

# **Installation Guide**

## **hp rp8400 Server Series**

**Third Edition**

**Version 4.0**



**Manufacturing Part Number: A6093-96022**

**August 2003**

USA

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## **Preface**

This guide provides the HP Installation Specialist with the background information and procedures needed to install the hp rp8400 server series.

## Revision History

**Table 1**                      **Revisions**

<b>Edition</b>	<b>Part Number</b>	<b>Release Date</b>	<b>Description</b>
Second	A6093-96012	August 2002	Updated with additions and corrections.
Third	A6093-960	August 2003	Added Configuring a Web Console on the MP to Chapter 5.

## Scope

The information contained in this manual applies to the hp rp8400 server series.

This guide is divided into the following chapters:

- Chapter 1, “Introduction”—Describes the responsibilities of the customer and the HP Installation Specialist prior to and during installation.
- Chapter 2, “Safety Considerations”—Lists the safety considerations for installing a new system or upgrading an existing system.
- Chapter 3, “Unpacking”—Discusses how to inspect equipment, unpack cabinets and accessories, and check inventory.
- Chapter 4, “AC Power”—Discusses procedures to connect AC power to the system and to power up the system.
- Chapter 5, “System Installation”—Provides information regarding hp rp8400 server series power inputs, setting up the CE Tool and configuring the MP.
- Chapter 6, “Installation cleanup”—Discusses procedures to complete the cosmetic portion of the installation.
- Chapter 7, “Returning equipment”—Discusses procedures to follow if equipment must be returned to Hewlett-Packard.
- Appendix A, “Installation checklist”—Provides a checklist to use during and after installation to ensure that all required tasks have been performed.
- Appendix B, “Accessing the MP Using a Modem”—Provides the procedure used to connect to the MP remotely.



## Warnings, Cautions and Notes

This document presents warnings, cautions and notes in the following format.

---

<b>WARNING</b>	<b>A warning highlights information that if not adhered to could cause harm or injury to personnel.</b>
----------------	---

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<b>CAUTION</b>	A caution highlights procedures or information necessary to avoid damage to equipment, damage to software, loss of data, or invalid test results.
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<b>NOTE</b>	A note highlights supplemental information.
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## Safety and Regulatory Information

For your protection, this product has been tested to various national and international regulations and standards. The scope of this regulatory testing includes electrical/mechanical safety, radio frequency interference, ergonomics, acoustics, and hazardous material. Where required, approvals obtained from third-party test agencies are shown on the product label.

### Safety in Material Handling

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**WARNING**     **Do not lift the server manually. To avoid physical injury you must use a mechanical lifting device.**

---

### USA Radio Frequency Interference FCC Notice

The Federal Communications Commission (in CFR Part 15) has specified that the following notice be brought to the attention of the users of this product.

---

**NOTE**     This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

---

The user is cautioned that changes or modifications not expressly approved by Hewlett-Packard could result in the equipment being noncompliant with FCC Class A requirements and void the user's authority to operate the equipment.

### Japanese Radio Frequency Interference VCCI

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

This equipment is a Class A category (Information Technology Equipment to be used in commercial and/or industrial areas) and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment aimed at preventing radio interference in commercial and/or industrial areas.

Consequently, when used in a residential area or in an adjacent area thereto, radio interference may be caused to radios and TV receivers, etc. Read the instructions for correct handling.

## EMI Statement (European Union Only)

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## Digital Apparatus Statement (Canada)

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

## BSMI (Taiwan)

This product has been reviewed and is fully compliant to CNS 13438 (CISPR 22: 1993) Class A.

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## Acoustics (Germany)

Acoustic Noise (A-weighted Sound Pressure Level LpA) measured at the bystander position, normal operation, to ISO 7779: LpA = 57.3 dB.

## IT Power System

This product has not been evaluated for connection to an IT power system (an AC distribution system having no direct connection to earth according to IEC 60950).

## Installation Conditions

See installation instructions before connecting to the supply.

---

<b>WARNING</b>	<b>This equipment is configured with multiple power sources. Hazardous voltages and energy may be present even after the removal of a single input source. Trained service personnel must follow guidelines stipulated in the service guidelines in the hp rp8400 server series EPSS.</b>
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## Lithium Battery Caution

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<b>CAUTION</b>	<b>Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.</b>
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## Notational Conventions

This section discusses notational conventions used in this book.

<b>Italic</b>	<b>In paragraph text, italic identifies new and important terms and titles of documents.</b>
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In command syntax diagrams, *italic* identifies variables that must be supplied by the user.

**Bold**

In paragraph text, bold identifies either equipment markings or actions that require an operator response.



## Associated Documents

The following is a list of other documents that provide more details on the topics presented in this manual:

- *Standard for the Protection of Electronic Computer Data Processing Equipment, (NFPA75) National Fire Protection Association*
- *EIA Standard RS-232-C, Electronic Industries Association*
- *Electrostatic Discharge Failures of Semiconductor Devices, Unger, B.A. 1981, Bell Laboratories*
- *Site Preparation Guide: hp rp8400 server series*
- Safety and Regulatory Information: hp rp8400 server series



---

# 1 Introduction

This chapter contains a general description of the responsibilities of the Customer and HP Installation Specialist before and during an installation.

- Customer Responsibilities
- HP Installation Specialist Responsibilities

## Customer Responsibilities

The customer is responsible for:

- Preparing the Site
- Accepting the Equipment

### Preparing the Site

The customer and a Hewlett-Packard representative should review the site survey and site inspection checklists located in the *Site Preparation Guide: hp rp8400 server series* to identify potential problems that may arise before, during, or after installation of the system. The checklists provide information on the following:

- Installation restrictions, such as size and weight limitations at the facility.
- Special delivery procedures.
- Special equipment required for installation, for example, tracks or hoists.
- Times when the facility is available for installation, after the components are unpacked and ready for installation.
- Special security requirements applicable to the facility, such as security clearances, visitor or vendor badges.

### Accepting the Equipment

The customer should oversee the arrival of the equipment, including checking the inventory and moving the equipment to the final installation location.

The customer and the HP Installation Specialist should inspect the equipment when it is unpacked. Inventory the equipment with the *Sales Order Packing Slip* or the customer's *Bill of Material*. It is the customer's responsibility to obtain and complete a damage claim form from the shipping representative if the system has been damaged. Refer to Chapter 3, "Unpacking," for more information on checking the inventory.

## HP Installation Specialist Responsibilities

The HP Installation Specialist is responsible for:

- Unpacking the equipment
- Installing the cabinets
- Connecting the system to AC power
- Completing the installation report

### Tool Requirements

The following list provides the HP Installation Specialist with the recommended tools for performing the unpacking and installation process.

#### Tools Required for Unpacking

- Diagonal side cutters
- Safety glasses
- Ratchet handle, extension, and socket (1/2 inch)
- Open end wrench (1/2 inch)
- Closed end wrench (1/2 inch)

#### Tools Required for Installation

- Digital voltmeter
- Open end wrench (1/2 inch)
- ESD kit (wrist strap, wrist cord, ground mat, ground cord)
- Cable ties
- Permanent marking pen

### Unpacking the Equipment

The HP Installation Specialist may unpack the equipment after it is located at the final installation site. Unpacking includes checking the inventory, inspecting the equipment with the customer, and removing the equipment from the containers. Save all packing material until the operational checkout of the equipment is completed. Saving all the packing material allows the equipment to be repacked for return if necessary.

### Installing the Cabinet

To install an hp rp8400 server, the HP Installation Specialist must connect the cables between the server and the console, and if applicable, connect modems and other peripherals.

Should it become necessary to troubleshoot the server during installation or later during a service call, note the following caution:

---

**CAUTION** Do not leave side or top covers off the server for extended periods of time while troubleshooting the server. Overall reliability of the server will be compromised if covers are not replaced after servicing.

---

## Connecting and Testing AC Power

After the equipment has been unpacked and moved into position, it must be connected to the site AC power supply.

---

**NOTE** Before applying AC power to the system, check that the site supply voltage is 200-240 volts AC, 50-60 Hz. This should be done for every AC receptacle that will supply power to the system(s) since one receptacle could be wired correctly while the remaining receptacles could be wired incorrectly.

---

Verify the following items before applying power to the system:

- AC power receptacles are wired correctly at the site
- AC voltage levels are adequate

Domestic and international systems are shipped with a 4.5 meter AC power cord terminating with an AC power plug. The matching AC power receptacles must be prewired into the site AC power supply for each cabinet.

After installing each cabinet(s), the HP Installation Specialist must verify AC wiring, apply AC power to the system, and check input AC voltages. Refer to Chapter 4, “AC Power” for procedures on connecting AC power to the system and measuring the AC voltage.

## Completing the Installation Report

Complete the Installation Report, if one is provided with the system, and return to the address noted in the Installation Report.

---

## 2 Safety Considerations

It is important to observe safety procedures when installing Hewlett-Packard computers and their peripheral devices. General guidelines are provided in this chapter.

- Input Power Ratings
- Electrical Safety Precautions

## Input Power Ratings

Each cabinet has a label mounted at the rear of the cabinet that lists its input power rating. See Figure 2-1 for the cabinet power label.

**WARNING** Safety warning labels affixed to the rear of the processor must be in the correct language for the installation and must show the power configuration of the power controller. Incorrect labels may result in injury to personnel and damage to equipment.

**CAUTION** Do not exceed the cabinet's International Electrotechnical Commission (IEC) outlet power ratings. Doing so may cause damage to equipment.

**Figure 2-1      Power Label**



## Power Label Description

Each power label provides power rating information for its corresponding cabinet.

The dash (-) and the virgule (/) symbols on the labels indicate a specific value or range:

- The dash (-) means that the equipment operates properly between the values listed.
- The virgule (/) means that a specific voltage or frequency is required and that internal adjustments or specific component installation must be made by authorized personnel only.

When the virgule (/) symbol is used, the specific voltage or frequency is also listed on the cabinet's power cable safety caution label.

## Input Power Inspection Checklist

**WARNING** Injury to personnel or damage to equipment can occur if the AC input power does not comply with the specifications on the cabinet power label.

The following information should be verified before applying AC power to a cabinet:

1. Facility AC voltage range and the cabinet voltage requirements are the same.
2. Facility AC input frequency range corresponds to the cabinet frequency range.



3. Facility circuit breakers are adequate for specified cabinet current loads. Refer to the *Site Preparation Guide: hp rp8400 server series* for circuit breaker size requirements.
4. Facility AC power connection to the processor cabinet complies with and is tested by guidelines set forth in Chapter 4, “AC Power.”

---

## Electrical Safety Precautions

Hazardous voltages are present inside the server cabinet while the site AC circuit breakers are set to **ON**. Ensure that the site AC circuit breakers are set to **OFF** before servicing the system.

### Circuit Breakers

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**WARNING** Set all AC input circuit breakers to the **OFF** position before connecting a power cable plug to the facility's AC power. Failure to do so may cause injury to personnel.

---

---

## 3 Unpacking

Inspect shipping containers when the equipment arrives at the site. Check equipment after the packing has been removed. This chapter discusses how to inspect and receive the hp rp8400 server cabinet.

---

**NOTE** The server will ship in one of three different configurations. The configurations are on a pallet in a Rosebowl II cabinet, on a pallet for rack mount into an existing cabinet on the customer site, and on a pallet with a wheel kit for installation as a standalone server.

---

- “Inspecting the hp rp8400 Server Cabinet”
- “Receiving the hp rp8400 Server Cabinet”
- “Rack Mount System Installation”
- “Wheel Kit Installation”
- “Power Distribution Unit”

---

## Inspecting the hp rp8400 Server Cabinet

Hewlett-Packard shipping containers are designed to protect their contents under normal shipping conditions. After the equipment arrives at the customer site, carefully inspect each carton for signs of shipping damage. A tilt indicator is installed on each carton shipped. The beads in the indicator will roll to the upper position if the container has been tilted to an angle that could cause equipment damage. The tilt indicator itself will have two windows and each window under normal conditions will show four beads present. If a carton has been mishandled, accidentally dropped, or knocked against something, the tilt indicator will indicate missing beads. If damage is found, document the damage with photographs and contact the transport carrier immediately.

Examine the server cabinet for visible shipping damage. After unpacking the cabinet, check for damage that may have been obscured by the shipping container. If damage is found after visual inspection, document the damage with photographs and contact the transport carrier immediately.

If the equipment has any damage, a damage claim form must be obtained by the customer from the shipping representative. The customer should complete the form and return it to the shipping representative.

---

### NOTE

The factory provides an installation warranty that is effective from the time the customer receives the shipment until Field Services turns the system over to the customer.

Upon inspection of a received system and/or during installation of the system, if any parts or accessories are missing or defective, they will be replaced directly from the factory via a priority process. To request replacement parts, the HP Installation Specialist must contact the local Order Fulfillment group which will coordinate the replacement with the factory.

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## Receiving the hp rp8400 Server Cabinet

This section contains information pertaining to unpacking the server cabinet.

---

**WARNING**    **Wear protective glasses while cutting the plastic bands around the shipping container. These bands are under tension. When cut, they can spring back and cause serious eye injury.**

---

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**NOTE**        Position the pallet allowing for enough space to roll the cabinet off the pallet before starting.

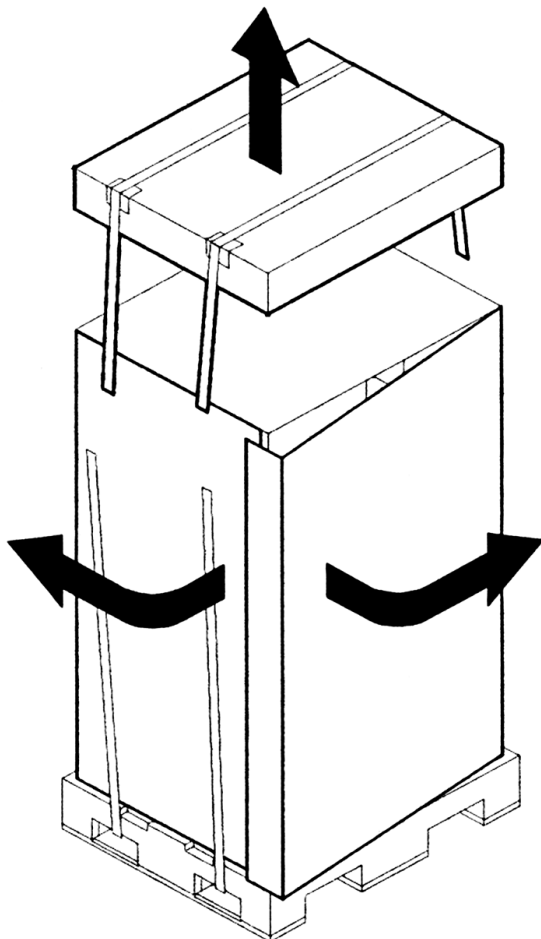
---

Remove the server cabinet using the following procedure:

**Step 1.** Cut the polystrap bands around the shipping container.

**Step 2.** Lift the cardboard top cap from the shipping box.

**Figure 3-1 Removing the Polystraps and Cardboard**



**Step 3.** Remove the corrugated wrap from the pallet.

**Step 4.** Remove the packing materials.

---

**CAUTION** The plastic wrapping material should be cut off rather than pulled off. Pulling the plastic covering off represents an ESD hazard.

---

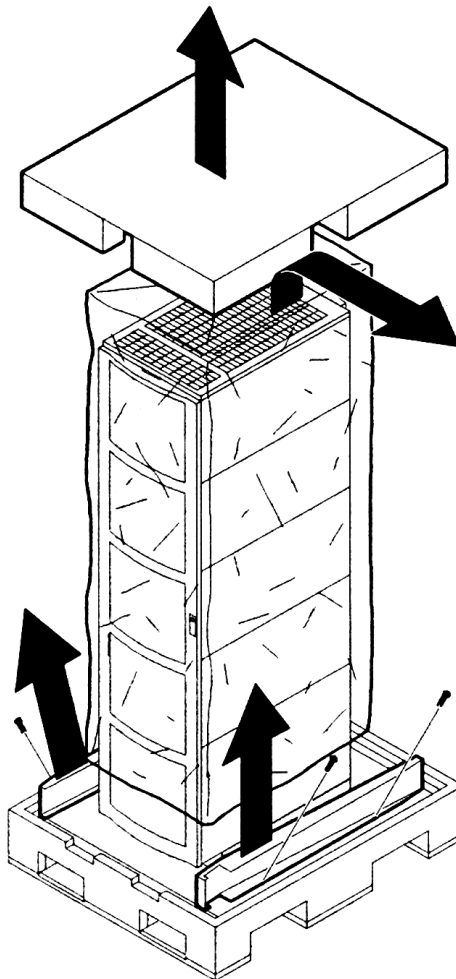
**Step 5.** Remove four bolts holding down the ramps and remove the ramps.

---

**NOTE** Figure 3-2 shows one ramp attached to the pallet on either side of the cabinet with each ramp secured to the pallet using two bolts. There is another configuration where the ramps are secured together on one side of the cabinet with one bolt.

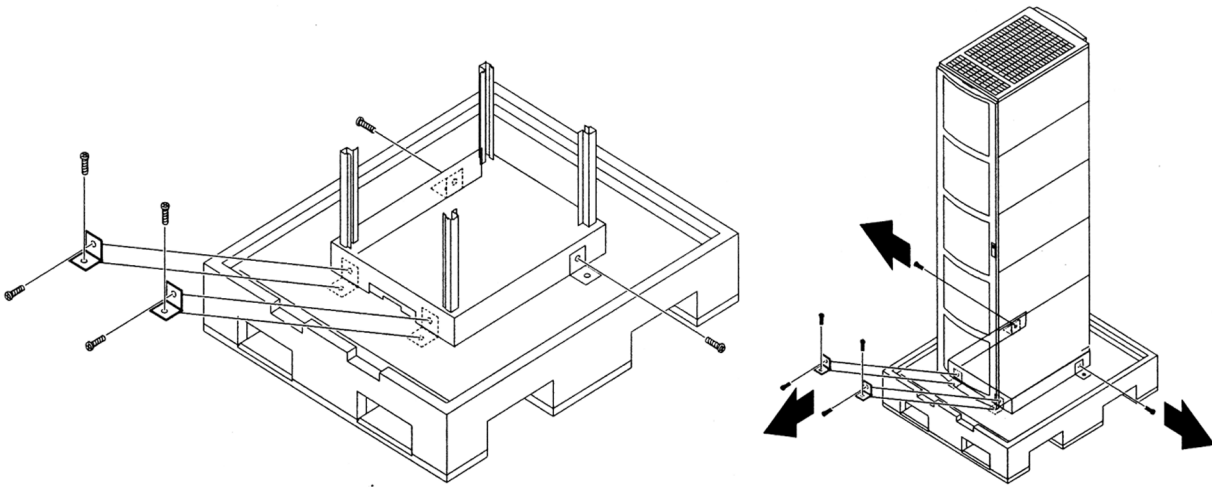
---

**Figure 3-2** Removing the Shipping Bolts and Plastic Cover



**Step 6.** Remove the six bolts from the base attaching the rack to the pallet.

**Figure 3-3**Preparing to Roll Off the Pallet



---

**WARNING**

Make sure that the leveling feet on the rack are raised before you roll the rack down the ramp and any time you roll the rack on the casters. Use caution when rolling the cabinet off the ramp. A single server in the cabinet weighs approximately 508 pounds. It is strongly recommended that two people roll the cabinet off the pallet.

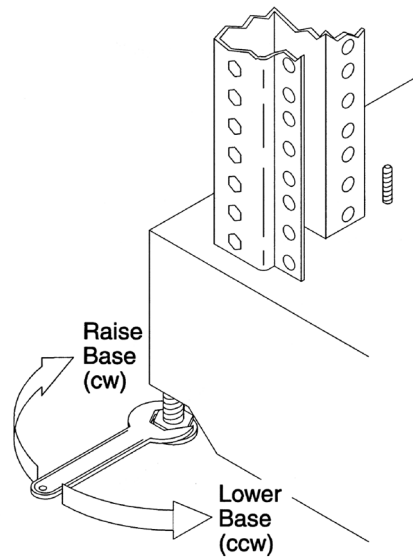
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## Securing the Cabinet

Once in position, secure and stabilize the cabinet using the leveling feet at the corners of the base and install the anti-tip mechanisms on the bottom front and rear of the rack.

**Figure 3-4**      **Securing the Cabinet**



## Rack Mount System Installation

Servers shipped as a *stand alone* or in the *to be racked* configuration must have the core I/O *handles* and the PCI *towel bars* attached at system installation. Obtain and install the core I/O handles and PCI towel bars from the accessory kit A6093-04046. The towel bars and handles are the same part. Refer to service note A6093A-11.

There are several documents written to help with rack mounting the server. This list is intended to guide the HP Installation Specialist to the documentation that has been written by the Rack Solutions team. The external Web site is <http://www.hp.com/racksolutions>. The internal Web site is <http://racksolutions.corp.hp.com>.

### Rack System/E

Detailed rack information for the rack system/e covers the following topics.

- Safety and Regulatory Information
- Description of the Standard Racks and Physical Specifications
- Installation Guidelines
- Procedures

The part number for this user's manual is 5967-6409.

### Rack System/E Stabilizer Feet

The stabilizer installation guide for the rack system/e covers the following topics.

- How to Install the Stabilizers
- Moving the Rack

The part number for this installation guide is A5805-96001

### HP J1528A Rack Integration Kit

The rack integration kit information covers installing the following products.

- Ballast Kit (J1479A)
- Anti-Tip Stabilizer Kit (A5540A)
- Slide Rails
- CMA (Cable Management Arm)
- Interlock Device Assembly

This installation guide provides a complete parts list of the hardware and tools required to perform the installation of the products mentioned. Installation of the products is illustrated in this guide. The part number for this installation guide is J1528-90001.

## Manual Lifting

Use this procedure only if no Hewlett-Packard approved lift is available.

This procedure should only be performed by FOUR (4) qualified HP Service Personnel utilizing proper lifting techniques and procedures.

System damage can occur through improper removal and re-installation of devices. This task must be performed by trained personnel only. Instructions for removing and re-installing these components can be found in the Removal & Replacement chapter of the Service Guide.

---

**CAUTION** Observe all ESD safety precautions before attempting this procedure. Failure to follow ESD safety precautions could result in damage to the server.

---

**Step 1.** Reduce the weight by removing all Bulk Power Supplies and Cell Boards.

**Step 2.** Locate the FOUR (4) positioning handles on the sides of the system. They are color coded blue and located close to each base corner of the unit.

---

**CAUTION** Utilize proper lifting techniques and procedures. Refer to URL:  
[http://ehss-field.corp.hp.com/web\\_docs/C03-0010.pdf](http://ehss-field.corp.hp.com/web_docs/C03-0010.pdf)

---

**Step 3.** Unfold the handles so they are extended out from the unit. The server is now ready for manual lifting by the FOUR (4) qualified HP Service Personnel.

**Step 4.** After the server is secured, re-install the previously removed Cell Boards and Bulk Power Supplies.

## Using the RonI Model 17000 SP 400 Lifting Device

A lifter designed by the RonI company will be used to rack mount the server. The lifter is capable of lifting 400 pounds to a height of five feet. The lifter can be broken down into several components. Once completely broken down, no single component weighs more than 25 pounds. This makes the lifter easy to transport from the office to the car and then to the customer site.

Documentation for the RonI lifter has been written by RonI and is on the *hp rp8400 server series EPSS*. Complete details on how to assemble the lifter, troubleshoot the lifter and maintain the lifter are provided by RonI in the documentation.

Use the following procedure to unload the server from the pallet once the lifter is assembled.

---

**WARNING** Use caution when using the lifter. Because of the weight of the server, it must be centered on the lifter forks before raising it off the pallet to avoid injury.

**The server must be racked in the bottom of a cabinet for safety reasons. Never extend more than one server from the same cabinet while installing or servicing either an hp rp8400 server series or another server product. Failure to follow these instructions could result in the cabinet tipping over.**

---

**Step 1.** Obtain the *HP J1528A Rack Integration Kit Installation Guide* before proceeding with the rack mount procedure. This guide covers these important steps:

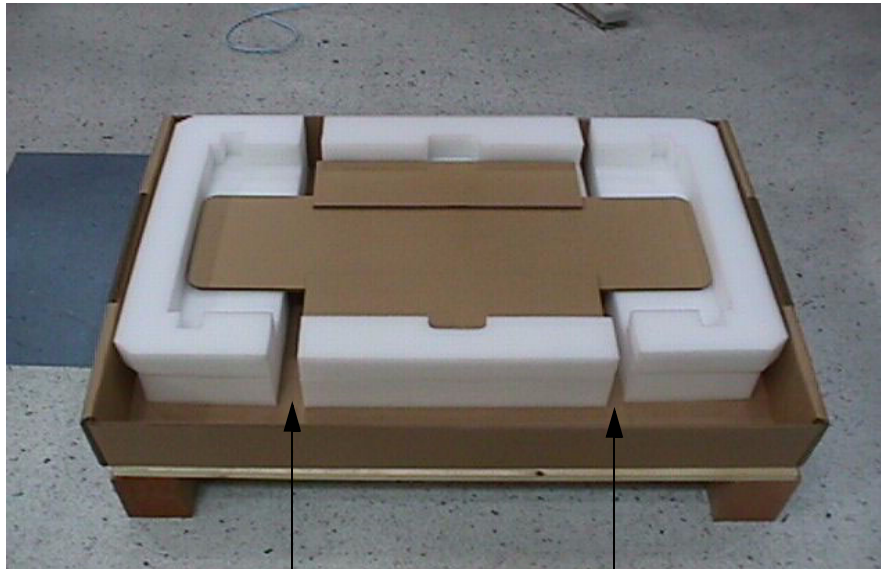
- Installing the anti-tip stabilizer kit (A5540A)

- Installing the ballast kit (J1479A)
- Installing the barrel nuts on the front and rear columns
- Installing the slides

**Step 2.** Follow the instructions on the outside of the server packaging to remove the banding and carton top from the server pallet.

**Step 3.** Insert the lifter forks between the cushions.

**Figure 3-5 Pallet Cushion Layout without Server on Pallet**

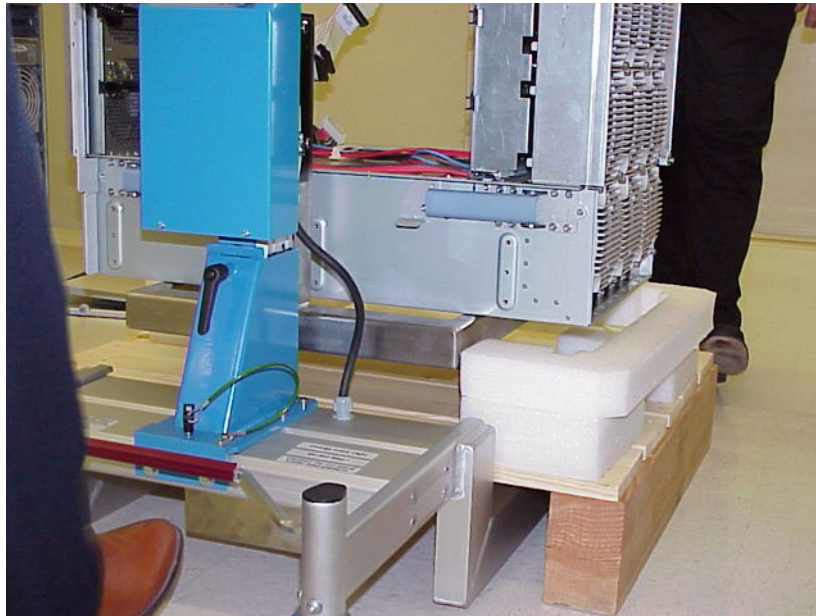


**Position the Lifter Forks at These Insertion Points**

**Step 4.** Carefully roll the lift forward until it is fully positioned against the side of the server.

**Step 5.** Slowly raise the server off the pallet until it clears the pallet cushions.

**Figure 3-6 Raising the Server Off the Pallet Cushions**



**Step 6.** Carefully roll the lifter and server away from the pallet. Do not raise the server any higher than necessary when moving it over to the rack.

**Step 7.** Follow the HP J1528A Rack Integration Kit Installation Guide to complete these steps:

- Mounting the server to the slides
- Installing the cable management arm (CMA)
- Installing the interlock device assembly (if two servers are in the same cabinet)

---

## Wheel Kit Installation

Compare the packing list with the contents of the wheel kit before beginning the installation.

**Table 3-1 Wheel Kit Packing List**

Part Number	Description	Quantity
A6093-04081	Pedestal Cover Assembly	2
A6093-04082	Right Front Caster Assembly	1
A6093-04083	Right Rear Caster Assembly	1
A6093-04084	Left Front Caster Assembly	1
A6093-04085	Left Rear Caster Assembly	1
0515-2478	M4 x 0.7 8mm T15 Steel Zinc Machine Screw (Used to attach each caster to the chassis)	8
A6093-44013	Plywood Unloading Ramp	1
Not Applicable	Phillips Head Wood Screw (Used to attach the ramp to the pallet)	2

### Tools Required for Installation

The following list provides the installer with the recommended tools to perform the wheel kit installation.

- Diagonal side cutters
- Safety glasses
- Torx driver with T-15 bit
- Phillips head screwdriver

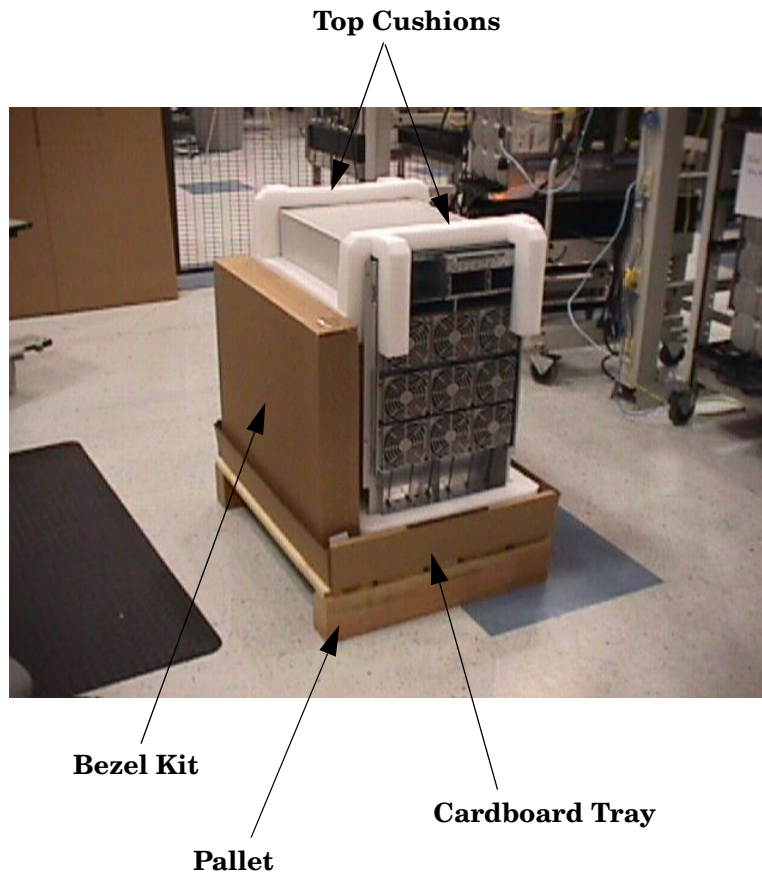
---

**WARNING**    **Wear protective glasses while cutting the plastic bands around the shipping container. These bands are under tension. When cut, they can spring back and cause serious eye injury.**

---

1. Cut and remove the polystrap bands securing the HP Server to the pallet.
2. Lift the carton top from the cardboard tray resting on the pallet.
3. Remove the bezel kit carton and top cushion from the pallet.

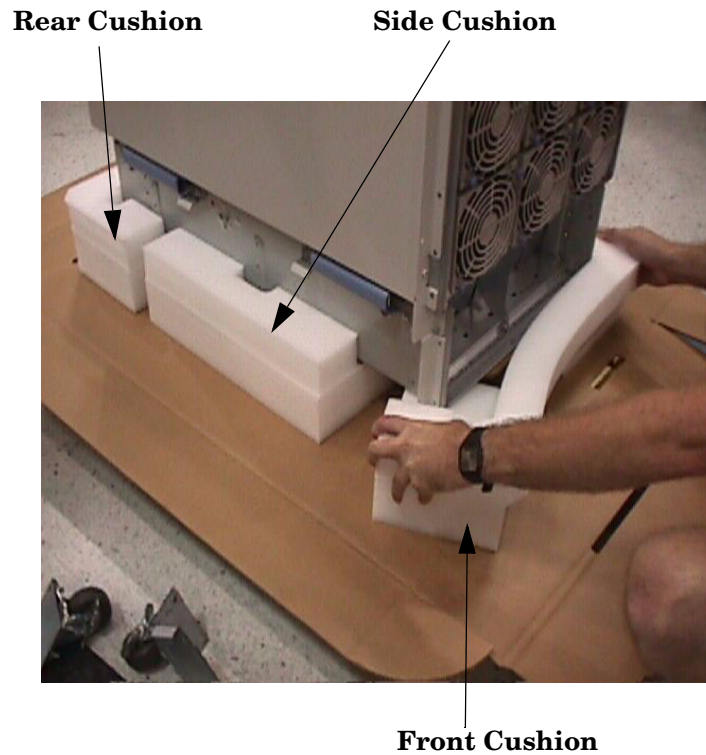
**Figure 3-7 Bezel Kit and Top Cushion**



4. Unfold bottom cardboard tray.

5. Remove the front cushion only. Do not remove any other cushions until further instructed.

**Figure 3-8 Removal of Cushion from Front Edge of Server**

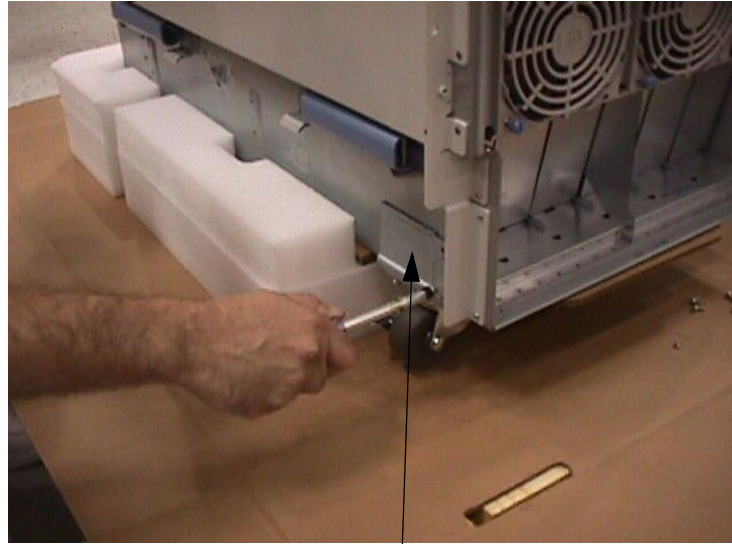


6. Open the wheel kit box and locate the two front casters. The front casters are shorter in length than the two rear casters. Each front caster is designed to fit only on one corner of the server. There is a right front caster and a left front caster.



7. Remove two of the eight screws from the plastic pouch. Attach one wheel caster to the front of the server.

**Figure 3-9 Attaching a Caster Wheel to the Server**

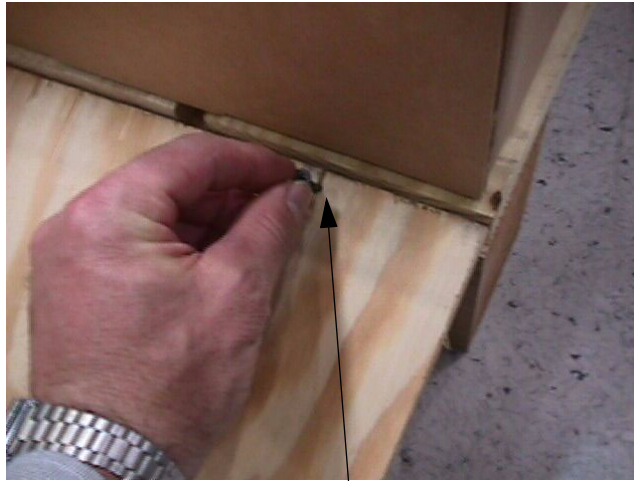


**Front Caster**

8. Attach the remaining front caster to the server using two more screws supplied in the plastic pouch.
9. Remove the rear cushion at the rear of the server. Do not remove the remaining cushions.
10. Mount the two rear casters to the server using the remaining four screws.
11. Obtain the plywood ramp from the wheel kit.

12. Attach the ramp to the edge of the pallet. Note there are two pre-drilled holes in the ramp. Use the two screws taped to the ramp and attach it to the pallet.

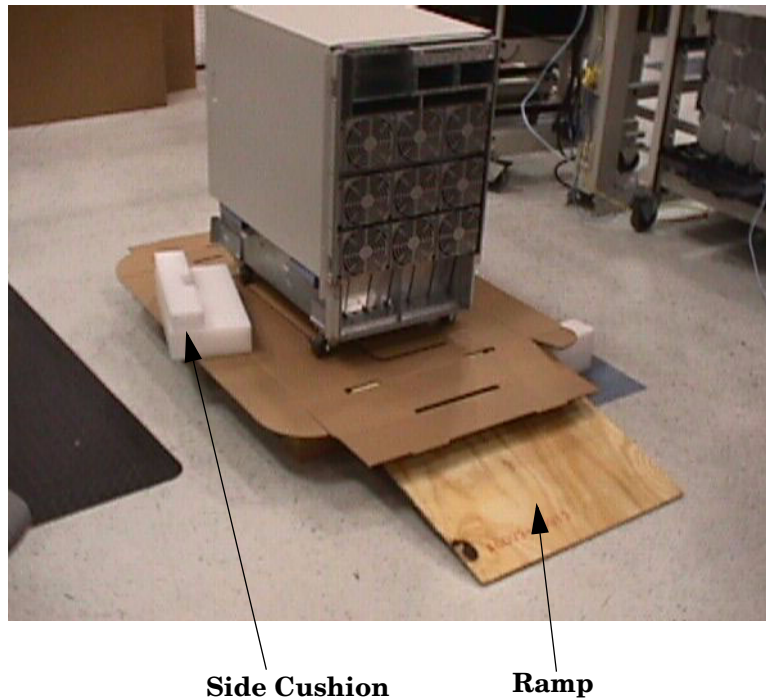
**Figure 3-10 Attaching the Ramp to the Pallet**



**Positioning the Screw in the Ramp**

13. Remove the two side cushions from the server and unfold the cardboard tray so that it lays flat on the pallet.

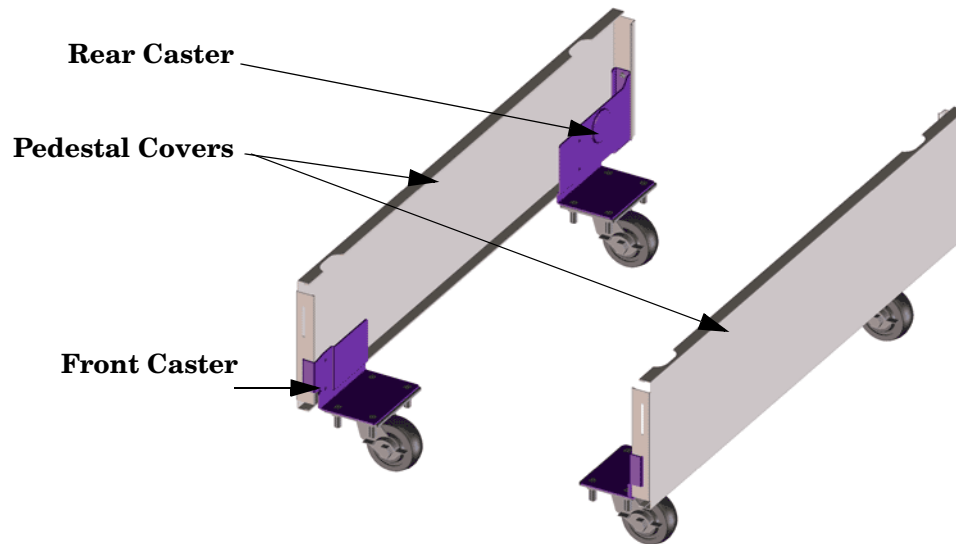
**Figure 3-11 Side Cushion Removal from Server**



14. Carefully roll the server off the pallet and down the ramp.
15. Obtain the pedestal covers from the wheel kit. Note that the pedestal covers are designed to fit on either side of the server.

16. Insert the slot on the pedestal cover into the front caster. Secure the pedestal cover to the server by tightening the captive screw on the cover at the rear of the server.

**Figure 3-12 Securing each Pedestal Cover to the Server**



17. Wheel kit installation is complete once both pedestal covers are attached to the server and the bezel cover is snapped into place on the front of the server.

**Figure 3-13 Completed Wheel Kit Installation**



**Attached Pedestal Cover**

## Power Distribution Unit

The server may ship with a 60A Power Distribution Unit (PDU). The NEMA PDU will have four 20A circuit breakers. The IEC PDU will have four 16A circuit breakers. Each circuit breaker will have two IEC 320-20 outlets associated with each breaker providing a total of eight IEC 320-20 outlets. The PDU will be 3U high and will be rack-mounted in the server cabinet

Documentation for installation will accompany the PDU. The documentation may also be found at the external Rack Solutions Web site at <http://www.hp.com/racksolutions>. The internal Web site is <http://racksolutions.corp.hp.com>.

The 60A PDU installation guide will contain

- PDU Contents
- Hardware
- Tools required
- Installation diagrams with text

The part number for this installation guide is 5969-6523.

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## 4 AC Power

Once the system has been unpacked and moved into position, it must be connected to a source of AC power which must be checked before the system is powered up. This chapter describes these activities.

- Overview
- AC Power Connections

- Wiring and Voltage Checks



---

## Overview

The hp rp8400 server series has an AC power plug on a 3-wire AC power cable. These systems connect to a power source of 200-240 V AC.

---

**WARNING**    **Do not set site AC circuit breakers serving the cabinet(s) to ON before verifying that the cabinet has been wired into the site AC power supply correctly. Failure to do so may result in injury to personnel or damage to equipment when AC power is applied to the cabinet.**

---

Always perform a wiring check to verify that the AC power cable is wired into the AC power supply correctly before applying AC power to the cabinet(s).

Verify the following items before applying AC power to the cabinet.

- Cabinet ground connects to the site electrical system ground and is not left floating or connected to a phase.
- AC voltage is within the 200-240 V AC limits.
- Safety warning labels on the cabinet are correct.

## AC Power Connections

This section provides a brief overview of concerns to be aware of when attaching the site AC power to the server cabinet. See the *Site Preparation Guide for the hp rp8400 Server Series* for a more detailed explanation.

Hewlett-Packard personnel should *not* be directly involved in the selection of material, installation, or connection of site AC power. In all cases, this work should be done *in strict adherence to local codes* by the customer, either directly through their personnel, or via licensed contractors. Hewlett-Packard personnel should not be involved with the selection of suitable materials, which must conform to local code (size, temperature rating, length, etc.).

Before beginning receptacle installation, consider the following:

- Observe all local electrical codes and practices.
- Ensure that the AC power receptacle is wired to the site AC power via conductors routed through flexible metal conduit or via approved AC power cable before cabinet installation.
- Ensure that AC power cable is properly sized, service rated, temperature rated, and complies with all applicable codes and regulations.
- Ensure that the conductors in conduit are properly sized, service rated, temperature rated, color coded, and comply with all applicable codes and regulations.
- Ensure that the AC power cable or conduit is long enough to reach from the site AC power junction box to a location within the distance required to connect to the cabinet.

---

## Wiring and Voltage Checks

This section details the methods to check wiring and voltage before powering up a new system.

---

**WARNING**     **Do not set site AC circuit breakers serving the cabinet(s) to ON before verifying that the cabinet has been wired into the site AC power supply correctly. Failure to do so may result in injury to personnel or damage to equipment when AC power is applied to the cabinet.**

---

---

**CAUTION**     Do not set the cabinet circuit breaker to **ON** before verifying that AC input power is within limits. Failure to do so may cause damage to equipment.

---

Verify the following items before applying AC power to the cabinet.

- Cabinet ground connects to the site electrical system ground and is not left floating or connected to a phase.
- AC voltage is within limits.
- Safety warning labels on the cabinet are correct.

### Wiring Check

---

**WARNING**     **LETHAL VOLTAGE HAZARD—Hazardous voltages may be present in the cabinet if incorrectly wired into the site AC power supply. Always verify correct wiring and cabinet grounding before applying AC power to the cabinet. Failure to do so may result in injury to personnel and damage to equipment.**

---

Always verify that the AC power cable is correctly wired into the AC power supply before applying AC power to the cabinet.

Verify the following items before applying AC power to the cabinet:

- Cabinet safety ground connects to the site electrical system ground and is not left floating or connected to a phase.

---

**NOTE**     The following identifies the minimum acceptable and the preferred methods of grounding. Use the preferred method whenever possible.

---

- Preferred method of grounding is to connect the green power cord safety ground to the site ground point. This is accomplished through the power cord receptacle wiring. When required, cabinets may be grounded by using grounding straps connected to a site grounding mesh or ground grid.
- As a minimum, the green power cord safety ground must be connected to the site ground point.

If the cabinet ground is left floating, anyone coming into contact with the cabinet could receive a lethal shock if a component should fail causing leakage or direct connection of phase energy to the cabinet.

If the cabinet ground connects to a phase, the cabinet will be over 200 volts above ground, presenting a lethal shock hazard to anyone coming into contact with the cabinet when site AC power is applied to the cabinet.

Verify the connection of the cabinet ground to site AC power ground through a continuity check between the cabinet and site AC power supply ground. The continuity check should be performed while the site AC power supply circuit breakers serving the cabinet and the cabinet circuit breaker are all set to **OFF**.

Use the following procedure to verify that the cabinet ground connects to the site AC power supply ground:

**Step 1.** Ensure that the site AC power supply circuit breakers serving the cabinet are set to **OFF**.

**Step 2.** Ensure that the cabinet main circuit breaker is set to **OFF**.

**Step 3.** Touch one test probe to the site AC power supply ground source.

**Step 4.** Touch the other test probe to an unpainted metal surface of the cabinet.

---

<b>NOTE</b>	If the digital multimeter (DMM) leads will not reach from the junction box to the cabinet, use a piece of wire connected to the ground terminal of the junction box.
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**Step 5.** Check for continuity indication of less than 0.1 ohm.

- If continuity is *not* found, check to ensure that the DMM test leads are making good contact to unpainted metal and try again.
- If continuity is *still* not found, disconnect the cabinet site AC power immediately and notify the customer of the probability of incorrectly wired AC power to the cabinet.
- If continuity is good, and connection of the cabinet to site AC power supply ground (and not floating or connected to a phase) is verified, then voltage checks may be performed.

## Voltage Check

This section provides voltage check information for use on the customer site. The emphasis will focus on measuring the voltages at the power cord plug end specified as an IEC 320 C19 type plug. This is the end that plugs directly into the back of the server cabinet.

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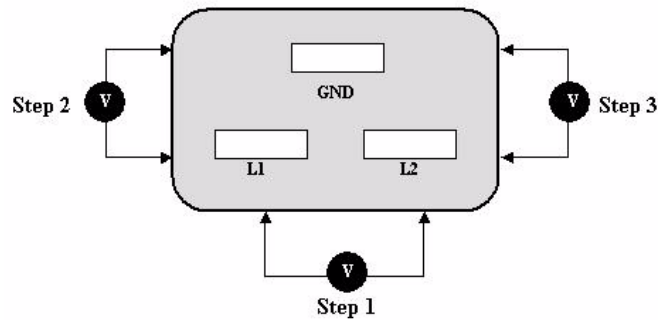
<b>NOTE</b>	These procedures need to be performed for each power cord that will be plugged directly into the back of the server cabinet. If the expected results from this procedure are not observed during the voltage check, please refer to the next section titled “Voltage Check (Additional Procedure)”
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### Voltage Range Verification of Receptacle

This procedure measures the voltage between L1 and L2, then from L1 to ground and finally from L2 to ground. Three separate measurements will be performed during this procedure. Refer to Figure 4-1 for voltage reference points when performing the following measurements.

**Figure 4-1** Voltage Reference Points for IEC 320 C19 Plug

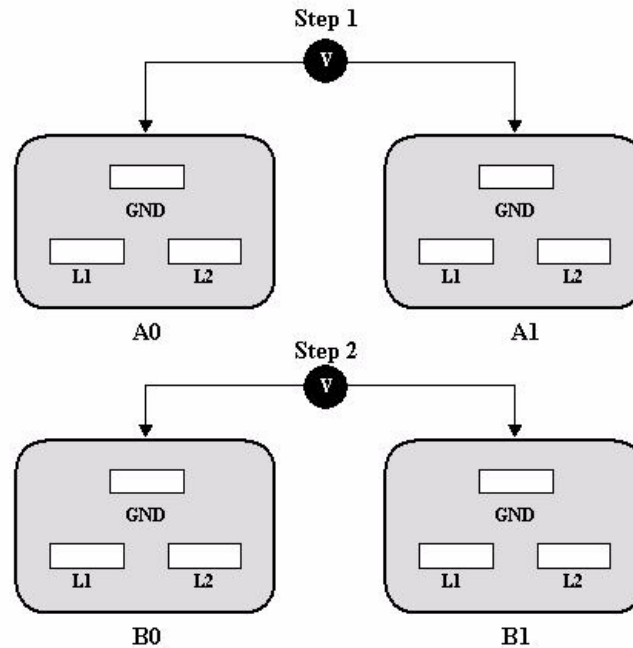


- Step 1.** Measure the voltage between L1 and L2. This is considered to be a phase to phase measurement in North America. In Europe and certain parts of Asia-Pacific, this measurement is referred to as a phase to neutral measurement. The expected voltage measured should be between 200- 240 volts AC regardless of the geographic region.
- Step 2.** Measure the voltage between L1 and ground. In North America, verify this voltage is between 100 - 120 volts AC. In Europe and certain parts of Asia-Pacific, verify this voltage is between 200 - 240 volts AC.
- Step 3.** Measure the voltage between L2 and ground. In North America, verify this voltage is between 100 - 120 volts AC. In Europe and certain parts of Asia-Pacific, verify this voltage is 0 (zero) volts AC.

### Safety Ground Verification (Single Power Source)

This procedure measures the voltage level between A0 and A1. The voltage level between B0 and B1 will also be verified. All measurements will be taken between ground pins. Refer to Figure 4-2 for ground reference points when performing these measurements.

**Figure 4-2** Safety Ground Reference Check - Single Power Source

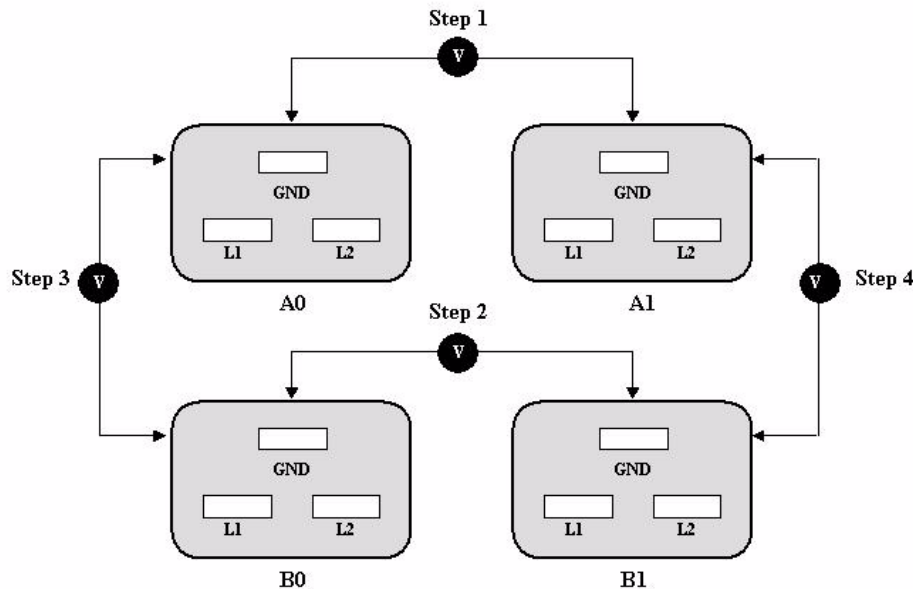


- Step 1.** Measure the voltage between A0 and A1. Take the AC voltage down to the lowest scale on the volt meter. One probe will be inserted into the ground pin for A0. The other probe will be inserted into the ground pin for A1. Verify that the measurement is between 0 - 5 volts AC. If the measurement is 5V or greater, escalate the situation. Do not attempt to plug the power cords into the server cabinet.
- Step 2.** Measure the voltage between B0 and B1. Take the AC voltage down to the lowest scale on the volt meter. One probe will be inserted into the ground pin for B0. The other probe will be inserted into the ground pin for B1. Verify that the measurement is between 0 - 5 volts AC. If the measurement is 5V or greater, escalate the situation. Do not attempt to plug the power cords into the server cabinet.

### Safety Ground Verification (Dual Power Source)

This procedure measures the voltage level between A0 and A1, between B0 and B1, between A0 and B0 and between A1 and B1. All measurements will be taken between ground pins. Refer to Figure 4-3 for ground reference points when performing these measurements.

**Figure 4-3 Safety Ground Reference Check - Dual Power Source**



- Step 1.** Measure the voltage between A0 and A1. Take the AC voltage down to the lowest scale on the volt meter. One probe will be inserted into the ground pin for A0. The other probe will be inserted into the ground pin for A1. Verify that the measurement is between 0 - 5 volts AC. If the measurement is 5V or greater, escalate the situation. Do not attempt to plug the power cords into the server cabinet.
- Step 2.** Measure the voltage between B0 and B1. Take the AC voltage down to the lowest scale on the volt meter. One probe will be inserted into the ground pin for B0. The other probe will be inserted into the ground pin for B1. Verify that the measurement is between 0 - 5 volts AC. If the measurement is 5V or greater, escalate the situation. Do not attempt to plug the power cords into the server cabinet.
- Step 3.** Measure the voltage between A0 and B0. Take the AC voltage down to the lowest scale on the volt meter. One probe will be inserted into the ground pin for A0. The other probe will be inserted into the ground pin for B0. Verify that the measurement is between 0 - 5 volts AC. If the measurement is 5V or greater, escalate the situation. Do not attempt to plug the power cords into the server cabinet.
- Step 4.** Measure the voltage between A1 and B1. Take the AC voltage down to the lowest scale on the volt meter. One probe will be inserted into the ground pin for A1. The other probe will be inserted into the ground pin for B1. Verify that the measurement is between 0 - 5 volts AC. If the measurement is 5V or greater, escalate the situation. Do not attempt to plug the power cords into the server cabinet.

## Voltage Check (Additional Procedure)

The voltage check ensures that all phases (and neutral, for international systems) are connected correctly to the cabinet and that the AC input voltage is within limits.

This procedure will need to be performed if the previous voltage check procedure did not yield the expected results as previously outlined.

---

**NOTE** If a UPS is used, refer to applicable UPS documentation for information to connect the server and to check the UPS output voltage. UPS User Manual documentation is shipped with the UPS. Documentation may also be found at <http://hpcp.grenoble.hp.com>

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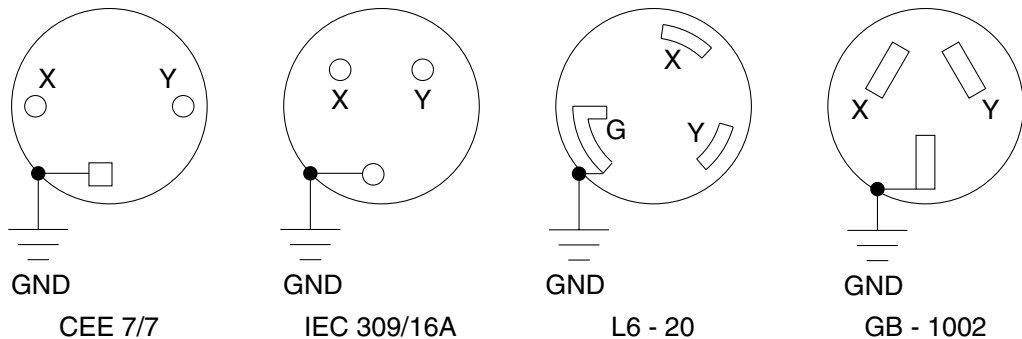
**Step 1.** Verify that site power is **OFF**.

**Step 2.** Open the site circuit breaker(s).

**Step 3.** Verify that the receptacle ground connector is connected to ground. Refer to Figure 4-4 for connector details.

**Step 4.** Set the site power circuit breaker to **ON**.

**Figure 4-4 Wall Receptacle Pinouts**



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**Step 5.** Verify that the voltage between receptacle pins x and y is between 200 - 240 volts AC.

**Step 6.** Set the site power circuit breaker to **OFF**.

**Step 7.** Ensure that power is removed from the server.

**Step 8.** Route and connect the server power connector to the site power receptacle.

- For locking type receptacles, line up the key on the plug with the groove in the receptacle.
- Push the plug into the receptacle and rotate to lock the connector in place.

---

**WARNING** Do not set site AC circuit breakers serving the processor cabinet(s) to **ON** before verifying that the cabinet has been wired into the site AC power supply correctly. Failure to do so may result in injury to personnel or damage to equipment when AC power is applied to the cabinet.

---

**Step 9.** Set the site power circuit breaker to **ON**.



---

**WARNING      SHOCK HAZARD**  
**Risk of shock hazard while testing primary power.**  
**Use properly insulated probes.**  
**Be sure to replace access cover when finished testing primary power.**

---

**Step 10.** Set the server power to **ON**.

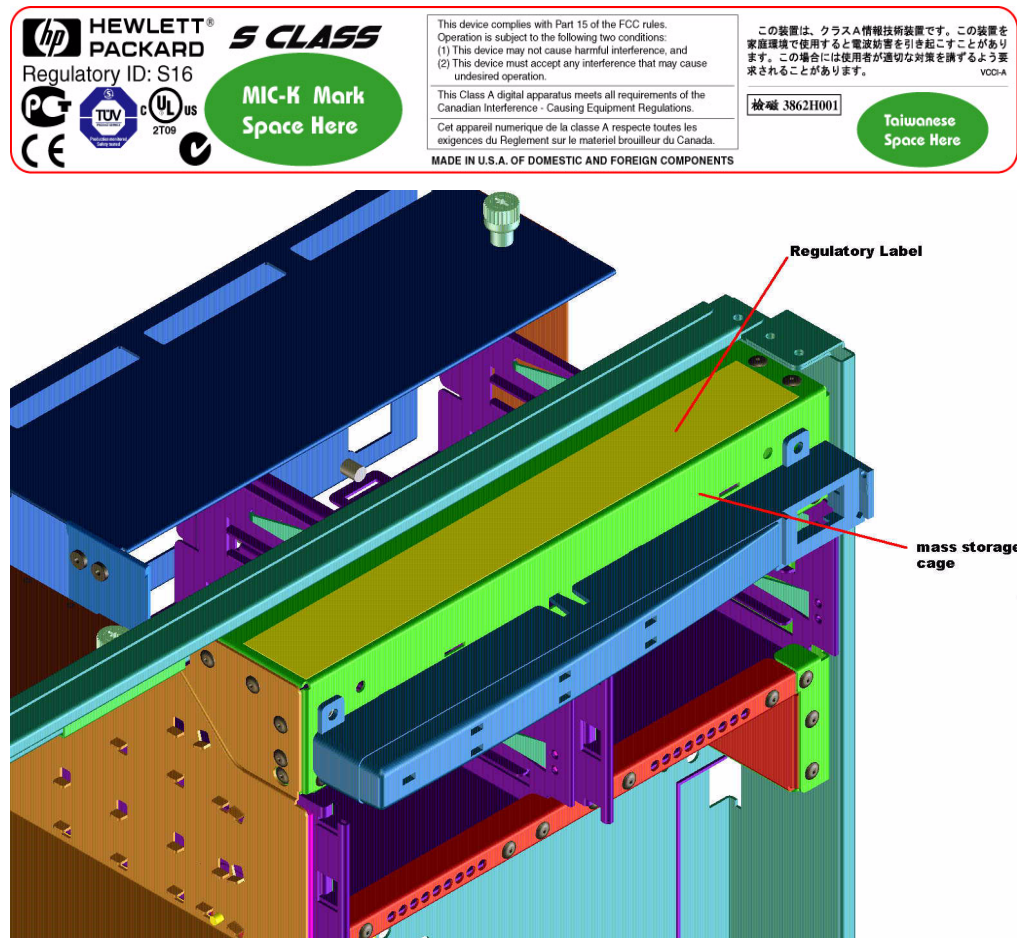
**Step 11.** Check that the indicator light on each power supply is lit.

## Regulatory and System Serial Number Label Check

A system serial number is located on the regulatory label affixed to cabinet. This label is printed in the appropriate language for the installation location.

The serial number check verifies that the label is affixed to the server and that it is printed in the correct language. Refer to Figure 4-5 for label details.

**Figure 4-5** Regulatory Label with Serial Number



Inspect the cabinet mass storage cage area and verify that the regulatory label is securely attached and is printed in the correct language for the installation.

Ensure that the label is securely fastened to the mass storage cage area.

If the label is printed in an incorrect language, notify the customer sales representative or the shipping division.

---

## 5 System Installation

This chapter contains the procedures for completing the system installation procedures for the hp rp8400 server series.

- “hp rp8400 Server Series AC Input Power”
- “Setting Up the CE Tool (PC)”

- “Turning On Housekeeping Power and Logging in to the MP”
- “Configuring LAN Information for the MP”
- “Configuring the Management Processor for use with a Web Console”
- “Verifying Presence of the Cell Boards”
- “Configuring AC Line Status”
- “Powering On the hp rp8400 Server Series Cabinet (48 V)”
- “Verifying the System Configuration”
- “Adding Processors with Instant Capacity On Demand (iCOD)”
- “Booting HP-UX on the Partition(s)”

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## hp rp8400 Server Series AC Input Power

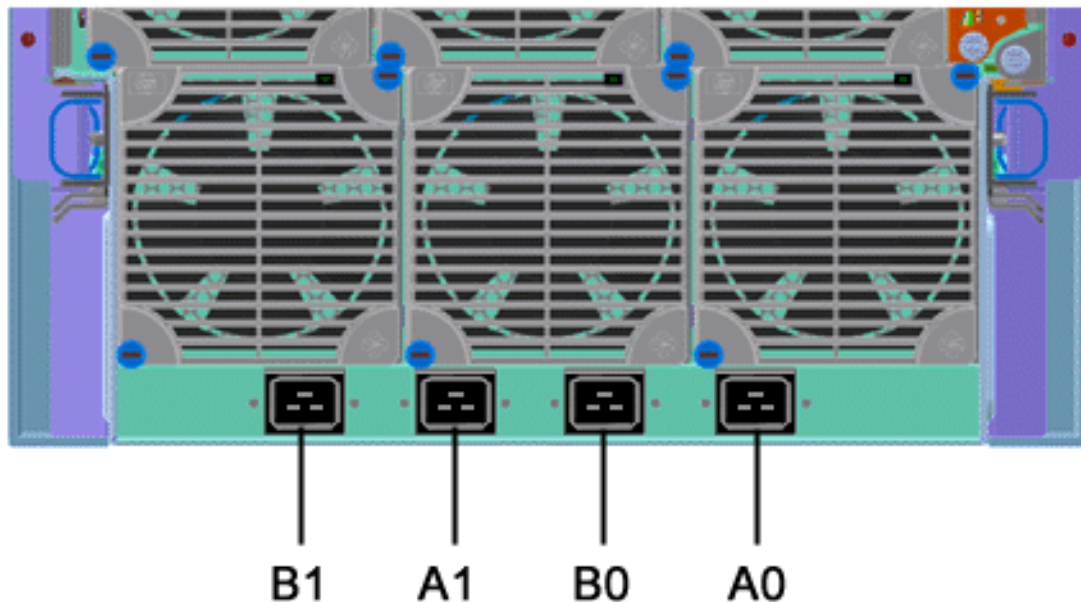
The server can receive AC input from two different AC power sources. If two separate power sources are available, the server can be plugged into the separate power sources increasing system reliability should one power source fail. The main power source is defined to be A0 and A1. The redundant power source is defined to be B0 and B1. See Figure 5-1 for the AC power input label scheme.

---

**NOTE** When it is desired to run the server with a single power source, either A0 and A1 or B0 and B1 should be used. All other combinations are not supported. Either combination requires two power cords.

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**Figure 5-1** AC Power Input Labeling

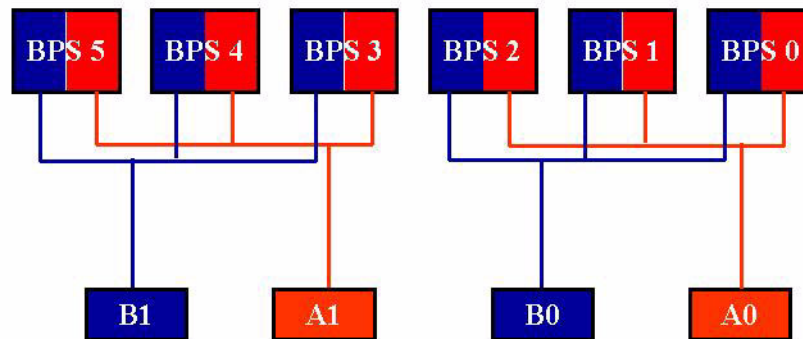


The power distribution for the Bulk Power Supplies is provided as follows:

- A0 input provides power to BPS 0, BPS 1, and BPS 2
- A1 input provides power to BPS 3, BPS 4, and BPS 5
- B0 input provides power to BPS 0, BPS 1, and BPS 2
- B1 input provides power to BPS 3, BPS 4, and BPS 5

See Figure 5-2 for the graphical representation of how the input power cords supply power to each BPS.

**Figure 5-2**      **Distribution of Input Power for Each Bulk Power Supply**



---

**CAUTION**      Do not route data and power cables together in the same cable management arm.

Do not route data and power cables in parallel paths in close proximity to each other. The suggested minimum distance that the data and power cables should be apart is 3 inches (7.62 centimeters).

The power cord has current flowing through it, which creates a magnetic field. The potential to induce electromagnetic interference in the data cables exist thereby causing data corruption.

---

There can be a total of six Bulk Power Supplies (BPS) installed in the server.

- A minimum of two BPS are required to bring up a single cell board installed in the server.
- N+1 capability is provided in the server when the number of BPS installed exceeds the number of cell boards installed by one BPS.
- An additional BPS is required for each additional cell board installed in the server. For the case where two cell boards are installed, there would be a total of four BPS needed to support the two cell board configuration while providing N+1 functionality.

---

**NOTE**      Label the AC power cords during the installation. One suggestion is to use tie wraps that have the flag molded into the tie wrap. The flag can be labeled using the appropriate two characters to represent the particular AC power input (e.g. A0). Another suggestion would be to use color coded plastic bands. One color to represent the first pair A0/A1 and another color to represent the second pair B0/B1 (provided a second power source is available at the customer site).

---

## Applying Power to the hp rp8400 Server Series

Initial observations can be made as to the functionality of the server before attaching any LAN or serial cables, the system console or any peripherals to the server. When an active AC power source is first applied to the server, the following observations can be made at three different intervals or points in time.

### INTERVAL ONE

The power has just been applied to the server but the front panel **On/Off** switch is not **On**. The front air intake fans will be flashing a dim red color, the bulk power supplies will be flashing amber and there will be an amber light present on the hard disk drive(s).

### INTERVAL TWO

After the power has been plugged into the server for about 30 seconds, the standby power turns on and the front intake fan LED indicators turn solid green. The Bulk Power Supplies (BPS) will be flashing green and the amber light is still present on the hard disk drive(s). The front panel **On/Off** switch is not **On** at this point. House keeping power is up at this point.

### INTERVAL THREE

With the **On/Off** switch on the front of the server is set to **On**, the intake fans spin up and become noticeably audible while the LED indicator remains solid green. The BPS LED indicator turns a solid green and the PCI backplane power supply LED indicators turn solid green. The hard disk drive LED will turn green briefly and then the LED will turn off.

## Setting Up the CE Tool (PC)

The CE Tool is usually a laptop. It allows communication with the Management Processor (MP) in the server. The MP monitors the activity of either a one partition or a multiple partition configuration.

During installation, communicating with the MP enables such tasks as:

- Verifying that the components are present and installed correctly
- Setting LAN IP addresses
- Shutting down cell board power

Communication with the MP is established by connecting the CE Tool to the Local RS-232 port on the Core I/O card.

### Setting CE Tool Parameters

After powering on the CE Tool, ensure the communications settings are as follows:

- 8/none (parity)
- 9600 baud
- None (Receive)
- None (Transmit)



If the CE Tool is a laptop using Reflection 1, check or change these communications settings using the following procedure:

1. From the Reflection 1 Main screen, pull down the **Connection** menu and select **Connection Setup**.
2. Select **Serial Port**.
3. Select **Com1**.
4. Check the settings and change, if required.

Go to **More Settings** to set Xon/Xoff. Click **OK** to close the More Settings window.

5. Click **OK** to close the Connection Setup window.
6. Pull down the **Setup** menu and select **Terminal** (under the **Emulation** tab).
7. Select any HP terminal type.

Preferred types are **HP70092**, **HP70096** or **HP70094**, **HP70098**, **VT100**.

8. Click **Apply**.

This option is not highlighted if the terminal type you want is already selected.

9. Click **OK**.

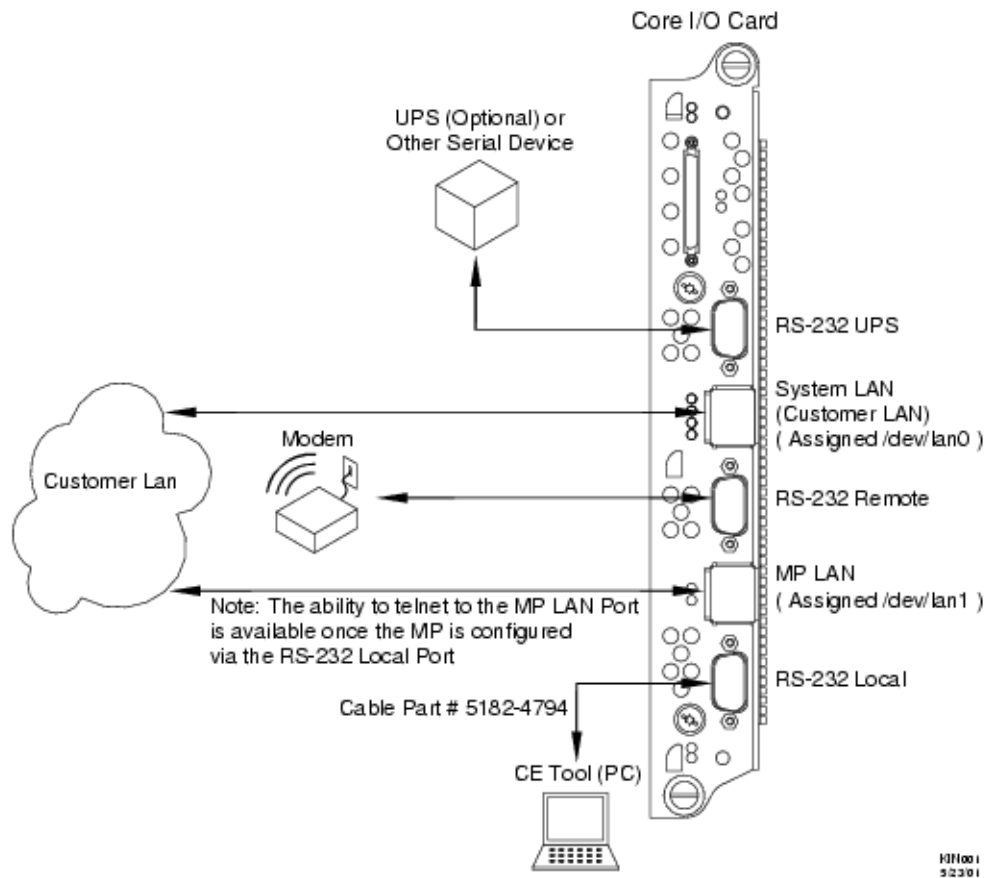
## Connecting the CE Tool to the Local RS-232 Port on the MP

This connection allows direct communications with the MP. **Only one window can be created** on the CE Tool to monitor the MP. When enabled, it provides direct access to the MP and any partition.

Use the following procedure to connect the CE Tool to the Local RS-232 Port on the MP:

1. Connect one end of a null modem cable (9-pin to 9-pin) (Part Number 5182-4794) to the **Local RS-232** port on the Core I/O card (the DB9 connector located at the bottom of the Core I/O card).

**Figure 5-3 LAN and RS-232 Connectors on the Core I/O Board**



2. Connect the other end of the RS-232 cable to the CE Tool.

## Turning On Housekeeping Power and Logging in to the MP

After connecting the serial display device, the power to the server cabinet is now ready to be turned **On** to get a login prompt for the Management Processor (MP). Switching the power to **On** allows power to flow to the Bulk Power Supplies (BPS) located at the front of the server cabinet, which in turn provides housekeeping power (HKP).

### Before powering up the server cabinet for the first time:

1. Verify that the AC voltage at the input source is within specifications for each server cabinet being installed.
2. If not already done so, power on the serial display device.

The preferred tool is the CE Tool running Reflection 1.

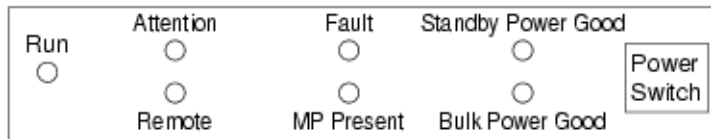
### To power up the MP, set up a communications link, and login to the MP:

1. Apply power to the server cabinet.

Power on any other server cabinets that were shipped to the customer site.

On the front of the server, a solid green **Standby Power Good**, a solid green **MP Present**, and a flashing amber **Attention** light will illuminate after about 30 seconds.

**Figure 5-4 Front Panel Display**



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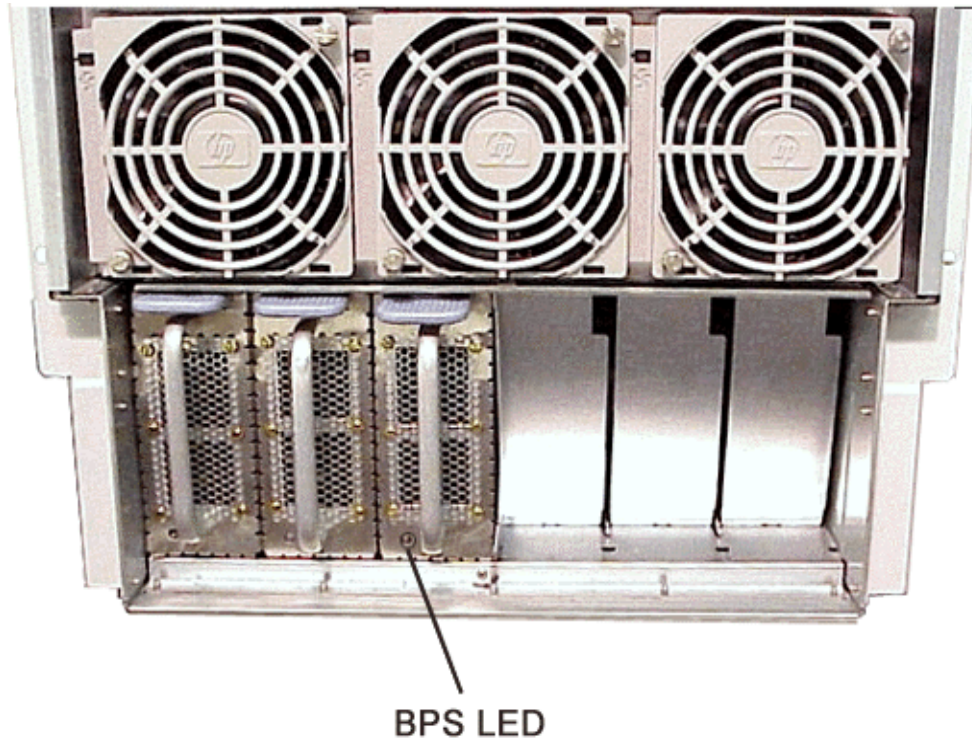
2. Check the Bulk Power Supply (BPS) LED for each BPS. See Figure 5-5 for the LED location.

When on, the breakers distribute power to the BPSs. AC power is present at the BPSs:

- when power is first applied. Note the BPS LEDs will be flashing amber.

- after 30 seconds has elapsed. Note the flashing amber BPS LED for each BPS becomes a flashing green LED

**Figure 5-5 BPS LED Location**



3. Login to the MP:

- a. Enter **Admin** at the login prompt. (This term is case sensitive.)

It takes a few moments for the MP prompt to appear. If it does not, make sure the laptop serial device settings are correct: 8 bits, no parity, 9600 baud, and None for both Receive and Transmit. Then, try again.

- b. Enter **Admin** at the password prompt. (This term is case sensitive.)

The MP Main Menu appears:

**Figure 5-6 MP Main Menu**

```
MP login: Admin
MP password:

                Welcome to the

                S Class 16K-A

                Management Processor

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                Version 0.23

MP MAIN MENU:

    CO: Consoles
    VFP: Virtual Front Panel
    CM: Command Menu
    CL: Console Logs
    SL: Show chassis Logs
    HE: Help
    X: Exit Connection

MP>
```

# Configuring LAN Information for the MP

This section describes how to set and verify the server Management Processor (MP) LAN port information. LAN information includes the MP network name, the MP IP address, the subnet mask, and gateway address. This information is provided by the customer.

To set the MP LAN IP address:

1. At the MP Main Menu prompt (*MP>*), enter **cm**. From the MP Command Menu prompt (*MP:CM>*), enter **lc** (for LAN configuration).

The screen displays the default values and asks if you want to modify them. It is a good idea to write down the information, as it may be required for future troubleshooting.

**NOTE** If the Command Menu is not shown, enter **q** to return to the MP Main Menu, then enter **cm**

Enter **lc** and press the *Return* key. The following screen appears:

**Figure 5-7 The lc Command Screen**

```
MP:CM> LC

This command modifies the LAN parameters.

Current configuration of GSP customer LAN interface
MAC address   : 00:30:6e:05:09:24
IP address    : 15.99.83.215      (0x0f6353d7)
Hostname      : quartz-s
Subnet mask    : 255.255.255.0    (0xffffffff00)
Gateway       : 15.99.83.254     (0x0f6353fe)
Status        : UP and RUNNING
AutoNegotiate : Enabled
Data Rate     : 100 Mb/s
Duplex        : Half
Error Count   : 0
Last Error    : none

Do you want to modify the configuration for the customer LAN? (Y/[N]) q
MP:CM>
```

**NOTE** The value in the “IP address” field has been set at the factory. Obtain the LAN IP address from the customer.

2. At the prompt, *Do you want to modify the configuration for the customer LAN?*, enter **y**.  
The current IP address is shown; then the following prompt appears: *Do you want to modify it? (Y/[N])*
3. Enter **y**.
4. Enter the new IP address.

The customer shall provide this address for network interface 0.

5. Confirm the new address.

6. Enter the MP Network Name.

This is the host name for the customer LAN. The name can be as many as 64 characters, and include alpha numerics, - (dash), \_ (under bar), . (period), or a space. It is recommended that the name be a derivative of the complex name. For example, Acme.com\_MP.

7. Enter the LAN parameters for *Subnet mask* and *Gateway address*.

This information shall come from the customer.

8. Once step 7 is completed, the system will indicate the parameters have been updated and return to the MP Command Menu prompt (*MP:CM>*)

9. To check the LAN parameters and status, enter the *ls* command at the MP Command Menu prompt (*MP:CM>*).

10. A screen similar to the following will appear allowing verification of the settings:

**Figure 5-8 The ls Command Screen**

```
MP:CM> LS

Current configuration of GSP customer LAN interface
MAC address  : 00:30:6e:05:09:24
IP address   : 15.99.83.215   (0x0f6353d7)
Hostname     : quartz-s
Subnet mask   : 255.255.255.0   (0xffffffff00)
Gateway      : 15.99.83.254   (0x0f6353fe)
Status       : UP and RUNNING
AutoNegotiate : Enabled
Data Rate    : 100 Mb/s
Duplex       : Half
Error Count   : 0
Last Error    : none

MP:CM>
```

To return to the MP main menu, enter **ma**.

To exit the MP, enter **x** at the MP main menu.

---

## Configuring the Management Processor for use with a Web Console

The Web console is an embedded feature of the management processor (MP). The Web console allows access to the server via the LAN port on the core I/O card. MP configuration must be done from an ASCII console.

---

**NOTE** The MP has a separate LAN port from the system LAN port. It requires a separate LAN drop, IP address, and networking information from that of the port used by HP-UX.

---

Before starting this procedure, the following information is required:

- IP address for the MP LAN
- Subnet mask
- Gateway address
- Hostname (this is used when messages are logged or printed)

To configure the LAN port for a Web console, perform the following steps:

**Step 1.** Type **^b (Control-b)** to access the MP LAN interface.

**Step 2.** At the MP prompt, type **lc** to access the LAN configuration command.

Respond to each prompt with the appropriate information.

**Figure 5-9 Example lc Command**

```
MP:CM> LC

This command modifies the LAN parameters.

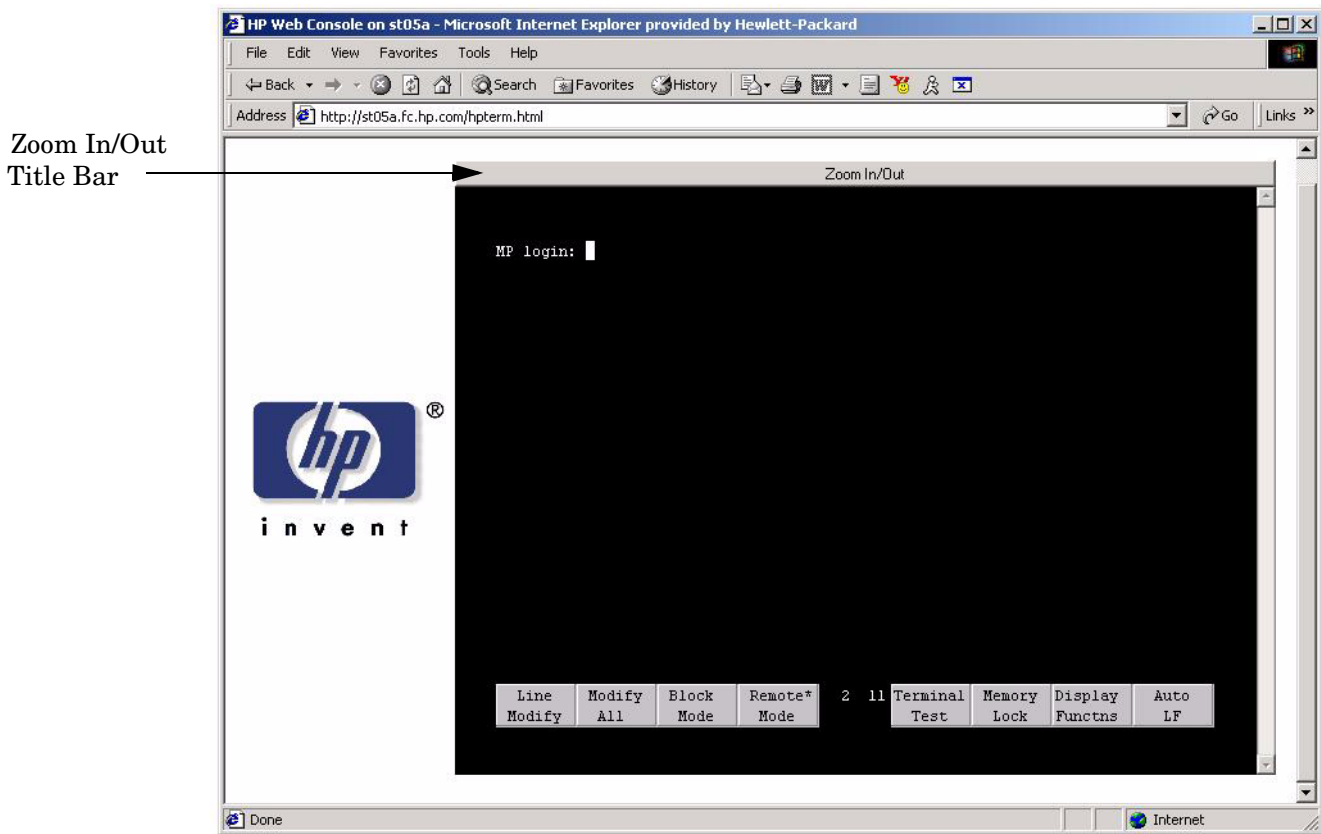
Current configuration of MP LAN interface
MAC address   : 00:30:6e:05:09:24
IP address    : 15.99.83.215      (0x0f6353d7)
Hostname      : quartz-s
Subnet mask   : 255.255.255.0      (0xffffffff)
Gateway       : 15.99.83.254      (0x0f6353fe)
Status        : UP and RUNNING
AutoNegotiate : Enabled
Data Rate     : 100 Mb/s
Duplex        : Half
Error Count   : 0
Last Error    : none

Do you want to modify the configuration for the customer LAN? (Y/[N]) q
MP:CM>
```



- Step 3.** Access the Web console by launching a Web browser on the same subnet using the IP address for the MP LAN port.

**Figure 5-10 Browser Window**



- Step 4.** Click anywhere on the Zoom In/Out title bar to generate a full screen MP window.

There is not a separate administration layer when using the embedded Web access of the MP. When launching the Web browser using the IP for the MP LAN port, connection is directly routed to the MP. The Web console part of the MP employs the same users as the MP.

- Step 5.** Set configurable parameters.

Adding Users - The MP provides a maximum of 20 users. Only the MP administrator can add or remove users or change the MP configuration.

To add a user, perform the following:

1. Access the MP.
2. Enter the Security Options and access control (so) command.
3. Reply appropriately to the prompts Be sure to read each prompt carefully and enter the correct response. A missed or incorrect entry could deny entry to that user.

Removing Users - Users can be removed or disabled with the security options command.

To remove a user, perform the following:

1. Access the MP.
2. Enter the Security Options and access control (so) command.
3. Select the second menu item then enter "D" for delete.

Return the MP to default configurations - The Default Configuration (dc) command is used to reset all or some of the MP values to the default values.

To return MP values to default configurations, perform the following:

1. Access the MP.
2. Enter the Default Configuration (dc) command.
3. Follow the prompts for the dc command. Be sure to have the change information available.

---

<b>CAUTION</b>	When the security configuration is reset, all users are removed including the MP administrator. It also disables the remote. The remote must be enabled through the main console using the enable remote (ER) command.
----------------	--

---

The Web console is now configured on the MP.

For instructions on how to connect a Secure Web Console to the Core I/O, go to the following URL:

<http://docs.hp.com/>

Scroll down and click on System Hardware, then select Secure Web Console.

# Verifying Presence of the Cell Boards

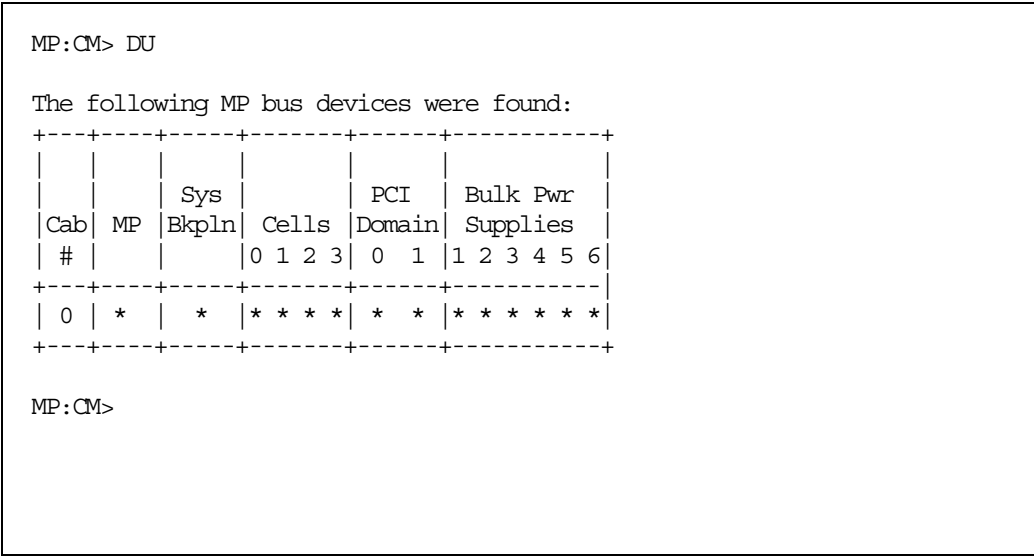
To perform this activity, either connect to the Management Processor (MP) over the customer console or connect the CE Tool (laptop) to the RS-232 Local port on the MP.

After login to the MP, verify that the MP detects the presence of all the cells installed in the server cabinet. It is important for the MP to detect the cell boards. If it does not, the partitions will not boot.

To determine if the MP detects the cell boards:

- At the MP prompt, enter `cm`.  
  
This displays the Command Menu. Among other things, the Command Menu allows one to view or modify the configuration and/or look at utilities controlled by the MP.  
  
To look at a list of the commands available, enter `he`. You may have to press **Enter** to see more than one screen of commands. Use the Page Up and Page Down keys to view the previous or next screen of commands. To exit the Help Menu, enter `q`.
- From the command prompt (MP:CM>), enter `du`.  
  
The `du` command displays the MP Bus topology. A screen similar to the following appears:

**Figure 5-11    The du Command Screen**



- There will be an asterisk (\*) in the column marked *MP*.
  - Verify that there is an asterisk (\*) for each of the cells installed in the server cabinet, by comparing what is in the *Cells* column with the cells physically located inside the server cabinet.
- Figure 5-9 shows that cells are installed in slots 0, 1, 2 and 3. In the server cabinet, there should be cells physically located in slots 0, 1, 2, and 3.

## Configuring AC Line Status

Utilities is able to detect if power is applied to each of the AC input cords for the server. This is achieved by sampling the status of the bulk power supplies. During installation, use the following procedure to check the configuration for the AC line status and configure it to match the customer's environment.

- Step 1.** At the MP prompt, enter **cm**. This will display the command menu and allow for viewing and configuring various utilities controlled by the MP.
- Step 2.** From the command prompt (MP:CM>), enter **pwrgrd**. The **pwrgrd** command displays the current power configuration. This command can also be used to change the power grid configuration. A screen similar to the following appears:

**Figure 5-12**The **pwrgrd** Command Screen

```
MP:CM> pwrgrd

The current power configuration is: Grids A & B

Power grid configuration preference.

    1. Grid A only
    2. Grid B only
    3. Grids A & B

    Select Option:

MP:CM>
```

- Step 3.** Verify that the power grid configuration is correct by examining the output from the **pwrgrd** command. The power configuration shown above indicates that both grid A and grid B have been configured.
- Step 4.** To change the configuration, select the proper response and enter the appropriate numeric value when **Select Option:** appears on the screen. If no change is desired, enter **q** and press the **Enter** key. Once the value has been entered, the MP will respond back and indicate that change has taken effect.

---

## Powering On the hp rp8400 Server Series Cabinet (48 V)

After powering on the Management Processor (MP) (+3.3 V HKP), and checking that the MP detects the presence of the cell boards, power up the server cabinet, or, apply the 48 V power to the system.

If using a LAN crossover cable with the laptop, review server cabinet activity for each partition configured, as the server cabinet powers up and boots. Windows can be opened for the complex and for each partition. It is recommended that at least two windows be opened.

- A window showing all activity in the complex. (Following the installation procedure in this manual, will have a window open already on the laptop.)

To display activity for the complex:

1. If not already done, open a separate Reflection 1 window and connect to the MP.
2. From the MP Main Menu, select the VFP (Virtual Front Panel) command with the `s` option.

- A window showing activity for a single partition.

To display activity for each partition as it powers up:

1. Open a separate Reflection 1 window and connect to the MP.
2. Select the VFP command and choose the partition desired to view.

There should be no activity on the screen at this point in the installation process.

---

**NOTE** More than one window cannot be opened using a serial display device.

---

To power on the SPU cabinet:

1. Switch the power switch at the front of the cabinet to **On**. The following events shall occur:
  - 48 V power is applied to the server cabinet.
  - Processor Dependent Code (PDC) starts to run on each cell.
  - Cell self test executes.
  - Hardware initializes for the cabinet.
  - Console communication is established.
2. When activity on the Reflection 1 screen stops, return to the MP Main Menu by typing **Ctrl-B**.
3. Enter **co** to enter console mode.
4. Enter the partition number of the partition to boot.
5. Press **Enter** once or twice until the BCH prompt is present (*Main Menu: Enter command or menu>*).

## Verifying the System Configuration

At this point in the installation process, the hardware is set up, the Management Processor (MP) is connected to the LAN, the AC and DC power have been turned on, and the selftest is completed. Now the configuration can be verified.

After DC is powered on and the selftest is completed, the BCH prompt appears (*Main Menu: Enter command or menu>*).

1. Enter **di** to display a list of the Boot Console Handler (BCH) commands.
2. To display the Information Menu (to check the configuration), enter **in**.
3. Check the following parameters, by selecting the corresponding command from the menu, to verify that what the customer ordered is what the customer received.
  - **PR** (Processor)
  - **ME** (Memory)
  - **IO** (Check the “PCI Device Information” to determine if the values match the devices installed in the I/O chassis.)

Use the **MA** command to return to the BCH Main Menu once the parameters have been checked.

## Adding Processors with Instant Capacity On Demand (iCOD)

The Instant Capacity On Demand (iCOD) program provides access to additional CPU resources beyond the amount that was purchased for the server. This provides the ability to activate additional CPU power for unexpected growth and unexpected spikes in workloads such as Internet or E-intelligence.

Internally, iCOD systems physically have more CPUs, called iCOD CPUs, than the number of CPUs actually purchased. These iCOD CPUs reside in the purchased system, but they belong to Hewlett-Packard (HP) and therefore are HP assets. A nominal "Right-To-Access Fee" is paid to HP for each iCOD processor in the system. At any time, any number of iCOD CPUs can be "activated." Activating an iCOD CPU automatically and instantaneously transforms the iCOD CPU into an instantly ordered and fulfilled CPU Upgrade that requires payment. After the iCOD CPU is activated and paid for, it is no longer an iCOD CPU, but is now an ordered and delivered CPU Upgrade for the system.

Due to the changing of this product, the most current information on installing, configuring and troubleshooting iCOD can be found at <http://docs.hp.com>

---

<b>NOTE</b>	Ensure that the customer is aware of the iCOD email requirements. Refer to <a href="http://docs.hp.com">http://docs.hp.com</a> for further details.
-------------	---

---

---

## Booting HP-UX on the Partition(s)

To boot HP-UX on a partition:

1. At the MP Main Menu, enter **co**.

If at the BCH prompt, enter **Ctrl B** to return to the MP Main Menu.

If at the MP CM Menu, enter **ma** to return to the MP Main Menu.

2. Identity the partition to boot. Partitions may be booted in any order.

3. At the BCH prompt, enter **bo**.

The prompt, Do you wish to stop at the ISL prompt prior to booting? (y/n) appears.

4. Enter **n**.

---

### NOTE

If the partition fails to boot, or if the SPU was shipped without *instant ignition*, you may have to boot from a DVD that contains the operating system and other necessary software.

---



---

## 6 Installation Cleanup

After the hp rp8400 server series has been installed in a computer room and verified, conduct the post installation check. Before turning the system over to the customer, it is important to inspect the system visually and clean up the installation area.

## Installation Cleanup Checklist

Use the following list to ensure the system is ready to be turned over to the customer.

- **Inspect circuit boards.** Check that all circuit boards are installed and properly seated, and that the circuit board retainers are reinstalled.
- **Inspect cabling.** Check that all cables are installed, secured, and properly routed.
- **Inspect test points.** Check that test leads are removed from the voltage test points.
- **Clean up and dispose of debris.** Remove all packing materials and debris from the area, and dispose of it properly.
- **Perform final check.** Inspect the area to ensure that all parts, tools, and other items used to install the system are disposed of properly. Then, if you have not already done so, close and lock the doors.
- **Enter information in the Gold Book.** When you complete the installation and cleanup, we recommend that you make the appropriate notations in the Gold Book, which should have been shipped with the system.
- **Obtain customer acceptance (if required).** This includes thanking the customer for choosing Hewlett-Packard.

---

## **7 Returning Equipment**

If damaged equipment is found, use the following procedure to return it to Hewlett-Packard.

## Repacking the Cabinet for Shipment

Use the original packing material to repackage the server cabinet for shipment. If the packing material is not available, contact your local Hewlett-Packard Sales and Support office regarding shipment.

Before shipment, securely place a tag on the container (and equipment) to identify the owner and the service to be performed. Include the SPU cabinet model number.

To repackage the SPU cabinet, follow the repackage checklist below and refer to the unpacking instructions for details.

- Step 1.** Assemble the original HP packing materials, or contact your local Hewlett-Packard Sales and Support office.
- Step 2.** Connect the loading ramp to the pallet.
- Step 3.** Raise the leveling feet.
- Step 4.** Push the SPU cabinet up the ramp, front first.
- Step 5.** Secure the SPU cabinet to the pallet.
- Step 6.** Place the anti-static bag over the SPU cabinet.
- Step 7.** Place the top pad packing material and loading/unloading ramps on the sides of the SPU cabinet.
- Step 8.** Place the corrugated wrap around the SPU cabinet.
- Step 9.** Put the box top on the box.
- Step 10.** Secure the top to the pallet with top-to-bottom plastic bands.

---

## **A Installation Checklist**

This section provides a means of tracking progress to ensure that all steps required for a successful installation are completed.

# Using the Checklist

The checklist provided here is an installation aid and should be used only after you have installed a few systems using the detailed procedures described in the body of this manual. This checklist is a compilation of the tasks described in this manual.

The checklist is organized as follows:

- PROCEDURES    The procedures outlined in this document in order.
- IN-PROCESS    The portion of the checklist that allows you to comment on the current status of a procedure.
- COMPLETED    The final check to ensure that a step has been completed and comments.
- Major tasks are in **bold type**, subtasks are indented.

Table A-1            Factory-Integrated Installation Checklist

PROCEDURE		IN-PROCESS		COMPLETED	
		Initials	Comments	Initials	Comments
<b>Obtain LAN information</b>					
<b>Verify site preparation</b>					
	Site grounding verified				
	Power requirements verified				
<b>Check inventory</b>					
<b>Inspect shipping containers for damage</b>					
<b>Unpack SPU cabinet</b>					
	Allow proper clearance				
	Cut polystrap bands				
	Remove cardboard top cap				
	Remove corrugated wrap from the pallet				
	Remove four bolts holding down the ramps and remove the ramps				
	Remove antistatic bag				
	Check for damage (exterior and interior)				
	Position ramps				
	Roll cabinet off ramp				

**Table A-1 Factory-Integrated Installation Checklist (Continued) (Continued)**

PROCEDURE		IN-PROCESS		COMPLETED	
<b>Unpack the peripheral cabinet (if ordered)</b>					
<b>Unpack other equipment</b>					
<b>Remove and dispose of packaging material</b>					
<b>Move cabinet(s) and equipment to computer room</b>					
<b>Move cabinets into final position</b>					
	Position cabinets next to each other (approx. 1/2 inch)				
	Adjust leveling feet				
	Install anti tip plates				
	Inspect cables for proper installation				
<b>Set up CE tool and connect to Remote RS-232 port on MP</b>					
<b>Apply power to cabinet (Housekeeping)</b>					
<b>Check power to BPSs</b>					
<b>Log in to MP</b>					
<b>Set LAN IP address on MP</b>					
<b>Connect customer console</b>					
<b>Set up network on customer console</b>					
<b>Verify LAN connection</b>					
<b>Verify presence of cells</b>					
<b>Power on cabinet (48 V)</b>					
<b>Verify system configuration and set boot parameters</b>					
<b>Set automatic system restart</b>					
<b>Boot partitions</b>					
<b>Configure remote login (if required). See Appendix B.</b>					
<b>Verify remote link (if required). See Appendix B.</b>					

**Table A-1 Factory-Integrated Installation Checklist (Continued) (Continued)**

PROCEDURE		IN-PROCESS		COMPLETED	
<b>Install non-factory-integrated I/O cards (if required)</b>					
	Select PCI card slot				
	Install PCI card				
	Verify installation				
<b>Route cables using the cable management arm</b>					
<b>Install other peripherals (if required)</b>					
<b>Perform visual inspection and complete installation</b>					
<b>Set up network services (if required)</b>					
<b>Enable iCOD (if available)</b>					
Final inspection of circuit boards					
Final inspection of cabling					
Area cleaned and debris and packing materials disposed of					
<b>Tools accounted for</b>					
<b>Parts and other items disposed of</b>					
<b>Make entry in Gold Book (recommended)</b>					
<b>Customer acceptance and signoff (if required)</b>					



---

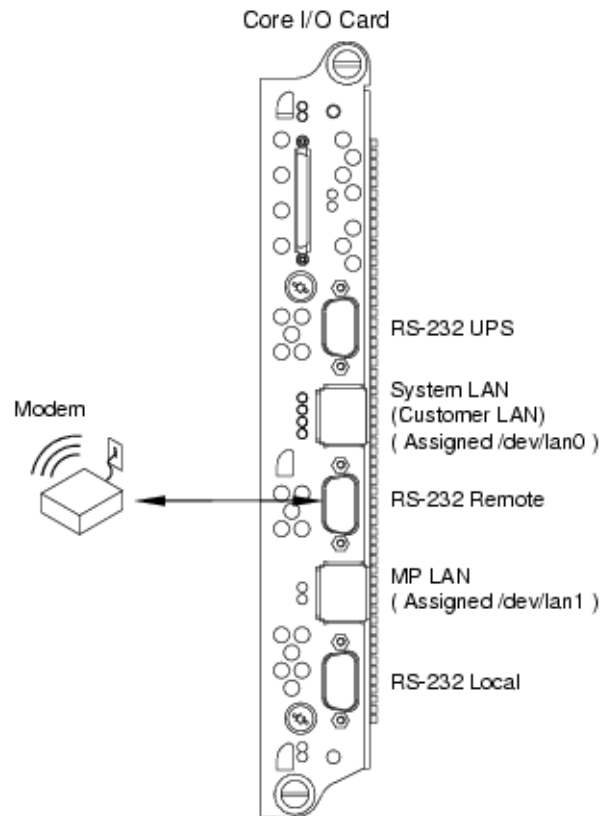
## B Accessing the MP Using a Modem

A modem may be used to access the Management Processor (MP) remotely. A modem is often used in conjunction with a paging device to alert a remote monitor about the condition of the SPU. As with the Local RS-232 connection, **only one window can be viewed** on the display device. When enabled, it provides direct access to the MP and to any partition.

To connect the serial display device to the MP using a modem:

1. At the side of the SPU cabinet, connect one end of a modem cable to the **Remote RS-232** port on the Core I/O card.

**Figure B-1 Remote Connection**



H31002  
4/25/01

2. Connect the other end of the RS-232 cable to the modem.
3. Connect a dedicated phone (analog) line to the modem.
4. Set modem configuration as specified for remote support.

To modify the modem configuration to configure remote login, enter **ca** (Configure Asynchronous and Modem Parameters) at the MP command prompt (*MP:CM>*) and follow the instruction on the screen.

**Figure B-2      The ca Command Screen**

```
MP> cm

Enter HE to get a list of available commands

MP:CM> ca

This command allows modification of the asynchronous parameters.

WARNING: Changing the asynchronous parameters requires reboot of the MP
for proper local operation.

Do you want to modify the local rs232 port parameters? (Y/[N])

Do you want to modify the modem parameters? (Y/[N])

MP:CM>
```

## **Verifying Modem Communications**

Verify the modem communications using the following procedure:

1. If not already obtained, get the modem phone number from the customer.
2. Contact the testing organization. This could be the Response Center or the WWSIT team.
3. Provide the organization with the phone number and parameters set using the MP `ca` command.
4. Request confirmation of the communication link, or check the modem light for activity.

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