Installation Guide
hp Integrity Superdome and
hp 9000 Superdome

Sixth Edition

Manufacturing Part Number: A5201-96043-en
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Legal Notices

The information contained herein is subject to change without notice.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

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Contents

1 Installing the System

This chapter describes installation of a new hp Integrity Superdome or hp 9000 Superdome systems. It is assumed that the installer has received adequate training and is knowledgeable with the product and has a good, overall background in electronics and customer hardware installation.

Introduction

The instructions in this guide are written for Customer Engineers (CEs) who are experienced at installing complex systems.

If installing an hp Integrity Superdome or hp 9000 Superdome for the first time, read this manual. It provides details about each step in the installation process. Some steps must be performed before others can be completed successfully. To avoid having to undo and redo an installation step, follow the installation sequence outlined in this guide.

Communications Interference

HP system compliance tests are conducted with HP supported peripheral devices and shielded cables, such as those received with the system. The system meets interference requirements of all countries in which it is sold. These requirements provide reasonable protection against interference with radio and television communications.

Installing and using the system in strict accordance with instructions provided by HP minimizes the chances that the system will cause radio or television interference. However, HP does not guarantee that the system will not interfere with radio and television reception.

Take these precautions:

- Use only shielded cables.
- Install and route the cables per the instructions provided.
- Ensure that all cable connector screws are firmly tightened.
- Use only HP supported peripheral devices.
- Ensure that all panels and cover plates are in place and secure before system operation.

Electrostatic Discharge

HP systems and peripherals contain assemblies and components that are sensitive to electrostatic discharge (ESD). Carefully observe the precautions and recommended procedures in this manual to prevent component damage from static electricity.

Take these precautions:

- Always wear a grounded wrist strap when working on or around system components.
- Treat all assemblies, components, and interface connections as static-sensitive.
- When unpacking cards, interfaces, and other accessories that are packaged separately from the system, keep the accessories in their conductive plastic bags until they are ready to be installed.
- Before removing or replacing any components or installing any accessories in the system, select a work area where potential static sources are minimized, preferably an anti-static work station.
- Avoid working in carpeted areas, and keep body movement to a minimum while installing accessories.

Unpacking and Inspecting

This section describes what to do before unpacking the server and how to unpack the system itself.

WARNING **Do not attempt to move the cabinet, either packed or unpacked, up or down an incline of more than 15°.**

Verifying Site Preparation

Verifying site preparation includes two tasks: gathering LAN information and verifying electrical requirements.

Gathering LAN Information

The SMS connects to the customer's LAN. Determine the IP of the appropriate address.

Verifying Electrical Requirements

The site should have been verified for proper grounding and electrical requirements prior to the system being shipped to the customer as part of the site preparation. Before unpacking and installing the system, verify with the customer that grounding specifications and power requirements have been met.

Checking the Inventory

The sales order packing slip lists all equipment shipped from HP. Use this packing slip to verify that all equipment has arrived at the customer site.

NOTE To identify each item by part number, refer to the sales order packing slip.

One of the large overpack containers is labeled "Open Me First." This box contains the Solution Information Manual and DDCAs. The unpacking instructions are in the plastic bag taped to the cabinet.

The following items are in other containers and should be checked against the packing list:

- Power Distribution Control Assembly (PDCA) and power cord
- Two blower housings per cabinet
- Four blowers per cabinet
- Four side skins with related attachment hardware
- Cabinet blower bezels and front door assemblies
- Support Management Station
- Cables
- Optional equipment
- Boot device with HP-UX, Windows, and/or Linux installed.

Inspecting the Shipping Containers for Damage

HP 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.

WARNING **Do not attempt to move the cabinet, either packed or unpacked, up or down an incline of more than 15°.**

A tilt indicator is installed on the back and side of the cabinet shipping container. If the container has been tilted to an angle that could cause equipment damage, the beads in the indicator shift positions. If a carton has received a physical shock and the tilt indicator is in an abnormal condition, visually inspect the unit for any signs of damage. If damage is found, document the damage with photographs, and contact the transport carrier immediately.

Figure 1-1 Tilt Indicator (Normal)

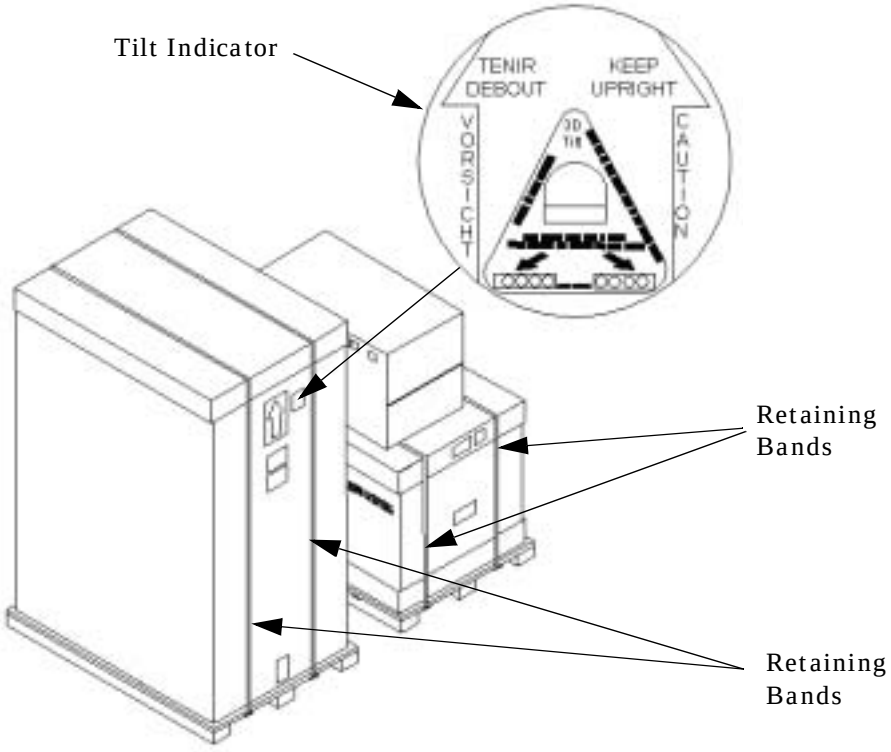
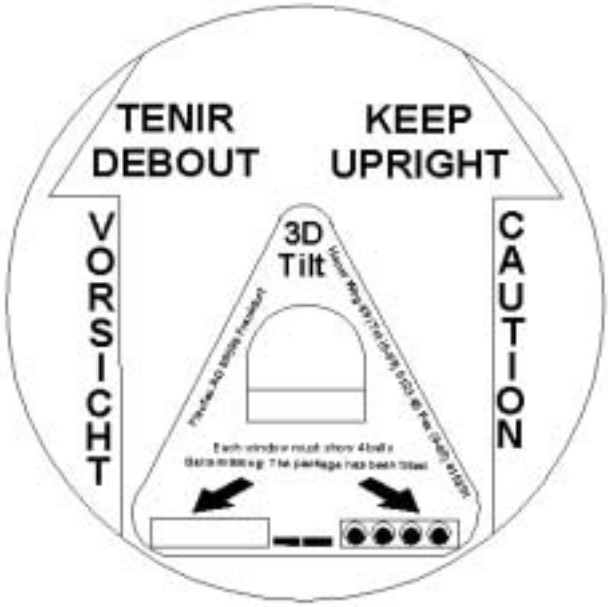


Figure 1-2 Tilt Indicator (Abnormal)



NOTE If the tilt indicator shows that an abnormal shipping condition has occurred, write “possible hidden damage” on the bill of lading, and keep the packaging.

Inspection Precautions

- When the shipment arrives, check each container against the carrier's bill of lading. Inspect the exterior of each container immediately for mishandling or damage during transit. If any of the containers are damaged, request the carrier's agent be present when the container is opened.
- When unpacking the container(s), inspect each item for external damage. Look for broken controls and connectors, dented corners, scratches, bent panels, and loose components.

NOTE Hewlett-Packard recommends keeping the shipping container or the packaging material. If it becomes necessary to repackage the cabinet, the original packing material will be needed.

If discarding the shipping container or packaging material, please dispose of them in an environmentally responsible manner (recycle, if possible).

Claims Procedures

If the shipment is incomplete, the equipment is damaged, or it fails to meet specifications, notify the nearest Hewlett-Packard Sales and Service Office. If damage occurred in transit, notify the carrier as well.

Hewlett-Packard will arrange for replacement or repair without waiting for settlement of claims against the carrier. In the event of damage in transit, retain the packing container and packaging materials for inspection.

Unpacking and Inspecting Hardware Components

Tools Required

The following tools are required to install the system:

- Standard hand tools (such as a adjustable-end wrench)
- ESD grounding strap
- Digital Ohm-Voltmeter (or VOM) capable of reading AC/DC voltages
- 1/2-inch wrench/socket
- 9/16-inch wrench
- #2 Phillips screwdriver
- Flathead screwdriver
- Wire cutters or utility knife
- Safety goggles or glasses
- T10, T15, T20, T25, and T30 Torx drivers
- 9-pin to 25-pin serial cable (Hewlett-Packard Part Number 24542G)
- 9-pin to 9-pin Null modem cable (Hewlett-Packard Part Number F1047-80002)

Unpacking the Cabinet

CAUTION Use three people to unpack the cabinet safely.

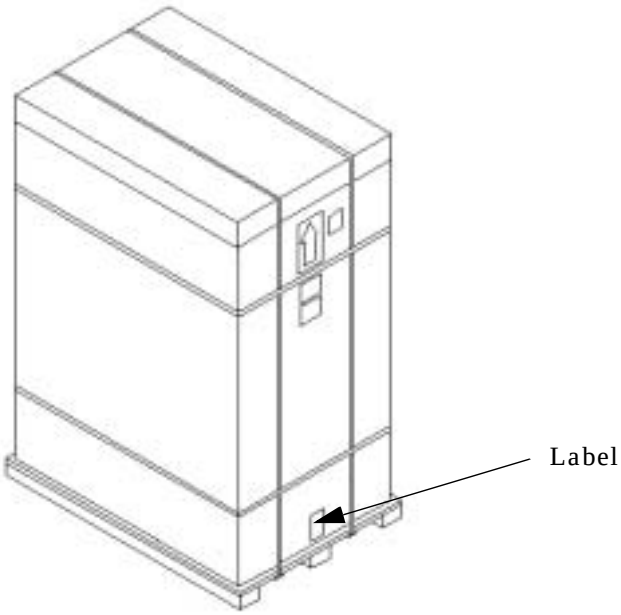
Hewlett-Packard recommends removing the cardboard shipping container before moving the cabinet into the computer room.

NOTE If unpacking the cabinet in the computer room, be sure to position it so that it can be moved into its final position easily. Notice that the front of the cabinet is the side with the label showing how to align the ramps.

To unpack the cabinet, perform the following steps:

Step 1. Position the packaged cabinet so that a clear area about three times the length of the package (**about 12 feet**) is available in front of the unit, and at least 2 feet are available on the sides.

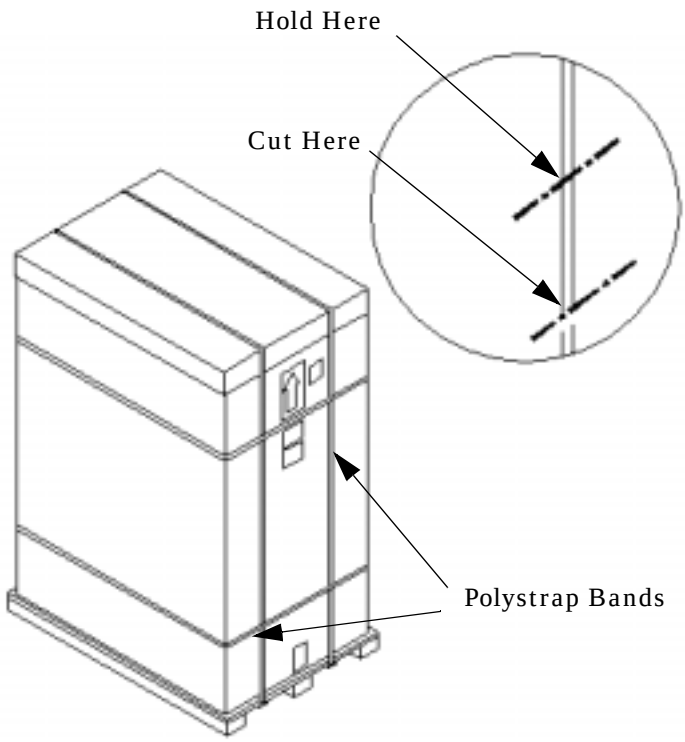
Figure 1-3Front of Cabinet Container



Step 2. Cut the plastic Polystraps bands around the shipping container.

WARNING **Do not stand directly in front of the strapping while cutting it. Hold the band above the intended cut and wear protective glasses. These bands are under tension. When cut, they spring back and could cause serious eye injury.**

Figure 1-4Cutting Polystrap Bands



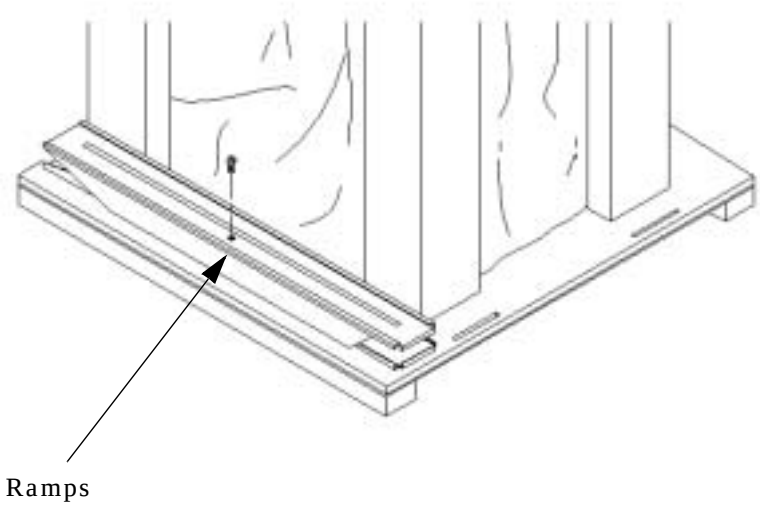
Step 3. Lift the cardboard corrugated top cap off of the shipping box.

Step 4. Remove the corrugated sleeves surrounding the cabinet.

Step 5. Remove the stretch wrap, the front and rear top foam inserts, and the four corner inserts from the cabinet.

Step 6. Remove the ramps from the pallet and set them aside.

Figure 1-5Removing the Ramps from the Pallet



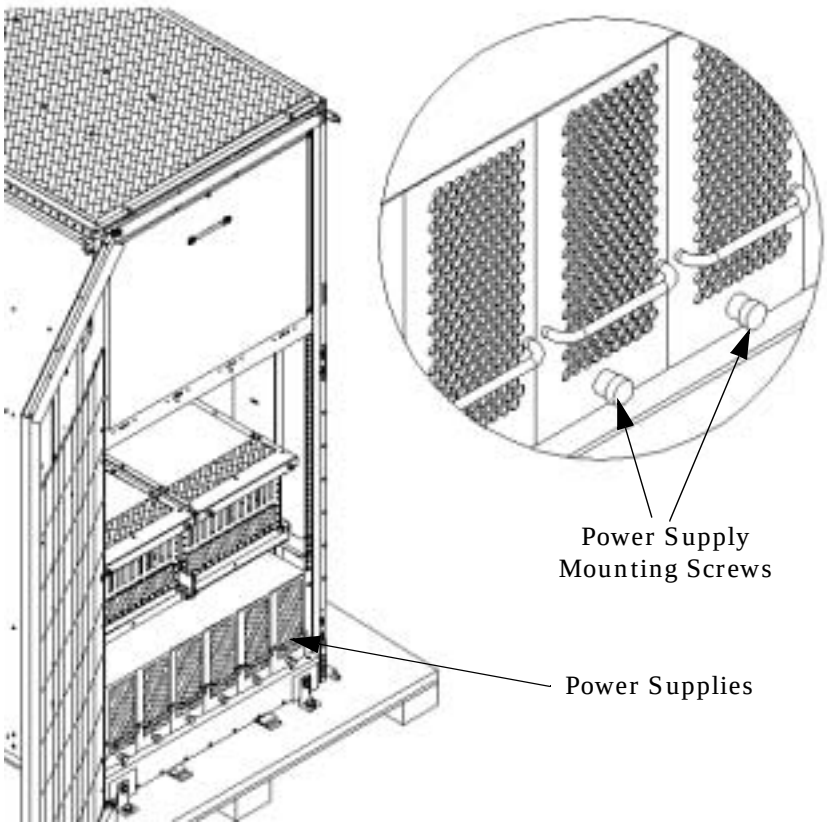
Step 7. Remove the plastic anti-static bag by lifting it straight up off the cabinet, and check for damage. If damaged, follow the claims procedure. Some damage can be repaired by replacing the damaged part. If extensive damage is found, it may be necessary to repack and return the entire cabinet to Hewlett-Packard.

Check the cabinet exterior for signs of shipping damage.

Step 1. Look at the top and sides for dents, warpage, or scratches.

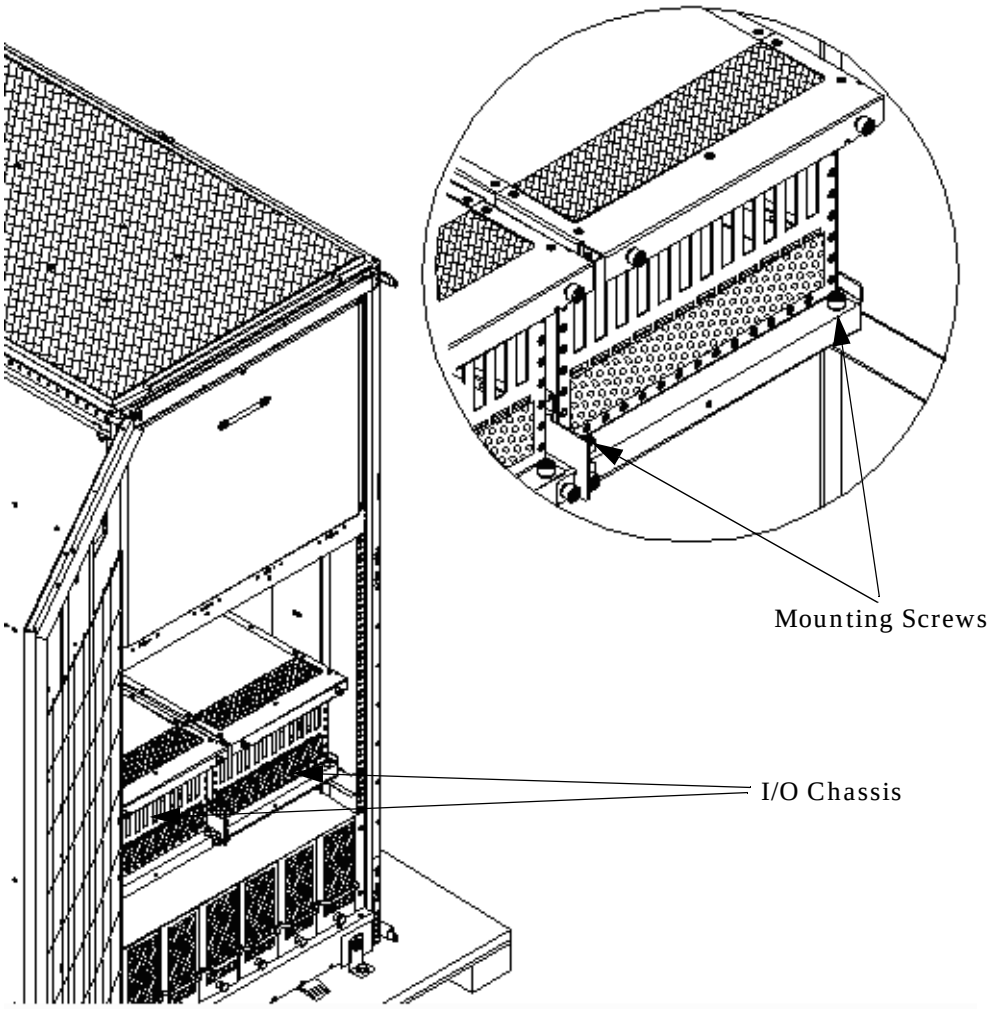
Step 2. Check that the power supply mounting screws are in place and **locked**.

Figure 1-6Check Power Supply Mounting Screws



Step 3. Check to see that the I/O chassis mounting screws are in place and secure.

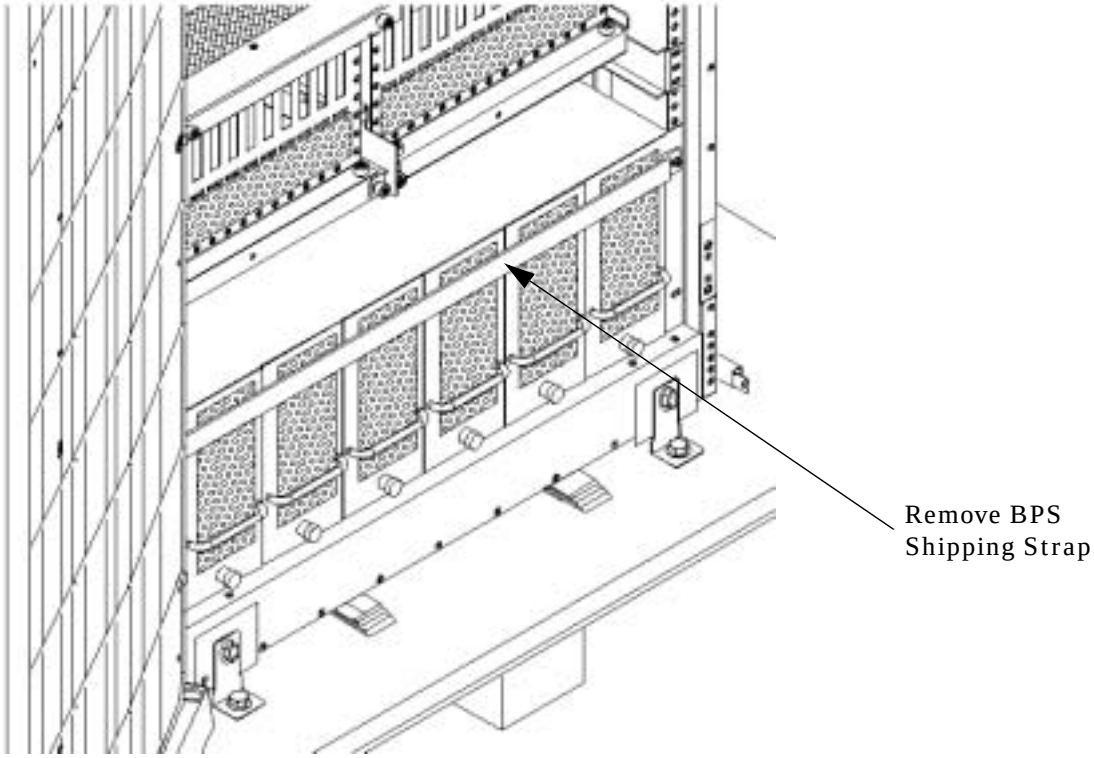
Figure 1-7I/O Chassis Mounting Screws



Check all components for signs of shifting during shipment or any signs of damage.

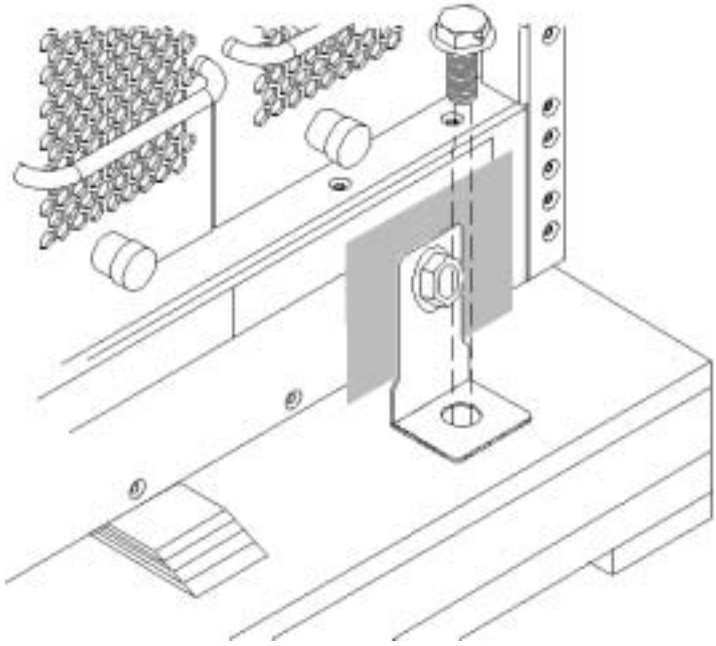
Step 4. Remove the shipping strap that holds the BPSs in place during shipping.

Figure 1-8Remove BPS Shipping Strap



Step 5. Remove the pallet mounting brackets and pads on the side of the pallet where the ramp slots are located.

Figure 1-9Removing the Mounting Brackets



Step 6. On the other side of the pallet, remove only the bolt on each mounting bracket that is attached to the cabinet.

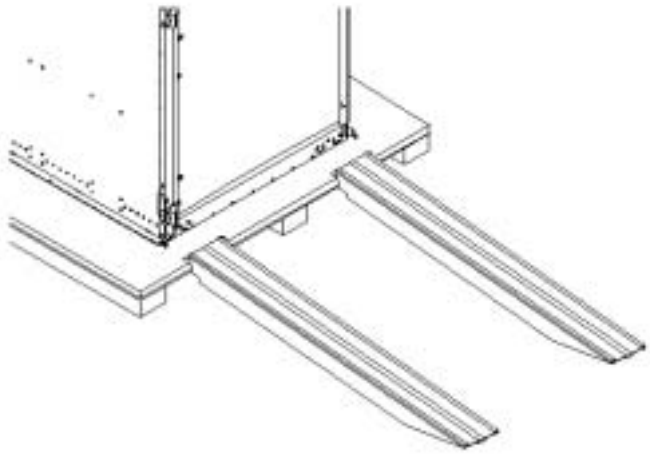
WARNING **Do not remove the bolts on the mounting brackets that attach to the pallet. These bolts prevent the cabinet from rolling off the back of the pallet.**

Step 7. Insert the ramps into the slots on the pallet.

CAUTION Make sure the ramps are **parallel and aligned**.

The casters on the cabinet should roll unobstructed onto the ramp.

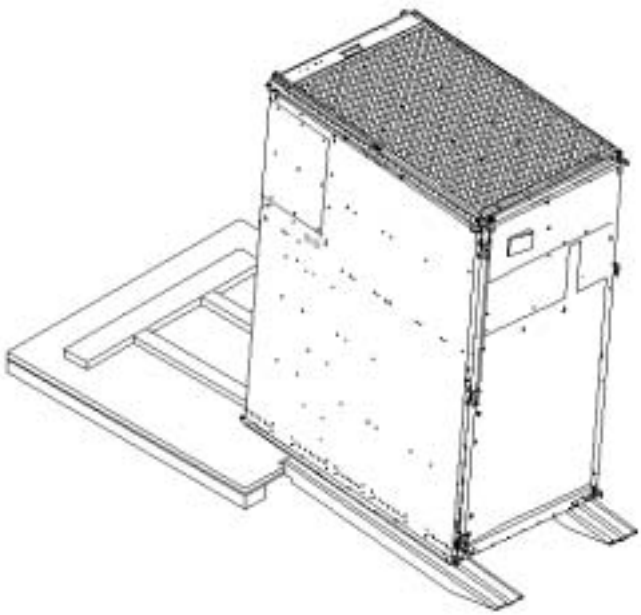
Figure 1-10 Positioning the Ramps



WARNING **Do not attempt to roll a cabinet without help. The cabinet can weigh as much as 1400 lbs. Three people are required to roll the cabinet off the pallet. Position one person at the rear of the cabinet and one person on each side.**

Step 8. Carefully roll the cabinet down the ramp.

Figure 1-11Rolling the cabinet Down the Ramp



WARNING **Do not attempt to move the cabinet, either packed or unpacked, up or down an incline of more than 15°.**

Step 9. Unpack any other cabinet(s) that was shipped.

Unpacking the PDCA

At least one Power Distribution Control Assembly (PDCA) is shipped with the system. In some cases, the customer may have ordered two PDCAs, the second to be used as a backup power source. Unpack the PDCA now and ensure it has the power cord option for this installation.

There are several power cord options available for the PDCAs. Only options 6 and 7 are currently available in new system configurations.

Table 1-2 details options 6 and 7.

Table 1-1 Available Power Options

Option	Source Type	Source Voltage (nominal)	PDCA Required	Input Current Per Phase 200-240 VAC [a]	Power Receptacle Required
6	3-phase	Voltage range 200-240 VAC, phase-to-phase, 50/60 Hz	four-wire	44A Maximum per phase	Connector and plug provided with a 2.5-meter power cable. Electrician must hard-wire receptacle to 60A site power.b,d
7	3-phase	Voltage range 200-240 VAC, phase-to-neutral, 50/60 Hz	five-wire	24A Maximum per phase	Connector and plug provided with a 2.5-meter power cable. Electrician must hard-wire receptacle to 32A site power.b,d

a. A dedicated branch circuit is required for each PDCA installed.

Table 1-2 Option 6 and 7 Specifics

PDCA Part Number	Attached Power Cord	Attached Plug	Receptacle Required
A5201-69023 (Option 6)	OLFLEX 190 (PN 600804) is a 2.5 meter multi conductor, 600 volt, 90 degree C, UL and CSA approved, oil resistant flexible cable. (8 AWG 60 A capacity)	Mennekes ME 460P9 (60 A capacity)	Mennekes ME 460R9 (60 A capacity)
A5201-69024 (Option 7)	H07RN-F (OLFLEX PN 1600130) is a 2.5 meter heavy duty neoprene jacketed harmonized European flexible cable. (4 mm^2 32A capacity)	Mennekes ME 532P6-14 (32A capacity)	Mennekes ME 532R6-1500 (32 A capacity)

Returning Equipment

If the equipment is found to be damaged, use the original packing material to repackage the cabinet for shipment. If the packing material is not available, contact the local Hewlett-Packard Sales and Support Office regarding shipment.

Before shipping, place a tag on the container (or equipment) to identify the owner and the service to be performed. Include the equipment model number and the full serial number, if applicable. The model number and the full serial number are printed on the System Information Labels located at the bottom front of the cabinet.

WARNING **Do not attempt to push the loaded cabinet up the ramp onto the pallet. Three people are required to push the cabinet up the ramp and position it on the pallet. Check the condition of the loading/unloading ramp before use.**

Repackaging:

Step 1. Assemble the Hewlett-Packard packing materials that came with the cabinet.

Step 2. Carefully roll the cabinet up the ramp.

Step 3. Attach the pallet mounting brackets to the pallet and the cabinet.

Step 4. Reattach the ramps to the pallet.

Step 5. Replace the plastic anti-static bag and foam inserts.

Step 6. Replace the cardboard surrounding the cabinet.

Step 7. Replace the cardboard caps.

Step 8. Secure the assembly to the pallet with straps.

The cabinet is now ready for shipment.

Setting Up the hp Integrity Superdome or hp 9000 Superdome

After a site has been prepared, the system has been unpacked, and components have been inspected, the system can now be prepared for booting.

Moving the System and Related Equipment to the Installation Site

Carefully move the cabinet(s) and its related equipment to the installation site but not into its final location. If the system is to be placed at the end of a row, side bezels must be added before positioning the cabinet in its final location. Check the path from where the system was unpacked to its final destination to make sure the way is clear and free of obstructions. If the cabinet must be moved up ramps, be sure to maneuver it using three people.

Unpacking and Installing the Blower Housings and Blowers

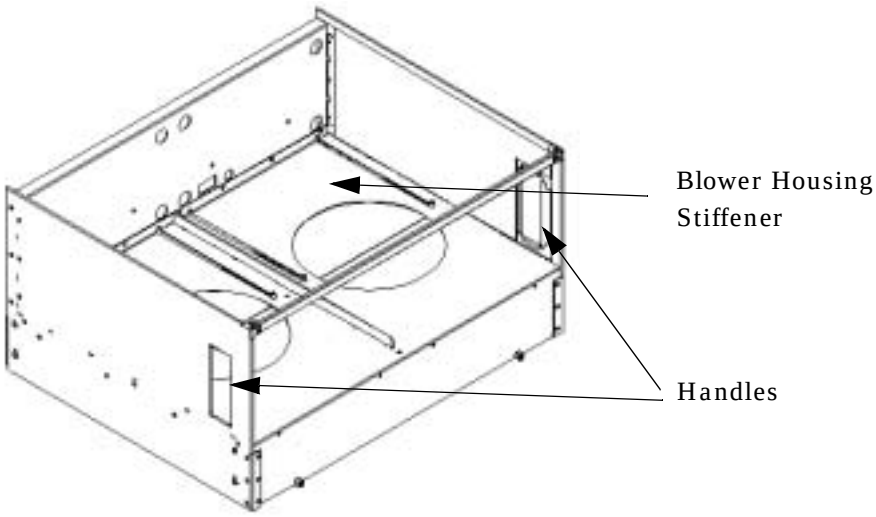
There are two blower housings and four blowers for each cabinet. Although similar in size, the blower housings for each cabinet are not the same; one has a connector to which the other attaches. Use the following procedure to unpack and install the housings and blowers:

Step 1. Unpack the housings from the cardboard box and set them aside.

The rear housing is labeled **Blower 3 Blower 2**. The front housing is labeled **Blower 0 Blower 1**.

CAUTION Do not lift the housing by the stiffener.

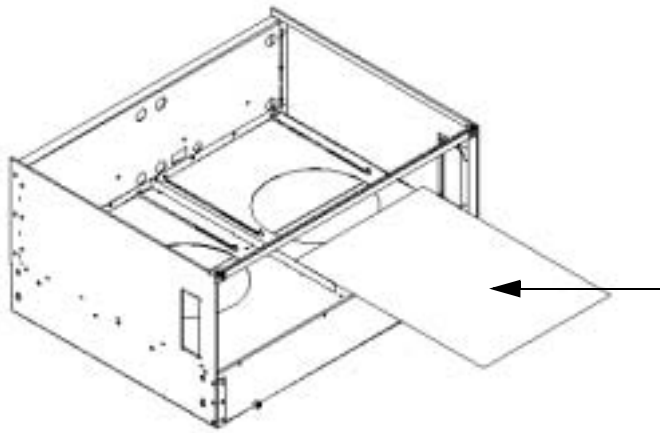
Figure 1-12Blower Housing Stiffener



Step 2. Remove the cardboard from the blower housing.

This cardboard protects the housing baffle during shipping. If it is not removed, the fans will not work properly.

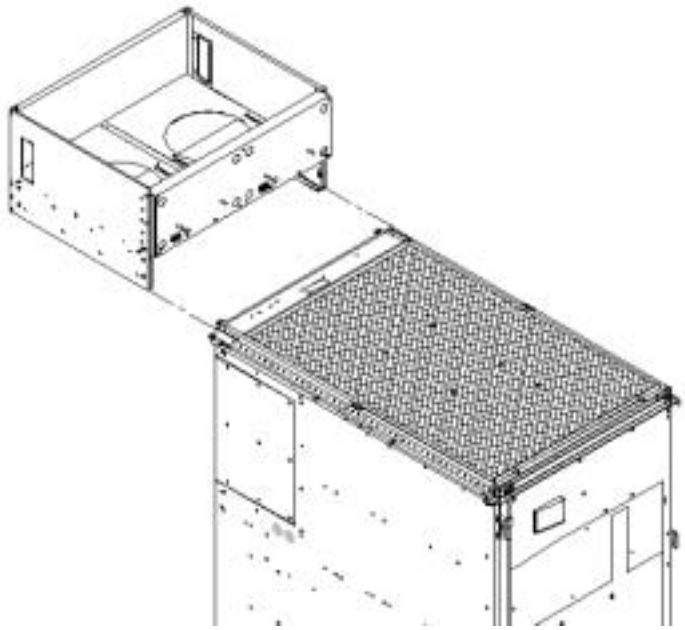
Figure 1-13Removing Protective Cardboard from the Housing



NOTE Double-check that the protective cardboard has been removed.

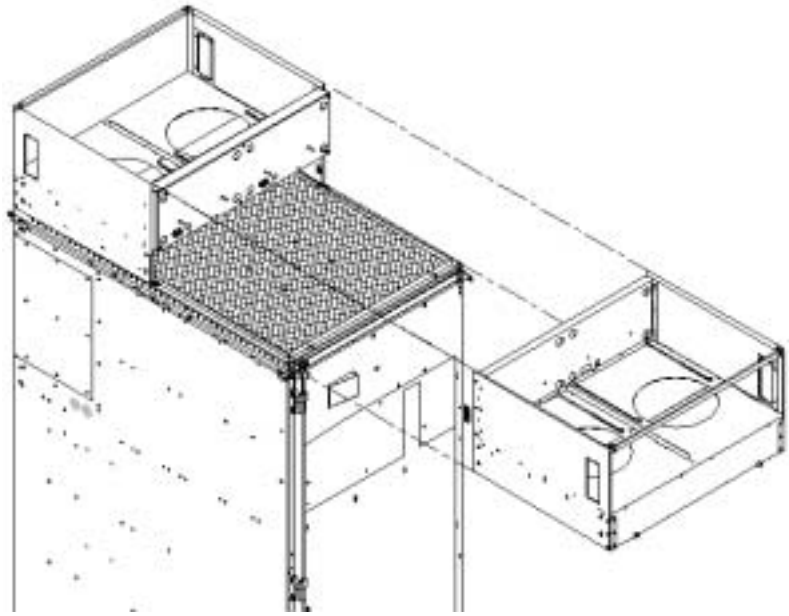
Step 3. Using the handles on the housing labeled **Blower 3 Blower 2**, part number A5201-62029, align the edge of the housing over the edge at the top rear of the cabinet, slide it into place, and tighten the thumbscrews at the front of the housing.

Figure 1-14Installing the Rear Blower Housing



Step 4. Using the handles on the housing labeled **Blower 0 Blower 1**, part number A5201-62030, align the edge of the housing over the edge at the top front of the cabinet, and slide it into place until the connectors at the back of each housing are fully mated; then tighten the thumbscrews at the front of the housing.

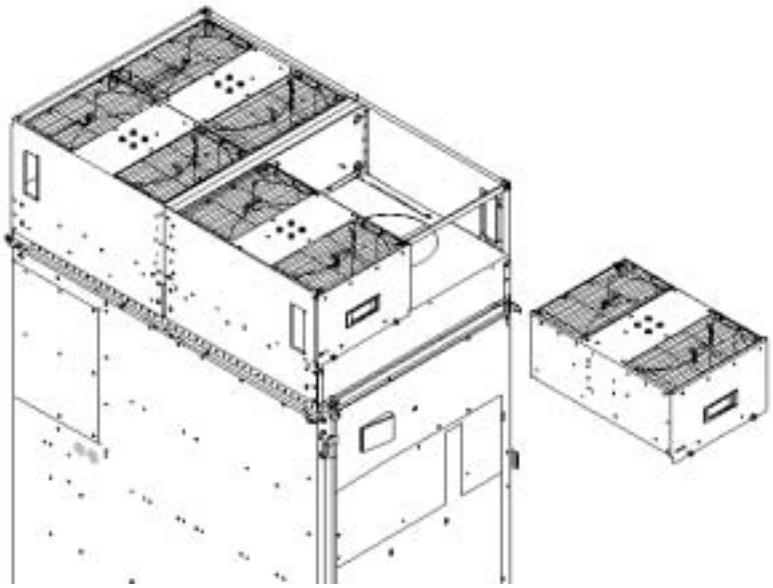
Figure 1-15Installing the Front Blower Housing



Step 5. Unpack each of the four blowers.

Step 6. Insert each of the four blowers into place in the blower housings with the thumbscrews at the bottom.

Figure 1-16Installing the Blowers



Step 7. Tighten the thumbscrews at the front of each blower.

Step 8. If required, install housings on any other cabinets that were shipped with the system.

Attaching Side Skins and Blower Side Bezels

There are two cosmetic side panels that affix to the left and right sides of the system. In addition, there are bezels that cover the sides of the blowers.

IMPORTANT Be sure to attach the side skins at this time in the installation sequence, especially if the cabinet is to be positioned at the end of a row of cabinets or between cabinets.

Attaching the Side Skins

There are four side skins: two front-side skins and two rear-side skins.

NOTE Attach side skins to the left side of Cabinet 0 and the right side of Cabinet 1 (if applicable).

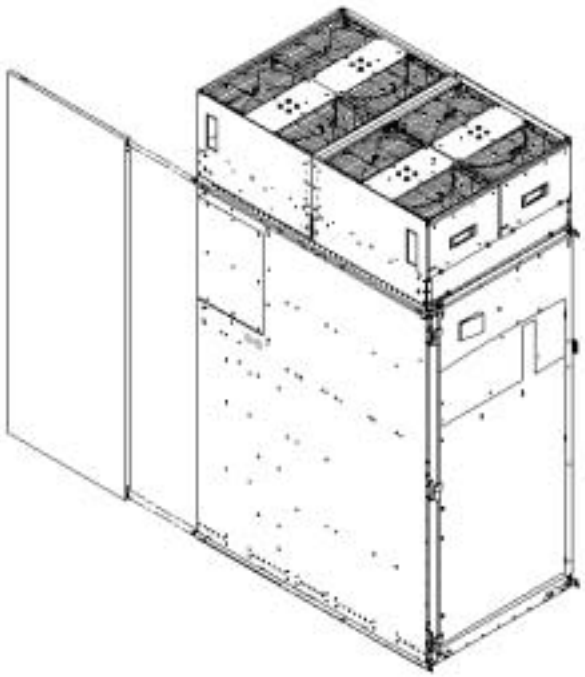
To attach the side skins:

Step 1. If not already done, remove the side skins from their boxes and protective coverings.

Step 2. From the end of the brackets at the back of the cabinet, position the side skin *with the lap joint* (rear) over the top bracket and under the bottom bracket, and gently slide it into position.

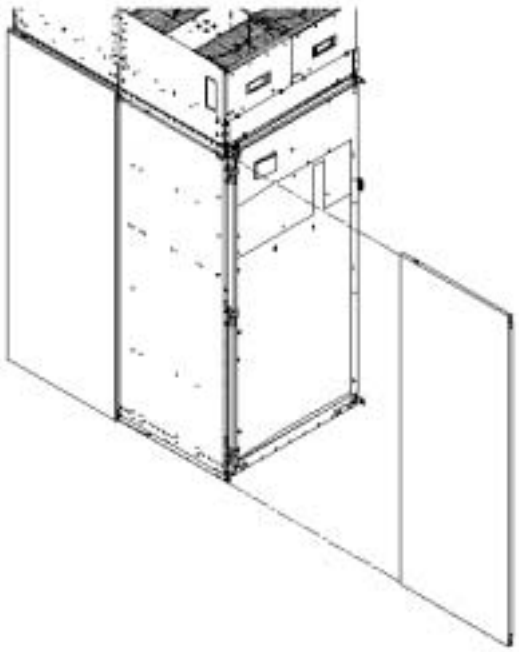
Two skins are installed on each side of the cabinet, one has a lap joint (rear) and one does not (front). The side skins with the lap joint is marked *Rear* and the side skins without the lap joint is marked *Front*.

Figure 1-17Attaching the Rear Side Skin



Step 3. Attach the skin *without the lap joint* (front) over the top bracket and under the bottom bracket and gently slide the skin into position.

Figure 1-18Attaching the Front Side Skins



Step 4. Push the side skins together, making sure the skins overlap at the lap joint.

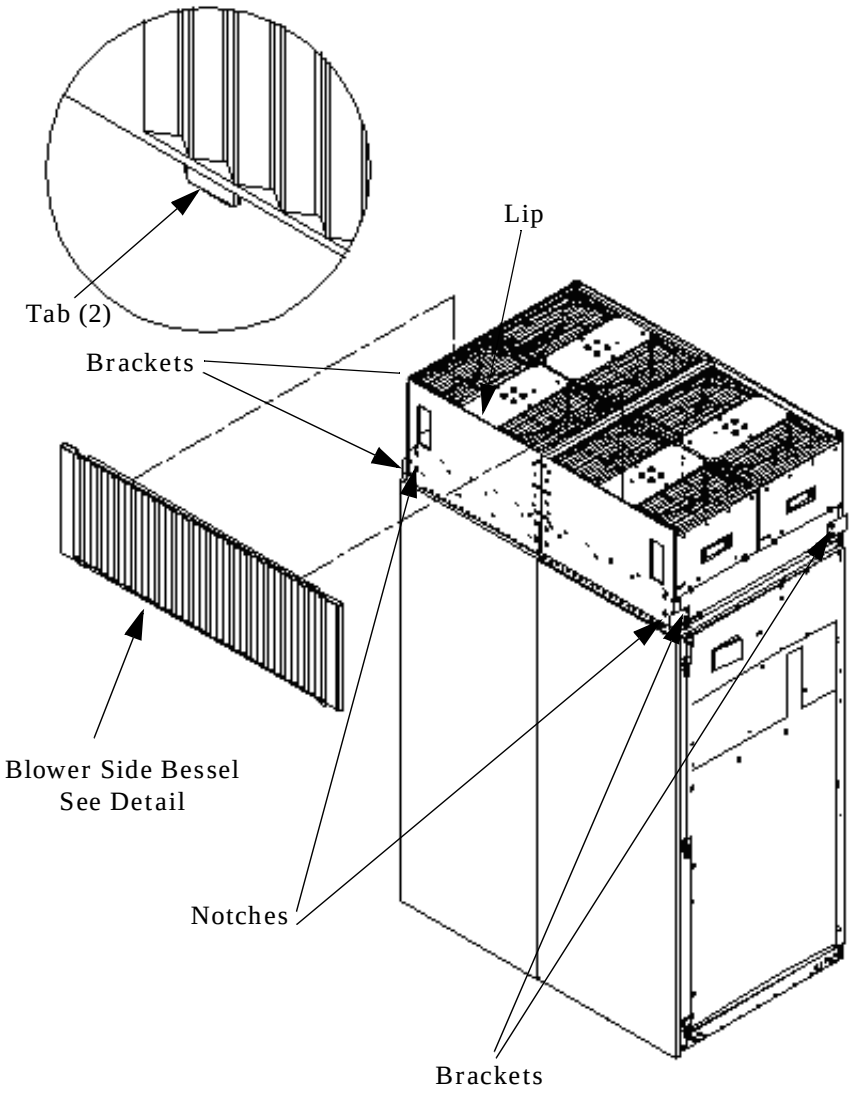
Attaching the Blower Side Bezels

The bezels are held on at the top by the bezel lip, which fits over the top of the blower housing frame, and is secured at the bottom by tabs that fit into slots on the cabinet side panels.

The right and left blower side bezels are attached using the same procedure.

Step 1. Place the side bezel slightly above the blower housing frame.

Figure 1-19 Attaching the Side Bezels and Blower Bracket Locks



Step 2. Align the lower bezel tabs to the slots in the side panels.

Step 3. Lower the bezel so the bezel top lip fits securely on the blower housing frame and the two lower tabs are fully inserted into the side panel slots.

Step 4. Using a Torx 10 drive, attach the screws (Hewlett-Packard P/N 0515-4271) to secure the skins to the brackets.

NOTE Use four screws to attach the side skins to the top and bottom brackets, except for the top bracket on the right side (facing the front of the cabinet). Do not attach the rear screw on that bracket. Insert all screws but do not tighten until all side skins are aligned.

Step 5. Repeat Step 1 through Step 4 for the skins on the other side of the cabinet.

Step 6. To secure the side bezels to the side skins, attach the blower bracket locks (Hewlett-Packard P/N A5201-00268) to the front and back blowers using a T20 Torx driver.

There are two blower bracket locks on the front blowers and two on the rear. Refer to Figure 1-19.

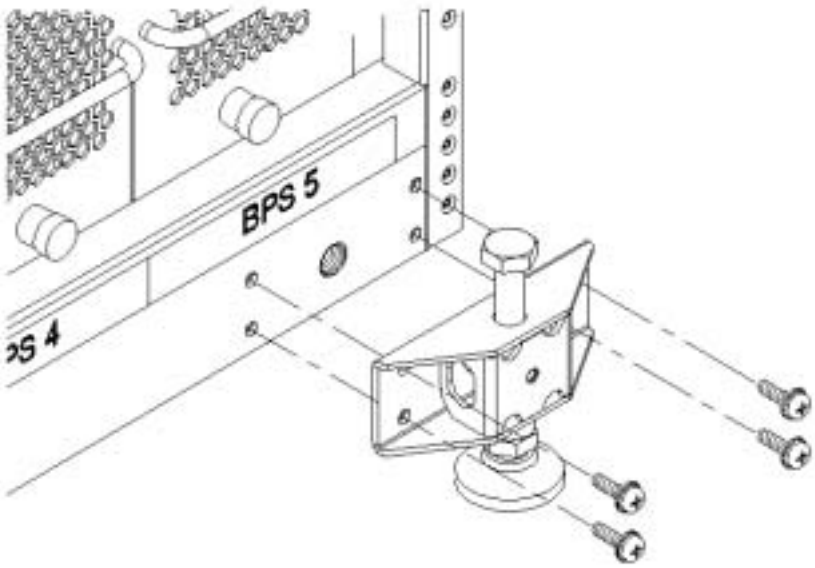
Attaching the Leveling Feet and Leveling the cabinet

After positioning the cabinet to its final position, attach and adjust the leveling feet using the following procedure:

Step 1. Remove the leveling feet from their packages.

Step 2. Attach the leveling feet to the cabinet using four (T25 Torx) screws.

Figure 1-20Attaching the Leveling Feet



Step 3. Screw down each leveling foot clockwise, until it is in firm contact with the floor. Adjust each foot until the cabinet is level.

Installing the Front Door Bezels and the Front and Back Blower Bezels

There are two doors: one at the front and one at the back. The back door is shipped on the chassis and requires no assembly. The front door, which is also shipped on the chassis, requires the assembly of two plastic bezels to its front surface and a cable from the door to the upper front bezel. In addition, there are bezels that fit over the blowers at the front and back of the cabinet.

Installing the Front Door Bezels

The front door assembly includes two cosmetic covers, a control panel, and a key lock. Installing the front door is a three-step process: connecting the control panel ribbon cable from the chassis to the control panel, and mounting the two plastic bezels onto the metal chassis door.

NOTE The procedure in this section requires two people and must be performed with the front metal chassis door open.

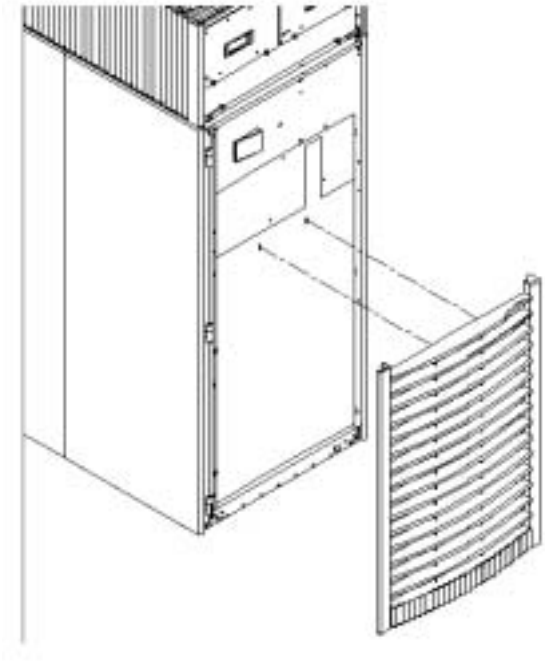
To install the front door assembly:

Step 1. Open the door, unsnap the screen, and remove all the filters held in place with Velcro.

Step 2. Remove the cabinet keys that are taped inside the top front door bezel.

Step 3. Insert the shoulder studs on the lower door bezel into the holes on the front door metal chassis.

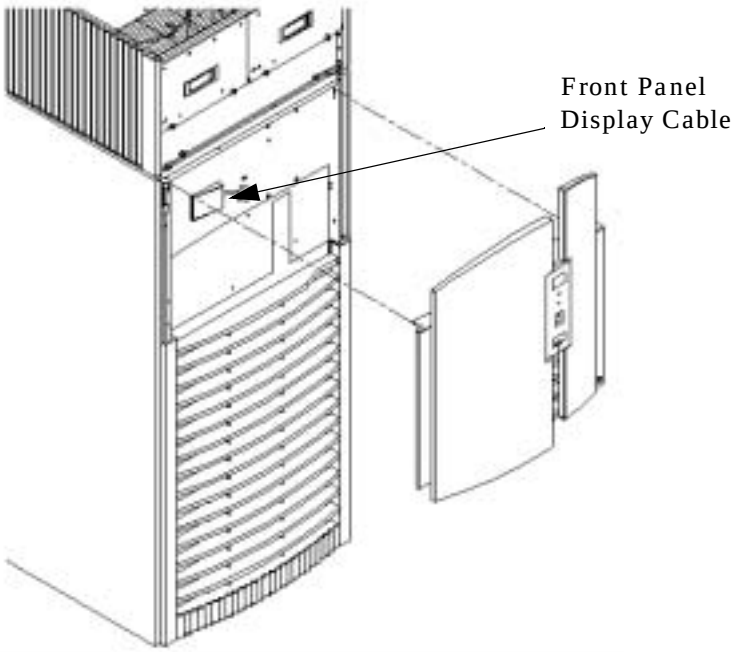
Figure 1-21Installing the Lower Front Door Assembly



Step 4. Using a Torx 10 driver, secure the lower door bezel to the front door chassis with 10 of the screws provided (Hewlett-Packard P/N 0515-0372). Insert all screws loosely, then torque them after the bezel is aligned.

Step 5. While one person holds the upper door bezel near the door chassis, attach the ribbon cable to the back of the control panel on the bezel and tighten the two flathead screws.

Figure 1-22Installing the Upper Front Door Assembly



Step 6. Feed the grounding strap through the door and attach it to the cabinet.

Step 7. Insert the shoulder studs on the upper door bezel into the holes on the front door metal chassis.

Step 8. Using a Torx 10 driver, secure the upper door bezel to the metal door with eight of the screws provided, part number 0515-0372. Be sure to hold down on the hinge side of the bezel while tightening the screws to prevent misalignment of the bezel.

Step 9. Reattach all filters removed in Step 1.

Installing the Rear Blower Bezel

The rear blower bezel is a cosmetic cover for the blowers and is located above the rear door.

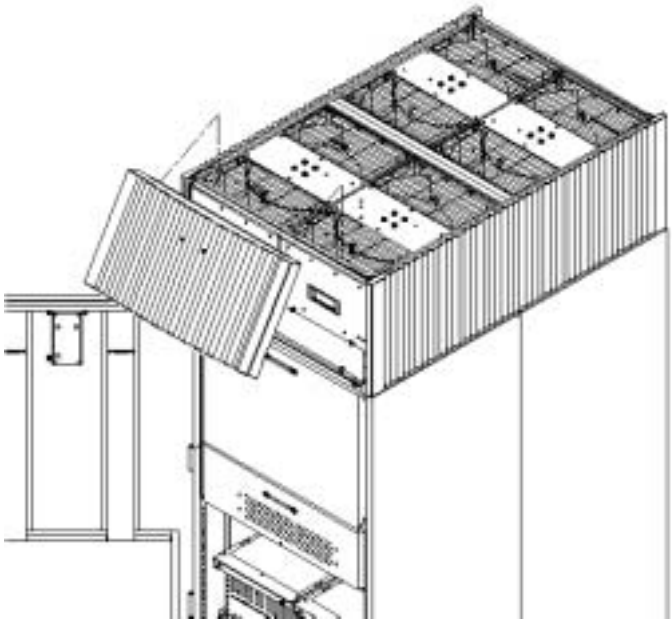
To install the rear blower bezel:

Step 1. Open the rear cabinet door.

The latch is located on the right side of the door.

Step 2. Slide the bezel over the blower housing frame, hooking the lip of the bezel onto the cross support of the blower housing, hold the bottom of the bezel. Rotate the bezel from the top a until the bottom snaps in place.

Figure 1-23Installing the Rear Blower Bezel



Step 3. Align the bezel over the nuts that are attached to the bracket at the rear of the cabinet.

Step 4. Using a T20 Torx driver, tighten the two captive screws on the lower flange of the bezel.

NOTE Tighten the screws securely, otherwise the screw may interfere with the door.

Step 5. Close the cabinet rear door.

Installing the Front Blower Bezel

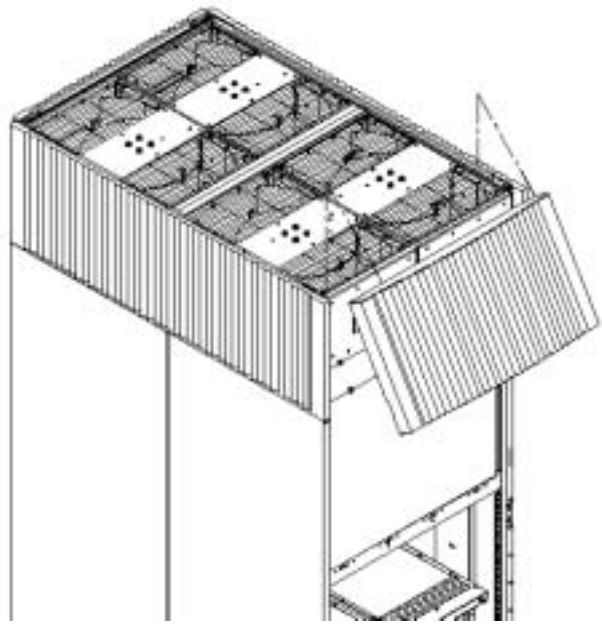
The front blower bezel is a cosmetic cover for the blowers and is located above the front door. To install it, use the following procedure:

Step 1. Open the front door.

The latch is located on the right side of the front door.

Step 2. Position the bezel over the blower housing frame, hooking the lip of the bezel onto the cross support of the blower housing.

Figure 1-24Installing the Front Blower Bezel



Step 3. Align the bezel over the nuts that are attached to the bracket at the front of the cabinet.

Step 4. Using a T20 Torx driver, tighten the two captive screws on the lower flange of the bezel.

NOTE Tighten the screws securely, otherwise the screw may interfere with the door.

Step 5. Close the front door.

Installing and Verifying the PDCA

All systems are delivered with the appropriate cable plug for Options 6 and 7.

Check the voltages at the receptacle prior to plugging in the PDCA plug. Refer to Figure 1-26 and Figure 1-27 for pin locations.

- To verify the proper wiring for a four-wire PDCA, use a DVM to measure the voltage at the receptacle. Voltage should read 200 - 240 Vac phase-to-phase as measured between the receptacle pins as follows: L1 to L2, L2 to L3, L1 to L3.
- To verify the proper wiring for a five-wire PDCA, use a DVM to measure the voltage at the receptacle. Voltage should read 200 - 240 Vac phase-to-neutral as measured between the receptacle pins as follows: L1 to N, L2 to N, L3 to N.

Figure 1-25 PDCA Assembly for Options 6 and 7

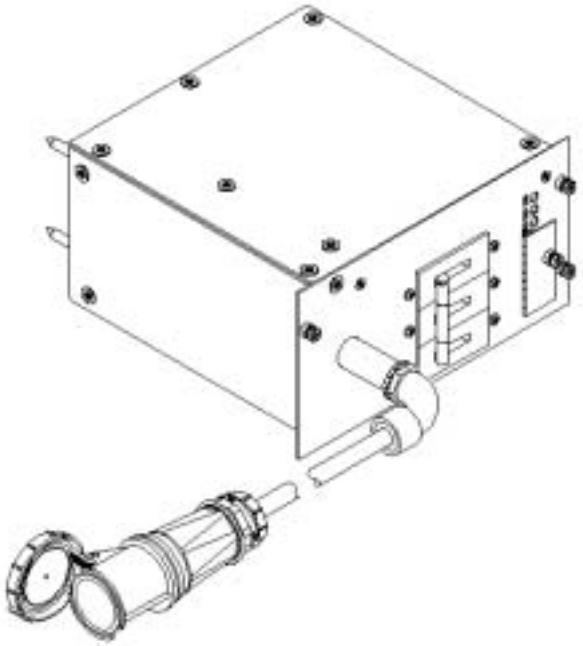


Figure 1-26 Four-Wire Connector

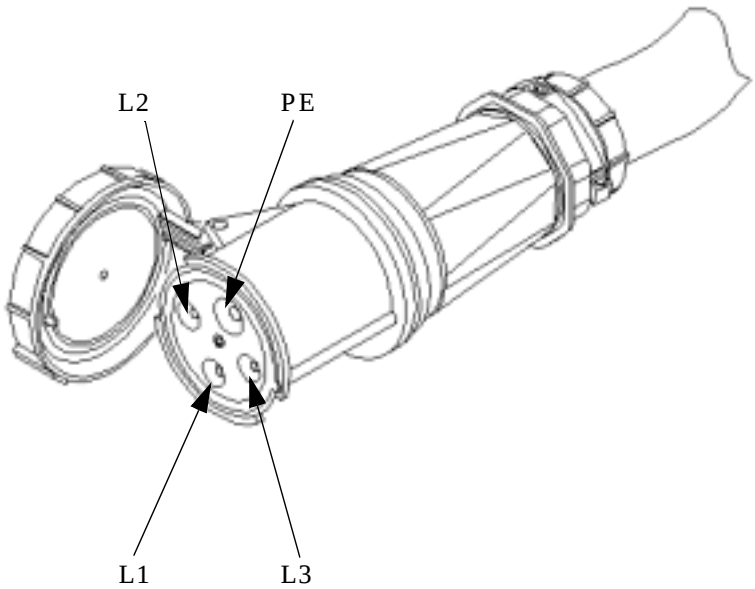
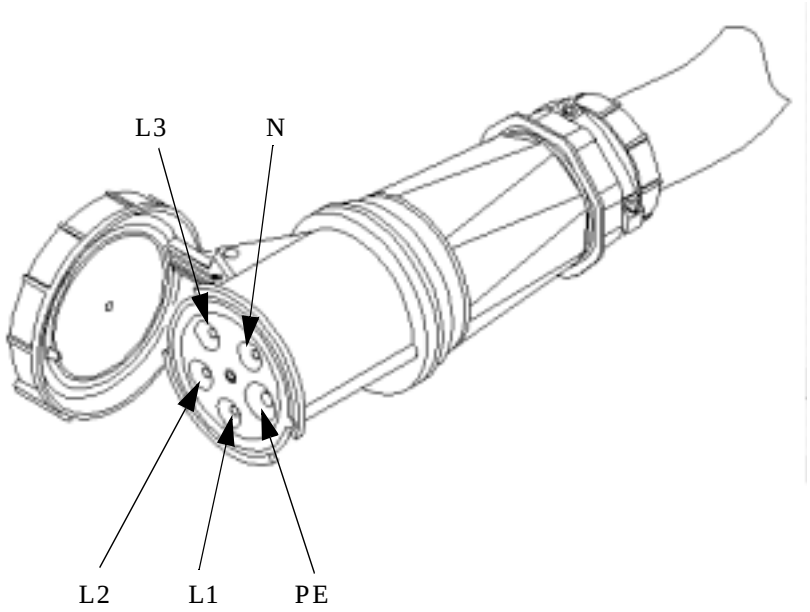


Figure 1-27 Five-Wire Connector



Use the following procedure to install the PDCA:

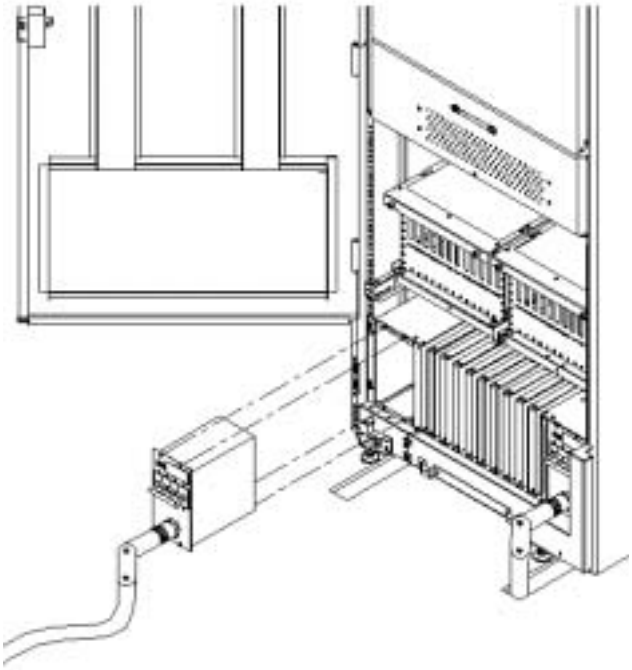
Step 1. Make sure the circuit breaker on the PDCA is **Off**.

Step 2. Remove the rear PDCA bezel by removing the four retaining screws.

Step 3. Run the power cord down through the appropriate opening in the floor tile.

Step 4. Insert the PDCA into its slot and secure with four screws.

Figure 1-28Installing the PDCA



Step 5. Using a T20 Torx driver, attach the four screws that hold the PDCA in place.

Step 6. If required, repeat Step 3 through Step 5 for the second PDCA.

Step 7. Re-install the rear PDCA bezel.

CAUTION Do not check voltages with the PDCA breaker set to **On**. Make sure the electrical panel breaker is **On** and the PDCA breaker is **Off**.

Step 8. Plug in the PDCA connector.

Step 9. Check the voltage at the PDCA.

1. Using a T20 Torx driver, remove the screw on the hinged panel at the top of the PDCA. Refer to Figure 1-29.
2. Using a Volt-Ohm meter (VOM), check the following test points to make sure they conform to the specifications for the PDCA and local electrical specifications:

If the voltage values do not match the specifications, have the customer contact an electrician to troubleshoot the problem.

Figure 1-29 Checking PDCA Test Points (5-Wire)

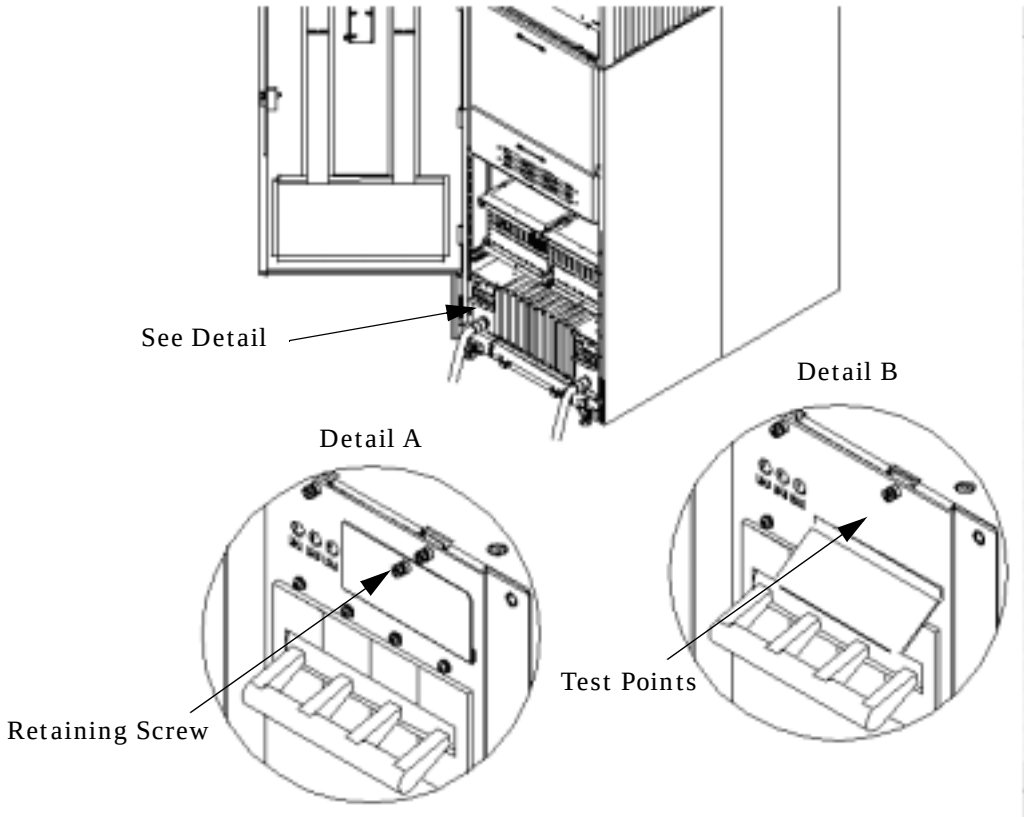


Table 1-3 4- and 5-Wire Voltage Ranges

4-Wire	5-Wire
L2 to L3: 200-240 V	L1 to N: 200-240 V
L2 to L1: 200-240 V	L2 to N: 200-240 V
L1 to L3: 200-240 V	L3 to N: 200-240 V
	N to Ground: [a]

a. Neutral to ground voltage can vary from millivolts to several volts depending on the distance to the ground/neutral bond at the transformer. Anything over 3 V should be investigated by a site prep or power specialists.

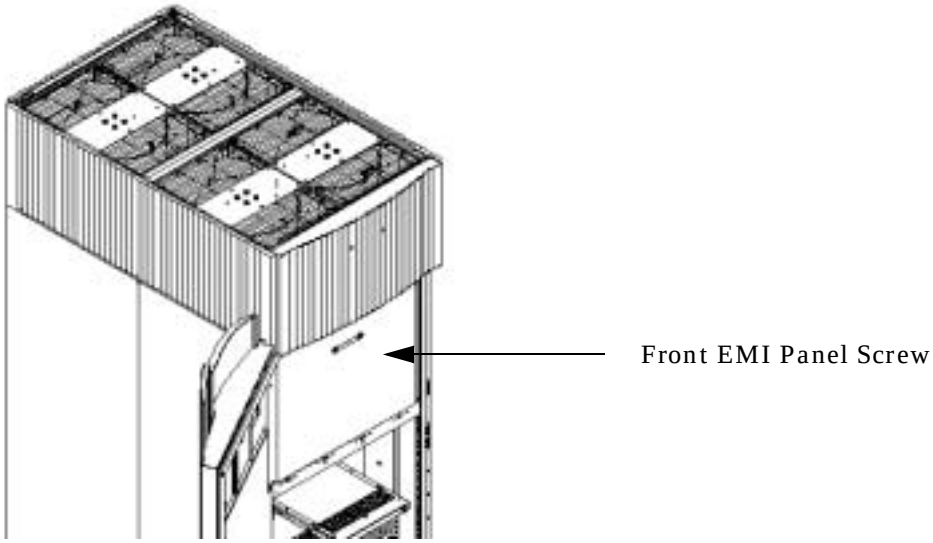
Removing the EMI Panels

Remove the front and back electromagnetic interference (EMI) panels to access ports and to visually check whether components are in place and the LEDs are properly illuminated when power is applied to the system.

To remove the front and back EMI panels:

Step 1. Using a T20 Torx driver, loosen the captive screw at the top center of the front EMI panel.

Figure 1-30Removing Front EMI Panel Screw

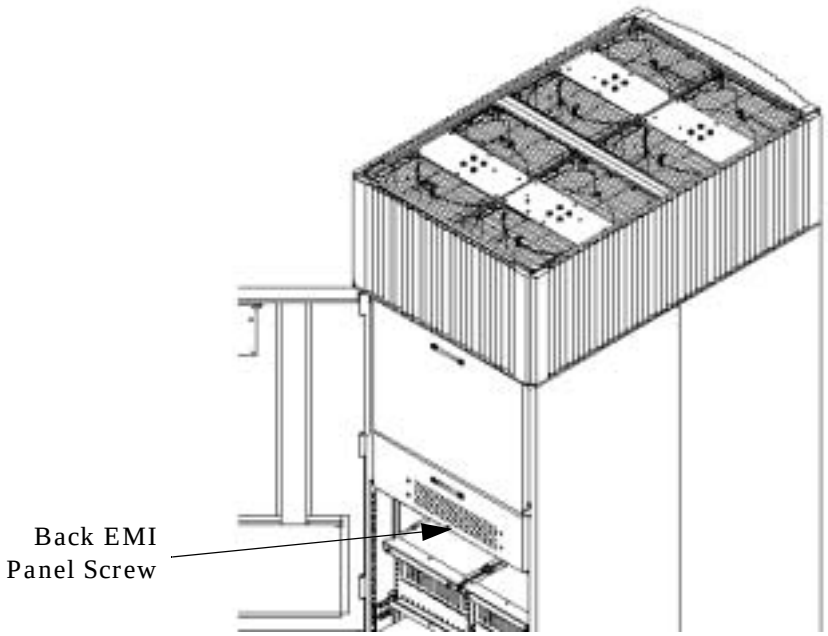


Step 2. Use the handle provided to remove the EMI panel and set it aside.

When in position, the EMI panels (front and back) are tightly in place. Removing them takes controlled, but firm, exertion.

Step 3. Loosen the captive screw at the lower center of the back EMI panel.

Figure 1-31Removing the Back EMI Panel



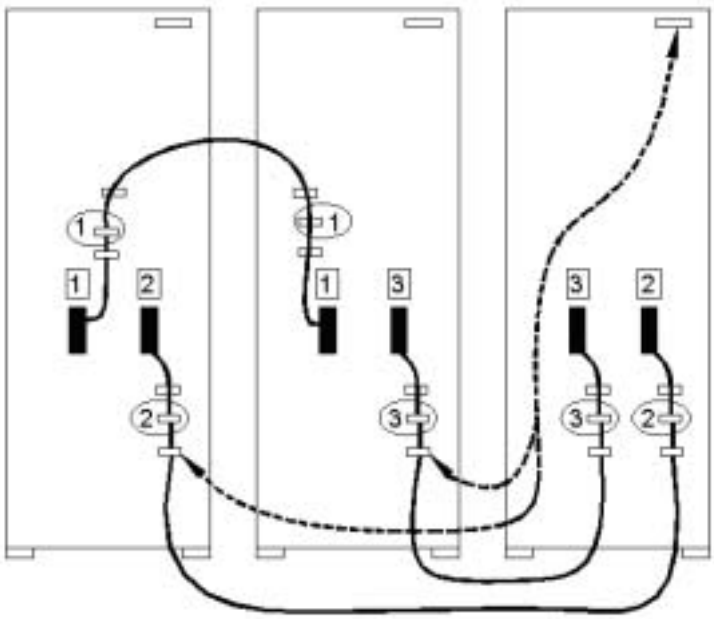
Step 4. Use the handle provided to gently remove the EMI panel; then, set it aside.

Connecting the Cables

The I/O cables are attached and tied inside the cabinet. When the system is installed, these cables must be untied, routed, and connected to the cabinets where the other end of the cables terminate. Use the following guidelines and Figure 1-32 to route and connect cables. For more information on cable routing, refer to “Routing I/O Cables” on page 34.

- Each cabinet is identified with a unique color. The cabinet color label is located at the top of the cabinet.
- The colored label closest to the cable connector corresponds to the color of the cabinet to which it is attached.
- The colored label farther away from the cable connector corresponds to the color of the cabinet where the other end of the cable is attached. In Figure 1-32, the dotted lines show where the label is located and where the cable terminates.
- Each cable is also labeled with a unique number. This number label is applied on both ends of the cable and near the port where the cable is to be connected. In Figure 1-32, the cable number labels are indicated by circled numbers and the cabinet port numbers are indicated with boxed numbers.

Figure 1-32 Cable Labeling

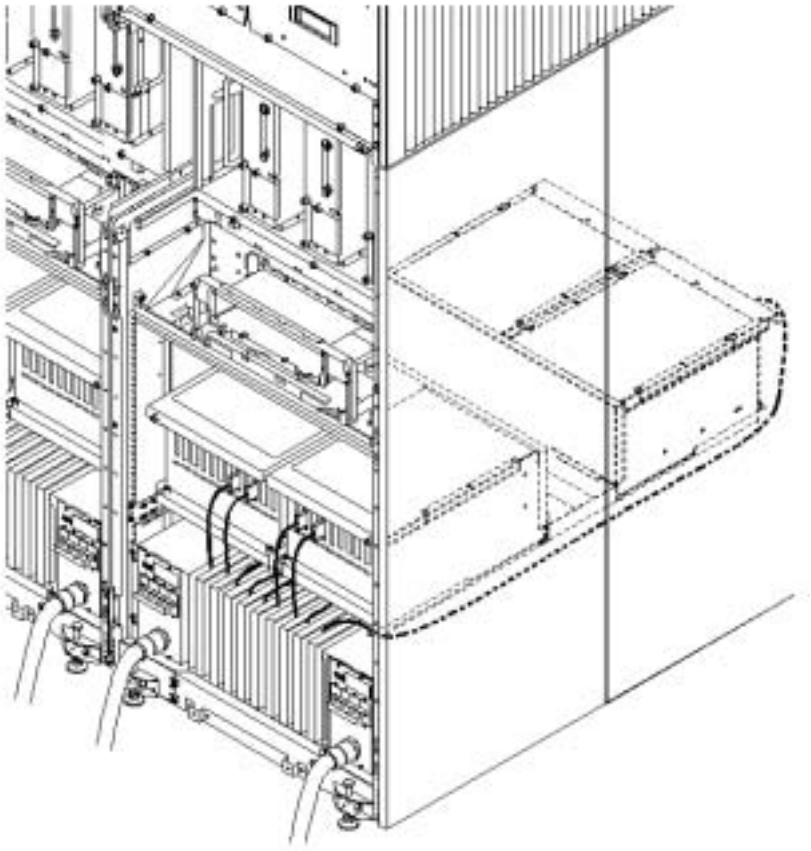


Routing I/O Cables

Routing the cables is a significant task in the installation process. It is important not only for the immediate need of completing the installation, but efficient cable routing is important when future service calls are made.

Neatness counts. The most efficient use of space is to route cables so that they are not crossed or tangled.

Figure 1-33 Routing I/O Cables



Use the following procedure and guidelines to route cables through the cable groomer at the bottom rear of the cabinet.

Step 1. Remove the cable access plate at the bottom of the groomer.

Step 2. Beginning at the front of the cabinet, route the cables using the following pattern:

1. Route the first cable on the left side of the left-most card cage first. Route it under the PCI-X card cage toward the back of the cabinet and down through the first slot at the right of the cable groomer.
2. Route the second cable on the left side of the left-most card cage to the right of the first cable, and so on, until routing all of the cables in the card cage is complete.

   The number and width of cables vary from system to system. Use judgement and the customer's present and estimated future needs to determine how many cables should be routed through each cable groomer slot.
3. After routing the left most card cage at the front of the cabinet, route the cables in right-most card cage at the back of the cabinet. Begin with the right cable in the card cage and work toward the left.
4. After routing the cables in right-most card cage at the rear of the cabinet, return to the front of the system and route the cables in the next card cage to the right.

5. Repeat the above pattern until all of the cables are routed.

Step 3. Connect the Management Processor (MP) cables last.

Step 4. Reattach the cable access plate at the bottom of the cable groomer.

Step 5. Reattach the cable groomer kick plate at the back of the cabinet.

Step 6. Slip the L bracket(s) under the power cord on the rear of the PDCA.

Step 7. While holding the L bracket in place, insert the PDCA completely into the cabinet and secure the L bracket with one screw.

Installing the SMS

The SMS is shipped already installed in a rack. If, however, the SMS must installed at a customer location, refer to either “Installing the PC SMS” on page 64 or “Upgrading to the HP-UX SMS” on page 86.

Connecting the MP to the Customer LAN

This section discusses how to connect, set up, and verify the Superdome MP to the customer LAN. LAN information includes the MP network name (host name), the MP IP address, the subnet mask, and gateway address. This information is provided by the customer.

Connecting the MP to the Network

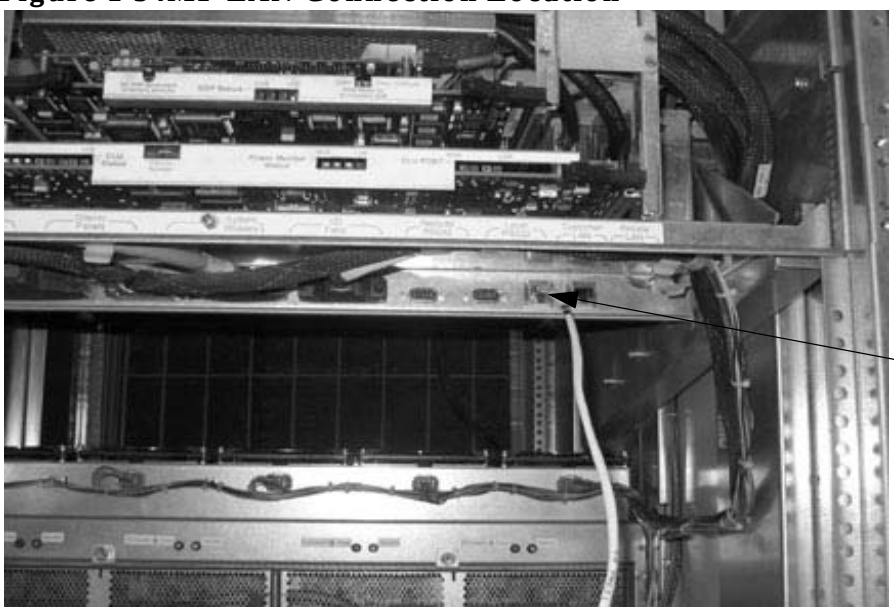
NOTE Unlike earlier Superdome systems, which required the MP to be connected to the private LAN, the new system MP now connects to the customer's LAN through the appropriate hub, switch, router, or any other customer-provide LAN device.

In some cases, the customer may want to connect the SMS to the MP on the private management LAN. This may be done, but the customer must be informed that they will not be able to access the SMS remotely and will have to use the SMS as a "local" device.

Connect the MP to the customer's LAN:

Step 1. Connect one end of the RJ-45 LAN cable to the LAN port on the MP.

Figure 1-34MP LAN Connection Location



Step 2. Connect the other end of the LAN cable to the customer-designated LAN port. Obtain the IP address for the MP from the customer.

Connect dial-up modem cable between the MP modem and the customer's phone line connection.

Setting Customer IP Address

NOTE The default IP address for the Customer LAN port on the MP is **192.168.1.1.**

To set the customer LAN IP address:

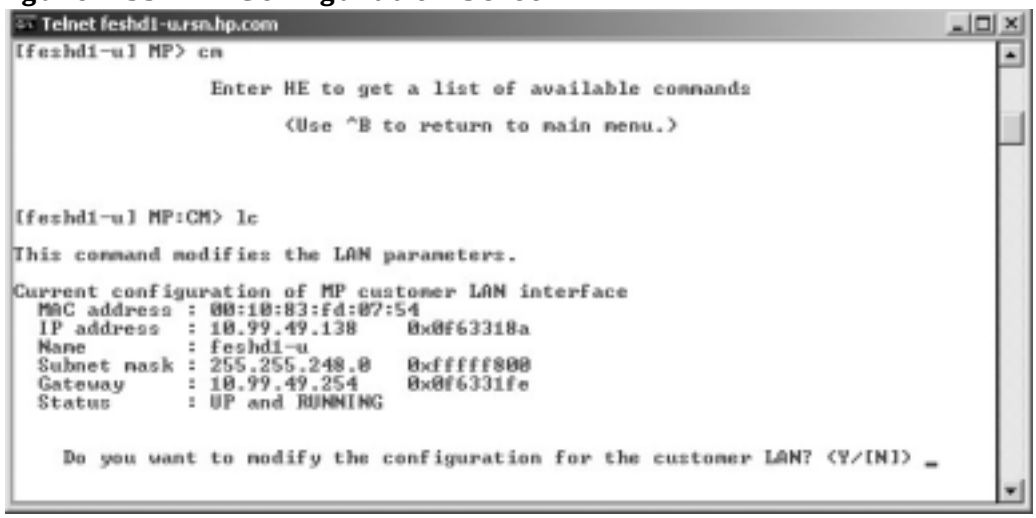
Step 1. From the MP Command Menu prompt (*MP:CM>*), enter ***lc*** (for LAN Configuration).

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.

If you are not already in the Command Menu, enter ***ma*** to return to the Main Menu, then enter ***cm***

When you enter ***lc***, the following screen appears:

Figure 1-35LAN Configuration Screen



If the LAN software on the MP is working properly, it should see the message: "LAN status: UP and RUNNING." The value in the "IP address" field has been set at the factory. You will need to get the customer LAN IP addresses from the customer.

NOTE The customer LAN IP address is designated LAN Port 0.

Step 2. The prompt will ask if you want to modify the LAN port 0; enter ***y***.

The current Customer IP address is shown; then the following prompt appears: *Do you want to modify it? (Y/[N])*

Step 3. Enter ***y***.

Step 4. Enter the new IP address.

The customer should provide this address for LAN Port 0.

Step 5. Confirm the new address.

Step 6. Enter the MP Network Name.

This is the host name for the customer LAN. You can use any name you like. 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.

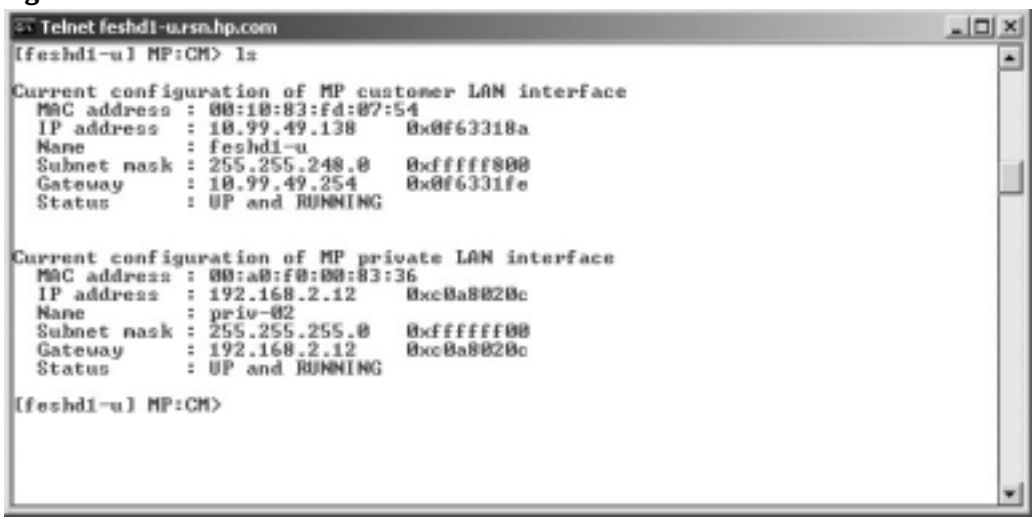
Step 7. Enter the LAN parameters for *Subnet mask* and *Gateway address*.

This information should come from the customer.

Step 8. To check the LAN parameters and status, enter the *ls* command at the MP Command Menu prompt (*MP:CM>*).

A screen similar to the following appears:

Figure 1-36The ls Command Screen



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

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

Turning On Housekeeping Power

Step 1. Verify that the AC voltage at the input source is within specifications for each cabinet being installed.

Step 2. Ensure that:

- The AC breakers are in the Off position. See Figure 1-37.
- The cabinet power switch at the front of the cabinet is in the Off position.
- The AC breakers and cabinet switches on the I/O Expansion Cabinet (if one is present) are in the Off position.

Step 3. If the complex has an IOX cabinet, power on this cabinet first.

Step 4. Turn on the AC breakers on the PDCA(s) at the back of the each cabinet.

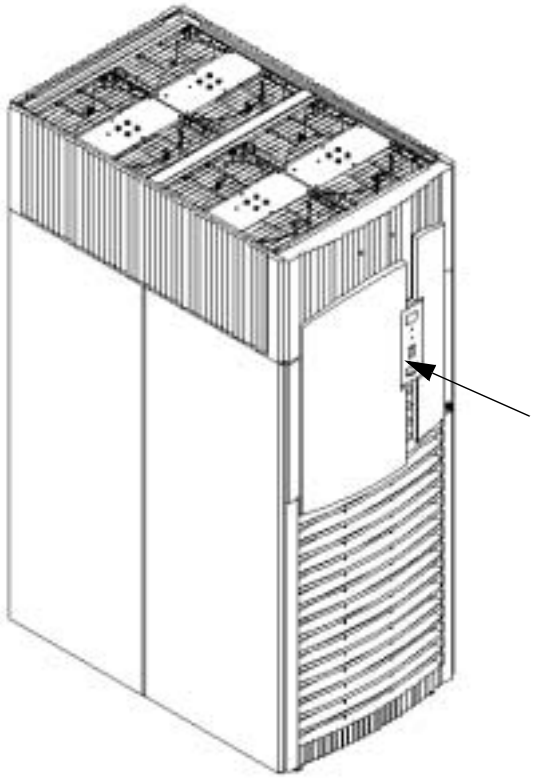
In a large complex cabinets should be powered on in one of the two following orders: 9, 8, 1, 0 or 8, 9, 0, 1.

On the front and back panel, the HKP and the Present lights should illuminate.

On cabinet 0, the HKP and the Present lights illuminate, but only the HKP LED illuminates on cabinet 1 (the right cabinet).

NOTE The 48-volt switch on the front panel should be off at this time.

Figure 1-37Front Panel Display with Housekeeping (HKP) Power On, and Present Indicators

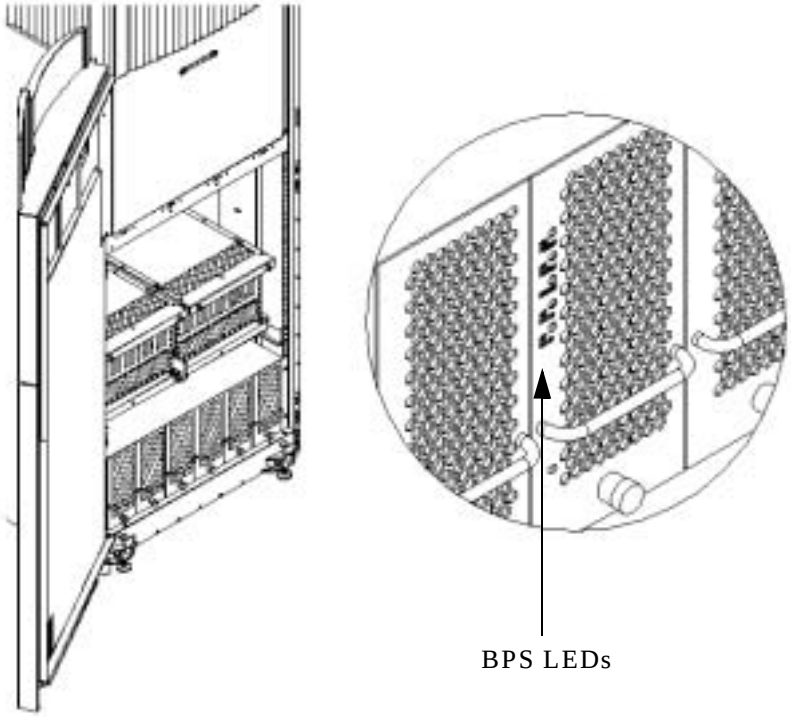


Step 5. Check the BPS LEDs.

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

- The amber light on the BPS next to the label AC0 Present (if the breakers on the PDCA on the left side at the back of the cabinet) is on.
- The amber light on the BPS next to the label AC1 Present (if the breakers on the PDCA on the right side at the back of the cabinet) is on.

Figure 1-38BPS LEDs



Booting and Verifying the System

After the system has been installed, it should be verified that the proper hardware is installed and booted.

This section describes how to power on the cabinet; and boot and test each partition. A console window must be open for each partition. Two additional windows should also be open: one window for initiating reset on partitions and the other for monitoring system partition status. In each window the MP is initiated.

NOTE The HKP should be ON and the 48-volt switch on the front panel should be OFF at this time. Refer to section "Turning On Housekeeping Power" on page 41 for turning on the HKP.

Connecting to the Management Processor

Before powering on the cabinet, several windows must be open and connected to the MP. Then the 48 volts is switched on and each partition is booted to the EFI prompt.

Step 1. On the SMS, open the required number of command-prompt windows:

- One "console" window for each partition (MP CO option)
- One for initializing RS command from the MP
- One for monitoring partition status (MP VFP option)

In each window connect to the MP by entering:

telnet <MP hostname>

or

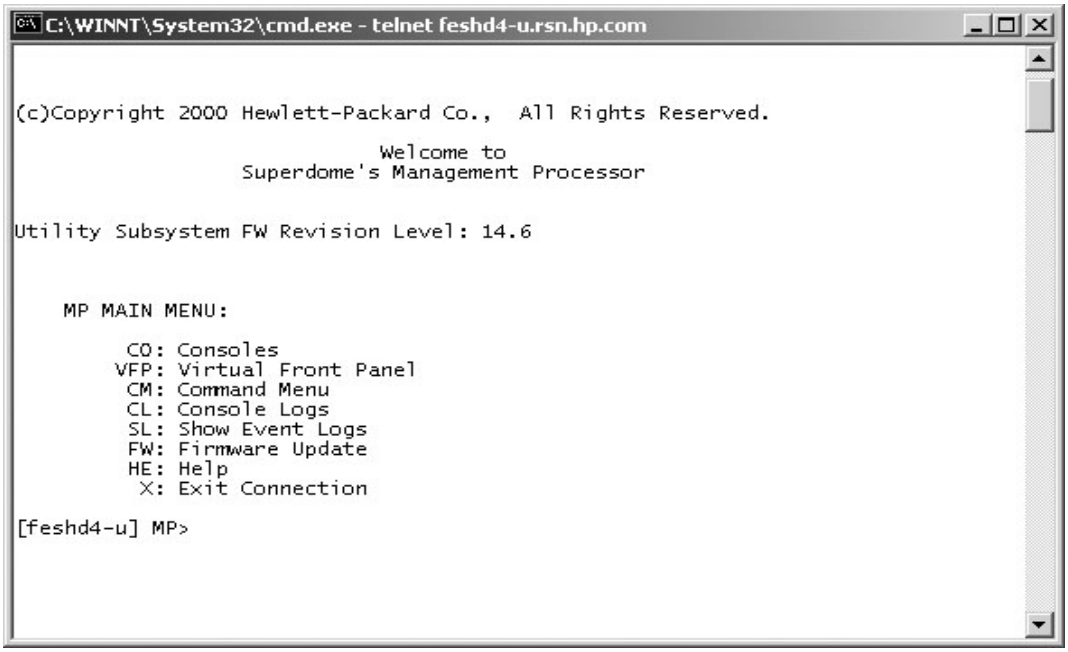
telnet <IP address>

Step 2. Enter the appropriate login and password at the *MP* prompt.

Figure 1-39Connecting to Host

The MP main menu appears as shown in Figure 1-40.

Figure 1-40Main MP Menu



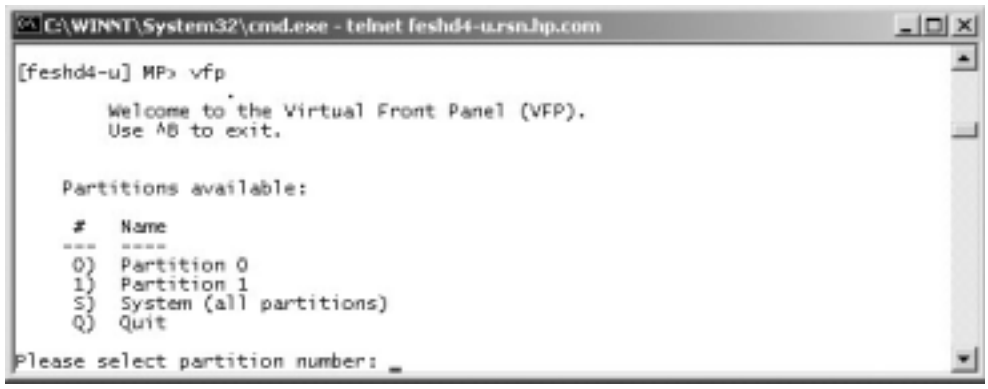
Step 3. Repeat the first two steps for each partition required.

Step 4. In one window, bring up the command prompt by entering ***cm*** at the *MP* prompt, as shown in Figure 1-41.

Figure 1-41MP Command Option

Step 5. In the another window, bring up the virtual front panel by entering ***vfp***, as shown in Figure 1-42. Use this window to observe partition status.

Figure 1-42MP Virtual Front Panel

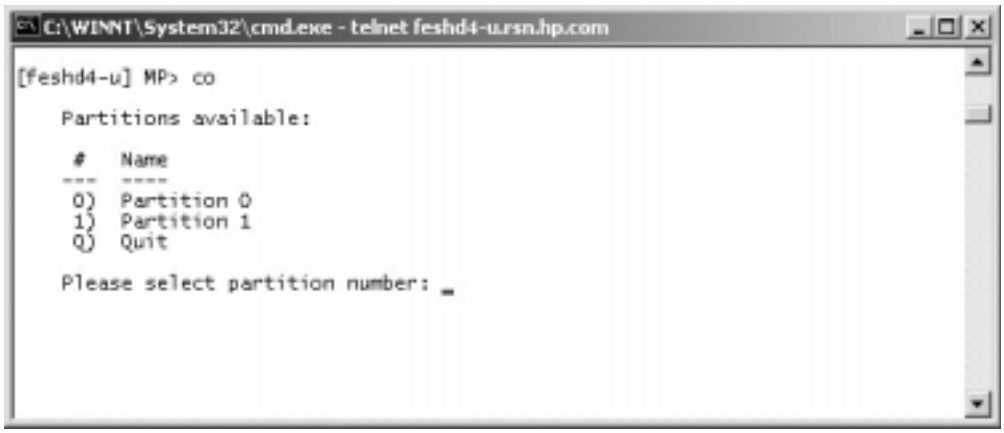


Step 6. From the VFP menu, enter ***s*** to select the whole system or the partition number to select a particular partition. An output similar to that shown in Figure 1-43 should appear. In this example, no status should be listed, because the system 48 volts has not been switched on.

Figure 1-43Example of Partition State—Cabinet Not Powered Up

Step 7. For each of the remaining windows, bring up the partition console for each partition by enter ***co*** at the MP prompt, as shown in Figure 1-44. These windows should be blank. If not, the information in them means nothing at this point, because the cabinet is powered off.

Figure 1-44MP Console Option



Powering on the System 48 Volts

Step 1. Switch on the 48-volt supply from each cabinet front panel.

If the complex has an IOX cabinet, power on this cabinet first.

In a large complex cabinets should be powered on in one of the two following orders: 9, 8, 1, 0 or 8, 9, 0, 1.

IMPORTANT The MP should be running in each window.

As the cabinet boots, the partition(s) activity can be observed in the window displaying the VFP.

Step 2. For hp Integrity Superdome systems, follow the procedure in “Booting hp Integrity Superdome to EFI Shell” on page 48.

For hp 9000 Superdome systems, follow the procedure in “Booting hp 9000 to BCH Shell” on page 50.

Booting hp Integrity Superdome to EFI Shell

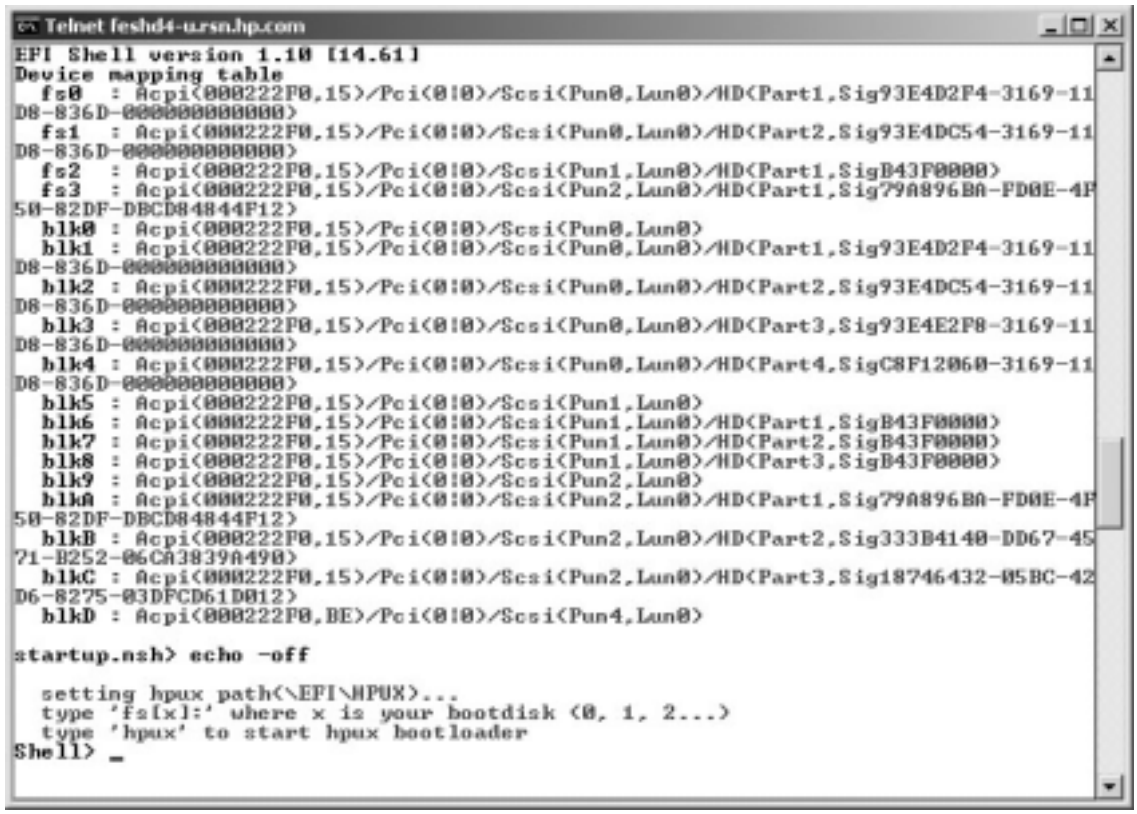
After powering on (or using the CM *bo* command), all partition console windows will show activity while the firmware is initialized and will stop momentarily at an Boot Manager menu.

Figure 1-45hp Integrity Superdome EFI Boot Manager

Use the up-down arrows on the keyboard to highlight *EFI Shell (Built-in)* and press enter. Do this for all partitions.

For all partitions, after selecting EFI Shell and pressing enter, much activity is viewed in the console window, but it will cease and the EFI shell prompt appears as shown in Figure 1-46.

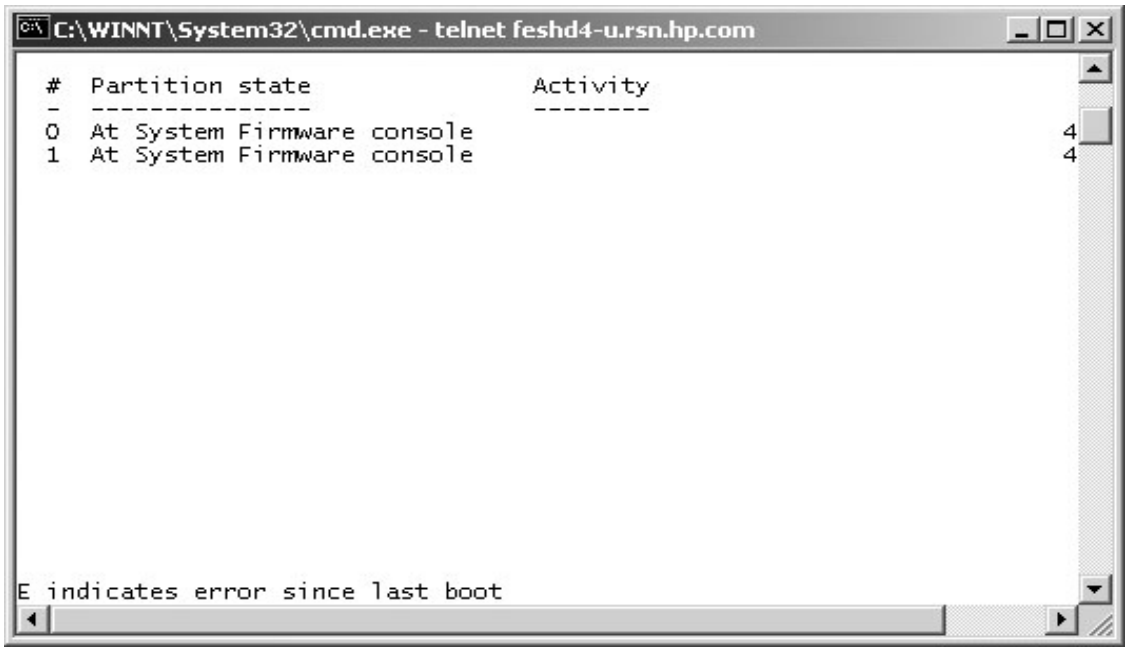
Figure 1-46 EFI Shell Prompt



NOTE If autoboot is enabled for an nPartition, it must be interrupted to stop the boot process at the firmware console: EFI on hp Integrity Superdome and BCH on hp 9000 Superdome.

At this point, the virtual front panel indicates that each partition is at system firmware console as indicated in Figure 1-47.

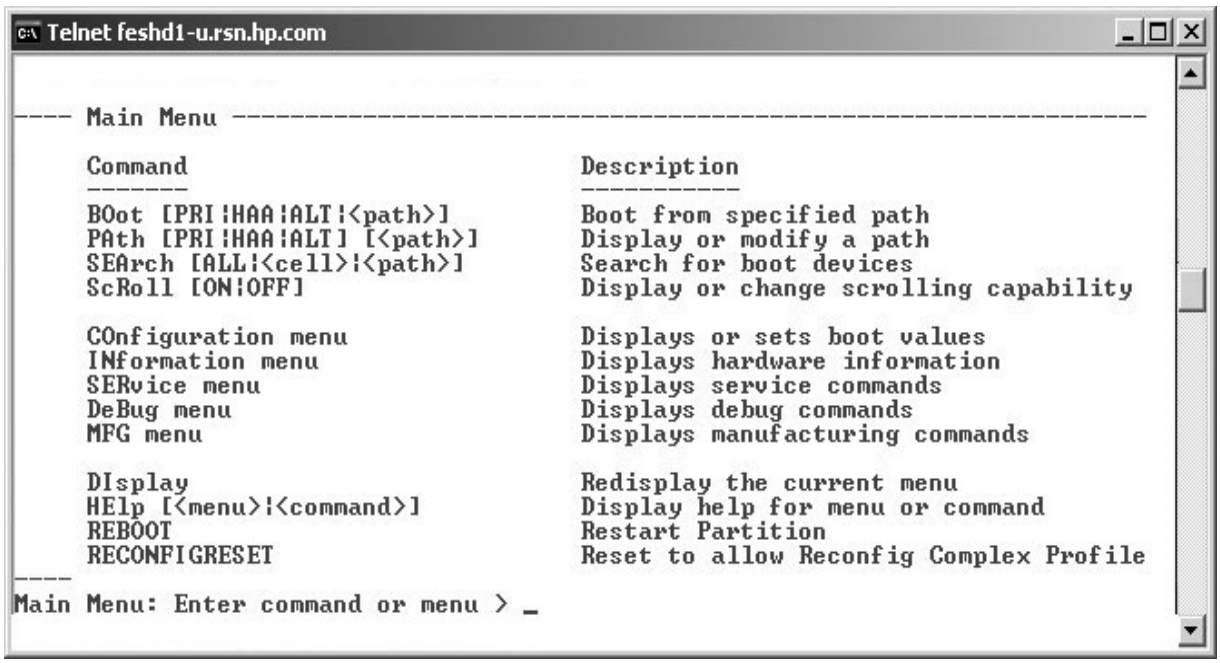
Figure 1-47 hp Integrity Superdome Partitions at System Firmware Console



Booting hp 9000 to BCH Shell

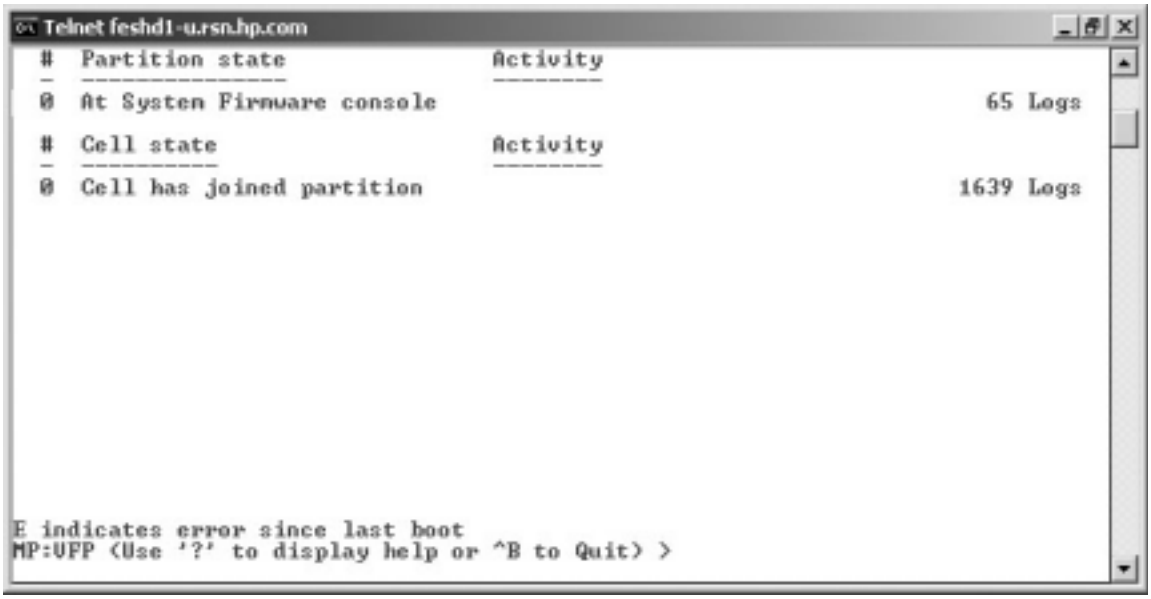
After powering on (or using the CM *bo* command), all partition console windows will show activity while the firmware is initialized and will stop at the BCH menu shown in Figure 1-48.

Figure 1-48hp 9000 Superdome BCH Main Menu



At this point, the virtual front panel indicates that each partition is at system firmware console as indicated in Figure 1-49.

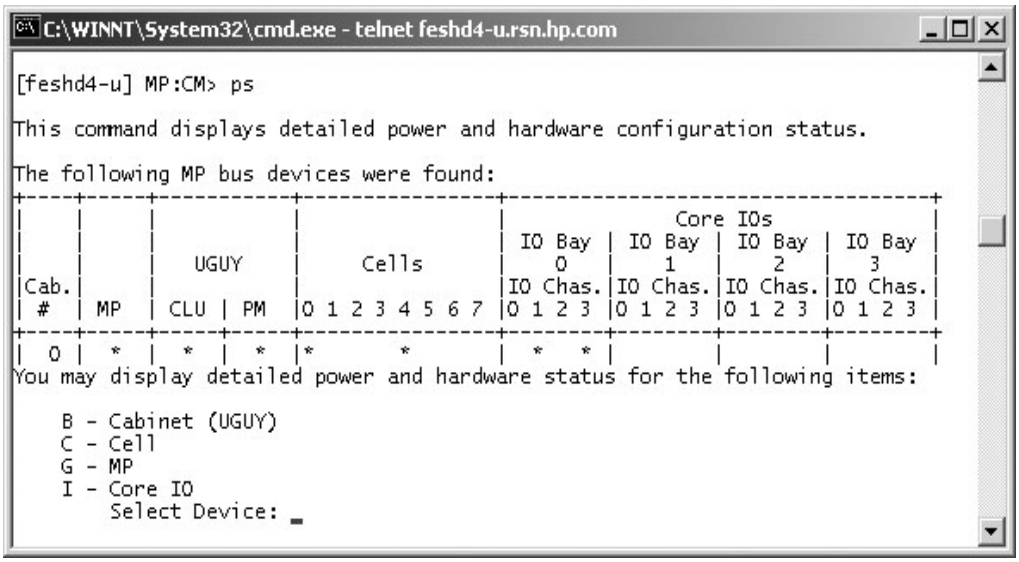
Figure 1-49 hp 9000 Superdome Virtual Front Panel



Verifying the System

Step 1. From the *CM* prompt, enter ***ps*** to observe the power status. A status screen as shown in Figure 1-50 should appear.

Figure 1-50Power Status First Window



Step 2. At the "Select Device" prompt, enter ***B*** then the cabinet number to check the power status of the cabinet. Observe that the Power Switch: on and Power: enabled as shown in Figure 1-51.

Figure 1-51Power Status Window

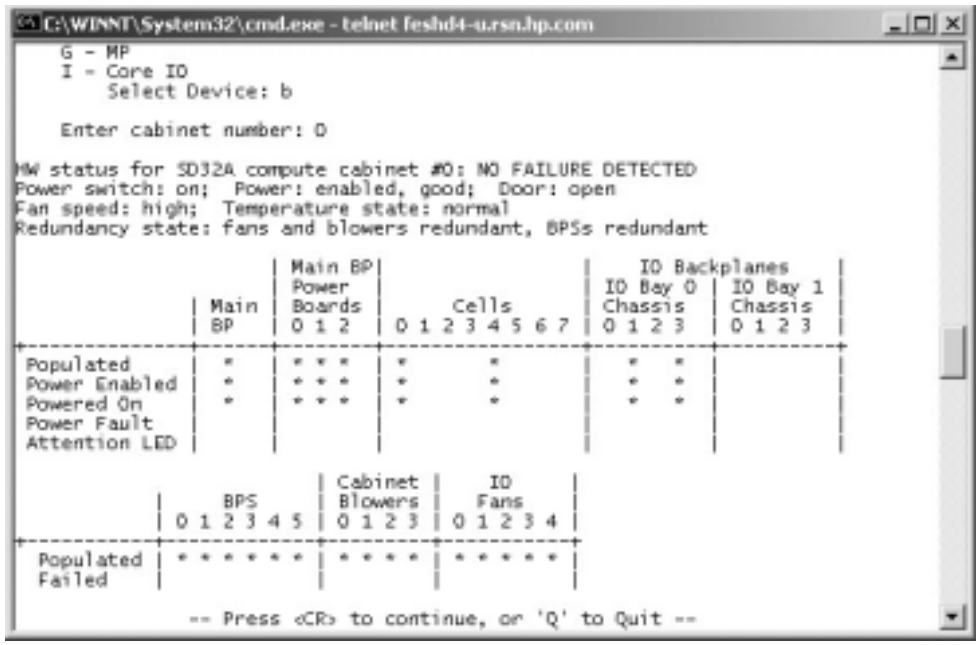
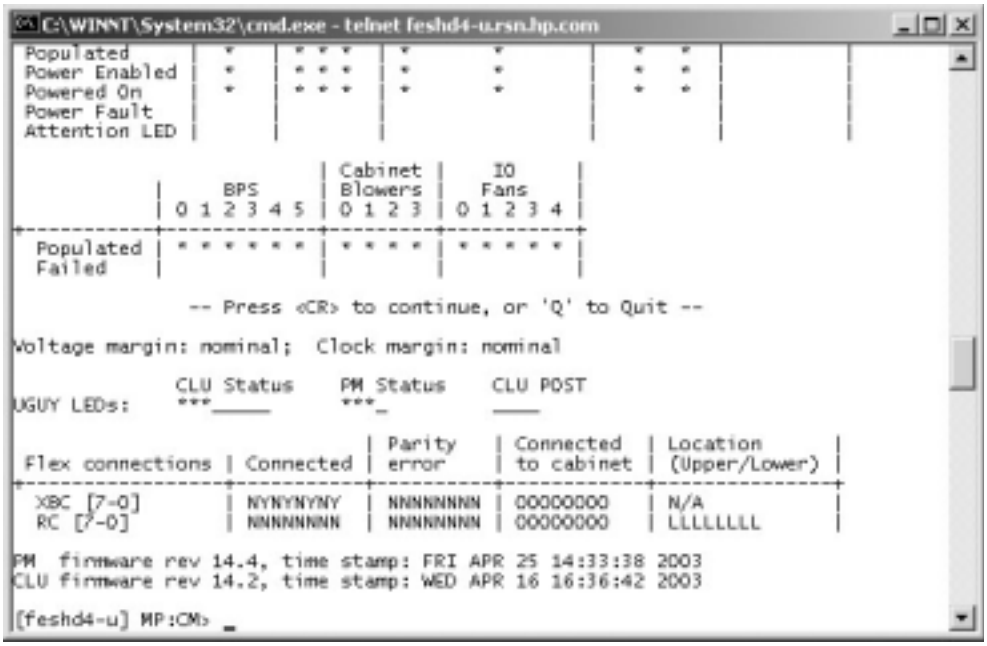


Figure 1-51 shows that cells are installed in slots 0 and 4. In the cabinet, there should be cells physically located in slots 0 and 4.

Step 3. Enter ***ps*** from the Command Menu, or if proceeding from Step 2.in the previous section, simply press **<CR>** one more time to observe the status as shown in Figure 1-52.

Figure 1-52Power Status Showing State of UGUY LEDs (and other status)



Step 4. Verify that there is an * in the columns marked MP, CLU, and PM.

IMPORTANT An * appears in the MP column only for cabinet 0; that is, the cabinet containing the MP. There is only one cabinet that contains the MP, and that is cabinet 0.

Verify that there is an * for each of the cells installed in the cabinet, by comparing what is in the *Cells* column with the cells located inside the cabinet.

Running JET Software

The JTAG Utility for Scan Tests (JUST) Exploration Tool, or JET, collects system information for each system on a network and places it in files for use by other scan tools. JET gathers configuration data by executing a series of queries targeted at the MP and the CLU portion of the UGUY board.

JET is described in Appendix D, “JUST Exploration Tool,” on page 203.

IMPORTANT Any problems encountered must be resolved before booting the operating system.

Power Cycling After Using JET

Whenever JUST has been run, system power must be recycled, because the off-line diagnostic can deallocate the CPUs.

Remove 48 Volts via the MP command, *pe*, then cycle the AC breakers on the rear of the cabinet(s). See Appendix B, Powering On and Off the System, for details on power cycling the system

If the complex has any IOX cabinet(s), IDs 8 or 9, it is very important to power cycle these cabinet(s) in the proper sequence.

Attaching Rear Kick Plates

Kick plates serve the practical purpose of protecting cables from accidentally being disconnected or damaged, as well as add an attractive cosmetic touch to the cabinet. There are three metal pieces to attach to the bottom rear of the cabinet.

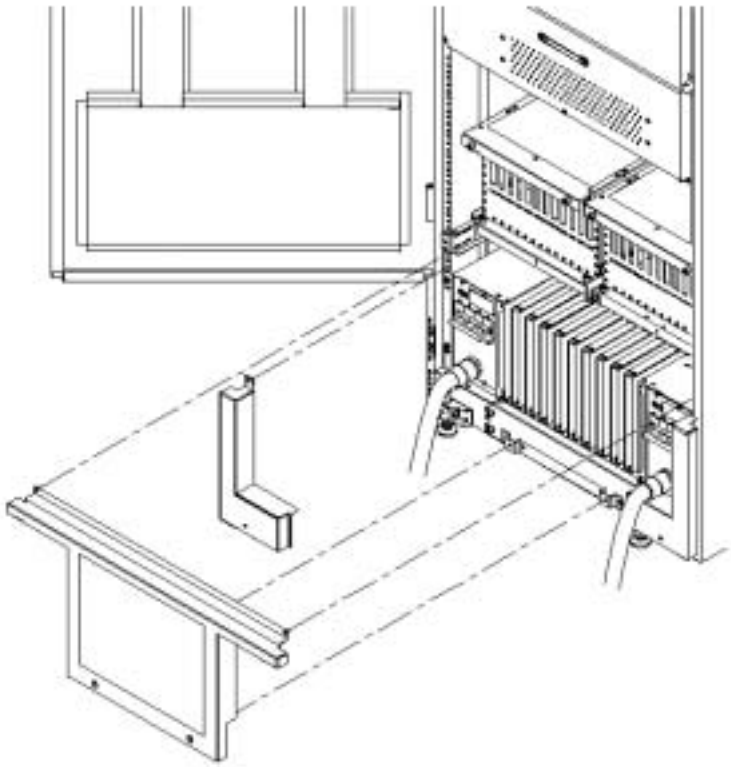
To install the kick plates:

Step 1. Hold the left kick plate (A5201-0671) in position and attach a clip nut (0590-2318) on the cabinet column next to the hole in the flange at the top of the kick plate.

Step 2. Using a screw (0515-0671) and a T25 Torx driver, attach the flange on the kick plate to the nut clip.

Step 3. Using a Torx 10 driver and a screw (0515-4271), attach the bottom of the kick plate to the center hole in the leveling foot.

Figure 1-53Attaching Rear Kick Plates



Step 4. Perform steps 1-3 on the right kick plate (A5201-00281).

Step 5. Position the upper flange of the center kick plate (A5201-00261) under the I/O tray's complementary mounting bracket (A5201-00402) so as to retain the center kick plate top flanges. No top screws are needed on the center kick plate due to bracket A5201-00402. This unsymmetrical bracket must be orientated with the hole located nearest the edge in the up position.

Step 6. Using a T20 Torx driver, tighten the thumbscrews at the bottom of the center kick plate.

Performing a Visual Inspection and Completing the Installation

After booting the system, carefully inspect it and reinstall the EMI covers. Here are the steps required to perform a final inspection and complete the installation:

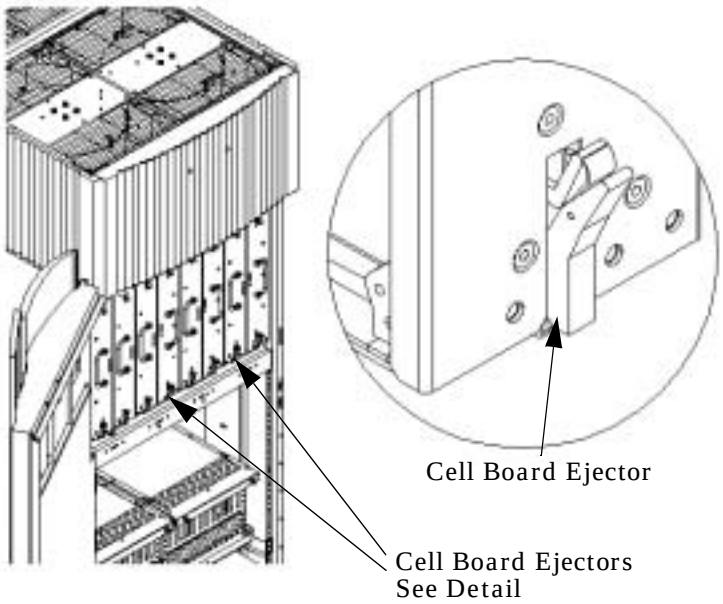
Step 1. Visually inspect the system to verify that all components are in place and secure.

Step 2. Check that the cables are secured and routed properly.

Step 3. Check that the cell board ejectors are secure.

If the ejectors are broken or open, the cell board is disconnected.

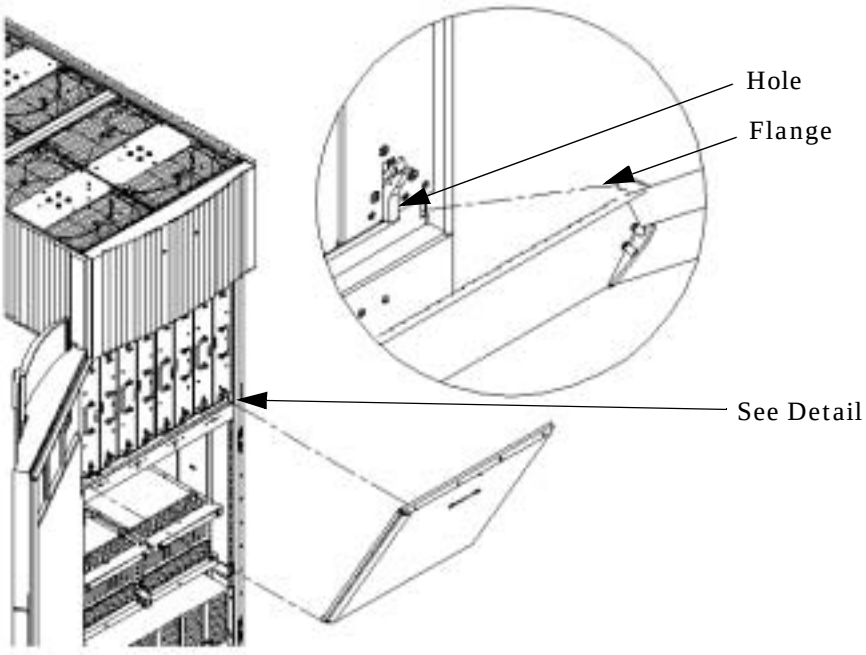
Figure 1-54Cell Board Ejectors7



Step 4. Reinstall the front EMI panel.

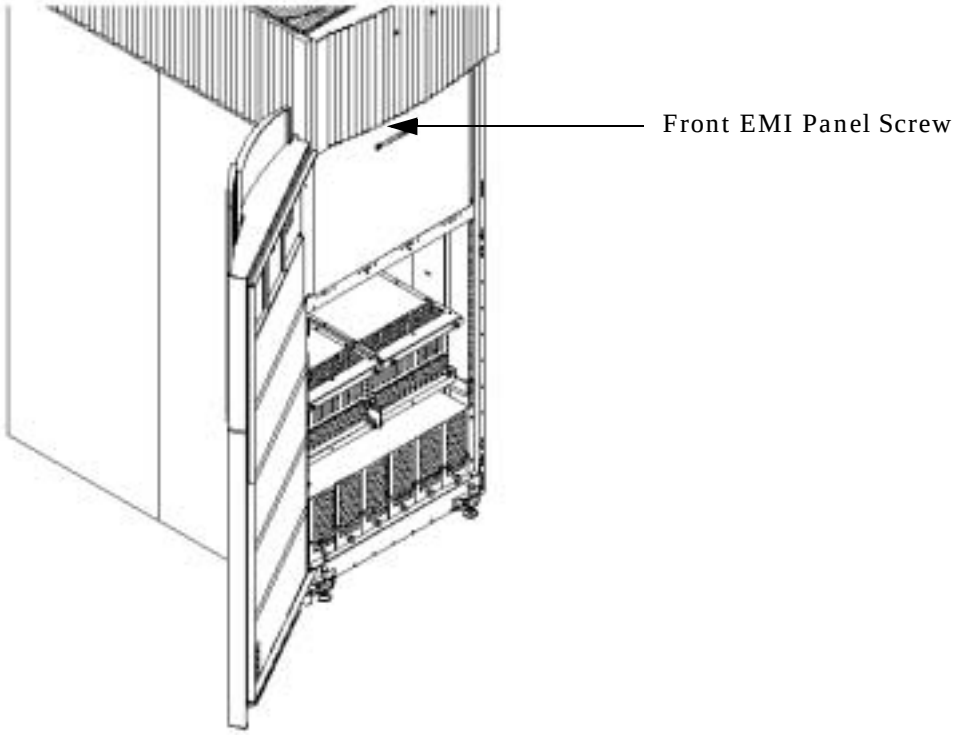
1. Hook the flange at the lower corners of the EMI panel into the holes on the cabinet.

Figure 1-55Front EMI Panel Flange and cabinet Holes



2. Position the panel at the top lip and lift the panel up while pushing the bottom into position. The EMI gasket may have to be compressed to get the panel to seat properly.
3. Reattach the screw at the top of the EMI panel.

Figure 1-56Attaching Front EMI Panel

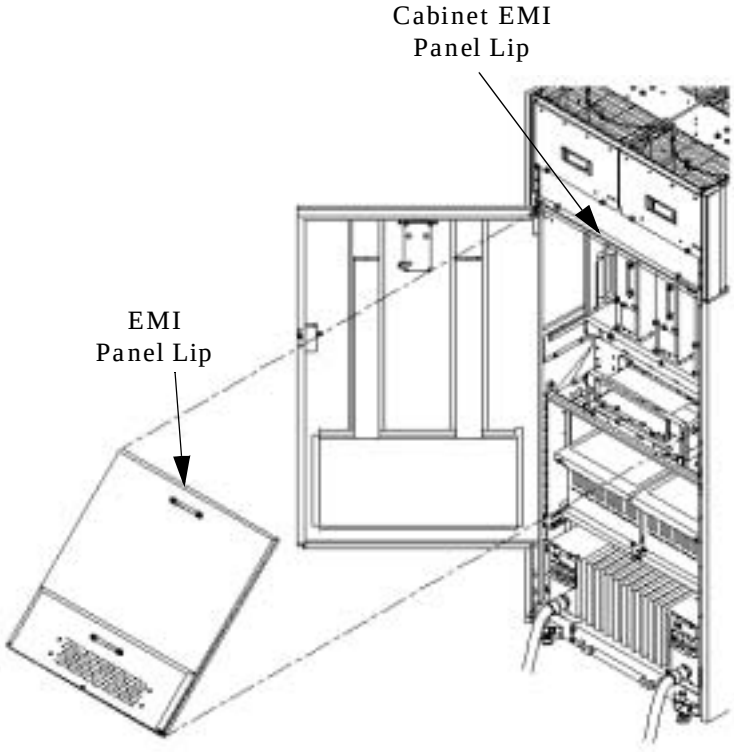


Step 5. Check that the cables inside the rear enclosure are secure.

Step 6. Reinstall the back EMI panel.

1. Align the lip inside the cabinet with the lip on the EMI Panel.

Figure 1-57Reinstalling the Back EMI Panel



2. Push the EMI panel up and in. The EMI gasket may have to be compressed at the top of the enclosure to get the panel to seat properly.
3. Reattach the screw at the bottom of the EMI panel.

Post-System-Installation Check

After the system 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. Do the following:

- **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 test points, and that the test points are properly covered.
- **Clean up and dispose of debris.** Remove all 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 close and lock the doors.
- **Enter information in the Gold Book.** When the installation and cleanup are complete, 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.

A Installing the Support Management Station

There are two optional Support Management Stations: a Windows-based hp Proliant M350-G3 - recently upgraded to a G4 - PC running Windows Datacenter 2003 and an HP-UX based hp Server rx2600 using Itanium® 2 processes and running the HP-UX 11.11 v2 operating system. The Proliant is referred to as the PC SMS, and the rx2600, the HP-UX SMS. Refer to the appropriate section for installing the SMS

Upgrading to the PC SMS

NOTE This section applies only to customers who have purchased the PC SMS upgrade.

The PC SMS provides support, management and diagnostic tools. It combines software applications onto a single platform to reduce MTTR. These applications include tools to collect and analyze system log information, analyze and decode crash dump data, perform scan diagnostics, and provide configuration rules and recommendations for the CEs. The PC SMS also acts as an FTP server for PDC/IPF/Utility firmware files that are required to perform firmware updates. The operating system is Windows 2000.

IMPORTANT If the customer intends to use the PC SMS to access web services outside of the LAN used for the system, it is recommended that the customer install virus detection and correction software.

Installed Software

Third party tools are installed on the new PC SMS that support remote modem connections, remote desktop sharing, Hpterm emulation and UNIX shell commands. A Java JRE environment is also provided to support installed applications. Unlike HP-UX distributions, these tools are not part of Windows and must be included separately.

The following list shows the third party tools installed on the PC SMS:

- Windows IIS FTP server
- Symantec PC-Anywhere
- WRQ Reflection X
- WRQ Reflection for HP
- Java 1.3 RTE
- CYGWIN
- Nero Burning ROM 5.5

The HP products installed on the PC SMS include:

- Console Log Acquirer
- IPMI Event Acquirer
- IPMI Event Viewer
- Scan Diagnostics
- Memory Configuration Tool
- Partition Configuration Tool
- New IPF firmware packages
- Command-Line Interfaces

PC SMS Functionality

Remote Access

Loaded on the PC SMS, PC-Anywhere by Symantec Corporation provides remote connections to the system. This product can be configured to provide remote desktops either by LAN or modem connections and can be shared between multiple remote users and a local user.

FTP Access to Firmware and Log Files

Legacy Superdome SMSs use the *FWUU* firmware installation utility to load and configure firmware. The PC SMS supports this functionality for backward compatibility. In the new hp Integrity Superdome or hp 9000 Superdome systems, the FWUU functionality is part of the MP and acts as a server for the firmware files.

Log files may be accessed by way of an FTP server on the PC SMS installed as part of IIS. This service is configured to allow remote access to users having administrative access to the machine. The root directory for FTP access is set to "*c:*\".

System Console Access

The PC SMS supports connections to the partition consoles. It must provide hpterm emulation over telnet and must be capable of both LAN and serial bus connections to the hp Integrity Superdome or hp 9000 Superdome system.

For connections to HP-UX-based Superdome systems, the SMS uses WRQ Reflection X and Reflection for hp products. These products provide terminal emulation, remote desktops, and support for X applications on the Windows-based PC.

To support these connections to a Windows-based system, the PC SMS uses the Windows terminal services client.

SCAN Diagnostics

The new PC SMS supports SCAN diagnostics with the following three tools:

- JET Setup
- JUST Exploration Tool (JET)
- JTAG Utilities and Scan Test (JUST)

JET Setup JET setup (*jet_setup*) is a GUI-based replacement for *scan_setup* used on older Superdome SDnn system SMSs. This application builds the configuration file needed by JET to interrogate systems in the network. It requires Java runtime script 1.3 of greater.

NOTE This script is for the new PC SMS. The script, *scan_setup*, is still functional on the *original* HP-UX SMS.

JET JET is a tool that interrogates the system under test and builds a configuration database containing cabinet, board, device, and scan path information used by the JUST tool to test the system.

JUST The JUST tool performs scan testing with a high level of diagnostic capability through several built in tests.

It also provides a scripting interface that requires Cygwin utility. Cygwin provides a Unix like shell environment from which the scripts can be executed. Cygwin will be available from a desktop icon or the start menu.

The JET and JUST tools are command line based. They are run from a *cmd* prompt on the PC SMS and from any shell on the HP-UX SMS.

Installing the PC SMS

CAUTION Always wear a grounded wrist strap when working on or around system components.

The PC SMS platform is the HP Proliant ML350-G3, either the rack mount unit or desktop server or the ML350-G4 rack-mount only. The operating system is Windows 2003 Server. The PC SMS connects to the same LAN to which the hp Integrity Superdome or hp 9000 Superdome is connected.

If the PC SMS is the desktop type follow the procedure in "Unpacking and Setting Up the Desktop PC SMS" to remove the PC SMS from its shipping container and set it up on the work desktop near the system.

If the PC SMS is the rack-mount type, it comes installed in the cabinet. If, however, the PC SMS is not already installed in the rack, see the appropriate documentation set for information on complete installation.

Unpacking and Setting Up the Desktop PC SMS

This section describes how to unpack and setup the Proliant ML350-G3 desktop unit and its monitor.

Step 1. Place the Proliant ML350-G3 shipping box on the floor and carefully cut the shipping tape on the top of the box.

Step 2. Remove the plastic fasteners found around the base of the box. Open the top of the box.

Step 3. Inside at the top of the box there are two smaller boxes. One contains the keyboard, part number 296433-005.

The other contains the following:

- Package containing power cord, mouse, manuals and CDs, part number 311753-001
- System recovery DVD, part number A9801-11001.
- Modem phone cord, part number 8121-0862

Inspect these boxes to ensure that all pieces have been shipped.

Step 4. Remove the power cord, keyboard, and mouse and place them on the workspace where the ML350-G3 is to be located.

Step 5. Lift up and remove the outside portion of the shipping container from the bottom portion to fully expose the ML350-G3.

Step 6. Lift the ML350-G3 up and out of the bottom of the shipping container and place it on the designated workspace.

Step 7. Place the monitor box, part number 2090-0913, on the floor and carefully cut the shipping tape.

Step 8. Remove the monitor stand from the box and place it on the workspace.

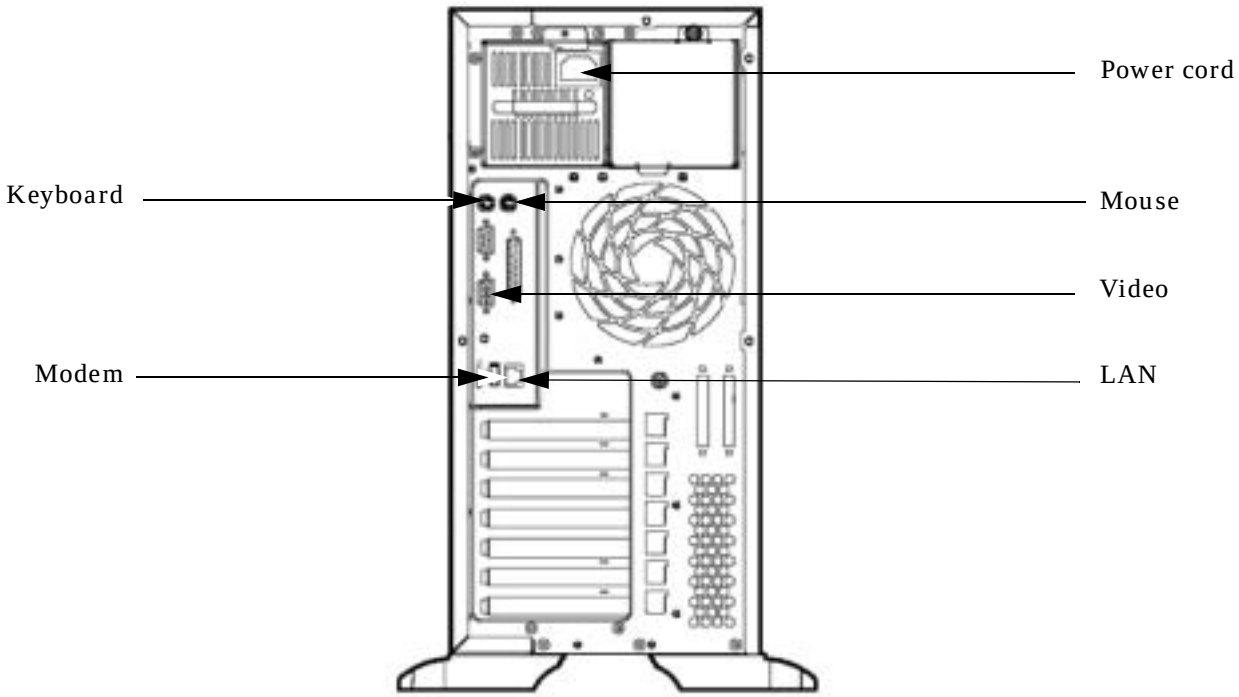
Step 9. Lift the monitor straight up from its shipping container and place it on the workspace.

Step 10. Snap the monitor stand into bottom of the monitor.

Step 11. With the Proliant ML350-G3, the monitor, the keyboard, and the mouse on the workspace, connect the units as follows:

1. Plug the monitor power cord into it receptacle on the back. The video output cable is hard wired.
2. Remove the plastic cover on the connector of the video cable and connect to the monitor output of the ML350-G3.

Figure A-1Connections to the Proliant ML350-G3 Desktop



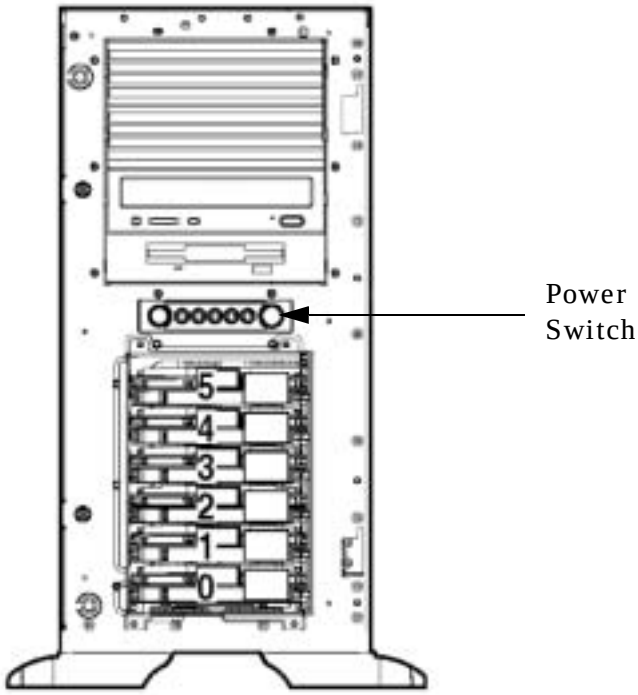
3. Connect the keyboard and mouse to the ML350-G3, as shown in Figure A-1
4. If using a LAN connection, refer to Figure A-1 and connect the RJ-45 cable to appropriate connector.
5. If using a modem, refer to Figure A-1 and connect the modem cable to appropriate connector.
6. Plug in the ML350-G3 power cord as shown in Figure A-1.

Step 12. Plug the monitor and ML350-G3 power cords into the AC power receptacles.

NOTE When the ML350-G3 power cord is inserted, the UID LED (located on the rear of the unit) flashes. This is normal.

Step 13. Open the front door and power on the ML350-G3 by pressing the power button on the front panel.

Figure A-2Powering on the Proliant ML350-G3 Desktop Unit



Step 14. Allow the PC SMS to boot to the Windows login panel, and enter “Administrator” as the login. No password is required.

Windows will continue to boot.

Rack Mounting the PC SMS

Normally, the SMS is delivered already mounted in the rack. If, however, the SMS requires mounting, this section provides instructions for rack mounting.

There are two pieces to mount: the Proliant ML350-G3 or G4 and its mating TFT5600 integrated monitor, keyboard, and touchpad.

CAUTION Always wear a grounded wrist strap when working on or around system components.

Mounting the TFT5600

This section provides rack-mounting instructions for the PC SMS.

Supplied with the TFT are rack mounting rails and slides for mounting the unit into a Compaq rack. The mounting rails must be modified to fit a System/E cabinet. Included in the shipping container is a kit, part number 287139-B21, that contains the adjustable rails required to mount the rails into the System/E cabinet.

Step 1. Locate both left and right rack rails with slides attached.

Step 2. Remove the telescoping slides from the one-piece rails and mount them to the adjustable rack rails.

Step 3. Locate where the TFT 5600 is to be mounted in the rack.

NOTE If the TFT5600 is to be used while seated, mount it at the 18U position in the rack.

If the TFT5600 is to be used while standing, mount it in the 20U, 21U, or 22U position in the rack.

Step 4. Install eight 10-32 number 5 U clips, part number 0590-2318, onto the rack, front and back.

The template supplied with the TFT5600 helps locate the correct holes.

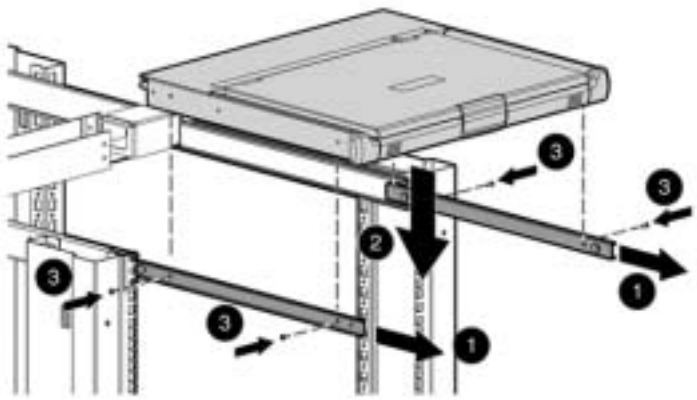
Step 5. Mount the rails to the rack using 10-32, #15 Torx-head screws, front and back.

The rails are adjustable. Slightly loosen the nuts on the adjusting screws while mounting and then tighten the nuts.

Step 6. Pull out the slides until they lock, both left and right.

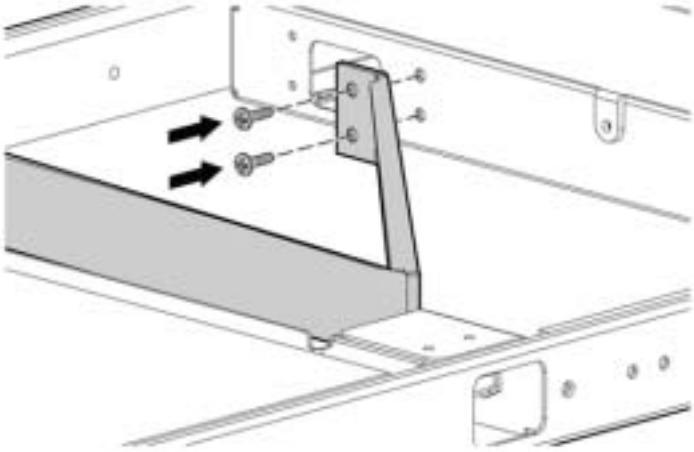
Step 7. Mount the TFT5600 to the slides using supplied 3/8-inch, 6-32 Phillips-head screws. There are two screws on each side.

Figure A-3Installing the TFT5600



Step 8. Install the TFT5600 cable management arm to the rack mounts according to the instructions supplied with the unit.

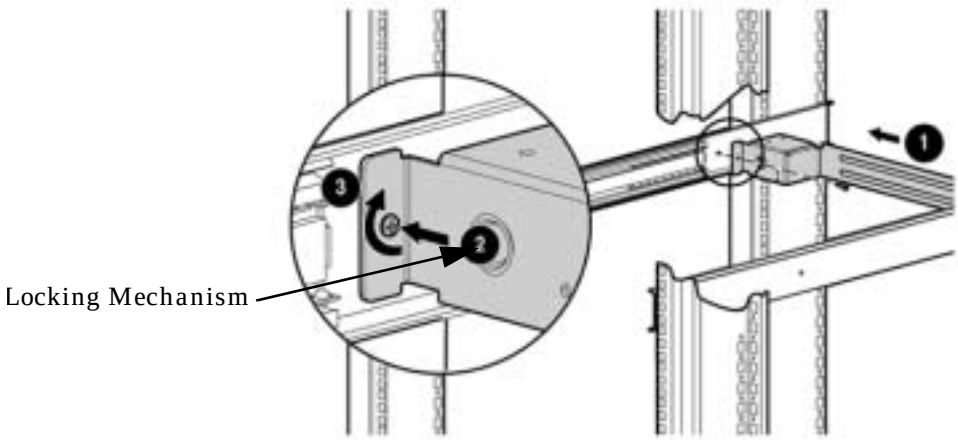
Figure A-4Installing the TFT5600 Cable Management Arm



Once mounted, the TFT5600 may be pulled out on its slides. The slides lock whenever the unit is pulled out.

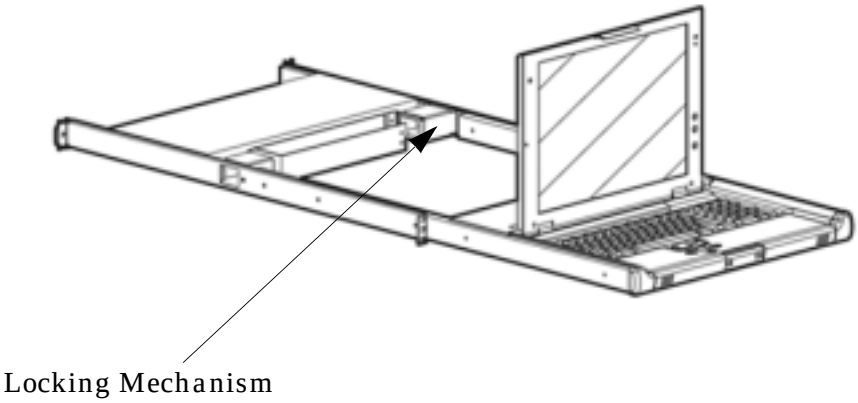
There is also a locking pin on the right side (looking from the front) of the cable management arm, shown in Figure A-5, that secures the unit when pushed into the rack. Before pulling the unit out, first push in on the front of the unit to release this locking pin, then pull the unit out until it locks.

Figure A-5 TFT5600 Cable Management Arm Installed



To stow the TFT5600 into the rack, release the locks on each side of the slides by pulling them toward the front of the unit.

Figure A-6 TFT5600 Monitor, Keyboard, and Touch Pad



Proliant ML350-G3 Conversion Kit

The older rack-mounted Proliant ML350-G3 were intended to be mounted in Compaq racks. Mounting it into an HP System/E rack requires a supplied kit of parts.

NOTE Use this section for mounting older ML350-G3 supplied with the conversion kit.

The kit part number is 303239-001, and it contains the following:

Table A-1 ML350-G3/G4 Rack Mounting Hardware Kit - P/N 303239-001

Qty	Part Number	Description
1	249905-L	Back left bracket - Do not use, replace with A9802-nnnn
1	249905-R	Back right bracket - Do not use, replace with A9802-nnnn
2	A9802-87901	Back universal bracket - replacement for 249905-L and -R, RBII rack kit
1	249904-L	Front left bracket - Do not use, replace with 244902-L
1	249904-R	Front right bracket - Do not use, replace with 244902-R
1	249902-L	Front left bracket - replacement bracket for 244904-L
1	249902-R	Front right bracket - replacement bracket for 244904-R
1	3701784-L	Left rail slide
1	3701784-R	Right rail slide
1	249909	Cable management arm
1	249909-1	Cable arm chassis bracket
1	6070A0038501	Package of rail kit assembly screws

Table A-1 ML350-G3/G4 Rack Mounting Hardware Kit - P/N 303239-001

Qty	Part Number	Description
1	303378-001	Package of type M5 Assembly nuts - use for racks only

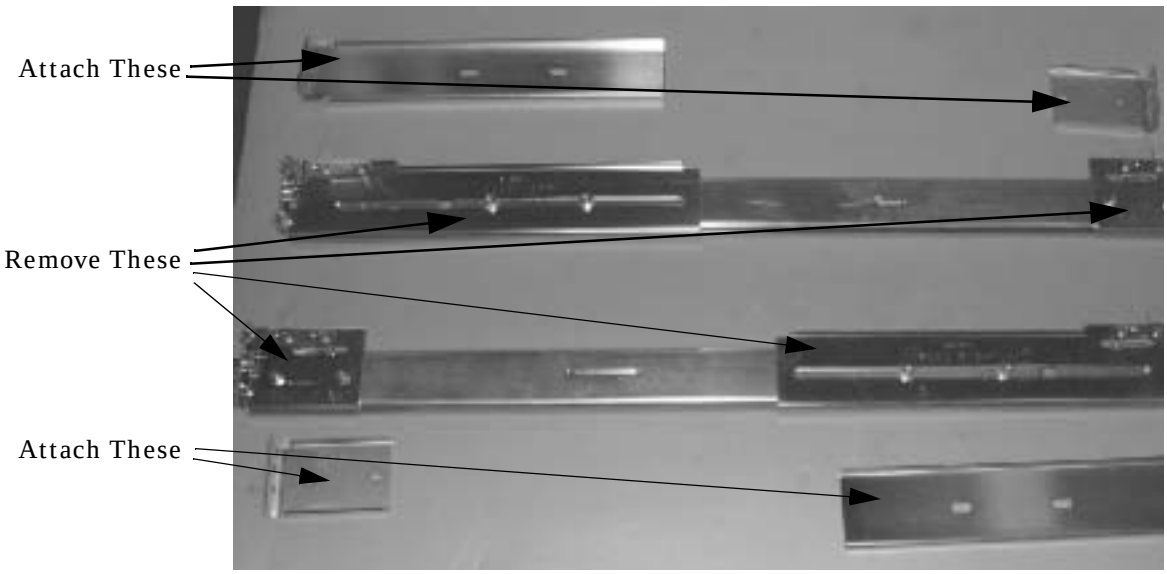
NOTE Mount the Proliant ML350-G3/G4 just below the TFT5600.

Perform the following procedure to modify the rails and mount the Proliant PC SMS:

Step 1. Locate the supplied left and right rack-mount rails with slides (slide part numbers 3701784-L and -R) and remove existing back left and right brackets, part numbers 249903-L and -R, by removing the two 3/8-inch nuts (on each rail).

Step 2. Replace the back left and right brackets by attaching the two universal back brackets, part number A9802-87901.Use the original hardware. See Figure 3-41 below.

Figure A-7Removing Original Front and Rear Mounting Brackets



Step 3. Remove the front left and right brackets, part numbers 249904-L and -R, and attach new front brackets, part numbers 249902-L and -R.

Step 4. Using the supplied Proliant mounting template as a guide only - see note below - install eight 10-32 number 5 U clips, part number 0590-2318, onto the rack, front and back.

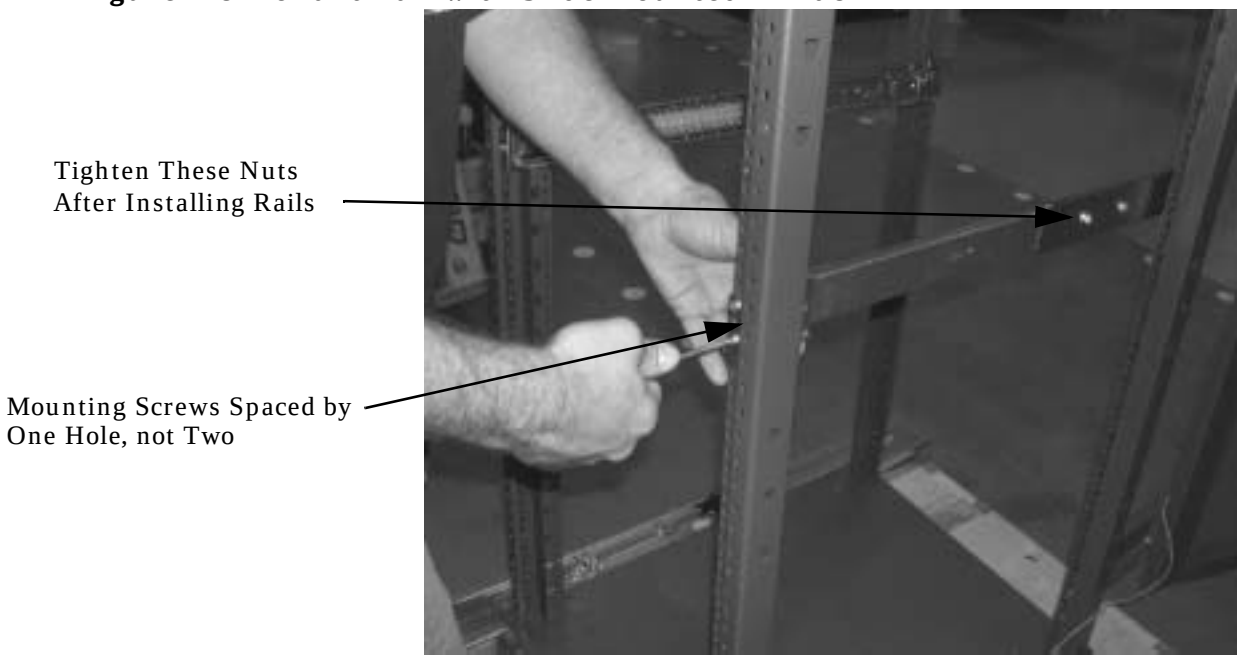
NOTE The template supplied with the Proliant is not correct for System/E cabinets. The rail mounting holes for the System/E cabinet are spaced with one hole in between, not two as the template indicates. The template, however, does help locate the correct highest rail mounting hole to space it the correct distance from the TFT5600.

Step 5. Mount the newly assembled slide rails into the rack using 10-32, #15 Torx-head screws.

The rear of the rail is adjustable. Loosen the two nuts while installing and then tighten them once the rail is installed.

Figure A-8 shows one of the rails mounted in the rack. Notice the spacing between the Proliant rail and the TFT5600 rail. This is determined using the Proliant mounting template.

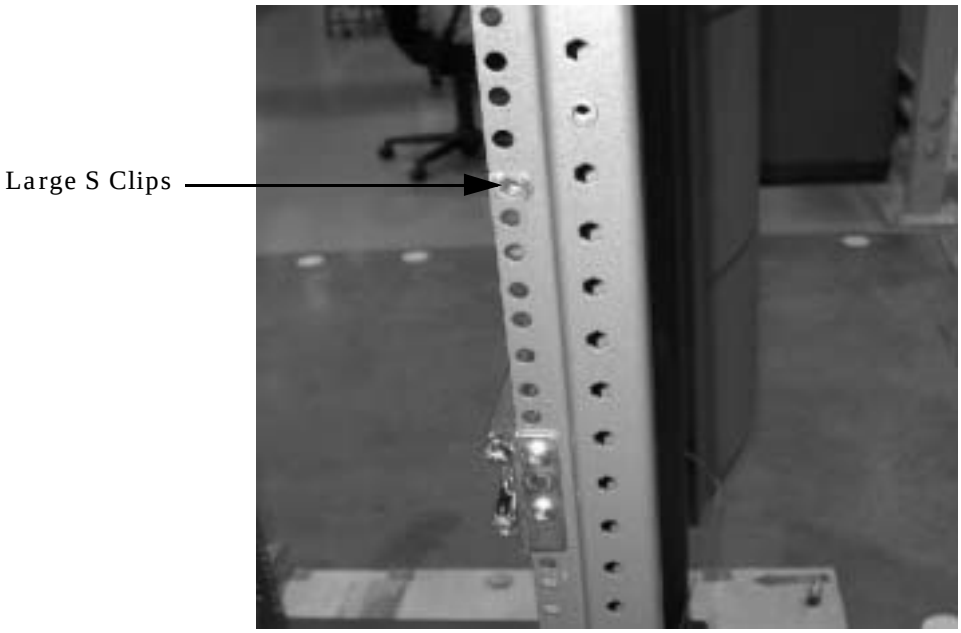
Figure A-8Proliant Rail with Slide Mounted in Rack



Step 6. Secure the two large S clips to the rack in the eighth hole above the upper-most slide rail U clip.

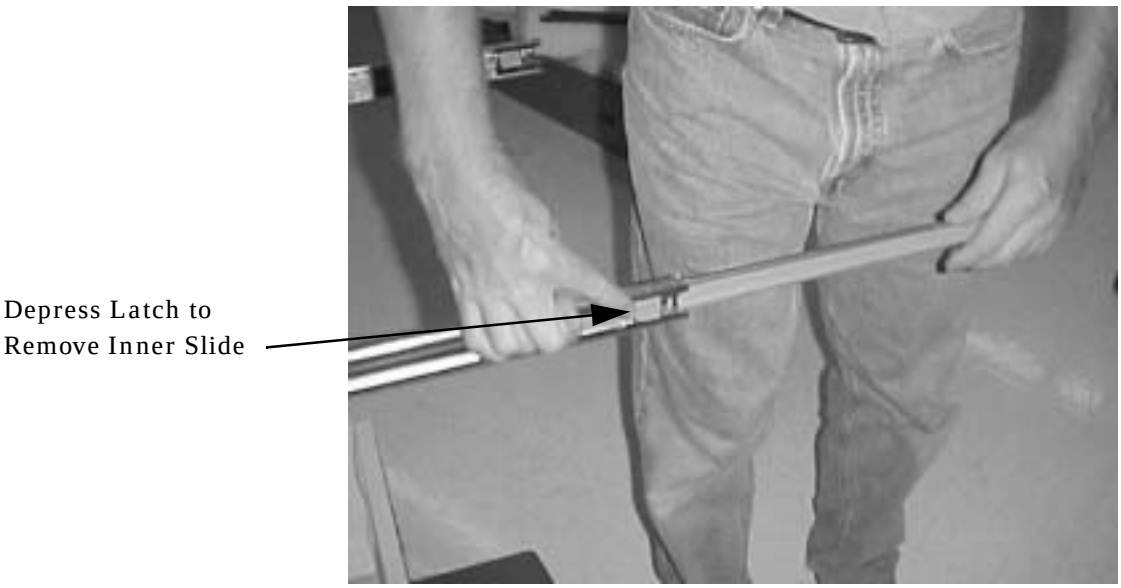
These two nuts are used for the thumb screws on the Proliant front panel to secure the unit. See Figure A-9 below.

Figure A-9Proliant Large S Clips for Thumbscrews



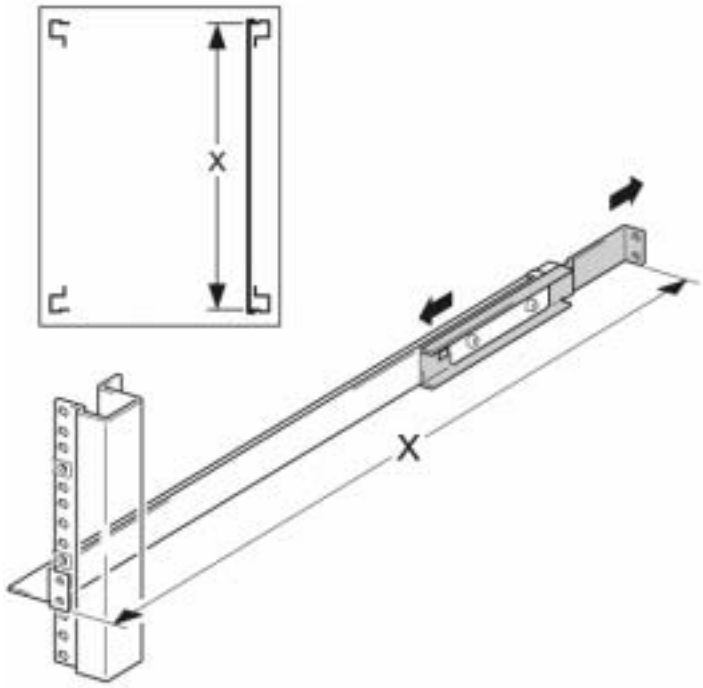
Step 7. For both left and right rails, remove the inner slide from the slide assembly by pulling it forward. Depress the latch to remove it from the slide assembly.

Figure A-10Removing the Inner Slide from the Slide Assembly



Proliant ML350-G4 Slides The new Generation 4 unit uses easily mounted, snap in rack slides, and supplied with the unit are installation instructions.

Figure A-11 Installing the Snap-In Rack Slide

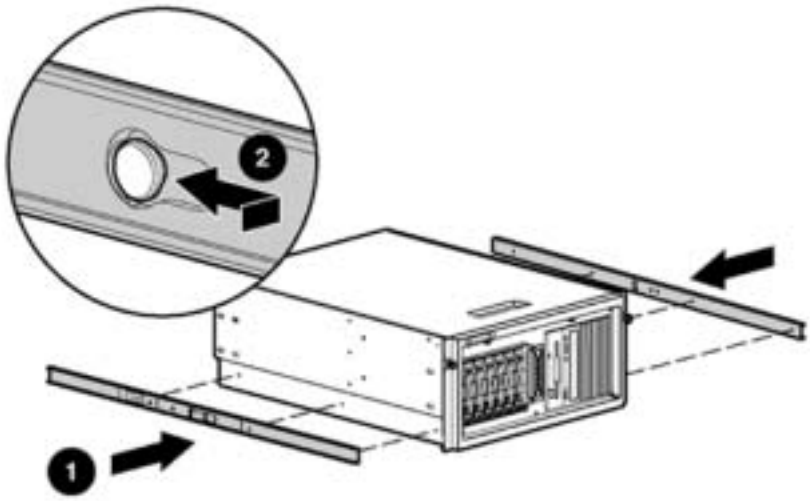


The unit can be mounted either above or below the TFT5600. Use the supplied template to locate the proper location for the rack slides

Placing the Proliant ML350-G3/G4 into the Rack This section provides instructions for placing both generations of the ML350 in to the rack.

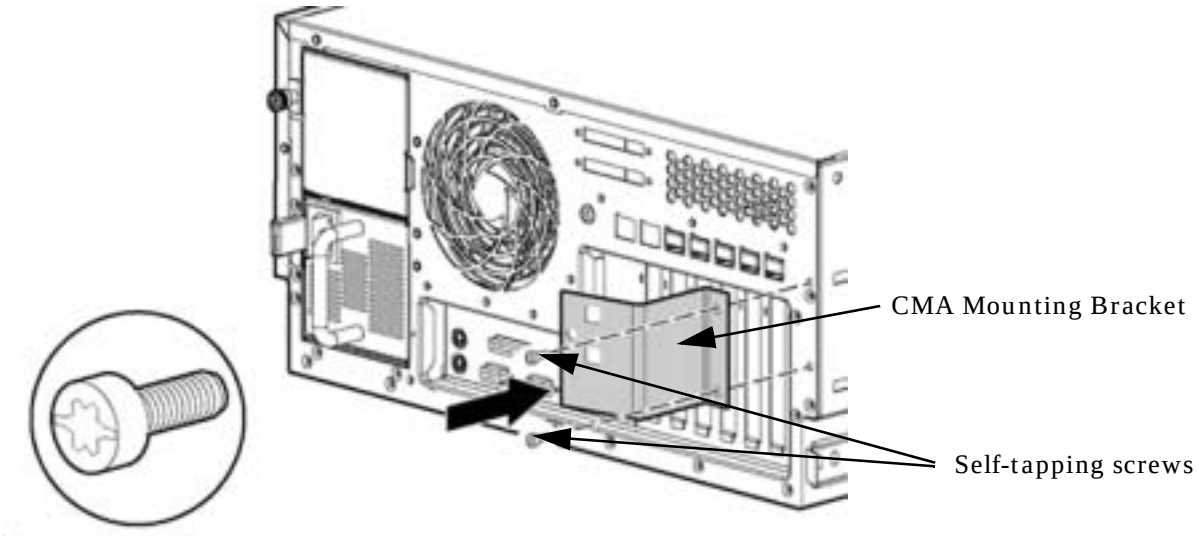
Step 1. Attach the equipment slides, both left and right, to the Proliant by lining up the holes on the inner slides to the studs on the Proliant and then sliding them to the rear until they lock, as shown in Figure A-12.

Figure A-12Attaching Equipment Slides to Proliant



Step 2. Attach the cable management arm mounting bracket to the rear of the Proliant using the supplied self-tapping screws, part number 192308-2, as shown in Figure A-13 below.

Figure A-13Cable Management Arm Mounting Bracket

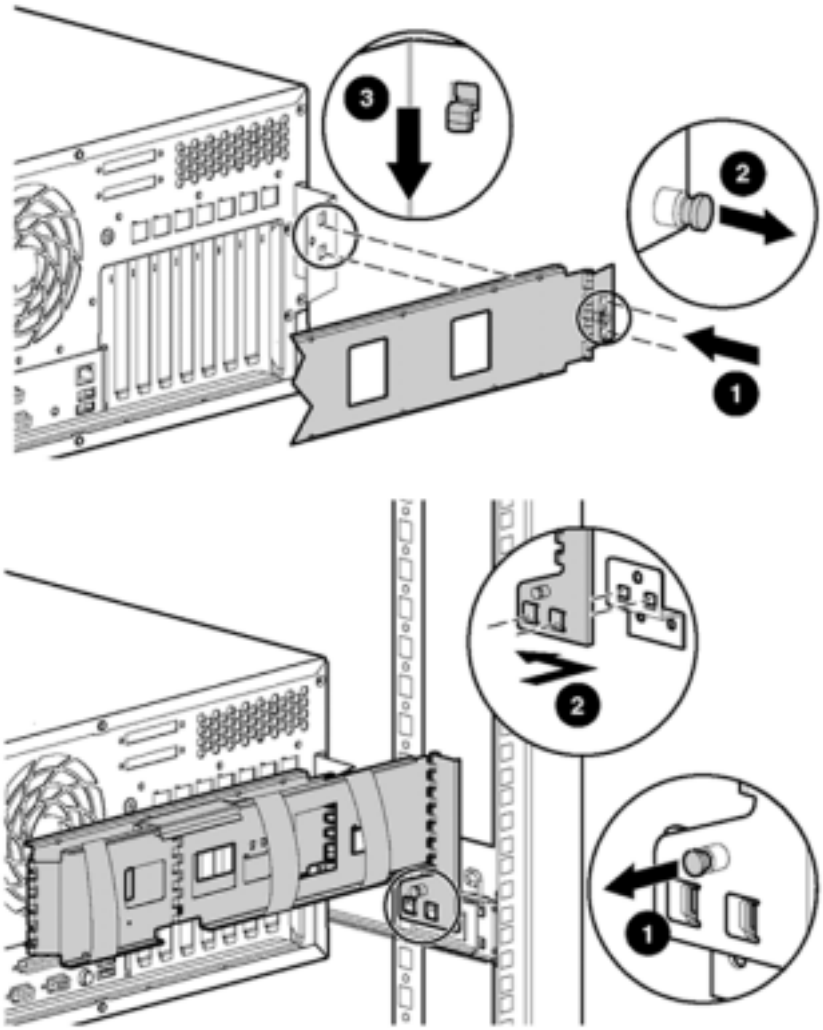


Step 3. Carefully lift the Proliant to the rack, line up the inner slides to the slide assembly, and slide the unit into the rack. Tighten the two thumb screws

CAUTION Do not lift the Proliant ML350-G3/G4 without help. Either use another person or the proper mechanical lift.

Step 4. Attach the Proliant cable management arm to its bracket on the back using the supplied instructions.

Figure A-14Attaching Cable Management Arm



Step 5. Connect the monitor, mouse, and keyboard cables from the TFT5600 to the Proliant ML350-G3/G4. Route the cables using the cable management arms of both units.

IMPORTANT Supplied with the Proliant is a modem cable, part number 8121-0862. This cable should be used when connecting the PC SMS to a telephone line.

Connecting the PC SMS to the Network

Connect the PC SMS to the customer's LAN:

Step 1. Connect one end of the RJ-45 LAN cable to the LAN port on the PC SMS.

Step 2. Connect the other end of the LAN cable to the customer's LAN port. Obtain the IP address for the PC SMS from the customer.

Connect dial-up modem cable between the PC SMS modem and the customer's phone line connection.

Powering Up and Configuring the PC SMS

Power on the PC SMS and wait for it to completely boot. A user login and password may be required.

Setting Network IP Address Configure the PC SMS to communicate to the LAN and or dial-up line.

To set the IP address, perform the following steps:

Step 1. Click the start button on the system tray at the bottom of the screen.

Step 2. Click Settings and then Control Panel.

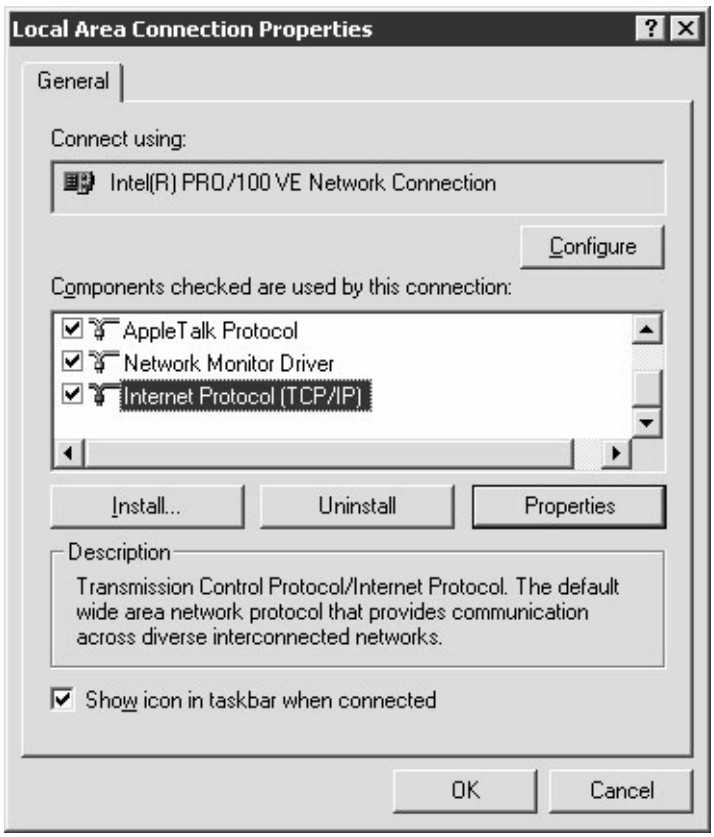
Step 3. When the Control Panel window opens, double-click on the Networking and Dial-Up Connection folder.

Step 4. Right-click on the Local Area Connection icon and select Properties.

This brings up the Local Area Connection Properties Window.

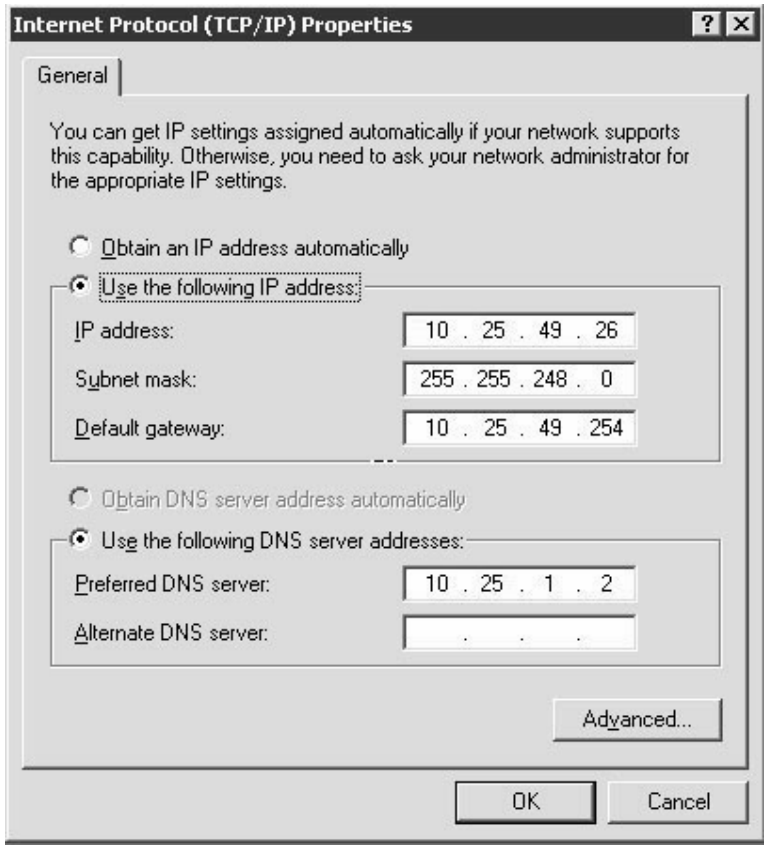
Step 5. In the window click on Internet Protocol (TCP/IP) to highlight it as shown in Table A-15. Then click the Properties button.

Figure A-15Local Area Connection Properties Windowpane



This opens the Internet Protocol (TCP/IP) Properties windowpane as shown in Table A-16.

Figure A-16TCP/IP Properties Window



Step 6. Click the "Automatically detect settings" option box for to automatically detect the network settings or enter the appropriate IP address, subnet mask, and default gateway. Also DHCP can be used to obtain an IP address.

Step 7. Click OK first in the Internet Protocol (TCP/IP) Properties pane, then in the Local Area Connection Properties window.

Configuring pcAnywhere So that the PC SMS may be remotely accessed, an off-the-shelf product, pcAnywhere, has been installed on it. Configuring the PC SMS requires that a hostname be assigned. As a host, remote users can connect to the PC SMS and take control of it: accessing files. folders, and applications. The level of access authority for each user is set by the CE in a "connection item" on the PC SMS.

IMPORTANT When configuring a connection item, security of the PC SMS is paramount. Use as high a level of protection as possible while allowing the remote user enough flexibility to perform the tasks required.

IMPORTANT For more detailed information on setting up and configuring pcAnywhere, refer to the help function of the application.

To setup a host connection item, perform the following steps:

Step 1. Double-click the pcAnywhere icon on the desktop, or click the start button in the menu tray and select pcAnywhere from the Programs menu.

Step 2. In the pcAnywhere Manager window, click ***Hosts***.

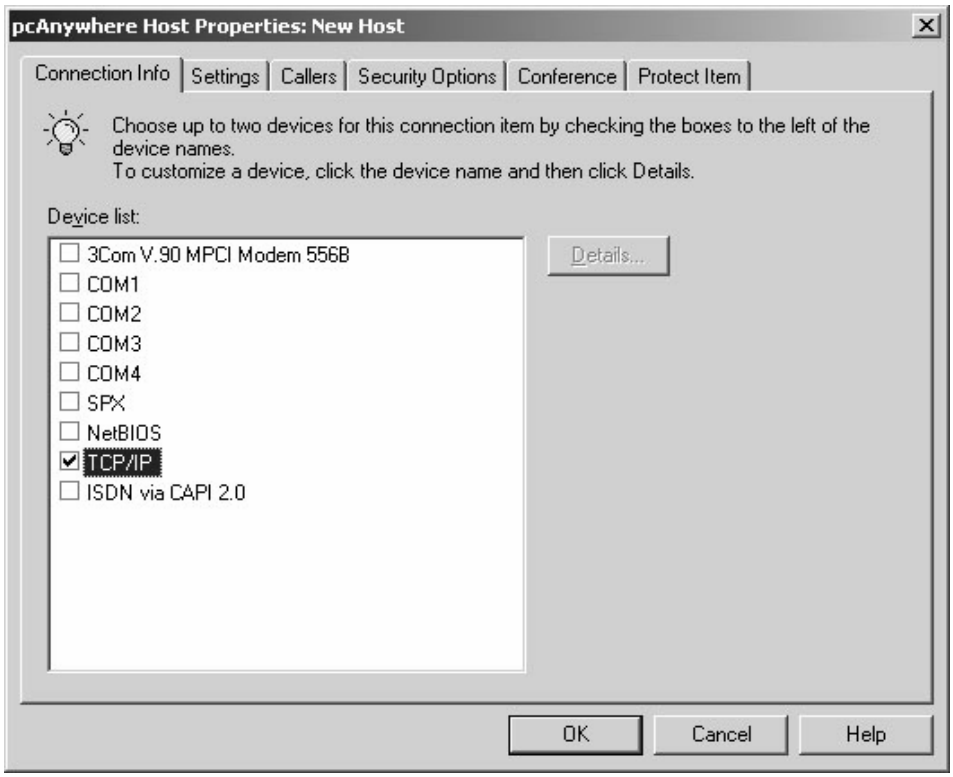
Step 3. In the File menu, click ***New***.

The pcAnywhere Host Properties window opens

Step 4. Click the TCP/IP box as shown in Table A-17 and then click OK.

This generates a new host icon in the Manager window. The initial name is New Host.

Figure A-17pcAnywhere Host Properties Window



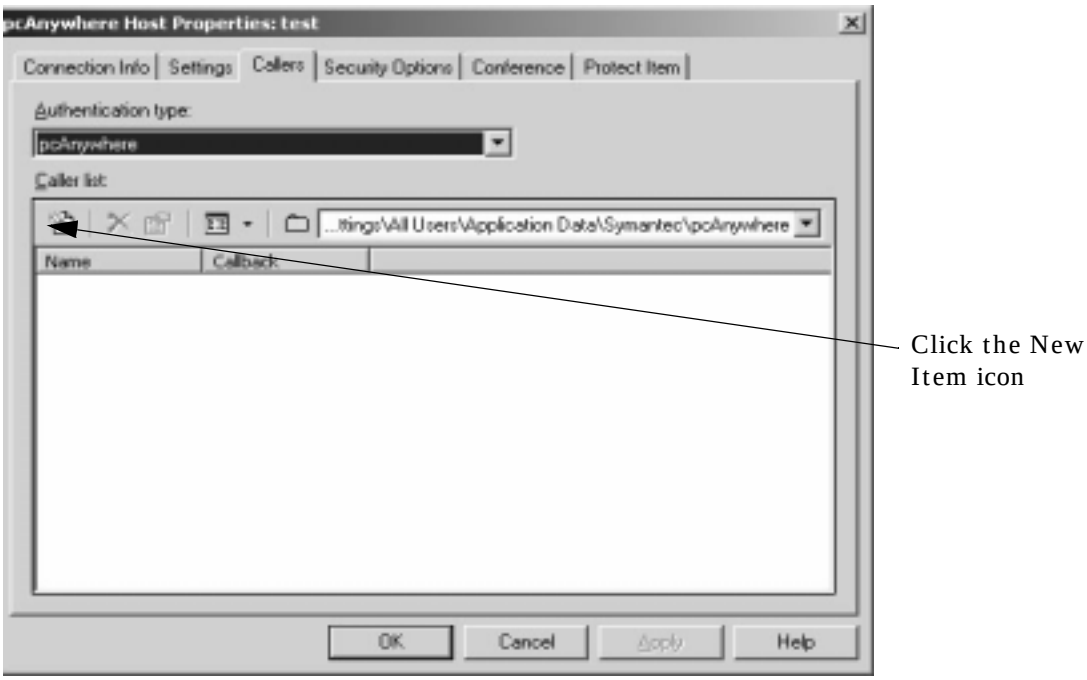
Step 5. Enter the hostname. The host name should be obtained from the customer.

Step 6. Right-click on the host icon just generated and click on properties to bring up the Host Properties window.

Step 7. Click on the Callers tab to setup the authorized users.

This brings up the Caller list panel as shown in Figure A-18. This panel allows the CE to set up all authorized users or “callers.”

Figure A-18Caller List Panel

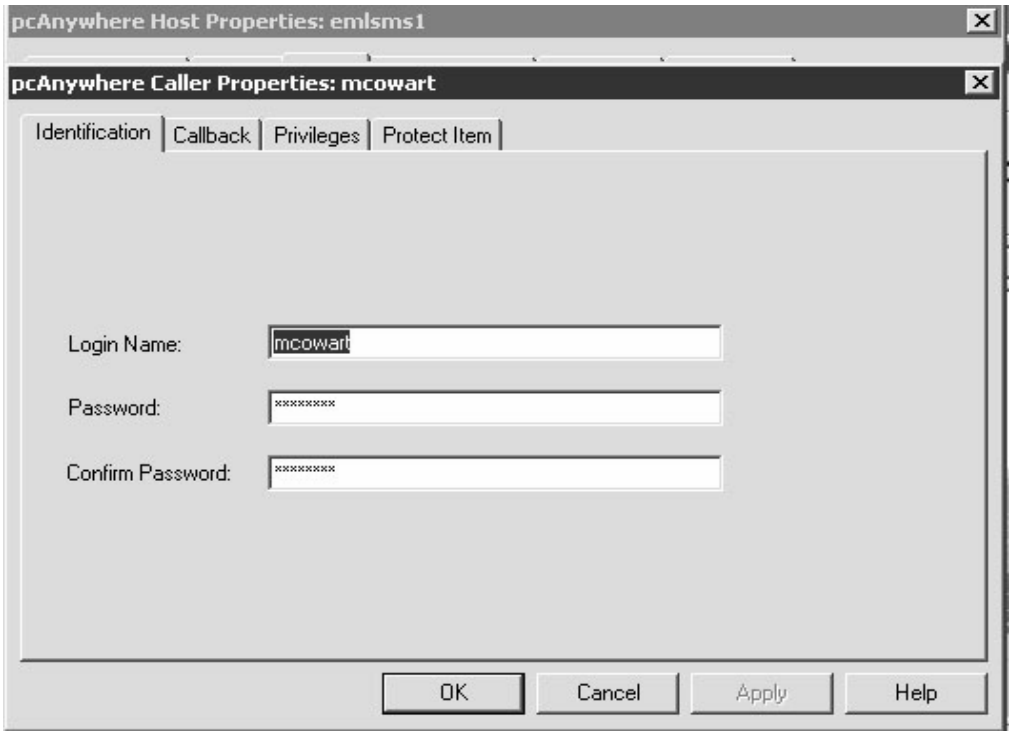


Step 8. Click the New Caller icon to set up a caller. This action brings up the Caller Properties panel.

IMPORTANT Ensure that the Authentication type field displays pcAnywhere.

Step 9. Enter the user name in the Login Name field, the user password in the Password field, and re-enter the password in the Confirm Password field.

Figure A-19Caller Identification Panel



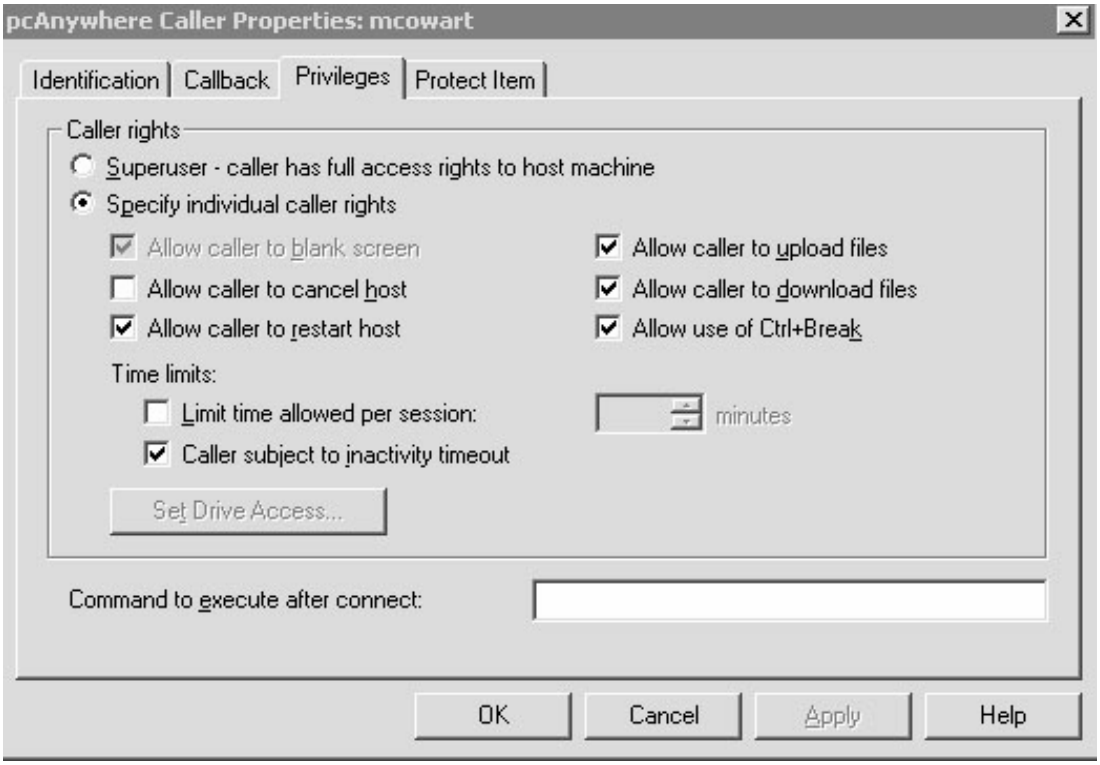
NOTE For increased security, some customer may want to implement the "callback" feature of pcAnywhere. Using this feature, the user calls into the host, enters the appropriate login ID and password, but the remote connection is not completed. The PC SMS then calls back the user using a phone number supplied at set up. To set up a call-back number, perform the following step; otherwise, skip to Step 11.

IMPORTANT The following step is only for modem connections.

Step 10. Click on the Callback tab, click the box labelled Callback the remote user, and enter the appropriate phone number in the Phone number field.

Step 11. Click on the Privileges tab to set up the user's privileges. Enter the appropriate privileges in the appropriate fields.

Figure A-20User (Caller Privileges) Panel



Step 12. If the caller requires a password, click the Protect item tab and enter the password in the Password field. Click the boxes that apply.

Step 13. Click OK to enter the new user (caller). The new user name should appear in the Host Properties window.

Step 14. Repeat Step 8. through Step 13. for all users.

Locating Other Windows-Based PC SMS Software Applications

There are several required and useful software applications on the PC SMS. This section provides the paths to them. The user should be familiar with these application before using them. It is not in the scope of this document to fully describe how to use them.

WRQ

The WRQ utilities provide both terminal windows and an FTP application for remotely accessing other servers. To access this set of utilities:

1. Click the Start button in the system tray
2. Click Program Files
3. Click the WRQ Reflection Folder

Nero CD-ROM Burner

This utility allows the user to store data on CD-ROM. To access this utility:

1. Click on the *Start* button in the system tray.
2. Click the *Programs* folder.
3. Click the *Nero Ahead* folder.
4. Click *Nero - Burning ROM*.

cygwin Utility

To open this application:

1. Click on the *Start* button in the system tray.
2. Click the *Programs* folder.
3. Click the *JUST Support Utilities* folder.
4. Click *cygwin*.

PC SMS Tools

The Memory Configuration tool, the Partitions tool, and other PC SMS tools are located at:

C:\opt\smsmtools\bin

1. Double click the *My Computer* icon on the Desktop.
2. Double click the *opt* folder.
3. Double click the *smstools* folder.
4. Double click the *bin* folder.

SCAN

The SCAN Utilities are located in:

C:\opt\scan

1. Double click the *My Computer* icon on the Desktop.
2. Double click the *opt* folder.
3. Double click the *scan* folder

Recovering PC SMS Factory Image from DVD

If there is ever a need to recover the PC SMS factory image, perform the following procedure:

Step 1. Put recovery DVD into the DVD drive.

Step 2. Reboot the PC SMS.

Norton Ghost will be launched from the DVD.

Step 3. Click “OK” on the “About Norton Ghost” screen to continue.

Step 4. From the “Image” menu, select “Local” then “Disk.”

Step 5. Select “DVD writer” as the source of the hard-disk image.

Step 6. Click “Open” to select the image file.

Step 7. Click “OK” to select the destination drive for the restore.

Step 8. Click “OK” again on the Destination Drive details screen.

Step 9. Click “Yes” to proceed with restore.

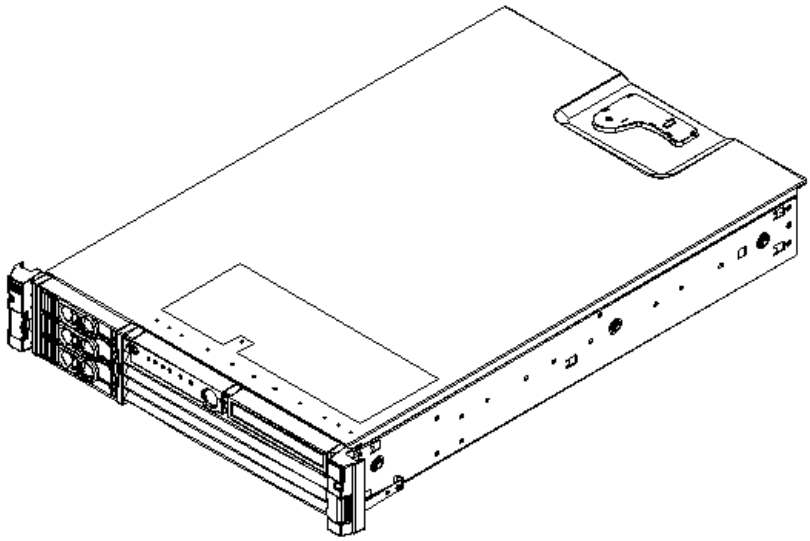
NOTE The restore process should take about one hour. There is an indicator on screen also to show the percentage completed.

NOTE The restore function brings the PC SMS back to its factory shipped state. All customer configuration information must be regenerated.

Upgrading to the HP-UX SMS

The optional hp Server rx2600 SMS uses the new Itanium® 2 based processes and runs the HP-UX 11.11 v2 operating system.

Figure A-21 hp Server rx2600



The hp Server rx2600 is installed only in a peripheral equipment rack uses the C7508A Tape Array for booting and other management functions.

NOTE This section applies only to customers who have purchased the HP-UX SMS upgrade.

Required Tools

The following tools are required to modify and mount the cabinet slide rails:

- TorX drivers: #10, #15, and #20
- Number 2 Phillips head screwdriver
- 3/8-inch nut driver

Racking the HP-UX SMS

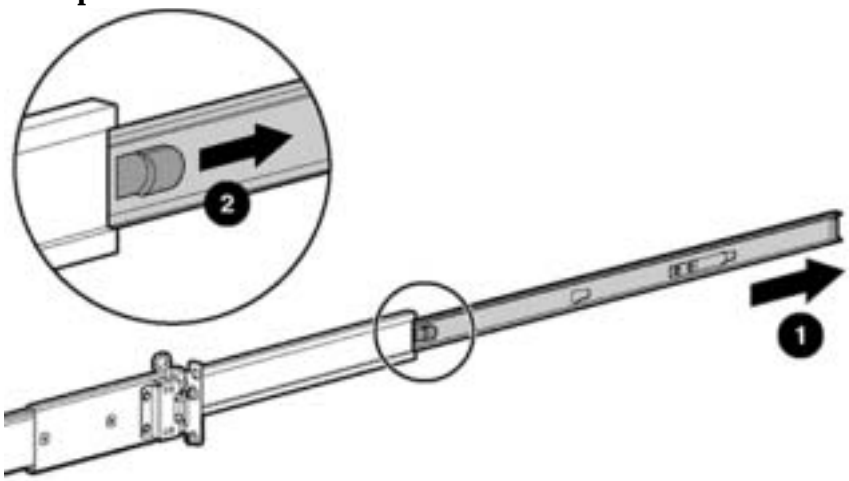
The rack-mount kit is supplied with a complete procedure, *installation guide, midweight slide kit, hp5064-967*0, to mount the hp Server rx2600 into an equipment rack. The following procedure augments this procedure:

Step 1. Open the hp Server rx2600 field rack kit and remove the left and right rack rails (part number 5064-9671).

Step 2. Use the supplied installation guide mentioned above to mount both the left and right rack slides into the rack.

An included mounting template allows convenient location of the appropriate rack mounting holes

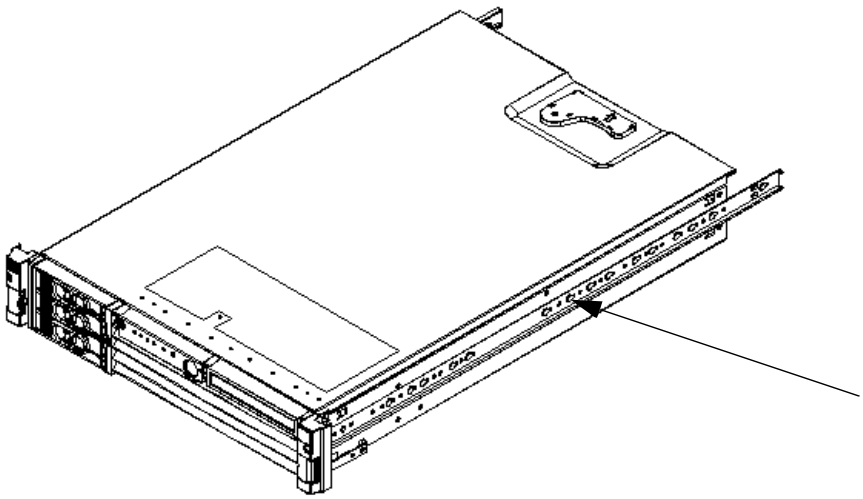
Figure A-22hp Server rx2600 Rack Slides



Step 3. Mount the equipment slides to both sides of the HP-UX SMS.

The slides have three holes that mate to the matching studs on the HP-UX SMS. The stud toward the front has a snap lock. Align the holes to the studs and press the slides down. Then push them forward to engage the snap lock.

Figure A-23hp Server rx2600 Equipment Slides



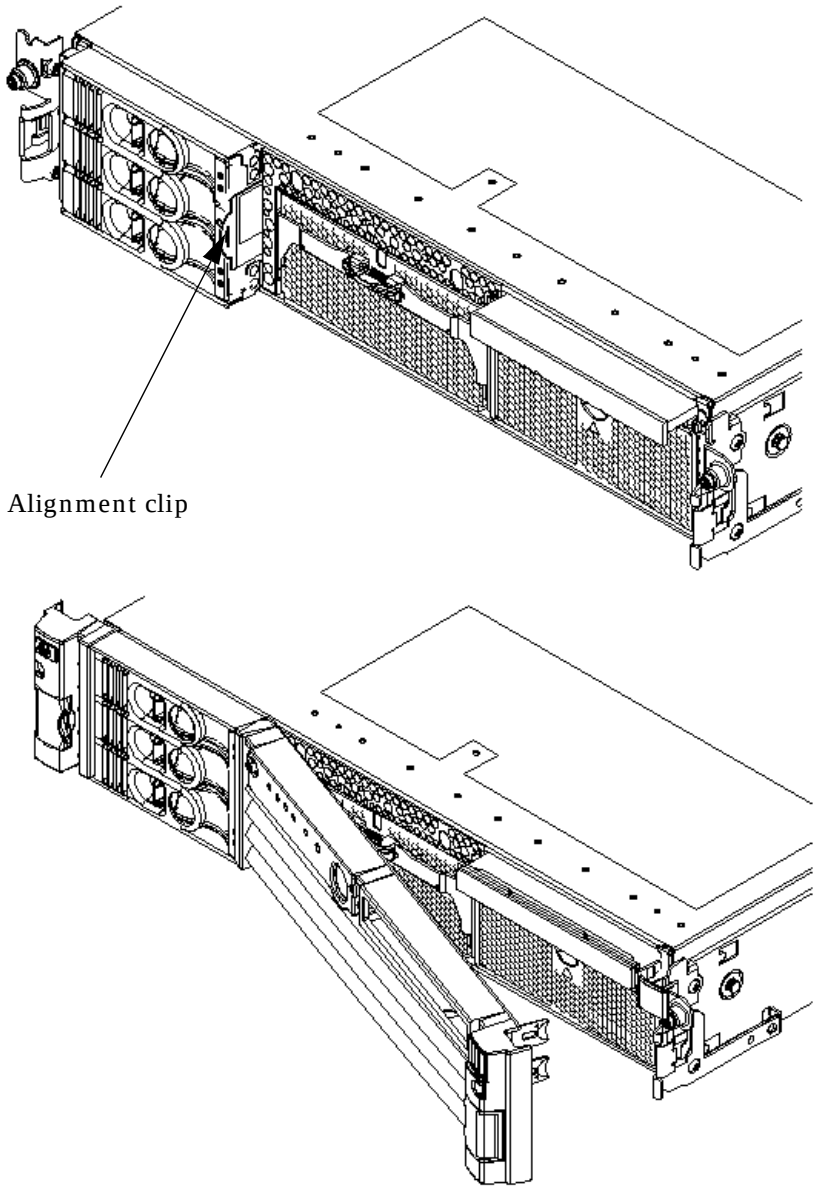
Step 4. Using two people, carefully lift and align the equipment slides on the hp Server rx2600 to the equipment slides in the rack.

Step 5. Disengage the slide lock release and slide the hp Server rx2600 into the rack.

Step 6. Attach the appropriate colored bezel onto the front of the unit.

Do this by aligning the slot on the left side of the bezel to the clip on the hp Server rx2600 and then snapping the bezel on the right side.

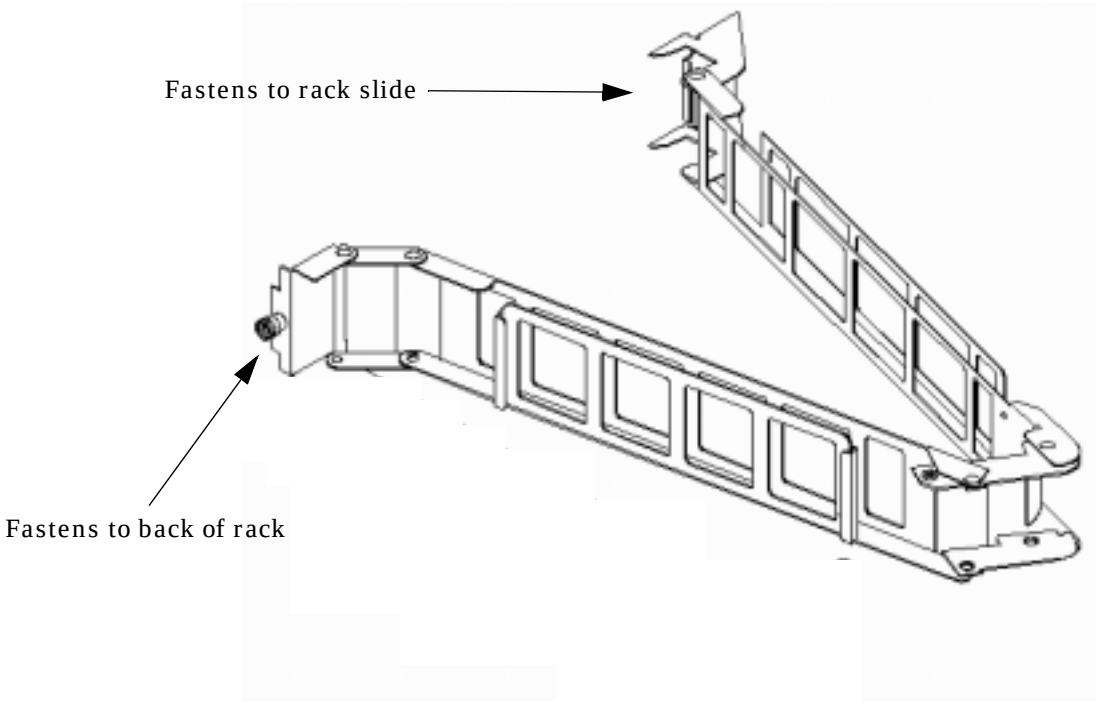
Figure A-24 Attaching the HP-UX SMS Bezel



Step 7. Attach the hp Server rx2600 cable management arm (CMA) per the enclosed instructions.

There are three thumbscrews: two secure the CMA to the back of the rack and one secures the arm to the rack slides. See figure below:

Figure A-25hp Server rx2600 Cable Management Arm



Installing the Tape Array 5300A

I/O for the hp Server rx2600 is installed in the Tape Array 5300 chassis. Perform the following procedure.

Step 1. Install each storage unit into the Tape Array 5300 by sliding it into the appropriate slot.

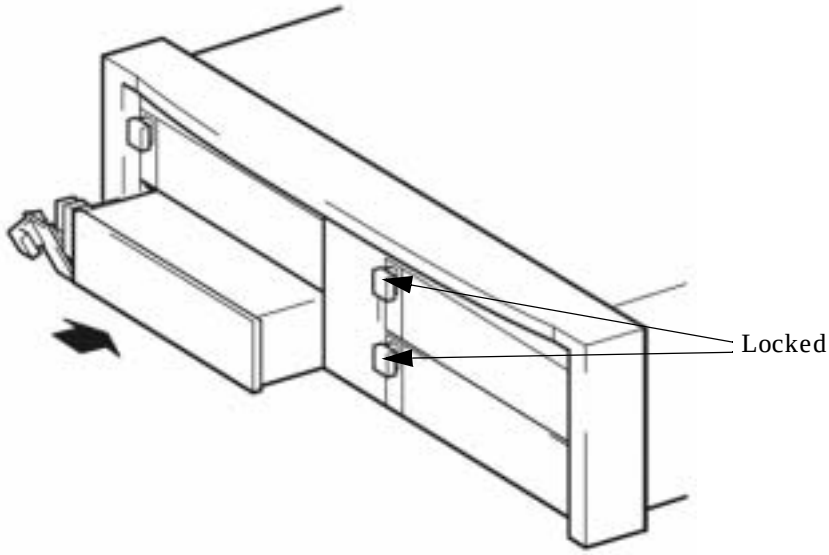
The correct configuration is:

- DVD drive in slot 1
- DAT drive in slot 3

Ensure that the storage unit back connector engages with its mating chassis connector and pull the locking mechanism on the left of the storage unit up.

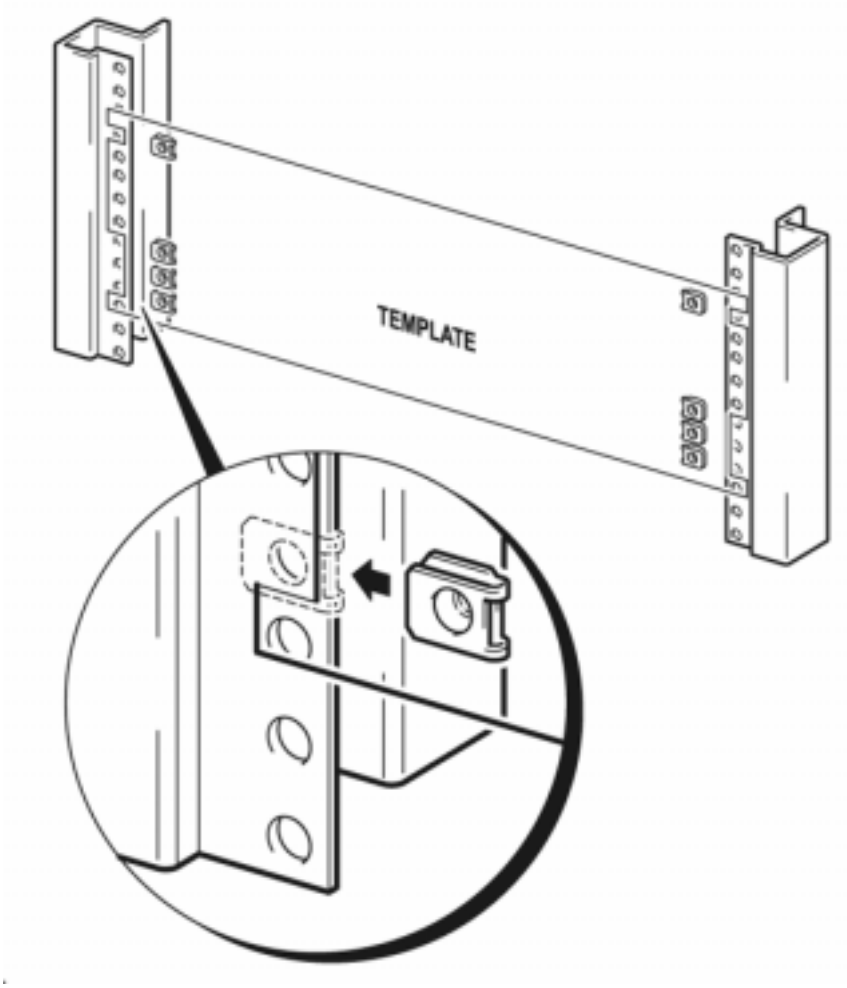
NOTE The drives are not in the correct locations in Figure A-26.

Figure A-26Installing Storage Units Into the Tape Array 5300



Step 2. Mount the Tape Array 5300 rack shelves into the rack following the supplied installation procedure and using the supplied rack mounting hardware.A template is supplied for determining the appropriate rack hole locations. There are a total of eight mounting clips, four installed on each side of the rack for the front of the unit. There are a total of four mounting clips, two installed on each side of the rack for the rear of the unit.

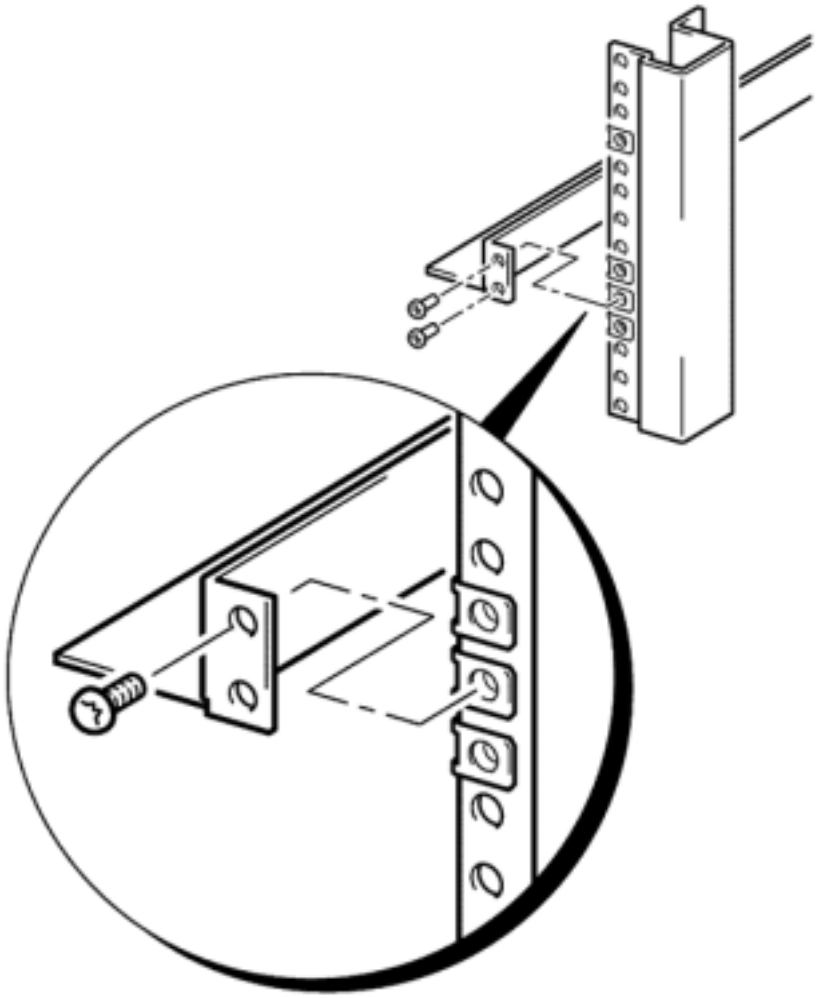
Figure A-27Tape Array 5300 Mounting Template



Step 3. Install the Tape Array 5300 rack shelves into the rack using the supplied procedure.

The lower two mounting clips on the front and the two on the rack rear are used to mount a shelf on each side.

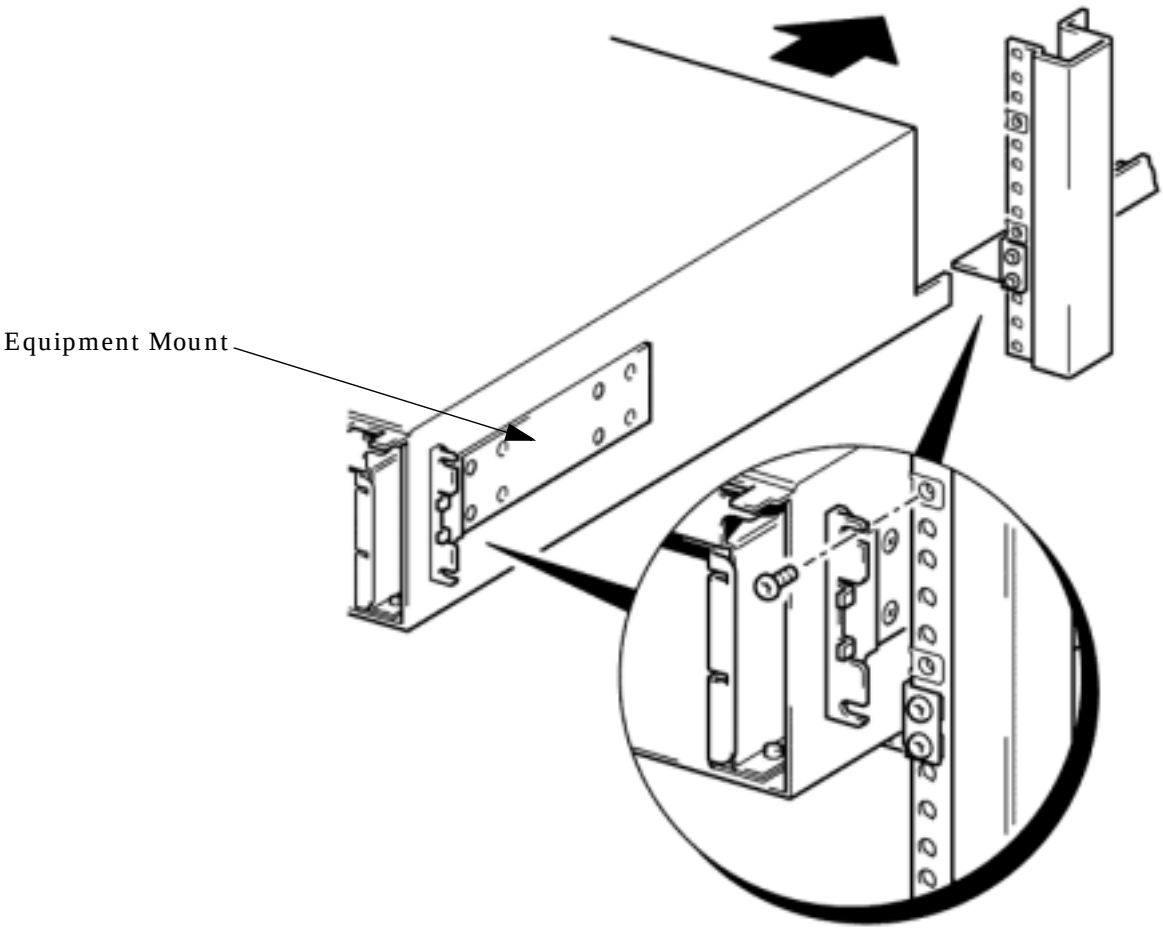
Figure A-28Tape Array 5300 Rack Shelf



Step 4. Attach the Tape Array 5300 equipment mounts using the supplied procedure and hardware.

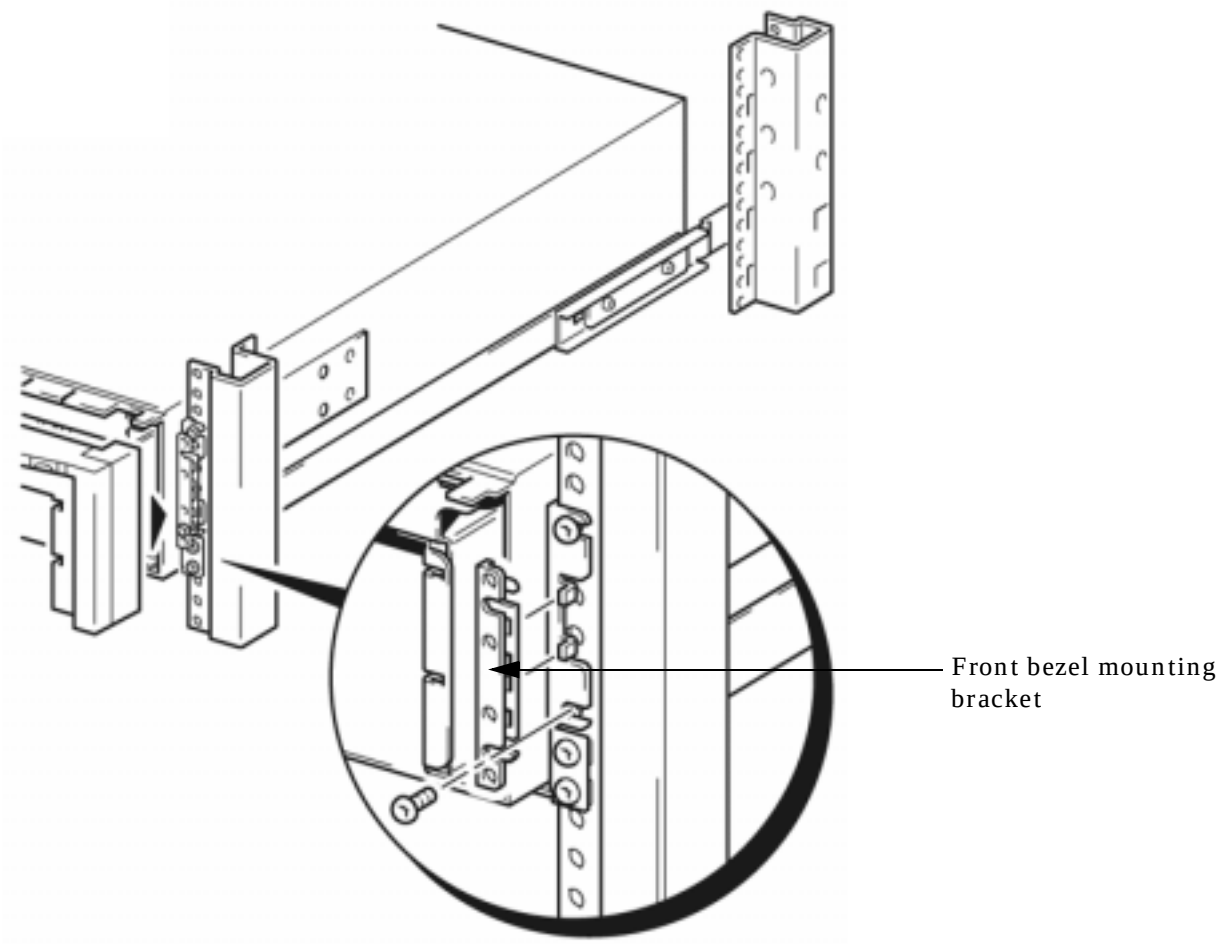
Step 5. Slide the Tape Array 5300 fully into the rack.

Figure A-29Mounting the Tape Array 5300



Step 6. While holding the bezel mounting hardware with one hand, use the supplied Torx 25 wrench to and screws to secure the Tape Array 5300 and bezel mounting hardware on both left and right sides. See figure below.

Figure A-30Securing Both the Tape Array 5300 and Front Bezel Mounting Hardware



Step 7. Attach the Tape Array 5300 front bezel.

For both sides of the front bezel and tape array: there are four plastic snap-studs on the bezel. Three of them line up with the three holes in the bezel mounting hardware. Also on the bezel are two clips that mate with two metal snap-studs on the tape array.

Align these snap-studs on one side and press the bezel onto the tape array front. Then do the same on the other side.

Step 8. Install the drive bay bezels for vacant drive bays slots.

Align the two fingers on the right side of the bezel with the two slots in the drive bay and press in the bezel.

Mounting the TFT5600

Instructions for mounting the TFT5300 are provided in section “Mounting the TFT5600” on page 66.

Connecting the HP-UX SMS Cables

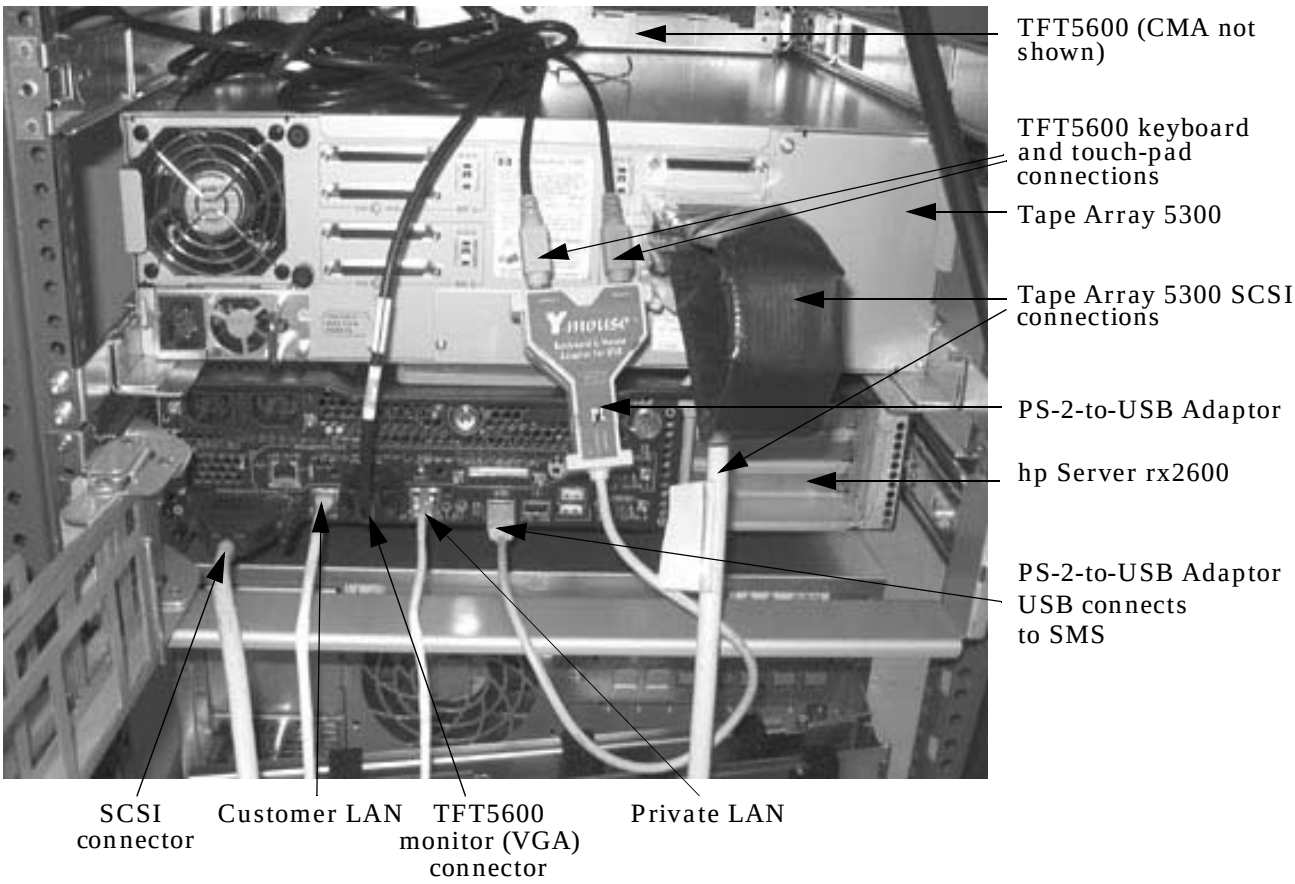
After the HP-UX SMS components have been installed, connect them using the following procedure:

NOTE Make sure all devices on the SCSI bus have a unique address and that the last device is terminated. Refer to the documentation accompanying each device to learn where to place terminators.

Step 1. Plug the hp Server rx2600, the Tape Array 5300, and the TFT5600 power cords from each unit to the rack power strip and refer to Figure A-31 for the remaining connections.

Step 2. Connect the Customer LAN and Private LAN.

Figure A-31HP-UX SMS Connections



Step 3. Connect the TFT5600 keyboard and touch-pad connectors to the supplied USB adaptor.

Step 4. Connect the PS-2-to-USB adaptor to one of the two USB ports on the hp Server rx2600.

Step 5. Connect the TFT VGA cable to the VGA port on the hp Server rx2600.

Step 6. Connect a SCSI cable from the SCSI port on the hp Server rx2600 to the Tape Array 5300 nnnn SCSI port

Step 7. Connect the SCSI terminating cable from SCSI port 1 to the SCSI port 3.

Configuring the HP-UX SMS

Configuring EFI Boot Paths

Step 1. Power on the HP-UX SMS by applying power first to the TFT5600 and then the hp Server rx2600.

Step 2. Escape the boot sequence at EFI. Press any key.

Step 3. Validate on EFI boot menu that the path defaults are set as follows:

- primary: 0/1/1/1.0.0
- secondary: 0/1/1/1.3.0

Step 4. Set autoboot off by entering ***autoboot off*** at the EFI prompt.

Configuring the Operating System

Perform the following to configure HP-UX 11i-v2:

Step 1. From the EFI prompt, boot the operating system by selecting *HP-UX Primary Boot* at the EFI menu.

Step 2. If the system boots to *set_parms*, enter **ctrl+c**.

Step 3. Login as root.

The password has not been set at this time.

Step 4. Enter date when prompted.

Step 5. Install the tools tape in the tape drive in the Tape Array 5300.

Step 6. To copy the files to the system, enter the following at the # prompt:

tar xvf/dev/rmt/0m

Step 7. Check for an available IP/hostname pair by entering the following:

nslookup

Step 8. Execute the set-up script by entering the following:

/tmp/bin/intitial_setup.sh

Step 9. Run setup by entering ***go [init1]***

Step 10. After running the set up script, return to the previous state by entering ***go [init3]***.

The system will reboot.

Step 11. After reboot, execute the system files script by entering the following:

/tmp/bin/filesystem.sh

Step 12. To increase the size of the */tmp* and */opt* directories copy the file system script by entering the following:

cp /tmp/bin/filesystem.sh

Step 13. Execute the script by entering:

```
# . filesystem.sh
```

Step 14. Verify that the script did increase the size of the */tmp* and */opt* directories by performing the following steps:

1. Modify the *maxuprc* and *maxdsiz* parameters by entering the following at the prompt:

   ```
   # /tmp/bin/kmchange.sh
   ```

   The system automatically reboots after this command.

2. Enter the following at the prompt:

   ```
   # /tmp/bin/lvminfo.sh
   ```

   The parameters should be set as follows:

   - */tmp = 1000 MB*
   - */opt = 6900 MB*

3. Verify the *maxuprc* and *maxdsiz* parameters by entering the following at the prompt:

   ```
   # /tmp/bin/kmdisplay.sh
   ```

   The parameters should be set as follows:

   - *maxuprc = 200*
   - *maxdsiz = 0x0c800000*

Step 15. Verify that all drives in the Tape Array 5300 are claimed by entering the following at the prompt:

```
# ioscan -fn | grep UNC
```

Nothing should be returned as there should be no unclaimed drives.

Step 16. Verify that the DVD and DAT drives are configured as per the documentation sent with the system or set to default (DVD = 1, DAT = 3). Enter the following at the prompt:

```
# ioscan -fn
```

Step 17. Install the HP-UX SMS software by entering the following at the prompt:

```
# /tmp/bin/install.sms.filesets
```

Enable *nsswitch.conf* to verify the installation

Step 18. Enter the following at the prompt:

```
# swlist -l bundle
```

Review the software load table for ignite tools and HP-UX SMS Software.

Setting the Network Configuration

The customer questionnaire is delivered with the HP-UX SMS. It contains the customer's hostnames and valid IP addresses.

Step 1. Verify the settings and adjust if necessary. At the prompt enter the following:

```
# more /tmp/hosts.orig
```

Step 2. Add the Private LAN address:

192.168.2.11 priv-01

192.168.2.101 private 1

Step 3. Verify the valid IP against the customer questionnaire by entering the following at the prompt:

***more /tmp/netconfig.orig***

Step 4. Add the following to the network configuration file:

***INTERFACE_NAME[1]=lan1***

***IP_ADDRESS[1]=192.168.2.101*** — increment or change as required

***SUBNET_MASK[1]=255.255.255.0***

#

***ROUTE_DESTINATION[1]=default***

***ROUTE_MASK[1]=""***

***ROUTE_GATEWAY[1]=192.168.2.101*** — increment or change as required

***ROUTE_COUNT[1]=0 – increment or change as required***

***ROUTE_ARGS[1]=""***

Configuring *scan* and *fwuu*

Step 1. Switch to the hduser profile by entering the following at the prompt:

***su hduser***

Step 2. If the hostname (shown at the prompt below as <*hostname*>) is "*privateX*," enter the following:

<*hostname*>*%* ***setenv SDP_GENERAL_LAN 1***

Step 3. Run the scan setup script by enter the following at the prompt:

<*hostname*>*%* ***/opt/scansw/bin/scan_setup***

Verify the following parameters are set as follow:

- hostname—GSP private LAN (default is priv-01)
- IP address—IP address of the GSP private LAN interface
- architecture—Halfdome = 32, Domelight = 16
- modify .cshrc—answer "yes"

Step 4. Validate all Core I/Os (CIO) are visible form the GSP console by using the *du* or *ps* commands from the Command Menu.

CM> ***du*** or ***ps***

Step 5. Ensure that all partitions are not at the OS level.

Step 6. Change to the *scan* directory by entering:

<hostname>% ***cd /opt/scansw/data***

Step 7. Run the cmd utility by entering the following:

<hostname>% ***cmd***

NOTE If the system does not return in 5-10 seconds, there could be a problem.

Step 8. Change to the complex directory be entering:

<hostname>% ***cd cplx_[gsp_hostname]***

Verify that *cmd* ran correctly

Step 9. Verify the configuration by entering the following:

<hostname>% ***/tmp/bin/recap_config***

Running JUST

Step 1. At the GSP prompt, enter the following to run JUST:

<hostname>% ***just -s [GSP hostname]***

Step 2. Verify the scan tests passed by entering the following at the JSUT prompt:

just> ***idv*** or ***d***

Step 3. Exit JUST by entering ***q*** at the just prompt.

Step 4. Power cycle the Superdome system.

Verifying Firmware with *fwuu*

Step 1. Change to the firmware directory by entering:

<hostname>% ***cd /opt/firmware/rel_[x.x]***

Where *x.x* is the current level of firmware.

Step 2. Validate the firmware revision by entering the following:

<hostname>% ***fwuu [GSP hostname]***

Step 3. Exit fwuu by entering ***exit*** at the MP prompt.

Final Customer Configuration

Step 1. Create a pert file and enter the Superdome number when prompted:

***/tmp/bin/esgcheck***

Step 2. Review the pert file by entering the following:

***more /tmp/pf****

Cleaning Up and Creating a Backup

Step 1. Remove all core and other temporary files by entering the following:

```
# /tmp/bin/clearlogs.sh
```

Step 2. Remove all factory scripts and files in the temporary directory by entering the following:

```
# /tmp/bin/fremove.sh
```

Step 3. Create a backup tape on the DAT drive by entering the following:

```
# /opt/ignite/bin/make_tape_recovery -A
```

Step 4. Check all GSP error logs:

```
# ctrl+b, sl
```

Step 5. Shutdown the system:

```
# shutdown -hy now
```

B Powering On and Off the System

This appendix provides procedures to shut down and bring up a system. Not all steps of some of the procedures apply. For example, if checking the configuration as outlined in “Checking System Configuration” on page 104 and already connected to the host, Step 1. would not be performed.

Chose the appropriate section for the desired task. This appendix provides steps for this purpose.

Shutting Down the System

Use this procedure whenever the system must be shut down. Some of the steps may not apply. For example, the user may already be connected to the host, and therefore, Step 1. of the following procedure would may be ignored.

Checking System Configuration

To power down the system, perform the following procedure:

Step 1. Open a command prompt window and connect to the MP by entering:

telnet ***<hostname>***

Figure B-1 Connecting to Host

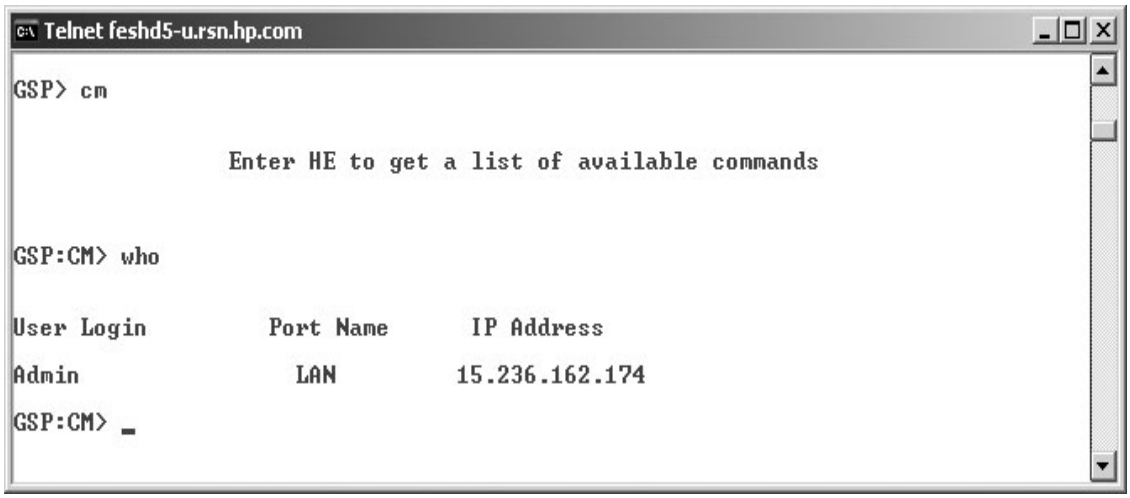
Step 2. Enter the appropriate login and password at the *MP* prompt. The Main Menu appears as shown below:

Figure B-2 Main MP Menu

Step 3. Bring up the Command Menu by entering ***cm*** at the *MP* prompt.

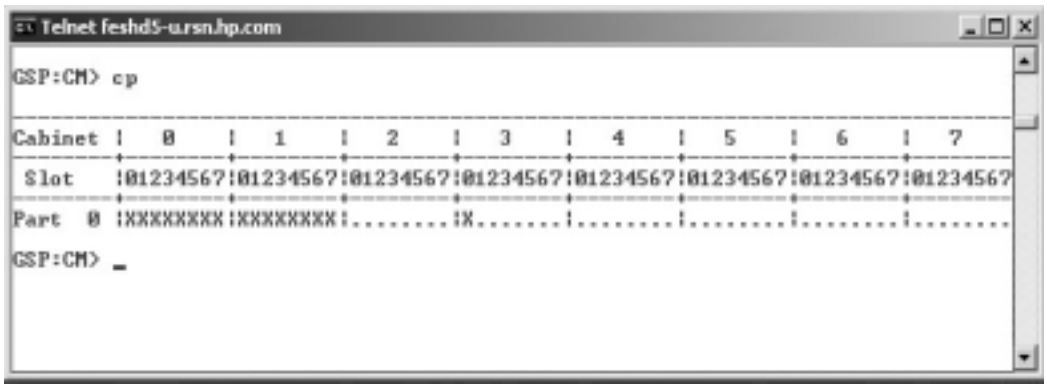
Step 4. Make sure that no one else is using the system by entering ***who*** at the *CM* prompt. Only one user should be seen, as indicated in Figure B-3.

Figure B-3 Checking for Other Users



Step 5. Read the and save the current system configuration by entering ***cp*** and the *CM* prompt. Cabinet and partition information should be displayed as in Figure B-4.

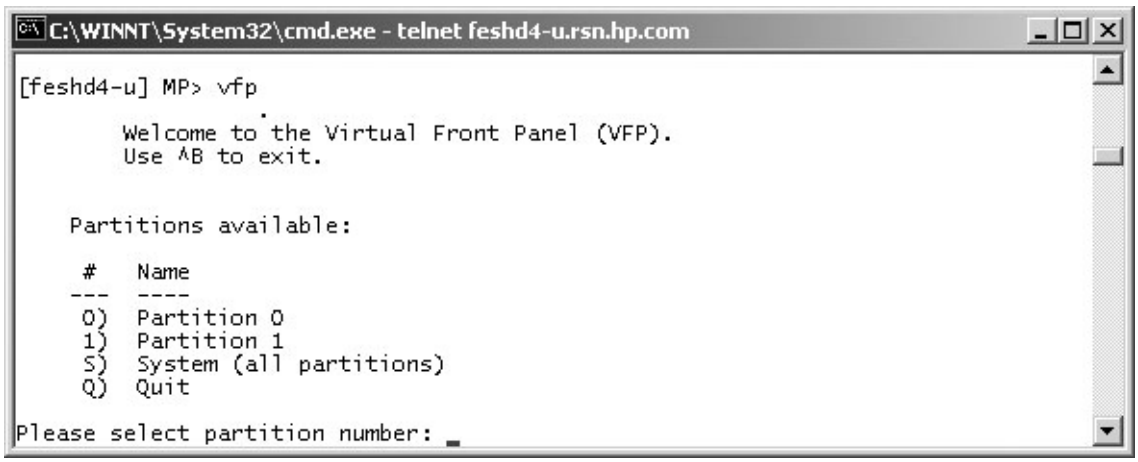
Figure B-4 Checking Current System Configuration



Step 6. Go back to the Main Menu by entering ***ma*** at the *CM* prompt.

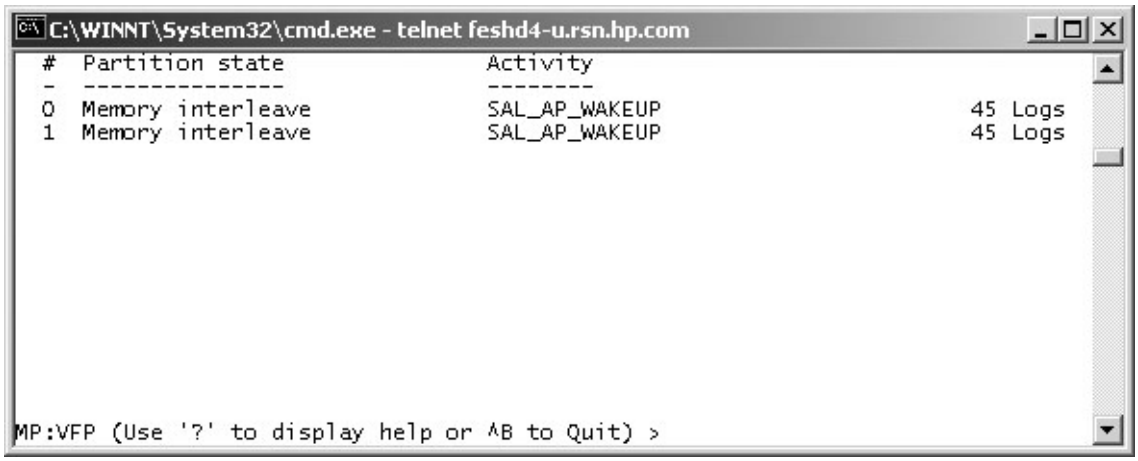
Step 7. From the Main Menu, enter ***vfp*** to bring up the Virtual Front Panel as shown in Figure B-5.

Figure B-5 MP Virtual Front Panel



Step 8. From the VFP, enter ***s*** to select the whole system or the partition number to select a particular partition. An output similar to that shown in Figure B-6 should be observed.

Figure B-6 Example of Partition State

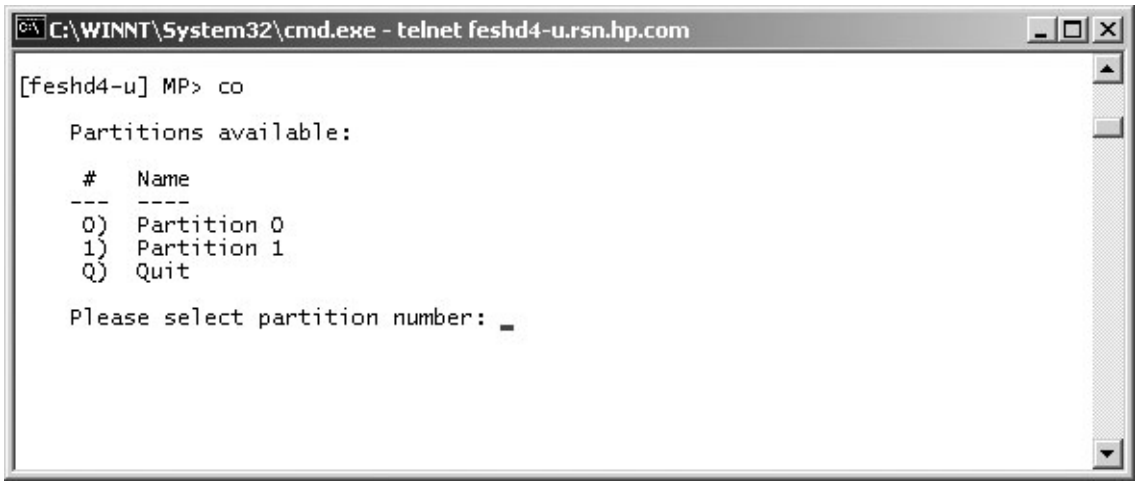


Step 9. Enter **ctrl-B** to exit the Virtual Front Panel and bring up the Main Menu.

Shutting Down the Operating System

The operating system on each partition must be shut down. From the Main Menu prompt, enter ***co*** to bring up the Partition Consoles Menu. The menu is shown in Figure B-7.

Figure B-7 Partition Consoles Menu



For each partition, perform the following steps:

Step 1. Enter the partition number at the prompt.

Step 2. Log onto the console as root.

Step 3. At the console prompt, shutdown the OS by entering the ***shutdown -h*** command.

Step 4. Exit the partition console by entering **ctrl-B** after shutting down the system.

Step 5. Repeat Step 1. through Step 4. for each partition.

Preparing the Partitions for Shutdown

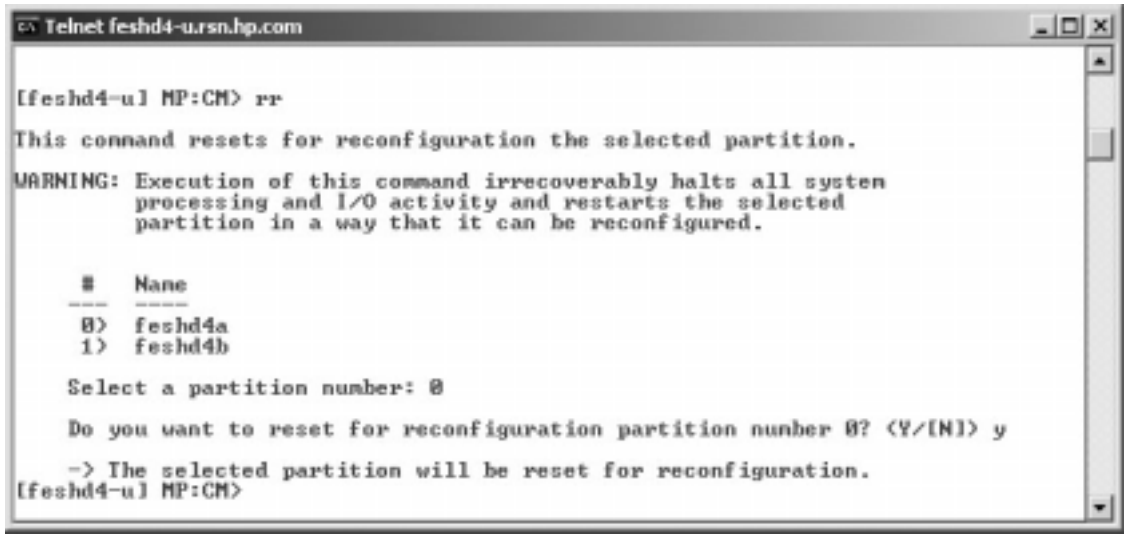
Powering off the cabinet(s) requires first that all partitions be brought to *Boot Is Blocked* (BIB).

Perform the following procedure to ensure that all partitions are ready to be shutdown.

Step 1. From the CM prompt, issue an *rr* command as shown in Figure B-8.

Step 2. Enter the partition number and when prompted for reset of the partition number, enter ***Y*** (yes).

Figure B-8 Issuing an rr Command



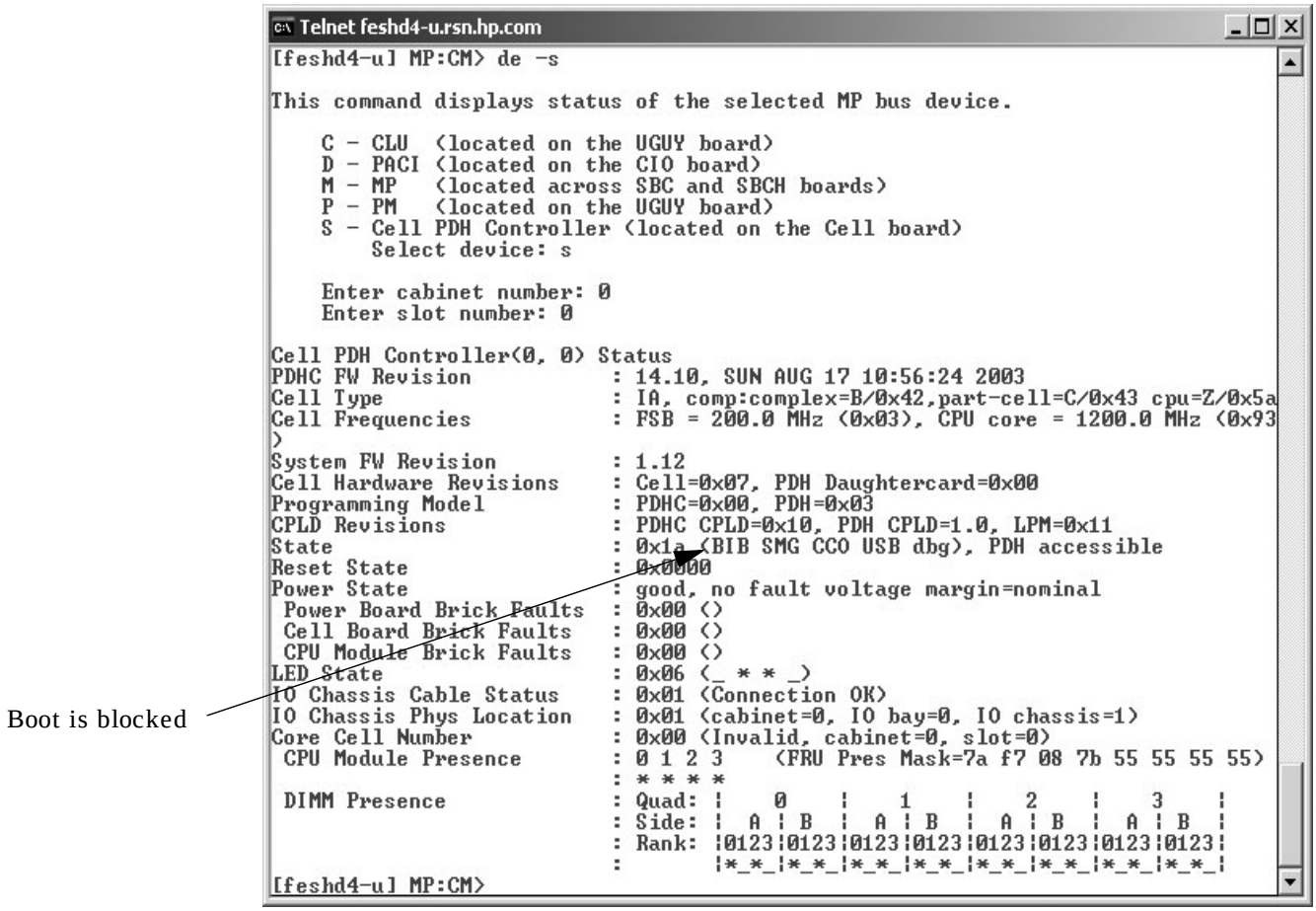
Step 3. At the CM prompt, enter a *de -s* command. See Figure B-9.

Step 4. From the de menu prompt, enter *s* to Cell PDH Controller.

Step 5. When prompted, enter the cabinet and cell board number on which the partition resides.

Step 6. Read the Cell PDH Controller status to determine if the partition is at BIB.

Figure B-9 Using the *de -s* Command



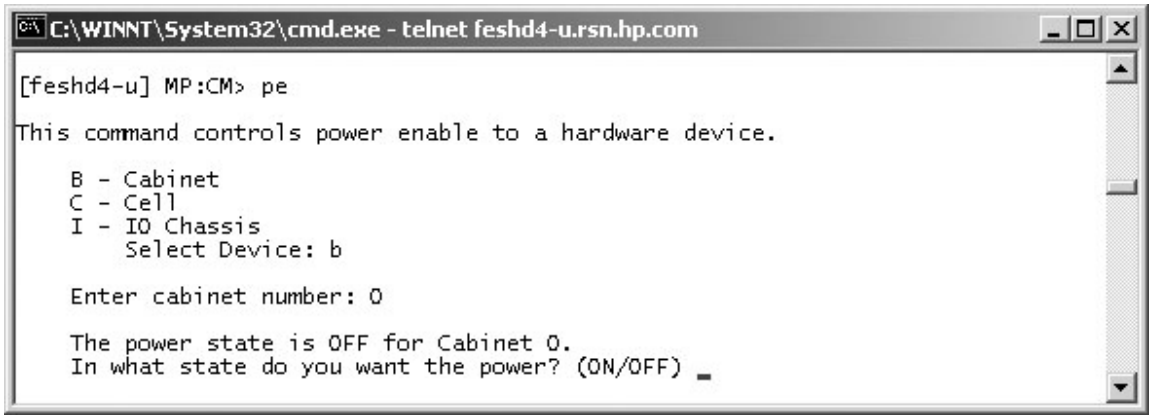
Step 7. Repeat these steps for each partition.

Powering Off the System Using the *pe* Command

Perform the following steps to power off a cell board for removal.

Step 1. From the Command Menu, enter ***pe***.

Figure B-10 Power Entity Command

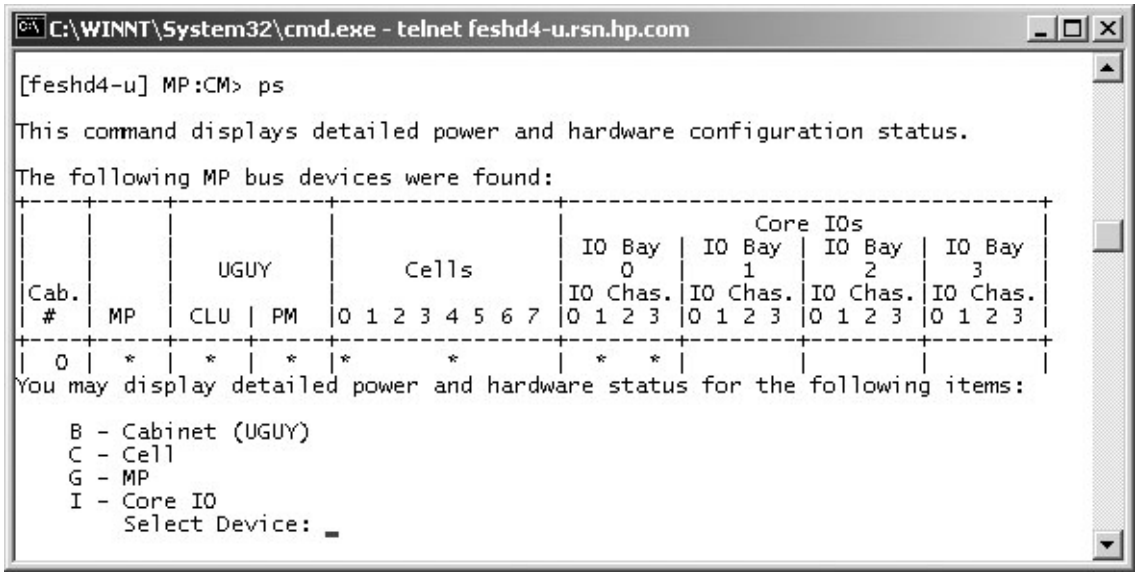


Step 2. Enter the number of the cabinet to power off. In this example of Figure B-10, the number is 0.

Step 3. When prompted for the state of the cabinet power, enter ***off***.

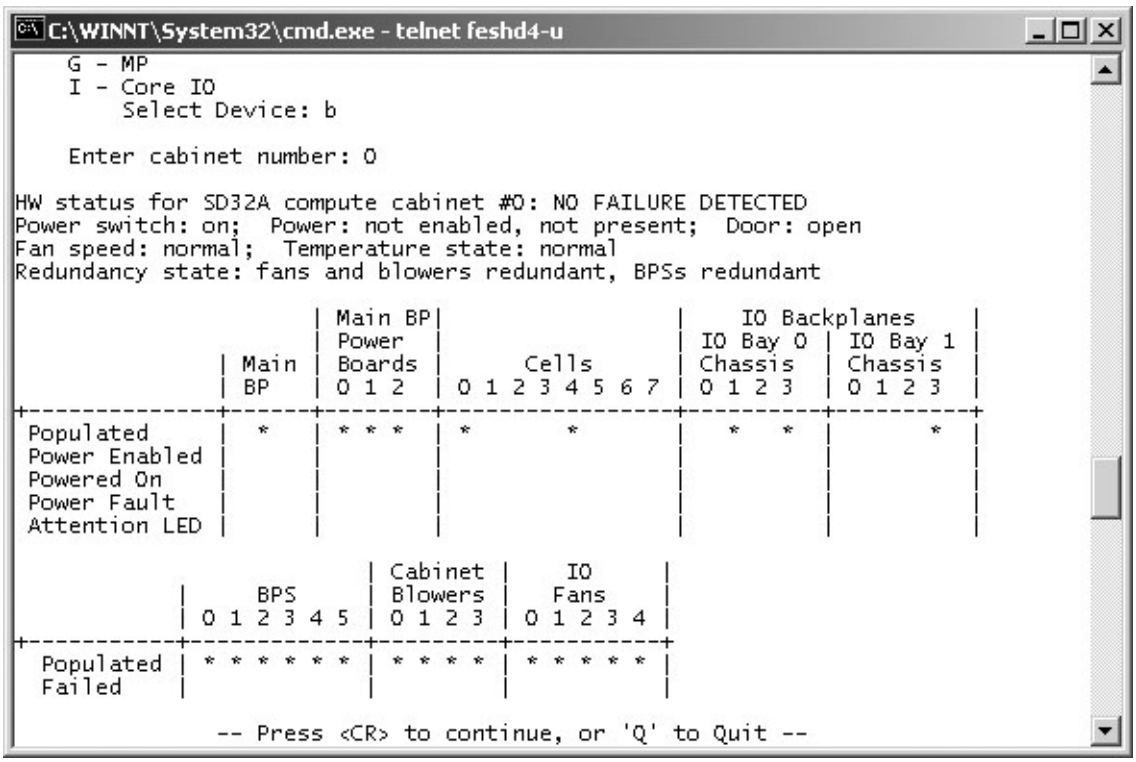
Step 4. Now enter ***ps*** (Power Status Command) at the *CM* prompt to view the power status.

Figure B-11 Power Status First Window



Step 5. Enter ***b*** at the select device prompt to select ensure the cabinet power is off. The output should be similar to that in Figure B-12. The Power Switch should be "*on*," but the Power should be "*not enabled*."

Figure B-12 Power Status Second Window



The cabinet is now powered off.

Turning On Housekeeping Power

Step 1. Verify that the AC voltage at the input source is within specifications for each cabinet being installed.

Step 2. Ensure that:

- The AC breakers are in the Off position. See Figure B-13.
- The cabinet power switch at the front of the cabinet is in the Off position.
- The AC breakers and cabinet switches on the I/O Expansion Cabinet (if one is present) are in the Off position.

Step 3. If the complex has an IOX cabinet, power on this cabinet first.

Step 4. Turn on the AC breakers on the PDCA(s) at the back of the each cabinet.

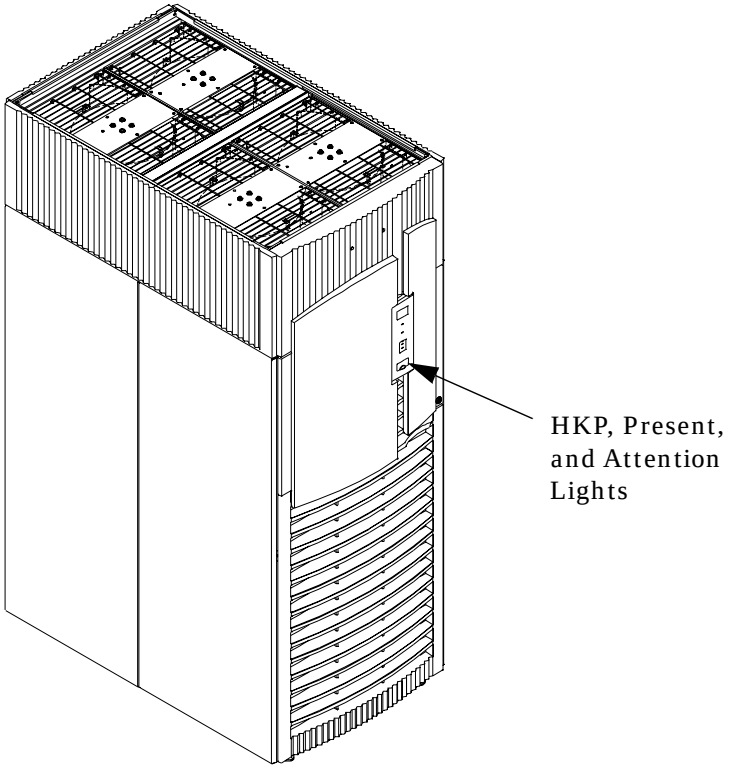
In a large complex cabinets should be powered on in one of the two following orders: 9, 8, 1, 0 or 8, 9, 0, 1.

On the front and back panel, the HKP and the Present lights should illuminate.

On cabinet 0, the HKP and the Present lights illuminate, but only the HKP LED illuminates on cabinet 1 (the right cabinet).

NOTE The 48-volt switch on the front panel should be off at this time.

Figure B-13 Front Panel Display with Housekeeping (HKP) Power On, and Present Indicators



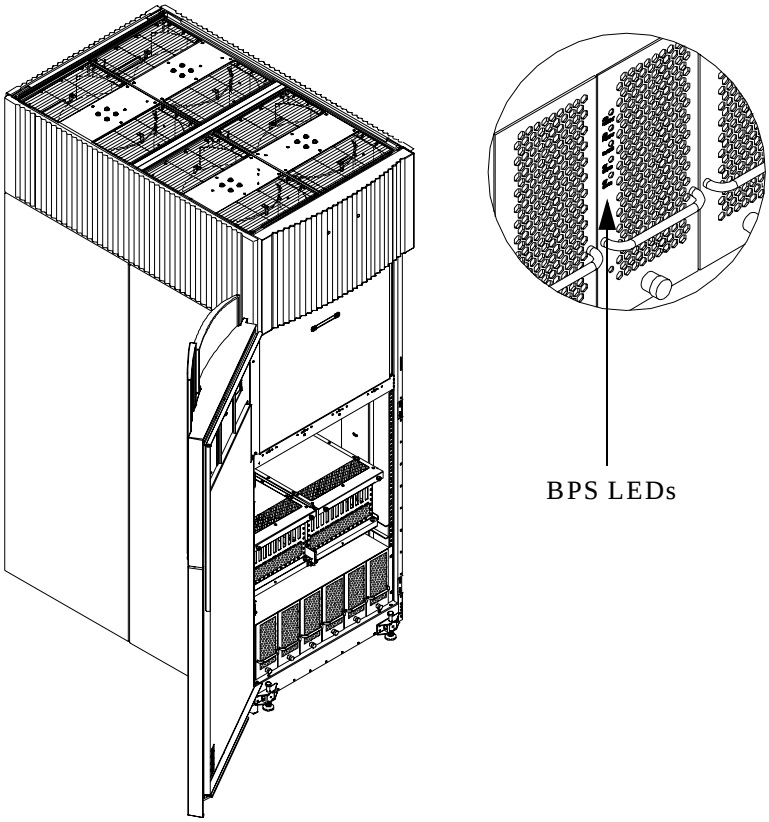
Step 5. Check the BPS LEDs.

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

- The amber light on the BPS next to the label AC0 Present (if the breakers on the PDCA on the left side at the back of the cabinet) is on.

- The amber light on the BPS next to the label AC1 Present (if the breakers on the PDCA on the right side at the back of the cabinet) is on.

Figure B-14 BPS LEDs



Powering on the System Using the *pe* Command

This section describes how to power up the system.Use the following procedures anytime the system needs to be powered on.

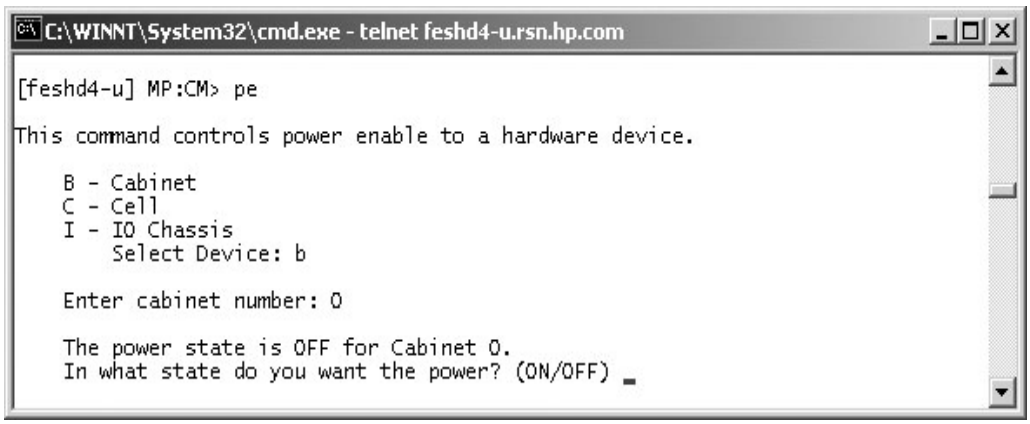
Step 1. From the Command Menu, enter the ***pe*** command.

IMPORTANT If the complex has an IOX cabinet, power on this cabinet first.

In a large complex cabinets should be powered on in one of the two following orders: 9, 8, 1, 0 or 8, 9, 0, 1.

Step 2. Enter ***B*** and then the cabinet number as shown in Figure B-15.

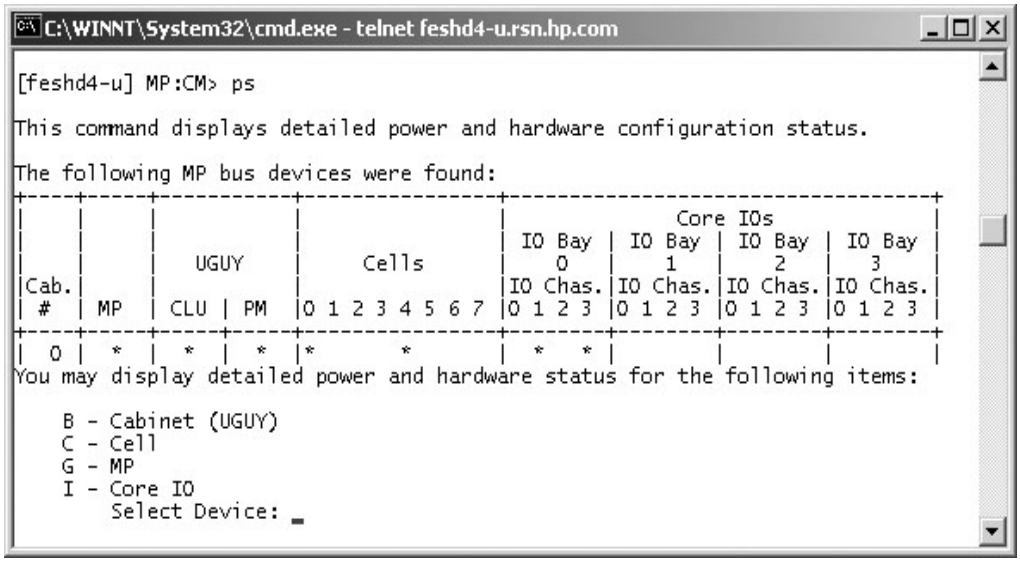
Figure B-15 Power Entity Command



Step 3. The power state is OFF. Enter ***on*** to power up the cabinet.

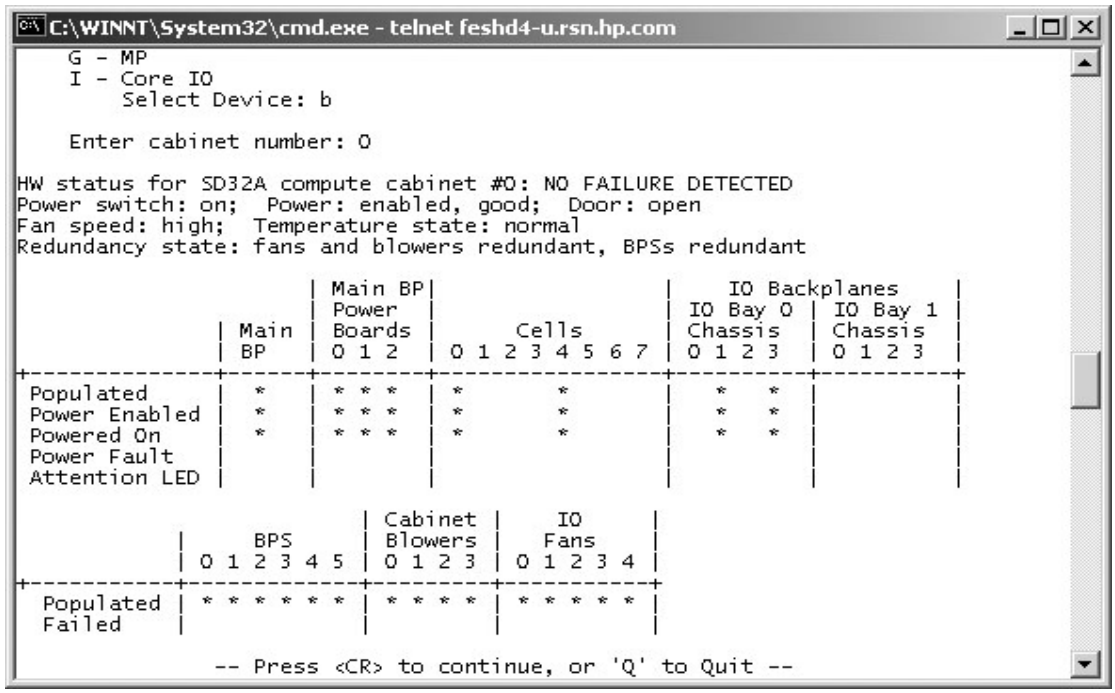
Step 4. From the *CM* prompt, enter ***ps*** to observe the power status. The status screen shown in Figure B-16 appears.

Figure B-16 Power Status First Window



Step 5. At the "Select Device" prompt, enter B then the cabinet number to check the power status of the cabinet. Observe that the Power Switch: on and Power: enabled as shown in Figure B-17.

Figure B-17 Power Status Window



A Operating System Boot and Shutdown

This appendix covers procedures for booting an operating system (OS) on an nPartition (hardware partition) and procedures for shutting down the OS.

Operating Systems Supported on HP nPartition-capable Servers

HP supports nPartitions on HP 9000 servers and HP Integrity servers. The following list describes the operating systems supported on the different nPartition-capable models.

- HP 9000 servers have PA-RISC processors and including the following nPartition-capable models:
  - — HP 9000 Superdome (SD16A, SD32A, and SD64A models)
  - — HP rp8420, rp8400
  - — HP rp7420, rp7405/rp7410

  See “Booting HP-UX” on page 122 for details on booting an OS on these servers.

  These HP 9000 servers run HP-UX 11i Version 1 (B.11.11). These HP 9000 servers also run the September 2004 or later release of HP-UX 11i Version 2 (B.11.23). Releases of HP-UX B.11.23 prior to September 2004 do not support HP 9000 servers.
- HP Integrity servers have Intel® Itanium® 2 processors and include the following nPartition-capable models:
  - — HP Integrity Superdome (SD16A, SD32A, and SD64A models)
  - — HP rx8620
  - — HP rx7620

  These HP Integrity servers run the following OSes:
  - — HP-UX 11i Version 2 (B.11.23) — See “Booting HP-UX” on page 122 for details.
  - — Microsoft® Windows® Server 2003 — See “Booting the Microsoft Windows Operating System” on page 133 for details.
  - — Red Hat Enterprise Linux 3 Update 2 and Red Hat Enterprise Linux 3 Update 3 — See “Booting the Red Hat Linux Operating System” on page 135 for details.
  - — SuSE Linux Enterprise Server 9 — See “Booting the SuSE Linux Enterprise Server Operating System” on page 137 for details.

System Boot Configuration Options

This section briefly discusses the system boot options you can configure on nPartition-capable servers. You can configure boot options that are specific to each nPartition in the server complex.

HP 9000 Boot Configuration Options

On nPartition-capable HP 9000 servers the configurable system boot options include boot device paths (*PRI*, *HAA*, and *ALT*) and the autoboot setting for the nPartition. To set these options from HP-UX use the *setboot* command. From the BCH system boot environment, use the *PATH* command at the BCH Main menu to set boot device paths, and use the *PATHFLAGS* command at the BCH Configuration menu to set autoboot options. For details issue *HELP command* at the appropriate BCH menu, where *command* is the command for which you want help.

HP Integrity Boot Configuration Options

On nPartition-capable HP Integrity servers you must properly specify the ACPI configuration value, which affects the OS startup process and on some servers can affect the shutdown behavior. You also can configure boot device paths and the autoboot setting for the nPartition. Details are given in the following list.

- **Boot Options List—HP Integrity Server Boot Device Paths**

  You can manage the boot options list for each nPartition either by using the *bcfg* command at the EFI Shell, or by using the **Add a Boot Option**, **Delete Boot Option(s)**, and **Change Boot Order** menu items at the EFI **Boot Option Maintenance menu**.

  To set boot options from HP-UX use the *setboot* command.

- **Autoboot Setting**

  You can configure the autoboot setting for each nPartition either by using the *autoboot* command at the EFI Shell, or by using the **Set Auto Boot TimeOut** menu item at the EFI **Boot Option Maintenance menu**.

  To set autoboot from HP-UX use the *setboot* command.

- **ACPI Configuration Value—HP Integrity Server OS Boot**

  On nPartition-capable HP Integrity servers you must set the proper ACPI configuration for the OS that will be booted on the nPartition.

  To check the ACPI configuration value, issue the *acpiconfig* command with no arguments at the EFI Shell.

  To set the ACPI configuration value, issue the *acpiconfig value* command at the EFI Shell, where *value* is either *default*, *windows*, or *single-pci-domain*. Then reset the nPartition by issuing the *reset* EFI Shell command for the setting to take effect.

  The ACPI configuration settings for the supported operating systems are in the following list.

  — **HP-UX ACPI Configuration: default**

    On nPartition-capable HP Integrity servers, to boot or install the HP-UX operating system an nPartition must have its ACPI configuration value set to *default*.

    For details see “ACPI Configuration for HP-UX Must Be “default”” on page 122.

— **Windows ACPI Configuration: windows**

On nPartition-capable HP Integrity servers, to boot or install the Windows operating system an nPartition must have its ACPI configuration value set to *windows*.

For details see “ACPI Configuration for Windows Must Be “windows”” on page 133.

— **Red Hat Linux 3 ACPI Configuration: single-pci-domain**

On nPartition-capable HP Integrity servers, to boot or install the Red Hat Linux 3 operating system an nPartition must have its ACPI configuration value set to *single-pci-domain*.

For details see “ACPI Configuration for Red Hat Linux 3 Must Be “single-pci-domain”” on page 135.

— **SuSE Linux Enterprise Server ACPI Configuration: default**

On nPartition-capable HP Integrity servers, to boot or install the SuSE Linux Enterprise Server operating system an nPartition must have its ACPI configuration value set to *default*.

For details see “ACPI Configuration for SuSE Linux Enterprise Server Must Be “default”” on page 137.

- **ACPI “Softpowerdown” Configuration—rx7620 and rx8620 OS Shutdown Behavior**

On HP rx7620 servers and rx8620 servers you can configure the nPartition behavior when an OS is shutdown and halted. The two options are to have hardware power off when the OS is halted, or to have the nPartition be made inactive (all cells are in a boot-is-blocked state). The normal OS shutdown behavior on rx7620 servers and rx8620 servers depends on the ACPI configuration for the nPartition.

You can run the *acpiconfig* command with no arguments to check the current ACPI configuration setting; however, softpowerdown information is displayed only when different from normal behavior.

To change the nPartition behavior when an OS is shutdown and halted use either the *acpiconfig enable softpowerdown* EFI Shell command or the *acpiconfig disable softpowerdown* command and then reset the nPartition to make the ACPI configuration change take effect.

— **acpiconfig enable softpowerdown**

When set, *acpiconfig enable softpowerdown* causes nPartition hardware to be powered off when the operating system issues a shutdown for reconfig command (for example, *shutdown -h* or *shutdown /s*).

This is the normal behavior on rx8620 and rx7620 servers with a *windows* ACPI configuration setting.

When softpowerdown is enabled on an rx7620 or rx8620 server, if one nPartition is defined in the server then halting the operating system powers off the server cabinet (including all cells and I/O chassis). On an rx7620 or rx8620 server with multiple nPartitions, halting the operating system from an nPartition with softpowerdown enabled causes only the resources on the local nPartition to be powered off.

To power on hardware that has been powered off, use the *PE* command at the management processor command menu.

— **acpiconfig disable softpowerdown**

When set, *acpiconfig disable softpowerdown* causes nPartition cells to remain at a boot-is-blocked state when the operating system issues a shutdown for reconfig command (for example, *shutdown -h* or *shutdown /s*). In this case an OS shutdown for reconfig makes the nPartition inactive.

This is the normal behavior on rx8620 and rx7620 servers with an ACPI configuration setting of *default* or *single-pci-domain*.

To make an inactive nPartition active, use the management processor *BO* command to boot the nPartition past the boot-is-blocked state.

Booting HP-UX

This section covers the following methods of booting HP-UX:

- HP-UX Booting — The standard ways to boot HP-UX. Typically this results in booting HP-UX in multi-user mode.
- Single-User Mode HP-UX Booting — How to boot HP-UX in single-user mode.
- LVM-Maintenance Mode HP-UX Booting — How to boot HP-UX in LVM-maintenance mode.

See “Shutting Down HP-UX” on page 139 for details on shutting down the HP-UX operating system.

CAUTION **ACPI Configuration for HP-UX Must Be “default”**

On nPartition-capable HP Integrity servers, to boot the HP-UX operating system an nPartition must have its ACPI configuration value set to *default*.

At the EFI Shell interface, enter the *acpiconfig* command with no arguments to list the current ACPI configuration. If the *acpiconfig* value is not set to *default*, then HP-UX cannot boot; in this situation you must reconfigure *acpiconfig* or else booting will be interrupted with a panic when launching the HP-UX kernel.

To set the ACPI configuration for HP-UX: at the EFI Shell interface enter the *acpiconfig default* command, and then enter the *reset* command for the nPartition to reboot with the proper (*default*) configuration for HP-UX.

HP-UX Booting

You can boot HP-UX by using any one of the following procedures:

- "HP-UX Booting [BCH Menu]" on page 123

  The BCH system boot environment is provided on HP 9000 servers.

- "HP-UX Booting [EFI Boot Manager]" on page 125

  The EFI system boot environment is provided on HP Integrity servers.

- "HP-UX Booting [EFI Shell]" on page 126

  The EFI system boot environment is provided on HP Integrity servers.

HP-UX Booting [BCH Menu]

From the BCH Menu, use the *BOOT* command to boot the HP-UX operating system. The BCH Menu is available only on HP 9000 servers.

Step 1. Access the BCH Main Menu for the nPartition on which you want to boot HP-UX.

Login to the service processor (MP or GSP) and enter *CO* to access the Console list. Select the nPartition console. When accessing the console, confirm that you are at the BCH Main Menu (the *Main Menu: Enter command or menu>* prompt). If at a BCH menu other than the Main Menu, then enter *MA* to return to the BCH Main Menu.

Step 2. Choose which device you wish to boot.

From the BCH Main menu, use the *PATH* command to list any boot path variable settings. The primary (PRI) boot path normally is set to the main boot device for the nPartition. You also can use the *SEARCH* command to find and list potentially bootable devices for the nPartition.

```
Main Menu: Enter command or menu > PATH

     Primary Boot Path:  0/0/2/0/0.13
                         0/0/2/0/0.d    (hex)

HA Alternate Boot Path:  0/0/2/0/0.14
                         0/0/2/0/0.e    (hex)

   Alternate Boot Path:  0/0/2/0/0.0
                         0/0/2/0/0.0    (hex)

Main Menu: Enter command or menu >
```

Step 3. Boot the device using the ***BOOT*** command from the BCH interface.

You can issue the *BOOT* command in any of the following ways:

- ***BOOT***

  Issuing the *BOOT* command with no arguments boots the device at the primary (PRI) boot path.

- ***BOOT bootvariable***

  This command boots the device indicated by the specified boot path, where *bootvariable* is the PRI, HAA, or ALT boot path.

  For example, *BOOT PRI* boots the primary boot path.

- ***BOOT LAN INSTALL*** or ***BOOT LAN.ip-address INSTALL***

The *BOOT... INSTALL* commands boot HP-UX from the default HP-UX install server or from the server specified by *ip-address*.

- ***BOOT path***

  This command boots the device at the specified *path*. You can specify the *path* in HP-UX hardware path notation (for example, 0/0/2/0/0.13) or in "path label" format (for example, P0 or P1) .

  If you specify the *path* in "path label" format then *path* refers to a device path reported by the last *SEARCH* command.

After you issue the *BOOT* command, the BCH interface prompts you to specify whether you want to stop at the ISL prompt.

To boot the /stand/vmunix HP-UX kernel from the device without stopping at the ISL prompt, enter ***n*** to automatically proceed past ISL and execute the contents of the AUTO file on the selected device. (By default the AUTO file is configured to load /stand/vmunix.)

```
Main Menu: Enter command or menu > BOOT PRI

     Primary Boot Path:  0/0/1/0/0.15


 Do you wish to stop at the ISL prompt prior to booting? (y/n) >> n


ISL booting  hpux

Boot
: disk(0/0/1/0/0.15.0.0.0.0.0;0)/stand/vmunix
```

To boot an HP-UX kernel other than */stand/vmunix*, or to boot HP-UX in single-user or LVM-maintenance mode, stop at the ISL prompt and specify the appropriate arguments to the *hpux* loader.

Step 4. Exit the console and service processor interfaces if finished using them.

To exit the BCH environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

HP-UX Booting [EFI Boot Manager]

From the EFI Boot Manager menu, select an item from the boot options list to boot HP-UX using the selected boot option. The EFI Boot Manager is available only on HP Integrity servers.

See "ACPI Configuration for HP-UX Must Be "default"" on page 122 for required configuration details.

Step 1. Access the EFI Boot Manager menu for the nPartition on which you want to boot HP-UX.

Login to the service processor (MP or GSP) and enter *CO* to access the Console list. Select the nPartition console.

When accessing the console, confirm that you are at the EFI Boot Manager menu (the main EFI menu). If at another EFI menu, select the **Exit** option from the sub-menus until you return to the screen with the *EFI Boot Manager* heading.

Step 2. At the EFI Boot Manager menu, select an item from the boot options list.

Each item in the boot options list references a specific boot device and provides a specific set of boot options or arguments to be used when booting the device.

Step 3. Press **Return** or **Enter** to initiate booting using the selected boot option.

Step 4. Exit the console and service processor interfaces if finished using them.

To exit the EFI environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

HP-UX Booting [EFI Shell]

From the EFI Shell environment, to boot HP-UX on a device first access the EFI System Partition (for example *fs0:*) for the root device and then enter ***HPUX*** to invoke the loader. The EFI Shell is available only on HP Integrity servers.

See "ACPI Configuration for HP-UX Must Be "default"" on page 122 for required configuration details.

Step 1. Access the EFI Shell environment for the nPartition on which you want to boot HP-UX.

Login to the service processor (MP or GSP) and enter *CO* to access the Console list. Select the nPartition console.

When accessing the console, confirm that you are at the EFI Boot Manager menu (the main EFI menu). If at another EFI menu, select the **Exit** option from the sub-menus until you return to the screen with the *EFI Boot Manager* heading.

From the EFI Boot Manager menu, select the **EFI Shell** menu option to access the EFI Shell environment.

Step 2. At the EFI Shell environment, issue the *acpiconfig* command to list the current ACPI configuration for the local nPartition.

On nPartition-capable HP Integrity servers, to boot the HP-UX operating system an nPartition must have its ACPI configuration value set to *default*. If the *acpiconfig* value is not set to *default*, then HP-UX cannot boot; in this situation you must reconfigure *acpiconfig* or else booting will be interrupted with a panic when launching the HP-UX kernel.

To set the ACPI configuration for HP-UX: at the EFI Shell interface enter the *acpiconfig default* command, and then enter the *reset* command for the nPartition to reboot with the proper (*default*) configuration for HP-UX.

Step 3. At the EFI Shell environment, issue the *map* command to list all currently mapped bootable devices.

The bootable filesystems of interest typically are listed as *fs0:*, *fs1:*, and so on.

Step 4. Access the EFI System Partition (*fsX:* where *X* is the filesystem number) for the device from which you want to boot HP-UX.

For example, enter *fs2:* to access the EFI System Partition for the bootable filesystem number *2*. Note that the EFI Shell prompt changes to reflect the filesystem currently accessed.

Also note that the filesystem number may change each time it is mapped (for example, when the nPartition boots, or when the *map -r* command is issued).

Step 5. When accessing the EFI System Partition for the desired boot device, issue the *HPUX* command to invoke the *HPUX.EFI* loader on the selected devive.

The full path for the loader is *\EFI\HPUX\HPUX.EFI* and when invoked it references the *\EFI\HPUX\AUTO* file and proceeds to boot HP-UX using the default boot behavior specified in the *AUTO* file.

You are given ten seconds to interrupt the automatic booting of the default boot behavior. Typing a key during this ten-second period stops the HP-UX boot process and enables you to interact with the *HPUX.EFI* loader. To exit the loader (the *HPUX>* prompt) type *exit* to return to the EFI Shell.

To boot the HP-UX operating system, do not type anything during the ten-second period given for stopping at the *HPUX.EFI* loader.

```
Shell> map
Device mapping table
  fs0  : Acpi(000222F0,269)/Pci(0|0)/Scsi(Pun8,Lun0)/HD(Part1,Sig72550000)
  blk0 : Acpi(000222F0,269)/Pci(0|0)/Scsi(Pun8,Lun0)
  blk1 : Acpi(000222F0,269)/Pci(0|0)/Scsi(Pun8,Lun0)/HD(Part1,Sig72550000)
  blk2 : Acpi(000222F0,269)/Pci(0|0)/Scsi(Pun8,Lun0)/HD(Part2,Sig72550000)
  blk3 : Acpi(000222F0,2A8)/Pci(0|0)/Scsi(Pun8,Lun0)
  blk4 : Acpi(000222F0,2A8)/Pci(0|1)/Scsi(Pun2,Lun0)

Shell> fs0:

fs0:\> hpux

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HP-UX Boot Loader for IA64  Revision 1.723

Press Any Key to interrupt Autoboot
\efi\hpux\AUTO ==> boot vmunix
Seconds left till autoboot -   9
```

Step 6. Exit the console and service processor interfaces if finished using them.

To exit the EFI environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

Single-User Mode HP-UX Booting

You can boot HP-UX in single-user mode by using any one of the following procedures:

- "Single-User Mode HP-UX Booting [BCH Menu]" on page 128
- "Single-User Mode HP-UX Booting [EFI Shell]" on page 129

Single-User Mode HP-UX Booting [BCH Menu]

From the BCH Menu, you can boot HP-UX in single-user mode by issuing the ***BOOT*** command, stopping at the ISL interface, and issuing *hpux* loader options. The BCH Menu is available only on HP 9000 servers.

Step 1. Access the BCH Main Menu for the nPartition on which you want to boot HP-UX in single-user mode.

Login to the service processor (MP or GSP) and enter ***CO*** to access the Console list. Select the nPartition console. When accessing the console, confirm that you are at the BCH Main Menu (the *Main Menu: Enter command or menu>* prompt). If at a BCH menu other than the Main Menu, then enter ***MA*** to return to the BCH Main Menu.

Step 2. Boot the desired device using the ***BOOT*** command at the BCH interface, and specify that the nPartition stop at the ISL prompt prior to booting (reply ***y*** to the "stop at the ISL prompt" question).

```
Main Menu: Enter command or menu > BOOT 0/0/2/0/0.13

 BCH Directed Boot Path: 0/0/2/0/0.13


 Do you wish to stop at the ISL prompt prior to booting? (y/n) >> y

Initializing boot Device.

....

ISL Revision A.00.42  JUN 19, 1999

ISL>
```

Step 3. From the ISL prompt, issue the appropriate Secondary System Loader (*hpux*) command to boot the HP-UX kernel in the desired mode.

Use the *hpux* loader to specify the boot mode options and to specify which kernel (such as: /stand/vmunix) to boot on the nPartition.

- To boot HP-UX in single-user mode:

  ```
  ISL> hpux -is boot /stand/vmunix
  ```

- To boot HP-UX at the default run level:

  ```
  ISL> hpux boot /stand/vmunix
  ```

To exit the ISL prompt and return to the BCH interface, issue the ***EXIT*** command instead of specifying one of the above *hpux* loader commands.

Refer to the *hpux* (1M) manpage for a detailed list of *hpux* loader options.

Example A-1Example Single-User HP-UX Boot

```
ISL Revision A.00.42  JUN 19, 1999

ISL> hpux -is /stand/vmunix

Boot
: disk(0/0/2/0/0.13.0.0.0.0.0;0)/stand/vmunix
8241152 + 1736704 + 1402336 start 0x21a0e8

....

INIT: Overriding default level with level 's'

INIT: SINGLE USER MODE

INIT: Running /sbin/sh
#
```

Step 4. Exit the console and service processor interfaces if finished using them.

To exit the BCH environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

Single-User Mode HP-UX Booting [EFI Shell]

From the EFI Shell environment, boot in single-user mode by stopping the boot process at the *HPUX.EFI* interface (the HP-UX Boot Loader prompt, *HPUX*>) entering the *boot -is vmunix* command. The EFI Shell is available only on HP Integrity servers.

See "ACPI Configuration for HP-UX Must Be "default"" on page 122 for required configuration details.

Step 1. Access the EFI Shell environment for the nPartition on which you want to boot HP-UX in single-user mode.

Login to the service processor (MP or GSP) and enter *CO* to access the Console list. Select the nPartition console.

When accessing the console, confirm that you are at the EFI Boot Manager menu (the main EFI menu). If at another EFI menu, select the **Exit** option from the sub-menus until you return to the screen with the *EFI Boot Manager* heading.

From the EFI Boot Manager menu, select the **EFI Shell** menu option to access the EFI Shell environment.

Step 2. Access the EFI System Partition (*fsX:* where *X* is the filesystem number) for the device from which you want to boot HP-UX.

Step 3. When accessing the EFI System Partition for the desired boot device, issue the *HPUX* command to invoke the *\EFI\HPUX\HPUX.EFI* loader on the selected devive.

Step 4. Boot to the HP-UX Boot Loader prompt (*HPUX*>) by typing any key within the ten seconds given for interrupting the HP-UX boot process. You will use the *HPUX.EFI* loader to boot HP-UX in single-user mode in the next step.

After you type a key, the *HPUX.EFI* interface (the HP-UX Boot Loader prompt, *HPUX>*) is provided. For help using the *HPUX.EFI* loader, type the *help* command. To return to the EFI Shell, type *exit*.

```
fs0:\> hpux

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HP-UX Boot Loader for IA64  Revision 1.723

Press Any Key to interrupt Autoboot
\efi\hpux\AUTO ==> boot vmunix
Seconds left till autoboot -   9
```

[User Types A Key to Stop the HP-UX Boot Process and Access the HPUX.EFI Loader]

```
   Type 'help' for help

HPUX>
```

Step 5. At the *HPUX.EFI* interface (the HP-UX Boot Loader prompt, *HPUX>*) enter the *boot -is vmunix* command to boot HP-UX (the */stand/vmunix* kernel) in single-user (*-is*) mode.

```
HPUX> boot -is vmunix
> System Memory = 4063 MB
loading section 0
.................................................. (complete)
loading section 1
........ (complete)
loading symbol table
loading System Directory(boot.sys) to MFS
....
loading MFSFILES Directory(bootfs) to MFS
......
Launching /stand/vmunix
SIZE: Text:25953K + Data:3715K + BSS:3637K = Total:33306K

Console is on a Serial Device
Booting kernel...
```

Step 6. Exit the console and service processor interfaces if finished using them.

To exit the EFI environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

LVM-Maintenance Mode HP-UX Booting

You can boot HP-UX in LVM-maintenance mode by using any one of the following procedures:

- "LVM-Maintenance Mode HP-UX Booting [BCH Menu]" on page 131
- "LVM-Maintenance Mode HP-UX Booting [EFI Shell]" on page 131

LVM-Maintenance Mode HP-UX Booting [BCH Menu]

From the BCH Menu, you can boot HP-UX in LVM-maintenance mode by issuing the ***BOOT*** command, stopping at the ISL interface, and issuing *hpux* loader options. The BCH Menu is available only on HP 9000 servers.

Step 1. Access the BCH Main Menu for the nPartition on which you want to boot HP-UX in LVM-maintenance mode.

Login to the service processor (MP or GSP) and enter *CO* to access the Console list. Select the nPartition console. When accessing the console, confirm that you are at the BCH Main Menu (the *Main Menu: Enter command or menu>* prompt). If at a BCH menu other than the Main Menu, then enter *MA* to return to the BCH Main Menu.

Step 2. Boot the desired device using the ***BOOT*** command at the BCH interface, and specify that the nPartition stop at the ISL prompt prior to booting (reply ***y*** to the "stop at the ISL prompt" question).

Step 3. From the ISL prompt, issue the appropriate Secondary System Loader (*hpux*) command to boot the HP-UX kernel in the desired mode.

To boot HP-UX in LVM-maintenance mode:

ISL> ***hpux -lm boot /stand/vmunix***

Step 4. Exit the console and service processor interfaces if finished using them.

To exit the BCH environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

LVM-Maintenance Mode HP-UX Booting [EFI Shell]

From the EFI Shell environment, boot in LVM-maintenance mode by stopping the boot process at the *HPUX.EFI* interface (the HP-UX Boot Loader prompt, *HPUX>*) entering the *boot -lm vmunix* command. The EFI Shell is available only on HP Integrity servers.

See "ACPI Configuration for HP-UX Must Be "default"" on page 122 for required configuration details.

Step 1. Access the EFI Shell environment for the nPartition on which you want to boot HP-UX in LVM-maintenance mode.

Login to the service processor (MP or GSP) and enter *CO* to access the Console list. Select the nPartition console.

When accessing the console, confirm that you are at the EFI Boot Manager menu (the main EFI menu). If at another EFI menu, select the **Exit** option from the sub-menus until you return to the screen with the *EFI Boot Manager* heading.

From the EFI Boot Manager menu, select the **EFI Shell** menu option to access the EFI Shell environment.

Step 2. Access the EFI System Partition (*fsX:* where *X* is the filesystem number) for the device from which you want to boot HP-UX.

Step 3. When accessing the EFI System Partition for the desired boot device, issue the *HPUX* command to invoke the *\EFI\HPUX\HPUX.EFI* loader on the selected device.

Step 4. Type any key within the ten seconds given for interrupting the HP-UX boot process. This stops the boot process at the *HPUX.EFI* interface (the HP-UX Boot Loader prompt, *HPUX>*).

Step 5. At the *HPUX.EFI* interface, enter the ***boot -lm vmunix*** command to boot HP-UX (the */stand/vmunix* kernel) in LVM-maintenance (*-lm*) mode.

Step 6. Exit the console and service processor interfaces if finished using them.

To exit the EFI environment type **^B** (**Control-B**); this exits the nPartition console and returns to the service processor Main Menu. To exit the service processor, type *X* at the Main Menu.

Booting the Microsoft Windows Operating System

You can boot the Windows Server 2003 operating system on an HP Integrity server by using the EFI Boot Manager to select the appropriate Windows item from the boot options list.

See "Shutting Down Microsoft Windows" on page 141 for details on shutting down the Windows operating system.

CAUTION **ACPI Configuration for Windows Must Be "windows"**

On nPartition-capable HP Integrity servers, to boot the Windows operating system an nPartition must have its ACPI configuration value set to *windows*.

At the EFI Shell, enter the *acpiconfig* command with no arguments to list the current ACPI configuration. If the *acpiconfig* value is not set to *windows*, then Windows cannot boot; in this situation you must reconfigure *acpiconfig* or else booting will be interrupted with a panic when launching Windows.

To set the ACPI configuration for Windows: at the EFI Shell enter the *acpiconfig windows* command, and then enter the *reset* command for the nPartition to reboot with the proper (*windows*) configuration for Windows.

NOTE **Microsoft Windows Booting on HP Integrity Servers**

The recommended method for booting Windows is to use the EFI Boot Manager menu to select a Windows entry from the boot options list. Using the *ia64ldr.efi* Windows loader from the EFI Shell is not recommended.

Windows Booting

From the EFI Boot Manager menu, select an item from the boot options list to boot Windows using the selected boot option. The EFI Boot Manager is available only on HP Integrity servers.

See “ACPI Configuration for Windows Must Be “windows”” on page 133 for required configuration details.

Step 1. Access the EFI Boot Manager menu for the system on which you want to boot Windows.

Login to the management processor and enter *CO* to access the Console list. Select the nPartition console.

When accessing the console, confirm that you are at the EFI Boot Manager menu (the main EFI menu). If at another EFI menu, select the **Exit** option from the sub-menus until you return to the screen with the *EFI Boot Manager* heading.

Step 2. At the EFI Boot Manager menu, select an item from the boot options list.

Each item in the boot options list references a specific boot device and provides a specific set of boot options or arguments to be used when booting the device.

Step 3. Press **Return** or **Enter** to initiate booting using the selected boot option.

Step 4. Once Windows begins loading, wait for the Special Administration Console (SAC) to become available.

The SAC interface provides a text-based administration tool that is available from the nPartition console. For details see the SAC online help (type ***?*** at the *SAC>* prompt).

```
Loading.: Windows Server 2003, Datacenter
Starting: Windows Server 2003, Datacenter



                              Starting Windows...
********************************************************************************

Computer is booting, SAC started and initialized.

Use the "ch -?" command for information about using channels.
Use the "?" command for general help.

SAC>
```

Step 5. Exit the console and management processor interfaces if finished using them.

To exit the console environment type **^B** (**Control-B**); this exits the console and returns to the management processor Main menu. To exit the management processor, type *X* at the Main menu.

Booting the Red Hat Linux Operating System

You can boot the Red Hat Linux operating system on HP Integrity servers using either of the methods described in this section.

See "Shutting Down Linux" on page 143 for details on shutting down the Red Hat Linux operating system.

CAUTION **ACPI Configuration for Red Hat Linux 3 Must Be "single-pci-domain"**

On nPartition-capable HP Integrity servers, to boot the Red Hat Linux 3 operating system an nPartition must have its ACPI configuration value set to *single-pci-domain*.

At the EFI Shell, enter the *acpiconfig* command with no arguments to list the current ACPI configuration. If the *acpiconfig* value is not set to *single-pci-domain*, then Red Hat Linux could panic; in this situation you must reconfigure *acpiconfig* to eliminate any bus address conflicts and ensure all I/O slots have unique addresses.

To set the ACPI configuration for Red Hat Linux 3: at the EFI Shell enter the *acpiconfig single-pci-domain* command, and then enter the *reset* command for the nPartition to reboot with the proper (*single-pci-domain*) configuration for Red Hat Linux 3.

Use either of these methods to boot Red Hat Linux:

- Select a Red Hat Linux entry from the EFI Boot Manager menu.

  To load the Red Hat Linux operating system at the EFI Boot Manager menu, select its entry from the list of boot options.

  Selecting a Linux entry from the boot options list boots the operating system using *ELILO.EFI* loader and the *elilo.conf* file.

- Invoke the *ELILO.EFI* Linux loader from the EFI Shell.

  See the procedure "Red Hat Linux Operating System Booting from the EFI Shell" on page 136 for details.

  On a Red Hat Linux boot device EFI System Partition, the full paths to the loader and configuration files are:
  \EFI\redhat\elilo.efi
  \EFI\redhat\elilo.conf

  After selecting the filesystem for the boot device (for example, *fs0:*) you can invoke the Linux loader from the EFI Shell prompt by entering the full path for the *ELILO.EFI* loader.

By default the *ELILO.EFI* loader boots Linux using the kernel image and parameters specified by the default entry in the *elilo.conf* file on the EFI System Partition for the boot device.

To interact with the *ELILO.EFI* loader, interrupt the boot process (for example, type a space) at the *ELILO boot* prompt. To exit the *ELILO.EFI* loader use the *exit* command.

Red Hat Linux Operating System Booting from the EFI Shell

Use this procedure to boot Red Hat Linux from the EFI Shell.

See "ACPI Configuration for Red Hat Linux 3 Must Be "single-pci-domain"" on page 135 for required configuration details.

Step 1. Access the EFI Shell.

From the system console, select the **EFI Shell** entry from the EFI Boot Manager menu to access the shell.

Step 2. Access the EFI System Partition for the Red Hat Linux boot device.

Use the *map* EFI Shell command to list the filesystems (*fs0*, *fs1*, and so on) that are known and have been mapped.

To select a filesystem to use, enter its mapped name followed by a colon (*:*). For example, to operate with the boot device that is mapped as *fs3*, enter ***fs3:*** at the EFI Shell prompt.

Step 3. Enter ***ELILO*** at the EFI Shell command prompt to launch the *ELILO.EFI* loader.

If needed, you can specify the loader's full path by entering ***\EFI\redhat\elilo*** at the EFI Shell command prompt.

Step 4. Allow the *ELILO.EFI* loader to proceed with booting the Red Hat Linux kernel.

By default, the *ELILO.EFI* loader boots the kernel image and options specified by the default item in the *elilo.conf* file.

To interact with the *ELILO.EFI* loader, interrupt the boot process (for example, type a space) at the *ELILO boot* prompt. To exit the loader use the *exit* command.

Booting the SuSE Linux Enterprise Server Operating System

You can boot the SuSE Linux Enterprise Server 9 operating system on HP Integrity servers using either of the methods described in this section.

See "Shutting Down Linux" on page 143 for details on shutting down the SuSE Linux Enterprise Server operating system.

CAUTION **ACPI Configuration for SuSE Linux Enterprise Server Must Be "default"**

On nPartition-capable HP Integrity servers, to boot the SuSE Linux Enterprise Server operating system an nPartition must have its ACPI configuration value set to *default*.

At the EFI Shell, enter the *acpiconfig* command with no arguments to list the current ACPI configuration. If the *acpiconfig* value is not set to *default*, then SuSE Linux Enterprise Server could panic.

To set the ACPI configuration for SuSE Linux Enterprise Server: at the EFI Shell enter the *acpiconfig default* command, and then enter the *reset* command for the nPartition to reboot with the proper (*default*) configuration for SuSE Linux Enterprise Server.

Use either of these methods to boot SuSE Linux Enterprise Server:

- Select a SuSE Linux Enterprise Server entry from the EFI Boot Manager menu.

  To load the SuSE Linux Enterprise Server operating system at the EFI Boot Manager menu, select its entry from the list of boot options.

  Selecting a Linux entry from the boot options list boots the operating system using *ELILO.EFI* loader and the *elilo.conf* file.

- Invoke the *ELILO.EFI* Linux loader from the EFI Shell.

  See the procedure "SuSE Linux Enterprise Server Operating System Booting from the EFI Shell" on page 138 for details.

  On a SuSE Linux Enterprise Server boot device EFI System Partition, the full paths to the loader and configuration files are:
  \efi\SuSE\elilo.efi
  \efi\SuSE\elilo.conf

  After selecting the filesystem for the boot device (for example, *fs0:*) you can invoke the Linux loader from the EFI Shell prompt by entering the full path for the *ELILO.EFI* loader.

By default the *ELILO.EFI* loader boots Linux using the kernel image and parameters specified by the default entry in the *elilo.conf* file on the EFI System Partition for the boot device.

To interact with the *ELILO.EFI* loader, interrupt the boot process (for example, type a space) at the *ELILO boot* prompt. To exit the *ELILO.EFI* loader use the *exit* command.

SuSE Linux Enterprise Server Operating System Booting from the EFI Shell

Use this procedure to boot SuSE Linux Enterprise Server 9 from the EFI Shell.

See "ACPI Configuration for SuSE Linux Enterprise Server Must Be "default"" on page 137 for required configuration details.

Step 1. Access the EFI Shell.

From the system console, select the **EFI Shell** entry from the EFI Boot Manager menu to access the shell.

Step 2. Access the EFI System Partition for the SuSE Linux Enterprise Server boot device.

Use the *map* EFI Shell command to list the filesystems (*fs0*, *fs1*, and so on) that are known and have been mapped.

To select a filesystem to use, enter its mapped name followed by a colon (*:*). For example, to operate with the boot device that is mapped as *fs3*, enter ***fs3:*** at the EFI Shell prompt.

Step 3. Enter ***ELILO*** at the EFI Shell command prompt to launch the *ELILO.EFI* loader.

If needed, you can specify the loader's full path by entering ***\efi\SuSE\elilo*** at the EFI Shell command prompt.

Step 4. Allow the *ELILO.EFI* loader to proceed with booting the Red Hat Linux kernel.

By default, the *ELILO.EFI* loader boots the kernel image and options specified by the default item in the *elilo.conf* file.

To interact with the *ELILO.EFI* loader, interrupt the boot process (for example, type a space) at the *ELILO boot* prompt. To exit the loader use the *exit* command.

Shutting Down HP-UX

When HP-UX is running on an nPartition, you can shut down HP-UX using the *shutdown* command.

On nPartitions you have the following options when shutting down HP-UX:

- To shut down HP-UX and reboot an nPartition: ***shutdown -r***

  On nPartition-capable HP Integrity servers, the *shutdown -r* command is equivalent to the *shutdown -R* command.

- To shut down HP-UX and halt an nPartition: ***shutdown -h***

  On nPartition-capable HP Integrity servers, the *shutdown -h* command is equivalent to the *shutdown -R -H* command.

- To perform a reboot for reconfig of an nPartition: ***shutdown -R***

- To hold an nPartition at a shutdown for reconfig state: ***shutdown -R -H***

For details refer to the *shutdown* (1M) manpage.

NOTE On HP rx7620 servers and rx8620 servers you can configure the nPartition behavior when an OS is shutdown and halted (*shutdown -h* or *shutdown -R -H*). The two options are to have hardware power off when the OS is halted, or to have the nPartition be made inactive (all cells are in a boot-is-blocked state).

The normal behavior for HP-UX shutdown and halt is for the nPartition be made inactive.

For details see “ACPI “Softpowerdown” Configuration—rx7620 and rx8620 OS Shutdown Behavior” on page 120.

Shutting Down HP-UX [*/sbin/shutdown* command]

From the HP-UX command line, issue the *shutdown* command to shut down the HP-UX operating system.

Step 1. Login to HP-UX running on the nPartition that you want to shut down.

You can login to HP-UX on the nPartition either by directly connecting (with the *telnet* or *rlogin* commands) or by logging in to the service processor (GSP or MP) for the complex where it resides and using the Console menu to access the nPartition console.

Accessing the console through the service processor allows you to maintain console access to the nPartition after HP-UX has shut down.

Step 2. Issue the ***shutdown*** command with the appropriate command-line options.

The command-line options you specify dictate the way in which HP-UX is shut down, whether the nPartition is rebooted, and whether any nPartition configuration changes (adding or removing cells) take place.

Use the following list to choose an HP-UX shut down option for your nPartition.

- Shut down HP-UX and halt the nPartition.

On HP 9000 servers only, issue the ***shutdown -h*** command to shut down and halt the nPartition. This leaves the nPartition and all its cells in an active state after HP-UX shuts down and halts.

To reboot a halted nPartition you must reset the nPartition using the *RS* command at the GSP command menu.

On nPartition-capable HP Integrity servers, the *shutdown -h* command puts an nPartition into the shutdown for reconfig state; for details see the discussion of *shutdown -R -H* in this list.

- Shut down HP-UX and reboot the nPartition.

  Issue the ***shutdown -r*** command to shut down and reboot the nPartition.

  On nPartition-capable HP Integrity servers, the *shutdown -r* command is equivalent to the *shutdown -R* command.

- Perform a reboot for reconfig of the nPartition.

  Issue the HP-UX ***shutdown -R*** command to perform a reboot for reconfig.

  This shuts down HP-UX, reconfigures the nPartition if needed, and reboots the nPartition.

- Reboot the nPartition and put it in to the shutdown for reconfig state.

  Use the HP-UX ***shutdown -R -H*** command to hold the nPartition in the shutdown for reconfig state.

  This leaves the nPartition and all its cells in an inactive state (the nPartition can be reconfigured remotely), unless the normal behavior has been modified. For details on changing OS halt behavior on rx8620 and rx7620 servers see “ACPI “Softpowerdown” Configuration—rx7620 and rx8620 OS Shutdown Behavior” on page 120.

  To reboot the nPartition you must do so manually by using the *BO* command at the service processor Command menu.

If HP-UX is halted on the nPartition, thus not allowing you to use the *shutdown* command, you can reboot or reset the nPartition by issuing commands from the service processor Command menu.

Shutting Down Microsoft Windows

You can shut down the Windows operating system on HP Integrity servers using the **Start** menu or the *shutdown* command.

CAUTION Do not shut down Windows using Special Administration Console (SAC) *restart* or *shutdown* commands under normal circumstances.

Issuing *restart* or *shutdown* at the *SAC>* prompt causes the system to restart or shutdown immediately and can result in the loss of data.

Instead use the Windows **Start** menu or the *shutdown* command to shut down gracefully.

To shut down Windows use either of the following methods.

- Select **Shut Down** from the **Start** menu and choose either **Restart** or **Shut down** from the pull-down menu.

  The **Restart** menu item shuts down and restart the system. The **Shut down** menu item shuts down the system.

  You can use this method when using a graphical interface to the system.

- Issue the *shutdown* command from the Windows command line.

  See the procedure "Windows Shutdown from the Command Line" on page 141 for details.

  You can issue this command from a command prompt through the Special Administration Console (SAC) or from any other command line.

  The Windows *shutdown* command includes the following options:

/s	Shut down the system. This is the equivalent of **Start—>Shut Down, Shut down**.
/r	Shut down and restart the system. This is the equivalent of **Start—>Shut Down, Restart**.
/a	Abort a system shutdown.
/t xxx	Set the timeout period before shutdown to *xxx* seconds. The timeout period can be 0–600, with a default of 30.

  Refer to the *help shutdown* Windows command for details.

NOTE On HP rx8620 servers and HP rx7620 servers, performing a shutdown using *shutdown /s* (or the equivalent **Start—>Shut Down, Shut down**) powers off the server cabinet or powers off the cells and I/O chassis assigned to the nPartition. On HP rx8620 servers and HP rx7620 servers this behavior can be customized. For details see "ACPI "Softpowerdown" Configuration—rx7620 and rx8620 OS Shutdown Behavior" on page 120.

On HP Integrity Superdome servers, the Windows *shutdown /s* command shuts down the system and keeps all cells at BIB (the boot is blocked, inactive state).

Windows Shutdown from the Command Line

From the Windows command line, issue the ***shutdown*** command to shut down the operating system.

Step 1. Login to Windows running on the system that you want to shut down.

For example, access the system console and use the Windows SAC interface to start a command prompt, from which you can issue Windows commands to shut down the the system.

Step 2. Check to see whether any users are logged in.

Use the *query user* or *query session* command.

Step 3. Issue the *shutdown* command and the appropriate options to shut down the Windows Server 2003 on the system.

You have the following options when shutting down Windows:

- To shut down Windows and reboot:
  shutdown /r
  or select the **Start —> Shut Down** action and choose **Restart** from the pull-down menu.
- To shut down Windows and not reboot (either power down server hardware or put an nPartition into a shutdown for reconfig state):
  shutdown /s
  or select the **Start —> Shut Down** action and choose **Shut down** from the pull-down menu.
- To abort a shutdown (stop a shutdown that has been initiated): ***shutdown /a***

For example:

```
shutdown /r /t 60 /c "Shut down in one minute."
```

This command initiates a Windows system shutdown-and-reboot after a timeout period of 60 seconds. The */c* option specifies a message that is broadcast to any other users of the system.

Shutting Down Linux

Use the *shutdown* command to shut down the Red Hat Linux or the SuSE Linux Enterprise Server operating system.

The Red Hat Linux and SuSE Linux Enterprise Server *shutdown* command includes the following options:

-h Halt after shutdown.

On nPartition-capable HP Integrity servers, this will either power down server hardware or put the nPartition into a shutdown for reconfig state.

Use the *PE* command at the management processor Command menu to manually power on or power off server hardware, as needed.

-r Reboot after shutdown.

-c Cancel an already running shutdown.

time When to shut down. (Required.) *time* can be specified in any of the following ways:

- Absolute time in the format *hh*:*mm*, in which *hh* is the hour (one or two digits) and *mm* is the minute of the hour (two digits).
- Number of minutes to wait in the format *+m*, in which *m* is the number of minutes.
- *now* to immediately shut down; this is equivalent to using *+0* to wait zero minutes.

Refer to the *shutdown*(8) Linux manpage for details. Also refer to the Linux mapage for the *poweroff* command.

NOTE On HP rx7620 servers and rx8620 servers you can configure the nPartition behavior when an OS is shutdown and halted (*shutdown -h* or *poweroff*). The two options are to have hardware power off when the OS is halted, or to have the nPartition be made inactive (all cells are in a boot-is-blocked state).

The normal behavior for Red Hat Linux or SuSE Linux Enterprise Server shutdown and halt is for the nPartition be made inactive.

For details see “ACPI “Softpowerdown” Configuration—rx7620 and rx8620 OS Shutdown Behavior” on page 120.

Linux Shutdown

From the command line for Red Hat Linux or SuSE Linux Enterprise Server, issue the ***shutdown*** command to shut down the operating system.

Step 1. Login to Linux running on the system you want to shut down.

Step 2. Issue the ***shutdown*** command with the desired command-line options, and include the required *time* argument to specify when the operating shutdown is to occur.

For example, *shutdown -r +20* will shutdown and reboot the system starting in twenty minutes.

B SMS Event Information Tools

Installed on the PC SMS are three applications that can aid in troubleshooting. The Event Information Tools (EIT) include the following applications that are described in this section: Console Logger, Log Acquirer, Event Viewer.

Directory Paths

For Windows-Based PC SMS Only

Throughout this section, directory paths are called out starting with:

c:\Program Files\Hewlett-Packard\EIT

The implication is that the SMS files and programs maybe found by clicking the START button in the system tray using the follow this procedure:

Step 1. Click *START* in the system tray.

Step 2. Select *Programs*.

Step 3. Select *EIT*.

Step 4. Select desired file or program.

An alternate way to navigate is to use the Command Prompt window and enter the path directly. For example:

*c:\Program Files\Hewlett-Packard\EIT\opt\doc*s

Console Logger

The Management Processor (MP) console log captures the commands typed at the console, the response displayed, and alert messages generated by the system.

The Console Logger is a utility, running on the SMS, that retrieves the console information from the MP and places it on the SMS in a continuous log format. When the file reaches its user-defined size limit (the default size is approximately 2MB), it is archived and a new file is used. By archiving this information on the SMS, Root Cause Analysis (RCA) can be achieved much more quickly and remote failure diagnostics is improved.

The Console Logger works on Windows SMS systems. It can retrieve console log data from any hp Integrity SuperDome-compatible MP.

Preconfigured Login and Password

In order to run the Console Logger, a user name and password is required. The SMS is preconfigured at the factory to run as a Scheduled Task with the username “root” and the password “serialbus”.

Getting Started with the Console Logger

Before getting started using the Console Logger, the following configuration file must be modified:

HP-UX: /var/smstools/config/conslogd.cfg

Windows: C:\Program Files\Hewlett-Packard\EIT\var\config\conslogd.cfg

The Console Logger has been preconfigured at the factory to run as a "Scheduled Task" with system host, IP, and login information.

First Time Task

To use the Console Logger for the first time, perform the following steps:

1. Run the utility to generate an encrypted password.
2. Modify the configuration file, *conslogd.cfg*.
3. Set up Console Logger as a "Scheduled Task" in Windows.
4. Start Console Logger.

The following sections describe these procedures in detail.

Un-Installation Information

If an installation of the Console Logger has been completed and a reinstall becomes necessary, perform an uninstall prior to beginning the reinstall. In order to uninstall, bring up the Windows Task Manager Processes list, select the process *conslogd.exe*, and terminate it beforehand. Because that process is initiated at startup, it should stay terminated and allow un-installation or reinstallation over existing program.

The uninstaller is located at:

C:\Program Files\Hewlett-Packard\EIT\opt\bin\uninstall

After initial installation, there are no entries in the default Console Logger configuration file (*conslogd.cfg*). An MP entry to the configuration file must be made. If the MP entry to the configuration file is not made, an error message is written into the file:

No MP entry can be found in C:\Program Files\Hewlett-Packard\EIT\var\config\conslogd.cfg

Running the Utility to Generate An Encrypted Password

Follow these steps to generate an encrypted password for the configuration file:

Step 1. Navigate to the utility directory:

HP-UX: ***cd /opt/bin***

Windows: cd ***c:\Program Files\Hewlett-Packard\EIT\opt\bin***

Step 2. Execute the utility be entering:

encryptpasswd.exe

Step 3. When prompted, enter the unencrypted MP password:

Enter the Password: ***pass4mp***

The utility then displays the encrypted version of the password you entered (the following encrypted password is merely an example of an encrypted password; the encrypted password may be different):

```
Encrypted Password: h123456789abcdef
```

Step 4. Copy the Encrypted Password ("*h123456789abcdef*" in the example) into the configuration file, under the heading "*MP Information*," in place of the "*<encrypted password>*" field entry.

Modifying the Configuration File

Follow these steps to modify the configuration file:

Step 1. Use Notepad to open the following file:

```
C:\Program Files\Hewlett-Packard\EIT\var\config\conslogd.cfg
```

IMPORTANT Do not use Microsoft® Word

The following rules must be observed:

1. An equal sign must be placed between an entry name and its value; spaces and other characters are not acceptable.
2. All line entries must be left-justified. That is, they must start at the first cursor position in the line (there can be no leading spaces or characters).
3. In MP entries, spaces are not allowed between field values. The only permitted inter-field value characters allowed are commas, and there must be no spaces either before or after them.

Step 2. Modify the one required field: MP Information. Enter the appropriate data:

- System name
- IP address
- User name
- Encrypted password generated in Step 3 of the section "Running the Utility to Generate An Encrypted Password.".

NOTE The system name should include the domain name. Also, the maximum number of entries for this field is 18.

Step 3. Modify any other fields in the configuration field as desired and appropriate.

NOTE See the configuration file for instructions and suggestions on how to choose appropriate values and to identify default values.

Example B-1 Changing the Polling Cycle

To change the polling cycle, for instance, remove the comment code (#) for the line "#POLLING_CYCLE=5" in the sample configuration file below. Then replace 5 with the desired value. To accept the default value for the polling cycle (in this case 5), then do nothing to this section of the configuration file; leave the statement "#POLLING_CYCLE=5" as it is.

Step 4. Save the Notepad file being careful to not change the file name

Starting Console Logger

To start the Console Logger, perform the following:

For HP-UX

To start the console logger in the HP-UX operating environment, execute the following command:

```
/sbin/init.d/conslogd_rc start
```

To stop the console logger in the HP-UX operating environment, execute the following command:

```
/sbin/init.d/conslogd_rc stop
```

Click 'Run' on the pull-down menu.

For Windows

In the Windows operating environment, Console Logger will run as a service, and will start automatically once the EIT software bundle is installed.

To start or stop the Console Logger in Windows, perform the following:

Step 1. Select Control Panel

Step 2. Select Administrative Tools

Step 3. Select Services

Step 4. Select Logger

Step 5. Right click and select Stop/Start.

Routine Maintenance

There are three instances where routine maintenance needs to be performed on the Console Logger:

1. When a user changes the Microsoft® password, the Scheduled Task password needs to be changed.
2. When the user changes the Scheduled Task, user name and password needs to be changed.
3. When the user name changes the MP password, the utility for generating an encrypted password, *encryptpasswd.exe*, needS to be re-run to generate an encrypted version of the new MP password, which can then be copied into the configuration file.

For the first two of these instances, see the following section, "Changing User/Password for Scheduled Tasks of the Console Logger" on page 150 for the steps to follow to perform these changes. For the last instance, see "Running the Utility to Generate An Encrypted Password" on page 148.

Changing User/Password for Scheduled Tasks of the Console Logger

To change the user and/or the password for Scheduled Tasks of the Console Logger, perform the following procedure:

Step 1. Double click on the *Scheduled Task* icon.

Step 2. Click on the *conslogd* icon.

Step 3. *Select Properties.*

Step 4. To change only the Scheduled Tasks password, click *Set password* and enter the appropriate password.

Step 5. To change the user name and the password, enter the appropriate string in the "Run As (new user name)" field; then click *Set password* and enter the appropriate password.

Step 6. Enter *OK*.

Troubleshooting the Console Logger

Only one Console Logger should be running at any time. Running more than one copy of the Console Logger at a time will result in erratic and unpredictable behavior.

To ensure that only one copy of the Console Logger is running at a time, always start/stop the Console Logger from the *Scheduled Tasks* icon, described above. If starting or stopping the Console Logger from DOS, more than one copy of the Console Logger may be running at one time.

To ensure that you only have one copy of the Console Logger running at one time, perform these steps:

Go to the Windows Task Manager.

Step 1. Click on Processes.

Step 2. Click on Image Name to sort all processes.

Step 3. Determine how many *conslogd.exe* processes are currently running; there should only be one.

Step 4. If is more than one *conslogd.exe* process is running, select one by clicking on it.

Step 5. Click on End Process.

Step 6. Repeat Step 4.and Step 5. until there is only one *conslogd.exe* process is still running.

Troubleshooting Tips The following are general troubleshooting tips when using the Console Logger:

Follow the instructions immediately above to ensure that only one copy of the *conslogd.exe* process is running.

If *conslogd.exe* is not running, it is probably due to the fact the Windows logon/password used to run the Console Logger was changed, but the Scheduled Tasks logon/password was not changed at the same time. See the instructions under "Changing User/Password for Scheduled Tasks of the Console Logger" on page 150 to resolve this issue.

If *conslogd.exe* was running and has stopped running, then the "Scheduled Task Completed" checkbox may be checked. For correct operation, it should be unchecked.

Go to the *C:\var\smstools\log* directory to examine the contents of *conslogd.log* or *conslogd.log.old*, the archived copy of *conslogd.log*. The file *conslogd.log* contains the Console Logger log status and error messages. For example, it would tell why *telnet* to an MP failed (due to incorrect IP address, invalid username/password, etc.)

The configuration file can be edited "on the fly." If not, do the following:

1. Stop the Console Logger.
2. Edit the configuration file.

3. Restart the Console Logger.

Configuring the Console Logger

A configuration file issued to contain information such as MP IP address, user name, password, and so on. The following is the sample configuration file:

```
##########################################################
#
# Configuration file for Console Logger
#
#
##########################################################

##########################################################
#
# WARNING!
#
#1) An equal sign must be placed between an entry name
#and its value: spaces and other characters are not
#acceptable.
#2) All line entries must be left-justified, that is,
#they must start at the first cursor position in the line
#(there can be no leading spaces or characters).
#3) In MP entries, spaces are not allowed between field
#values; the only permitted inter-field value characters
#allowed are commas, and there must be no spaces either
#before or after them.
#
# WARNING!
#
##########################################################

##########################################################
# MP information.
#
# MP=<system name>,<IP address>,<user name>,<encrypted password>
# Please note <system name> must include domain name.
# This is a only requried field. Max number of entries
# is 18.
##########################################################
#MP=mp1.cup.hp.com,15.23.48.0,user1,secret1
#MP=mp2.cup.hp.com,16.23.48.0,user2,secret2

##########################################################
#
# POLLING_CYCLE
# Every POLLING_CYCLE minutes, the console logger connects
# to each MP specified in the above list. It must poll
# each MP console log often enough to prevent console
# data from being lost due to the log becoming full. However,
# it must not poll so often that it becomes a burden on the
# MP, preventing it from being able to perform it's other
# duties in a timely manner. We recommend setting POLLING_CYCLE
# to 5 minutes.
#
# This is an optional field. The default is 5 minutes.
##########################################################
#POLLING_CYCLE=5

##########################################################
#
# MAX_NUM_ARCH_FILE
#
# Maximum number of archived files per partition per MP.
# For example MAX_NUM_ARCH_FILE is 8, mp1.cup.hp.com_1_1.dat
# is the most recent archived console log file for mp1.cup.hp.com
# partition 1 and  mp1.cup.hp.com_1_8.dat is the oldest.
#
```

```
# This is an optional field. The default is 10.
############################################################
#MAX_NUM_ARCH_FILE=8

############################################################
#
# Maximum console log data file size.
#
# This is an optional field. There are two sets of default
# value. If no MAX_LOG_DATA_FILE_SIZE entry specified, we
# use default value 2,000,000 (about 2MB); if this entry
# has value less than 100,000 (about 100KB), we use default
# minimum value which is 100,000.
############################################################
#MAX_LOG_DATA_FILE_SIZE=1000000

############################################################
#
# Console Logger program log file Size
#
# This is an optional field. There are two sets of default
# values. If no MAX_PROG_LOG_FILE_SIZE entry is specified, we
# use a default value of 1,000,000 (about 1MB); if this entry
# has a value of less than 100,000 (about 100KB), we use
# a default minimum value of 100,000.
############################################################
#MAX_PROG_LOG_FILE_SIZE=500000
```

Console Logger User Interface

User Interface for HP-UX

Console Logger Inputs:

The configuration file for Console Logger is located at:

/var/smstools/config/conslogd.cfg

Console Logger Outputs

The location of the Console log file is:

/var/smstools/log/MP_Name}_{Partition Number}.txt

The location of the status log file for the Console Logger error/program is:

/var/smstools/log/conslogd.log

The location of the archived status log file for the Console Logger error/program is:

/var/smstools/log/conslogd.log.old

User Interface for Windows

Console Logger Inputs

The configuration file for Console Logger is located at:

C:\Program Files\Hewlett-Packard\EIT\var\config\conslogd.cfg

Console Logger Outputs

The location of the Console log file is:

C:\Program Files\Hewlett-Packard\EIT\var\log\{MP_Name}_{Partition}.txt

For example: mp1.hp.com_1.txt (console log file for MP mp1 and partition 1).

NOTE If the console displayed control characters, the file C:\Program Files\Hewlett-Packard\EIT\var\log\{MP_Name}_{Partition}.txt will contain control characters,

---

The location of the status log file for the Console Logger error/program is:

C:\Program Files\Hewlett-Packard\EIT\var\log\conslogd.log

The location of the archived status log file for the Console Logger error/program is:

C:\Program Files\Hewlett-Packard\EIT\var\log\conslogd.log.old

Response to Inputs

Error Handling

The error messages and program status are logged to

HP-UX: */var/smstools/conslogd.log*

Windows: *C:\Program Files\Hewlett-Packard\EIT\var\log\conslogd.log*

The following are sample records from this file:

```
Begin - Wed Jun 18 10:43:48 2003
Obtain console log data for all partitions of mp3.cup.hp.com (16.23.
48.0) - Thu Jun 12 13:11:55 2003
Telnet Error - Error - Can not open Telnet session
Problem: problem connecting to "16.23.48.0", port 23: Unknown error
end Timestamp
Begin timestamp
MAX_NUM_ARCH_FILE does not exist- using default: 10
POLLING_CYCLE does not exist- using default: 5
MAX_LOG_DATA_FILE_SIZE does not exist- using default: 2000000
MAX_PROG_LOG_FILE_SIZE does not exist- using default: 1000000
end timestamp
Begin timestamp
No MP entry can be found in C:\var\smstools\config\conslogd.cfg


end timestamp
Begin timestamp
No valid MP entry can be found in C:\var\smstools\config\conslogd.cfg
end timestamp
Begin timestamp
MAX_NUM_ARCH_FILE value invalid- using default: 10

Invalid ip address in MP entry - 16.23A.48.0
End - Wed Jun 18 10:44:22 2003
```

Troubleshooting with console Logger

Only one Console Logger should be running at any time. Running more than one copy of the Console Logger at a time will result in erratic and unpredictable behavior.

NOTE To ensure that only one copy of the Console Logger is running at a time, always start and/or stop the Console Logger from Administrative Tools. If starting and/or stopping the Console Logger from DOS, more than one copy of the Console Logger running at one time.

To ensure that you only have one copy of the Console Logger running at one time:

1. Go to the Windows Task Manager.
2. Click on Processes.
3. Click on Image Name to sort all processes.
4. Determine how many *conslogd.exe* processes are currently running: there should only be one.
5. If there is more than one *conslogd.exe* process running, select one by clicking on it.
6. Click on End Process.
7. Repeat 5 and 6 until there is only one *conslogd.exe* process still running.

Troubleshooting Tips

The following are general troubleshooting tips when using the Console Logger:

Follow the instructions immediately above to ensure that only one copy of the *conslogd.exe* process is running.

Go to the

C:\Program Files\Hewlett-Packard\EIT\var\log

and examine the contents of *conslogd.log* or *conslogd.log.old* (the archived copy of *conslogd.log*).

conslogd.log contains the Console Logger log status and error messages. For example, it can indicate the telnet to an MP failed (due to incorrect IP address, invalid username/password, and so on).

The configuration file should be capable of being edited on the fly. If not, perform the following:

1. Stop the Console Logger.
2. Edit the configuration file.
3. Restart the Console Logger.

IPMI Log Acquirer

The IPMI Log Acquirer is part of Event Information Tools (EIT). The IPMI Log Acquirer captures and saves large stores of IPMI logs from the memory-limited GSP. The Event Viewer, which is a part of EIT, analyzes the captured logs and displays the system event information. IPMI Log acquirer does not interpret the data. It only distinguishes the types of data: FPL and FRUID.

IPMI Log Acquirer acquires FPL and FRUID logs from remote IPMI systems via IPMI over LAN. The remote OS does not need to be running to obtain these logs as long as the BMC can be contacted via the LAN.

A simple configuration file configures the IPMI Log Acquirer to fetch IPMI logs from remote systems. The log files are stored as local files on disk. Log file trimming is performed by switching to a new log file when the current file size reaches a threshold limit, and by keeping only a limited number of history files for each remote system. The file size threshold and the number of history files are configurable. Each log file name uniquely identifies the type of log and the host from which the logs are captured.

Functionality and Features

The IPMI Log Acquirer has the following functionality and features:

- Acquires and logs IPMI FPL and FRUID records in a continuous loop from remote hp Integrity SuperDome systems.
- Identifies the type of log, and the system it is collected from, in log filenames.
- Logs on to remote machines by way of a LAN interface using IPMI commands to the MP encapsulated in RMCP (Remote Management Control Protocol) packets datagrams.
- Runs on both HP-UX and Windows systems qualified to be an hp Integrity Superdome or hp 9000 Superdome SMS.
- Maintains FPL logs by file switching using file size threshold and keeping a finite number of logs for each file type.
- Uses a configuration file to determine which remote systems to obtain logs from and to set values (file size thresholds, number of log files) to maintain log files.
- Checks for configuration file modifications.
- Gathers platform identification information.
- Gathers all FRUID data from the remote system in one go and writes to one FRUID log file for that remote system.
- Generates the FRUID information if the FRUID log file is not present.

Determining the Version of Log Acquirer

HP-UX: `/sbin/init.d/ipmiacqd_rc version` prints the version of IPMI Log Acquirer.

Windows: Select the properties of

`C:\Program Files\Hewlett-Packard\EIT\opt\bin\daemons\ipmiacqd.exe`.

The Description field contains the version information.

Getting Started with the Log Acquirer

Log Acquirer runs as a service and starts automatically once the SMS software bundle is installed.

Alternatively, on HP-UX systems it is started manually by entering:

To start Log Acquirer, enter the following:

HP-UX:

$ /sbin/init.d/ipmiacqd_rc start

Windows:

C:\>net start IPMI Log Acquirer

To stop Log Acquirer, enter the following:

HP-UX:

$ /sbin/init.d/ipmiacqd_rc stop

Windows:

C:\>net stop IPMI Log Acquirer

On Windows systems:

Step 1. From the Start menu, select Control Panel

Step 2. Select Administrative Tools.

Step 3. Select Services.

Step 4. Select IPMI log acquirer.

Step 5. Right click and select stop/start.

After initial installation of the product, there are no remote system entries in the configuration file that is located at *C:\Program Files\Hewlett-Packard\EIT\var\config\ipmiacqd.cfg* on Windows and */var/smstools/config/ipmiacqd.cfg* on HP-UX. The following are the instructions for adding remote system entries:

Step 1. Use an ASCII text editor to update the configuration file:

C:\Program Files\Hewlett-Packard\EIT\var\config\ipmiacqd.cfg on Windows and

/var/smstools/config/ipmiacqd.cfg on HP-UX.

Step 2. Run the password encryption utility which is located at

C:\Program Files\Hewlett-Packard\EIT\opt\bin\encryptpasswd.exe on Windows and

/opt/smstools/bin/encryptpasswd on HP-UX.

The encrypted password can be obtained by following this procedure:

1. Run the password encryption utility:
2. When prompted, enter the unencrypted IPMI password.

3. Copy the displayed encrypted password into the *<encrypted-password>* field, mentioned above.

Example B-2 HP-UX System With a Password For *mp1* as *passwd132*

```
$ /opt/smstools/bin/encryptpasswd
Enter the Password: <type passwd123>
Encrypted Password: a1b2c3d4e5f6g7f8g9h
Do you encrypt again (Y/N) : n
$
```

The following line needs to be added to the configuration file:

REMOTE_SYSTEM_PASSWD mp1 a1b2c3d4e5f6g7f8g9h

Example B-3 Windows System With a Password For *mp1* as *passwd123*

```
$c:\Program Files\Hewlett-Packard\EIT\opt\bin\encryptpasswd
Enter the Password: <type passwd123>
Encrypted Password: a1b2c3d4e5f6g7f8g9h
Do you encrypt again (Y/N) : n
$
```

The following line needs to be added to the configuration file:

REMOTE_SYSTEM_PASSWD mp1 a1b2c3d4e5f6g7f8g9h

Uninstallation of Log Acquirer

Before uninstallation, please make sure that the log acquirer is stopped as mentioned in “Getting Started with the Log Acquirer” on page 157.

User Interface

The HP-UX implementation of the Acquirer is started by an *rc* script. For Windows, the Acquirer is started like a Windows service.

The user interaction with the Acquirer takes place through its configuration file.

The FPL records are written to log files. The sizes and number of FPL log files are limited by the parameters specified in the configuration file. File switching will take place when the size of a log file reaches its limit. In contrast, all FRUID data is written to one log file. For both FPL and FRUID, log files are maintained per host. The names of the log files indicates the host and the type of log from that host.

Errors for all hosts are logged into error files. The sizes and number of the error files are limited by the parameters specified in the configuration file. File switching takes place when the size of an error file reaches its limit.

The log files and error files are binary files with similar data for both HP-UX and Windows.

Syntax and Semantics of User Interface

Log Acquirer Configuration File

The locations for the configuration file are:

HP-UX: 7*/var/smstools/config/ipmiacqd.cfg*

Windows: *c:\Program Files\Hewlett-Packard\EIT\var\config\ipmiacqd.cfg*

The following is a sample configuration file:

```
#############################################################
# This is the configuration file for IPMI Log acquirer # # All characters in
# a line after '#' will be treated as # comments.
#############################################################

# FPL log file size threshold (in bytes)
FPL_FILE_SIZE_THRESHOLD 200000

# Error log file size threshold (in bytes)
ERROR_FILE_SIZE_THRESHOLD 100000

# Maximum number of FPL logs per remote host
FPL_NUM_FILES_TO_HOLD 22

# Number of error logs that can present
ERROR_NUM_FILES_TO_HOLD 5

# The minimum interval between the two successive requests
# to the same remote system (in sec)
POLLING_INTERVAL 10

# The number of times the same IPMI request will be send to
# remote system (in sec)
RETRY_LIMIT 4

# The interval which the log acquirer has to wait for the
# response from the remote system (in sec)
TIMEOUT 7

# Remote MP from which FPL/FRUID logs to be acquired
# The format is as follows
#REMOTE_SYSTEM_PASSWD <MP name> <encrypted-passwd> REMOTE_SYSTEM_PASSWD mp1 a1b2c3d4e5f6g7f8g9h
```

The following default values for the parameters are used if they are not present in the configuration file:

Table B-1 Log Acquirer Default Configuration File Values

Parameter	Value
FPL_FILE_SIZE_THRESHOLD	2000000
ERROR_FILE_SIZE_THRESHOLD	1000000
FPL_NUM_FILES_TO_HOLD	22
ERROR_NUM_FILES_TO_HOLD	5
POLLING_INTERVAL	10
RETRY_LIMIT	4
TIMEOUT	3

FPL Log File Locations

FPL log files can be found at the these locations:

HP-UX: */var/smstools/log/ipmifpl_{host name}_{n}.log*

Windows: *C:\Program Files\Hewlett-Packard\EIT\var\log\ ipmifpl_{host name}_{n}.log*

where *n* is a number between 0 to (FPL_NUM_FILES_TO_HOLD - 1).

For example, the third FPL log file for *mp1.hp.com* is *ipmifpl_mp1.hp.com_2.log*.

FRUID Data File Locations

FRUID data files can be found at the these locations:

HP-UX: */var/smstools/log/ipmifruid_{host name}.log*

Windows: *C:\Program Files\Hewlett-Packard\EIT\var\log\ipmifpl_{host name}_{n}.log*

For example, the FRUID log file for *mp1.hp.com* is *ipmifruid_mp1.hp.com.log*.

Error Handling

The Log Acquirer writes errors to error log files that reside in the path:

HP-UX: */var/smstools/log/ipmiacqd_error_{n}.log*

Windows: *C:\Program Files\Hewlett-ackard\EIT\var\log\ipmiacqd_error_{n}.log*

where *n* is a number between 0 to (*ERROR_NUM_FILES_TO_HOLD* - 1).

For example, the first error log file is *ipmiacqd_error_0.log*.

Two types of error messages are logged:

1. one at the time of parsing the configuration file
2. one at the time of log acquisition.

A typical error message for a parsing error message will be of the form:

Time:Date:Parsing Config File:Error Message

For example,

11-35-37:6/19/2003:Parsing config file:The value for FPL_NUM_FILES_TO_HOLD starting with non-digit, default value used.

A typical error message format for the errors that occur during log acquisition will be of the form:

Time:Date:Hostname:Error Message

For example,

11-40-56: 11/20/2002/:mp1.hp.com:Activate session timed out.

IPMI Event Viewer

The IPMI Event Viewer is part of Event Information Tools (EIT) and displays low-level system log information. Event information is generated on the Management Processor (MP), then transferred and archived on the Windows or HP-UX Support Management Station (SMS) by the log acquirer. Event information is also logged on the local system by the ia64_corehw monitor. These tools combined allow collection and review of event data that is much larger than possible in the memory-limited MP.

Both a command line and web-based graphical user interface (GUI) are included in the design for Windows and HP-UX. The interfaces will mimic the log viewer available from the MP, so that new field training will not be necessary.

A customer engineer (CE) could use this tool to determine if any components have failed or are not functioning correctly. A system administrator could use this tool to determine what processors in a given cell within a given cabinet are currently configured and active.

Product Environment

The Event Viewer runs on the SMS and is designed to decode events generated on all HP-UX systems that use IPMI for their low level events.

The SMS is a machine used not only as a console to the systems in which it monitors, but is also as the repository for special tools created for and used by the field for upgrading firmware, running scan tests, and configuring the system. The HP customer engineer will execute the viewer on SMS systems to view a trace of events to help in troubleshooting a problem or potential problem. This tool will be another in the suite that will take over the responsibilities of the *cclog* viewer as well as the chassis code log viewer in earlier PA7xxx-based SuperDome systems. The SMS machine can be Windows-based or HP-UX server-based.

A key to making the new Event ID codes work is a new database and dictionary. Event ID information is created in the database by the engineers who define the events. Data from the database is exported to a file on the SMS where a local dictionary library is used to associate event ID's from the event logs to entries in the database.

Getting Started with the Event Viewer

To ensure that the Event Viewer functions properly, perform the following setup steps after installing the SMS software bundle:

Step 1. Use an ASCII text editor to update the configuration file:

C:\Program Files\Hewlett-Packard\EIT\var\config\ipmiacqd.cfg on Windows and

/var/smstools/config/ipmiacqd.cfg on HP-UX.

Step 2. Run the password encryption utility which is located at

C:\Program Files\Hewlett-Packard\EIT\opt\bin\encryptpasswd.exe on Windows and

/opt/smstools/bin/encryptpasswd on HP-UX.

The encrypted password can be obtained by following this procedure:

1. Run the password encryption utility:
2. When prompted, enter the unencrypted IPMI password.

3. Copy the displayed encrypted password into the *<encrypted-password>* field, mentioned above.

Example B-4 HP-UX System With a Password For *mp1* as *passwd132*

```
$ /opt/smstools/bin/encryptpasswd
Enter the Password: <type passwd123>
Encrypted Password: a1b2c3d4e5f6g7f8g9h
Do you encrypt again (Y/N) : n
$
```

The following line needs to be added to the configuration file:

REMOTE_SYSTEM_PASSWD mp1 a1b2c3d4e5f6g7f8g9h

Example B-5 Windows System With a Password For *mp1* as *passwd123*

```
$c:\Program Files\Hewlett-Packard\EIT\opt\bin\encryptpasswd
Enter the Password: <type passwd123>
Encrypted Password: a1b2c3d4e5f6g7f8g9h
Do you encrypt again (Y/N) : n
$
```

The following line needs to be added to the configuration file:

REMOTE_SYSTEM_PASSWD mp1 a1b2c3d4e5f6g7f8g9h

Step 3. Add any of the following entries in the configuration file:

REMOTE_SYSTEM_PASSWD <BMC name/IP address> <encrypted-password>MP=<BMC Name>,<BMC IP Address>,<IPMI User Name>,<Encrypted Passwd>

NOTE If the IPMI user name is not NULL, then only the second format should be used.

Step 4. Use the ASCII text editor to add the SMS tools directory to the system path (optional).

Open:

C:*autoexec.bat* (or run *sysedit* from the Run menu)

Append to the command path by adding the following entry:

PATH=C:\Program Files\Hewlett-Packard\EIT\opt\bin;%PATH%

Step 5. Verify the *eventdef* file is installed.

The *eventdef* file is used to decode raw E0 events from IPMI log files and is required for the IPMI Event Viewer to function properly. By default, the file is installed with the software bundle.

The file must be in the

C:\Program Files\Hewlett-Packard\EIT\var\data

directory for PC SMS and

/var/smstools/data directory for HP-UX SMS.

NOTE If the *eventdef* file is not installed, install it from the EIT software bundle.

Step 6. Shutdown and restart your system.

1. Close all applications.
2. From the Start menu, select Shut Down.
3. Select “Restart.” The logging daemons will begin to transfer event data to the directory *C:\Program Files\Hewlett-Packard\EIT\var\log* upon startup.

Step 7. Display event data.

1. From the start menu, select *Run*.
2. Enter ***cmd*** and click OK to initiate a command shell.
3. From the prompt in the command shell, change to the log file directory by entering

   C:\Program Files\Hewlett-Packard\EIT\var\log

   for Windows systems or

   cd /EIT/var/log

   on HP-UX systems.
4. Execute *slview -f <logfile>*.

NOTE The *slview -f <logfile>* command does not necessarily have to be run from the log directory: it can be run from any directory, as long as the path to the log directory is specified.

The Event Viewer then decodes the Forward Progress Log (FPL) event logs that are created and stored to disk by the Log Acquirer.

The FPL log files reside in the path:

HP-UX: */var/smstools/log/ipmifpl_{REMOTE_SYSTEM}_{n}.log*

Windows: *C:\Program Files\Hewlett-Packard\EIT\var\log\ipmifpl_{REMOTE_SYSTEM}_{n}.log*

where 'n' is a number between 0 to *FPL_NUM_FILES_TO_HOLD - 1*.

The *FPL_NUM_FILES_TO_HOLD <num>* parameter is the maximum number of FPL log files that IPMI log acquirer can create per remote host. For example, the third FPL log file for *mp1.hp.com* will be *ipmifpl_mp1.hp.com_2.log*.

IPMI Event Viewer Command Line Interface

The command line interface options are designed to be as similar as possible to the options for event log viewing on the MP

The command line Event Viewer installation directory from the EIT bundle on

HP-UX:

\opt\smstools\bin and on

Windows:

C:\Program Files\Hewlett-Packard\EIT\opt\bin.

Syntax and Semantics of the User Interface

Syntax for the command line command *slview*:

Usage:

- *slview -d [-k|-r|-t|-v [logentry] [-a level|-c cell] [-p platform] -f <file>*
- *slview -v logentry [-p platform] -f <file>*
- *slview [-k|-r|-t|-v] [-a level|-c cell] [-p platform] -f <file>*
- *slview [-k|-r|-t|-v] -x <hexevent> [-p platform]*

Options:

- *-d*—Dumps a report of the entire log file without pausing and sends to standard out. By default, the report is paged.
- *-x* <*hexevent*>—Decodes a specific event by specifying the value as two 64-bit numbers.
- *k|-r|-t|-v logentry*—Reports the format by keyword:

  k—default
  r—raw hex
  t—text
  v—verbose problem/cause/action data

  The tool allows the user to go between formats in an interactive session. The choices are mutually exclusive on the command line.

  The verbose option, *v*, also allows specification of a single logged event. Log entry numbers are shown in the keyword, text, and verbose log file format as follows:

- *a level|-c cell*

  Filters options for cell number, *c*, or by alert level, *a*. Valid alert levels include the following:

  0: *Minor Forward Progress*
  1: *Major Forward Progress*
  2: *Informational*
  3: *Warning*
  5: *Critical*
  7: *Fatal*

  For example, selecting an alert level threshold of 3 selects all events with alert levels of 3 or higher.

- *-p platform*—Type of machine from which the logs were generated.

The logfile is scanned for this information if not entered. Valid platforms are defined in the event dictionary library and include the following:

1. hpworkstationzx6000
2. hpworkstationzx2000
3. hpworkstationzx1600
4. hpworkstationgx4000
5. hpserverrx5670
6. hpserverrx5630
7. hpserverrx2600
8. hpserverrx1600
9. hpserverrx4640
10. HPSERVERRX4640
11. superdomeserver16000
12. superdomeserver32000
13. superdomeserver64000
14. hpsuperdomeserverSD16A
15. hpsuperdomeserverSD32A
16. hpsuperdomeserverSD64A
17. hpserverrx8620
18. hpserverrx8610
19. hpserverrx7620
20. hpserverrx7610
21. NECserveru32000
22. hitachiserverha8500
23. IntelMPServer
24. hpserverrx1600
25. hpservercx2600

- *-f logfile*—FPL event file name on the SMS transferred by the log acquirer to the *C:\var\smstools\log* directory must be specified.

Command Menu

The following is an example of Command Menu usage:

```
Welcome to the Forward Progress Log (FPL) Viewer

Use '?' for help, 'q' to exit, or <cr> to display events

The following navigation commands are available:
D: Dump log starting at current block for capture and analysis
F: Display first (oldest) block
L: Display last (newest) block
J: Jump to specified entry and display previous block
```

```
+: Display next (forward in time) block
-: Display previous (backward in time) block
<cr>: Repeat previous +/- command
?: Display help
q: Exit viewer

The following event format options are available:
K: Keyword
R: Raw hex
T: Text
V: Verbose

The following event filter options are available:
A: Alert level
C: Cell
U: Unfiltered

SL (<cr>,+,-,?,D,F,L,J,K,R,T,V,A,C,U,q) > q
```

Report Format

This section shows an example of each of the formats available, by keyword, *k*, raw hex, *r*, text, *t*, or verbose PCA data, *v*.

Keyword

```
23 SFW 0,2,0 0 0x04000a1020e00000 0x00ffff02ffffff94 BOOT_SYNC_CELLS_START
24 SFW 0,2,0 0 0x030008e320e00000 0x0000000000000004 BOOT_GET_CONFIG_SET
25 SFW 0,2,0 0 0x04000a4f20e00000 0x00ffff02ffffff94 BOOT_CELL_RENDEZVOUSING
26 SFW 0,2,0 0 0x030009a520e00000 0x0000000023c34600 BOOT_PD_RENDEZ_DELAY
27 SFW 0,2,0 0 0x0400085720e00000 0x00ffff02ffffff94 BOOT_CONFIG_SET_RENDEZ
28 SFW 0,2,0 0 0x04000a4e20e00000 0x00ffff02ffffff94 BOOT_CELL_RENDEZVOUSED
29 SFW 0,2,0 0 0x0300084020e00000 0x000000000001e8480 BOOT_CELL_SYNC_DELAY
30 SFW 0,2,0 0 0x0300083a20e00000 0x0000000000000004 BOOT_CELL_LOCAL_RENDEZ_SET
31 SFW 0,2,0 0 0x0300084020e00000 0x000000000001e8480 BOOT_CELL_SYNC_DELAY
32 SFW 0,2,0 0 0x030009c920e00000 0x0000000000000004 BOOT_RENDEZ_SET_CREATED
```

Raw Hex

```
0x0200086420e00000 0x0000000000000105
0x0200086020e00000 0x0000000000000000
0x0200086220e00000 0x0000000000000010
0x0200086120e00000 0x0000000000000000
0x0200086320e00000 0x000000002cb41780
0x030008e020e00000 0x0000000000000004
0x030008e120e00000 0x0000000000000000
0x040009be20e00000 0x00ffff02ffffff94
0x040009a120e00000 0x00ffff02ffffff94
0x3480083720e00000 0x000000000002000c
```

Text

```
Log Entry  44:
Alert Level 3:  Non-Critical
Keyword: HP-UX_DUMP_WRITE_ERROR
OS dump, error writing image area to disk (E055)
Logged by:  HP-UX cabinet 0, slot 0, cpu 0
FRU Physical Location:   0x000000ffff07ff83
FRU Source          =  8(I/O device)
Source Detail       =  3(local bus adapter)
Cabinet Location    =  0
Card Cage Location  =  0
Backplane Location  =  0
```

```
I/O Slot Number     =  7
0x0400035500e00000 0x000000ffff07ff83

Log Entry  45:
Alert Level 1:  Major Forward Progress
Keyword: HP-UX_HEX_RUN_CODE
OS legacy PA hex run code (Fxxx)
Logged by:  HP-UX cabinet 0, slot 0, cpu 0
Legacy PA HEX Chassis Code = 0xcf02f
0x3f00033a00e00000 0x00000000000cf02f
```

Verbose

```
Log Entry  314:
Alert Level 3:  Non-Critical
Keyword: BOOT_ROM_REV_TO_FIT_REV_WARNING
Rom revision not equal to FIT revision
Logged by:  PA System Firmware PDC cabinet 0, slot 0, cpu 0
E0 Event Timestamp: Wed Feb 26 18:22:46 2003
0x6b00025900e01760 0x010000003e5d7676
Cause: A ROM Rev and FIT Rev do not match.
Action: Update ROM, if problem persists contact your HP representative for support.

Log Entry  315:
Alert Level 0:  Minor Forward Progress
Keyword: BOOT_SCR_TEST_START
Scratch RAM test
Logged by:  PA System Firmware PDC cabinet 0, slot 0, cpu 0
Data:  0x0000005600e00000 0x0000000000000000
Cause/Action: Forward progress, no action required
```

Error Handling

If the platform type cannot be determined by a scan of the log file, the user is prompted to enter the value.

In the command line interface, submission of the incorrect type of file, missing files, etc. are handled as syntax errors. If a specified input or output file cannot be opened, both the Windows and HP-UX versions generate an error message and the viewer terminates.

Messages

The following messages result in the Event Viewer exiting with an error:

- “Error: Unable to open event log file.”

  Indicates the event log could not be opened.

- “Error: Unable to open configuration file.”

  Indicates the configuration file could not be opened.

- “Error: Unable to access database data.”

  Indicates the database file could not be opened.

If known, the reason for the failure will be displayed in the message: for example., “file not found.”

IPMI Event Viewer Graphical User Interface

Initially, the GUI presents the Selection Criteria web page, which contains a “View Events” button. Once the selection criteria have been made and the “View Events” button is clicked, a summary web page is presented in “keyword” format if a log file is specified, or a detail web page is presented if a hex event word pair is specified.

See the documentation supplied with the GUI for detailed instructions on running it.

C Management Processor Commands

This Appendix summarizes the Management Processor commands. Notice that in the examples herein, MP is used as the command prompt. The term Guardian Service Processor has been changed to Management Processor, but some code already written uses the old term.

MP Command: AR

AR - Automatic partition Restart Configuration

- Access level—Administrator
- Scope—partition

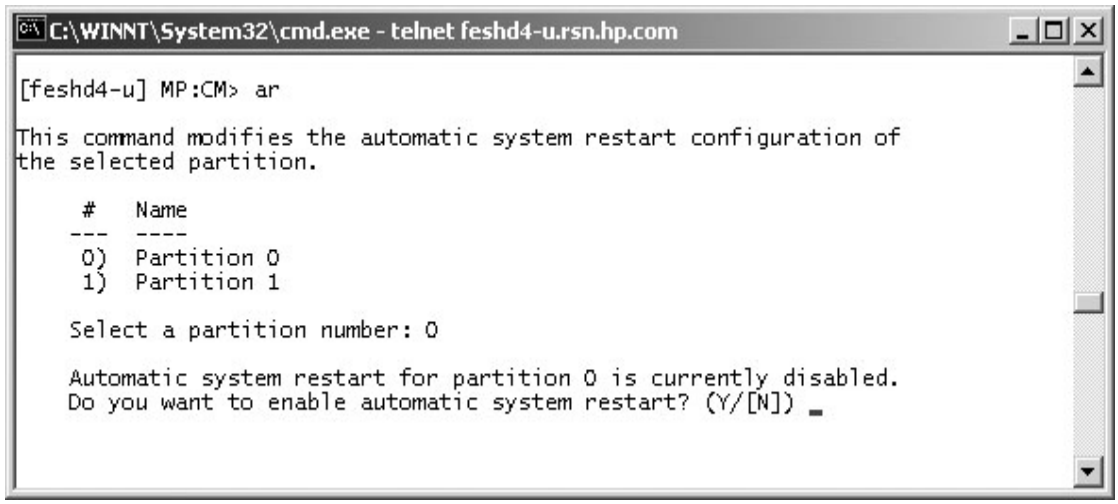
This command allows the operator to set the conditions and actions of the Automatic System Restart (ASR) feature. In the context of this command, system is synonymous with partition. The MP detects configured events and takes appropriate action, allowing a partition to reboot automatically without user intervention. By default, when it is enabled, ASR is performed on a chassis code with an alert level of 13. MP produces chassis codes when a timeout, started by an entity running on a partition, pops before the entity disables it.

ASR may be configured for several specific alert level values (e.g., alert level 12 and alert level 13). Using partition status, the MP can differentiate between time-outs due to normal system shutdown or system failures.

If there is an active session opened with the partition through the session path, the MP interrupts the session.

If the session was activated through an SE command, the MP Main Menu appears at the session client. System sessions opened through the console path are closed by the system.

Example C-1 AR Command



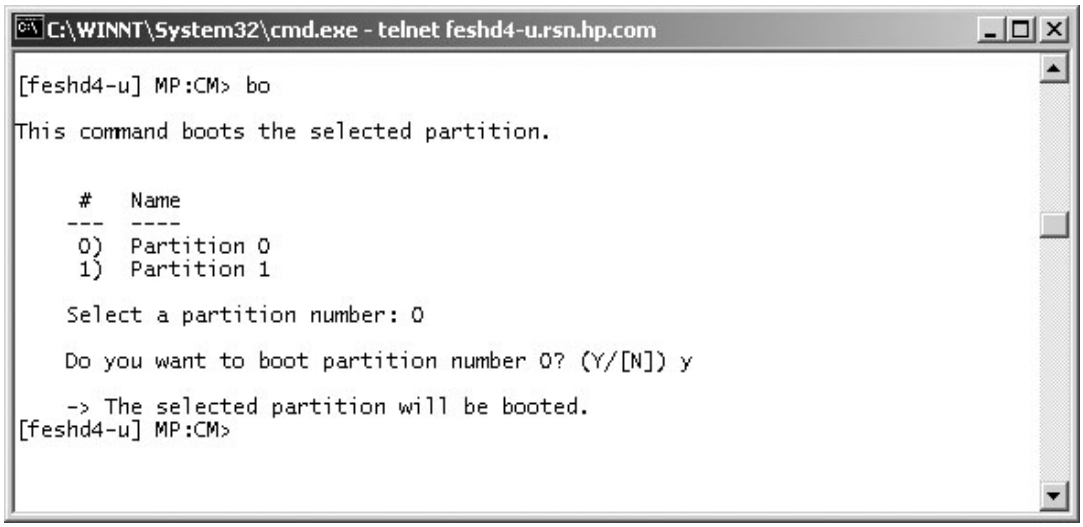
MP Command: BO

BO - Boot partition

- Access level—Single PD user
- Scope—partition

This command boots the specified partition. It ensures that all the cells assigned to the target partition have valid complex profiles and then releases Boot-Is-Blocked (BIB).

Example C-2 BO command



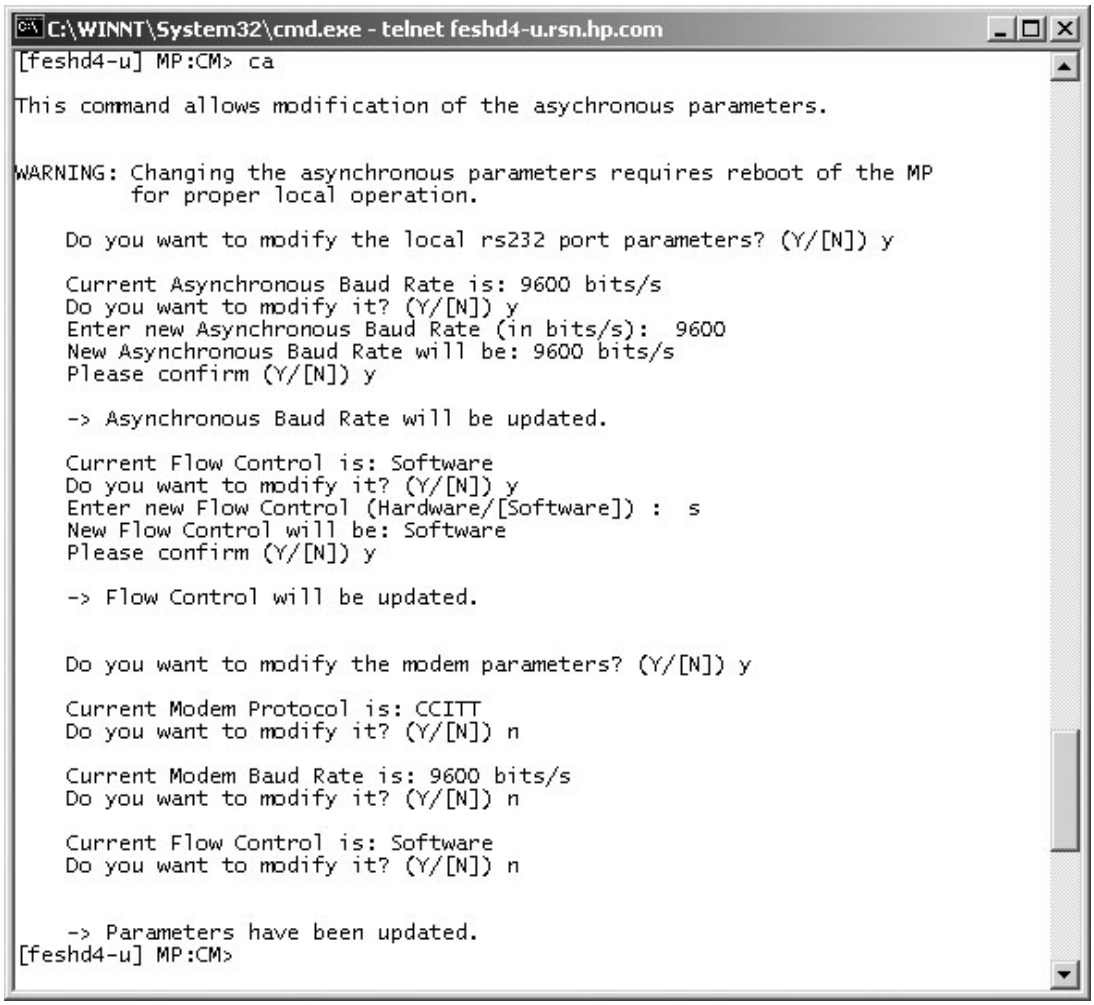
MP Command: CA

CA - Configure Asynchronous & Modem Parameters

- Access level—Operator
- Scope—Complex

This command allows the operator to configure the local and remote console ports. The parameters that can be configured are the baud rate, flow control, and modem type.

Example C-3 CA Command



MP Command: CC

CC - Complex Configuration

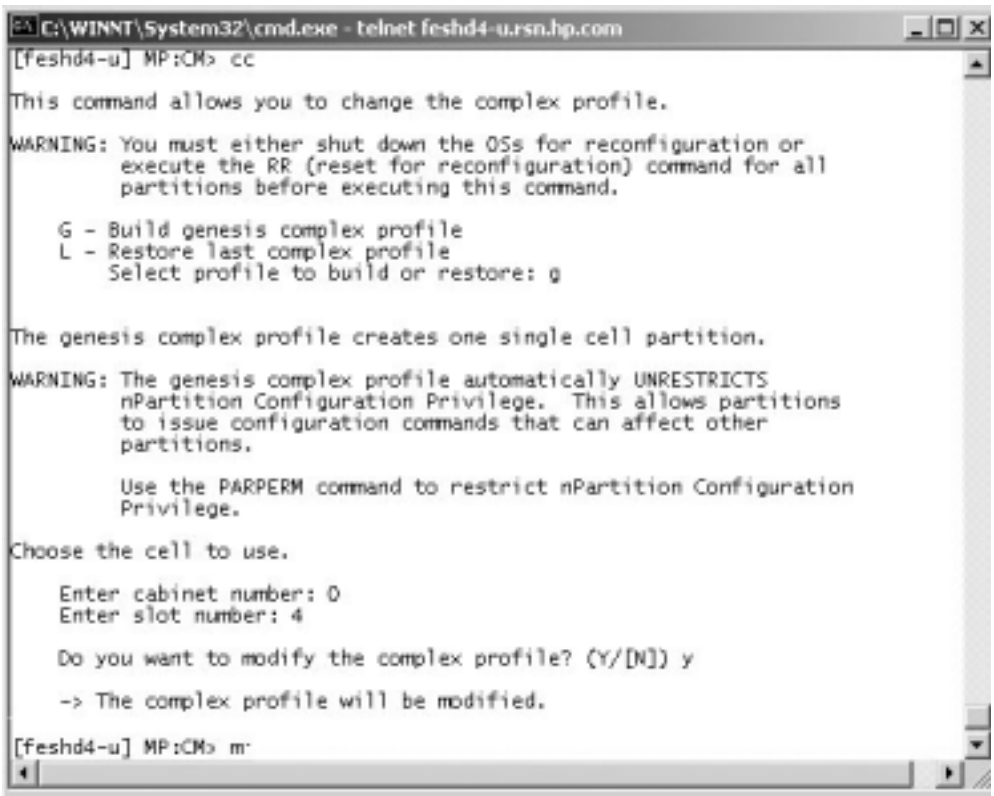
- Access level—Administrator
- Scope—Complex

This command performs an initial out of the box complex configuration. The system can be configured as either a single (user specified) cell in partition 0 (the genesis complex profile) or the last profile can be restored. The state of the complex prior to command execution has no bearing on the changes to the configuration. The user is responsible for ensuring that all other partitions are shut down before using this command. The use of the ID command could be required following the creation of the genesis complex profile. If the genesis profile is selected, then all remaining cells will be assigned to the free cell list.

NOTE This command does not boot any partitions. The user must boot the desired partition(s) using the BO command.

NOTE The best choice of cell to use in the genesis complex profile is one that has a bootable device attached.

Example C-4 CC Command



MP Command: CP

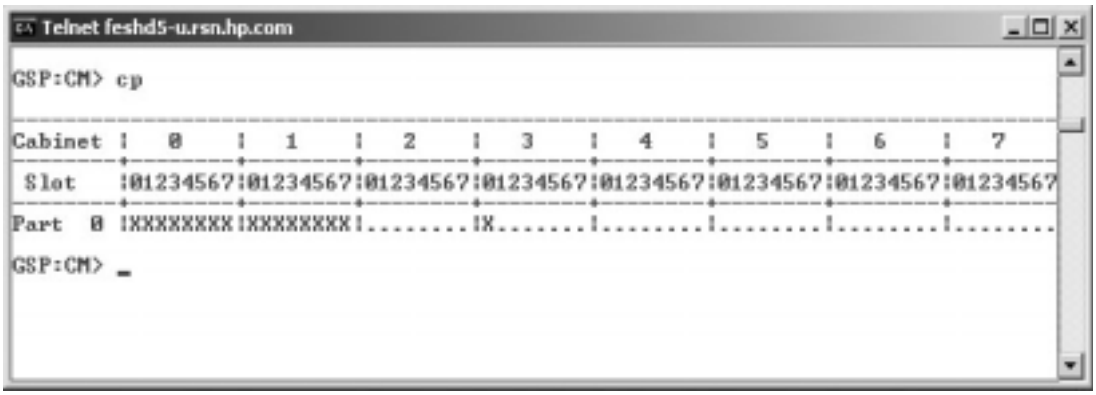
CP - Cells Assigned by Partition

- Access Level - Single Partition User
- Scope - Complex

The *cp* command displays a table of cells assigned to partitions and arranged by cabinets.

This is for display only, no configuration is possible with this command.

Example C-5 CP Command



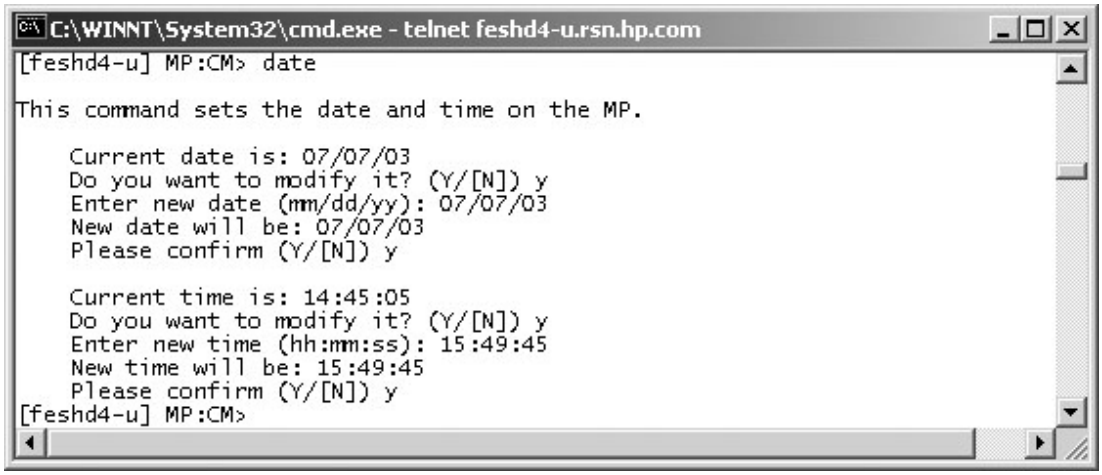
MP Command: DATE

DATE Command - Set Date and Time.

- Access level—Administrator
- Scope—Complex

This command changes the value of the real time clock chip on the MP.

Example C-6 DATE



MP Command: DC

DC - Default Configuration

- Access level—Administratrix
- Scope—Complex

This command resets some or all of the configuration parameters to their default values.

The clock setting is not effected by the DC command.

The example below shows the various parameters and their defaults.

Example C-7 DC Command

```
C:\WINNT\System32\cmd.exe - telnet feshd4-u.rsn.hp.com
[feshd4-u] MP:CM> dc

This command allows you to reset parameters to their default settings.

Parameter                  Current Configuration     Default Configuration


MANAGEMENT PROCESSOR:
  Command Timeout          3                         3

ASYNCHRONOUS:
  Baud Rate                9600                      9600
  Flow Control             Software(xon/xoff)        Software(xon/xoff)

MP SECURITY:
  Login TimeOut            1                         1
  Login Retries            3                         3
  Flow Control Timeout     5                         5

LAN:
  Customer LAN IP Address  15.99.49.133              192.168.1.1
  Customer LAN Host Name   feshd4-u                  gsp0
  Customer LAN Subnet Mask 255.255.248.0             255.255.255.0
  Customer LAN Gateway     15.99.49.254              192.168.1.1

  Private LAN IP Address   192.168.2.14              192.168.2.10
  Private LAN Host Name    priv-04                   priv-00
  Private LAN Subnet Mask  255.255.255.0             255.255.255.0
  Private LAN Gateway      192.168.2.10              192.168.2.10

MANUFACTURING:
  Manufacturing Mode       DISABLED                  DISABLED

MODEM:
  Modem Enable             ENABLED                   ENABLED
  Modem Protocol           CCITT                     CCITT
  Modem Baud Rate          9600                      9600
  Flow Control             Software(xon/xoff)        Software(xon/xoff)

ASR (Automatic System Restart):
  ASR Enabled/Disabled        Partitions             Default is
                                       1    1        all paritions
                           0....5....0....5          disabled
                           DDDDDDDDDDDDDDDD

    Do you wish to reset ALL parameters to their defaults? (Y/[N]) n
```

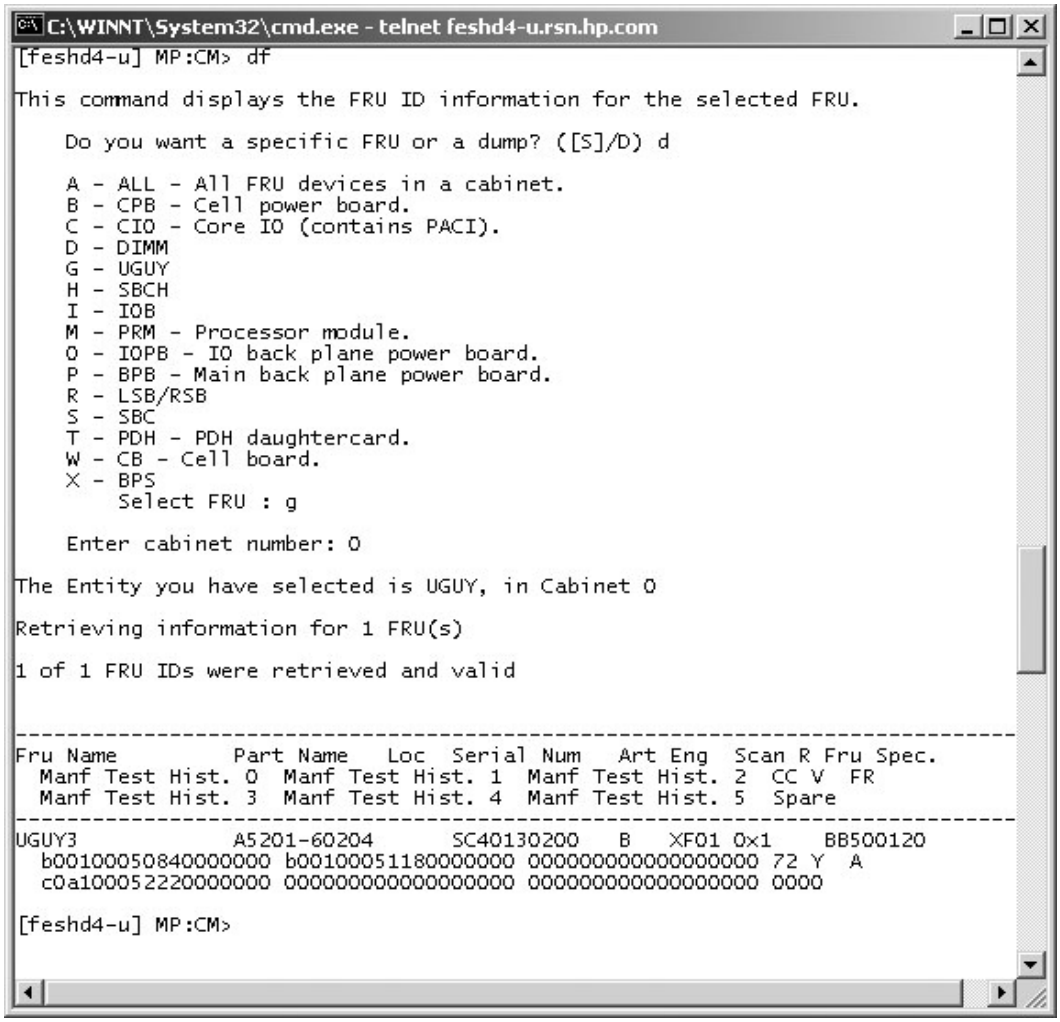
MP Command: DF

DF - Display FRUID

- Access level—Single Partition User
- Scope—Complex

This command displays the FRUID data of the specified FRU. FRU information for the SBC, BPS, and processors are "constructed," because they do not have a FRU ID EEPROM. Because of this fact, the list of FRUs is different than the list presented in the WF command.

Example C-8 DF Command



MP Command: DI

DI - Disconnect Remote or LAN Console

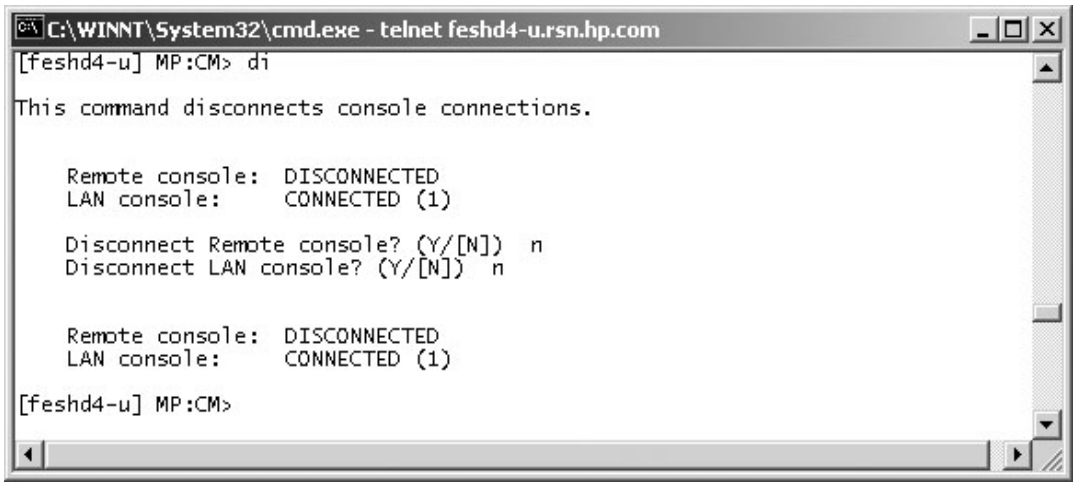
- Access level—Operator
- Scope—Complex

This command initiates separate remote console or LAN console disconnect sequences. For the remote console, the modem control lines are de-asserted, forcing the modem to hang up the telephone line. For the LAN console, the telnet connection is closed.

If the console being disconnected has an access mode of single connection (see ER command), then it is disabled, otherwise it remains enabled after the connection has been dropped.

The number after the LAN console status is the number of LAN connections.

Example C-9 DI Command



MP Command: HE

HE - Help Menu

- Scope—N/A
- Access level—Single PD user

This command displays a list of all MP commands available to the level of the MP access (Administrator, Operator, or Single PD user). The commands that are available in manufacturing mode will be displayed if the MP is in manufacturing mode.

In the following example, the MP is in manufacturing mode and as a result, the manufacturing commands are shown in the last screen. This example is from a pre-release version of MP firmware.

Example C-10 HE Command

MP Command: ID

ID - Configure Complex Identification

- Access level—Operator
- Scope—Complex

This command configures the complex identification information. The complex identification information includes the following:

- model number
- model string
- complex serial number
- complex system name
- original product number
- current product number
- enterprise ID and diagnostic license

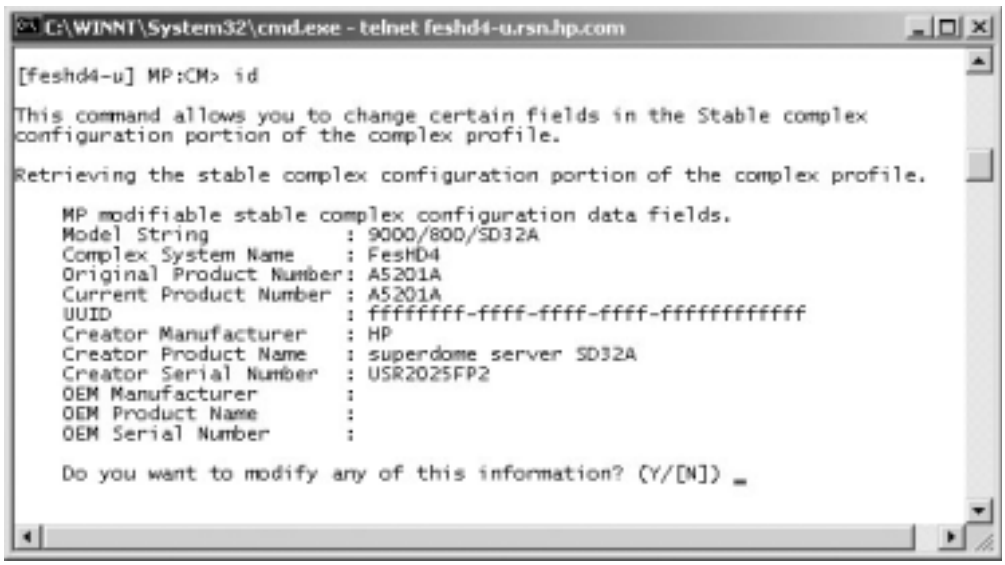
This command is similar to the SSCONFIG command in ODE.

The command is protected by an authentication mechanism. The MP generates a lock word, and the user must supply an authentication key which is dependent on the lock word. A fixed timeout of one minute protects against this command being entered inadvertently. This command has no effect if the timeout pops or the wrong authentication key is entered.

This command is inoperable until the MP has determined the golden complex profile.

When the machine is powered on for the first time, the CC command must be issued before the ID command can be used.

Example C-11 ID Command



MP Command: IT

IT - View / Configure Inactivity Timeout Parameters

- Access level—Operator
- Scope—Complex

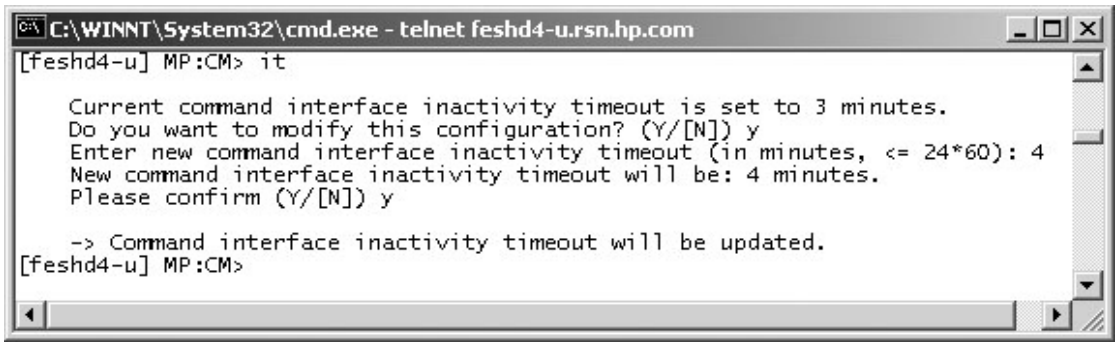
This command sets the two inactivity time-outs.

The session inactivity timeout prevents a session to a partition to be inadvertently left opened, preventing other users to log onto a partition using this path. If the system session is hung or if the partition OS is hung, the IT command also prevents a session from being locked indefinitely i

The second timeout is a MP-Handler command timeout. This prevents a user from not completing a command and preventing other users from using the MP-Handler.

Neither timeout can be deactivated.

Example C-12 IT Command



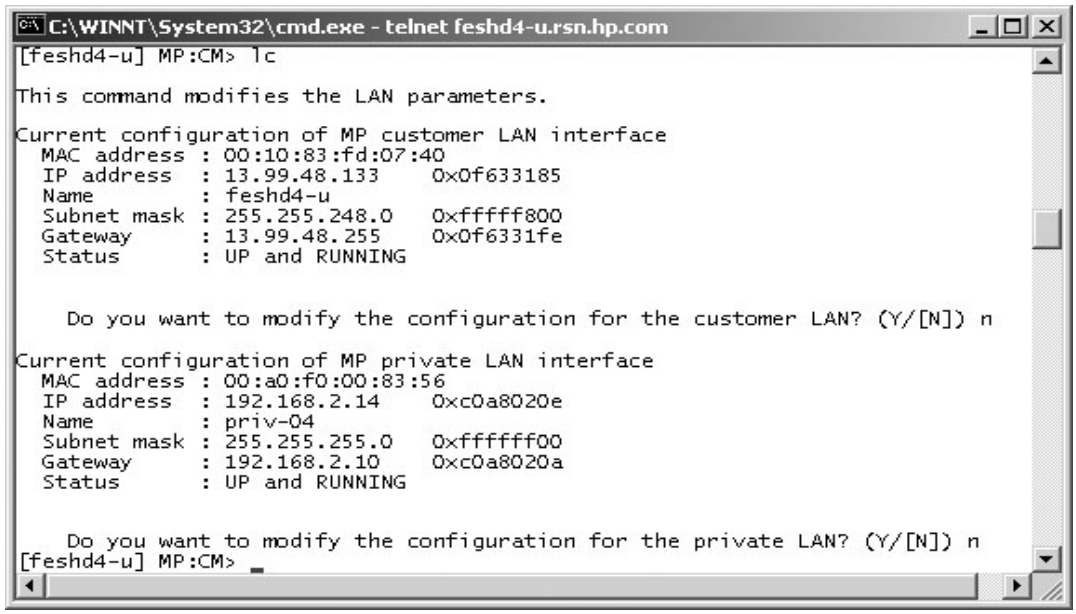
MP Command: LC

LC - LAN Configuration

- Access level—Administrator
- Scope—Complex

This command displays and modifies the LAN configurations. The IP address, Hostname, Subnet mask, and Gateway address can be modified with this command.

Example C-13 LC Command



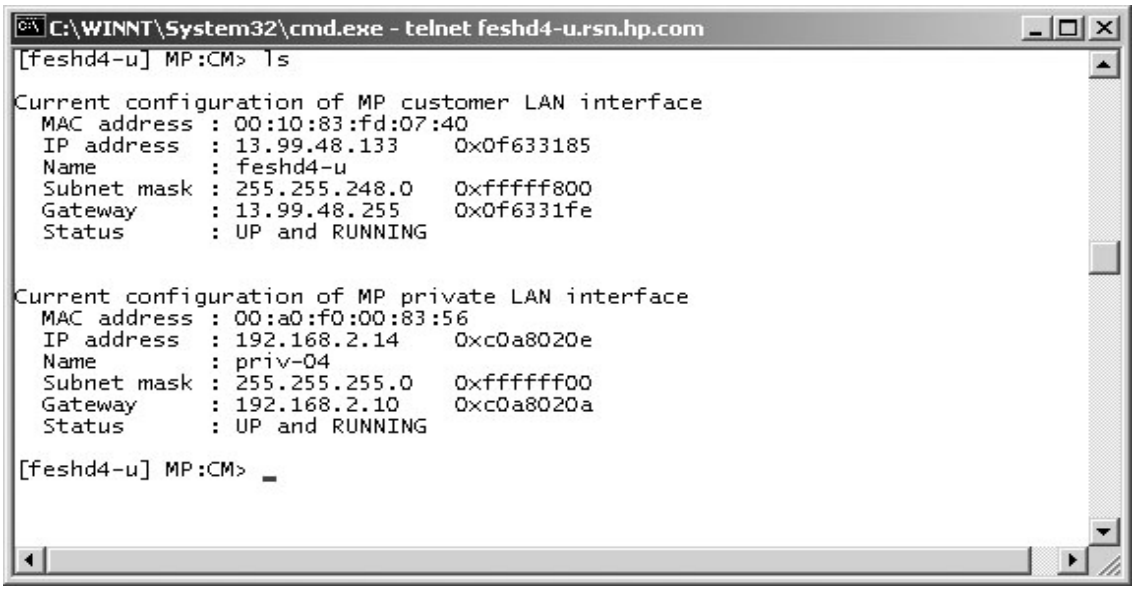
MP Command: LS

LS - LAN Status

- Access level—Single Partition User
- Scope—Complex

This command displays all parameters and current connection status of the LAN interface.

Example C-14 LS Command



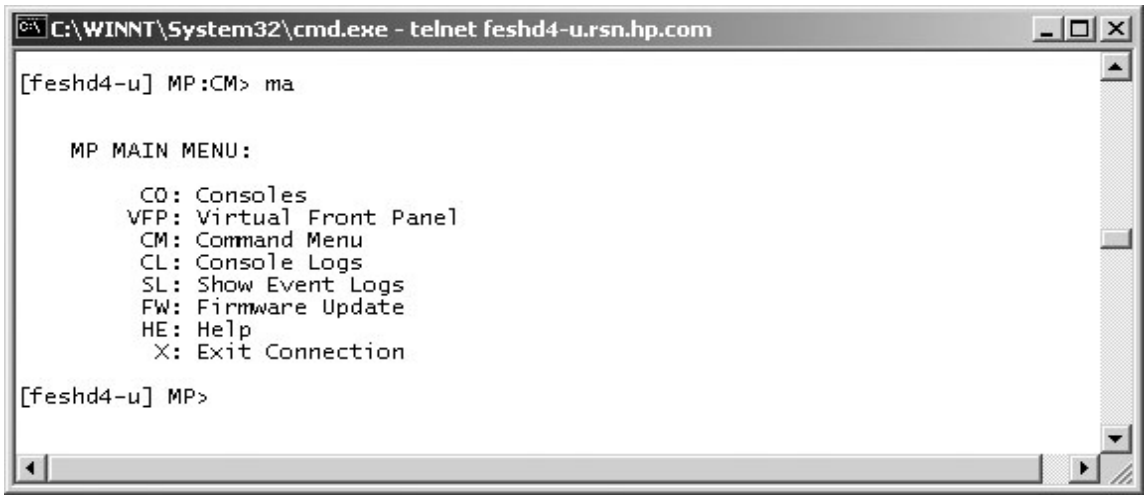
MP Command: MA

MA - Main Menu

- Access level—Single Partition User
- Scope—N/A

The command takes the specific user from the Command menu and returns the user to the main menu. Only the user that enters the command is returned to his private main menu.

Example C-15 MP Main Menu



MP Command: MFG

MFG- Enter Manufacturing Mode

- Access level—Administrator
- Scope—Complex

NOTE This command is reserved for HP manufacturing and is available for internal use only. Its use is protected by an authentication mechanism based on the algorithm currently used by workstation manufacturing.

The MP generates a lock word, and the user must supply an authentication key which is dependent on this lock word. A fixed timeout of one minute protects against inadvertent entry of this command. If the timeout pops or the wrong authentication key has been entered, the command has no effect.

If the correct authentication key is entered, the manufacturing mode is entered. This gives access to an additional set of MP commands. *The command must again be invoked to exit manufacturing mode. If the manufacturing mode is not exited, it is available to the next person that accesses the command menu.*

These commands show up in the HE command output when in manufacturing mode only.

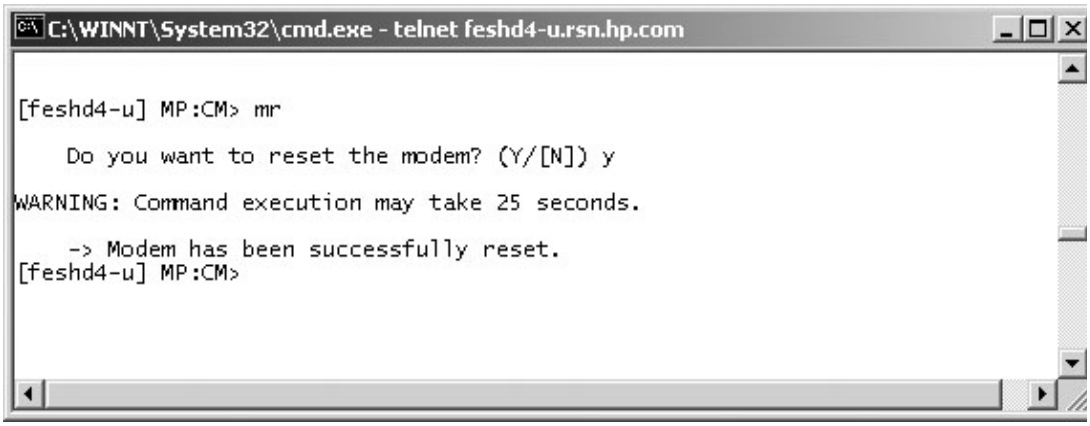
MP Command: MR

MR - Modem Reset

- Access level—Operator
- Scope—Complex

This command sends an *AT Z* command to the system modem connected to the SBC. The initialization results can be viewed by way of the MS command. This command does not reset modems connected to the PACI-Serial ports.

Example C-16 MR Command



MP Command: MS

MS - Modem Status

- Access level—Single Partition User
- Scope—Complex

This command displays the result of the system modem's power-on selftest and shows the state of the modem lines. Each time the system is powered-on, the MP command performs a selftest and then reads a modem register containing the results of the last selftest.

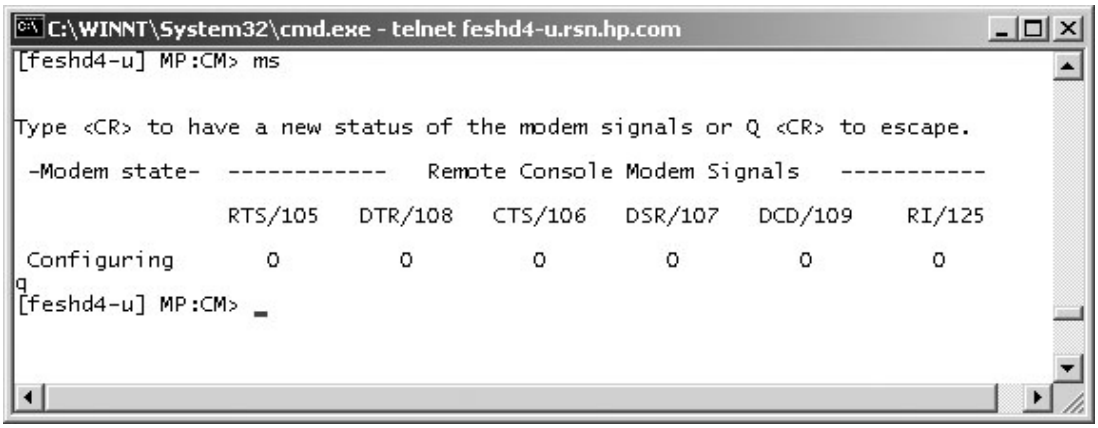
The modem selftest register is read by using the AT&T8 command. The result displayed is exactly the same as the one returned by the modem. No analysis of the result is done.

If the MP is unable to complete the modem access (auto-identification and self-test register reading) before the MS command is performed, the following message will be displayed:

Modem initialization not done. Use MR to complete it.

The MS command also displays the state of the modem lines. This display is updated when the operator enters a Carriage Return. The command displays the current state of the status signals (DCD, CTS, DSR, RI) and the last state of the control signals (FS, GPO, DTR, RTS) as set by the firmware.

Example C-17 MS Command



See also: MR

MP Command: PD

PD - Set Default Partition

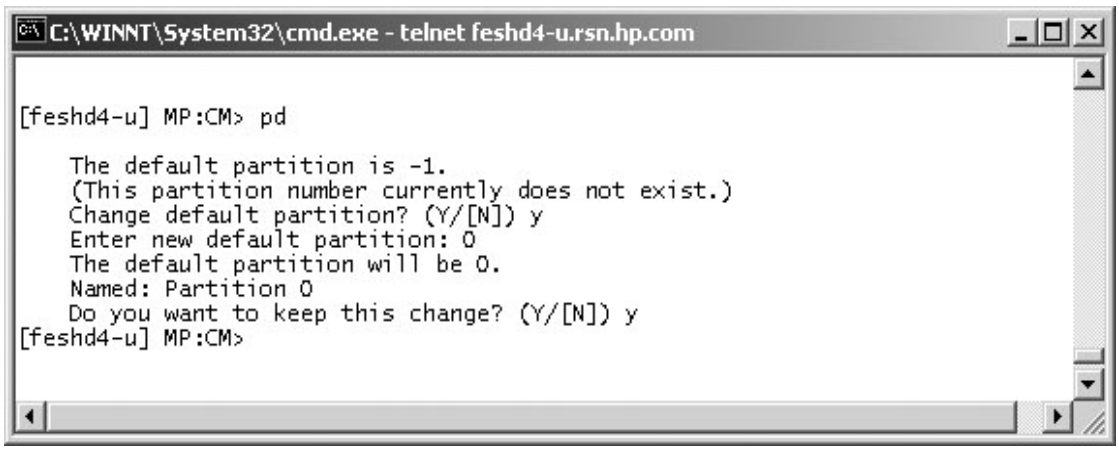
- Access level—Operator
- Scope—Complex

This command sets the default partition. If a default partition already exists, then this command overrides the previously defined partition. Setting the default partition prevents the user from being forced to enter a partition in commands that require a partition for their operation. For example, this prevents a user from accidentally TOCing the wrong partition.

A default partition is automatically set for users who are assigned the Single Partition User access level when they login into the MP handler. A user assigned the Single Partition User access level can not change the default partition.

When users of the Administrator or Operator levels log in, their default partition will be set to an invalid partition. The default partition for users of these access levels is maintained independently for each connection. When the user logs out of the MP handler, the default partition setting is not stored in non-volatile storage.

Example C-18 PD Command



See also: RE, SO

MP Command: PS

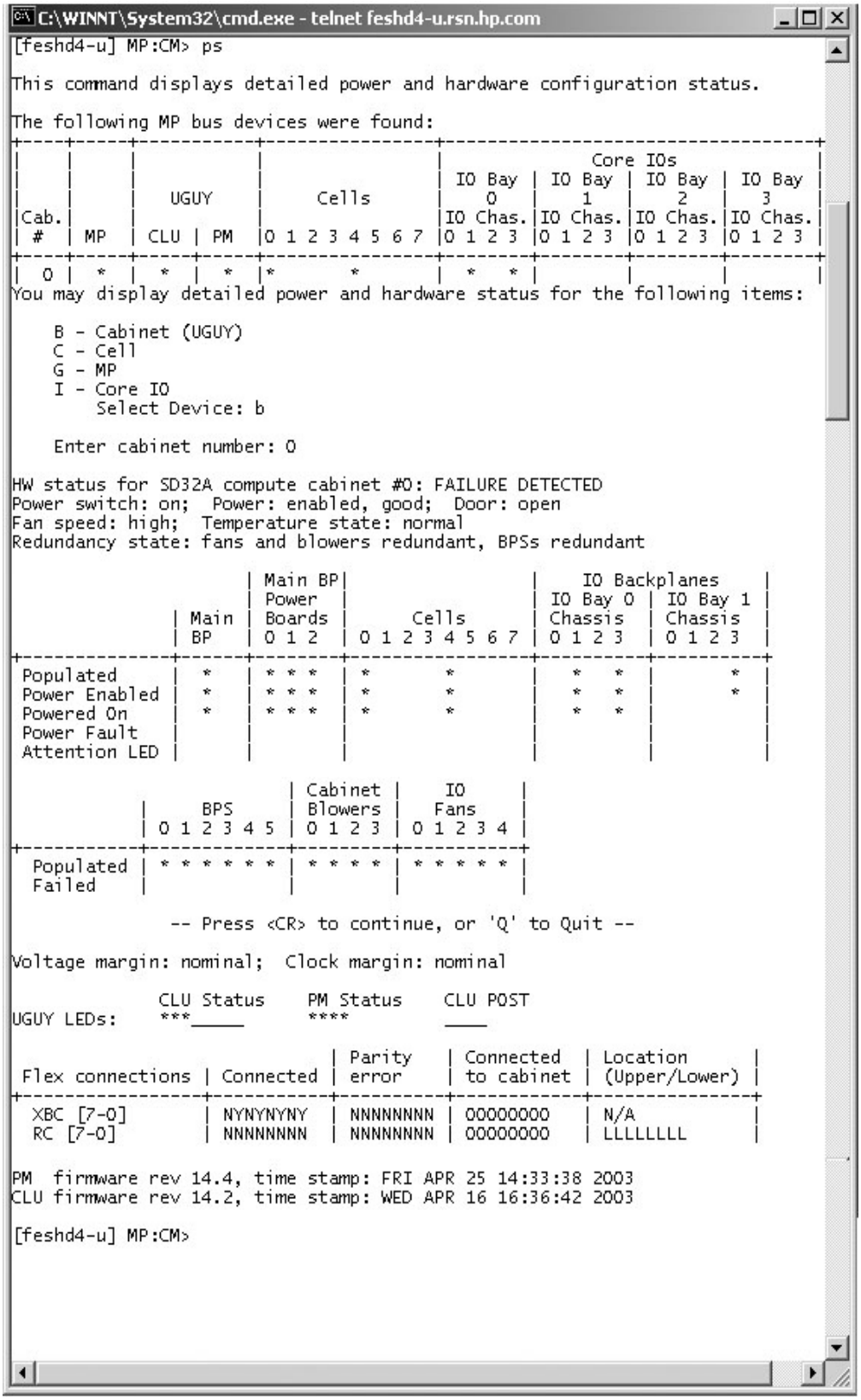
PS - Power and Configuration Status

- Access level—Single Partition User
- Scope—Cabinet

This command displays the status of the specified hardware. This command adds new information from previous versions of the PS command in other systems.

The user can retrieve a summary or more detailed information on one of the following: a cabinet, a cell, a core IO, and the MP.

Example C-19 PS Command



```
C:\WINNT\System32\cmd.exe - telnet feshd4-u.rsn.hp.com
[feshd4-u] MP:CM> ps

This command displays detailed power and hardware configuration status.

The following MP bus devices were found:
+-----+-----+-----------+----------------+-----------------------------------+
|     |     |           |                |             Core IOs              |
|     |     |           |                | IO Bay | IO Bay | IO Bay | IO Bay |
|     |     |   UGUY    |     Cells      |   0    |   1    |   2    |   3    |
|Cab. |     |           |                |IO Chas.|IO Chas.|IO Chas.|IO Chas.|
| #   | MP  | CLU | PM  |0 1 2 3 4 5 6 7 |0 1 2 3 |0 1 2 3 |0 1 2 3 |0 1 2 3 |
+-----+-----+-----+-----+----------------+--------+--------+--------+--------+
|  0  |  *  |  *  |  *  |*       *       |  *   * |        |        |        |
You may display detailed power and hardware status for the following items:

    B - Cabinet (UGUY)
    C - Cell
    G - MP
    I - Core IO
        Select Device: b

    Enter cabinet number: 0

HW status for SD32A compute cabinet #0: FAILURE DETECTED
Power switch: on;  Power: enabled, good;  Door: open
Fan speed: high;  Temperature state: normal
Redundancy state: fans and blowers redundant, BPSs redundant

                     | Main BP|                 |    IO Backplanes    |
                     | Power  |                 | IO Bay 0 | IO Bay 1 |
               | Main  | Boards |      Cells      | Chassis  | Chassis  |
               | BP    | 0 1 2  | 0 1 2 3 4 5 6 7 | 0 1 2 3  | 0 1 2 3  |
+--------------+-------+--------+-----------------+----------+----------+
 Populated     |  *    | * * *  | *       *       |   *   *  |        *  |
 Power Enabled |  *    | * * *  | *       *       |   *   *  |        *  |
 Powered On    |  *    | * * *  | *       *       |   *   *  |           |
 Power Fault   |       |        |                 |          |           |
 Attention LED |       |        |                 |          |           |

                          | Cabinet |    IO     |
            |     BPS     | Blowers |   Fans    |
            | 0 1 2 3 4 5 | 0 1 2 3 | 0 1 2 3 4 |
+-----------+-------------+---------+-----------+
  Populated | * * * * * * | * * * * | * * * * * |
  Failed    |             |         |           |

              -- Press <CR> to continue, or 'Q' to Quit --

Voltage margin: nominal;  Clock margin: nominal

             CLU Status    PM Status    CLU POST
UGUY LEDs:   ***_____      ****         ____

                              | Parity   | Connected  | Location      |
 Flex connections | Connected | error    | to cabinet | (Upper/Lower) |
+-----------------+-----------+----------+------------+---------------+
  XBC [7-0]       | NYNYNYNY  | NNNNNNNN | 00000000   | N/A           |
  RC [7-0]        | NNNNNNNN  | NNNNNNNN | 00000000   | LLLLLLLL      |

PM  firmware rev 14.4, time stamp: FRI APR 25 14:33:38 2003
CLU firmware rev 14.2, time stamp: WED APR 16 16:36:42 2003

[feshd4-u] MP:CM>
```

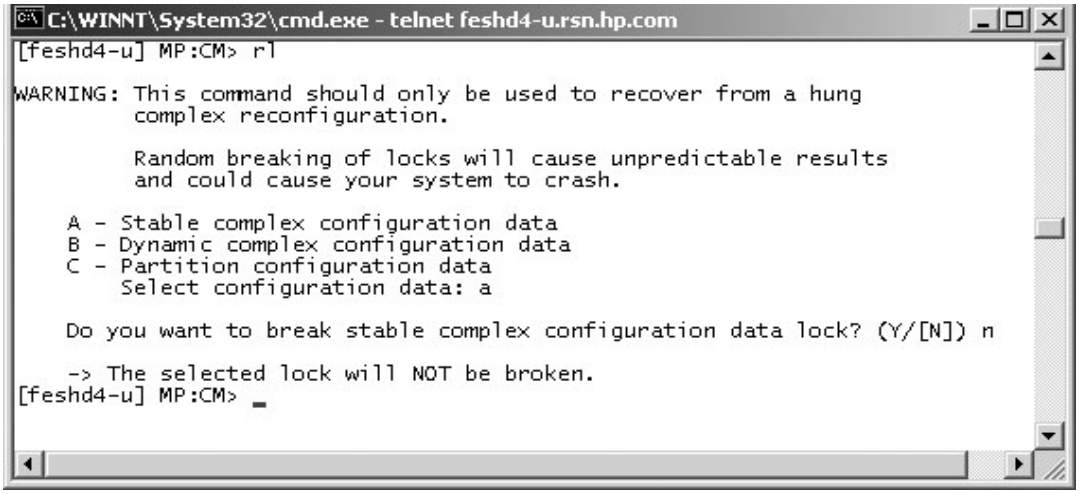
MP Command: RL

RL - Re-key Complex Profile Lock

- Access level—Operator
- Scope—Complex

This command re-keys the complex profile lock. It should only be used to recover from the error caused by the holder of the lock terminating before releasing the complex profile lock. It invalidates any outstanding key to the complex profile lock. There are up to 66 complex profile locks: one for each partition in section C of plus one key each for the A and B sections of the Complex Profile. The Default Partition is the default when prompting the user for which lock to re-key.

Example C-20 Re-key lock for partition 3



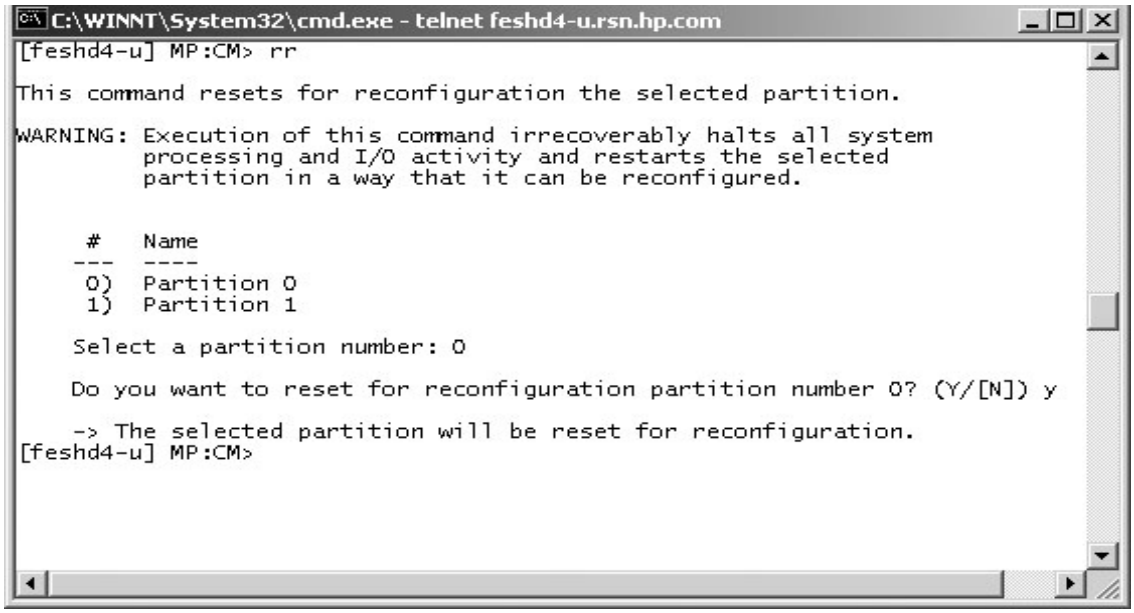
MP Command: RR

RR - Reset Partition for Re-configuration

- Access level—Single Partition User
- Scope—Partition

This command resets the specified partition but does not automatically boot it. The utility system resets each cell that is a member of the specified partition.If the user is either Administrator or Operator, a choice of which partition will be offered.

Example C-21 RR Command



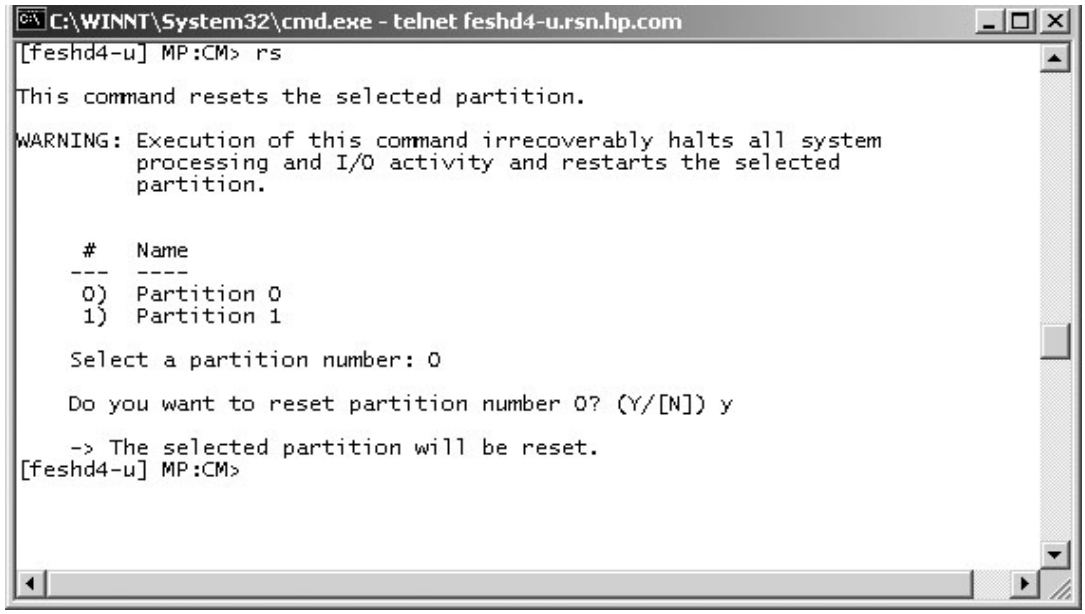
MP Command: RS

RS - Reset Partition

- Access level—Single PD user
- Scope—Partition

This command resets and boots the specified partition. The utility system resets each cell that is a member of the specified partition. Once all cells have completed reset, the partition is booted. If the user is either Administrator or Operator, a choice of which partition is offered.

Example C-22 RS Command



MP Command: SO

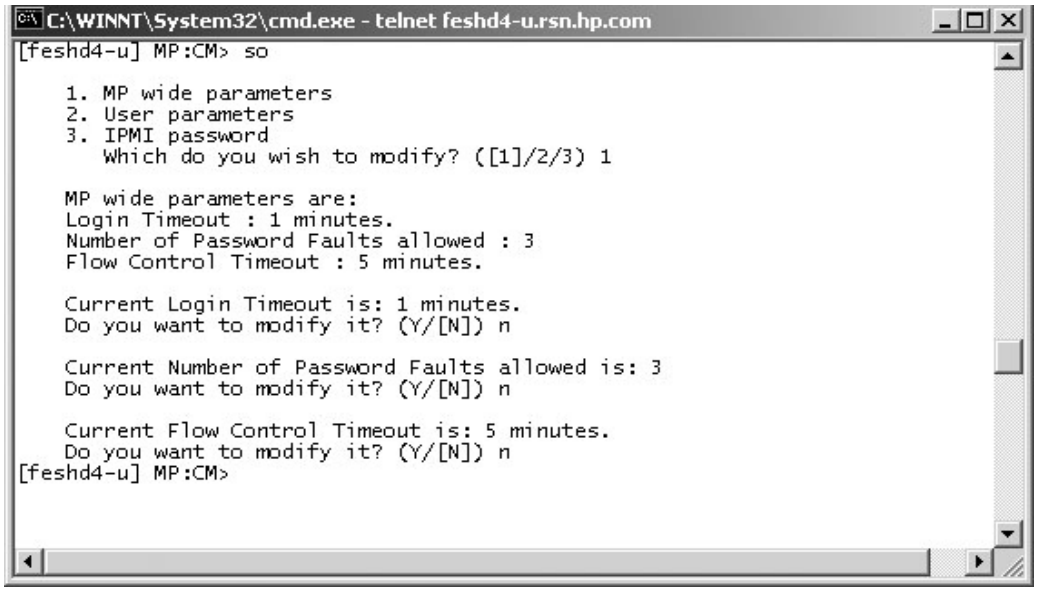
SO - Security Options and Access Control Configuration

- Access level—Administrator
- Scope—Complex

This command modifies the security options and access control to the MP handler. The parameters that can be modified are:

- Login timeout
- Number of password faults allowed
- Flow control time-outs
- User parameters:
  - — User name
  - — Organization name
  - — Access level
  - — Mode
  - — User state

Example C-23 SO Command



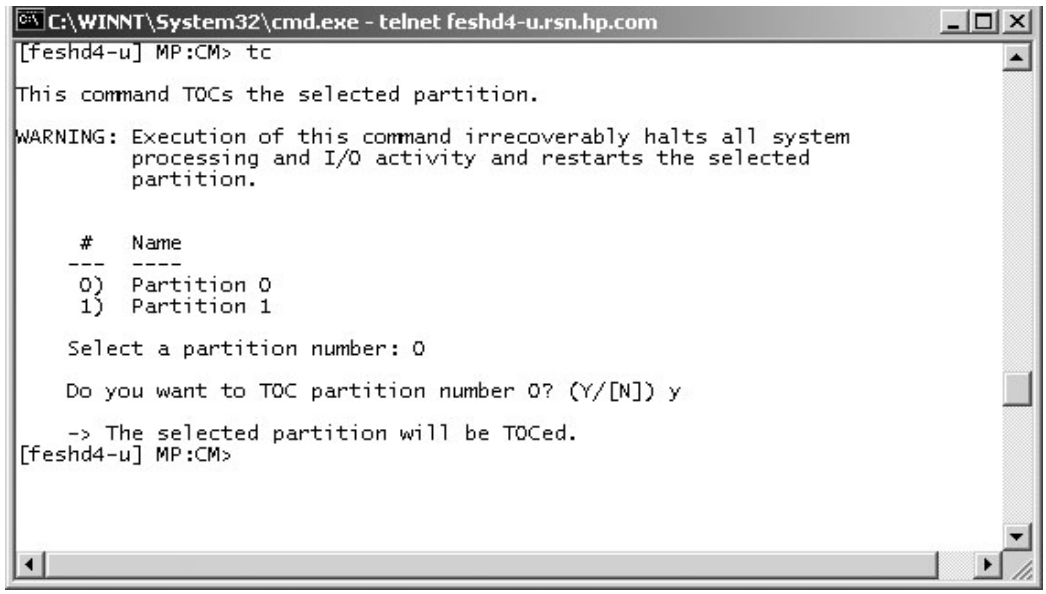
MP Command: TC

TC - TOC Partition

- Access level—Single Partition User
- Scope—Partition

This command transfers the control (TOC) of the specified partition. The SINC on each cell in the specified partition asserts the sys_init signal to Dillon.

Example C-24 TC Command



MP Command: TE

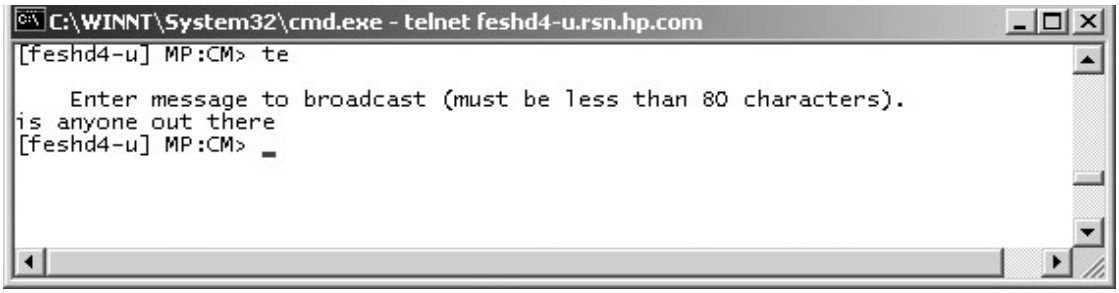
TE - Tell

- Access level—Single Partition User
- Scope—Complex

This command treats all characters following the TE as a message that is broadcast when the **<CR>** is pressed. The message size is limited to 80 characters. Any extra characters are not broadcast. Also, any message that is written is not entered into the console log.

NOTE All users connected to the MP handler will receive the message irrespective of what Partition the user sending the message has access to.

Example C-25 TE Command



MP Command: VM

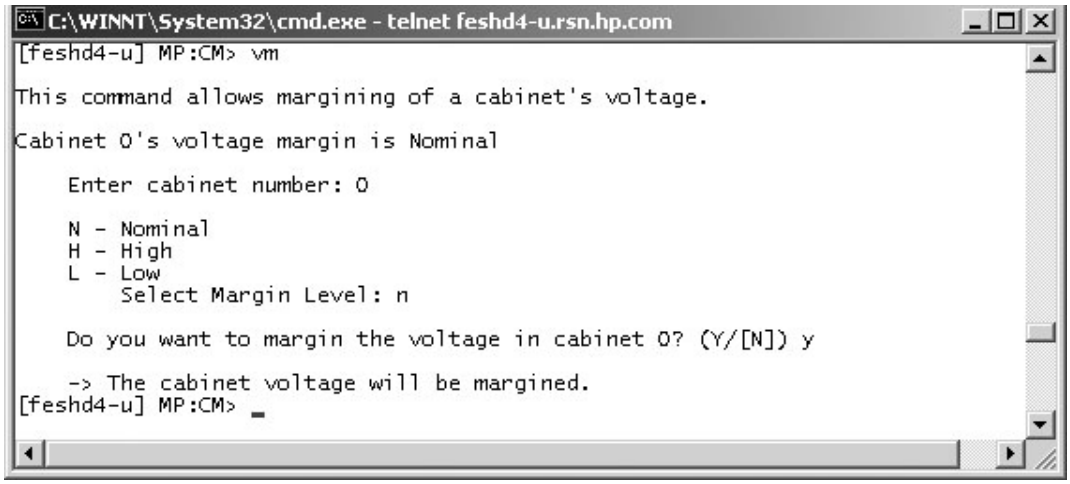
VM - Voltage Margin

- Access level—Single Partition User
- Scope—Cabinet

The command adjusts the voltage of all marginable supplies within a range of +/- 5%

No reset is required for the command to become effective.

Example C-26 VM Command



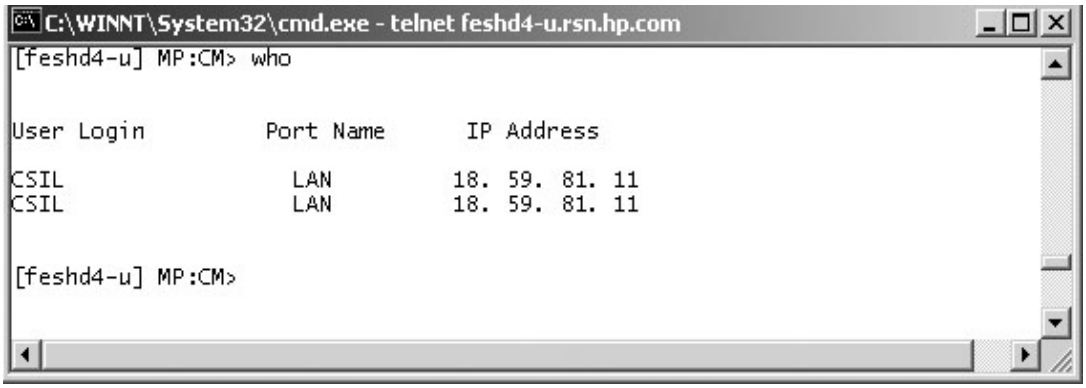
MP Command: WHO

WHO - Display List of Connected Users

- Access level—Single Partition User
- Scope—Complex

This command displays the login name of the connected console client user and the port on which they are connected. For LAN console clients the remote IP address is displayed.

Example C-27 WHO Command



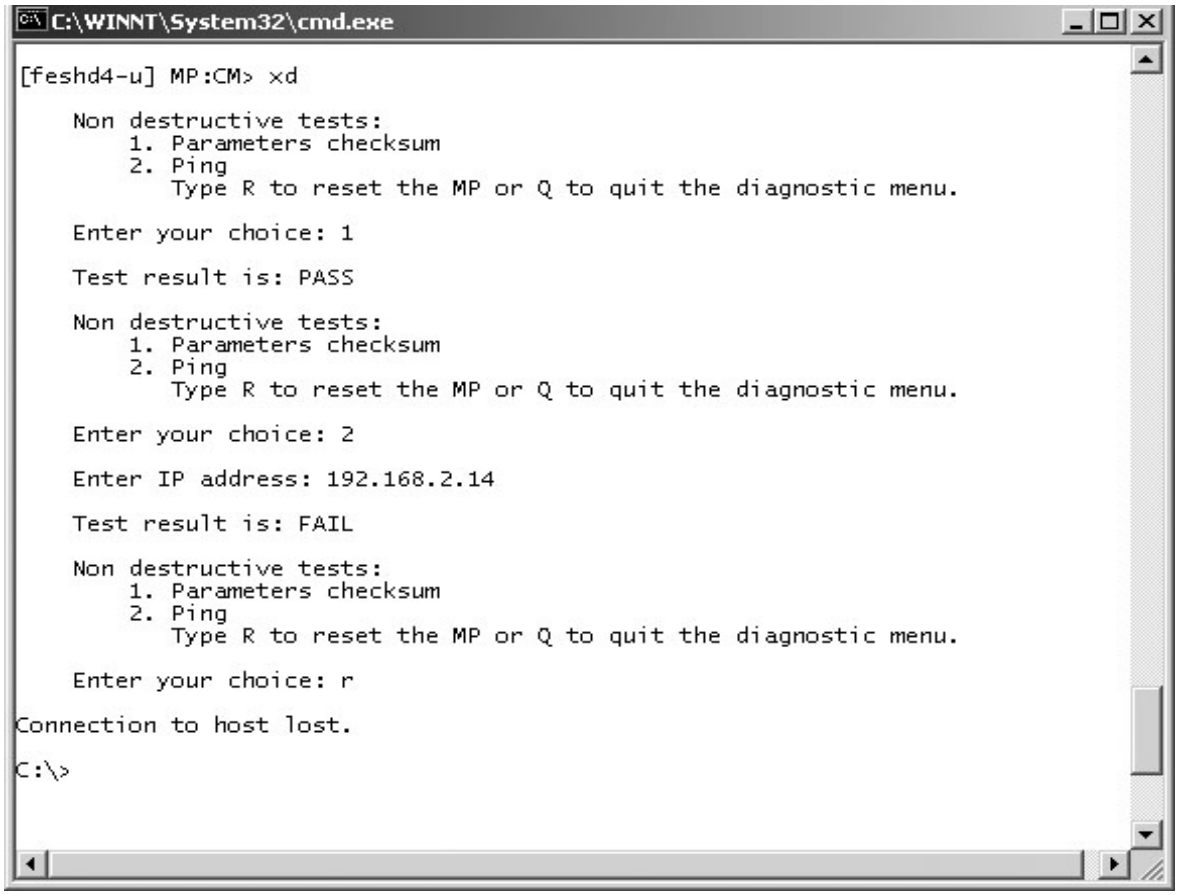
MP Command: XD

XD - Diagnostic and Reset of MP

- Access level—Operator
- Scope—Complex

This command tests certain functions of the SBC and SBCH boards. Some of the tests are destructive and should not be performed on a system running the operating system.

Example C-28 XD Command



D JUST Exploration Tool

The JTAG Utility for Scan Tests (JUST) Exploration Tool, or JET, collects system information for each hp Integrity Superdome or hp 9000 Superdome on a network and places it in files for use by other scan tools. JET gathers configuration data by executing a series of queries targeted at the MP and the CLU portion of the UGUY board.

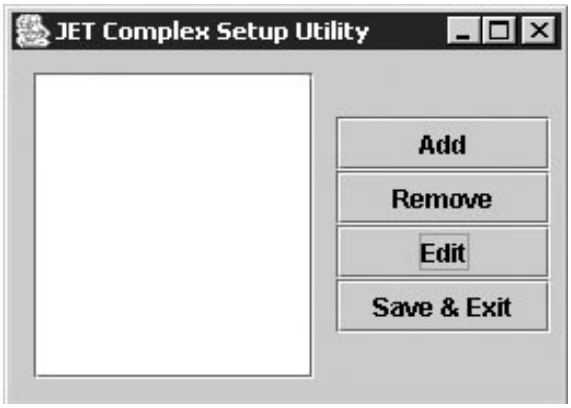
Jet Set-Up Utility (for PC SMS Only)

To run JET on the installed server from the PC-based SMS, the JET utility must first be run so that JET the can recognize the server's IP address.

Step 1. From the Start menu, select RUN.

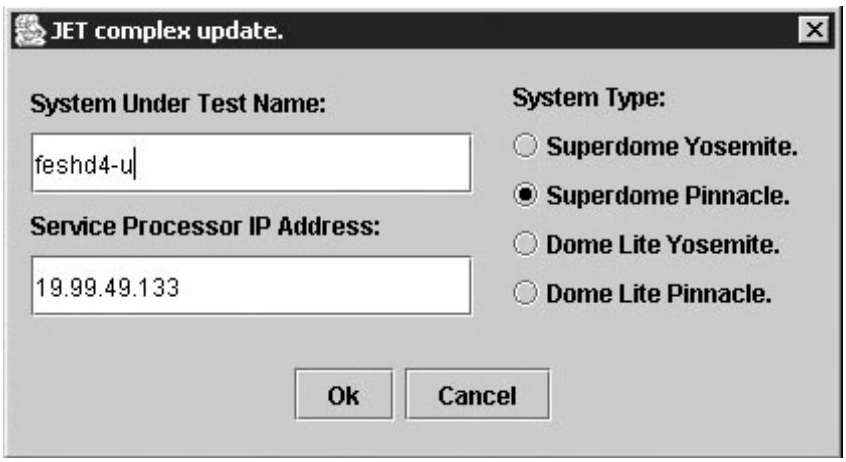
Step 2. Enter the path to the JET utility. The following window appears:

Figure D-1JET Set-UP Utility



Step 3. Select Add. The following window appears:

Figure D-2JET Complex Update Window



Step 4. Enter the server name and IP address and click OK. The server name is recorded in the initial utility window (Figure D-1).

Step 5. Click Save & Exit to store the server for the utility.

Command Line Arguments

JET supports the following command line arguments:

Table D-1 Command Line Arguments

Argument	Parameters	Description
-v		Prints version information then exit.
-d	<debug level>	Specifies JET debug level. This parameter overrides any other specification of debug level.
-h		(lower case h) Prints short help page.
-f	<complex name> <node number>	Causes a forced disconnect from the specified node in the specified complex.
-i		Enter interactive mode.
-o		Outputs the old format *complex.cfg* configuration file. The default is to output the new format *cplx.cfg* file.
-r		Performs a JTAG reset on each path before scanning the ID rings. It takes the field <on/off>, with ON enabling JTAGE resets and OFF disabling the. the default is ON.

These options are specified using the following format:

jet [-v] [-h] [-d <debug level>] [-f <complex name> <node number>] [-i]

JET Interactive Mode

The interactive mode allows the user to run JET, display the current system configuration, and to update that configuration. To run in the interactive mode, enter ***jet -i*** at the prompt. When entering the interactive mode, the following is displayed:

Figure D-3 Interactive Mode Display

```
% jet -i

JET Interactive MAIN MENU!

  Select from the following options.
    1) Run JET.
    2) Display current configuration data.
    3) Update configuration.
    X) Exit

  Enter selection:
```

Select one of the options from the menu.

JET Run Menu

By entering a 1 at the main JET menu, it is placed in the run mode. Figure D-4 shows the run menu options. You may either interrogate all complexes of an individual complex.

Figure D-4 JET Run Display

```
JET Interactive RUN MENU!

  Select from the following options.

    1) Interrogate all complexes.
    2) Select a complex to interrogate.
    X) Return to previous menu.

  Enter selection:
```

When interrogating a single complex (entering option 2), the following is displayed:

Figure D-5 Individual Complex Interrogation Menu

```
JET Interactive COMPLEX SELECTION MENU!

  Select from the following options.

    1) feynman-s.
    X) Return to previous menu.

  Enter selection: 1
```

In this case, the only complex available is feynman-s. If other complexes were available, they would be listed as well. shows a typical complex configuration.

Figure D-6 Typical Complex Configuration Dump

```
Links for complex feynman-s:
DNA to REO links: 4
TOGO flex links: 12
```

JET Current Configuration Display Menu

To view the current complex configuration, from the JET main menu, enter 2 from the JET main menu as shown in Figure D-7.

Figure D-7 Interactive Mode Display

```
% jet -i

JET Interactive MAIN MENU!

  Select from the following options.
    1) Run JET.
    2) Display current configuration data.
    3) Update configuration.
    X) Exit

  Enter selection:
```

Figure D-8 Display Current Configuration Menu

```
JET Interactive COMPLEX SELECTION MENU!

  Select from the following options.
    1) feynman-s.
    X) Return to previous menu.
  Enter selection: 1
```

Enter the number listed in the menu for the desired complex. In this example only one complex is online. Selecting a complex yields a typical menu as shown in Figure D-9.

Figure D-9 Configuration Display Options Menu

```
JET Interactive DISPLAY SELECTION!

  Select from the following options.
    1) Display all nodes.
    2) Select a specific node.
    X) Return to previous menu.

  Enter selection: 1
```

Selecting all nodes (option 1) displays a menu that lists of all the nodes in the complex as shown in Figure D-10.

Figure D-10 Typical List of Nodes

```
JET Interactive NODE SELECTION MENU!

  Select from the following options.

    0) Node number 0.
    1) Node number 1.
    2) Node number 2.
    3) Node number 3.
    4) Node number 4.
    5) Node number 5.
    6) Node number 6.
    7) Node number 7.
    8) Node number 8.
    9) Node number 9.
    10) Node number 10.
    11) Node number 11.
    12) Node number 12.
    13) Node number 13.
    14) Node number 14.
    15) Node number 15.
    X) Return to previous menu.

  Enter selection: 0
```

Entering a node number yields a display that is typified in Figure D-11.

Figure D-11 Typical Node Configuration Display

```
------------------------------------------------------------------------

feynman-s  Arch code: 80
  Node:  0     PRESENT          UP_TO_DATE
    Board:     MAIN BACKPLANE   0   PRESENT         UP_TO_DATE    HLSB2
    Board:     HMIOB            0   PRESENT         UP_TO_DATE    HMIOB
    Board:     HMIOB            1   PRESENT         UP_TO_DATE    HMIOB
    Board:     HIOB             1   PRESENT         UP_TO_DATE    GXIOB3
    Board:     HIOB             3   PRESENT         UP_TO_DATE    HIOB2
    Board:     HIOB             5   PRESENT         UP_TO_DATE    HIOB2
    Board:     HIOB             7   PRESENT         UP_TO_DATE    GXIOB3
    Board:     CELL             0   PRESENT         UP_TO_DATE    OCB2-IPF
    Board:     CELL             1   NOT PRESENT     UP_TO_DATE
    Board:     CELL             2   NOT PRESENT     UP_TO_DATE
    Board:     CELL             3   PRESENT         UP_TO_DATE    OCB2-IPF
    Board:     CELL             4   NOT PRESENT     UP_TO_DATE
    Board:     CELL             5   NOT PRESENT     UP_TO_DATE
    Board:     CELL             6   NOT PRESENT     UP_TO_DATE
    Board:     CELL             7   NOT PRESENT     UP_TO_DATE
    Board:     PDH Card         0   PRESENT         UP_TO_DATE    OPDH
    Board:     PDH Card         1   NOT PRESENT     UP_TO_DATE
    Board:     PDH Card         2   NOT PRESENT     UP_TO_DATE
    Board:     PDH Card         3   PRESENT         UP_TO_DATE    OPDH
    Board:     PDH Card         4   NOT PRESENT     UP_TO_DATE
    Board:     PDH Card         5   NOT PRESENT     UP_TO_DATE
    Board:     PDH Card         6   NOT PRESENT     UP_TO_DATE
    Board:     PDH Card         7   NOT PRESENT     UP_TO_DATE
    Board:     Slot 0 CPU       0   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 0 CPU       1   NOT PRESENT     UP_TO_DATE
    Board:     Slot 0 CPU       2   NOT PRESENT     UP_TO_DATE
    Board:     Slot 0 CPU       3   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 0 CPU       4   NOT PRESENT     UP_TO_DATE
    Board:     Slot 0 CPU       5   NOT PRESENT     UP_TO_DATE
    Board:     Slot 0 CPU       6   NOT PRESENT     UP_TO_DATE
    Board:     Slot 0 CPU       7   NOT PRESENT     UP_TO_DATE
    Board:     Slot 1 CPU       0   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 1 CPU       1   NOT PRESENT     UP_TO_DATE
    Board:     Slot 1 CPU       2   NOT PRESENT     UP_TO_DATE
    Board:     Slot 1 CPU       3   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 1 CPU       4   NOT PRESENT     UP_TO_DATE
```

```
    Board:     Slot 1 CPU       5   NOT PRESENT     UP_TO_DATE
    Board:     Slot 1 CPU       6   NOT PRESENT     UP_TO_DATE
    Board:     Slot 1 CPU       7   NOT PRESENT     UP_TO_DATE
    Board:     Slot 2 CPU       0   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 2 CPU       1   NOT PRESENT     UP_TO_DATE
    Board:     Slot 2 CPU       2   NOT PRESENT     UP_TO_DATE
    Board:     Slot 2 CPU       3   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 2 CPU       4   NOT PRESENT     UP_TO_DATE
    Board:     Slot 2 CPU       5   NOT PRESENT     UP_TO_DATE
    Board:     Slot 2 CPU       6   NOT PRESENT     UP_TO_DATE
    Board:     Slot 2 CPU       7   NOT PRESENT     UP_TO_DATE
    Board:     Slot 3 CPU       0   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 3 CPU       1   NOT PRESENT     UP_TO_DATE
    Board:     Slot 3 CPU       2   NOT PRESENT     UP_TO_DATE
    Board:     Slot 3 CPU       3   PRESENT         UP_TO_DATE    CPUMOD
    Board:     Slot 3 CPU       4   NOT PRESENT     UP_TO_DATE
    Board:     Slot 3 CPU       5   NOT PRESENT     UP_TO_DATE
    Board:     Slot 3 CPU       6   NOT PRESENT     UP_TO_DATE
    Board:     Slot 3 CPU       7   NOT PRESENT     UP_TO_DATE
    Board:     CORE IO          1   NOT PRESENT     UP_TO_DATE
    Board:     CORE IO          3   NOT PRESENT     UP_TO_DATE
    Board:     CORE IO          5   NOT PRESENT     UP_TO_DATE
    Board:     CORE IO          7   NOT PRESENT     UP_TO_DATE

  Link: source node = 0   INPUT-OUTPUT    CELL0_REO_IN
  Link: source node = 0   INPUT-OUTPUT    CELL0_REO_OUT
  Link: source node = 0   INPUT-OUTPUT    CELL3_REO_IN
  Link: source node = 0   INPUT-OUTPUT    CELL3_REO_OUT
  Link: source node = 0   BACKPLANE       TOGO_FLEX_0
  Link: source node = 0   BACKPLANE       TOGO_FLEX_3
  Link: source node = 0   BACKPLANE       TOGO_FLEX_6
  Link: source node = 0   BACKPLANE       TOGO_FLEX_5
  Link: source node = 1   BACKPLANE       TOGO_FLEX_7
  Link: source node = 1   BACKPLANE       TOGO_FLEX_4
  Link: source node = 1   BACKPLANE       TOGO_FLEX_0
  Link: source node = 1   BACKPLANE       TOGO_FLEX_2
  Link: source node = 1   BACKPLANE       TOGO_FLEX_6
  Link: source node = 1   BACKPLANE       TOGO_FLEX_5
  Link: source node = 1   BACKPLANE       TOGO_FLEX_1
  Link: source node = 1   BACKPLANE       TOGO_FLEX_3
-------------------------------------------------------------------------
```

JET Update Configuration Menu

To update the configuration in a complex, 3 from the main JET menu as shown in Figure D-12.

Figure D-12 Interactive Mode Display

```
% jet -i

JET Interactive MAIN MENU!

  Select from the following options.
    1) Run JET.
    2) Display current configuration data.
    3) Update configuration.
    X) Exit

  Enter selection:
```

When selecting the Update Configuration Option, the menu shown in Figure D-13 is displayed, which shows a list of available complexes. Select the desired complex.

Figure D-13 Update Configuration Main Menu

```
JET Interactive COMPLEX SELECTION MENU!

  Select from the following options.

    1) feynman-s.
    X) Return to previous menu.

  Enter selection: 1
```

Figure D-14 Update Configuration Options Menu

```
JET Interactive Update menu.

  Select from the following options.

    1) Load new node configuration file.
    2) Add a Board to an existing node.
    3) Remove a Board from an existing node.
    4) Load flex mate file.
    5) Add a Link.
    6) Remove a Link.
    X) Return to previous menu.

  Enter selection: 2
```

Select the desired option. In this example Option 2, Add a Board to an existing node, is chosen and series of menus is presented to the user to add the board. These menus are presented in the following examples:

Example D-1 Selecting Node 0

```
JET Interactive NODE SELECTION MENU!


  Select from the following options.

    0) Node number 0.
    1) Node number 1.
    8) Node number 8.
    X) Return to previous menu.

  Enter selection: 0
```

Example D-2 Selecting A Processor Board

```
JET Interactive BOARD FAMILY SELECTION MENU!


  Select from the following options.

    2) BACKPLANE
    3) PROCESSOR
    5) IO
    X) Return to previous menu.

  Enter selection: 3
```

Example D-3 Selecting a PDH Riser Board

```
JET Interactive BOARD TYPE SELECTION MENU!


  Select from the following options.

    1) CELL
    2) PDH Card
    3) Slot 0 CPU
    4) Slot 1 CPU
    5) Slot 2 CPU
    6) Slot 3 CPU
    X) Return to previous menu.

  Enter selection: 1
```

Example D-4 Selecting the PDH Board

```
JET Interactive CELL BOARD NUMBER SELECTION MENU!


  Select from the following board numbers.

    0) Board number  0
    1) Board number  1
    2) Board number  2
    3) Board number  3
    4) Board number  4
    5) Board number  5
    6) Board number  6
    7) Board number  7
    X) Return to previous menu.

  Enter selection: 1
```

Example D-5 Selecting the PDH Board Name

```
JET Interactive BOARD NAME SELECTION MENU!


  Select from the following options.

    1) OCB
    2) OCB2
    3) OCB2-IPF
    4) OCB2-PA
    5) OCB2-2
    6) OCB2-2-IPF
    7) OCB2-2-PA
    X) Return to previous menu.

    Enter selection: 2
```

Example D-6 Selecting the Correct Device Numbers

```
JET Interactive DEVICE SELECTION for path number 0


JET Interactive DEVICE SELECTION for path number 1


  Select the correct device for: jab, Reference designator: U33

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3


  Select the correct device for: jab, Reference designator: U34

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


 Enter selection: 3


  Select the correct device for: jab, Reference designator: U43

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3


  Select the correct device for: jab, Reference designator: U42

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3

JET Interactive DEVICE SELECTION for path number 2


  Select the correct device for: jab, Reference designator: U15

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3


  Select the correct device for: jab, Reference designator: U16

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3


  Select the correct device for: jab, Reference designator: U3
```

```
    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3


  Select the correct device for: jab, Reference designator: U2

    1) jab    0x082b2291
    2) jab    0x182b2291
    3) jab    0x282b2291


  Enter selection: 3

JET Interactive Update menu.

  Select from the following options.

    1) Load new node configuration file.
    2) Add a Board to an existing node.
    3) Remove a Board from an existing node.
    4) Load flex mate file.
    5) Add a Link.
    6) Remove a Link.
    X) Return to previous menu.

  Enter selection: x

JET Interactive MAIN MENU!

  Select from the following options.

    1) Run JET.
    2) Display current configuration data.
    3) Update configuration.
    X) Exit

  Enter selection: x
```

JET Help Menu

To obtain help on available JET run parameters, enter the *-h* argument in the run line as shown in Figure D-15.

Figure D-15 JET Help Menu

```
% jet -h


usage: jet [-d <debug level>] [-f <complex> <node>] [-h] [-i] [-v]

Where:

    -d <debug level> = set debug level, valid values are 0 - 4.
    -f <complex name> <node number> = force a disconnect.
    -h = print this help page.
    -i = interactive mode.
    -o = Use old complex.cfg file format.
    -r = Perform Jtag resets on all paths prior to scanning.
    -s <complex name> = interrogate only the specified complex.
    -v = print JET version information.
```

Data Files

Input Data Files

JET uses several input data files of two main types: configuration files and architecture files. The configuration files control how the JET utility operates and the architecture files provide information on the system under test.

NOTE Comments can be used in any of these files and are indicated by a # sign in front of the comment.

Input Data File Locations

Unless otherwise specified, JET looks for its data using a search algorithm that is valid for all scan tools. It first looks for a local *./config* directory. If it is found, JET then looks for the required file in that location. If the file is not found, then JET checks to see if the *SCANSW_DIR* environment variable has been set. If this variable is set to the path specified in the variable, it will be used to find the file. Failing this, JET looks in the default scan file directory path for the file.

Configuration Files

Configuration files control the flow of execution and other processing information needed by the JET application. There are currently three configuration files: *jet.cfg*, *cplx.ini*, and *board_name.map*.

JET Configuration File (Optional)

This file contains several parameters that define JET operation. If the file is not found, then JET uses its default values. Each of the parameters described for this file may or may not be present. If they are not present, default parameters are used.

This file must be located in the directory from which JET is executed and must have the name *jet.cfg*.

The following list describes parameters supported in the JET configuration file:

- *Cplx_INI_File*—Shows JET where to look for the *cplx.ini* file (this file is described below). The default for this field is the */opt/scansw/data* directory. This field contains a path and file name.
- *Max_Msg_Retries*—Specifies JET how many times to resend a command before declaring a communications error. This field is a positive integer value with a default of five. It is used only with the UDP communications protocol.
- *Msg_Retry_Interval*—Specifies the amount of time to wait for a response to a command before timing out and resending the command. This is a positive floating point number with a default value of five seconds for UDP and 25 seconds for TCP.
- *Debug_Level*—Sets the debug level for JET. Based on this value, different amounts of data are logged into the *jet.log* file. The debug level is an integer value between zero and four.
- *Log_File*—Specifies the name of the JET log file. This field is a string specifying the path and file name of the file to use. The default is */opt/scansw/data/jet.log*.

- *Cplx_Cfg_File*—Allows the redirection of the complex configuration file created by JET. This field is a string specifying the path and file name to use for this file. The default for this parameter is */opt/scansw/data/complex.cfg*.

NOTE If any of the parameters listed above are present in the Jet Configuration File, they override the *SCANSW_DIR* environment variable and the default scan directory.

If this file is present it must end with the keyword *End_Of_File*.

Complex Initialization File

The *cplx.ini* file provides information on complex names, communications information, entity types, and protocols needed to communicate with the complex. Each complex that the SMS is responsible for should have an entry in this file.

The complex initialization, *cplx.ini*, file establishes a basis for communication between JET and the complex(es) being interrogated. JET uses this file when the JET Broadcast Enabled Flag is set to *FALSE*. This file contains a single line for each complex to be interrogated. JET looks for this file first by checking the *SCANSW_DIR* environment variable (if set). If this variable is not set, then JET looks for the file in the default */opt/scansw/data* directory. The file location and name can be modified by setting the *Cplx_INI_File* parameter in the *jet.cfg* file. This overrides all other locations.

File Format There are two types of entries in the *cplx.ini*. The type of entry is present for a complex depends on whether the complex has multiple host entities or only a single host entity. Multi-host entries are specified with the key *MH* while single host entities are specified with the key *SH*. Multi-host entities have an additional parameter for the hostname associated with each host entry. Single-host entities use the complex name as the hostname for the complex.

Each entry in this file begins with the keyword *COMPLEX* followed by the name and architecture code of the complex. These fields are followed by the multi- or single-host selection key: either *MH* or *SH*. Following this field comes the host entities type and reference number along with its supported SDP protocol version. The last series of fields represent the communication protocol, IP address, and port number to use for communications with this host. The type of each of these parameters follows:

complex name—string

architecture code—unsigned short

hostname—string

entity type—MP or NODE

entity reference num—integer

SDP version—string representation of a float

IP Address—IP address in dot notation

port number—unsigned short

Example D-7 Typical Usage

COMPLEX <complex name> <arch code> MH <hostname> <entity type> <entity ref num> <SDP version> <protocol> <IP address> <port num>

or

COMPLEX <complex name> <arch code> SH <entity type> <entity ref num> <SDP version> <protocol> <IP address> <port num>

Example D-8 Typical *cplx.ini* File

```
COMPLEX zurg-s     0x20  SH          MP  0  1.0  TCP  15.99.83.130  5151
COMPLEX feynman-s  0x30  MH  host_1  MP  0  1.0  UDP  19.99.83.101  5151
COMPLEX feynman-s  0x30  MH  host_2  MP  0  1.0  TCP  15.99.83.102  5151
```

Board Name Mapping File

The *board_name.map* file has two basic purposes. The first is to map board names to board part numbers. This mapping is required, because the part numbers in the EPROMs are changed to indicate repair history of the board. JET must be able to provide the JUST tool with part number matching its data files. The second is to support the JET interactive mode. This file contains scan handle values that map a board name with the type of board that name represents. When a user is adding a board of a specific type, JET looks though this file to find the name of all boards matching the specified type. It then displays a list of these board names for the user to select.

This file is located by the default path search with the subdirectory *arch_<arch_code>/cmd* appended to the base path, unless it exists in the *./config* directory.

Format

Comments Comments in the *board_name.map* file are specified by placing a # character at the beginning of the line containing the comment. End of line comments are not currently supported.

Version The first non-comment field in the *board_name.map* file must start with the keyword *FILE_VERSION* followed by the version number entered as a double.

FILE_VERSION <version number>

Board Entries Each board in the system has an entry in this file, which consists of the following information:

Board name—String representing the board name

Board part number—String representing the board part number to place in the node configuration file for this board

Scan Revision—Scan revision of the board

Board family—Board family scan handle value

Board type—Board type scan handle value

Example D-9 Board Entries With Comments

```
#########################################################################
#<board family> <board part num> <scan revision> <board family> <board type>
#########################################################################

HIOB      A4856-60001     1     2     3
```

Architecture Files

Architecture files describe the system architecture, providing complex, node, board, and device information needed to properly interrogate the complex.

Complex Architecture File

This file describes the complex and contains information on the types of entities in the complex. Currently valid entity types are MPs and nodes. This file must have the name *complex.arc*.

Format

Comments Comments in this file are specified by placing a # character at the beginning of the line containing the comment. End of line comments are not currently supported.

Version Information The first non-comment field in the *cplx.ini* file must start with the keyword *FILE_VERSION* followed by the file version entered as a double.

MP List Entries The first type of entry in this file list the MPs that are possible within the complex. A MP list begins with the keyword *MP_List* and ends with the keyword *End_MP_List*. Between the begin and end tags are MP entries defined as follows.

MP Entries A MP entry begins with the keyword *MP_ID* and is followed by the MP reference number as an unsigned integer.

MP_ID <reference number>

Node List Entries The second type of entry in this file is a list of nodes. A node list begins with the keyword *Node_List* and ends with the keyword *End_Node_List*. Between the beginning and ending tags are the node entries as defined below.

Node Entries A node entry begins with the keyword *Node_ID* and is followed by the node type (either *PROCESSOR* or *IO_EXPANSION*), the nodes reference number, and a presence mask available boolean. If the mask available flag is *TRUE* then the next field is the bit in the mask representing this node, if the flag is *FALSE* then this field is omitted. The mask available field(s) are followed by the is host flag which indicates whether this entity is a host or not. If the host flag is *FALSE* then the entity to which commands destine for node are to be sent is specified along with its reference number.

Node_ID <node type> <ref num> <mask flag> [<mask bit>] <host flag> [<entity type> <entity ref #>]

End of file marker As with all scan files this file must end with the keyword *End_Of_File*.

Example D-10 Complex Architecture File

```
FILE_VERSION 4.0

       MP_List
              MP_ID 0
       End_MP_List
       Node_List
               Node_ID PROCESSOR 0 TRUE 0 FALSE MP 0
               Node_ID IO_EXPANSION 8 FALSE TRUE
       End_Node_List
End_Of_File
```

Node Architecture File

This file describes a node and contains the types of boards in each node type and a description of the scan paths in the node. This file contains a list of boards that make up the node followed by a list of paths. The path entries map the paths though the boards to the path in the node.

This file can currently have one of two names: *node_PROCESSOR.arc* or *node_IO_EXPANSION.arc*.

Format

Comments Comments are specified by placing a # character at the beginning of the line containing the comment. End of line comments are not currently supported.

Version Information The first none comment field must start with the keyword *FILE_VERSION* followed by the file version entered as a double.

FILE_VERSION <version number>

Board Lists The board list section begins with the keyword Board_List and ends with the keyword *End_Board_List*. Between these tags are board entries for each of the boards in the node.

Board entries begin with the keyword Board followed by the board family, board type, and the board reference number. Board entries end with the keyword *End_Board*. Board entries contain a variable number of parameters each designated by a keyword. Each of the parameters that can be specified has default values that are used if the parameter is not present. Below is a list of the board options.

- *required*—By default boards are consider to be not required. If a board is required, it must have an entry beginning with the keyword *required* followed by an upper case boolean either *TRUE* or *FALSE*.
- *eprom*—By default boards are assumed to have serial EPROMs from which the board name and scan revision can be retrieved. If a board doesn't have an eprom then the board name, part number and scan revision must be supplied. An eprom entry begins with the keyword *EPROM* and is followed by a boolean indicating whether eprom data is available. If EPROM data is not available (*FALSE*) then the entry must specify the board name, part number, and scan revision as follows:

  eprom <TRUE/FALSE> [<board name> <part number> <scan revision>]
- *num_scan_paths*—By default a board is assumed to have no (zero) scan paths. If a board has scan paths, the number of paths on the board must be defined, using the keyword *num_scan_paths* followed by an unsigned integer representing the number of scan paths on the board as follows:

  num_scan_paths <# scan paths>

Masks By default a board is assumed to not have a presence mask. If a presence mask does exist for this board then an entry defining the mask is required. A mask entry begins with the keyword *mask* followed by a boolean indicating whether a mask is available. If a mask is available then the following data is also required. The bit in the mask that reflects this board, the type of mask to request (either CELL_MASK, IO_MASK, or NODE_MASK), the type of entity the mask should be sent to an that entities reference number.

mask <TRUE/FALSE> [<bit in mask> <mask type> <destination entity> <destination entity number>

Dependency A dependency is a relationship between boards. There are two currently supported dependency types: CHILD and PARENT. A board that contains a child dependency depends on the board specified in the dependency to be present. A board that contains a parent dependency must be present for the board specified in the dependency to be present. During normal JET operations these dependencies are used to resolve presence issues. In interactive mode these dependencies are used to prevent invalid configurations from being created.

By default, boards are considered to contain no dependencies. If a board has a dependency then an entry must be made. A dependency entry begins with the keyword *dependency* followed by the family, type and reference number of the board and the dependency type.

dependency <board family> <board type> <board number> <dependency type>

Example D-11 Board list

```
Board_List
          Board  2  1  0
            required  FALSE
            eprom TRUE
            num_scan_paths  3
            mask  TRUE  3  IO_MASK  MP  0
            dependency  5  3  1  PARENT
      End_Board
      Board  5  1  5
            required  TRUE
            eprom  FALSE  HMIOB  A5201-60005  1
            num_scan_paths  1
```

```
            mask  FALSE
            dependency 2  1  0  CHILD
      End_Board
End_Board_List
```

The Path List The next section of Node Architecture FIle defines the scan paths in the node. Each of the nodes scan paths are composed of one or more scan paths on the board defined in the board list. The path list begins with the keyword *Path_List* and ends with the keyword *End_Path_List*. Between these tags are the individual path definitions for the node.

Path Entries A path entry defines the boards and there scan paths that make up this node level scan path. A path entry begins with the keyword *Path* followed by the paths reference number. A path entry ends with the keyword *End_Path*. Between these tags are board entries for each board composing the path.

Board Entries A board entry in a path begins with the keyword *board* followed by the family, type, and reference number of the board and the path on the board that is to be used. These entries must be in order of how they appear on the path through the node as follows:

board <board family> <board type> <board reference num> <board path num>

Example D-12 Path Entry

```
Path_List
      Path 1
            board  2  1  0  2
            board  3  2  6  0
      End_Path
      Path 2
            board  5  1  1  1
            board  3  2  6  2
      End_Path
End_Path_List
```

End of File Marker This file must end with the keyword *End_Of_File*.

Board Architecture File

The Board Archiritecture File describes the scan paths and link connections present on the board. It lists the devices present on each board scan path along with there name, and removal information. It also has a section that lists the connections present on the board for links.

A board architecture file must exist for each board part number/scan revision. Its file name has the form *brd_<board part number>_<scan revision>.arc*. This file is named using the prefix *brd_* followed by the board name and scan revision separated by an underscore and ending with the suffix *.arc*.

Format

Comments Comments in this file are specified by placing a # character at the beginning of the line containing the comment. End of line comments are not currently supported.

Version Information The first none comment field in the cplx.ini file must start with the keyword *FILE_VERSION* followed by the files version entered as a double.

Example D-13 Board Architecture File Version

FILE_VERSION <version number>

Board Path Entries The first series of entries in this file describe the scan paths on the board and the devices on those paths. Each of these entries begins with the keyword Board_Path followed by the path number. The entries end with the keyword End_Board_Path. Between the beginning and ending tags the devices on the path are defined. A device entry begins with the keyword Device and is followed by the devices reference number, the device name, the devices reference designator, a boolean indicating whether the device is required, and finally the devices removal order.

- Device number—integer
- Device name—string
- Reference designator—string
- Required flag—TRUE | FALSE
- Removal order—integer

NOTE The removal order determines which non-required devices are missing if less than the maximum number of devices are encountered. The lower the removal order the more likely the device is missing.

Link Connection Entries Each link connection to this board needs to have an entry in this file. Link entries contain primary and secondary link connection information. A link entry is specified as follows.

Each entry begins with the keyword *Link_Type* followed by the link type number and ends with the keyword, *End_Link_Type*. Between the begin and end are entries for Primary and Secondary link connections. A primary link connection is the originating connection. The secondary entries are destinations for the link.

A primary link connection begins with the keyword *Primary* and ends with the keyword *End_Primary*. Between the begin and end tags the possible connections are listed as specified below:

- ID—Cable number of device selector number
- lookup—Number added to look up the correct entry
- loopback—Flag that indicates whether the connection is a loopback connection
- type—String that indicates the type of cable being processed
- part number—Part number of the cable as a string
- name—String representing the name of the link cable

Secondary link connections begin with the keyword *Secondary* and end with the keyword *End_Secondary*. Connections on a secondary link follow the same format as those of a primary link but use two less fields.

Link connections begin with the keyword *Connection* followed by the following fields.

- ID—Cable number of device selector number
- lookup—Number added to look up the correct entry
- loopback—Flag that indicates whether the connection is a loopback connection
- type—String that indicates the type of cable being processed

End of File This file must end with the keyword *End_Of_File*.

Example D-14 Board Architecture File

```
FILE_VERSION 4.0

##########################################################################
# Board_Path  <path number>
##########################################################################
Board_Path1


#######################################################################
# Device  <ref num>  <device name>  <ref des>  <required>  <removal order>
#######################################################################
Device6elroyU5007TRUE0
Device8dnaU5000FALSE1

End_Board_Path

#######################################################################
# Link_Type <link type>
#######################################################################
Link_Type1

Secondary

#######################################################################
# Connection <ID> <lookup> <loopback>  <type> <brd ref des> <cable ref des>
#######################################################################
Connection10FALSEIOFC0014P1
Connection11TRUEIOFC0415N1

End_Secondary

Primary

#######################################################################
# Connection <ID> <lookup> <loopback> <type> <brd ref des> <cable ref des>
#<PN> <name>
#######################################################################
Connection1  0  FALSE  IO  J5005T  P1  A5201-63037_0001  CELL0_REO_IN
Connection1  1  TRUE    IO  J5033T  P1  A5201-63037_0001  CELL1_REO_IN

End_Primary

End_Link_Type

End_Of_File
```

Device Architecture File

The device architecture file lists valid JTAG IDs for a device based on the device name. If a device does not have a JTAG ID, then a default ID entry must be included in this file. The file must exist for each device name present in the board architecture file. Its file name has the form *dev_<device name>.arc*. and is named by placing the prefix *dev_* in front of the device name and ending it with the suffix *.arc*.

Format

Comments Comments in this file are specified by placing a # character at the beginning of the line containing the comment. End of line comments are not currently supported.

Version Infromation The first none comment field in the cplx.ini file must start with the keyword *FILE_VERSION* followed by the files version entered as a double.

Example D-15 Device Architecture File Version

```
FILE_VERSION <version number>
```

Device Entries Each valid JTAG ID for this device must have an entry in this file. Entries consist of the keyword *Device_Id* followed by the device name and the unsigned long representation of the JTAG ID.

Example D-16 Device ID

```
######################################################################
# Device_Id  <device name>  <jtag id>
######################################################################
  Device_Id  dna1  0x14076049
```

If a device does not have a JTAG ID, a default ID must be provided in this file. The format of a default entry begins with the keyword *Default_Id* followed by the device name and the default JTAG ID represented as a string.

The default JTAG ID string must begin with the *0x*. The JUST tool looks for this these characters and strips them off to build its device file names.

Example D-17 Default ID

```
######################################################################
# Device_Id  <device name>  <jtag id>
######################################################################
  Device_Id  dna1  0x14076049
```

End of File Marker This file must end with the keyword *End_Of_File*.

Link Architecture File

The link architecture file describes the possible link interconnects possible within a complex. These connections are any that are not static within a system.

There is only one link architecture file for each complex and it must be named *link.arc*.

Output Data Files

JET produces both data files and log files. Other scan tools use the data files created by JET as input information. The log file generated by JET contains information on its execution. JET output files are described in the following sections.

Complex Configuration File

This file contains information on the systems available for test on a particular network. It is used by the *Libsdp* library to direct messages from the test station to the system under test.

There is only one complex configuration file, which must be named *complex.cfg*. It may contain entries for multiple complexes. JET places this file in the default scan directory */opt/scansw/data*.

System entities represent MPs and nodes. The data contained in this file provides information on what entities can be tested and the basics of how to communicate with each of the entities specified. This file is normally created by JET. Below is a description of each entry in the file.

Comments Comments in this file are specified by placing a # character at the beginning of the line containing the comment. End of line comments are not currently supported.

Complex Entries Each complex entry in the file begins with the keyword *Complex* followed by the complex name string and the complex's architecture code. A complex entry ends with the keyword *End_Complex*. Both of these entries must be on separate own lines.

Example D-18 Complex Entries

```
Complex  <complex name> <architecture code>
    .
    .
    .

End_Complex
```

Between these tags are the entity instances described below.

Entity Entries Entities exist within the complex tags. There are currently of two types: MP or NODE. Each entity begins with the keyword *Entity*, followed by the entity type and its reference number, and ends with the keyword *End_Entity*. Each of these tags must be on a separate line as shown below:

```
Entity  <MP|NODE> <reference number>
    .
    .
    .
End_Entity
```

The fields between the entity tags are described in the following section.

Entity Parameters Each Entity in this file must contain one and only one of the following entries.

If the entity is a Host—meaning that it has an Ethernet presence with its own IP address— then the entity requires a hostname entry in the file. A hostname entry begins with the keyword *Hostname* and is followed by the hostname string, the communication protocol (UDP or TCP), its IP address in dot notation, and the communications port number.

```
Hostname   <host name>   <TCP|UDP>   <ip address>   <port number>
```

If an entity is not a host, then a reference to the target host entity must be supplied. This reference specifies which host entity commands targeted to this entity must be directed. This targeting entry begins with the keyword *Target_Entity* followed by the entity type (*MP|NODE*) and its reference number:

```
Target_Entity<target entity type><target entity ref number>
```

Firmware information entries:

Firmware Information Entries Each entity must have a firmware information entry. This entry defines the capabilities of the firmware to processes Scan Requests. A firmware entry begins with the keyword *Firmware* followed by the supported sequence queue depth and queue size in kilobytes, and the version of the SDP protocol supported.

```
Firmware    <queue depth>    <queue size kBytes>    <SDP version>
```

End of File The complex configuration file must always end with the keyword *End_Of_File*.

Example File The following is an example of the Complex Configuration File:

```
############################################################
# complex name architecture code
############################################################
Complex zurg- s0x20
################################################################
# entity type entity reference number
################################################################
Entity MP0
#########################################################
# host name protocol address port
#########################################################
Hostname zurg -s UDP 15.99.83.130 5151
#########################################################
#queue depth queue size SDP version
#########################################################
Firmware 165536 1.0
End_Entity
################################################################
# entity type entity reference number
################################################################
Entity NODE 0
#########################################################
# entity type entity reference number
#########################################################
Target_Entity MP 0
#########################################################
#queue depthqueue  size SDP version
#########################################################
Firmware 16553 6 1.0
End_Entity
End_Complex
End_Of_File
```

Node Configuration Files

Each node detected by JET gets a node configuration file. These files are named *node_<node number>.cfg* and are placed in the default scan directory */opt/scansw/data/cplx_<hostname>*. Where hostname is the name of the complex under test. Theses files define the boards and paths present in each node. This file is created by the Configuration Management Deamon (*cmd*).

An entry like the following must be supplied for each board in the node:

Board <scan handle> <board name> <board part number>_<scan revision>

An entry like the following must be supplied for each path in the node:

Path <path number>

Each device on the path must have an entry like the following:

Device <scan handle> <mechanical name> <device reference designator> <jtag identifier> <device name>

The *mechanical name* field in the device descriptor line identifies a unique name for the device. This unique name is used by DSU to delineate between common devices on a scan path and is identified in the *partname.lst* file.

Flex Link Mating File

The flex link mating file contains information on the non-static connections within the system, needed to determine how the current system is connected. There is only one flex link file for a complex, and it must be named *flex.mte.* JET places this file in the default scan directory */opt/scansw/data/cplx_<hostname>*.

The flex.mate file specifies all flex and cable connections for a complex. This file only contains information on all possible links that could exist in the complex base on the hardware present. Links that don't exist because hardware is not present are not listed. This file is generated by the Configuration Management Deamon (*cmd*).

An entry like the following must be present for each existing or possible link in the complex:

Link <cable scan handle> <cable part number> <cable name>

An entry like the following must exist for each connector on the link:

Mate <cable type> <board scan handle> <connector ref des> <cable ref des>

Mate <cable type> <board scan handle> <connector ref des> <cable ref des>

JET Log File

JET writes its execution information (errors and general informational) into a log file. The level of information is controlled by the debug level parameter in the *jet.cfg* file. This file is the first level for understanding problems encountered during JET execution. The name and location of this file are controlled by the *Log_File* parameter in the *jet.cfg* file.

Error Conditions

When errors are detected during update, several things can happen.

If the error is detected at the complex level, an error is written to the *complex.cfg* file, but the complex data will not be present in the file.

If an error is detected at the node level, the node configuration file will contain an error message and no data will be present.

If an error is detected at the board level, an error message is placed in the node configuration file for the board. This message prevents JUST from loading the file but does not affect any other board or path data in the file.

If an error is detected at the scan path level, the path entry in the file will contain an error message that prevents JUST from loading the file, but no other path data is affected.

In any of these cases, a *jet.err* file is created and an entry for the node is added to it. If an error occurs at the node level, the nodes entry is not placed in the *complex.cfg* file.

If an error is detected during link processing, a message is placed in the *flex.mte* file for certain error types. Due to the fact that the *flex.mte* file is complex wide, JET may encounter errors when testing a single node with other nodes in the complex powered off. This is a valid test condition. Therefore, link errors due to destination nodes not being present are dropped and a *jet.log* entry is made, but no error is entered into the flex.mte file.