

Power Systems

*Servicing the IBM Power Systems HMC
(7063-CR2)*



Note

Before using this information and the product it supports, read the information in [“Safety notices” on page v](#), [“Notices” on page 109](#), 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.

© **Copyright International Business Machines Corporation 2021.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Safety notices.....	V
Removing and replacing parts in the 7063-CR2.....	1
Cables.....	2
Drive power cable.....	2
Drive signal cable.....	4
Operator console cable.....	7
USB cable.....	9
Drive.....	10
Removing a drive.....	11
Replacing a drive.....	12
Drive holder.....	13
Removing the drive holder.....	14
Replacing the drive holder.....	16
Fans.....	17
Removing a fan.....	18
Replacing a fan.....	20
Memory.....	21
Control panel.....	26
Removing the control panel.....	26
Replacing the control panel.....	30
PCIe adapters.....	33
Removing a PCIe adapter.....	33
Replacing a PCIe adapter.....	35
PCIe riser.....	37
Removing the PCIe riser.....	37
Replacing the PCIe riser.....	39
Power distribution board.....	41
Removing the power distribution board.....	41
Replacing the power distribution board.....	46
Power supplies.....	51
Removing a power supply.....	51
Replacing a power supply.....	52
System backplane.....	53
Preparing to remove the system backplane.....	53
Removing the system backplane.....	54
Replacing the system backplane.....	55
Preparing the system for operation after removing and replacing the system backplane.....	67
System processor module.....	68
Removing the system processor module.....	68
Replacing the system processor module.....	76
Time-of-day battery.....	86
Trusted platform module.....	89
Common service procedures for servicing the 7063-CR2.....	93
Before you begin.....	93
Identifying the 7063-CR2 system that contains the part to replace.....	96
LEDs on the 7063-CR2 system.....	96
Identifying the 7063-CR2 that needs servicing.....	97
Starting and stopping the system.....	98

Starting the 7063-CR2 system	98
Stopping the 7063-CR2 system.....	99
Drive commands for the 7063-CR2 system.....	99
Creating the virtual drive on the 7063-CR2 system.....	99
Sensor status.....	100
Removing and replacing power cords.....	100
Disconnecting the power cords.....	100
Connecting the power cords.....	101
Service and operating positions.....	101
Placing a 7063-CR2 system into the service position.....	101
Placing a 7063-CR2 system into the operating position.....	103
Removing and replacing covers.....	104
Removing the service access cover.....	104
Installing the service access cover.....	105
Notices.....	109
Accessibility features for IBM Power Systems servers.....	110
Privacy policy considerations	111
Trademarks.....	111
Electronic emission notices.....	111
Class A Notices.....	111
Class B Notices.....	115
Terms and conditions.....	117

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)



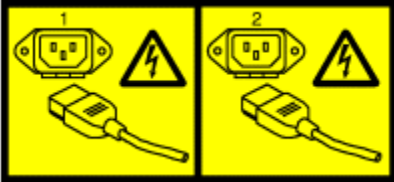
DANGER: Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices. In addition, do not lean on rack-mounted devices and do not use them to stabilize your body position (for example, when working from a ladder). Stability hazard:

- 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

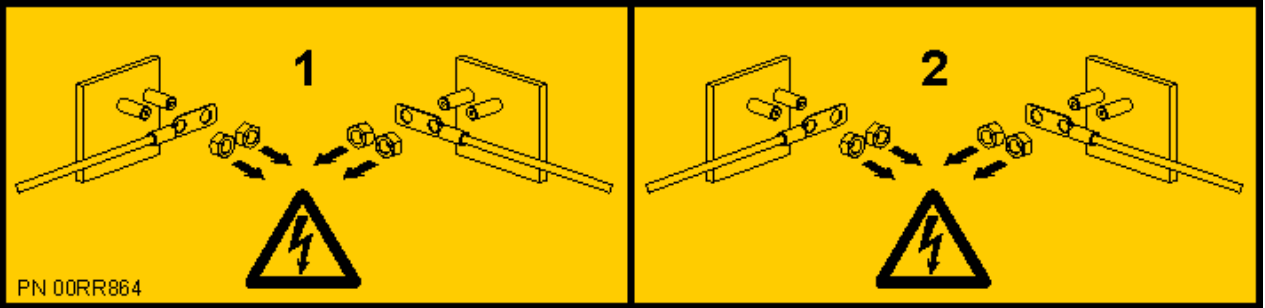



or



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.

Removing and replacing parts in the 7063-CR2

Use these procedures to remove and replace failing parts in the IBM Power® Systems HMC (7063-CR2). 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) (<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 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. Blue 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, or open or close a latch.
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. 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)



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 before you power on the system.

For safety and airflow purposes and thermal performance, if you remove parts from the system, you must ensure that PCIe tail-stock fillers are present.

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), multi-chip modules (MCM), electronic boards, and 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 cables in the 7063-CR2

Learn how to remove and replace cables in the IBM Power Systems HMC (7063-CR2) system.

Removing and replacing the drive power cable in the 7063-CR2

Learn how to remove and replace the drive power cable in the IBM Power Systems HMC (7063-CR2) system.

Removing the drive power cable from the 7063-CR2 system

To remove the drive power cable from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Power off the system.
For instructions, see [“Stopping the 7063-CR2 system” on page 99.](#)
 3. Place the system in the service position on an ESD surface on a table.
For instructions, see [“Placing a 7063-CR2 system into the service position” on page 101.](#)
 4. Remove the service access cover.
For instructions, see [“Removing the service access cover from a 7063-CR2 system” on page 104.](#)
 5. Remove the drive power cable.
 - a) Label where the drive power cable (**A**) connects to the power distribution board and to the drive holder.
This cable is a "Y" cable that connects to the drive holder in two places.
 - b) Remove the drive power cable from the power distribution board and from the drive holder.
Use your thumb or finger to press the release latch on the connector to remove the cable from the power distribution board.

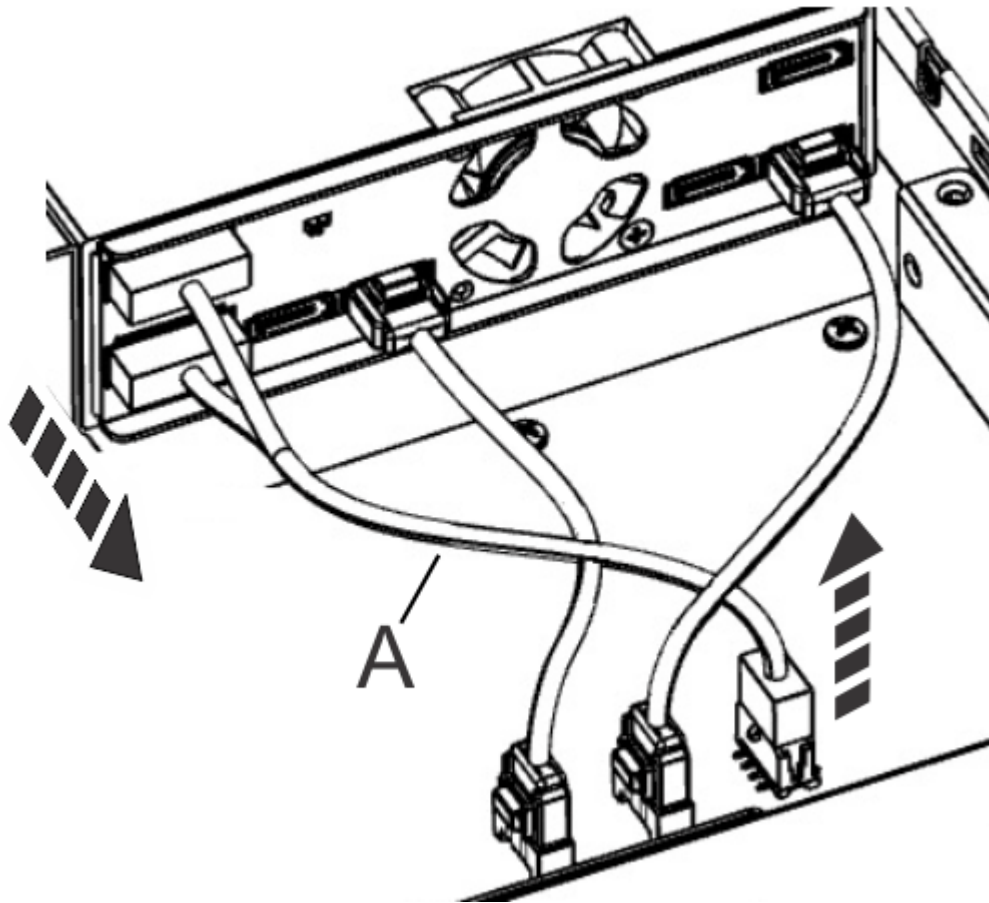


Figure 1. Disconnecting the drive power cable

Replacing the drive power cable in the 7063-CR2 system

To replace the drive power cable in the IBM Power Systems HMC (7063-CR2) 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. Using your labels, replace the drive power cable into the power distribution board and into the drive holder.

Ensure that the cable latch clip snaps into place in the connector on the power distribution board.

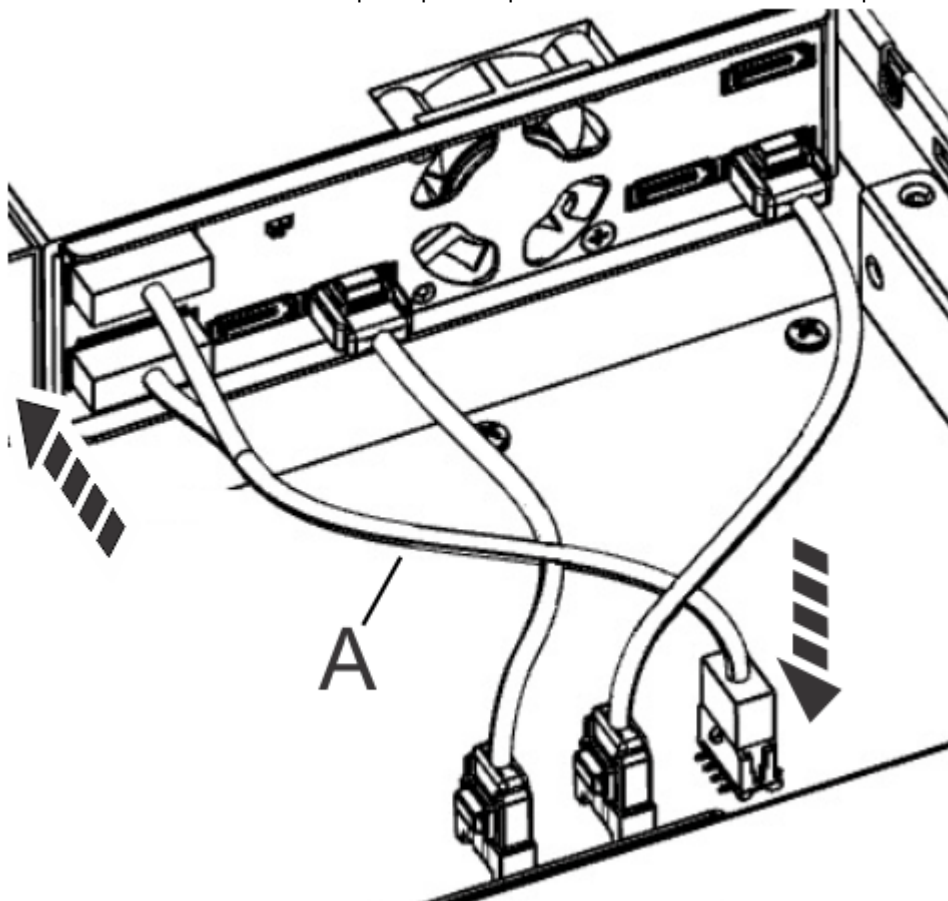


Figure 2. Connecting the drive power cable

3. Install the service access cover.
For instructions, see [“Installing the service access cover on a 7063-CR2 system”](#) on page 105.
4. Replace the system in the rack and replace the components that you removed.
For instructions, see [“Placing a 7063-CR2 system into the operating position”](#) on page 103.
5. Power on the system for operation.
For instructions, see [“Starting the 7063-CR2 system”](#) on page 98.

Removing and replacing a drive signal cable in the 7063-CR2

Learn how to remove and replace a drive signal cable in the IBM Power Systems HMC (7063-CR2) system.

Removing a drive signal cable from the 7063-CR2 system

To remove a drive signal cable from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. The system has two drive signal cables. Identify which drive cable has the issue.
 3. Power off the system.
For instructions, see [“Stopping the 7063-CR2 system” on page 99.](#)
 4. Place the system in the service position on an ESD surface on a table.
For instructions, see [“Placing a 7063-CR2 system into the service position” on page 101.](#)
 5. Remove the service access cover.
For instructions, see [“Removing the service access cover from a 7063-CR2 system” on page 104.](#)
 6. Remove the previously identified drive signal cable.
 - a) Label where the drive signal cable (**A**) connects to the power distribution board and to the drive holder.
 - b) Remove the drive signal cable from the power distribution board and from the drive holder.
Use your thumb or finger to press the release latch on the connector to remove the cable.

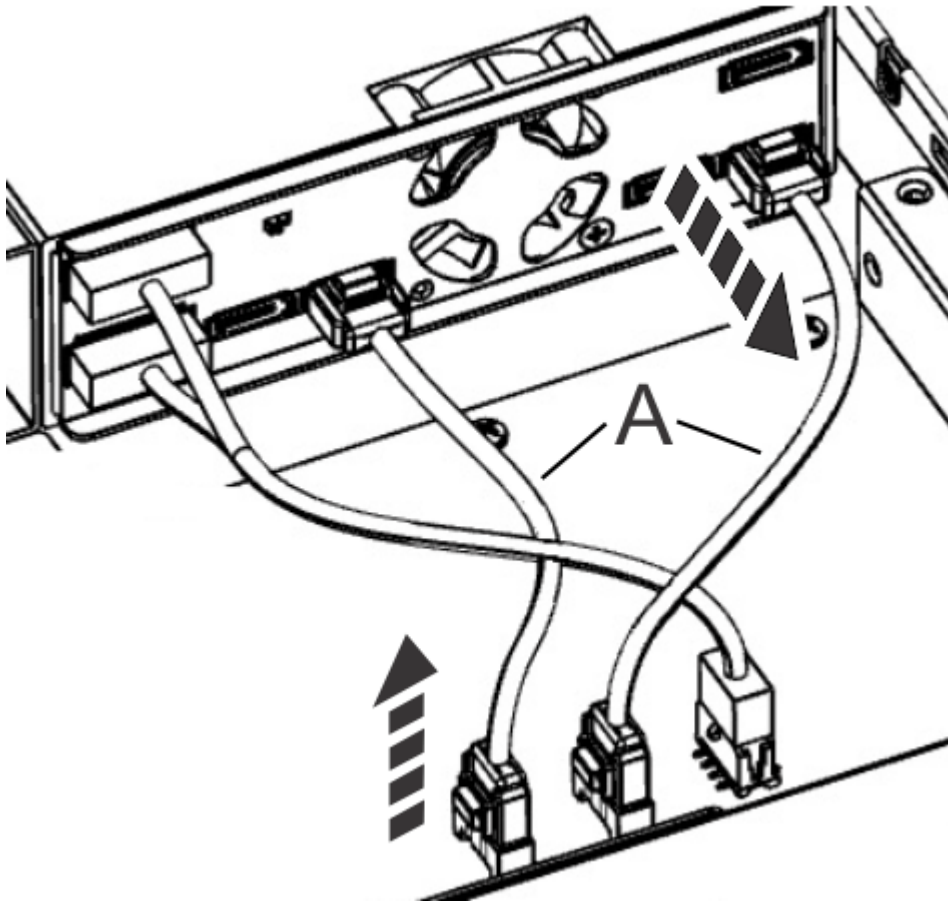


Figure 3. Disconnecting the drive signal cable

Replacing a drive signal cable in the 7063-CR2 system

To replace a drive signal cable in the IBM Power Systems HMC (7063-CR2) 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. Using your labels, replace the drive signal cable into the power distribution board and into the drive holder.

Ensure that the cable latch clip snaps into place on the connector.

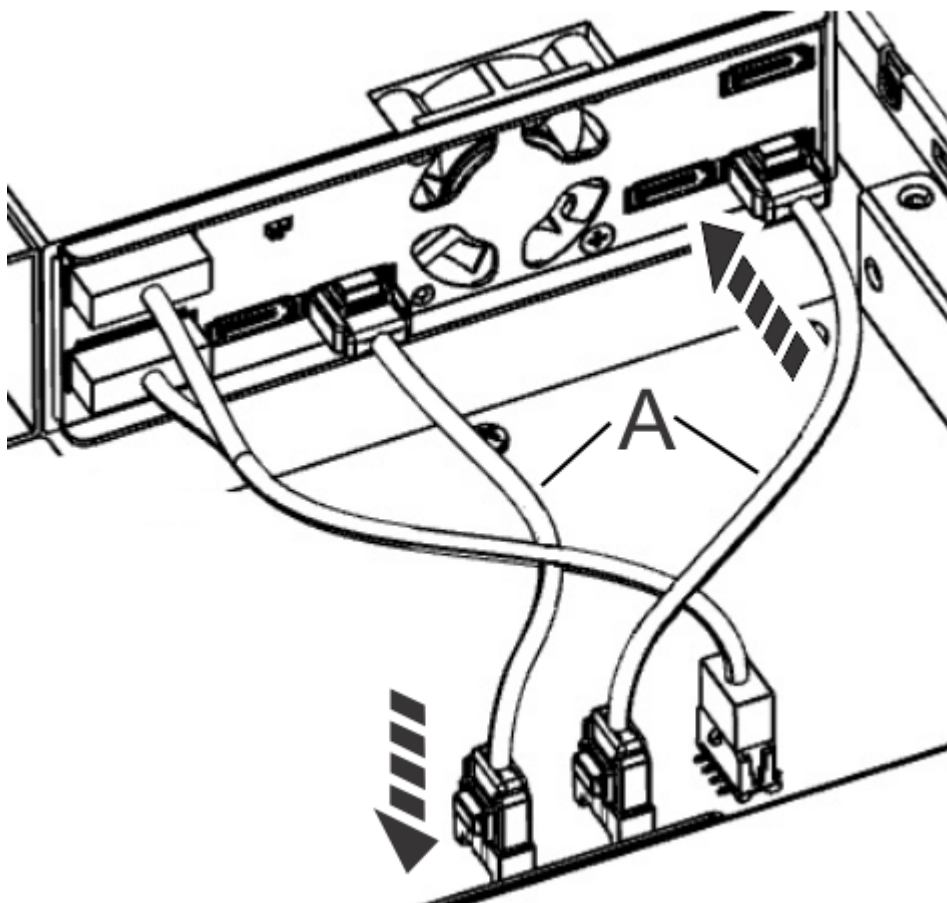


Figure 4. Connecting the drive signal cable

3. Install the service access cover.

For instructions, see [“Installing the service access cover on a 7063-CR2 system”](#) on page 105.

4. Replace the system in the rack and replace the components that you removed.

For instructions, see [“Placing a 7063-CR2 system into the operating position”](#) on page 103.

5. Power on the system for operation.

For instructions, see [“Starting the 7063-CR2 system ”](#) on page 98.

Removing and replacing the control panel cable in the 7063-CR2

Learn how to remove and replace the control panel cable in the IBM Power Systems HMC (7063-CR2) system.

Removing the control panel cable from the 7063-CR2 system

To remove the control panel cable from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Power off the system.
For instructions, see [“Stopping the 7063-CR2 system”](#) on page 99.
 3. Place the system in the service position on an ESD surface on a table.
For instructions, see [“Placing a 7063-CR2 system into the service position”](#) on page 101.
 4. Remove the service access cover.
For instructions, see [“Removing the service access cover from a 7063-CR2 system”](#) on page 104.
 5. Remove the control panel cable.
 - a) Label where the control panel cable (**A**) connects to the power distribution board and to the control panel.
 - b) Remove the control panel cable from the power distribution board and from the control panel.
Use your thumb or finger to press the release latch on the connector to remove the cable. Unclip the cable from the right air baffle.

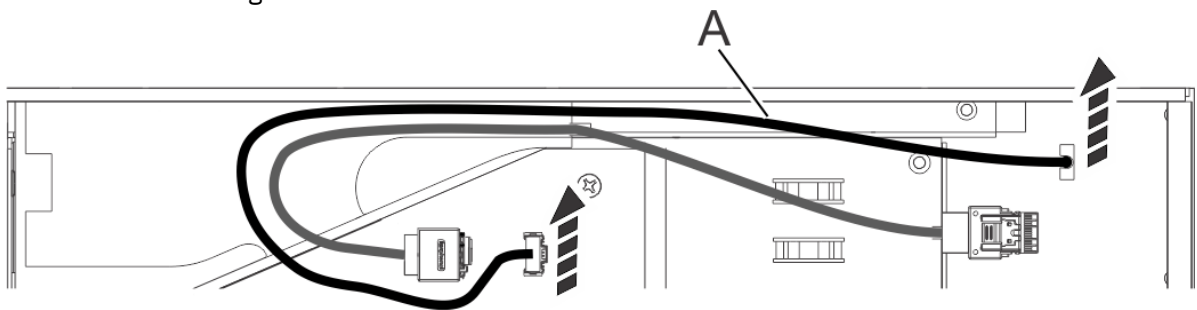


Figure 5. Disconnecting the control panel cable

Replacing the control panel cable in the 7063-CR2 system

To replace the control panel cable in the IBM Power Systems HMC (7063-CR2) 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. Replace the control panel cable.
 - a) Using your labels, replace the control panel cable (**A**) into the power distribution board and into the control panel.
Ensure that the cable latch clip snaps into place on the connector.
 - b) Route the cable through the right air baffle channel; the USB cable nests inside the control panel cable.
Clip the cable into the right air baffle.

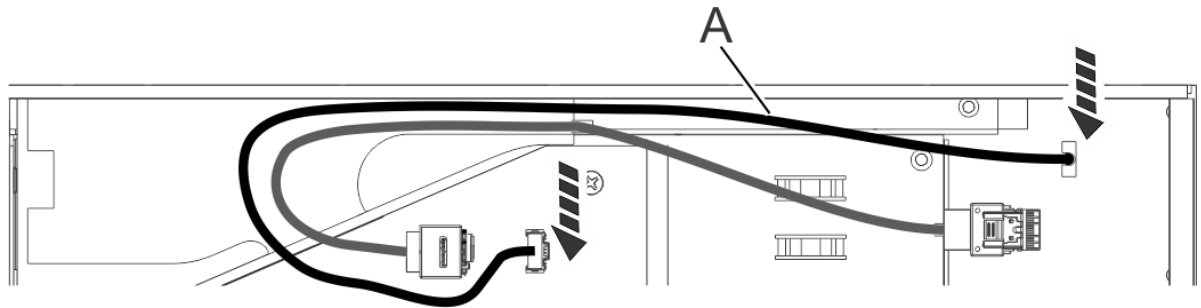


Figure 6. Connecting the control panel cable

3. Install the service access cover.
For instructions, see [“Installing the service access cover on a 7063-CR2 system” on page 105.](#)
4. Replace the system in the rack and replace the components that you removed.
For instructions, see [“Placing a 7063-CR2 system into the operating position” on page 103.](#)
5. Power on the system for operation.
For instructions, see [“Starting the 7063-CR2 system ” on page 98.](#)

Removing and replacing the USB cable in the 7063-CR2

Learn how to remove and replace the USB cable in the IBM Power Systems HMC (7063-CR2) system.

Removing the USB cable from the 7063-CR2 system

To remove the USB cable from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Power off the system.
For instructions, see [“Stopping the 7063-CR2 system” on page 99.](#)
 3. Place the system in the service position on an ESD surface on a table.
For instructions, see [“Placing a 7063-CR2 system into the service position” on page 101.](#)
 4. Remove the service access cover.
For instructions, see [“Removing the service access cover from a 7063-CR2 system” on page 104.](#)
 5. Remove the USB cable.
 - a) Label where the USB cable (**A**) connects to the power distribution board and to the control panel.

- b) Remove the USB cable from the power distribution board and from the control panel.
Use your thumb or finger to press the release latch on the connector to remove the cable. Unclip the cable from the right air baffle.

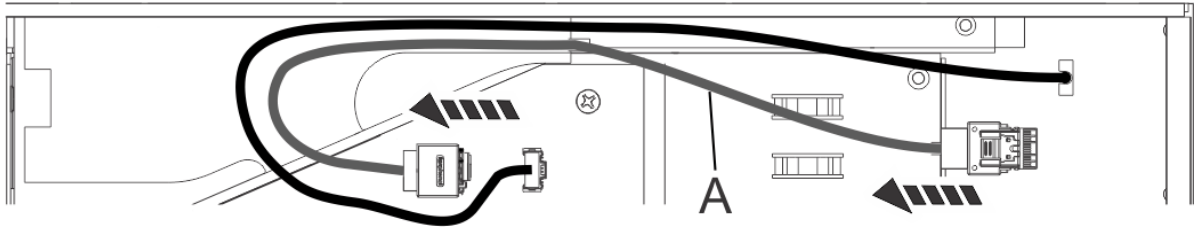


Figure 7. Disconnecting the USB cable

Replacing the USB cable in the 7063-CR2 system

To replace the USB cable in the IBM Power Systems HMC (7063-CR2) 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. Replace the USB cable.
 - a) Using your labels, replace the USB cable into the power distribution board and into the control panel.
Ensure that the cable latch clip snaps into place on the connector.
 - b) Route the cable through the right air baffle channel; the USB cable nests inside the control panel cable.
Clip the cable into the right air baffle.

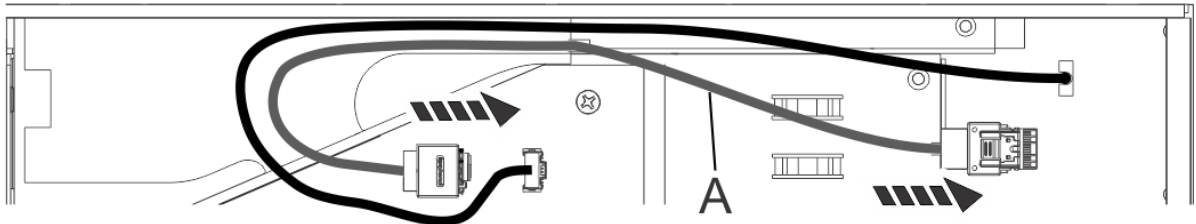


Figure 8. Connecting the USB cable

3. Install the service access cover.
For instructions, see [“Installing the service access cover on a 7063-CR2 system” on page 105.](#)
4. Replace the system in the rack and replace the components that you removed.
For instructions, see [“Placing a 7063-CR2 system into the operating position” on page 103.](#)
5. Power on the system for operation.
For instructions, see [“Starting the 7063-CR2 system ” on page 98.](#)

Removing and replacing a drive in the 7063-CR2

Learn how to remove and replace a drive in the IBM Power Systems HMC (7063-CR2) system.

About this task

The system has two physical drives. These drives are configured as a single virtual drive, as a RAID1 array. The drives have an ID of 0. If one of the drives needs to be replaced, use the [“Drive commands for the 7063-CR2 system” on page 99](#) to check the status of the drives, the IDs of the drives, and to rebuild the RAID1 array. The drive can be replaced with power on; the HMC continues to function normally.

Removing a drive from the 7063-CR2 system

To remove a drive from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

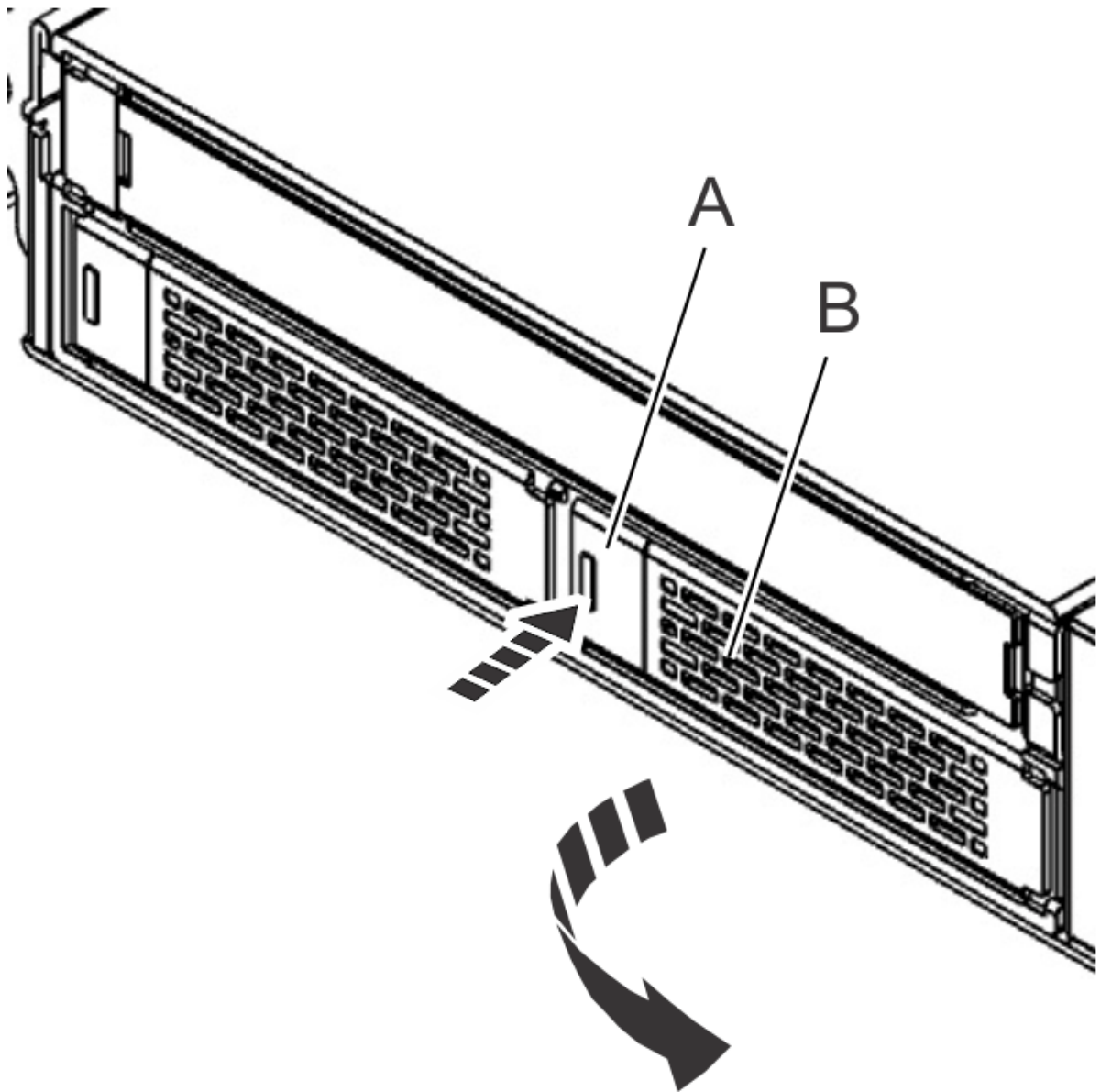
The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Remove the drive. Use the position information indicated by the service log.
 - a) Push in the left side of the handle release latch **(A)** to unlock the drive bay handle **(B)**.
 - b) Pull out the drive bay handle **(B)** toward you. If the drive bay handle is not all the way out, the drive cannot slide out of the system.
 - c) Support the bottom of the drive as you slide it out of the system. Do not hold the drive by the handle.
 - d) Place the drive on an ESD surface.

Figure 9. Removing a drive



Replacing a drive in the 7063-CR2 system

To replace a drive in the IBM Power Systems HMC (7063-CR2) 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. Replace the drive.
 - a) Support the drive by the bottom as you position the drive, and insert it into the drive slot.

Important: Ensure that the drive is fully seated and is all the way into the system.
 - b) Lock the drive bay handle (**A**) by pushing in the handle release latch until it locks into place.

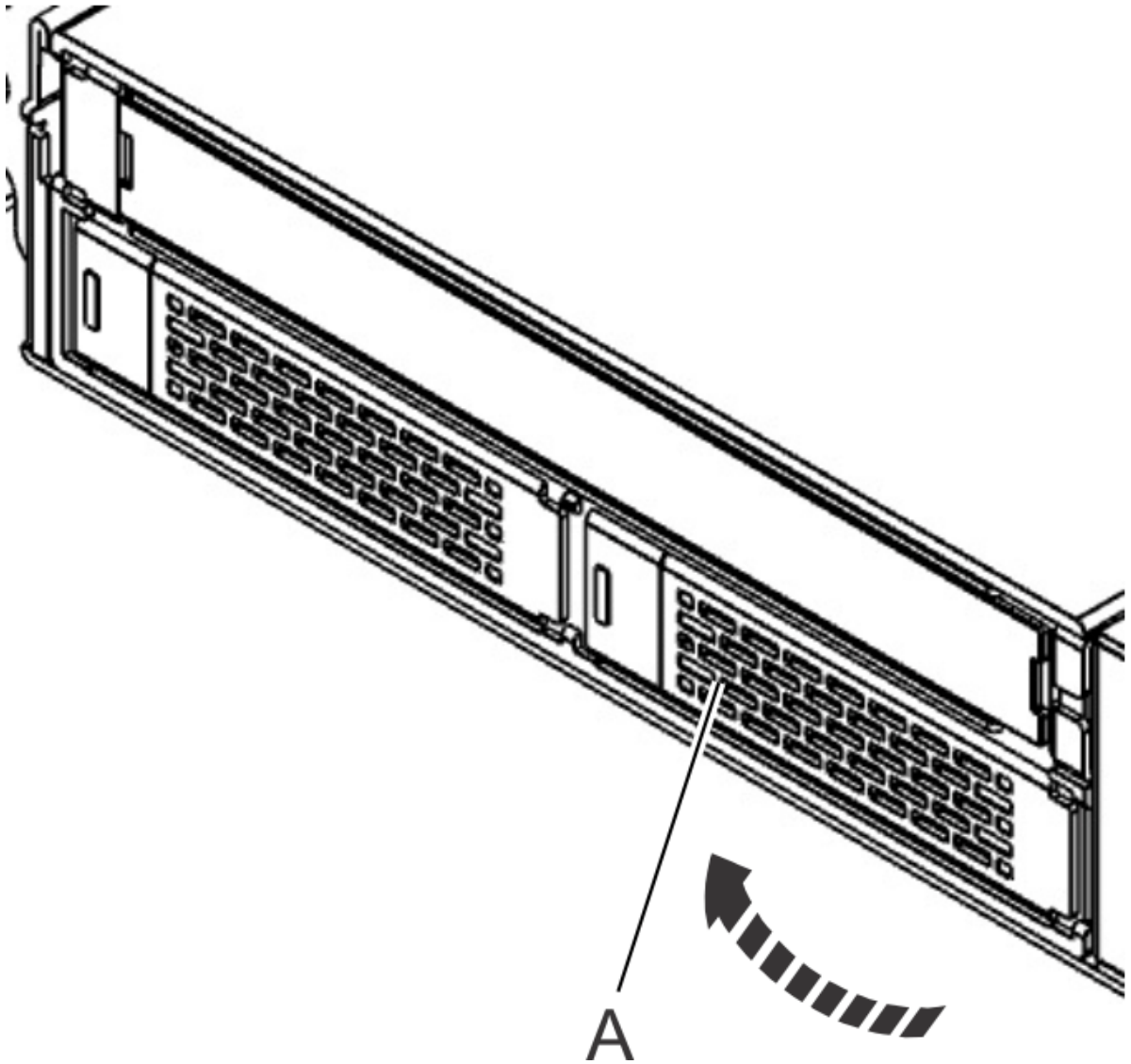


Figure 10. Installing a drive

3. The drive rebuild operation starts automatically. The rebuild operation can take upto 5 minutes to start.

To verify if the rebuild operation has started, from the HMC, run the following command:

```
lshmc -h
```

To verify if the rebuild operation has started, from the Petitboot shell, run the following command:

```
arcconf getconfig 1 ld
```

Removing and replacing the drive holder in the 7063-CR2

Learn how to remove and replace the drive holder in the IBM Power Systems HMC (7063-CR2) system.

Removing the drive holder from the 7063-CR2 system

To remove the drive holder from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

You can use a magnetic tip screwdriver to remove and replace the screws.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

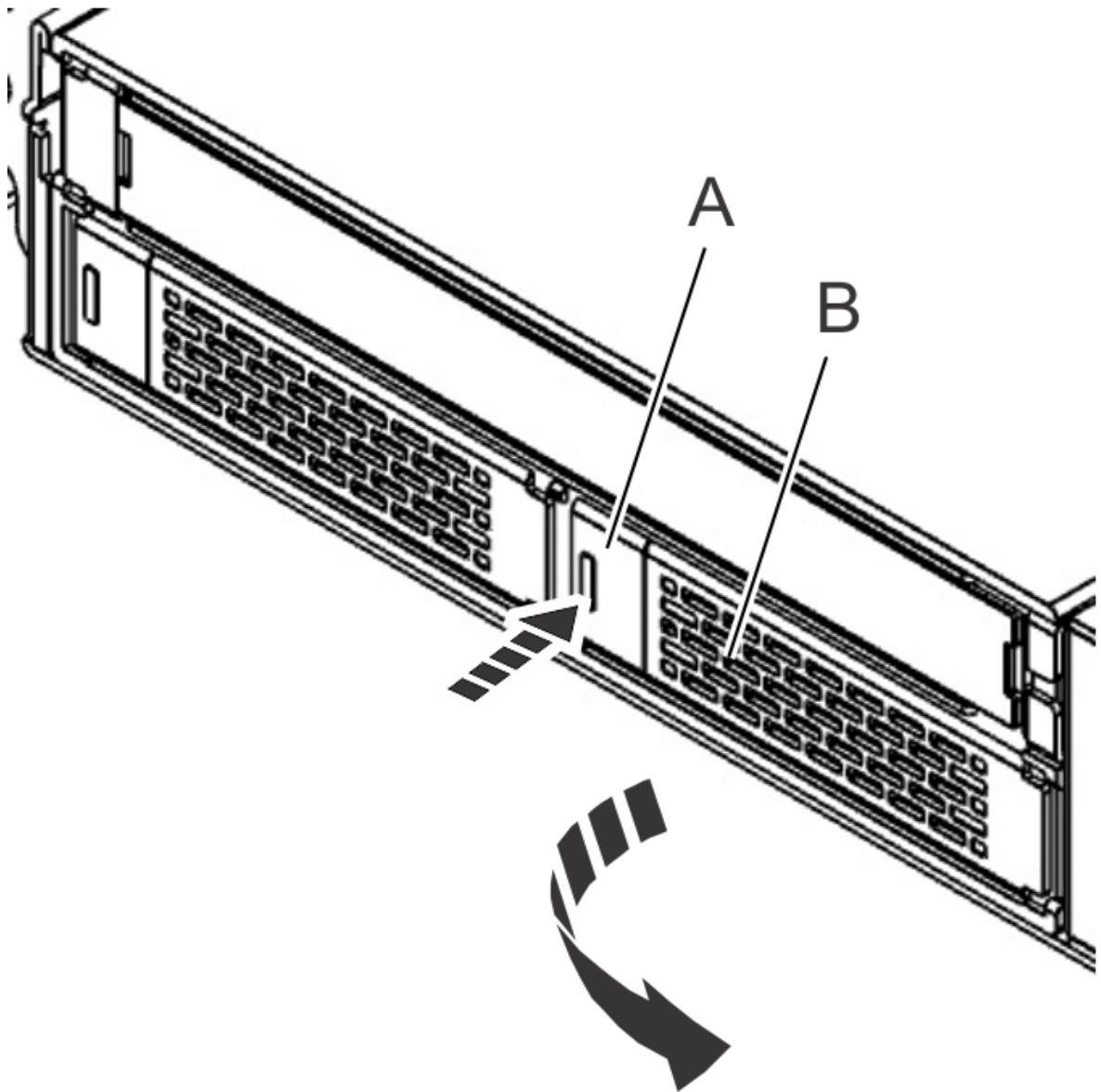
The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Power off the system.
For instructions, see [“Stopping the 7063-CR2 system” on page 99](#).
 3. Place the system in the service position on an ESD surface on a table.
For instructions, see [“Placing a 7063-CR2 system into the service position” on page 101](#).
 4. Label and remove the two drives from the system.
 - a) Push in the left side of the handle release latch **(A)** to unlock the drive bay handle **(B)**.
 - b) Pull out the drive bay handle **(B)** toward you. If the drive bay handle is not all the way out, the drive cannot slide out of the system.
 - c) Support the bottom of the drive as you slide it out of the system. Do not hold the drive by the handle.
 - d) Place the drive on an ESD surface.

Figure 11. Removing a drive



5. Remove all of the fans from the system.
For instructions, see [“Removing a fan from the 7063-CR2 system”](#) on page 18.
6. Remove the service access cover.
For instructions, see [“Removing the service access cover from a 7063-CR2 system”](#) on page 104.
7. Label and disconnect the cables from the rear of drive holder.
For instructions, see [“Removing the drive power cable from the 7063-CR2 system”](#) on page 2 and [“Removing a drive signal cable from the 7063-CR2 system”](#) on page 5.
8. Remove left rail from the system.
9. Remove the four screws from the drive holder. The holder has two screws on each side.

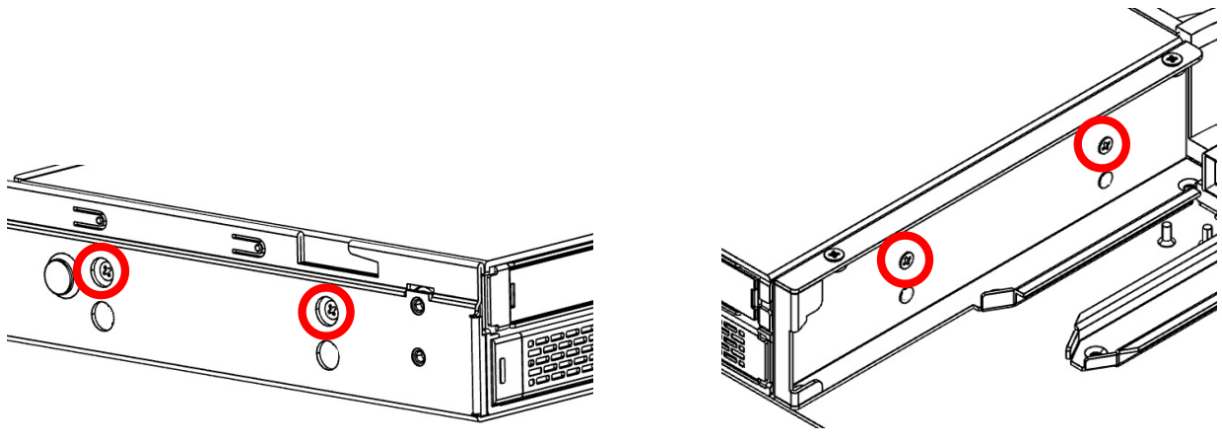


Figure 12. Drive holder screws

10. Remove the drive holder from the system.
11. Place the drive holder and cables on the table.

Replacing the drive holder in the 7063-CR2 system

To replace the drive holder in the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

You can use a magnetic tip screwdriver to remove and replace the screws.

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. Insert the drive holder into the system.
3. Install the four screws for the drive holder. The holder has two screws on each side; use the top screw holes.

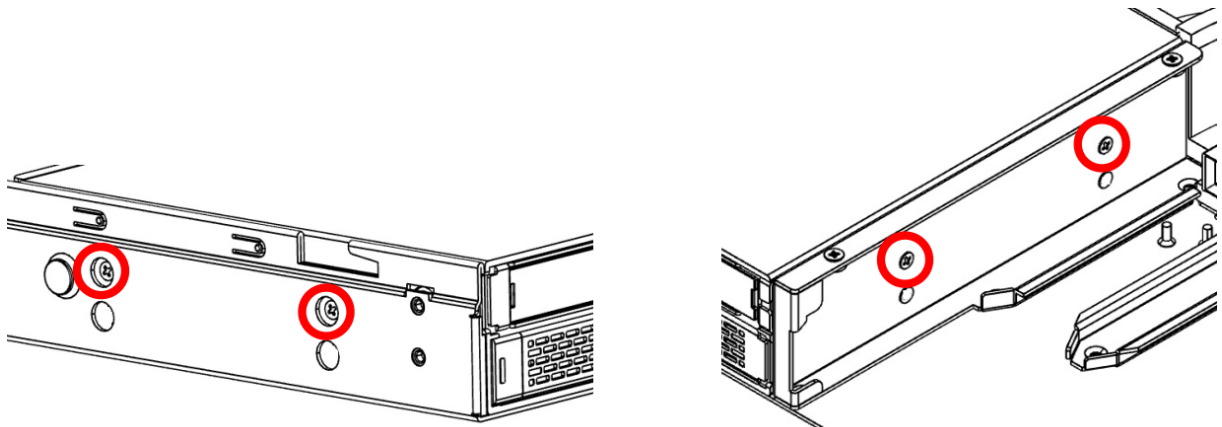


Figure 13. Drive holder screws

4. Install the left rail onto the system.
5. Using your labels, replace the cables into the rear of the drive holder.
6. Install the service access cover.
 - For instructions, see [“Installing the service access cover on a 7063-CR2 system”](#) on page 105.
7. Replace all of the fans into the system.

For instructions, see “Replacing a fan in the 7063-CR2 system” on page 20.

8. Using your labels, replace the two drives into the system.
 - a) Support the drive by the bottom as you position the drive, and insert it into the drive slot.
Important: Ensure that the drive is fully seated and is all the way into the system.
 - b) Lock the drive bay handle (**A**) by pushing in the handle release latch until it locks into place.

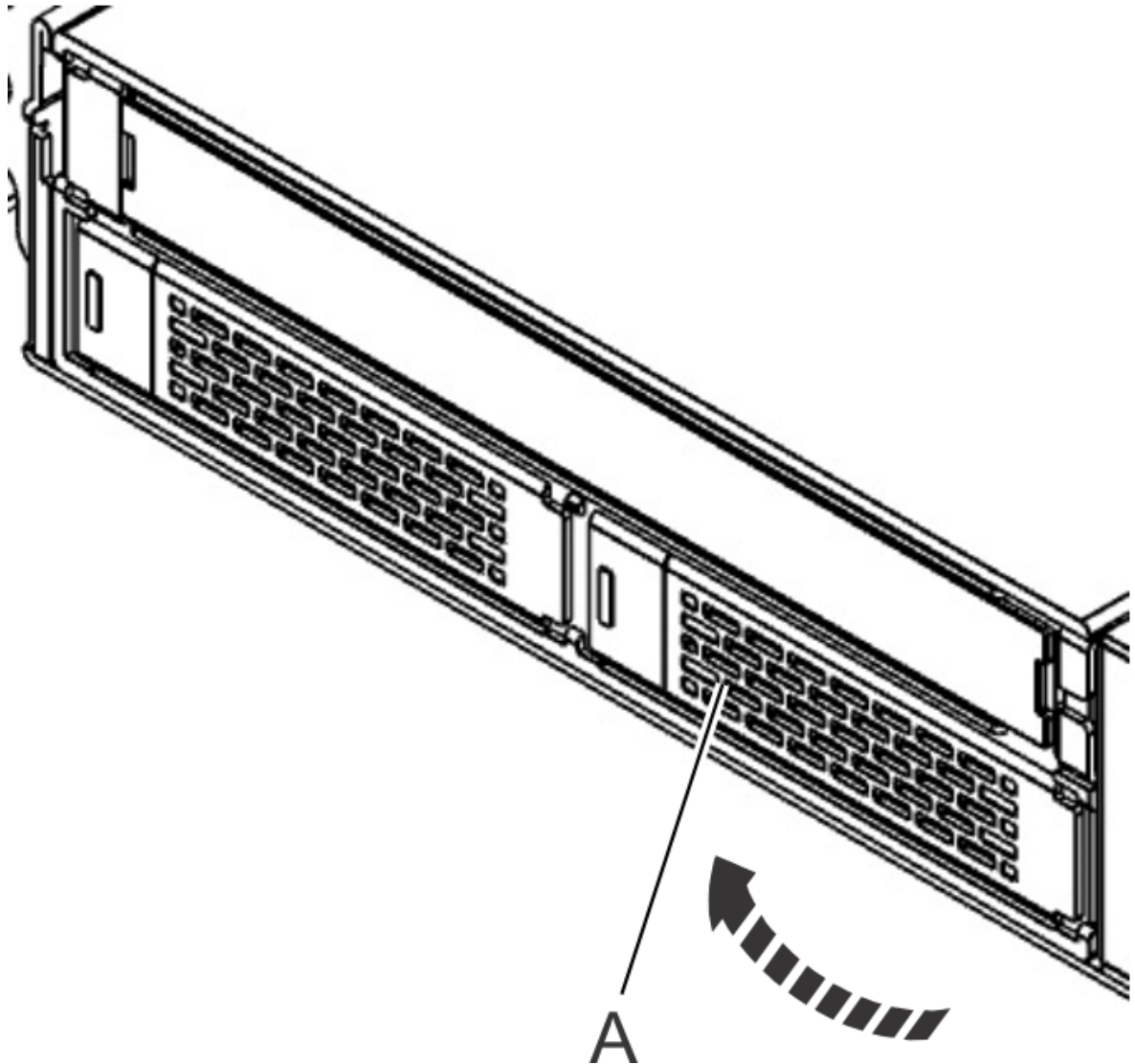


Figure 14. Installing a drive

9. Replace the system in the rack and replace the components that you removed.
For instructions, see “Placing a 7063-CR2 system into the operating position” on page 103.
10. Power on the system for operation.
For instructions, see “Starting the 7063-CR2 system ” on page 98.

Removing and replacing fans in the 7063-CR2

Learn how to remove and replace fans in the IBM Power Systems HMC (7063-CR2) system.

Removing a fan from the 7063-CR2 system

To remove a fan from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Before you begin

(L008)



CAUTION: Hazardous moving parts nearby. (L008)

About this task

If a single fan failed, it can be replaced while the system is running.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Remove the fan cover from the front of the system.
 - a) Rotate the two levers (**A**) on each side of the fan cover up and out to unlock the fan cover.
 - b) Pull the cover away from the system.

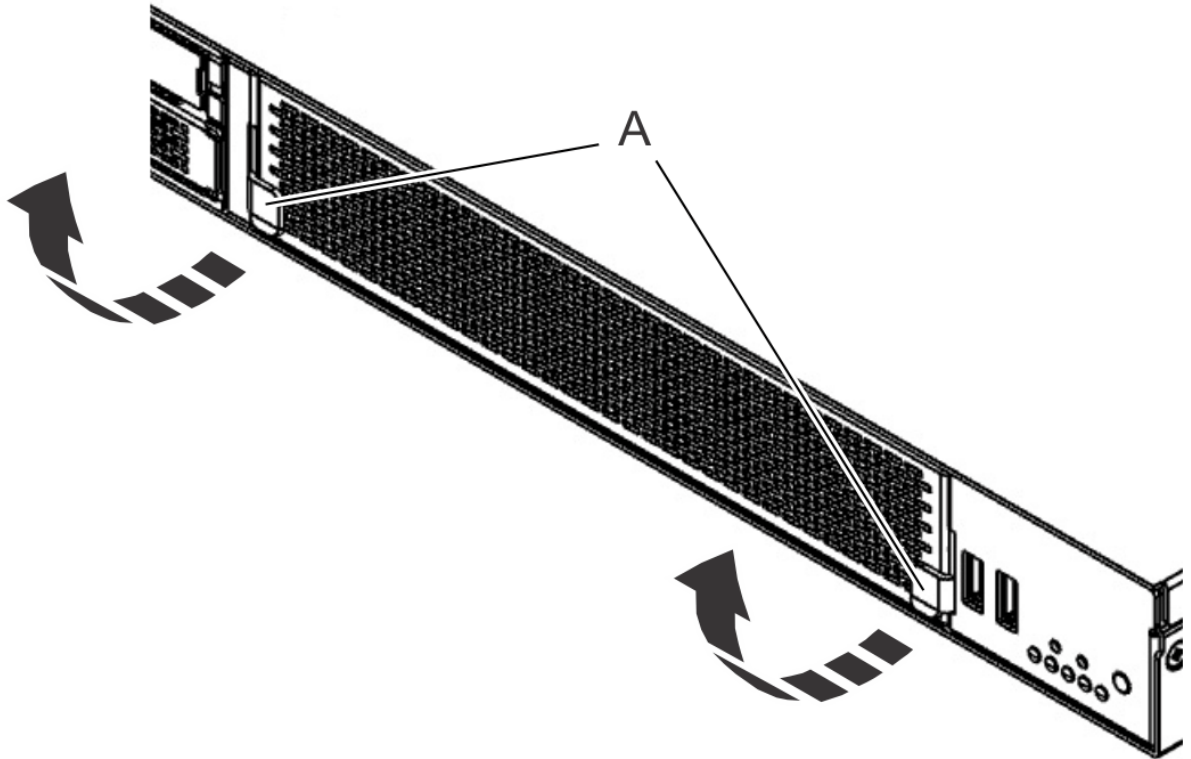



Figure 15. Removing the fan cover

3. Remove the fan assembly from the system.

 **Warning:** If the system is powered on and you remove two or more fans, the system powers down.

- a) Use the ring (**A**) on the front of the fan to pull the fan from the system.
- b) Support the bottom of the fan as you slide it out of the system. Do not hold the fan by the ring.

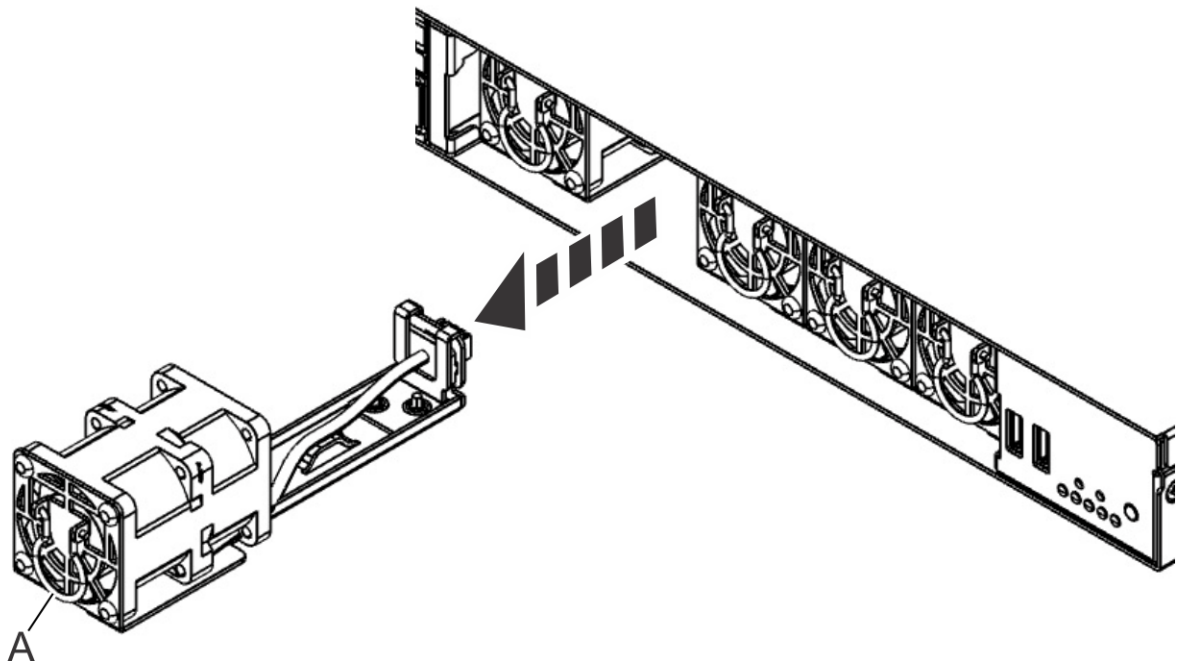


Figure 16. Removing a fan

Replacing a fan in the 7063-CR2 system

To replace a fan in the IBM Power Systems HMC (7063-CR2) 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. Replace the fan in the system. The top side of the fan assembly has an arrow that shows the airflow direction; the metal alignment plate is the bottom of the fan assembly. Ensure that you align the fan housing under the internal fan rails. Push the fan into the system until the fan is fully seated.

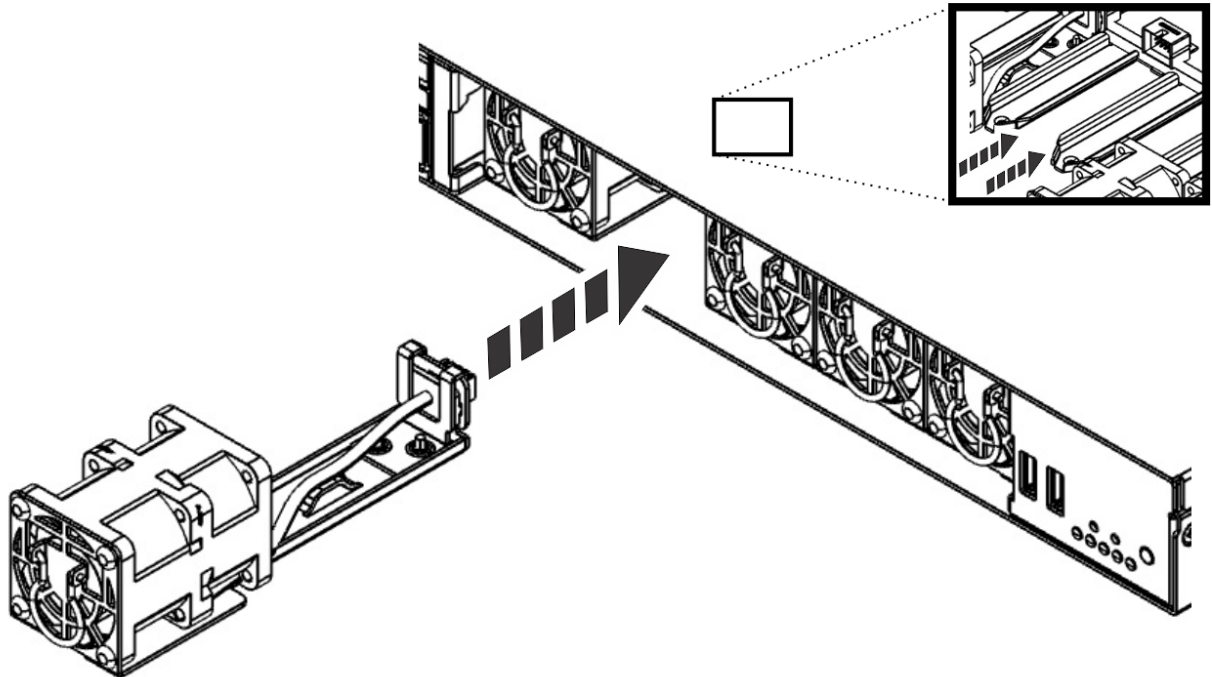


Figure 17. Replacing a fan

3. Replace the fan cover.
 - a) Ensure that the two levers are open.
 - b) Put the fan cover in place.
 - c) Rotate the two levers on each side of the fan cover down and in to secure the cover to the system.

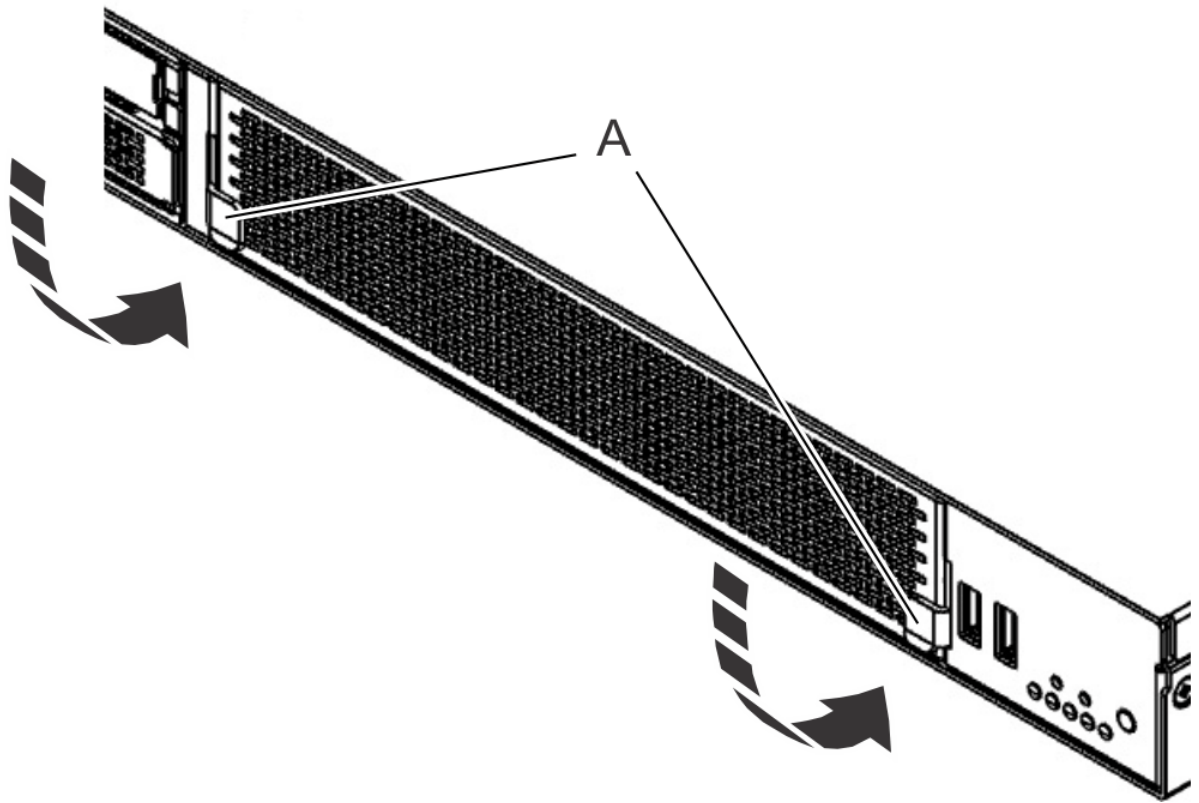


Figure 18. Replacing the fan cover

Removing and replacing memory in the 7063-CR2

To remove and replace memory in the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

The four memory modules must be the same size and type. Mixing of memory module types is not allowed. The following table lists the supported memory feature codes.

Feature code	Size
EM62	4 x 16 GB = 64 GB
EM63	4 x 32 GB = 128 GB

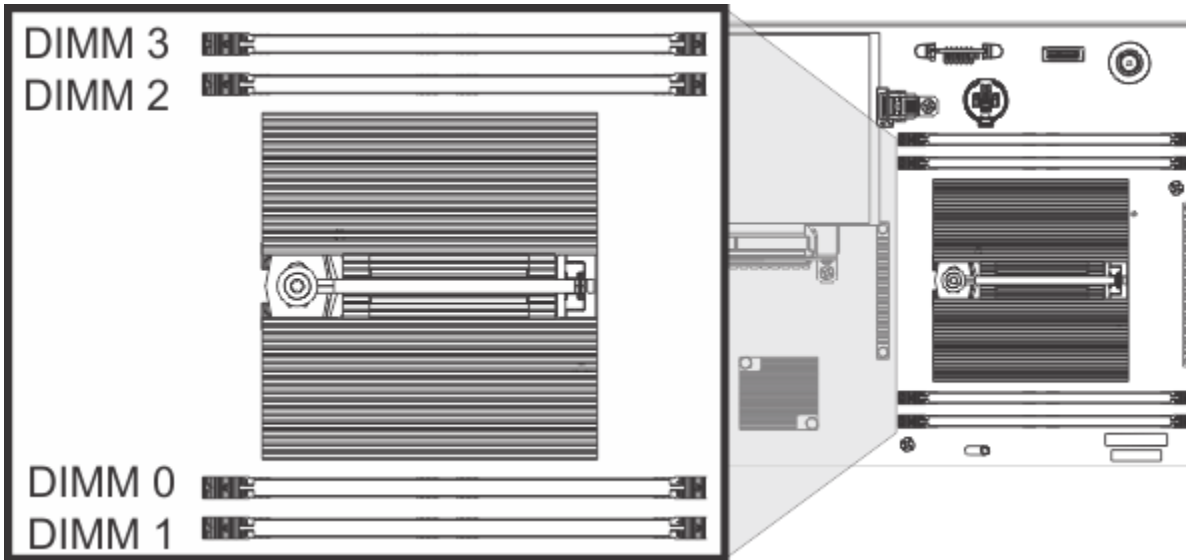


Figure 19. Memory locations

Procedure

1. Power off the system.

For instructions, see [“Stopping the 7063-CR2 system”](#) on page 99.

2. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
3. Remove the system backplane from the rear of the system.
 - a) Label and remove the two power cables.

For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.
 - b) Label and remove the signal cables from the rear of the system.
 - c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

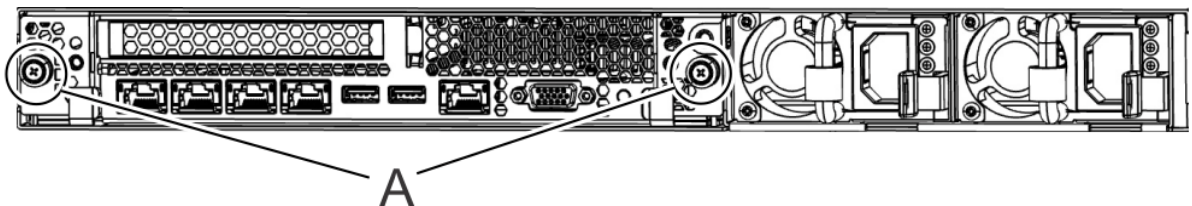


Figure 20. Removing the system backplane screws

- d) Simultaneously rotate the two levers (**A**) on each side of the system backplane out and to the side to unlock the system backplane from the system.

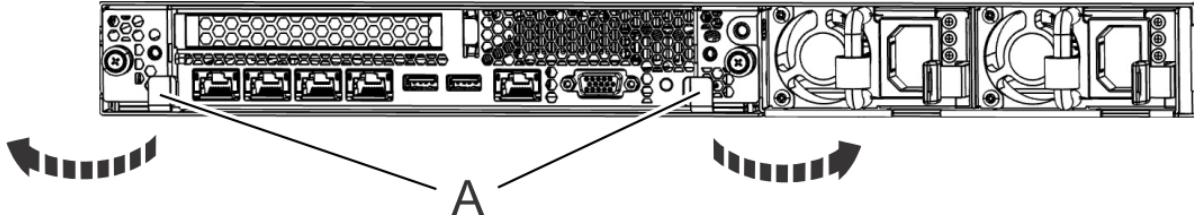


Figure 21. Unlatching the system backplane

- e) Support the system backplane by the bottom as you slide it from the system.

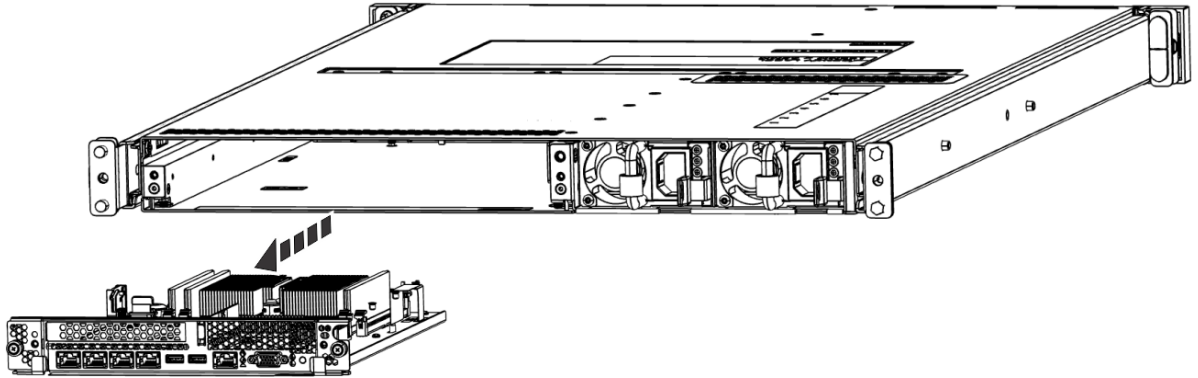


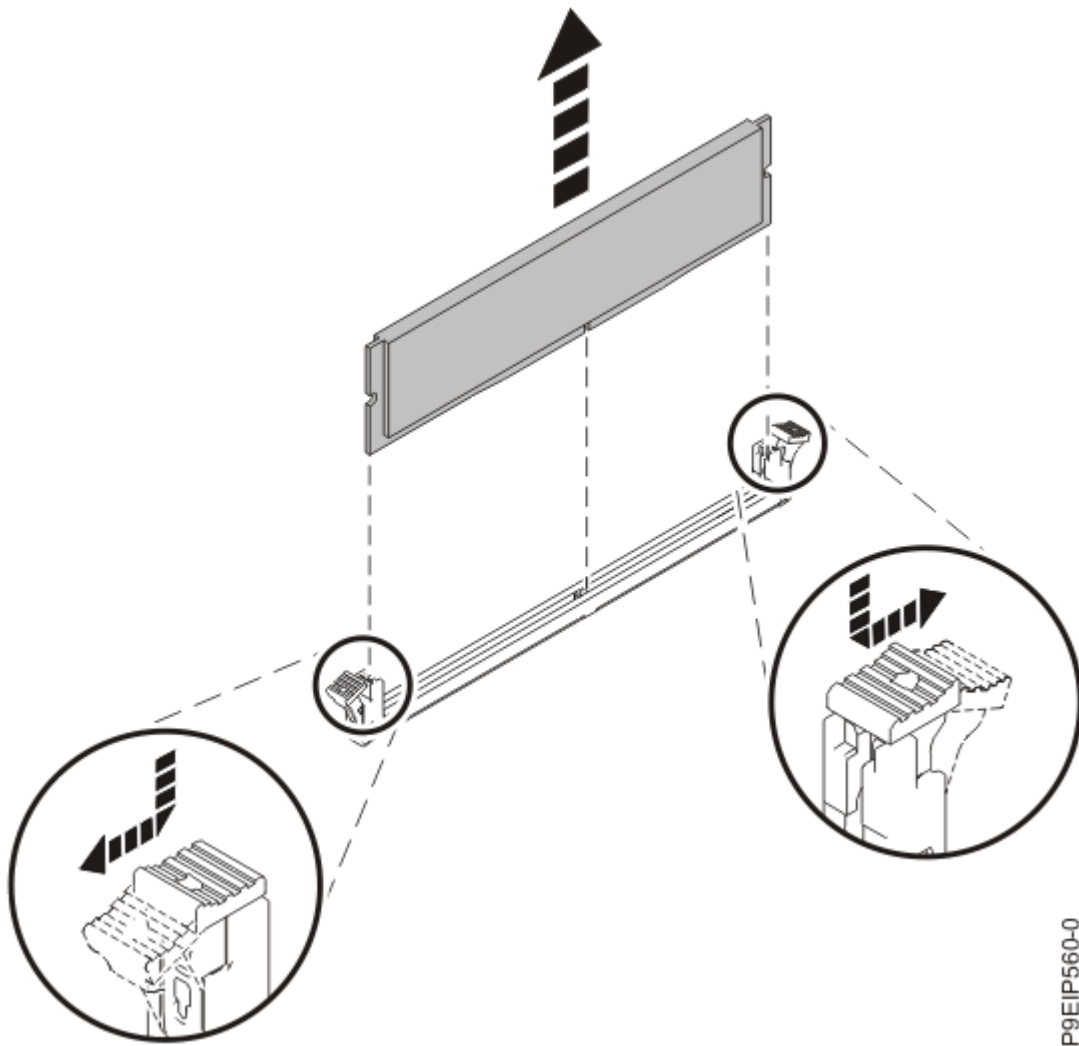
Figure 22. Removing the system backplane

- f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

4. Remove the memory DIMM.

- Locate the memory DIMM that you want to remove.
- Unlock the memory DIMM by simultaneously pushing the locking tabs away from the memory DIMM. Be sure to unlock both tabs at the same time. The lever action of opening the tabs pushes the memory DIMM out of the slot.
- Hold the memory DIMM by the edges and pull it out of the slot.



P9EIP560-0

Figure 23. Removing the memory DIMM

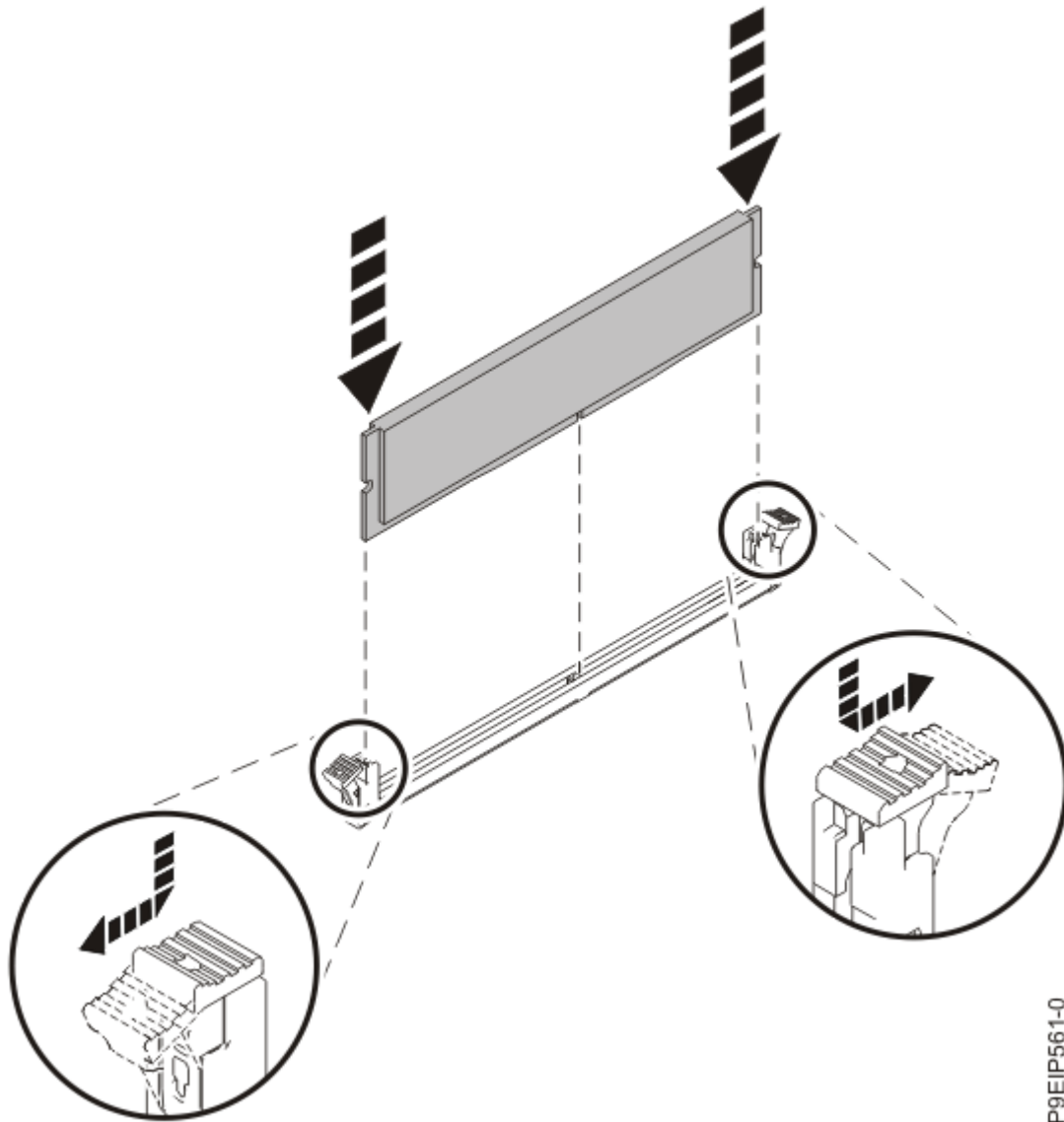
5. Insert the memory DIMM.

a) Grasp the memory DIMM along its edges and align it with the slot on the system backplane.



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.

b) Press firmly on each side of the memory DIMM until the locking tab locks in place with an audible click.



P9EIP561-0

Figure 24. Inserting the memory DIMM

6. Replace the system backplane into the rear of the system.

- a) Ensure that the two system backplane levers are open.
- b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

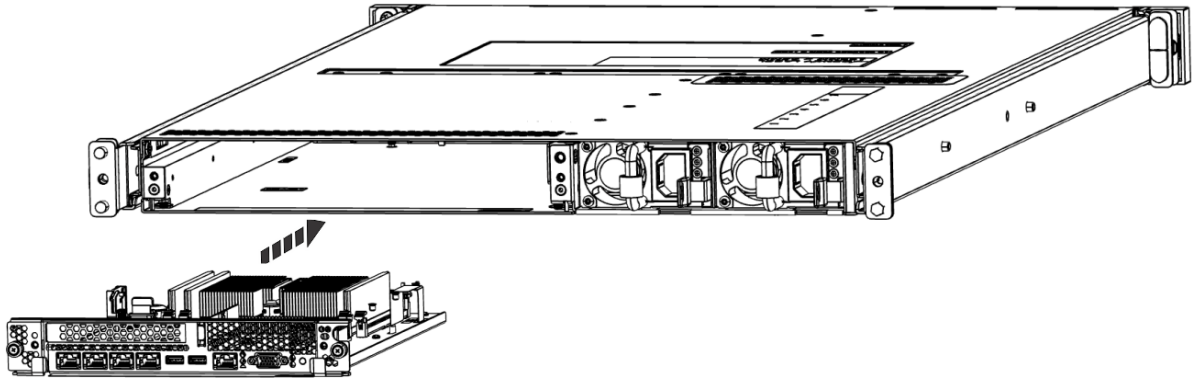


Figure 25. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
- d) Tighten the two screws on the sides of the system backplane.
- e) Using your labels, replace the signal cables into the rear of the system.
- f) Using your labels, replace the two power cords at the rear of the system.

For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

7. Power on the system for operation.

For instructions, see [“Starting the 7063-CR2 system ”](#) on page 98.

Removing and replacing the control panel in the 7063-CR2

Learn how to remove and replace the control panel in the IBM Power Systems HMC (7063-CR2) system.

Removing the control panel from the 7063-CR2 system

To remove the control panel from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.

2. Power off the system.

For instructions, see [“Stopping the 7063-CR2 system”](#) on page 99.

3. Place the system in the service position on an ESD surface on a table.

For instructions, see [“Placing a 7063-CR2 system into the service position”](#) on page 101.

4. Turn the system upside down on the ESD surface.
5. Remove the two screws **(A)** that secure the control panel to the bottom of the system.

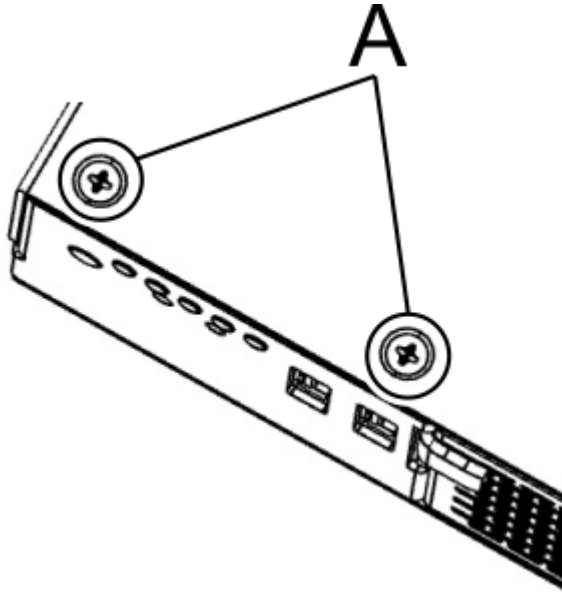


Figure 26. Removing the control panel bottom screws

6. Turn the system right side up on the ESD surface.
7. Remove the screw **(A)** that secures the control panel to the right side of the system.

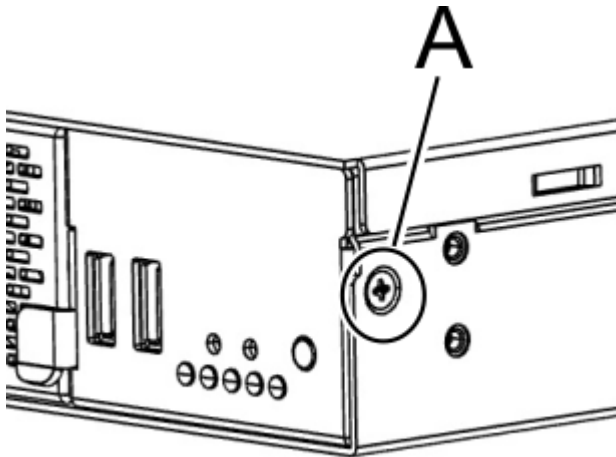


Figure 27. Removing the control panel side screw

8. Remove the fan cover from the front of the system.
 - a) Rotate the two levers **(A)** on each side of the fan cover up and out to unlock the fan cover.
 - b) Pull the cover away from the system.

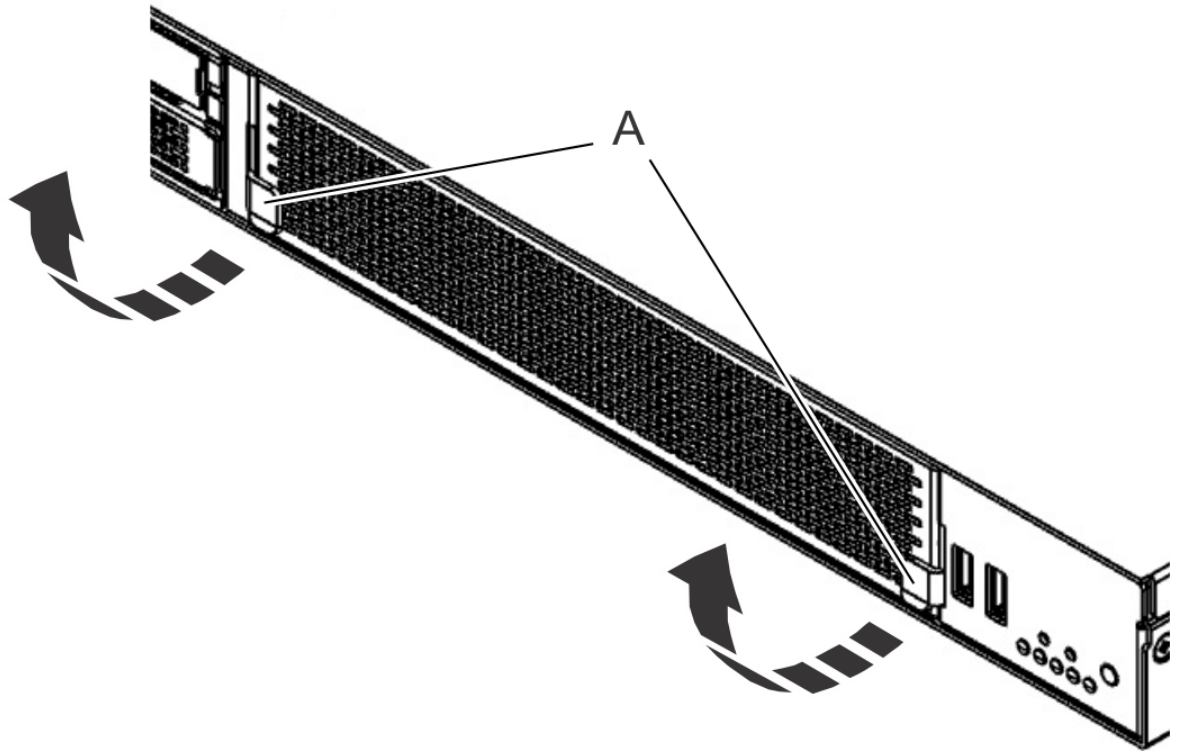


Figure 28. Removing the fan cover

9. Slide the control panel out of the system. Be careful with the cables that are attached to the control panel.

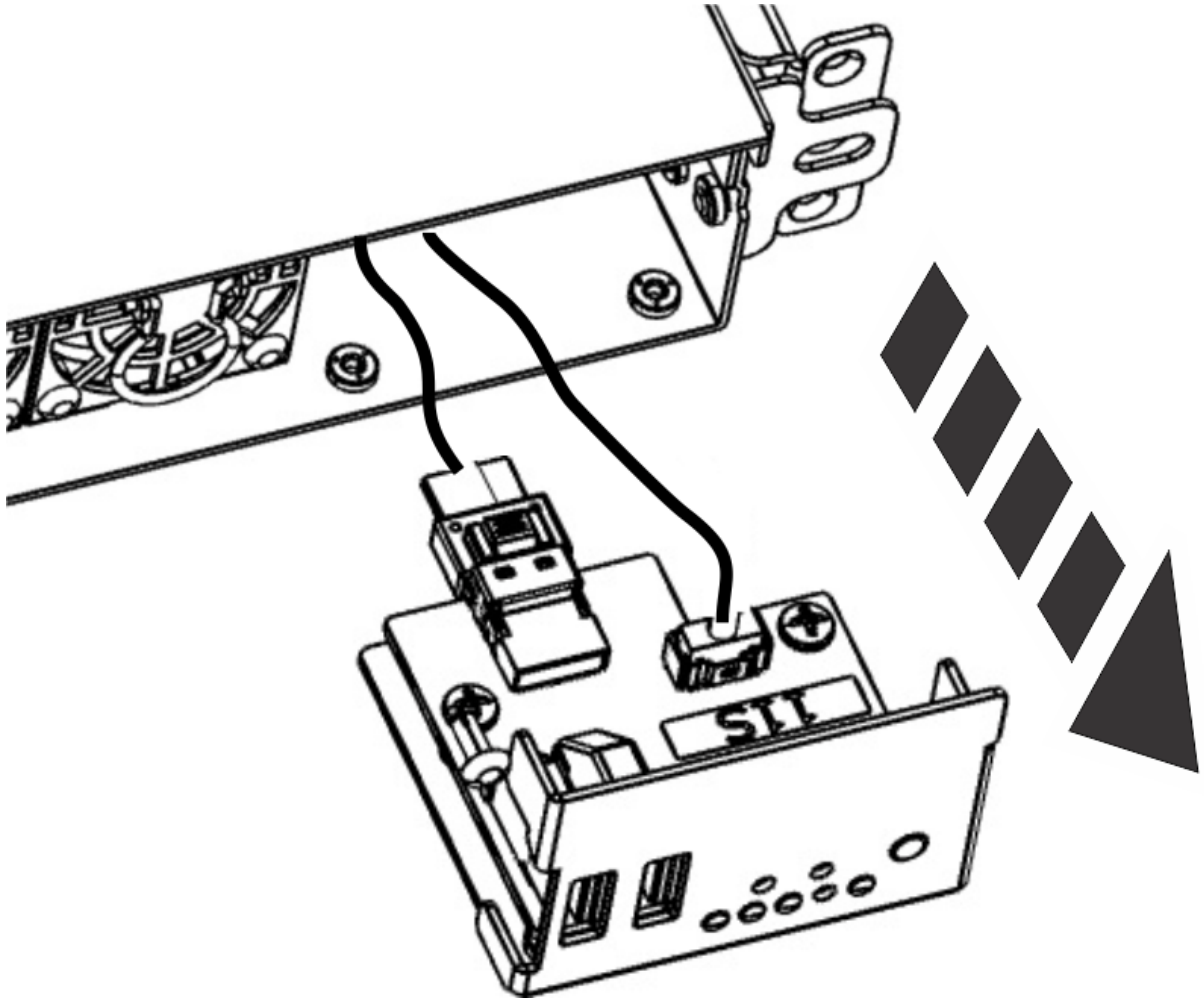


Figure 29. Removing the control panel from the system

10. Disconnect the USB cable and the control panel cable from the control panel.
Use your thumb or finger to press the release latch on the connector to remove the cable.
11. Remove the three screws that secure the control panel card to the control panel cover.

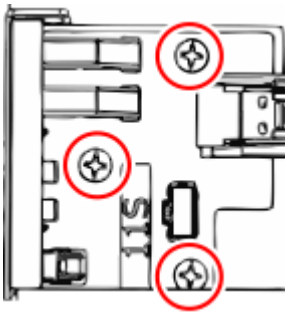


Figure 30. Removing the control panel screws

Replacing the control panel in the 7063-CR2 system

To replace the control panel in the IBM Power Systems HMC (7063-CR2) 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 new control panel card from new control panel cover.
3. Align the new control panel card on the current control panel cover.
The current control panel cover has the system serial number and needs to be used.
4. Replace the three screws that secure the control panel card to the control panel cover.

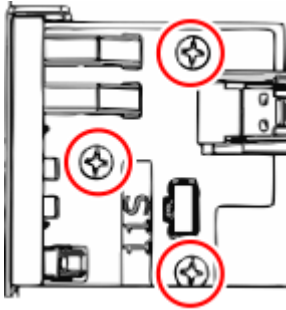


Figure 31. Replacing the control panel screws

5. Connect the USB cable and the control panel cable to the control panel.
6. Install the control panel into the system.
Ensure that the USB and power switch cables are not pinched when you insert the control panel.

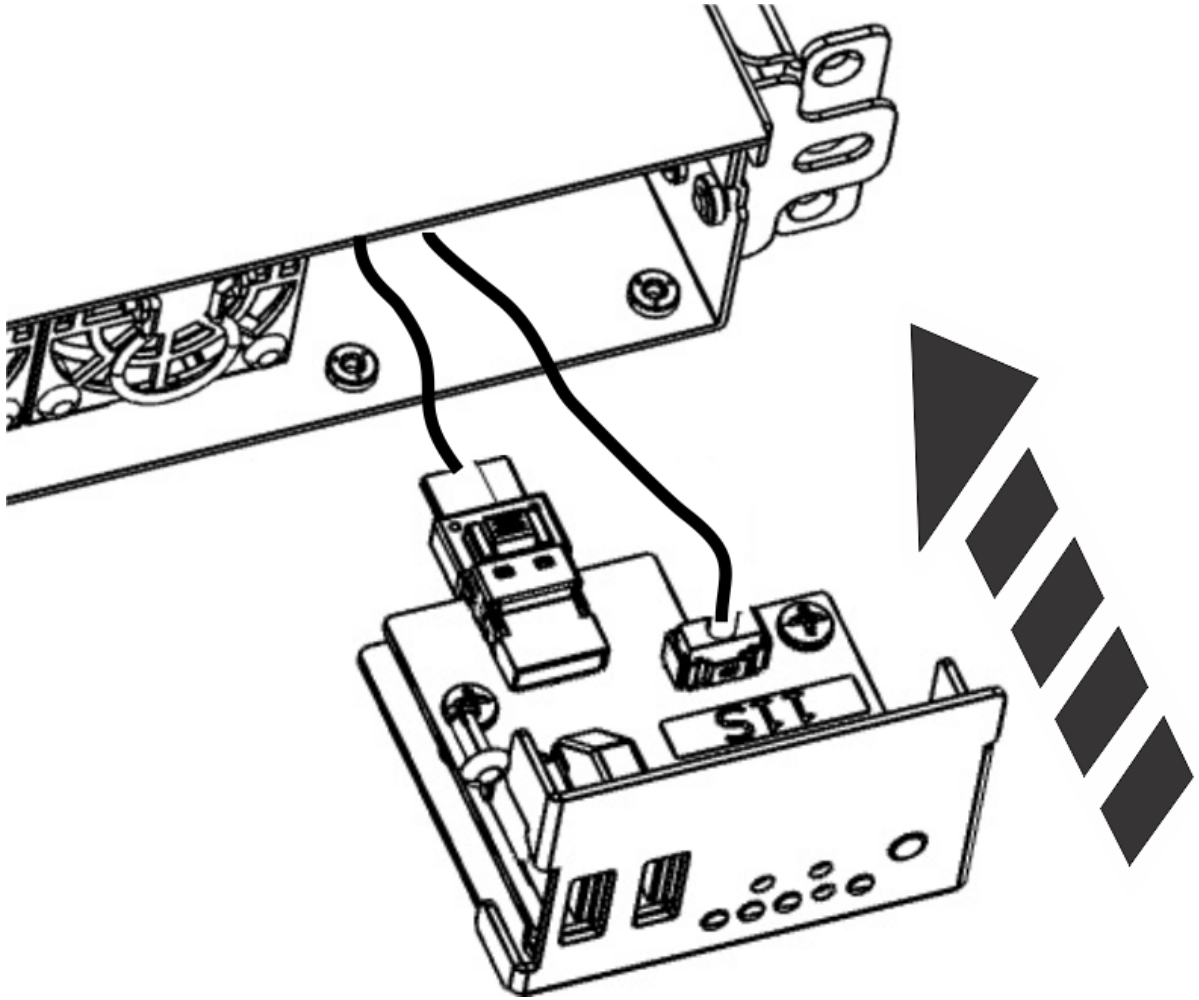


Figure 32. Installing the control panel into the system

7. Install the screw **(A)** to secure the control panel to the right side of the system.

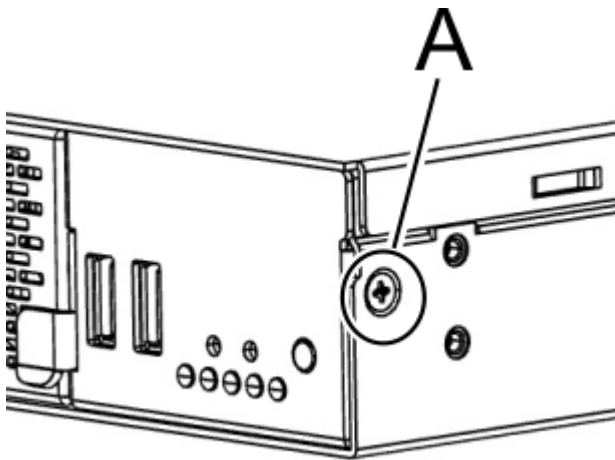


Figure 33. Installing the control panel side screw

8. Turn the system upside down on the ESD surface.
9. Install the two screws **(A)** to secure the control panel to the bottom of the system.

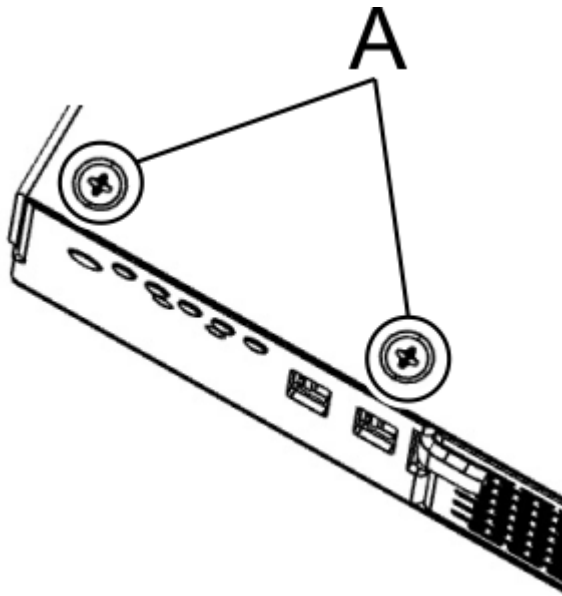


Figure 34. Installing the control panel bottom screws

10. Turn the system right side up on the ESD surface.

11. Replace the fan cover.

a) Ensure that the two levers are open.

b) Put the fan cover in place.

c) Rotate the two levers on each side of the fan cover down and in to secure the cover to the system.

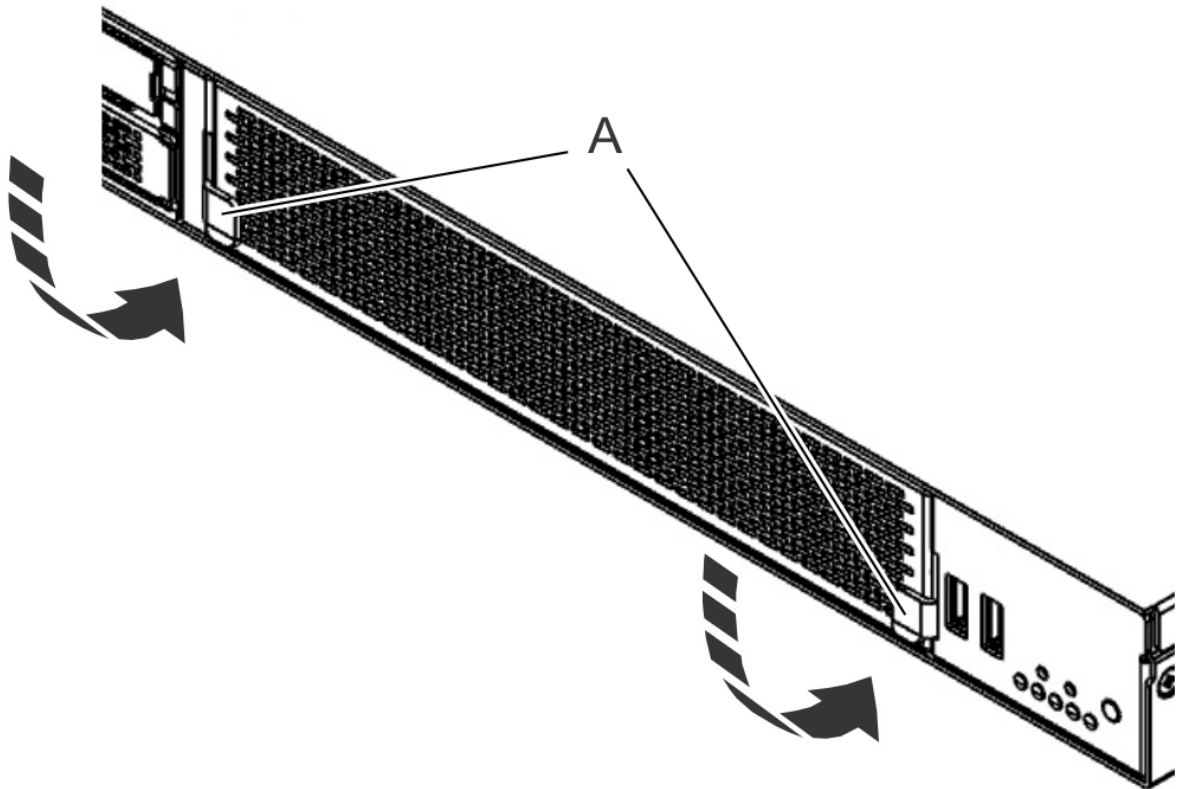


Figure 35. Replacing the fan cover

12. Replace the system in the rack and replace the components that you removed.

For instructions, see [“Placing a 7063-CR2 system into the operating position”](#) on page 103.

13. Power on the system for operation.

For instructions, see [“Starting the 7063-CR2 system”](#) on page 98.

Removing and replacing PCIe adapters in the 7063-CR2

Learn how to remove and replace Peripheral Component Interconnect (PCI) Express (PCIe) adapters in the IBM Power Systems HMC (7063-CR2) system.

About this task



Attention: For safety and airflow purposes, if you remove a PCIe adapter from the system, you must ensure that a PCIe filler and a PCIe tail-stock filler are present.

Parts must be replaced with the identical part in the exact same place.

Removing a PCIe adapter from the 7063-CR2 system

To remove a PCIe adapter from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task



Attention: For safety and airflow purposes, if you remove a PCIe adapter from the system, you must ensure that a PCIe filler and a PCIe tail-stock filler are present.

Parts must be replaced with the identical part in the exact same place.

Procedure

1. Power off the system.

For instructions, see [“Stopping the 7063-CR2 system”](#) on page 99.

2. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.

3. Remove the system backplane from the rear of the system.

- a) Label and remove the two power cables.

For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.

- b) Label and remove the signal cables from the rear of the system.

- c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

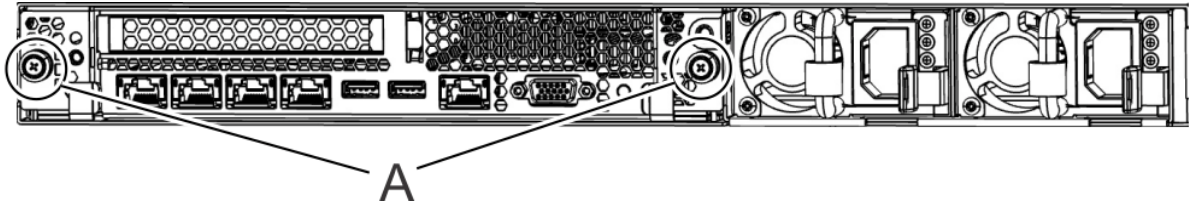


Figure 36. Removing the system backplane screws

- d) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

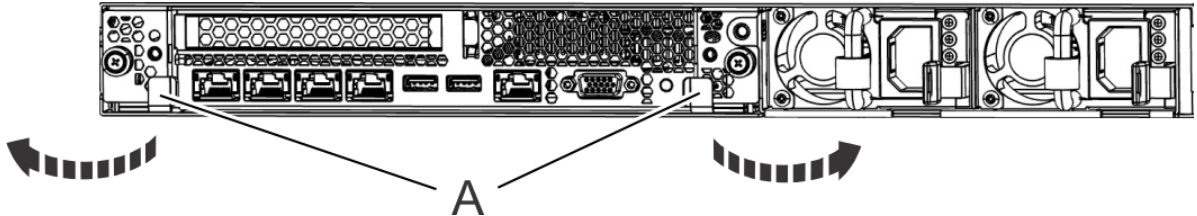


Figure 37. Unlatching the system backplane

- e) Support the system backplane by the bottom as you slide it from the system.

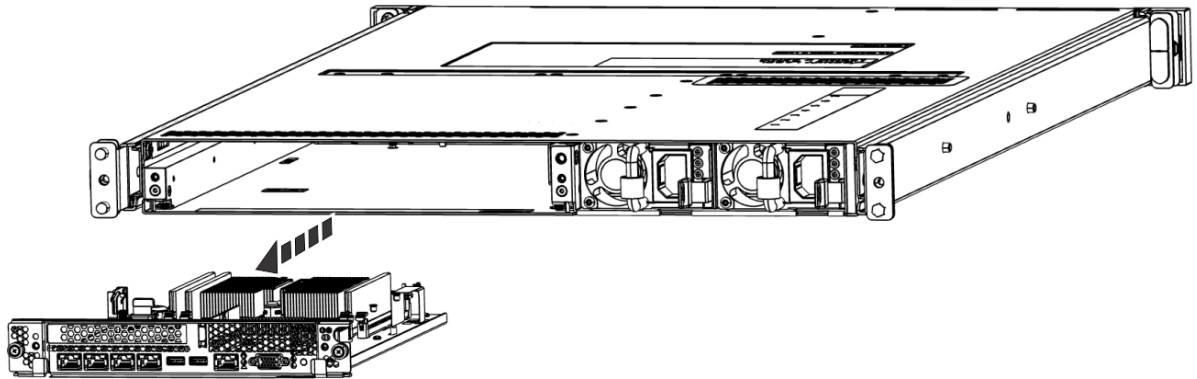


Figure 38. Removing the system backplane

- f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

4. Remove the PCIe adapter from the PCIe riser.

- a) Remove the screw that secures the PCIe adapter to the system backplane.

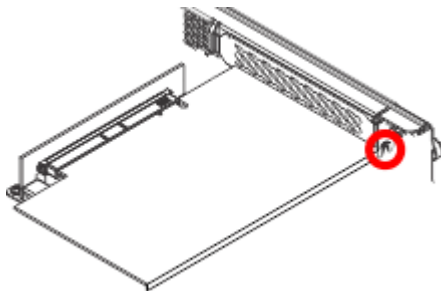


Figure 39. Removing the tail-stock screw

- b) Open the retainer clip that secures the PCIe adapter to the PCIe riser, by moving the blue lever to the unlocked position.

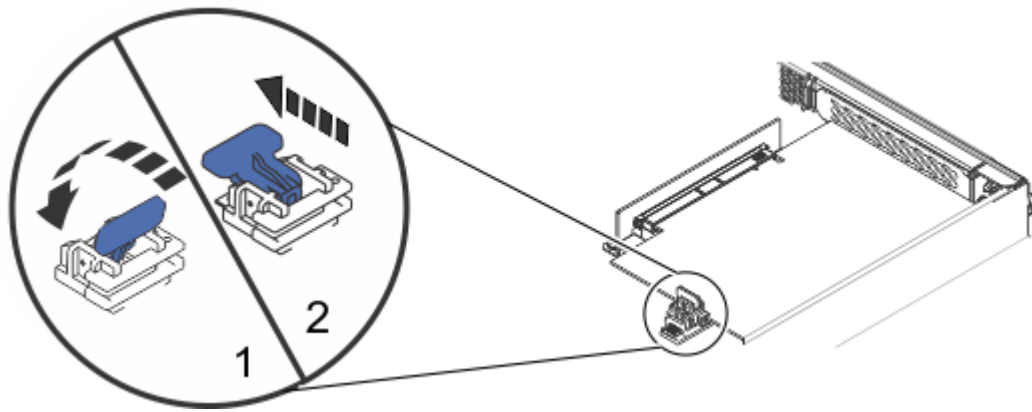


Figure 40. Removing the PCIe adapter retaining latch

- c) Move the retainer clip away from the PCIe adapter.
- d) Remove the PCIe adapter from the PCIe riser.

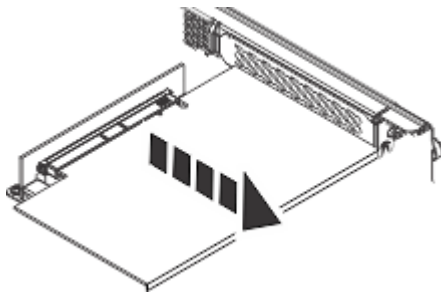


Figure 41. Removing the PCIe adapter

Replacing a PCIe adapter in the 7063-CR2 system

To replace a PCIe adapter in the IBM Power Systems HMC (7063-CR2) 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. Replace the PCIe adapter.
 - a) Replace the PCIe adapter into the PCIe riser.

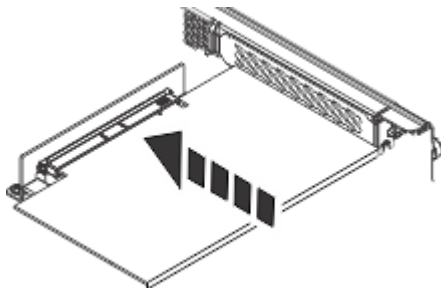


Figure 42. Replacing the PCIe adapter

- b) Replace the screw that secures the PCIe adapter to the system backplane.

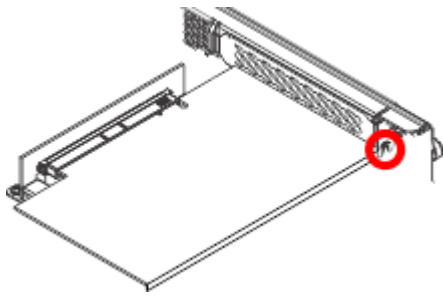


Figure 43. Replacing the tail-stock screw

- c) Move the retainer clip to secure the PCIe adapter to the PCIe riser. Ensure that the clip is fully seated around the edge of the adapter.

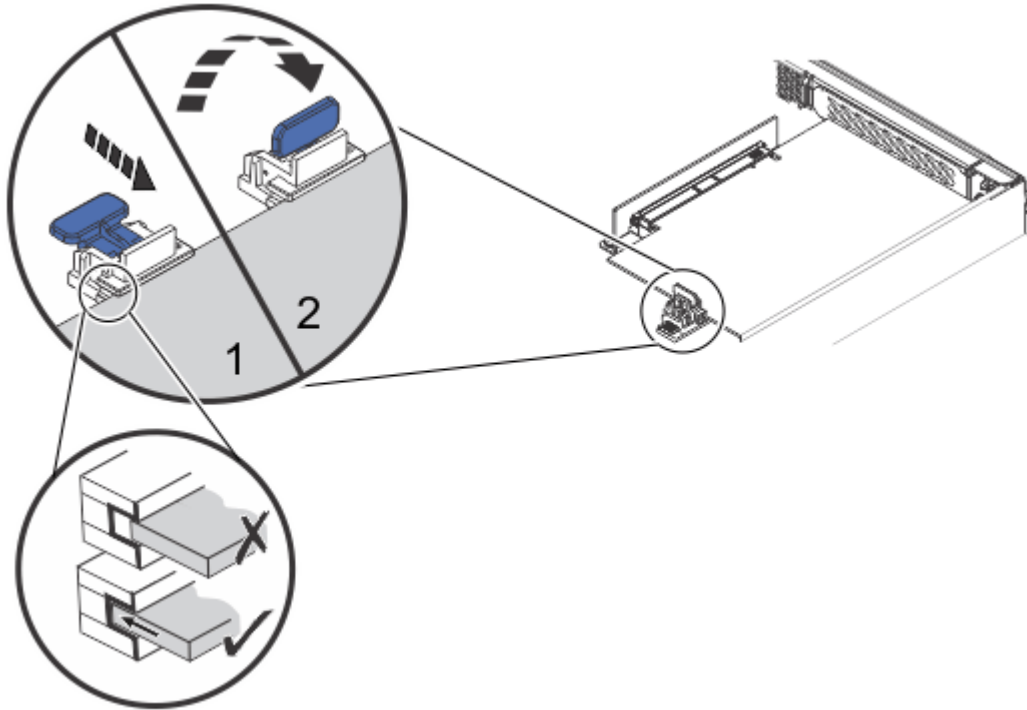


Figure 44. Replacing the PCIe adapter retaining latch

- d) Close the retainer clip that secures the PCIe adapter to the PCIe riser.
3. Replace the system backplane into the rear of the system.
- Ensure that the two system backplane levers are open.
 - Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

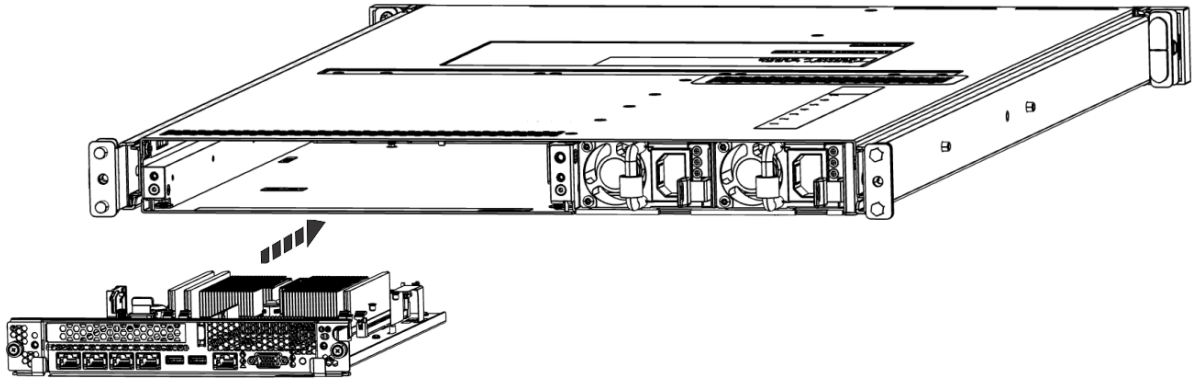


Figure 45. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
 - d) Tighten the two screws on the sides of the system backplane.
 - e) Using your labels, replace the signal cables into the rear of the system.
 - f) Using your labels, replace the two power cords at the rear of the system.
For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.
4. Power on the system for operation.
For instructions, see [“Starting the 7063-CR2 system ”](#) on page 98.

Removing and replacing the PCIe riser in the 7063-CR2

Learn how to remove and replace the PCIe riser in the IBM Power Systems HMC (7063-CR2) system.

Removing the PCIe riser from the 7063-CR2 system

To remove the PCIe riser from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Power off the system.
For instructions, see [“Stopping the 7063-CR2 system”](#) on page 99.
2. Attach the electrostatic discharge (ESD) wrist strap.
The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.

⚠ 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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
3. Remove the system backplane from the rear of the system.
 - a) Label and remove the two power cables.

For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.

b) Label and remove the signal cables from the rear of the system.

c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

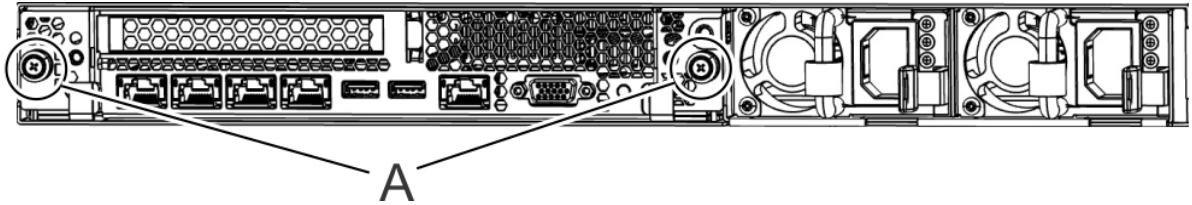


Figure 46. Removing the system backplane screws

d) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

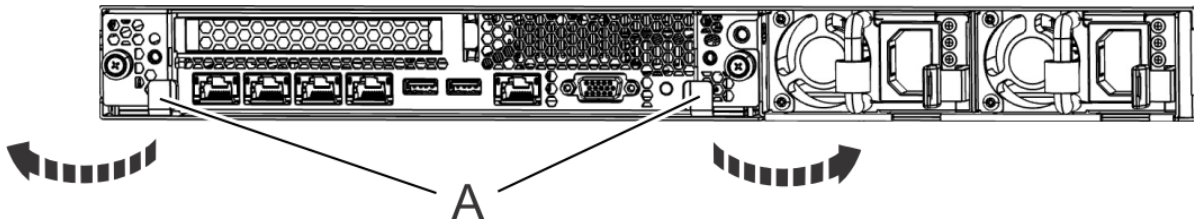


Figure 47. Unlatching the system backplane

e) Support the system backplane by the bottom as you slide it from the system.

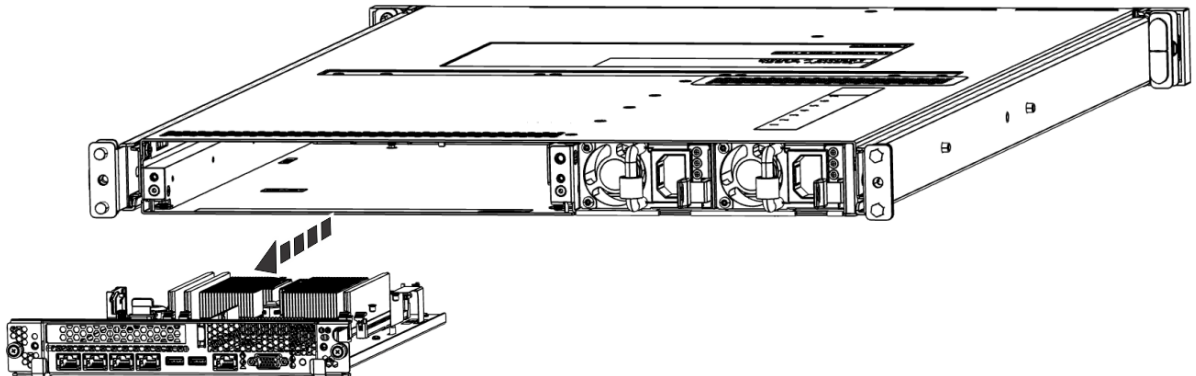


Figure 48. Removing the system backplane

f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

4. Remove the PCIe adapter or filler from the PCIe riser.

For instructions, see [“Removing a PCIe adapter from the 7063-CR2 system”](#) on page 33.

5. Remove the four screws that secure the PCIe riser to the system backplane.

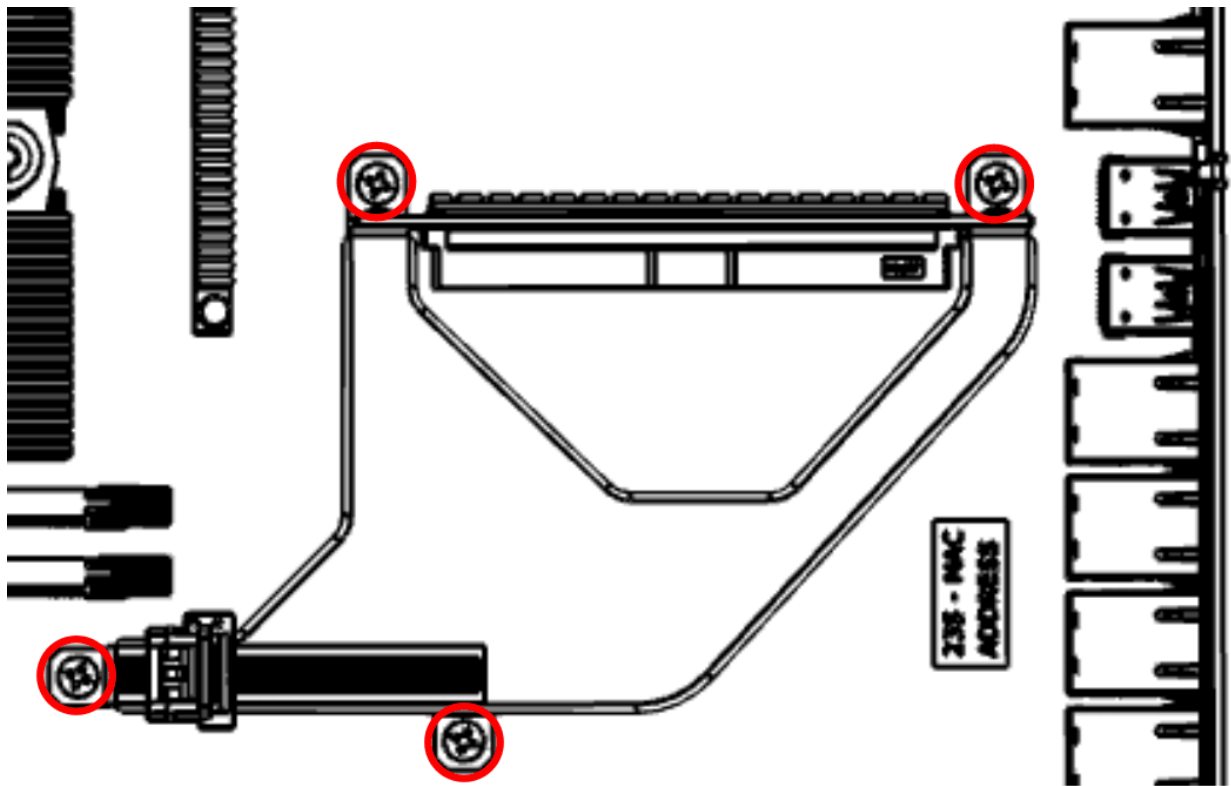


Figure 49. Removing the PCIe riser screws

6. Lift the PCIe riser from the system and place it on an ESD surface.

Replacing the PCIe riser in the 7063-CR2 system

To replace the PCIe riser in the IBM Power Systems HMC (7063-CR2) 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. Install the PCIe riser into the system. Insert the PCIe riser into the system backplane until the riser card is fully seated in the socket on the backplane.
3. Replace the four screws to secure the PCIe riser to the system backplane.

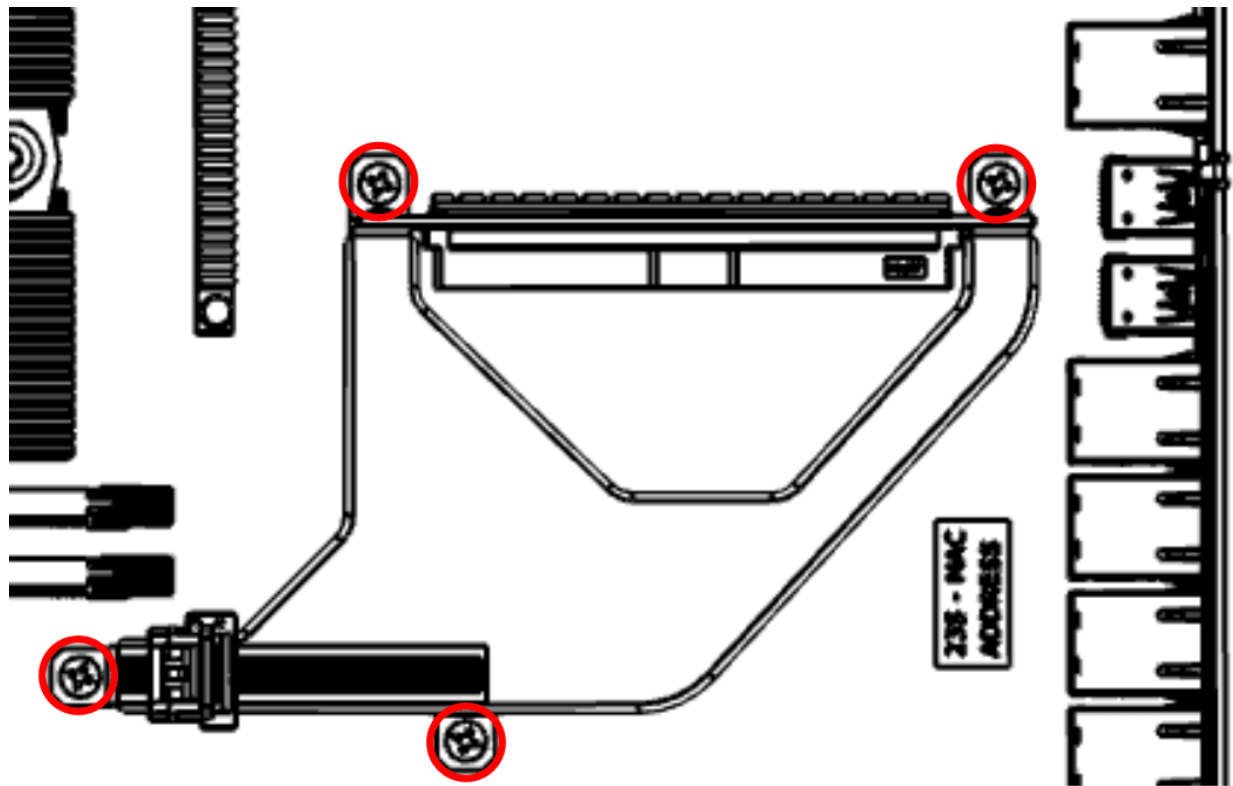


Figure 50. Replacing the PCIe riser screws

4. Replace the PCIe adapter or filler.

For instructions, see [“Replacing a PCIe adapter in the 7063-CR2 system”](#) on page 35.

5. Replace the system backplane into the rear of the system.

- a) Ensure that the two system backplane levers are open.
- b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

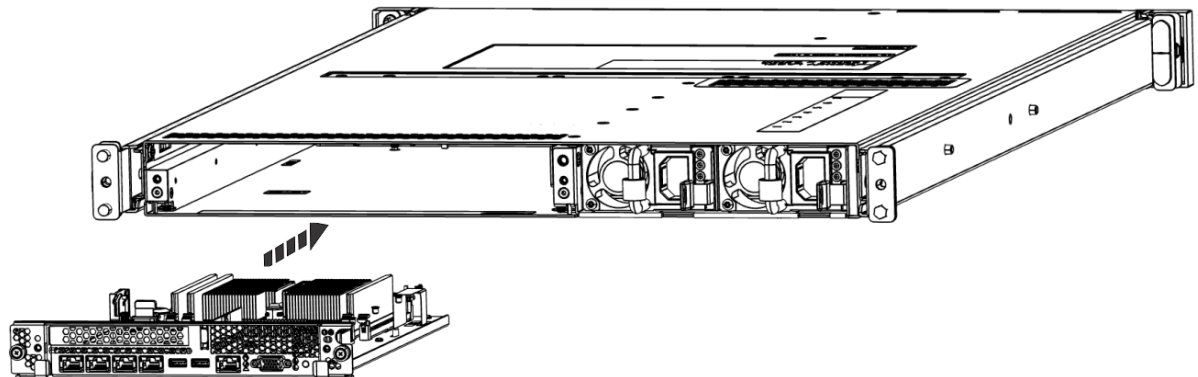


Figure 51. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
 - d) Tighten the two screws on the sides of the system backplane.
 - e) Using your labels, replace the signal cables into the rear of the system.
 - f) Using your labels, replace the two power cords at the rear of the system.
For instructions, see [“Connecting the power cords to a 7063-CR2 system” on page 101.](#)
6. Power on the system for operation.
For instructions, see [“Starting the 7063-CR2 system ” on page 98.](#)

Removing and replacing the power distribution board in the 7063-CR2

Learn how to remove and replace the power distribution board in the IBM Power Systems HMC (7063-CR2) system.

Removing the power distribution board from the 7063-CR2 system

To remove the power distribution board from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

You can use a magnetic tip screwdriver to remove and replace the screws.

Procedure

1. Power off the system.

For instructions, see [“Stopping the 7063-CR2 system” on page 99.](#)

2. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
3. Remove all the fans from the system.
For instructions, see [“Removing a fan from the 7063-CR2 system” on page 18.](#)
 4. Remove the system backplane from the rear of the system.
 - a) Label and remove the two power cables.
For instructions, see [“Disconnecting the power cords from a 7063-CR2 system” on page 100.](#)
 - b) Label and remove the signal cables from the rear of the system.
 - c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

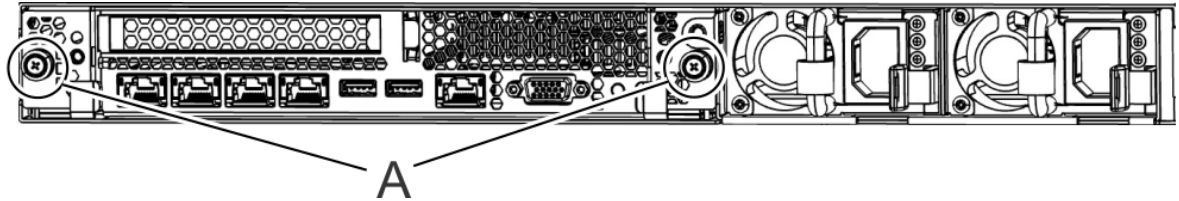


Figure 52. Removing the system backplane screws

- d) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

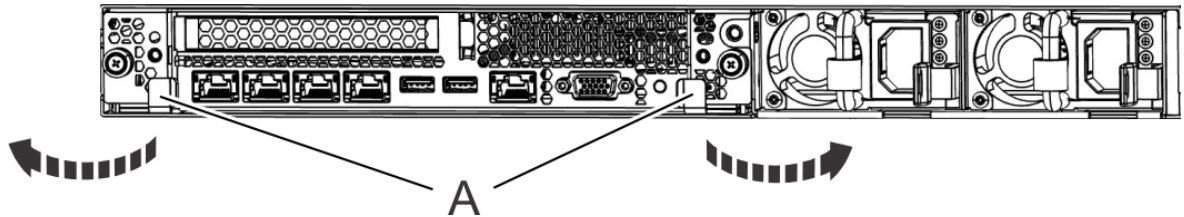


Figure 53. Unlatching the system backplane

- e) Support the system backplane by the bottom as you slide it from the system.

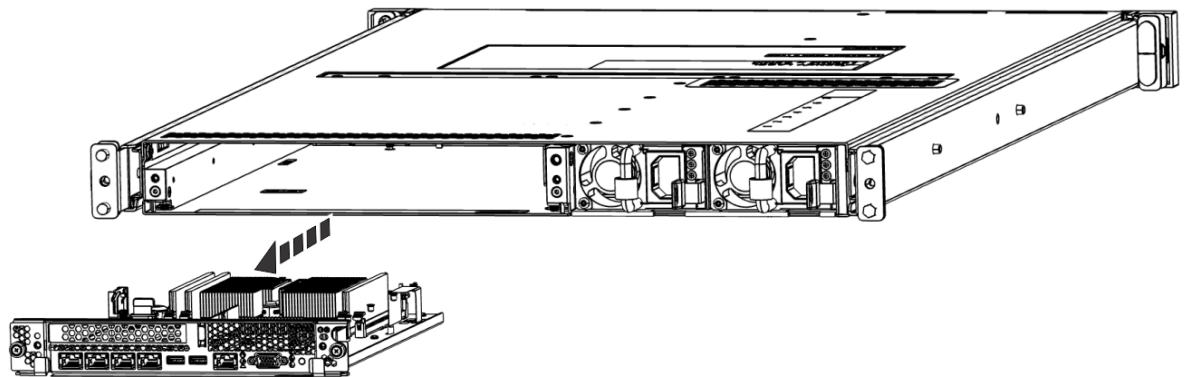


Figure 54. Removing the system backplane

- f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

5. Place the system in the service position on an ESD surface on a table.

For instructions, see [“Placing a 7063-CR2 system into the service position”](#) on page 101.

6. Remove the service access cover.

For instructions, see [“Removing the service access cover from a 7063-CR2 system”](#) on page 104.

7. Label and unplug the five cables **(A)** from the power distribution board. Unplug the drive cables from the rear of the drive holder.

Use your thumb or finger to press the release latch on the connector to remove the cable.

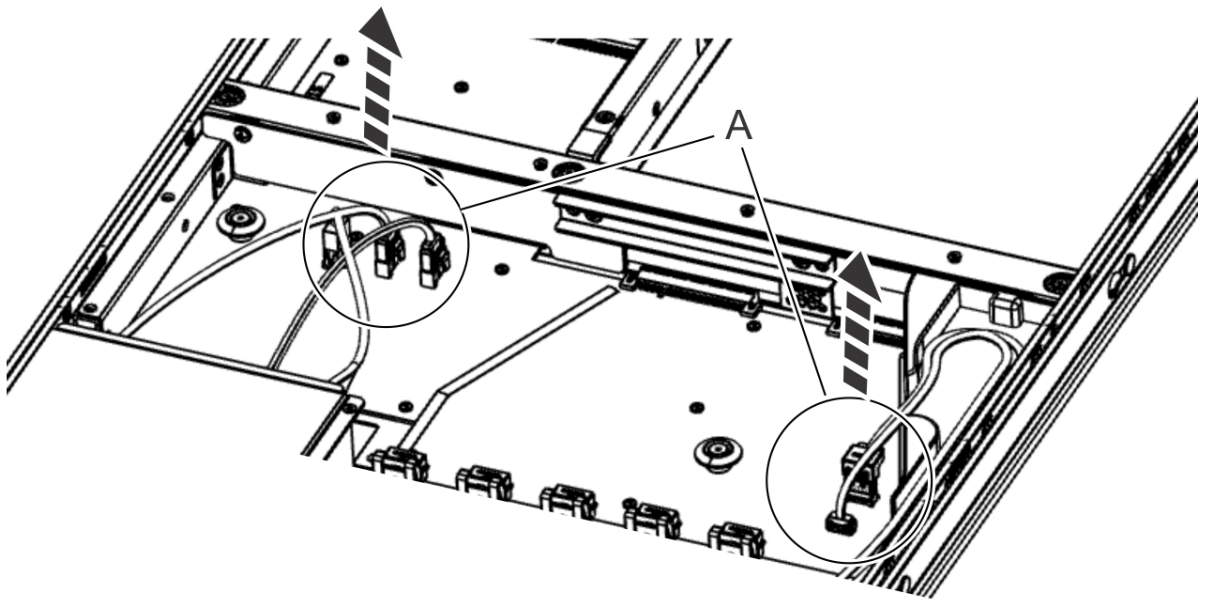


Figure 55. Removing cables from the power distribution board

8. Remove the right plastic air baffle (A) from the right edge of the system; lift it straight up.

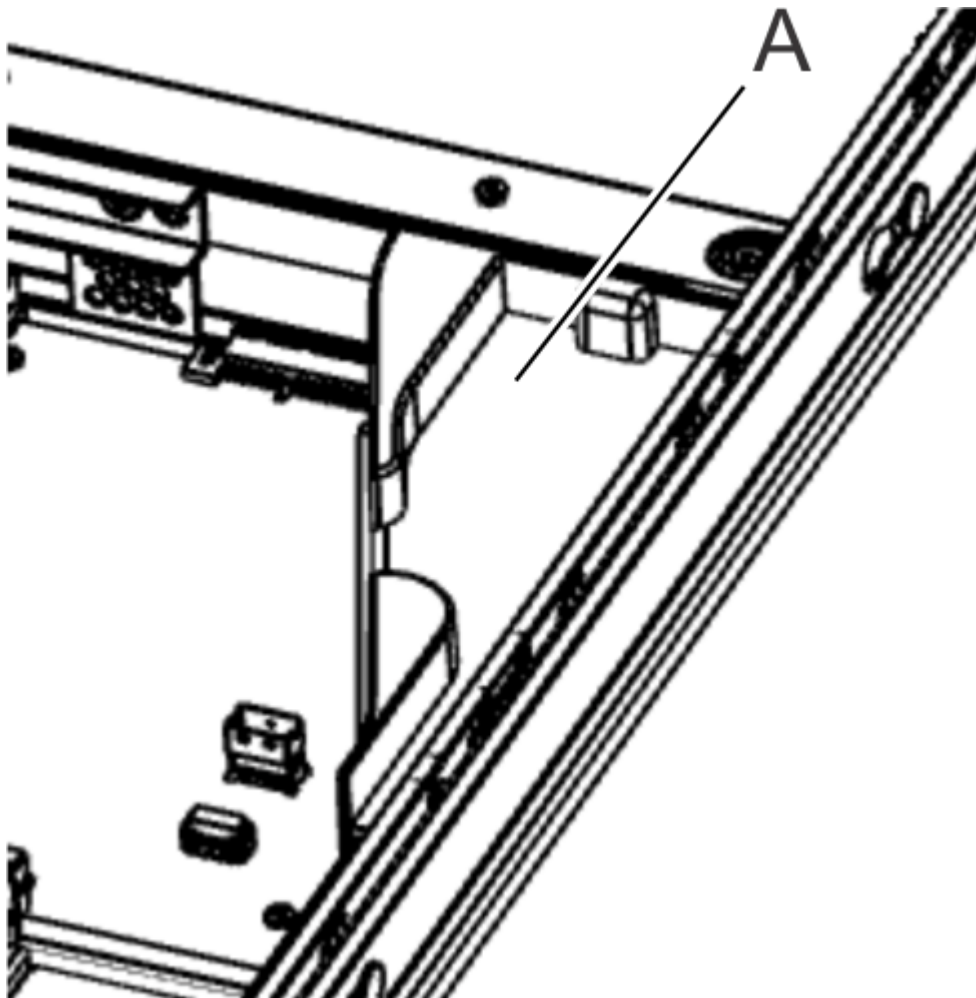


Figure 56. Right air baffle

9. Remove the cross bar from inside the system.

a) Remove the five screws from the front of the cross bar.

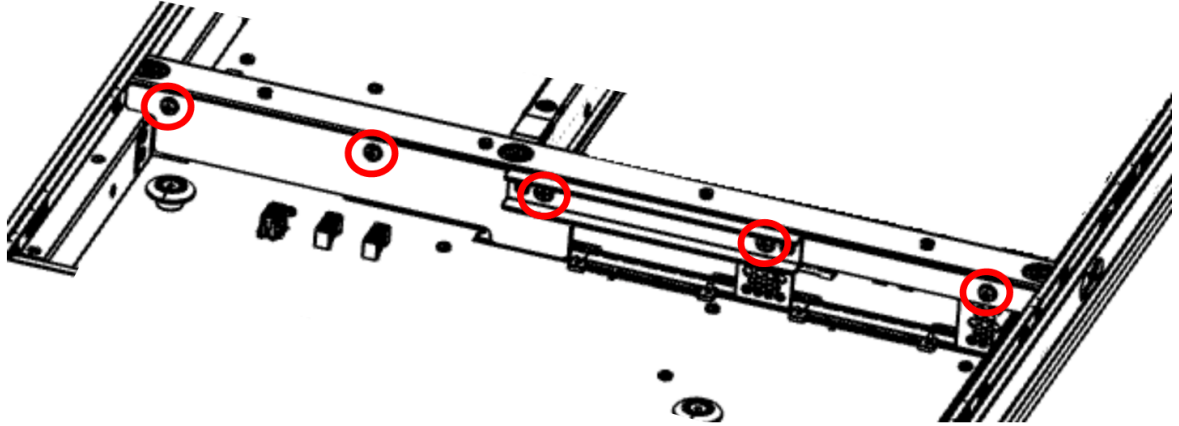


Figure 57. Cross bar front screws

b) Remove the air baffle (A) from the cross bar.

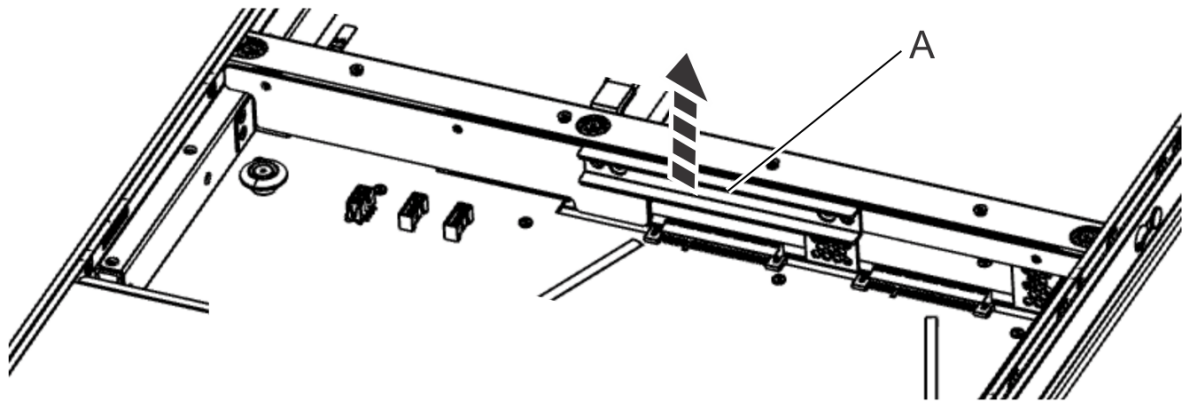


Figure 58. Removing the air baffle

c) Loosen the three screws at the top of the cross bar.

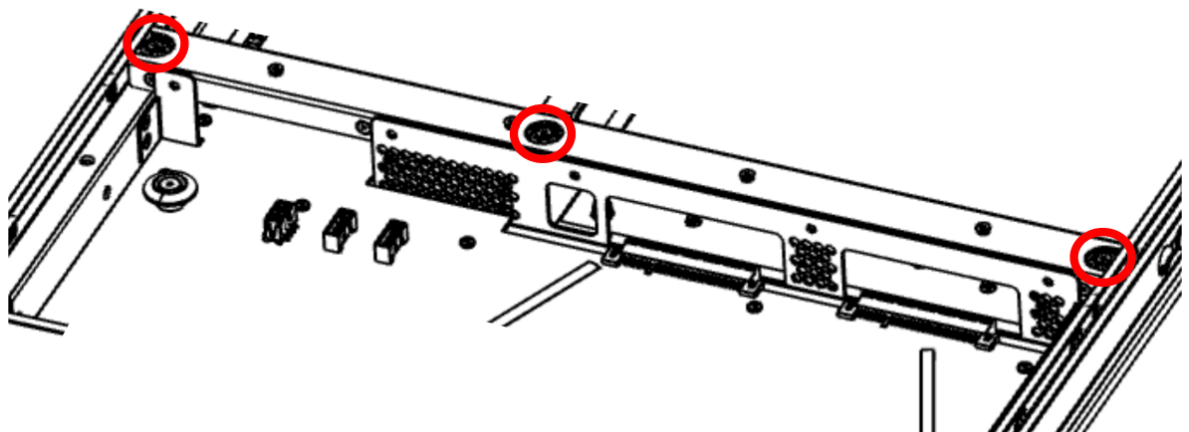


Figure 59. Cross bar top screws

d) Lift the cross bar out of the system.

10. Remove the 19 screws that secure the power distribution board to the system.

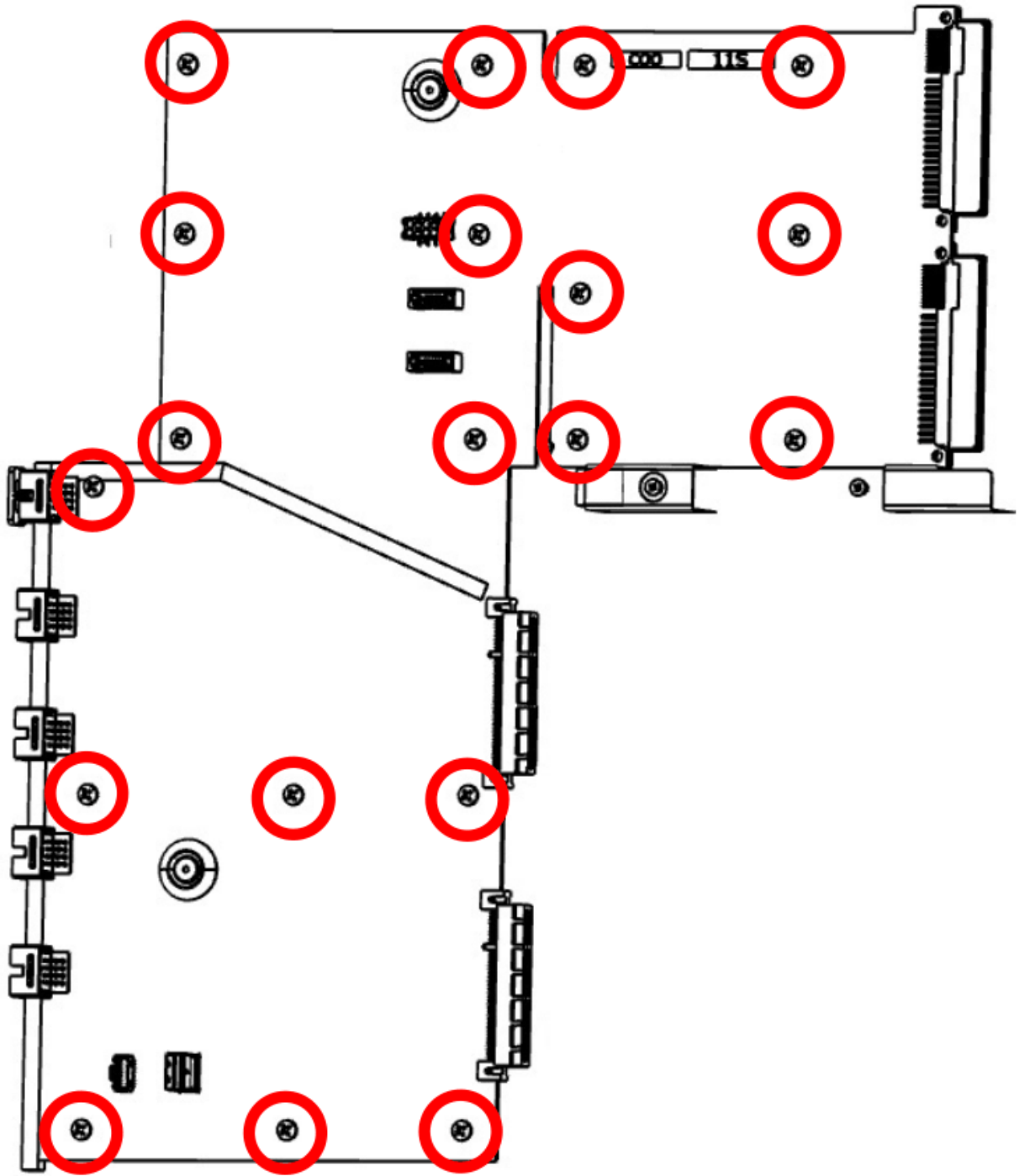


Figure 60. Power distribution board screws

11. Use the two finger grips to lift the power distribution board up and out of the system.
12. Place the power distribution board on an ESD surface.

Replacing the power distribution board in the 7063-CR2 system

To replace the power distribution board in the IBM Power Systems HMC (7063-CR2) 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. Use the two finger grips to lift the power distribution board and set the power distribution board into the system.
3. Replace the 19 screws to secure the power distribution board to the system.

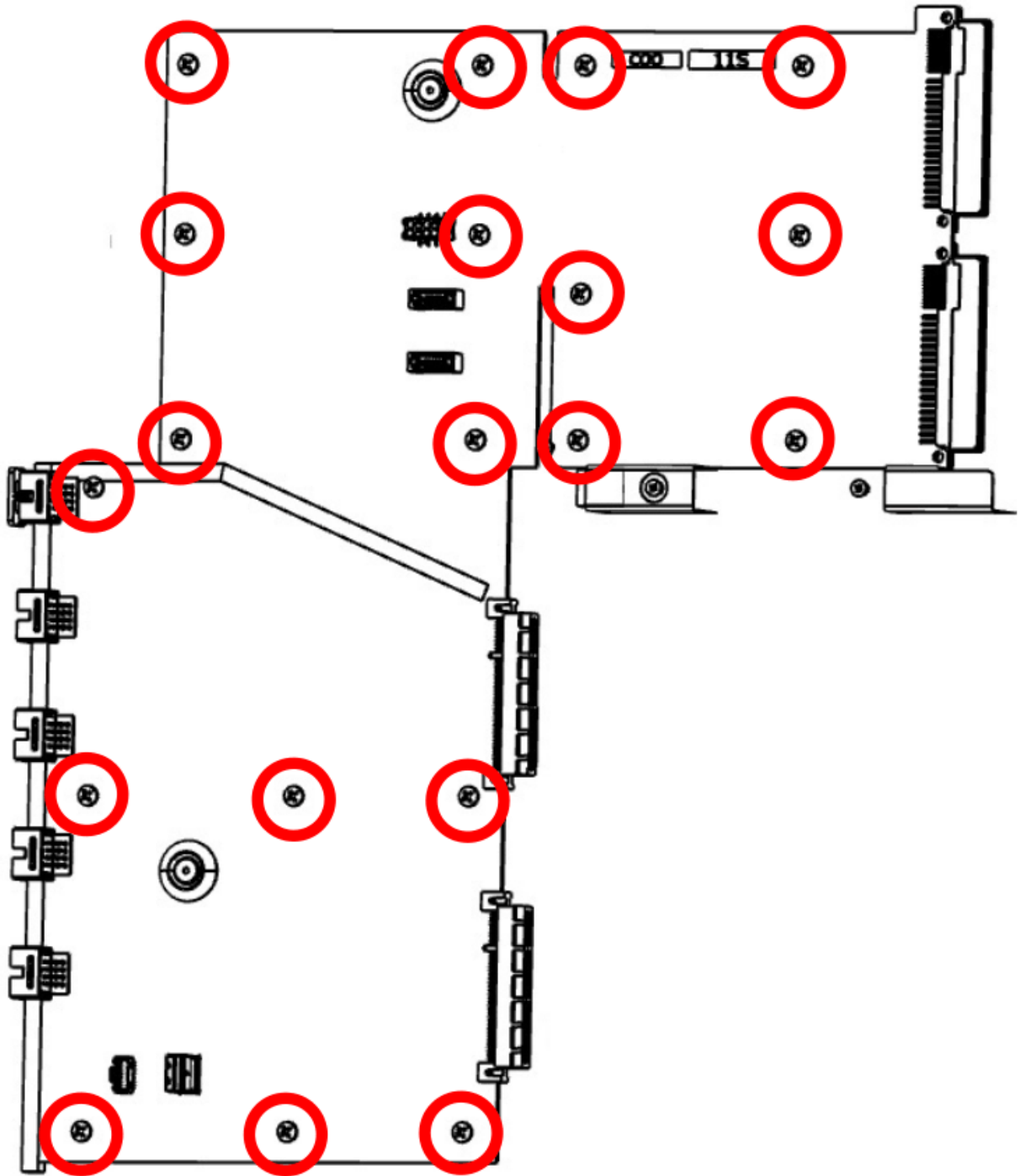


Figure 61. Power distribution board screws

4. Replace the cross bar inside the system.
 - a) Put the cross bar into its location inside the system. Ensure that the five screw holes face the front.
 - b) Tighten the three screws at the top of the cross bar.

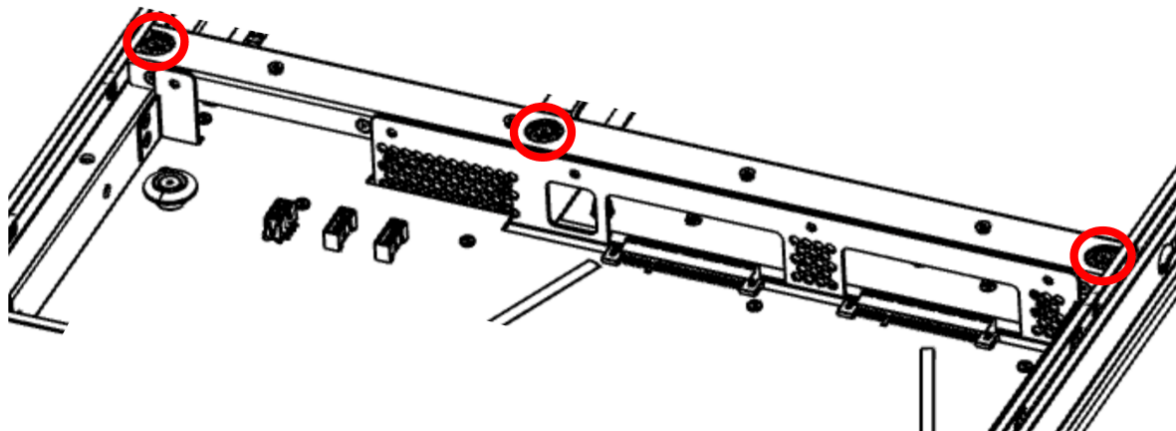


Figure 62. Cross bar top screws

- c) Replace the air baffle (A) into the system, placing it against the front side of the cross bar.

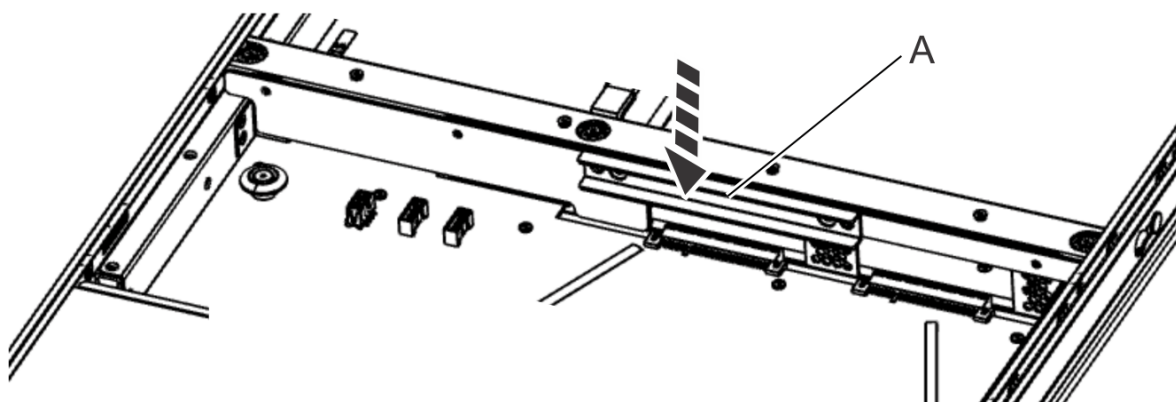


Figure 63. Replacing the air baffle

- d) Replace the five screws into the front of the cross bar.

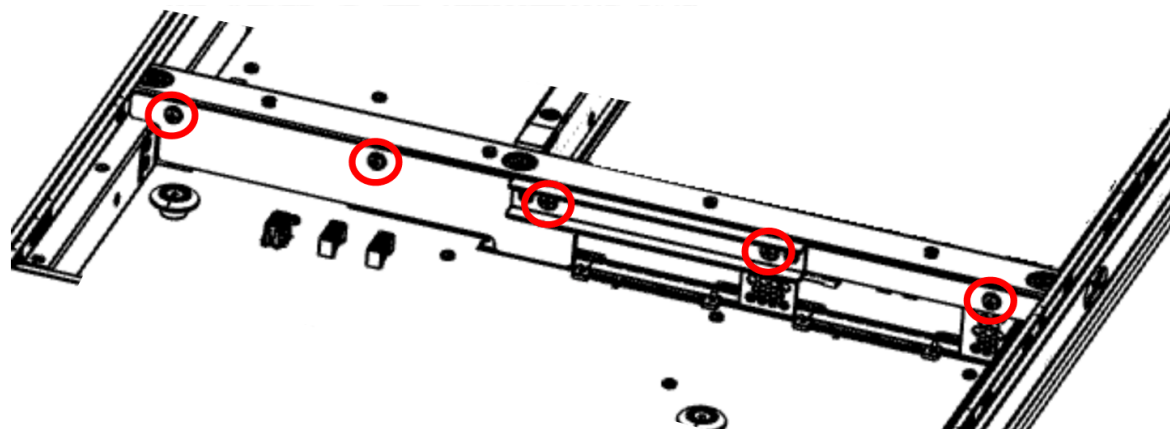


Figure 64. Cross bar front screws

5. Replace the plastic air baffle (A) on the right edge of the system; place it straight down.

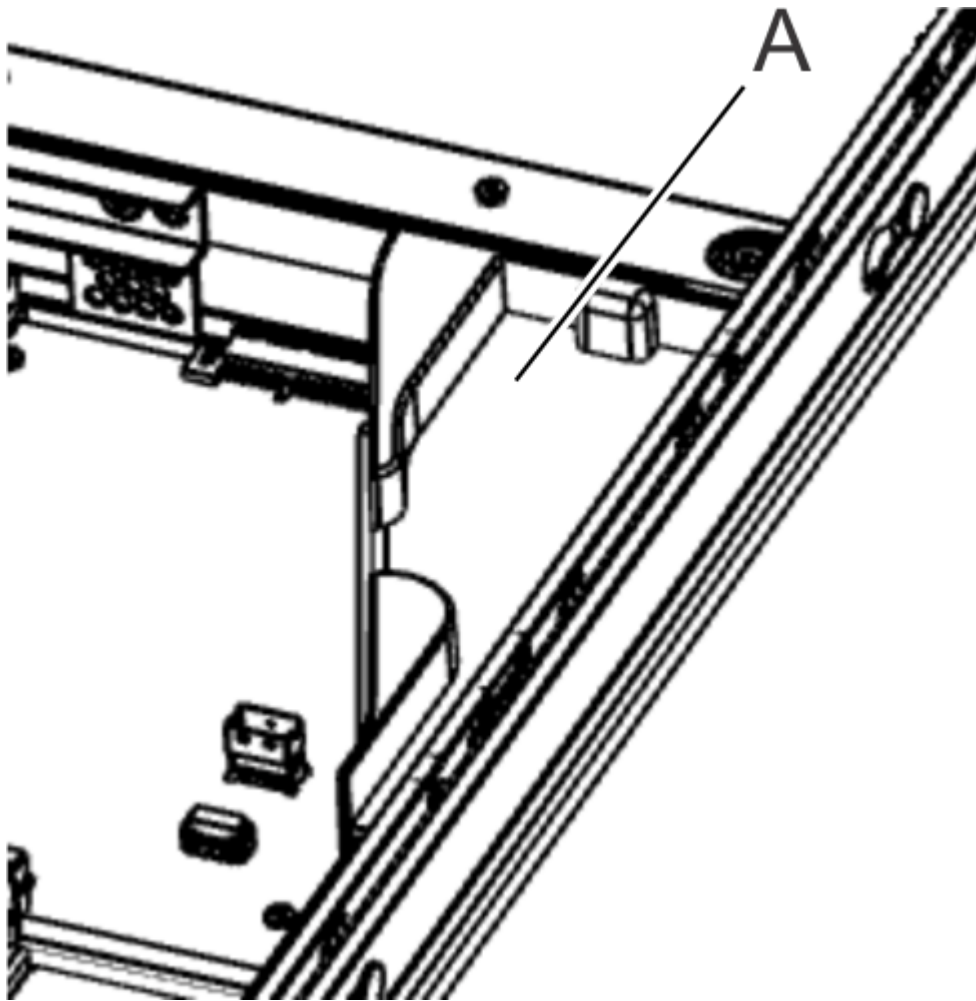


Figure 65. Right air baffle

6. Using your labels, replace the five cables **(A)** into the power distribution board. Reconnect the drive cables to the rear of the drive holder. The USB cable nests inside the control panel power cable in the right air baffle.

Ensure that the cable latch clips snap into place on the connectors.

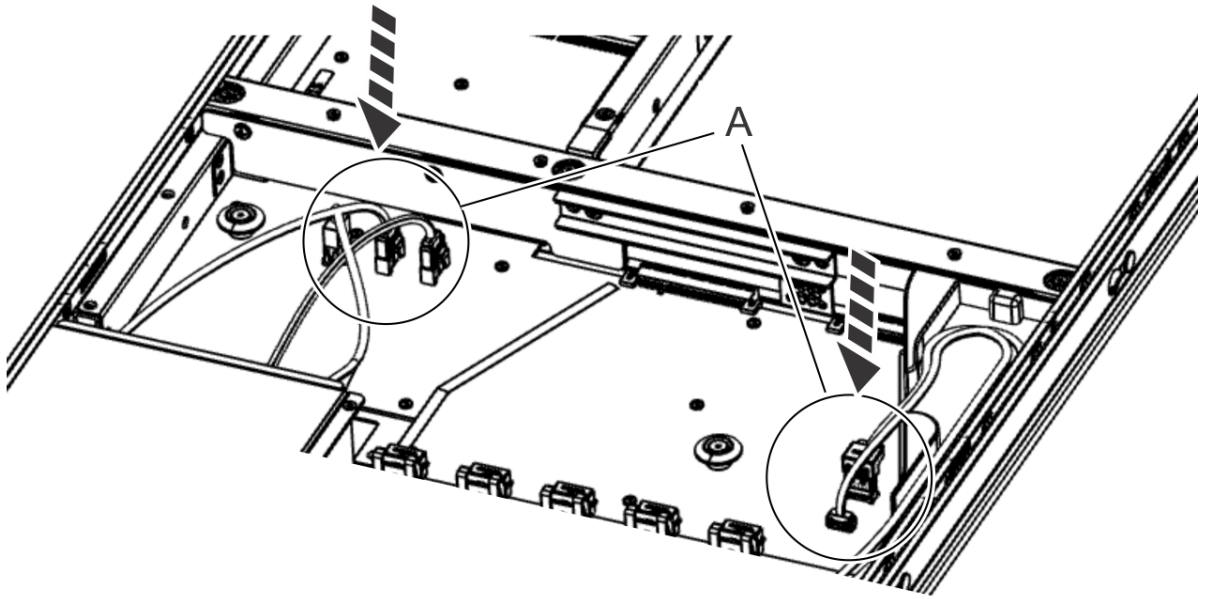


Figure 66. Replacing cables from the power distribution board

7. Install the service access cover.

For instructions, see [“Installing the service access cover on a 7063-CR2 system”](#) on page 105.

8. Replace the system in the rack and replace the components that you removed.

For instructions, see [“Placing a 7063-CR2 system into the operating position”](#) on page 103.

9. Replace the system backplane into the rear of the system.

- a) Ensure that the two system backplane levers are open.
- b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

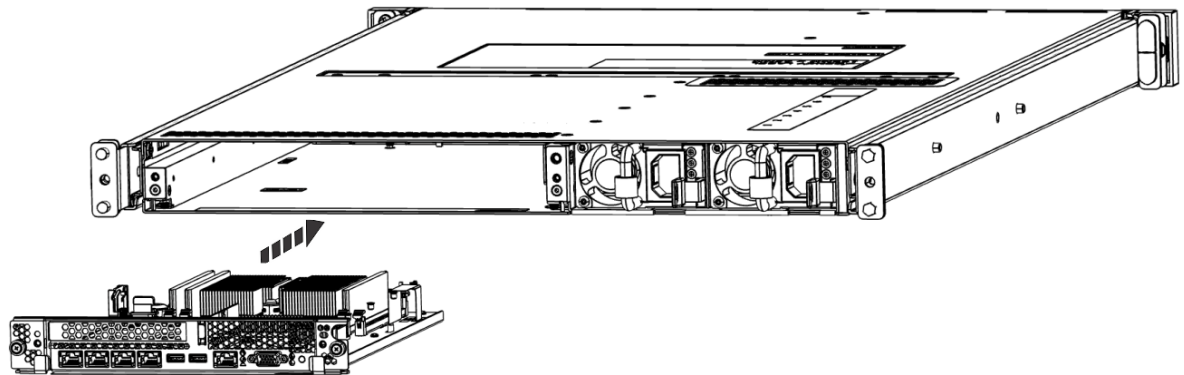


Figure 67. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.

- d) Tighten the two screws on the sides of the system backplane.
 - e) Using your labels, replace the signal cables into the rear of the system.
 - f) Using your labels, replace the two power cords at the rear of the system.
For instructions, see [“Connecting the power cords to a 7063-CR2 system” on page 101.](#)
10. Replace all the fans into the system.
For instructions, see [“Replacing a fan in the 7063-CR2 system” on page 20.](#)
 11. Power on the system for operation.
For instructions, see [“Starting the 7063-CR2 system ” on page 98.](#)

Removing and replacing a power supply in the 7063-CR2

Learn how to remove and replace power supplies in the IBM Power Systems HMC (7063-CR2) systems.

Removing a power supply from the 7063-CR2 system

To remove a power supply from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

If a single power supply failed, it can be replaced while the system is running.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Label and remove the power cord from the power supply that you want to remove.
For instructions, see [“Disconnecting the power cords from a 7063-CR2 system” on page 100.](#)
 3. To remove the power supply from the system, complete the following steps:
 - a) To unseat the power supply from its position in the system, push the locking-tab **(A)** to the left as shown in the following figure.
 - b) Grasp the power supply handle with one hand, and pull the power supply partially out of the system.
 - c) Place your other hand underneath the power supply and pull the power supply out of the system and place it on an ESD mat.

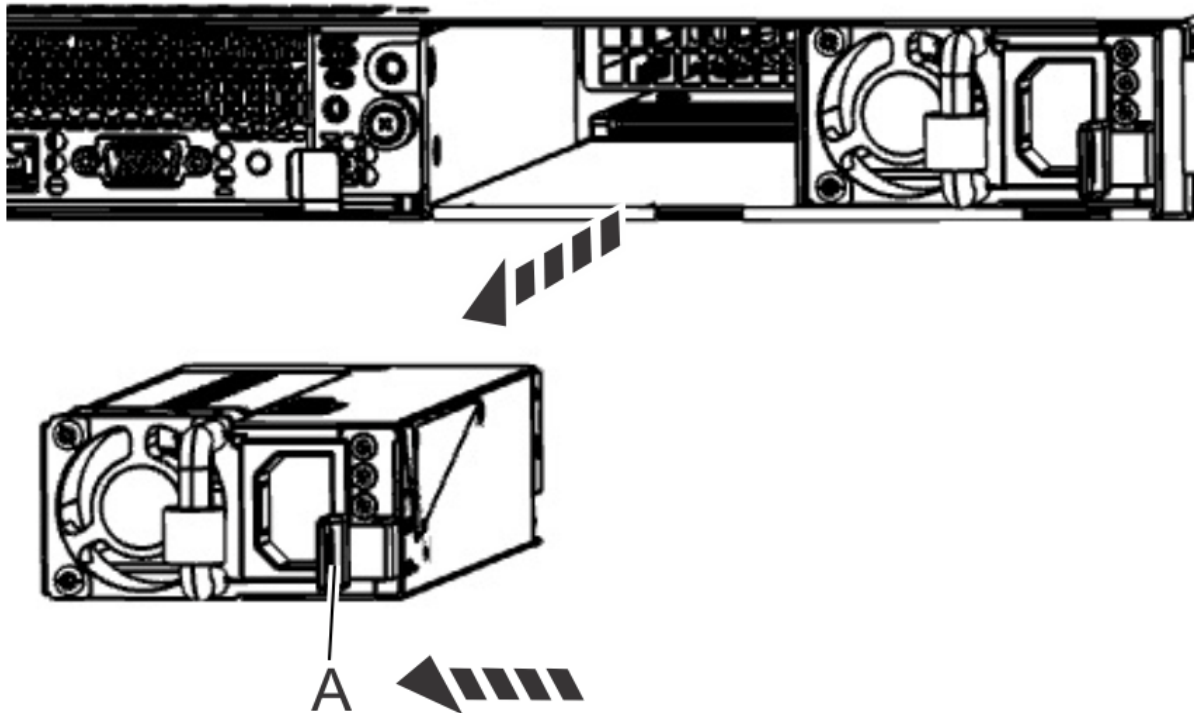


Figure 68. Removing a power supply from the system

Replacing a power supply in the 7063-CR2 system

To replace a power supply in the IBM Power Systems HMC (7063-CR2) 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. Wait 30 seconds after you remove a power supply before you install a power supply.
3. To install a power supply in the system, complete the following steps:
 - a) Align the power supply with the bay as shown in the following figure. The fan is on the left; the plug is on the right.
 - b) Slide the power supply into the system until the latch locks in place.

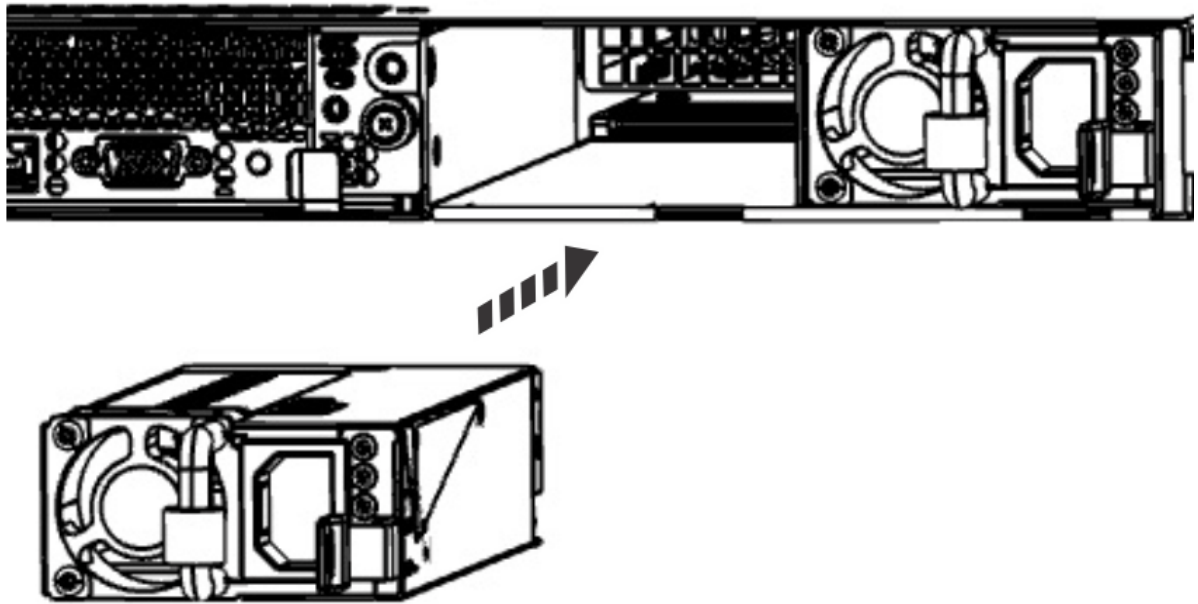


Figure 69. Installing a power supply in the system

4. Reconnect the power cord.

For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

Removing and replacing the system backplane in the 7063-CR2

Learn how to remove and replace the system backplane in the IBM Power Systems HMC (7063-CR2) system.

Before you begin

Removing or replacing this part is a customer task. You can complete this task yourself, or contact a service provider to complete the task for you. You might be charged a fee by the service provider for this service.

Before you begin replacing the system backplane, write down the system serial number and machine model type. After you replace the system backplane, you must set the system serial number and machine model type in the system backplane.

Preparing the 7063-CR2 system to remove the system backplane

To prepare to remove the system backplane from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Make note of the system serial number and the machine model type. After you replace the system backplane, you must set the system serial number and machine model type in the system backplane.
2. Make note of the BMC network settings. Record the BMC IP settings.
After you replace the system backplane, you might need to reconfigure the BMC network settings.

Removing the system backplane from the 7063-CR2 system

To remove the system backplane from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

You can use a magnetic tip screwdriver to remove and replace the screws.

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

Procedure

1. Power off the system.

For instructions, see [“Stopping the 7063-CR2 system”](#) on page 99.

2. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
3. Remove the system backplane from the rear of the system.
 - a) Label and remove the two power cables.
For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.
 - b) Label and remove the signal cables from the rear of the system.
 - c) Loosen the two screws (**A**) on the sides of the system backplane as shown in the following figure.

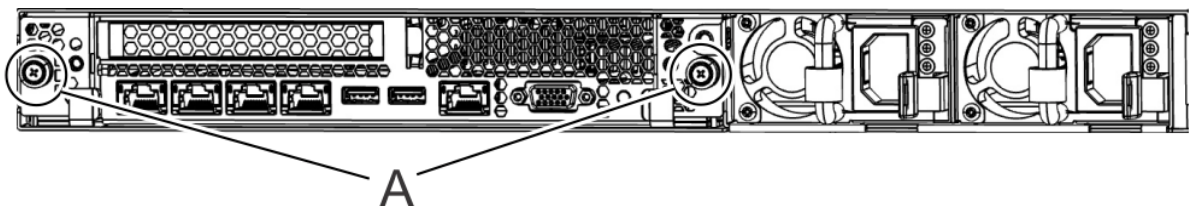


Figure 70. Removing the system backplane screws

- d) Simultaneously rotate the two levers (**A**) on each side of the system backplane out and to the side to unlock the system backplane from the system.

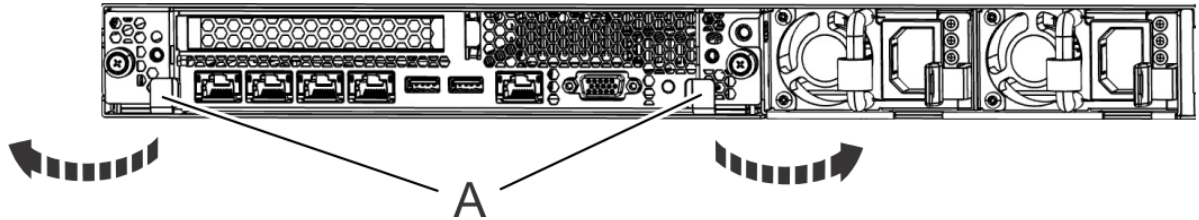


Figure 71. Unlatching the system backplane

e) Support the system backplane by the bottom as you slide it from the system.

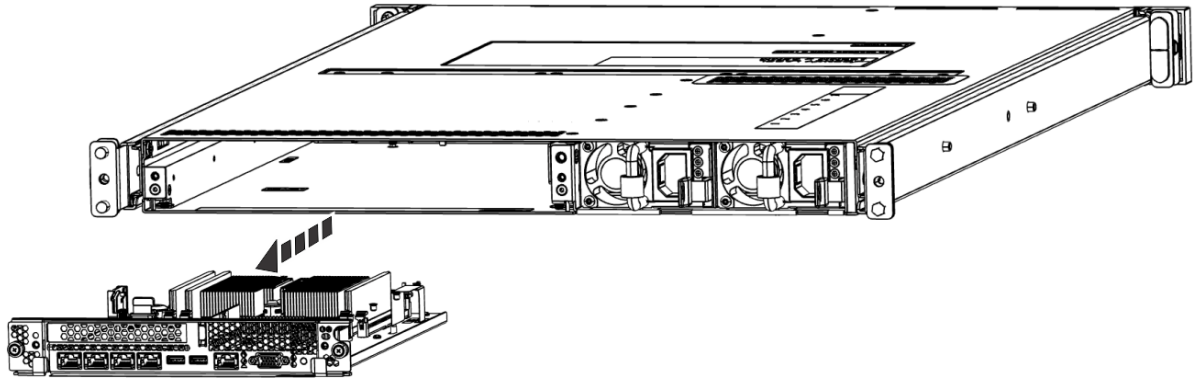


Figure 72. Removing the system backplane

f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

Replacing the system backplane in the 7063-CR2 system

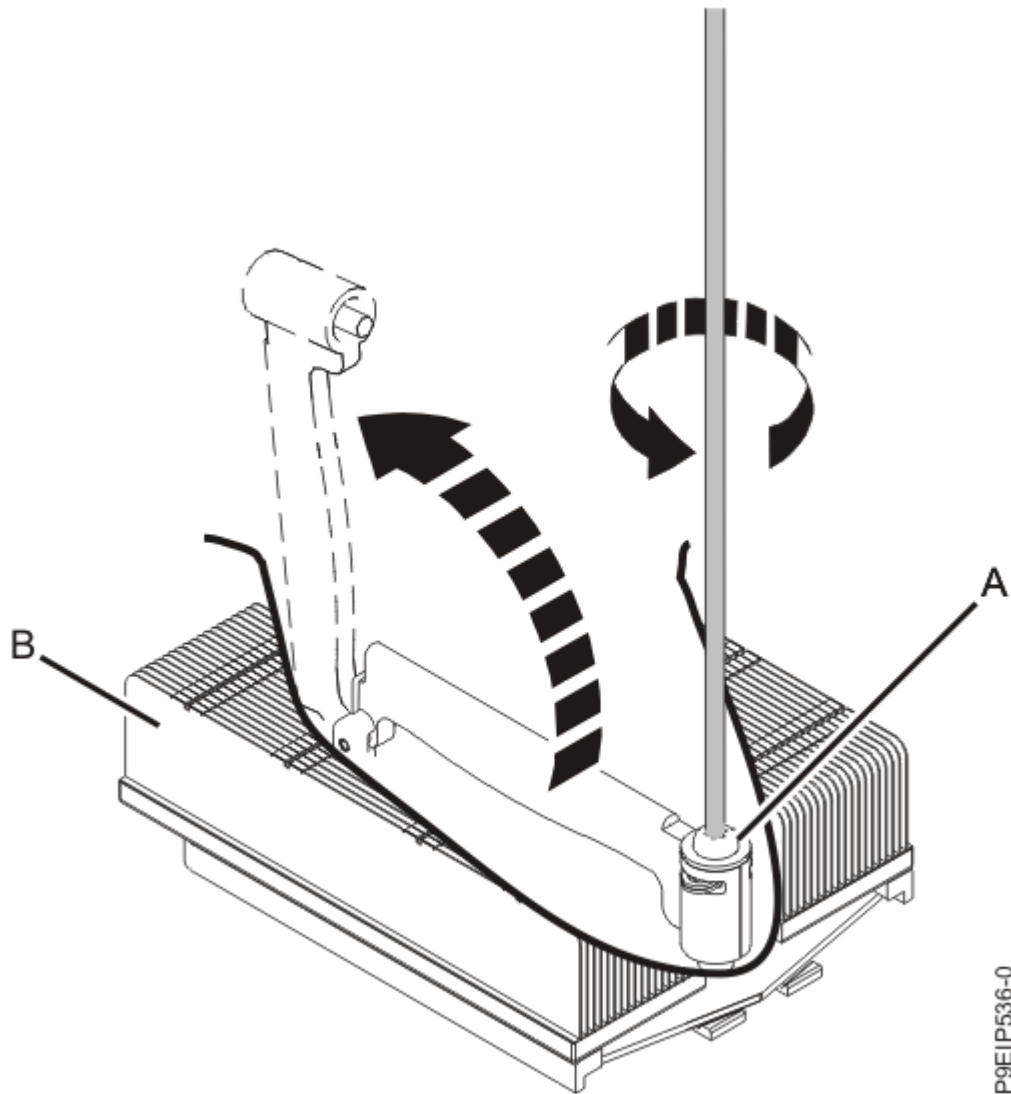
To replace the system backplane in the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

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 replacement system backplane from the static-protective package and place it on an ESD mat next to the old system backplane.

The following steps move the system processor module from the old system backplane to the new system backplane:

3. Loosen the load arm screw **(A)** of the system processor heat sink **(B)** that you are removing with a T20 hexalobular driver. The load arm pivots up in the direction that is shown in the following figure.



P9EIP536-0

Figure 73. Loosening the load arm screw of the heat sink

4. Grip the heat sink and remove it by lifting it straight up as shown in the following figure.

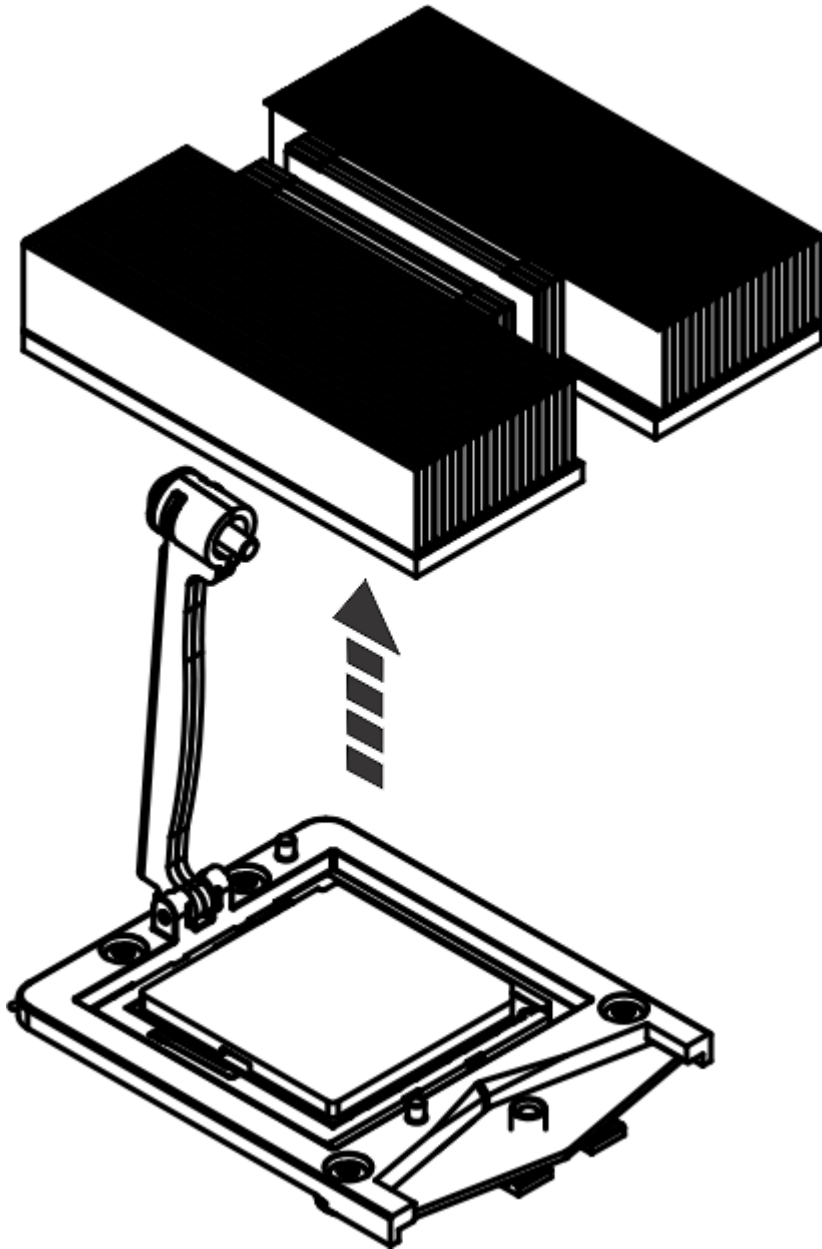
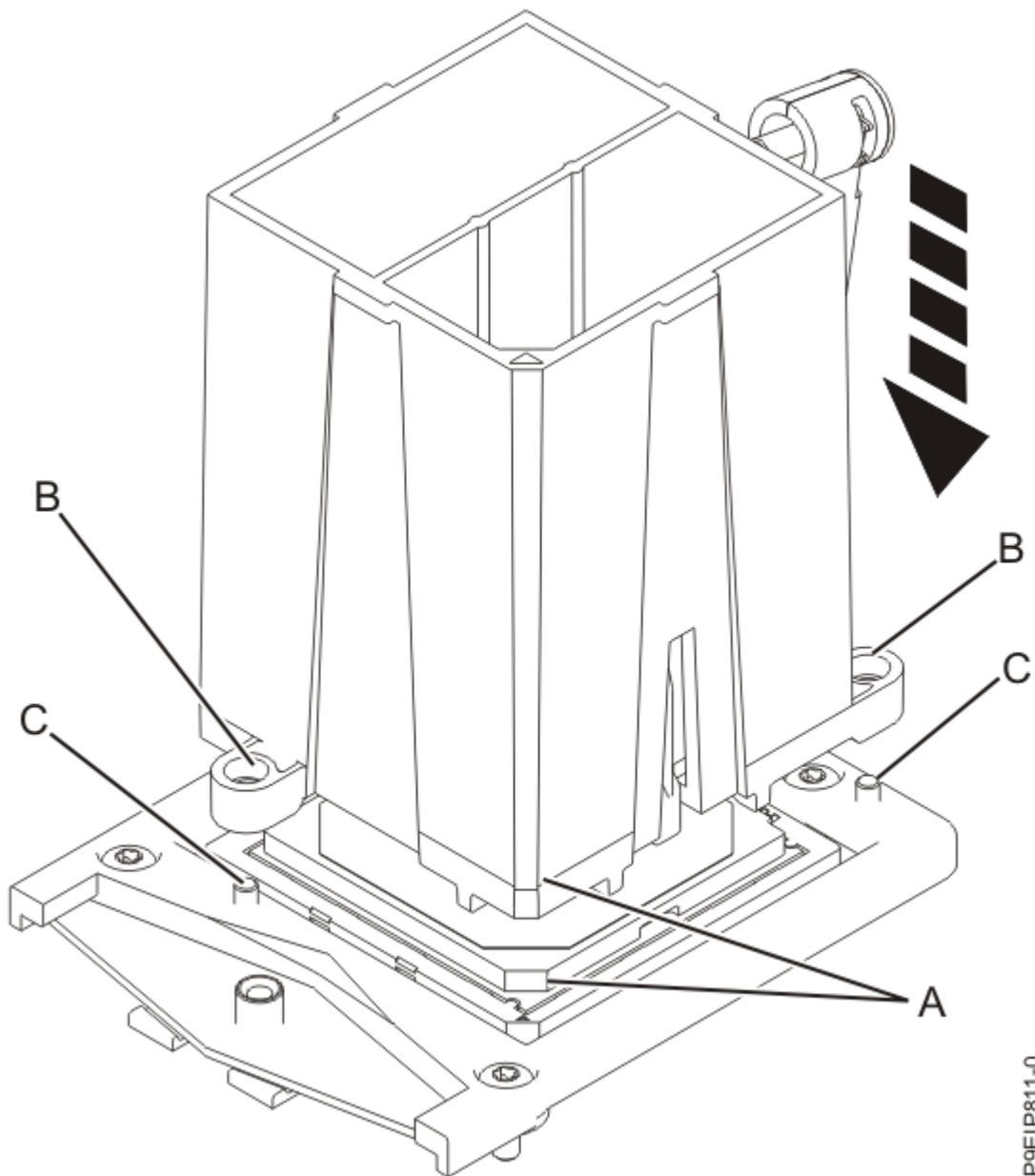


Figure 74. Removing the heat sink

5. Place the heat sink upside down on a clean surface.
6. Using tweezers, carefully remove the TIM from the top of the system processor module and place it in a clean, dry area.
The TIM can tear easily.
7. Remove the cover from the system processor socket on the new system backplane
8. Inspect the system processor socket area and remove any dust or debris (use a can of compressed air).
9. Align the tool with the beveled edge **(A)** of the system processor module as shown in the following figure. 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.



P9EIP811-0

Figure 75. Lowering the removal tool onto the system processor module

10. Using the lift tool, move the system processor module from the old system backplane socket to transfer it to the new system backplane socket.
11. 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 the following figure.
The tool drops slightly when you push down on the system processor module so that the jaws can grab the bottom of the module. 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.

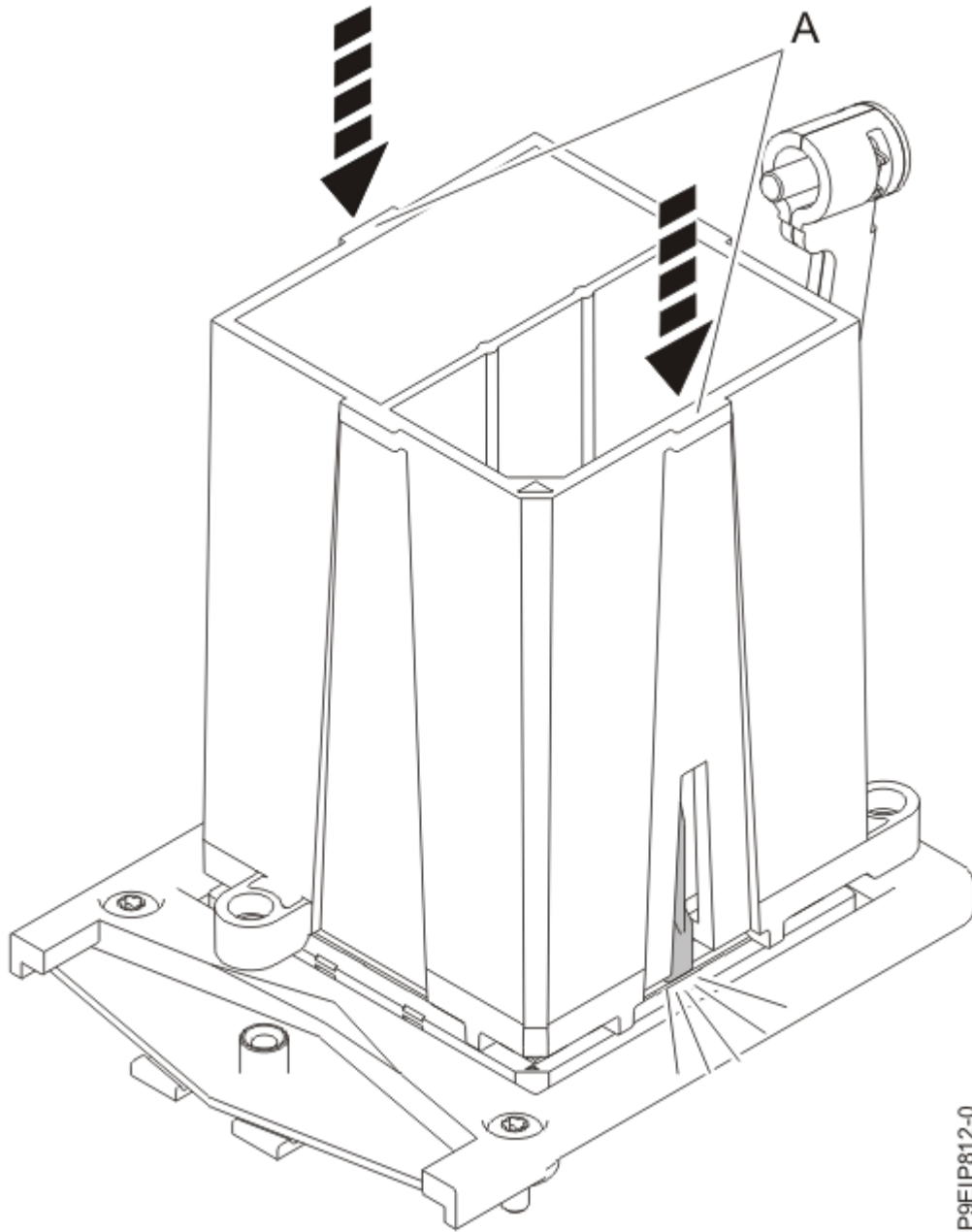
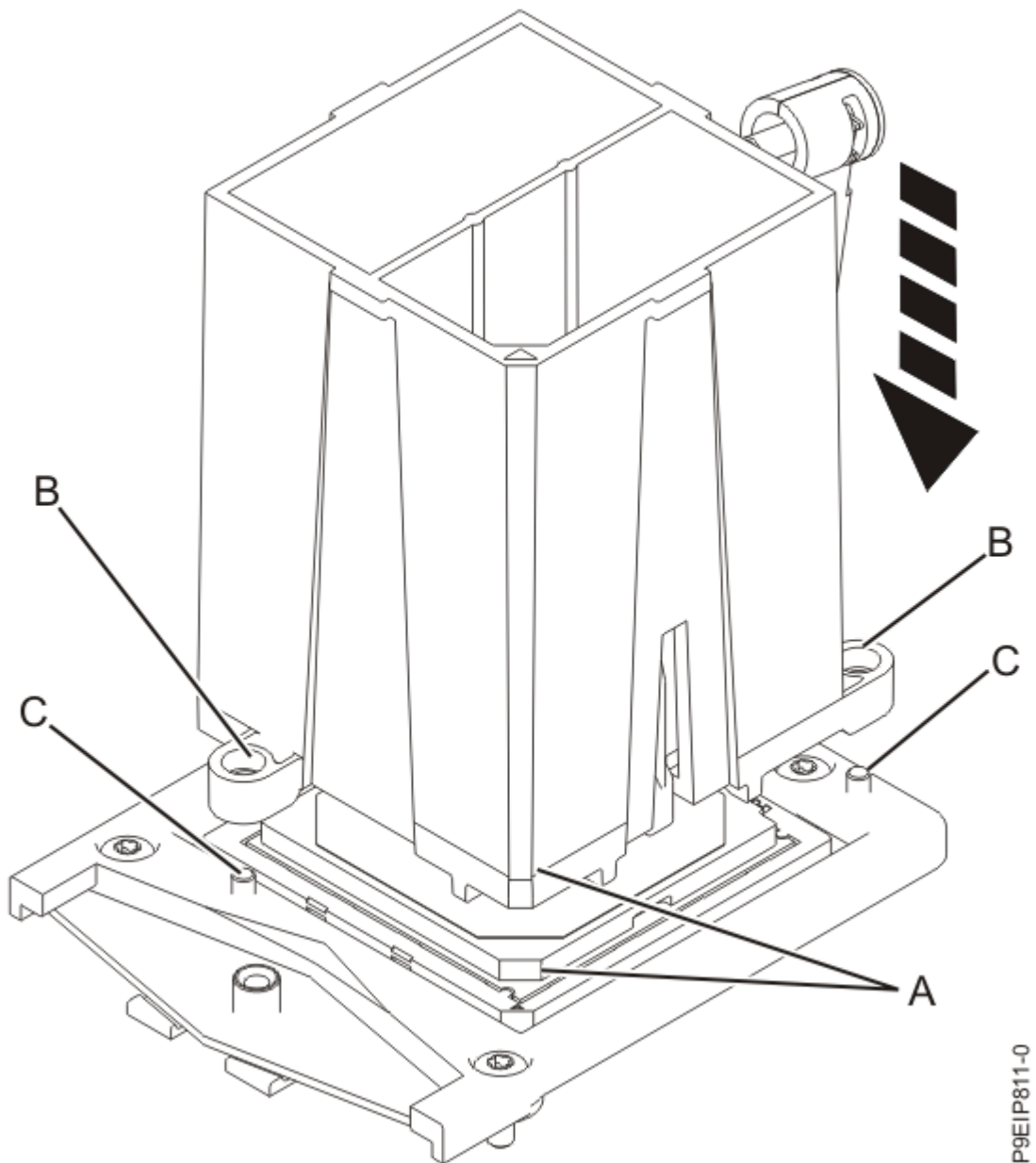


Figure 76. Locking the system processor module into the tool

12. 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 as shown in the following figure.

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. 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.



P9EIP811-0

Figure 77. Installing the system processor module

13. 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 the following figure.
Then, lift the tool off the system processor module.

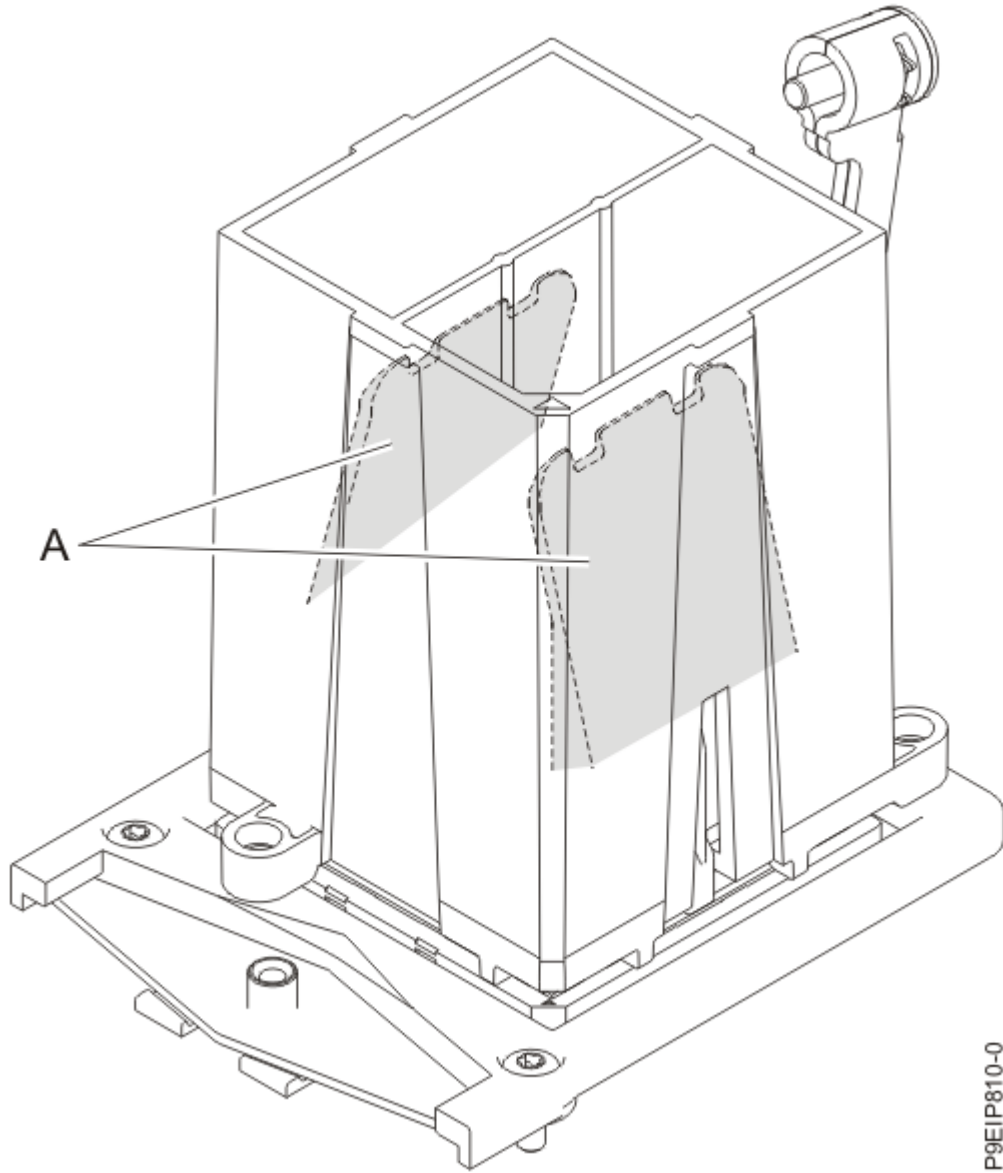
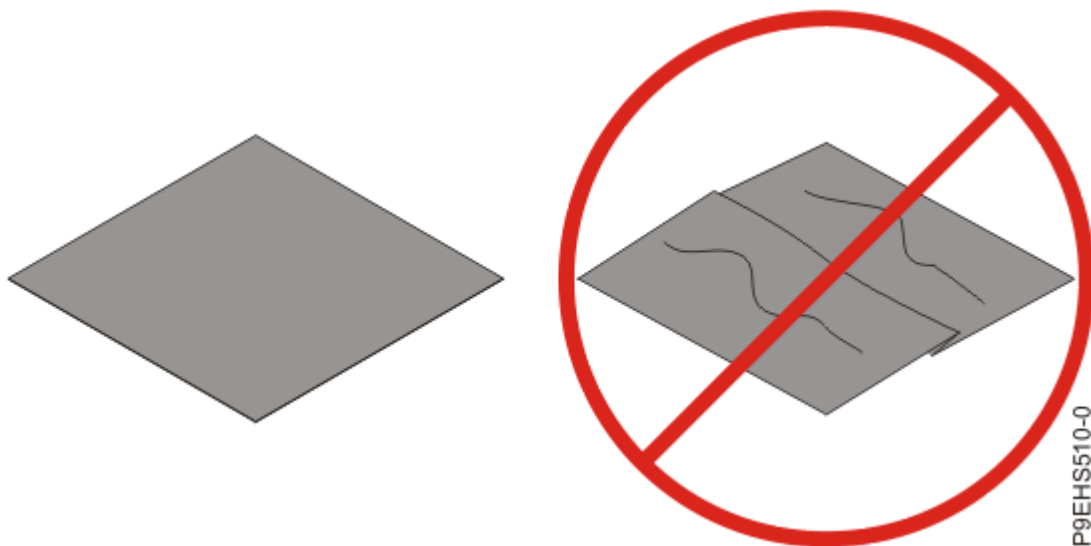


Figure 78. Removing the system processor module tool

14. Inspect the thermal interface material (TIM) for visible signs of damage. If you see folds, tears, bends, or if you have doubts about the TIM, replace it.



P9EHS510-0

Figure 79. Inspecting the thermal interface material

15. Choose one of the following repair options:

Option	Description
Is the TIM damaged?	It is damaged. Proceed to step “16” on page 62 to replace the TIM and install the existing heat sink.
Is the TIM OK?	It is not damaged and can be reused. Proceed to step “18” on page 62 to reuse the TIM and install the existing heat sink.

16. Use this step to install a new TIM and reuse the existing heat sink.

- a) 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.
- b) 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.
- c) Using the tweezers, remove the TIM from the carrier strip and center it onto the system processor module.

The TIM has no preferred up side. The TIM can be placed on the system processor module and centered..

17. Continue with step “19” on page 62.

18. Use this step to reuse the existing undamaged TIM and heat sink.

- a) Using the tweezers, move the old TIM from the clean, dry surface and center it onto the new system processor module.

The TIM has no preferred up side. The TIM can be placed on the system processor module and centered.

19. Carefully lower the heat sink over the system processor module, ensuring that the holes in the heat sink align with the two guide pins **(A)** on the socket, as shown in the following figure.

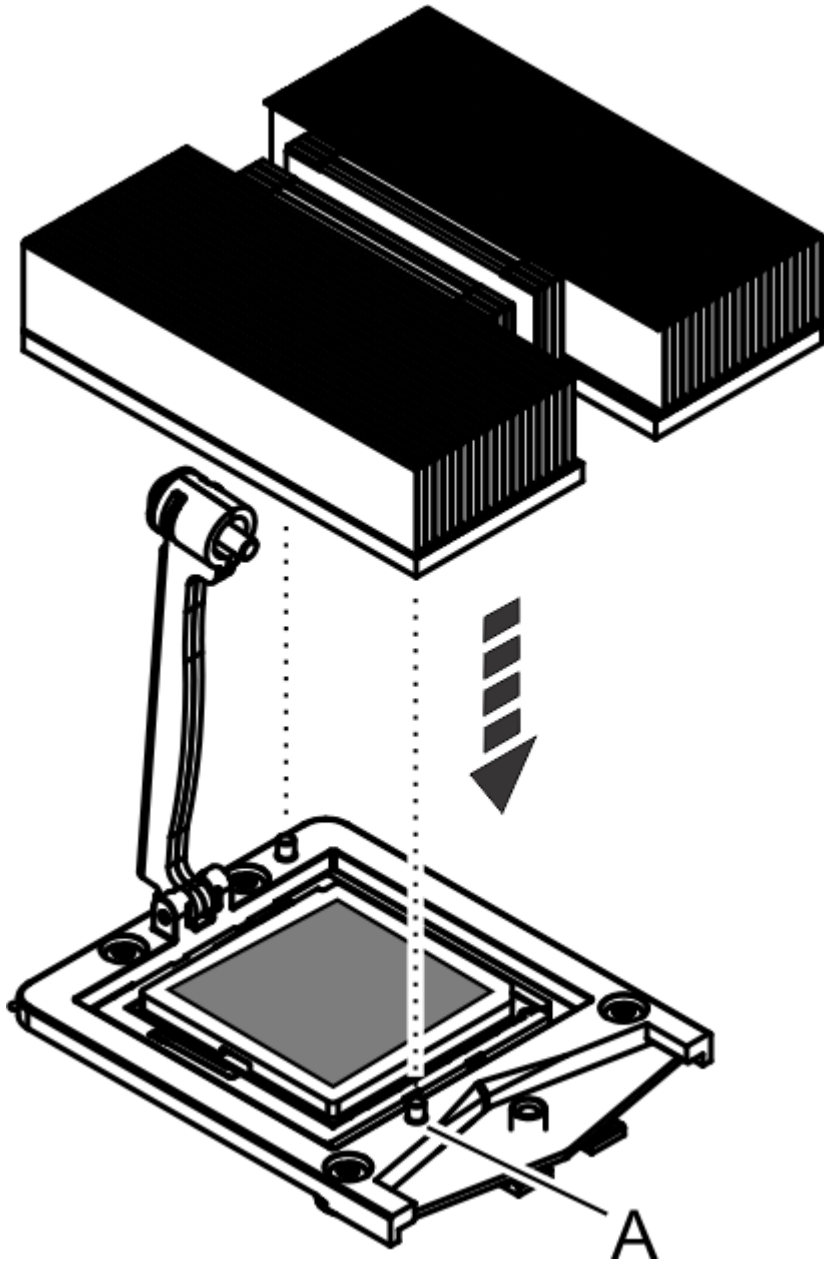
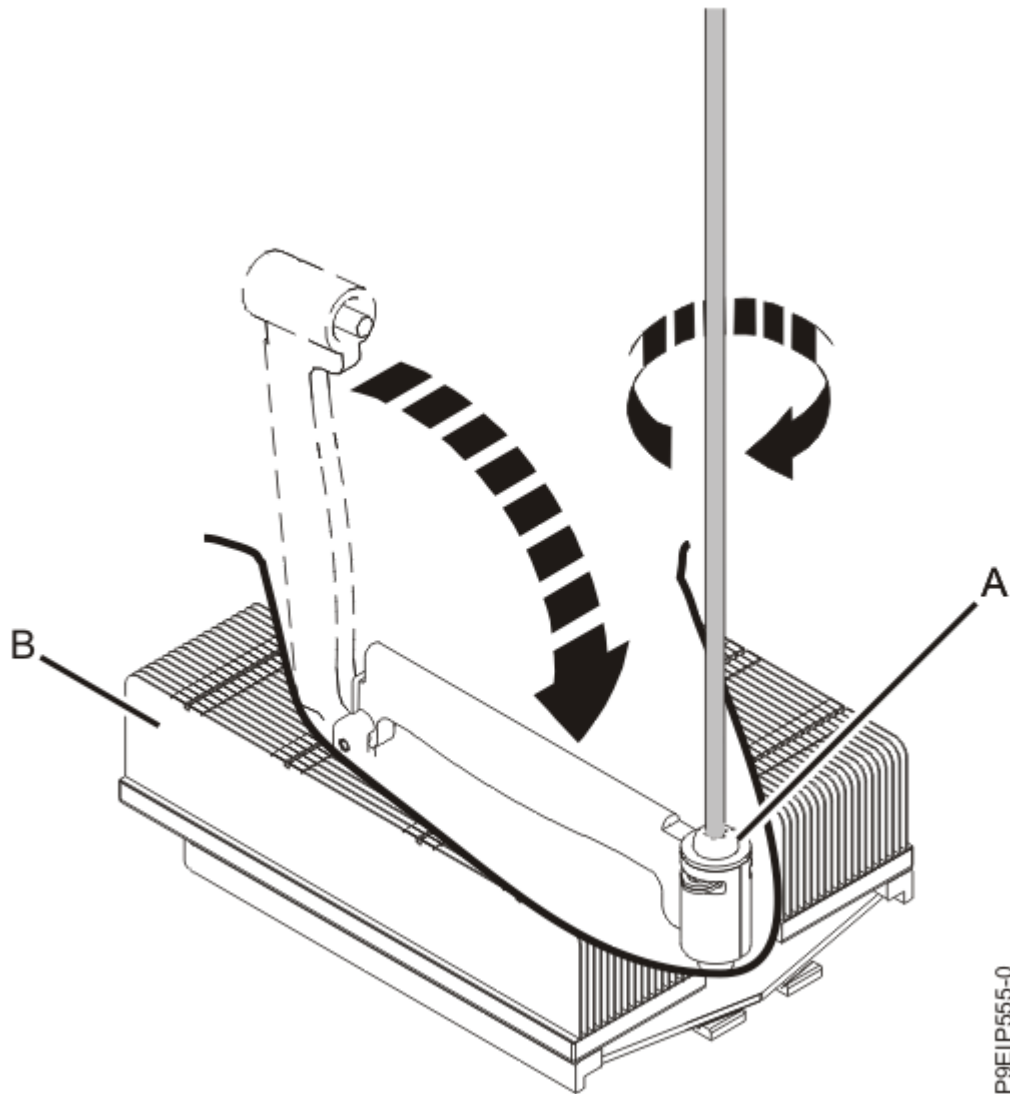


Figure 80. Installing the heat sink

20. Move the load arm **(A)** into position over the heat sink **(B)** and tighten the load arm screw with a T20 hexalobular driver, as shown in the following figure.

Note: Do not over tighten the load arm screw.



P9EIP555-0

Figure 81. Tightening the load arm screw

The following steps move the remaining parts from the old system backplane to the new system backplane:

21. Move the memory DIMMs from the old system backplane to the corresponding location on the new system backplane.
For instructions, see [“Removing and replacing memory in the 7063-CR2” on page 21.](#)
22. Move the TPM card from the old system backplane to the corresponding location on the new system backplane.
For instructions, see [“Removing and replacing the trusted platform module in the 7063-CR2” on page 89.](#)
23. If applicable, move the PCIe adapter from the old system backplane to the corresponding location on the new system backplane.
 - a) Remove the screw that secures the PCIe adapter to the system backplane.

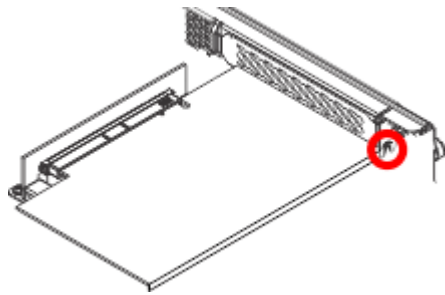


Figure 82. Removing the tail-stock screw

- b) Open the retainer clip that secures the PCIe adapter to the PCIe riser, by moving the blue lever to the unlocked position.

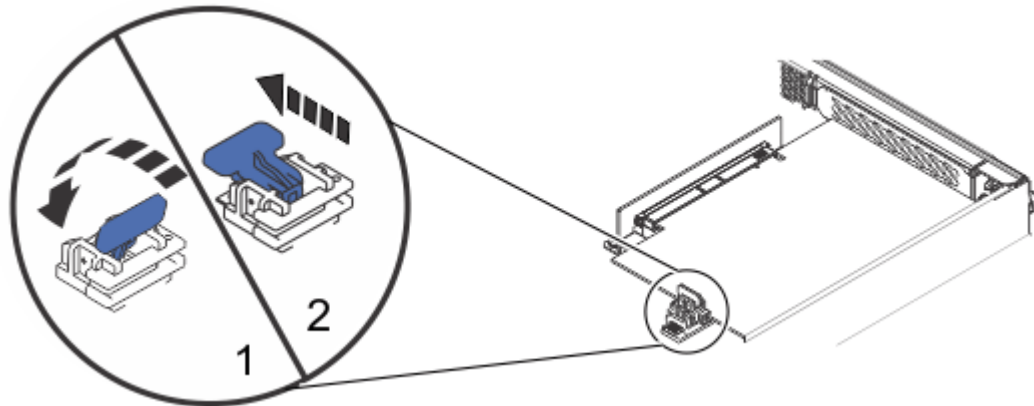


Figure 83. Removing the PCIe adapter retaining latch

- c) Move the retainer clip away from the PCIe adapter.
- d) Remove the PCIe adapter from the PCIe riser on the old system backplane.

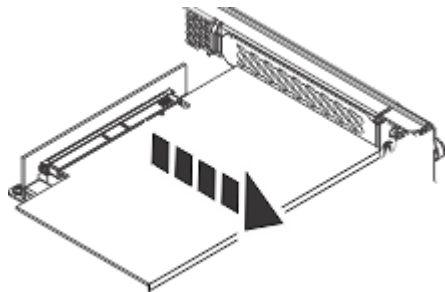


Figure 84. Removing the PCIe adapter

- e) Replace the PCIe adapter into the PCIe riser on the new system backplane

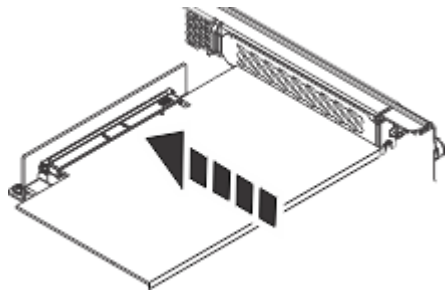


Figure 85. Replacing the PCIe adapter

- f) Replace the screw that secures the PCIe adapter to the system backplane.

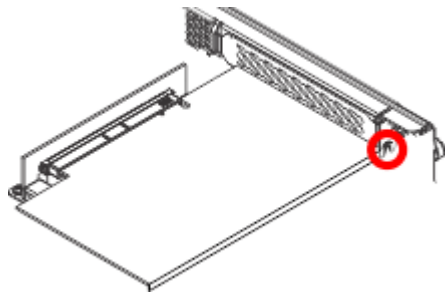


Figure 86. Replacing the tail-stock screw

- g) Move the retainer clip to secure the PCIe adapter to the PCIe riser. Ensure that the clip is fully seated around the edge of the adapter.

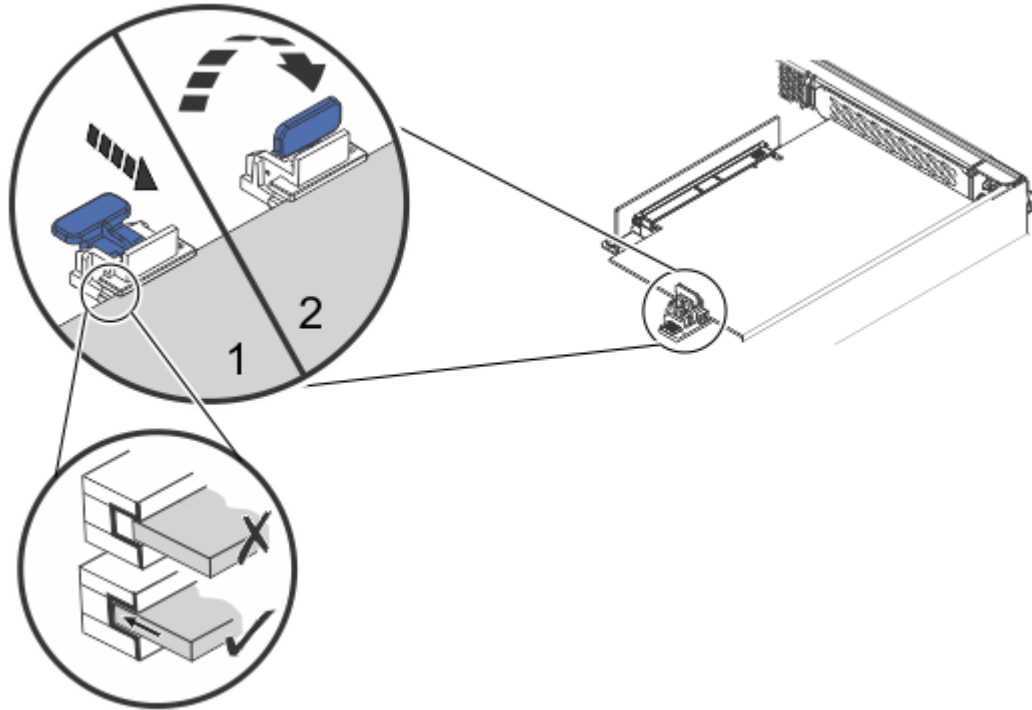


Figure 87. Replacing the PCIe adapter retaining latch

- h) Close the retainer clip that secures the PCIe adapter to the PCIe riser.
24. Remove the blue protective insulator from the battery.
25. Replace the system backplane into the rear of the system.
- a) Ensure that the two system backplane levers are open.
- b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

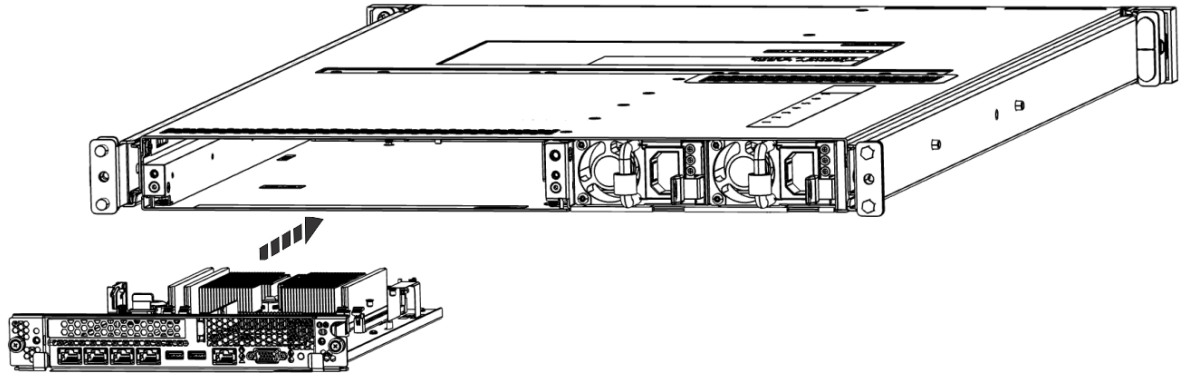


Figure 88. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
- d) Tighten the two screws on the sides of the system backplane.
- e) Using your labels, replace the signal cables into the rear of the system.
- f) Using your labels, replace the two power cords at the rear of the system.

For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

Preparing the 7063-CR2 system for operation after removing and replacing the system backplane

To prepare the IBM Power Systems HMC (7063-CR2) system for operation after removing and replacing the system backplane, complete the steps in this procedure.

Procedure

1. The serial number needs to be set before the operating system starts to avoid issues.
Follow the steps listed here: [Scale-out LC system VPD update tool \(www14.software.ibm.com/webapp/set2/sas/f/lopdiags/scaleOutLCdebugtool.html#OpenPOWER\)](http://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/scaleOutLCdebugtool.html#OpenPOWER).
2. Ensure that the BMC network settings are correct. For instructions, see [Configuring the BMC IP address](#).
3. The date and time needs to be set before the operating system starts to avoid issues.

Follow these petitboot steps:

- a) From the petitboot menu, select **Exit to shell**.
- b) Run the following two commands to check the date and time:

```
date
ipmitool sel time get
```

- c) To set the correct date and time in UTC use the following format:

```
date -s YYYY.MM.DD-HH:MM
```

- d) Run the following ipmitool command to set the system entry log (SEL) date and time to the new values:

```
ipmitool sel time set now
```

- e) Verify that the ipmitool and date commands now show the correct values by running the following commands again:

```
date
ipmitool sel time get
```

- f) To leave the petitboot shell, type **exit**.

- The operating system of the HMC needs to have valid credentials with which to access the BMC.
The credentials are set during the setup of the HMC. The credentials can also be set by running a task. If the credentials are not set up, the HMC cannot run the call-home functions for itself. Reconfigure the credentials after you sign in to the HMC.

To run the task, click the **HMC Management** icon, then select **Console Settings > Console Inband Communication Credentials**

Removing and replacing the system processor module in the 7063-CR2

Learn how to remove and replace the system processor module in the IBM Power Systems HMC (7063-CR2) system.

Before you begin

Removing or replacing this part is a customer task. You can complete this task yourself, or contact a service provider to complete the task for you. You might be charged a fee by the service provider for this service.

Removing the system processor module from the 7063-CR2 system

To remove the system processor module from the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task

(L007)



CAUTION: A hot surface nearby. (L007)

Procedure

1. Power off the system.

For instructions, see [“Stopping the 7063-CR2 system” on page 99](#).

2. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the

system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.

3. Remove the system backplane from the rear of the system.
 - a) Label and remove the two power cables.
For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.
 - b) Label and remove the signal cables from the rear of the system.
 - c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

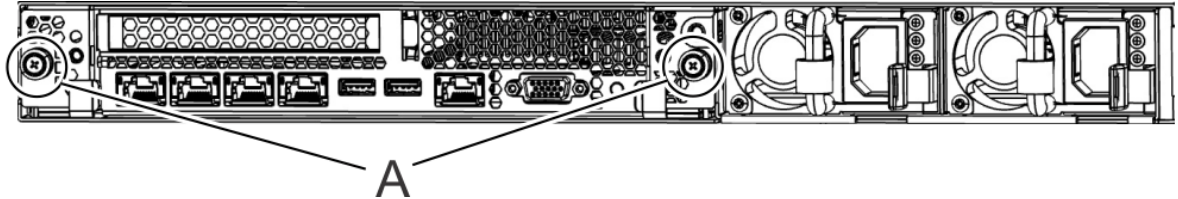


Figure 89. Removing the system backplane screws

- d) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

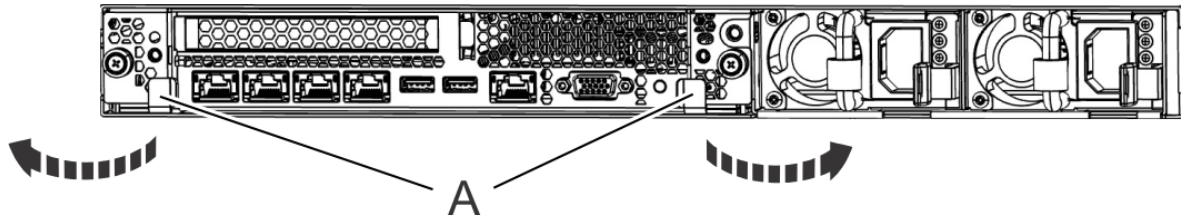


Figure 90. Unlatching the system backplane

- e) Support the system backplane by the bottom as you slide it from the system.

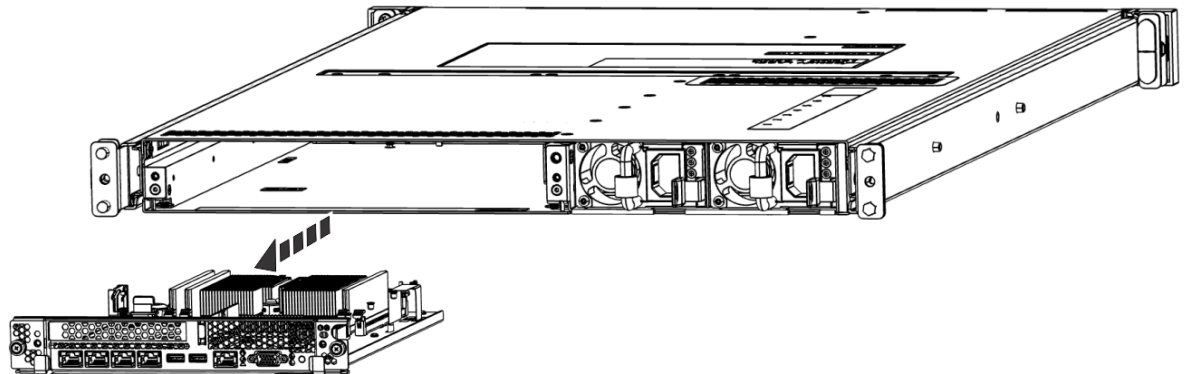


Figure 91. Removing the system backplane

- f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

4. Open the packaging of the new system processor module and place the cover upside down next to the tray, as shown in the following figure. The cover is used for the system processor module that you want to replace.

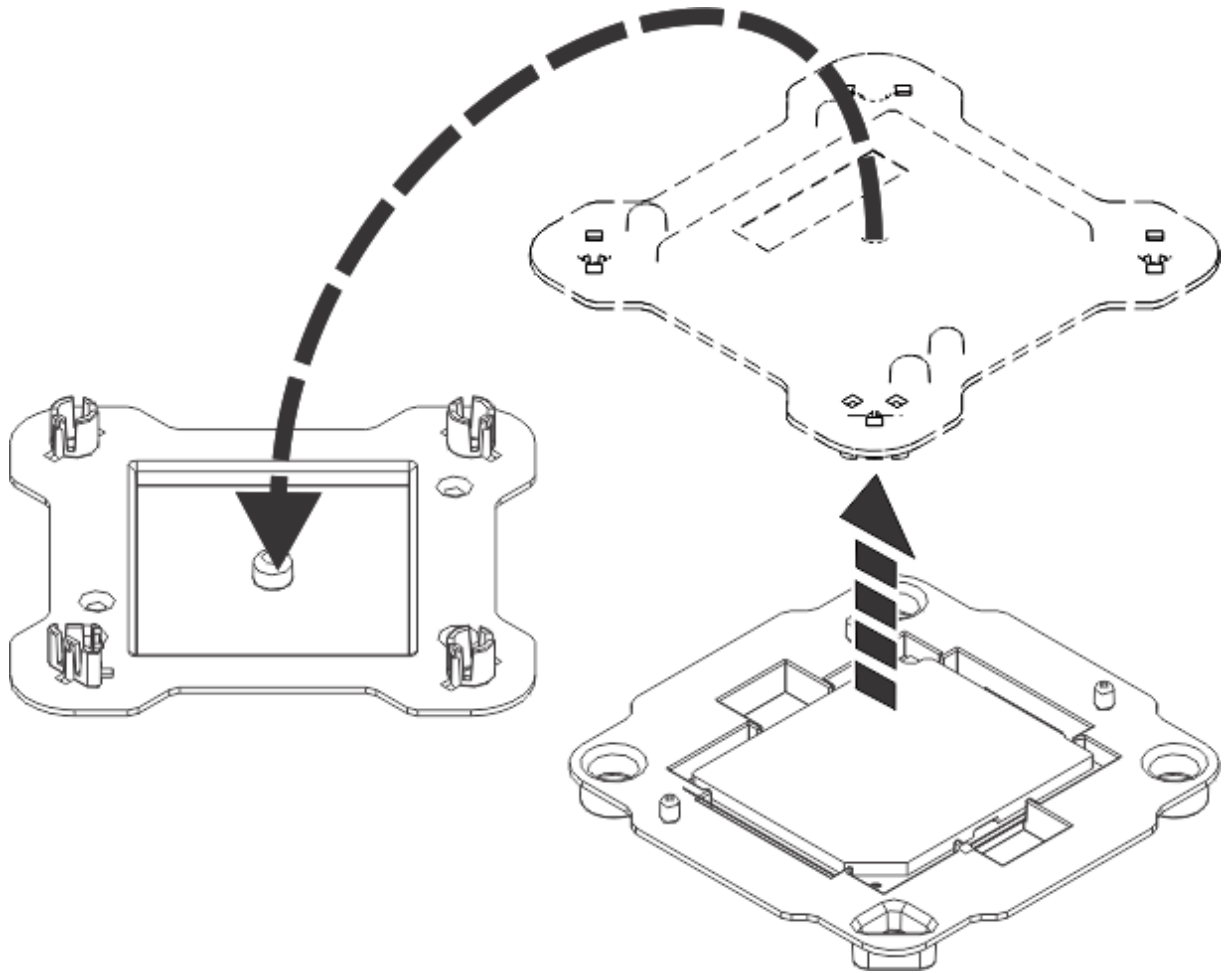
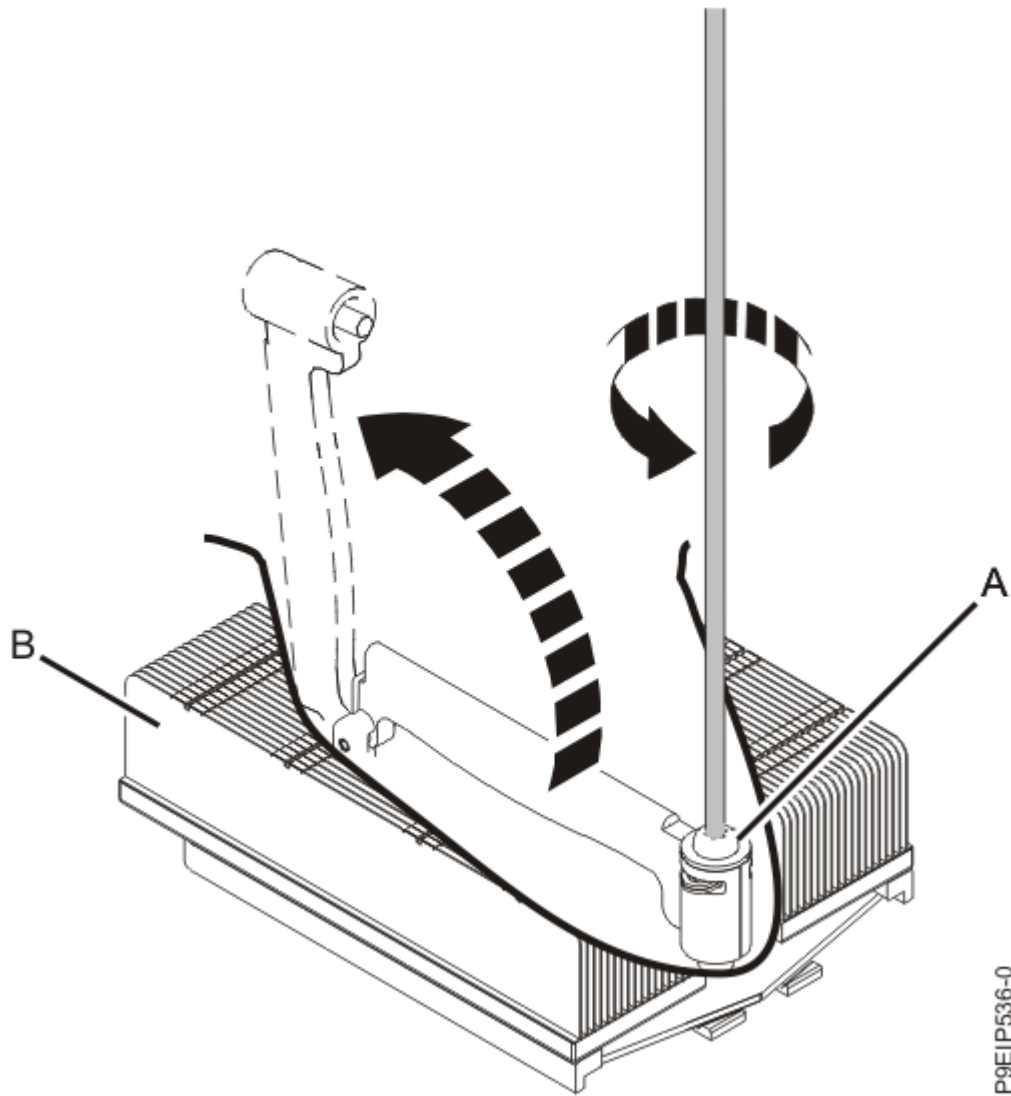


Figure 92. Opening the system processor module packaging

5. Loosen the load arm screw **(A)** of the system processor heat sink **(B)** that you are removing with a T20 hexalobular driver. The load arm pivots up in the direction that is shown in the following figure.



P9EIP536-0

Figure 93. Loosening the load arm screw of the heat sink

6. Grip the heat sink and remove it by lifting it straight up as shown in the following figure.

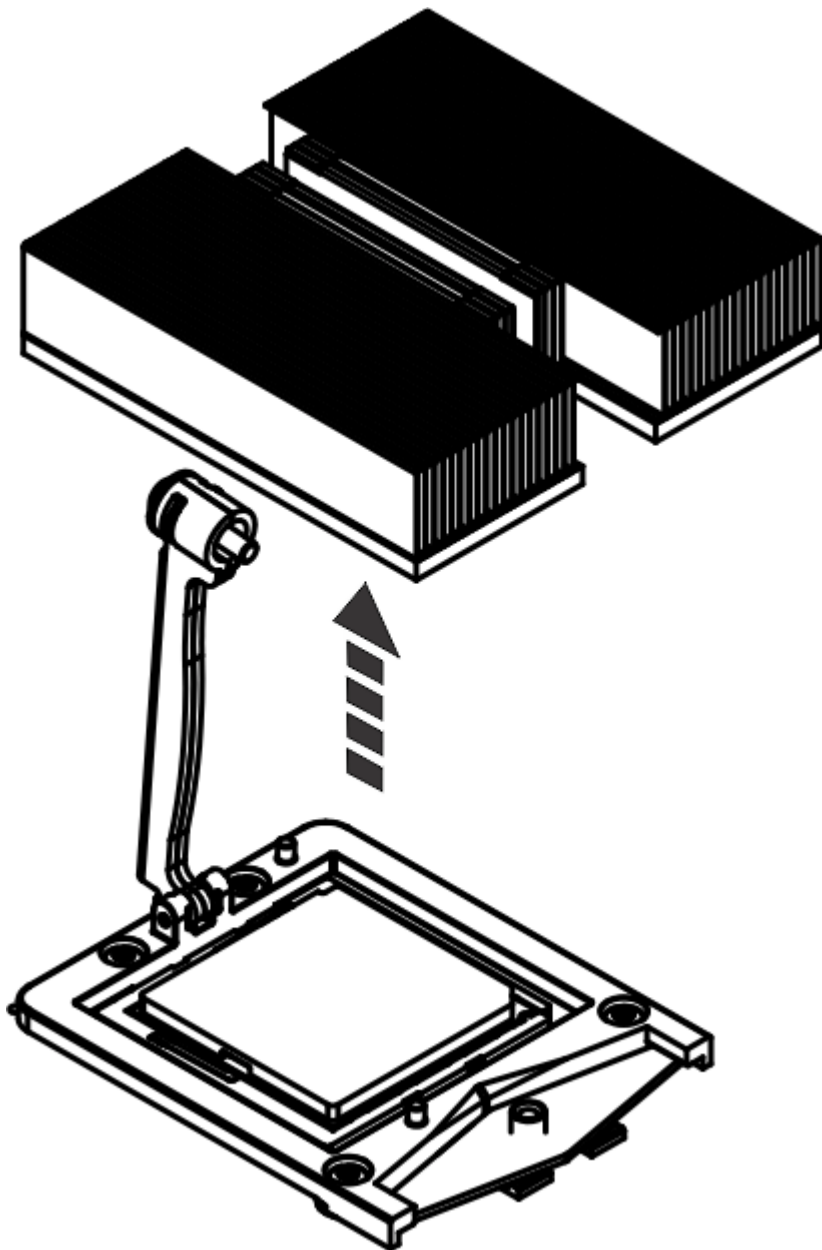
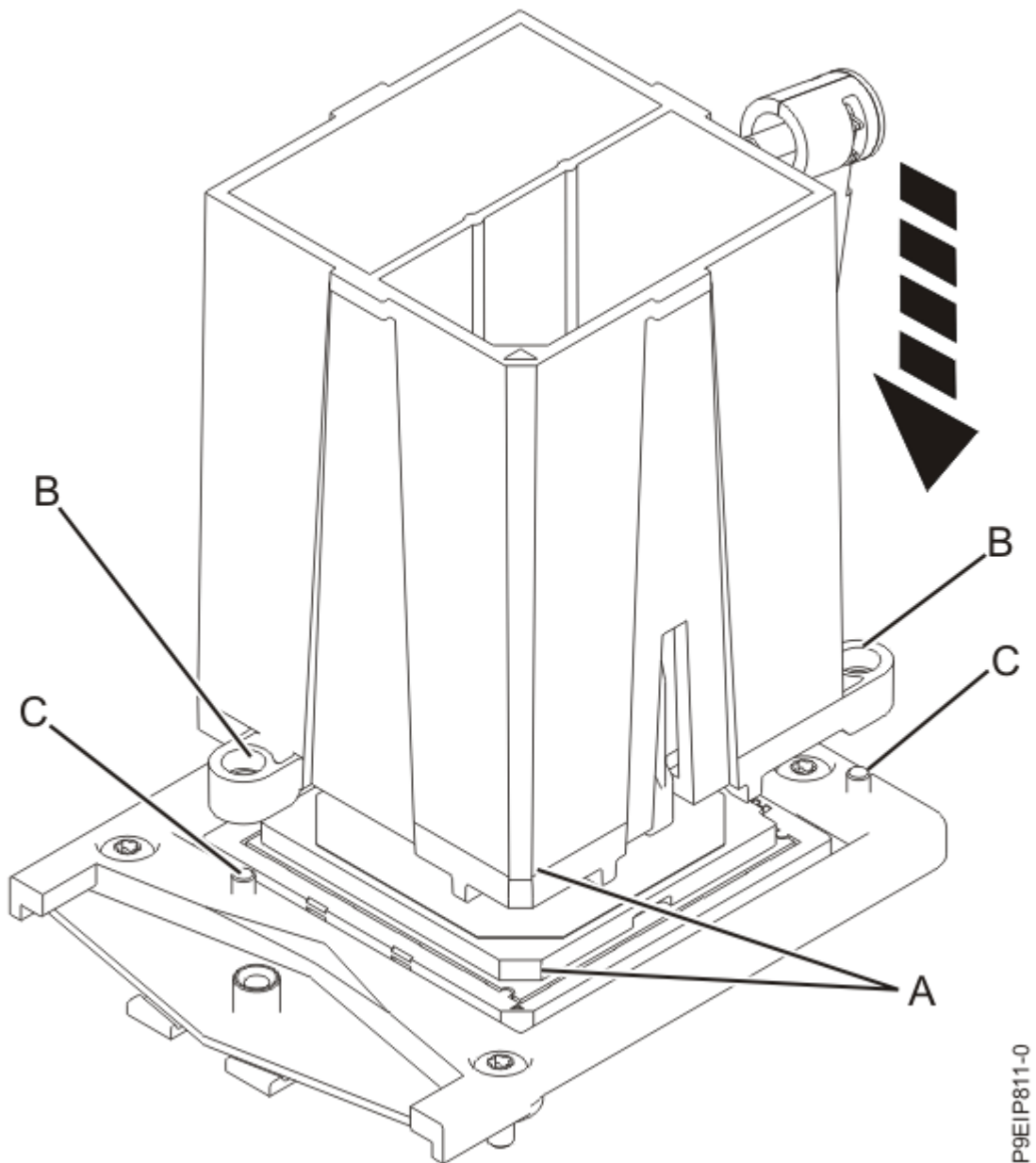


Figure 94. Removing the heat sink

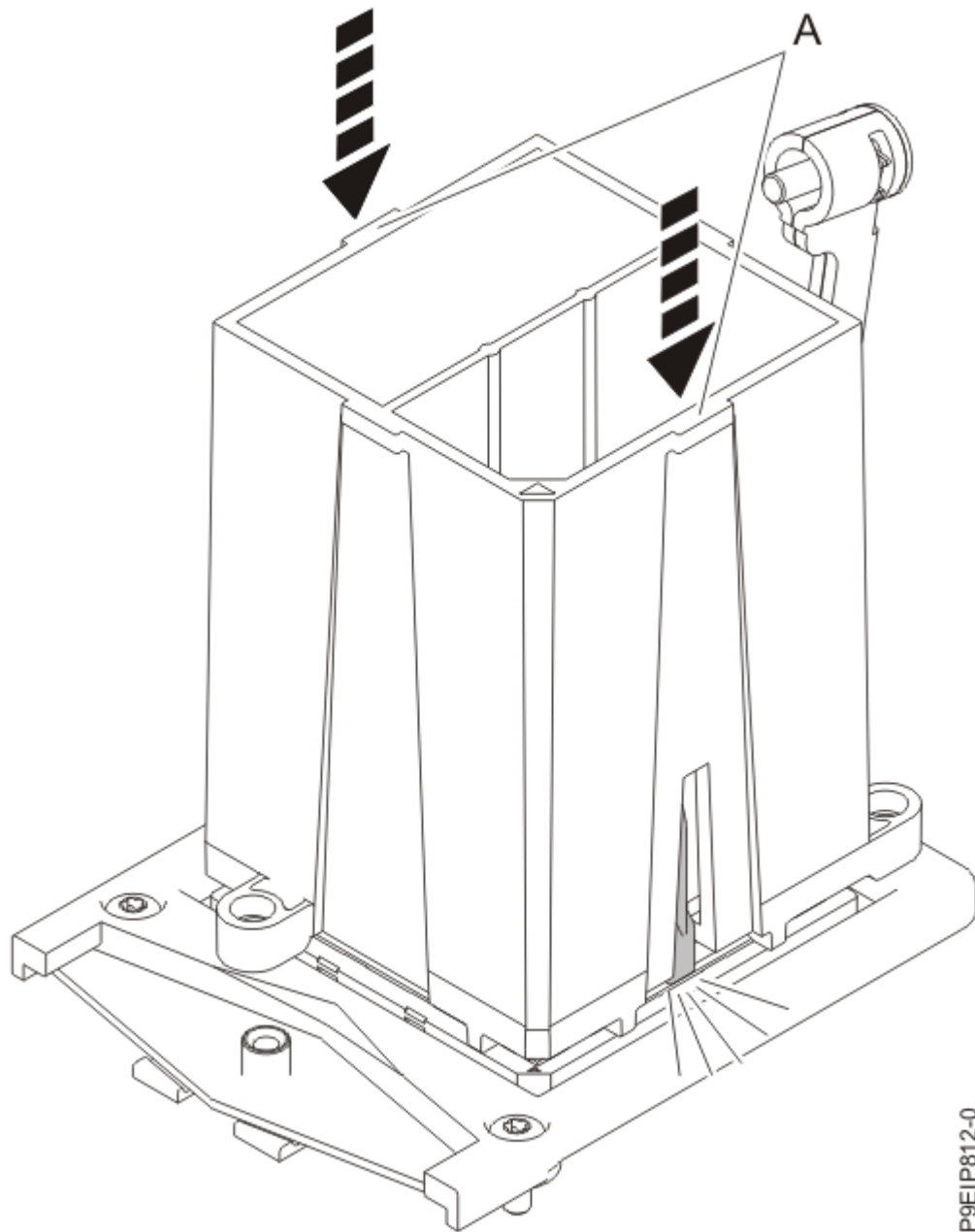
7. Place the heat sink upside down on a clean surface.
8. Using tweezers, carefully remove the TIM from the top of the system processor module and place it in a clean, dry area.
The TIM can tear easily.
9. Inspect the system processor socket area and remove any dust or debris (use a can of compressed air).
10. Align the tool with the beveled edge **(A)** of the system processor module as shown in the following figure. 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.



P9EIP811-0

Figure 95. Lowering the removal tool onto the system processor module

11. 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 the following figure.
The tool drops slightly when you push down on the system processor module so that the jaws can grab the bottom of the module. 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.



P9EIP812-0

Figure 96. Locking the system processor module into the tool

12. Hold the outside of the tool and lift the tool and system processor module from the socket. Place them at an angle on the top cover of the system processor module packaging as shown in the following figure.

Setting the 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.

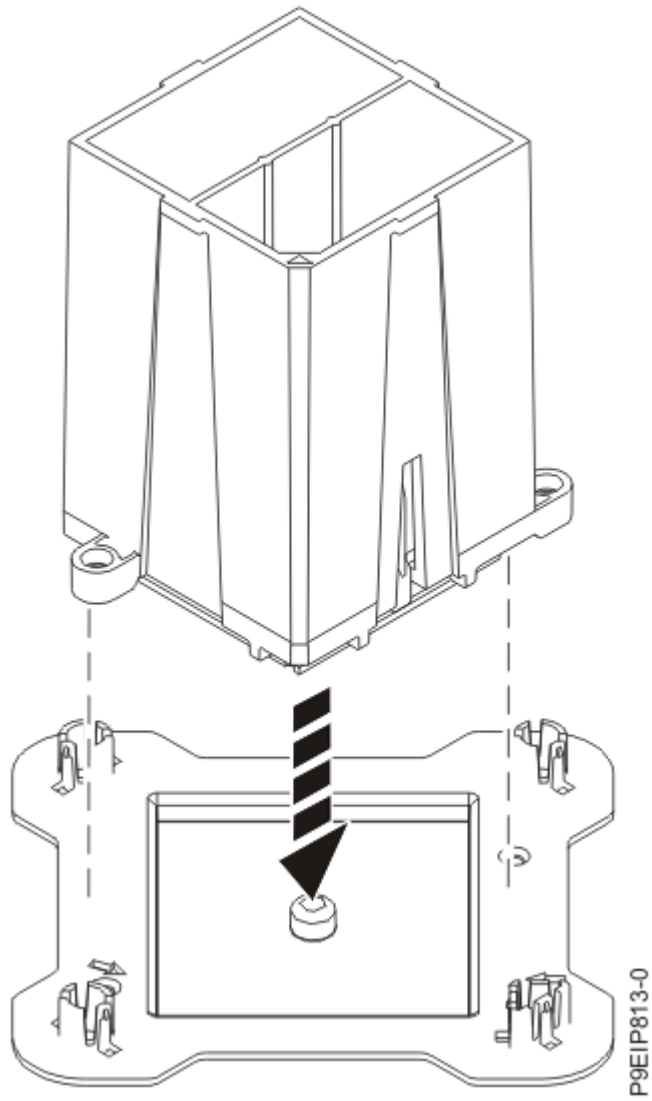


Figure 97. Placing the system processor module at an angle on the top cover of the packaging

13. Squeeze the two blue tabs to release the system processor module from the tool as shown in the following figure.

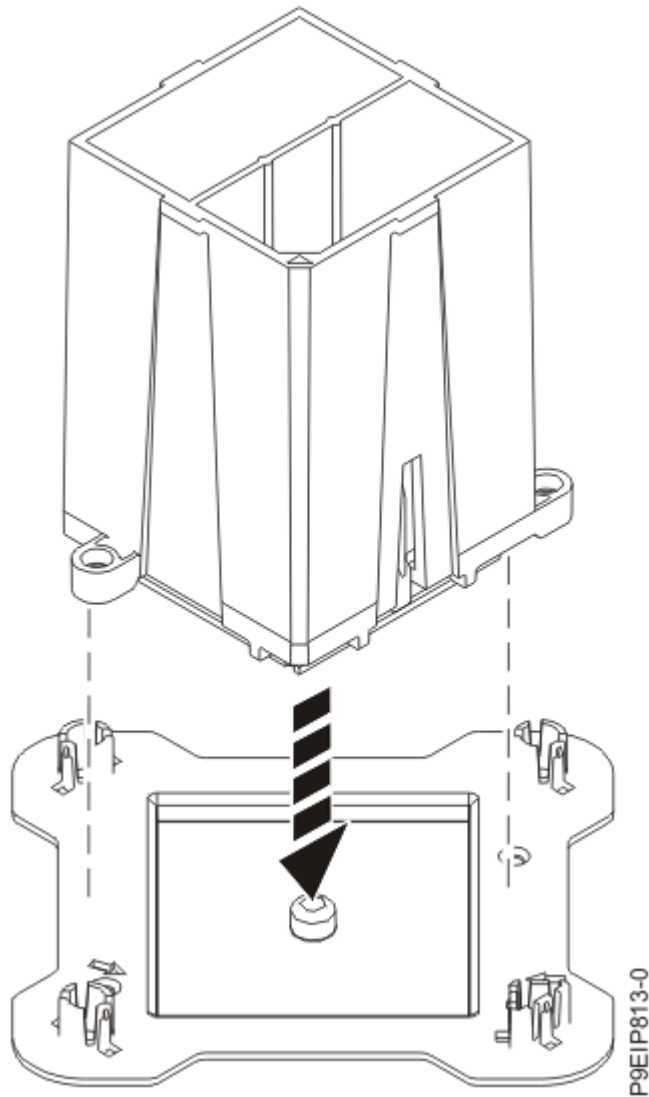


Figure 98. Releasing the system processor module from the tool

Replacing the system processor module in the 7063-CR2 system

To replace the system processor module in the IBM Power Systems HMC (7063-CR2) 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. Inspect the system processor socket area and remove any dust or debris (use a can of compressed air).
3. Remove the replacement processor module from the shipping tray. Align the beveled corner **(A)** of the tool over the beveled corner of the module as shown in the following figure. Ensure that the guide **(B)** fits into the alignment pin **(C)**.

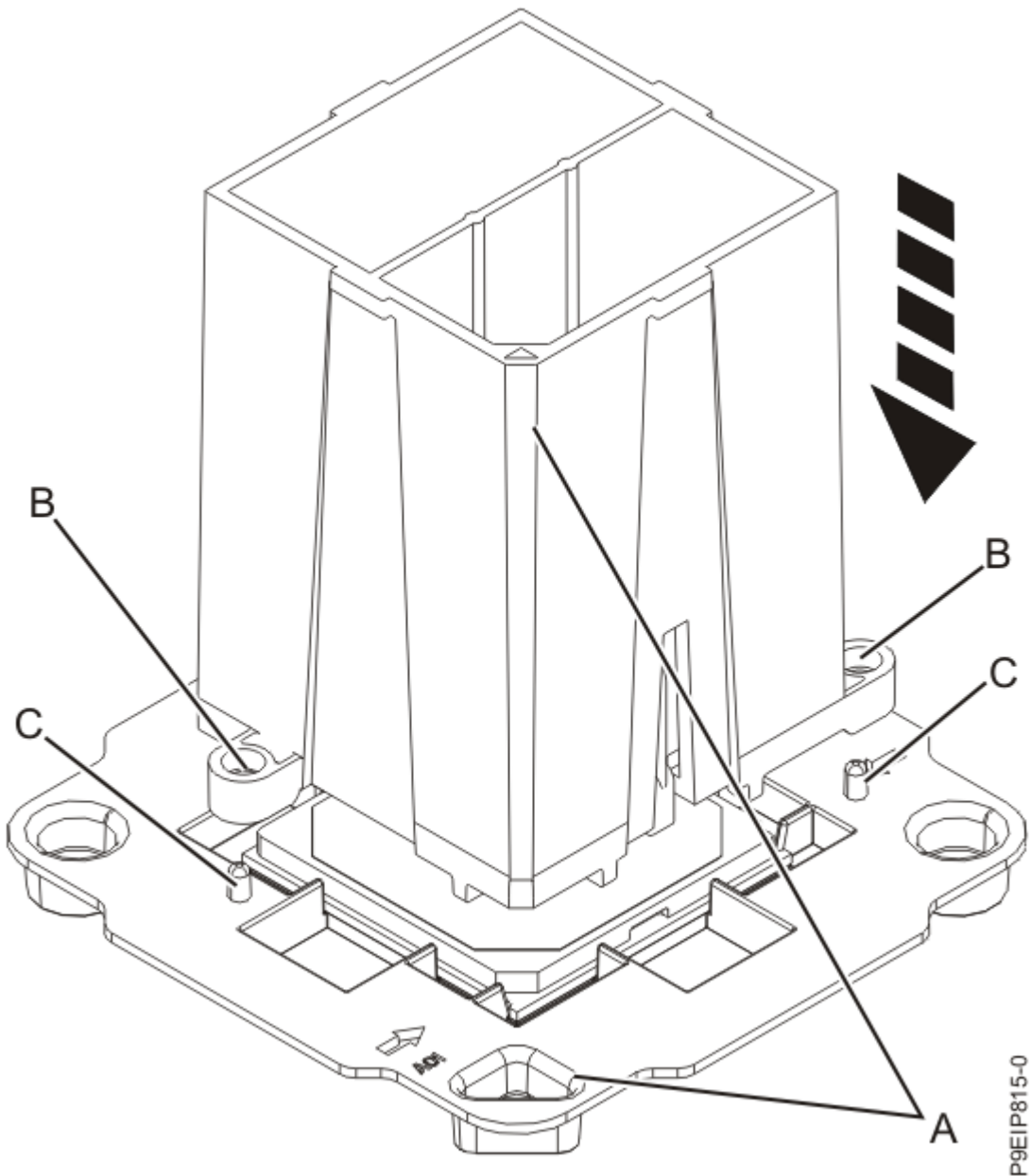
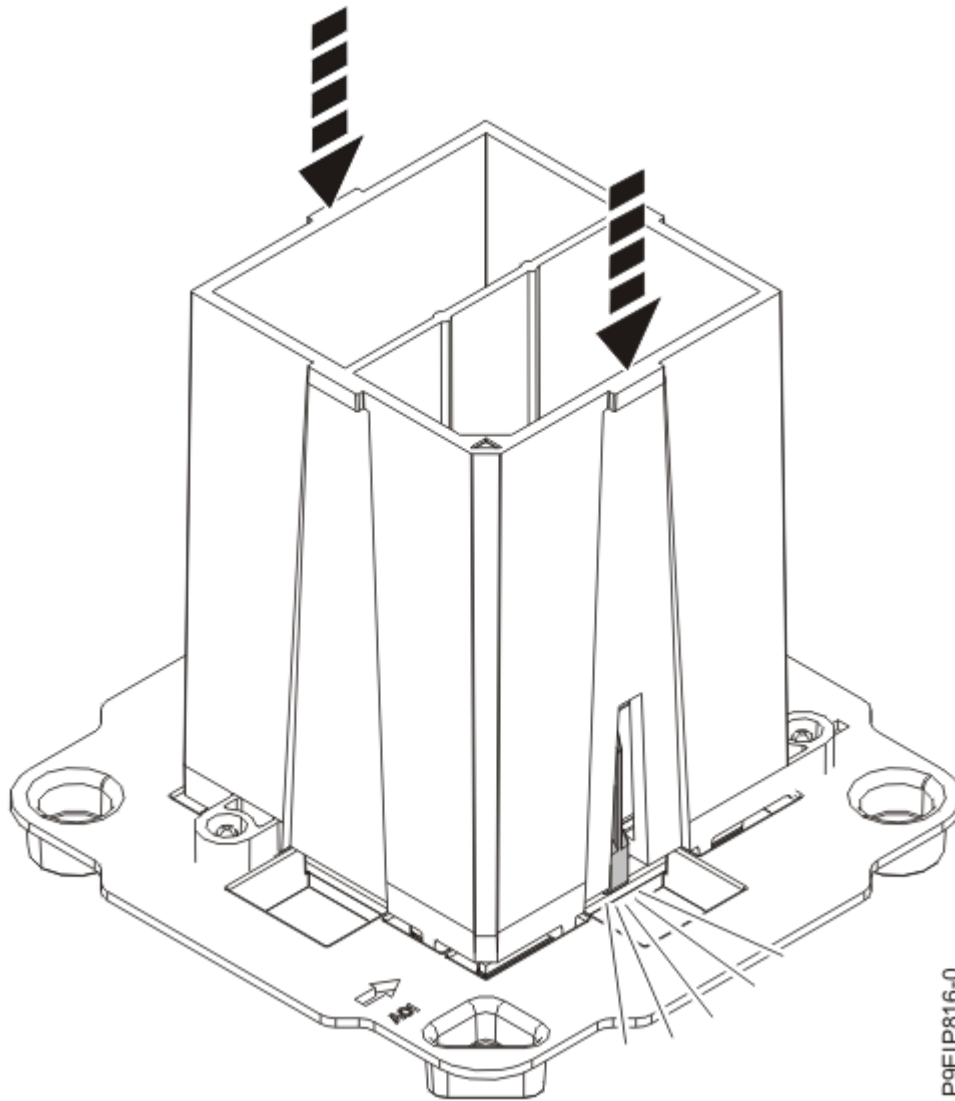


Figure 99. Aligning the removal tool

4. With the removal tool 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 the following figure.

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



P9EIP816-0

Figure 100. Locking the system processor module into the tool

5. Lift the system processor module from the packaging tray as shown in the following figure.

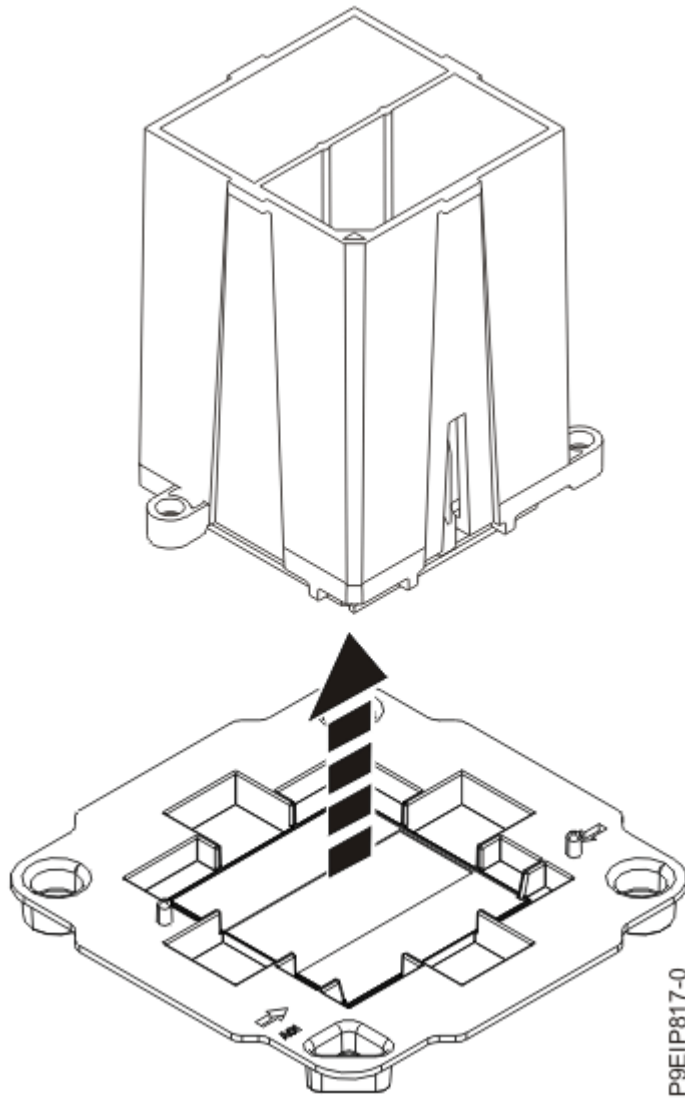


Figure 101. Lifting the system processor module from the packaging tray

6. 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 as shown in the following figure.

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. 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.

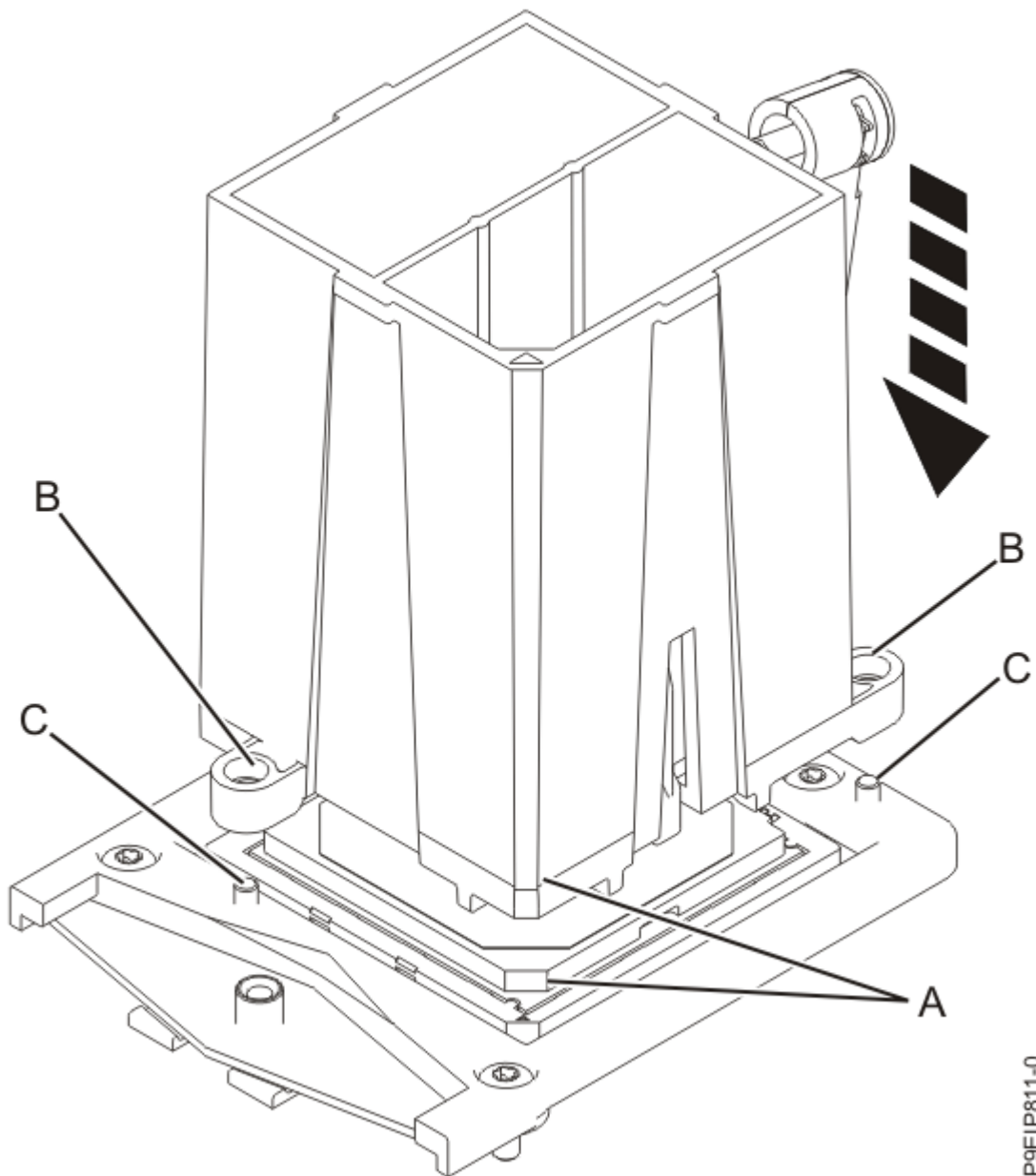


Figure 102. Installing the system processor module

7. 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 the following figure.

Then, lift the tool off the system processor module.

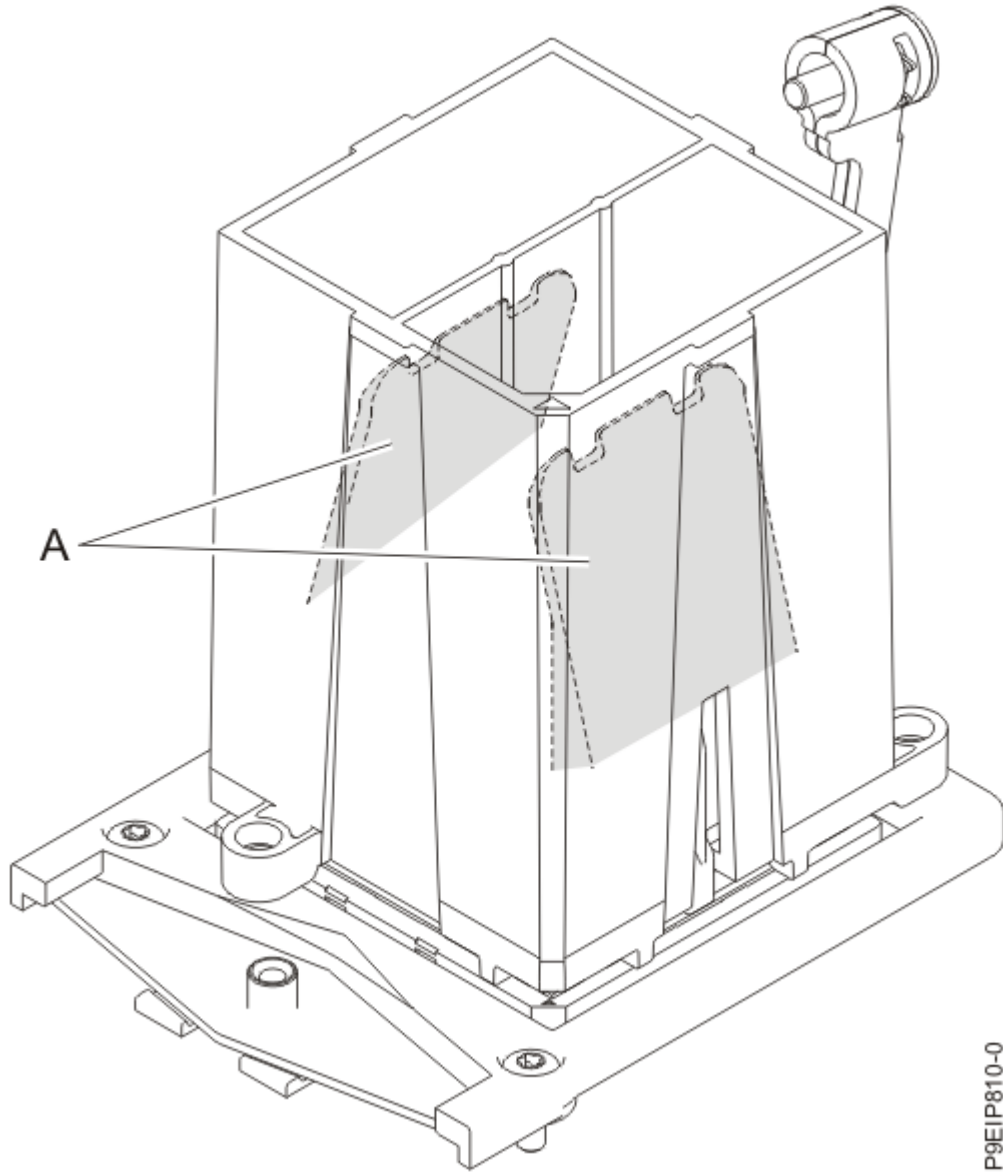


Figure 103. Removing the system processor module tool

8. Inspect the thermal interface material (TIM) for visible signs of damage. If you see folds, tears, bends, or if you have doubts about the TIM, replace it.

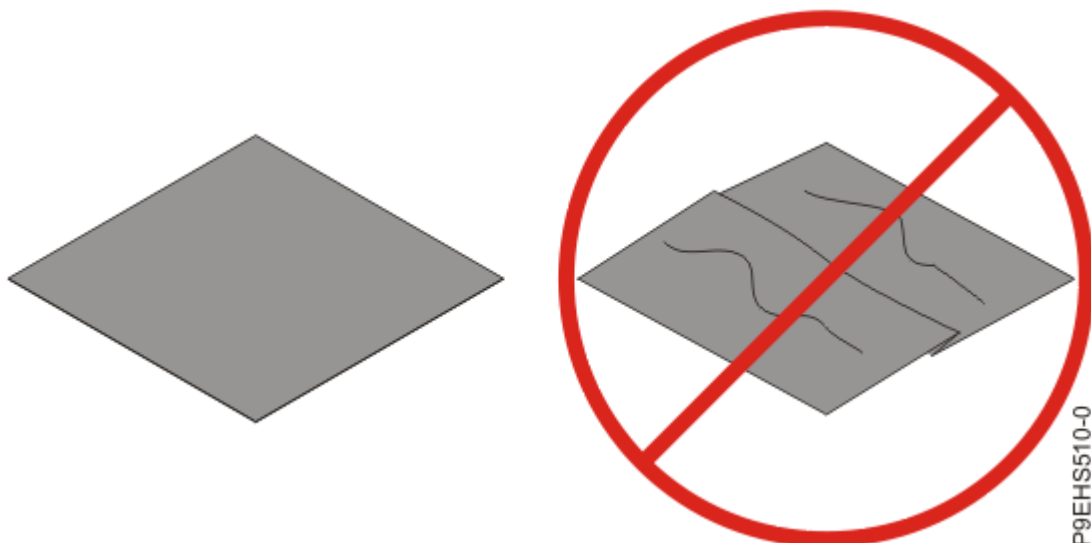


Figure 104. Inspecting the thermal interface material

9. Choose one of the following repair options:

Option	Description
Is the TIM damaged?	It is damaged. Proceed to step “10” on page 82 to replace the TIM and install the existing heat sink.
Is the TIM OK?	It is not damaged and can be reused. Proceed to step “12” on page 82 to reuse the TIM and install the existing heat sink.

10. Use this step to install a new TIM and reuse the existing heat sink.

- a) 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.
- b) 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.
- c) Using the tweezers, remove the TIM from the carrier strip and center it onto the system processor module.

The TIM has no preferred up side. The TIM can be placed on the system processor module and centered..

11. Continue with step “13” on page 82.

12. Use this step to reuse the existing undamaged TIM and heat sink.

- a) Using the tweezers, move the old TIM from the clean, dry surface and center it onto the new system processor module.

The TIM has no preferred up side. The TIM can be placed on the system processor module and centered.

13. Carefully lower the heat sink over the system processor module, ensuring that the holes in the heat sink align with the two guide pins (**A**) on the socket, as shown in the following figure.

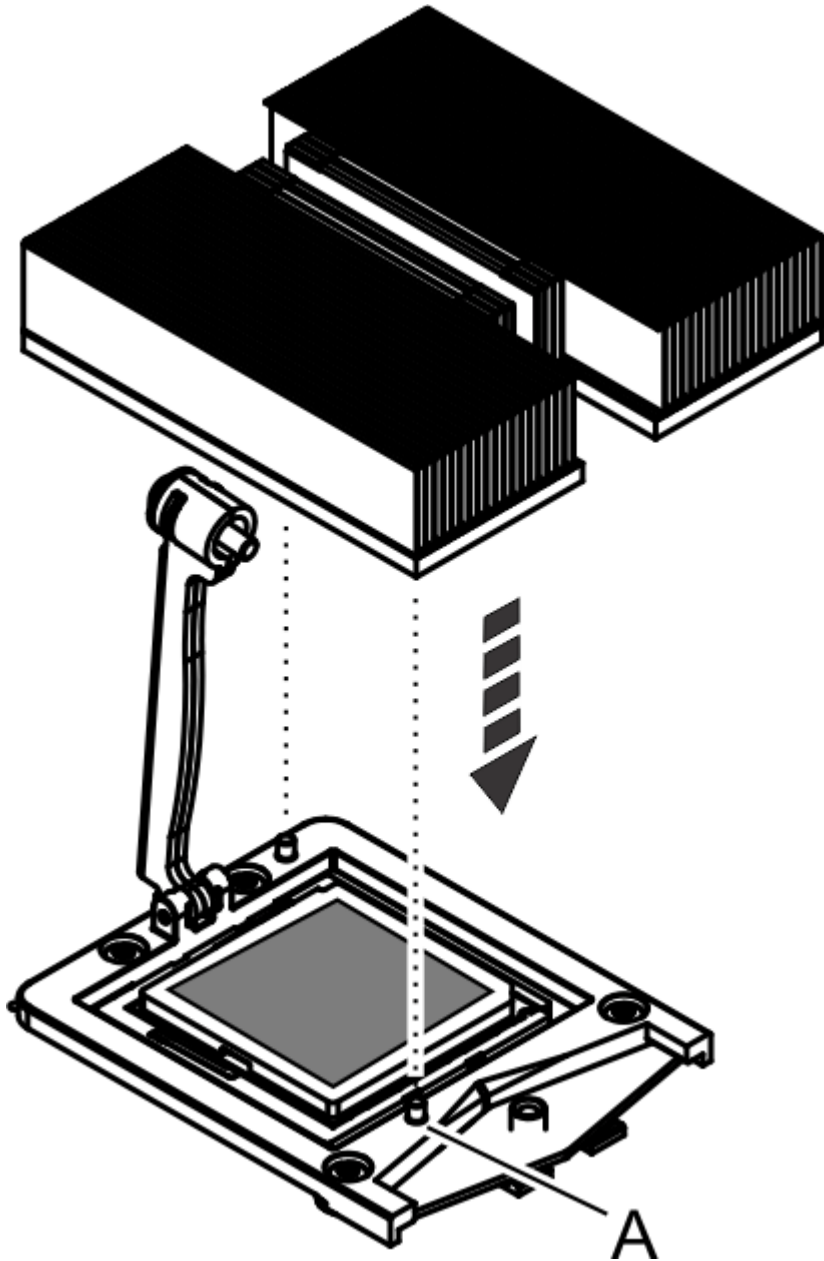


Figure 105. Installing the heat sink

14. Move the load arm **(A)** into position over the heat sink **(B)** and tighten the load arm screw with a T20 hexalobular driver, as shown in the following figure.

Note: Do not over tighten the load arm screw.

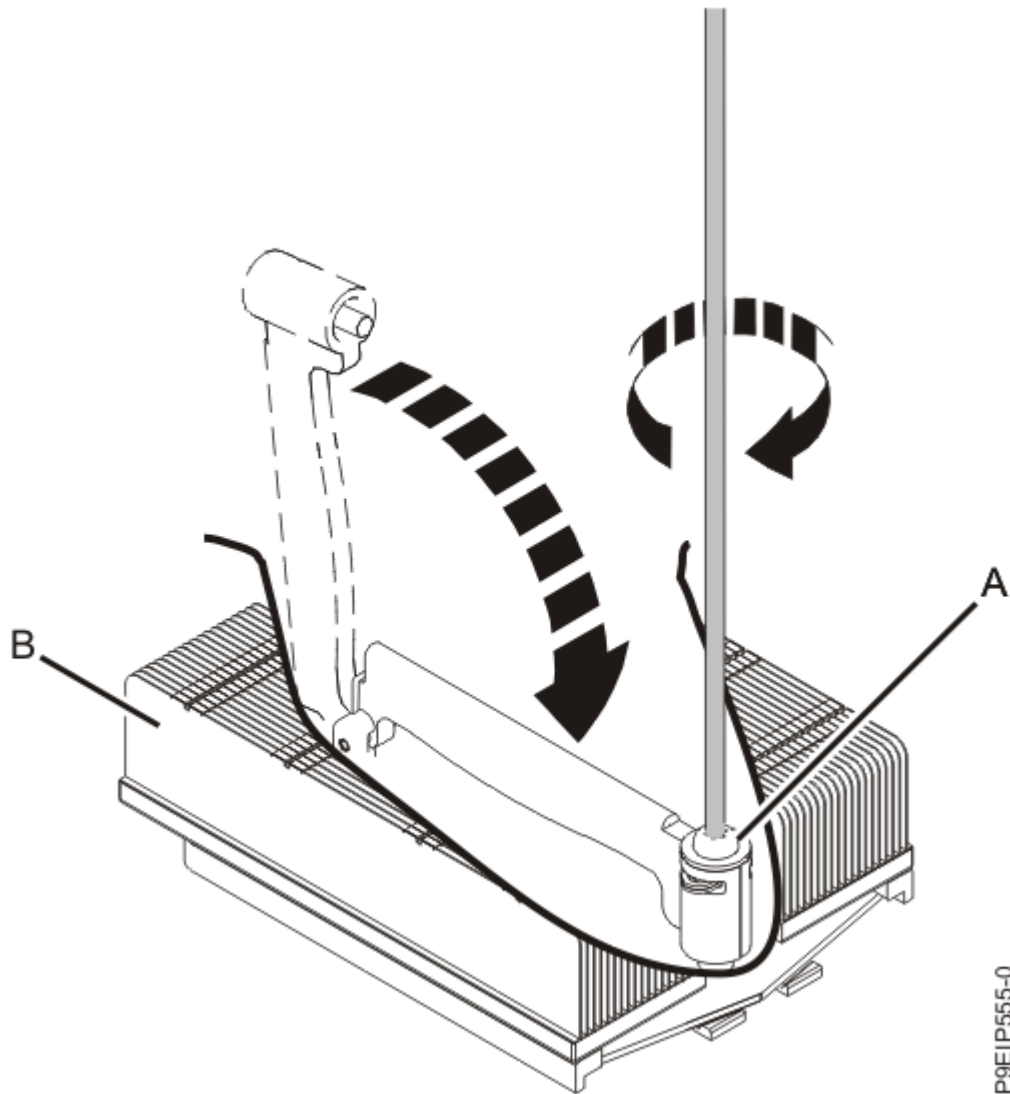
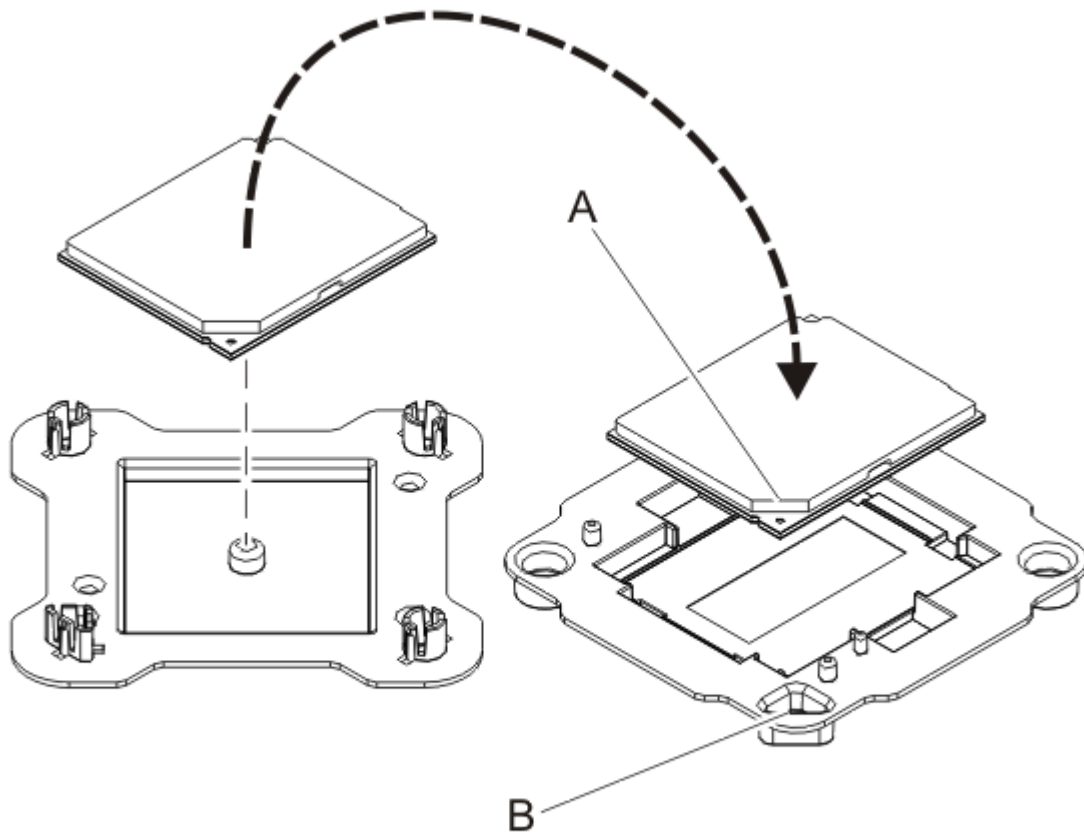


Figure 106. Tightening the load arm screw

15. Lightly grip the system processor module that you replaced by the edges and lift it off the shipping cover. Align the beveled corner of the module **(A)** to the corner of the tray with the triangle **(B)** and place it in the tray, as shown in the following figure.



P9EDE608-0

Figure 107. Placing the system processor module into the shipping tray

16. Replace the system backplane into the rear of the system.

- a) Ensure that the two system backplane levers are open.
- b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

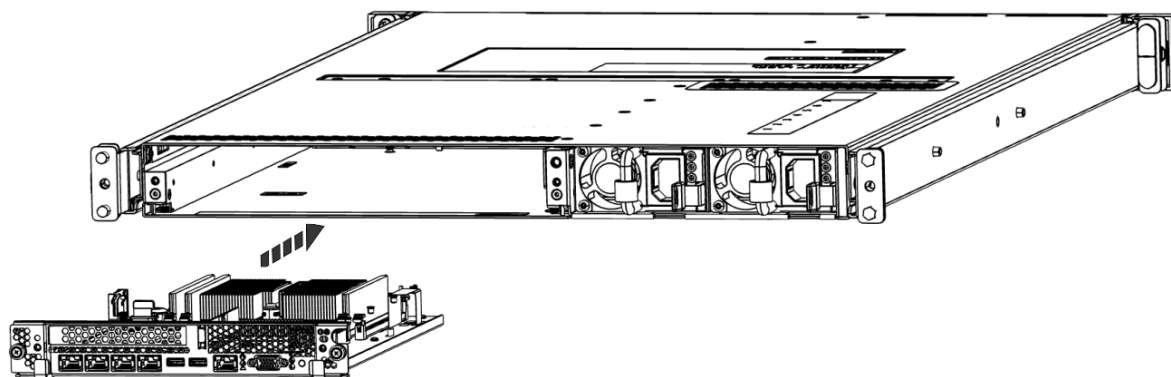


Figure 108. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
- d) Tighten the two screws on the sides of the system backplane.
- e) Using your labels, replace the signal cables into the rear of the system.
- f) Using your labels, replace the two power cords at the rear of the system.

For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

17. Power on the system for operation.

For instructions, see [“Starting the 7063-CR2 system”](#) on page 98.

Removing and replacing the time-of-day battery in the 7063-CR2

To remove and replace the time-of-day battery in the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.

2. Remove the system backplane from the rear of the system.

a) Label and remove the two power cables.

For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.

b) Label and remove the signal cables from the rear of the system.

c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

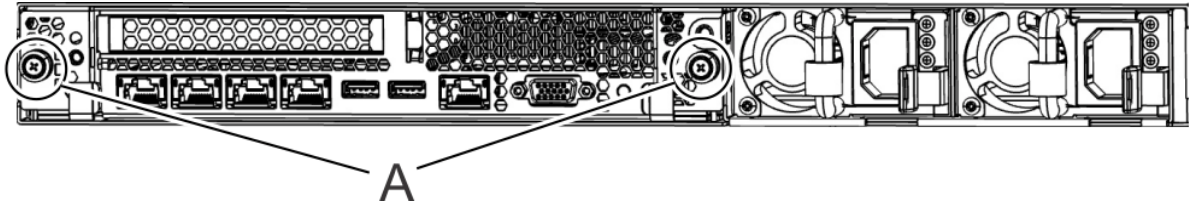


Figure 109. Removing the system backplane screws

- d) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

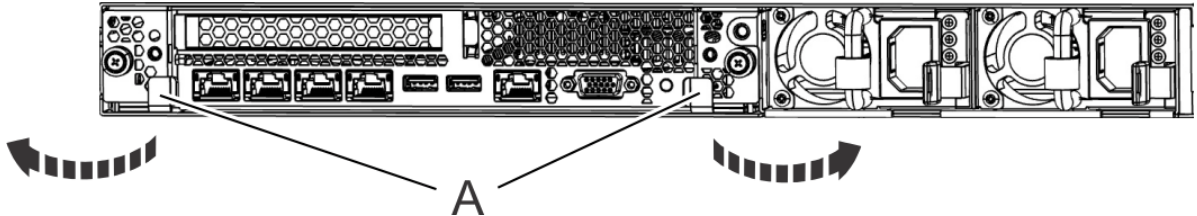


Figure 110. Unlatching the system backplane

- e) Support the system backplane by the bottom as you slide it from the system.

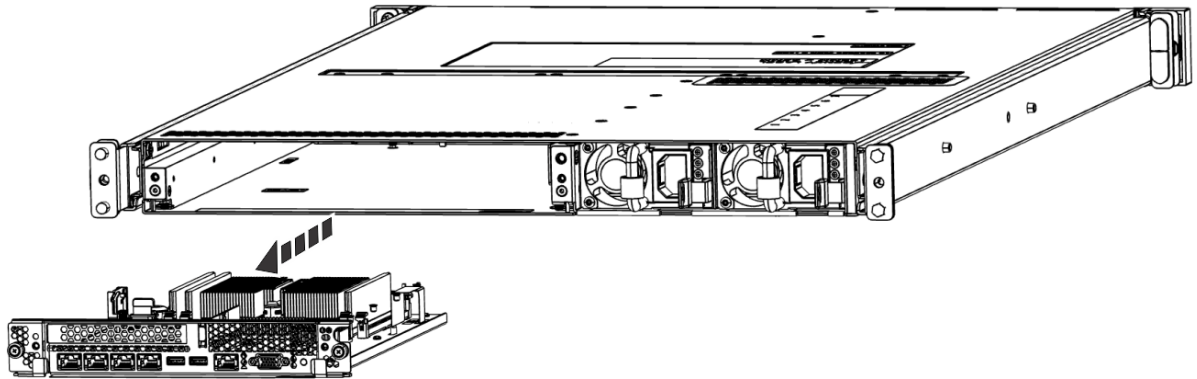


Figure 111. Removing the system backplane

- f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

3. Remove the time-of-day battery **(A)** by using your thumb to press the spring latch toward the back of the system to release the time-of-day battery. Lift the time-of-day battery from the battery socket. When you remove the time-of-day battery, do not use a metallic tool to disengage it from its slot.

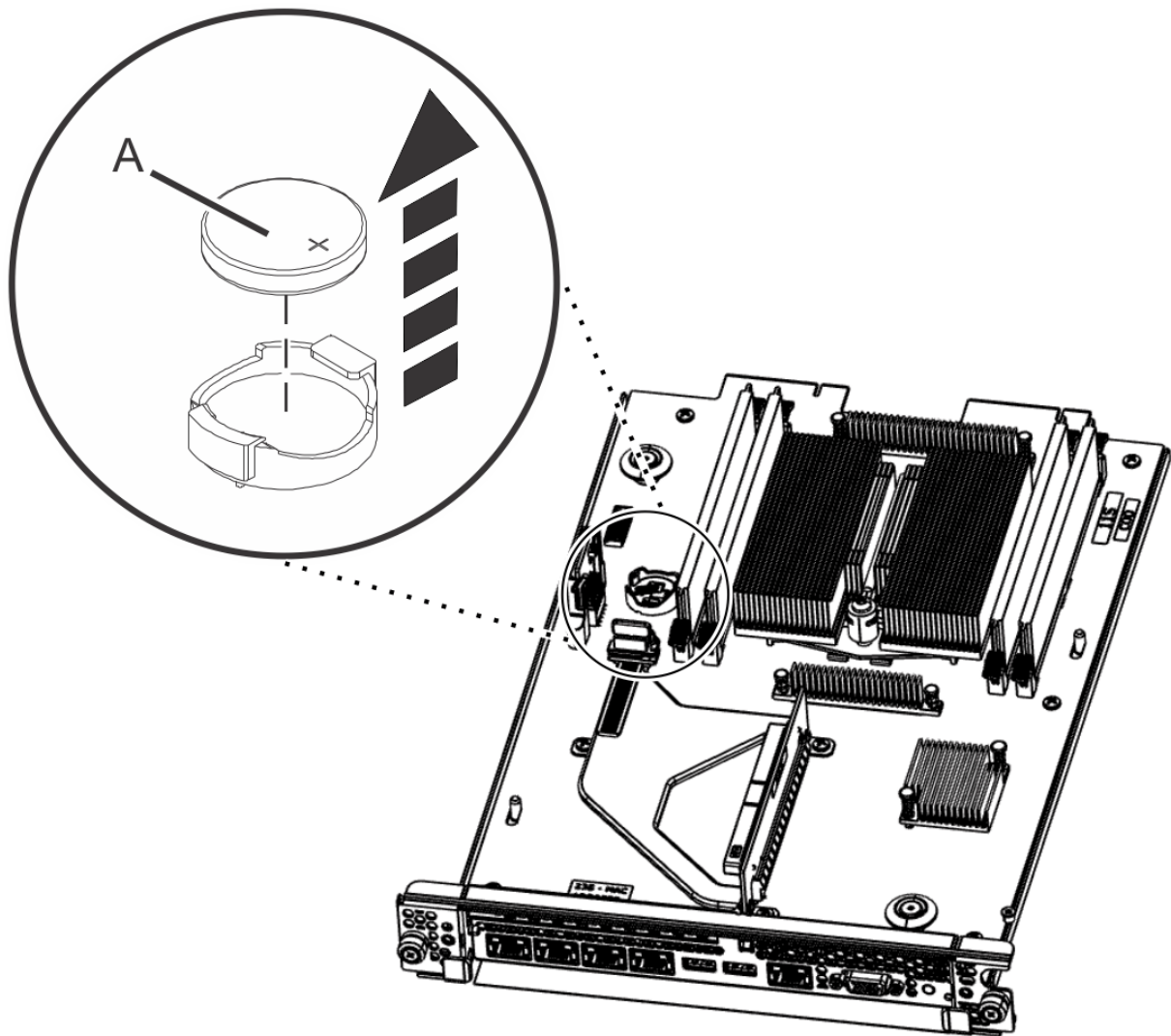


Figure 112. Removing the time-of-day battery

4. To replace the time-of-day battery, use your thumb to press the battery socket spring latch and replace the time-of-day battery.

The orientation of the + of the battery is up.

5. Replace the system backplane into the rear of the system.
 - a) Ensure that the two system backplane levers are open.
 - b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

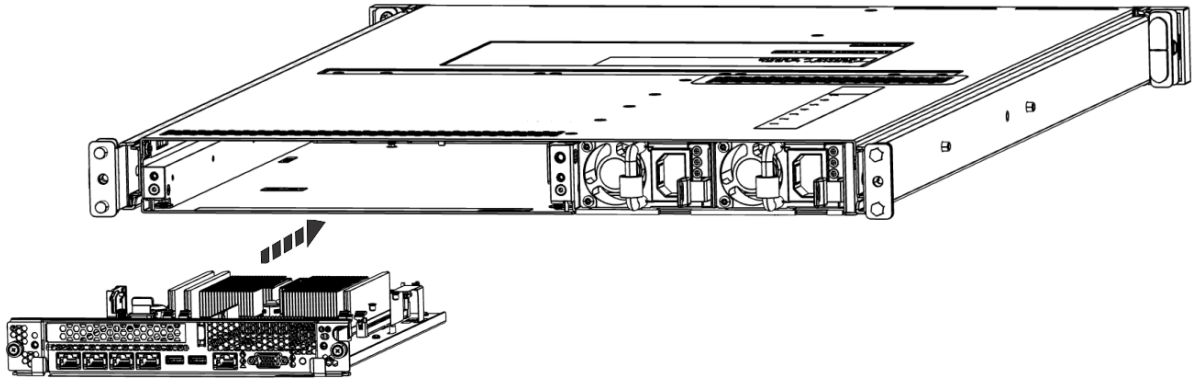


Figure 113. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
- d) Tighten the two screws on the sides of the system backplane.
- e) Using your labels, replace the signal cables into the rear of the system.
- f) Using your labels, replace the two power cords at the rear of the system.

For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

Removing and replacing the trusted platform module in the 7063-CR2

To remove and replace the trusted platform module in the IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
2. Remove the system backplane from the rear of the system.
 - a) Label and remove the two power cables.
For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.
 - b) Label and remove the signal cables from the rear of the system.
 - c) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

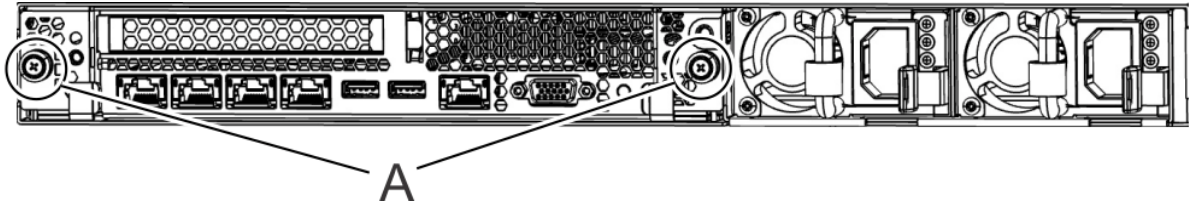


Figure 114. Removing the system backplane screws

- d) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

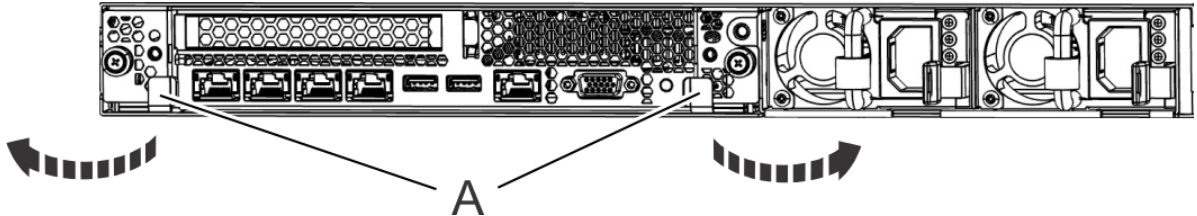


Figure 115. Unlatching the system backplane

- e) Support the system backplane by the bottom as you slide it from the system.

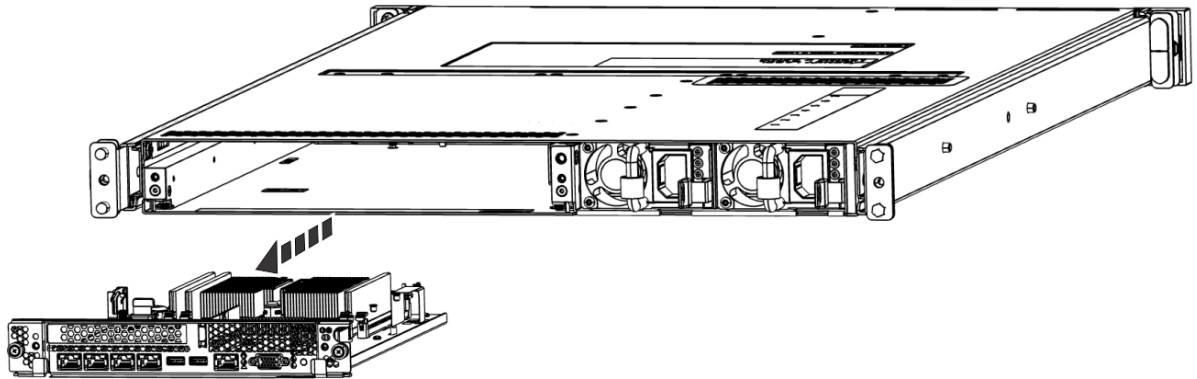


Figure 116. Removing the system backplane

- f) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

3. Pull small the lever **(A)** slightly away from the trusted platform module to release the module and lift the module straight up from its slot on the system backplane.

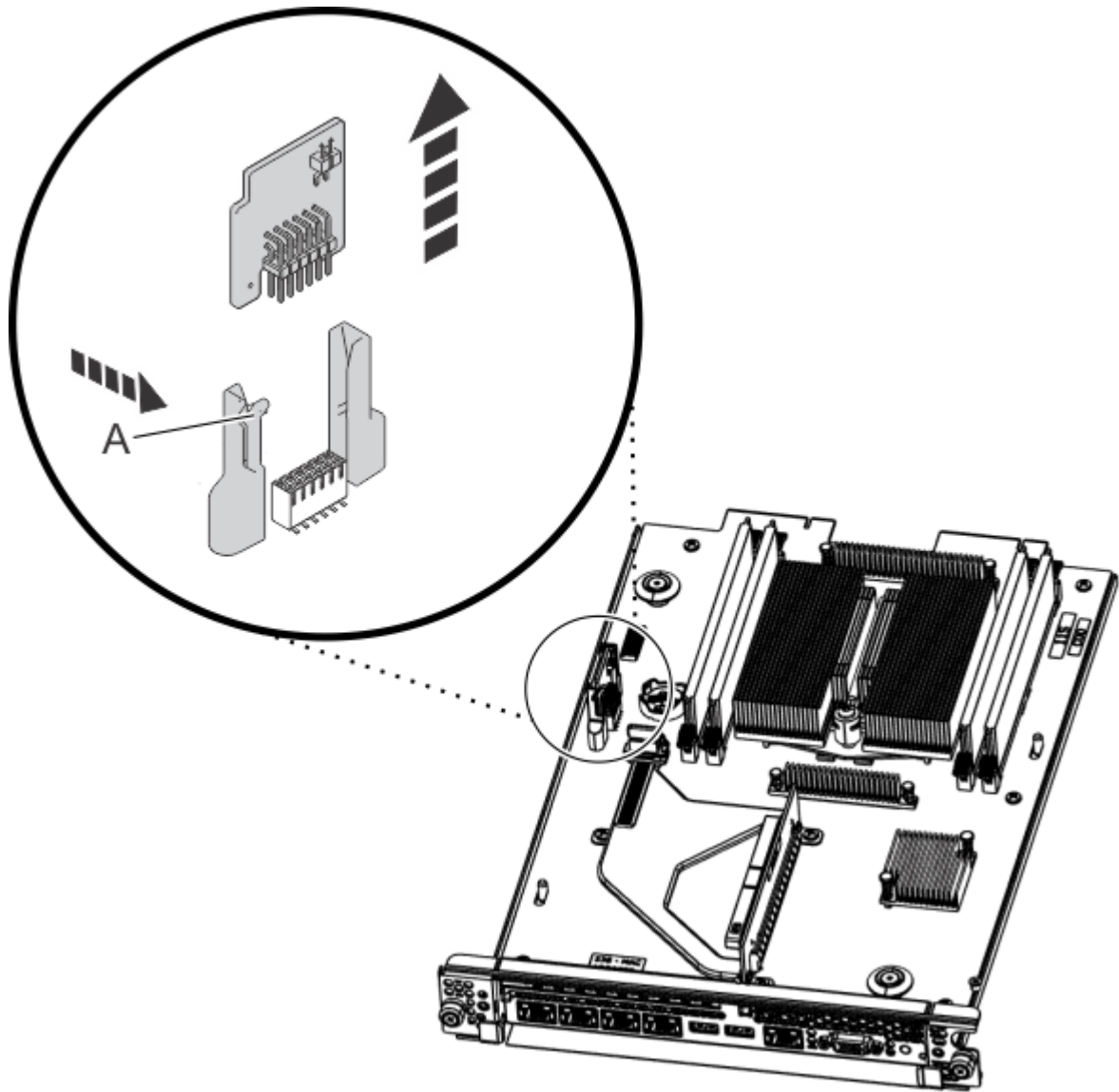


Figure 117. Removing the trusted platform module

4. Align the trusted platform module with the plastic guides and push the trusted platform module straight into the system backplane until it is fully seated and the lever **(A)** clicks into place.
5. Replace the system backplane into the rear of the system.
 - a) Ensure that the two system backplane levers are open.
 - b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

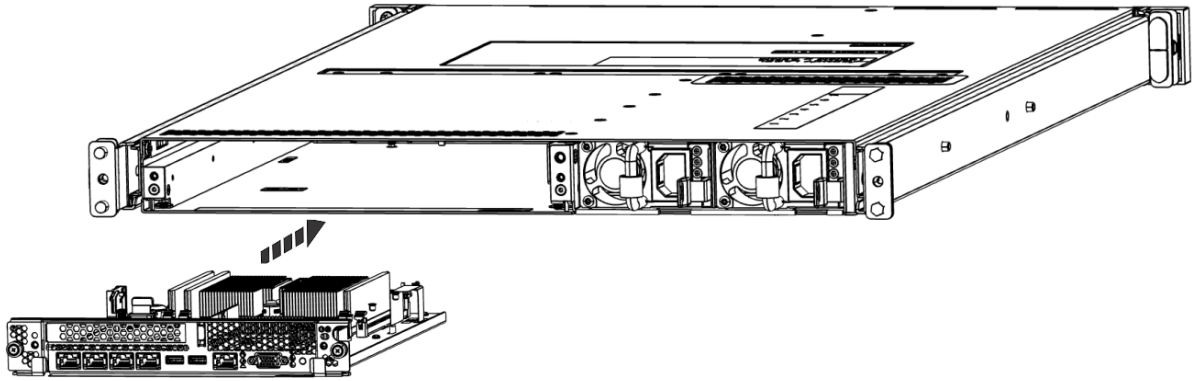


Figure 118. Replacing the system backplane

- c) Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
 - d) Tighten the two screws on the sides of the system backplane.
 - e) Using your labels, replace the signal cables into the rear of the system.
 - f) Using your labels, replace the two power cords at the rear of the system.
- For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

Common procedures for servicing the 7063-CR2

Learn about the common procedures related to removing and replacing parts in the IBM Power Systems HMC (7063-CR2) 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 that are 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. 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)

Procedure

1. If you are installing a new feature, ensure that you have the software that is required to support the new feature. See [IBM Prerequisite](#).
2. If you are installing or replacing something 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 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, or open or close a latch.
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 steps:
 - 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 thermal performance, ensure that the top cover is on when the system is running.

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 7063-CR2 system that contains the part to replace

Learn how to determine which system has the part you want to replace.

LEDs on the 7063-CR2 system

Use this information as a guide to the LEDs on the IBM Power Systems HMC (7063-CR2) system.

The LEDs indicate various system statuses. If the part does not have a problem indicator LED, you can use a troubleshooting program such as **impitool** to identify the issue.

The front control panel LEDs are shown in the following figure.

- The green LED **(6)** indicates the power status (on or off). The LED flashes when the BMC is at standby. The LED is solid when the system is running.
- The blue identify LED **(8)** identifies the system to be serviced.
- The amber LED **(7)** indicates a system fault.
- The fan LEDs **(1) - (5)** indicate an issue with the corresponding fan.

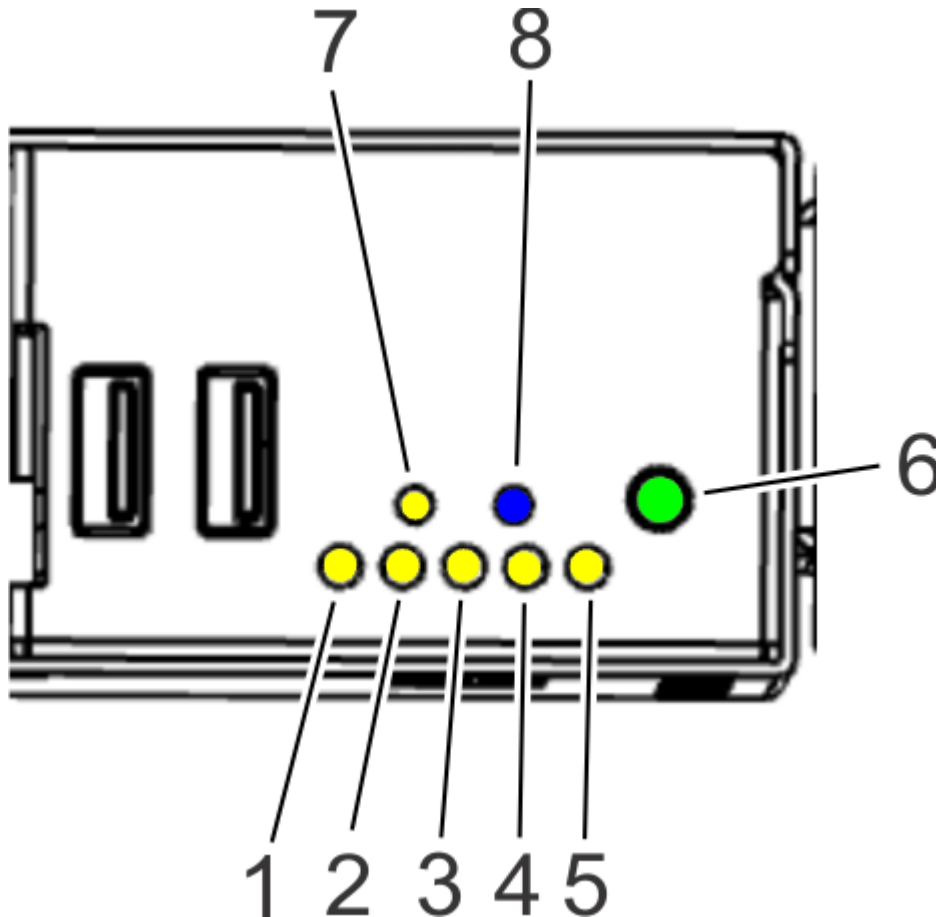


Figure 119. Control panel LEDs

The drive LEDs are shown in the following figure.

- The green LED indicates the power status (on or off).
- The amber LED flashes when there is activity.

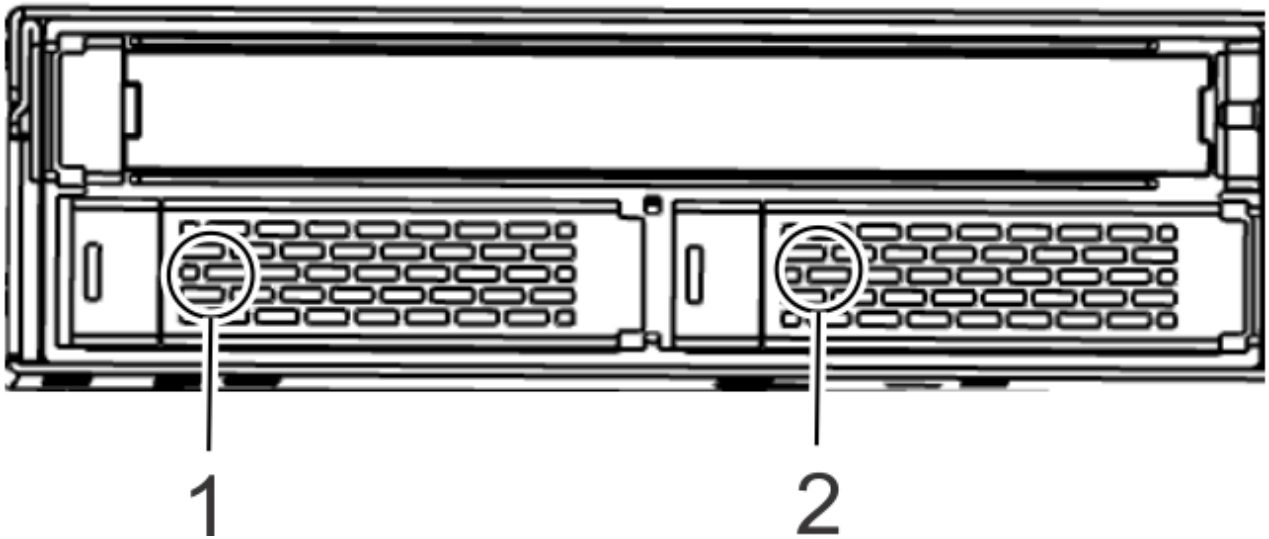


Figure 120. Drive LEDs

LEDs are also on the rear of the system; see the following figure.

- The blue identify LED **(1)** identifies the system to be serviced.
- The amber LED **(2)** indicates a system fault.

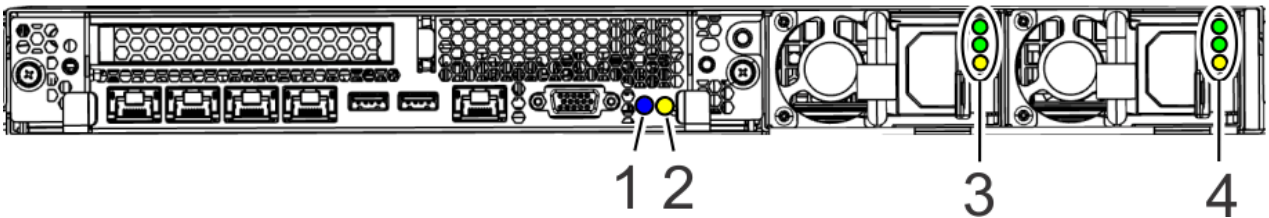


Figure 121. LEDs on the rear of the system

Power supply LEDs **(3)** and **(4)** can indicate the following states:

- The top green LED indicates AC power (on or off). The LED is solid during system standby.
- The middle green LED indicates DC power (on or off). The LED flashes during system standby.
- The bottom amber LED indicates a power fault.

Identifying the 7063-CR2 that needs servicing

Use the Intelligent Platform Management Interface (IPMI) program to turn on the blue identify LED to help you find the IBM Power Systems HMC (7063-CR2) system that needs servicing.

Procedure

You can use the following command to activate the blue system identify LED:

```
openbmctool -U <username> -P <password> -H <BMC IP address or BMC host name> chassis identify on
```

To turn off the blue system identify LED, use the following command:

```
openbmctool -U <username> -P <password> -H <BMC IP address or BMC host name> chassis identify off
```

To check the status of the blue system identify LED, use the following command:

```
openbmctool -U <username> -P <password> -H <BMC IP address or BMC host name> chassis identify status
```

Also visually check the LED.

Starting and stopping the 7063-CR2

Learn how to start and stop the IBM Power Systems HMC (7063-CR2) system to perform a service action or system upgrade.

Starting the 7063-CR2 system

You can use the power button to start the IBM Power Systems HMC (7063-CR2) systems.

About this task



Attention: For safety, airflow purposes and thermal performance, the service access cover must be installed and fully seated before you power on the system.

You can use this procedure to power on the system, or you can use a console and the IPMI tool to power on the system.

Procedure

1. Before you press the power button, ensure that the power supplies are connected to the system unit and that the power cables are connected to a power source.
2. Press the power button **(6)** shown in the following figure.

The power-on light stops flashing and remains on, indicating that the system power is on.

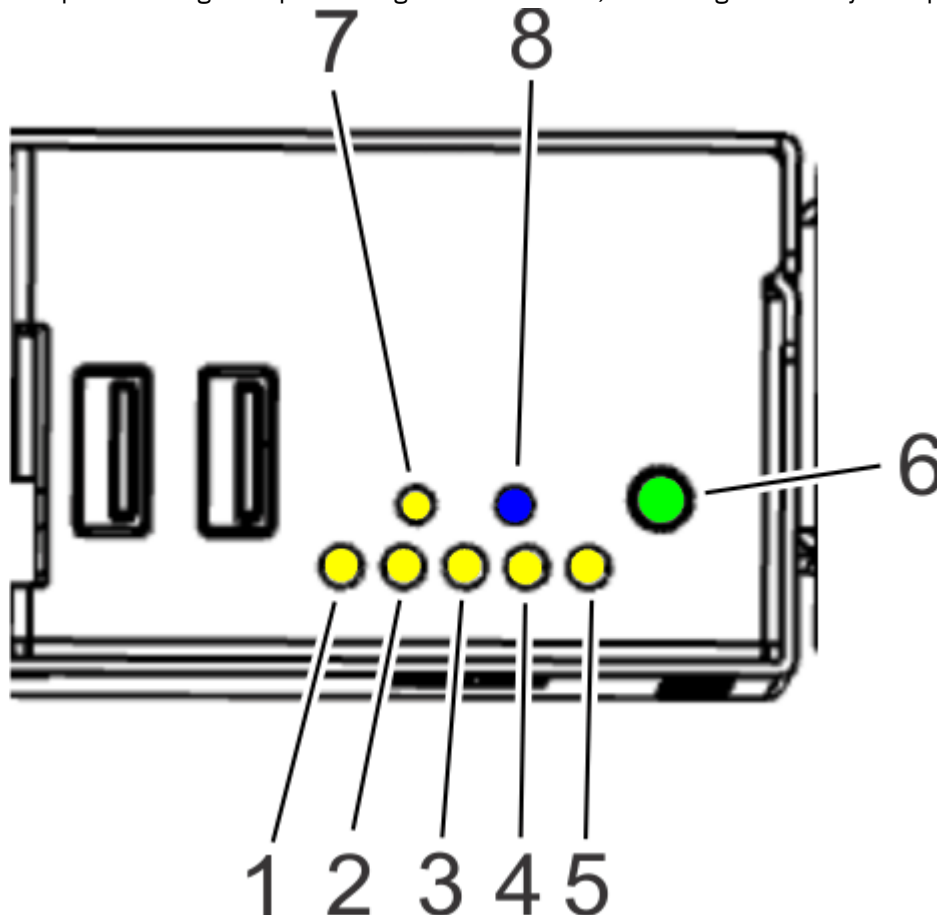


Figure 122. Power switch for the 7063-CR2 system

What to do next

If you press the power button and the system does not start, contact your next level of support or your service provider.

Stopping the 7063-CR2 system

To stop the IBM Power Systems HMC (7063-CR2) systems, complete the steps in this procedure.

Procedure

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

For example, the following command shuts down the system now.

```
hmcshutdown -t now
```

Drive commands for the 7063-CR2 system

Learn about the drive commands for the IBM Power Systems HMC (7063-CR2) system.

The system uses the **arconf** command. The command is included in Petitboot. In Petitboot shell, run the command including the **bin** folder; for example:

```
/bin/arconf
```

When you run the **arconf** command from the operating system, you must be logged in as root.

To list the drive and device configurations, use the following **arconf** command.

```
arconf getconfig 1 pd
```

Note the Channel and Device numbers of the desired drive. In the following example, the channel number is 0 and the device number is 1.

```
Reported Channel,Device(T:L)      : 0,1(1:0)
```

Identify the fault LED on the drive using the following command. The command uses the Channel and Device numbers from the **arconf getconfig** command:

```
arconf identify 1 device 0 1
```

Take the drive off line. Run the following **arconf setstate** command. The command uses the Channel and Device numbers from the **arconf getconfig** command:

```
arconf setstate 1 device 0 1 ddd
```

Creating the virtual drive on the 7063-CR2 system

Follow the steps in this procedure in the unlikely event that you need to re-create the virtual drive on the IBM Power Systems HMC (7063-CR2).

About this task

This procedure assumes that:

- The system was erroneously shipped without an already created and preinstalled virtual disk.
- The existing virtual disk is somehow damaged and needs to be re-created.

These are rare events.



CAUTION: This procedure results in loss of data. This procedure must be used only if the HMC operating system is either not installed, incorrectly installed, or corrupted.

To create the RAID1 logical drive and to rebuild the content on that drive, run the following commands from the Petitboot shell:

1. Create the RAID1 logical drive:

```
/bin/arcconf create 1 logicaldrive name "HMC Disk" max 1 0,0 0,1
```

2. Display the logical drive to confirm that it was created:

```
/bin/arcconf getconfig 1 ld
```

3. Enable the automatic rebuild of the logical drive:

```
/bin/arcconf setcontrollerparam 1 spareactivationmode 1
```

If you need to remove the RAID1 logical drive:

```
/bin/arcconf delete 1 logicaldrive 0
```

Sensor status

You can check the sensor status to quickly determine the general health of the system without using the event codes.

To view the sensor status, use the following command:

```
openbmctool -U <username> -P <password> -H <BMC IP address or BMC host name> fru status
```

To view the sensor status and any corresponding event codes, use the following command:

```
openbmctool -U <username> -P <password> -H <BMC IP address or BMC host name> fru status -v
```

Sensors that have a status of **present** and **functional** do not require a service action. Sensors that have a status of **present** and **not functional** require a service action.

Some occurrences of errors in the system might not appear in the sensor status. After you view the sensor status, look for event codes to determine whether a service action is required.

Removing and replacing power cords on a 7063-CR2 system

Learn how to disconnect and connect the power cords on IBM Power Systems HMC (7063-CR2) systems.

Disconnecting the power cords from a 7063-CR2 system

To disconnect the power cords from an IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Before you begin

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 power sources to the system are disconnected.

Procedure

1. Identify the system unit that you are servicing in the rack.
For instructions, see [“Identifying the 7063-CR2 system that contains the part to replace” on page 96.](#)
2. Unfasten the hook-and-loop fasteners from the power cords.

3. Label and disconnect the power cords from the system unit as shown in the following figure.

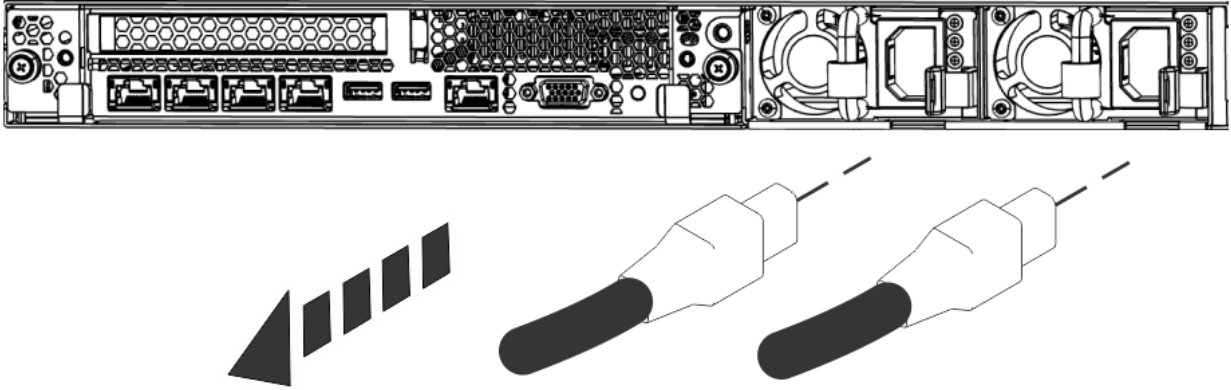


Figure 123. Removing the power cords from the system

Connecting the power cords to a 7063-CR2 system

To connect the power cords to an IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

Procedure

1. Using your labels, reconnect the power cords to the system unit as shown in the following figure.

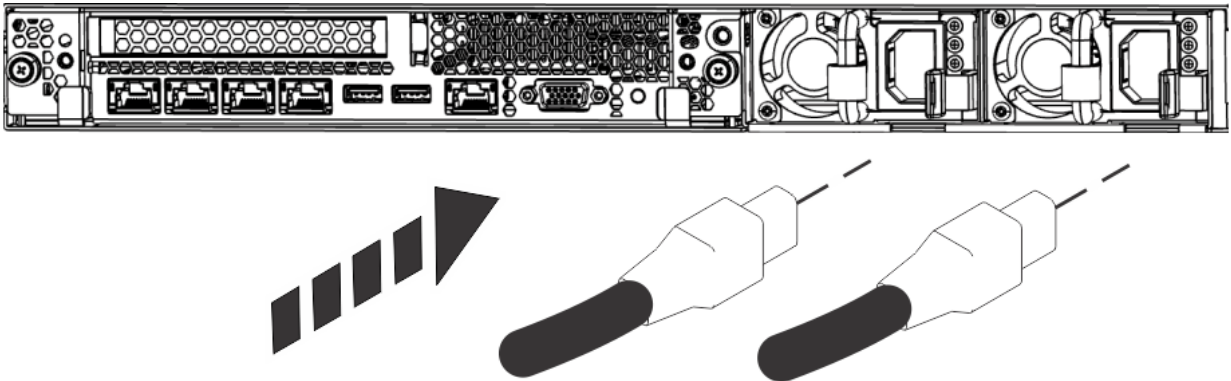


Figure 124. Connecting the power cords to the system

2. Fasten the hook-and-loop fasteners to secure the power cords.

Service and operating positions for the 7063-CR2 system

Learn how to place an IBM Power Systems HMC (7063-CR2) system into the service or operating position.

Placing a 7063-CR2 system into the service position

To place an IBM Power Systems HMC (7063-CR2) system into the service position, complete the steps in this procedure.

Before you begin

The systems must be removed from the rails for servicing some internal parts.



CAUTION: This part or unit is heavy but has a weight smaller than 18 kg (39.7 lb). Use care when lifting, removing, or installing this part or unit. (C008)

Note: When you move a system out of a rack, ensure that all stability plates are firmly installed to prevent the rack from toppling. Slide only one system out at a time.

Procedure

1. Label and remove the two power cords from the rear of the system.
For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.
2. Label and remove all cables from the rear of the system.
3. Lighten the system by removing the two power supplies.
For instructions, see [“Removing a power supply from the 7063-CR2 system”](#) on page 51.
4. Lighten the system by removing the system backplane from the rear of the system.
 - a) Label and remove the signal cables from the rear of the system.
 - b) Loosen the two screws **(A)** on the sides of the system backplane as shown in the following figure.

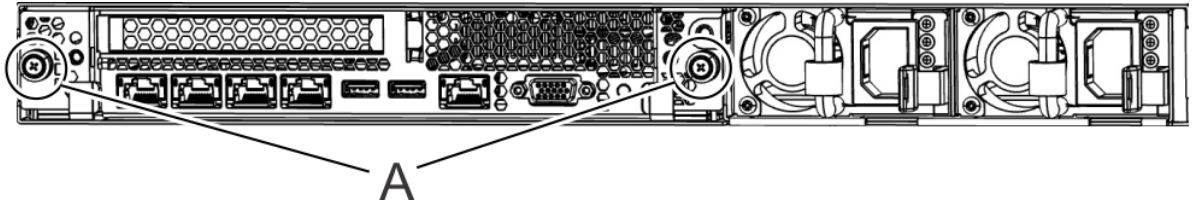


Figure 125. Removing the system backplane screws

- c) Simultaneously rotate the two levers **(A)** on each side of the system backplane out and to the side to unlock the system backplane from the system.

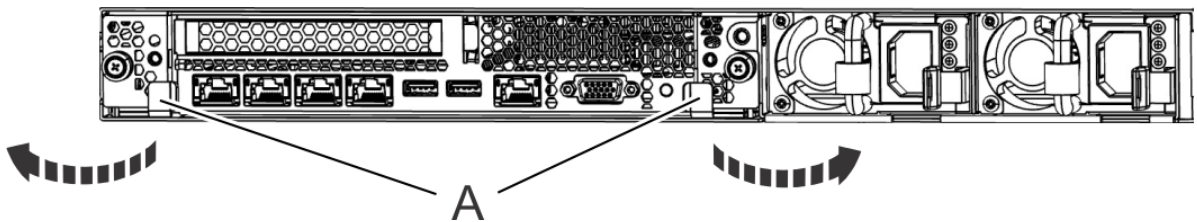


Figure 126. Unlatching the system backplane

- d) Support the system backplane by the bottom as you slide it from the system.

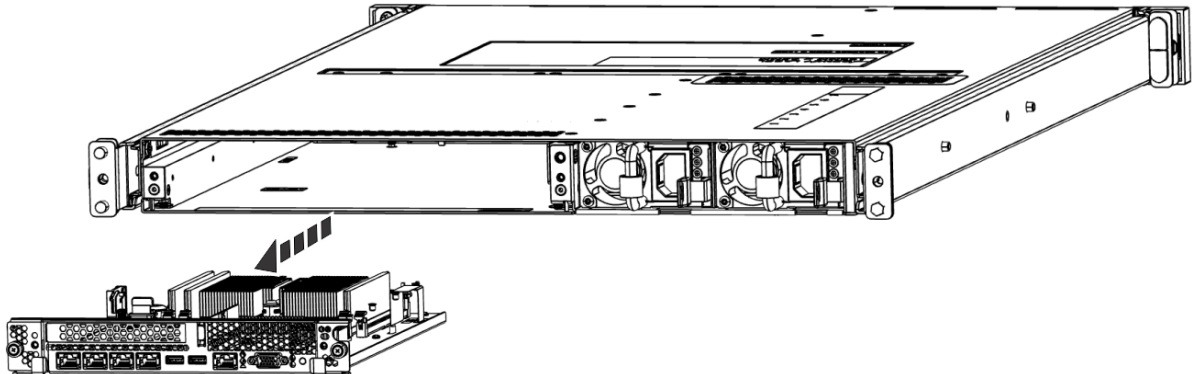


Figure 127. Removing the system backplane

- e) Place the system backplane on an ESD surface.

Note: You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

5. Remove the front screws that secure the system to the rack from both sides of the system as shown in the following figure.

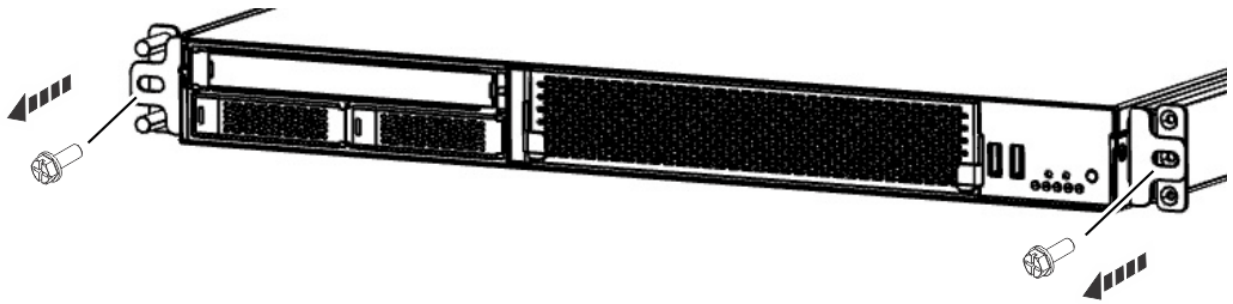


Figure 128. Removing the front screws

6. From the rear of the system, push the system forwards approximately 5 cm (2 in).
7. From the front of the system, while you support the system from underneath, slide the system out of the rack.
Be careful when removing the system. The rails have no intermediate stopping point. Be sure to support the system from underneath.
8. Carefully set the system on a table with an appropriate ESD surface.

Placing a 7063-CR2 system into the operating position

To place an IBM Power Systems HMC (7063-CR2) system into the operating position, complete the steps in this procedure.

About this task



CAUTION: This part or unit is heavy but has a weight smaller than 18 kg (39.7 lb). Use care when lifting, removing, or installing this part or unit. (C008)

Procedure

1. Lift the system from the table.
2. Align the rails on each side of the system with the rack slide rails.
3. Push the system into the rack.
4. Fasten the two front screws to secure the system to the rack.

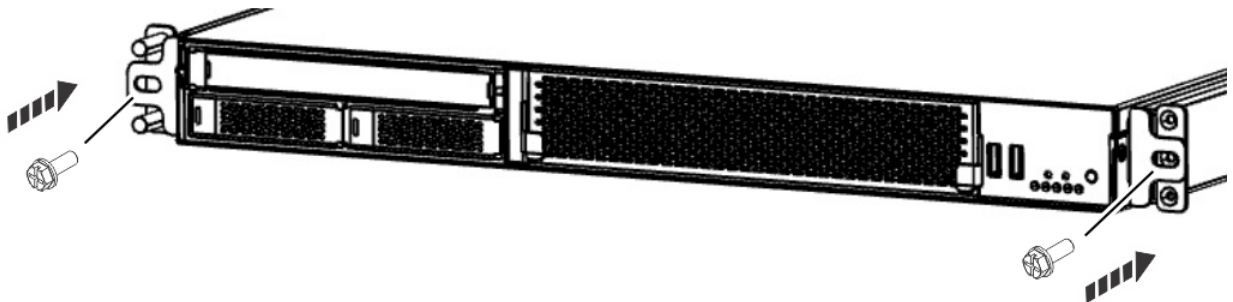


Figure 129. Replacing the front screws

5. If you removed the two power supplies, replace them.
For instructions, see [“Replacing a power supply in the 7063-CR2 system”](#) on page 52.
6. If you removed the system backplane, replace it.
 - a) Ensure that the two system backplane levers are open.
 - b) Support the system backplane by the bottom as you position the system backplane and insert it into the system until it is fully seated.

Important:

- Use care when you insert the system backplane so that no damage occurs to the components at the socket edge of the backplane.
- Ensure that the system backplane is fully seated and is all the way into the system.
- You must remove and replace the system backplane at a flat angle. The ventilation holes in the top cover can come into contact with the DIMMs in the system backplane if the insertion of the backplane is at an angle or is rushed. As a result of possible contact, DIMMs can be scratched and can leave residue on the top cover.

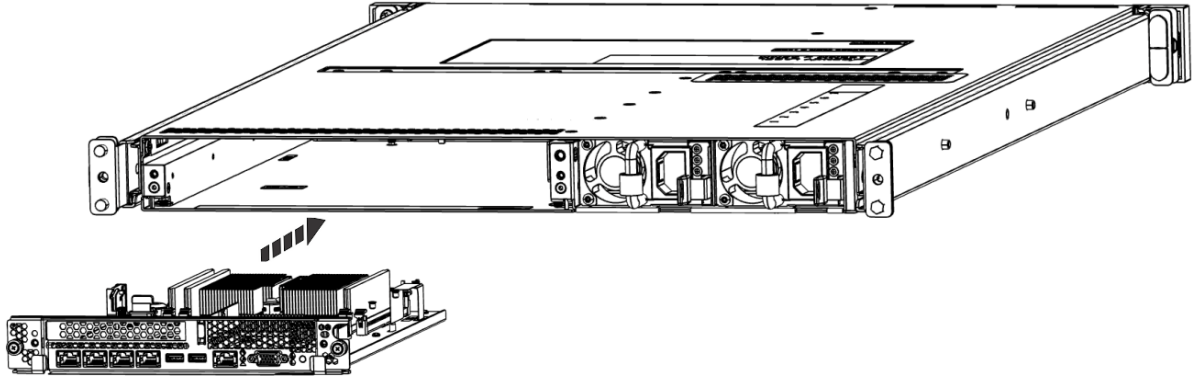


Figure 130. Replacing the system backplane

- Simultaneously rotate the two levers on each side of the system backplane in to secure the system backplane to the system.
 - Tighten the two screws on the sides of the system backplane.
 - Using your labels, replace the signal cables into the rear of the system.
- Using your labels, reconnect the cables at the rear of the system unit.
 - Using your labels, replace the two power cords at the rear of the system.

For instructions, see [“Connecting the power cords to a 7063-CR2 system”](#) on page 101.

Removing and replacing covers on a 7063-CR2 system

Learn how to remove and replace the covers on an IBM Power Systems HMC (7063-CR2) system so that you can access the hardware parts or service the system.

Removing the service access cover from a 7063-CR2 system

To remove the service access cover from an IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task



Attention: For safety, airflow purposes and thermal performance, the service access cover must be installed and fully seated before you power on the system.

Procedure

- If the system is not already powered off and in the service position**, complete these steps: [“Placing a 7063-CR2 system into the service position”](#) on page 101
- Attach the electrostatic discharge (ESD) wrist strap.

The ESD wrist strap must be connected to an unpainted metal surface until the service procedure is completed, and if applicable, until the service access cover is replaced.



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. If at any point in this service process you move away from the system, it is important to again discharge yourself by touching an unpainted metal surface for at least 5 seconds before you continue with the service process.
3. Ensure that you removed both power cords from the system. For instructions, see [“Disconnecting the power cords from a 7063-CR2 system”](#) on page 100.
 4. Remove the rails from both sides of the system.
 - a) Remove the two screws that secure the rail to the front of the system.
 - b) Slide the rail back and remove the rail from the support pins on side of the system.
 5. Remove the 19 screws from the cover as shown in the following figure.
The system has 4 screws on each side, and 11 screws on the top surface. Use a #2 Phillips screwdriver.

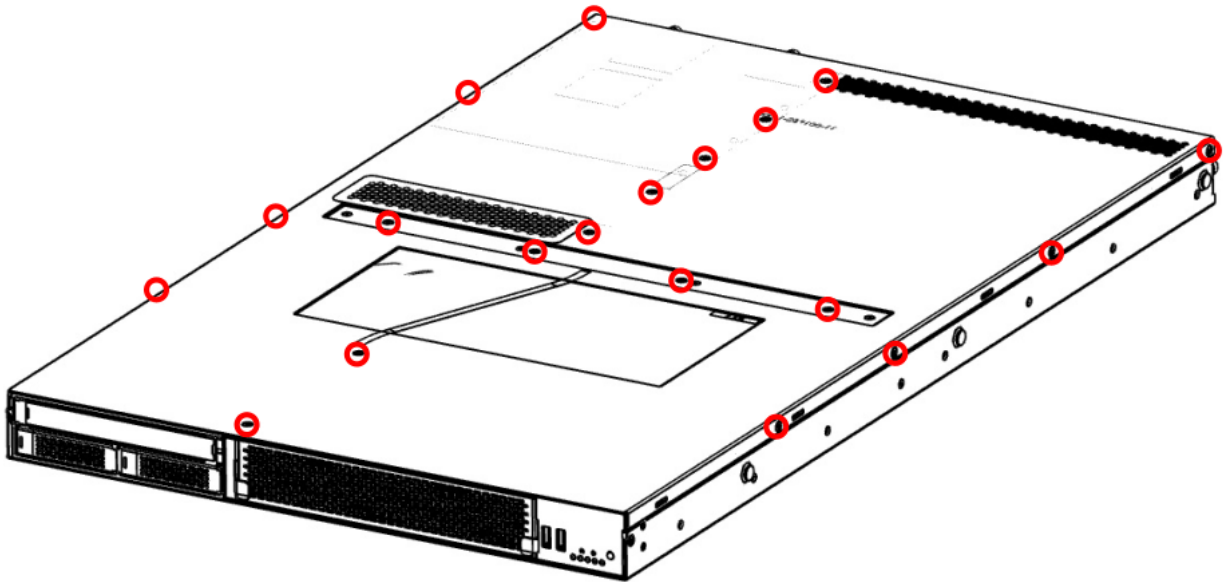


Figure 131. Removing the cover screws

6. Slide the cover to the rear and lift the cover from the system.

Installing the service access cover on a 7063-CR2 system

To install the service access cover on a rack-mounted IBM Power Systems HMC (7063-CR2) system, complete the steps in this procedure.

About this task



Attention: For safety, airflow purposes and thermal performance, the service access cover must be installed and fully seated before you power on the system.

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. Place the cover on the system. Align the pins inside the cover with the slots on the top of the chassis as shown in the following figure.

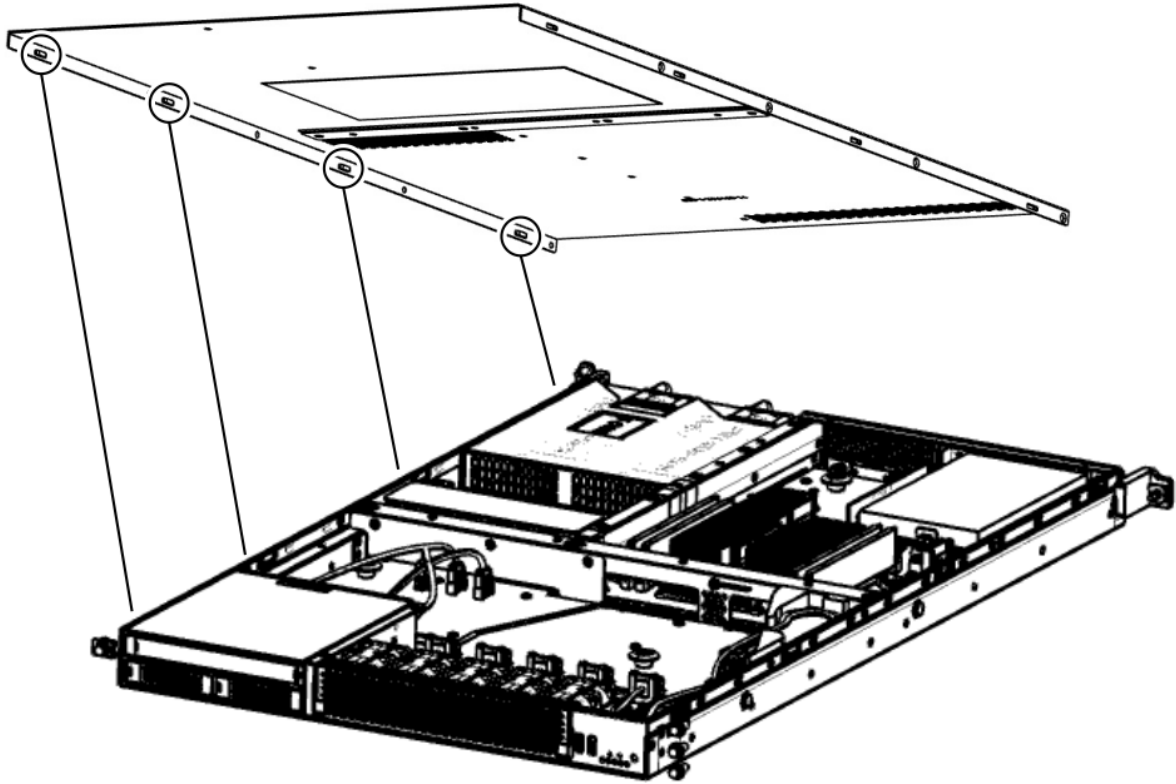


Figure 132. Replacing and securing the cover

3. Slide the cover forwards until it latches into place.
4. Replace the 19 screws to secure the cover as shown in the following figure.
The system has 4 screws on each side, and 11 screws on the top surface. Use a #2 Phillips screwdriver.

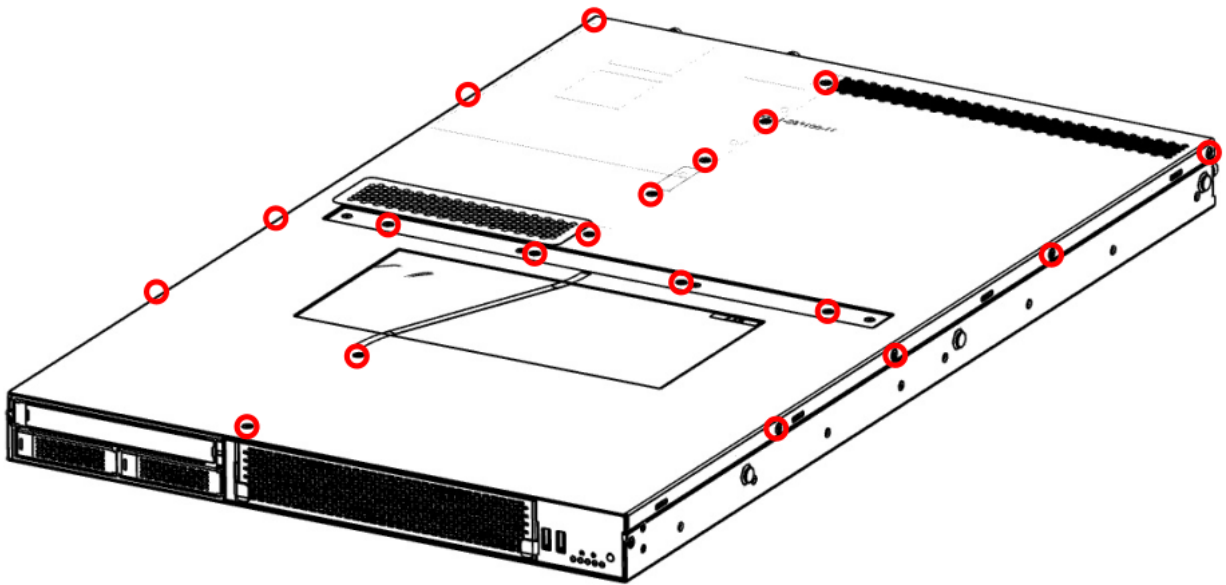


Figure 133. Replacing the cover screws

5. Replace the rails on both sides of the system.
 - a) Attach the rail to the system by placing the rail over the three support pins on the side of the system. Ensure that each of the three support pins goes through the rail.

- b) Slide the rail forwards onto the support pins.
- c) Replace the two screws that secure the rail to the front of the system.

Notices

This information was developed for products and services offered in the US.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
US

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

If you are viewing this information in softcopy, the photographs and color illustrations may not appear.

The drawings and specifications contained herein shall not be reproduced in whole or in part without the written permission of IBM.

IBM has prepared this information for use with the specific machines indicated. IBM makes no representations that it is suitable for any other purpose.

IBM's computer systems contain mechanisms designed to reduce the possibility of undetected data corruption or loss. This risk, however, cannot be eliminated. Users who experience unplanned outages, system failures, power fluctuations or outages, or component failures must verify the accuracy of operations performed and data saved or transmitted by the system at or near the time of the outage or failure. In addition, users must establish procedures to ensure that there is independent data verification before relying on such data in sensitive or critical operations. Users should periodically check IBM's support websites for updated information and fixes applicable to the system and related software.

Homologation statement

This product may not be certified in your country for connection by any means whatsoever to interfaces of public telecommunications networks. Further certification may be required by law prior to making any such connection. Contact an IBM representative or reseller for any questions.

Accessibility features for IBM Power Systems servers

Accessibility features assist users who have a disability, such as restricted mobility or limited vision, to use information technology content successfully.

Overview

The IBM Power Systems servers include the following major accessibility features:

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

The IBM Power Systems servers use the latest W3C Standard, [WAI-ARIA 1.0](http://www.w3.org/TR/wai-aria/) (www.w3.org/TR/wai-aria/), to ensure compliance with [US Section 508](http://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards) (www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards/section-508-standards) and [Web Content Accessibility Guidelines \(WCAG\) 2.0](http://www.w3.org/TR/WCAG20/) (www.w3.org/TR/WCAG20/). To take advantage of accessibility features, use the latest release of your screen reader and the latest web browser that is supported by the IBM Power Systems servers.

The IBM Power Systems servers online product documentation in IBM Knowledge Center is enabled for accessibility. The accessibility features of IBM Knowledge Center are described in the [Accessibility](http://www.ibm.com/support/knowledgecenter/doc/kc_help.html#accessibility) section of the IBM Knowledge Center help (www.ibm.com/support/knowledgecenter/doc/kc_help.html#accessibility).

Keyboard navigation

This product uses standard navigation keys.

Interface information

The IBM Power Systems servers user interfaces do not have content that flashes 2 - 55 times per second.

The IBM Power Systems servers web user interface relies on cascading style sheets to render content properly and to provide a usable experience. The application provides an equivalent way for low-vision users to use system display settings, including high-contrast mode. You can control font size by using the device or web browser settings.

The IBM Power Systems servers web user interface includes WAI-ARIA navigational landmarks that you can use to quickly navigate to functional areas in the application.

Vendor software

The IBM Power Systems servers include certain vendor software that is not covered under the IBM license agreement. IBM makes no representation about the accessibility features of these products. Contact the vendor for accessibility information about its products.

Related accessibility information

In addition to standard IBM help desk and support websites, IBM has a TTY telephone service for use by deaf or hard of hearing customers to access sales and support services:

TTY service
800-IBM-3383 (800-426-3383)
(within North America)

For more information about the commitment that IBM has to accessibility, see [IBM Accessibility \(www.ibm.com/able\)](http://www.ibm.com/able).

Privacy policy considerations

IBM Software products, including software as a service solutions, (“Software Offerings”) may use cookies or other technologies to collect product usage information, to help improve the end user experience, to tailor interactions with the end user, or for other purposes. In many cases no personally identifiable information is collected by the Software Offerings. Some of our Software Offerings can help enable you to collect personally identifiable information. If this Software Offering uses cookies to collect personally identifiable information, specific information about this offering’s use of cookies is set forth below.

This Software Offering does not use cookies or other technologies to collect personally identifiable information.

If the configurations deployed for this Software Offering provide you as the customer the ability to collect personally identifiable information from end users via cookies and other technologies, you should seek your own legal advice about any laws applicable to such data collection, including any requirements for notice and consent.

For more information about the use of various technologies, including cookies, for these purposes, see IBM’s Privacy Policy at <http://www.ibm.com/privacy> and IBM’s Online Privacy Statement at <http://www.ibm.com/privacy/details/us/en/> in the section entitled “Cookies, Web Beacons and Other Technologies”.

Trademarks

IBM, the IBM logo, and [ibm.com](http://www.ibm.com)[®] are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at [Copyright and trademark information](#).

Electronic emission notices

Class A Notices

The following Class A statements apply to the IBM servers that contain the POWER9 processor and its features unless designated as electromagnetic compatibility (EMC) Class B in the feature information.

When attaching a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices supplied with the monitor.

Canada Notice

CAN ICES-3 (A)/NMB-3(A)

European Community and Morocco Notice

This product is in conformity with the protection requirements of Directive 2014/30/EU of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Germany Notice

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

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 / EN 55032 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung von IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung von IBM gesteckt/eingebaut werden.

EN 55032 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:

"Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

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 A

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

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:
International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:
IBM Deutschland GmbH
Technical Relations Europe, Abteilung M456
IBM-Allee 1, 71139 Ehningen, Germany
Tel: +49 (0) 800 225 5426
email: HalloIBM@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 / EN 55032 Klasse A.

Japan Electronics and Information Technology Industries Association (JEITA) Notice

(一社) 電子情報技術産業協会 高調波電流抑制対策実施
要領に基づく定格入力電力値 : Knowledge Centerの各製品の
仕様ページ参照

This statement applies to products less than or equal to 20 A per phase.

高調波電流規格 JIS C 61000-3-2 適合品

This statement applies to products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 6 (単相、PFC回路付)
- 換算係数 : 0

This statement applies to products greater than 20 A per phase, three-phase.

高調波電流規格 JIS C 61000-3-2 準用品

本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

Japan Voluntary Control Council for Interference (VCCI) Notice

この装置は、クラスA 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

Korea Notice

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

People's Republic of China Notice

声 明

此为 A 级产品, 在生活环境中,
该产品可能会造成无线电干扰。
在这种情况下, 可能需要用户对其
干扰采取切实可行的措施。

Russia Notice

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи, для снижения которых необходимы дополнительные меры

Taiwan Notice

<p>警告使用者： 此為甲類資訊技術設備， 於居住環境中使用時，可 能會造成射頻擾動，在此 種情況下，使用者會被要 求採取某些適當的對策。</p>

IBM Taiwan Contact Information:

台灣IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

United States Federal Communications Commission (FCC) Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. 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.

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504

Contact for FCC compliance information only: fccinfo@us.ibm.com

Class B Notices

The following Class B statements apply to features designated as electromagnetic compatibility (EMC) Class B in the feature installation information.

When attaching a monitor to the equipment, you must use the designated monitor cable and any interference suppression devices supplied with the monitor.

Canada Notice

CAN ICES-3 (B)/NMB-3(B)

European Community and Morocco Notice

This product is in conformity with the protection requirements of Directive 2014/30/EU of the European Parliament and of the Council on the harmonization of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

German Notice

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

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022/ EN 55032 Klasse B ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung von IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung von IBM gesteckt/eingebaut werden.

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.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

International Business Machines Corp.

New Orchard Road

Armonk, New York 10504

Tel: 914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH

Technical Relations Europe, Abteilung M456

IBM-Allee 1, 71139 Ehningen, Germany

Tel: +49 (0) 800 225 5426

email: HalloIBM@de.ibm.com

Generelle Informationen:

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

Japan Electronics and Information Technology Industries Association (JEITA) Notice

(一社) 電子情報技術産業協会 高調波電流抑制対策実施
要領に基づく定格入力電力値 : Knowledge Centerの各製品の
仕様ページ参照

This statement applies to products less than or equal to 20 A per phase.

高調波電流規格 JIS C 61000-3-2 適合品

This statement applies to products greater than 20 A, single phase.

高調波電流規格 JIS C 61000-3-2 準用品

本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 6 (単相、PFC回路付)
- 換算係数 : 0

This statement applies to products greater than 20 A per phase, three-phase.

高調波電流規格 JIS C 61000-3-2 準用品

本装置は、「高圧又は特別高圧で受電する需要家の高調波抑制対策ガイドライン」対象機器（高調波発生機器）です。

- 回路分類 : 5 (3相、PFC回路付)
- 換算係数 : 0

Japan Voluntary Control Council for Interference (VCCI) Notice

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

Taiwan Notice

台灣IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

United States Federal Communications Commission (FCC) Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. 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.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM-authorized dealers. 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.

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, New York 10504
Contact for FCC compliance information only: fccinfo@us.ibm.com

Terms and conditions

Permissions for the use of these publications are granted subject to the following terms and conditions.

Applicability: These terms and conditions are in addition to any terms of use for the IBM website.

Personal Use: You may reproduce these publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative works of these publications, or any portion thereof, without the express consent of IBM.

Commercial Use: You may reproduce, distribute and display these publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these publications, or reproduce, distribute or display these publications or any portion thereof outside your enterprise, without the express consent of IBM.

Rights: Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the publications or any information, data, software or other intellectual property contained therein.

IBM reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the publications is detrimental to its interest or, as determined by IBM, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations.

IBM MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED,

INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.

