starting from the bottom of the rack cabinet.
- Always install the heaviest devices in the bottom of the rack cabinet.

Safety Information, Statement 4



Use safe practices when lifting.



≥18 kg (39.7 lb)



≥32 kg (70.5 lb)



≥55 kg (121.2 lb)

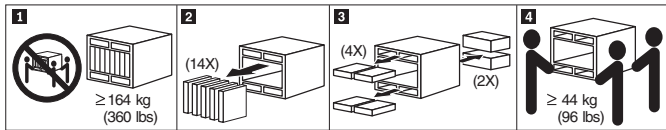
Rack Safety Information, Statement 9



DANGER

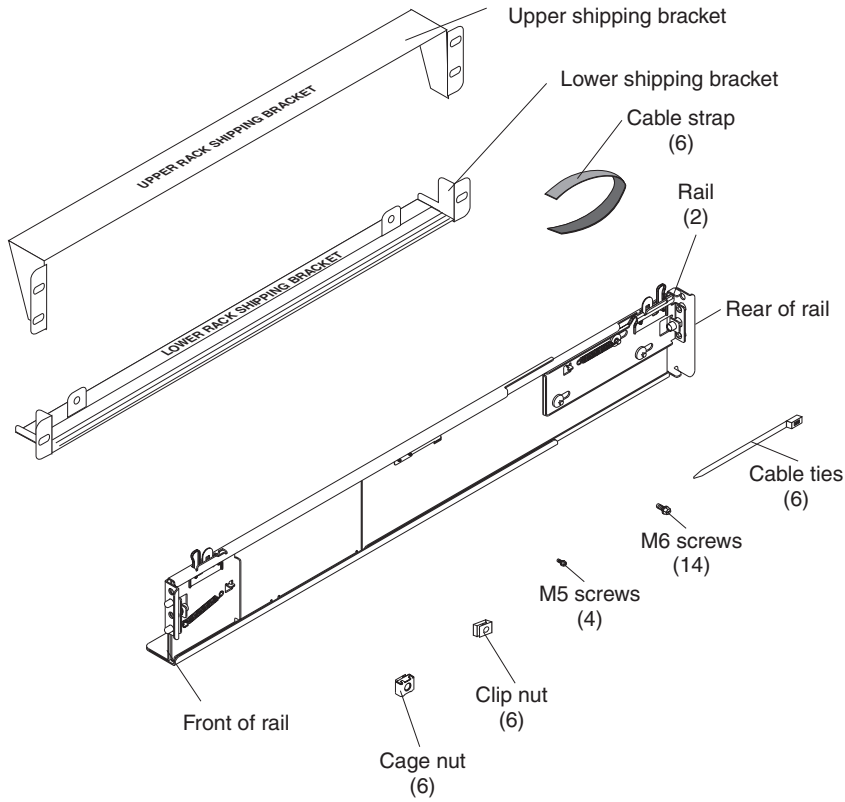
Overloading a branch circuit is potentially a fire hazard and a shock hazard under certain conditions. To avoid these hazards, ensure that your system electrical requirements do not exceed branch circuit protection requirements. Refer to the information that is provided with your device for electrical specifications.

Safety Information, Statement 20



To avoid personal injury, remove all the blades, power modules, and blowers to reduce the weight before lifting. Refer to the *Installation and User Guide* for information on how to remove these components.

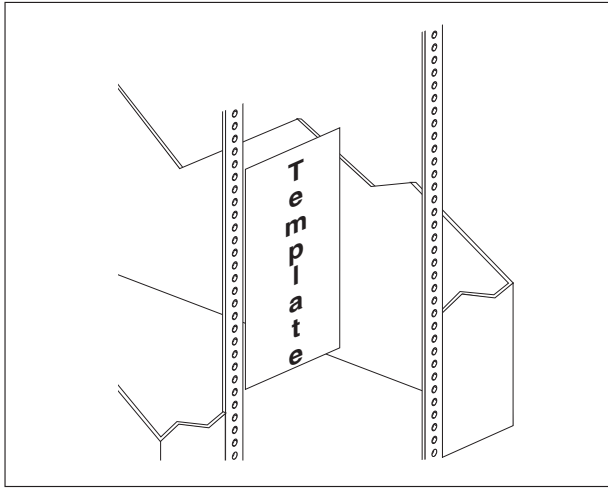
The following illustration shows the items contained in the BladeCenter Rack Installation Kit. If any items are missing or damaged, contact your place of purchase.



Note: Upper and lower shipping brackets are not required for the rack installation. These brackets must be used when shipping an IBM BladeCenter installed in a rack cabinet.

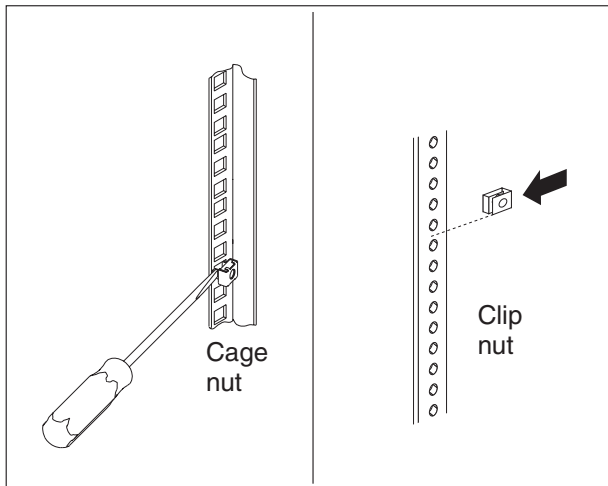
To install your BladeCenter unit, complete the following steps:

1. Position the rack mounting template supplied with your BladeCenter unit on the rack so the edges of the template do not overlap any other installed devices. Line up and select the holes on the front and rear of the rack in the locations indicated by the arrows on the attached template.

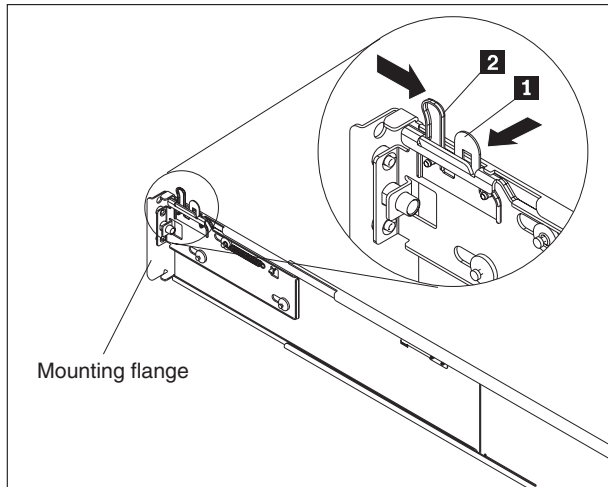


2. Use a screwdriver to install the cage nuts or the clip nuts, as required for your rack, into the selected holes.

Note: For racks with square holes, use the cage nuts. For racks with round holes, use the clip nuts.

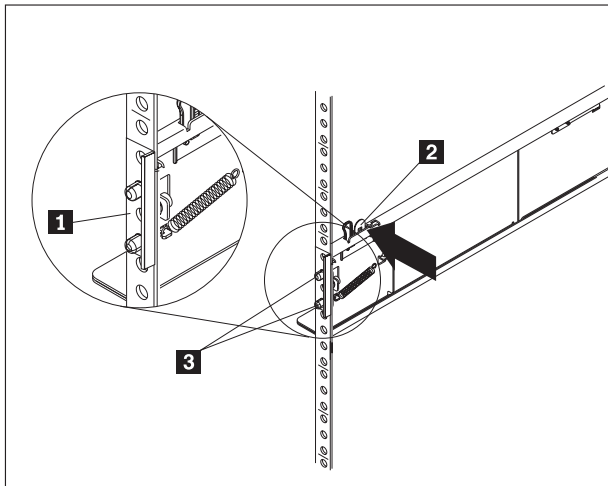


3. Before installing the rails in to the rack, fully extend each rail. A set of rail pins and a mounting flange are on each end of the rail. Retract the rail pins by pressing in the rail latch **1** and then pulling the finger pull **2** toward the center of the rail.



4. Position the rail in to the desired location on the rack and align the pins on each end of the rail with the appropriate holes on the rack **1**. Release the rail latches and finger pulls **2** on each end to allow the rail pins to pass through the rail and the mounting flange **3**. Repeat steps 3 and 4 for the remaining rail.

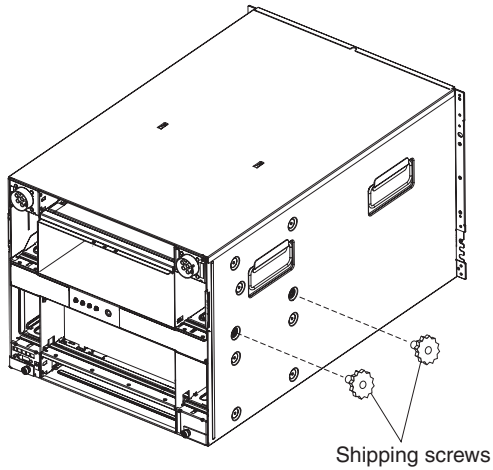
Note: Make sure that the rail pins protrude through the mounting flanges and the rack cabinet rails.



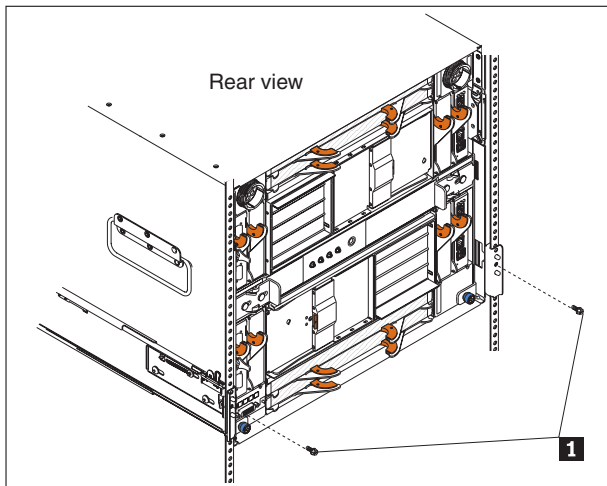
5. Remove the blade servers, power modules, and blower modules from the BladeCenter unit to reduce the weight during installation. For information about how to remove these components, see the *Installation and User Guide*.

Note: Before removing a blade server from the BladeCenter, make sure to label the blade servers and BladeCenter unit bays to make sure that you reinstall the blade servers in the correct bays.

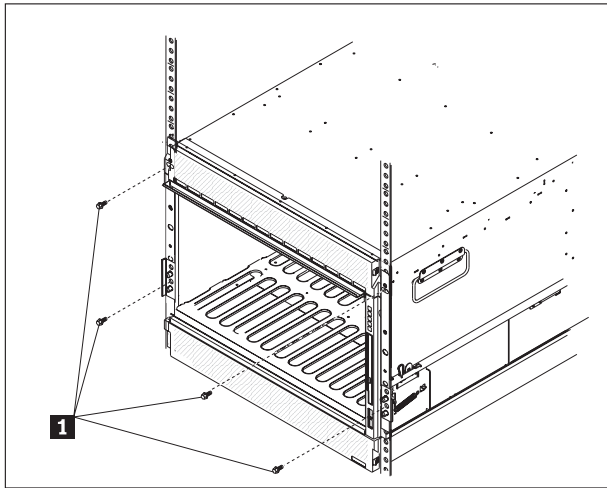
6. Remove the two blue shipping screws from each side of the BladeCenter unit.



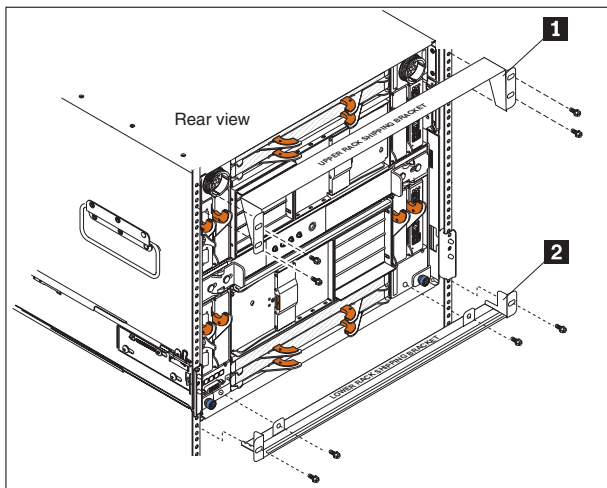
7. Slide the BladeCenter unit in to the rack. Insert one M6 screw **1** in the center hole of each rail on the rear of the rack cabinet.



8. Insert four M6 screws **1** in the front of the BladeCenter unit to secure it to the rack cabinet.

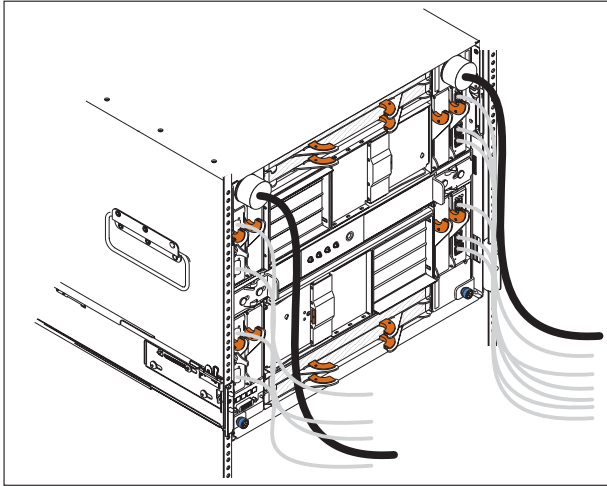


9. Reinstall the blade servers, power modules and blower modules in the BladeCenter unit. Make sure that you reinstall the blade servers in the same bays from which they were removed. For information about installing these components, see the *Installation and User Guide*.
10. If you are shipping a BladeCenter unit while it is installed in a rack cabinet, install the upper and lower shipping brackets. Secure the upper shipping bracket **1** to the rack using four M6 screws . Use two M6 screws to secure the lower shipping bracket **2** to the rack and two M5 screws to secure the bracket to the BladeCenter unit.
Note: The shipping brackets must be removed to remove the shuttle from the BladeCenter unit.



11. Connect your data cables and power cords to the rear of the BladeCenter unit. Use the supplied cable ties and cable straps to secure the cables together and to the rack cabinet rails.

Note: Allow slack in all cables to avoid tension in the cables and to allow you to remove components without disconnecting the cables from the BladeCenter unit.



To remove the BladeCenter unit from the rack cabinet, reverse these instructions. Store this information with your BladeCenter documentation for future use.

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