Power Systems

# Common procedures for installable features

**IBM**

Power Systems

*Common procedures for installable features*

IBM

# Common procedures for installable features

This section contains all the common procedures related to installing, removing, and replacing features.

## Before you begin

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

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

**DANGER**

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

**Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:**
- **Connect power to this unit only with the IBM provided power cord. Do not use the IBM provided power cord for any other product.**
- **Do not open or service any power supply assembly.**
- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords.**
- **Connect all power cords to a properly wired and grounded electrical outlet. Ensure that the outlet supplies proper voltage and phase rotation according to the system rating plate.**
- **Connect any equipment that will be attached to this product to properly wired outlets.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers on this product or attached devices.**

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

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

  **(D005)**

**DANGER**

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



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

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

(R001)

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

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

5. Ensure that you have access to a medium flat-blade screwdriver, a Phillips screwdriver, and a pair of scissors.

6. If parts are incorrect, missing, or visibly damaged, do the following:
   - If you are replacing a part, contact the provider of your parts or next level of support.
   - If you are installing a feature, contact one of the following service organizations:
     – The provider of your parts or next level of support.
     – In the United States, the IBM Rochester Manufacturing Automated Information Line (R–MAIL) at 1–800–300–8751.

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

   http://www.ibm.com/planetwide

7. If you encounter difficulties during the installation, contact your service provider, your IBM reseller, or your next level of support.

8. 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 a part

Learn how to identify the system or enclosure that contains a failing part, the location code and light-emitting diode (LED) status for a part, and how to activate and deactivate the identify part LED.

**Note:** If you are using PowerKVM, you must use the ASMI procedures to identify a part or enclosure.

*Table 1. Tasks to identify a part*

| What you want to do | See the following information |
| --- | --- |
| Determine which server or enclosure contains the part | "Identifying the enclosure or server that contains the part" |
| Find the location of the part and determine whether the part has an identifying LED | "Finding the part location code and LED support status" on page 5 |
| Turn on an identifying LED for a part | |
| If you are using PowerKVM: | "Identifying a part by using the ASMI" on page 9 |
| If your system is in the runtime state: | "Identifying a part by using the operating system or VIOS" on page 6 |
| If your system is in the standby power state: | "Identifying a part by using the ASMI" on page 9 |
| If you have an HMC: | "Identifying a part with the HMC" on page 11 |
| Turn off an identify LED | "Deactivating an identify LED" on page 61 |
| Turn off a check log indicator | "Deactivating a check log indicator (system information indicator) by using the ASMI" on page 63 |

## Identifying the enclosure or server that contains the part

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

### Enabling enclosure or server indicators with the ASMI

Find out how to enable enclosure or server indicators by using the Advanced System Management Interface (ASMI).

To perform this operation, you must have one of the following authority levels:

- Administrator
- Authorized service provider

To enable the enclosure or server indicator states, complete the following steps:
1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** and **Service Indicators**.
3. Scroll to the bottom of the list and find the last option that does not have a location code.
4. In the Identify indicator status field, select **On**.
5. To save the changes made to the state of an indicator, click **Save settings**.

## Control panel LEDs

Use this information as a guide to the control panel LEDs and buttons.

Use Figure 1 with the control panel LED descriptions to understand the system status that is indicated by the control panel.
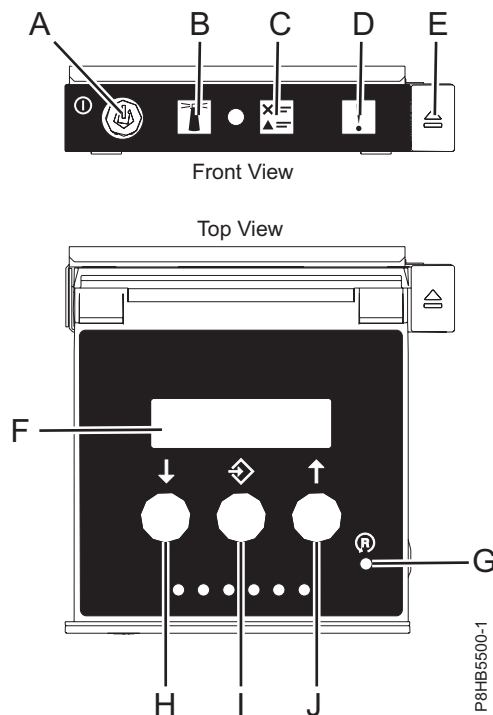


Figure 1. Control panel LEDs

**Control panel LEDs and descriptions:**
- **A**: Power-on button
    - A constant light indicates full system power to the unit.
    - A flashing light indicates standby power to the unit.
    - There is approximately a 30-second transition period from the time the power-on button is pressed to when the power LED goes from flashing to solid. During the transition period, the LED might flash faster.
- **B**: Enclosure identify light
    - A constant light indicates the identify state, which is used to identify a part.
    - No light indicates that the system is operating normally.

- **C**: Check log light
  - No light indicates that the system is operating normally.
  - Light on indicates that the system requires attention.
- **D**: Enclosure fault light
  - A constant light indicates a fault in the system unit.
  - No light indicates that the system is operating normally.
- **E**: Eject button
- **F**: Function/Data display
- **G**: Pinhole reset button
- **H**: Decrement button
- **I**: Enter button
- **J**: Increment button

## Activating an identify LED for an enclosure or server by using the HMC

Learn how to activate an identify LED for an enclosure or server by using the Hardware Management Console (HMC).

The system provides several LEDs that help identify various components in the system, such as enclosures or field-replaceable units (FRUs). For this reason, they are called *identify LEDs*.

If you want to add a part to a specific enclosure or server, you need to know the machine type, model, and serial number (MTMS) of the enclosure or server. To determine whether you have the correct MTMS for the enclosure or server that needs the new part, you can activate the LED for an enclosure or server and verify that the MTMS corresponds to the enclosure or server that requires the new part.

1. Choose one of the following navigation options depending on the interface type of the HMC:
   - If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, select **Systems Management** > **Servers**.
     b. In the content area, check the box for the appropriate system.
     c. Select **Tasks** > **Operations** > **LED Status** > **Identify LED**. The Identify LED, Select Enclosure window is displayed.
   - If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps:

     a. In the navigation area, click the **Resources** icon , and then select **All Systems**.
     b. Click the server name for which you want to activate the attention LED.
     c. Select **System Actions** > **Attention LED** > **Identify Attention LED**. The Identify Attention LED, Select Enclosure window is displayed.
2. To activate an identify LED for an enclosure or server, select an enclosure or server from the table and click **Activate LED**. The associated LED is turned on.

## Finding the part location code and LED support status

You can use location codes for the server you are working with to find the part location code and whether there is Identify LED support.

To find the location code and to determine if there is identify LED support, complete the following steps:

1. Select the server you are working on to see the location codes:
   - 8247-21L, 8247-22L, or 8284-22A locations (http://www.ibm.com/support/knowledgecenter/POWER8/p8ecs/p8ecs_83x_8rx_loccodes.htm)

- 8247-42L, 8286-41A, or 8286-42A locations (http://www.ibm.com/support/knowledgecenter/POWER8/p8ecs/p8ecs_82x_84x_loccodes.htm)
- 8408-E8E locations (http://www.ibm.com/support/knowledgecenter/POWER8/p8ecs/p8ecs_85x_loccodes.htm)

2. Record the location code.
3. Refer to the field replaceable unit (FRU) location table, Identify LED column to see if the word **Yes** (there is an identify LED) or **No** (there is not an identify LED) appears.
4. Select from the following options:
   - If the part has an identify LED, refer to the applicable procedure:
      - If you are using IBM PowerKVM, see "Identifying a part by using the ASMI" on page 9.
      - If your system is at runtime state, see "Identifying a part by using the operating system or VIOS."
      - If your system is at standby power state, see "Identifying a part by using the ASMI" on page 9.
   - If the part does not have an identify LED, see Identifying the enclosure or server that contains the part.

# Identifying a part by using the operating system or VIOS

Learn how to use AIX®, IBM i, Linux, or the Virtual I/O Server (VIOS) to identify a part.

For IBM Power Systems™ that contain the POWER8™ processor, the identify LEDs can be used to identify or verify the location of a part that you intend to install, remove, or replace. The identify function (flashing the amber LED) corresponds to the location code you are going to work with.

When you are removing a part, first verify whether you are working on the correct part by using the identify function in the management console or other user interface. When you remove a part by using the Hardware Management Console (HMC), the identify function is activated and deactivated automatically at the correct times.

The identify function causes the amber LED to flash. When you turn off the identify function, the LED returns to the state it was previously. For parts that have a blue service button, the identify function sets LED information for the service button so that when the button is pressed, the correct LEDs on that part flash.

**Note:** Use the enclosure locate LED to identify the enclosure that is being serviced. Then, confirm and verify the location of the FRU (to be serviced) in the enclosure by checking the active identify indicator (flashing LED) for the selected FRU. For some FRUs, you might need to remove the service access cover to be able to see the identify indicators.

## Identifying a part in an AIX system or logical partition

Use these instructions to learn how to locate a part, activate the indicator light for the part, and deactivate the indicator light for the part on a system or logical partition running the AIX operating system.

**Finding the location code for a part in an AIX system or logical partition:**

You might need to use AIX tools, before activating the indicator light, to locate a part.

To configure the AIX system to locate a part, complete the following steps:

1. Log in as root user or `celogin-`.
2. At the command line, type `diag` and press Enter.
3. From the Function Selection menu, select **Task Selection** and press Enter.
4. Select **Display Previous Diagnostic Results** and press Enter.

5. From the Display Previous Diagnostic Results display, select **Display Diagnostic Log Summary**. The Display Diagnostic Log display shows a chronological list of events.
6. Look in the **T** column for the most recent **S** entry. Select this row in the table and press Enter.
7. Select **Commit**. The details of this log entry are shown.
8. Record the location information and the SRN value that is shown near the end of the entry.
9. Exit to the command line.

Use the location information for the part to activate the indicator light that identifies the part. See "Activating the indicator light for a part by using AIX diagnostics."

**Activating the indicator light for a part by using AIX diagnostics:**

Use these instructions to help physically identify the location of a part you are servicing.

To activate the indicator light for a part, complete the following steps:
1. Log in as root user.
2. At the command line, type `diag` and press Enter.
3. From the **Function Selection** menu, select **Task Selection** and press Enter.
4. From the **Task Selection** menu, select **Identify and Attention Indicators** and press Enter.
5. From the list of lights, select the location code for the part and press Enter.
6. Select **Commit**. This turns on the system attention and indicator light for the part.

> **Important:** A flashing amber LED indicates the location of the part and a solid amber LED indicates that the part is failing.

7. Exit to the command line.

## Identifying a part in an IBM i system or logical partition
You can activate or deactivate the indicator light to locate a part in an IBM i system or logical partition.

**Finding the location code and activating the indicator light for a part by using the IBM i operating system:**

You can search the service action log for an entry that matches the time, reference code, or resource of a problem, and then activate the indicator light for a part.
1. Sign on to an IBM i session, **with at least service level authority**.
2. On the command line of the session, type `strsst` and press Enter.

> **Note:** If you cannot get to the System Service Tools (SST) display, use function 21 from the control panel. Alternatively, if the system is managed by a Hardware Management Console (HMC), use the Service Focal Point™ utilities to get to the Dedicated Service Tools (DST) display.

3. Type your service tools user ID and service tools password on the System Service Tools (SST) Sign On display and press Enter.

> **Remember:** The service tools password is case sensitive.

4. Select **Start a service tool** from the System Service Tools (SST) display and press Enter.
5. Select **Hardware service manager** from the Start a Service Tool display and press Enter.
6. Select **Work with service action log** from the Hardware Service Manager display and press Enter.
7. On the Select Timeframe display, change the **From: Date and Time** field to a date and time prior to when the problem occurred.
8. Search for an entry that matches one or more conditions of the problem:
   - System reference code

- Resource
- Date and time
- Failing item list

9. Select option **2** (Display failing item information) to display the service action log entry.

10. Select option **2** (Display details) to display location information for the failing part to be replaced. The information displayed in the date and time fields is the date and time for the first occurrence of the specific system reference code for the resource displayed during the time range selected.

11. If location information is available, select option **6** (Indicator on) to turn on the indicator light for the part.

   **Tip:** If the part does not contain a physical indicator light, a higher-level indicator light is activated. For example, the indicator light for the backplane or unit that contains the part might be lit. In this case, use the location information to locate the actual part.

12. Look for the enclosure indicator light to locate the enclosure that contains the part.

   **Important:** A flashing amber LED indicates the location of the part and a solid amber LED indicates that the part is failing.

## Identifying a part in a Linux system or logical partition

If the service aids have been installed on a system or logical partition, you can activate or deactivate the indicator lights to locate a part or complete a service action.

**Finding the location code of a part in a Linux system or logical partition:**

Use this procedure to retrieve the location code of the part to perform service operations.

To find the location code of a part in a Linux system or logical partition, complete the following steps:

1. Log in as root user.
2. At the command line, type `grep diagela /var/log/platform` and press Enter.
3. Look for the most recent entry that contains a system reference code (SRC).
4. Record the location information.

**Related information**:

▶ Service and productivity tools for PowerLinux servers from IBM
IBM provides hardware diagnostic aids and productivity tools, and installation aids for Linux operating systems on IBM Power Systems servers.

**Activating the indicator light for a part by using the Linux operating system:**

If you know the location code of a part, activate the indicator light to help locate the part the while performing service operations.

To activate the indicator light, complete the following steps:

1. Log in as root user.
2. At the command line, type `/usr/sbin/usysident -s identify -l` *location_code* and press Enter.
3. Look for the system attention light to identify the enclosure that contains the part.

   **Important:** A flashing amber LED indicates the location of the part and a solid amber LED indicates that the part is failing.

**Related information**:

▶ Service and productivity tools for Linux on Power servers
IBM provides hardware diagnostic aids and productivity tools, and installation aids for Linux operating

systems on IBM Power Systems servers.

## Identifying a part in a VIOS system or logical partition

Learn how to find the location code and identify a part by using the Virtual I/O Server (VIOS) tools.

**Finding the location code of a part in a VIOS system or logical partition:**

You can use Virtual I/O Server (VIOS) tools to find the location code of a part before you activate the indicator light.

To configure the Virtual I/O Server system for identifying a part, complete the following steps:
1. Log in as root user or `celogin-`.
2. At the command line, type `diagmenu` and press Enter.
3. From the **Function Selection** menu, select **Task Selection** and press Enter.
4. Select **Display Previous Diagnostic Results** and press Enter.
5. From the **Display Previous Diagnostic Results** display, select **Display Diagnostic Log Summary**. A **Display Diagnostic Log** display appears. This display contains a chronological list of events.
6. Look in the **T** column for the most recent **S** entry. Select this row in the table and press Enter.
7. Choose **Commit**. The details of this log entry are shown.
8. Record the location information and the SRN value shown near the end of the entry.
9. Exit to the command line.

Use the location information for the part to activate the indicator light that identifies the part. For instructions, see "Activating the indicator light for a part by using the VIOS tools."

**Activating the indicator light for a part by using the VIOS tools:**

You can use Virtual I/O Server (VIOS) tools to activate the indicator light to physically locate a part.

To turn on the indicator light for identifying a part, complete the following steps:
1. Log in as root user.
2. At the command line, type `diagmenu` and press Enter.
3. From the **Function Selection** menu, select **Task Selection** and press Enter.
4. From the **Task Selection** menu, select **Identify and Attention Indicators** and press Enter.
5. From the list of lights, select the location code for the failing part and press Enter.
6. Select **Commit**. This turns on the system attention and indicator light for the part.

   **Important:** A flashing amber LED indicates the location of the part and a solid amber LED indicates that the part is failing.
7. Exit to the command line.

## Identifying a part by using the ASMI

Learn how to activate or deactivate amber identify indicator light-emitting diodes (LEDs) by using the Advanced System Management Interface (ASMI).

You can access the ASMI by using a web browser. For more information, see Accessing the Advanced System Management Interface by using a web browser (http://www.ibm.com/support/knowledgecenter/POWER8/p8ect/pxect_browser.htm).

For IBM Power Systems that contain the POWER8 processor, the identify LEDs can be used to identify or verify the location of a part that you intend to install, remove, or replace. The identify function (flashing the amber LED) corresponds to the location code you are going to work with.

You can set the identify LED to flash and to stop flashing by using the ASMI.

**Note:** You can use the ASMI to turn on and turn off the identify indicators except for the adapters, disk drives, solid-state drives, and media devices.

## Activating the identify LED by using the ASMI when you know the location code

Learn how to activate the identify LED by using the Advanced System Management Interface (ASMI) when you know the location code.

You can specify the location code of any indicator to view or modify its current state. If you provide the wrong location code, the ASMI attempts to go to the next higher level of the location code.

The next level is the base-level location code for that field replaceable unit (FRU). For example, a user types the location code for the FRU located on the second memory module slot of the third enclosure in the system. If the location code for the second memory module slot is incorrect (the FRU does not exist at this location), an attempt to set the indicator for the third enclosure is initiated. This process continues until a FRU is located or no other level is available.

To complete this operation, your authority level must be one of the following levels:
* Administrator
* Authorized service provider

To change the current state of an indicator, complete the following steps:
1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** > **Service Indicators** > **Indicators by Location code**.
3. In the right pane, enter the location code of the FRU and click **Continue**.
4. Select the preferred state from the list.
5. Click **Save settings**.

## Activating the identify LED by using the ASMI when you do not know the location code

Learn how to activate the identify LED by using the Advanced System Management Interface (ASMI) when you do not know the location code.

You can turn on the identify indicators in each enclosure.

To complete this operation, your authority level must be one of the following levels:
* Administrator
* Authorized service provider

To enable the enclosure indicator states, complete the following steps:
1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** > **Service Indicators** > **Enclosure Indicators**. All servers and enclosures managed by the ASMI will display.
3. Select the server or enclosure with the part that needs to be replaced and click **Continue**. The location code identifiers are listed.
4. Select the location code identifier and select **ON/OFF**
5. To save the changes made to the state of one or more FRU indicators, click **Save settings**.

# Identifying a part with the HMC

You can use the following procedures to activate light-emitting diodes (LEDs) by using the Hardware Management Console (HMC).

You can use the identify LED for a FRU associated with a specified enclosure to help you identify a part. For example, if you want to hook up a cable to a specific I/O adapter, you can activate the LED for the adapter, which is a field replaceable unit (FRU). Then, you can physically check to see where you should hook up the cable. This action is especially useful when you have several adapters with open ports.

1. Choose one of the following navigation options depending on the interface type of the HMC:
   - If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, select **Systems Management** > **Servers**.
     b. Select the server that you are working on.
     c. From the **Tasks** menu, select **Operations** > **LED status** > **Identify LED**. The Identify LED, Select Enclosure window is displayed.
   - If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps.

     a. In the navigation area, click the **Resources** icon  , and then select **All Systems**.
     b. Click the server name for which you want to activate the attention LED.
     c. In the navigation area, select **System Actions** > **Attention LED** > **Identify Attention LED**. The Identify LED, Select Enclosure window is displayed.
2. To activate an identify LED for a FRU, select an enclosure from the table and then select **Selected** > **List FRUs**.
3. Select one or more FRUs from the table, and click **Activate LED**. The associated LED is turned on.

# Starting the system or logical partition

Learn how to start a system or logical partition after performing a service action or system upgrade.

# Starting a system that is not managed by an HMC

You can use the power button or the Advanced System Management Interface (ASMI) to start a system that is not managed by a Hardware Management Console (HMC).

To start a system that is not managed by a HMC, follow these steps:

1. Open the front rack door, if necessary.
2. Before you press the power button on the control panel, ensure that power is connected to the system unit as follows:
   - All system power cables are connected to a power source.
   - The power LED, as shown in the following figure, is slowly flashing.
   - The top of the display, as shown in the following figure, shows 01 V=F.
3. Press the power button **(A)**, as shown in the following figure, on the control panel.

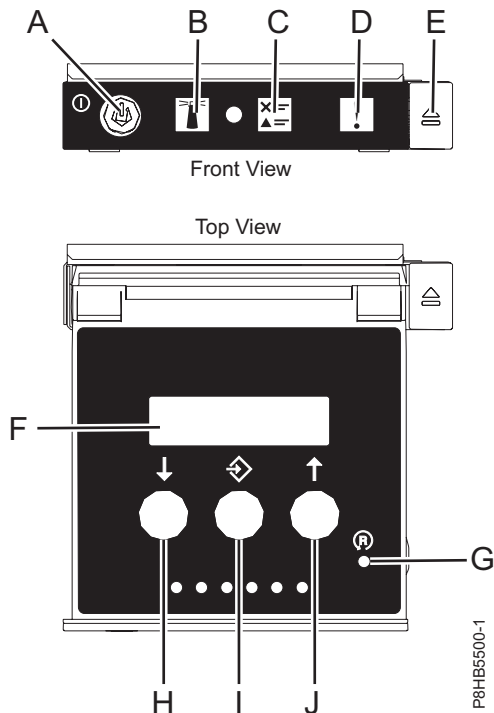A        B   C    D   E

Front View

Top View



*Figure 2. Control panel*

- **A**: Power-on button
  - A constant light indicates full system power to the unit.
  - A flashing light indicates standby power to the unit.
  - There is approximately a 30-second transition period from the time the power-on button is pressed to when the power LED goes from flashing to solid. During the transition period, the LED might flash faster.
- **B**: Enclosure identify light
  - A constant light indicates the identify state, which is used to identify a part.
  - No light indicates that the system is operating normally.
- **C**: System information light
  - No light indicates that the system is operating normally.
  - Light on indicates that the system requires attention.
- **D**: Enclosure fault roll-up light
  - A constant light indicates a fault in the enclosure.
  - No light indicates that the system is operating normally.
- **E**: Eject button
- **F**: Function/Data display
- **G**: Pinhole reset button
- **H**: Decrement button
- **I**: Enter button
- **J**: Increment button
4. Observe the following aspects after pressing the power button:
   - The power-on light begins to flash faster.
   - The system cooling fans are activated after approximately 30 seconds and begin to accelerate to operating speed.

- Progress indicators, also referred to as checkpoints, appear on the control panel display while the system is being started. The power-on light on the control panel stops flashing and remains on, indicating that the system power is on.

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

# Starting a system or logical partition by using the HMC

You can use the Hardware Management Console (HMC) to start the system or logical partition after the required cables are installed and the power cables are connected to a power source.

## Starting a system or logical partition by using the HMC Classic or HMC Enhanced interface

Learn how to start a system or logical partition by using the HMC Classic or HMC Enhanced interface.

To start the system by using the HMC Classic or HMC Enhanced interface, complete the following steps:

1. Verify that the logical partition start policy is set to **User-Initiated**, by completing the following steps:
   a. In the navigation area, expand **Systems Management** > **Servers**.
   b. In the contents area, select the managed system.
   c. In the tasks area, click **Properties**.
   d. Click the **Power-On Parameters** tab. Ensure that the **Partition start policy** field is set to **User-Initiated**.
2. Power on the managed system by completing the following steps:
   a. In the navigation area, expand **Systems Management** > **Servers**.
   b. In the contents area, select the managed system.
   c. Click **Operations > Power on**.
   d. Select the power-on option and click **OK**.

## Starting a system or logical partition by using the HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface

Learn how to start a system or logical partition by using the HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface.

To start a system or logical partition by using the HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps:

- To power on the managed system, complete the following steps:

  

  1. In the navigation area, click the **Resources** icon , and then select **All Systems**.
  2. Click the server name that you want to power on.
  3. In the navigation area, click **System Actions** > **Operations** > **Power On**.
  4. Click **OK**.
- To activate a logical partition, complete the following steps:

  

  1. In the navigation area, click the **Resources** icon , and then select **All Partitions**.
  2. Click the logical partition name that you want to activate.
  3. In the navigation area, click **Partition Actions** > **Operations** > **Activate**.
  4. Click **OK**.

- To activate a logical partition for a specific system, complete the following steps:

  1. In the navigation area, click the **Resources** icon     , and then select **All Systems**.
  2. Click the server name in which you want to activate the logical partition.
  3. In the navigation area, click **Partition** > **View Partitions**.
  4. Select logical partitions that you want to activate.
  5. In the contents area, click **Actions** > **Activate**.
  6. Click **OK**.

- To verify that the logical partition start policy is set to **User-Initiated**, complete the following steps:

  1. In the navigation area, click the **Resources** icon     , and then select **All Systems**.
  2. Select the server name to view details.
  3. In the navigation area, click **Properties** > **Other Properties**.
  4. Click the **Power-On Parameters** tab. Ensure that the **Partition start policy** field is set to **User-Initiated**.

## Starting an IBM PowerKVM system

You can use the Intelligent Platform Management Interface (IPMI) to start an IBM PowerKVM system.

To start an IBM PowerKVM system, run the `ipmitool -I lanplus -H` *FSP IP* `-P` *ipmipassword* `chassis power on` command from a remote system.

## Stopping a system or logical partition

Learn how to stop a system or logical partition as a part of a system upgrade or service action.

**Attention:** Using either the power-on button on the control panel or entering commands at the Hardware Management Console (HMC) to stop the system can cause unpredictable results in the data files. Also, the next time you start the system, it might take longer if all applications are not ended before stopping the system.

To stop the system or logical partition, select the appropriate procedure.

## Stopping a system that is not managed by an HMC

You might need to stop the system to complete another task. If your system is not managed by the Hardware Management Console (HMC), use these instructions to stop the system by using the power button or the Advanced System Management Interface (ASMI).

Before you stop the system, follow these steps:

1. Ensure that all jobs are completed and end all applications.
2. If a Virtual I/O Server (VIOS) logical partition is running, ensure that all clients are shut down or that the clients have access to their devices by using an alternative method.

The following procedure describes how to stop a system that is not managed by the HMC.

1. Log in to the host partition as a user with the authority to run the `shutdown` or `pwrdwnsys` (Power Down System) command.
2. At the command line, enter one of the following commands:

- If your system is running the AIX operating system, type **shutdown**.
- If your system is running the Linux operating system, type **shutdown -h now**.
- If your system is running the IBM i operating system, type PWRDWNSYS. If your system is partitioned, use the **PWRDWNSYS** command to power down each of the secondary partitions. Then, use the **PWRDWNSYS** command to power down the primary partition.

The command stops the operating system. The system power turns off, the power-on light begins to slowly flash, and the system goes into a standby state.

3. Record the IPL type and the IPL mode from the control panel display to help you return the system to this state when the installation or replacement procedure is completed.

4. Set the power switches of any devices that are connected to the system to off.

# Stopping a system by using the HMC

You can use the Hardware Management Console (HMC) to stop the system or logical partition.

By default, the managed system is set to power off automatically when you shut down the last running logical partition on the managed system. If you set the managed system properties on the HMC so that the managed system does not power off automatically, you must use this procedure to power off your managed system.

**Attention:** Ensure that you shut down the running logical partitions on the managed system before you power off the managed system. Powering off the managed system without shutting down the logical partitions first causes the logical partitions to shut down abnormally and can cause data loss. If you use a Virtual I/O Server (VIOS) logical partition, ensure that all clients are shut down or that the clients have access to their devices by using an alternative method.

To power off a managed system, you must be a member of one of the following roles:
- Super administrator
- Service representative
- Operator
- Product engineer

**Note:** If you are a product engineer, verify that the customer has shut down all active partitions and has powered off the managed system. Continue with the procedure only after the status of the server changes to **Power Off**.

## Stopping a system by using the HMC Classic or HMC Enhanced interface

Learn how to stop a system by using the HMC Classic or HMC Enhanced interface.

To stop the system or logical partition by using the HMC Classic or HMC Enhanced interface, complete the following steps:

1. In the navigation area, click **Systems Management** > **Servers**.
2. In the Contents area, select the managed system.
3. In the Tasks area, select **Operations** > **Power Off**.
4. Select the appropriate power-off mode and click **OK**.

**Related information**:

➡ Shutting down and restarting logical partitions

## Stopping a system by using the HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface

Learn how to stop a system by using the HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface.

To stop the system or logical partition by using the HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps:

1. You must deactivate all the active logical partitions before powering off the system. To deactivate logical partitions for a specific system, complete the following steps:

   a. In the navigation area, click the **Resources** icon , and then select **All Systems**.
   b. Click the server name for which you want to deactivate partitions.
   c. In the navigation area, click **Partitions** > **View Partitions**.
   d. Select the logical partitions that you want to deactivate.
   e. In the content area, click **Actions** > **Deactivate**.
   f. Click **OK**.

2. To power off the system, complete the following steps:

   a. In the navigation area, click the **Resources** icon , and then select **All Systems**.
   b. Click the server name that you want to power off.
   c. In the content area, select **Actions** > **All Actions** > **Power Off**.
   d. Click **OK**.

## Stopping an IBM PowerKVM system

You can use the Intelligent Platform Management Interface (IPMI) to stop an IBM PowerKVM system.

To stop an IBM PowerKVM system, complete the following steps:

1. Log in to the host as a root user or with sudo authority.
2. To power off each of the guests, complete the following steps.
   a. To obtain a list of all guests, type `virsh list`.
   b. For each guest in the list, type `virsh shutdown` *domain name* or type `virsh shutdown` *domain ID*.

      **Note:**
      Type `virsh list` to verify whether all the guests are powered off. If any guest is not powered off, type `virsh destroy` *domain name* or type `virsh destroy` *domain ID* to power off the guest.
3. Run the `ipmitool -I lanplus -H` *FSP IP* `-P` *ipmipassword* `chassis power off` command from a remote system.

---

## System covers

Use these procedures to remove and replace the covers on IBM Power Systems servers that contain the POWER8 processor.

## Removing and replacing covers on the 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A

Use these instructions to remove and replace the covers for a 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system so that you can access the hardware parts or perform service.

### Removing the front cover

Use these instructions to remove the front cover on a 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system so that you can access the hardware parts or perform service.

**Removing the front cover from a rack-mounted 8247-21L, 8247-22L, or 8284-22A system:**

Use this procedure to remove the cover from a rack-mounted system so that you can access the components or perform service.

To remove the front cover, complete the following steps:

1. Remove the two shipping screws **(A)** (if present) that secure the system to the rack.

   **Note:** Replacing the shipping screws is optional but should be done in geographic areas that are prone to seismic activity.

2. Pull the cover away from the system. The cover has an indentation where you can hold onto it more easily.



*Figure 3. Removing the front cover*

**Removing the front cover from a rack-mounted 8247-42L, 8286-41A, or 8286-42A system:**

Use this procedure to remove the cover from a rack-mounted system so that you can access the components or perform service.

To remove the front cover, complete the following steps:

1. Remove the two shipping screws **(A)** (if present) that secure the system to the rack.

   **Note:** Replacing the shipping screws is optional but should be done in geographic areas that are prone to seismic activity.

2. Pull the cover away from the system. The cover has an indentation where you can hold onto it more easily.
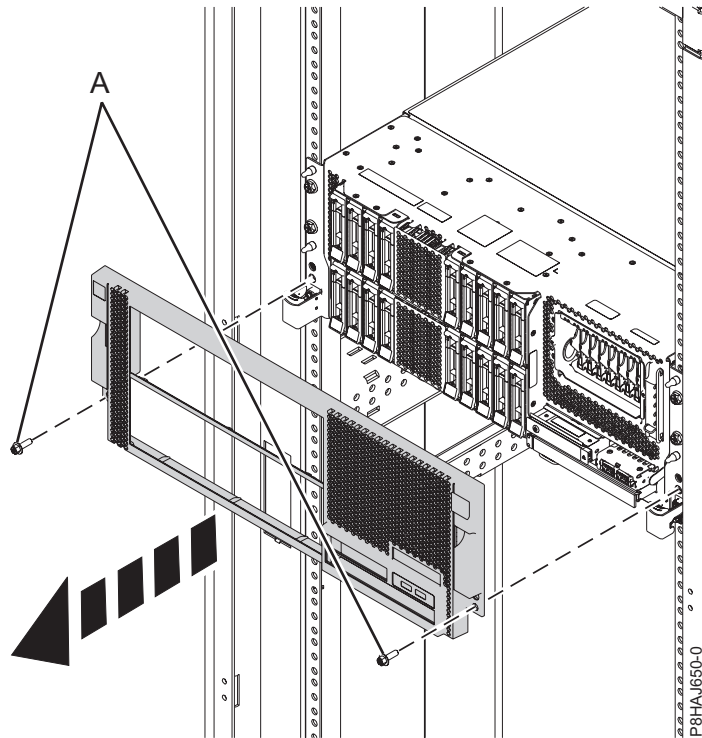
*Figure 4. Removing the front cover*

**Removing the front cover from a stand-alone 8286-41A system:**

Use this procedure to remove the cover from a stand-alone 8286-41A system so that you can access components or perform service.

To remove the front cover, complete the following steps:
1. Open the front door.
2. Press the latch **(A)** and pull the cover away from the system. The cover has an indentation where you can hold onto it more easily.
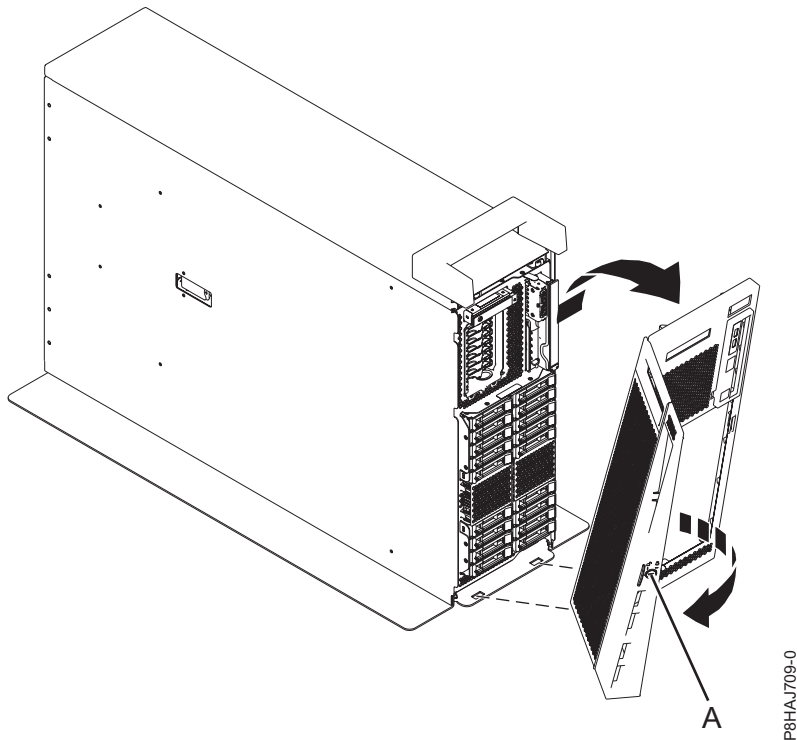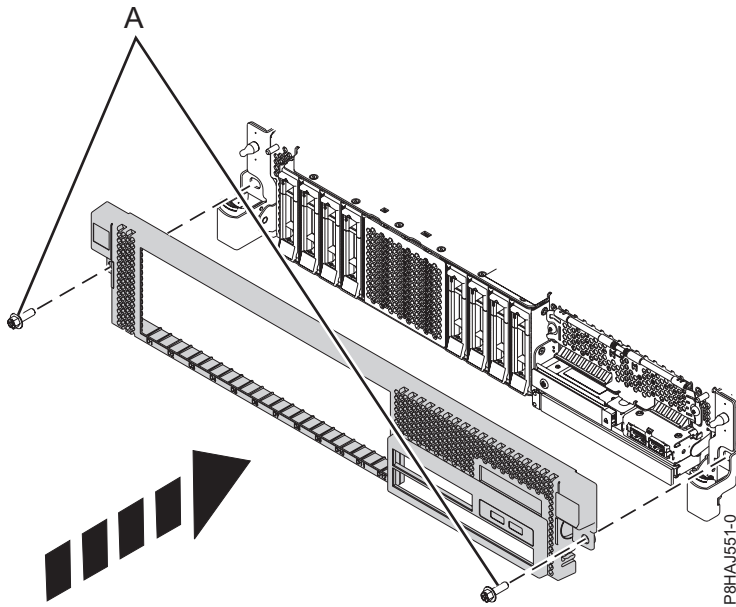
*Figure 5. Removing the front cover*

## Installing the front cover

Use this procedure to install the front cover on a 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system.

**Installing the front cover on a rack-mounted 8247-21L, 8247-22L, or 8284-22A system:**

Use this procedure to install the front cover on a rack-mounted 8247-21L, 8247-22L, or 8284-22A system.

To install the front cover, complete the following steps:

1. Slide the cover onto the system.
2. Close the release latches by pushing in the direction shown in Figure 6 on page 20. The cover snaps into place and has an indentation where you can hold onto it more easily.
3. Replace the shipping screws **(A)**.

   **Note:** Replacing the shipping screws is optional but should be done in geographic areas that are prone to seismic activity.
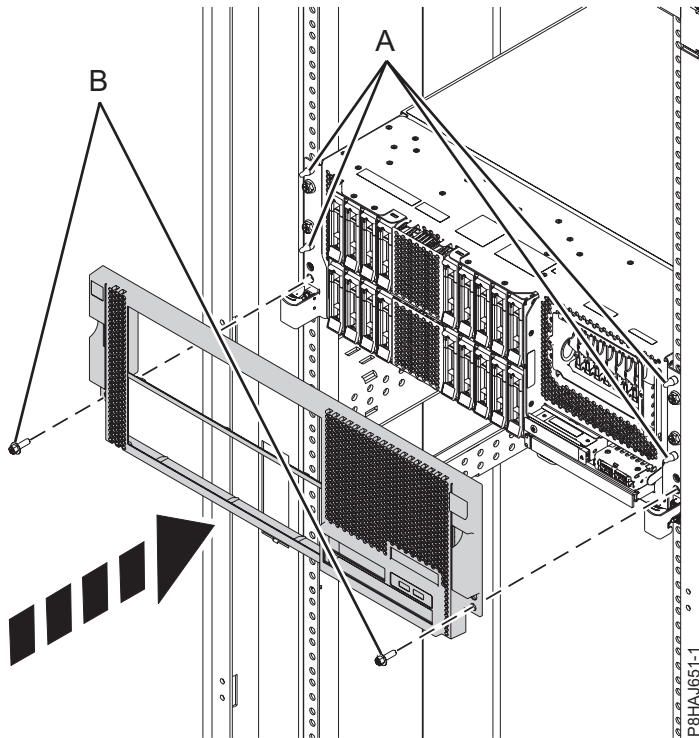
*Figure 6. Installing the front cover*

**Installing the front cover on a rack-mounted 8247-42L, 8286-41A, or 8286-42A system:**

Use this procedure to install the front cover on a rack-mounted 8247-42L, 8286-41A, or 8286-42A system.

To install the front cover, complete the following steps:

1. Push the cover onto the system.
2. Gently push the cover in until the cover clips **(A)** are seated in their respective mounting posts as shown in the following figure. The cover snaps into place and has an indentation where you can hold onto it more easily.
3. Replace the shipping screws **(B)**.

   **Note:** Replacing the shipping screws is optional but should be done in geographic areas that are prone to seismic activity.

*Figure 7. Installing the front cover*

**Installing the front cover and front door on a stand-alone 8286-41A system:**

Use this procedure to install the front cover and front door on a stand-alone 8286-41A system to access components or perform service.

To install the front cover and front door, complete the following steps.

1. Align the cover until the two cover tabs **(A)** are seated into the slots on the base plate **(B)**, as shown in the following figure.
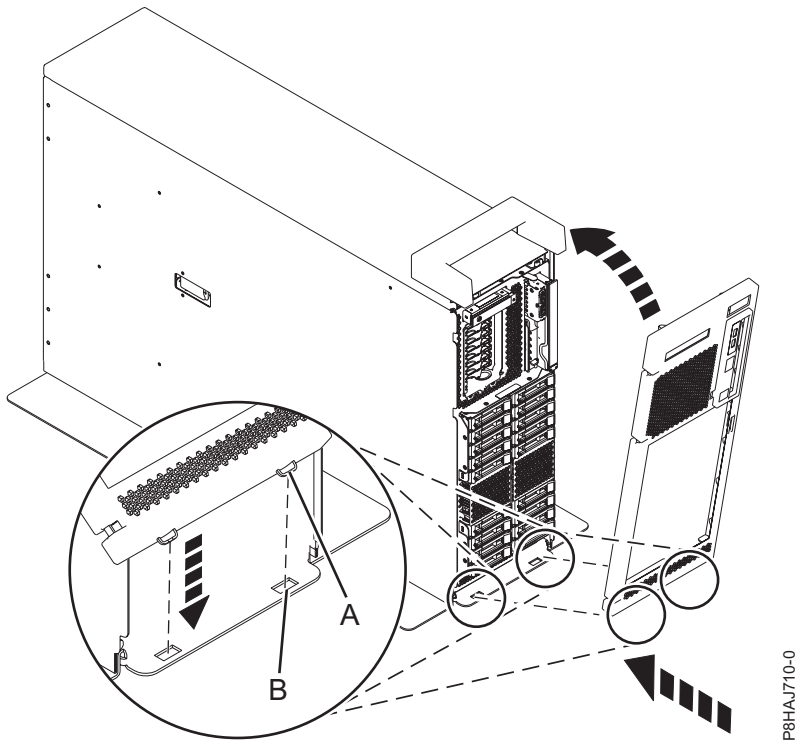
*Figure 8. Installing the front cover*

2. Rotate the cover up and towards the system until the release latch is seated into its respective slot.
3. Hold the front door at an approximate 120 degree angle to the system as shown in the following figure. Engage the latches. The cover has an indentation where you can hold onto it more easily.
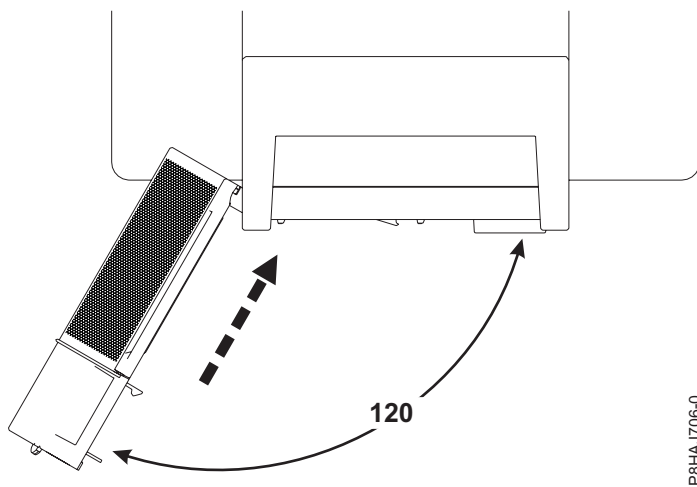


*Figure 9. Rotating the front cover*

## Removing the service access cover on a 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system

Use this procedure to remove the service access cover.

**Removing the service access cover from a rack-mounted 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system:**

Use this procedure to remove the service access cover from a rack-mounted 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system.

To remove the service access cover from a rack-mounted system, complete the following steps:

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

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



*Figure 10. Removing the service access cover*

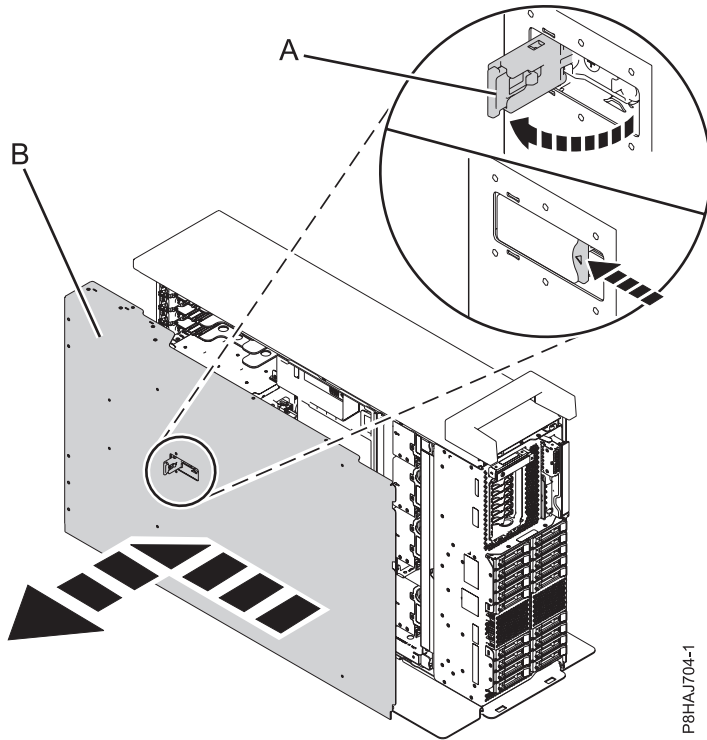**Removing the service access cover from a stand-alone 8286-41A system:**

Use this procedure to remove the service access cover from a stand-alone 8286-41A system.

**Attention:** The system must be powered off before removing the top cover. Operating the system without the cover for more than 30 minutes might damage the system components.

To remove the service access cover from a stand-alone system, complete the following steps:

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

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

*Figure 11. Removing the service access cover*

## Installing the service access cover on a 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system
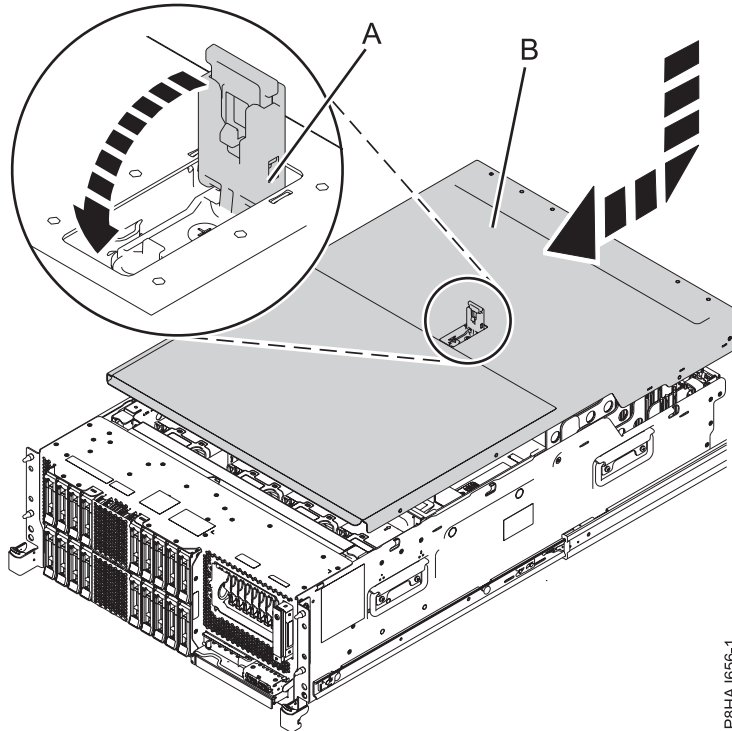
Use this procedure to install the service access cover.

**Installing the service access cover on a rack-mounted 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system:**

Use this procedure to install the service access cover on a rack-mounted 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system.

To install the service access cover on a rack-mounted system, complete the following steps:

1. Slide the cover **(B)** on to the system unit.
2. Close the latch release **(A)** by pushing it in the direction shown.
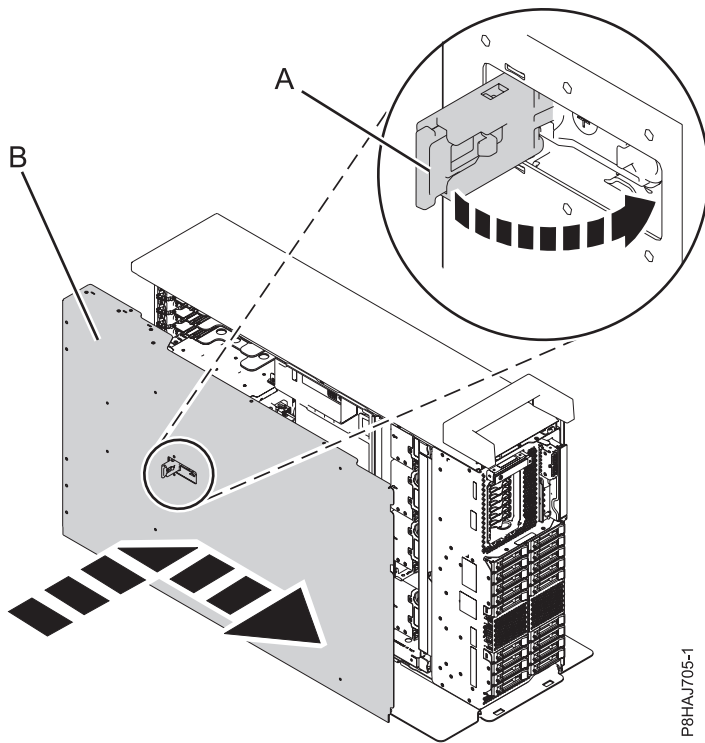
*Figure 12. Installing the service access cover*

**Installing the service access cover on a stand-alone 8286-41A system:**

Use this procedure to install the service access cover on a stand-alone 8286-41A system.

To install the service access cover on a stand-alone system, complete the following steps:
1. Slide the cover **(B)** on to the system unit.
2. Close the latch release **(A)** by pushing it in the direction shown.

*Figure 13. Installing the service access cover*

## Air baffle

Use this procedure to open, close, remove, and replace the air baffle in a 8247-42L, 8286-41A, or 8286-42A system.

**Opening the air baffle on a 8247-42L, 8286-41A, or 8286-42A system:**

Use this procedure to open the air baffle on a 8247-42L, 8286-41A, or 8286-42A system.

To open the air baffle, complete the following steps:
1. Pull the latches **(A)** to disengage the air baffle from the chassis.
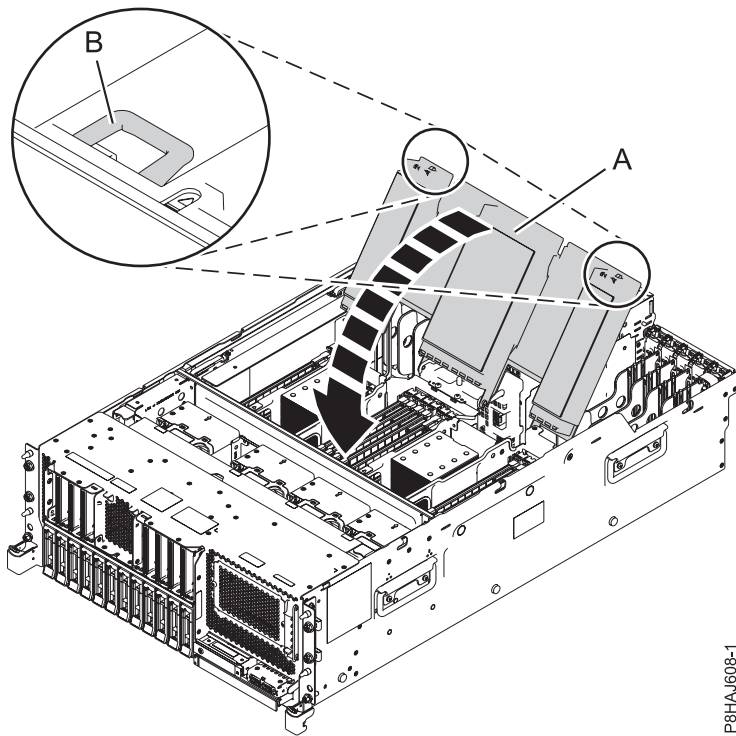2. Lift the air baffle **(B)** up to open it.
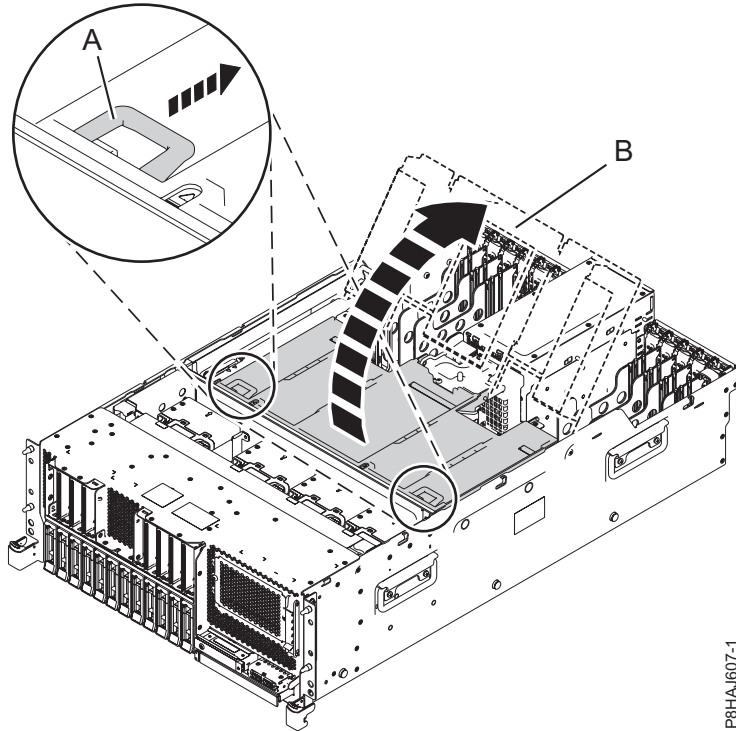
*Figure 14. Opening the air baffle*

**Closing the air baffle on a 8247-42L, 8286-41A, or 8286-42A system:**

Use this procedure to close the air baffle on a 8247-42L, 8286-41A, or 8286-42A system.

To close the air baffle, complete the following steps:
1. Push down the air baffle **(B)** toward the chassis.
2. Press the side latches **(A)** to latch the air baffle to the chassis.
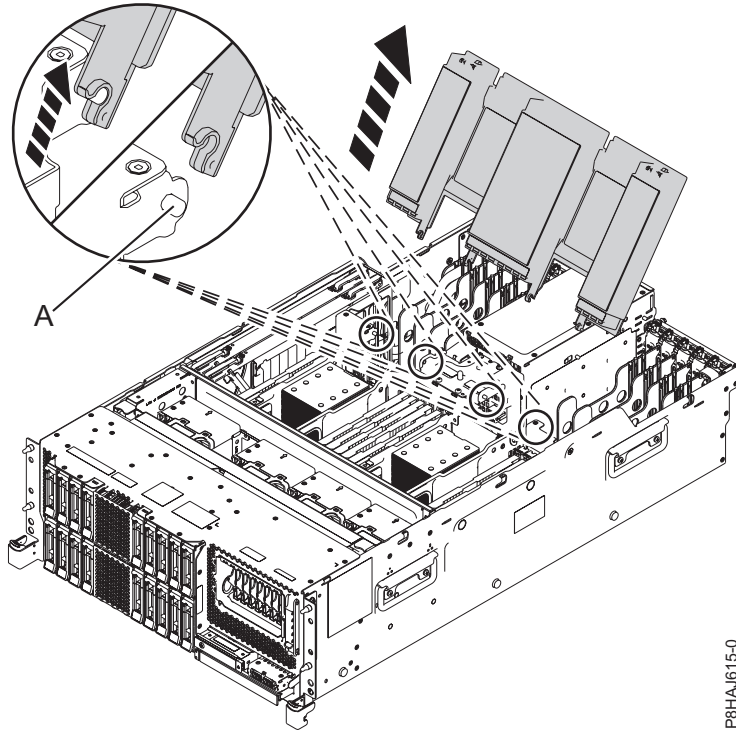
*Figure 15. Closing the air baffle*

**Removing the air baffle from a 8247-42L, 8286-41A, or 8286-42A system:**

Use this procedure to remove the air baffle from a 8247-42L, 8286-41A, or 8286-42A system.

To remove the air baffle, complete the following steps:
1. Pull the air baffle to disengage it from the chassis clasp **(A)**.
2. Lift the air baffle up to remove it.

*Figure 16. Removing the air baffle*

**Replacing the air baffle on a 8247-42L, 8286-41A, or 8286-42A system:**

Use this procedure to replace the air baffle on a 8247-42L, 8286-41A, or 8286-42A system.

To replace the air baffle, complete the following steps:
1. Push the air baffle toward the chassis.
2. Fix the air baffle to the chassis by pushing the clasp onto the chassis **(A)** until it locks into place.
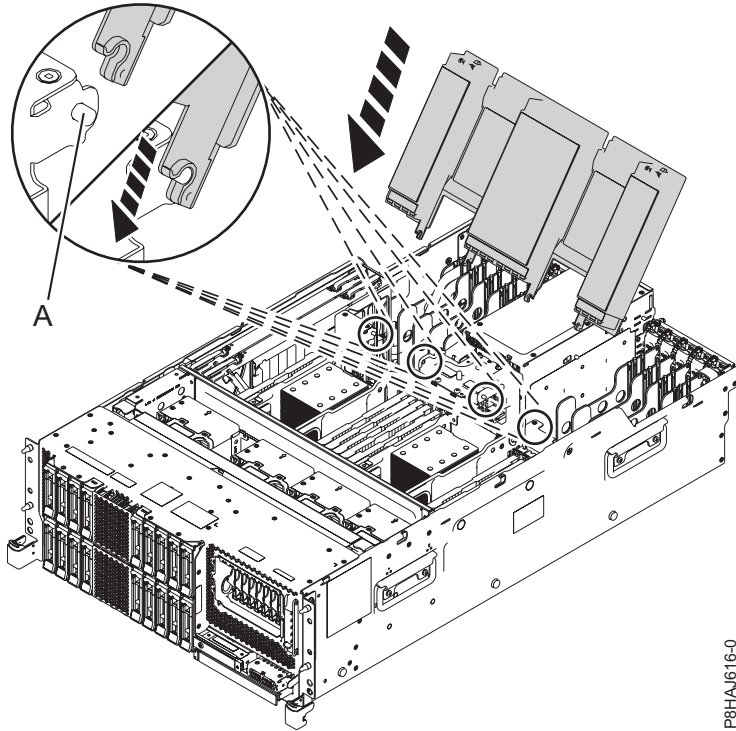
*Figure 17. Replacing the air baffle*

# Removing and replacing covers on the 8408-E8E

Use these instructions to remove and replace the covers for a 8408-E8E system so that you can access the hardware parts or perform service.

## Removing the front cover from the 8408-E8E

Use this procedure to remove the cover so that you can access the components or perform service.

To remove the front cover, complete the following steps:

1. If necessary, open the front rack door.
2. Place your fingers on the indentations **(A)** located on both sides of the cover.
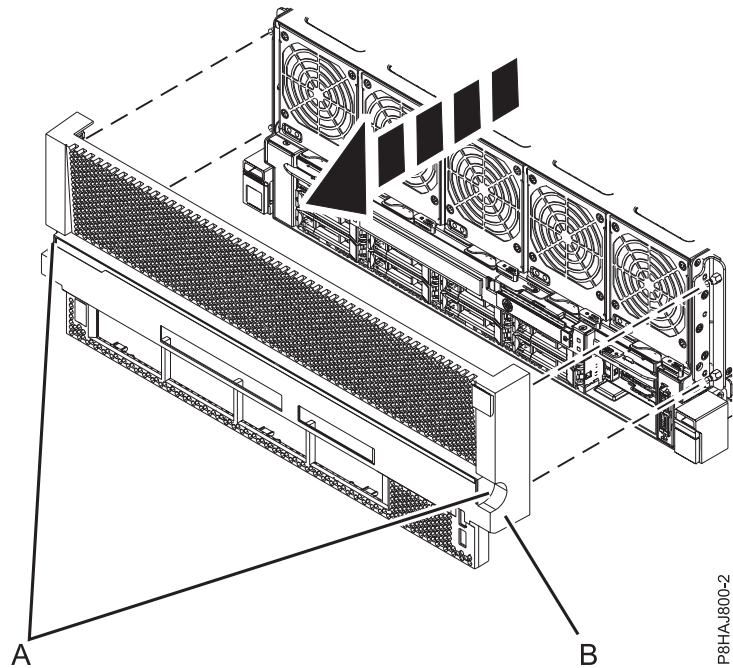
*Figure 18. Removing the front cover*

3. Pull the cover **(B)** away from the system.

## Installing the front cover on the 8408-E8E

Use this procedure to install the cover after accessing the components or performing service.

To install the front cover, complete the following steps:

1. Position the cover **(A)** on the front of the system unit so that the four pins on the system match the four holes on the rear of the cover.
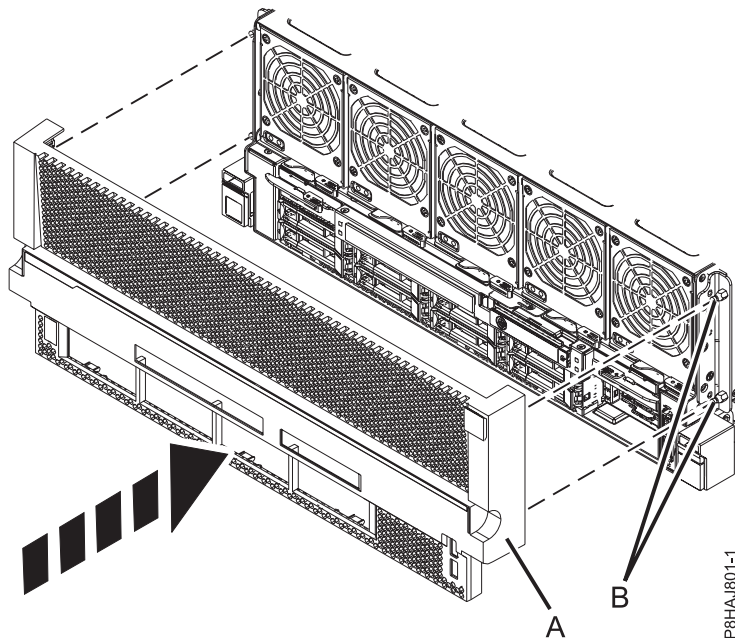


*Figure 19. Installing the front cover*

2. Press the tabs **(B)** to snap the cover into position.
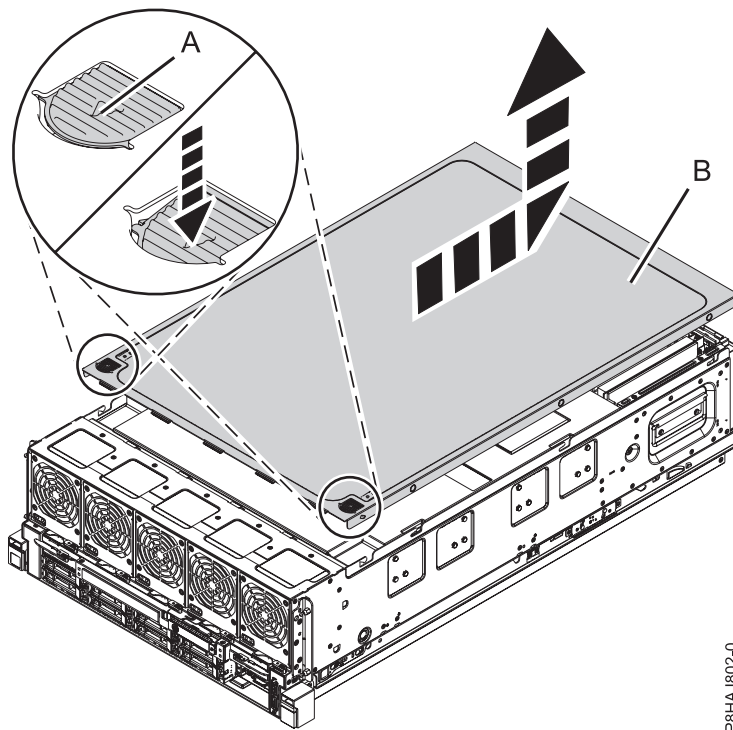
3. Close the front rack door.

## Removing the service access cover from the 8408-E8E

Use this procedure to remove the service access cover from the 8408-E8E.

To remove the service access cover, complete the following steps:

1. Push the release latches **(A)** in the direction shown.

2. Slide the cover **(B)** off the system unit. When the front of the service access cover has cleared the upper frame ledge, lift the cover up and off the system unit.

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



*Figure 20. Removing the service access cover*

## Installing the service access cover on the 8408-E8E

Use this procedure to install the service access cover.

To install the service access cover, complete the following steps:

1. Slide the cover **(A)** on to the system unit.

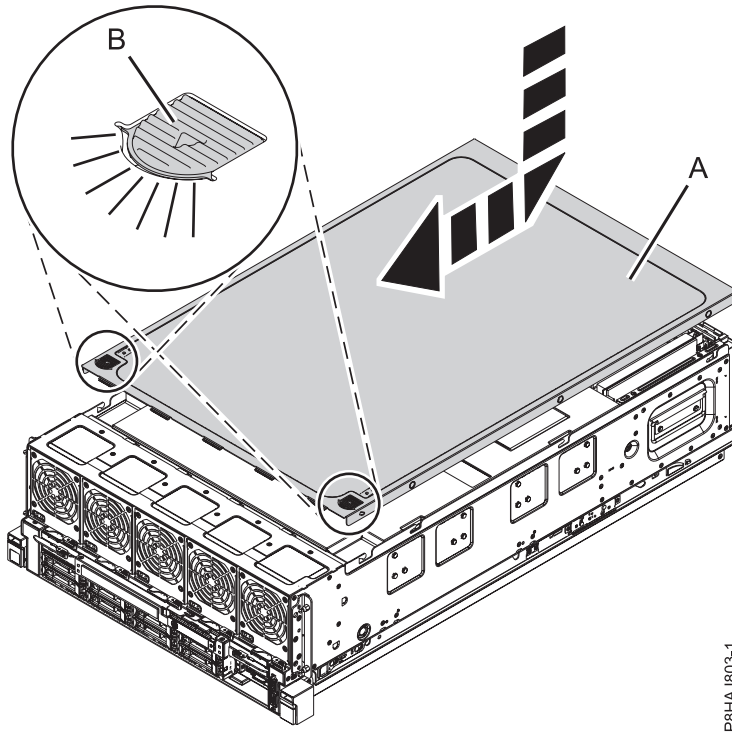2. Close the release latches **(B)** by pushing in the direction shown.

*Figure 21. Installing the service access cover*

## Removing and replacing the safety cover from a 8408-E8E system

Use this procedure to remove and replace the safety cover in a 8408-E8E system.

**Removing the safety cover from a 8408-E8E system:**

Use this procedure to remove the safety cover from a 8408-E8E system.

To remove the safety cover, complete the following steps:

1. Loosen the thumbscrew **(A)** located at the rear of the cover, by turning it in the direction shown in the figure.
2. Slide the safety cover **(B)** toward the rear of the system. When the front of the cover has cleared the upper frame ledge, lift the cover up and off the system.
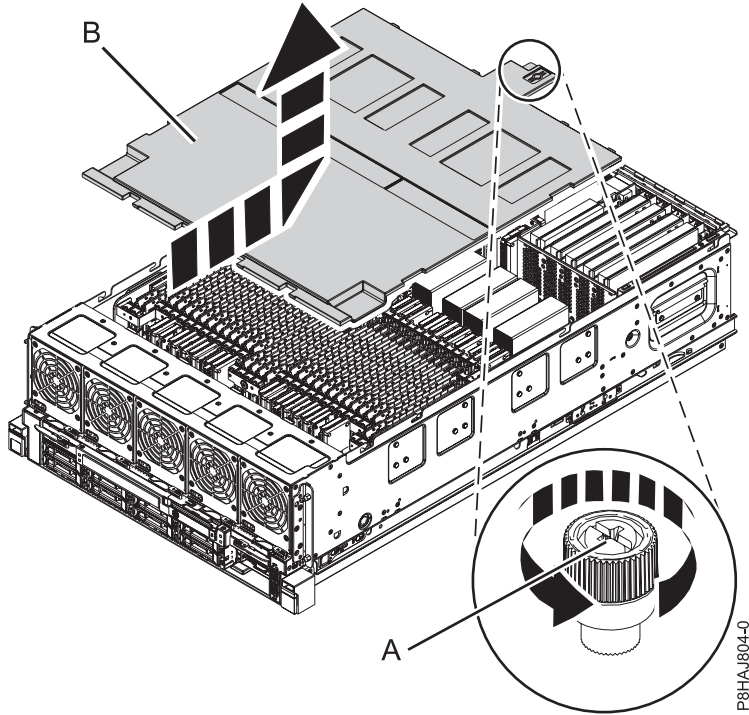
*Figure 22. Removing the safety cover*

**Replacing the safety cover on a 8408-E8E system:**

Use this procedure to replace the safety cover on a 8408-E8E system.

To replace the safety cover, complete the following steps:
1. Push the safety cover **(A)** toward the chassis.
2. Tighten the thumbscrew **(B)** by turning it in the direction shown, to fix the safety cover to the chassis.
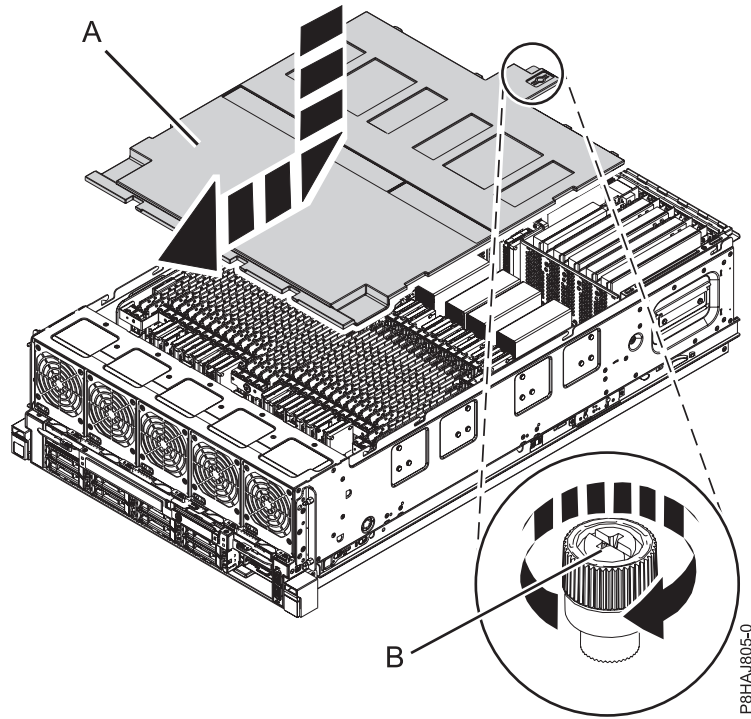
*Figure 23. Replacing the safety cover*

## Opening and closing the I/O latch in a 8408-E8E system

Use this procedure to open and close the I/O latch in a 8408-E8E system.

**Opening the I/O latch in a 8408-E8E system:**

Use this procedure to open the I/O latch in a 8408-E8E system.

To open the I/O, complete the following steps:
1. Loosen the terracotta thumbscrew **(A)**, by turning it in the direction shown in the figure.
2. Move service access latch **(B)** to the open position, by pushing it in the direction shown in the figure.
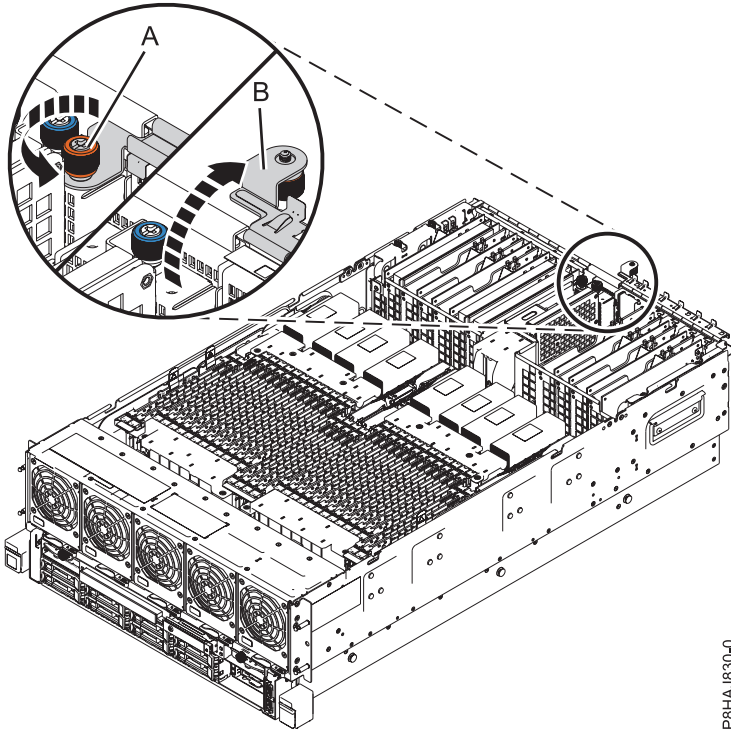
*Figure 24. Opening the I/O latch*

**Closing the I/O latch in a 8408-E8E system:**

Use this procedure to close the I/O latch in a 8408-E8E system.

To close the I/O latch, complete the following steps:
1. Close the service access latch **(B)** by pushing it toward the chassis as shown in the figure.
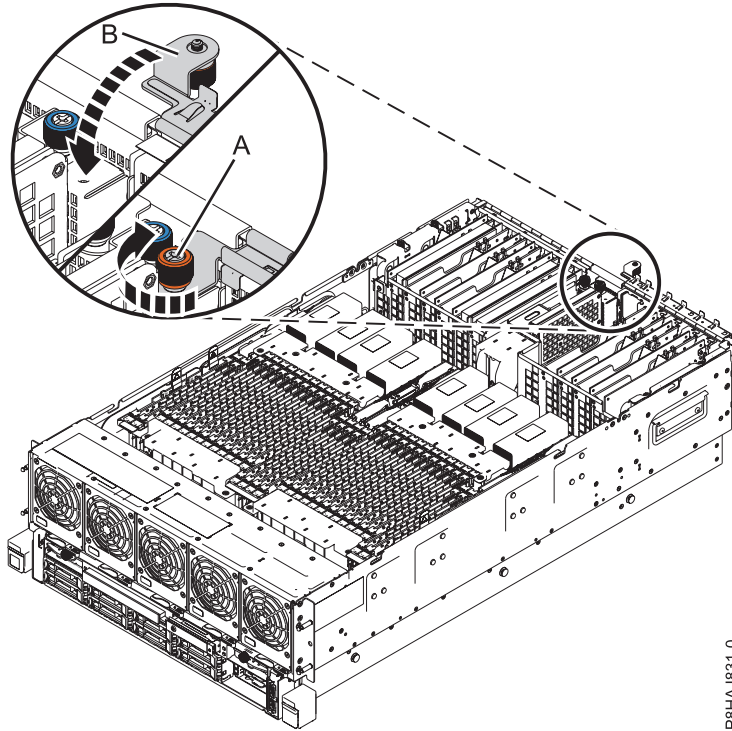2. Tighten the thumbscrew **(A)** by turning it in the direction shown, to fix the latch to the chassis.

*Figure 25. Closing the I/O latch*

# Removing and replacing covers for the system

Use these instructions to remove, replace, or install covers for the 9119-MHE or 9119-MME system so that you can access the hardware parts or perform service.

## Removing the front cover

Use these instructions to remove the front cover on a 9119-MHE or 9119-MME system so that you can access the hardware parts or perform service.

**Removing the front cover from the 9119-MHE or 9119-MME:**

Use this procedure to remove the cover so that you can access the components or perform service.

To remove the front cover, complete the following steps:

1. If necessary, open the front rack door.
2. Place your fingers on the indentations located on both sides of the cover.

*Figure 26. Removing the front cover*

3. Pull the cover **(A)** away from the system.

**Removing the front cover from the 9119-MHE or 9119-MME system control unit:**

Use this procedure to remove the system control unit cover so that you can access the components or perform service.

To remove the system control unit cover, complete the following steps:
1. If necessary, open the front rack door.
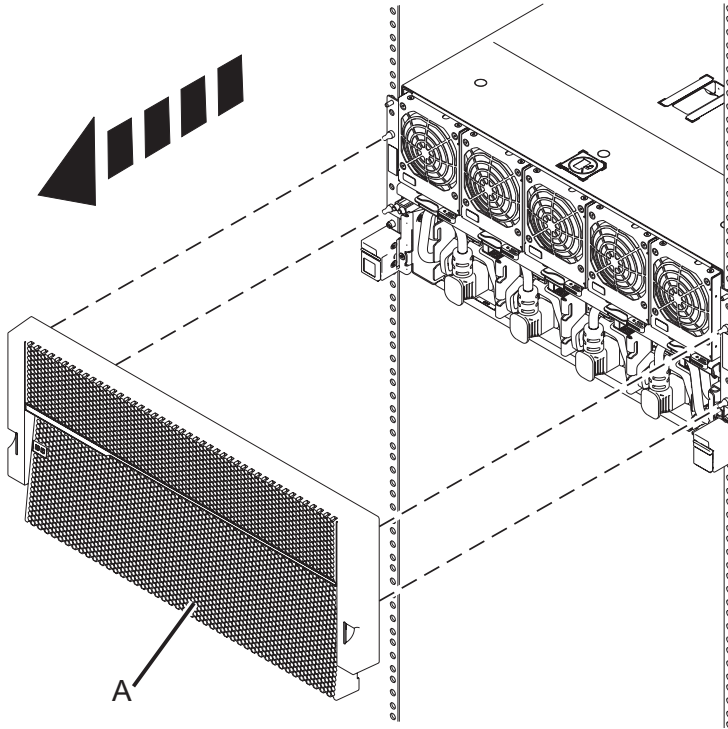2. Place your fingers on the indentations located on both sides of the system control unit cover.
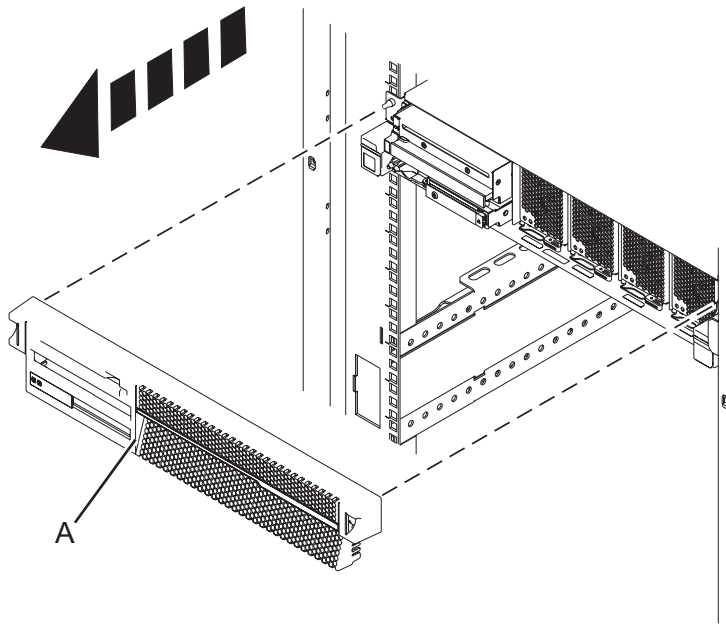
*Figure 27. Removing the system control unit front cover*

3. Pull the cover **(A)** away from the system control unit.

## Installing the front cover

Use this procedure to install the front covers on a 9119-MHE or 9119-MME system.

**Installing the front cover on the 9119-MHE or 9119-MME:**

Use this procedure to install the cover after accessing the components or performing service.

To install the front cover, complete the following steps:

1. Position the cover **(A)** on the front of the system unit so that the four pins on the system match the four holes on the rear of the cover.
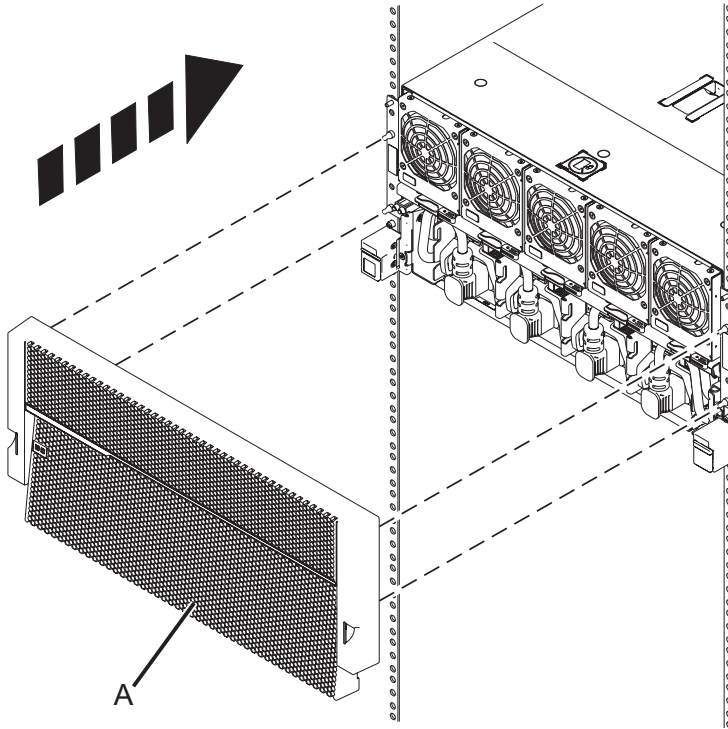
*Figure 28. Installing the front cover*

2. Press the tabs to snap the cover into position.
3. Close the front rack door.

**Installing the front cover on the 9119-MHE or 9119-MME system control unit:**

Use this procedure to install the system control unit cover after accessing the components or performing service.

To install the system control unit cover, complete the following steps:
1. Position the cover **(A)** on the front of the system control unit so that the two pins on the system control unit match the two holes on the rear of the cover.

*Figure 29. Installing the system control unit front cover*

2. Place your fingers on the indentations located on both sides of the system control unit cover, then press in to snap the cover into position.
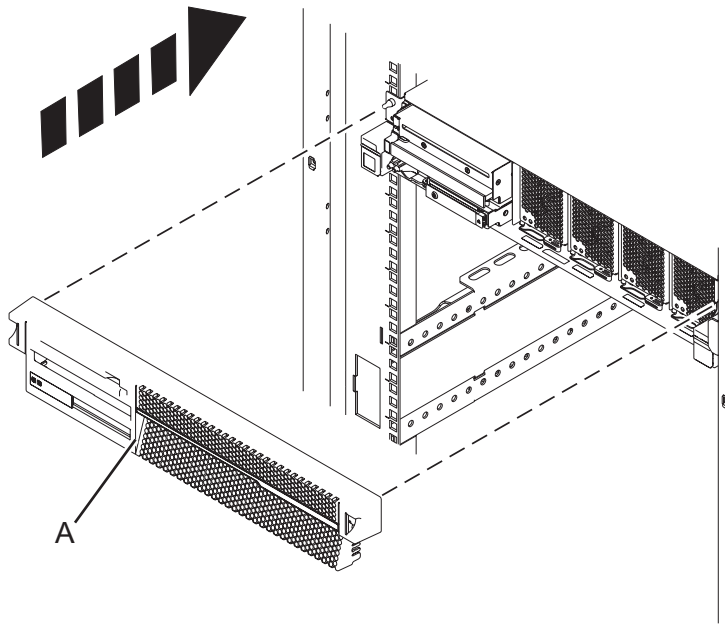3. Close the front rack door.

## Service and operating positions

Use these procedures to place IBM Power Systems servers into the service or operating position.

## Service and operating positions for the 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A system

Use these procedures to place 8247-21L, 8247-22L, 8247-42L, 8284-22A, 8286-41A, or 8286-42A server into the service or operating position.

### Placing the rack-mounted system into the service position

Use this procedure to place the rack-mounted system into the service position.

**Notes:**

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

To place a rack-mounted system into the service position, complete the following steps:

1. If you have not already done so, remove the front cover of the system. For instructions, see "Removing the front cover" on page 16.

2. Remove the front screws **(A)** that secure the system unit to the rack.
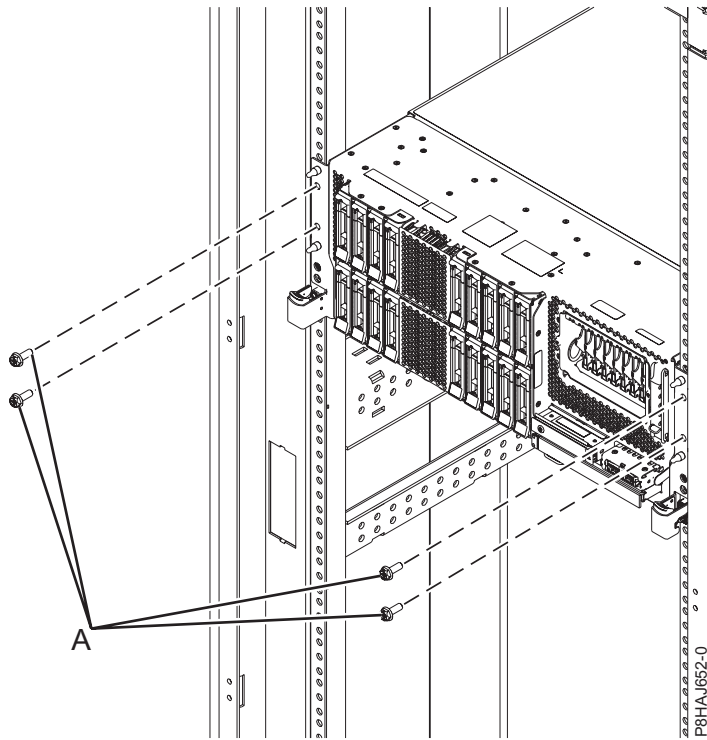


*Figure 30. Removing the front screws*

3. Release the side latches **(B)** and pull the latches to slide out the Central Electronics Complex (CEC) Advanced System Management (ASM).
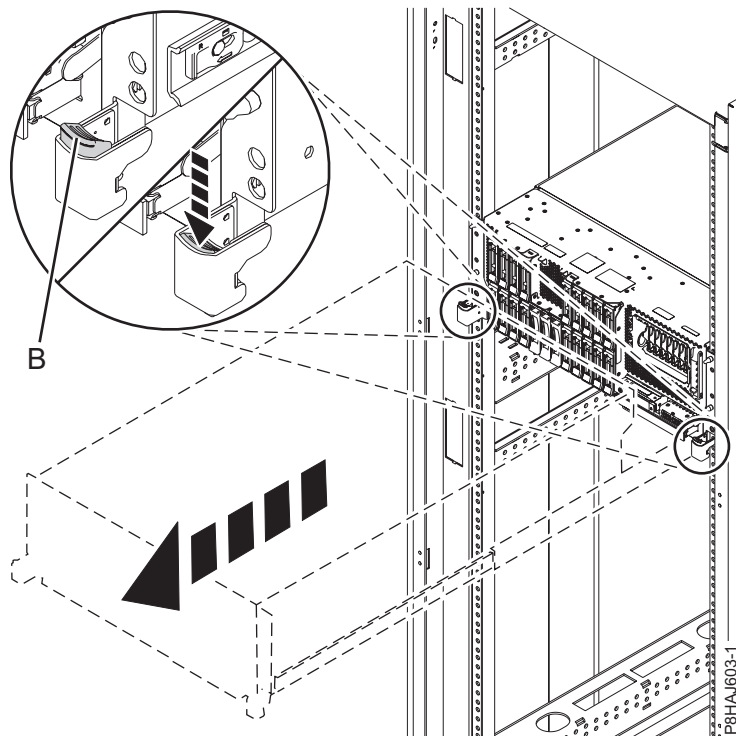
*Figure 31. Releasing the side latches*

## Placing the rack-mounted system into the operating position

Use this procedure to place the rack-mounted system into the operating position.

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

To place a rack-mounted system in the operating position, complete the following steps:

1. Unlock the blue rail safety latches **(A)** by lifting them upward.
2. Push the system unit **(B)** back into the rack until both system unit release latches lock into position.

*Figure 32. Placing the system into the operating position*

3. Secure the server to the rack by using shipping screws.
4. If you have not already done so, replace the front cover. For instructions, see "Installing the front cover" on page 19.

## Service and operating positions for the 8408-E8E system

Use these procedures to place the 8408-E8E servers into the service or operating position.

### Placing the 8408-E8E system into the service position

Use this procedure to place the 8408-E8E system into the service position.

**Notes:**

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

To place a rack-mounted system into the service position, complete the following steps:

1. If you have not already done so, remove the front cover of the system. For instructions, see "Removing the front cover from the 8408-E8E" on page 30.
2. Release the side latches **(A)** by pressing them downward and then outward as shown in the following figure.
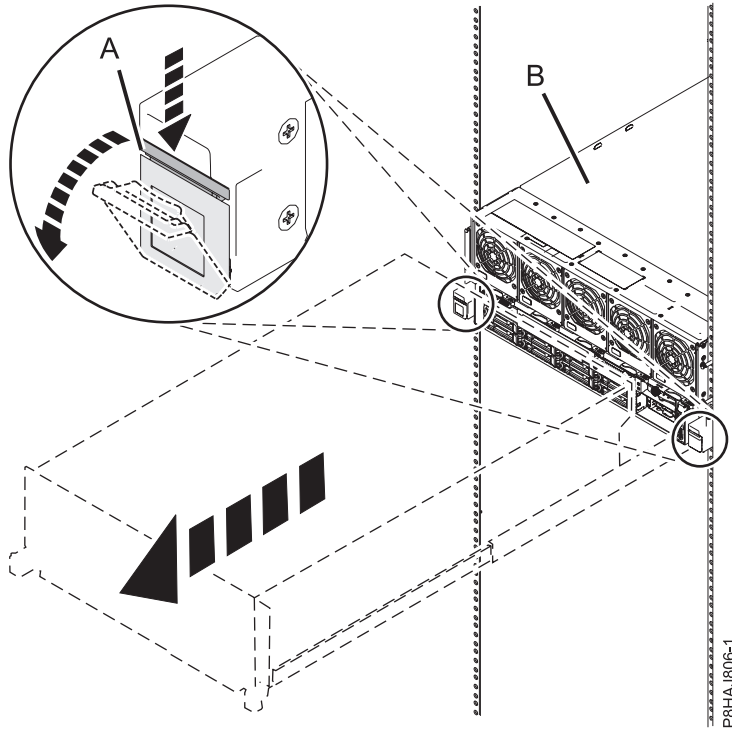
*Figure 33. Placing the system in service position*

3. Slide out the system unit **(B)** from the rack.

## Placing the 8408-E8E system into the operating position

Use this procedure to place the 8408-E8E system into the operating position.

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

To place the 8408-E8E system in the operating position, complete the following steps:
1. Unlock the blue rail safety latches **(A)** by lifting them upward.
2. Push the system unit **(B)** back into the rack until both system unit release latches lock into position.
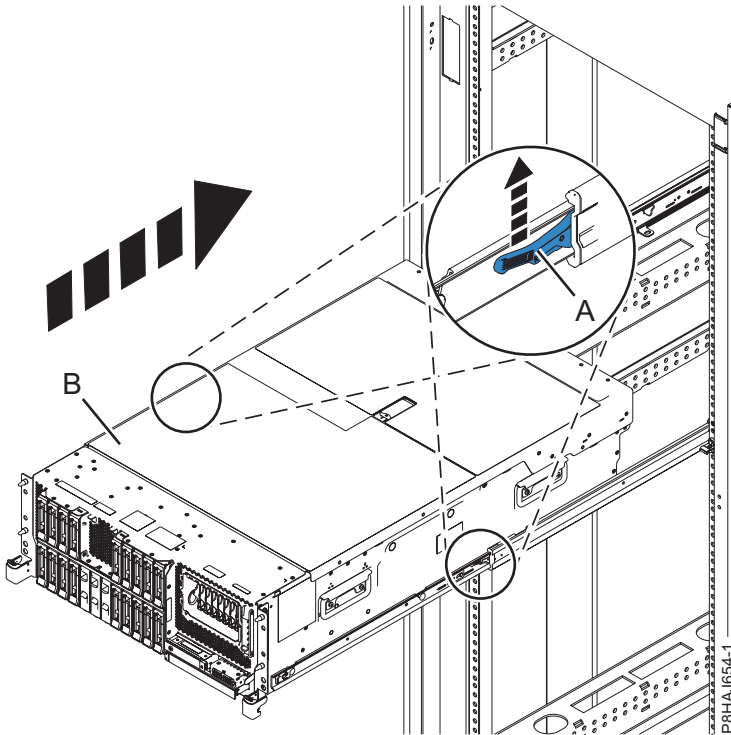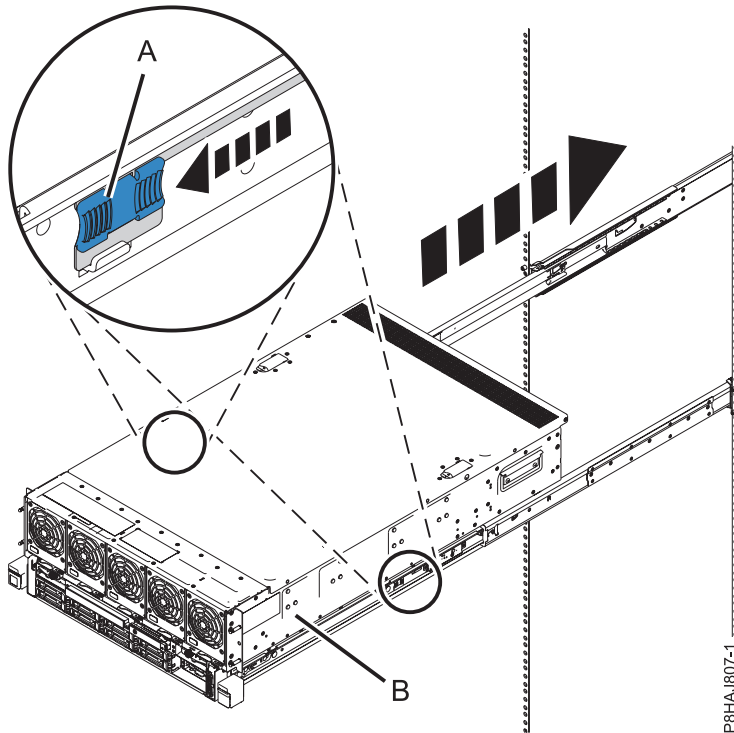
*Figure 34. Placing the system into the operating position*

3. Secure the server to the rack by using shipping screws.

4. If you have not already done so, replace the front cover. For instructions, see "Installing the front cover on the 8408-E8E" on page 31.

## Power cords

Use these procedures to disconnect and connect the power cords on IBM Power Systems servers that contain the POWER8 processor.

## Disconnecting the power cords from the system

Use this procedure to disconnect the power cords from the system.

To disconnect the power cords from the system, complete the following steps:

1. Open the rear rack door on the system unit that you are servicing.

2. Identify the system unit that you are servicing in the rack.

3. Disconnect the power cords **(B)** from the system unit. See figures Figure 35 on page 47 and Figure 36 on page 47 depending on the type of your system.

   **Notes:**

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

   - The power cord is fastened to the system using the hook-and-loop fastener **(A)**. If you are placing the system in a service position after disconnecting the power cords, then ensure that you unstrap the fastener.
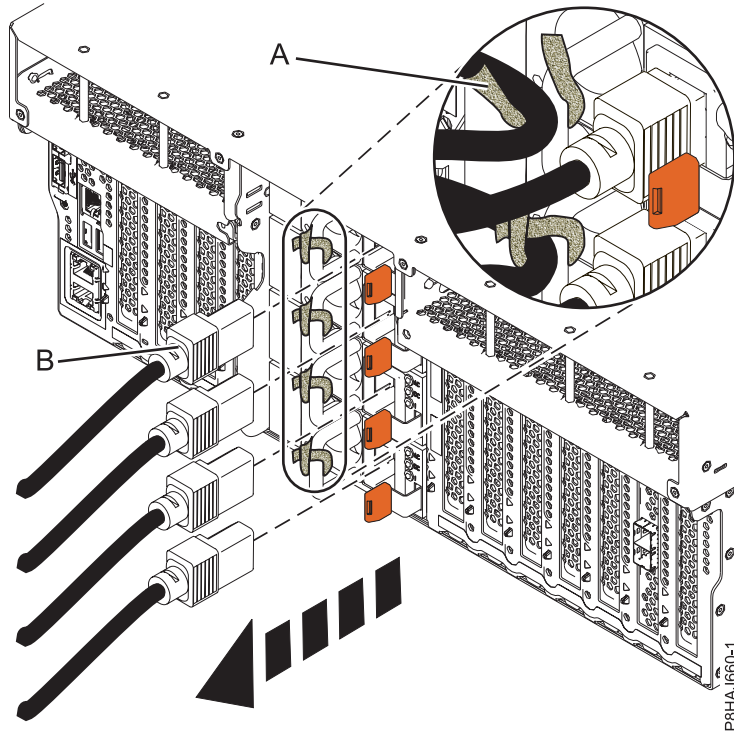
*Figure 35. Removing the power cords from a 8247-42L, 8286-41A, or 8286-42A system*
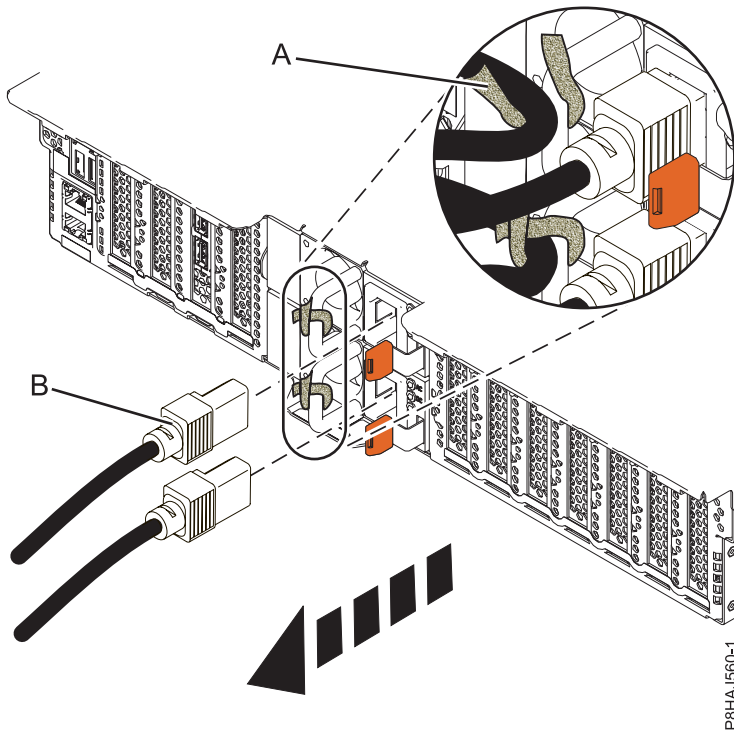


*Figure 36. Removing the power cords from a 8247-21L, 8247-22L, or 8284-22A system*

*Figure 37. Removing the power cords from a 8408-E8E system*

## Connecting the power cords to the system

Use this procedure to connect the power cords to the system.

To connect the power cords to the system, complete the following steps:

1. Open the rear rack door on the system unit that you are servicing.
2. Reconnect the power cords **(A)** to the system unit. See figures Figure 38 on page 49 or Figure 39 on page 49 depending on the type of your system.
3. Fasten the power cords to the system using the hook-and-loop fasteners **(B)**.
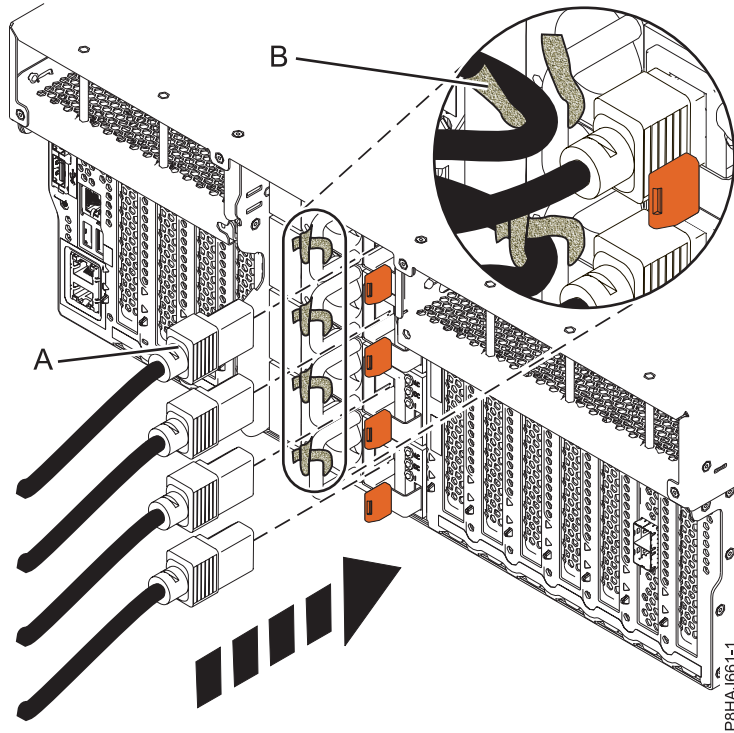
*Figure 38. Connecting the power cords to a 8286-41A or 8286-42A system*



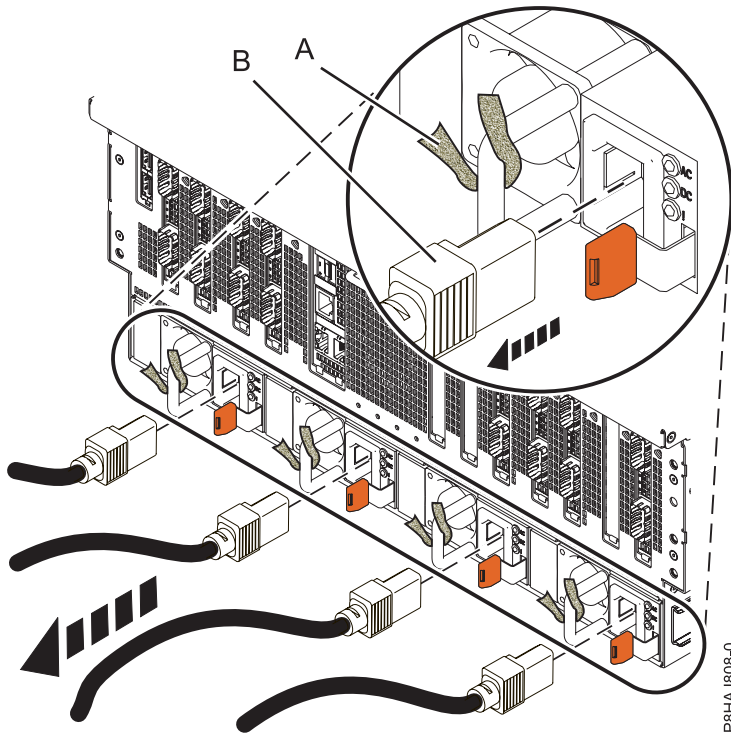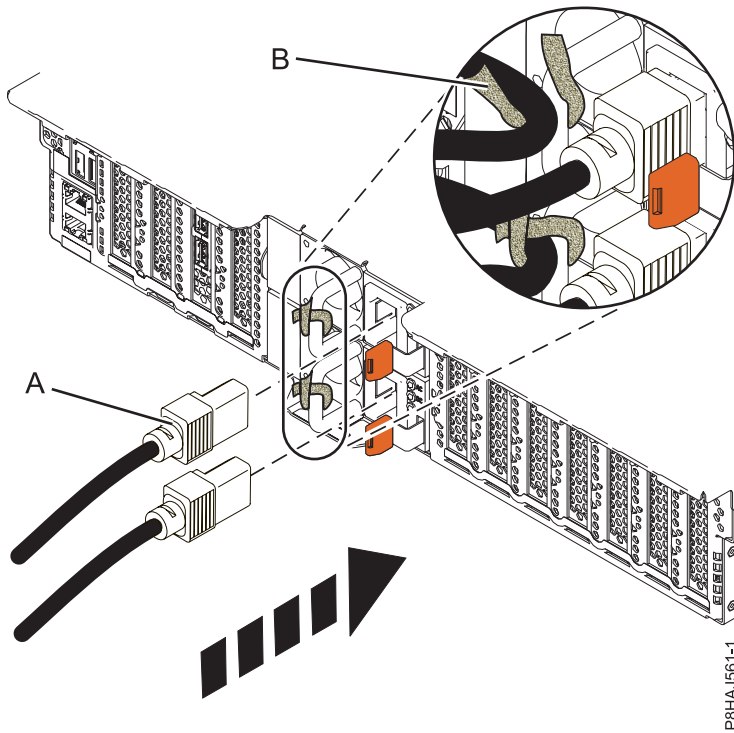*Figure 39. Connecting the power cords to a 8247-21L, 8247-22L, or 8284-22A system*
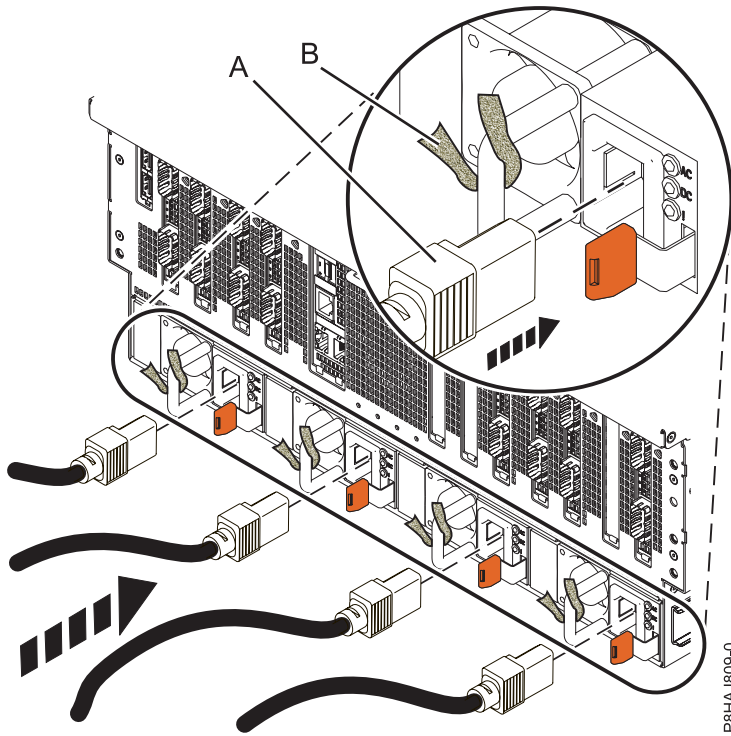
*Figure 40. Connecting the power cords to a 8408-E8E system*

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

## Installing or replacing a part with an HMC

You can use the Hardware Management Console (HMC) to perform many service actions, including the installation of a new field-replaceable unit (FRU) or parts.

## Installing a part by using the HMC

You can use the Hardware Management Console (HMC) to perform many service actions, including the installation of a new feature or part.

To install a feature or part into a system or an expansion unit by using the HMC, complete the following steps:

1. Choose one of the following navigation options depending on the interface type of the Hardware Management Console (HMC):
   - If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, expand **Systems Management** > **Servers**.
     b. Select the managed system for which you want to install a part.

       **Note:** If your part is in a miscellaneous equipment specification (MES), continue with step 1c. If your part is contained in the install that is done by the system services representative (SSR) or in a ship group, go to step 1h on page 51.
     c. In the Tasks area, expand **Serviceability** > **Hardware** > **MES Tasks** > **Open MES**.
     d. Click **Add MES Order Number**.
     e. Enter the number, and click **OK**.
     f. Click the newly created order number, and click **Next**. The details of the order number are displayed.

g. Click **Cancel** to close the window.

h. In the Tasks area, expand **Serviceability** > **Hardware** > **MES Tasks**.

- If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps:

a. In the navigation area, click the **Resources** icon  , and then select **All Systems**.

b. Click the server name for which you want to install the part.

c. In the navigation area, click the **Serviceability** icon  , and then select **Serviceability**.

2. Select **Add FRU** (field replaceable unit).

3. In the Add/Install/Remove Hardware-Add FRU, Select FRU Type window, select the system or enclosure into which you are installing the feature.

4. Select the type of feature you are installing, and click **Next**.

5. Select the location code where you will install the feature, and click **Add**.

6. After the part is listed in the **Pending Actions** section, click **Launch Procedure** and follow the instructions to install the feature.

   **Note:** The HMC might open external instructions for installing the feature. If so, follow those instructions to install the feature.

## Removing a part by using the HMC

Learn how to remove a part by using the Hardware Management Console (HMC).

To remove a part in a system or an expansion unit by using the HMC, complete the following steps:

1. Choose one of the following navigation options depending on the interface type of the HMC:
   - If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, expand **Systems Management** > **Servers**.
     b. Select the managed system from which you are removing a part.
     c. In the Tasks area, expand **Serviceability** > **Hardware** > **MES Tasks** > **Remove FRU**.
   - If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps:

     a. In the navigation area, click the **Resources** icon  , and then select **All Servers**.

     b. Click the server name for which you want to remove a part.

     c. In the navigation area, click the **Serviceability** icon  , and then select **Serviceability**.

     d. In the Serviceability window, click **Remove FRU**.

2. In the Add/Install/Remove Hardware - Remove FRU, Select FRU Type window, select the system or enclosure from which you are removing the part.

3. Select the type of part that you are removing, and click **Next**.

4. Select the location of the part that you are removing, and click **Add**.

5. After the part is listed in the **Pending Actions** section, click **Launch Procedure** and follow the instructions to remove the part.

   **Note:** The HMC might display the IBM Knowledge Center instructions for removing the part. If so, follow those instructions to remove the part.

## Repairing a part by using the HMC

You can use the Hardware Management Console (HMC) to complete many service actions, including repairing a field-replaceable unit (FRU) or part.

1. Choose one of the following navigation options depending on the interface type of the Hardware Management Console (HMC):
   - If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, expand **Systems Management** > **Servers**.
     b. Select the managed system for which you want to repair a part.
     c. In the Tasks area, expand **Serviceability** > **Manage Serviceable Events**.
   - If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following step:
     a. In the navigation area, click the **Serviceability** icon In the navigation area, click the

       **Serviceability** icon , and then select **Serviceability**.
     b. Select **Serviceable Events Manager** .
2. In the Manage Serviceable Events window, specify the event criteria, error criteria, and FRU criteria. If you do not want the results to be filtered, select **ALL**.
3. Click **OK**. The Manage Serviceable Events - Serviceable Event Overview window displays all of the events that match your criteria. The information that is displayed in the compact table view includes the following details:
   - Problem number
   - PMH number
   - Reference code - click the Reference code to display a description of the problem reported and actions that can be taken to fix the problem.
   - Status of the problem
   - Last reported time of the problem
   - Failing MTMS of the problem

   **Note:** The full table view includes more detailed information, including reporting MTMS, first reported time, and serviceable event text.
4. Select a serviceable event and use the **Selected** drop-down menu to select **Repair**.
5. Follow the instructions to repair the part.

   **Note:** The HMC might open the IBM Knowledge Center instructions for repairing the part. If so, follow those instructions to repair the part.

## Verifying the installed part

You can verify a newly installed or replaced part on your system, logical partition, or expansion unit by using the operating system, stand-alone diagnostics, or the Hardware Management Console (HMC).

# Verifying a part by using the operating system or VIOS

If you installed a new feature or replaced a part, you might want to use the tools in the operating system or Virtual I/O Server (VIOS) to verify that the feature or part is recognized by the system or logical partition.

## Verifying an installed feature or replaced part in an AIX system or logical partition

If you installed feature or replaced a part, you might want to use the tools in the AIX operating system to verify that the feature or part is recognized by the system or logical partition.

**Verifying an installed feature with the AIX operating system:**

If you installed feature or replaced a part, you might want to use the tools in the AIX operating system to verify that the feature or part is recognized by the system or logical partition.

To verify the installed feature by using the AIX operating system, complete the following steps:

1. Log in as root user.
2. At the command line, type `diag` and press Enter.
3. Select **Advanced Diagnostics Routines** and press Enter.
4. From the **Diagnostic Mode Selection** menu, select **System Verification** and press Enter.
5. When the **Advanced Diagnostic Selection** menu appears, select one of the following options:
   - To test a single resource, select the resource that you installed from the list of resources and press Enter.
   - To test all the resources available to the operating system, select **All Resources** and press Enter.
6. Select **Commit**, and wait until the diagnostic programs run to completion, responding to any prompts that appear.
7. Did the diagnostics run to completion and display the message `No trouble was found`?
   - **No:** If a service request number (SRN) or other reference code is displayed, suspect a loose adapter or cable connection. Review the installation procedures to ensure that the new feature is installed correctly. If you cannot correct the problem, collect all SRNs or any other reference code information that you see. If the system is running in logical partitioning (LPAR) mode, note the logical partition in which you installed the feature. Contact your service provider for assistance.
   - **Yes:** The new device is installed correctly. Exit the diagnostic programs and return the system to normal operations.

**Verifying a replaced part with the AIX operating system:**

If you replaced a part, you might want to use the tools in the AIX operating system to verify that the part is recognized by the system or logical partition.

To verify the operation of a replacement part, complete the following steps:

1. Did you use either the AIX operating system or the online diagnostics service aid concurrent (hot-swap) service to replace the part?

   **No:** Go to step 2.

   **Yes:** Go to step 5 on page 54.

2. Is the system powered off?

   **No:** Go to step 4 on page 54.

   **Yes:** Continue with the next step.

3. Start the system and wait until the AIX operating system login prompt is displayed or until apparent system activity on the operator panel or display has stopped.

   Did the AIX login prompt display?

- **No:** If a service request number (SRN) or other reference code is displayed, suspect a loose adapter or cable connection. Review the procedures for the part that you replaced to ensure that the new part is installed correctly. If you cannot correct the problem, collect all SRNs or any other reference code information that you see. If the system does not start or you have no login prompt, see: Problems with loading and starting the operating system.

  If the system is partitioned, note the logical partition in which you replaced the part. Contact your service provider for assistance.

- **Yes:** Go to step 4.

4. At the command prompt, type `diag –a` and press Enter to check for missing resources. If you see a command prompt, go to step 5.

   If the **Diagnostic selection** menu is shown with **M** appearing next to any resource, follow these steps:

   a. Select the resource and press Enter.

   b. Select **Commit**.

   c. Follow any instructions that are shown.

   d. If the *Do you want to review the previously displayed error?* message is shown, select **Yes** and press Enter.

   e. If an SRN is shown, suspect a loose card or connection. If no obvious problem is shown, record the SRN and contact your service provider for assistance.

   f. If no SRN is shown, go to step 5.

5. Test the part by doing the following steps:

   a. At the command line, type `diag` and press Enter.

   b. From the **Function Selection** menu, select **Advanced Diagnostics Routines** and press Enter.

   c. From the **Diagnostic Mode Selection** menu, select **System Verification** and press Enter.

   d. Select **All Resources**, or select the diagnostics for the individual part to test only the part you replaced and any devices that are attached to the part you replaced and press Enter.

      Did the **Resource Repair Action** menu appear?

      **No:** Go to step 6.

      **Yes:** Go to step 7.

6. Did the *Testing Complete, No trouble was found* message appear?

   - **No:** There is still a problem. Contact your service provider. **This ends the procedure.**

   - **Yes:** Select **Log Repair Action**, if not previously logged, from the **Task Selection** menu to update the AIX error log. If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your action is not displayed on the resource list, select **sysplanar0** and press Enter.

     **Tip:** This action changes the indicator light for the part from the fault state to the normal state.

     Go to step 9 on page 55.

7. Select the resource for the replaced part from the **Resource Repair Action** menu. When a test is run on a resource in system verification mode, and that resource has an entry in the AIX error log, if the test on the resource was successful, the **Resource Repair Action** menu appears. Complete the following steps to update the AIX error log to indicate that a system-detectable part has been replaced.

   **Note:** On systems with an indicator light for the failing part, this action changes the indicator light to the normal state.

   a. Select the resource that has been replaced from the **Resource Repair Action** menu. If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your action does not appear on the resource list, select **sysplanar0** and press Enter.

b. Select **Commit** after you make your selections. Did another **Resource Repair Action** display appear?

**No:** If the **No Trouble Found** display appears, go to step 9

**Yes:** Go to step 8.

8. Select the parent or child of the resource for the replaced part from the **Resource Repair Action** menu if necessary. When a test is run on a resource in system verification mode, and that resource has an entry in the AIX error log, if the test on the resource was successful, the **Resource Repair Action** menu appears. Complete the following steps to update the AIX error log to indicate that a system-detectable part has been replaced.

**Note:** This action changes the indicator light for the part from the fault state to the normal state.

a. From the **Resource Repair Action** menu, select the parent or child of the resource that has been replaced. If the repair action was to reseat a cable or adapter, select the resource associated with that repair action. If the resource associated with your action does not appear on the resource list, select **sysplanar0** and press Enter.

b. Select **Commit** after you make your selections.

c. If the **No Trouble Found** display appears, go to step 9.

9. If you changed the service processor or network settings, as instructed in previous procedures, restore the settings to the values they had prior to servicing the system.

10. Did you do any hot-plug procedures before doing this procedure?

**No:** Go to step 11.

**Yes:** Go to step 12.

11. Start the operating system, with the system or logical partition in normal mode. Were you able to start the operating system?

**No:** Contact your service provider. **This ends the procedure.**

**Yes:** Go to step 12.

12. Are the indicator lights still on?

- **No. This ends the procedure.**
- **Yes.** Turn off the lights. See the following for instructions: Changing service indicators (http://www.ibm.com/support/knowledgecenter/POWER8/p8hby/serviceindicators.htm).

## Verifying the installed part in an IBM i system or logical partition

If you have installed a new feature or part, verify that the system recognizes the feature or part by using the IBM i system service tools.

To verify the installed part, complete the following steps:

1. Deactivate the failing item indicator light. For instructions, see "Deactivating the indicator light using the IBM i operating system" on page 61.

2. Sign on **with at least service level authority**.

3. On the command line of the IBM i session, type `strsst` and press Enter.

**Note:** If you cannot get to the System Service Tools display, use function 21 from the control panel. Alternatively, if the system is managed by Hardware Management Console (HMC), use the Service Focal Point Utilities to get to the Dedicated Service Tools (DST) display.

4. Type your service tools user ID and service tools password on the System Service Tools (SST) Sign On display and press Enter.

**Note:** The service tools password is case-sensitive.

5. Select **Start a service tool** from the System Service Tools (SST) display and press Enter.

6. Select **Hardware service manager** from the Start a Service Tool display and press Enter.

7. Select **Logical hardware resources (buses, IOPs, controllers)** from the Hardware Service Manager display and press Enter. This option allows you to display and work with logical resources. Logical hardware resources are the functional resources of the system used by the operating system.

With the Logical Hardware Resources display, you can show logical hardware resource status or information, and associated packaging hardware resources. Use the online Help information to better understand specific functions, fields, or symbols.

## Verifying an installed part in a Linux system or logical partition

Learn how to verify that the system recognizes a new or replacement part.

To verify the newly installed or replaced part, continue with "Verifying an installed part by using stand-alone diagnostics."

## Verifying an installed part by using stand-alone diagnostics

If you have installed or replaced a part, verify that the system recognizes the new part. You can use stand-alone diagnostics to verify an installed part in an AIX or Linux system, expansion unit, or logical partition.

- If this server is directly attached to another server or attached to a network, ensure communications with the other servers have stopped.
- The stand-alone diagnostics require use of all of the logical partition resources. No other activity can be running on the logical partition.
- The stand-alone diagnostics require access to the system console.

You access these diagnostics from a CD-ROM or from the Network Installation Management (NIM) server. This procedure describes how to use the diagnostics from a CD-ROM. For information on running diagnostics from the NIM server, see Running stand-alone diagnostics from a Network Installation Management server.

To use stand-alone diagnostics, follow these steps:

1. Stop all jobs and applications and then stop the operating system on the system or logical partition.
2. Remove all tapes, diskettes, and CD-ROM.
3. Turn off the system unit power. The next step boots the server or logical partition from the stand-alone diagnostics CD-ROM. If the optical drive is not available as a boot device on the server or logical partition on which you are working, follow these steps:
   a. Access the ASMI. For information on using the ASMI, see Managing the Advanced System Management Interface.
   b. On the ASMI main menu, click **Power/Restart Control**.
   c. Click **Power On/Off System**.
   d. Select the **Service mode boot from default boot list** option in the AIX or Linux logical partition mode boot drop-down menu.
   e. Click **Save settings and power on**. When the optical drive is powered on, insert the stand-alone diagnostic CD-ROM.
   f. Go to step 5.
4. Turn on the system unit power and immediately insert the diagnostics CD-ROM into the optical drive.
5. After the **keyboard** POST indicator displays on the system console and before the last POST indicator (**speaker**) displays, press the numeric 5 key on the system console to indicate that a service mode boot must be initiated by using the default-service mode boot list.
6. Enter any requested password.
7. At the **Diagnostic Operating Instructions** display, press Enter.

**Tip:** If a service request number (SRN) or other reference code is displayed, suspect a loose adapter or cable connection.

**Note:** If you received an SRN or any other reference code when you attempted to start the system, contact your service provider for assistance.

8.  If the terminal type is requested, select the **Initialize Terminal** option on the Function Selection menu to initialize the operating system.

9.  From the Function Selection menu, select **Advanced Diagnostics Routines** and press Enter.

10.  From the Diagnostic Mode Selection menu, select **System Verification** and press Enter.

11.  When the Advanced Diagnostic Selection menu appears, select **All Resources**, or test only the part you replaced, and any devices that are attached to the part you replaced, by selecting the diagnostics for the individual part and press Enter.

12.  Did the `Testing Complete, No trouble was found` message appear?
    *   **No:** There is still a problem. Contact your service provider.
    *   **Yes:** Go to step 13.

13.  If you changed the service processor or network settings, as instructed in previous procedures, restore the settings to the value they had prior to servicing the system.

14.  If the indicator lights are still on, follow these steps:
    a.  Select **Identify and Attention Indicators** from the Task Selection menu to turn off the system attention and indicator lights and press Enter.
    b.  Select **Set System Attention Indicator to NORMAL** and press Enter.
    c.  Select **Set All Identify Indicators to NORMAL** and press Enter.
    d.  Choose **Commit**.

        **Note:** This changes the system attention and identify indicators from the *Fault* state to the *Normal* state.
    e.  Exit to the command line.

## Verifying an installed part or replaced part on a system or logical partition by using Virtual I/O Server tools

If you installed or replaced a part, you might want to use the tools in Virtual I/O Server (VIOS) to verify that the part is recognized by the system or logical partition.

**Verifying an installed part by using VIOS:**

You can verify the operation of an installed part by using the VIOS.

To verify an installed part, complete the following steps:

1.  Log in as root user.

2.  At the command line, type `diagmenu` and press Enter.

3.  Select **Advanced Diagnostics Routines** and press Enter.

4.  From the **Diagnostic Mode Selection** menu, select **System Verification** and press Enter.

5.  When the **Advanced Diagnostic Selection** menu appears, do one of the following steps:
    *   To test a single resource, select the resource that you just installed from the list of resources and press Enter.
    *   To test all the resources available to the operating system, select **All Resources** and press Enter.

6.  Select **Commit**, and wait until the diagnostic programs run to completion, responding to any prompts that appear.

7.  Did the diagnostics run to completion and display the message `No trouble was found`?

- **No:** If a service request number (SRN) or other reference code is displayed, suspect a loose adapter or cable connection. Review the installation procedures to ensure that the new part is installed correctly. If you cannot correct the problem, collect all SRNs or any other reference code information that you see. If the system is running in LPAR mode, note the logical partition in which you installed the part. Contact your service provider for assistance.
- **Yes:** The new device is installed correctly. Exit the diagnostic programs and return the system to normal operations.

**Verify the replacement part by using VIOS:**

You can verify the operation of a replacement part by using the VIOS.

To verify the operation of a replacement part, complete the following steps:
1. Did you replace the part by using either VIOS or the online diagnostics service aid's concurrent (hot-swap) service operation?
   - **No:** Go to step 2.
   - **Yes:** Go to step 5.
2. Is the system powered off?
   - **No:** Go to step 4.
   - **Yes:** Go to step 3.
3. Start the system and wait until the VIOS operating system login prompt displays or until apparent system activity on the operator panel or display has stopped. Did the VIOS login prompt display?
   - **No:** If an SRN or other reference code is displayed, suspect a loose adapter or cable connection. Review the procedures for the part that you replaced to ensure that the new part is installed correctly. If you cannot correct the problem, collect all SRNs or any other reference code information that you see. If the system does not start or you have no login prompt, see Problems with loading and starting the operating system.

     If the system is partitioned, note the logical partition in which you replaced the part. Contact your service provider for assistance.
   - **Yes:** Go to step 4.
4. At the command prompt, type `diag -a` and press Enter to check for missing resources. If you see a command prompt, go to step 5.

   If the **Diagnostic selection** menu is shown with **M** appearing next to any resource, follow these steps:
   a. Select the resource and press Enter.
   b. Select **Commit**.
   c. Follow any instructions that are shown.
   d. If a *Do you want to review the previously displayed error?* message is shown, select **Yes** and press Enter.
   e. If an SRN is shown, suspect a loose card or connection. If no obvious problem is shown, record the SRN and contact your service provider for assistance.
   f. If no SRN is shown, go to 5.
5. Test the part by doing the following:
   a. At the command line, type `diagmenu` and press Enter.
   b. From the **Function Selection** menu, select **Advanced Diagnostics Routines** and press Enter.
   c. From the **Diagnostic Mode Selection** menu, select **System Verification** and press Enter.
   d. Select **All Resources**, or select the diagnostics for the individual part to test only the part you replaced, and any devices that are attached to the part you replaced and press Enter.

      Did the **Resource Repair Action** menu appear?
   - **No:** Go to step 6 on page 59.

- **Yes:** Go to step 7.
6. Did the *Testing Complete, No trouble was found* message appear?
   - **No:** There is still a problem. Contact your service provider. **This ends the procedure.**
   - **Yes:** Select **Log Repair Action**, if not previously logged, from the **Task Selection** menu to update the error log. If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your action is not displayed on the Resource List, select **sysplanar0** and press Enter.

     **Tip:** This action changes the indicator light for the part from the fault state to the normal state. Go to step 9.
7. Select the resource for the replaced part from the **Resource Repair Action** menu. When a test is run on a resource in system verification mode, and that resource has an entry in the error log, if the test on the resource was successful, the **Resource Repair Action** menu appears. Complete the following steps to update the error log to indicate that a system-detectable part has been replaced. On systems with a indicator light for the failing part, this changes the indicator light to the normal state.
   a. Select the resource that has been replaced from the **Resource Repair Action** menu. If the repair action was reseating a cable or adapter, select the resource associated with that repair action. If the resource associated with your action does not appear on the Resource List, select **sysplanar0**. Press Enter.
   b. Select **Commit** after you make your selections. Did another **Resource Repair Action** display appear?
   - **No:** If the **No Trouble Found** display appears, go to step 9.
   - **Yes:** Go to step 8.
8. Select the parent or child of the resource for the replaced part from the **Resource Repair Action** menu if necessary. When a test is run on a resource in system verification mode, and that resource has an entry in the error log, if the test on the resource was successful, the **Resource Repair Action** menu appears. Complete the following steps to update the error log to indicate that a system-detectable part has been replaced. This changes the indicator light for the part from the fault state to the normal state.
   a. From the **Resource Repair Action** menu, select the parent or child of the resource that has been replaced. If the repair action was to reseat a cable or adapter, select the resource associated with that repair action. If the resource associated with your action does not appear on the Resource List, select **sysplanar0**. Press Enter.
   b. Select **Commit** after you make your selections.
   a. If the **No Trouble Found** display appears, go to step 9.
9. If you changed the service processor or network settings, as instructed in previous procedures, restore the settings to the values they had prior to servicing the system.
10. Did you do any hot-plug procedures before doing this procedure?
    - **No:** Go to step 11.
    - **Yes:** Go to step 12.
11. Start the operating system, with the system or logical partition in normal mode. Were you able to start the operating system?
    - **No:** Contact your service provider. **This ends the procedure.**
    - **Yes:** Go to step 12.
12. Are the indicator lights still on?
    - **No:** This ends the procedure.
    - **Yes.** Turn off the lights. For instructions, see Changing service indicators.

# Verifying the installed part by using the HMC

If you have installed or replaced a part, use the Hardware Management Console (HMC) to update your HMC records after you have completed a service action on your server. If you have reference codes, symptoms, or location codes that you used during the service action, locate the records for use during this procedure.

To verify the installed part, complete the following steps:

1. At the HMC, examine the service action event log for any open service action events. See "Viewing serviceable events by using the HMC" for details.
2. Are there any service action events that are open?

   **No**: If the system attention LED is still on, use the HMC to turn off the LED. See "Deactivating LEDs by using the HMC" on page 64. **This ends the procedure.**

   **Yes**: Continue with the next step.
3. Record the list of open service action events.
4. Examine the details of the open service action event. Is the error code associated with this service action event the same as you gathered earlier.

   - **No**: Select one of the following options:
     - Review the other serviceable events, find one that does match, and continue with the next step.
     - If the log does not match what you had gathered earlier, contact your service provider.
   - **Yes**: Continue with the next step.
5. Select and highlight the service action event from the Error Associated With This Serviceable Event window.
6. Click **Close Event**.
7. Add comments for the serviceable event. Include any unique additional information. Click **OK**.
8. Did you replace, add, or modify a field replaceable unit (FRU) of the open service action event?

   - **No**: Select the **No FRU Replaced for this Serviceable Event** option, and click **OK** to close the service action event.
   - **Yes**: Perform the following steps:
     a. From the FRU list, select a FRU that you need to update.
     b. Double-click the FRU and update the FRU information.
     c. Click **OK** to close the service action event.
9. If you continue to have problems, contact your service provider.

## Viewing serviceable events by using the HMC

Use this procedure to view a serviceable event, including details, comments, and service history by using the Hardware Management Console (HMC).

To view serviceable events and other information about the events, you must be a member of one of the following roles:

- Super administrator
- Service representative
- Operator
- Product engineer
- Viewer

To view serviceable events, follow these steps:

1. Choose one of the following navigation options depending on the interface type of the HMC:
   - If you are using the HMC Classic or HMC Enhanced interface, in the navigation pane, select **Service Management** . Then, select **Manage Serviceable Events**.

- If you are using an HMC Enhanced + Tech Preview (Pre-GA) interface, in the navigation area, click

  the **Serviceability** icon , and then select **Serviceable Events Manager**.

2. Select the criteria for the serviceable events that you want to view, and click **OK**. The Serviceable Event Overview window opens. The list shows all serviceable events that match your selection criteria. You can use the menu options to complete actions on the serviceable events.

3. Select a line in the Serviceable Event Overview window, and select **Selected** > **View Details**. The Serviceable Event Details window opens, showing detailed information about the serviceable event. The upper table shows information, such as problem number and reference code. The lower table shows the field replaceable units (FRUs) associated with this event.

4. Select the error for which you want to view comments and history, and follow these steps:

   a. Select **Actions** > **View Comments**.

   b. When you are finished viewing the comments, click **Close**.

   c. Select **Actions** > **View Service History**. The Service History window opens, showing service history that is associated with the selected error.

   d. When you are finished viewing the service history, click **Close**.

5. When you are finished, click **Cancel** twice to close the Serviceable Event Details window and the Serviceable Event Overview window.

# Deactivating an identify LED

Learn how to deactivate an identifying LED for a part or enclosure.

# Deactivating a system attention LED with the operating system or VIOS tools

You can use the AIX, IBM i, or Linux operating system, or the Virtual I/O Server (VIOS) tools to deactivate a system attention LED.

## Deactivating the indicator light for a part by using AIX diagnostics

Use this procedure to turn off any indicator light that you turned on as a part of a service action.

To deactivate the indicator light, complete the following steps:

1. Log in as root user.

2. At the command line, type `diag` and press Enter.

3. From the **Function Selection** menu, select **Task Selection** and press Enter.

4. From the **Task Selection** menu, select **Identify and Attention Indicators** and press Enter.

5. From the list of lights, select the location code for the part and press Enter. When a light is activated for a part, an I character precedes the location code.

6. Select **Commit**.

7. Exit to the command line.

## Deactivating the indicator light using the IBM i operating system

Use this procedure to turn off any indicator light that you turned on as a part of a service action.

To deactivate the indicator light, follow these steps:

1. Sign on to an IBM i session, **with at least service level authority**.

2. On the command line of the session, type `strsst` and press Enter.

**Note:** If you cannot get to the System Service Tools display, use function 21 from the control panel. Alternatively, if the system is managed by a Hardware Management Console (HMC), use the Service Focal Point utilities to get to the Dedicated Service Tools (DST) display.

3. Type your service tools user ID and service tools password on the System Service Tools (SST) Sign On display and press Enter.

   **Remember:** The service tools password is case-sensitive.
4. Select **Start a service tool** from the System Service Tools (SST) display and press Enter.
5. Select **Hardware service manager** from the Start a Service Tool display and press Enter.
6. Select **Work with service action log** from the Hardware Service Manager display and press Enter.
7. On the Select Timeframe display, change the **From: Date and Time** field to a date and time prior to when the problem occurred.
8. Search for an entry that matches one or more conditions of the problem:
   - System reference code
   - Resource
   - Date and time
   - Failing item list
9. Select option **2** (Display failing item information) to display the service action log entry.
10. Select option **2** (Display details) to display location information for the failing part to be replaced. The information displayed in the date and time fields is the date and time for the first occurrence of the specific system reference code for the resource displayed during the time range selected.
11. Select option **7** (Indicator off) to turn off the indicator light.
12. Select the **Acknowledge all errors** function at the bottom of the Service Action Log display, if all problems have been resolved.
13. Close the log entry by selecting option **8** (Close new entry) on the Service Action Log Report display.

## Deactivating the indicator light for the Linux operating system

After you complete a removal and replacement procedure, you can deactivate the indicator light.

To deactivate the indicator light, complete the following steps:

1. Log in as root user.
2. At the command line, type `/usr/sbin/usysident -s normal -l` *location_code* and press Enter.

**Related information**:

➡ Service and productivity tools for Linux on Power servers
IBM provides hardware diagnostic aids and productivity tools, and installation aids for Linux operating systems on IBM Power Systems servers.

## Deactivating the indicator light for a part by using the VIOS tools

Use this procedure to turn off any indicator light that you turned on as a part of a service action.

To deactivate the indicator light, complete the following steps:

1. Log in as root user.
2. At the command line, type `diagmenu` and press Enter.
3. From the **Function Selection** menu, select **Task Selection** and press Enter.
4. From the **Task Selection** menu, select **Identify and Attention Indicators** and press Enter.
5. From the list of lights, select the location code for the part and press Enter. When a light is activated for a part, an I character precedes the location code.
6. Select **Commit**.
7. Exit to the command line.

# Deactivating a system attention LED with the ASMI

You can use the Advanced System Management Interface (ASMI) to deactivate a system attention LED.

## Deactivating the identify LED by using the ASMI when you know the location code

Learn how to deactivate the identify LED by using the Advanced System Management Interface (ASMI) when you know the location code.

You can specify the location code of any indicator to view or modify its current state. If you provide the wrong location code, the ASMI attempts to go to the next higher level of the location code.

The next level is the base-level location code for that field replaceable unit (FRU). For example, a user types the location code for the FRU located on the second memory module slot of the third enclosure in the system. If the location code for the second memory module slot is incorrect (the FRU does not exist at this location), an attempt to set the indicator for the third enclosure is initiated. This process continues until a FRU is located or no other level is available.

To complete this operation, your authority level must be one of the following levels:
* Administrator
* Authorized service provider

To change the current state of an indicator, complete the following steps:
1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** > **Service Indicators** > **Indicators by Location code**.
3. In the right pane, enter the location code of the FRU and click **Continue**.
4. Select the preferred state from the list.
5. Click **Save settings**.

## Deactivating the identify LED by using the ASMI when you do not know the location code

Learn how to deactivate the identify LED by using the Advanced System Management Interface (ASMI) when you do not know the location code.

You can turn off the identify indicators in each enclosure.

To complete this operation, your authority level must be one of the following levels:
* Administrator
* Authorized service provider

To disable the enclosure indicator states, complete the following steps:
1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** > **Service Indicators** > **Enclosure Indicators**. All servers and enclosures managed by the ASMI will display.
3. Select the server or enclosure with the part that needs to be replaced and click **Continue**. The location code identifiers are listed.
4. Select the location code identifier and select **ON/OFF**
5. To save the changes made to the state of one or more FRU indicators, click **Save settings**.

## Deactivating a check log indicator (system information indicator) by using the ASMI

You can deactivate a check log indicator (system information indicator) or logical partition check log indicator by using the ASMI.

The check log indicator provides a visual signal that the system as a whole requires attention or service. Each system has a single check log indicator. When an event occurs that either needs your intervention or that of service and support, the check log indicator lights continuously. The check log indicator is turned on when an entry is made in the service processor error log. The error entry is transmitted to the system error log and to the operating system error log.

To complete this operation, your authority level must be one of the following levels:
- Administrator
- Authorized service provider

To turn off the check log indicator, do the following steps:
1. In the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** > **Service Indicators** > **System Information Indicator**.
3. In the right pane, click **Turn off system information indicator**. If the attempt is unsuccessful, an error message is displayed.

# Deactivating LEDs by using the HMC

Use this procedure to deactivate LEDs by using the Hardware Management Console (HMC).

## Deactivating a system attention LED or partition LED by using the HMC

Use this procedure to deactivate a system attention LED or partition LED by using the Hardware Management Console (HMC).

To deactivate an LED by using the HMC, complete the following steps:

Choose one of the following navigation options depending on the interface type of the HMC:
- If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
  1. In the navigation area, select **Systems Management** > **Servers**.
  2. In the content area, check the box for the appropriate system.
  3. From the **Tasks** menu, select **Operations** > **LED Status**.
  4. Select **Identify LED**. The Identify LED window opens. The selected system and its LED state are displayed in the upper part of the window. The logical partition and its LED state are displayed in the lower part of the window. From the Identify LED window, you can deactivate both the system attention LED and the logical partition LED.
  5. Select **Deactivate Attention LED**. A confirmation window is displayed that provides the following information:
     - A verification that the system attention LED was deactivated.
     - An indication that there still might be open problems within the system.
     - An indication that you cannot deactivate the system attention LED.
  6. Select one of the logical partitions in the lower table, and select **Deactivate partition LED**. A confirmation window is displayed that provides the following information:
     - A verification that the logical partition attention LED was deactivated.
     - An indication that there still might be open problems within the logical partition.
     - An indication that you cannot deactivate the logical partition attention LED.
- If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps:

  

  1. In the navigation area, click the **Resources** icon  , and then select **All Systems**.

2. Click the server name for which you want to deactivate the attention LED.

3. In the navigation area, select **System Actions** > **Attention LED**.

4. Select **Identify LED**. The Identify LED window opens. The selected system and its LED state are displayed in the upper part of the window. The logical partition and its LED state are displayed in the lower part of the window. From the Identify LED window, you can deactivate both the system attention LED and the logical partition LED.

5. Select **Turn Attention LED Off**. A confirmation window that provides the following information is displayed.
   – A verification that the system attention LED was deactivated.
   – An indication that there still might be open problems within the system.
   – An indication that you cannot deactivate the system attention LED.

6. Select one of the logical partitions in the lower table, and select **Turn Attention LED Off**. A confirmation window that provides the following information is displayed:
   – A verification that the logical partition LED was deactivated.
   – An indication that there still might be open problems within the logical partition.
   – An indication that you cannot deactivate the logical partition LED.

## Deactivating an identify LED for a FRU by using the HMC

Learn how to deactivate an identify LED by using the Hardware Management Console (HMC).

To deactivate an identify LED for a FRU by using the HMC, complete the following steps:

1. Choose one of the following navigation options depending on the interface type of the HMC:
   • If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, select **Systems Management** > **Servers**.
     b. In the content area, check the box for the appropriate system.
     c. Select **Tasks** > **Operations** > **LED Status** > **Identify LED**. The Identify LED, Select Enclosure window is displayed.
   • If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps.

     

     a. In the navigation area, click the **Resources** icon , and then select **All Systems**.
     b. To view the actions for that server, click the name of the required server.
     c. In the navigation area, select **System Actions** > **Attention LED** > **Identify Attention LED**. The Identify LED, Select Enclosure window is displayed.

2. To deactivate an identify LED for a FRU, select an enclosure from the table, and then select **Selected** > **List FRUs**.

3. Select one or more FRUs from the table, and click **Deactivate LED**. The associated LED is turned off.

## Deactivating an identify LED for an enclosure by using the HMC

Learn how to deactivate an identify LED by using the Hardware Management Console (HMC).

To deactivate an identify LED for an enclosure by using the HMC, complete the following steps:

1. Choose one of the following navigation options depending on the interface type of the HMC:
   • If you are using an HMC Classic or HMC Enhanced interface, complete the following steps:
     a. In the navigation area, select **Systems Management** **Servers**.
     b. In the content area, check the box for the appropriate system.
     c. Select **Tasks** > **Operations** > **LED Status** > **Identify LED**.

- If you are using an HMC Enhanced + Tech Preview (Pre-GA) or HMC Enhanced + interface, complete the following steps.

  a. In the navigation area, click the **Resources** icon  , and then select **All Systems**.

  b. To view the actions for that server, click the name of the required server.

  c. In the navigation area, select **System Actions** > **Attention LED** > **Identify Attention LED**.

2. To deactivate an identify LED for an enclosure, select an enclosure from the table, and click **Deactivate LED**. The associated LED is turned off.

**IBM** ®

Printed in USA