Maintaining the Avaya S8800 1U Server for Modular Messaging

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Contents

Chapter 1: Safety information

General safety information

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the system units during and after maintenance.

    - Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the system unit.

    - Keep your tool case away from walk areas so that other people do not trip over it.

- When lifting any heavy object:

    a. Verify that you can stand safely without slipping.

    b. Distribute the weight of the object equally between your feet.

    c. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.

    d. Lift by standing or by pushing up with your leg muscles. This action removes the strain from the muscles in your back. Do not attempt to lift any objects that weigh more than 16 kg (35 lb.) or objects that you think are too heavy for you.

- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.

- Before you start the system unit, ensure that other technical support staff and customer personnel are not in a hazardous position.

- Do not wear loose clothing that can be trapped in moving parts. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.

- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 cm (3 inches) from the end.

- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing. Metal objects are good electrical conductors.

- Remove items from your shirt pocket, such as pens and pencils, that could fall into the server as you lean over it.

- Wear safety glasses when you are working in any conditions that might be hazardous to your eyes.

- Avoid dropping any metallic objects, such as paper clips, hairpins, and screws, into the server.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the server to service.

⚠️ **Warning:**

To prevent access to electrical hazards by unauthorized personnel and to ensure continued compliance with international radiated emissions requirements, tighten all captive screws securely so they cannot be loosened without the use of a tool.

Safety Inspection

Use this list to identify potentially unsafe conditions related to the server. Each server, as it was designed and built, had required safety items installed to protect users and technical support staff from injury. If any unsafe conditions are present, determine how serious the apparent hazard is and whether you can safely continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power. Primary voltage on the frame can cause serious or fatal electrical shock.
- Explosive hazards, such as a damaged monitor face or bulging capacitor.
- Mechanical hazards, such as loose or missing hardware.

Perform the following safety checks when servicing this unit:

1. Check exterior covers for damage such as loose, broken, or sharp edges.
2. Shutdown the system and unplug the AC power cords.
3. Check the power cord:
   - Verify that the third-ground connector is in good condition. Use an ohmmeter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
   - Verify that the power cord is the appropriate type.
   - Verify that insulation is not frayed or worn.
4. Check inside the server for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
5. Check for worn, frayed, or pinched cables.
6. Verify that the power-supply cover fasteners, such as screws or rivets, have not been removed or tampered with.
7. If you notice any damage, replace the appropriate system components.

Electrical safety rules

Electrical current from power, telephone, and communication cables can be hazardous. To avoid any shock hazard, you must disconnect all power cords and cables.

Observer the following rules when working on electrical equipment.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.

- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.

- Disconnect all power before:

    - Doing a mechanical inspection

    - Working near power supplies

    - Removing or installing servers

- Before you start to work on the server, unplug the power cord. If you cannot unplug it, ask the customer to switch off the wall box that supplies power to the server. Afterwards, lock the wall box in the off position.

- If you must work on a server that has exposed electrical circuits, observe the following precautions:

    - Ensure that another person, familiar with the power-off controls, is near you. Another person must be there to switch off the power if necessary.

    - Stand on suitable rubber mats to insulate you from grounds such as metal floor strips and system unit frames. Obtain the mats locally, if necessary.

    - When using testers, set the controls correctly and use the approved probe leads and accessories for that tester.

    - Use only one hand when working with powered-on electrical equipment. Keep the other hand in your pocket or behind your back. This precaution can prevent a current from passing through your body.

- Regularly inspect and maintain your electrical hand tools for safe operational condition. Do not use worn or broken tools and testers.

- Never assume that power was disconnected from a circuit. First, verify that the unit is turned off.

- Always look carefully for possible hazards in your work area. Examples of hazards are moist floors, non-grounded power extension cables, power surges, and missing safety grounds.

- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive. Touching a live circuit can cause personal injury and damage to the server.

- Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents.

- Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do *not* use this type of mat to protect yourself from electrical shock.

If an electrical accident occurs:

- Use caution. Do not become a victim yourself.

- Turn off power.

- Send another person to get medical aid.

Protecting against ESD damage

Any system component that contains transistors or integrated circuits is sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge. The server, the part, the work mat, and the person handling the part must all be at the same charge.

Packaging materials that contain ESD-sensitive components are usually marked with a yellow and black warning symbol.

⚠ **Caution:**

You must observe proper grounding techniques to prevent the discharge of static electricity from your body into ESD-sensitive components.

To avoid damaging ESD-sensitive components:

- Limit your movement. Movement can cause static electricity to build up around you.

- Keep the parts in protective packages until you are ready to install them into the server. If it is necessary to set down a part, put it back into its static-protective package. Do not place the part on the server cover or on a metal surface.

- Place parts on a grounded surface before removing them from their containers.

- Handle the components only after attaching a wrist strap to your bare wrist. Attach the other end of the wrist strap to a ground that terminates at the system ground, such as any unpainted metallic chassis surface.

- Handle a circuit board by the faceplate or side edges only. Avoid touching pins, leads, or circuitry. Hold devices such as a hard disk drive in the same manner. The ESD-sensitive area of these components is located on the bottom surface.

⚠ **Caution:**

Make sure that the unprotected part of your hand is not in contact with the non-component side of the board.

- Keep components away from plastics and other synthetic materials such as polyester clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.

- Do not hand components to another person unless that person is grounded at the same potential level. In general, avoid contact with other people.

- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.

- Take additional care when handling devices during cold weather. Heating reduces indoor humidity and increases static electricity.

- Verify that the ESD protective devices you use are ISO 9000 certified as fully effective.

Chapter 2: Server preparation and reinstallation

Overview

The following descriptions and procedures are required for multiple maintenance tasks.

Front of server
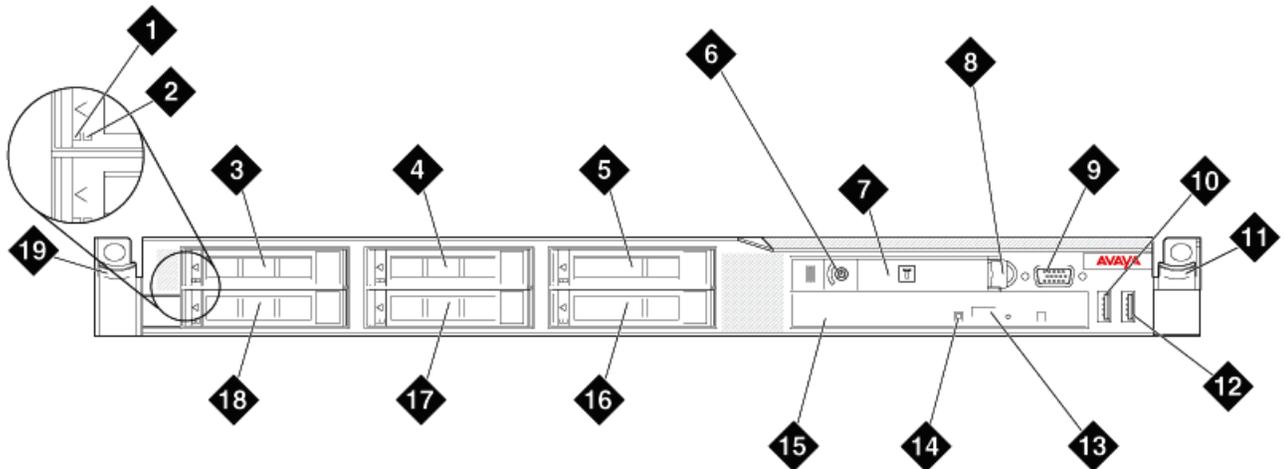
hw881fn LAO 092209

1	Hard disk drive activity LED (green)
2	Hard disk drive status LED (amber)
3	Drive bay 0
4	Drive bay 2
5	Drive bay 4
6	Power control button and LED
7	Operator information panel

	⭐ **Note:** The operator information panel is shown in the pushed in position.
8	Operator information panel release latch
9	Video connector
10	USB connector 1
11	Rack release latch
12	USB connector 2
13	DVD eject button
14	DVD drive activity LED
15	DVD drive
16	Drive bay 5
17	Drive bay 3
18	Drive bay 1
19	Rack release latch

Back of server
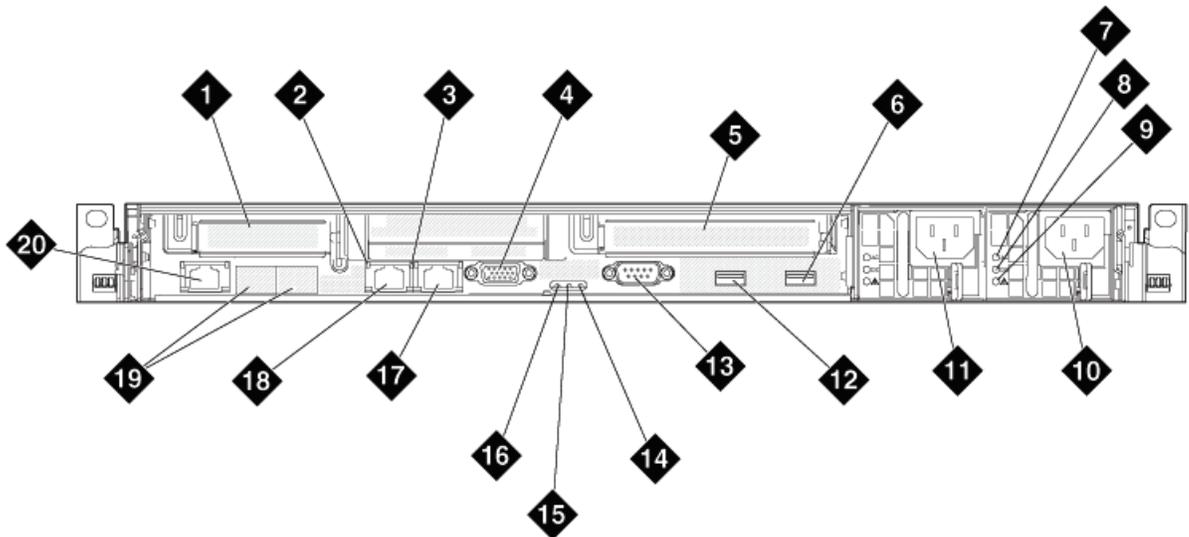
hw881bk LAO 100809

1	PCIe slot 1 (used for optional Ethernet connectors 5 and 6)
2	Ethernet activity LED

3	Ethernet link LED
4	Video connector
5	PCIe slot 2
6	USB connector 4
7	AC power LED (green)
8	DC power LED (green)
9	Power supply error LED (amber)
10	Power supply 2 (redundant power supply)
11	Power supply 1 (primary power supply)
12	USB connector 3
13	Serial connector
14	System error LED (amber)
15	System locator LED (blue)
16	Power LED (green)
17	Ethernet connector 2
18	Ethernet connector 1
19	Ethernet connectors 3 and 4 (with optional 2-port Ethernet daughter card) 😊 **Note:** The optional 2-port daughter card is not applicable to Application Enablement Services on System Platform.
20	System management Ethernet connector (IMM)

Shutting down an MAS

Before you begin

- If the server is already in operation, you must take it out of service to work inside the chassis. Schedule and publicize a time when the server will be out of operation.
- Busy out ports on an MAS.

Procedure

1. Remove any disk from the DVD drive.
2. Click **Start** > **Shut Down**.
3. In the Shut Down window, select **Shut Down** and click **OK**.

> The server shuts down and turns off automatically.

4. Verify that the power button on the front of the server is off or shows amber. If the power button remains green, press and hold down the power button to turn off the server.

   If the power button is amber, the system has shut down, but power is still applied.

5. Unplug all AC power cords from the back of the server.

   ⚠ **Caution:**

   You must physically unplug all AC power cords to completely remove power to the S8800 server. Do not open the server without first unplugging AC power.

Shutting down the MSS

Before you begin

If the server is already in operation, you must take it out of service to work inside the chassis. Schedule and publicize a time when the server will be out of operation.

Procedure

1. On the Administration main menu, select **Utilities** > **Shutdown System**.

2. On the Shutdown System page, click **Shutdown**.

3. At the shutdown warning message, click **OK**.

   The server shuts down and when done displays the message `Power down`. The shutdown process takes about 15 minutes.

4. Remove any disk from the DVD drive.

5. To turn off the power, press the power button on the front of the storage server.

6. Verify that the power button on the front of the server is off or shows amber.

   If the power button is amber, the system has shut down, but power is still applied.

7. Unplug all AC power cords from the back of the server.

   ⚠ **Caution:**

   You must physically unplug all AC power cords to completely remove power to the S8800 server. Do not open the server without first unplugging AC power.

Material codes for replaceable components

Component	Material code
2GB DIMMs 1333 Mhz	700478274
146 GB SAS 2.5" 10K RPM hard disk drive	700478316
146 GB SAS 2.5" 15K RPM hard disk drive	700478324
2-port Ethernet card (PCIe card)	700478290
675 watt power supply	700478308
RAID battery	700478753
Replacement server	700478647

Chapter 3: Removing and installing the server cover

Removing the server cover

Before you begin

Before you disconnect the server from the power source, make a note of which LEDs are lit, including the LEDs that are lit on the operation information panel, on the light path diagnostics panel, and LEDs inside the server on the system board. Once you disconnect the server from the power source, you lose the ability to view the LEDs because the LEDs are not lit when the power source is removed.

About this task

Remove the server cover to access the server's internal components.

> 🛈 **Important:**
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. If you are planning to view the error LEDs that are on the system board and components, leave the server connected to power.

2. If you are planning to install or remove a DIMM, PCI card, battery, or other non-hot swap device:

   a. Turn off the server and all attached devices.

   b. Label and disconnect all power cords and external cables.

3. If the server has been installed in a rack, slide the server out from the rack enclosure.

4. Press down firmly on the blue tab on the top (near the front of the server) of the cover and slide the cover toward the back of the server until the cover has disengaged from the chassis. See the following figure.

hw881rmcvr LAO 092209

1	Cover
2	Tab

5. Lift the server cover off the server and set it aside.

🛈 **Important:**

For proper cooling and airflow, replace the cover before you turn on the server. Operating the server for extended periods of time (over 30 minutes) with the cover removed might damage server components.

Installing the server cover

About this task

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Make sure that all internal cables, PCIe cards, and other components are installed and seated correctly and that you have not left loose tools or parts inside the server. Also, make sure that all internal cables are correctly routed.

2. Position the cover on top of the server. See the following figure.

🛈 **Important:**

Before you slide the cover forward, make sure that all the tabs on both the front, back, and side of the cover engage the chassis correctly. If all the tabs do not engage the chassis correctly, it will be very difficult to remove the cover later.
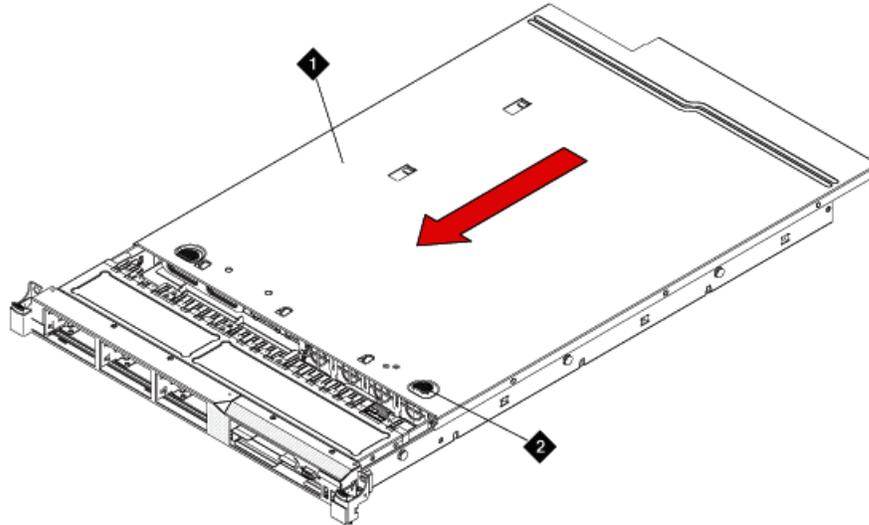
hw881incvr LAO 092209

1	Cover
2	Tab

3. Slide the cover toward the front of the server.

4. Make sure that the cover correctly engages all the inset tabs on the server.

5. Slide the server all the way into the rack until it latches.

6. Reconnect the external cables and power cords.

Chapter 4: Replacing memory modules

Sequence for populating DIMM connectors

When you install dual in-line memory modules (DIMMs), install them in the sequence shown in the following table to optimize system performance.

Installed microprocessors	DIMM connector population sequence
Microprocessor 1	Install the DIMMs in the following sequence: 3, 6, 8, 2, 5, 7, 1, 4
Microprocessor 2	Install the DIMMs in the following sequence: 11, 14, 16, 10, 13, 15, 9, 12

✳ **Note:**
The server for Communication Manager 5.2.1 has only one microprocessor installed.

✳ **Note:**
Dual microprocessors require equal distribution of DIMMs between the processors. For example, a 12GB DIMM would have connectors 3,6,8 and 11,14,16 populated.

The following figure shows the numbering sequence of the DIMMs.

hw682dmmnos LAO 100209
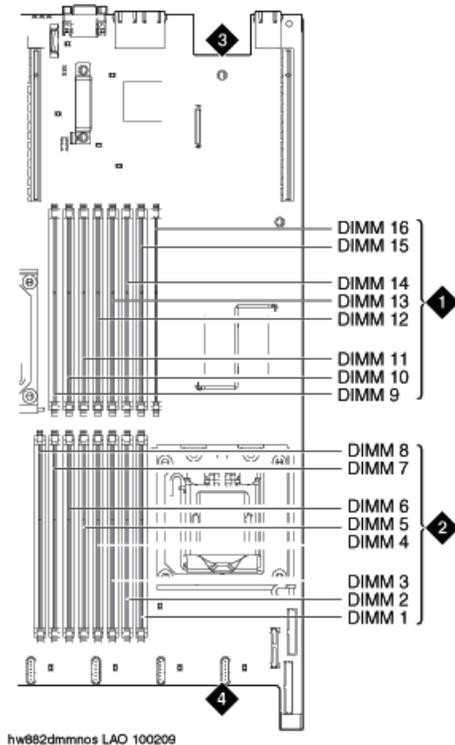
1	DIMMs for microprocessor 2
2	DIMMs for microprocessor 1
3	Back of server
4	Front of server

Removing the DIMM air baffle

About this task

You must remove the DIMM air baffle to replace or install a memory module.

⚠️ **Caution:**

For proper cooling and airflow, replace the air baffle before you turn on the server. Operating the server with an air baffle removed might damage server components.

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Turn off the server and all attached devices.

2. Label and disconnect all power cords and external cables.

3. Remove the cover.

4. Grasp the DIMM air baffle and lift the air baffle out of the server. Make sure that the pin comes out of the pin hole on the system board to the left of DIMM connector 8. See the following figure.

hw881dmmbffl LAO 092209
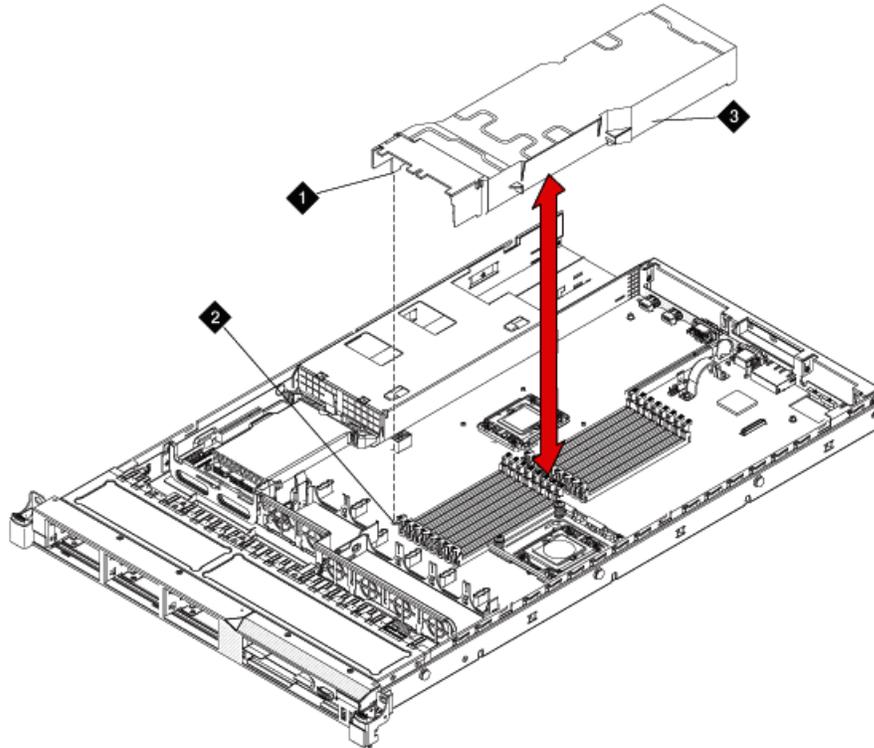
1	Baffle pin
2	Baffle pin hole
3	DIMM air baffle

Related topics:

[Removing the server cover](#) on page 21

Removing a memory module

Before you begin

Remove the DIMM air baffle.

About this task

> ⓘ **Important:**
>
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

Carefully open the retaining clips on each end of the memory module connector and remove the memory module. See the following figure.

> ⓘ **Important:**
>
> Open and close the clips gently to avoid breaking the retaining clips or damaging the memory module connectors.

hw88rmdimm LAO100209

1	Memory module
2	Retaining clip

When you install or remove memory modules, the server configuration information changes. When you restart the server, the system displays a message that indicates that the memory configuration has changed.

Next steps

Install a memory module.

Related topics:

Installing a memory module

Before you begin

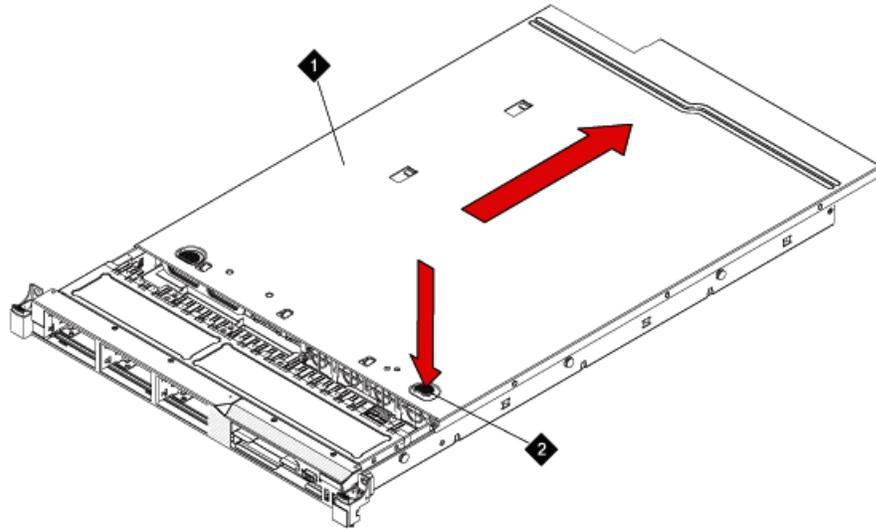Remove the DIMM air baffle.

About this task

> 🛈 **Important:**
>
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Carefully open the retaining clips on each end of the memory module connector. See the following figure.

   > 🛈 **Important:**
   >
   > Open and close the clips gently to avoid breaking the retaining clips or damaging the memory module connectors.

hw88indimm LAO100209
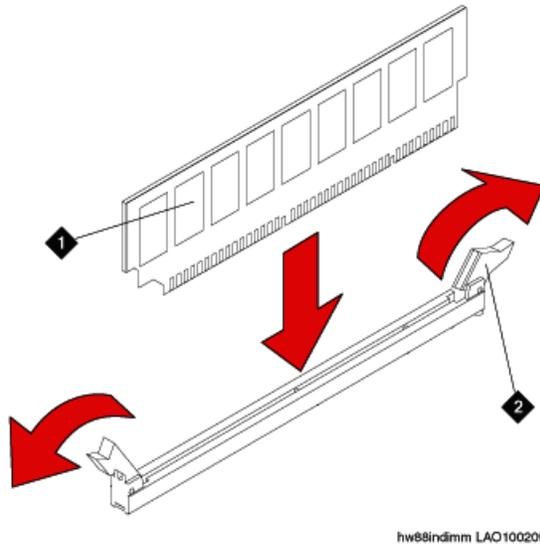
1	Memory module
2	Retaining clip

2. Touch the static-protective package that contains the memory module to any unpainted metal surface on the server.

3. Remove the memory module from the package.

4. Turn the memory module so that the memory module keys align correctly with the connector.

5. Insert the memory module into the connector by aligning the edges of the memory module with the slots at the ends of the memory module connector.

6. Firmly press the memory module straight down into the connector by applying pressure on both ends of the memory module simultaneously.
The retaining clips snap into the locked position when the memory module is firmly seated in the connector.

   ### ! Important:
   If there is a gap between the memory module and the retaining clips, the memory module has not been correctly inserted. Open the retaining clips, remove the memory module, and then reinsert it.

7. Replace the air baffle over the memory modules. Make sure all cables are out of the way.

8. Install the cover.

9. Reconnect the external cables and power cords.

10. Turn on the attached devices and the server.
When you install or remove memory modules, the server configuration information changes. When you restart the server, if a monitor and keyboard are connected,

the system displays a message that indicates that the memory configuration has changed.

Related topics:

Installing the DIMM air baffle

About this task

You must install the DIMM air baffle after you install a memory module.

⚠️ **Caution:**

For proper cooling and airflow, replace the air baffle before you turn on the server. Operating the server with an air baffle removed might damage server components.

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Align the DIMM air baffle over the DIMMs so that the baffle pin on the left side of the air baffle aligns with the pin hole next to DIMM connector on the system board. See the following figure.
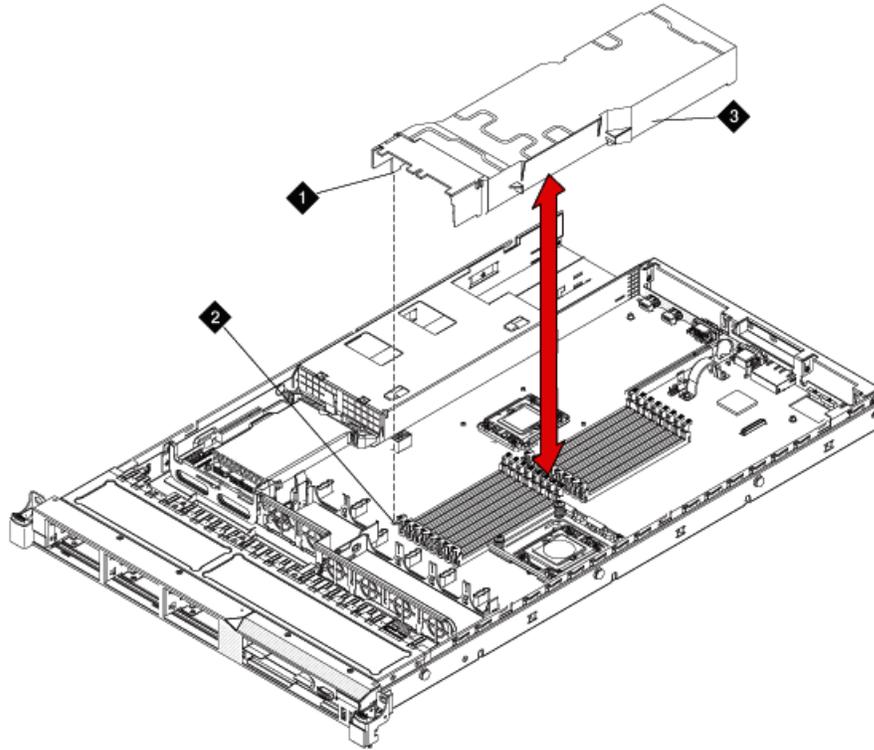
hw881dmmbffl LAO 092209

1	Baffle pin
2	Baffle pin hole
3	DIMM air baffle

2. Lower the air baffle into place. Make sure that all cables are out of the way.

3. Install the cover.

4. Reconnect the external cables and power cords.

5. Turn on the attached devices and the server.

Related topics:

Installing the server cover on page 22

Chapter 5: Removing and installing a PCI riser-card assembly

Removing a PCI riser-card assembly

About this task

You must remove the PCI riser-card assembly to replace the PCIe card.

> **Important:**
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Turn off the server and all attached devices.

2. Label and disconnect all power cords and external cables.

3. Remove the cover.

4. If a card is installed in the PCI riser-card assembly, disconnect any cables that are connected to the card.

5. Grasp the blue tab near the rear of the PCI riser-card assembly from the rear and lift it out of the PCI riser-card slot on the system board. See the following figure.
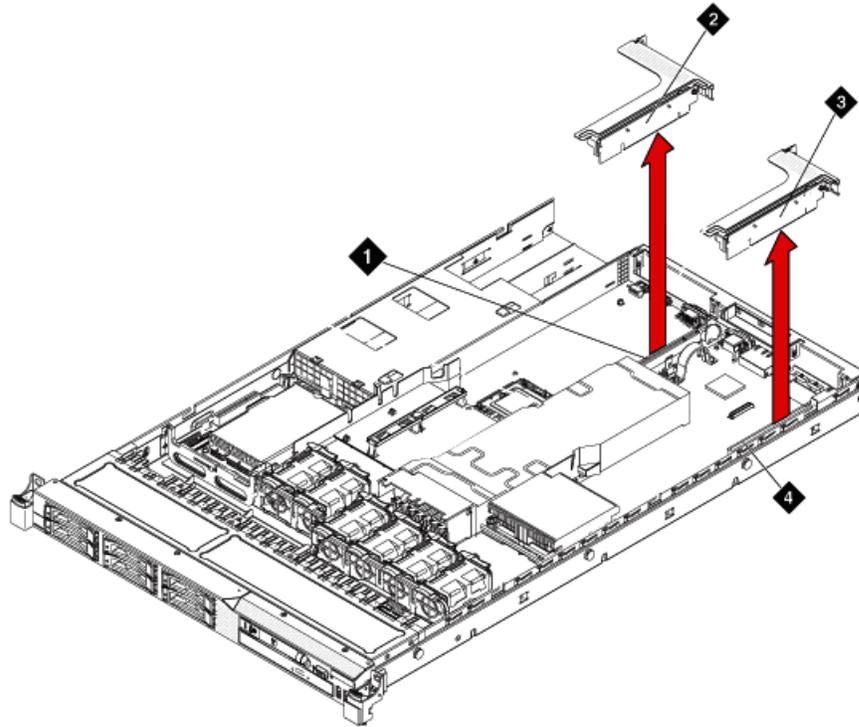
hw881rmcrdcg LAO 092309

1	PCI riser connector 2
2	PCI riser-card assembly (full-height, half-length PCIe cards)
3	PCI riser-card assembly (low profile PCIe cards)
4	PCI riser connector 1

6. Place the riser-card assembly on a flat, static-protective surface.

Next steps

Remove the PCIe card.

Related topics:

[Removing the server cover](#) on page 21
[Removing a PCIe card](#) on page 37

Installing a PCI riser-card assembly

Before you begin

Reinstall any PCIe cards and reconnect any internal cables that you removed.

About this task

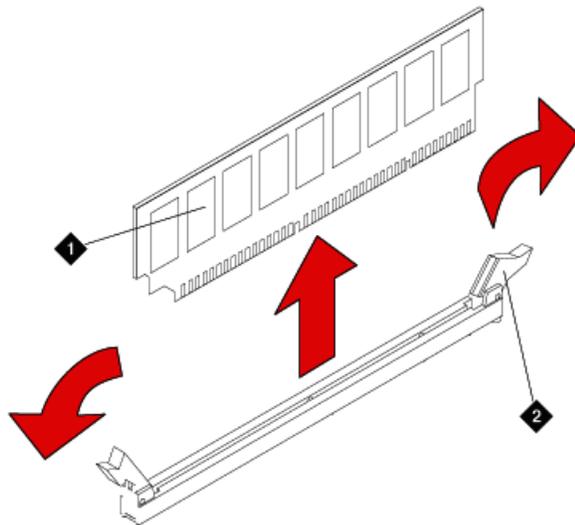You must install the PCI riser-card assembly after you replace the PCIe card.

> 🛈 **Important:**
>
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Align the PCI riser-card assembly with the PCI connector on the system board. See the following figure.
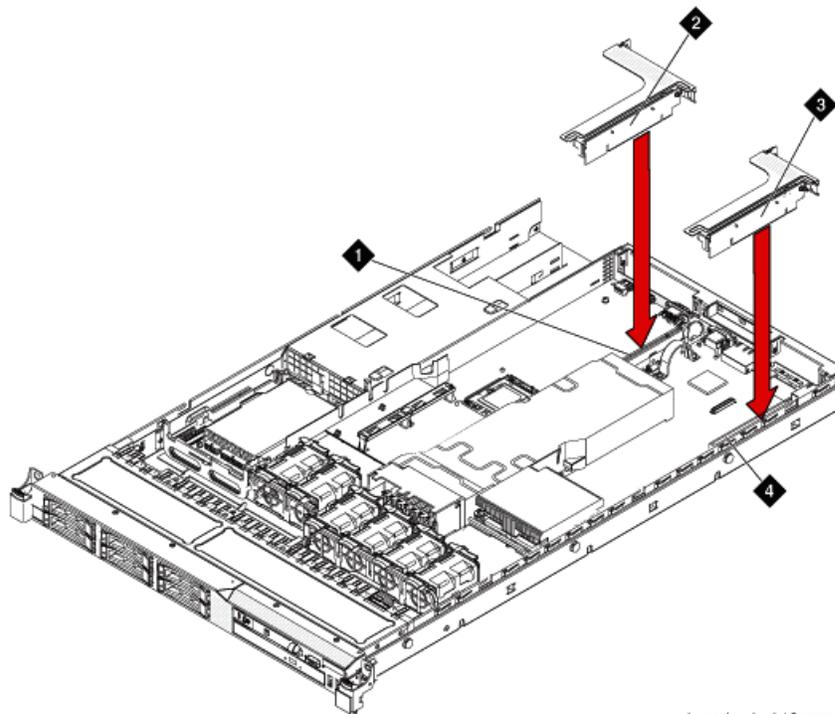
hw881incrdcg LAO 092309

1	PCI riser connector 2
2	PCI riser-card assembly (full-height, half-length PCIe cards)

3	PCI riser-card assembly (low profile PCIe cards)
4	PCI riser connector 1

2. Press down on the riser-card assembly. Make sure that the assembly is fully seated in the riser-card connector on the system board.

3. Install the cover.

4. Reconnect the external cables and power cords.

5. Turn on the attached devices and the server.

Related topics:

Installing the server cover on page 22

Chapter 6: Replacing a PCIe card

Removing a PCIe card

Before you begin

Remove the PCI riser-card assembly.

About this task

For Session Manager, the PCIe card is the SM100 Security Module.

> **Important:**
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

Carefully grasp the card by its top edge or upper corners, and pull the card from the PCI expansion slot. See the following figure.
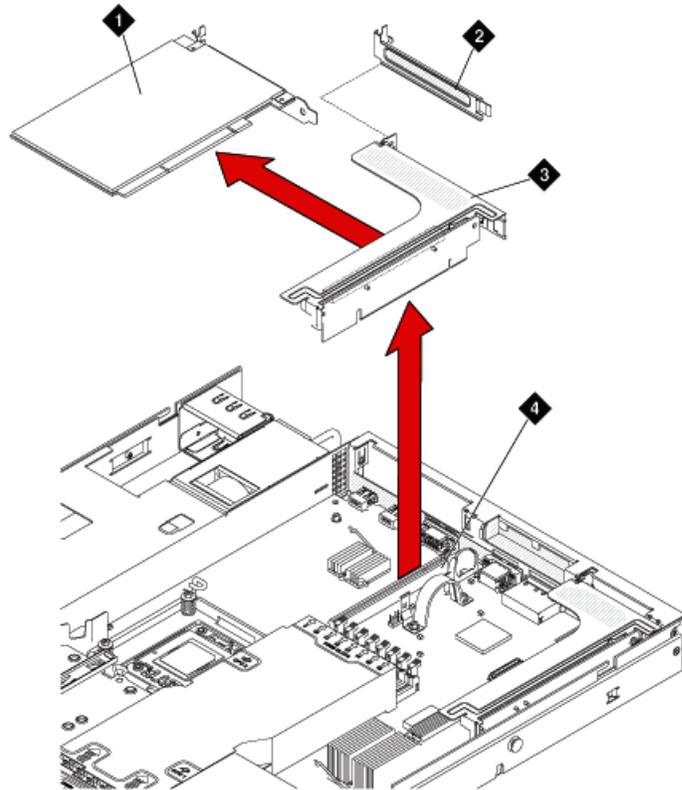
hw881rmcrd1 LAO 092309

1	PCIe card
2	Expansion slot cover
3	PCI riser-card assembly
4	PCI riser-card connector

Next steps

Install a PCIe card.

Related topics:
Removing the server cover on page 21
Removing a PCI riser-card assembly on page 33

Installing a PCIe card

Before you begin

Remove the PCIe card.

About this task

For Session Manager, the PCIe card is the SM100 Security Module. It must be installed in PCI slot 2.

⚠️ **Caution:**

When you install a PCIe card, make sure that the card is correctly seated in the riser-card assembly and that the riser-card assembly is securely seated in the riser-card connector on the system board before you turn on the server. An incorrectly seated PCIe card might cause damage to the system board, the riser-card assembly, or the PCIe card.

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Connect any required cables to the PCIe card. Follow the cabling instructions that came with the PCIe card. Route the card cables before you install the card.

2. Insert the PCIe card into the riser-card assembly, aligning the edge connector on the card with the connector on the riser-card assembly. Press the edge of the connector firmly into the riser-card assembly. Make sure that the PCIe card snaps into the riser-card assembly securely. See the following figure.
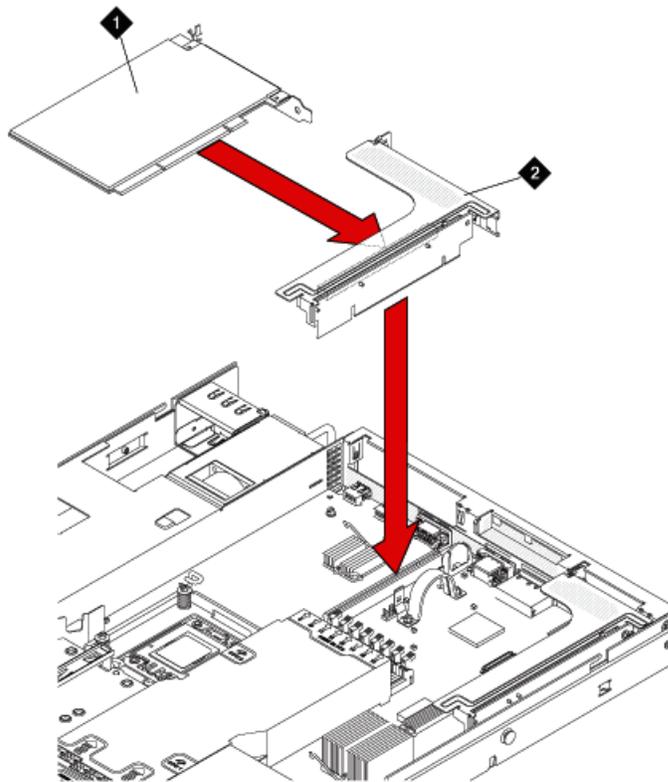
hw881incrd1 LAO 092309

1	PCIe card
2	PCI riser-card assembly

3. Install the riser-card assembly in the server.

4. Perform any configuration tasks that are required for the PCIe card.

5. Install the cover.

6. Reconnect the external cables and power cords.

7. Turn on the attached devices and the server.

Related topics:
Installing the server cover on page 22
Installing a PCI riser-card assembly on page 35

Chapter 7: Replacing a hard disk drive

Removing a hard disk drive

About this task

ℹ️ **Important:**

To ensure adequate system cooling, do not operate the server for more than 2 minutes without either a hard disk drive or a filler panel installed in each bay.

ℹ️ **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Slide the release latch (orange) gently to the left to unlock the drive handle. See the following figure.
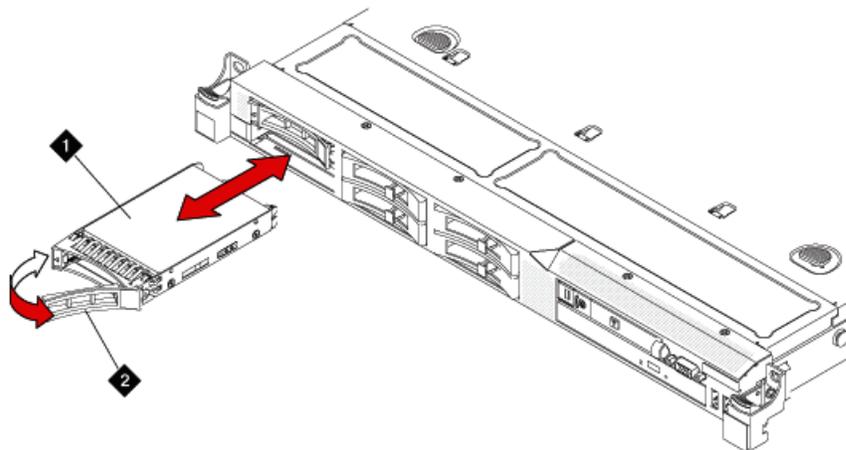
hw881rmhdd LAO 092309

1	Drive tray assembly

2	Drive handle

2. Grasp the handle and slide the drive out of the drive bay approximately 25 mm (1 inch). Wait until the drive stops spinning before you remove the drive completely from the bay.

Next steps

Install a hard disk drive.

Installing a hard disk drive

Before you begin

If replacing an existing hard drive, remove the hard drive that you want to replace.

About this task

🛈 **Important:**

To ensure adequate system cooling, do not operate the server for more than 2 minutes without either a hard disk drive or a filler panel installed in each bay.

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Touch the static-protective package that contains the drive to any unpainted metal surface on the server.

2. Remove the drive from the package and place it on a static-protective surface.

3. Make sure that the tray handle is in the open (unlocked) position.

4. Align the drive assembly with the guide rails in the bay. See the following figure.

hw881inhdd LAO 092309
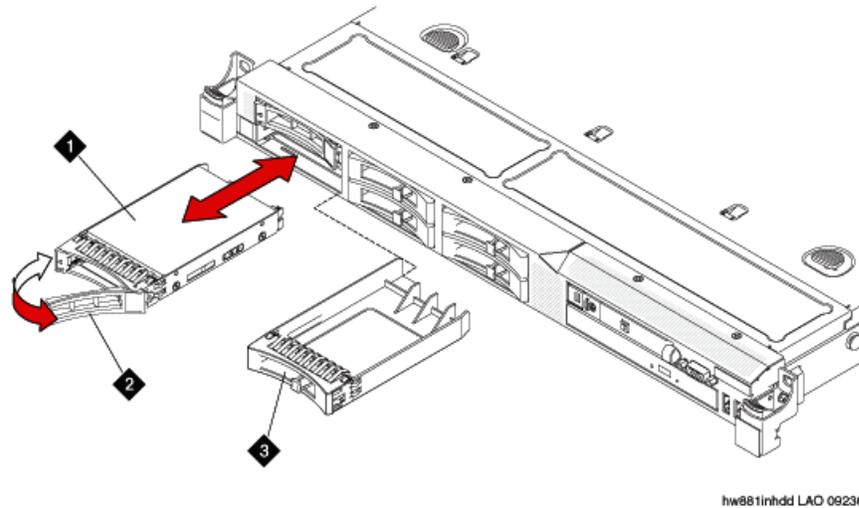
1	Drive-tray assembly
2	Drive handle
3	Filler panel

5. Gently push the drive assembly into the bay until the drive stops.

6. Push the tray handle to the closed (locked) position.

7. If the drive was hot-swapped, check the hard disk drive status LED to verify that the hard disk drive is operating correctly.

   After you replace a failed hard disk drive, the green activity LED flashes as the disk is accessed. When the new drive starts to rebuild, the amber LED flashes slowly, and the green activity LED remains lit during the rebuild process. The rebuild process takes approximately 30 minutes. If the amber LED remains lit, the drive is faulty and must be replaced.

Chapter 8: Replacing the RAID battery

Removing the RAID battery

Before you begin

The RAID battery is located on top of the RAID controller card.

The RAID configuration data is preserved when you replace the battery.

About this task

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Turn off the server and all attached devices.

2. Label and disconnect all power cords and external cables.

3. Remove the cover.

4. Disconnect the cable from the connector on the battery. Leave the other end of the cable connected to the battery carrier.

5. Squeeze the clip on the side of the battery to remove the battery from the battery carrier. See the following figure.

hw881rmrdbt1 LAO100209
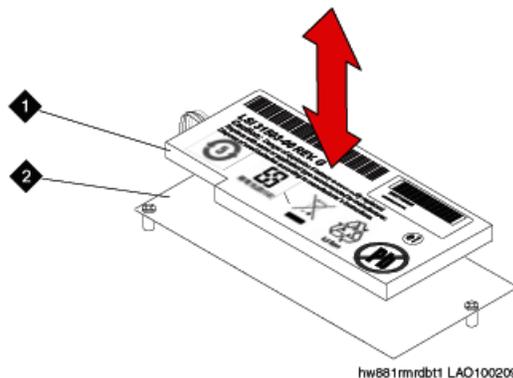
1	Battery

2	Battery carrier

6. Put the old battery aside.

Next steps

Install a new RAID battery.

Related topics:

[Removing the server cover](#) on page 21

Installing the RAID battery

Before you begin

Remove the existing RAID battery.

About this task

The RAID battery is located on top of the RAID controller card.

The RAID configuration data is preserved when you replace the battery.

 Important:

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See [Protecting against ESD damage](#) on page 12 for more information.

Procedure

1. Connect the battery cable to the connector on the battery.

2. Press the new battery onto the battery carrier until the clip on the side of the battery snaps into place. See the following figure.

hw881rmrdbt1 LAO100209
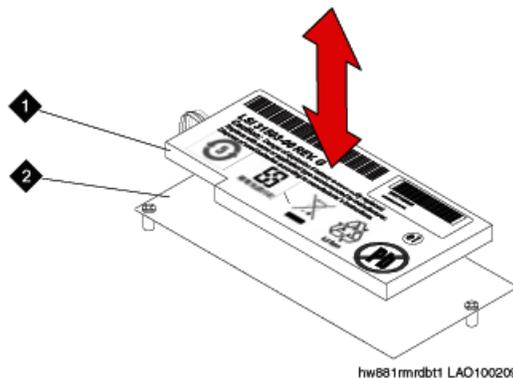
1	Battery

2	Battery carrier

3. Install the cover.

4. Reconnect the external cables and power cords.

5. Turn on the attached devices and the server.

Related topics:

[Installing the server cover](#) on page 22

Chapter 9: Replacing an Avaya S8800 Server

Reuse of hardware components in replacement servers

When you replace the Avaya S8800 Server, you must reuse the following components:

- DIMMs if more than two (4 GB capacity)
- Redundant power supply if used
- Any PCIe cards
- Hard disk drives if more than two.

You must remove these components from the defective server and install them in the replacement server.

Related topics:

Required equipment and tools

- Replacement Avaya S8800 Server
- #2 cross-point (Phillips) screwdriver or 3/8 inch flathead screwdriver
- USB keyboard, USB mouse, and monitor
- Electrostatic wrist ground strap and mat

Tasks to replace an Avaya S8800 Server

#	Task	Description	Notes	✔
1	Shut down the server.	If you can shut down the server from the software, do so. Otherwise, press the power button for several seconds to shut down the server.		
2	Disconnect all power cords and external cables.	**⊕ Important:** Be sure to label the cables for easy reconnection.		
3	Remove the server from the rack.	See Removing the server from the rack on page 51.		
4	Remove the reusable components from the failed server.	See Reusing hardware components on page 49.		
5	Install the reusable components in the new server.	See Reusing hardware components on page 49.		
6	Install the new server in the rack.	See Installing the server in the rack.		
7	Reconnect the external cables and power cords.			
8	Turn on the server.	See Turning on the server on page 53.		

Removing the server from the rack

Procedure

1. Turn off the server and all attached devices.

2. Label and disconnect all power cords and external cables.

3. Push the locking levers (1) forward. See the following figure.

hw88rmrck1 LAO 101609
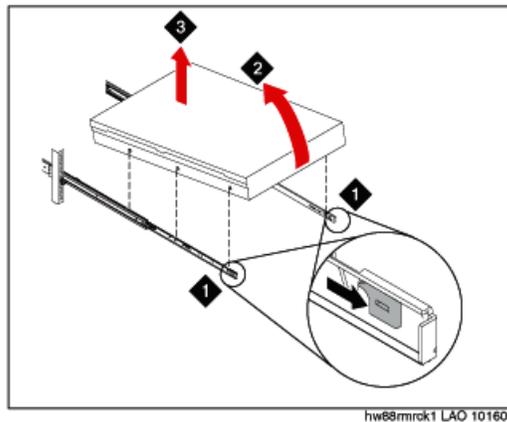
4. Lift up the front of the server (2). See the preceding figure.

5. Pull the server out of the rack (3). See the preceding figure.

Installing the server in the rack

Procedure

1. Pull the slide rails forward (1) until they click, two times, into place. See the following figure.

hw88inst4 LAO 092209
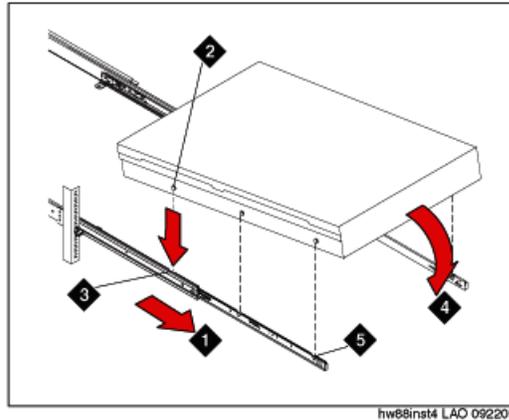
2. Carefully lift the server and tilt it into position over the slide rails so that the rear nail heads (2) on the server line up with the rear slots (3) on the slide rails. See the preceding figure.

3. Slide the server down until the rear nail heads slip into the two rear slots.

4. Slowly lower the front of the server (4) until the other nail heads slip into the other slots on the slide rails. See the preceding figure.

5. Make sure that the front latch (5) slides over the nail heads. See the preceding figure.

6. Lift the locking levers (6) on the slide rails. See the following figure.

hw88inst5 LAO 092209
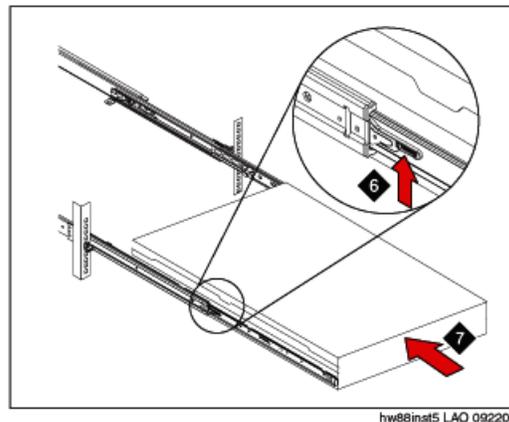
7. Push the server (7) all the way into the rack until it clicks into place. See the preceding figure.

8. Insert the optional M6 screws (8) in the front of the server when you move the rack cabinet or if you install the rack cabinet in a vibration-prone area. See the following figure.

hw88inst6 LAO 092209
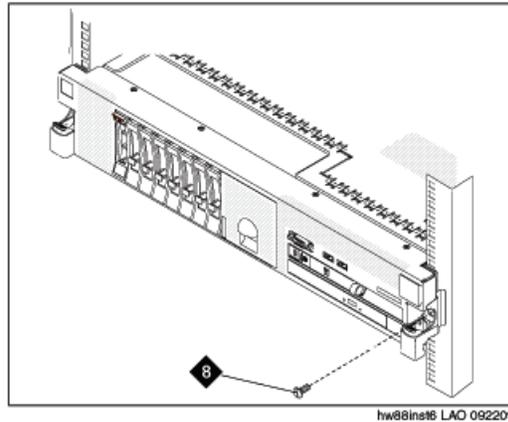
Turning on the server

About this task

After the server is installed in the rack, turn on the server to make sure that it powers up properly. Once you determine that it powers up properly, turn it off before you start any software installation procedure.

🛈 Important:

You must wait for the power-on LED to blink slowly (one flash per second) before pressing the power button. If you press the power button while the power-on LED is blinking quickly (three flashes per second), the server will not turn on.

Procedure

1. Plug one end of the power cord into the server power supply and the other end into a UPS or nonswitched outlet.
   Approximately 5 seconds after the server is connected to power, one or more fans might start running to provide cooling, and the power-on LED will blink quickly (three flashes per second). Approximately 3 minutes after the server is connected to power, the power-on LED will blink slowly (one flash per second), and one or more fans might start running.

2. Once the power-on LED begins to blink slowly, press the power button on the front of the server.
   The power-on LED will stop blinking and stay lit. After you press the power button, the server takes approximately 5 minutes to initialize.

> ⓘ **Important:**
> Avaya recommends that users not change the default uEFI/BIOS settings.

Next steps

See the specific product documentation for information on installing the operating system and software.

Chapter 10:   Light path diagnostics

About light path diagnostics

Light path diagnostics is a system of LEDs on various external and internal components of the server. When an error occurs, LEDs are lit throughout the server. By viewing the LEDs in a particular order, you can often identify the source of the error.

When LEDs are lit to indicate an error, they remain lit when the server is turned off, provided that the server is still connected to power and the power supply is operating correctly.

Using light path diagnostics to identify system errors

About this task

If an error occurs, view the light path diagnostics LEDs in the following order:

Procedure

1. Look at the operator information panel on the front of the server. Check if the information LED or system error LED is lit

2. View the light path diagnostics panel. Lit LEDs on this panel indicate the type of error that has occurred.

   > **Important:**
   >
   > The checkpoint code display does not provide error codes or suggest components to be replaced. The checkpoint code is an internal code used for IBM development only and is subject to change over time. Ignore this code unless you have a specific request from Avaya to note it .

3. Remove the server cover while the server is connected to power and look inside the server for lit LEDs.

   > **Important:**
   >
   > Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

   Certain components inside the server have LEDs that are lit to indicate the location of a problem. For some components, such as dual inline memory modules (DIMMs)

and fans, these LEDs can help you identify the problem. For other components, these LEDs are not useful.

Orange on a component or an orange label on or near a component indicates that the component can be hot-swapped, which means that you can remove or install the component while the server is running. (Orange can also indicate touch points on hot-swap components.) See the instructions for removing or installing a specific hot-swap component for any additional procedures that you might have to perform before you remove or install the component.

Related topics:

Operator information panel

The operator information panel is located on the front of the server.
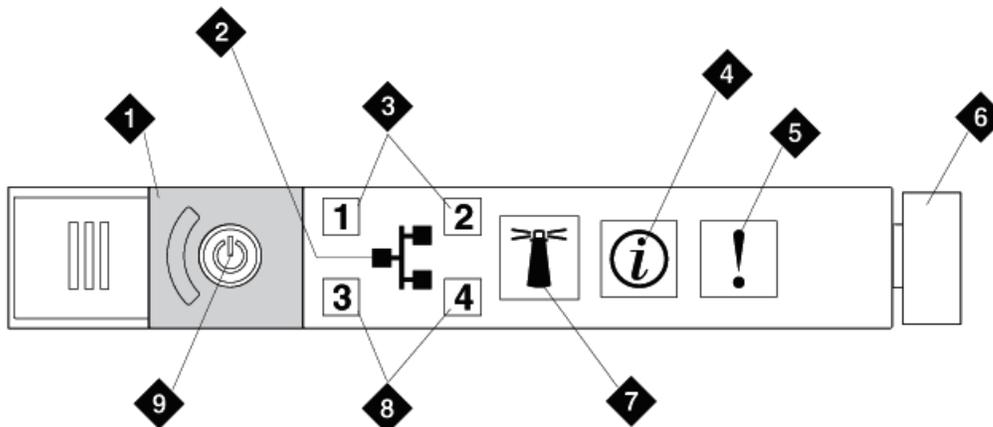
hw88opinfpnl LAO 092209

1	Power control button cover
2	Ethernet icon LED
3	Ethernet activity LEDs These LEDs indicate that the server is transmitting or receiving signals on the Ethernet port that corresponds to the lit LED.
4	Information LED

		This LED indicates that a noncritical event has occurred. An LED on the light path diagnostics panel is also lit to help isolate the error.
5		System error LED This LED indicates that a system error has occurred. An LED on the light path diagnostics panel is also lit to help isolate the error.
6		Release latch Slide this latch to the left to access the light path diagnostics panel, which is behind the operator information panel.
7		Locator button and LED Use this LED to visually locate the server among other servers. It is also used as the physical presence for Trusted Platform Module (TPM). Press this button to turn on or turn off this LED locally. You can use IBM Systems Director to light this LED remotely. A system locator LED on the back of the server is also lit when this LED is lit.
8		Ethernet activity LEDs These LEDs indicate that the server is transmitting or receiving signals on the Ethernet port that corresponds to the lit LED.
9		Power control button and power-on LED Press this button to turn on and turn off the server. The states of the power-on LED are: • Off: AC power is not present, or the power supply or the LED itself has failed. • Flashing rapidly (4 times per second): the server is turned off and is not ready to be turned on. The power-control button is disabled. Approximately 3 minutes after the server is connected to AC power, the power-control button becomes active. • Flashing slowly (once per second): the server is turned off and is ready to be turned on. You can press the power-control button to turn on the server. • Lit: The server is turned on. ✳ **Note:** If this LED is off, it does not mean that there is no electrical power in the server. The LED might be burned out. To remove all electrical power from the server, you must disconnect the power cord from the electrical outlet.

Accessing the light path diagnostics panel

The light path diagnostics panel is on the top of the operator information panel.

Procedure

1. Slide the blue release button on the operator information panel to the left. Pull forward on the unit until the hinge of the operator panel is free of the server chassis.

2. Pull down on the unit, so that you can view the light path diagnostics panel information.

hw881lpdacc LAO 091609
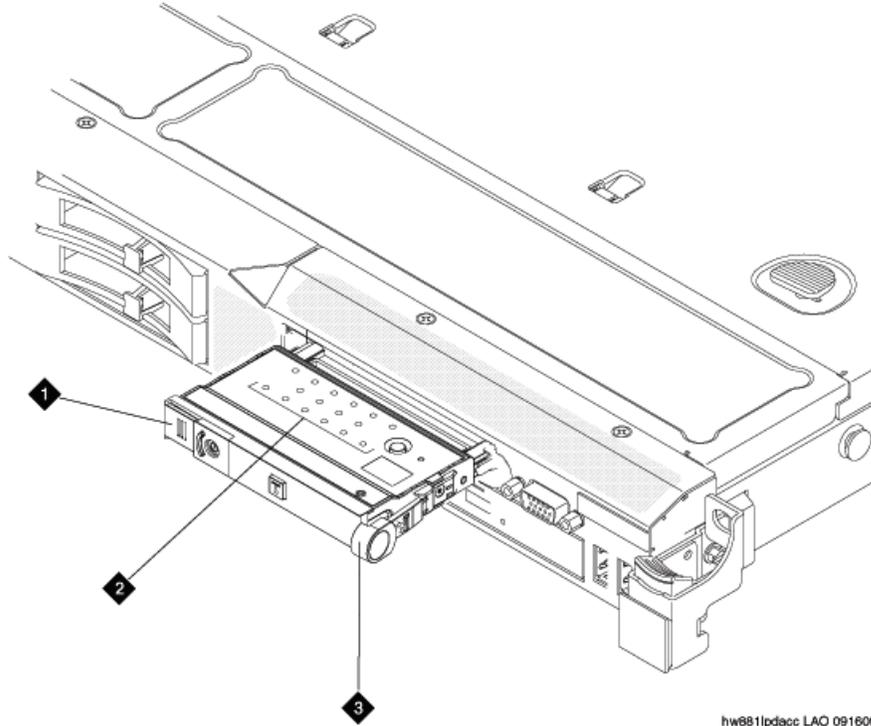
1	Operator information panel
2	Light path diagnostics LEDs
3	Release latch

3. Note any LEDs that are lit, and then reinstall the light path diagnostics panel in the server.

   ⓘ **Important:**

   When you slide the light path diagnostics panel out of the server to check the LEDs, do not run the server continuously with light path diagnostics panel outside of the server. The panel should be outside of the server for only a short time. The light path diagnostics panel must remain in the server when the server is running to ensure proper cooling.

Related topics:

Light path diagnostics panel

hw88lpdpnl LAO 092309

1	Remind button This button places the system-error LED on the front panel into Remind mode. In Remind mode, the system-error LED flashes once every 2 seconds until the problem is corrected, the server is restarted, or a new problem occurs. By placing the system-error LED indicator in Remind mode, you acknowledge that you are aware of the last failure but will not take immediate action to correct the problem. The remind function is controlled by the Integrated Management Module (IMM).
2	NMI button Pressing this button forces a nonmaskable interrupt to the microprocessor. You might have to use a pen or the end of a straightened paper clip to press the button. Use this button only when directed by your service provider.
3	Checkpoint code display The checkpoint code is an internal code used for IBM development only and is subject to change over time. The checkpoint code does not provide error codes or suggest components to be replaced. Ignore this code unless you have a specific request from Avaya to note it .
4	Reset button Pressing this button resets the server and runs the power-on self-test (POST). You might have to use a pen or the end of a straightened paper clip to press the button. The Reset button is in the lower-right corner of the light path diagnostics panel.

Troubleshooting light path diagnostic LEDs

OVERSPEC LED is lit

The OVERSPEC LED on the light path diagnostics panel is lit when the power supplies are using more power than their maximum rating.

Troubleshooting steps

Procedure

1. Check the power-supply LEDs for an error indication (AC LED and DC LED are not both lit, or the information LED is lit). Replace a failed power supply.

2. Replace the server.

Related topics:
Power supply LEDs on page 71
Removing a power supply on page 77
Installing a power supply on page 79

LOG LED is lit

The LOG LED on the light path diagnostics panel is lit when an error occurs.

Troubleshooting steps

Procedure

1. If any replaceable components need to be replaced, replace them.

2. If a faulty component is not replaceable, replace the server.

LINK LED is lit

The LINK LED on the light path diagnostics panel is not used.

Troubleshooting steps

Procedure

Ignore unless directed otherwise by Avaya.

PS LED is lit

The PS LED on the light path diagnostics panel is lit when power supply 1 or power supply 2 fails.

Troubleshooting steps

Procedure

1. Check the power supply LEDs for an error indication (AC LED and DC LED are not both lit).

2. Make sure that the power supplies are seated correctly.

3. Remove one of the power supplies to isolate the failed power supply.

4. Replace the failed power supply.

Related topics:
Power supply LEDs on page 71
Removing a power supply on page 77
Installing a power supply on page 79

PCI LED is lit

The PCI LED on the light path diagnostics panel is lit when an error occurs on a PCI bus or on the system board. An additional LED is lit next to a failing PCI slot.

Troubleshooting steps

Procedure

1. Check the LEDs on the PCI slots to identify the component that caused the error.

2. If you have a monitor, check the system error log for information about the error.

3. If you cannot isolate the failing PCIe card by using the LEDs and the information in the system error log, remove one card at a time from the failing PCI bus. Restart the server after each card is removed.

4. Reseat the failing PCIe card.

5. Replace the server.

Related topics:
Removing a PCIe card on page 37
Installing a PCIe card on page 38

SP LED is lit

The SP LED on the light path diagnostics panel is lit when an error occurs on the service processor.

Troubleshooting steps

Procedure

1. Remove power from the server; then, reconnect the server to power and restart the server.

2. Report this error to your service provider for possible server replacement.

FAN LED is lit

The FAN LED on the light path diagnostics panel is lit when a fan fails, is operating too slowly, or has been removed. The TEMP LED might also be lit.

Troubleshooting steps

Procedure

1. Reseat the failing fan, which is indicated by a lit LED near the fan connector on the system board.

2. Replace the server.

TEMP LED is lit

The TEMP LED on the light path diagnostics panel is lit when the system temperature exceeds a threshold level. A failing fan can cause the TEMP LED to be lit.

Troubleshooting steps

Procedure

1. Make sure that the room temperature is not too high.

2. Make sure that the air vents are not blocked.

3. Determine whether a fan has failed. If it has, replace the server.

MEM LED is lit

The MEM LED on the light path diagnostics panel is lit when a memory configuration is invalid or a memory error occurs (both the MEM LED and CNFG LED might be lit).

Troubleshooting steps when both MEM LED and CNFG LED are lit

Procedure

1. Make sure that the DIMM configuration is supported.

2. Replace the DIMMs with a supported configuration.

Related topics:
Sequence for populating DIMM connectors on page 25
Removing a memory module on page 28
Installing a memory module on page 29

Troubleshooting steps when only MEM LED is lit

- If the server did not boot and a failing DIMM LED is lit:

  a. If you have a monitor, check for a PFA log event in the system event log .

  b. Reseat the DIMM.

  c. If the problem still exists, move the DIMM to a different slot.

  d. Look at the DIMM LEDs on the system board:

    - If the DIMM LED that corresponds to the new DIMM socket is lit, replace the DIMM.

    - If the DIMM LED that corresponds to the original DIMM socket is lit, replace server.

- If the server booted, the failing DIMM is disabled, and the DIMM LED is lit:

  a. If the LEDs are lit by two DIMMs and you have a monitor, check the system event log for a PFA event for one of the DIMMs, and then replace that DIMM. Otherwise, replace both DIMMs

  b. If the LED is lit by only one DIMM, replace that DIMM.

Related topics:
Sequence for populating DIMM connectors on page 25
Removing a memory module on page 28
Installing a memory module on page 29
System board LEDs on page 68

NMI LED is lit

The NMI LED on the light path diagnostics panel is lit when a nonmaskable interrupt occurs, or the NMI button is pressed.

Troubleshooting steps

Procedure

1. If you have a monitor, check the system event log for information about the error.
2. Shut down server and remove the power cord.
3. Check that all plug-in cards and devices are firmly installed.
4. Turn on the server.
5. If the server does not boot, replace server.

CNFG LED is lit

The CNFG LED on the light path diagnostics panel is lit when a hardware configuration error occurs. This LED is used with the MEM and CPU LEDs.

Troubleshooting steps

Procedure

1. Check that the memory modules are installed in the correct sequence.
2. Check that the memory modules are properly seated.
3. Replace the server.

Related topics:
Sequence for populating DIMM connectors on page 25
Removing a memory module on page 28
Installing a memory module on page 29

CPU LED is lit

When only the CPU LED is lit, a microprocessor has failed.

When the CPU and CNFG LEDs are lit, an invalid microprocessor configuration has occurred.

Troubleshooting steps

Procedure

1. Determine whether the CNFG LED is also lit.

    - If the CNFG LED is not lit, a microprocessor has failed.

    - If the CNFG LED is lit, then an invalid microprocessor configuration has occurred.

2. Replace the server if the microprocessor has failed.

3. Make sure that the microprocessors are compatible with each other if the microprocessor configuration is invalid.

    The microprocessors must match in speed and cache size. To compare the microprocessor information, run the Setup utility and select **System Information** > **System Summary** > **Processor Details**.

VRM LED is lit

The VRM LED on the light path diagnostics panel is not used.

Troubleshooting steps

Procedure

Ignore unless directed otherwise by Avaya.

DASD LED is lit

The DASD LED on the light path diagnostics panel is lit when a hard disk drive fails or is missing.

Troubleshooting steps

Procedure

1. Check the LEDs on the hard disk drives for the drive with a lit status LED and reseat the hard disk drive.

2. If the error remains, replace the hard disk drive and then restart the server.

Related topics:
[Removing a hard disk drive](#) on page 41
[Installing a hard disk drive](#) on page 42
[Hard disk drive LEDs](#) on page 82

RAID LED is lit

The RAID LED on the light path diagnostics panel is not used.

Troubleshooting steps

Procedure

Ignore unless directed otherwise by Avaya.

BRD LED is lit

The BRD LED on the light path diagnostics panel is lit when an error occurs on the system board.

Troubleshooting steps

Procedure

Replace the server.

System board LEDs

The following figure shows the LEDs on the system board. A lit LED on or beside a component identifies the component as causing an error.
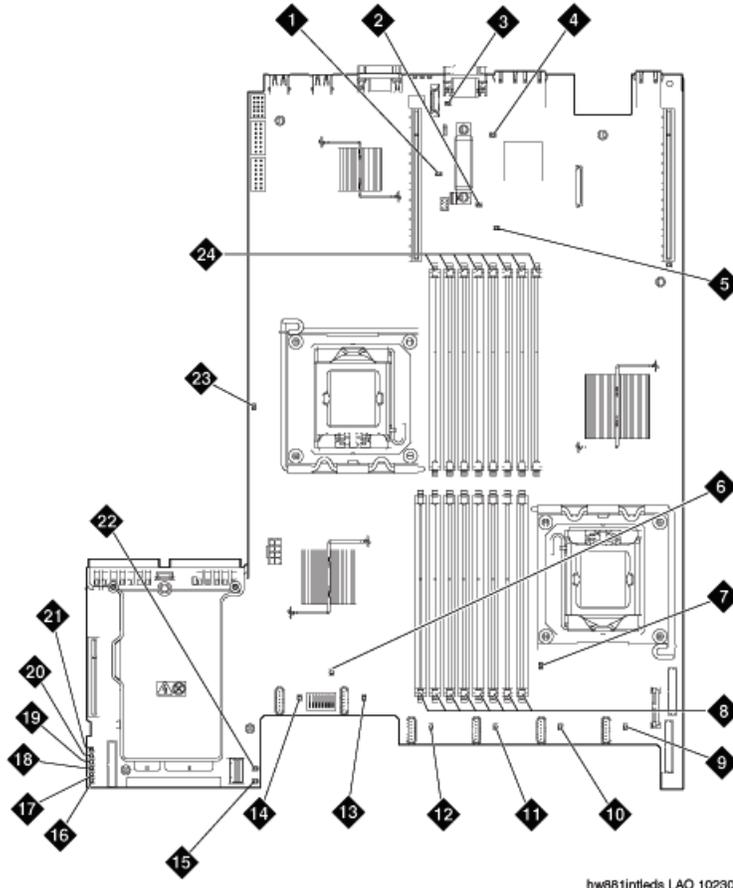
hw681intleds LAO 102309

1	Slot 2 missing PCI riser card LED
2	Enclosure manager heartbeat LED
3	Battery LED
4	IMM heartbeat LED
5	Slot 1 missing PCI riser card LED
6	System error LED
7	Microprocessor 1 error LED
8	DIMM 1 through 8 error LEDs

9	Fan 1 error LED
10	Fan 2 error LED
11	Fan 3 error LED
12	Fan 4 error LED
13	Fan 5 error LED
14	Fan 6 error LED
15	240 VA error LED
16	Power channel A error LED
17	Power channel B error LED
18	Power channel C error LED
19	Power channel D error LED
20	Power channel E error LED
21	AUX power channel error LED
22	RAID riser-card LED
23	Microprocessor 2 error LED
24	DIMM 9 through 16 error LEDs

Chapter 11: Power supply LEDs

Power supply LEDs

hw881psled LAO 091609
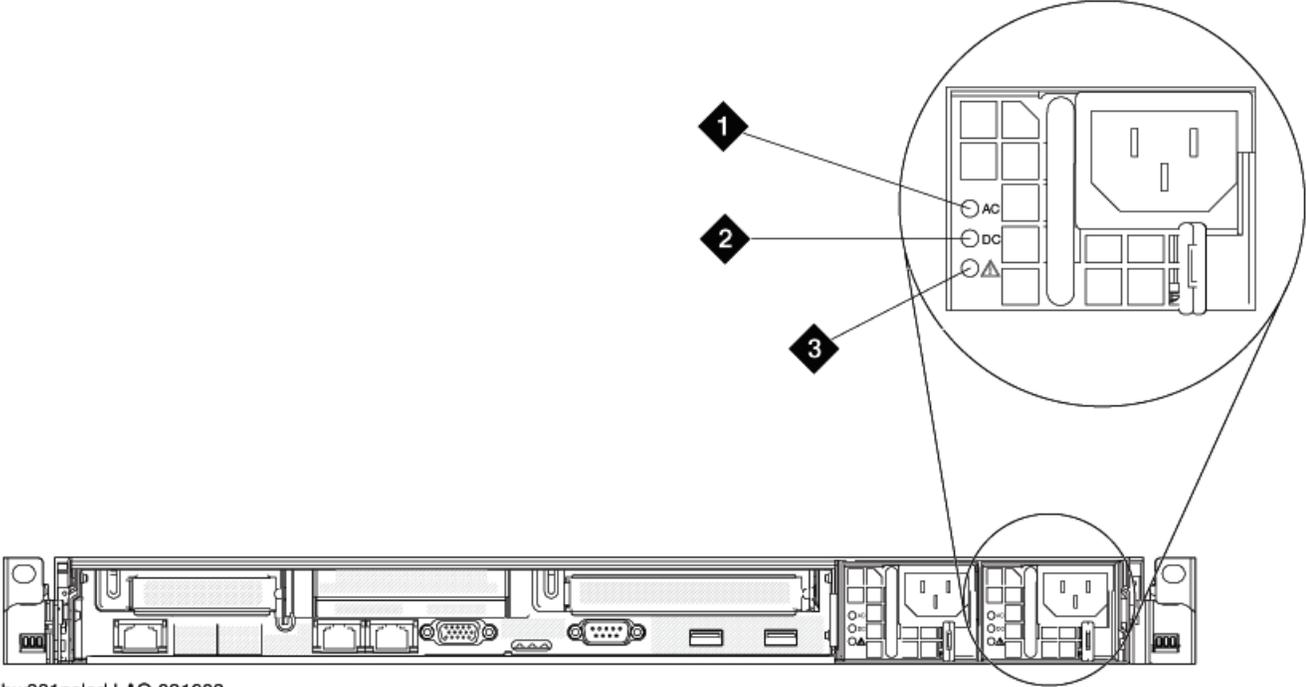
1	AC LED (green)
2	DC LED (green)
3	Power supply error LED (amber)

Identifying power supply problems

Power supply LEDs			Description
AC	**DC**	**Error**	
Off	Off	Off	No AC power to the server or a problem with the AC power source. This is a normal condition when no AC power is present. See Server has no AC power on page 72
Off	Off	On	No AC power to the power supply, a problem with the AC power source, or a failed power supply. This condition occurs only when a second power supply is providing power to the server. See Error LED is lit for one power supply on page 73
Off	On	Off	Faulty power supply. See Faulty power supply on page 74
Off	On	On	Faulty power supply. See Faulty power supply on page 74
On	Off	Off	Power supply not fully seated (most typical), faulty power supply, or faulty system board. See Power supply AC LED is lit on page 74
On	Off or flashing	On	Faulty power supply. See Faulty power supply on page 74
On	On	Off	Normal operation
On	On	On	Power supply is faulty but still operational See Faulty power supply on page 74

Troubleshooting power supply problems

Server has no AC power

All power supply LEDs are off when the server has no AC power.

Troubleshooting steps

Procedure

1. Check the AC power to the server.

2. Make sure that the power cord is connected to a functioning power source.

3. Turn the server off and then turn the server back on.

4. Replace the power supply.

_____

Related topics:
Removing a power supply on page 77
Installing a power supply on page 79

Error LED is lit for one power supply

If the power supply Error LED is lit and all other power supply LEDs are off, either the power supply has no AC power, a problem exists with the AC power source, or the power supply failed.

This condition occurs only when a second power supply is providing power to the server.

Troubleshooting steps

Procedure

1. Check the AC power to the server.

2. Make sure that the power cord is connected to a functioning power source.

3. Replace the power supply.

_____

Related topics:
Power supply LEDs on page 71
Removing a power supply on page 77
Installing a power supply on page 79

Power supply AC LED is lit

If the power supply AC LED is lit and all other power supply LEDs are off, one of three possible problems exists:

- The power supply is not fully seated (most typical).
- The power supply is faulty.
- The system board is faulty.

Troubleshooting steps

Procedure

1. Reseat the power supply.
2. If the 240 V failure LED on the system board is not lit, replace the power supply.
3. If the 240 V failure LED on the system board is lit, replace the server.

Related topics:
Power supply LEDs on page 71
Removing a power supply on page 77
Installing a power supply on page 79

Faulty power supply

Several LEDs and combinations of LEDs can indicate that a power supply is faulty. The following table describes these LEDs and LED combinations.

AC	DC	Error
Off	On	Off
Off	On	On
On	Off or flashing	On
On	On	On

Troubleshooting steps

Procedure

Replace the power supply.

────────

Related topics:
[Power supply LEDs](#) on page 71
[Removing a power supply](#) on page 77
[Installing a power supply](#) on page 79

Comments? infodev@avaya.com

Chapter 12: Replacing a power supply

Removing a power supply

About this task

> ⚠️ **Caution:**
>
> To remove all electrical current from the server, ensure that all power cords are disconnected from the power source. The power control button on the server does not turn off the electrical current supplied to the server. The server also might have more than one power cord.

> ⚠️ **Caution:**
>
> Never remove the cover on a power supply or any part that has the following label attached.

hw88vltwm LAO100209

Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, replace the power supply.

> ❗ **Important:**
>
> During normal operation, each power-supply bay must contain either a power supply or power-supply filler for proper cooling.

> ❗ **Important:**
>
> Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. If the server has only one power supply, turn off the server and peripheral devices and disconnect all power cords. If the server has two power supplies, you can replace one power supply while the server is running.

2. If the server is in a rack, at the back of the server, pull back the cable management arm to gain access to the rear of the server and the power supply.

3. Press and hold the orange release tab to the left. See the following figure.
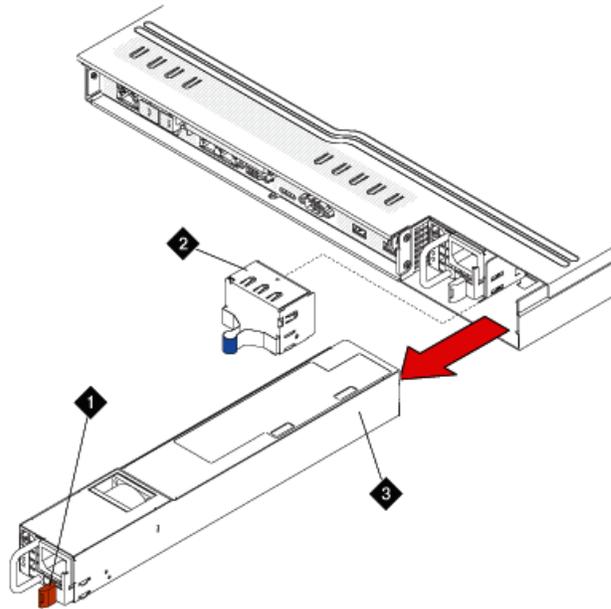
hw881rmps LAO100209

1	Power supply release tab
2	Power supply filler
3	Power supply

4. Pull the power supply part of the way out of the bay, then release the latch and support the power supply as you pull it the rest of the way out of the bay.

Next steps

Install a power supply.

Installing a power supply

About this task

⚠️ **Caution:**

To remove all electrical current from the server, ensure that all power cords are disconnected from the power source. The power control button on the server does not turn off the electrical current supplied to the server. The server also might have more than one power cord.

⚠️ **Caution:**

Never remove the cover on a power supply or any part that has the following label attached.

hw88vltwrn LAO100209

Hazardous voltage, current, and energy levels are present inside any component that has this label attached. There are no serviceable parts inside these components. If you suspect a problem with one of these parts, replace the power supply.

🛈 **Important:**

Always use an electrostatic-discharge wrist strap or other grounding system when you work inside the server. See Protecting against ESD damage on page 12 for more information.

Procedure

1. Touch the static-protective package that contains the power supply to any unpainted metal surface on the server.

2. Remove the power supply from the package and place it on a static-protective surface.

3. If you are installing a power supply into an empty bay, remove the power-supply filler panel from the power-supply bay.

4. Grasp the handle on the back of the power supply and slide the power supply into the power-supply bay until it clicks. Make sure that the power supply connects firmly into the power-supply connector. See the following figure.

hw881inps LAO100209
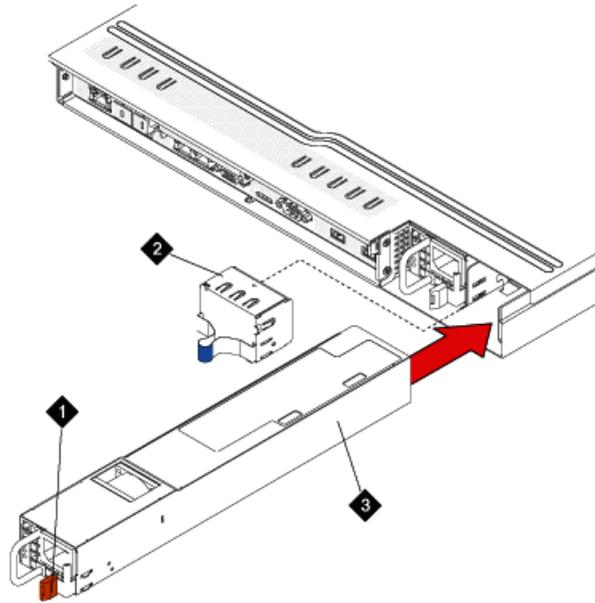
1	Power supply release tab
2	Power supply filler
3	Power supply

5. Route the power cord through the handle so that it does not accidentally become unplugged.

6. Connect the power cord for the new power supply to the power-cord connector on the power supply.

7. Connect the other end of the power cord to a properly grounded electrical outlet.

8. Make sure that both the AC LED and the DC LED on the power supply are lit.

   Both LEDs are lit when the power supply is operating correctly.

Chapter 13: Troubleshooting hard disk drive, power, or memory problems

Customer-provided equipment

The customer must provide the services personnel with the following equipment for the troubleshooting procedures that are described in this section:

- USB keyboard
- USB mouse
- Monitor

Diagnosing server problems

About this task

Use this sequence of tasks to diagnose a problem in the server.

Procedure

1. Check the system-error LED on the operator information panel. If this LED is lit or flashing, check the light diagnostic panel.

   ![Important icon] **Important:**
   When you slide the light path diagnostics panel out of the server to check the LEDs, do not run the server continuously with the light path diagnostics panel outside of the server. The panel should be outside of the server for only a short time. The light path diagnostics panel must remain in the server when the server is running to ensure proper cooling.

2. Check the power supply LEDs and hard disk drive LEDs.

3. If the LED is lit for a component that can be hot swapped, such as a hard disk drive or power supply, reseat the component and see if the alarm clears. If the alarm does not clear, replace the component.

   Orange on a component or an orange label on or near a component indicates that the component can be hot-swapped. (Orange can also indicate touch points on hot-

swap components.) See the instructions for removing or installing a specific hot-swap component for any additional procedures that you might have to perform before you remove or install the component.

> 🛈 **Important:**
>
> Do not remove a component with blue touch points while the server is running. Blue touch points indicate that the component cannot be hot swapped.

4. Check all cables and power cords.

5. If the LED is lit for a component that cannot be hot swapped or if the sever is already turned off, connect a customer-provided keyboard, mouse, and monitor to the server.

6. Perform the appropriate shut down procedure for the application that is running on the server.

7. If the LED was lit for a component that cannot be hot swapped, reseat or replace the component. See the procedure for replacing the component. Replaceable components that cannot be hot swapped are:

   - DIMMs
   - 2-port Ethernet card (PCIe card)
   - RAID battery

8. Check for successful completion of power-on self-test (POST). POST error messages are displayed on the system monitor.

Related topics:

Hard disk drive LEDs

hw881hdled LAO 092209
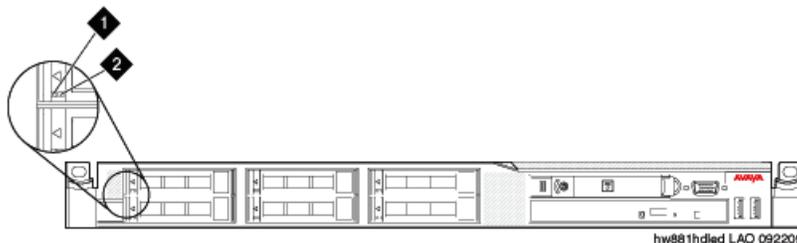
1	Hard disk drive activity LED (green)
2	Hard disk drive status LED (amber)

Troubleshooting hard disk drives

Failed hard disk drive

A hard disk drive has failed, and the associated amber hard disk drive status LED is lit.

Troubleshooting steps

Replace the hard disk drive.

Important:

Before replacing the hard disk drive, check the documentation for the application that is running on the server. You may need to execute specific commands before replacing a hard disk drive.

After you replace a hard disk drive, the rebuild process takes a minimum of 30 minutes.

Related topics:

A newly installed hard disk drive is not recognized

Troubleshooting steps

Procedure

1. Check the amber status LED for the hard disk drive.

2. If the LED is lit, remove the drive from the bay, wait 45 seconds, and reinsert the drive. Make sure that the drive assembly connects to the hard disk drive backplane.

3. Check the green activity LED and the amber status LED for the hard disk drive:

   • If the green activity LED is flashing and the amber status LED is not lit, the drive is recognized by the RAID controller and is working correctly.

   • If the green activity LED is flashing and the amber status LED is flashing slowly, the drive is recognized by the RAID controller and is rebuilding.

   • If neither LED is lit or flashing, check the hard disk drive backplane (go to next step).

   • If the green activity LED is flashing and the amber status LED is lit, replace the drive. If the activity of the LEDs remains the same, go to the next step. If the activity of the LEDs changes, return to step 1.

4. If the application provides information about the RAID status, access that information.

5. Connect a customer-provided keyboard, mouse, and monitor to the server and check the application syslog for errors.

Related topics:
Removing a hard disk drive on page 41
Installing a hard disk drive on page 42
Hard disk drive LEDs on page 82

Multiple hard disk drives fail

Troubleshooting steps

Procedure

Replace the server.

Multiple hard disk drives are offline

Troubleshooting steps

Procedure

Replace the server.

A replacement hard disk drive does not rebuild

Troubleshooting steps

Procedure

1. Make sure that the hard disk drive is recognized by the RAID controller card (the green hard disk drive activity LED is flashing).

2. Check the amber status LED for the hard disk drive.

3. If the LED is lit, remove the drive from the bay, wait 45 seconds, and reinsert the drive. Make sure that the drive assembly connects to the hard disk drive backplane.

4. Check the green activity LED and the amber status LED for the hard disk drive:

    • If the green activity LED is flashing and the amber status LED is not lit, the drive is recognized by the RAID controller and is working correctly.

    • If the green activity LED is flashing and the amber status LED is flashing slowly, the drive is recognized by the RAID controller and is rebuilding.

    • If neither LED is lit or flashing, check the hard disk drive backplane (go to next step).

    • If the green activity LED is flashing and the amber status LED is lit, replace the drive. If the activity of the LEDs remains the same, go to the next step. If the activity of the LEDs changes, return to step 1.

5. Connect a customer-provided keyboard, mouse, and monitor to the server and check the application syslog for errors.

Related topics:

Removing a hard disk drive on page 41
Installing a hard disk drive on page 42
Hard disk drive LEDs on page 82

Troubleshooting power problems

Power control button does not work

The power-control button does not work, and the reset button does work (the server does not start).

😊 **Note:**

The power control button does not function until approximately three minutes after the server has been connected to AC power.

Approximately five seconds after the server is connected to power, the power-on LED will blink quickly (three flashes per second). Approximately three minutes after the server is connected to power, the power-on LED will blink slowly (one flash per second)

You must wait for the power-on LED to blink slowly (one flash per second) before pressing the power button. If you press the power button while the power-on LED is blinking quickly (three flashes per second), the server will not turn on.

Troubleshooting steps

Procedure

1. Disconnect the server power cords.

2. Connect a customer-provided keyboard, mouse, and monitor to the server.

3. Reconnect the power cords.

4. Check the LEDs on the system board. For some components, such as DIMMs and fans, these LEDs can help you identify the problem. For other components, these LEDs are not useful.

5. Make sure that:

   - The power cords are correctly connected to the server and to a working electrical outlet.

   - The type of memory that is installed is correct.

   - The DIMMs are fully seated and in the correct sequence for the application that is running on the server.

   - The LEDs on the power supply do not indicate a problem.

6. Reseat the DIMMs.

7. Reseat the power supplies.

8. Replace the DIMMs as needed. Restart the server after replacement.

9. Replace the power supplies, one at a time. Restart the server after each replacement.

10. If you just installed an optional device, remove it, and restart the server. If the server now starts, you might have installed more devices than the power supply supports.

11. Replace the server.

Related topics:

Server does not start

Troubleshooting steps

Procedure

1. Check the four 12-volt power LEDs (A, B, C, and D) on the system board.

2. If the Channel A power LED is lit:

    a. Remove all PCIe cards and riser cards.

    b. Try restarting the server.

    c. If the server starts, reinstall the PCIe cards and riser cards, one at a time, to isolate the defective card. Restart the server after reinstalling each PCI riser card.

3. If the Channel D power LED is lit:

    a. Remove all DIMMs and restart the server.

    b. If the server restarts, reinstall the DIMMs, one pair at a time, to isolate the defective DIMM. Restart the server after installing each DIMM.

Related topics:

Server does not turn off

Troubleshooting steps

Procedure

1. Connect a customer-provided keyboard, mouse, and monitor to the server.

2. Press Ctrl+Alt+Delete.

3. Turn off the server by pressing the power-control button and hold it down for 5 seconds.

4. Restart the server.

5. If the server fails POST and the power control button does not work, disconnect the power cord for 20 seconds, and then reconnect the power cord and restart the server.

6. If the problem still exists, replace the server.

Troubleshooting memory problems

Memory displayed is less than memory installed

The amount of system memory that is displayed is less than the amount of installed physical memory.

Troubleshooting steps

Procedure

1. Make sure that:

   - No error LEDs are lit on the operator information panel.
   - The DIMMs are seated correctly.
   - If you changed the memory, you updated the memory configuration in the Setup utility.

2. Shut down the server and remove the power cords.

3. Reseat the DIMMs.

4. Reconnect the power cords, and restart the server.

5. Check the amount of system memory.

6. If the problem still exists, replace the server.

Related topics:
Removing a memory module on page 28
Installing a memory module on page 29
Operator information panel on page 56

Multiple rows of DIMMs in a branch are identified as failing

Troubleshooting steps

About this task

Procedure

1. Reseat the DIMMs.

2. Restart the server.

3. Remove the lowest numbered DIMM pair of those that are identified and replace it with an identical pair of known good DIMMs. Then, restart the server.

4. Repeat Step 3 as necessary. If the failures continue after all identified pairs are replaced, go to step 8.

5. Return the removed DIMMs, one pair at a time, to their original connectors. Restart the server after each pair, until a pair fails.

6. Replace each DIMM in the failed pair with an identical known good DIMM. Restart the server after each DIMM.

7. Replace the failed DIMM. Repeat steps 5 and 6 until you have tested all removed DIMMs.

8. Replace the lowest numbered DIMM pair of those identified. Then, restart the server.

9. Repeat Step 8 as necessary.

Related topics:

Removing a memory module on page 28
Installing a memory module on page 29

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