

Power Systems

*Service processor card for the 9009-41A,
9009-41G, 9009-42A, 9009-42G,
9223-42H, or 9223-42S*

IBM

Note

Before using this information and the product it supports, read the information in [“Safety notices” on page v](#), [“Notices” on page 25](#), the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125-5823.

This edition applies to IBM® Power Systems servers that contain the POWER9™ processor and to all associated models.

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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.

German safety information

Das Produkt ist nicht für den Einsatz an Bildschirmarbeitsplätzen im Sinne § 2 der Bildschirmarbeitsverordnung geeignet.

Laser safety information

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

Laser compliance

IBM 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. For AC power, disconnect all power cords from their AC power source. For racks with a DC power distribution panel (PDP), disconnect the customer's DC power source to the PDP.
- When connecting power to the product ensure all power cables are properly connected. For racks with AC power, 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. For racks with a DC power distribution panel (PDP), connect the customer's DC power source to the PDP. Ensure that the proper polarity is used when attaching the DC power and DC power return wiring.
- 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.
- When performing a machine inspection: 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 attempt to switch power to the machine until all possible unsafe conditions are corrected. Before you open the device covers, unless instructed otherwise in the installation and configuration procedures: Disconnect the attached AC power cords, turn off the applicable circuit breakers located in the rack power distribution panel (PDP), and disconnect any telecommunications systems, networks, and modems.
- 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) For AC power, remove the power cords from the outlets. 3) For racks with a DC power distribution panel (PDP), turn off the circuit breakers located in the PDP and remove the power from the Customer's DC power source. 4) Remove the signal cables from the connectors. 5) 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) For AC power, attach the power cords to the outlets. 5) For racks with a DC power distribution panel (PDP), restore the power from the Customer's DC power source and turn on the circuit breakers located in the PDP. 6) 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)

(R001 part 1 of 2):



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 if provided, unless the earthquake option is to be installed.
- 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. In addition, do not lean on rack mounted devices and do not use them to stabilize your body position (for example, when working from a ladder).



- Stability hazard:
 - The rack may tip over causing serious personal injury.
 - Before extending the rack to the installation position, read the installation instructions.
 - Do not put any load on the slide-rail mounted equipment mounted in the installation position.
 - Do not leave the slide-rail mounted equipment in the installation position.
- Each rack cabinet might have more than one power cord.
 - For AC powered racks, be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.

- For racks with a DC power distribution panel (PDP), turn off the circuit breaker that controls the power to the system unit(s), or disconnect the customer’s DC power source, 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. (R001 part 1 of 2)

(R001 part 2 of 2):



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 or if the rack is not bolted to the floor. 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 part 2 of 2)



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 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 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 2083 mm (30 x 82 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 or in an earthquake environment bolt the rack to the floor.
 - 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)



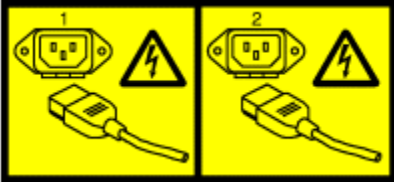
DANGER: Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack-mounted devices and do not use them to stabilize your body position (for example, when working from a ladder). Stability hazard:

- The rack may tip over causing serious personal injury.
- Before extending the rack to the installation position, read the installation instructions.

- Do not put any load on the slide-rail mounted equipment mounted in the installation position.
- Do not leave the slide-rail mounted equipment in the installation position.

(L002)

(L003)



or



or

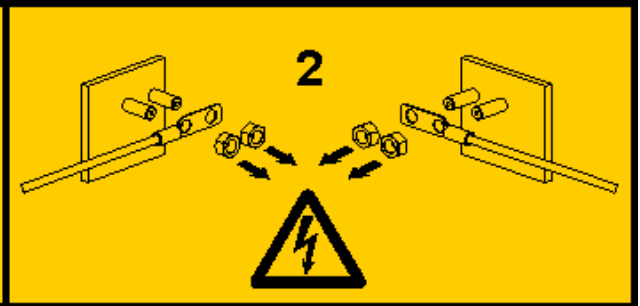
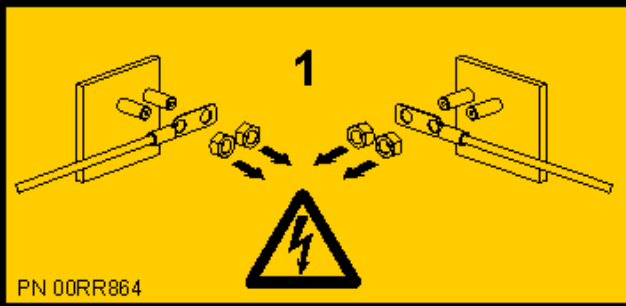


or



or





DANGER: Multiple power cords. The product might be equipped with multiple AC power cords or multiple DC power cables. To remove all hazardous voltages, disconnect all power cords and power cables. (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)

(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 degrees C (212 degrees 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)



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 raise, lower or slide platform load shelf unless stabilizer (brake pedal jack) is fully engaged. Keep stabilizer brake engaged when not in use or motion.
- 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 platforms, tilt riser, angled unit install wedge or other such accessory options. Secure such platforms -- riser tilt, wedge, etc options to main lift shelf or forks in all four (4x or all other provisioned mounting) 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 [adjustable angling platform] option flat at all times except for final minor angle 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 (unless the specific allowance is provided for one following qualified procedures for working at elevations with this 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.
- This TOOL must be maintained correctly for IBM Service personnel to use it. IBM shall inspect condition and verify maintenance history before operation. Personnel reserve the right not to use TOOL if inadequate. (C048)

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

The following comments apply to the IBM 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.

Service processor card for the 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-42H, or 9223-42S

Find information about removing and replacing the service processor card in the IBM Power® System S914 (9009-41A and 9009-41G), IBM Power System S924 (9009-42A and 9009-42G), IBM Power System H924 (9223-42H), or IBM Power System H924S (9223-42S) server.

Removing and replacing the service processor card in the 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-42H, or 9223-42S

Find information about removing and replacing the service processor card in the IBM Power System S914 (9009-41A and 9009-41G), IBM Power System S924 (9009-42A and 9009-42G), IBM Power System H924 (9223-42H), or IBM Power System H924S (9223-42S) system.

About this task

Removing and replacing the service processor card is a nonconcurrent procedure, which requires the system to be powered off. The service processor card is installed into slot P1-C1.

If your system is managed by the Hardware Management Console (HMC), use the HMC to repair a part in the system. For instructions, see [Repairing a part by using the HMC \(www.ibm.com/support/knowledgecenter/POWER9/p9haj/p9haj_hmc_repair.htm\)](http://www.ibm.com/support/knowledgecenter/POWER9/p9haj/p9haj_hmc_repair.htm).

If your system is not managed by an HMC, complete the steps in the following procedures to remove and replace the service processor card.

Preparing the 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-42H, or 9223-42S system to remove and replace the service processor card

To prepare the system to remove and replace the service processor card, complete the steps in this procedure.

Procedure

1. Access the Advanced System Management Interface (ASMI).
For instructions, see [Accessing the ASMI without an HMC \(www.ibm.com/support/knowledgecenter/POWER9/p9hby/connect_asmi.htm\)](http://www.ibm.com/support/knowledgecenter/POWER9/p9hby/connect_asmi.htm).
2. Check and record the current firmware level.
On the ASMI Welcome pane, view the existing level of server firmware in the upper-right corner under the copyright statement, for example, 01EM310 or FW760.00 (AM760_019).
3. Check and record the following service processor card settings:
 - System Name
 - System Power Control
 - System Service Aids
 - System Configuration
 - Network Services
 - Performance Option
 - Login Profile

4. Identify the part and the system that you are working on. For instructions, see [Identifying a part](http://www.ibm.com/support/knowledgecenter/POWER9/p9haj/sal.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9haj/sal.htm).
Use the blue identify LED on the enclosure to locate the system. Ensure that the serial number of the system matches the serial number to be serviced.
5. Stop the system. For instructions, see [Stopping a system](http://www.ibm.com/support/knowledgecenter/POWER9/p9haj/crustopsys.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9haj/crustopsys.htm).
6. Label and disconnect all external Ethernet, serial, and Universal Serial Bus (USB) cables that are connected to the service processor card.
7. Label and disconnect the power cords from the system unit.
See [Figure 1](#) on page 2 or [Figure 2](#) on page 3.

Notes:

- This system might be equipped with two or more power supplies. If the removing and replacing procedures require the system power to be turned off, ensure that all the power sources to the system are disconnected.
- The power cord (**B**) is fastened to the system with hook-and-loop fastener (**A**). If you are placing the system in a service position after you disconnect the power cords, ensure that you unstrap the fastener.

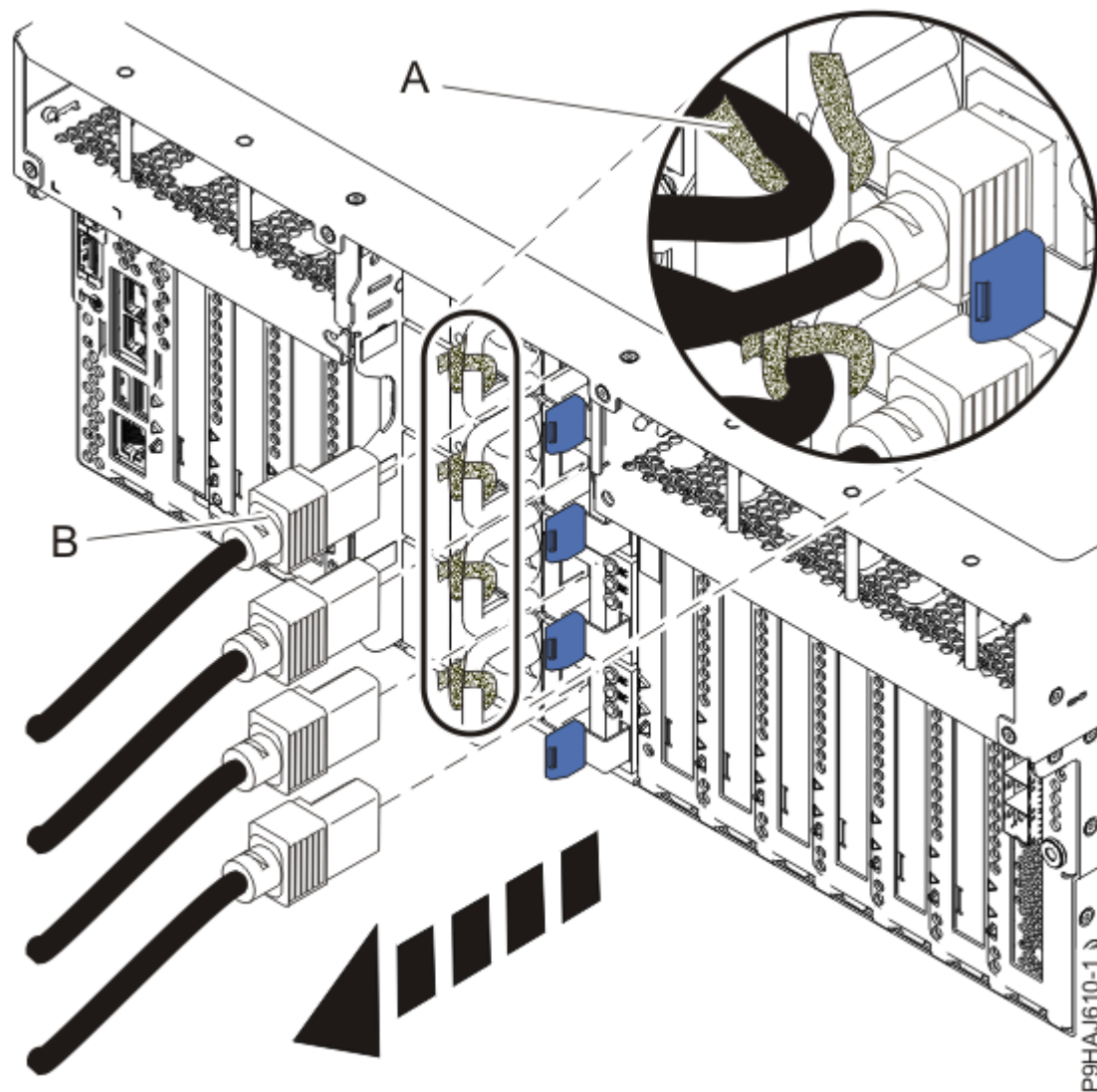


Figure 1. Removing the power cords from a rack-mounted server

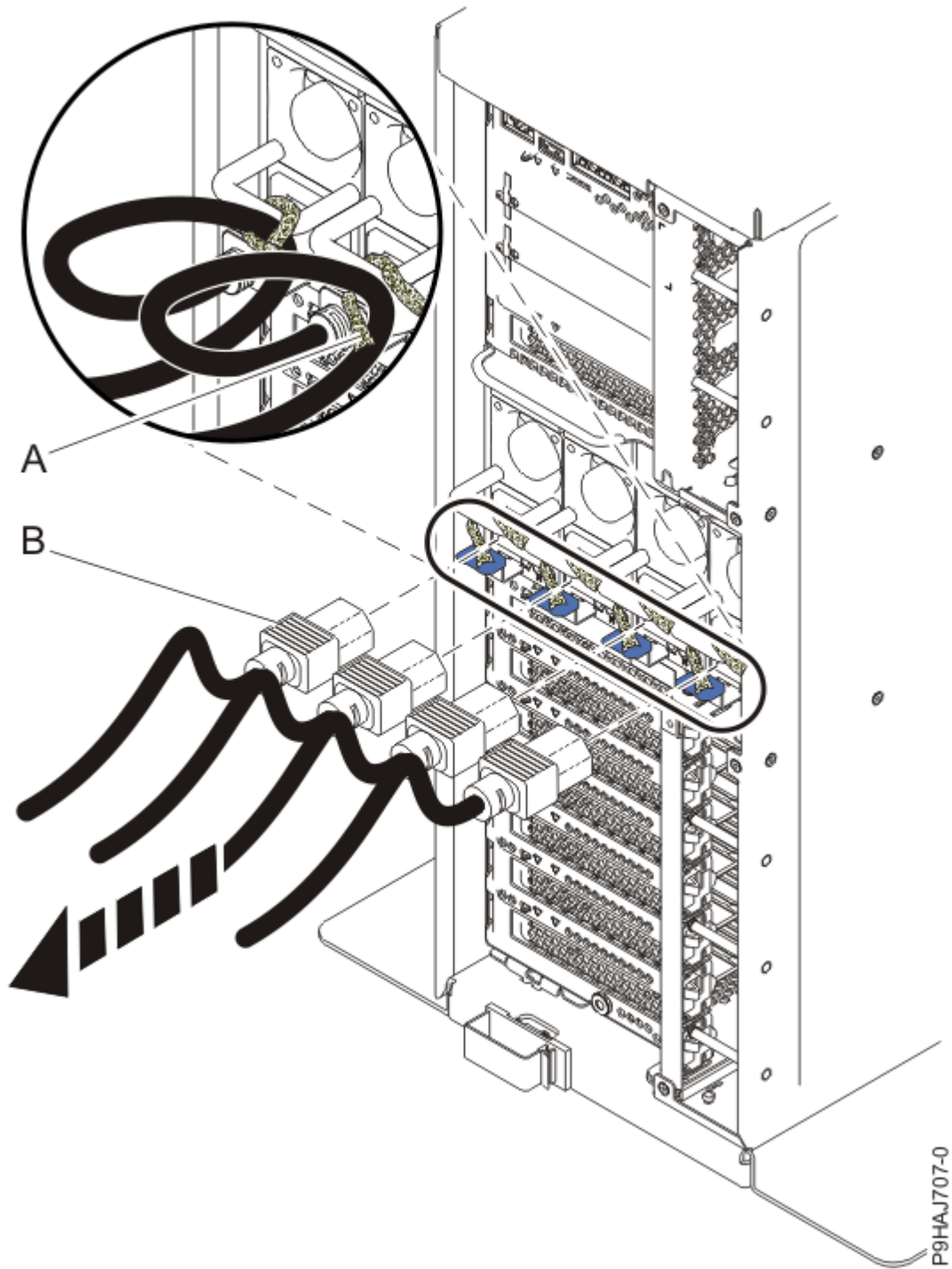
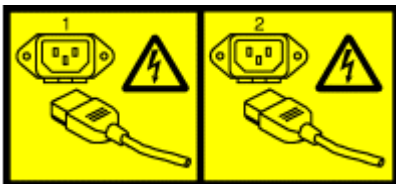


Figure 2. Removing the power cords from a stand-alone server

(L003)



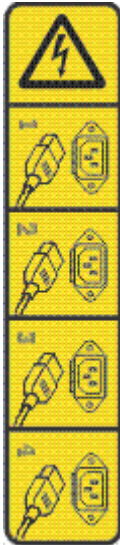
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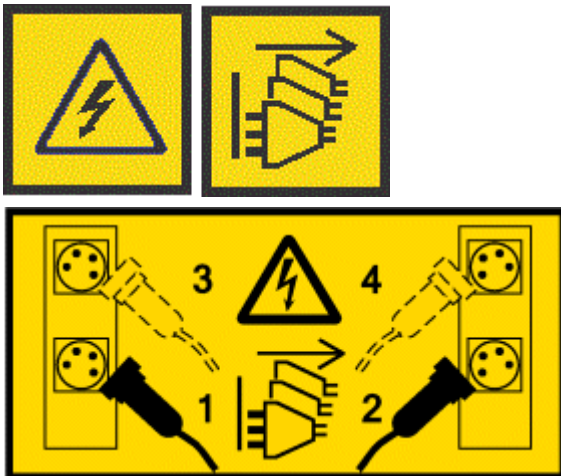
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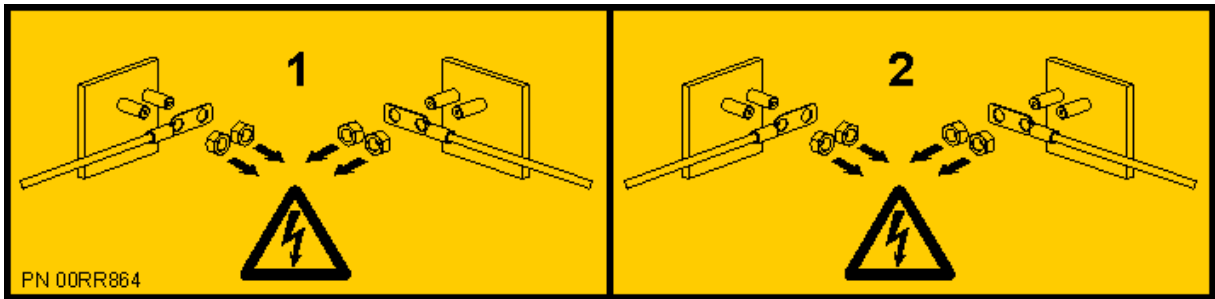


or



or





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

8. For a rack-mounted system, open the side latches **(A)** and pull the latches to slide the system unit fully into the service position until the slides click and hold the system unit securely. Ensure that the screws inside the latches are not secured to the rack.

See the following figure.

Remove the hook-and-loop fasteners that secure the cable management arms. Ensure that the cable management arms can move freely. Ensure that the cables at the rear of the system do not catch or bind as you pull the system unit into the service position.

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.



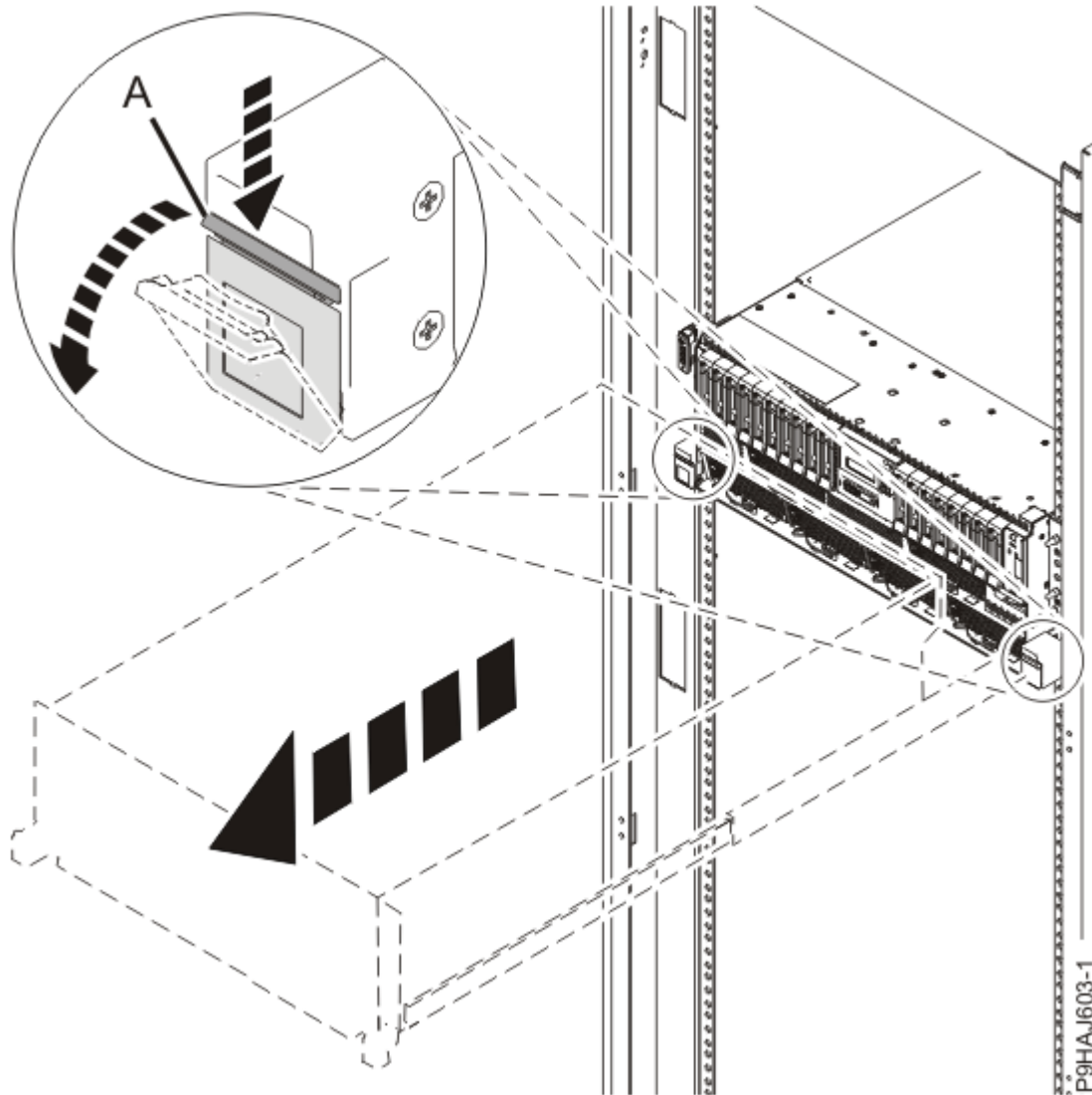


Figure 3. Releasing the side latches

9. Attach the electrostatic discharge (ESD) wrist strap. Your system has ESD jacks on the front and on the rear of the system as shown in the following figure. Plug the ESD wrist strap into the ESD jack.



Attention:

- Attach an electrostatic discharge (ESD) wrist strap to the front ESD jack, to the rear ESD jack, or to an unpainted metal surface of your hardware to prevent the electrostatic discharge from damaging your hardware.
- When you use 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.

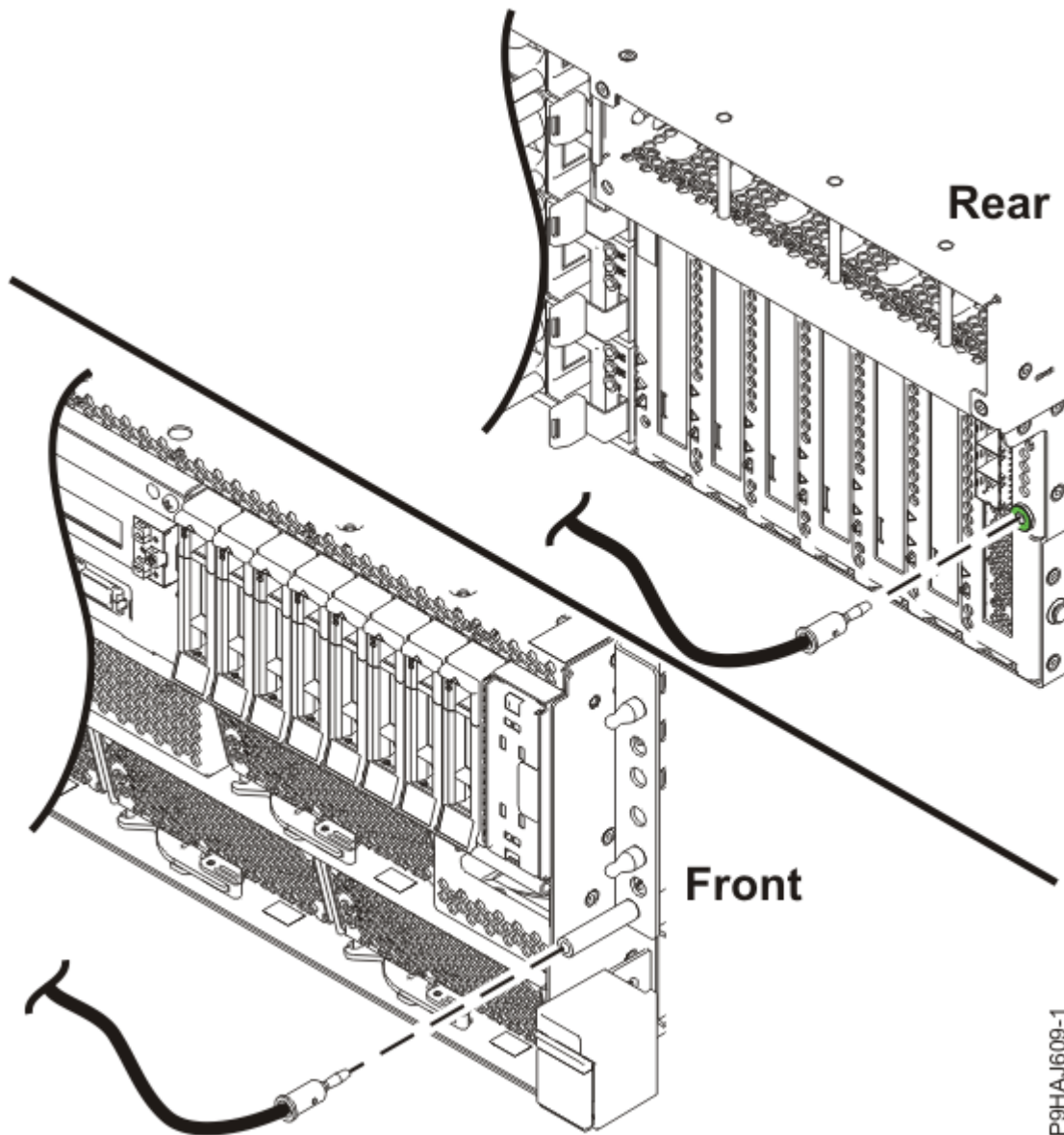


Figure 4. Location of ESD plugs

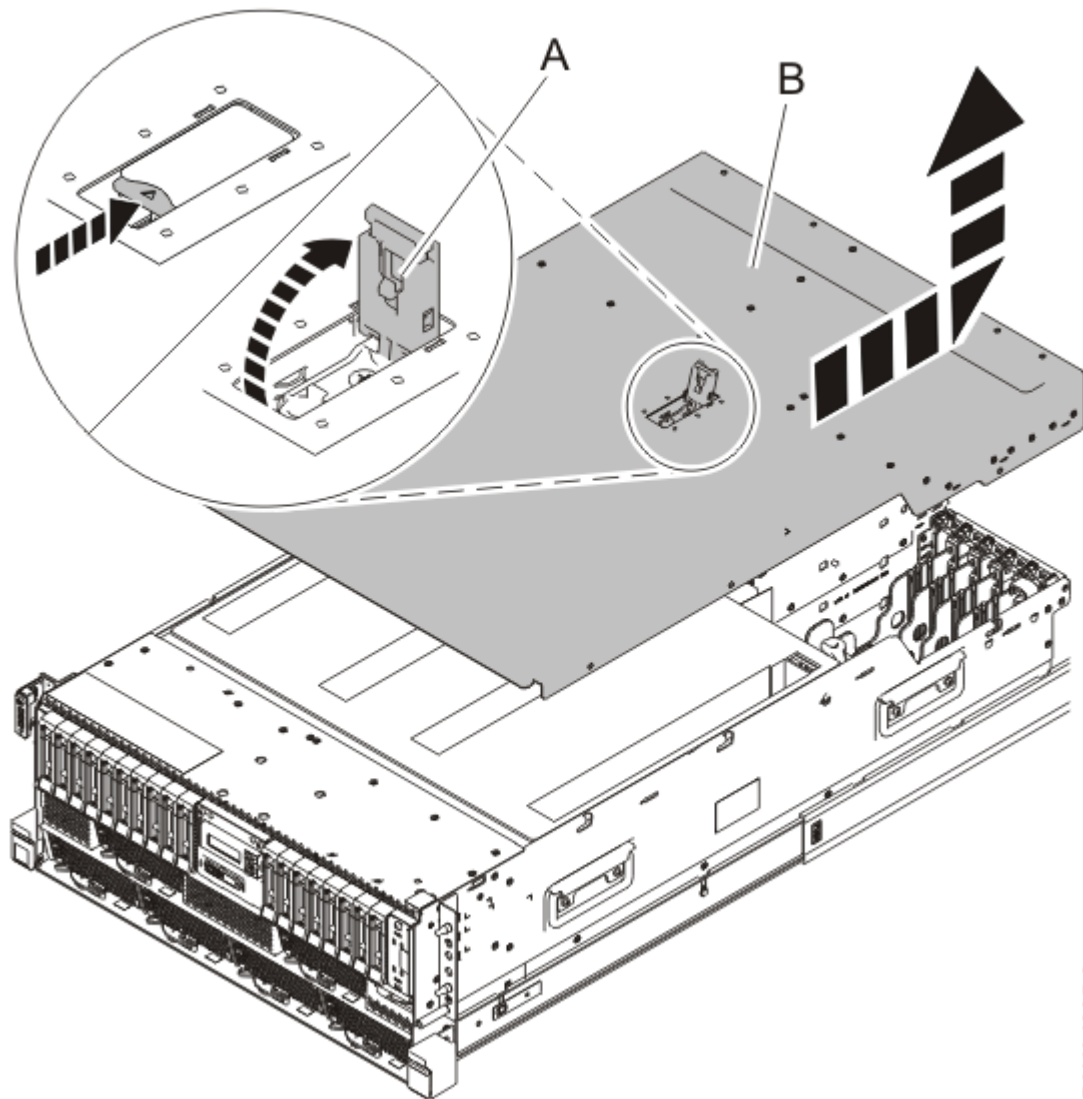
10. Remove the service access cover.

For a rack-mounted system, complete the following steps. Refer to [Figure 5](#) on page 8.



Attention: Operating the system without the service access cover on for more than 10 minutes when the system power is turned on might damage the system components.

- a. Release the service cover latch by pushing the release latch **(A)** in the direction shown.
- b. Slide the cover **(B)** off 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.



P9HAJ605-2

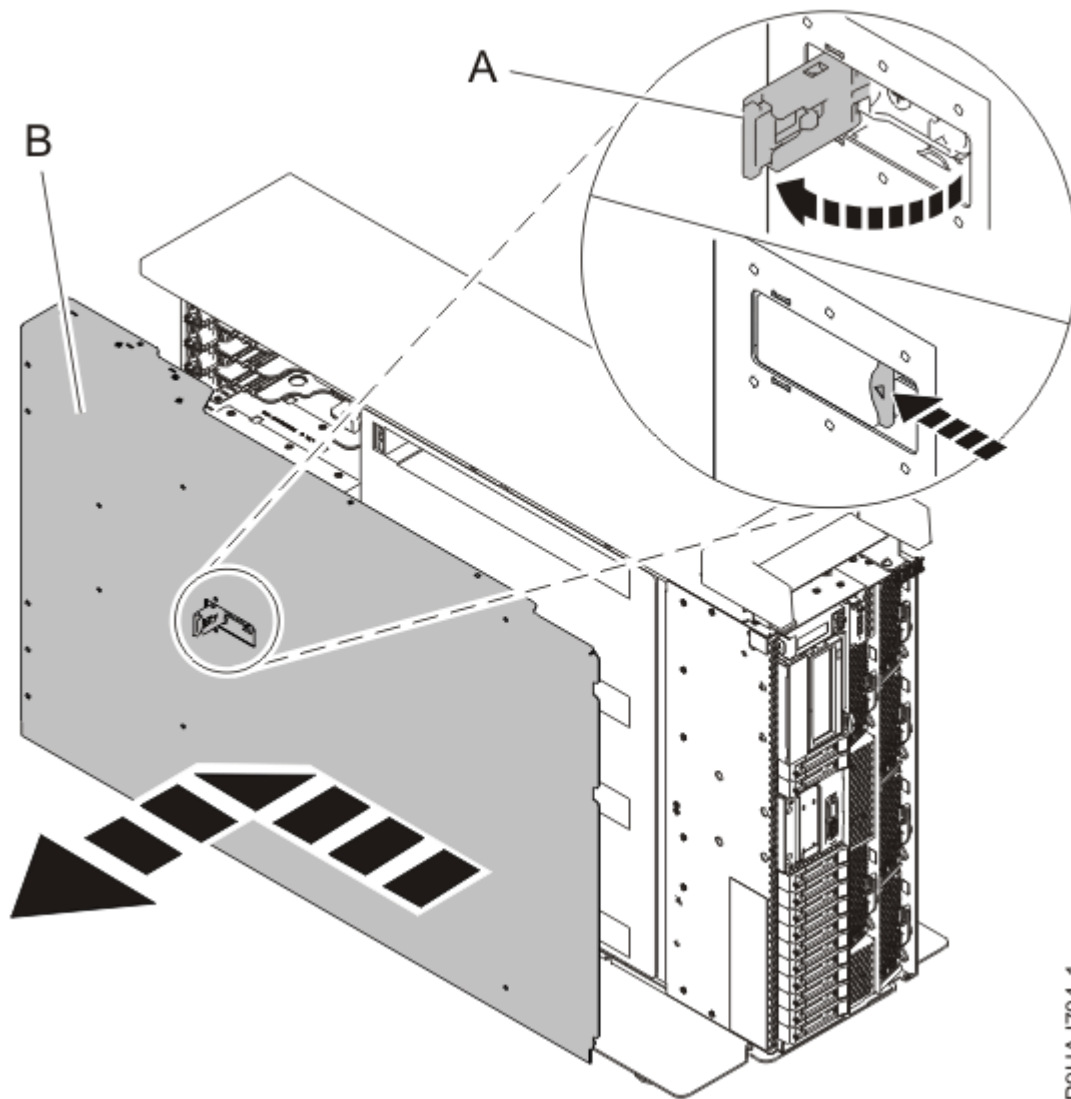
Figure 5. Removing the service access cover from a rack-mounted system

For a stand-alone system, complete the following steps. Refer to [Figure 6 on page 9](#).



Attention: Operating the system without the service access cover on for more than 10 minutes when the system power is turned on might damage the system components.

- a. Release the latch by pushing the release latch **(A)** in the direction shown.
- b. Slide the cover **(B)** off the system unit. When the front of the service access cover has cleared the upper frame ledge, lift the cover up and off the system unit.



P9HAJ704-1

Figure 6. Removing the service access cover

Removing the service processor card from the 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-42H, or 9223-42S system

To remove a service processor card from the system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap on and that the ESD clip is plugged into a ground jack or connected to an unpainted metal surface. If not, do so now.
2. Unplug the front and rear USB cables from the system backplane, because they cover the service processor card.

You can leave the cables connected to the system. Using your thumb, push the cable release latch and pull the cable from the system backplane. Lay the cables over the side of the system.

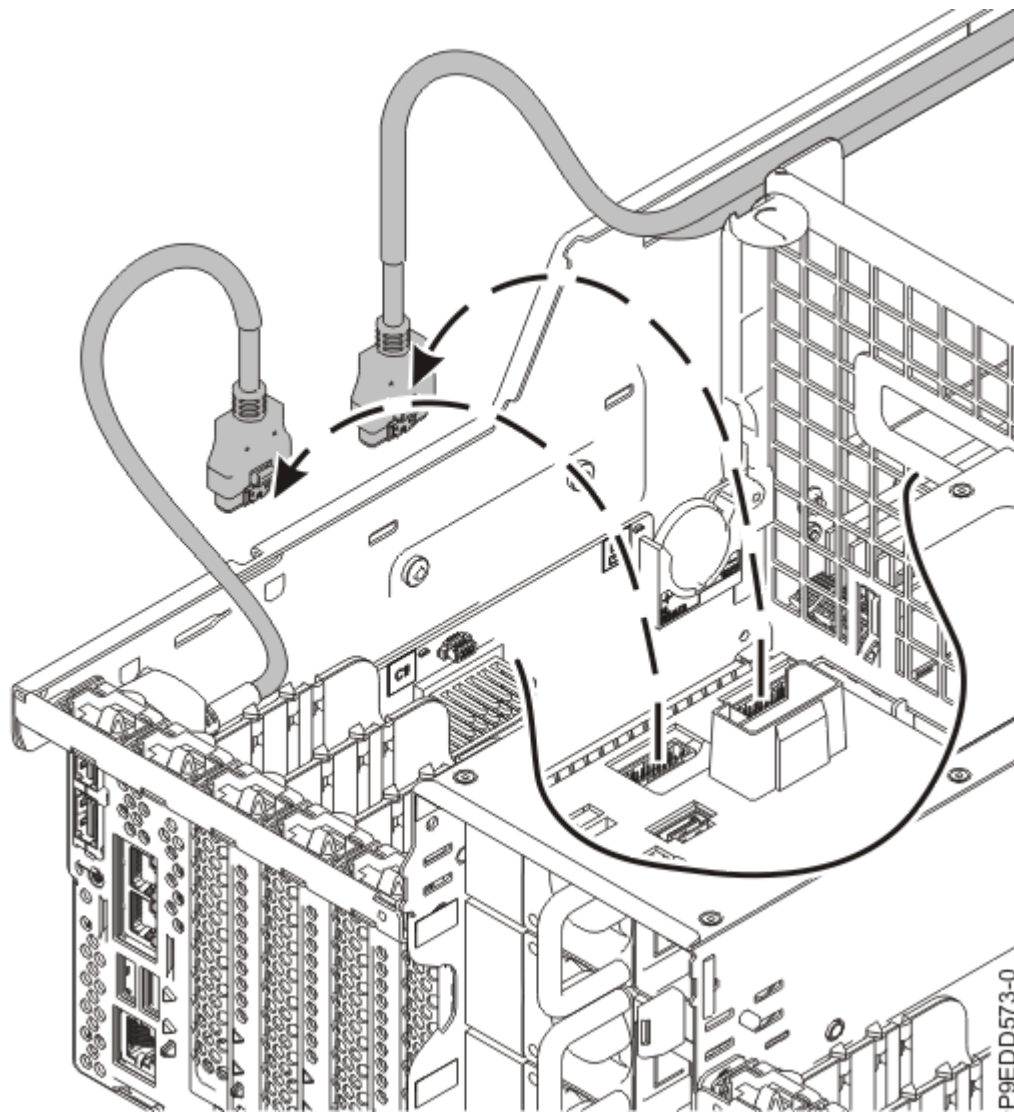
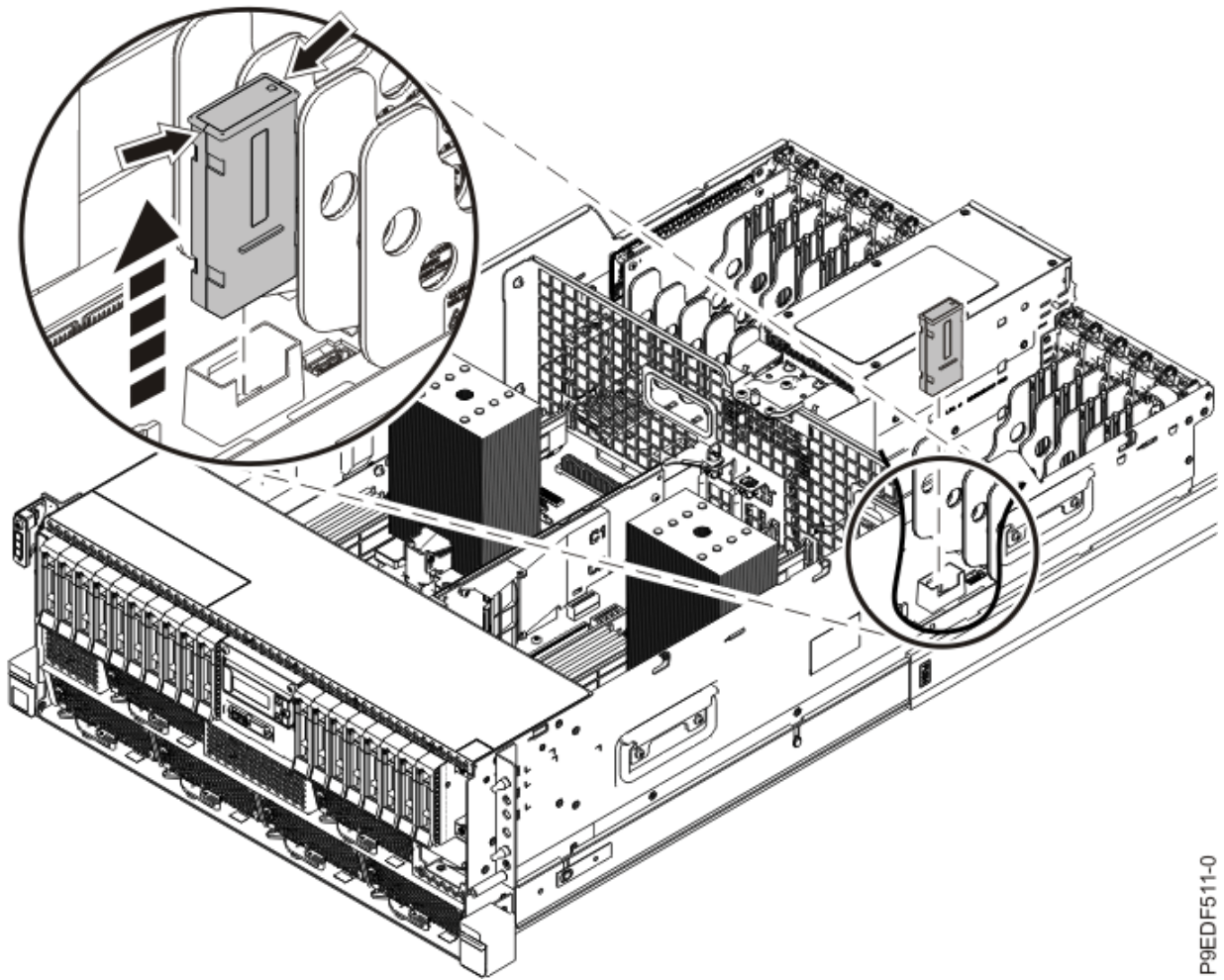


Figure 7. Moving the front USB and rear USB cables

3. If the vital product data (VPD) card needs to be removed to help in removing the service processor card, grasp the VPD card by the plastic housing and pull the VPD card out of its slot.

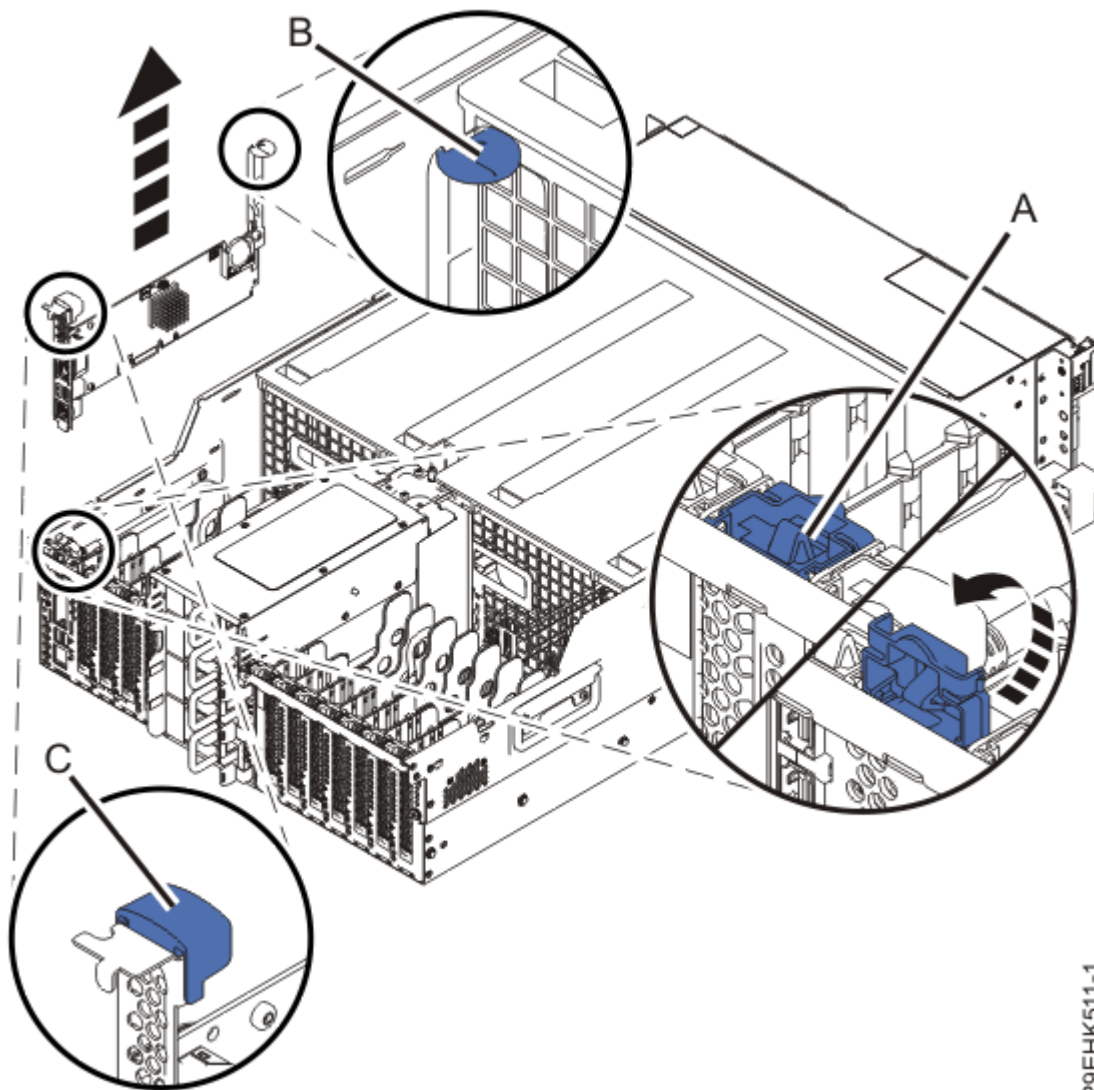


P9EDF511-0

Figure 8. Removing the VPD card

4. Remove the service processor card.

- a) At the rear of the system, unlatch the PCI adapter retainer (**A**) for the service processor card as shown in [Figure 9 on page 12](#).
- b) Pull the service processor card straight up from the slot by holding the two card holder brackets (**B**) and (**C**) at the front and rear of the service processor card as shown in [Figure 9 on page 12](#).



P9EHK511-1

Figure 9. Removing the service processor card from slot P1-C1

Replacing the service processor card in the 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-42H, or 9223-42S system

To replace a service processor card in the system, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap on and that the ESD clip is plugged into a ground jack or connected to an unpainted metal surface. If not, do so now.
2. Remove the insulator tab from the time-of day battery, to allow the time-of-day battery to make contact with the service processor card as shown in [Figure 10 on page 13](#).

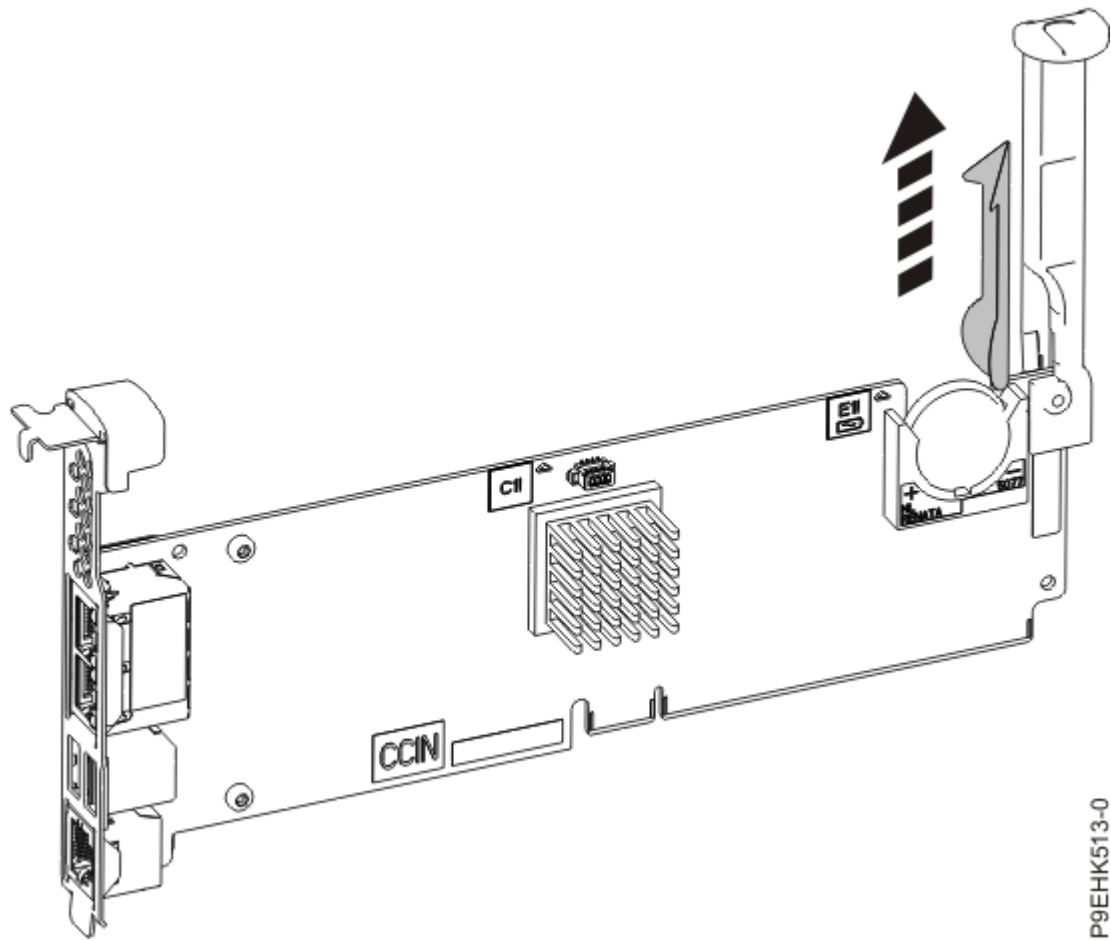
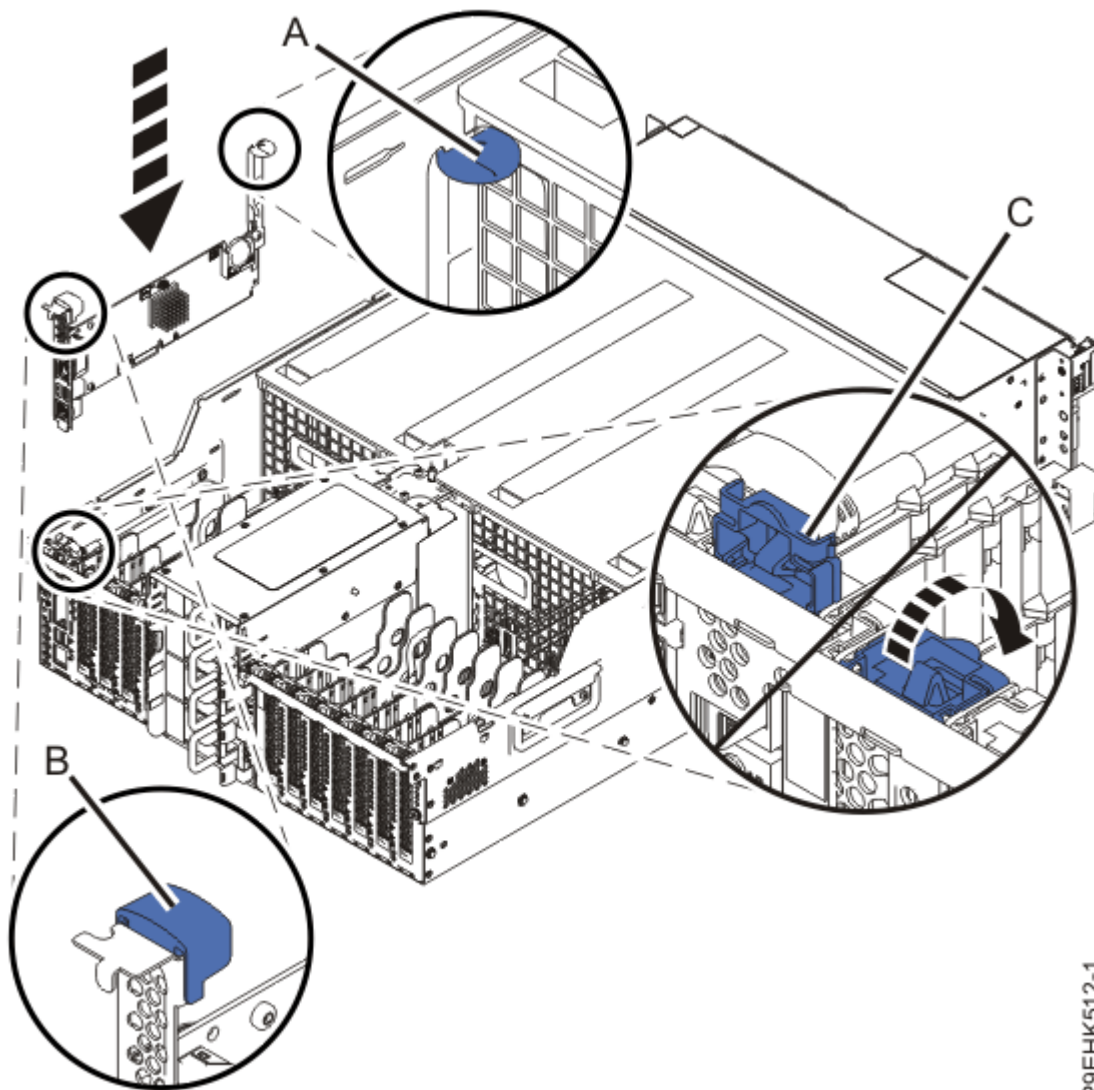


Figure 10. Removing the protective plastic insulator

3. Install the service processor card.

- a) Align the service processor card into PCIe location and push the service processor card straight down into the slot using two brackets **(A)** and **(B)**, as shown in Figure 11 on page 14.
- b) Close the PCI adapter retainer latch **(C)** to secure the service processor card.



P9EHK512-1

Figure 11. Installing the service processor card into slot P1-C1

4. Plug the front and rear USB cables into the system backplane as shown in Figure 12 on page 15.

- The front USB connector on the system backplane has the USB port symbol with an arrow that points to the front of the system.
- The rear USB connector on the system backplane has the USB port symbol with an arrow that points to the rear of the system.

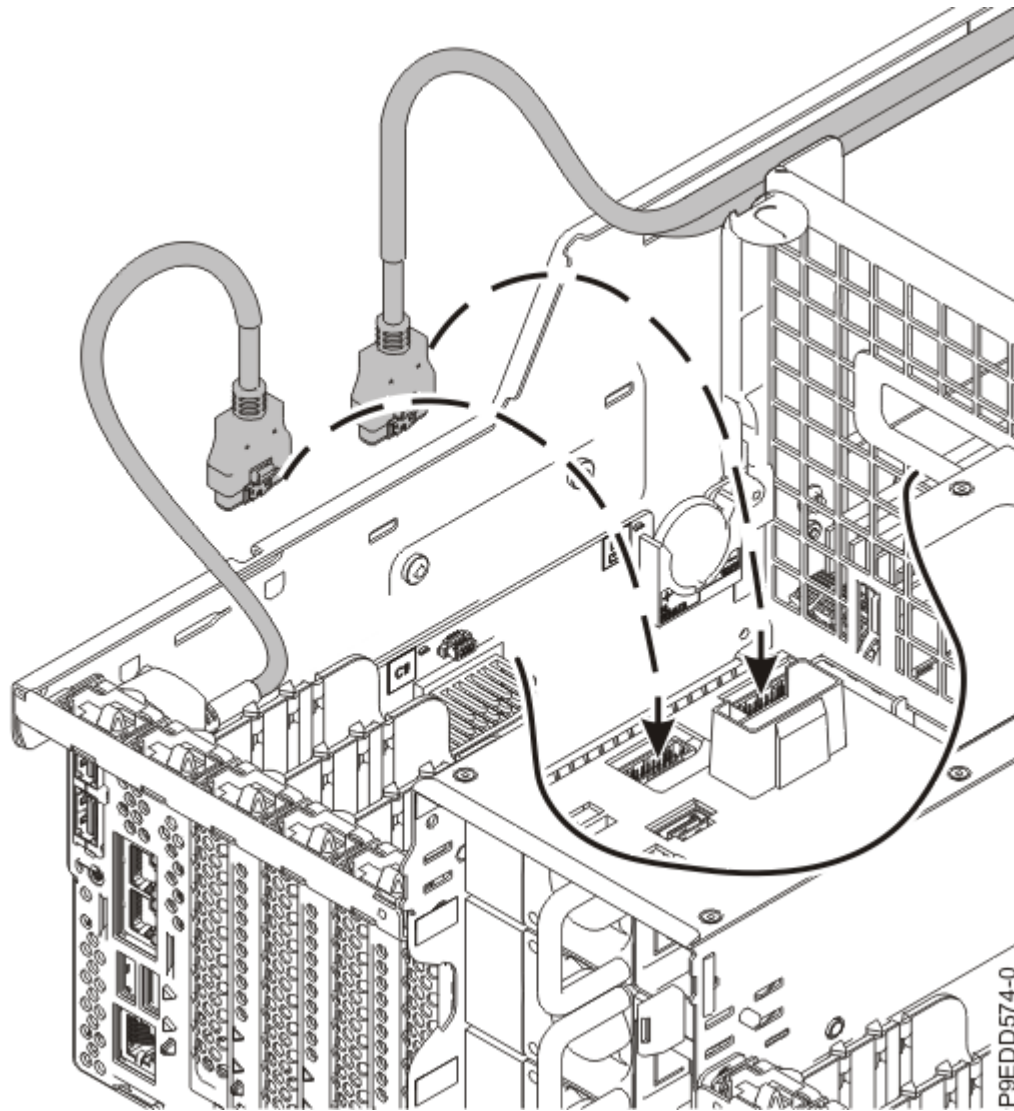
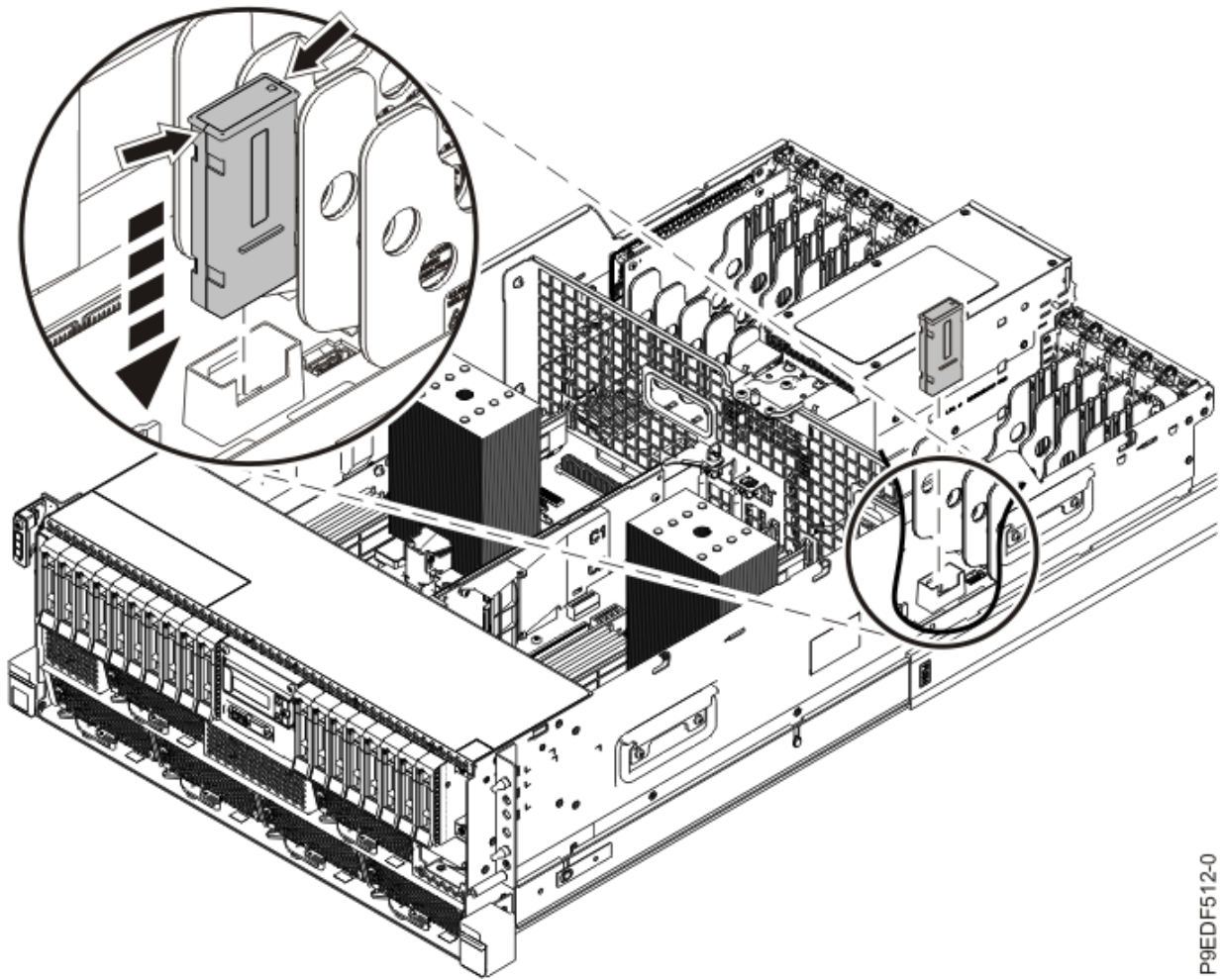


Figure 12. Replacing the front USB and rear USB cables

5. If you needed to unplug the vital product data (VPD) card, replace the VPD card in its slot.



P9EDF512-0

Figure 13. Replacing the VPD card

Preparing the 9009-41A, 9009-41G, 9009-42A, 9009-42G, 9223-42H, or 9223-42S system for operation after removing and replacing the service processor card

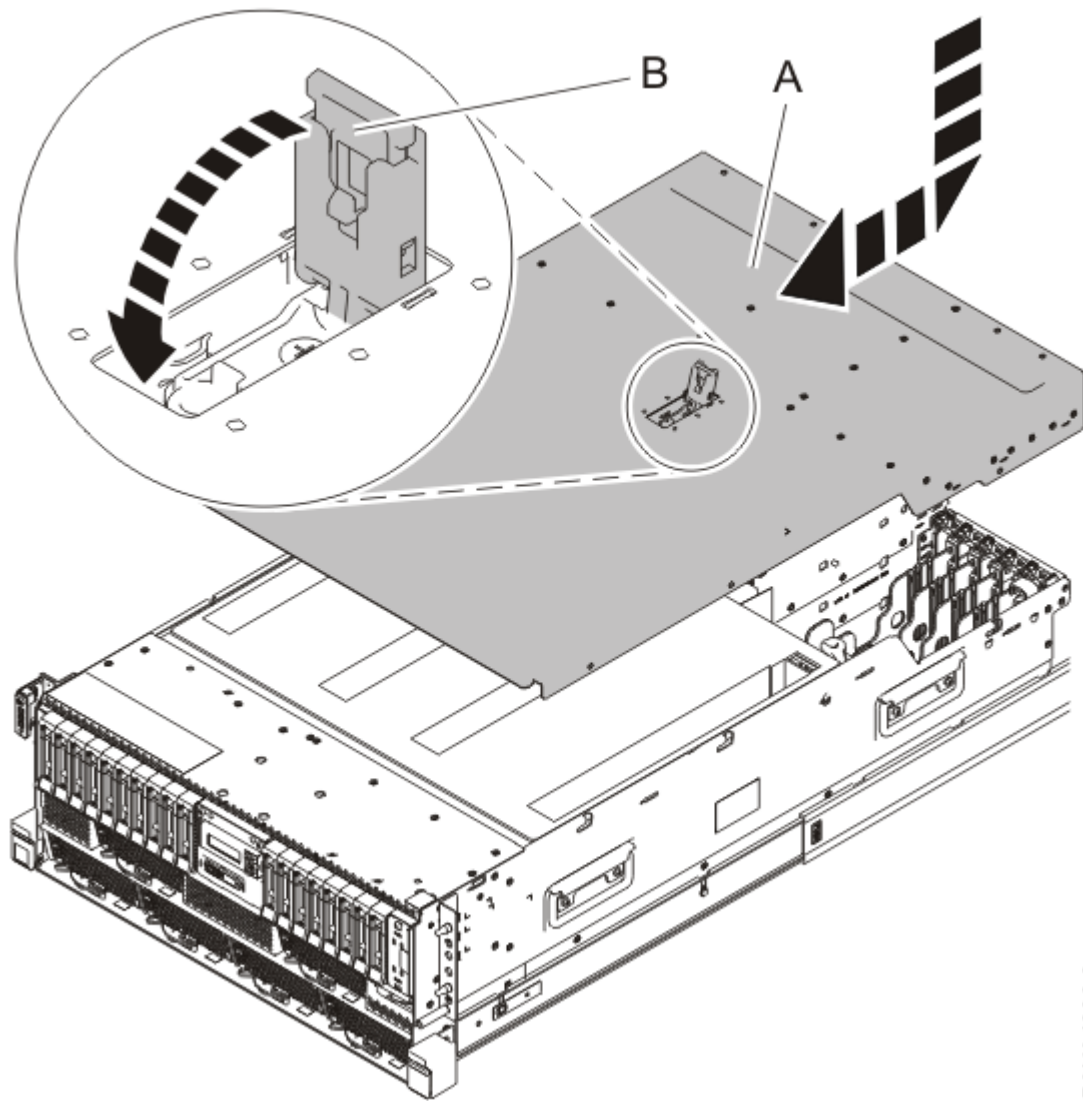
To prepare the system for operation after removing and replacing the service processor card, complete the steps in this procedure.

Procedure

1. Ensure that you have the electrostatic discharge (ESD) wrist strap on and that the ESD clip is plugged into a ground jack or connected to an unpainted metal surface. If not, do so now.
2. Replace the service access cover.

For a rack-mounted system, complete the following steps. Refer to [Figure 14 on page 17](#).

- a. Slide the cover **(A)** onto the system unit.
- b. Close the release latch **(B)** by pushing it in the direction shown.

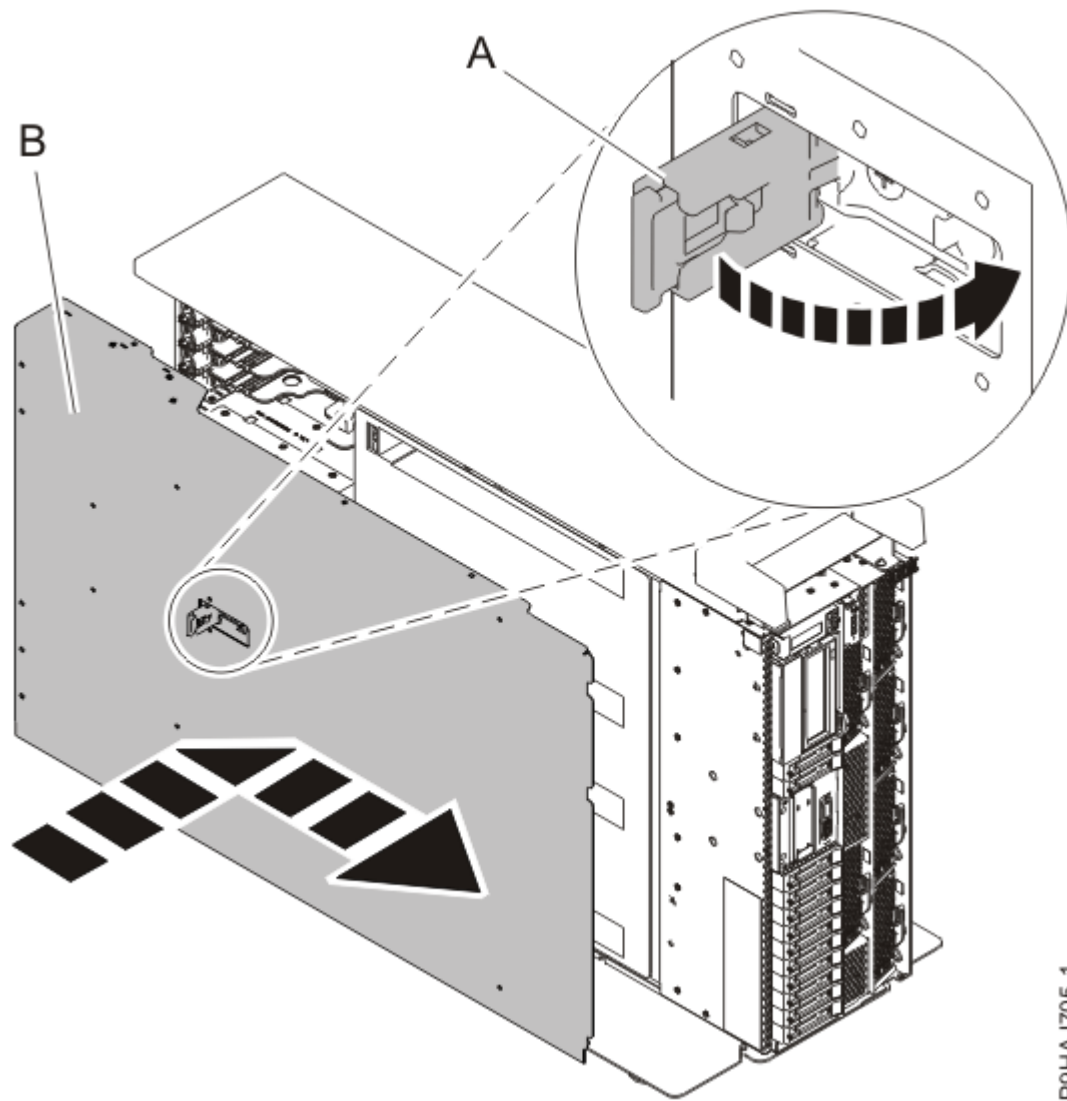


P9HAJ606-2

Figure 14. Installing the service access cover

For a stand-alone system, complete the following steps. Refer to [Figure 15 on page 18](#).

- a. Slide the cover **(B)** on to the system unit as shown.
- b. Close the latch release **(A)** by pushing it in the direction shown.



P9HAJ705-1

Figure 15. Installing the service access cover

3. For a rack-mounted system, unlock the blue rail safety latches (**A**) as shown in [Figure 16 on page 19](#) by pushing them inward.

Ensure that the cable management arms can move freely. Ensure that the cables at the rear of the unit do not catch or bind as you push the unit into the operating position.

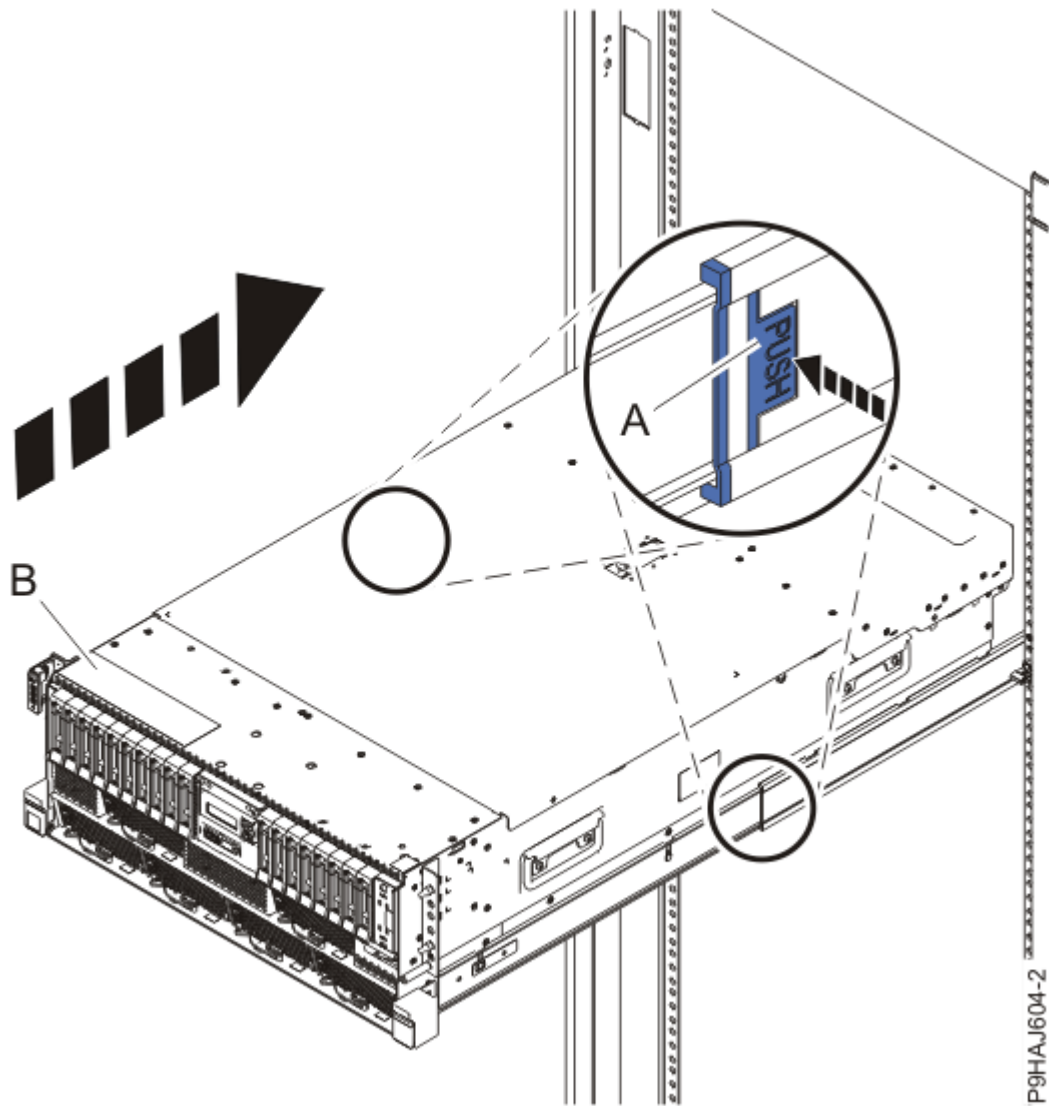


Figure 16. Placing the system into the operating position

4. Using your labels, reconnect the power cords **(A)** to the system unit.

Fasten the power cords **(A)** to the system using the hook-and-loop fasteners **(B)** as shown in [Figure 17](#) on page 20 or [Figure 18](#) on page 21.

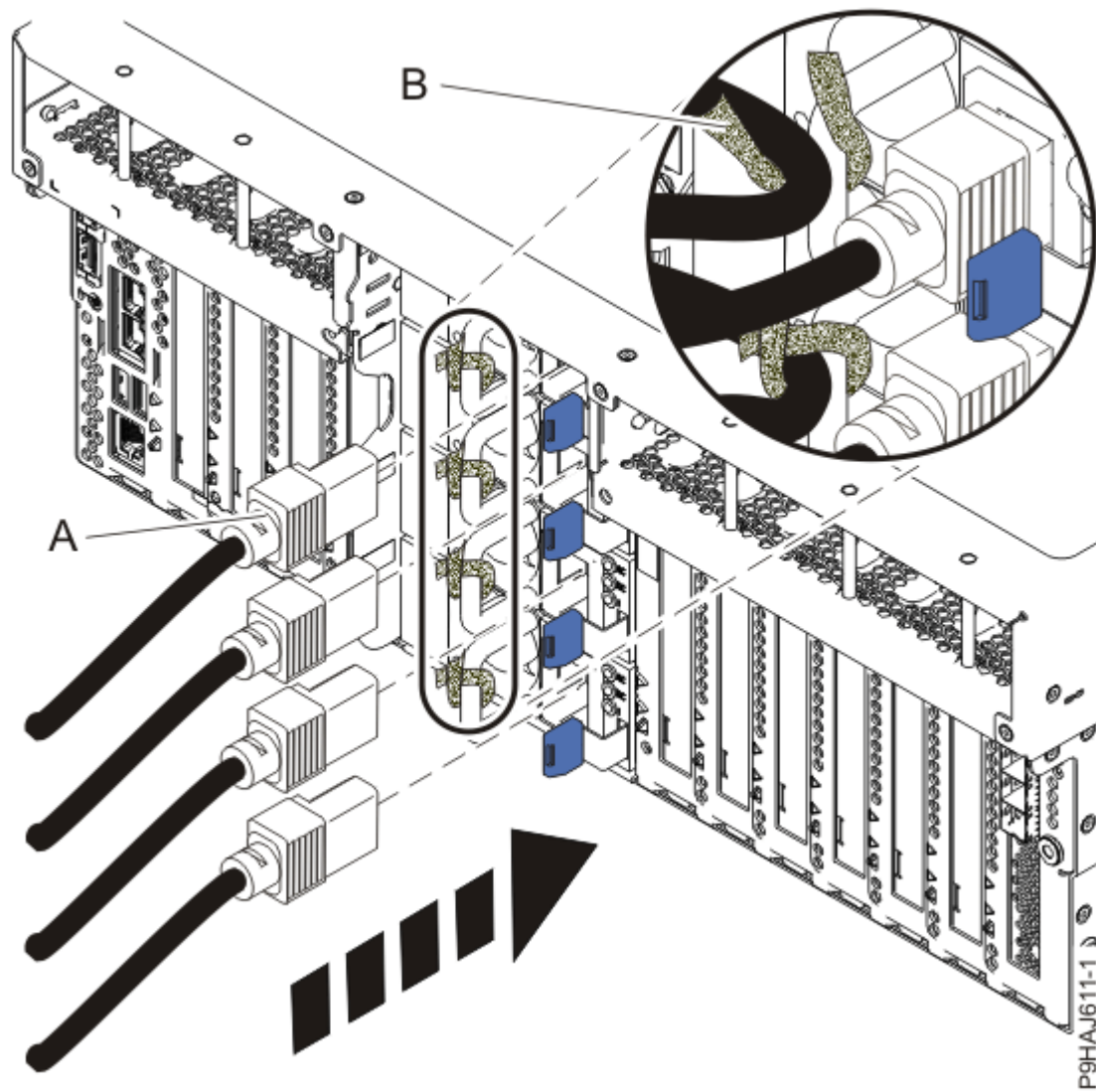


Figure 17. Connecting the power cords to a rack-mounted system

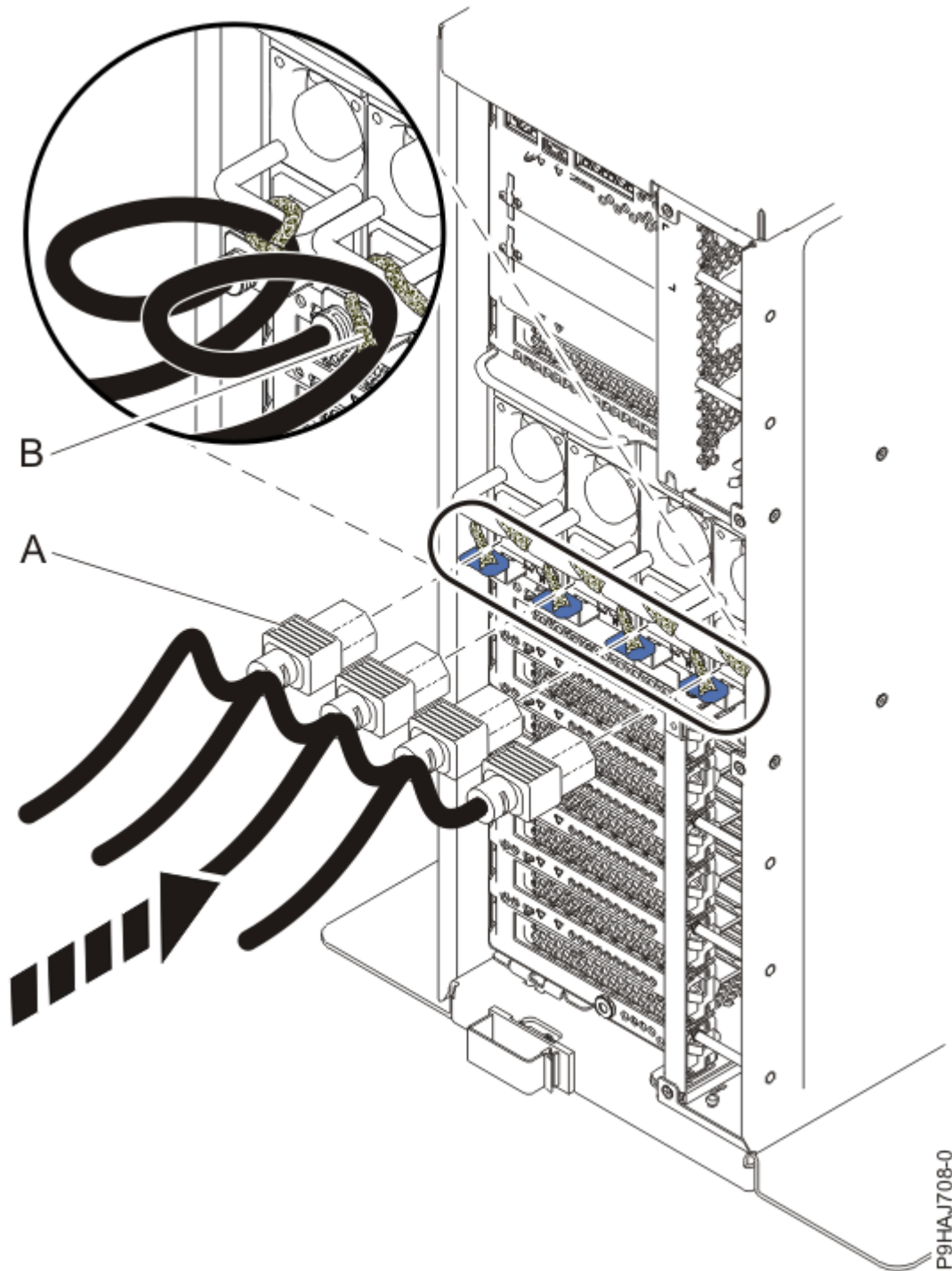


Figure 18. Connecting the power cords to a stand-alone system

5. Access the Advanced System Management Interface (ASMI).

For instructions, see [Accessing the ASMI without an HMC](http://www.ibm.com/support/knowledgecenter/POWER9/p9hby/connect_asmi.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9hby/connect_asmi.htm).

6. A new service processor card has the following settings:

- Port 1 default IP: 169.254.2.147
- Port 2 default IP: 169.254.3.147

You can also use the control panel display, function code 30, to display the IP addresses.

To reconfigure the IP addresses, see [Accessing the ASMI using a PC or notebook and web browser](http://www.ibm.com/support/knowledgecenter/POWER9/p9hby/browser.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9hby/browser.htm).

7. If removed, reconnect the Ethernet, serial, and Universal Serial Bus (USB) cables.
8. Use the ASMI to ensure that the time is set correctly and to restore the service processor card settings.
 - a) In the navigation area of the ASMI, click **System Configuration > Time of Day**.
 - b) Verify that the content pane displays the current date (month, day, and year) and time (hours, minutes, and seconds).
 - c) In the navigation area of the ASMI, click **System Configuration** and restore the service processor card settings by using the information that you recorded earlier.
9. Update vital product data.

If your system is running IBM i and is not managed by a management console, you must update the vital product date (VPD) after you replace the service processor card. The VPD is used by the service processor to locate the load source device during the initial program load (IPL). To update the VPD, complete the following steps:

- a. Load the customer media containing licensed internal code (LIC) into one of the alternate load devices (tape or DVD) on the primary system bus. The media can be a SAVSYS tape or DVD with the I_BASE_01 image. You must set the operator panel to 01 D M.

Note: This IPL can take several minutes.
 - b. After the Select a Language Group display is shown, press Enter to select the default language feature 2924 (English).

Note: To change the language feature, type the language feature that appears on the media that contains the operating system, and then press Enter.

Confirm the language feature by pressing Enter.
 - c. From the Install Licensed Internal Code display, select option 2 (Work with Dedicated Service Tools (DST)) and press Enter.

Use the Dedicated Service Tools to make sure the disk units, including the load source, are reporting correctly. Make sure that there are no errors that might prevent the IPL from disk. When all errors are resolved and the load source disk is reporting correctly, continue with the next step.
 - d. From the Work with dedicated service tools (DST) display, select option 2 (Work with disk units) and press Enter.
 - e. Select option 8 (Update system vital product data) to identify the location of the load source disk unit. Press Enter. The Update System Vital Product Data display is shown.
 - f. Press Enter to confirm that you want the vital product data to be written.
 - g. Press F12 (Previous) twice.
 - h. Type 1 and press Enter to exit DST.
 - i. Use the system control panel to power off the system.
 - j. Change the IPL mode to B.
 - k. Power on the system to complete an IPL from the device.
10. Start the system. For instructions, see [Starting a system](http://www.ibm.com/support/knowledgecenter/POWER9/p9haj/crustartsys.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9haj/crustartsys.htm).
 11. Turn off the identify LED. For instructions, see [Deactivating an identify LED](http://www.ibm.com/support/knowledgecenter/POWER9/p9haj/p9haj_turn_off_identify_led.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9haj/p9haj_turn_off_identify_led.htm).
 12. Use the ASMI to ensure that the new service processor card has the same level of firmware as the original service processor card.

On the **ASMI Welcome pane**, view the existing level of server firmware in the upper-right corner under the copyright statement, for example, 01EM310 or FW760.00 (AM760_019).
 13. If the service processor card that you just replaced has a different firmware level than what you recorded earlier, you must install the original firmware level on the new card. See (<http://>

www.ibm.com/support/knowledgecenter/POWER9/p9ha5/fix_serv_firm_kick) and use the USB port method to install the firmware. Then, return to this procedure and continue with the next step.

14. Verify the installed part.

- If you replaced the part because of a service action, verify the installed part. For instructions, see [Verifying a repair](http://www.ibm.com/support/knowledgecenter/POWER9/p9ect/pxect_verifyrepair.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9ect/pxect_verifyrepair.htm).
- If you installed the part for any other reason, verify the installed part. For instructions, see [Verifying the installed part](http://www.ibm.com/support/knowledgecenter/POWER9/p9haj/pxhaj_hsmverify.htm) (www.ibm.com/support/knowledgecenter/POWER9/p9haj/pxhaj_hsmverify.htm).

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Overview

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- Keyboard-only operation
- Operations that use a screen reader

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TTY service
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International Business Machines Corporation

New Orchard Road

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Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse B EU-Richtlinie zur Elektromagnetischen Verträglichkeit

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Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2014/30/EU in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC Richtlinie 2014/30/EU) für Geräte der Klasse B

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

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Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55032 Klasse B

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