

Power Systems

*Servicing the IBM Power System
S822LC (8335-GCA or 8335-GTA)*

IBM

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S822LC (8335-GCA or 8335-GTA)*

IBM

Note

Before using this information and the product it supports, read the information in Safety notices, "Notices" on page 119, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

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Safety notices

Safety notices may be printed throughout this guide.

- **DANGER** notices call attention to a situation that is potentially lethal or extremely hazardous to people.
- **CAUTION** notices call attention to a situation that is potentially hazardous to people because of some existing condition.
- **Attention** notices call attention to the possibility of damage to a program, device, system, or data.

World Trade safety information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, safety information documentation is included in the publications package (such as in printed documentation, on DVD, or as part of the product) shipped with the product. The documentation contains the safety information in your national language with references to the U.S. English source. Before using a U.S. English publication to install, operate, or service this product, you must first become familiar with the related safety information documentation. You should also refer to the safety information documentation any time you do not clearly understand any safety information in the U.S. English publications.

Replacement or additional copies of safety information documentation can be obtained by calling the IBM Hotline at 1-800-300-8751.

Laser safety information

The servers can use I/O cards or features that are fiber-optic based and that utilize lasers or LEDs.

Laser compliance

The servers may be installed inside or outside of an IT equipment rack.

DANGER

When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- If IBM supplied the power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Do not attempt to switch on power to the machine until all possible unsafe conditions are corrected.
- Assume that an electrical safety hazard is present. Perform all continuity, grounding, and power checks specified during the subsystem installation procedures to ensure that the machine meets safety requirements.
- Do not continue with the inspection if any unsafe conditions are present.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To Disconnect:

1. Turn off everything (unless instructed otherwise).
2. Remove the power cords from the outlets.
3. Remove the signal cables from the connectors.
4. Remove all cables from the devices.

To Connect:

1. Turn off everything (unless instructed otherwise).
2. Attach all cables to the devices.
3. Attach the signal cables to the connectors.
4. Attach the power cords to the outlets.
5. Turn on the devices.

Sharp edges, corners and joints may be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching.

(D005)

DANGER

Observe the following precautions when working on or around your IT rack system:

- Heavy equipment—personal injury or equipment damage might result if mishandled.
- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet.
- To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.
- Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices.



- Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.
- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

CAUTION

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers.)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.
- *(For fixed drawers.)* This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.

(R001)

CAUTION:

Removing components from the upper positions in the rack cabinet improves rack stability during relocation. Follow these general guidelines whenever you relocate a populated rack cabinet within a room or building.

- Reduce the weight of the rack cabinet by removing equipment starting at the top of the rack cabinet. When possible, restore the rack cabinet to the configuration of the rack cabinet as you received it. If this configuration is not known, you must observe the following precautions:
 - Remove all devices in the 32U position (compliance ID RACK-001 or 22U (compliance ID RR001) and above.
 - Ensure that the heaviest devices are installed in the bottom of the rack cabinet.
 - Ensure that there are little-to-no empty U-levels between devices installed in the rack cabinet below the 32U (compliance ID RACK-001 or 22U (compliance ID RR001) level, unless the received configuration specifically allowed it.
- If the rack cabinet you are relocating is part of a suite of rack cabinets, detach the rack cabinet from the suite.
- If the rack cabinet you are relocating was supplied with removable outriggers they must be reinstalled before the cabinet is relocated.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack cabinet. Refer to the documentation that comes with your rack cabinet for the weight of a loaded rack cabinet.
- Verify that all door openings are at least 760 x 230 mm (30 x 80 in.).
- Ensure that all devices, shelves, drawers, doors, and cables are secure.
- Ensure that the four leveling pads are raised to their highest position.
- Ensure that there is no stabilizer bracket installed on the rack cabinet during movement.
- Do not use a ramp inclined at more than 10 degrees.
- When the rack cabinet is in the new location, complete the following steps:
 - Lower the four leveling pads.
 - Install stabilizer brackets on the rack cabinet.
 - If you removed any devices from the rack cabinet, repopulate the rack cabinet from the lowest position to the highest position.
- If a long-distance relocation is required, restore the rack cabinet to the configuration of the rack cabinet as you received it. Pack the rack cabinet in the original packaging material, or equivalent. Also lower the leveling pads to raise the casters off of the pallet and bolt the rack cabinet to the pallet.

(R002)

(L001)



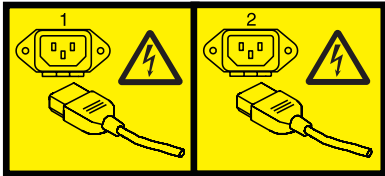
DANGER: Hazardous voltage, current, or energy levels are present inside any component that has this label attached. Do not open any cover or barrier that contains this label. (L001)

(L002)



DANGER: Rack-mounted devices are not to be used as shelves or work spaces. (L002)

(L003)



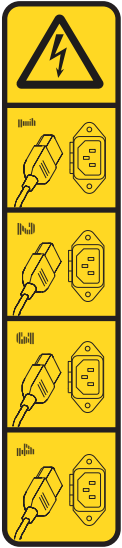
or



or



or



DANGER: Multiple power cords. The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords. (L003)

(L007)



CAUTION: A hot surface nearby. (L007)

(L008)



CAUTION: Hazardous moving parts nearby. (L008)

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with IEC 60825 as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

CAUTION:

This product might contain one or more of the following devices: CD-ROM drive, DVD-ROM drive, DVD-RAM drive, or laser module, which are Class 1 laser products. Note the following information:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of the controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

(C026)

CAUTION:

Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Although shining light into one end and looking into the other end of a disconnected optical fiber to verify the continuity of optic fibers may not injure the eye, this procedure is potentially dangerous. Therefore, verifying the continuity of optical fibers by shining light into one end and looking at the other end is not recommended. To verify continuity of a fiber optic cable, use an optical light source and power meter. (C027)

CAUTION:

This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)

CAUTION:

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following information: laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)

CAUTION:

The battery contains lithium. To avoid possible explosion, do not burn or charge the battery.

Do Not:

- ___ Throw or immerse into water
- ___ Heat to more than 100°C (212°F)
- ___ Repair or disassemble

Exchange only with the IBM-approved part. Recycle or discard the battery as instructed by local regulations. In the United States, IBM has a process for the collection of this battery. For information, call 1-800-426-4333. Have the IBM part number for the battery unit available when you call. (C003)

(C048)

CAUTION regarding IBM provided VENDOR LIFT TOOL:

- Operation of LIFT TOOL by authorized personnel only.
- LIFT TOOL intended for use to assist, lift, install, remove units (load) up into rack elevations. It is not to be used loaded transporting over major ramps nor as a replacement for such designated tools like pallet jacks, walkies, fork trucks and such related relocation practices. When this is not practicable, specially trained persons or services must be used (for instance, riggers or movers).
- Read and completely understand the contents of LIFT TOOL operator's manual before using. Failure to read, understand, obey safety rules, and follow instructions may result in property damage and/or personal injury. If there are questions, contact the vendor's service and support. Local paper manual must remain with machine in provided storage sleeve area. Latest revision manual available on vendor's web site.
- Test verify stabilizer brake function before each use. Do not over-force moving or rolling the LIFT TOOL with stabilizer brake engaged.
- Do not move LIFT TOOL while platform is raised, except for minor positioning.

- Do not exceed rated load capacity. See LOAD CAPACITY CHART regarding maximum loads at center versus edge of extended platform.
- Only raise load if properly centered on platform. Do not place more than 200 lb (91 kg) on edge of sliding platform shelf also considering the load's center of mass/gravity (CoG).
- Do not corner load the platform tilt riser accessory option. Secure platform riser tilt option to main shelf in all four (4x) locations with provided hardware only, prior to use. Load objects are designed to slide on/off smooth platforms without appreciable force, so take care not to push or lean. Keep riser tilt option flat at all times except for final minor adjustment when needed.
- Do not stand under overhanging load.
- Do not use on uneven surface, incline or decline (major ramps).
- Do not stack loads.
- Do not operate while under the influence of drugs or alcohol.
- Do not support ladder against LIFT TOOL.
- Tipping hazard. Do not push or lean against load with raised platform.
- Do not use as a personnel lifting platform or step. No riders.
- Do not stand on any part of lift. Not a step.
- Do not climb on mast.
- Do not operate a damaged or malfunctioning LIFT TOOL machine.
- Crush and pinch point hazard below platform. Only lower load in areas clear of personnel and obstructions. Keep hands and feet clear during operation.
- No Forks. Never lift or move bare LIFT TOOL MACHINE with pallet truck, jack or fork lift.
- Mast extends higher than platform. Be aware of ceiling height, cable trays, sprinklers, lights, and other overhead objects.
- Do not leave LIFT TOOL machine unattended with an elevated load.
- Watch and keep hands, fingers, and clothing clear when equipment is in motion.
- Turn Winch with hand power only. If winch handle cannot be cranked easily with one hand, it is probably over-loaded. Do not continue to turn winch past top or bottom of platform travel. Excessive unwinding will detach handle and damage cable. Always hold handle when lowering, unwinding. Always assure self that winch is holding load before releasing winch handle.
- A winch accident could cause serious injury. Not for moving humans. Make certain clicking sound is heard as the equipment is being raised. Be sure winch is locked in position before releasing handle. Read instruction page before operating this winch. Never allow winch to unwind freely. Freewheeling will cause uneven cable wrapping around winch drum, damage cable, and may cause serious injury. (C048)

Power and cabling information for NEBS (Network Equipment-Building System) GR-1089-CORE

The following comments apply to the servers that have been designated as conforming to NEBS (Network Equipment-Building System) GR-1089-CORE:

The equipment is suitable for installation in the following:

- Network telecommunications facilities
- Locations where the NEC (National Electrical Code) applies

The intrabuilding ports of this equipment are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intrabuilding ports of this equipment *must not* be metallically connected to the interfaces that connect to the OSP (outside plant) or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to connect these interfaces metallically to OSP wiring.

Note: All Ethernet cables must be shielded and grounded at both ends.

The ac-powered system does not require the use of an external surge protection device (SPD).

The dc-powered system employs an isolated DC return (DC-I) design. The DC battery return terminal *shall not* be connected to the chassis or frame ground.

The dc-powered system is intended to be installed in a common bonding network (CBN) as described in GR-1089-CORE.

Removing and replacing parts

Use these procedures to remove and replace failing parts. These parts are referred to as field replaceable units (FRUs).

Note: See the International Information Bulletin for Customers - Installation of IBM® Machines (<http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss>). This bulletin (Publication number: SC27-6601-00) provides a list of the key IBM system installation activities and those activities that might be billable activities.

Before you begin a replacement, complete these tasks:

1. If you are completing a replacement procedure that might put your data at risk, ensure, if possible, that you have a current backup of your system or logical partition (including operating systems, licensed programs, and data).
2. Review the installation or replacement procedure for the feature or part.
3. Note the significance of color on your system.
 - The color **terracotta** on the part indicates you might not need to power off the system to complete service. This determination depends on your system configuration, and you might need to complete steps to prepare the system before a service action can be completed on the system with the system power turned on.
 - The color **blue** on the part indicates that the procedure might require the system to be shut down before servicing. Check your service procedure before you attempt the repair.
4. Ensure that you have access to a medium, flat-blade screwdriver, and a Phillips screwdriver.
5. If parts are incorrect, missing, or visibly damaged, contact the provider of the part or your next level of support.

DANGER

When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- If IBM supplied the power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Do not attempt to switch on power to the machine until all possible unsafe conditions are corrected.
- Assume that an electrical safety hazard is present. Perform all continuity, grounding, and power checks specified during the subsystem installation procedures to ensure that the machine meets safety requirements.
- Do not continue with the inspection if any unsafe conditions are present.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

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To Connect:

1. Turn off everything (unless instructed otherwise).
2. Attach all cables to the devices.
3. Attach the signal cables to the connectors.
4. Attach the power cords to the outlets.
5. Turn on the devices.

Sharp edges, corners and joints may be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching.

(D005)

Attention:

Failure to follow the step-by-step sequence for FRU removal or installation might result in FRU or system damage.

For safety, airflow purposes and thermal performance, the service access cover must be installed and fully seated prior to powering the system on.

For safety and airflow purposes and thermal performance, if you remove parts from the system, you must ensure that:

- PCIe tailstock fillers are present
- GPU or PCIe carriers are present and that either GPU or PCIe fillers are installed in the carriers.

Use the following precautions whenever you handle electronic components or cables.

- The electrostatic discharge (ESD) kit and the ESD wrist strap must be used when you handle logic cards, single chip modules (SCM), multichip modules (MCM), electronic boards, and disk drives.
- Keep all electronic components in the shipping container or envelope until you are ready to install them.
- If you remove, and then reinstall an electronic component, temporarily place the component on an ESD pad or blanket.

Servicing system parts

Use this information to service your system.

To diagnose problems that might occur with your system, see Troubleshooting, service, and support for POWER8 processor-based systems.

Removing and replacing parts

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Use the following precautions whenever you handle electronic components or cables.

- The electrostatic discharge (ESD) kit and the ESD wrist strap must be used when you handle logic cards, single chip modules (SCM), multichip modules (MCM), electronic boards, and disk drives.
- Keep all electronic components in the shipping container or envelope until you are ready to install them.
- If you remove, and then reinstall an electronic component, temporarily place the component on an ESD pad or blanket.

Removing and replacing a disk drive in the 8335-GCA or 8335-GTA

Learn how to remove and replace a disk drive in the IBM Power® System S822LC (8335-GCA and 8335-GTA) system.

The drive might be a hard disk drive (HDD) or a solid-state drive (SSD).

Preparing the 8335-GCA or 8335-GTA system to remove and replace a disk drive with the power turned on

Follow these steps to prepare the IBM Power System S822LC (8335-GCA and 8335-GTA) system to replace a disk drive.

Procedure

1. Complete the prerequisite tasks. For instructions, see “Before you begin” on page 100.
2. Identify the part and the system that you will be working on. For instructions, see “Identifying the system that contains the part to replace” on page 103.
3. If applicable, open the rack front door.
4. Attach the electrostatic discharge (ESD) wrist strap.

Attention:

- Attach an electrostatic discharge (ESD) wrist strap to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
 - When using an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
5. Remove the front cover. For instructions, see “Removing the front cover from an 8335-GCA or 8335-GTA system” on page 110.

(L007)



CAUTION: A hot surface nearby. (L007)

6. Find the package that contains the replacement drive.
Attention: Drives are fragile. Handle with care.
7. Remove the drive from the static-protective package and place it on an ESD mat.

Removing and replacing a disk drive in the 8335-GCA or 8335-GTA system

Follow these steps to remove a disk drive in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Locate the faulty drive. The amber LED on the front of the disk drive unit indicates the faulty drive by a steady light.
3. Ensure that the media device is unmounted in the Linux system and if needed, remove the media from the device.
 - a. Logically remove the device from the Linux system.
 - b. Identify which disk (such as sda or sdb) to remove. Assume sda for this example. Log in as the root user. Run this command:

```
echo 1 > /sys/block/sda/device/delete
```
 - c. Physically remove the drive from the system.

Remove:

4. Unlock the drive bay handle (**B**) by pushing the handle release (**A**) up. The handle (**B**) snaps out towards you. If the handle does not snap all the way out, the drive does not slide out of the system. See Figure 1 on page 7.

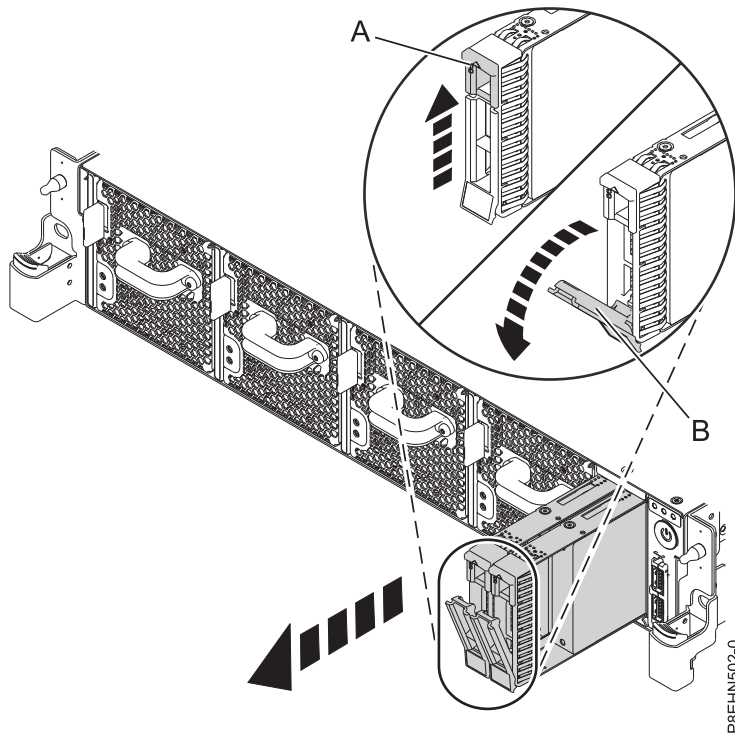


Figure 1. Disk drive lock detail

5. Support the bottom of the drive as you slide it out of the system. Do not hold the drive by the handle.
6. If you are removing more than one drive, repeat the steps in this procedure until all drives are removed.

Replace:

7. Hold the drive by the top and bottom edges as you position the drive, and insert it into the drive slot.
8. Lock the drive bay handle (A) by pushing in the handle release. See Figure 2 on page 8.

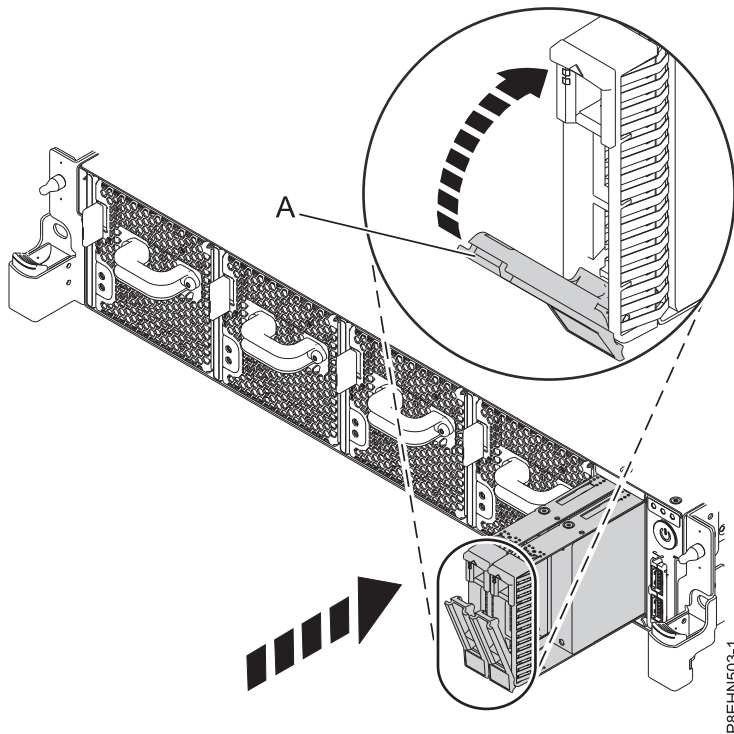


Figure 2. Locking the drive bay handle

9. Configure the installed or replaced disk drive for your environment.

When adding a new disk, after inserting the new disk, you need to for a rescan for the device. To do this, when logged in as the root user, run the command:

```
rescan-scsi-bus.sh -a
```

Load or restore data from your backup media.

Preparing the 8335-GCA or 8335-GTA system for operation after removing and replacing a drive with the power turned on

Follow these steps to prepare the IBM Power System S822LC (8335-GCA and 8335-GTA) system for operation.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. On the front of the system, verify that the power LED is **ON** (green) for the installed or replaced drive.
3. Replace the front cover. For instructions, see "Installing the front cover on an 8335-GCA or 8335-GTA system" on page 111.
4. If applicable, close the rack front door.
5. Verify the installed part. See Verifying a repair in the 8335-GCA or 8335-GTA. (www.ibm.com/support/knowledgecenter/POWER8/p8ei3/p8ei3_verifyrepair.htm)
6. Configure the installed or replaced disk drive for your environment.

When adding a new disk, after inserting the new disk, you need to for a rescan for the device. To do this, when logged in as the root user, run the command:

```
rescan-scsi-bus.sh -a
```

Load or restore data from your backup media.

Removing and replacing the disk drive and fan card in the 8335-GCA or 8335-GTA

Learn how to remove and replace the disk drive and fan card in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing the disk drive and fan card from the 8335-GCA or 8335-GTA

To remove the disk drive and fan card from the IBM Power System S822LC (8335-GCA and 8335-GTA) system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Label and remove each memory riser and any filler. Record their location to ensure they are replaced in the same position during the replacement steps. For instructions, see “Removing memory risers from the 8335-GCA or 8335-GTA” on page 36.
3. Label and remove the power cable from the disk drive and fan card. For instructions, see “Removing the fan power cable from the 8335-GCA or 8335-GTA” on page 20.
4. Label and remove the disk drive fan signal cable from the disk drive and fan card. For instructions, see “Removing the disk and fan signal cable from the 8335-GCA or 8335-GTA system” on page 12.
5. Remove the fans. For instructions, see “Removing a system fan from the 8335-GCA or 8335-GTA” on page 17.
6. Label and remove the disk drives and any fillers. For instructions, see “Removing and replacing a disk drive in the 8335-GCA or 8335-GTA” on page 5.
7. Remove the 5 screws from the top of the disk drive and fan card. Figure 3 shows all 12 screw locations.

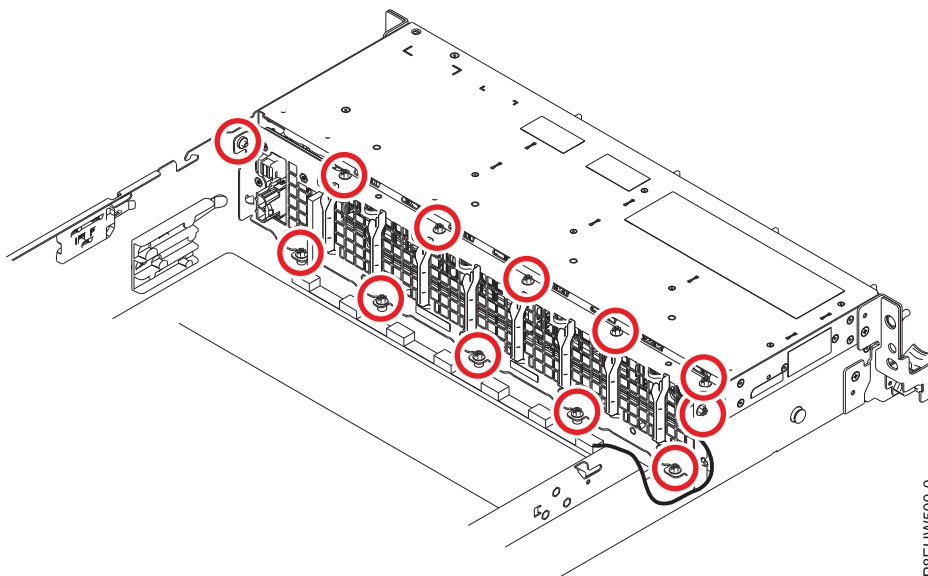
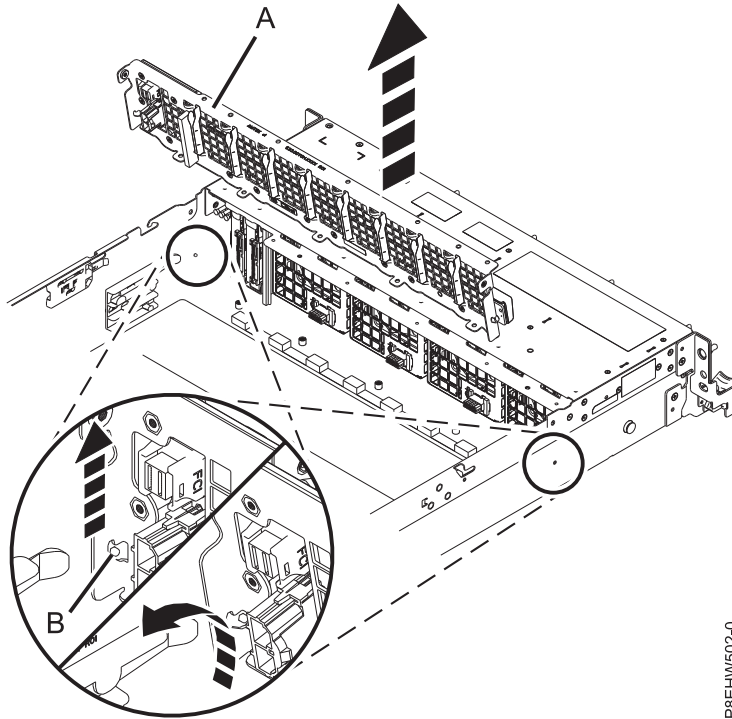


Figure 3. Screw locations for the disk drive and fan card

8. Remove the 5 screws from the bottom of the disk drive and fan card.
9. Remove the 2 screws from each side of the disk drive and fan card.
10. The disk drive and fan card (**A**) is aligned in the system using two pins (**B**). Pivot the disk drive and fan card away from the fan housing around the pins; then lift out the card.



P8EHW502-0

11. Place the disk drive and fan card on the table.

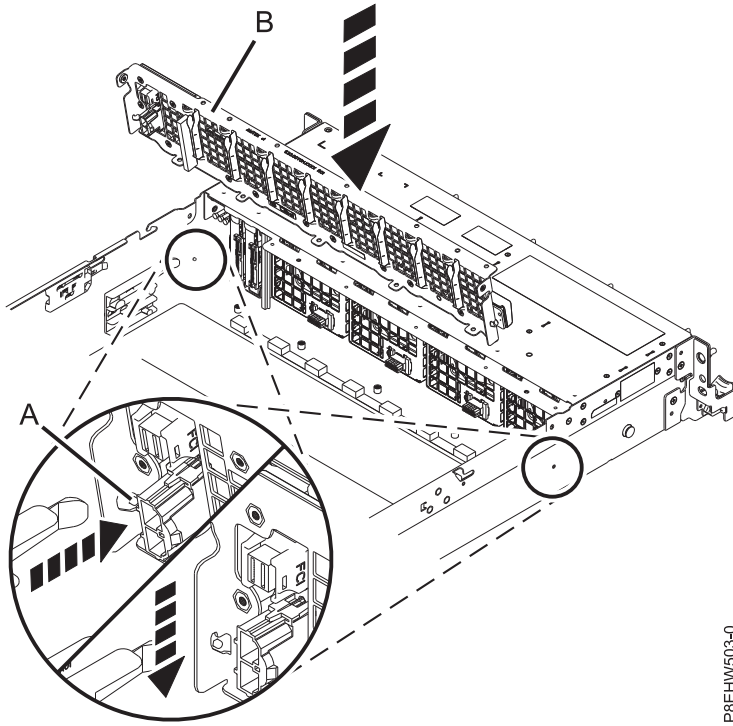
Replacing the disk drive and fan card in the 8335-GCA or 8335-GTA

To replace the disk drive and fan card in the IBM Power System S822LC (8335-GCA and 8335-GTA) system, complete the steps in this procedure.

Procedure

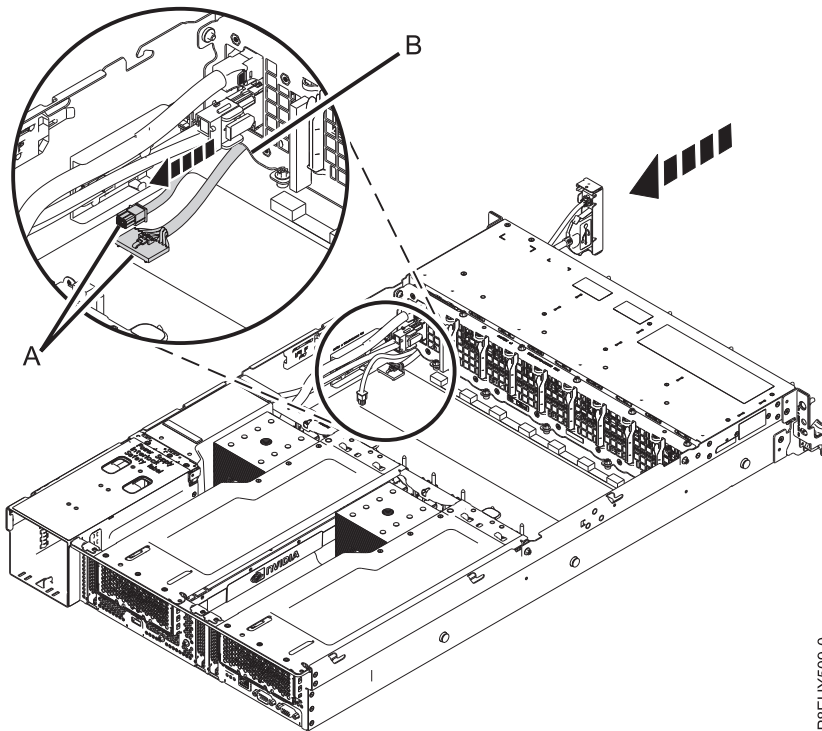
1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the replacement disk drive and fan card from the protective plastic envelope.
3. Using the alignment pins (one on each side) **(A)** for the disk drive and fan card **(B)**, lower and pivot the card into place. See Figure 4 on page 11.

Note: Both the front USB cable and the power switch cable **(A)** need to be located in the recessed area **(B)** of the disk drive and fan card. If they are not located in that recessed area, they can be pinched and damaged. See Figure 5 on page 11.



P8EHW503-0

Figure 4. Inserting the disk drive fan card



P8EHY509-0

Figure 5. Routing the cables under the disk drive and fan card

4. Replace the 5 screws for the bottom of the disk drive and fan card. Figure 6 on page 12 shows all 12 screw locations.

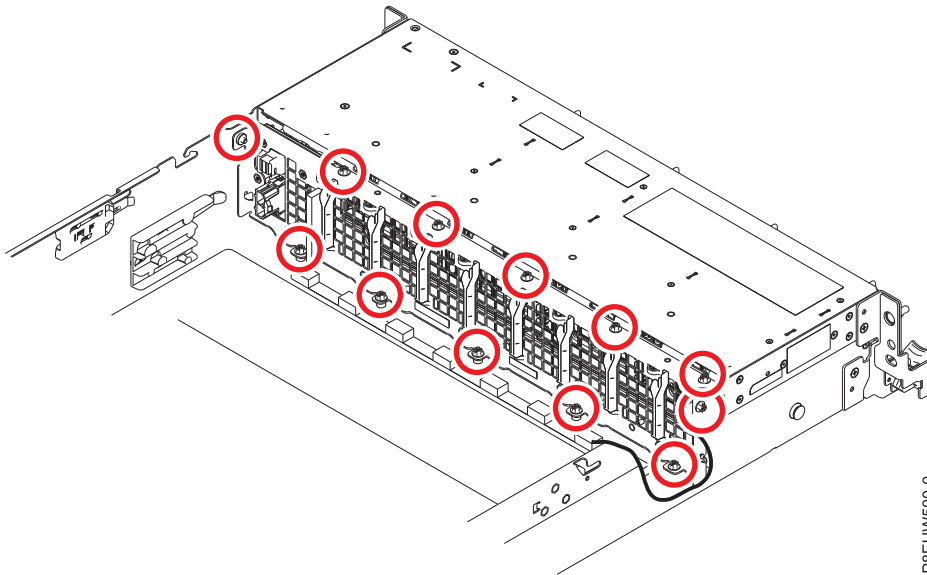


Figure 6. Screw locations for the disk drive and fan card

5. Replace the 5 screws for the top of the disk drive and fan card.
6. Replace the 2 screws in each side of the disk drive and fan card.
7. Using your labels, replace the disk drives and any fillers. For instructions, see “Removing and replacing a disk drive in the 8335-GCA or 8335-GTA” on page 5.
8. Replace the fans. For instructions, see “Replacing a system fan in the 8335-GCA or 8335-GTA” on page 18.
9. Using your label, plug the disk drive fan signal cable into the disk drive and fan card. For instructions, see “Replacing the disk and fan signal cable in the 8335-GCA or 8335-GTA system” on page 14.
10. Using your label, plug the power cable into the disk drive and fan card. For instructions, see “Replacing the 8335-GCA or 8335-GTA fan power cable” on page 22.
11. Using your labels, replace the memory risers and fillers. For instructions, see “Replacing memory risers in the 8335-GCA or 8335-GTA” on page 38.

Removing and replacing the disk and fan signal cable in the 8335-GCA or 8335-GTA

Learn how to remove and replace a disk and fan signal cable in the 8335-GCA or 8335-GTA system.

Removing the disk and fan signal cable from the 8335-GCA or 8335-GTA system

Follow these steps to remove a disk and fan signal cable from the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Locate the disk and fan signal cable (A). It connects from the system backplane to the disk drive fan card, along the inside of the system.

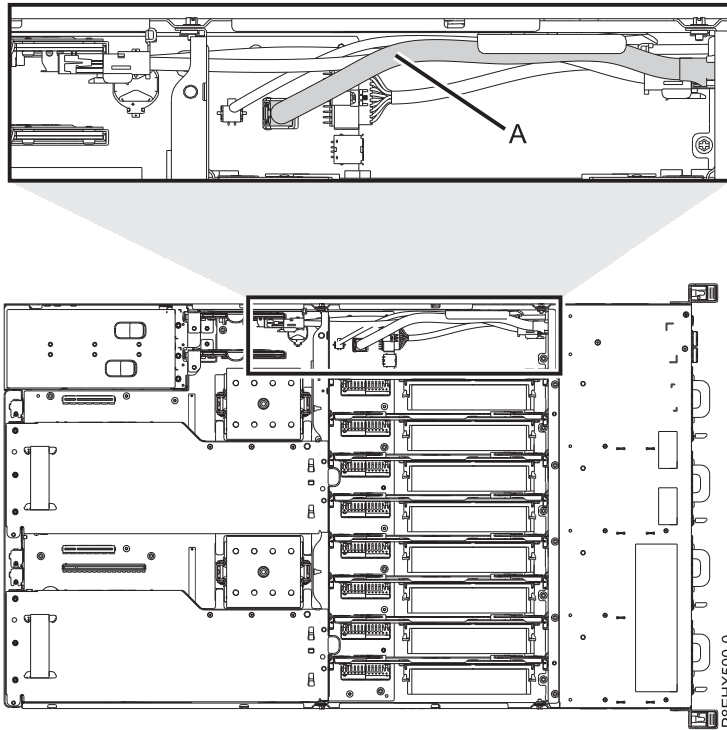


Figure 7. Location of the disk and fan signal cable and connectors

3. Release the cable from the retaining clip on the inside wall of the system.
4. Label and disconnect the disk and fan signal cable (**A**) from the disk drive and fan card (**B**) and from the system backplane (**C**). Using your thumb, press the release latch on the connector to remove a cable.

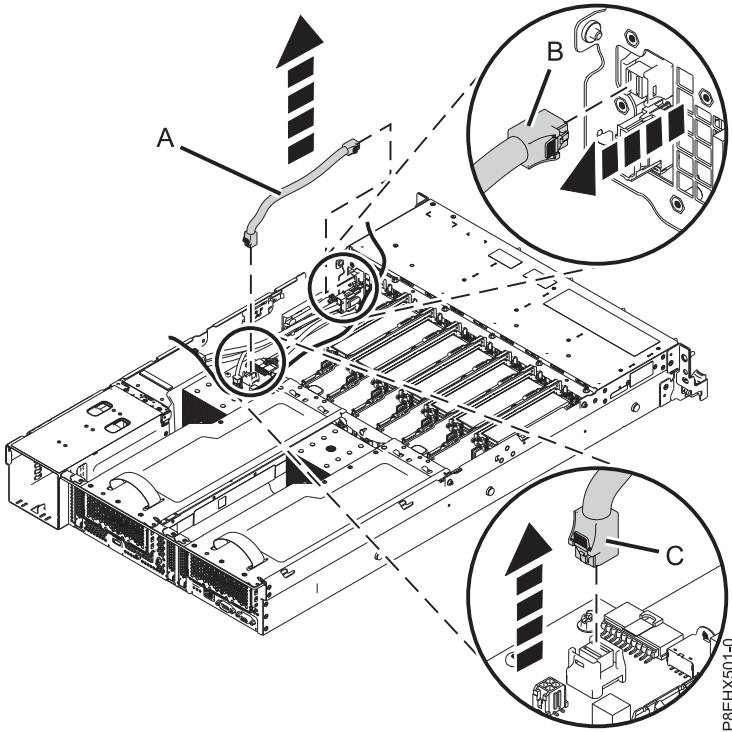


Figure 8. Removing the disk and fan signal cable from the system backplane and the disk drive and fan card

5. Place the cable on the table.

Replacing the disk and fan signal cable in the 8335-GCA or 8335-GTA system

Follow these steps to replace a disk and fan signal cable in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Using the labels, connect the disk and fan signal cable (A) to the disk drive fan card (B) and to the system backplane (C). Ensure that the cable latch clip snaps into place on the connectors.

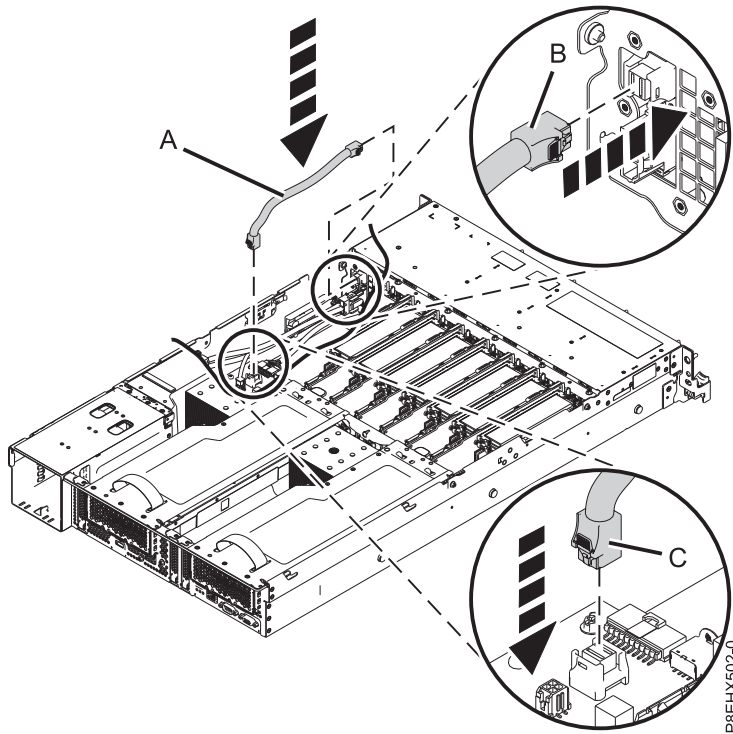


Figure 9. Replacing the disk and fan signal cable in the system backplane and the disk drive and fan card

3. Secure the cable in the retaining clip on the inside wall of the system.

Removing and replacing a fan in the 8335-GCA or 8335-GTA

Find information about removing and replacing fans in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Preparing the system to remove and replace a system fan

To prepare the system to remove and replace a system fan, complete the steps in this procedure.

About this task

Procedure

1. Complete the prerequisite tasks. For instructions, see "Before you begin" on page 100.
2. Identify the part and the system that you will be working on. For instructions, see "Identifying the system that contains the part to replace" on page 103.
3. If applicable, open the rack front door.
4. Attach the electrostatic discharge (ESD) wrist strap.

Attention:

- Attach an electrostatic discharge (ESD) wrist strap to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
 - When using an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
5. Remove the front cover. For instructions, see “Removing the front cover from an 8335-GCA or 8335-GTA system” on page 110.

(L007)

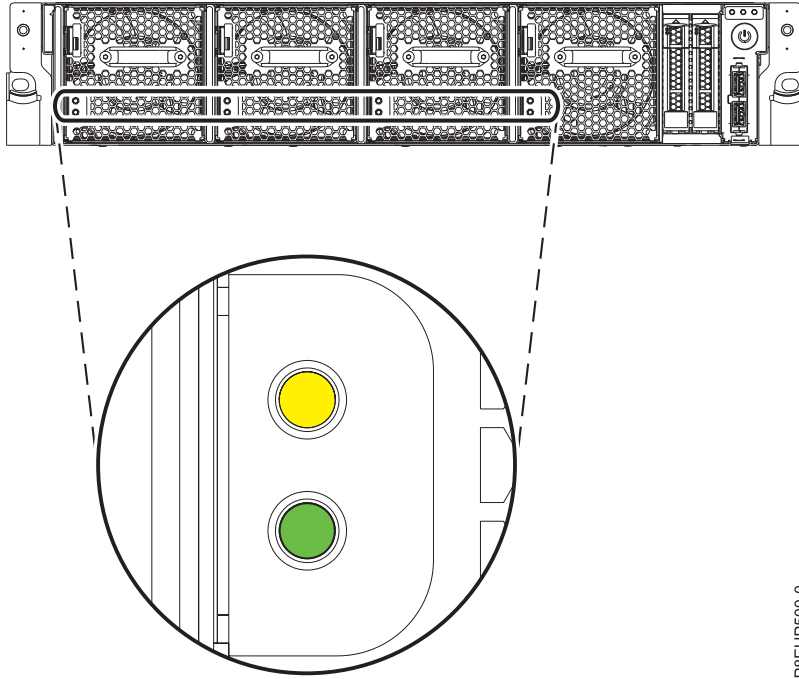


CAUTION: A hot surface nearby. (L007)

6. Determine whether the repair can continue concurrently.
- To continue the repair concurrently, the following conditions must be true:
- Fans must be installed in all four slots.
Each of the four fans has a green LED and an amber LED, as shown in Figure 10 on page 17. The green LED is lit solid for all four fans, but the fan with the failure has the amber fault LED lit.
 - If only one amber fault LED is **On**, the repair can be completed concurrently.

Attention:

- Removing and replacing the failed fan is a time sensitive task when serviced with the system power turned on (concurrent).
- You must replace the failed fan within five minutes after removing the fan from the system to avoid a system shutdown.
- Ensure that you have read the complete procedure to remove and replace a system fan and that you are prepared to remove and replace the fan within this time.



P8EHP500-0

Figure 10. Location of the fans and LEDs

7. Select an action:

- To do a concurrent repair with the system running:
 - a. Continue the procedure with the system power turned on.
 - b. Remove the failed fan indicated by the amber fault LED. For instructions, see “Removing a system fan from the 8335-GCA or 8335-GTA.”

Remember: Failure to replace the fan after removing the fan from the system within five minutes can cause the system to automatically power off.

- To do a nonconcurrent repair with the system power turned off:
 - a. Label the failed fan indicated by the amber fault LED.
 - b. Stop the system. For instructions, see “Stopping the system” on page 108.
 - c. Disconnect the power source from the system by unplugging the system. For instructions, see “Disconnecting the power cords from an 8335-GCA or 8335-GTA system” on page 113.
 - d. Using the label for the failed fan, remove that fan. For instructions, see “Removing a system fan from the 8335-GCA or 8335-GTA.”

Removing a system fan from the 8335-GCA or 8335-GTA

To remove a system fan, complete the steps in this procedure.

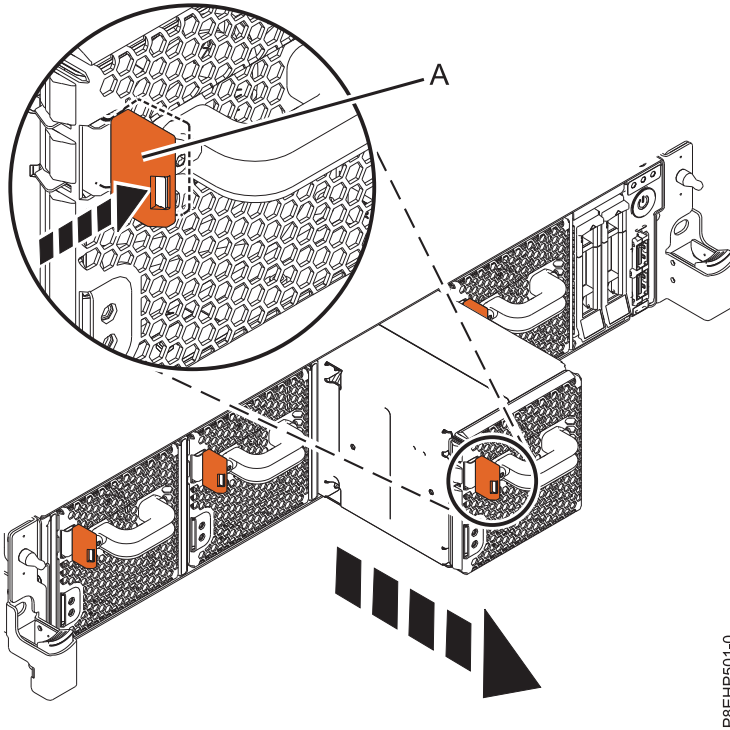
About this task

Attention: If you are replacing a fan with the system power turned on, you must replace the failed fan within five minutes to avoid a system shutdown.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. To remove the fan, complete the following steps:

- a. To unseat the fan from its position in the system, press in the terracotta locking-tab (A) as shown in Figure 11.
- b. Hold on to the fan handle and by using your hand to support the bottom of the fan, pull out the fan from its slot.



P8EHP501-0

Figure 11. Removing a fan from the system

Replacing a system fan in the 8335-GCA or 8335-GTA

To replace a system fan, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Using your hand to support the bottom of the fan, align the fan (A) with the fan slot and slide it into the system until the terracotta tab (A) locks in place, as shown in Figure 12 on page 19.

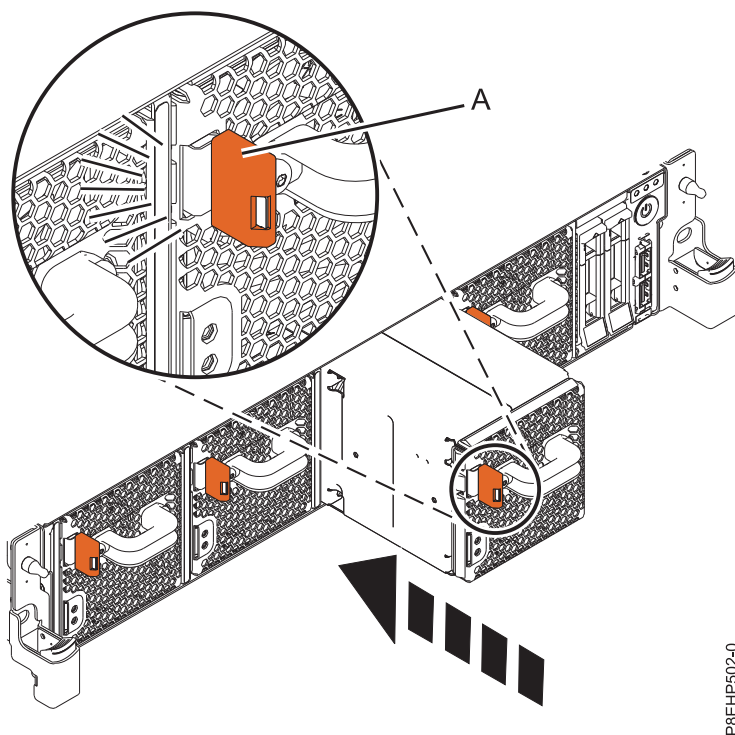


Figure 12. Replacing a fan in the system

Preparing the system for operation after removing and replacing a system fan

To prepare the system for operation after removing and replacing a system fan, complete the steps in this procedure.

About this task

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. If you performed a nonconcurrent repair, start the system. For instructions, see “Starting the system” on page 108.
3. Verify that the amber fault LED on the replaced fan is not lit.
4. Replace the front cover. For instructions, see “Installing the front cover on an 8335-GCA or 8335-GTA system” on page 111.
5. If applicable, close the rack front door.
6. Verify the installed part. See Verifying a repair in the 8335-GCA or 8335-GTA. (www.ibm.com/support/knowledgecenter/POWER8//p8ei3/p8ei3_verifyrepair.htm)

Removing and replacing the fan power cable in the 8335-GCA or 8335-GTA

Find information about removing and replacing the fan power cable in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing the fan power cable from the 8335-GCA or 8335-GTA

To remove the fan power cable, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the power riser air baffle. See Figure 13.

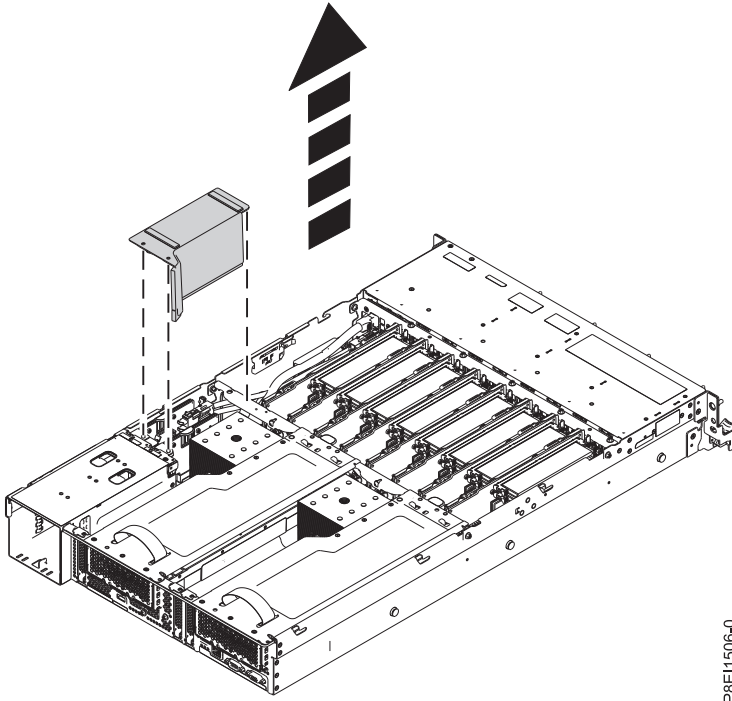


Figure 13. Removing the power riser air baffle

3. Locate where the fan power cable is connected. See **(A)** in Figure 14 on page 21.

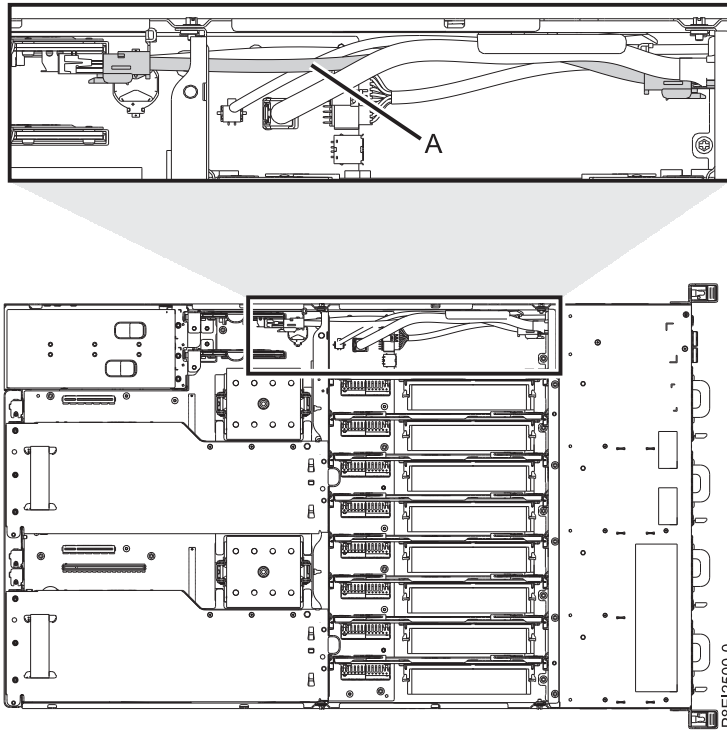
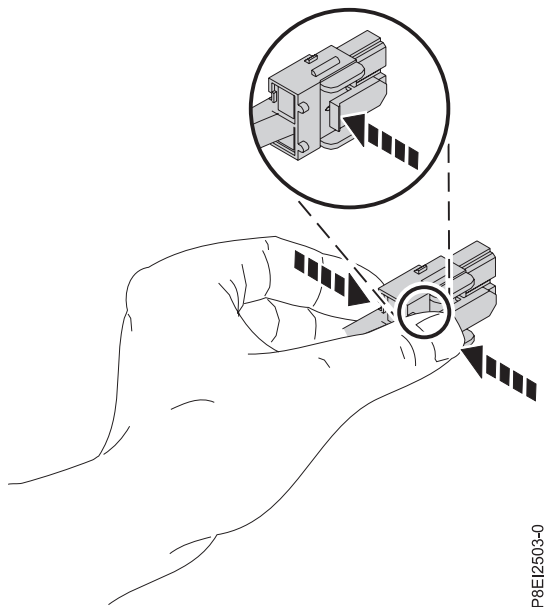


Figure 14. Location of the fan power cable and connectors

4. Grasp the connector end of the fan power cable that is connected to the power riser. See (A) in Figure 15 on page 22.
5. While pressing the latch release lever with your thumb, disconnect the cable from the connector.



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Note: The latch release on the connector must be depressed before unplugging the cable. Failure to do so could damage the cable and the connector.

6. Guide the cable end out through the opening towards the rear of the power riser.
7. Disconnect the fan power cable connector end from the disk drive and fan card.

8. Lift up to remove the fan power cable. Be careful to ensure that the ends of the cable does not catch on any components as you remove it.

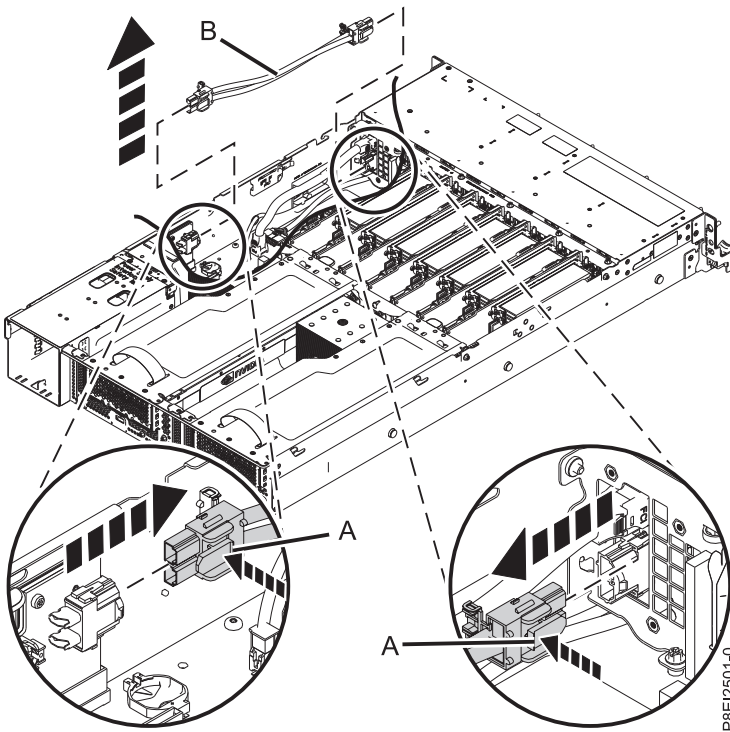


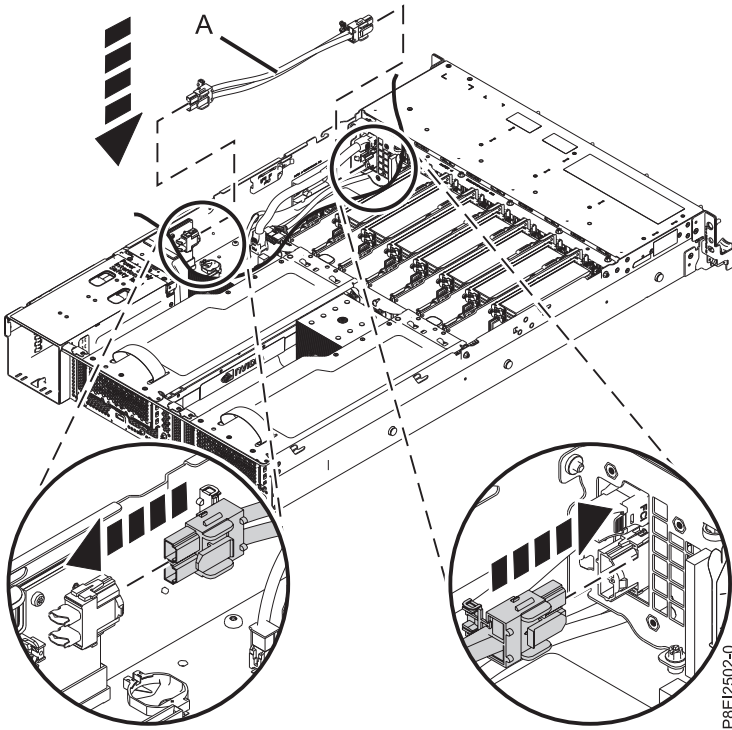
Figure 15. Removing the fan power cable from the system

Replacing the 8335-GCA or 8335-GTA fan power cable

To replace the fan power cable, complete the steps in this procedure.

Procedure

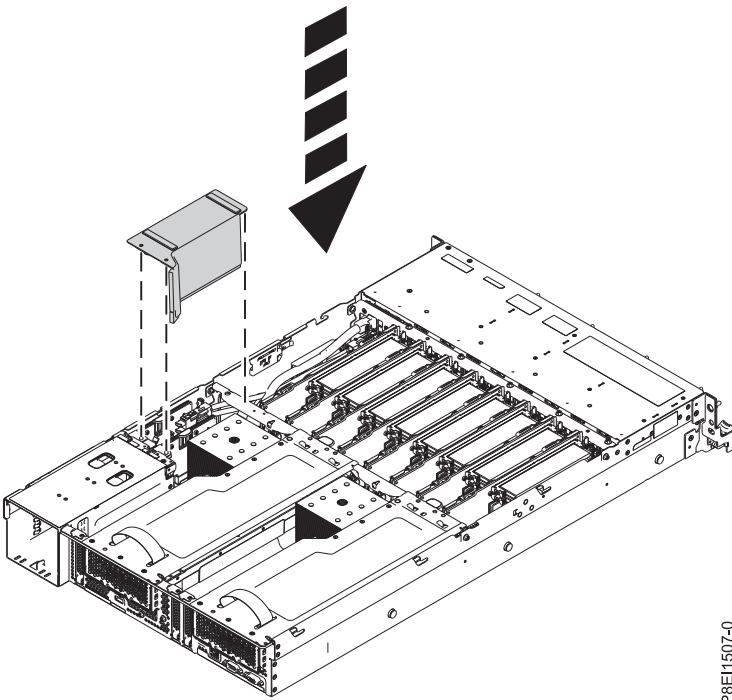
1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Route the fan power cable (A) connector end through the opening and connect it to the power riser as shown in Figure 16 on page 23. Ensure that the cable latch clip snaps into place on the connectors.
3. Connect the other end of the fan power cable into the disk drive and fan card as shown in Figure 16 on page 23.



P8E12502-0

Figure 16. Installing the fan power cable

4. Install the power riser air baffle. See Figure 17. Ensure that the holes in the baffle align with the pins on the system.



P8E11507-0

Figure 17. Installing the power riser air baffle

Removing and replacing the front USB cable and connector in the 8335-GCA or 8335-GTA

Learn how to remove and replace the front USB cable and connector in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing the front USB cable and connector from the 8335-GCA or 8335-GTA system

Follow these steps to remove the front USB cable and connector from the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the disk drive fan card. For instructions, see “Removing the disk drive and fan card from the 8335-GCA or 8335-GTA” on page 9
3. Locate the front USB cable (A) and the power switch cable (B). They connect between the system backplane and the power switch along the inside of the system. Label each cable.

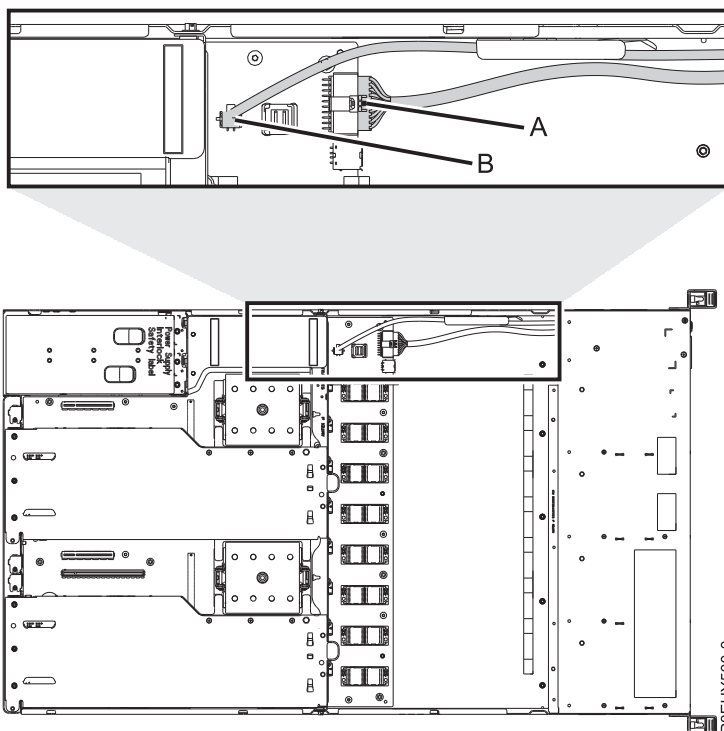
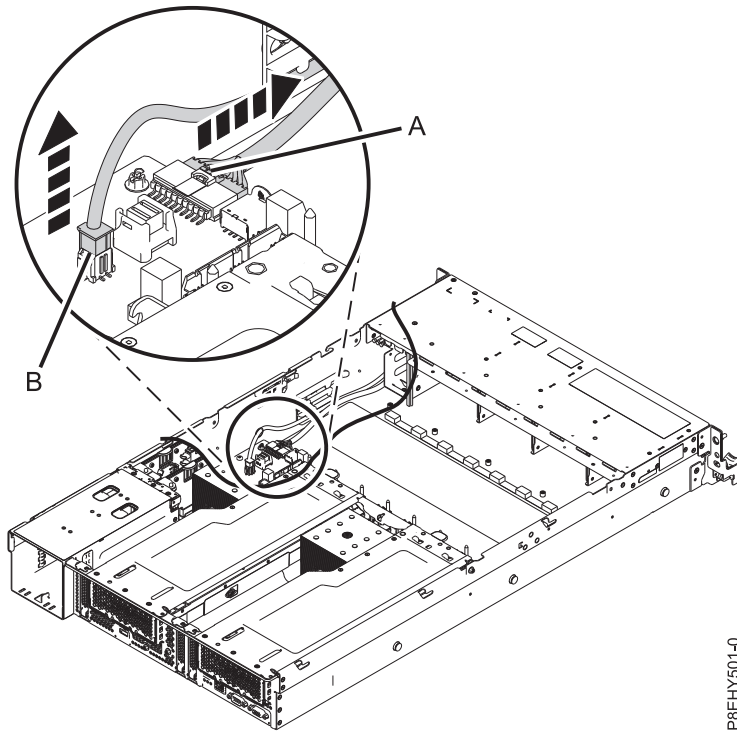


Figure 18. Location of the connectors for the front USB cable and connector and the power switch cable

4. Release each cable from the retaining clip on the inside wall of the system.
5. Pressing the latch release on the connector, disconnect the front USB cable (A). See Figure 19 on page 25.

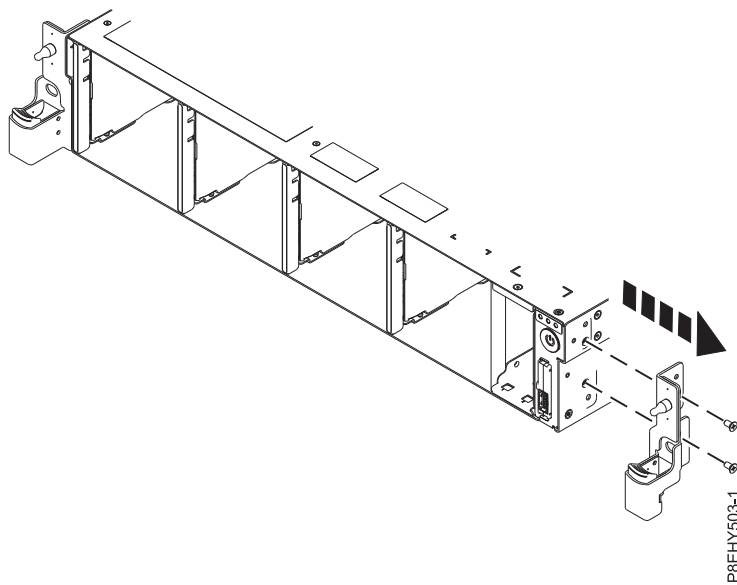
Note: The latch release on the connector must be depressed before unplugging the cable. Failure to do so could damage the cable and the connector.



P8EHY501-0

Figure 19. Removing the front USB cable and the power switch cable from the system backplane and the disk drive and fan card

6. Pressing the latch release on the connector, disconnect the power switch cable (**B**) from the system backplane. See Figure 19.
7. Remove the rack installation support from the side of the system. See Figure 20



P8EHY503-1

Figure 20. Removing the rack installation support

8. Remove the top and side screws from the power switch. See Figure 21 on page 26.

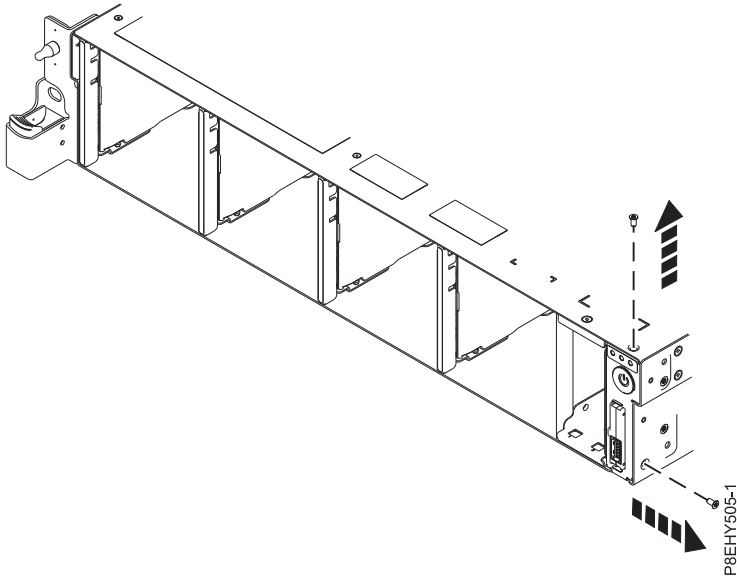


Figure 21. Remove the top and side screws

9. Pull the power switch from the system. See Figure 22.

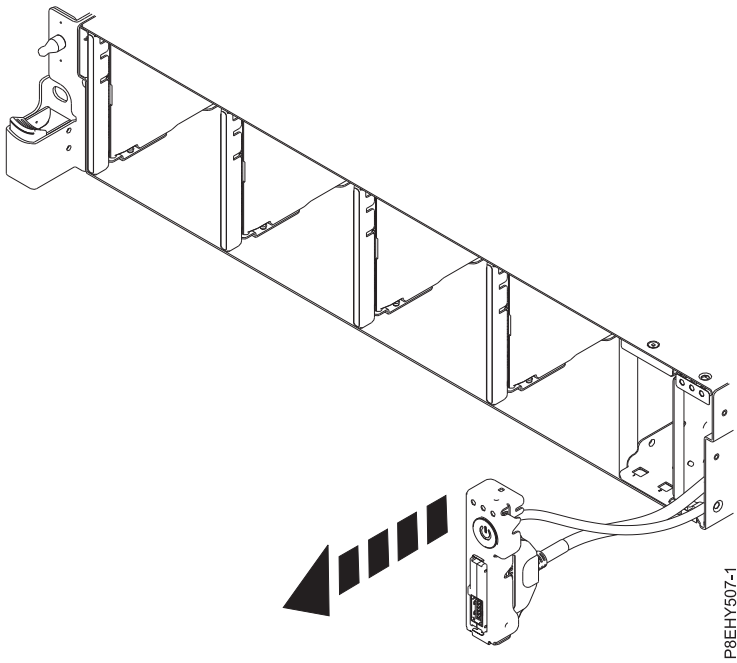


Figure 22. Pull out the switch and cable

10. Pressing the latch releases (A) on the connector, disconnect the front USB cable and connector from the power switch. See Figure 23 on page 27.

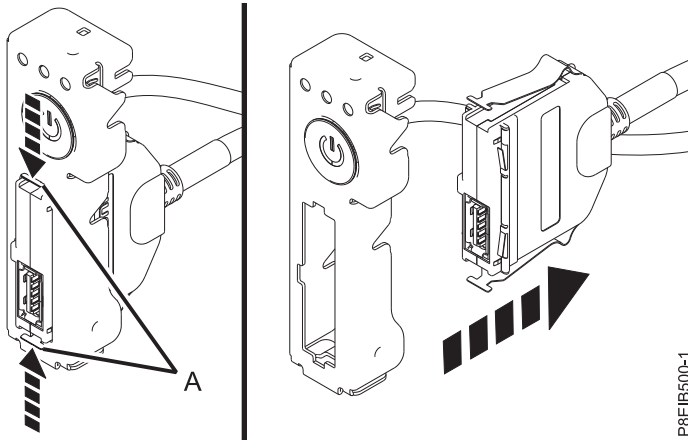


Figure 23. Removing front USB cable and connector from power switch

11. Place the front USB cable and connector and the power switch and cable on the table.

Replacing the front USB cable and connector in the 8335-GCA or 8335-GTA system

Follow these steps to replace the front USB cable and connector in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Find the replacement front USB cable and connector and remove it from the protective plastic envelope.
3. While pressing in the latches (A), connect the front USB cable and connector to the power switch. See Figure 24.

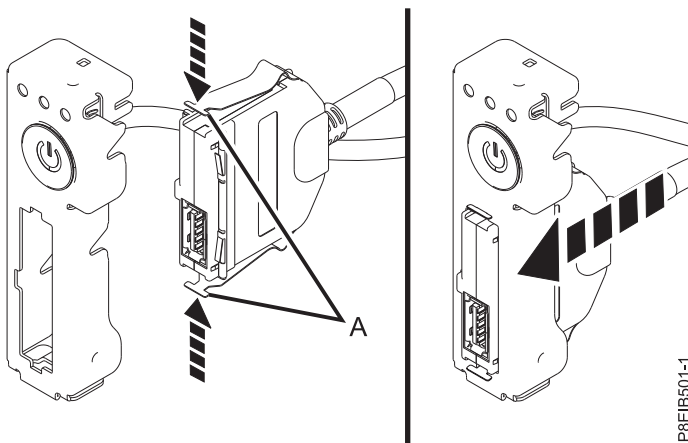


Figure 24. Attaching the front USB cable and connector to the power switch

4. Insert the power switch and cables into the system. Be careful to route the cables through to the system backplane. See Figure 25 on page 28.

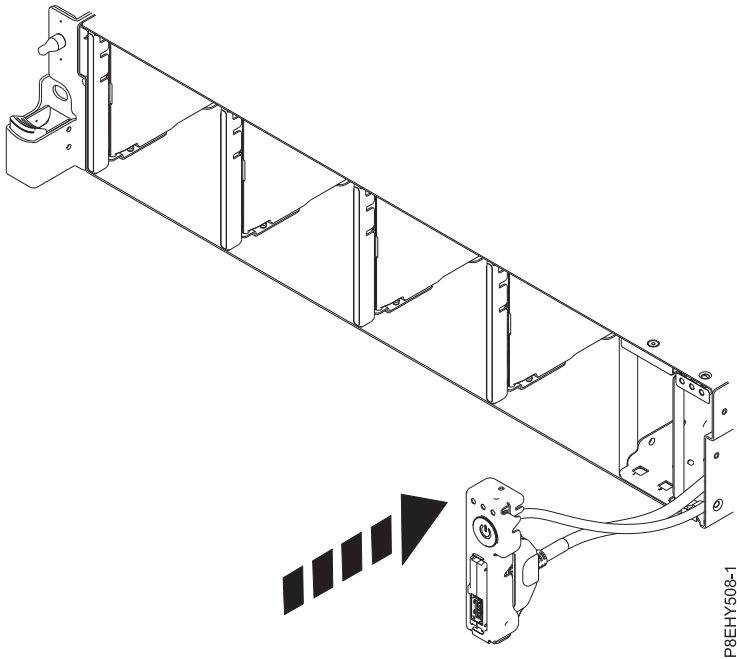


Figure 25. Replacing the front USB cable into the system backplane

5. Replace the top and side screws for the power switch See Figure 26.

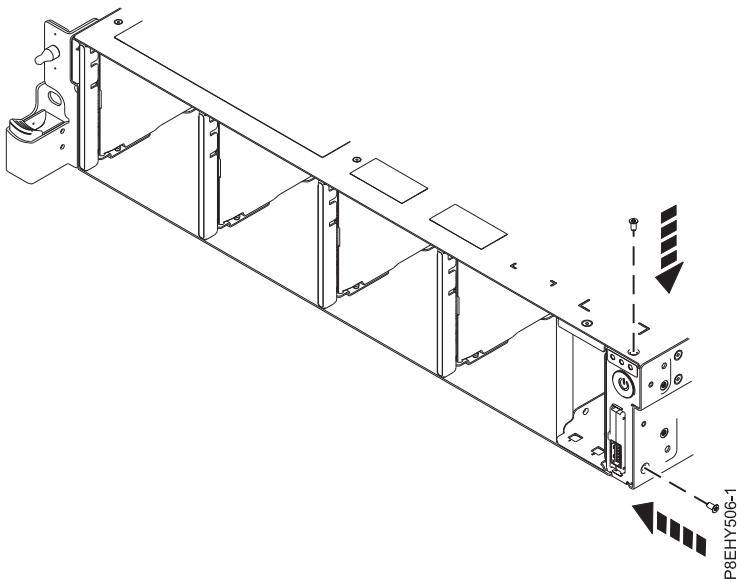
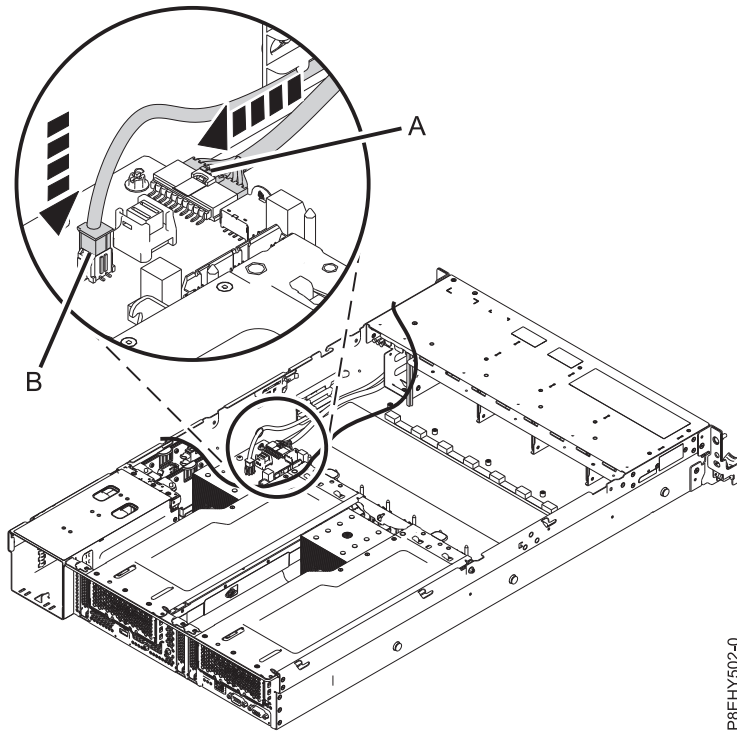


Figure 26. Replace the top and side screws

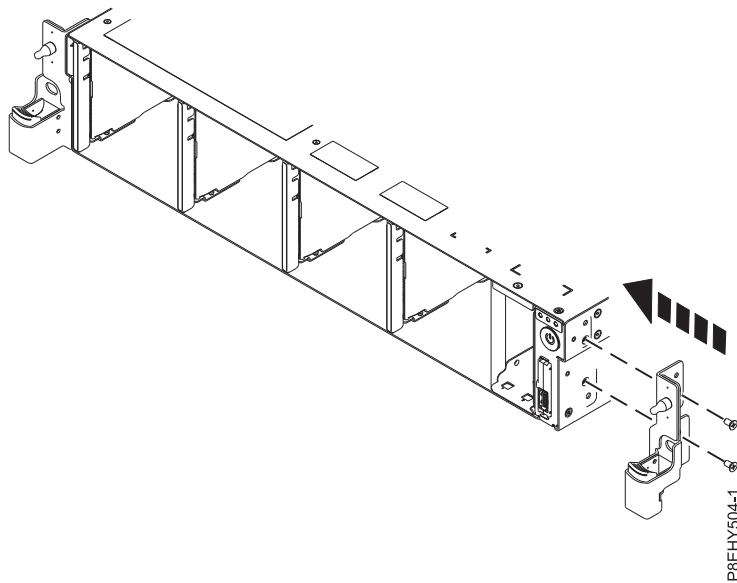
6. Using the labels, plug the front USB cable **(A)** and the power switch cable **(B)** to the system backplane. See Figure 27 on page 29. Ensure that the cable latch clip snaps into place on the connectors.



P8EHY502-0

Figure 27. Plugging in the cables

7. Replace the rack installation support on the side of the system. See Figure 28.



P8EHY504-1

Figure 28. Replacing the rack installation support

- 8. Secure each cable in the retaining clip on the inside wall of the system.
- 9. Replace the disk fan card. For instructions, see “Replacing the disk drive and fan card in the 8335-GCA or 8335-GTA” on page 10.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Using the 3 alignment pins, place the replacement GPU PCIe riser into the system. Push it down into place until it is firmly seated in the system. See Figure 30.

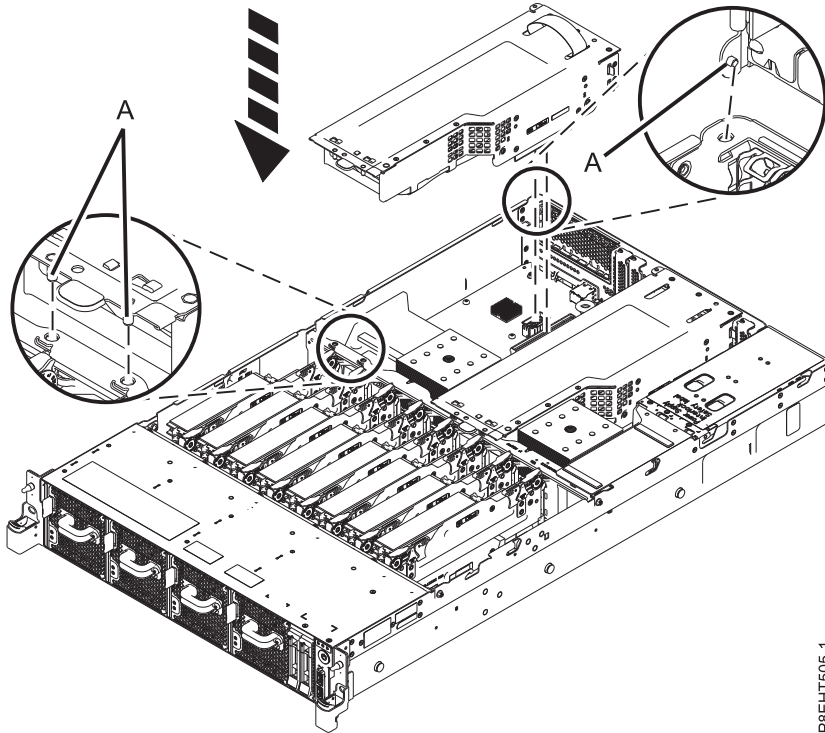


Figure 30. Inserting the PCIe riser

Removing and replacing memory in the 8335-GCA or 8335-GTA

Learn how to remove and replace memory in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing and replacing memory DIMM from the 8335-GCA or 8335-GTA

Learn how to remove and replace memory DIMM from the 8335-GCA or 8335-GTA system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.

Remove:

2. Locate the memory riser that contains the failed memory DIMM. Figure 31 on page 32 shows the location of the memory risers in the 8335-GCA or 8335-GTA system and Figure 32 on page 32 shows the DIMM slot locations on the riser.

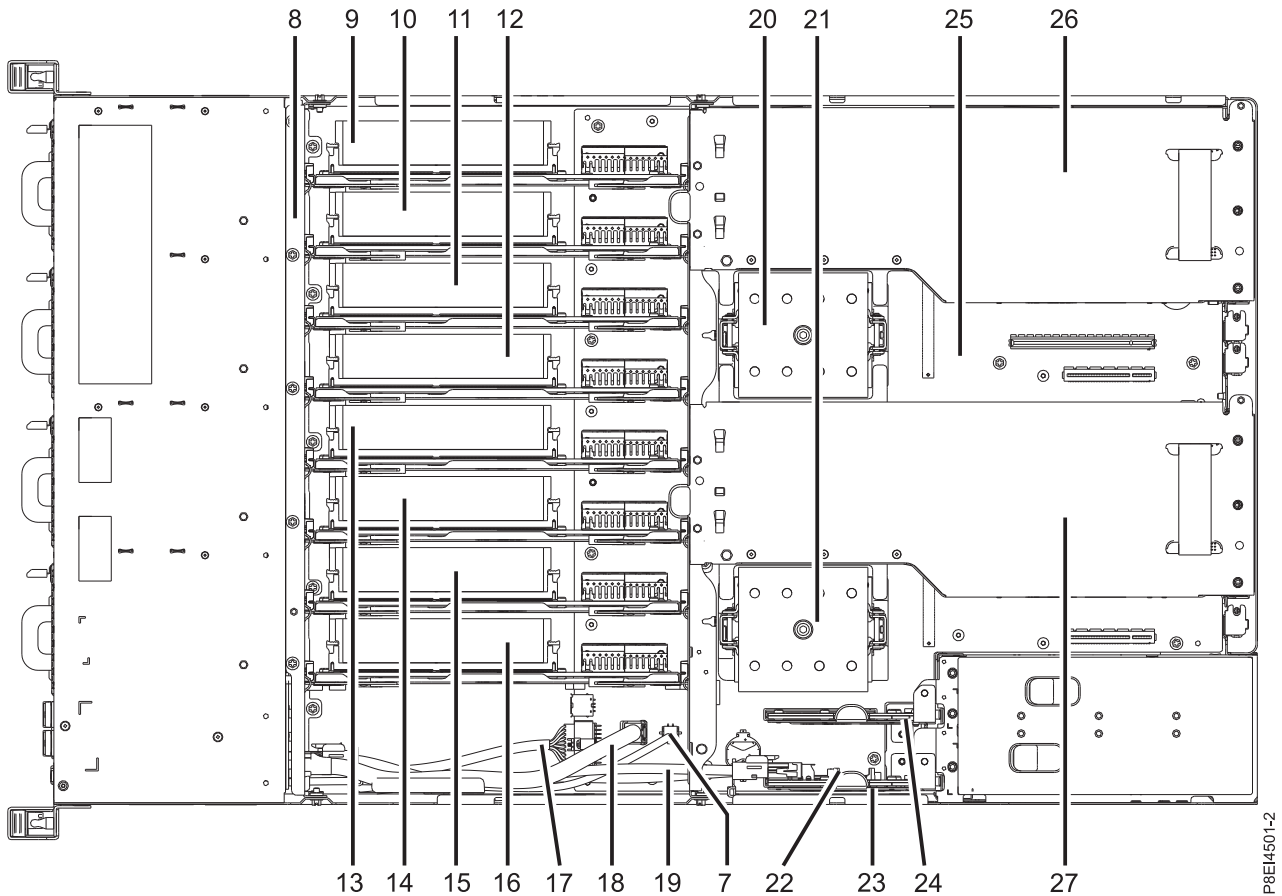


Figure 31. Location of the memory risers: positions 9 through 16

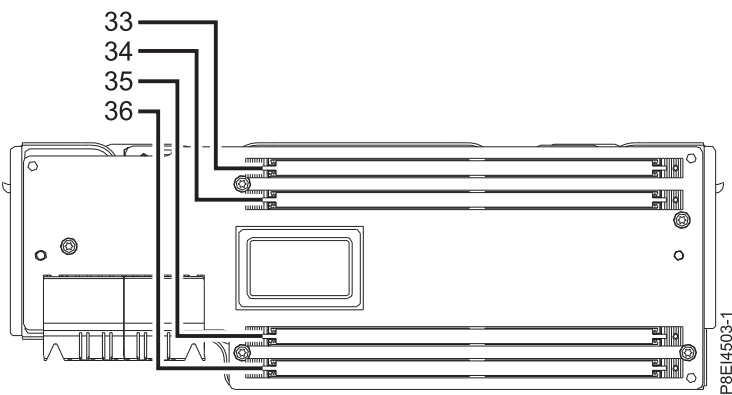
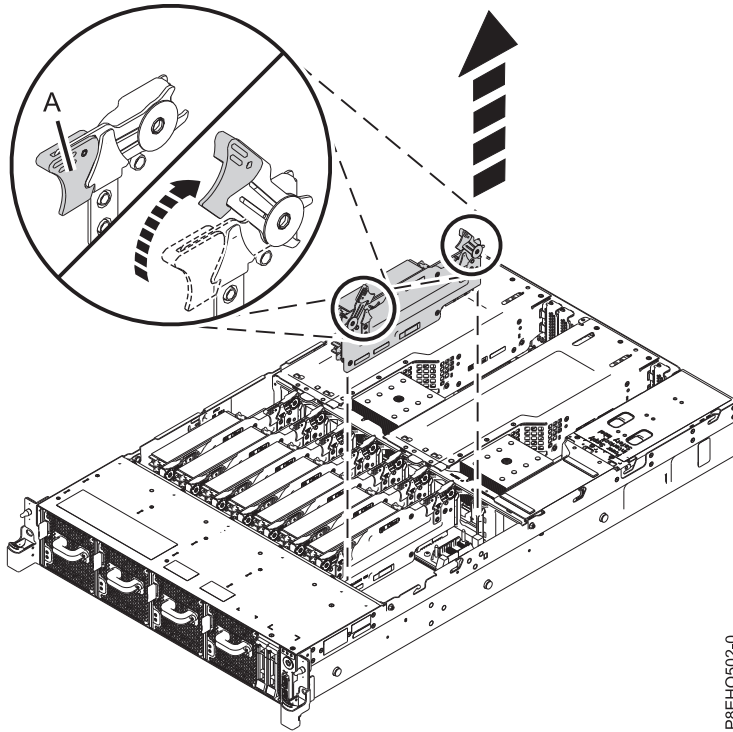


Figure 32. Location of the memory DIMM slots on the riser; positions 33 through 36

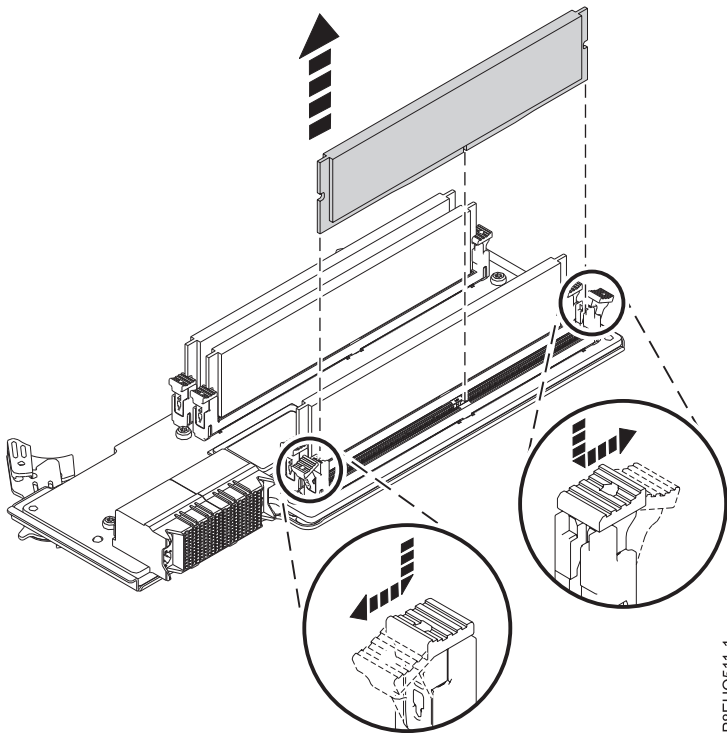
3. Remove the memory riser that contains the failed memory DIMM.
 - a. Open the release latches on the memory riser. See (A) in Figure 33 on page 33.



P8EHQ502-0

Figure 33. Removing a memory riser from the system

- b. Pull out the memory riser from the slot by holding onto the latches.
- c. Place the memory riser on an ESD mat.
4. Remove the failed memory DIMM from the slot on the memory riser.
 - a. Unlock the DIMM by pushing the locking tabs away from the DIMM, in the direction shown in Figure 34 on page 34. The lever action of opening the tabs pushes the memory DIMM out of the slot.



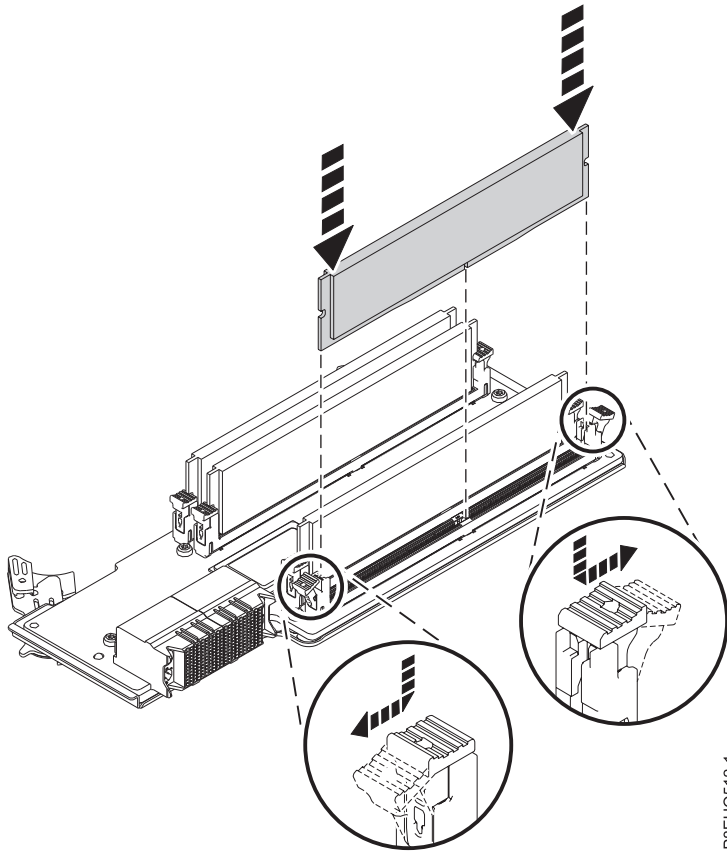
P8EHQ511-1

Figure 34. Removing memory DIMM from a slot on the riser

- b. Hold the memory DIMM by the edges and pull it out of the slot on the riser.
5. Place the memory on an ESD mat.

Replace:

6. To replace memory DIMM, complete the following steps:
 - a. Push the locking tabs to the open position, away from the slot, in the direction shown in Figure 35 on page 35.



P8EHQ512-1

Figure 35. Replacing memory DIMM in a slot on the riser

- b. Grasp the memory DIMM along its edges and align it with the slot on the riser.
 - Attention:** Memory is keyed to prevent it from being installed incorrectly. Note the location of the key tab within the memory connector before you attempt to install it.
 - c. Press firmly on each side of the memory DIMM until the locking tab locks in place with an audible click.
7. To replace the memory riser, complete the following steps:
 - a. Ensure the release latches are open to about a 60 degree angle, as shown in Figure 36 on page 36.
 - b. Align the memory riser with the connector.
 - c. Press the memory riser firmly into the connector.
 - d. Press the release latches into the closed position. See **(A)** in Figure 36 on page 36.

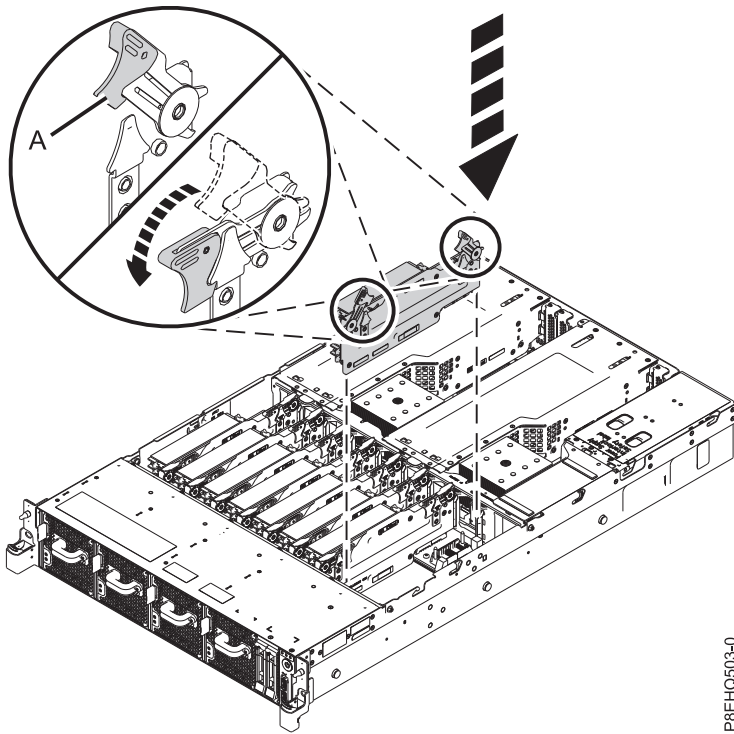


Figure 36. Replacing a memory riser in the system

8. Verify the installed part. See Verifying a repair in the 8335-GCA or 8335-GTA. (www.ibm.com/support/knowledgecenter/POWER8//p8ei3/p8ei3_verifyrepair.htm)

Removing and replacing memory risers in the 8335-GCA or 8335-GTA

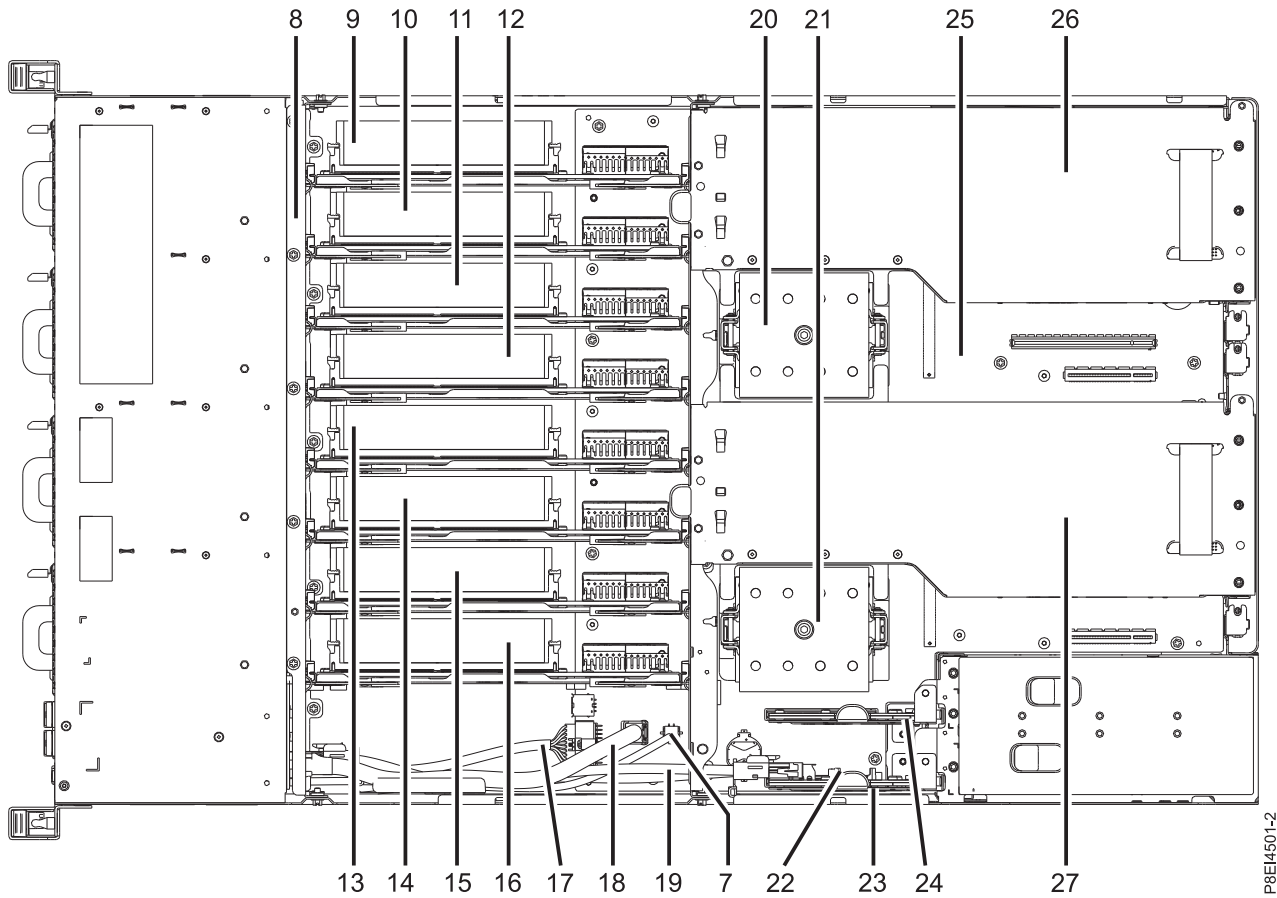
Learn how to remove and replace a memory riser in the 8335-GCA or 8335-GTA system.

Removing memory risers from the 8335-GCA or 8335-GTA

Learn how to remove a memory riser from the 8335-GCA or 8335-GTA system.

Procedure

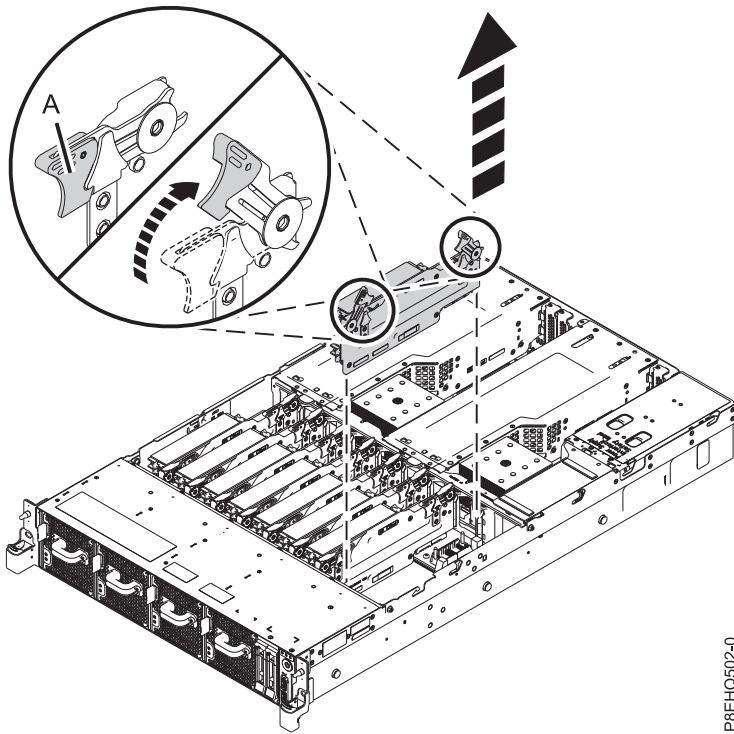
1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Locate the memory riser. Figure 37 on page 37 shows the location of the memory risers in the 8335-GCA or 8335-GTA system.



P8E14501-2

Figure 37. Location of the memory risers: positions 9 through 16

3. Remove the memory riser.
 - a. Open the release latches on the memory riser. See (A) in Figure 38 on page 38.



P8EHG502-0

Figure 38. Removing a memory riser from the system

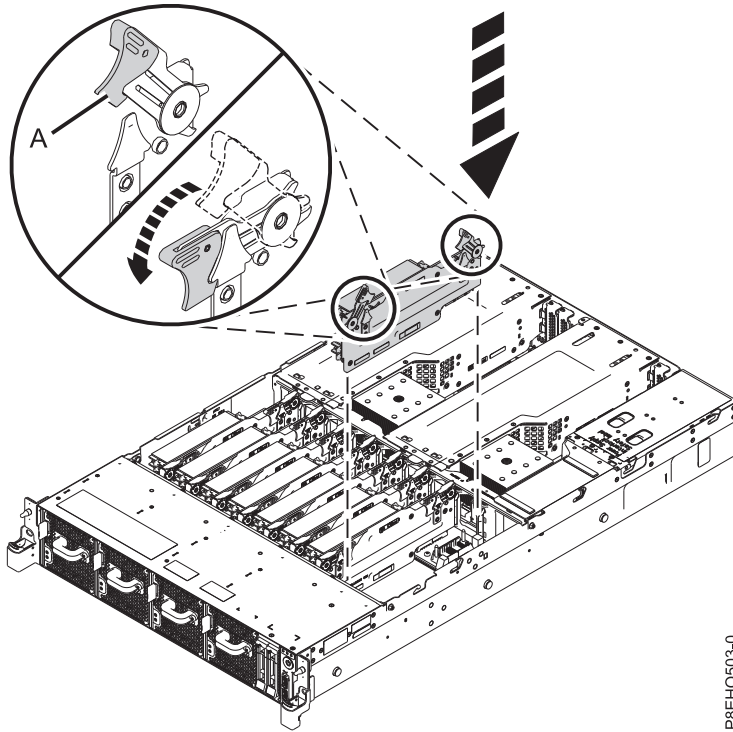
- b. Pull out the memory riser from the slot by holding onto the latches.
- c. Place the memory riser on an ESD mat.
4. If applicable, move the memory DIMM from the removed riser onto the replacement memory riser. For instructions, see “Removing and replacing memory DIMM from the 8335-GCA or 8335-GTA” on page 31.

Replacing memory risers in the 8335-GCA or 8335-GTA

Learn how to replace a memory riser in the 8335-GCA or 8335-GTA system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. To replace the memory riser, complete the following steps:
 - a. Ensure the release latches are open to about a 60 degree angle, as shown in Figure 39 on page 39.
 - b. Align the memory riser with the connector.
 - c. Press the memory riser firmly into the connector.
 - d. Press the release latches into the closed position. See (A) in Figure 39 on page 39.



P8EHG603-0

Figure 39. Replacing a memory riser in the system

Removing and replacing PCIe adapters in the 8335-GCA or 8335-GTA

Learn about removing and replacing Peripheral Component Interconnect (PCI) Express (PCIe) adapters in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Attention: For safety and airflow purposes, if you remove parts from the system, you must ensure that:

- PCIe tailstock fillers are present
- Graphic processor unit (GPU) or PCIe carriers are present and that either GPU or PCIe fillers are installed in the carriers.

Removing and replacing a PCIe adapter in a PCIe riser of the 8335-GCA or 8335-GTA

Follow these steps to remove and replace Peripheral Component Interconnect (PCI) Express (PCIe) adapters in the PCIe riser of the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing a PCIe adapter from a PCIe riser in the 8335-GCA or 8335-GTA

To remove a PCIe adapter in a PCIe riser, complete the steps in this procedure.

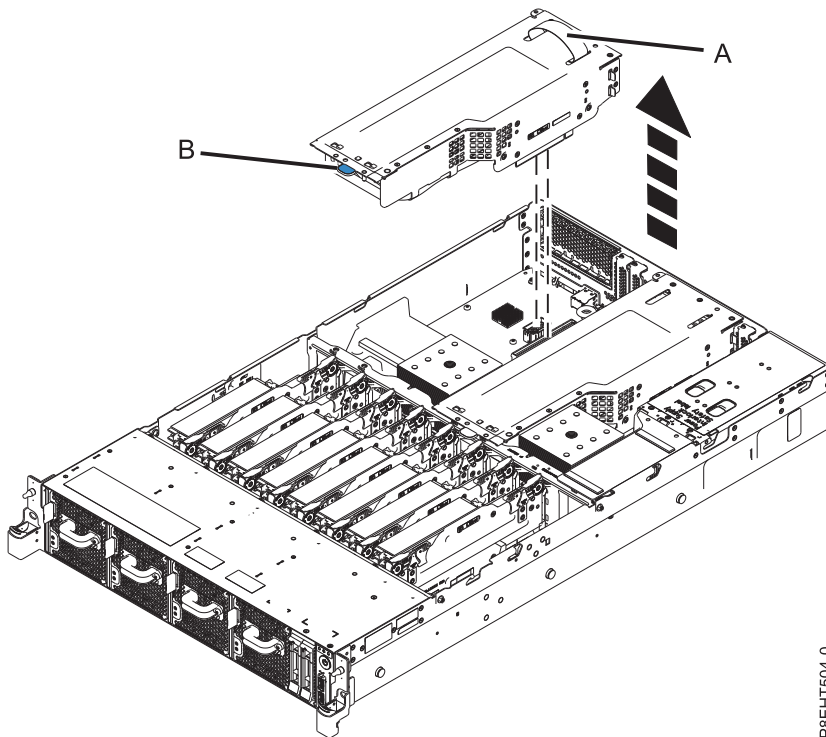
About this task

Attention: For safety and airflow purposes, if you remove parts from the system, you must ensure that:

- PCIe tailstock fillers are present
- Graphic processor unit (GPU) or PCIe carriers are present and that either GPU or PCIe fillers are installed in the carriers.

Procedure

1. If needed, label and remove the cables from the PCIe adapter. Also if needed, label and remove any plugs that extend out of the PCIe adapter.
2. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
3. Using the blue strap and the blue touchpoint, remove the PCIe riser from the system. See Figure 40.



P8EHT504-0

Figure 40. Removing the PCIe riser

4. Place the PCIe riser on an ESD mat on the table.
5. Remove the PCIe adapter from the PCIe riser

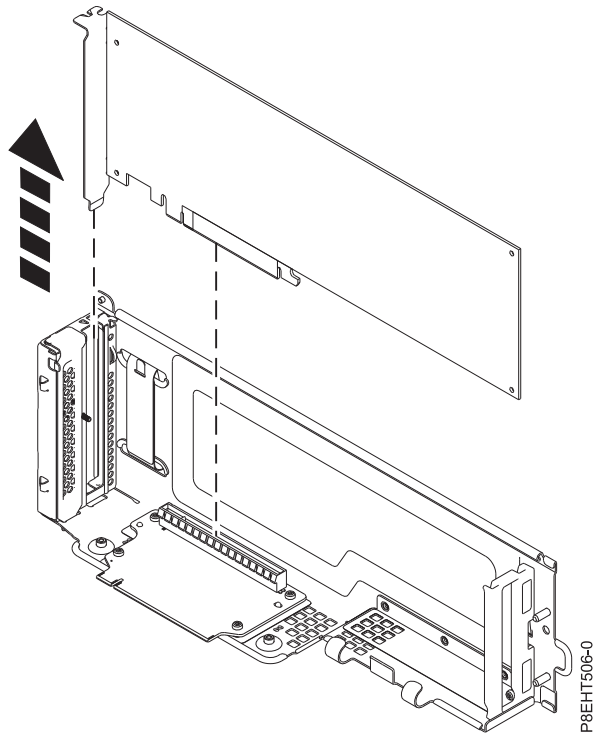


Figure 41. Removing PCIe card from PCIe riser

6. Place the PCIe adapter on the table.

Replacing a PCIe adapter in a PCIe riser in the 8335-GCA or 8335-GTA

To replace a PCIe adapter in a PCIe riser, complete the steps in this procedure.

About this task

Attention: For safety and airflow purposes, if you remove parts from the system, you must ensure that:

- PCIe tailstock fillers are present
- Graphic processor unit (GPU) or PCIe carriers are present and that either GPU or PCIe fillers are installed in the carriers.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Insert the replacement PCIe adapter into the PCIe riser, aligning it properly and inserting it fully into the slot. See Figure 42 on page 42.

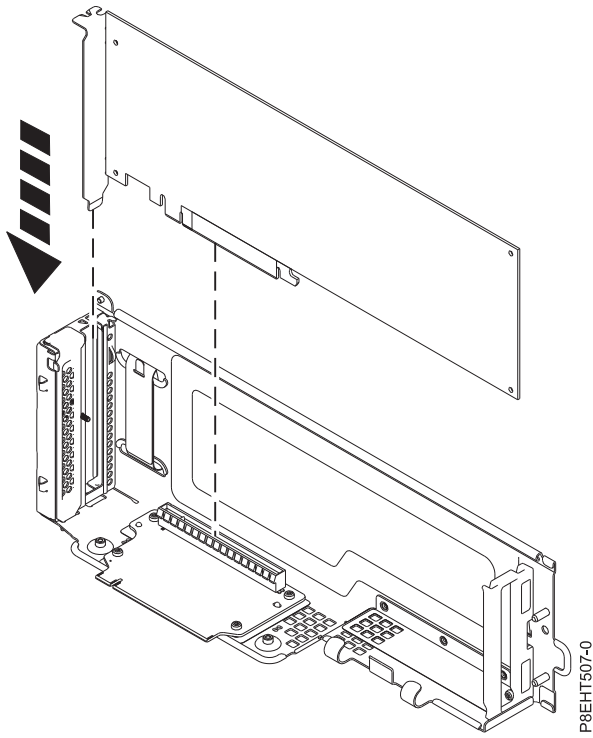


Figure 42. Inserting PCIe card into PCIe riser

3. If the PCIe adapter does not fill the riser, insert a filler into the riser. Figure 43 shows the filler (B).

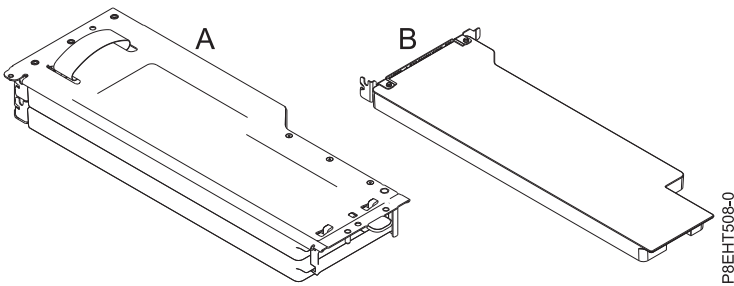
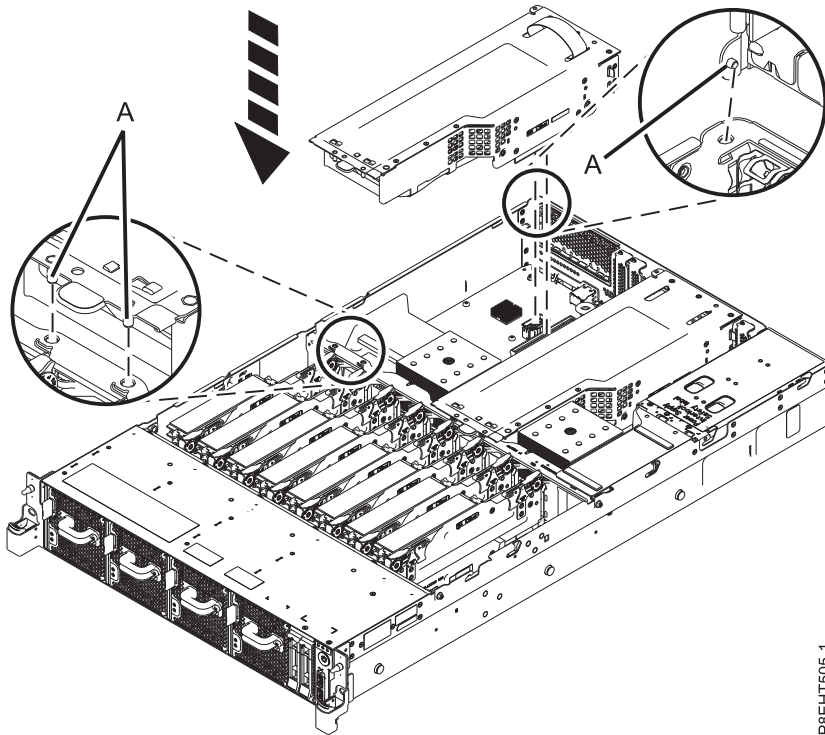


Figure 43. PCIe riser and filler

4. Using the 3 alignment pins (A), place the PCIe riser into the system. Push it down into place until it is firmly seated in the system. See Figure 44 on page 43.



P8EHT505-1

Figure 44. Installing the PCIe riser

- Using your labels, replace any plugs that you removed from the PCIe adapter. Using your labels, insert the cables into the PCIe adapter.

Removing and replacing a PCIe adapter on the system backplane of the 8335-GCA or 8335-GTA

Follow these steps to remove and replace Peripheral Component Interconnect (PCI) Express (PCIe) adapters in the system backplane of the IBM Power System S822LC (8335-GCA and 8335-GTA).

Removing a PCIe adapter from the system backplane in the 8335-GCA or 8335-GTA

To remove a PCIe adapter from the system backplane, complete the steps in this procedure.

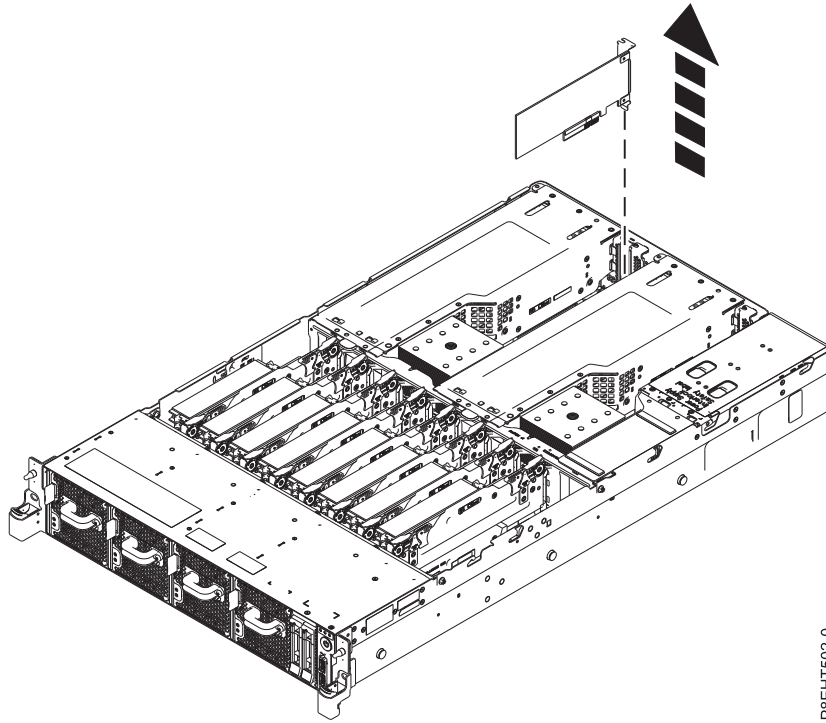
About this task

Attention: For safety and airflow purposes, if you remove parts from the system, you must ensure that:

- PCIe tailstock fillers are present
- Graphic processor unit (GPU) or PCIe carriers are present and that either GPU or PCIe fillers are installed in the carriers.

Procedure

- If needed, label and remove the cables from the PCIe adapter. Also if needed, label and remove any plugs that extend out of the PCIe adapter.
- Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
- Remove the PCIe adapter from the system backplane



P8EHT502-0

4. Place the PCIe adapter on the table.

Replacing a PCIe adapter in the system backplane in the 8335-GCA or 8335-GTA

To replace a PCIe adapter in the system backplane, complete the steps in this procedure.

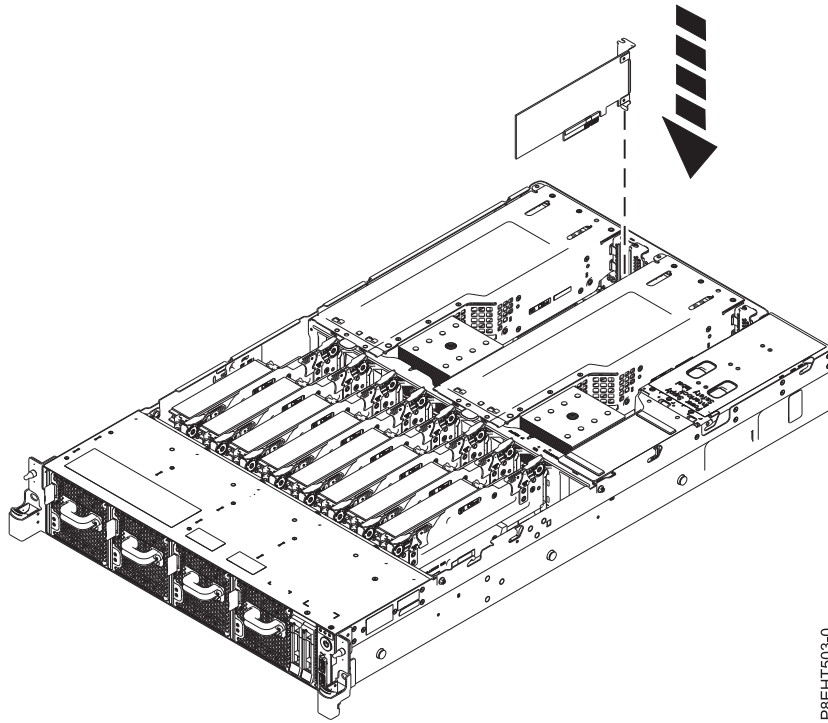
About this task

Attention: For safety and airflow purposes, if you remove parts from the system, you must ensure that:

- PCIe tailstock fillers are present
- Graphic processor unit (GPU) or PCIe carriers are present and that either GPU or PCIe fillers are installed in the carriers.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Insert the replacement PCIe adapter into the system backplane, aligning it properly and inserting it fully into the slot.



P8EHT503-0

3. Using your labels, replace any plugs that you removed from the PCIe adapter. Using your labels, insert the cables into the PCIe adapter.

Removing and replacing power risers in the 8335-GCA or 8335-GTA

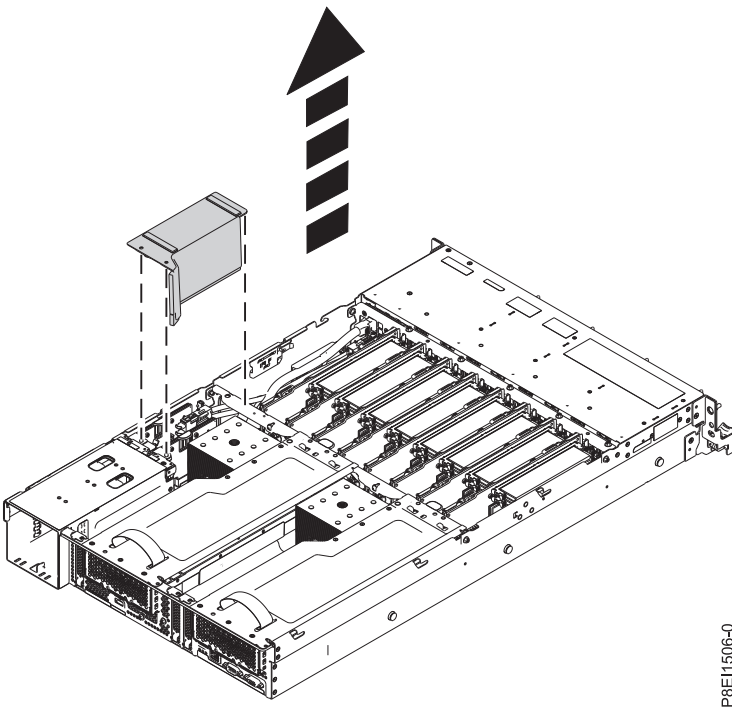
Find information about removing and replacing power risers in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing a power riser from the 8335-GCA or 8335-GTA

To remove a power riser from the 8335-GCA or 8335-GTA system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the power riser air baffle. See Figure 45 on page 46.



P8E11506-0

Figure 45. Removing the power riser air baffle

3. Locate the power risers. Figure 46 on page 47 shows the location of the power risers in the 8335-GCA or 8335-GTA system. The **(B)** power riser contains the time-of-day battery and the connector for the fan power cable.

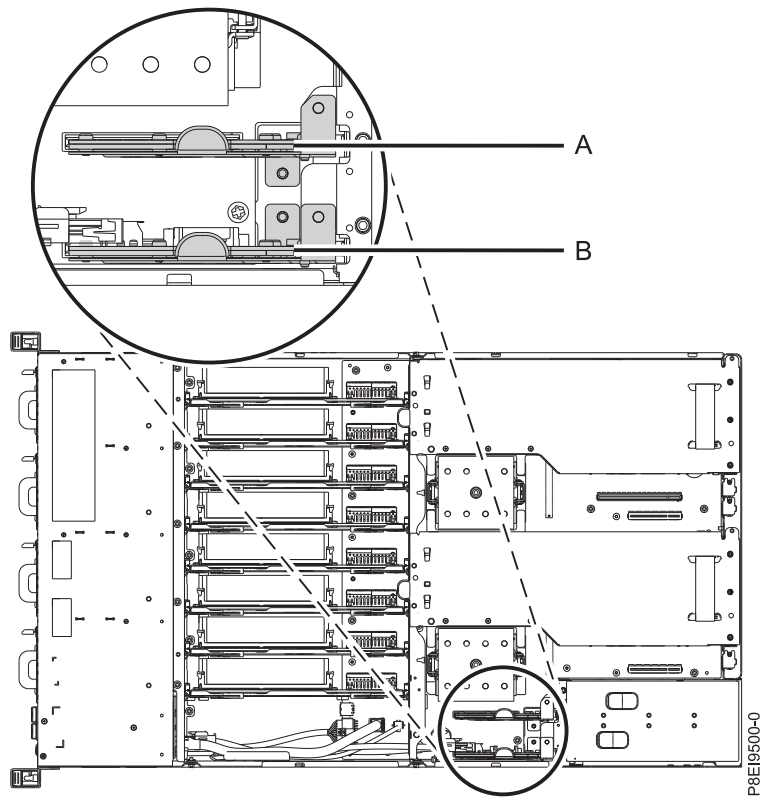


Figure 46. Location of the power risers

4. Remove the faulty or failed power riser.

- a. If applicable, disconnect the fan power cable from the power riser (A) in Figure 47 on page 48, by pressing the latch release lever with your thumb.

Note: The latch release on the connector must be depressed before unplugging the cable. Failure to do so could damage the cable and the connector.

- b. Pull out the power riser from the slot by holding the blue tab. See (B) in Figure 47 on page 48.

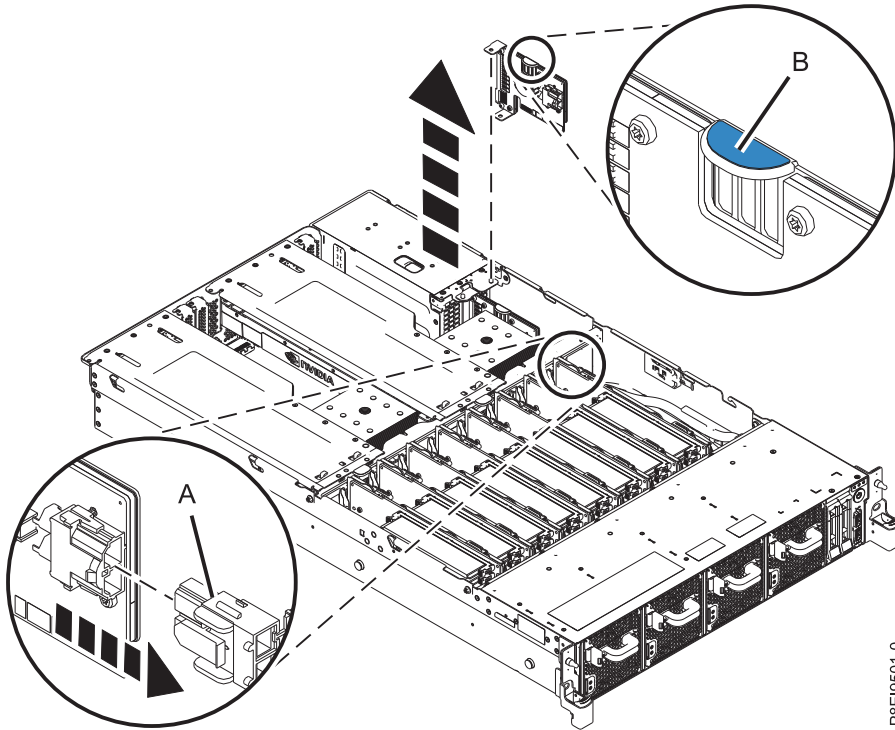


Figure 47. Removing a power riser from the system

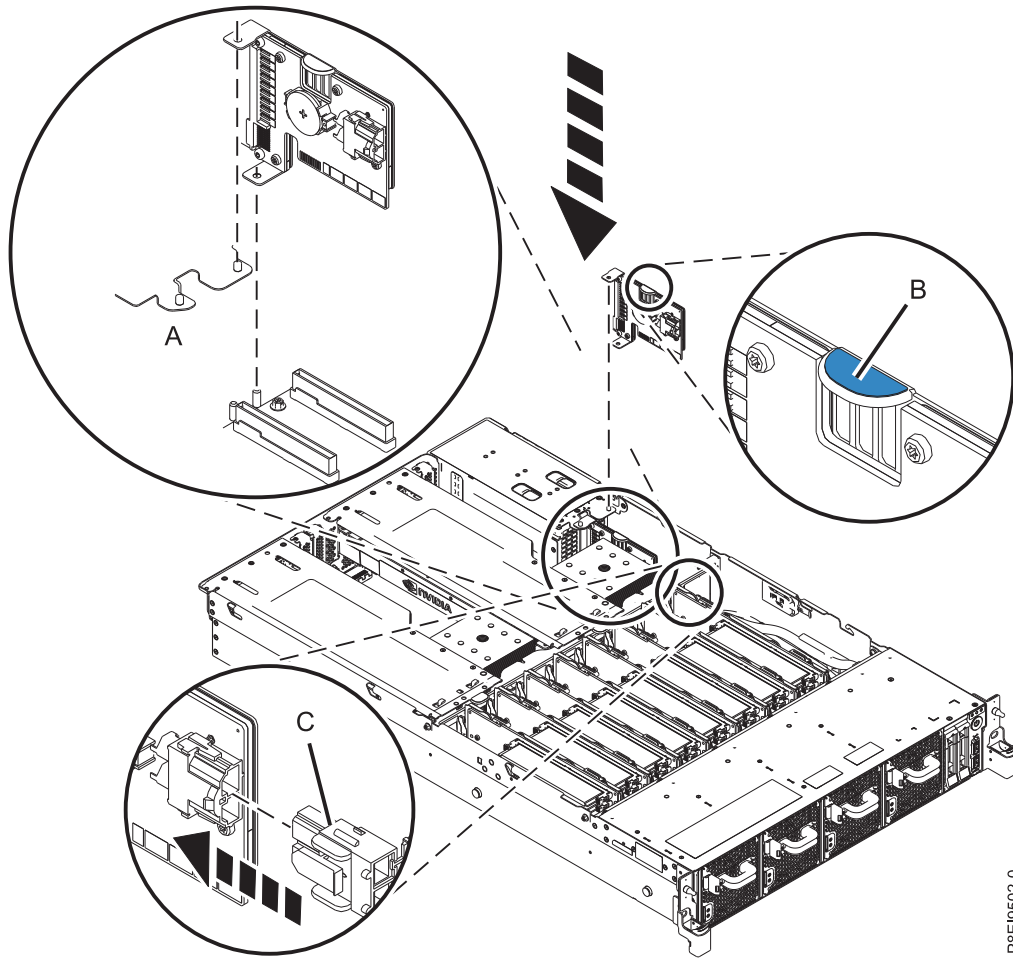
- c. Place the power riser on an ESD mat.

Replacing a power riser in the 8335-GCA or 8335-GTA

To replace a power riser in the 8335-GCA or 8335-GTA system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. If applicable, replace the time-of-day battery in the slot on the power riser. For instructions, see "Removing and replacing the time-of-day battery in the 8335-GCA or 8335-GTA" on page 95. The existing time-of-day battery can be reused, but IBM recommends installing a new time-of-day battery when replacing the power riser.
3. To replace a power riser, complete the following steps:
 - a. Hold the power riser by the blue tab as you position the notch on the riser over the pin on the system's chassis. See **(B)** in Figure 48 on page 49.
 - b. Insert the power riser into the slot. Use the alignment pins to properly insert the riser. See **(A)** in Figure 48 on page 49.
 - c. If applicable, reconnect the fan power cable to the power riser. See **(C)** in Figure 48 on page 49.



P8E19502-0

Figure 48. Replacing a power riser in the system

4. Install the power riser air baffle. See Figure 49 on page 50. Ensure that the holes in the baffle align with the pins on the system.

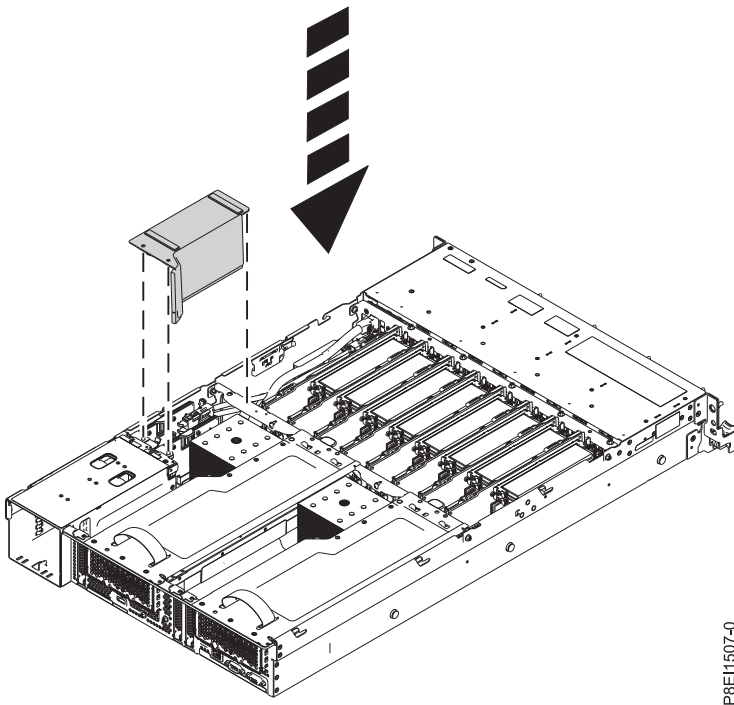


Figure 49. Installing the power riser air baffle

Removing and replacing a power supply in the 8335-GCA or 8335-GTA

Find information about removing and replacing power supplies in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Preparing the system to remove and replace a power supply

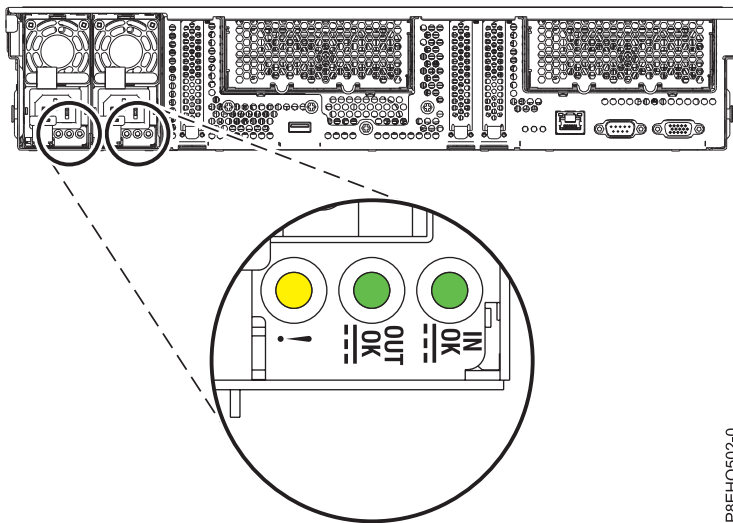
To prepare the system to remove and replace a power supply, complete the steps in this procedure.

Procedure

1. Complete the prerequisite tasks. For instructions, see “Before you begin” on page 100.
2. Identify the part and the system that you will be working on. For instructions, see “Identifying the system that contains the part to replace” on page 103.
3. If applicable, open the rack door at the rear of the system.
4. Attach the electrostatic discharge (ESD) wrist strap.

Attention:

- Attach an electrostatic discharge (ESD) wrist strap to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
 - When using an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
5. Locate the light-emitting diodes (LEDs) on the power supplies. Two power supplies are installed in the rear of the system. Figure 50 shows the LED locations.



P8EH0502-0

Figure 50. Location of the power supplies and LEDs

The power supply has three LEDs that indicate the status of the power supply:

- An ac power-on LED (green)
- A dc power-on LED (green)
- An error LED (amber)

Table 1 provides the descriptions for the states of the power supply LEDs and helps to identify whether the power supplies are working or have a failure.

Table 1. Description of the power supply LED states

ac power LED (Green)	dc power LED (Green)	Error and identify LED (Amber)	Power supply status
On (Solid)	On (Solid)	Off	The power supply is operating correctly.
On (Solid)	Flashing	Off	The system is turned off, but the power supply is still connected to the power source.
On (Solid)	Off	On	The power supply is not operating correctly or has failed.

6. Determine whether the repair can continue concurrently with the system power turned on. To continue the repair concurrently, the following conditions must be true:
- If you are servicing an 8335-GCA system:
 - Power supplies must be installed in both slots.
 - If only one amber fault LED is **On**, the repair can be completed concurrently.

Attention:

- Removing and replacing the power supply is a time sensitive task when you are servicing with the system power turned on (concurrent).
- To avoid a system shutdown, you must replace the failed power supply within **five** minutes after you remove the power supply from the system.
- Ensure that you have read the complete procedure to remove and replace a power supply and that you are prepared to remove and replace the power supply within the time limit.
- If you are servicing an 8335-GTA system, concurrent repair of the power supply is not supported; the system must be turned off. Continue with step 7 and follow the instructions for a nonconcurrent repair.

7. Select an action:

- To do a concurrent repair with the system running:
 - a. Continue the procedure with the system power turned on.
 - b. Remove the failed power supply that is indicated by the amber fault LED. For instructions, see “Removing a power supply from the 8335-GCA or 8335-GTA.”

Remember: Failure to replace the power supply after removing the power supply from the system within five minutes can cause the system to automatically power off.

- To do a non-concurrent repair with the system power turned off:
 - a. Label the failed power supply that is indicated by the amber fault LED.
 - b. Stop the system. For instructions, see “Stopping the system” on page 108.
 - c. Disconnect the power source from the system by unplugging the system. For instructions, see “Disconnecting the power cords from an 8335-GCA or 8335-GTA system” on page 113.
 - d. Using your label, remove the failed power supply. For instructions, see “Removing a power supply from the 8335-GCA or 8335-GTA.”

Removing a power supply from the 8335-GCA or 8335-GTA

To remove a power supply from the system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Label and disconnect the power cord from the failed power supply.

Attention: Do not remove the power cord from the cable-management arm, if applicable.

- a. Label the power cord, and then unstrap the hook-and-loop fastener to release the power cord from the power supply handle. Refer to Figure 51 on page 53.
- b. Pull the end of the power cord out of the power supply.
- c. Retain the hook-and-loop fastener for future use.

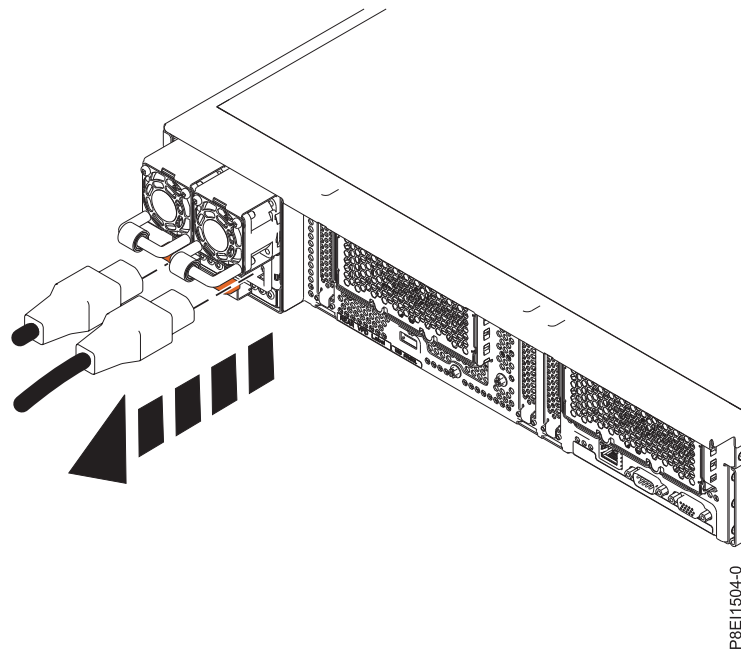


Figure 51. Disconnecting the power cord from the power supply

3. Remove the power supply from the system.
 - a. To unseat the power supply from its position in the system, pull up the terracotta locking-tab (A). See Figure 52.
 - b. Grasp the power supply handle with one hand, and pull the power supply (B) part of the way out of the system.
 - c. Place your other hand underneath the power supply and pull the power supply completely out of the system and place it on an ESD mat.

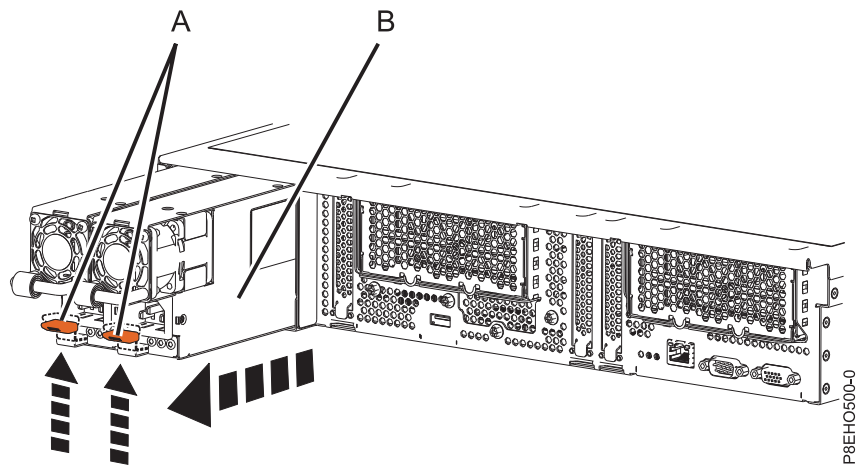


Figure 52. Removing a power supply from the system

Replacing a power supply in the 8335-GCA or 8335-GTA

To replace a power supply in the system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Align the power supply (A) with the bay and slide the power supply into the system until the terracotta latch (B) locks in place. See Figure 53.

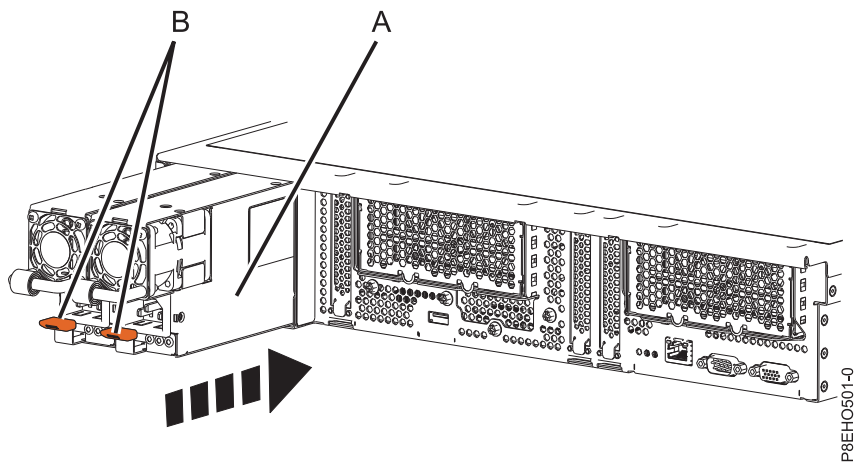


Figure 53. Replacing a power supply in the system

3. Connect and fasten the power cord to the power supply.
 - a. Connect the power cord to the power supply. See Figure 54.
 - b. Use the hook-and-loop fastener and tie the power cord to the power supply handle. To properly loop the power cables, see "Connecting the power cords to an 8335-GCA or 8335-GTA system" on page 115

Attention: This system is equipped with two power supplies. Before you continue with this procedure, connect all power cords to the power supplies and strap them.

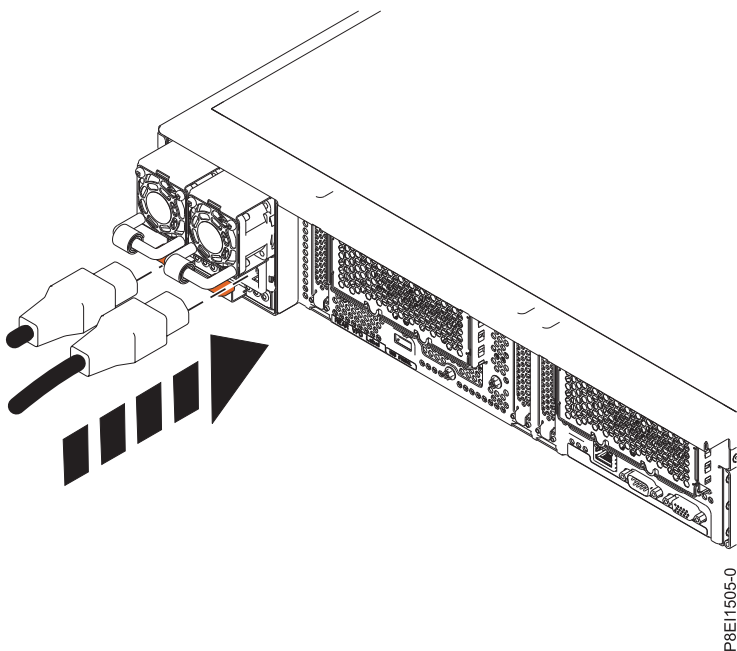


Figure 54. Connecting the power cord to the power supply

Preparing the system for operation after removing and replacing a power supply

To prepare the system for operation after removing and replacing a power supply, complete the steps in this procedure.

About this task

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Start the system for a nonconcurrent repair. For instructions, see “Starting the system” on page 108.
3. Note the state of LEDs on the replaced power supply. The LEDs for that power supply must be in the following state:
 - The ac power-on LED is **On** (solid).
 - The dc power-on LED is **On** (flashing).
 - The amber fault LED is **Off**.
4. Verify the installed part. See Verifying a repair in the 8335-GCA or 8335-GTA. (www.ibm.com/support/knowledgecenter/POWER8//p8ei3/p8ei3_verifyrepair.htm)
5. If applicable, close the rack door at the rear of the system.

Removing and replacing the power switch and cable in the 8335-GCA or 8335-GTA

Learn how to remove and replace the power switch and cable in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Removing the power switch and cable from the 8335-GCA or 8335-GTA system

Follow these steps to remove the power switch and cable from the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the disk drive fan card. For instructions, see “Removing the disk drive and fan card from the 8335-GCA or 8335-GTA” on page 9.
3. Locate the front USB cable (**A**) and the power switch cable (**B**). They connect between the system backplane and the power switch along the inside of the system. Label each cable.

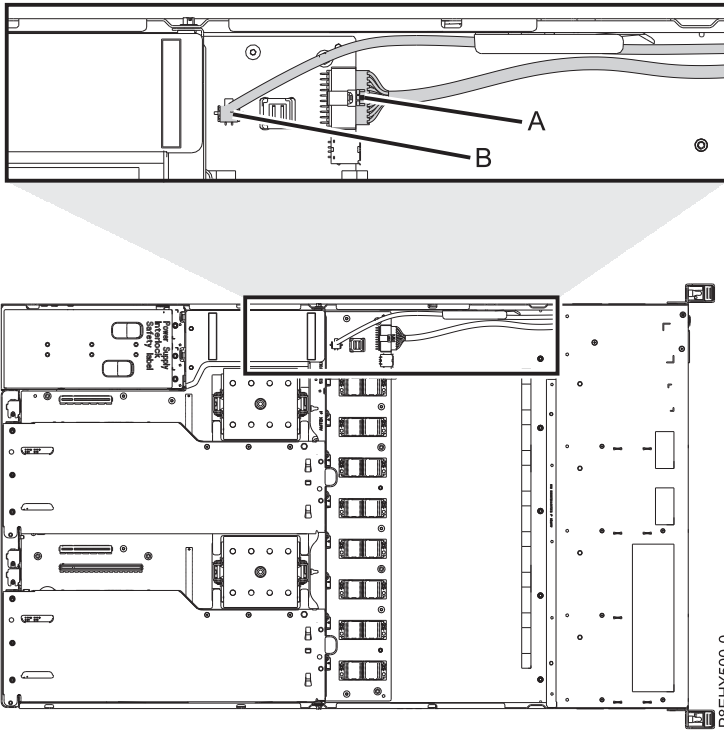
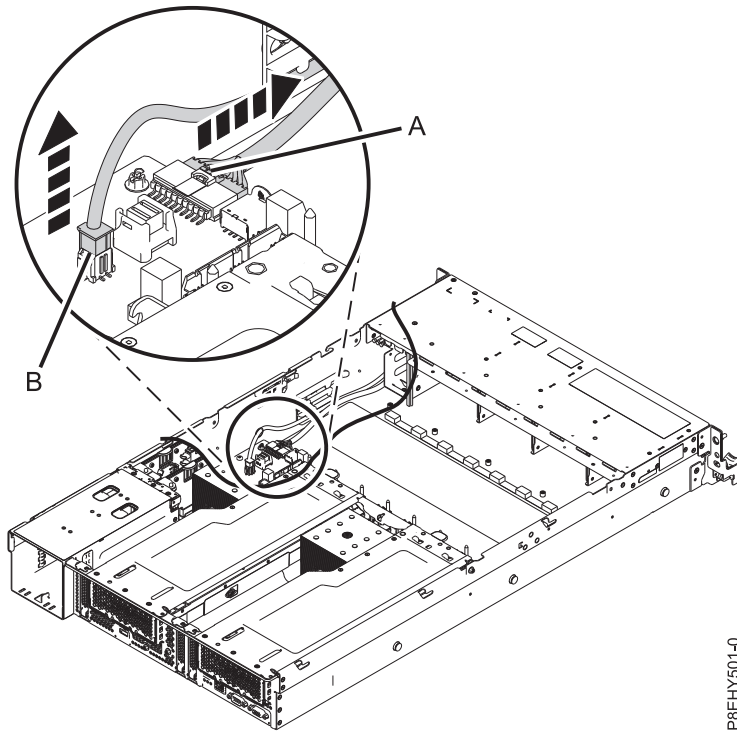


Figure 55. Location of the power switch and cable connectors

4. Release each cable from the retaining clip on the inside wall of the system.
5. Pressing the latch release on the connector, disconnect the front USB cable (A). See Figure 56 on page 57.

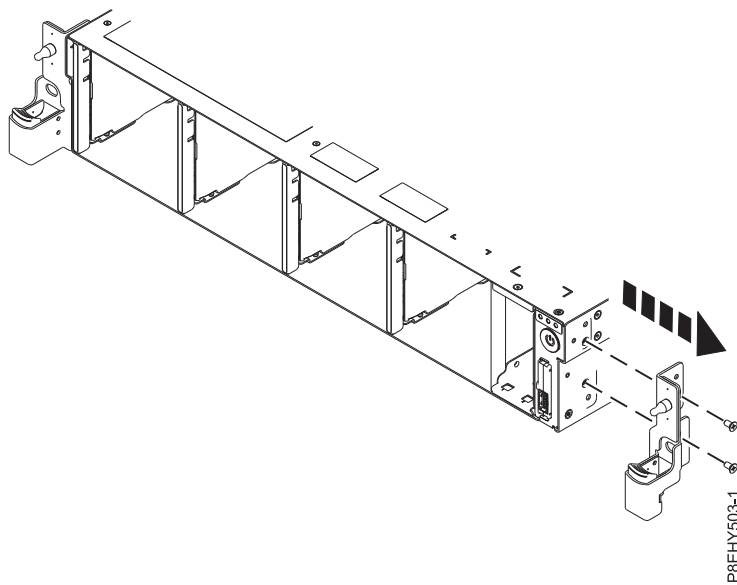
Note: The latch release on the connector must be depressed before unplugging the cable. Failure to do so can damage the cable and the connector.



P8EHY501-0

Figure 56. Removing the front USB cable and the power switch cable from the system backplane and disk drive fan card

6. Pressing the latch release on the connector, disconnect the power switch cable (**B**) from the system backplane. See Figure 56.
7. Remove the rack installation support from the side of the system. See Figure 57.



P8EHY503-1

Figure 57. Removing the rack installation support

8. Remove the top and side screws from the power switch. See Figure 58 on page 58.

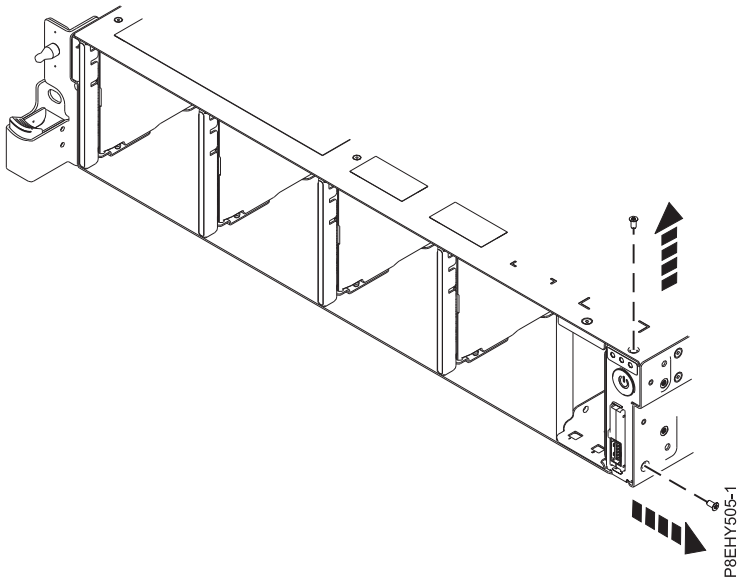


Figure 58. Remove the top and side screws

9. Pull the power switch from the system See Figure 59.

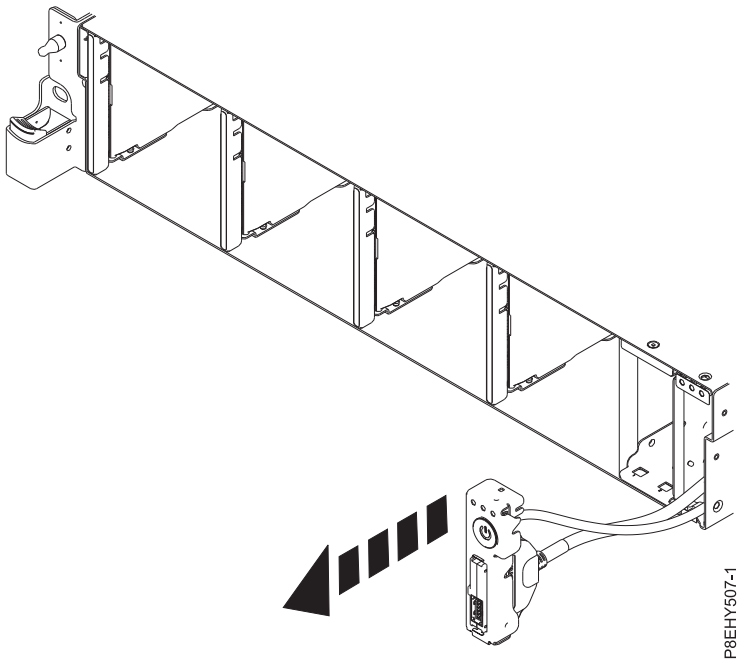


Figure 59. Pull power switch from system

10. Pressing the latch releases on the connector (A), disconnect the front USB cable from the power switch. See Figure 60 on page 59.

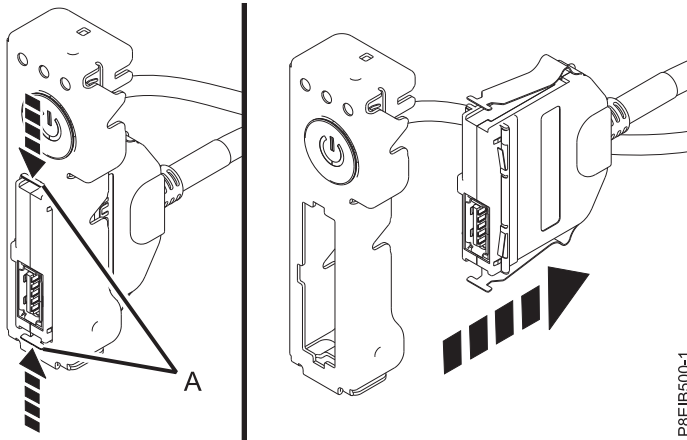


Figure 60. Removing front USB cable from power switch

11. Place the power switch and the front USB cable on the table.

Replacing the power switch and cable in the 8335-GCA or 8335-GTA system

Follow these steps to replace the power switch and cable in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Find the replacement power switch and cable and remove it from the protective plastic envelope.
3. Connect the front USB cable to the power switch. Push in the retaining latches (A) so that the USB port locks into the power switch. See Figure 61.

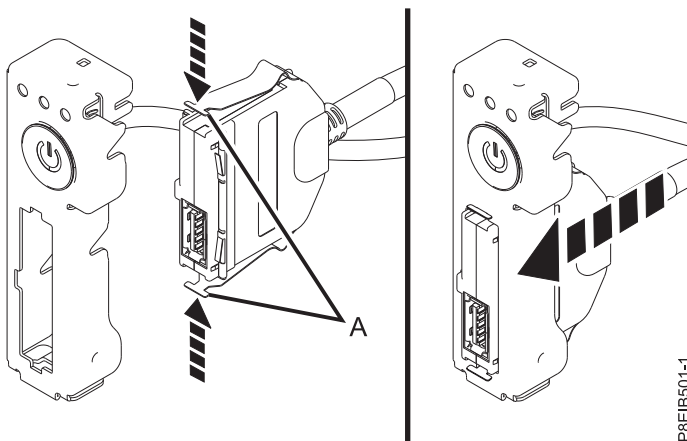
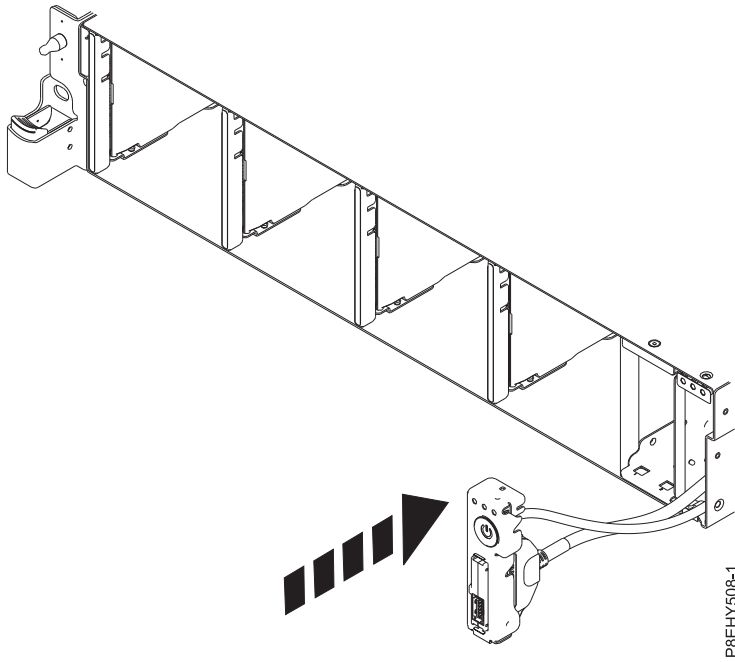
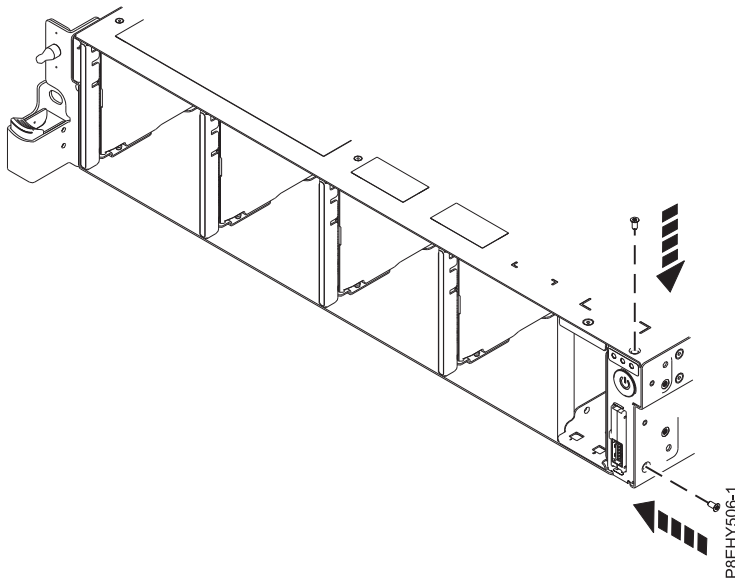


Figure 61. Attaching the front USB cable to the power switch

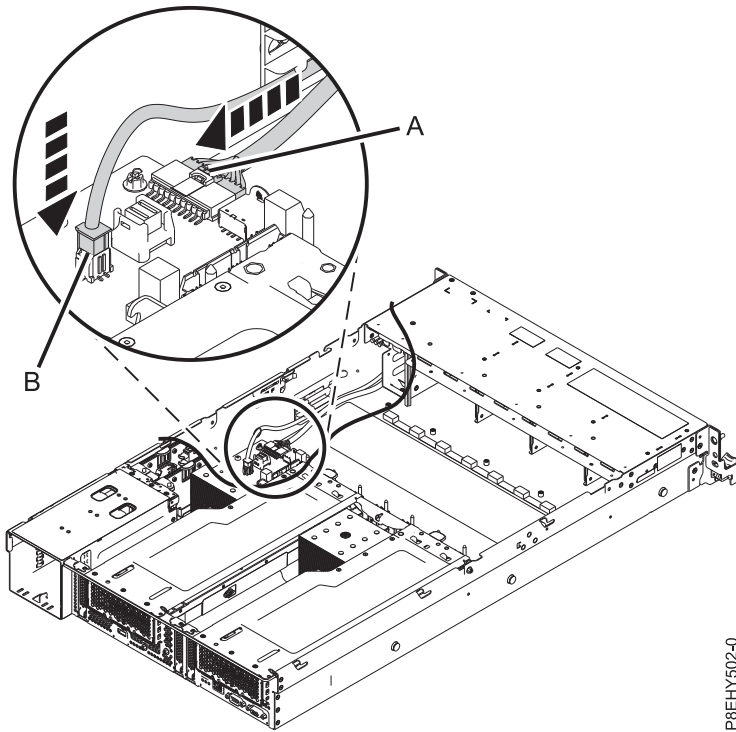
4. Insert the power switch and cables into the system. Be careful to route the cables through to the system backplane.



5. Replace the top and side screws for the power switch

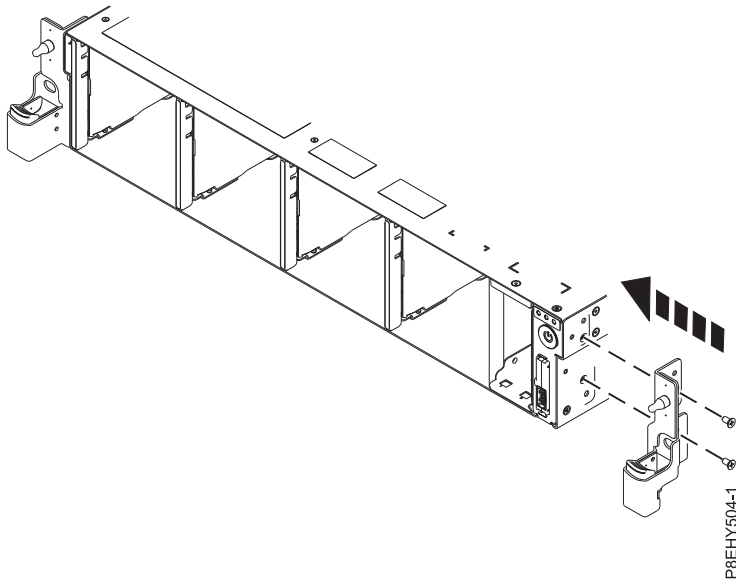


6. Using the labels, plug the front USB cable (A) and the power switch cable (B) to the system backplane. Ensure that the cable latch clip snaps into place on the connectors.



P8EHY502-0

7. Replace the rack installation support on the side of the system.



P8EHY504-1

8. Secure each cable in the retaining clip on the inside wall of the system.
9. Replace the disk fan card. For instructions, see "Replacing the disk drive and fan card in the 8335-GCA or 8335-GTA" on page 10.

Removing and replacing the system backplane in the 8335-GCA or 8335-GTA

You can remove and replace the system backplane in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Following a system backplane replacement, you must set the system serial number on the system backplane. There is a tool to set the system serial number, go to Fix Central (www.ibm.com/support/fixcentral/) to download the tool and follow the instructions for setting the serial number.

Removing the system backplane from the 8335-GCA or 8335-GTA

To remove the system backplane from the IBM Power System S822LC (8335-GCA and 8335-GTA) system, complete the steps in this procedure.

About this task

As part of the system backplane replacement, the system processor modules are moved from the old system backplane to the new system backplane.

Note: When the heat sink is removed from the system processor module, the TIM is typically adhered to the heat sink. Unless damaged, the TIM that is adhered to the heat sink can be reused. If the TIM is damaged, do not reuse the removed heat sink. Before you begin the system backplane removal and replacement procedure, ensure that you have a spare TIM and heat sink, part number 01AF286, on hand.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the power riser air baffle. See Figure 62.

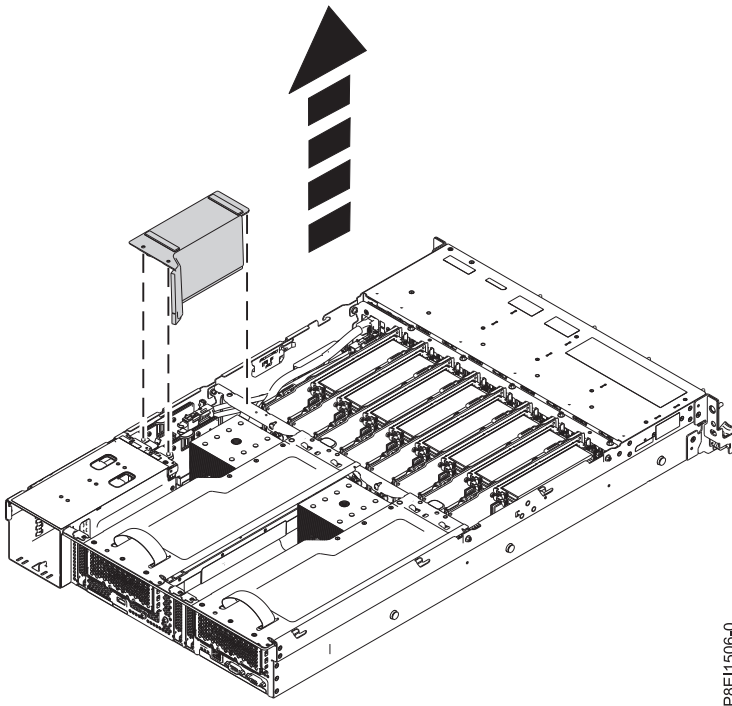


Figure 62. Removing the power riser air baffle

3. Label and remove the graphics processing unit (GPU) assemblies. For instructions, see “Removing the graphics processing unit from the 8335-GCA or 8335-GTA system” on page 30.
4. Label and remove the PCIe adapter cards. For instructions, see “Removing a PCIe adapter from the system backplane in the 8335-GCA or 8335-GTA” on page 43.
5. Label and remove the memory cards or fillers. For instructions, see “Removing memory risers from the 8335-GCA or 8335-GTA” on page 36.

6. Label and remove the fan power cable from the power distribution card. For instructions, see “Removing the fan power cable from the 8335-GCA or 8335-GTA” on page 20.
7. Label and remove the disk and fan signal cable from the system backplane. For instructions, see “Removing the disk and fan signal cable from the 8335-GCA or 8335-GTA system” on page 12.
8. Label and remove the USB cable and the power signal cable from the system backplane. For instructions, see “Removing the front USB cable and connector from the 8335-GCA or 8335-GTA system” on page 24.
9. Remove the power distribution cards. For instructions, see “Removing a power riser from the 8335-GCA or 8335-GTA” on page 45.
10. Remove the middle support (C). See Figure 63.
 - a. Remove the two screws (B) from each side of the system.
 - b. Remove the four screws (A) that connect the middle support to the system backplane.
 - c. Lift out the middle support (C).

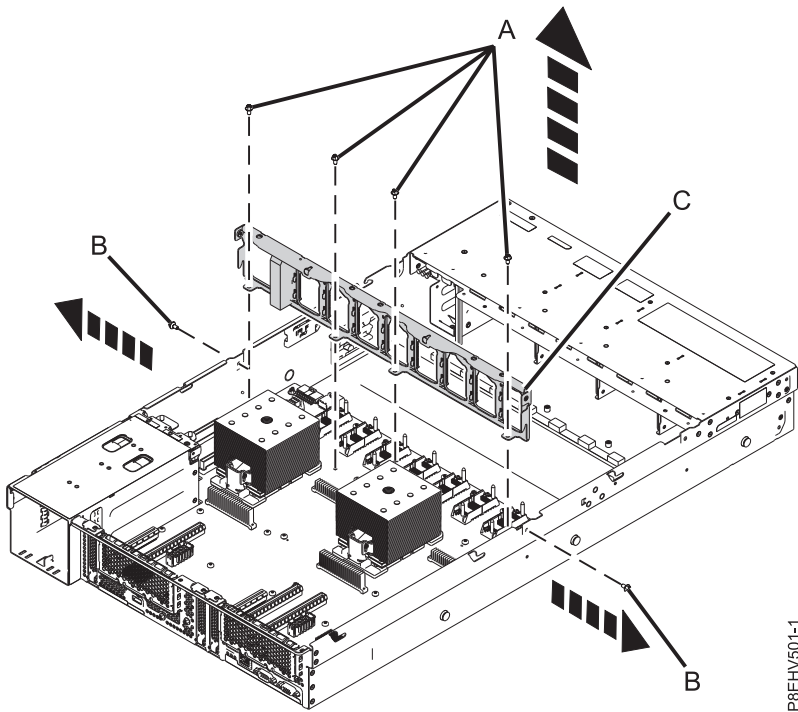


Figure 63. Remove the middle support and screw locations

11. Unscrew and remove 10 black hex screws (D) from the system backplane. The screw locations are shown in Figure 64 on page 64.

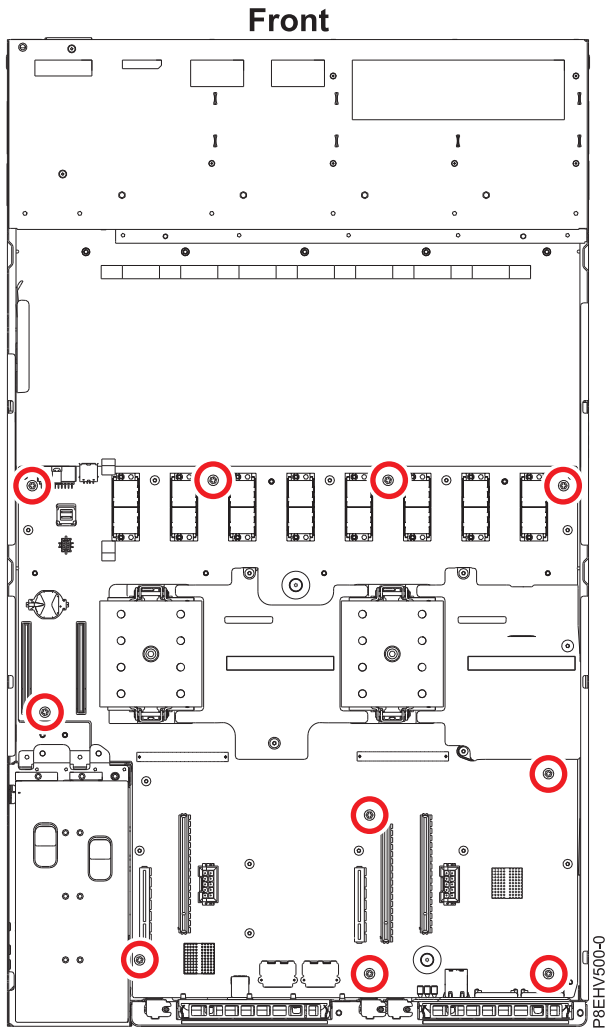
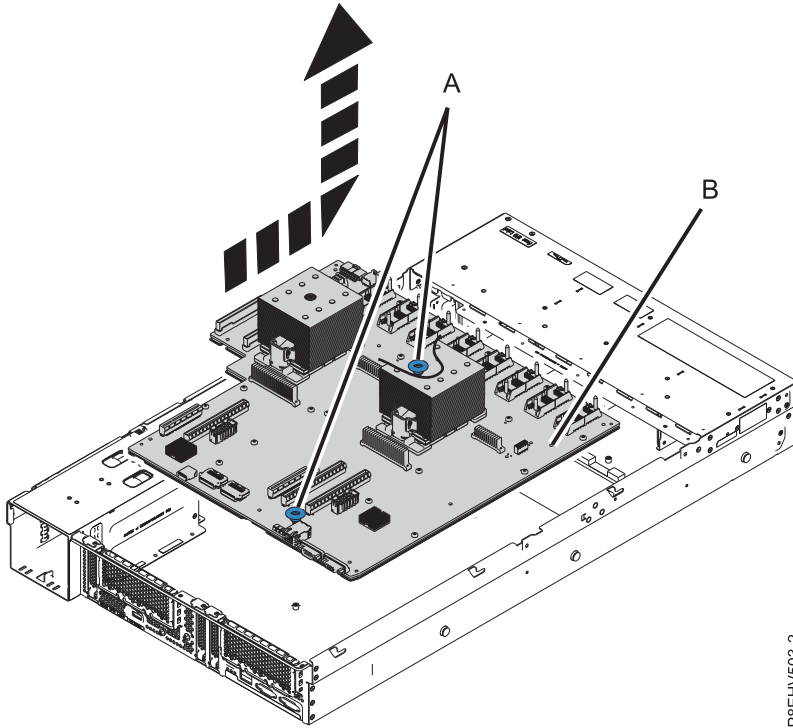


Figure 64. System backplane screw locations

12. Using the blue lift points, slide the system backplane (E) towards the fans, then lift to remove it. See Figure 65 on page 65.



P8EHV503-2

Figure 65. Lifting out the backplane

13. Place the system backplane on the ESD mat.

Replacing the system backplane in the 8335-GCA or 8335-GTA

To replace the system backplane, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove the replacement system backplane from the static-protective package and place it on an ESD mat.
3. Using the blue lift points, lower the system backplane (A) into the system, sliding it to the back of the system. Ensure that the connectors align and pass through the rear of the system.

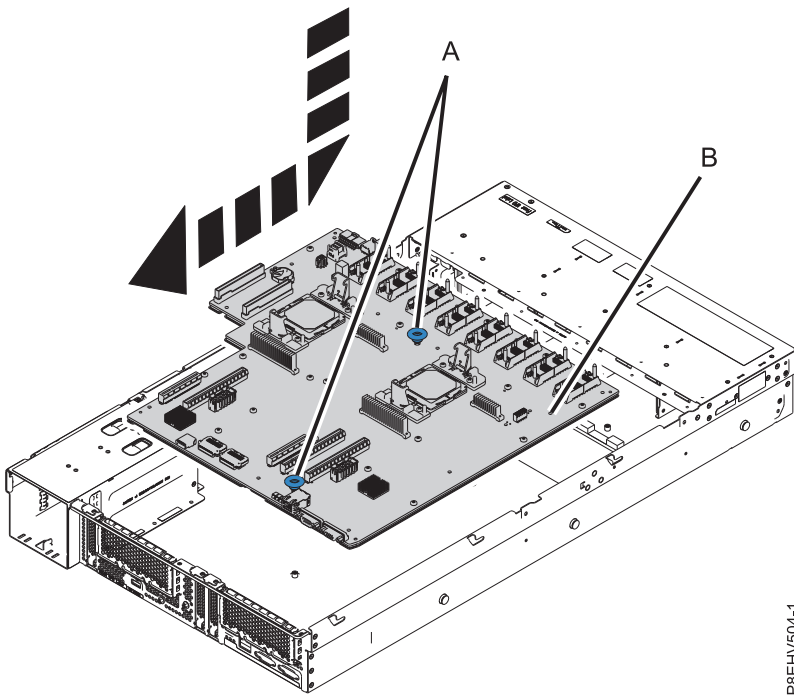


Figure 66. Lowering the system backplane into the system and sliding it to the back of the system.

4. Align and screw the 10 black hex screws (**B**) into the system backplane. The screw locations are shown in Figure 67 on page 67.

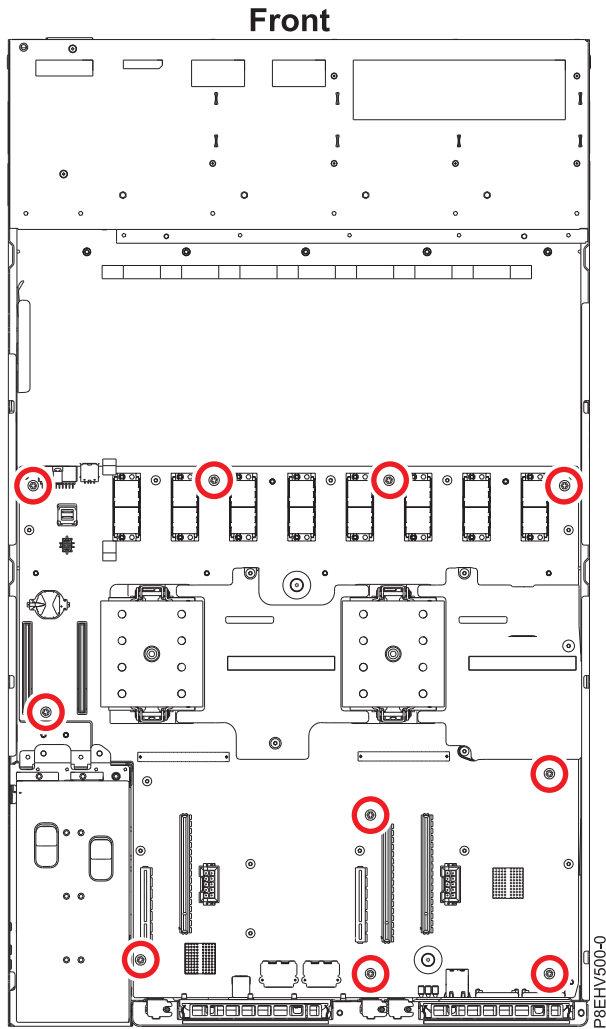


Figure 67. System backplane screw locations

5. Replace the middle support (C). See Figure 68 on page 68.
 - a. Lower the middle support (C) into place.
 - b. Replace the two screws (E) on the side of the system.
 - c. Replace the four screws (D) that connect the middle support to the system backplane.

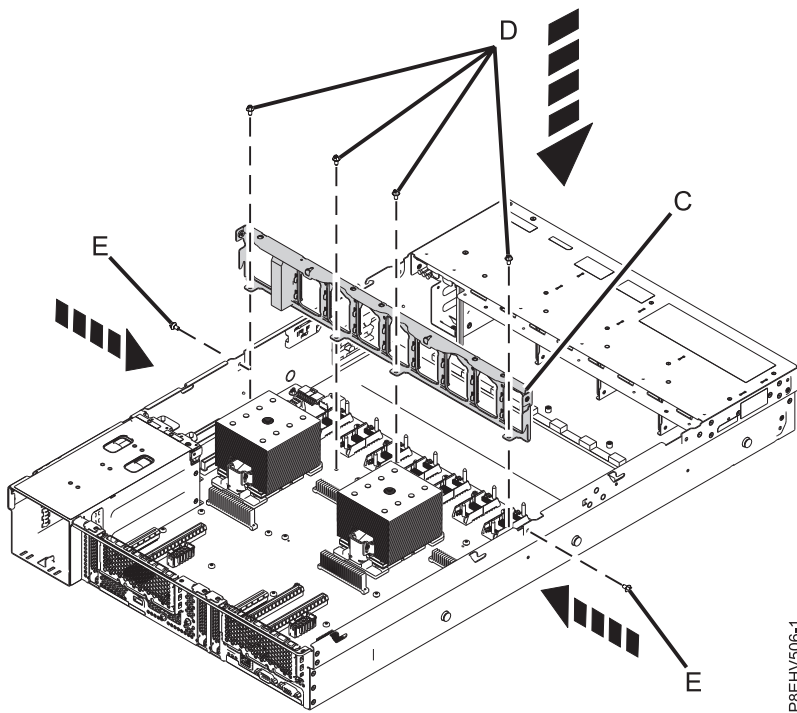
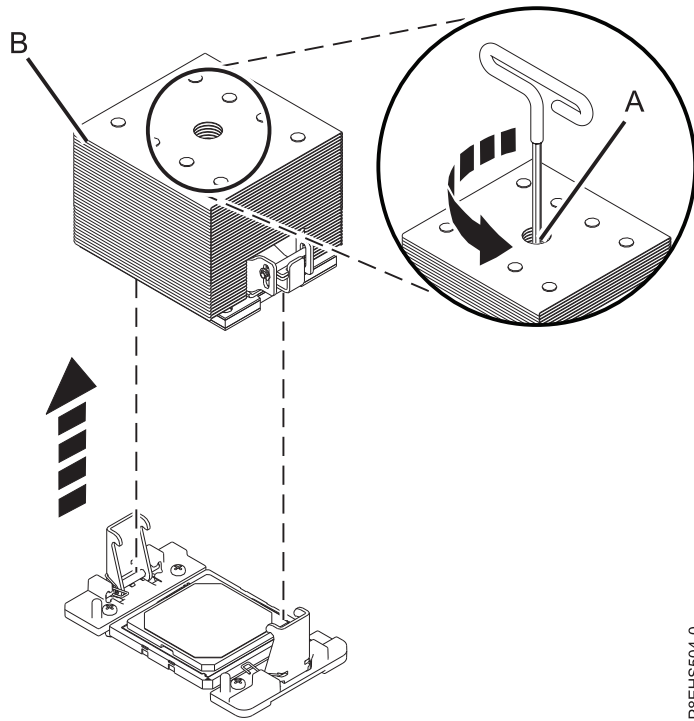


Figure 68. Replacing the middle support

These next steps move the system processor modules from the old system backplane to the new system backplane you just installed:

6. Begin the process of transferring the system processors, one at a time.
7. Remove the heat sink from the system processor module:
 - a. Loosen the heat sink actuation screw by turning the supplied hex key counterclockwise (A). Loosen the screw until it moves freely. See Figure 69 on page 69.
 - b. Grip the heat sink (B) on opposing sides and remove the heat sink by lifting it upward. Set the heat sink aside with the module side facing upward.

Note: If you plan to remove dust or debris from the heat sink, this operation must be performed in another room that is greater than 7.6 m (24.9 ft) away from the work area.



P8EHS004-0

Figure 69. Removing the heat sink

8. Remove dust and debris from the system processor module area.
 - a. If dust or debris is present, use the supplied air pump (part number 45D2645) to clean the system processor module area. Blow small bursts of air from the center toward the sides of the system processor module as shown in Figure 70 on page 70.

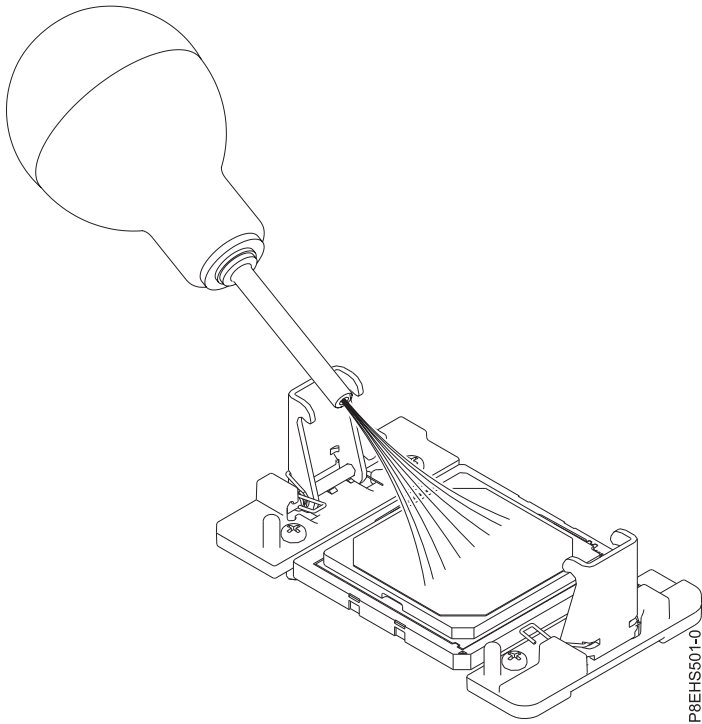


Figure 70. Removing dust and debris from the system processor module area

9. On the new system backplane, remove the socket cover from a system processor socket.
10. Prepare the system processor module for removal.
 - a. Using the supplied removal tool (part number 01AF101), align the beveled corner (**A**) of the tool over the beveled corner of the system processor module as shown in Figure 71 on page 71.
 - b. Lower the tool over the system processor module by ensuring the two guide pins (**C**) are inserted into the alignment holes (**B**) on each side of the tool.

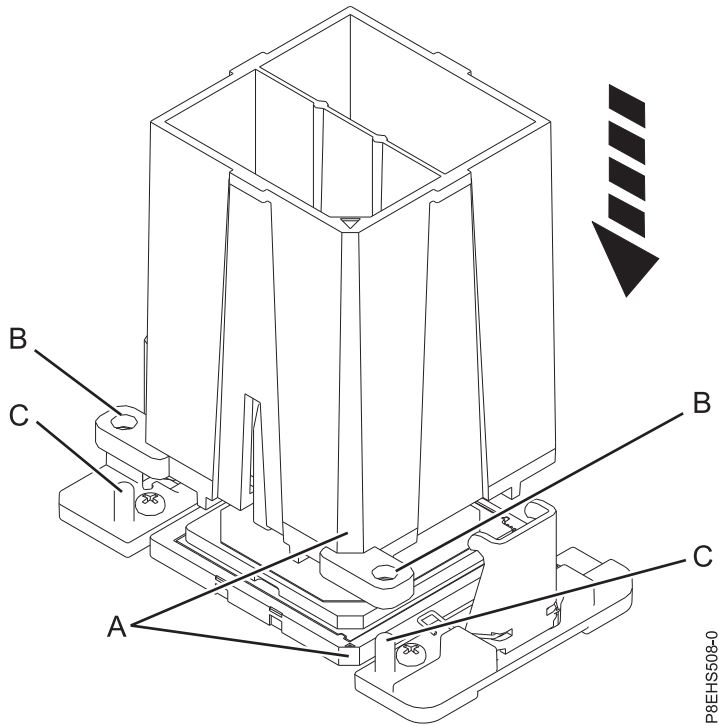


Figure 71. Lowering the removal tool onto the system processor module

- c. With the removal tool (A) sitting on top of the system processor module, push down on the tool to lock the system processor module into the tool, as shown in Figure 72 on page 72. Make sure that both of the tool jaws are locked on the system processor module. Do not press the blue release tabs until directed to do so later.

Note: The tool drops slightly when you push down on the processor module so that the jaws can grab the bottom of the module.

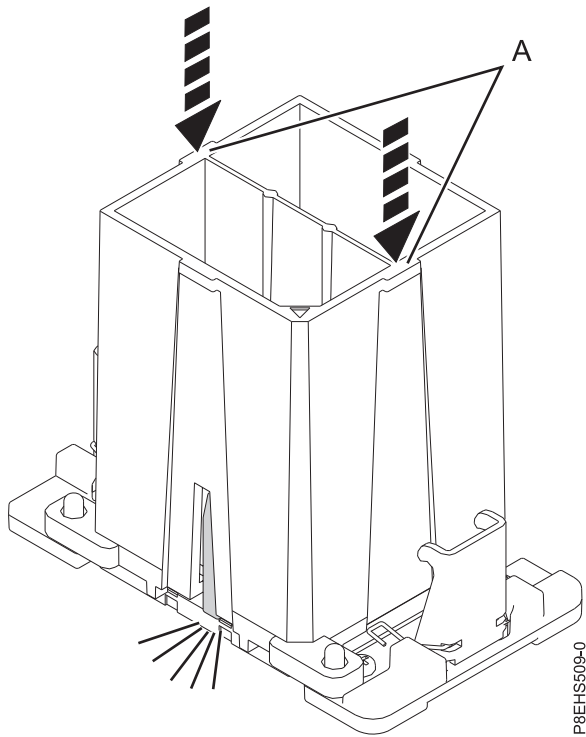


Figure 72. Locking the system processor module into the tool

11. Holding the outside of the tool, lift the tool and system processor module from the old system backplane socket to transfer it to the new system backplane socket.
12. Install the system processor module:
 - a. If dust or debris is present on the system processor socket, use the supplied air pump (part number 45D2645) to clean the socket. Blow small bursts of air from the center toward the sides of the socket, as shown Figure 73 on page 73.

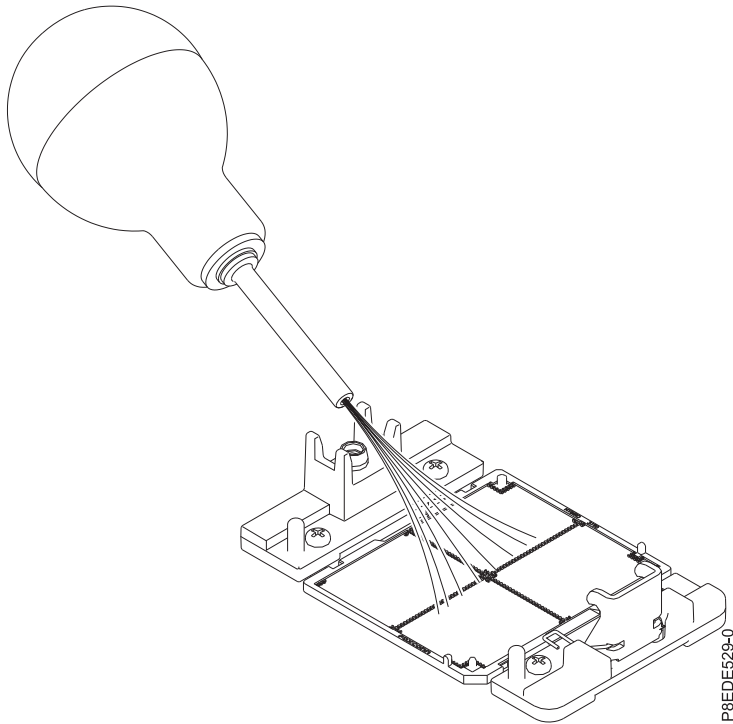
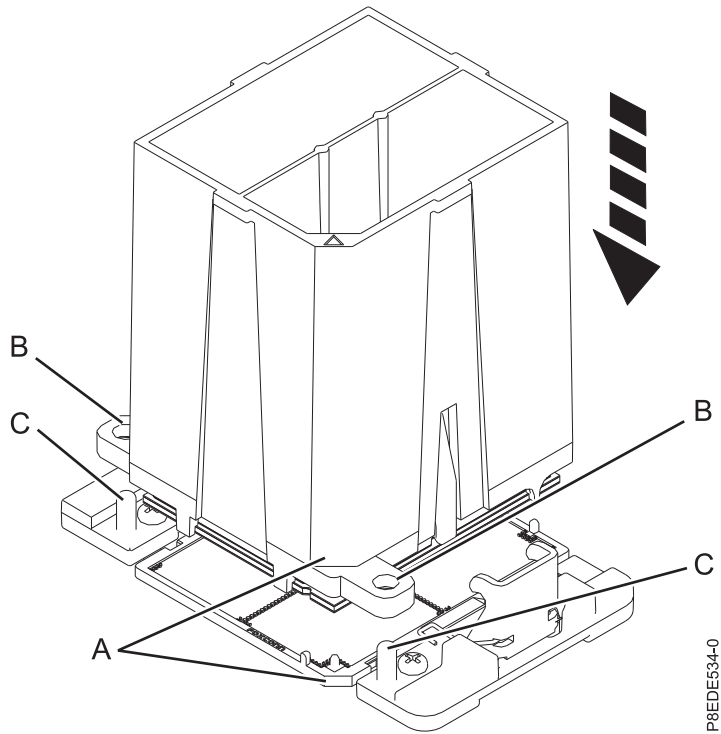


Figure 73. Removing dust and debris from the system processor socket

- b. Lower the tool and system processor module onto the socket. Align the beveled corner (A) of the tool with the beveled corner on the socket. Ensure that the two guide pins (C) are inserted into the alignment holes (B) on each side of the tool. Use care to lower the tool evenly without tilting the tool. See Figure 74 on page 74.

Note: Do not attempt to slide the tool and the system processor module in any direction while the system processor module is touching the socket. If the tool and the system processor module are not aligned with the guide pins, lift the tool and the system processor module and reposition them.



P8EDE534-0

Figure 74. Installing the system processor module

- c. After the tool and system processor module holes and guide pins are properly aligned, squeeze and hold the two blue release tabs (**A**) together until a firm stop is reached, as shown in Figure 75 on page 75. Then, lift the tool off the system processor module.

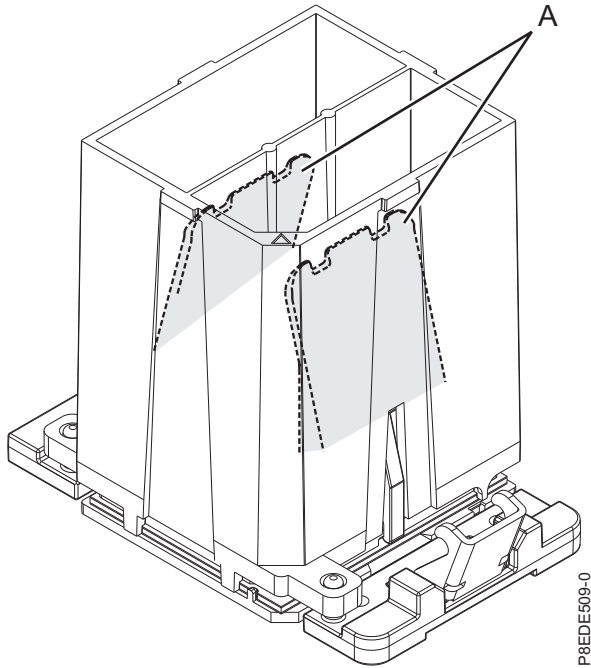
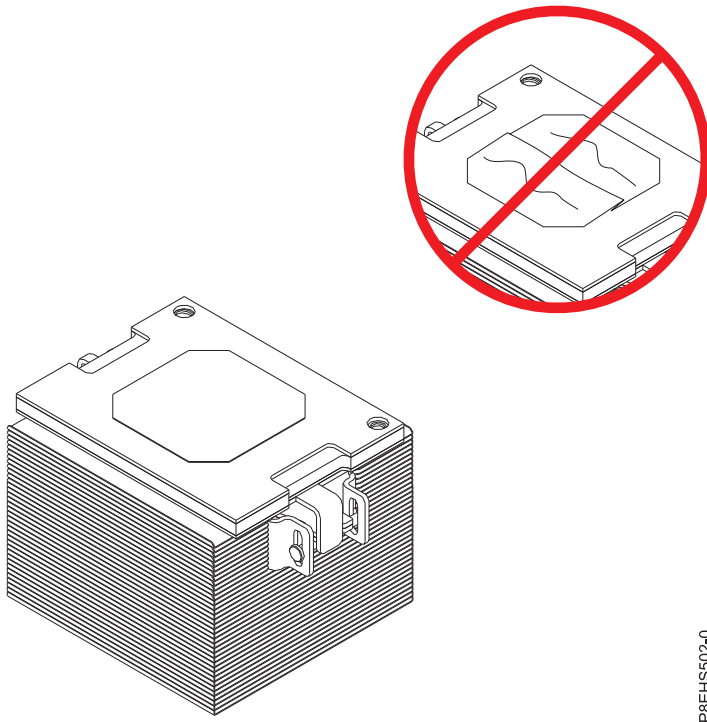


Figure 75. Removing the system processor module tool

13. Inspect the thermal interface material (TIM) for visible signs of damage, as shown in Figure 76 on page 76.

Note: When the heat sink is removed from the system processor module, the TIM is typically adhered to the heat sink. Unless damaged, the TIM that is adhered to the heat sink can be reused. If the TIM is damaged, do not reuse the removed heat sink. Before you begin the system backplane removal and replacement procedure, ensure that you have a spare TIM and heat sink, part number 01AF286, on hand.



P8EHS502-0

Figure 76. Inspecting the thermal interface material

14. Are you replacing the TIM or heat sink?

Yes: Continue with step 15.

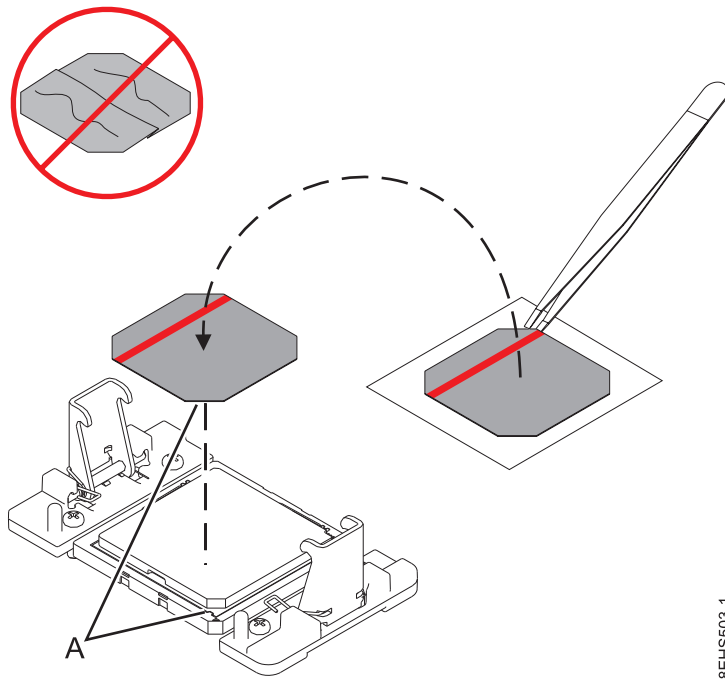
No: Go to step 16 on page 77.

15. Install a new TIM pad:

- a. If the TIM or heat sink must be replaced, order part number 01AF286, heat sink and TIM.
- b. Open the TIM packaging and carefully remove the TIM, holding it by the edges of the carrier strip and holding it away from the shipping container.
- c. Remove the protective film from the clear carrier strip by using the supplied tweezers.

Note: The TIM must remain flat. Small wrinkles are acceptable, but folds are not acceptable.

- d. Using the tweezers, remove the TIM from the carrier strip and center it onto the system processor module. The side with the red stripe must be facing up. Align the beveled edges of the TIM and the system processor module (**A**), as shown in Figure 77 on page 77.

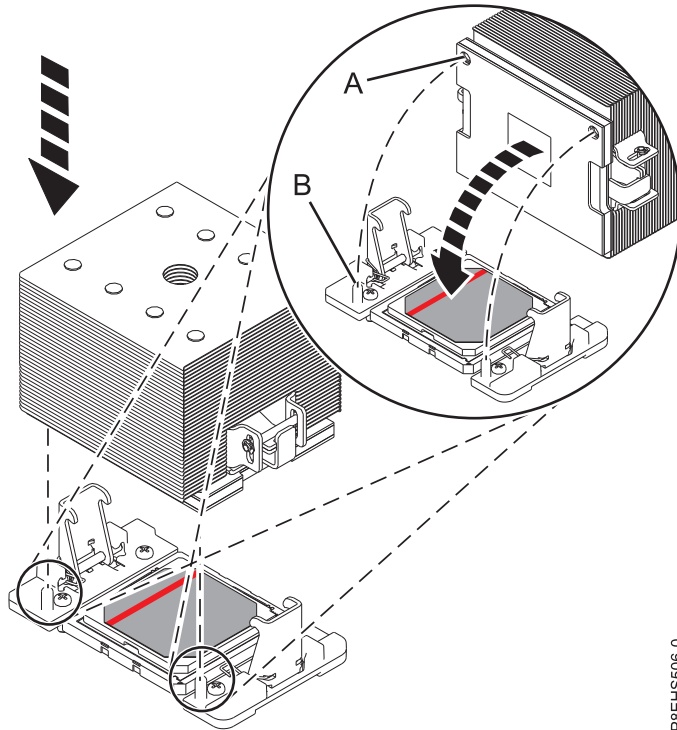


P8EHS503-1

Figure 77. Installing the TIM onto the processor lid

16. Install the heat sink:

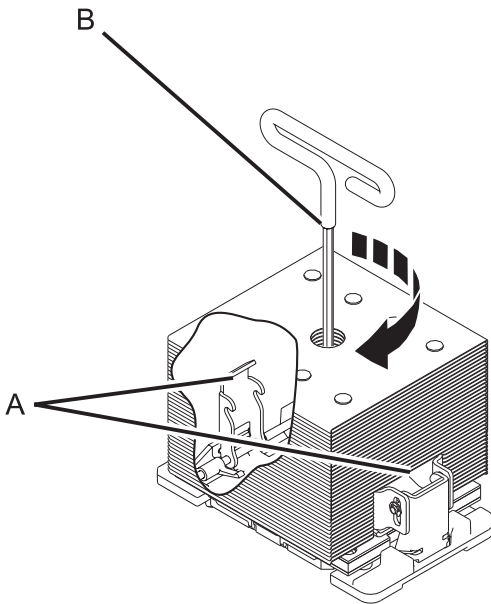
- a. Position the heat sink using the guide holes on the heat sink (**A**) to correctly align it with the guide pins (**B**). See Figure 78 on page 78.
- b. Ensure that the heat sink load arms are engaged.



P8EHS506-0

Figure 78. Installing the heat sink

- c. Tighten the center load screw **(B)** clockwise by using the supplied hex key until a firm stop is reached. If the heat sink moves noticeably, the load arms **(A)** are not engaged. Unscrew the center load screw and repeat this step again. See Figure 79.

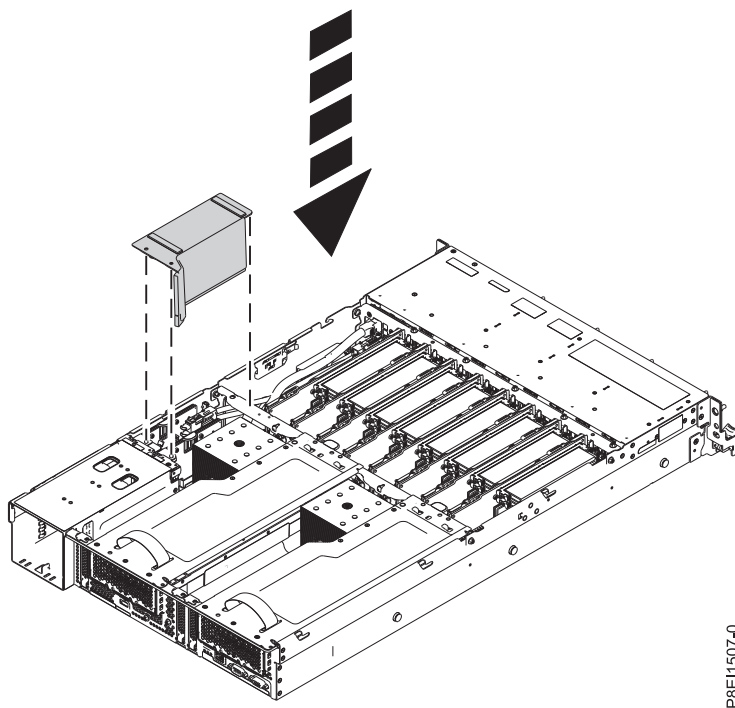


P8EHS507-0

Figure 79. Tightening the center load screw on the heat sink

17. Repeat from step 6 on page 68 with the other system processor module
These next steps continue installing components into the new system backplane:

18. Replace the power distribution cards. For instructions, see “Replacing a power riser in the 8335-GCA or 8335-GTA” on page 48.
19. Using your labels, replace the USB cable and the power signal cable into that connector in the system backplane. For instructions, see “Replacing the front USB cable and connector in the 8335-GCA or 8335-GTA system” on page 27.
20. Using your labels, replace the disk and fan signal cable into that connector in the system backplane. For instructions, see “Replacing the disk and fan signal cable in the 8335-GCA or 8335-GTA system” on page 14.
21. Using your labels, replace the fan power cable into that connector in the power distribution card. For instructions, see “Replacing the 8335-GCA or 8335-GTA fan power cable” on page 22.
22. Using your labels, replace the memory cards or fillers. For instructions, see “Replacing memory risers in the 8335-GCA or 8335-GTA” on page 38.
23. Using your labels, replace the PCIe adapter cards. For instructions, see “Replacing a PCIe adapter in the system backplane in the 8335-GCA or 8335-GTA” on page 44.
24. Using your labels, replace the graphic processing unit (GPU) assemblies. For instructions, see “Replacing the graphics processing unit in the 8335-GCA or 8335-GTA system” on page 30.
25. Install the power riser air baffle. See Figure 80. Ensure that the holes in the baffle align with the pins on the system.



P8E11507-0

Figure 80. Installing the power riser air baffle

Results

Following a system backplane replacement, you must set the system serial number on the system backplane. There is a tool to set the system serial number, go to Fix Central (www.ibm.com/support/fixcentral/) to download the tool and follow the instructions for setting the serial number.

Removing and replacing a system processor module for the 8335-GCA or 8335-GTA

You can remove and replace the system processor module in the IBM Power System S822LC (8335-GCA and 8335-GTA) server.

Removing a system processor module in the 8335-GCA or 8335-GTA system

Follow these steps to remove a system processor module from the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

About this task

As part of the system processor modules replacement, the heat sink is removed. When the heat sink is removed from the system processor module, the thermal interface material (TIM) is typically adhered to the heat sink. Unless damaged, the TIM that is adhered to the heat sink can be reused. If the TIM is damaged, do not reuse the removed heat sink. Before you begin the system backplane removal and replacement procedure, ensure that you have a spare TIM and heat sink, part number 01AF286, on hand.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Open the packaging of the new system processor module, and place the cover upside down next to the tray, as shown in Figure 81. The cover is used for the system processor module that you are replacing.

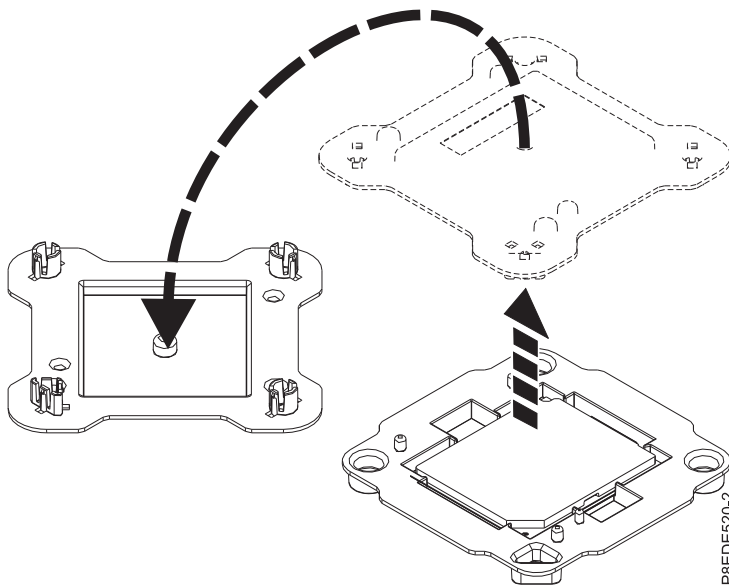
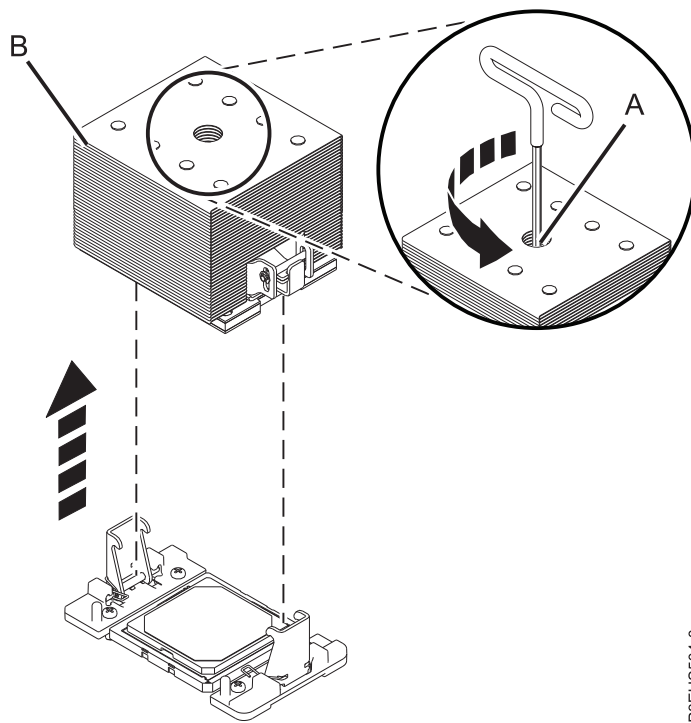


Figure 81. Opening the system processor module packaging

3. Remove the heat sink from the system processor module:
 - a. Loosen the heat sink actuation screw by turning the supplied hex key counterclockwise **(A)**. Loosen the screw until it moves freely. See Figure 82 on page 81.
 - b. Grip the heat sink **(B)** on opposing sides and remove the heat sink by lifting it upward. Set the heat sink aside with the module side facing upward.

Note: If you plan to remove dust or debris from the heat sink, this operation must be performed in another room that is greater than 7.6 m (24.9 ft) away from the work area.



P8EHS004-0

Figure 82. Removing the heat sink

4. Remove dust and debris from the system processor module area.
 - a. If dust or debris is present, use the supplied air pump (part number 45D2645) to clean the system processor module area. Blow small bursts of air from the center toward the sides of the system processor module as shown in Figure 83 on page 82.

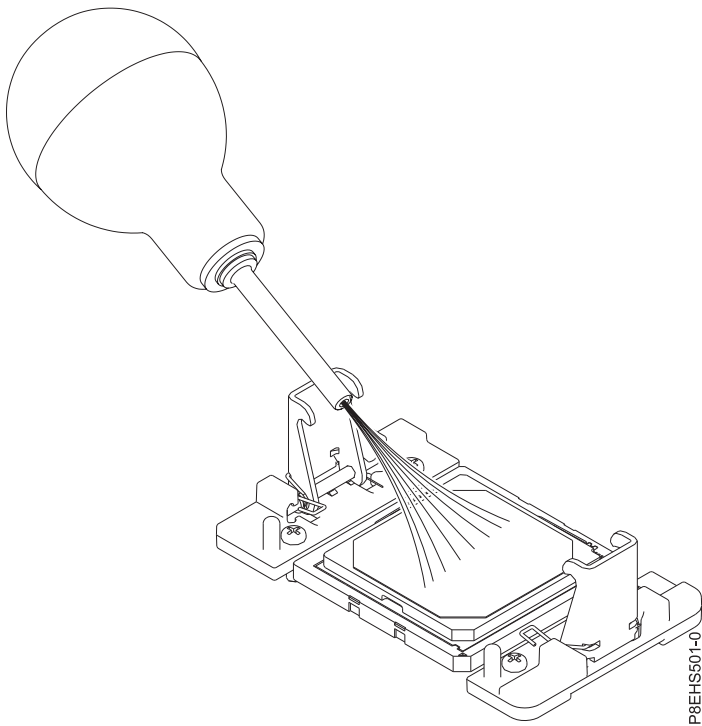


Figure 83. Removing dust and debris from the system processor module area

5. Prepare the system processor module for removal.
 - a. Using the supplied removal tool (part number 01AF101), align the beveled corner (**A**) of the tool over the beveled corner of the system processor module as shown in Figure 84 on page 83.
 - b. Lower the tool over the system processor module by ensuring the two guide pins (**C**) are inserted into the alignment holes (**B**) on each side of the tool.

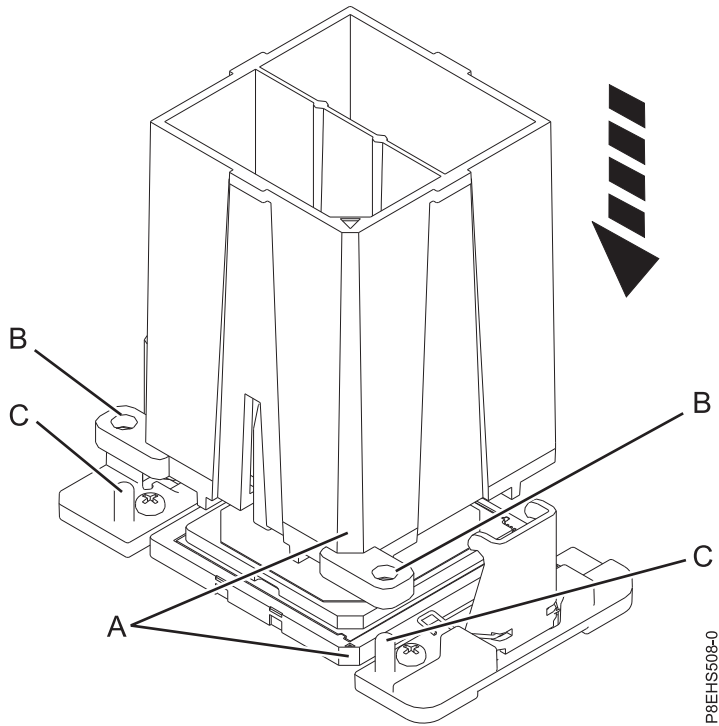


Figure 84. Lowering the removal tool onto the system processor module

- c. With the removal tool (A) sitting on top of the system processor module, push down on the tool to lock the system processor module into the tool, as shown in Figure 85 on page 84. Make sure that both of the tool jaws are locked on the system processor module. Do not press the blue release tabs until directed to do so later.

Note: The tool drops slightly when you push down on the processor module so that the jaws can grab the bottom of the module.

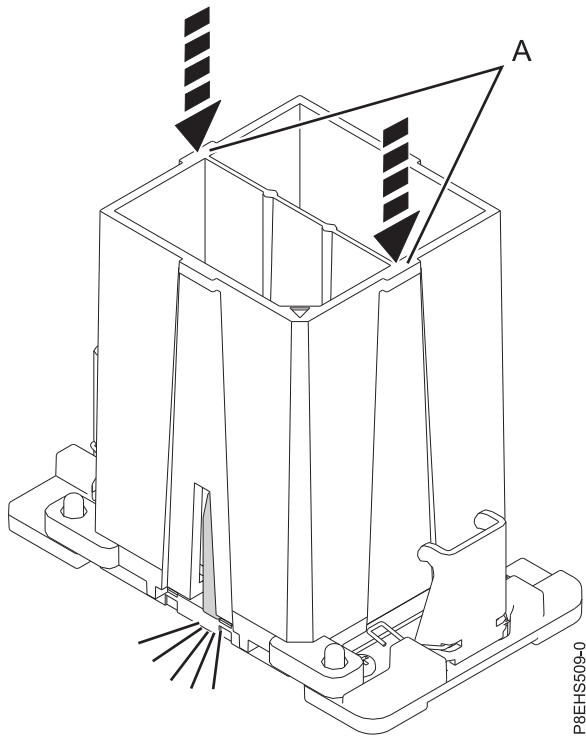
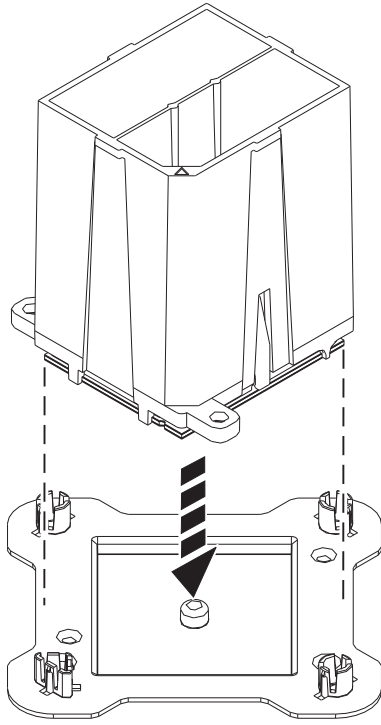


Figure 85. Locking the system processor module into the tool

6. Holding the outside of the tool, lift the tool and system processor module from the socket. Place them at an angle in the top cover of the system processor module packaging, as shown in Figure 86 on page 85.

Note: Setting the tool and system processor module at an angle on the top cover of the system processor module packaging will make it easier to pick up and place in the packaging after you replace the system processor module.

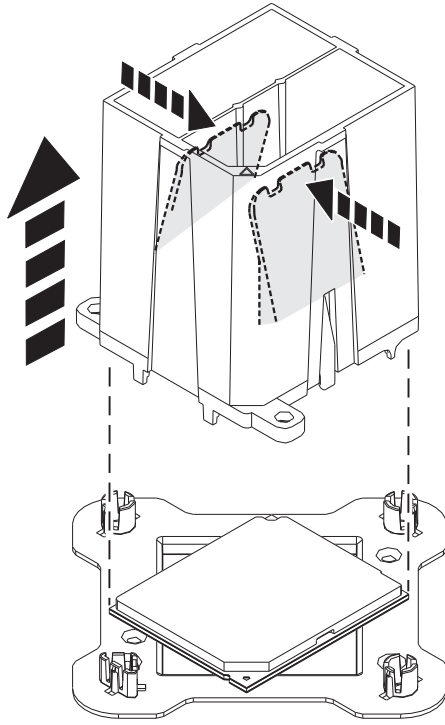


P8EDE521-1

Figure 86. Placing the tool at an angle on the top cover of the packaging

7. Squeeze the two blue tabs to release the system processor module from the tool. See Figure 87 on page 86.

Note: To prevent the system processor module from falling, do not squeeze the two tabs before you place the tool on the top cover of the system processor module packaging.



P88EDE522-1

Figure 87. Releasing the system processor module from the tool

Replacing a system processor module in the 8335-GCA or 8335-GTA system

Follow these steps to replace a system processor module in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Remove dust and debris from the system processor socket area. If dust or debris is present, use the supplied air pump (part number 45D2645) to clean the system processor socket area.
3. Prepare the system processor module for installation:
 - a. Remove the replacement processor module from the shipping tray. Using the supplied removal tool (part number 01AF101), align the beveled corner (**A**) of the tool over the beveled corner of the module, as shown in Figure 88 on page 87.
 - b. Lower the tool over the system processor module by ensuring that the two guide pins (**C**) are inserted into the alignment holes (**B**) on each side of the tool, as shown in Figure 88 on page 87. Then, push down on the tool to lock the system processor module into the tool, as shown in Figure 89 on page 87. Do not press the blue release tabs until directed to do so later.

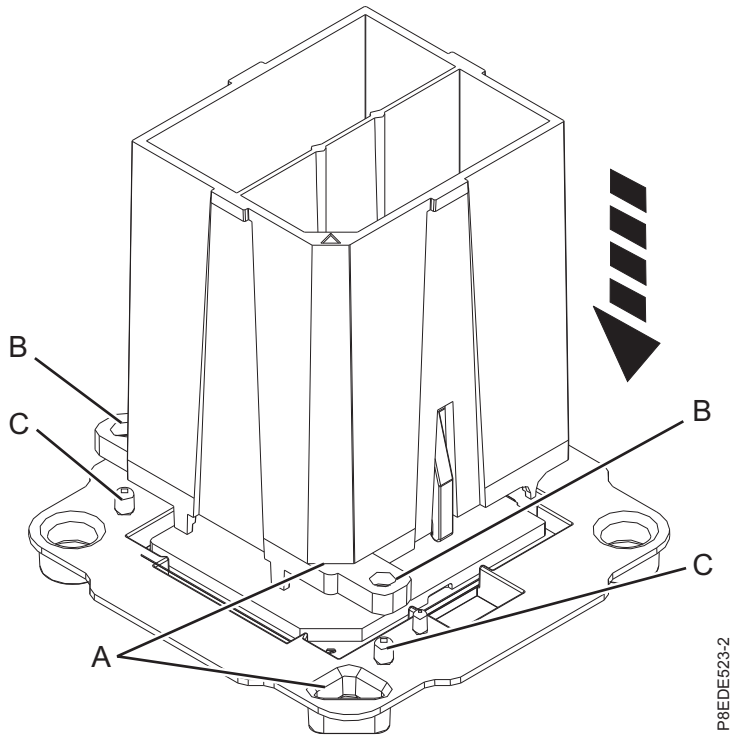


Figure 88. Aligning the removal tool

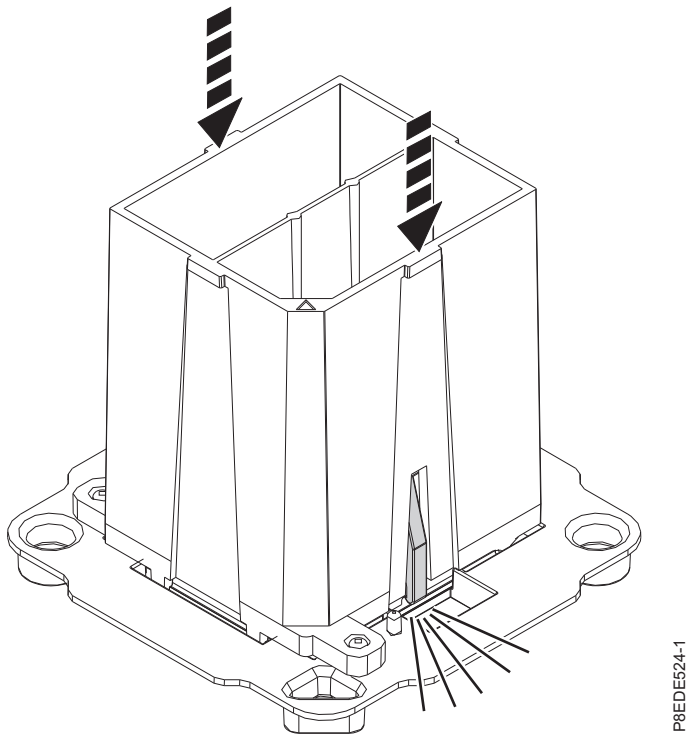


Figure 89. Locking the system processor module into the tool

4. Prepare for system processor module installation:

- a. Grasping the sides of the tool and system processor module, carefully lift it slightly out of the system processor module tray. Then, turn it over so that the system processor module side is up.
- b. Ensure that both jaws (A) are firmly grabbing the system processor module, as shown in Figure 90.

Note: If both jaws are not firmly grabbing the system processor module, press down on the corner of the system processor module closest to the jaw until it locks into place. Do not touch any part of the system processor module other than the corners.

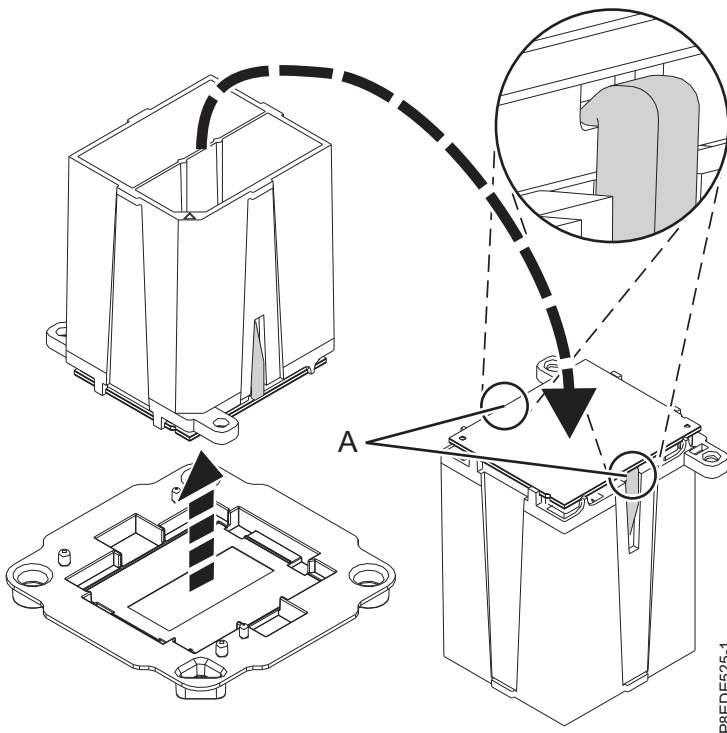


Figure 90. Preparing for system processor module installation

5. Install the system processor module:
 - a. If dust or debris is present on the system processor socket, use the supplied air pump (part number 45D2645) to clean the socket. Blow small bursts of air from the center toward the sides of the socket, as shown Figure 91 on page 89.

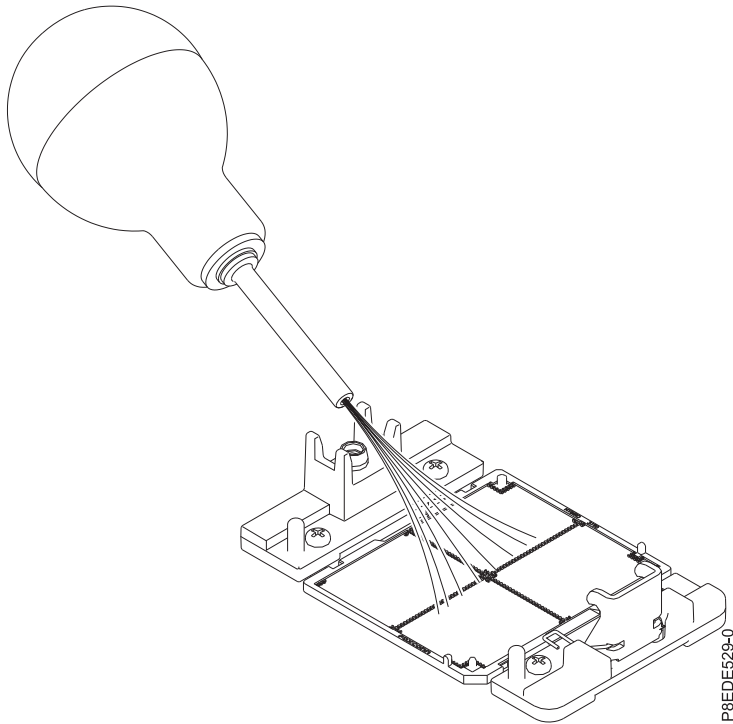


Figure 91. Removing dust and debris from the system processor socket

- b. Lower the tool and system processor module onto the socket. Align the beveled corner (A) of the tool with the beveled corner on the socket. Ensure that the two guide pins (C) are inserted into the alignment holes (B) on each side of the tool. Use care to lower the tool evenly without tilting the tool. See Figure 92 on page 90.

Note: Do not attempt to slide the tool and the system processor module in any direction while the system processor module is touching the socket. If the tool and the system processor module are not aligned with the guide pins, lift the tool and the system processor module and reposition them.

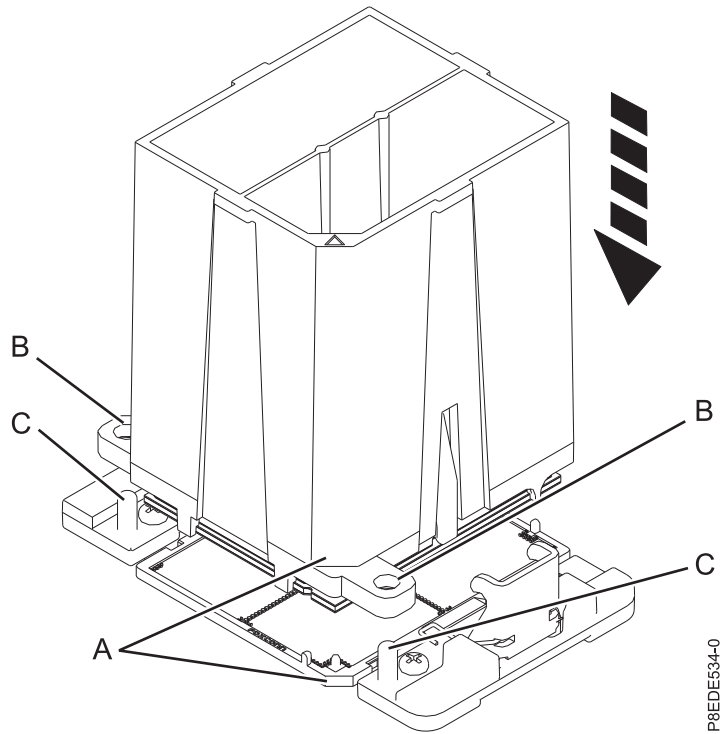


Figure 92. Installing the system processor module

- c. After the tool and system processor module holes and guide pins are properly aligned, squeeze and hold the two blue release tabs (**A**) together until a firm stop is reached, as shown in Figure 93 on page 91. Then, lift the tool off the system processor module.

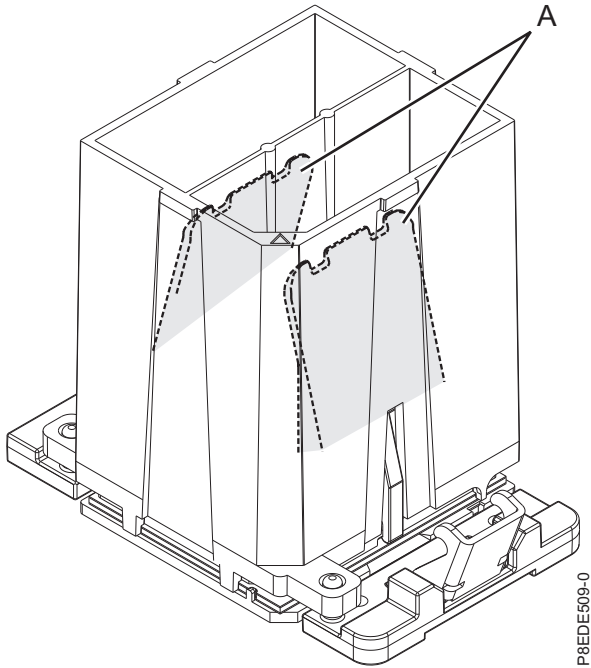
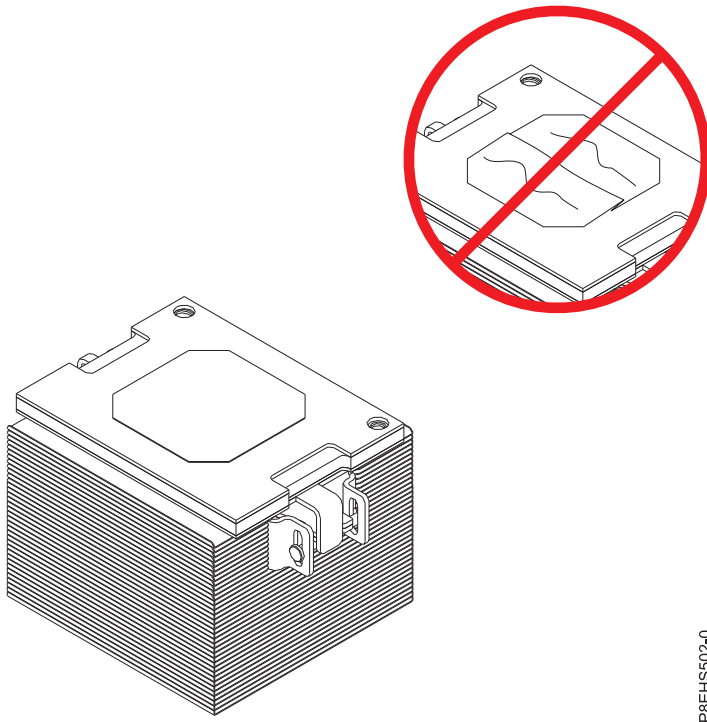


Figure 93. Removing the system processor module tool

6. Inspect the thermal interface material (TIM) for visible signs of damage, as shown in Figure 94 on page 92.

The thermal interface material (TIM) is typically adhered to the heat sink. Unless damaged, the TIM that is adhered to the heat sink can be reused. If the TIM is damaged, do not reuse the removed heat sink. Before you begin the system backplane removal and replacement procedure, ensure that you have a spare TIM and heat sink, part number 01AF286, on hand.



P8EHS502-0

Figure 94. Inspecting the thermal interface material

7. Are you replacing the TIM or heat sink?

Yes: Continue with step 8.

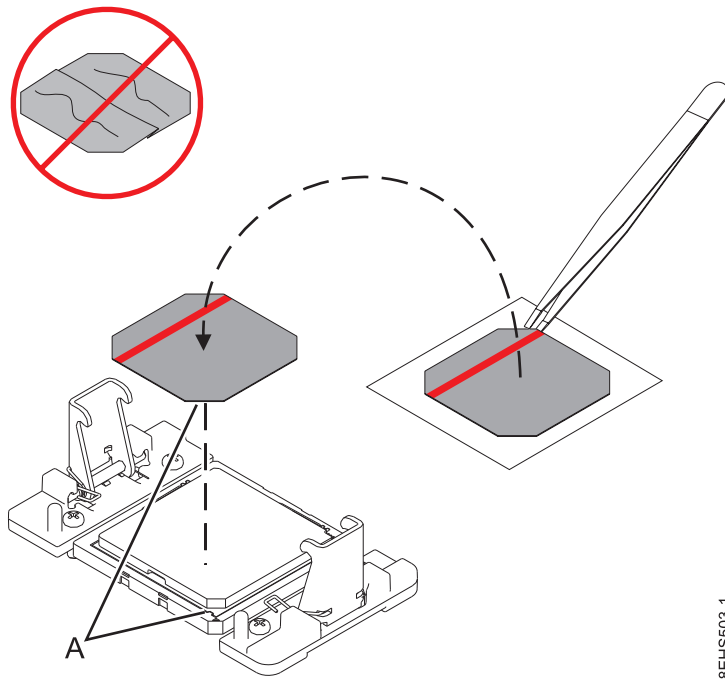
No: Go to step 9 on page 93.

8. Install a new TIM pad:

- a. If the TIM or heat sink must be replaced, order part number 01AF286, heat sink and TIM.
- b. Open the TIM packaging and carefully remove the TIM, holding it by the edges of the carrier strip and holding it away from the shipping container.
- c. Remove the protective film from the clear carrier strip by using the supplied tweezers.

Note: The TIM must remain flat. Small wrinkles are acceptable, but folds are not acceptable.

- d. Using the tweezers, remove the TIM from the carrier strip and center it onto the system processor module. The side with the red stripe must be facing up. Align the beveled edges of the TIM and the system processor module (**A**), as shown in Figure 95 on page 93.

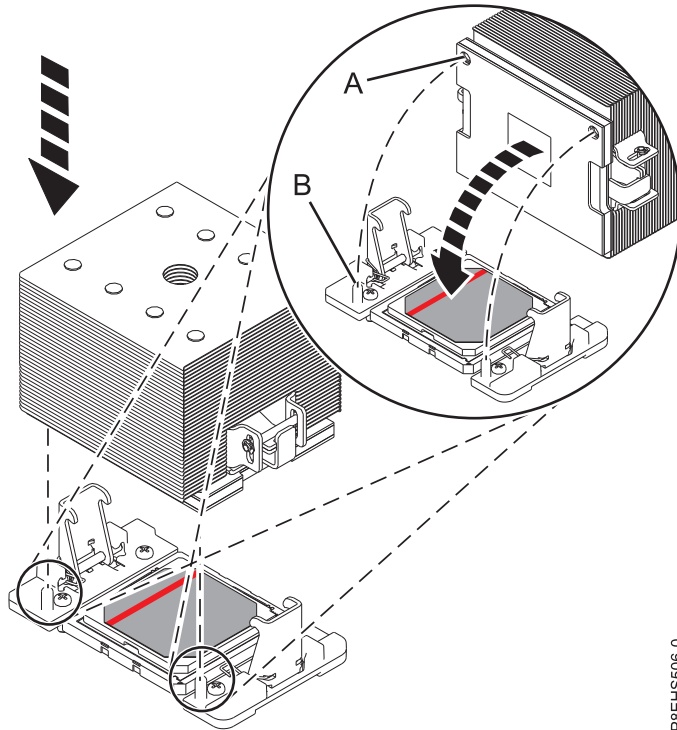


P8EHS503-1

Figure 95. Installing the TIM onto the processor lid

9. Install the heat sink:

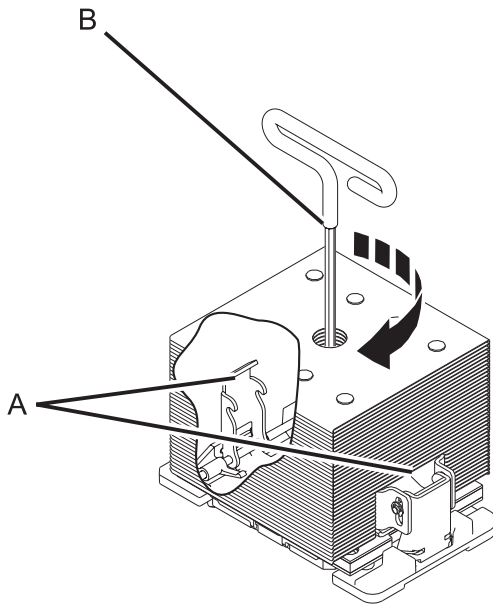
- a. Position the heat sink using the guide holes on the heat sink (**A**) to correctly align it with the guide pins (**B**). See Figure 96 on page 94.
- b. Ensure that the heat sink load arms are engaged.



P8EHS506-0

Figure 96. Installing the heat sink

- c. Tighten the center load screw **(B)** clockwise by using the supplied hex key until a firm stop is reached. If the heat sink moves noticeably, the load arms **(A)** are not engaged. Unscrew the center load screw and repeat this step again. See Figure 97.



P8EHS507-0

Figure 97. Tightening the center load screw on the heat sink

10. Lightly grip the system processor module that you replaced by the edges and lift it off of the packaging cover. Align the beveled corner of the module **(A)** to the corner of the packaging with triangle **(B)** and place it in the packaging, as shown in Figure 98 on page 95. Close the packaging

cover.

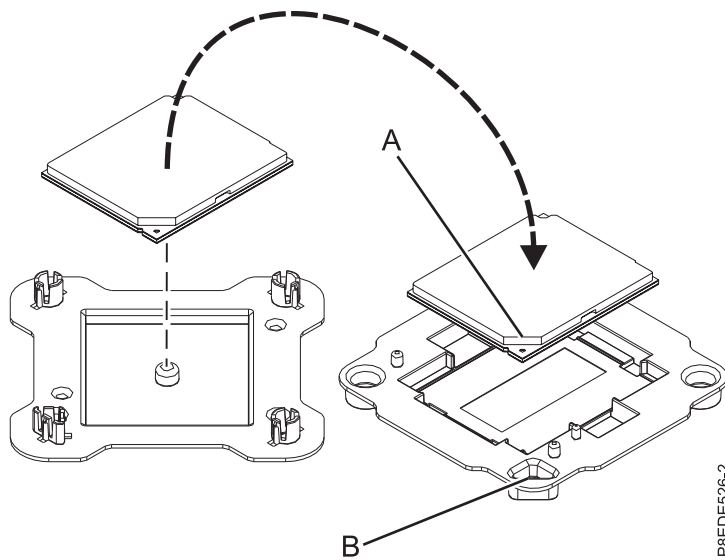


Figure 98. Placing the system processor module into the packaging

Removing and replacing the time-of-day battery in the 8335-GCA or 8335-GTA

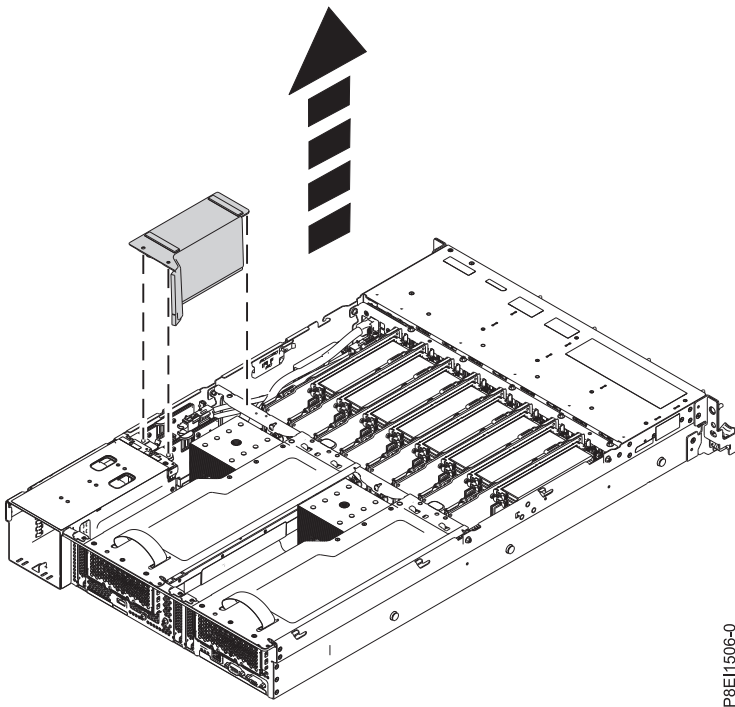
Learn about removing and replacing the time-of-day battery in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.

Remove:

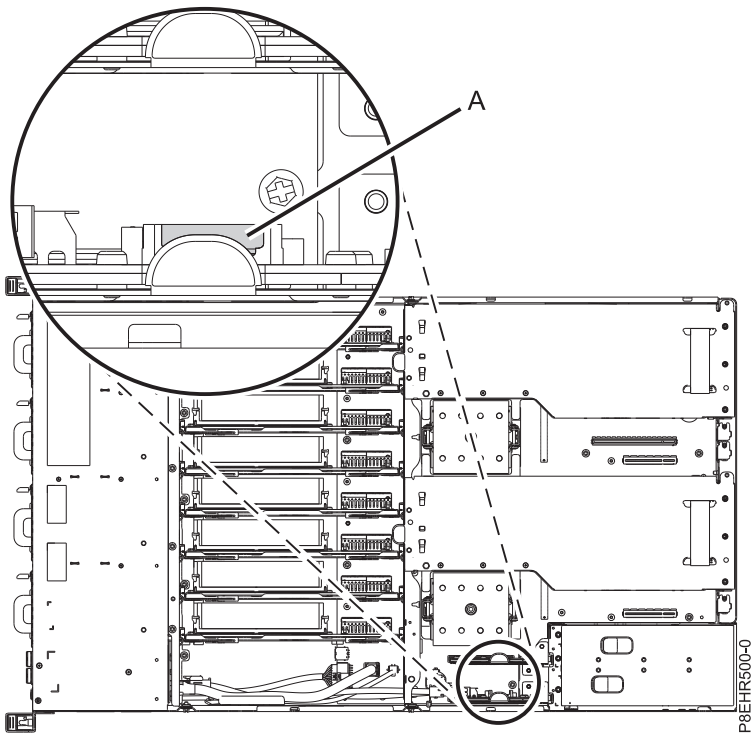
2. Remove the power riser air baffle. See Figure 99 on page 96.



P8E11506-0

Figure 99. Removing the power riser air baffle

3. Locate the time-of-day battery on the power riser nearest to the side of the system as shown in Figure 100.



P8EHR5000-0

Figure 100. Location of the time-of-day battery

4. Remove the power riser that contains the time-of-day battery.
 - a. Grasp the connector end of the fan power cable that is connected to the power riser. See **(A)** in Figure 101.
 - b. While pressing the latch release lever with your thumb, disconnect the cable from the connector.

Note: The latch release on the connector must be depressed before unplugging the cable. Failure to do so could damage the cable and the connector.

- c. Pull the power riser from the slot by holding the blue tab. See **(B)** in Figure 101.
- d. Place the power riser on an ESD mat.

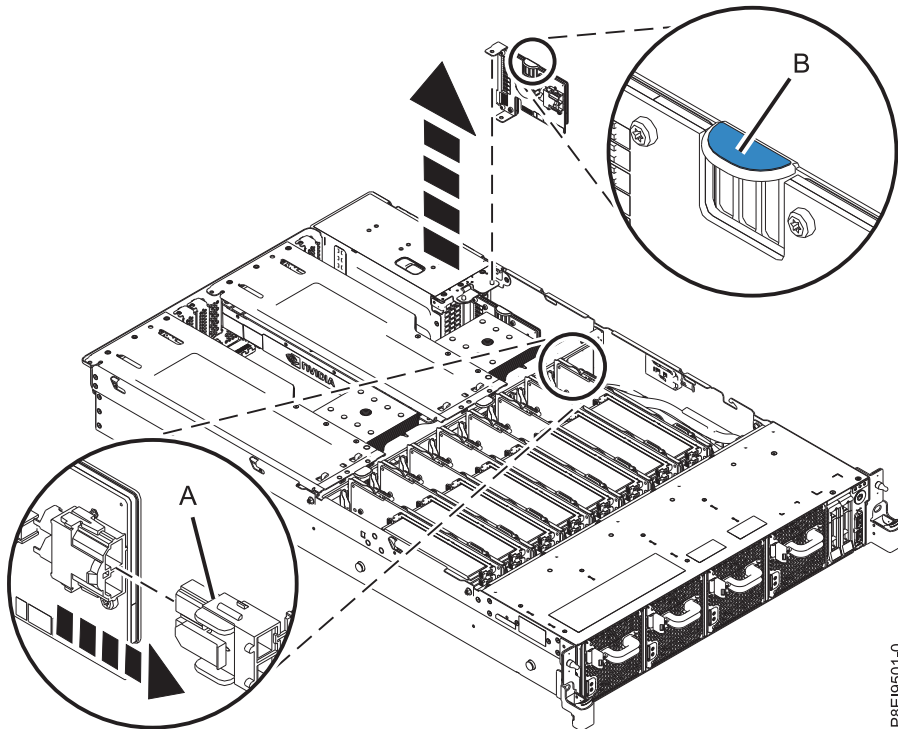
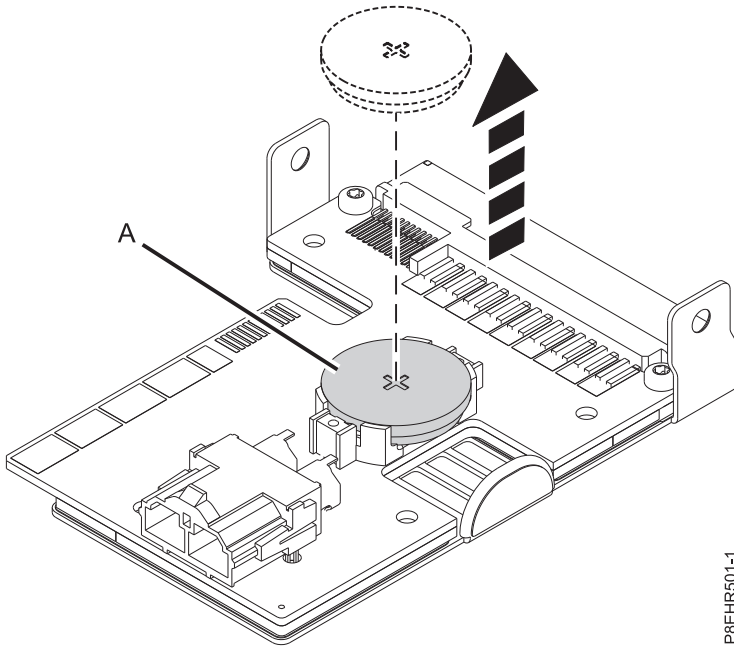


Figure 101. Removing the power riser from the system

5. Remove the time-of-day battery from its slot on the power riser, as shown in Figure 102 on page 98. Ensure to record the orientation of the polarity of the battery so that you can insert it with the same orientation later.

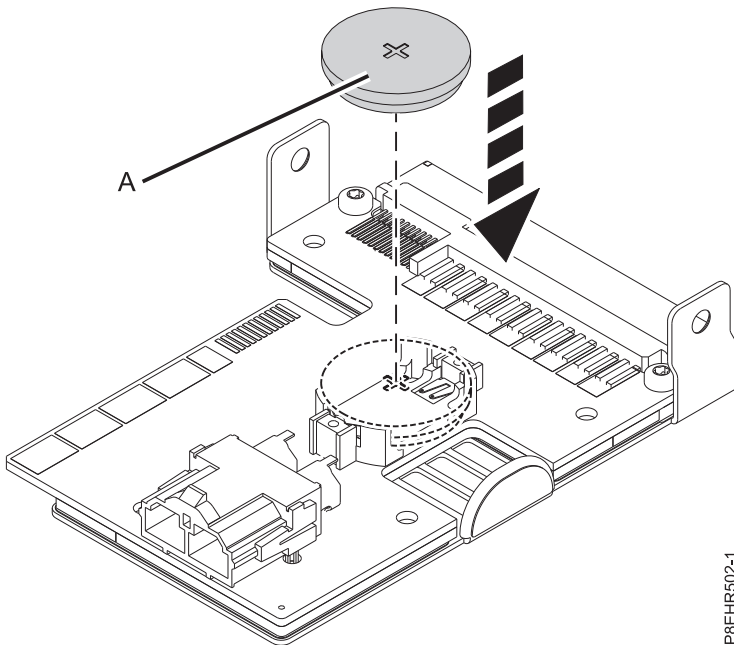


P8EHR501-1

Figure 102. Removing the time-of-day battery from the power riser

Replace:

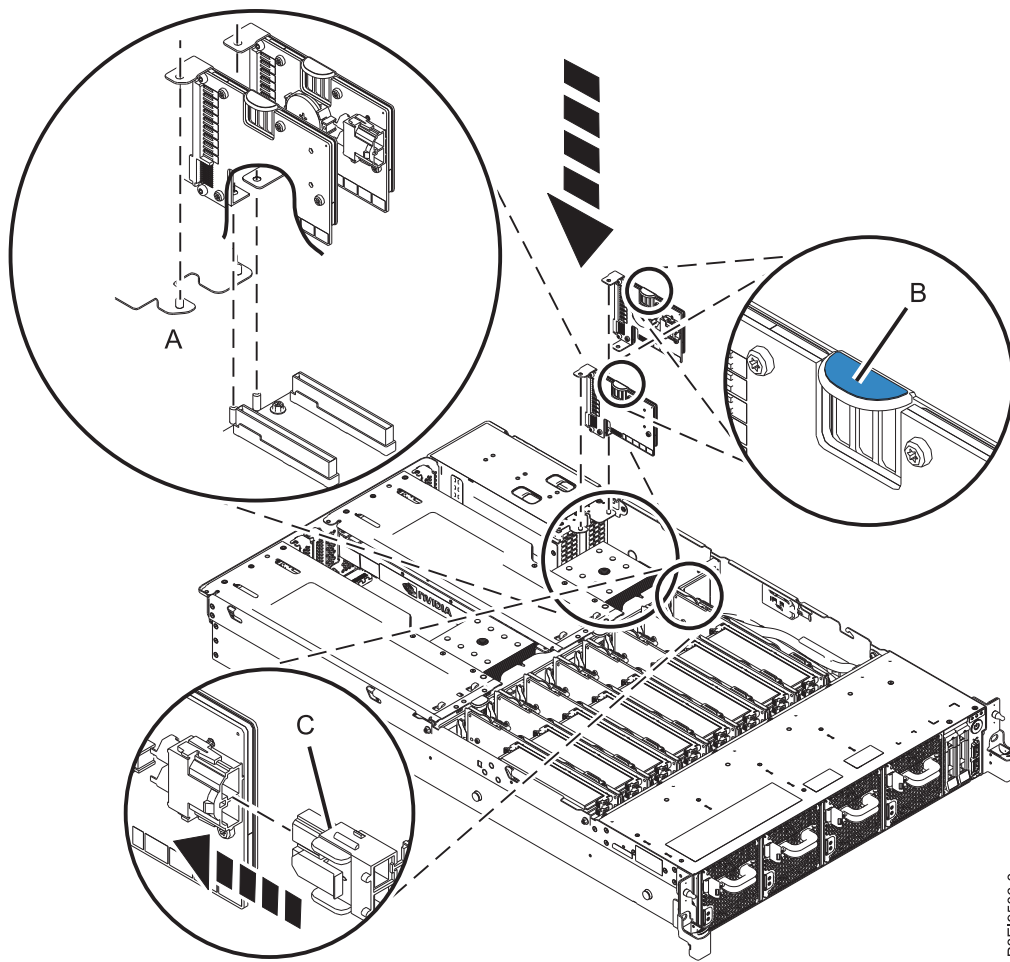
6. Insert the time-of-day battery in the slot on the power riser, as shown in Figure 103. Ensure to insert the battery with the correct polarity as recorded during removing of the battery.



P8EHR502-1

Figure 103. Replacing the time-of-day battery on the power riser

7. To replace a power riser, complete the following steps:
 - a. Hold the power riser by the blue tab.
 - b. Using the alignment pins (A), insert the power riser into the slot. See Figure 104 on page 99.
 - c. Reconnect the fan power cable to the power riser. See (C) in Figure 104 on page 99.



P8E19506-0

Figure 104. Replacing a power riser in the system

8. Install the power riser air baffle. See Figure 105 on page 100. Ensure that the holes in the baffle align with the pins on the system.

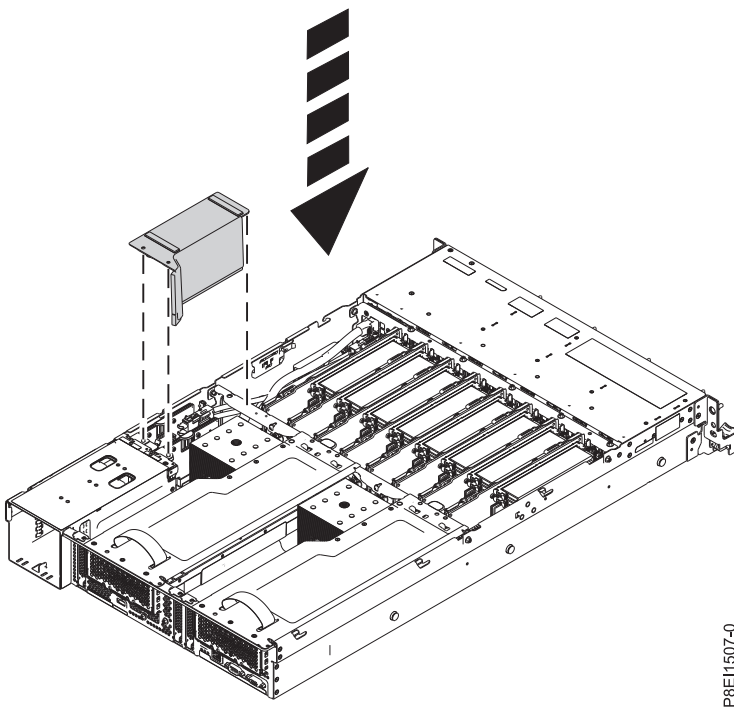


Figure 105. Installing the power riser air baffle

Common procedures for servicing or installing features in the 8335-GCA or 8335-GTA

This section contains all the common procedures related to installing, removing, and replacing features in the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Before you begin

Observe these precautions when you are installing, removing, or replacing features and parts.

About this task

These precautions are intended to create a safe environment to service your system and do not provide steps for servicing your system. The installation, removal, and replacement procedures provide the step-by-step processes required to service your system.

DANGER

When working on or around the system, observe the following precautions:

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- If IBM supplied the power cord(s), connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.
- Do not open or service any power supply assembly.
- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Do not attempt to switch on power to the machine until all possible unsafe conditions are corrected.
- Assume that an electrical safety hazard is present. Perform all continuity, grounding, and power checks specified during the subsystem installation procedures to ensure that the machine meets safety requirements.
- Do not continue with the inspection if any unsafe conditions are present.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.

To Disconnect:

1. Turn off everything (unless instructed otherwise).
2. Remove the power cords from the outlets.
3. Remove the signal cables from the connectors.
4. Remove all cables from the devices.

To Connect:

1. Turn off everything (unless instructed otherwise).
2. Attach all cables to the devices.
3. Attach the signal cables to the connectors.
4. Attach the power cords to the outlets.
5. Turn on the devices.

Sharp edges, corners and joints may be present in and around the system. Use care when handling equipment to avoid cuts, scrapes and pinching.

(D005)

DANGER

Observe the following precautions when working on or around your IT rack system:

- Heavy equipment—personal injury or equipment damage might result if mishandled.
- Always lower the leveling pads on the rack cabinet.
- Always install stabilizer brackets on the rack cabinet.
- To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.
- Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices.



- Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.
- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

CAUTION

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers.)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.
- *(For fixed drawers.)* This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.

(R001)

Before you begin a replacement or installation procedure, perform these tasks:

Procedure

1. If you are installing a new feature, ensure that you have the software required to support the new feature. See IBM Prerequisite.
2. If you are performing an installation or replacement procedure that might put your data at risk, ensure, wherever possible, that you have a current backup of your system or logical partition (including operating systems, licensed programs, and data).
3. Review the installation or replacement procedure for the feature or part.
4. Note the significance of color on your system.

Blue or terra-cotta on a part of the hardware indicates a touch point where you can grip the hardware to remove it from or install it in the system, open or close a latch, and so on. Terra-cotta might also indicate that the part can be removed and replaced with the system or logical partition power on.

5. Ensure that you have access to a medium flat-blade screwdriver, a Phillips screwdriver, and a pair of scissors.
6. If parts are incorrect, missing, or visibly damaged, do the following:
 - If you are replacing a part, contact the provider of your parts or next level of support.
 - If you are installing a feature, contact one of the following service organizations:
 - The provider of your parts or next level of support.
 - In the United States, the IBM Rochester Manufacturing Automated Information Line (R-MAIL) at 1-800-300-8751.

In countries and regions outside of the United States, use the following website to locate your service and support telephone numbers:

<http://www.ibm.com/planetwide>

7. If you encounter difficulties during the installation, contact your service provider, your IBM reseller, or your next level of support.
8. For the IBM Power System S822LC (8335-GCA and 8335-GTA) systems, ensure that the top cover is on when running for thermal performance.
9. If you are installing new hardware in a logical partition, you need to understand and plan for the implications of partitioning your system. For information, see Logical Partitioning.

Identifying the system that contains the part to replace

Learn how to determine which server or enclosure has the part you want to replace.

About this task

If the part does not have problem indicator LED, you will need to use a troubleshooting program such as **impitool** to identify the issue.

LEDs on the 8335-GCA or 8335-GTA system

Use this information as a guide to the LEDs on the IBM Power System S822LC (8335-GCA and 8335-GTA) system.

The LEDs indicate various system status. These LEDs are located at the front (as shown in Figure 106 on page 104) and at the rear of the system.

- The green LED indicates the power status.
 - A constant light indicates full system power to the unit.
 - A flashing light indicates standby power to the unit.
 - It takes approximately 30-seconds from the time the power-on button is pressed to when the power LED changes from flashing to solid. During the transition period, the LED might flash faster.
- The amber LED indicates a problem in the system.
- The blue LED is used to identify the system that requires service.

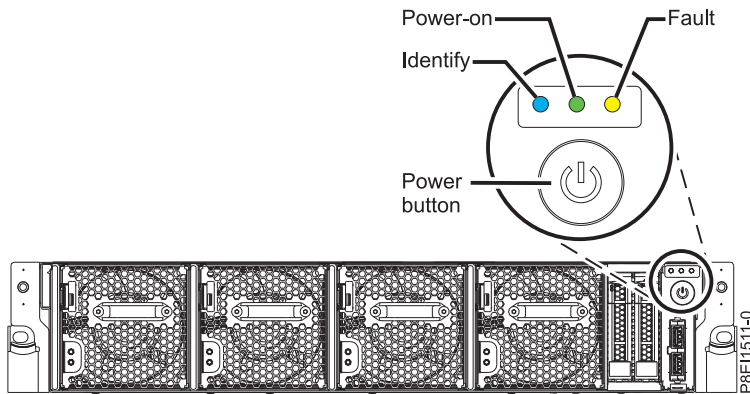


Figure 106. LEDs on an 8335-GCA or 8335-GTA system

LED indicators are located on the following parts:

- At the front of the system:
 - Disk drives (green LED indicates activity; amber LED indicates a problem)
 - Fans (green LED indicates activity; amber LED indicates a problem)
- At the rear of the system:
 - Backplane, near the rear LAN port: Green, amber, and blue (same as on the front next to the power button)
 - Power supplies (Two green LEDs indicate AC and DC power; amber LED indicates a problem)

Identifying the 8335-GCA or 8335-GTA that needs servicing

Use the Intelligent Platform Management Interface (IPMI) program to turn on the blue identify LED to help you find the system that needs servicing.

Procedure

Use the **ipmitool** command to activate the blue system identify LED.

For in-band networks, the chassis identify command is:

```
ipmitool -I <interface> chassis identify <interval>
```

Where:

interface

Is the interface you are using to connect to the system; for example usb.

interval

Is the time to turn on the identify LED in seconds. The default is 15; meaning the LED is on for 15 seconds then turns off. A value of zero (0) turns off the LED. A value of force turns on the LED and leaves it on until turned off.

To run the command remotely over the LAN, the chassis identify command to enter is:

```
ipmitool -I lanplus -H <hostname> -U <username> -P <password> chassis identify <interval>
```

Preparing the system to remove and replace internal parts in the 8335-GCA or 8335-GTA

To prepare the IBM Power System S822LC (8335-GCA and 8335-GTA) system to remove and replace internal parts, complete the steps in this procedure.

Procedure

1. Complete the prerequisite tasks. For instructions, see “Before you begin” on page 100.

2. Identify the part and the system that you will be working on. For instructions, see “Identifying the system that contains the part to replace” on page 103.
3. If applicable, open the rack front door.
4. Attach the electrostatic discharge (ESD) wrist strap.

Attention:

- Attach an electrostatic discharge (ESD) wrist strap to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
 - When using an ESD wrist strap, follow all electrical safety procedures. An ESD wrist strap is used for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have an ESD wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
5. Remove the front cover. For instructions, see “Removing the front cover from an 8335-GCA or 8335-GTA system” on page 110.

(L007)

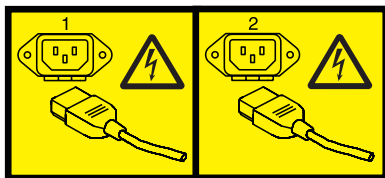


CAUTION: A hot surface nearby. (L007)

6. Stop the system. For instructions, see “Stopping the system” on page 108.
7. If applicable, open the rack door at the rear of the system.
8. Disconnect the power source from the system by unplugging the system. For instructions, see “Disconnecting the power cords from an 8335-GCA or 8335-GTA system” on page 113.

Note: The system might be equipped with redundant power supply. Before you continue with this procedure, ensure that all power to your system is disconnected.

(L003)



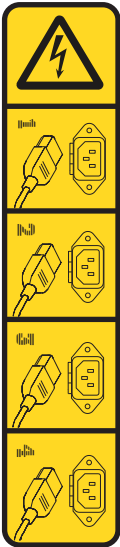
or



or



or



DANGER: Multiple power cords. The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords. (L003)

9. Remove the two power supplies from the system. For instructions, see "Removing a power supply from the 8335-GCA or 8335-GTA" on page 52.
10. Place the system into the service position. For instructions, see "Placing an 8335-GCA or 8335-GTA system into the service position" on page 112.

(R008)

CAUTION: Do not place any object on top of a rack-mounted device unless that rack-mounted device is intended for use as a shelf. (R008)

(L012)



or



CAUTION: Pinch hazard. (L012)

11. Remove the service access cover. For instructions, see “Removing the service access cover from an 8335-GCA or 8335-GTA system” on page 109.

Preparing the system for operation after removing and replacing internal parts for the 8335-GCA or 8335-GTA

To prepare the IBM Power System S822LC (8335-GCA and 8335-GTA) system for operation after removing and replacing internal parts, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Replace the service access cover. For instructions, see “Installing the service access cover on an 8335-GCA or 8335-GTA system” on page 109.
3. Place the system into the operating position. For instructions, see “Placing an 8335-GCA or 8335-GTA system into the operating position” on page 112.

(L012)



or



CAUTION: Pinch hazard. (L012)

4. Install both of the power supplies into the system. For instructions, see “Replacing a power supply in the 8335-GCA or 8335-GTA” on page 53.
5. Reconnect the power cords to the system. For instructions, see “Connecting the power cords to an 8335-GCA or 8335-GTA system” on page 115.
6. If applicable, close the rack door at the rear of the system.
7. Start the system. For instructions, see “Starting the system” on page 108.
8. Replace the front cover. For instructions, see “Installing the front cover on an 8335-GCA or 8335-GTA system” on page 111.
9. If applicable, close the rack front door.

10. Verify the installed part. See Verifying a repair in the 8335-GCA or 8335-GTA. (www.ibm.com/support/knowledgecenter/POWER8//p8ei3/p8ei3_verifyrepair.htm)

Starting and stopping the 8335-GCA or 8335-GTA

Learn how to start and stop the IBM Power System S822LC (8335-GCA and 8335-GTA) system for performing a service action or system upgrade.

Starting the system

You use the power button to start the system.

About this task

Attention: For safety, airflow purposes and thermal performance, the service access cover must be installed and fully seated prior to powering the system on.

Procedure

1. Open the front rack door, if necessary.
2. Before you press the power button, ensure that the power supplies are connected to the system unit and verify the following items:
 - All system power cables are connected to a power source.
 - The Power-on LED, as shown in Figure 107, is flashing. A flashing light indicates standby power to the unit.
3. Press the power button shown in Figure 107. The power-on light stops flashing and remains on, indicating that the system power is on. The system cooling fans are operate at a high speed, and after approximately 30 seconds, return to operating speed.

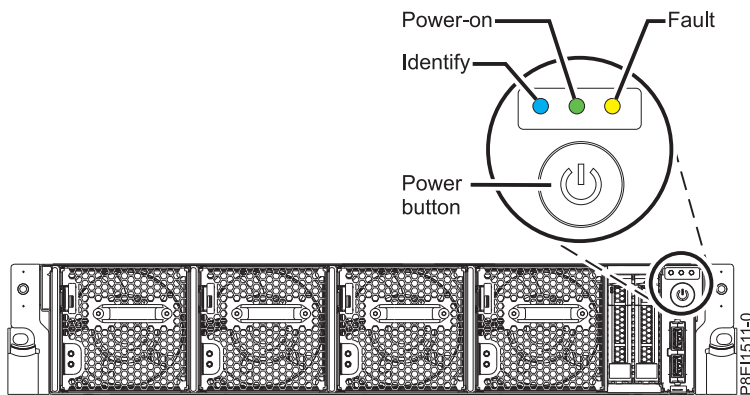


Figure 107. Power button

What to do next

If pressing the power button does not start the system, then contact your next level of support or your service provider.

Stopping the system

Learn how to stop the system to complete another task.

Procedure

You can use the Linux **shutdown** command to stop and power down the system.

From Linux, run the following command to shut down the system in 10 minutes and send the message "System shutdown in 10 minutes; repairs coming." to the users.

shutdown -P +10 "System shutdown in 10 minutes; repairs coming."

The -P setting instructs the system to shut down and then power down.

Removing and replacing covers on an 8335-GCA or 8335-GTA system

Learn how to remove and replace the covers for an IBM Power System S822LC (8335-GCA and 8335-GTA) system so that you can access the hardware parts or perform service.

Removing the service access cover from an 8335-GCA or 8335-GTA system

Learn how to remove the service access cover from an IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Remove the power supplies from the system. For instructions, see "Removing a power supply from the 8335-GCA or 8335-GTA" on page 52.
2. Release the cover by pressing the blue release latch (A).
3. While pressing down on latch (A) and touch point (B), slide the cover (C) toward the rear of the system unit. When the front of the service access cover clears the upper frame ledge, lift the cover up and off the system unit.

Attention: For proper cooling and airflow, replace the cover before powering on the system.

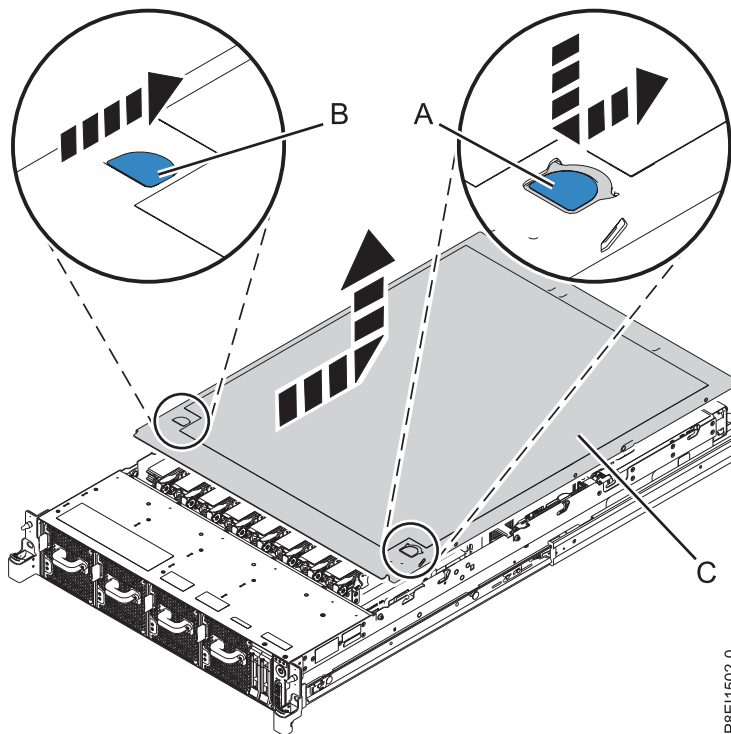


Figure 108. Removing the service access cover

Installing the service access cover on an 8335-GCA or 8335-GTA system

Learn how to install the service access cover on a rack-mounted IBM Power System S822LC (8335-GCA and 8335-GTA) system.

About this task

Attention: For safety, airflow purposes and thermal performance, the service access cover must be installed and fully seated prior to powering the system on.

Procedure

1. Place the cover **(A)** on to the system unit such that the alignment pins on the cover are aligned to the slots on the chassis.
2. Press down to engage the pins and slide the cover to the front of the system until the blue release latch **(B)** locks in to place, as shown in Figure 109.

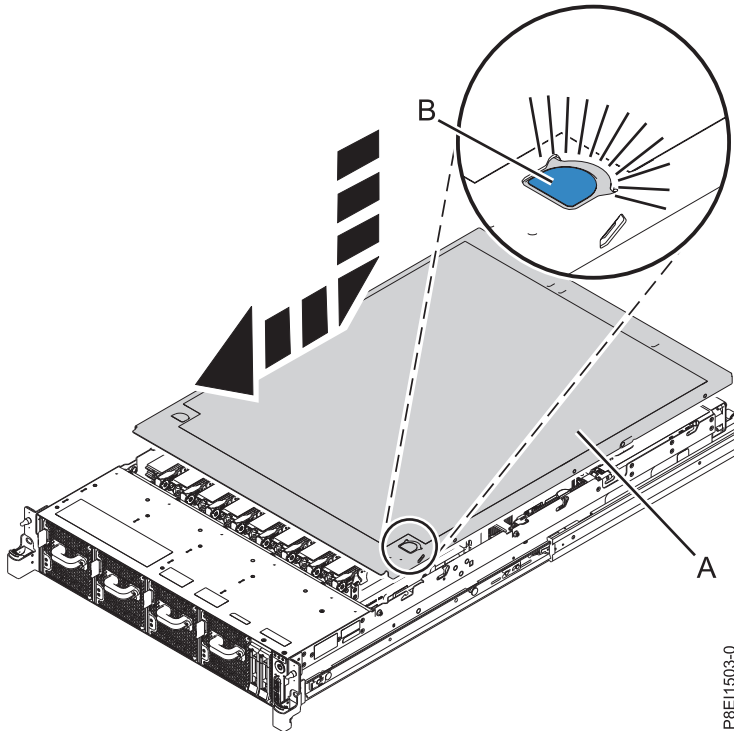


Figure 109. Installing the service access cover

3. Replace the power supplies into the chassis. For instructions, see “Replacing a power supply in the 8335-GCA or 8335-GTA” on page 53.

Removing the front cover from an 8335-GCA or 8335-GTA system

Learn how to remove the cover from an IBM Power System S822LC (8335-GCA and 8335-GTA) system so that you can access the components or perform service.

Procedure

1. If necessary, open the front rack door.
2. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
3. Loosen the screws **(A)** located on both sides of the cover to disengage the cover from the system unit.

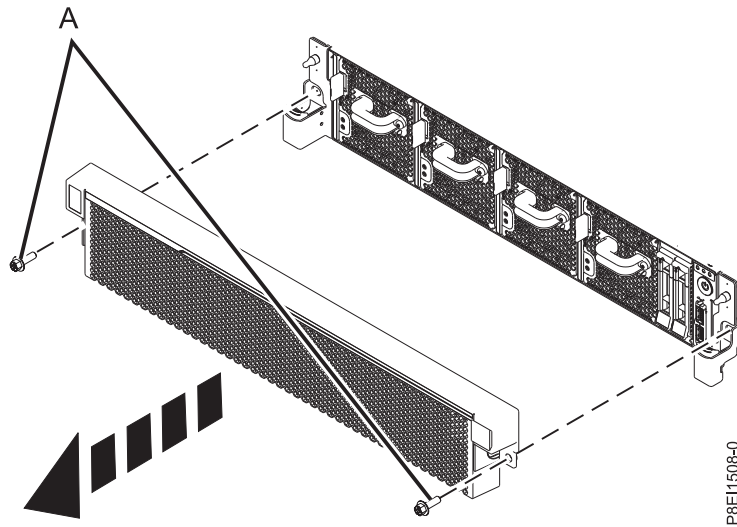


Figure 110. Removing the front cover

4. Pull the cover away from the system.

Installing the front cover on an 8335-GCA or 8335-GTA system

Learn how to install the front cover on an IBM Power System S822LC (8335-GCA and 8335-GTA) system after accessing the components or performing service.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap attached. If not, attach it now.
2. Position the cover on the front of the system unit so that the pins on the system match the holes at the rear of the cover.

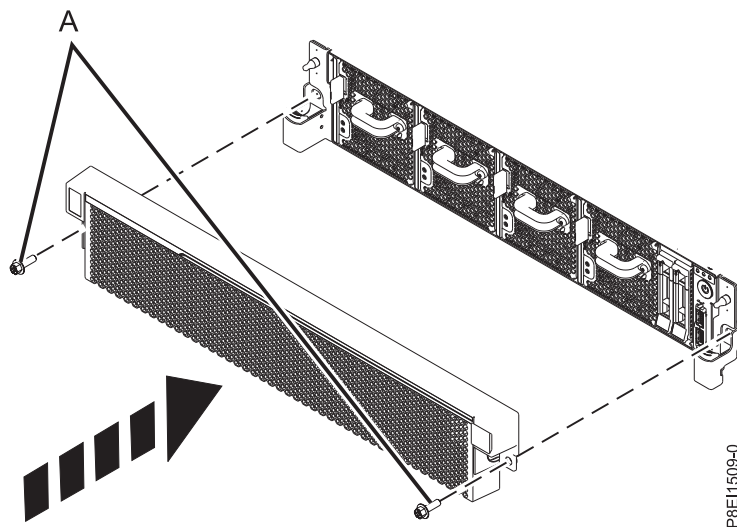


Figure 111. Installing the front cover

3. Press the cover on to the system unit such that the pins engage with the holes and cover is firmly in place.
4. Replace the screws (A) on each side of the cover to secure the system to the rack.
5. Close the front rack door.

Service and operating positions for 8335-GCA or 8335-GTA

Learn how to place on an IBM Power System S822LC (8335-GCA and 8335-GTA) system into the service or operating position.

Placing an 8335-GCA or 8335-GTA system into the service position

Learn how to place an IBM Power System S822LC (8335-GCA and 8335-GTA) system into the service position.

Before you begin

Notes:

- When placing the system into the service position, it is essential that all stability plates are firmly installed to prevent the rack from toppling. Ensure that only one system unit is in the service position at a time.
- Ensure that the cables at the rear of the system unit do not catch or bind as you pull the system unit forward in the rack.
- When the rails are fully extended, the rail safety latches lock into place. This action prevents the system from being pulled out too far.

Procedure

1. Remove the screws on either side of the system that secure the system to the rack.
2. Push down the front latches (A) that secure the system unit to the rack.

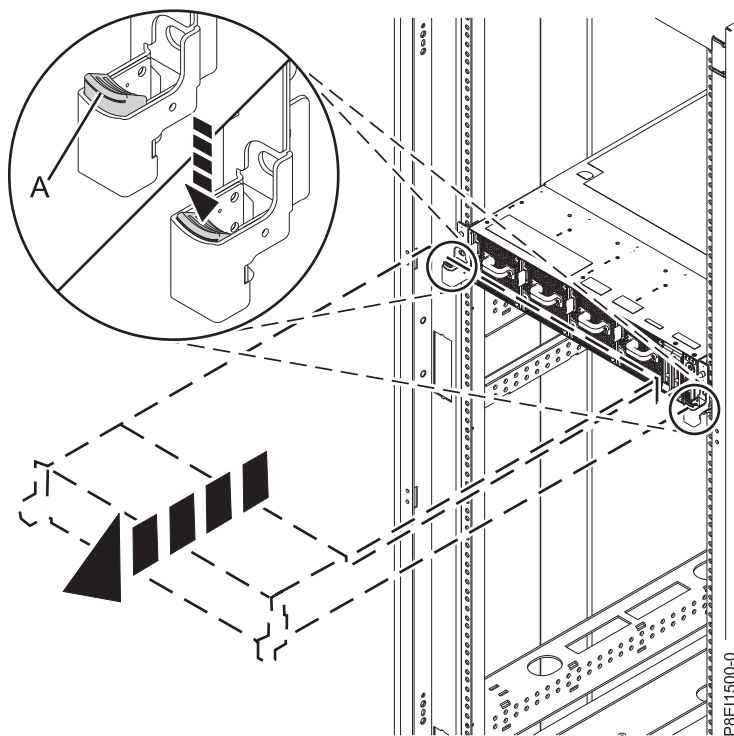


Figure 112. Placing the system into the service position

3. Pull the system unit out of the rack.

Placing an 8335-GCA or 8335-GTA system into the operating position

Learn how to place an IBM Power System S822LC (8335-GCA and 8335-GTA) system into the operating position.

Before you begin

When you place the system in the operating position, ensure that the cables at the rear of the system do not catch or bind as you push the system unit back into the rack.

Procedure

1. Unlock the blue rail safety latches (**A**) by lifting them upward.
2. Align the system unit on to the rails and push the system unit back into the rack until both release latches lock into position.

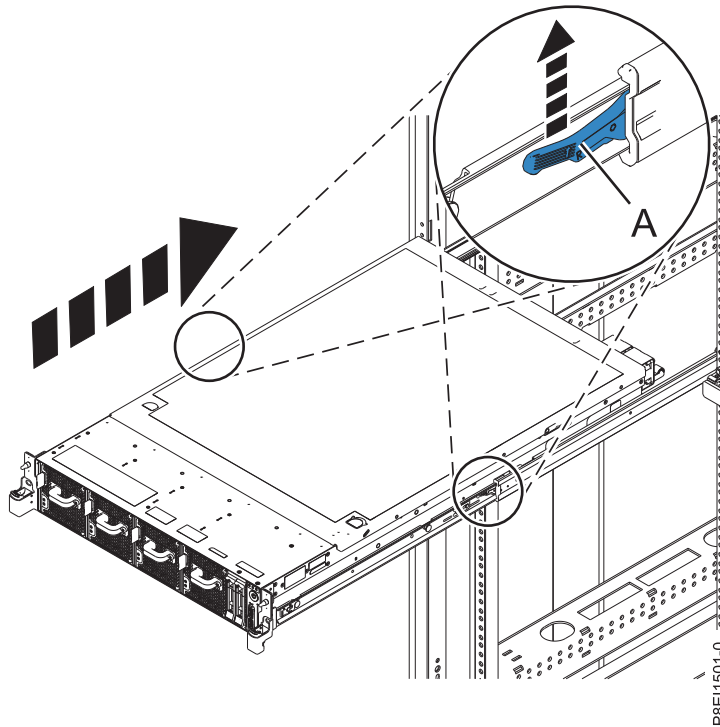


Figure 113. Placing the system into the operating position

Power cords

Learn how to disconnect and connect the power cords on IBM Power System S822LC (8335-GCA and 8335-GTA) systems.

Disconnecting the power cords from an 8335-GCA or 8335-GTA system

Learn how to disconnect the power cords from an IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Open the rear rack door on the system unit that you are servicing.
2. Identify the system unit that you are servicing in the rack.
3. Disconnect the power cords from the power supply handle. Unfasten the hook and loop fastener that ties the power cord to the power supply handle. Note how the power is looped; you will need to make that same loop when you reattach the power cords. There are two types of loops, detailed in Figure 114 on page 114 and Figure 115 on page 114.

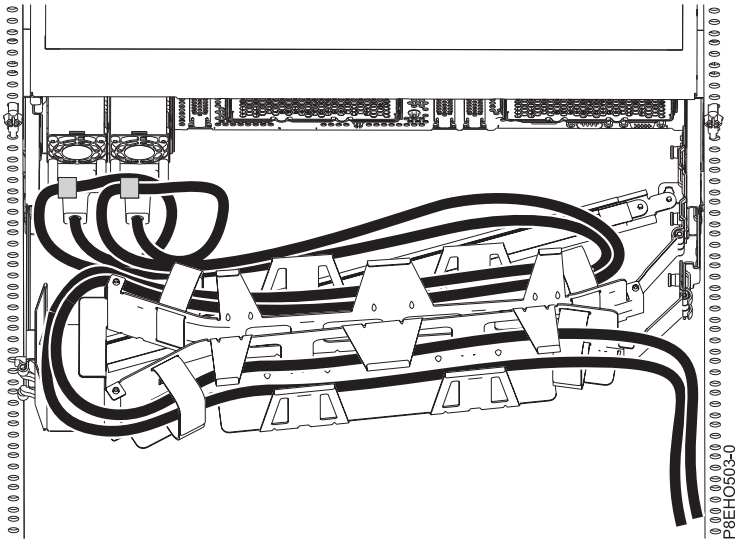


Figure 114. Power cord loop with cable management arm routing. The power cord loops counter-clockwise to the right.

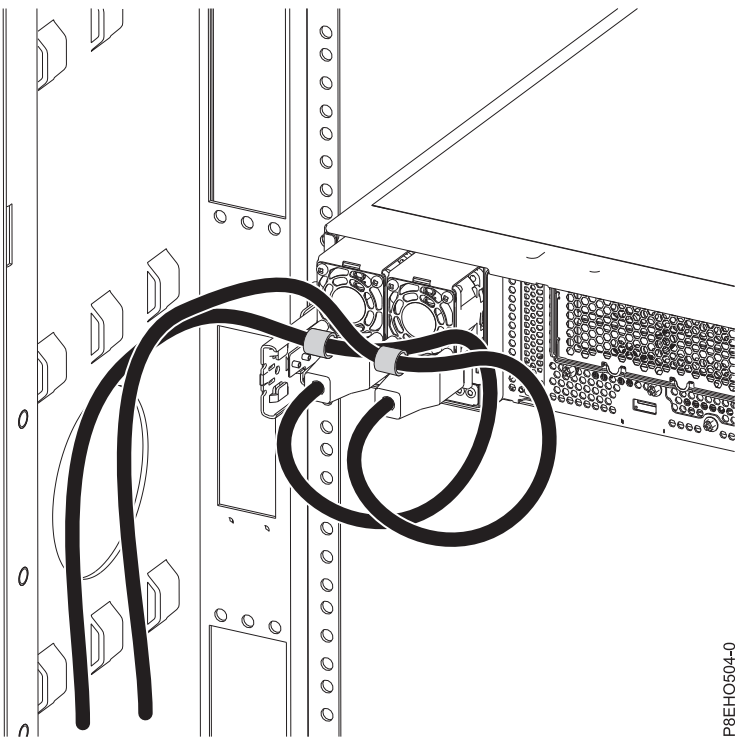


Figure 115. Power cord loop with sidewall routing. The power cord loops counter-clockwise to the left.

4. Disconnect the power cords from the system unit. See figure Figure 116 on page 115.

Note: This system might be equipped with two or more power supplies. If the removing and replacing procedures require the power to be off, then ensure that all the power sources to the system have been completely disconnected.

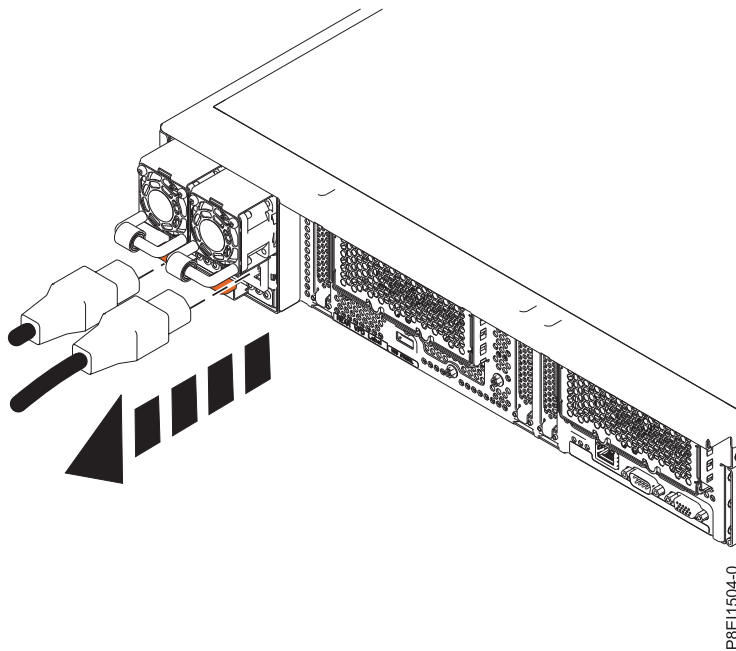


Figure 116. Removing the power cords from an 8335-GTA or 8335-GCA system

Connecting the power cords to an 8335-GCA or 8335-GTA system

Learn how to connect the power cords to an IBM Power System S822LC (8335-GCA and 8335-GTA) system.

Procedure

1. Open the rear rack door on the system unit that you are servicing.
2. Reconnect the power cords to the system unit. See figure Figure 117 on page 116.

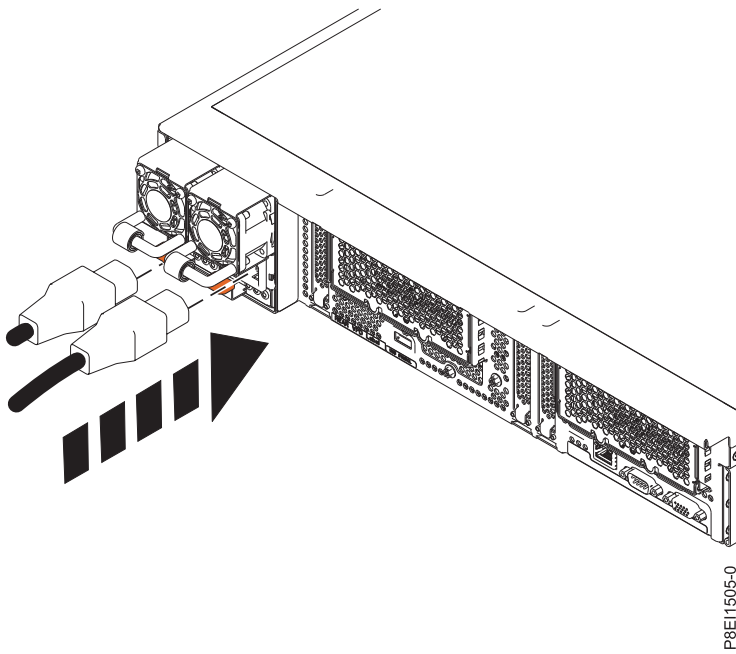


Figure 117. Connecting the power cords to an 8335-GTA or 8335-GCA system

3. Loop and attach the power cords to the power supply handle. Note how the power is looped; be sure to maintain at least a 5 cm (2 in.) diameter loop. There are two types of loops, detailed in Figure 118 and Figure 119 on page 117. Use the hook-and-loop fastener to tie the power cord to the power supply handle.

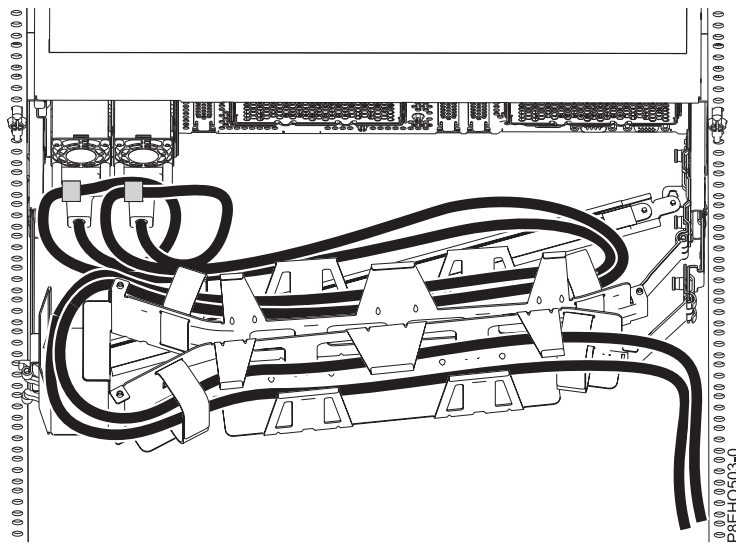


Figure 118. Power cord loop with cable management arm routing. The power cord loops counterclockwise to the right.

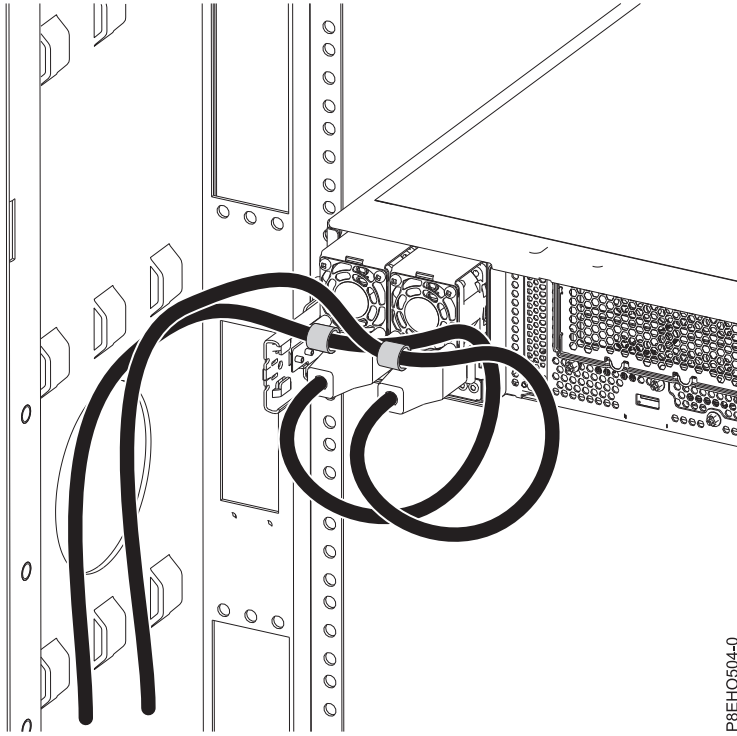


Figure 119. Power cord loop with sidewall routing. The power cord loops counterclockwise to the left.

4. Close the rack door at the rear of the system.

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Federal Communications Commission (FCC) statement

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Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

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IBM-Allee 1, 71139 Ehningen, Germany
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Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:
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New Orchard Road
Armonk, New York 10504
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
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Technical Regulations, Abteilung M372
IBM-Allee 1, 71139 Ehningen, Germany
Tel: +49 (0) 800 225 5423 or +49 (0) 180 331 3233
email: halloibm@de.ibm.com

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If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM-authorized dealer or service representative for help.

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This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Compliance Statement

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