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Compaq 8500 I/O Module Upgrade

Abstract: This white paper outlines new features and benefits of the I/O module upgrade of the Compaq ProLiant 8500. Key elements of the upgrade include the addition of a PCI-X bus and new ROM Based Setup Utility (RBSU) tool.

After the upgrade, the server will become a *ProLiant DL760*. A new service number will be assigned to the server to identify the new components. This service number is used to identify the type of system you have and will assure that proper help and diagnosis is given by the Call Center or Service Technician. You will maintain the current system serial number, and when you call for service, you should provide both numbers: the original system serial number, and the upgrade service number.

Help us improve our technical communication. Let us know what you think about the technical information in this document. Your feedback is valuable and will help us structure future communications. Please send your comments to: robert.campbell@Compaq.com

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Overview

The purpose of this White Paper is to provide the reader with information pertaining to the new features and benefits of the I/O module upgrade of the Compaq ProLiant 8500. Key elements of the upgrade include the addition of a PCI-X bus and new ROM Based Setup Utility (RBSU) tool.

Understanding PCI-X

PCI-X is an evolutionary bus architecture based on the prevalent PCI bus. PCI-X technology leverages the wide acceptance of the PCI bus and provides an evolutionary I/O upgrade to conventional PCI.

PCI-X technology increases bus capacity to more than eight times the conventional PCI bus bandwidth — from 133 MB/s with the 32-bit, 33-MHz PCI bus to 1066 MB/s (1GB/s) with the 64-bit, 133-MHz PCI-X bus as summarized in the table below:

PCI-X Bus Performance		
64-bit card	133 MHz	1066 MB/s

The 64-bit, 133-MHz interconnect protocol achieves this performance through the use of a register-to-register design that allows higher clock frequencies and new protocol enhancements such as the attribute phase and split transactions that allow more efficient use of the bus.

PCI-X technology is backward compatible with conventional PCI systems at the system, device driver, and the adapter level. Conventional PCI adapters will operate in PCI-X systems, and vice versa; however, when a PCI-X adapter is placed on a conventional PCI bus, it is limited to conventional PCI speeds.

A PCI-X system automatically switches between conventional PCI and PCI-X mode, depending on the type of adapters installed on the bus segment. If a PCI-X bus segment includes *any* conventional PCI adapters, that segment must operate in conventional PCI mode.

Just as with conventional PCI, the operating frequency is adjusted to match that of the slowest device on the bus. If the system includes a 33-MHz adapter, the bus must operate at 33 MHz. If only conventional 66-MHz devices are present, a PCI bus optionally operates in conventional 66-MHz or 33-MHz mode. The table below illustrates several possible combinations of system and adapter frequencies:

	Bus Frequency MHz	Conventional PCI adapters			PCI-X adapters	
		33 MHz (5 V)	33 MHz (3.3V or Universal)	66 MHz (3.3V or Universal)	66 MHz (3.3V or Universal)	133 MHz (3.3V or Universal)
PCI system	33	33	33	33	33	33
	66		33	66	33 or 66	33 or 66
PCI-X system	66		33	33 or 66	66	66
	100		33	33 or 66	66	100
	133		33	33 or 66	66	133

Note: The shaded cells denote PCI-X areas of operation.

Understanding RBSU

RBSU is an updateable, "intelligent" configuration utility that is embedded in the server ROM. The purpose of RBSU is to help you configure certain server hardware settings and prepare your server for operating system (OS) installation. Like its predecessor, SCU, RBSU allows you to view and establish server configuration settings during initial system startup, as well as modify them after the server has been configured.

The Configuration Options table describes some of the configuration options that may be available through RBSU.

Option	Description
System	Select or configure system specific options such as OS, COM ports, LPT ports, standard boot order, NUMLock
PCI devices	View installed PCI devices and configure IRQs for these devices.
Date and time	View and change system date and time
Automatic Server Recovery (ASR)	View and configure ASR settings
Server passwords	Set and change server passwords
System identification	Set the server asset tag and text displayed on the IMD
Boot controller order	View and change the controller order. All mass storage devices are included in this selection.
Integrated Remote Console (IRC)	Configure IRC communication settings and IRC user configuration (This feature is a possible future option, and will be available only on servers that support IRC.)
Advanced options	Configure options normally set by default and not user-modified, such as MPS/APIC mode, Hot-Plug Reservation, and CPU correction marking.

Key Features

The features that make RBSU an efficient and flexible configuration tool include:

- **Familiar Interface.** RBSU retains the look, feel, and functionality of SCU to ease transition for customers accustomed to using SCU. Only a few menu and navigation differences are noticeable.
- **Flexible User Control.** RBSU allows you to select between a default configuration or create your own, customized configuration settings.
- **ROM-Embedded Location.** Because it is housed in the system ROM, RBSU can be accessed by pressing the F9 function key during the system startup process. This feature allows you to change your settings without having to depend on a SmartStart and Support Software CD or startup diskette.
- **"Silent" Conflict Resolution.** Rather than allow configuration conflicts to occur, RBSU automatically avoids any settings that would create hardware and software conflicts. RBSU checks each setting as it is made and immediately resolves possible conflicts without issuing an audible warning message.
- **Virtual Presence.** Because RBSU is embedded in the system ROM, system administrators can use the Compaq Remote Insight Lights-Out Edition to remotely access and configure the system in a totally unattended fashion. (When these tools are used in combination with the SmartStart Scripting Toolkit, multiserver configurations can also be performed remotely in a silent command line mode.)
- **Automated Language Selection.** RBSU is available in English, French, Italian, German, Spanish, or Japanese. RBSU allows you to change your language selection at any time and it automatically updates the keyboard mappings to match the standard keyboard for the language you select.
- **Machine-Specific Settings.** RBSU is customized to each server, based on the unique hardware and software environment of the server. Because RBSU contains only the information relevant to a single machine, it is smaller and runs faster than traditional configuration utilities.
- **Replication Support.** RBSU is designed to work with ConRep to create an editable script file containing the configuration settings of the server. This script file can then be deployed across multiple servers with similar hardware and software components.
- **System Restore Capability.** RBSU uses the Compaq Intelligent Manageability tools to backup system settings to a configuration file. These settings can be saved for a quick system restore in a server recovery situation.
- **Easy to Update.** You can quickly install the latest version of RBSU on an already configured server by flashing the system ROM using the latest version of ROMPaq.
- **Does Not Require or Use the System Partition.** RBSU can be installed as part of the configuration process onto the system partition, if desired. However, unlike SCU, RBSU does not automatically create the system partition.

For more information on RBSU, see the ROM Based Setup Utility User Guide, available by logging on to the Internet at www.compaq.com.

Installing the Upgrade Kit

Use the option kit and the instructions provided with the kit to add PCI-X and the ROM-Based Setup Utility (RBSU) to Compaq *ProLiant*™ 8500 servers.

The upgrade is performed by one of two methods. The method used depends on the current server setup and operating system. Depending on the current setup, the operating system may have to be reinstalled.

After the upgrade, the server will become a *ProLiant* DL760. A new service number will be assigned to server to identify the new components. This service number is used to identify the type of system you have and will assure that proper help and diagnosis is given by the Call Center or Service Technician. You will maintain the current system serial number, and when you call for service, you should provide both numbers: the original system serial number, and the upgrade service number.

CAUTION: If you are planning to upgrade the server with the I/O module upgrade and the 900MHz processor upgrade simultaneously, perform the I/O module upgrade first. This will ensure that the latest BootBlock ROM chip is installed in the server.

IMPORTANT: After the upgrade, the server will support the following operating systems:

- Microsoft Windows NT Server 4.0 and Windows NT Server 4.0 Enterprise Edition
- Microsoft Windows 2000 Server and Windows 2000 Advanced Server
- SCO UnixWare 7.1.2
- Novell Netware 4.2 SMP, Netware 4.2, Netware 5 and Netware 5.1

NOTE: After the upgrade, the server will only support three 5V I/O expansion boards and eight 3.3V I/O expansion boards. For detailed PCI/PCI-X expansion slot information, refer to the “PCI-X and PCI Bus Distribution Guidelines” section of this document.

NOTE: The I/O module upgrade will take approximately two to four hours to complete.

Kit Contents

- I/O module pre-wired for an optional Remote Insight Lights-Out Edition board
- Compaq *SmartStart*™ for Servers 5.0 CD
- Compaq ProLiant DL760 Documentation CD
- ProLiant 8500 I/O Module Upgrade Migration diskette
- Compaq ProLiant 8500 Server I/O Module Upgrade Quick Installation poster
- Two PCI/PCI-X access panel hood labels
- One ProLiant DL760 label
- Two service number labels

Tools Required

- A Torx T-15 or a flathead screwdriver

Precautions

WARNING: There is a risk of personal injury from hazardous energy levels. The installation of options and routine maintenance and servicing of this product shall be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with equipment containing hazardous energy circuits.

WARNING: To reduce the risk of personal injury or damage to the equipment, refer to the documentation supplied with the system, and observe the appropriate safety precautions and option installation instructions.

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

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

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded electrical outlet that is easily accessible at all times.
- Disconnect power from the system by unplugging the power cord from either the electrical outlet or the system.

CAUTION: To prevent damage to your system, you must become static-free by touching a screw or unpainted surface on the system's housing before beginning these procedures. In addition, avoid touching any exposed metal on the option board and chip or on the system's circuit boards.

Selecting an Upgrade Method

The I/O module upgrade can be performed by either of two methods. The method to use depends on the existing server setup.

IMPORTANT: Using Method 1 is strongly recommended. Reinstalling the operating system using the SmartStart for Servers 5.0 CD results in a cleaner upgrade.

- **Method 1**—This method is the preferred method. It involves reinstalling the supported operating system using SmartStart for Servers 5.0.
- **Method 2**—This method involves keeping the same supported operating system, but updating the System Partition with the System Dispatcher and Compaq Server Diagnostics utilities, updating the drivers, and updating the *Compaq Insight Manager*[™] Console using the Compaq Management 5.0 CD.

Method 1 Scenarios:

1. No operating system is installed on the existing server.
2. A non-supported operating system is installed on the existing server.
3. New expansion boards will be added to the new I/O module.
4. The 5V expansion boards on the existing secondary bus must be moved to the primary bus due to the new slot keying on the 3.3V secondary bus.
5. The existing server has a supported operating system, but it will be reinstalled.

Method 2 Scenario:

- The existing server has a supported operating system, but it will not be reinstalled.

NOTE: If upgrade Method 2 is used, do **not** install any new expansion boards during the I/O module upgrade.

Preparing the ProLiant 8500

CAUTION: The ProLiant 8500 I/O Module upgrade process may destroy data on your server. To ensure that you do not lose data, Compaq recommends that you back up your server.

CAUTION: Disconnect any data drives present to prevent data from being erased when running the Erase utility from SmartStart.

1. Backup your data.
2. Shutdown the operating system as described in the operating system's instructions.
3. Disconnect any data drives.
4. Power down the server.
5. Gather the kit contents.

Upgrade Method 1

IMPORTANT: Using upgrade Method 1 is strongly recommended. Reinstalling the operating system using the SmartStart for Servers 5.0 CD results in a cleaner install.

If Method 1 is used, proceed to the "Migrating the System" section of this guide. You will install (reinstall) the operating system after the migration has taken place.

Upgrade Method 2

If Method 2 is used, continue with the "Updating the Drivers, System Partition, and Compaq Insight Manager Console" section of this guide.

Updating the Drivers, System Partition, and Compaq Insight Manager Console

NOTE: Use these instructions only if you are using upgrade method 2 to perform the upgrade.

IMPORTANT: SmartStart for Servers 5.0 can no longer be used to create a Compaq Server Diagnostics diskette. If the server is not installed with a System Partition, a new version of the Compaq Server Diagnostics utility will need to be downloaded from the Compaq website. To access the Compaq website, log on to the Internet and point the browser to:

<http://www.compaq.com>

IMPORTANT: If the server does not have a System Partition, do not perform the “Updating the System Partition” section that follows. Perform only the “Updating the Drivers” and “Updating the Compaq Insight Manager Console” sections and then continue to the “Migrating the System” section.

Updating the Drivers

Software drivers and utilities have been updated to support the new PCI-X architecture included in this upgrade. To update the Support Software and Health Drivers specific to your operating system perform the following:

- **Microsoft Windows NT 4.0 and Windows 2000**
 1. Insert the SmartStart for Servers 5.0 CD in the server and allow Autorun to execute.
 2. Select and install the appropriate Compaq Support Paq following the screen instructions.
- **Novell NetWare**
 1. Insert the SmartStart for Servers 5.0 CD in the server.
 2. Mount the CDROM drive.
 3. Run the update utility by typing:
 4. `LOAD CPQSMST500:CPQSUPSW\NSSD\INSTALL\CPQNSSU.NLM`
 5. Follow the screen instructions.
- **SCO UnixWare**

IMPORTANT: Uninstall the existing Extended Features Supplement (EFS) prior to performing this procedure. Refer to the documentation included with your version of the SCO UnixWare EFS for procedures on uninstalling.

1. Insert the SmartStart for Servers 5.0 CD in the server.
2. Mount the CDROM drive.
3. Execute the following command:
4. `pkgadd -d /<mountpoint>/ssup/uwar7/cpqefs.pkg`

NOTE: Unix commands must be typed in lowercase.

NOTE: Check the Compaq website for the latest drivers. Access the Compaq website at:

<http://www.compaq.com/support/files/server/us/index.html>

Follow the instructions provided on the website to obtain and install the latest drivers for your operating system.

Updating the System Partition

The System Partition must be updated with the System Dispatcher and Compaq Server Diagnostics utilities. To update the System Partition:

1. Insert the SmartStart for Servers 5.0 CD into the server.
2. Boot the server.
3. After the system is restarted, click the **Update the System Partition** icon from the screen to update the System Dispatcher and Compaq Server Diagnostics utilities. After the System Partition is updated, the server will reboot.
4. Remove the SmartStart for Servers CD during the reboot.

Updating the Compaq Insight Manager Console

The Compaq Insight Manager Console must be updated. To do the update perform the following:

1. Insert the Compaq Management 5.0 CD on any Management Console machine.
2. Follow the screen instructions to perform the update.
3. Remove the Compaq Management 5.0 CD.

Migrating the System

To maintain the original system serial number when upgrading to the new I/O module, a serial number migration is necessary. The serial number migration transfers the serial number and the Environmental Variables (EVs) of the existing server onto the server with the new I/O module.

1. Insert the ProLiant 8500 I/O Module Upgrade Migration diskette and boot the server
2. When the system completes the boot, two options will display on the screen:
 - **Prepare for Migration**
 - **Exit and Reboot System**
3. Select **Prepare for Migration** option by pressing the **P** key.

The system will respond with “Collecting Migration Information ...” and then you will get a confirmation, “Migration information collected and saved successfully” and the screen will display the serial number of the server.
4. Record the serial number for use later when verifying the serial number migrated successfully.
5. Leave the ProLiant 8500 I/O Module Upgrade Migration diskette in the server

IMPORTANT: If you are upgrading multiple servers, do not reuse the same ProLiant 8500 I/O Module Upgrade Migration diskette. Each upgrade kit is supplied with its own diskette.

Powering Down the Server

Power down the server and disconnect all power cords from the power supplies.

NOTE: For more information regarding powering down the server and accessing the I/O board, refer to the server installation guide or maintenance and service guide supplied with your server.

Removing the Existing I/O Module

Removing the Cable Management Arm

IMPORTANT: All PCI expansion boards must be removed from the server to perform the upgrade. If you are performing Method 2, write down where the expansion boards are located. When replacing the expansion boards in the new I/O module, they must be placed in the same bus and slot location as they were in the existing I/O module.

NOTE: Before removing the PCI expansion boards, label all cables.

1. Disconnect all cables from the PCI expansion boards (if installed).
2. Loosen the thumbscrew on the cable management arm bracket (1) and lift up on the bracket (2) to disconnect the cable management arm from the back of the server.
3. Swing the cable management arm out of the way.

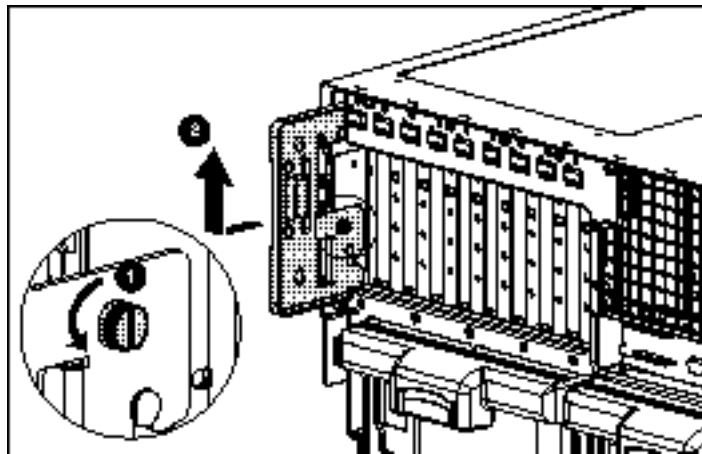


Figure 1. Removing the cable management arm

NOTE: For clarity, the cable management arm is not shown

Accessing the Existing I/O Module

The ProLiant 8500 server has a top latch security screw on the top access panel, as shown in Figure 2. The screw prevents access to the Processor and Memory Module and the I/O module. There is also a shipping screw between the Processor and Memory Module and the I/O module.

1. Loosen the thumbscrews and slide the server out of the rack until it is fully extended.

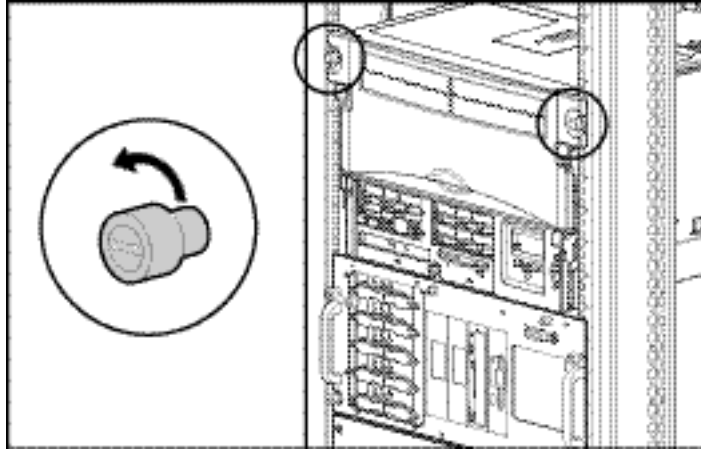


Figure 2. Loosening the rack thumbscrews

2. Loosen the top access panel screw (1), slide the latch forward (2) and slide the top access panel (3) toward the front of the server.

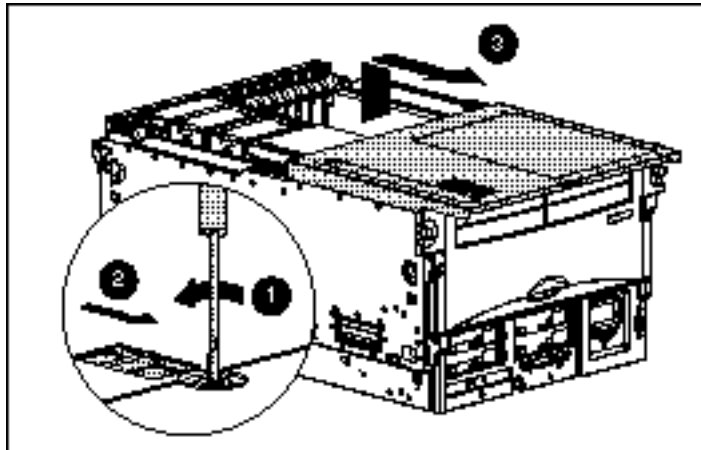


Figure 3. Opening the top access panel

3. Open the air baffle (1) in the I/O module.
4. Loosen the shipping screw between the Processor and Memory Module and the I/O module (2) as shown in Figure .



Figure 4. Loosening the shipping screw

5. Close the air baffle and the top access panel.
6. Slide the server into the rack.
7. Secure the server in the rack.

Removing the I/O Module

CAUTION: If the server is equipped with a three-segment virtual power button cable, refer to the “Removing the Virtual Power Button Cable” section at the end of this guide for further instructions before continuing with this section. Removing the I/O module without disconnecting the virtual power button cable can damage the cable.

1. Push in on the sides of the stop latches on the I/O module (1), and rotate the cam levers downward (2).
2. Pull the I/O module out of the rear of the chassis (3).

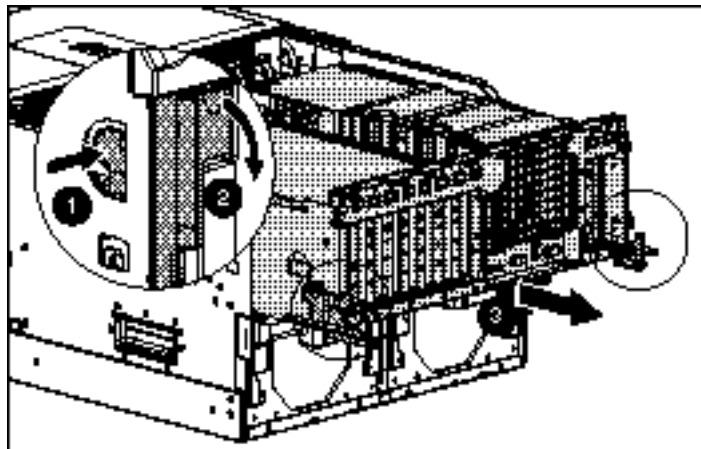


Figure 5. Releasing the existing I/O module

3. Press in the module stop latches (4) on both sides and pull the module out of the chassis (5).

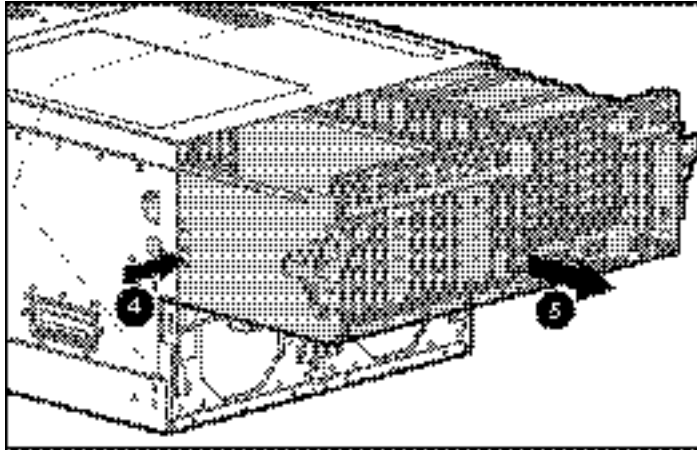


Figure 6. Removing the existing I/O module

Transferring I/O Expansion Boards Between the I/O Modules

This section provides instructions on removing I/O expansion boards from the existing I/O module and installing them into the new I/O module.

IMPORTANT: If performing the upgrade Method 2, place the I/O expansion boards in the same slots in the new I/O module as they were in the existing I/O module.

NOTE: Before installing the I/O expansion boards into the new I/O module, make sure that the PCI/PCI-X expansion slot will support the I/O expansion board. For detailed PCI/PCI-X expansion slot information see the “PCI-X and PCI Bus Distribution Guidelines” section of this guide.

Removing PCI Expansion Boards from Slots 1 Through 9

1. Open the air baffle (1).
2. Press down on the top of the PCI expansion slot (2) and open the slot release lever (3).
3. Lift the PCI expansion board out of the slot (4).

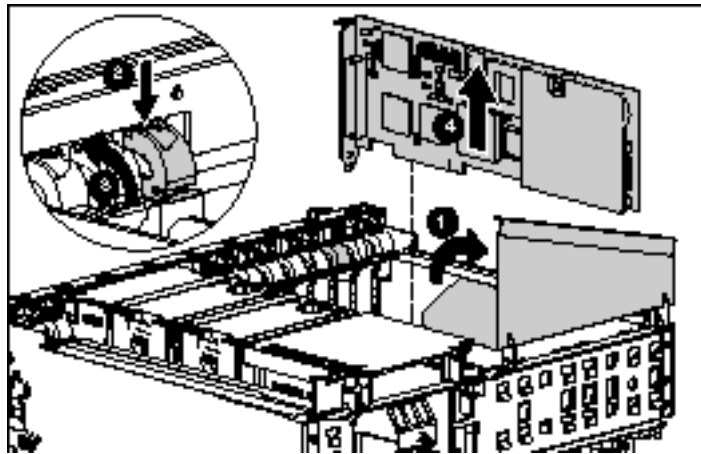





Figure 7 Removing PCI expansion boards from slots 1-9

4. Repeat steps 1 through 3 for the remaining PCI expansion boards in slots 1-9, if installed.

Removing PCI Expansion Boards from Slots 10 and 11

1. Press down on the top of the PCI expansion slot , and open the slot release lever .
2. Lift the PCI expansion board out of the slot .

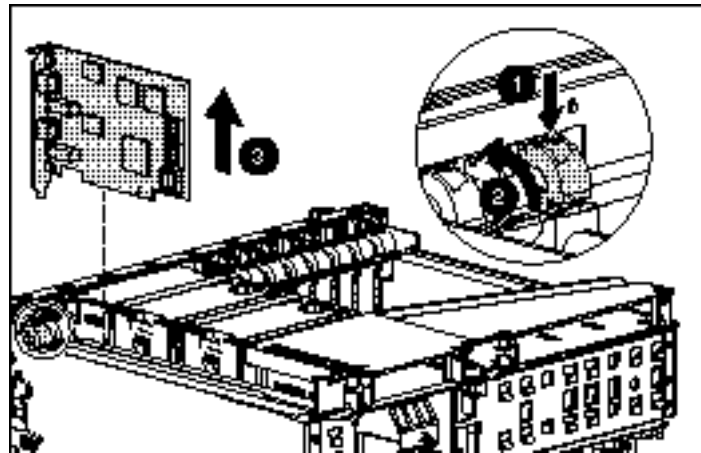


Figure 8. Removing PCI expansion boards from slots 10 and 11

3. Repeat steps 1 and 2 for the remaining PCI expansion board, if one is installed.

New I/O Module PCI/PCI-X Slot Information

The following section describes the new slot keying on the new I/O module.

I/O Board Slot Descriptions

The new I/O module has 11 slots divided into 3 buses. The Primary bus (slots 7 through 9) is keyed (1) for 64-bit 5V PCI boards or 64-bit PCI universal boards. The Secondary bus (slots 1 through 6) and the Tertiary bus (slots 10 through 11) are keyed (2) for 64-bit 3.3V PCI/PCI-X boards or 64-bit universal PCI/PCI-X boards. This is a change from the previous I/O module, where the Secondary bus (slots 1 through 6) supported 64-bit 5V PCI boards.

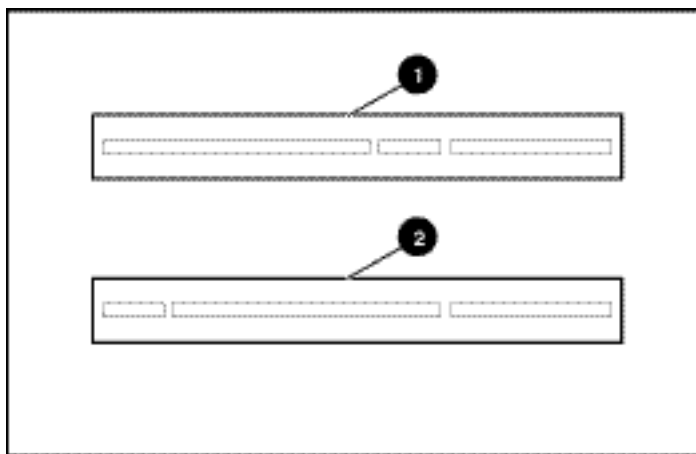


Figure 9. I/O board slot descriptions

I/O Expansion Board Descriptions

The Primary bus will accept a 64-bit 5-V PCI board (1) or a 64-bit universal PCI board (3) The Secondary and Tertiary buses will accept a 64-bit 3.3-V PCI/PCI-X board (2) or a 64-bit universal PCI/PCI-X board (3).

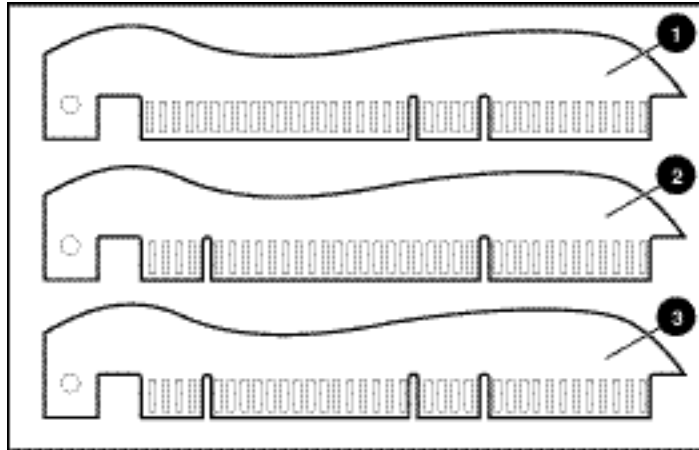


Figure 10. I/O Expansion Board Descriptions

PCI-X and PCI Bus Distribution Guidelines

The new I/O board in the new I/O module has 11 PCI Hot Plug I/O expansion slots.

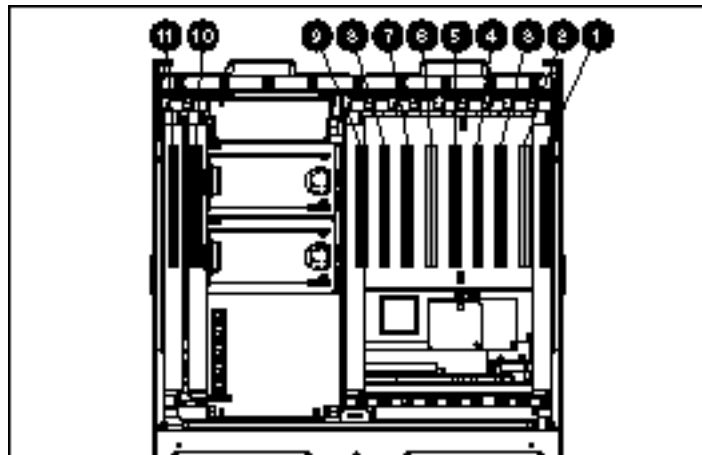












Figure11. PCI/PCI-X bus assignments

Table 1
Bus Distribution of PCI Hot Plug I/O Expansion Slots

Slots	Bus	Maximum PCI/PCI-X Bus Speed	Expansion Board
 - 	Secondary	64-bit, 33-MHz PCI OR 64-bit, 50-MHz PCI-X	Industry Standard 64-bit 33-MHz PCI and 66-MHz PCI-X Boards (3.3V keying)
 - 	Primary	64-bit, 33-MHz PCI	Industry Standard 64-bit 33-MHz PCI Boards (5V keying)
 - 	Tertiary	64-bit, 66-MHz PCI OR 64-bit, 100-MHz PCI-X	Industry Standard 64-bit 33-MHz PCI, 66-MHz PCI, 66-MHz PCI-X, and 133-MHz PCI-X Boards (3.3V keying)
Note: All PCI-X buses support PCI cards at 33 MHz			
Note: The bus speed will only run as fast as the slowest card installed			

Installing the I/O Expansion Boards in the New I/O Module

IMPORTANT: If you are using upgrade Method 1 and you will be installing **new** PCI/PCI-X expansion boards, do so using the procedures in this section.

1. Press on the top of the appropriate expansion slot release lever () 1, and open the lever toward the rear of the expansion slot ().
2. Remove the expansion slot cover () 2.
3. Open the air baffle () 3.

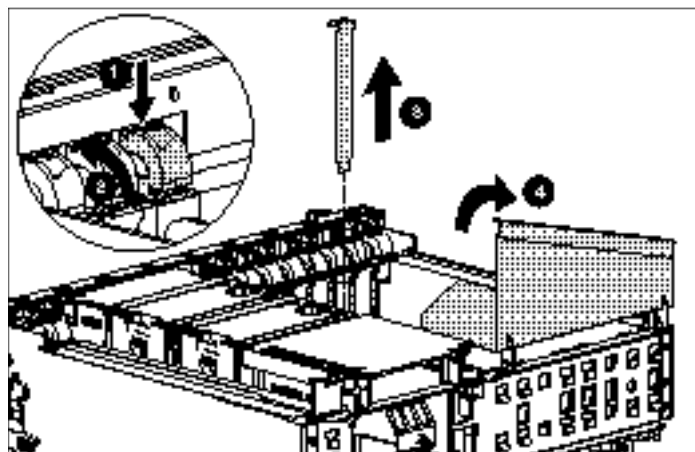





Figure 12. Preparing the hot-plug expansion slot for installation

4. Install any new PCI/PCI-X expansion boards at this time (only if performing upgrade Method 1).

5. Insert an expansion board into the appropriate expansion slot , pushing firmly until the board is seated properly.

IMPORTANT: If performing the upgrade Method 2, place the I/O expansion boards in the same slots in the new I/O module as they were in the existing I/O module.

6. Close the air baffle .
7. Close the expansion slot release lever .

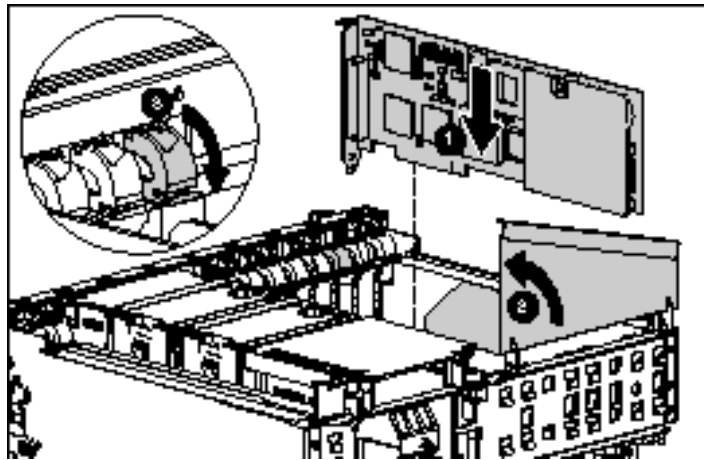






Figure 13. Inserting the PCI/PCI-X expansion board

8. Replace any PCI expansion boards removed from slots 10 and 11
9. Repeat steps 1 through 6 for the remaining PCI expansion boards.
10. If no Remote Insight Lights-Out Edition board will be installed, proceed to the “Installing the New I/O Module” section of this guide.

Installing the Remote Insight Lights-Out Edition Board

If you are installing a Remote Insight Lights-Out Edition board, follow these procedures. Otherwise, continue with the “Installing the New I/O Module” section of this guide.

NOTE: The Remote Insight Lights-Out Edition board can be installed in slots 7,8, or 9. Compaq recommends installing the board in slot 9 for the easiest installation.

1. Press on the top of the slot release lever , and open the lever toward the rear of the expansion slot .
2. Remove the expansion slot cover .
3. Open the air baffle .

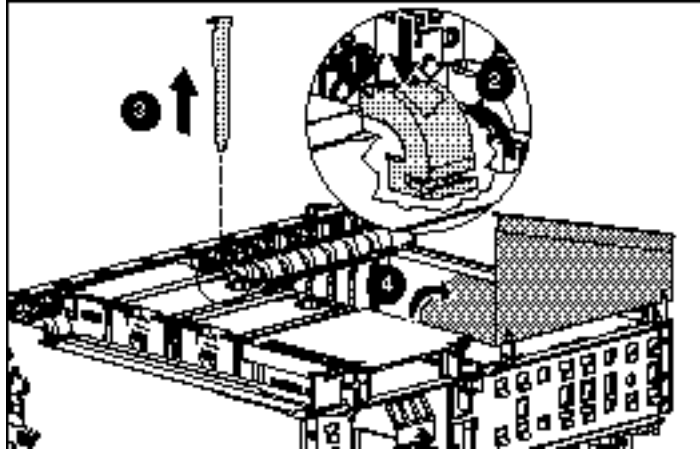


Figure 14. Preparing the expansion slot for installation

4. Locate the ProLiant DL760 Remote Insight Lights-Out Edition adapter cable next to slot 9. The LED indicator cover must be opened to access the cable.

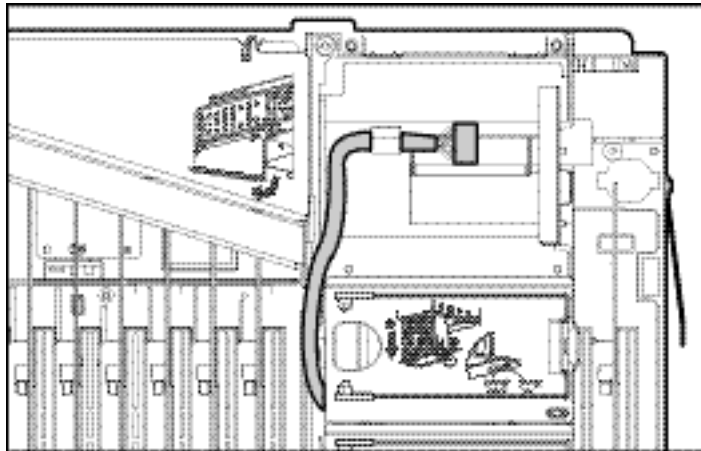




Figure 15. Locating the ProLiant DL760 Remote Insight Lights-Out Edition adapter cable

5. Insert the Remote Insight Lights-Out Edition board into the slot, pushing firmly until the board is seated properly , then close the expansion slot release lever .

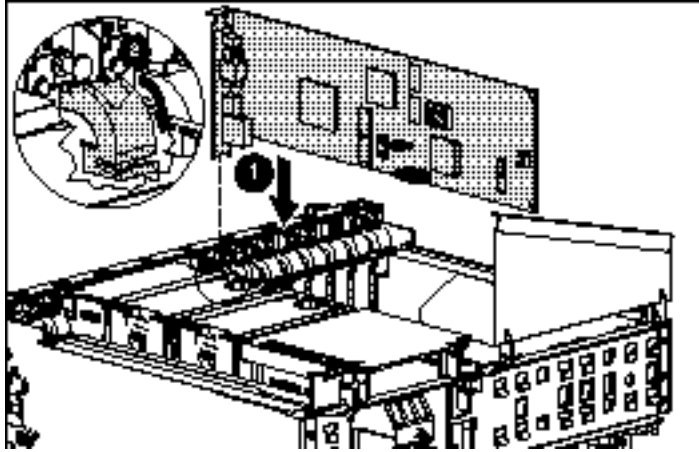


Figure 16. Inserting the Remote Insight Lights-Out Edition expansion board

6. Connect the ProLiant DL760 Remote Insight Lights-Out Edition adapter cable to the cable connector on the Remote Insight Lights-Out Edition board .
7. Close the air baffle .

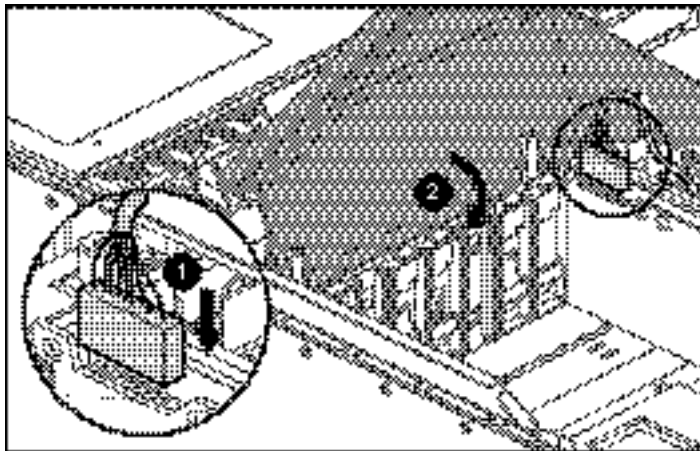



Figure 17. Connecting the ProLiant DL760 Remote Insight Lights-Out Edition adapter cable

8. Continue with the section, "Installing the New I/O Module."

Installing the New I/O Module

Before sliding the I/O module into the server, verify that the correct module is being installed.

1. Verify that the serial number  on the new I/O module matches the serial number on the service number labels included in the kit.

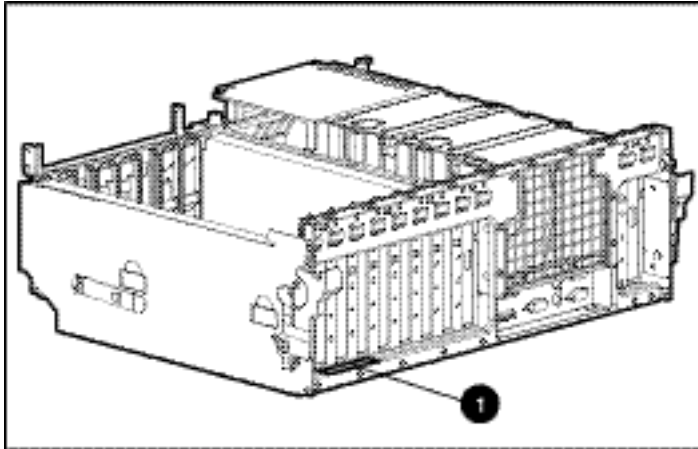


Figure 18. New I/O module serial number label location.

2. Install the new I/O module into the server until the cam levers engage with the server chassis.
3. Secure the module by rotating the top cam levers upward.

Completing the Upgrade

This section describes the procedures necessary to complete the upgrade.

Installing the New Labels

1. Slide the server out of the rack until it is fully extended.
2. Superimpose the Tertiary I/O Slot label over the Additional I/O Information label (📁 ①).
Superimpose the Hot-Plug I/O Slot label over the existing I/O Board Information label (📄 ②).
3. Superimpose the DL760 model number label over the 8500 label (📄 ③).

NOTE: Do not superimpose the service number labels over the serial number labels. The service number labels are needed for warranty purposes.

4. Place the service number labels **next** to the serial number labels (📄 ④).

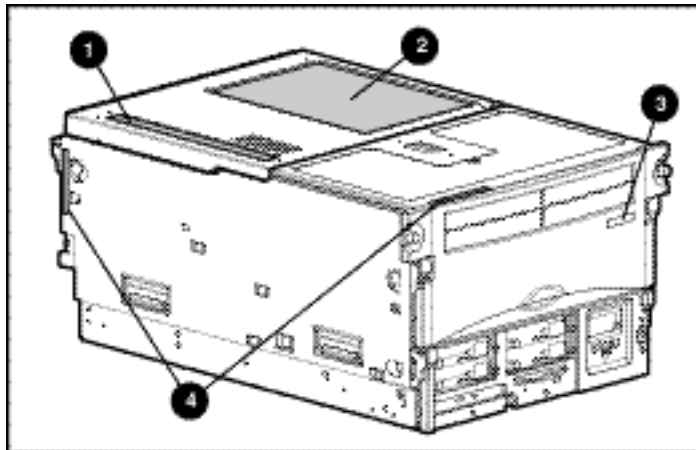


Figure 19. Slot information and serial number label locations

Table 2
Label Locations

Item	Component	Item	Component
📁	Additional I/O Information	📄	Model Number
📄	I/O Board Information	📄	Serial Number

5. Slide the server into the rack.
6. Secure the server to the rack.

Connecting the Cable Management Arm and Cables

1. Connect the cable management arm to the server (📁 ①), and secure it using the thumbscrew (🔩 ②).

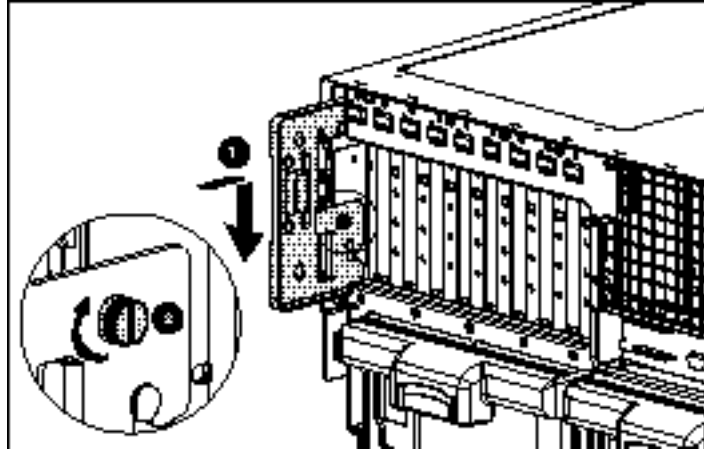


Figure 20. Connecting the cable management arm

NOTE: For clarity, the cable management arm is not shown.

IMPORTANT: If a Remote Insight Lights-Out Edition board is installed, do not connect the mouse and keyboard cables to the board. These signals are provided through the ProLiant DL760 Remote Insight Lights-Out Edition adapter cable.

NOTE: If a Remote Insight Lights-Out Edition board is installed, you can connect the auxiliary power cable to provide a redundant power supply to the board.

2. Connect any cables or power cords that were disconnected from the server at the beginning of the procedure.

Transferring the Serial Number to the New I/O Module

1. With the ProLiant 8500 I/O Module Upgrade Migration diskette loaded, boot the server.

The screen will display two options:

- **Restore Migration Information**
- **Exit and Reboot System**

2. Select **Restore Migration Information** by pressing the **R** key.

The system will respond with “Restoring Migration Information.”

After the migration completes, the confirmation message, “Migration Information Restored Successfully,” will be displayed, followed by the server serial number and the new service number (serial number of the new I/O module).

3. Confirm that the service number displayed matches the number on the new service number label located on the top of the server.
4. Confirm that the server serial number matches the server serial number label located on the top of the server as well as the server serial number noted earlier in the “Migrating the System” section of this guide.
5. Remove the diskette and press any key to reboot the server.

Confirming the Serial Number and Service Number Display

After the server completes the Power-On Self Test, press the **F9** key to access the RBSU configuration utility screen.

1. Verify that the server serial number displayed matches the serial number you recorded earlier.
2. Verify that the new service number displayed is correct.

NOTE: The new service number will contain the serial number of the new PCI-X I/O module.

3. Exit RBSU.
4. If you are reinstalling the operating system, proceed to the “Configuring the Server” section of this guide.

CAUTION: If you are performing upgrade Method 2, do not perform the procedures in the “Configuring the Server” section that follows. Performing those steps will cause data loss.

If you are performing upgrade Method 2, the upgrade is now complete.

Configuring the Server

USE THESE INSTRUCTIONS ONLY IF YOU ARE USING UPGRADE METHOD 1 TO PERFORM THE UPGRADE.

IMPORTANT: Data loss will occur if you are performing upgrade Method 2 and you continue with these procedures.

SmartStart is the intelligent way to configure the server and to load the system software and operating system, thereby achieving a well-integrated server that ensures maximum dependability and supportability.

To install the SmartStart for Servers CD:

1. Insert the SmartStart for Servers CD.
2. Reboot the server from the SmartStart for Servers CD.

IMPORTANT: Running the System Erase Utility will cause the new service number to be erased. Before running this utility, confirm you have placed both of the new service number labels on the server.

3. Select the **Run System Erase Utility** icon.
4. Cycle power to the server when prompted.
5. After the boot, RBSU runs the memory check and then prompts you for the language and operating system to be used.
6. Follow the screen prompts.

NOTE: During this process you will be prompted to load the operating system.

7. Install Compaq Insight Manager when prompted by SmartStart.

When the CD-ROM busy LED indicator is illuminated, the SmartStart installation sequence begins.

The first time the server is configured, the SmartStart program automatically creates a System Partition and installs the Compaq Server Diagnostics utility and other Compaq utilities in that partition.

Refer to the Server Setup and Management pack for instructions on using SmartStart.

The upgrade is now complete.

Removing the Virtual Power Button Cable

If the server was installed with a three-segment virtual power button cable, the cable must be removed. Each segment of the virtual power button cable is labeled A through C and has factory-installed self-adhesive cable guides.

NOTE: Refer to the *Compaq Remote Insight Lights-Out Edition User Guide* for additional information on the virtual power button feature of the option board.

Removing Cable Segment A

Cable segment A of the virtual power button cable is located in the media module. Viewing the server from the front, remove the media module by following these steps:

1. Loosen the thumbscrews on the front of the rack.

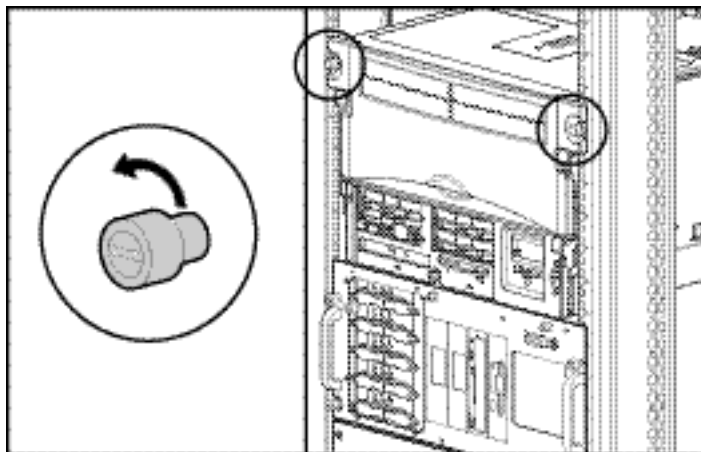


Figure 21. Loosening the rack thumbscrews

2. Push in on the sides of the cam levers (A) on the media module and rotate the top of the levers downward (B).
3. Pull the media module out of the chassis until it makes contact with the module stop latches.
4. Press in the module stop latches (C) and pull the module out of the chassis (D).

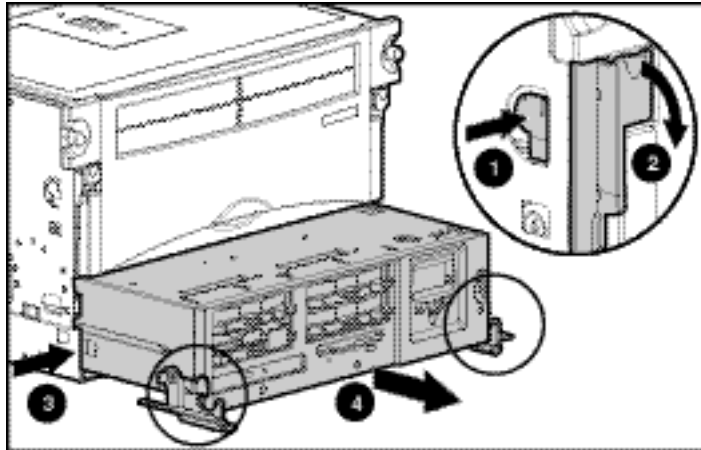


Figure 22. Removing the media module

5. Disconnect the keyed cable segments A and B.

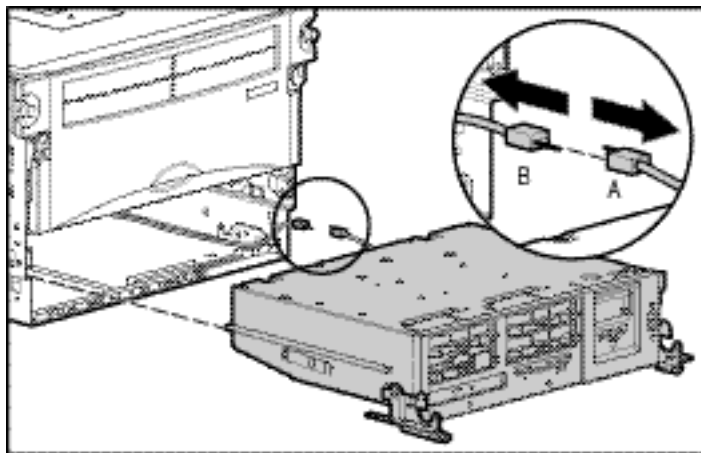


Figure 23. Disconnecting cable segments A and B

6. Remove the self-adhesive cable guide of cable segment A from the rightmost wall of the media module, adjacent to the Power On/Standby connector.

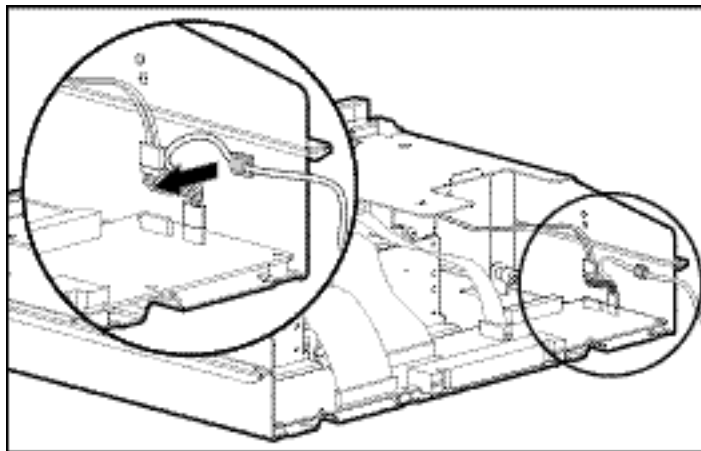


Figure 24. Removing the self-adhesive cable guide

7. Disconnect the keyed connector of the server's Power On/Standby cable from the dual-head connector.

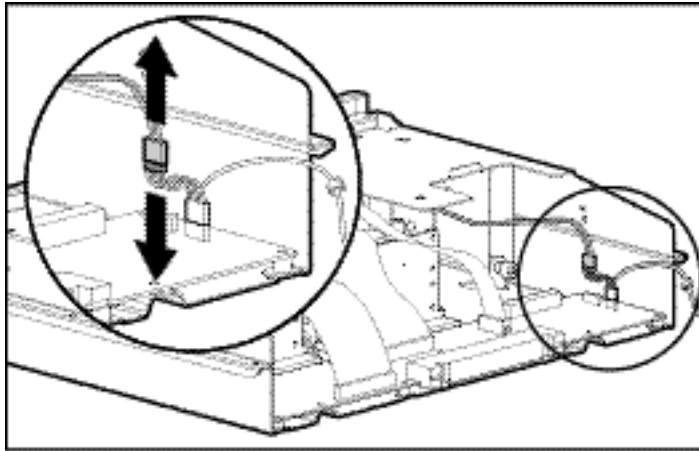


Figure 25. Disconnecting the Power On/Standby cable

8. Disconnect the keyed dual-head connector of cable segment A from the Power On/Standby connector on the media board.

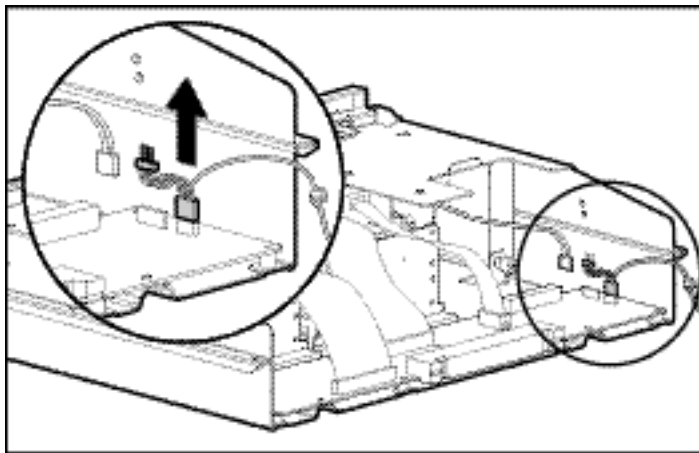


Figure 261. Disconnecting the keyed dual-head connector

9. Connect the Power On/Standby switch connector to the media board in the media module.

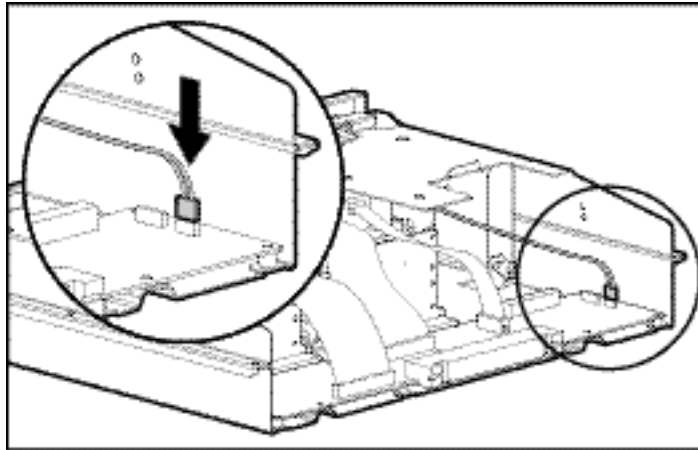





Figure 27. Connecting the Power On/Standby switch connector

10. Set the media module aside.

Cable segment A is now removed.

Removing Cable Segment B

Cable segment B is situated on the system midplane board and connects cable segment A in the media module to cable segment C in the I/O module.

1. Slide the server out of the rack until it is fully extended.
2. Loosen the top access panel screw , slide the latch forward , and slide the top access panel  toward the front of the server.

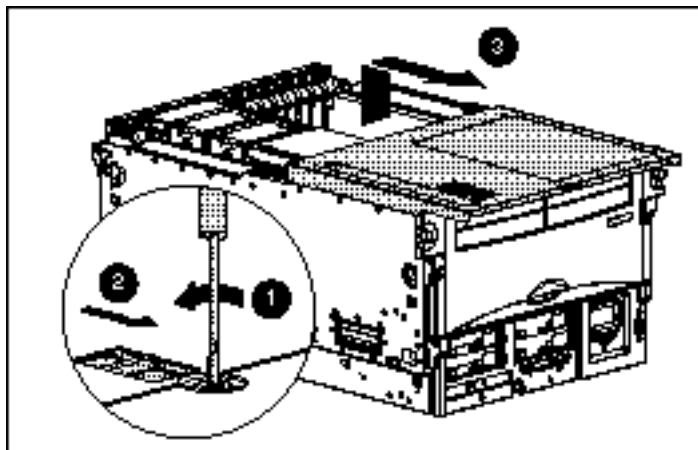


Figure 28. Opening the top access panel

3. Looking down on the server from the front, disconnect the keyed cable segments B and C located on the right side just forward of the air baffle.

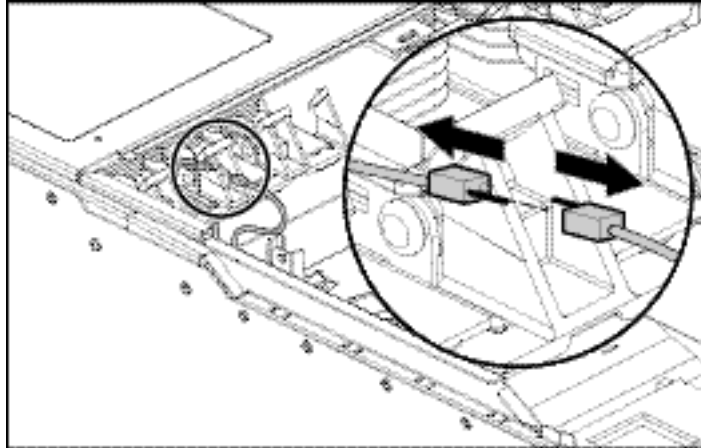


Figure 29. Disconnecting cable segments B and C

4. Viewing the server from the front, remove the self-adhesive cable guide without Velcro from the base of the server in the media module area, adjacent to the right server wall.

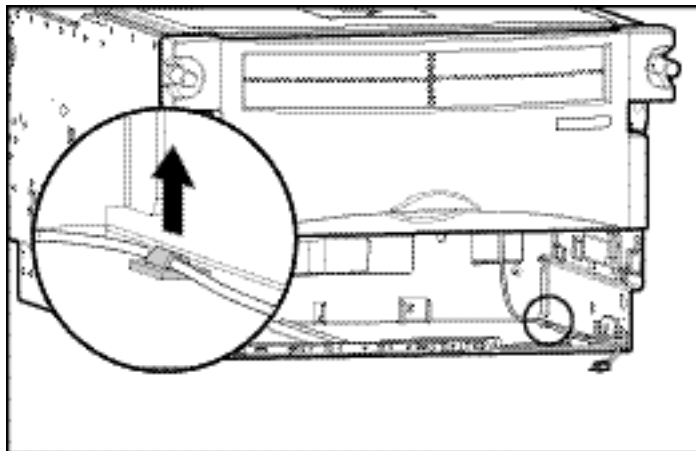


Figure 30. Removing the cable guide from media module area

5. Remove the power supplies located under the I/O module on the rear of the server to gain access to cable segment B.
6. Viewing the server from the rear, remove the cable guide with Velcro from the back of the vertical wall of the system midplane board, adjacent to the left server wall.

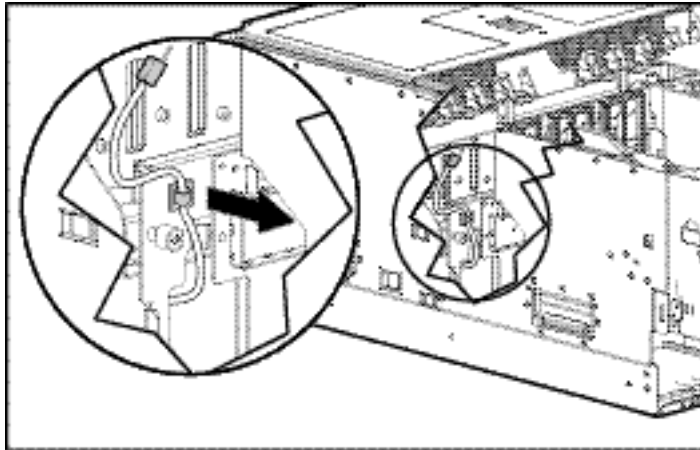


Figure 31. Removing cable guide from system midplane

7. Viewing the server from the front, pull the end of cable segment B closest to the cable guide with Velcro through the right vent hole in the system midplane board and down toward the media module area.

Cable segment B is now removed.

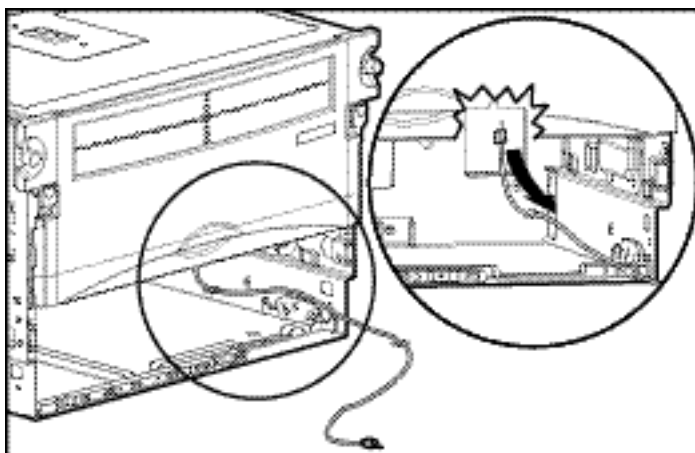


Figure 32 Removing cable segment B

8. Slide the media module back into the server.

Removing Cable Segment C

Cable segment C of the virtual power button cable is situated in the I/O module and connects to cable segment B located in the system midplane.

Viewing the server from the rear, slide the I/O module out of the server several inches by following these steps:

1. Push in on the sides of the cam levers (📁 ①) on the I/O module and rotate the top of the levers downward (📁 ②).
2. Pull the I/O module out of the chassis (📁 ③) to gain access to the system midplane.

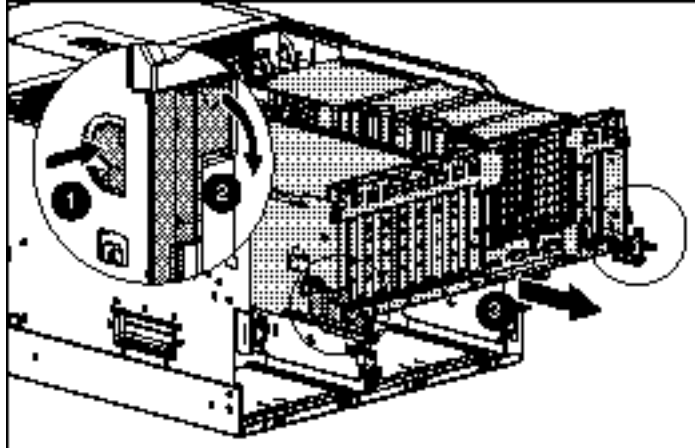


Figure 33. Gaining access to the I/O module

3. Open the air baffle and disconnect the four-pin connector of cable segment C from the virtual power button J-12 connector on the Remote Insight Lights-Out Edition board.

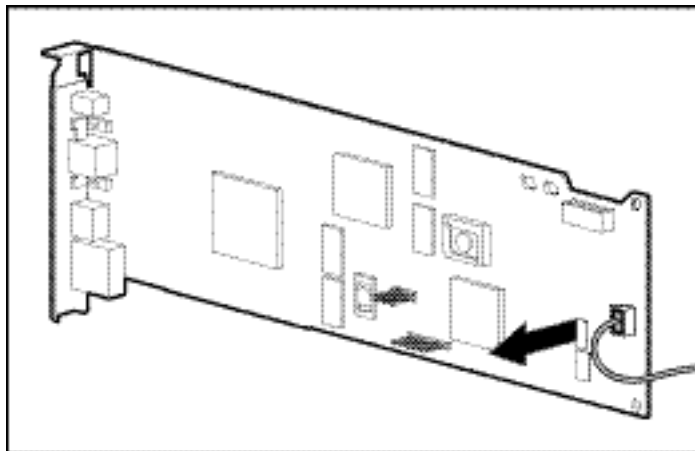


Figure 34. Disconnecting cable segment C from the Remote Insight Lights-Out Edition board

4. Pass the four-pin connector end of cable segment C through the hole in the air baffle.

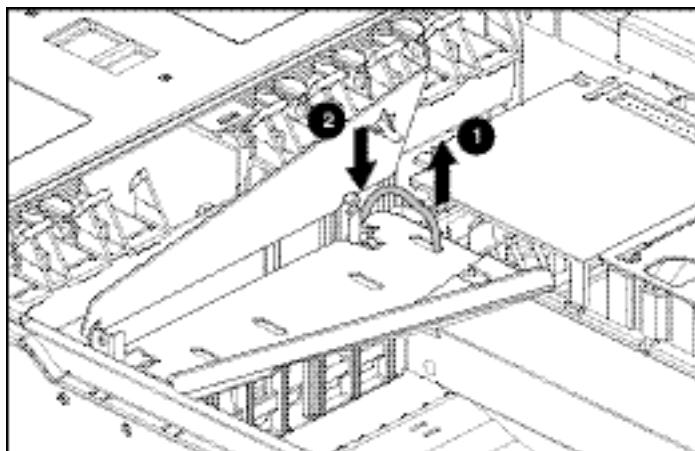




Figure 35. Passing cable segment C through the air baffle

5. Viewing the server from the front, open the I/O module air baffle and remove the four-pin connector end of the cable from the air baffle .
6. Remove the self-adhesive cable guides of cable segment C from the lip on the outside wall of the I/O module PCI expansion slot area .

Cable segment C is now removed.

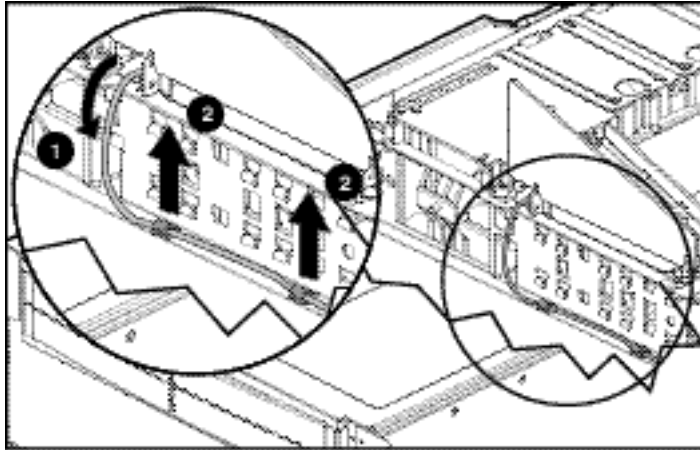


Figure 36. Removing cable segment C

The virtual power button cable is now removed. Return to “Removing the I/O Module” section of this guide to continue the I/O module upgrade.