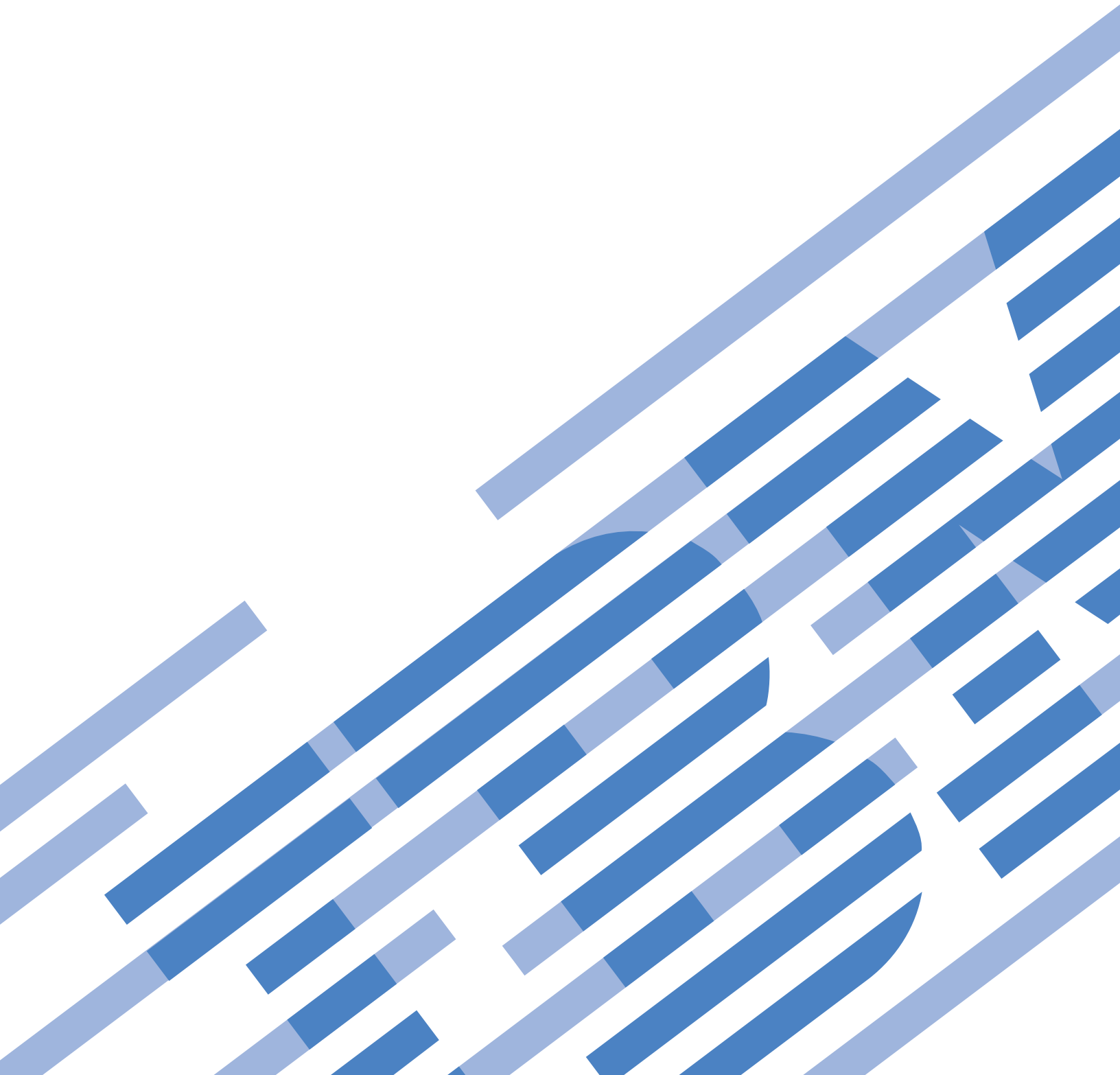IBM

Power Systems

Control panel, control panel fillers, and signal cables

IBM

Power Systems

Control panel, control panel fillers, and signal cables

> **Note**
>
> Before using this information and the product it supports, read the information in "Notices," on page 67, "Safety notices" on page v, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125–5823.

Contents

Safety notices

Safety notices may be printed throughout this guide:

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

World Trade safety information

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

German safety information

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

Laser safety information

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

Laser compliance

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

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

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

(C026)

CAUTION:
Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. (C027)

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

CAUTION:

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

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

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

The equipment is suitable for installation in the following:
- Network telecommunications facilities
- Locations where the NEC (National Electrical Code) applies

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

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

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

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

Control panel, control panel fillers, or signal cables

You can remove, install, or replace the control panel (operator panel), control panel fillers, or signal cable in the server.

Chapter 1. 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel

You can remove the control panel from the server.

Replacing this feature is a customer task. You can perform this task yourself, or contact a service provider to perform the task for you. You might be charged a fee by the service provider for this service.

To complete the removal and replacement of a signal cable, you must use the information for removing a disk-drive backplane in the Backplanes topic collection.

Related information

📄 Backplanes

Removing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel with the power off

You can remove the control panel on the server with the power off.

These procedures describe the removal of the control panel with the power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a control panel. For instructions, see Removing a part using the Hardware Management Console. If you do not have an HMC, complete this procedure to remove a control panel.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to remove the control panel from the server. For information about using the SDMC to remove a control panel, see Removing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to remove a control panel.

Note: You might have a 2.5 in. or a 3.5 in. disk drive. The procedures are the same for both. Any differences are noted.

To remove the control panel with the power off, complete the following procedure:
1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. Stop the system. See "Stopping a system or logical partition" on page 30.
3. Disconnect the power source from the system by unplugging the system.

   Note: This system can be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.
4. Remove the front cover.
   - For a rack-mounted system, see "Removing the front cover from a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 36.
   - For a stand-alone system, see "Removing the front cover from the stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 38.
5. **Attention:** Disconnect the control-panel signal cable **(B)** from the back of the control panel.
6. Unlock the control panel by pressing release button **(A)**, and then pull it out of the system as shown in the following figures. Remove the control panel by pressing the locking tabs **(C)** located on either side of the panel, grasping the edges of the panel, and pulling it out of its bay.
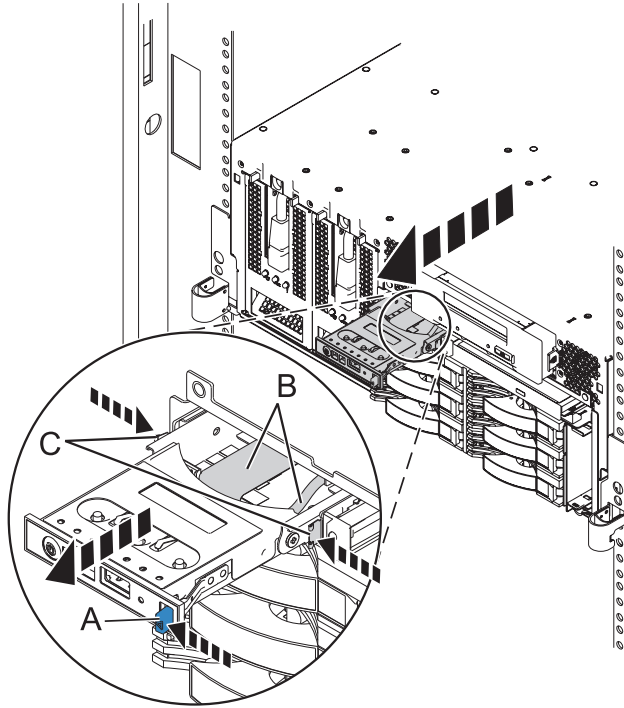
Figure 1. Removal of a control panel from a rack-mounted system
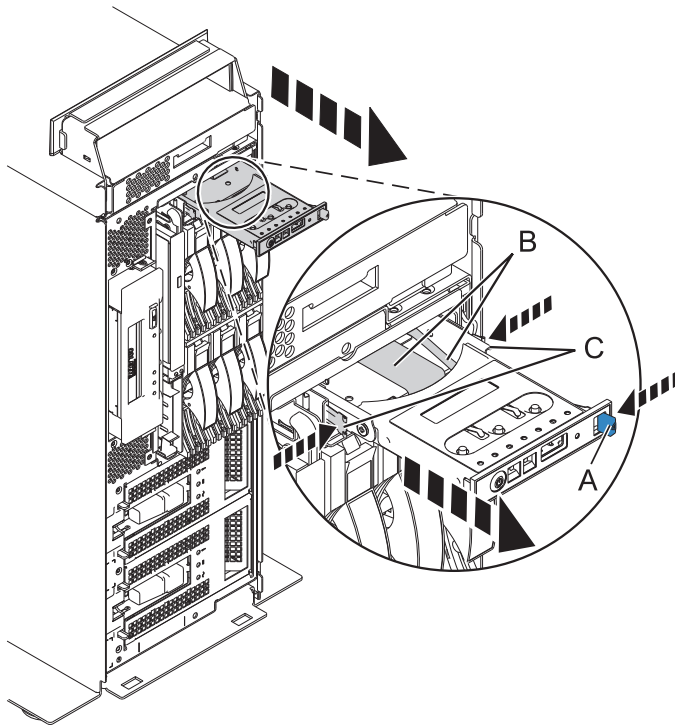
Figure 2. Removal of a control panel from a stand-alone system

7. If you are removing the control panel as part of another procedure, return to that procedure now.

Attention: A control panel or control panel filler must be in place when the system power is on for proper air flow and cooling. For instructions on removing or replacing a control panel filler, see "Removing and replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel fillers" on page 7.

8. Replace the control panel with power off. See "Replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel with the power off."

Related information

📄 Removing a part using the Hardware Management Console

Replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel with the power off

You can replace the control panel in the server.

These procedure describe the replacement of the control panel with the power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a control panel. For instructions, see Replacing a part by using the Hardware Management Console. If you do not have an HMC, complete this procedure to replace a control panel.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to replace the control panel in the server. For information about using the SDMC to replace a control panel, see Replacing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to replace a control panel.

Note: You might have a 2.5-inch or a 3.5-inch disk drive. The procedure are the same for both. Any differences are noted.

To replace the control panel with the power off, complete the following procedure:

1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. Remove the control panel with power off. See "Removing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel with the power off" on page 3.

   Attention: A control panel or control panel filler must be in place when the system power is on for proper air flow and cooling. For instructions on removing or replacing a control panel filler, see "Removing and replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel fillers" on page 7.
3. If necessary, remove the new control panel from its packaging. If there are control-panel overlays included with the new control panel, install the appropriate overlay on the control panel.

   Note: Remove the machine type label, with the serial number, from the front of the existing control panel and place the label on the new control panel.
4. Connect the control-panel signal cable **(A)** to the back of the control panel as shown in the following figures.
5. Carefully slide the control panel into the control panel bay until you feel the locking tabs lock in place.
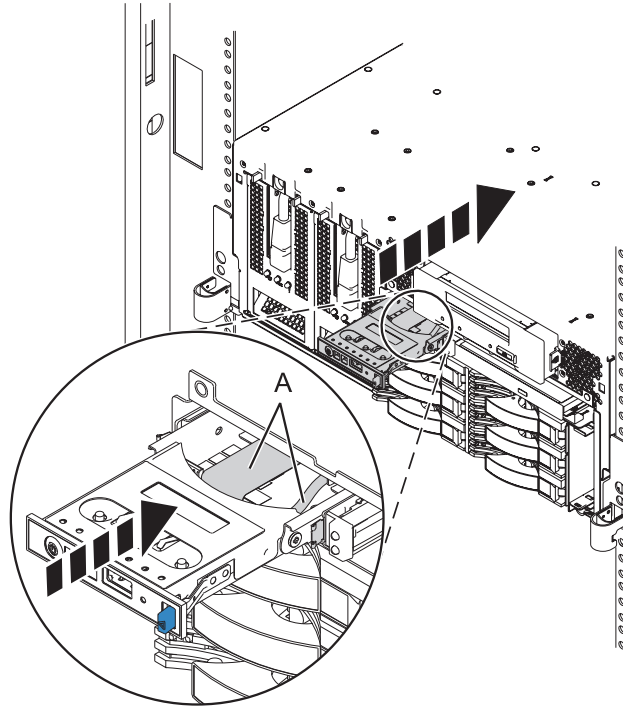
Figure 3. Replacement of a control panel in a rack-mounted system
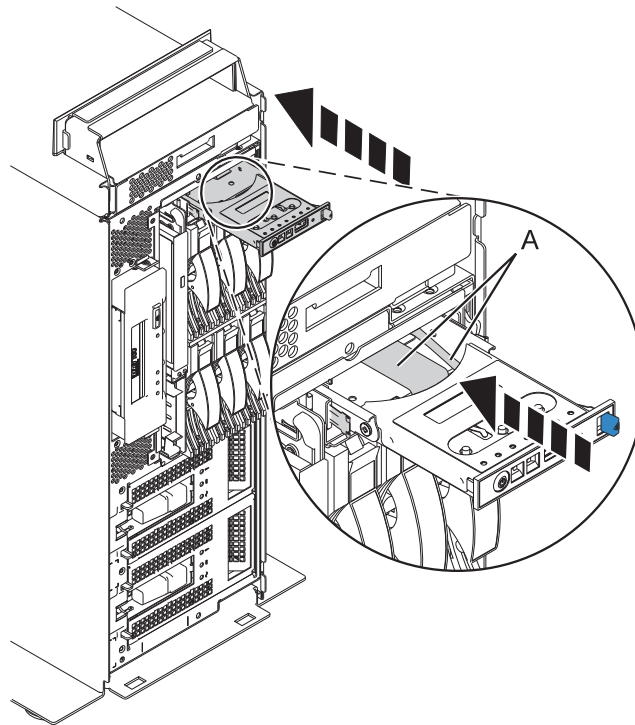
Figure 4. Replacement of a control panel in a stand-alone system

6. Replace the front cover.

- For a rack-mounted system, see "Installing the front cover on a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 37.
- For a stand-alone system, see "Installing the front cover on a stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 39.

7. If you replaced the control panel as part of another procedure, return to that procedure now. If you replaced it because it was not operational, verify that the new resource is functional. See "Hardware service manager Verify option" on page 52.

8. Start the system. See "Starting the system or logical partition" on page 27.

   Note: If there is a ball or dot that appears in the middle of the control panel, toggle between function 02 and function 01 until the graphic disappears.

Related information

Exchange a part using the Hardware Management Console

Removing and replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel fillers

You can remove or replace the control panel filler from the server.

Attention: If you do not replace the control panel immediately after removing it, a control panel filler must be in place for proper air flow and cooling when the system is powered on.

Removing the control panel filler

To remove the control panel filler, do the following steps:

1. Remove the front cover.
   - For a rack-mounted system, see "Removing the front cover from a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 36.
   - For a stand-alone system, see "Removing the front cover from the stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 38.
2. Locate the control panel filler.
3. Remove the control panel filler by pressing the locking tabs located on either side of the filler, grasping the edges of the panel, and pulling it out of its bay.

Replacing the control panel filler

To replace the control panel filler, do the following steps:

1. Carefully slide the control panel filler into the control panel bay until you feel the locking tabs lock in place.
2. Replace the front cover.
   - For a rack-mounted system, see "Installing the front cover on a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 37.
   - For a stand-alone system, see "Installing the front cover on a stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50" on page 39.

Removing and replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control-panel signal cable

You can replace the control-panel signal cable on the server.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a control-panel signal cable. For instructions, see Replacing a part by using the Hardware Management Console. If you do not have an HMC, complete this procedure to replace a control-panel signal cable.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to remove and replace the control-panel signal cable. For information about using the SDMC to remove and replace a control-panel signal cable, see Removing a part by using the Systems Director Management Console and Replacing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to replace a control-panel signal cable.

Note: You might have a 2.5-inch or a 3.5-inch disk drive. The procedures are the same for both. Any differences are noted.

To replace the control-panel signal cable, complete the following procedure:

1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. Remove the disk-drive backplane. See Removing the 8203-E4A, 8204-E8A, 8261-E4S, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 disk drive backplane
3. Remove the control panel with power off. See "Removing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel with the power off" on page 3.
4. Remove and replace a control-panel signal cable in either a 2.5-inch or 3.5-inch disk drive, as applicable to your system.
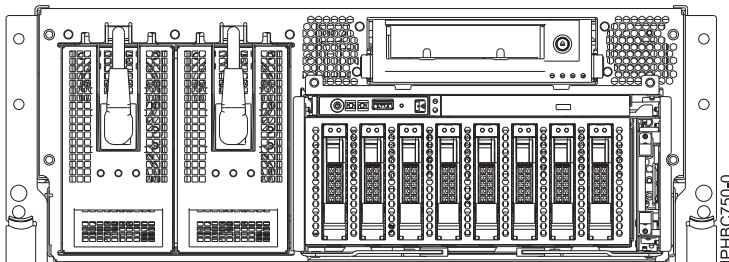
Figure 5. 2.5-inch disk drive

If your system has a 2.5-inch disk drive, go to **Removing and replacing a control-panel signal cable in a 2.5-inch disk drive**.
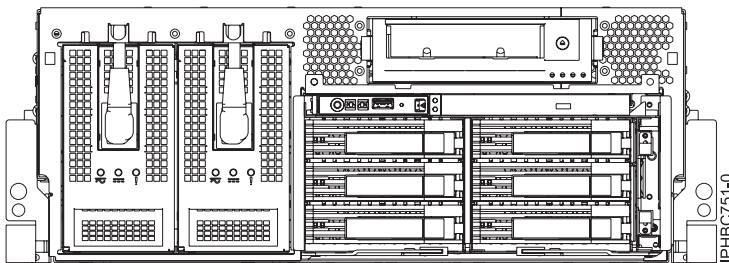
Figure 6. 3.5-inch disk drive

If your system has a 3.5-inch disk drive, go to **Removing and replacing a control-panel signal cable in a 3.5-inch disk drive**.

Removing and replacing a control-panel signal cable in a 2.5-inch disk drive

a. Remove the control-panel signal cable from the system by doing one of the following methods:

Important: When removing the cable, note where the connections are and how the cable is routed. You need this information to complete the replacement procedure.

1) In a rack-mounted system, disconnect the signal cable **(B)** from port **(A)** on the back of the backplane and lift the cable out of the system.
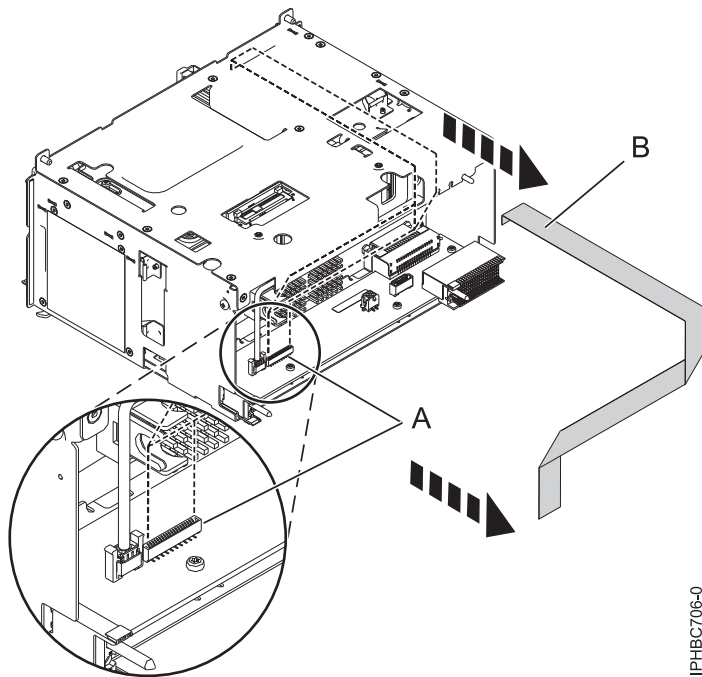
Figure 7. Removal of a signal cable in a rack-mounted system

2) In a stand-alone system, disconnect the signal cable **(B)** from port **(A)** on the back of the backplane and lift the cable out of the system.
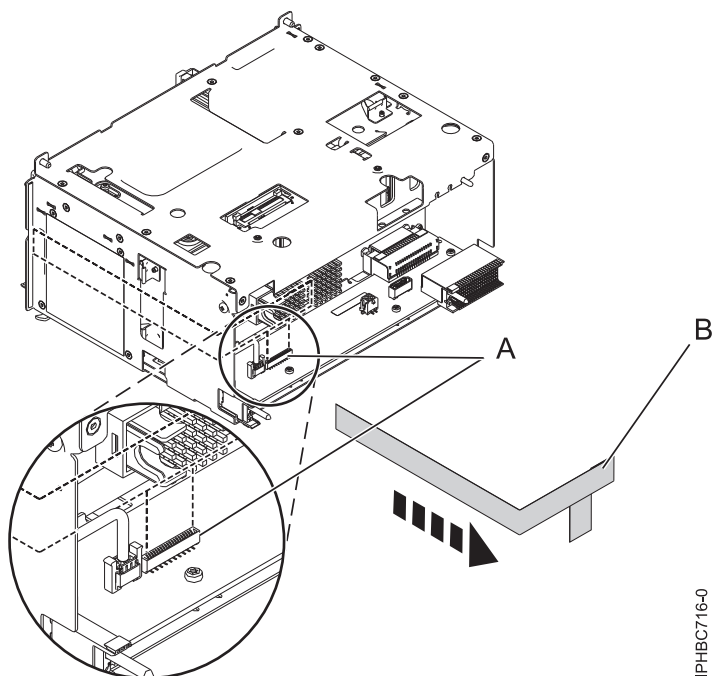
Figure 8. Removal of a signal cable in a stand-alone system

> **Note:** On either type of system it is important to note how the cable is folded. You might want to keep the cable nearby when completing the replacement so that you can compare this pattern to the replacement cable.

   b. Install the replacement control-panel signal cable into the system by doing one of the following methods:

   Rack-mounted signal cable installation

   1) Carefully fold the signal cable **(B)** to match the folds on the signal cable that was removed.

   2) Attach the signal cable to port **(A)** on the back of the backplane.
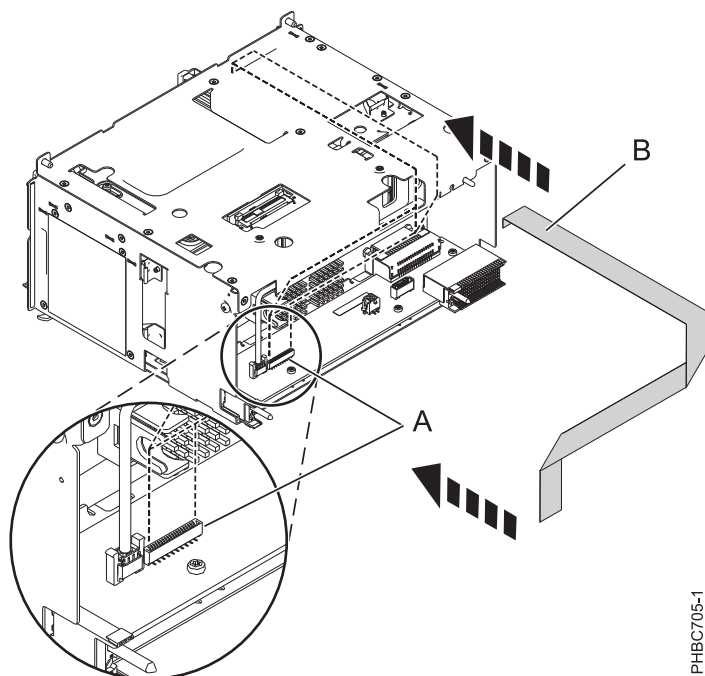
IPHBC705-1

Figure 9. Installation of a signal cable in a rack-mounted system

3) Route the signal cable to the front of the system, leaving extra cable length to the back of the system.

4) Carefully form an S-shaped loop with the signal cable and tuck the loop into the open area at the back of the system.

Desk-side signal cable installation

1) Carefully fold the signal cable **(B)** to match the folds on the signal cable that was removed.

2) Attach the signal cable to the port **(A)** on the back of the backplane.

3) Route the signal cable to the side of the system as shown.

4) Continue routing the signal cable to the front of the system, leaving extra cable length to the side of the system.

IPHBC715-1
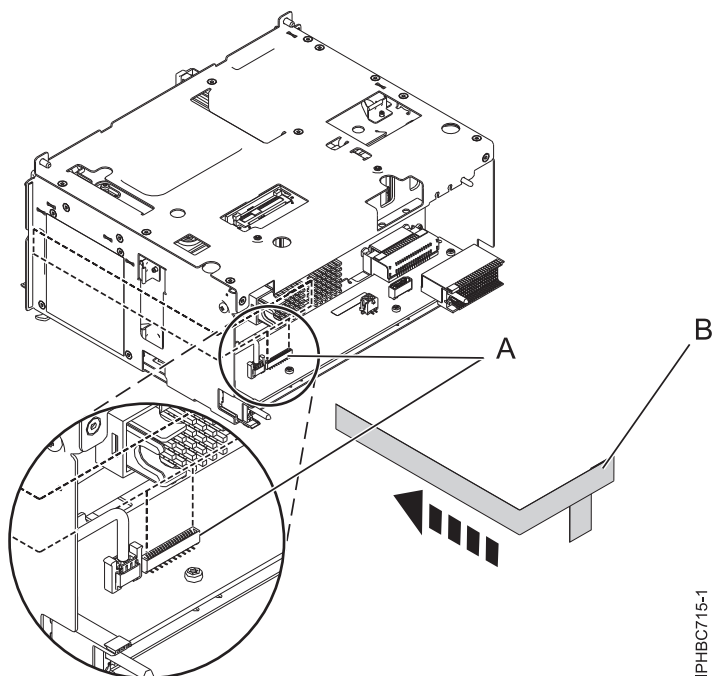
Figure 10. Installation of a signal cable in a stand-alone system

Removing and replacing a control-panel signal cable in a 3.5-inch disk drive

a. Remove the control-panel signal cable from the system by doing one of the following methods:

Important: When removing the cable, note where the connections are and how the cable is routed. You need this information to complete the replacement procedure.

1) In a rack-mounted system, disconnect the signal cable from the port **(A)** on the back of the backplane and lift the cable out of the system.

IPHBC700-0
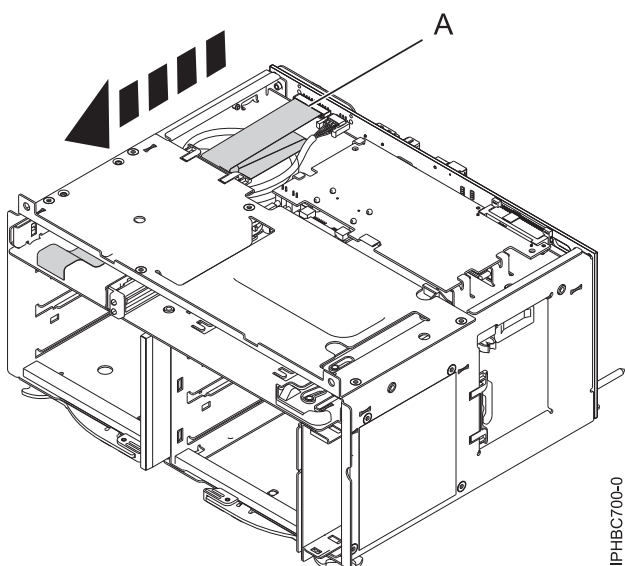
Figure 11. Removal of a signal cable in a rack-mounted system

2) In a desk-side system, remove the DVD interposer card **(C)** by gently pressing down on the light pipes **(D)** and the tab **(E)**. With thumbs and with both forefingers, pull the card forward

until the notches **(F)** line up with the side openings of the card. Pull the card all the way out.
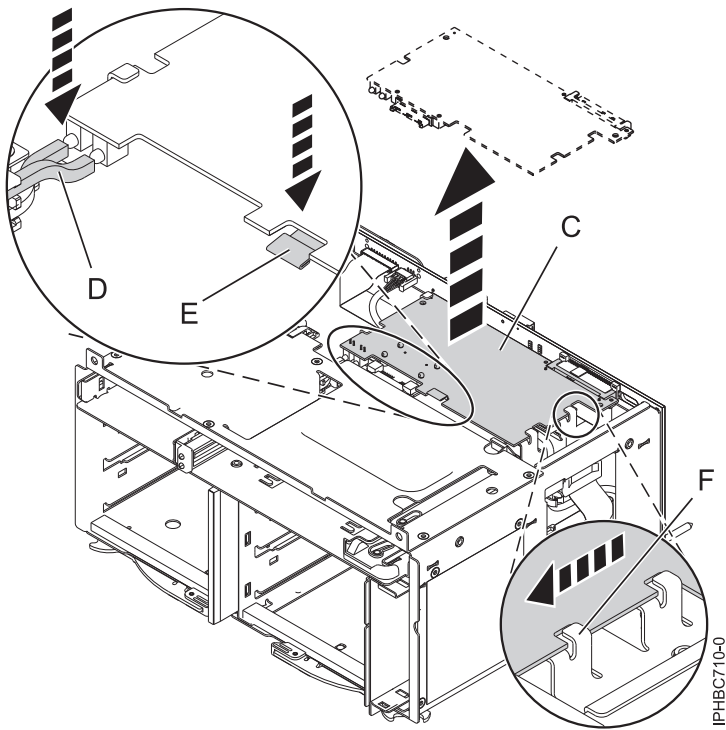
Figure 12. Removing the DVD interposer card

Disconnect the signal cable from the port **(A)** on the back of the backplane and lift the cable out of the system.

Note: On either type of system it is important to note how the cable is folded. You might want to keep the cable nearby when completing the replacement so that you can compare this pattern to the replacement cable.

b. Install the replacement control-panel signal cable into the system by using one of the following methods:

Rack-mounted signal cable installation

1) Carefully fold the signal cable **(B)** to match the folds on the signal cable that was removed.
2) Attach the signal cable to the port **(A)** on the back of the backplane.
3) Thread the signal cable through the clip **(G)**.
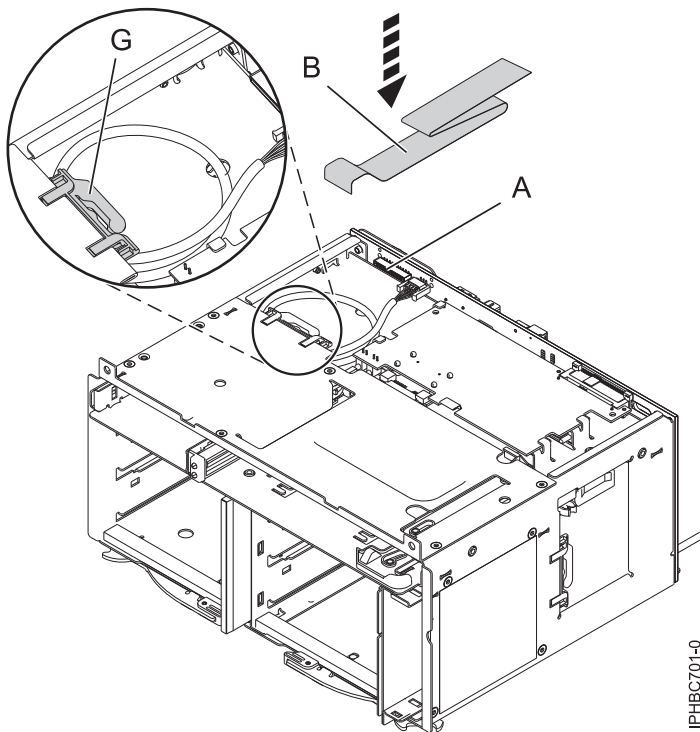
Figure 13. Installation of a signal cable in a rack-mounted system

4) Route the signal cable to the front of the system, leaving extra cable length to the back of the system.

5) Carefully form an S-shaped loop with the signal cable and tuck the loop into the open area at the back of the system.

Desk-side signal cable installation

1) Carefully fold the signal cable **(B)** to match the folds on the signal cable that was removed.

2) Attach the signal cable to the port **(A)** on the back of the backplane.

3) Route the signal cable to the side of the system as shown.

4) Thread the signal cable through the clamp **(H)** and the clip **(G)**.

5) Continue routing the signal cable to the front of the system, leaving extra cable length to the side of the system.
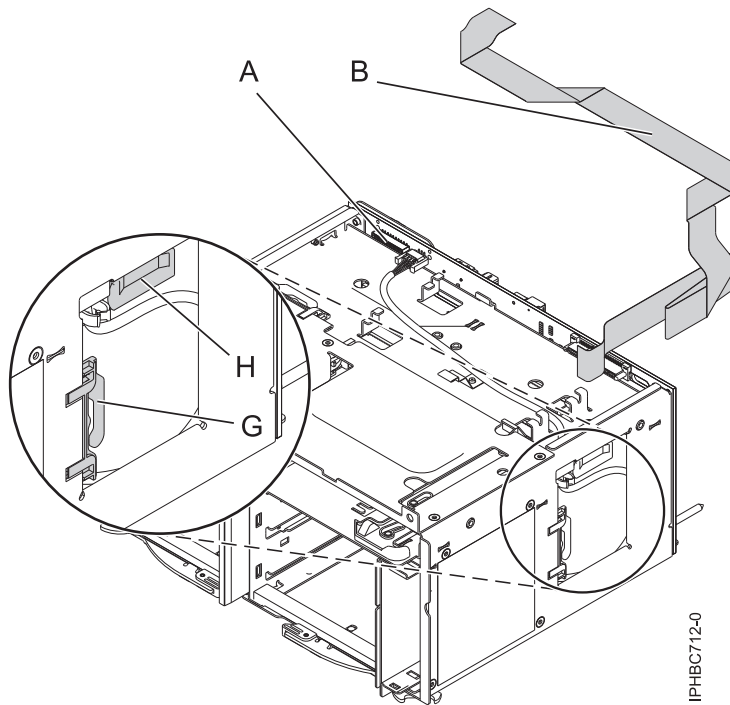
Figure 14. Installation of a signal cable in a stand-alone system

      6) Insert the DVD interposer card **(C)** by lining up the notches **(F)** with the side openings of the card and carefully press the card back and down until the tab **(E)** clicks in place.
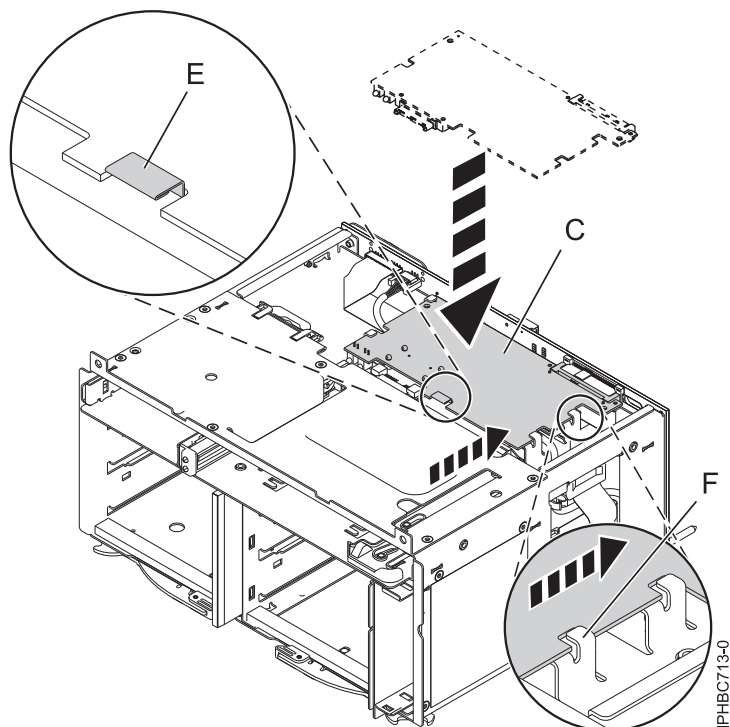
Figure 15. Installation of the DVD interposer card in the stand-alone system

5. Replace the control panel with power off. For instructions, see "Replacing the 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 control panel with the power off" on page 5.

Note: When installing a new signal cable you can replace the control panel while the disk-drive backplane is still outside the system. After you have replaced the control panel, replace the disk-drive backplane as instructed in the Backplanes topic collection.

Related information

 Exchange a part using the Hardware Management Console

 Backplanes

Chapter 2. 8234-EMA, 9117-MMA, or 9406-MMA control panel

You can install, remove, or replace the control panel in the server.

Related information

📄 Managing the Advanced System Management Interface

Removing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power on

You can remove the control panel from the server with the power on.

Be sure you read these instructions carefully and understand the complexity of the power-on Procedure before you begin.

Attention: Failure to follow these instructions could result in damage to the media device (tape drive, CD, or DVD), or to the system, and could result in loss of data.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a control panel. For instructions, see Removing a part using the Hardware Management Console. If you do not have an HMC, complete this procedure to remove a control panel.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to remove the control panel from the server. For information about using the SDMC to remove a control panel, see Removing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to remove a control panel.

Prerequisites

To remove a control panel with the system power on, you must first gain access to the Advanced System Management Interface (ASMI).

Remove the control panel

To remove the control panel with the system or logical partition powered on, follow these steps from the system or logical partition that controls the media device:

1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. Access the Advanced System Management Interface (ASMI).

   Attention: Do not reset the service processor, or remove and then reapply power to the system during this procedure.
3. In the navigation area of the ASMI, select **Concurrent maintenance** and then **Control panel**.
4. At the Preparing the control panel window, select **Remove** and click **Continue**.
5. Choose the control panel's location and click **Save Settings**. If the operation was successful, the window will display Operation completed successfully.
6. Remove the front cover from your system. See "Removing the front cover from the 8234-EMA, 9117-MMA, or 9406-MMA" on page 40.
7. Remove the control panel by pressing the locking tabs **(A)** located on either side of the panel, grasping the edges of the panel, and pulling it out of its bay as shown in the following figure.

Figure 16. Removing a control panel

8. Install or replace the control panel with power on. See "Installing or replacing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power on."

   Attention: If you are not immediately installing or replacing the control panel, a control panel filler must be in place when the system power is on for proper air flow and cooling. For instructions on installing a control panel filler, see "Removing and installing the 8234-EMA, 9117-MMA, or 9406-MMA control panel filler" on page 23.

Related information

📄 Removing a part using the Hardware Management Console

📄 Managing the Advanced System Management Interface

Installing or replacing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power on

You can install or replace the control panel on the server with the power on.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a control panel. For instructions, see Replacing a part by using the Hardware Management Console. If you do not have an HMC, complete this procedure to replace a control panel.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to replace the control panel in the server. For information about using the SDMC to replace a control panel, see Replacing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to replace a control panel.

Prerequisites

To replace a control panel with the system power on, you must first gain access to the Advanced System Management Interface (ASMI).

Install or replace the control panel

To install or replace the control panel with the power on, complete the following Procedure:

1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. If you have not already done so, remove the control panel with power on. See "Removing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power on" on page 17.

   Attention: If you are not immediately installing or replacing the control panel, a control panel filler must be in place when the system power is on for proper air flow and cooling. For instructions about installing a control panel filler, see "Removing and installing the 8234-EMA, 9117-MMA, or 9406-MMA control panel filler" on page 23.

3. If necessary, remove the new control panel from its packaging. If there are control-panel overlays included with the new control panel, install the appropriate overlay on the control panel.

   Note: Remove the machine type label, with the serial number, from the front of the existing control panel and place the label on the new control panel.

4. Carefully slide the control panel into the control panel bay until you feel the locking tabs **(A)** lock in place as shown.
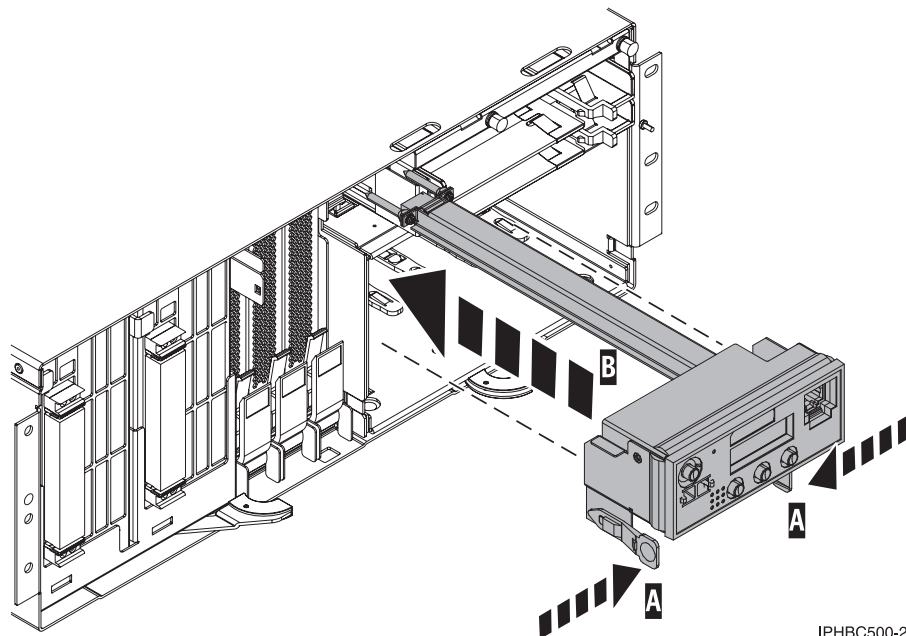
IPHBC500-2

Figure 17. Replacing a control panel

5. Access the Advanced System Management Interface (ASMI).
6. In the navigation area of the ASMI, select **Concurrent maintenance** → **Control panel**.
7. At the control panel window, select **Install** and click **Continue**.
8. Choose the control panel's location and click **Save Settings**. If the operation was successful, the window will display `Operation completed successfully`.

   Note: If a ball or dot is displayed in the middle of the control panel, toggle between function 02 and function 01 until the ball or dot disappears.

9. Install the front cover onto your system. See "Installing the front cover on the 8234-EMA, 9117-MMA, or 9406-MMA" on page 41.
10. Verify that the new resource is functional. See "Hardware service manager Verify option" on page 52.

Related information

Installing a feature using the Hardware Management Console

Managing the Advanced System Management Interface

Removing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power off

You can remove the control panel from the server with the power off. Use the Procedure in this section to perform this task.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a control panel. For instructions, see Removing a part using the Hardware Management Console. If you do not have an HMC, complete this procedure to remove a control panel.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to remove the control panel from the server. For information about using the SDMC to remove a control panel, see Removing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to remove a control panel.

To remove the control panel with the power off, complete the following steps:

1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. Stop the system. See "Stopping a system or logical partition" on page 30.
3. Disconnect the power source from the system by unplugging the system.

   Note: This system might be equipped with a second power supply. Before continuing with this Procedure, ensure that the power source to the system has been completely disconnected.
   (L003)
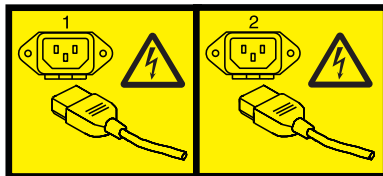
   or

4. Remove the front cover from your system. See "Removing the front cover from the 8234-EMA, 9117-MMA, or 9406-MMA" on page 40.

5. Remove the control panel by pressing the locking tabs **(A)** located on either side of the panel, grasping the edges of the panel, and pulling it out of its bay as shown in the following figure.
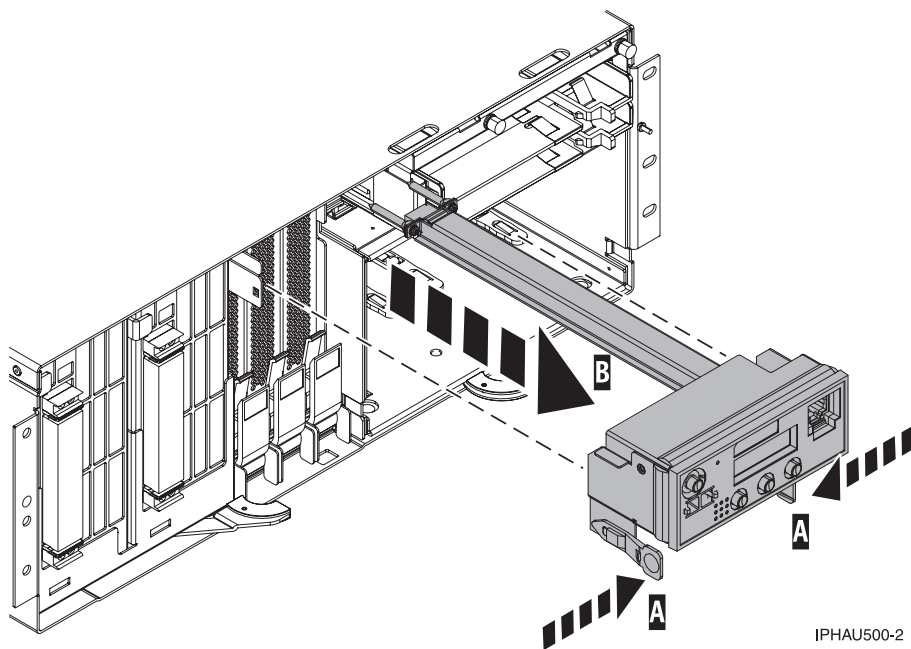
Figure 18. Removing a control panel

6. If you are removing the control panel as part of another Procedure, return to that Procedure now.

   Attention: If you are not immediately installing or replacing the control panel, a control panel filler must be in place when the system power is on for proper air flow and cooling. For instructions about installing a control panel filler, see "Removing and installing the 8234-EMA, 9117-MMA, or 9406-MMA control panel filler" on page 23.
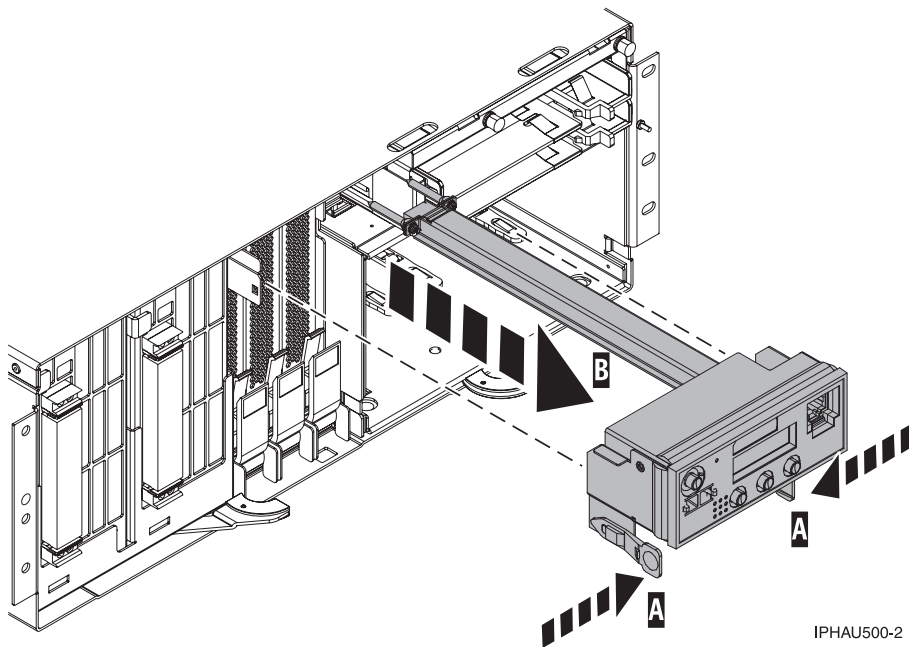
7. Install or replace the control panel with power off. See "Installing or replacing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power off" on page 22.

Related information

Removing a part using the Hardware Management Console

Installing or replacing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power off

You can install or replace the control panel on the server with the power off.

If your system is managed by the IBM Systems Director Management Console (SDMC), use the SDMC to replace the control panel in the server. For information about using the SDMC to replace a control panel, see Replacing a part by using the Systems Director Management Console. If you do not have an SDMC, complete this procedure to replace a control panel.

To install or replace the control panel with the power off, complete the following Procedure:

1. Perform the prerequisite tasks described in "Before you begin" on page 25.
2. Remove the control panel with power off. See "Removing the 8234-EMA, 9117-MMA, or 9406-MMA control panel with power off" on page 20.

   Attention: If you are not immediately installing or replacing the control panel, a control panel filler must be in place when the system power is on for proper air flow and cooling. For instructions about installing a control panel filler, see "Removing and installing the 8234-EMA, 9117-MMA, or 9406-MMA control panel filler" on page 23.
3. If necessary, remove the new control panel from its packaging. If there are control-panel overlays included with the new control panel, install the appropriate overlay on the control panel.

   Note: Remove the machine type label, with the serial number, from the front of the existing control panel and place the label on the new control panel for future reference.
4. Carefully slide the control panel into the control panel bay until you feel the locking tabs **(A)** lock in place as shown in the following figure.
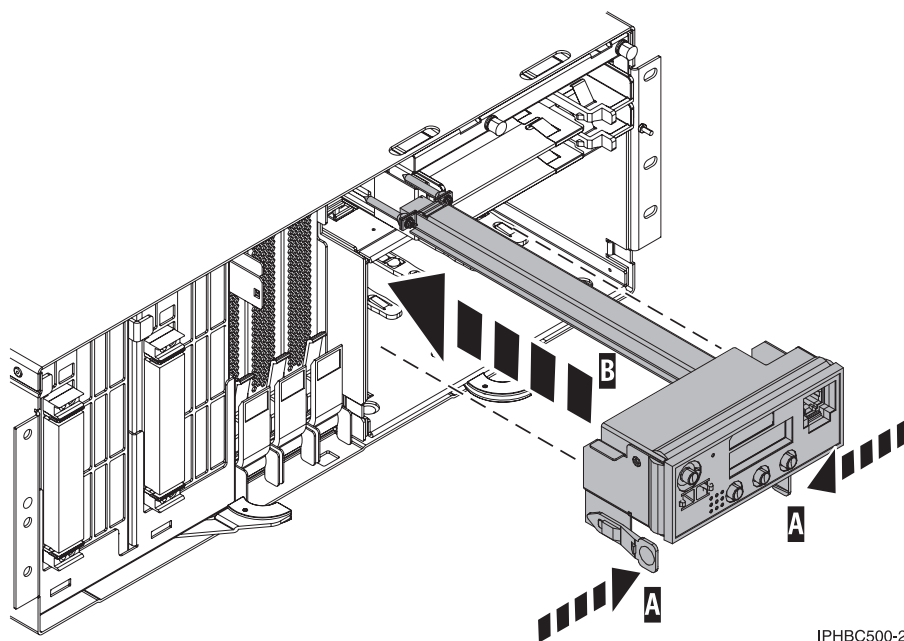
Figure 19. Replacing a control panel

5. Install the front cover onto your system. See "Installing the front cover on the 8234-EMA, 9117-MMA, or 9406-MMA" on page 41.
6. Verify that the new resource is functional. See "Hardware service manager Verify option" on page 52.
7. Start the system. See "Starting the system or logical partition" on page 27.

   Note: If a ball or dot is displayed in the middle of the control panel, toggle between function 02 and function 01 until the ball or dot disappears.

Removing and installing the 8234-EMA, 9117-MMA, or 9406-MMA control panel filler

You can install or remove the control panel filler from the server.

Attention: If you are not immediately installing or replacing the control panel, a control panel filler must be in place when the system power is on for proper air flow and cooling.

Note: You might have a 2.5-inch or a 3.5-inch disk drive. The Procedures are the same for both. Any differences are noted.

Removing the control panel filler

To remove the control panel filler, complete the following steps:
1. Remove the front cover from your system. See "Removing the front cover from the 8234-EMA, 9117-MMA, or 9406-MMA" on page 40.
2. Locate the control panel filler.
3. Remove the control panel filler by pressing the locking tabs located on either side of the filler, grasping the edges of the panel, and pulling it out of its bay.

Installing the control panel filler

To install the control panel filler, complete the following steps:
1. Carefully slide the control panel filler into the control panel bay until you feel the locking tabs lock in place.
2. Install the front cover onto your system. See "Installing the front cover on the 8234-EMA, 9117-MMA, or 9406-MMA" on page 41.

Chapter 3. Common procedures for installable features

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

Before you begin

Understand prerequisites for installing, removing, or replacing features and parts.

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.

   To do this, go to the following Web site: http://www-912.ibm.com/e_dir/eServerPrereq.nsf

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 Web site 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.

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 a Hardware Management Console

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

To start a system that is not managed by a Hardware Management Console (HMC), follow these steps:

1. On a rack-mounted system unit, open the front rack door, if necessary. On a stand-alone system unit, open the front door.

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-on light, as shown in the following figure, is slowly flashing.
   - The top of the display, as shown in the following figure, shows 01 V=F.

   Tip: The system attention light, as shown in the following figure, does not appear on the control panel on the model 9117-MMA.

3. Press the power button **(A)**, as shown in the following figure, on the control panel.
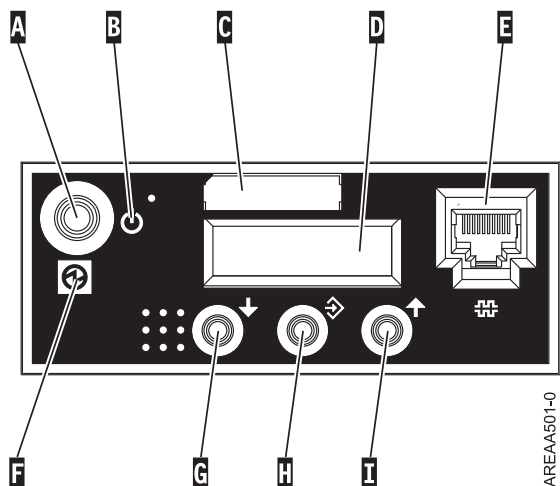
Figure 20. 570 control panel

- **A**: Power-on button
- **B**: On/off power symbol
- **C**: Serial number label
- **D**: Function/Data display
- **E**: System port (S1)
- **F**: Power LED
    - A flashing light indicates standby power to the unit.
    - A constant light indicates full system power to the unit.

    Note: 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, you might observe the flashing intervals speed up.

- **G**: Decrement button
- **H**: Enter button
- **I**: Increment button
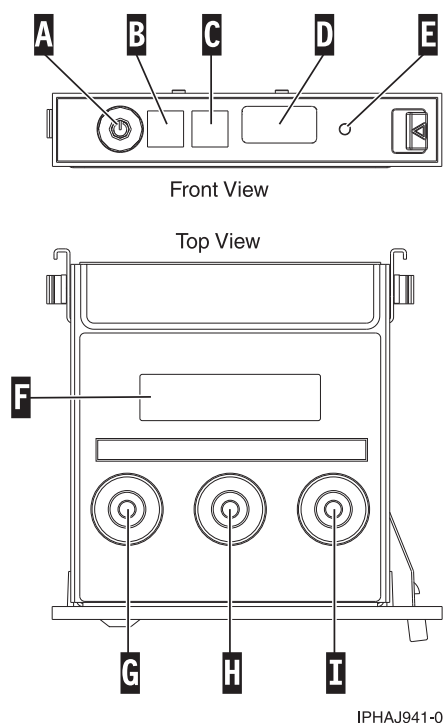
Figure 21. Control panel for the 8203-E4A, 8261-E4S, 8204-E8A, 9407-M15,9408-M25, and 9409-M50.

- **A**: Power-on button
- **B**: Power LED
  - A flashing light indicates standby power to the unit.
  - A constant light indicates full system power to the unit.

  Note: 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, you might observe the LED flashing faster.
- **C**: Attention light
- **D**: USB port
- **E**: Pinhole reset button
- **F**: Function/Data display
- **G**: Decrement button
- **H**: Enter button
- **I**: Increment button

4. Observe the following 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 system power is on.

Tip: If pressing the power button does not start the system, do the following steps to start the system using the Advanced System Management Interface (ASMI):

1. Set up access to the ASMI. For instructions, see Accessing the ASMI.

2. Start the system using the ASMI. For instructions, see Powering the system on and off.

Starting a system or logical partition using the Hardware Management Console

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

For instructions on working with the HMC, see Managing the Hardware Management Console. For instructions on starting a logical partition, see Logical partitioning. For instructions on starting the system, see Powering on the managed system.

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

Starting a system or virtual server with the Systems Director Management Console

You can use the IBM Systems Director Management Console (SDMC) user interface to start the system or virtual server after the required cables are installed and the power cables are connected to a power source.

For instructions on working with the SDMC, see Managing and configuring the SDMC. For instructions on starting a virtual server, see Managing virtual servers. For instructions on shutting down and restarting virtual servers, see Shutting down and restarting virtual servers.

Progress indicators, also known as checkpoints, display on the control panel while the system is being started. When the power-on light on the control panel stops flashing and remains on, the system power is on.

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 a Hardware Management Console

You might need to stop the system to perform another task. Use these instructions to stop the system using the power button or Advanced System Management Interface.

Before you stop the system, follow these steps:
1. If an Integrated xSeries® Adapter (IXA) is present on the system, shut it down using IBM i options.
2. Ensure that all jobs are completed and end all applications.
3. Ensure that the operating system is stopped.
   Attention: Failure to do so can result in the loss of data.
4. Record the IPL type and IPL mode from the control panel display to help you return the system to this state when the installation or replacement procedure is completed.

The following procedure describes how to stop a system that is not managed by a Hardware Management Console (HMC).

1. Log in to the system 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 blink, and the system goes into a standby state.
3. Set the power switches of any devices connected to the system to off.
4. Unplug any power cables that are attached to the unit from electrical outlets. Ensure that you unplug power cables from peripheral devices, such as printers and expansion units.

   Important: The system might be equipped with a second power supply. Before continuing with this procedure, ensure that all power sources to the system have been completely disconnected.

   (L003)
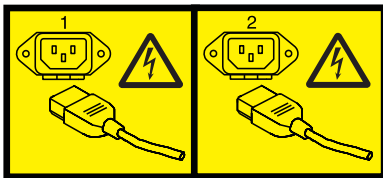
   or
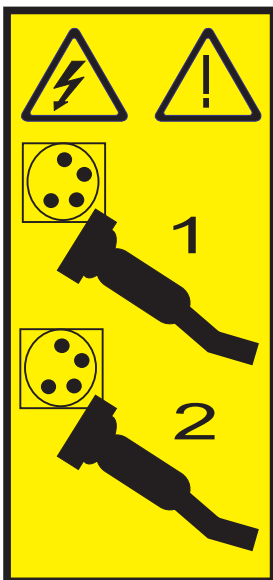
Stopping a system by using the Hardware Management Console

You can use the Hardware Management Console (HMC) user interface to stop the system or a logical partition. Use the following steps to accomplish this task.

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: If possible, shut down the running logical partitions on the managed system before powering 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 using an alternate 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
1. In the Navigation area, expand the **Systems Management** folder.
2. Click the **Servers** icon.
3. In the Contents area, select the managed system.
4. Select **Tasks**, then **Operations**, and then **Power Off**
5. Select the appropriate power-off mode and click **OK**.

Related information

➜ Shutting down and restarting logical partitions

Stopping a system with the Systems Director Management Console

You can use the IBM Systems Director Management Console (SDMC) user interface to stop the system or a virtual server. Use the following steps to accomplish this task.

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

Attention: If possible, shut down the running virtual servers on the managed system before powering off the managed system. Powering off the managed system without shutting down the virtual servers first causes the virtual servers 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 with an alternate 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
1. In the Power Systems™ Resource area, select the managed system you want to power off.
2. From the **Actions** menu, select **Operations** → **Power Off**.
3. Select the appropriate power-off mode and click **OK**.

Removing and replacing covers and doors

Use these instructions to remove, replace, or install covers to access components or perform service.

Removing the service access cover from a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

Use this procedure to remove the service access cover to perform service or to gain access to internal components.

1. Place the system into the service position. For instructions, see "Placing a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 in the service position" on page 47.
2. Loosen the two thumbscrews **(A)** located at the back of the cover.
3. Slide the cover **(B)** toward the back of the system unit. When the front of the service access cover clears the upper frame ledge, lift the cover up and off the system unit.

Attention: For proper cooling and airflow, install the cover before starting the system. Operating the system without the cover for more than 30 minutes could damage the system components.
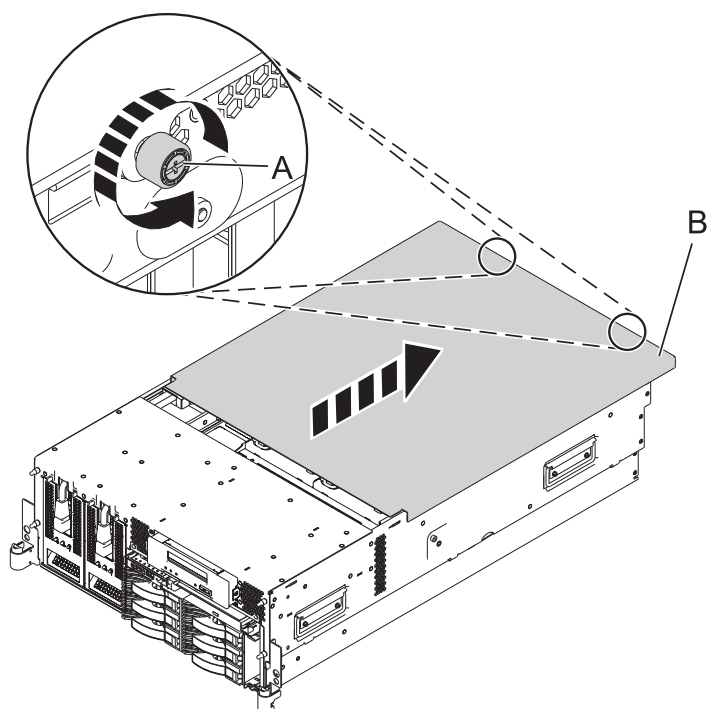
Figure 22. Remove the service access cover from a rack-mounted model

Installing the service access cover on a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

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

1. Place the service access cover **(A)** on the top of the system unit, approximately 25 mm (1 in.) from the front of the system unit.
2. Hold the service access cover against the system unit, and slide it toward the front of the system.

   The tabs on the service access cover slide beneath the upper chassis ledge, and the two thumbscrews align with the screw holes at the back of the system unit.

3. Tighten the thumbscrews **(B)** located at the back of the cover.
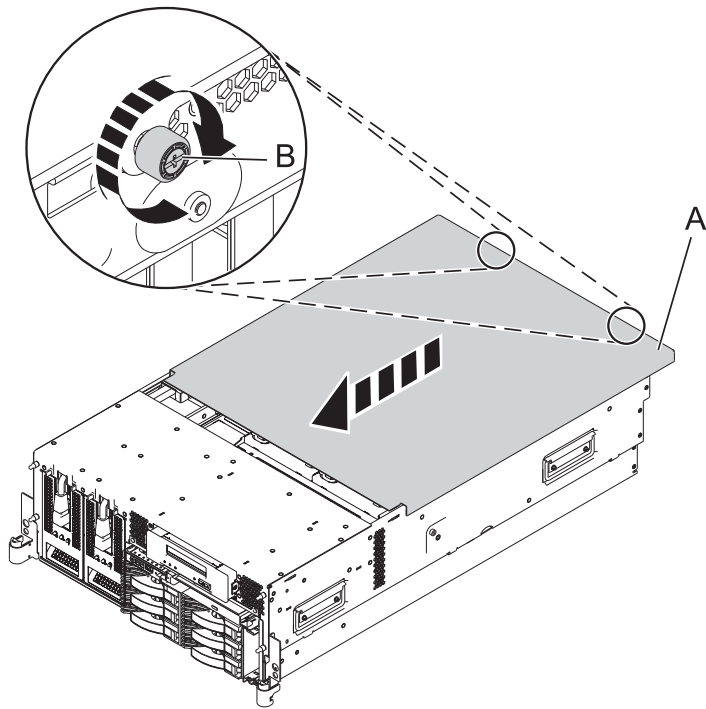
Figure 23. Install the service access cover on the rack-mounted model

Removing the service access cover from a stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

Use this procedure to remove the service access cover to perform service or to gain access to internal components.

To remove the service access cover from a stand-alone model, do the following steps:

1. Loosen the two thumbscrews **(A)** located at the back of the service access cover as shown in the following figure.
2. Slide the service access cover **(B)** toward the back of the system. When the front of the cover clears the front frame ledge, lift the cover off the system.

   Attention: For proper cooling and airflow, install the cover before starting the system. Operating the system without the cover for more than 30 minutes might damage the system components.
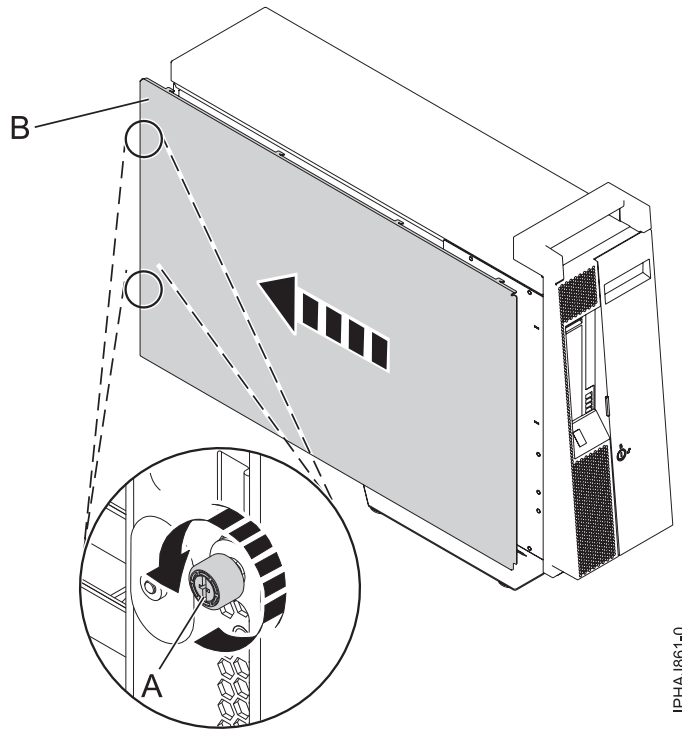
Figure 24. Removing the service access cover from the stand-alone model

Installing the service access cover on a stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

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

1. Align the service access cover pins with the slots in the system. The flanges on the top and bottom of the cover wrap around the system frame.
2. Hold the service access cover against the system unit **(A)** and slide it toward the front of the system.
3. Tighten the two thumbscrews **(B)** located at the back of the cover.
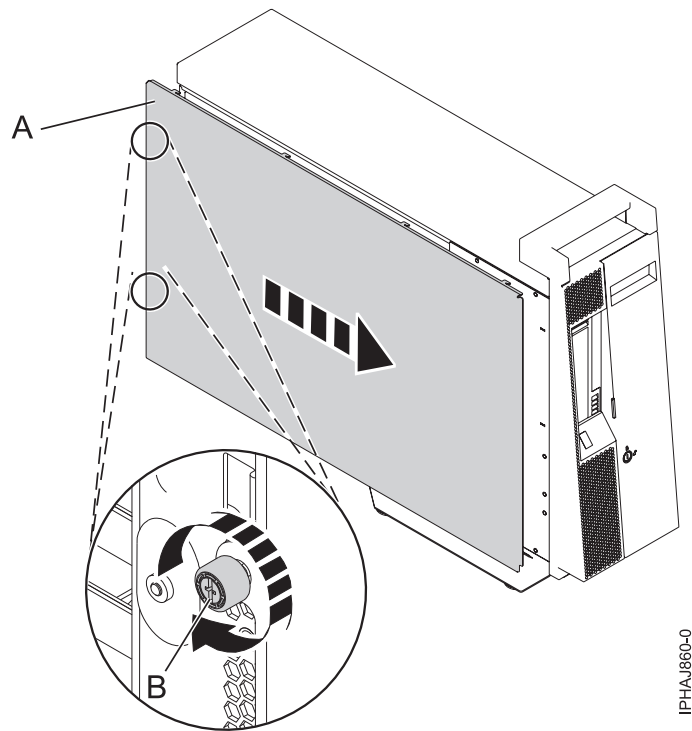
Figure 25. Installing the service access cover on a stand-alone model

Removing the front cover from a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

Use this procedure to remove the cover to access components or perform service.

1. Remove the two thumbscrews **(A)** that secure the system to the rack **(B)** as shown in the following figure.
2. Push in the release latches **(C)** and pull the cover away from the system.
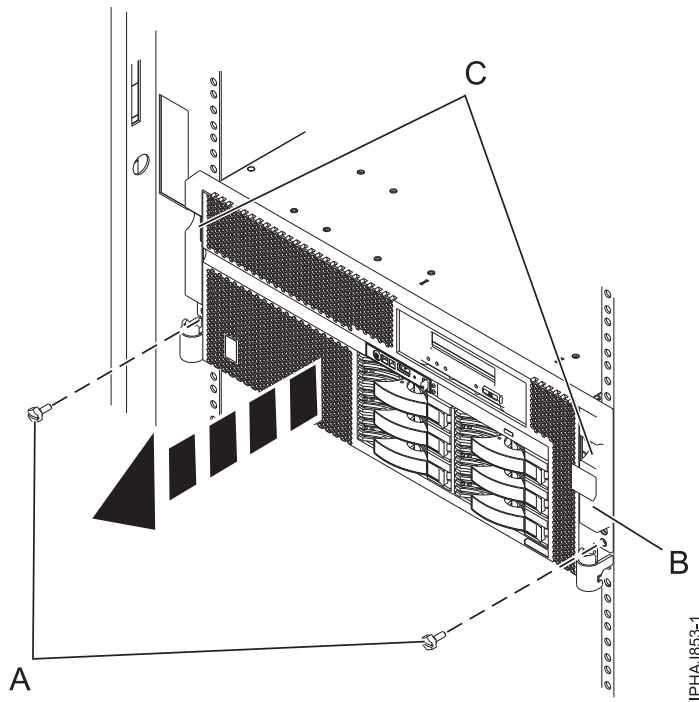
Figure 26. Removing the front cover from a rack-mounted model

Installing the front cover on a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

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

1. Push in the release latches **(B)** and push the cover onto the system.
2. Gently push the cover in until the two cover-release latches **(B)** are seated in their respective slots as shown in the following figure.
3. Replace the two thumbscrews **(C)** that secure the system to the rack **(A)**.
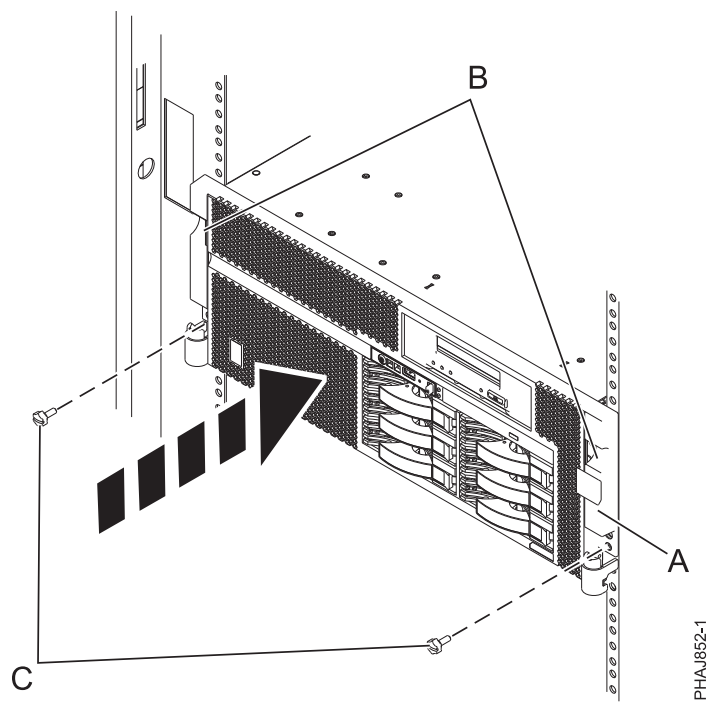
Figure 27. Installing the front cover on a rack-mounted model

Removing the door from the 8204-E8A or 9409-M50

Use this procedure to remove the door to access components or perform service.

1. Open the front door by grasping the door handle and pulling the door out and away from the system unit.
2. To remove the door, press down on the top back edge of the door.
3. Gently swivel the top back edge of the door forward and out past the top of the system unit.
4. Lift the door up to release it from the lower retaining post.

Installing or replacing the door on the 8204-E8A or 9409-M50

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

1. Set the door on the lower retaining post.
2. Rotate the door toward the top of the system unit.
3. Press down on the lower back edge of the door, and seat the top post into its matching slot.
4. Close and secure the door.

Removing the front cover from the stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

Use this procedure to remove the cover to access components or perform service.

1. Open the door that covers the disk drives by unlocking and pulling the door open.
2. Press down on the cover-release tab **(A)** as shown in the following figure.
3. Pull the top of the cover **(B)** out and away from the system.
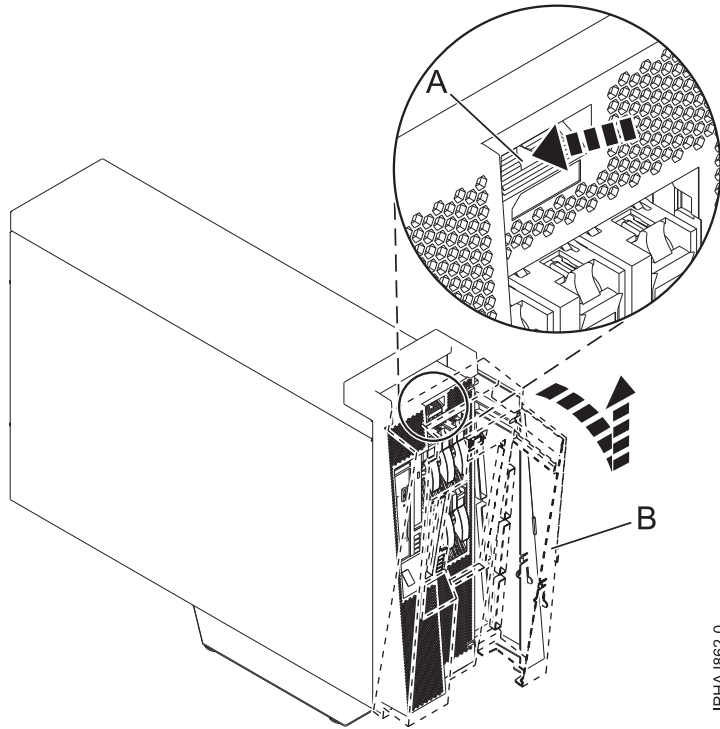
Figure 28. Remove the door from the model

4. Gently pull the cover up and off the base.

Installing the front cover on a stand-alone 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50

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

1. Place the two lower cover-locking tabs into the retaining slots located on the base of the system unit as shown in the following figure.

Figure 29. Replacing the cover on the model

2. Push the cover up toward the top of the system **(A)**, ensuring that the aligning pins are aligned with their matching slots **(B)** located on the system.
3. Gently push the cover in until the cover-release tab snaps into place.
4. Close and secure the door.

Removing and replacing the front cover for the 8234-EMA, 9117-MMA, or 9406-MMA

Use these procedures to remove and replace the cover to access components or perform service.

Removing the front cover from the 8234-EMA, 9117-MMA, or 9406-MMA

Use this procedure to remove the cover to access components or perform service.

To remove the front cover follow these steps:
1. If necessary, open the front rack door.
2. Loosen the thumbscrew on the right side of the cover as shown in the following figure.

IPHAI501-1

Figure 30. Removing the front cover

3. Slide the cover to the right, and remove it from the system unit.

Installing the front cover on the 8234-EMA, 9117-MMA, or 9406-MMA

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

To install the front cover follow these steps:

1. Position the cover on the front of the system unit so that the tab on the left side of the cover is in the matching slot on the left side of the system unit as shown in the following figure.
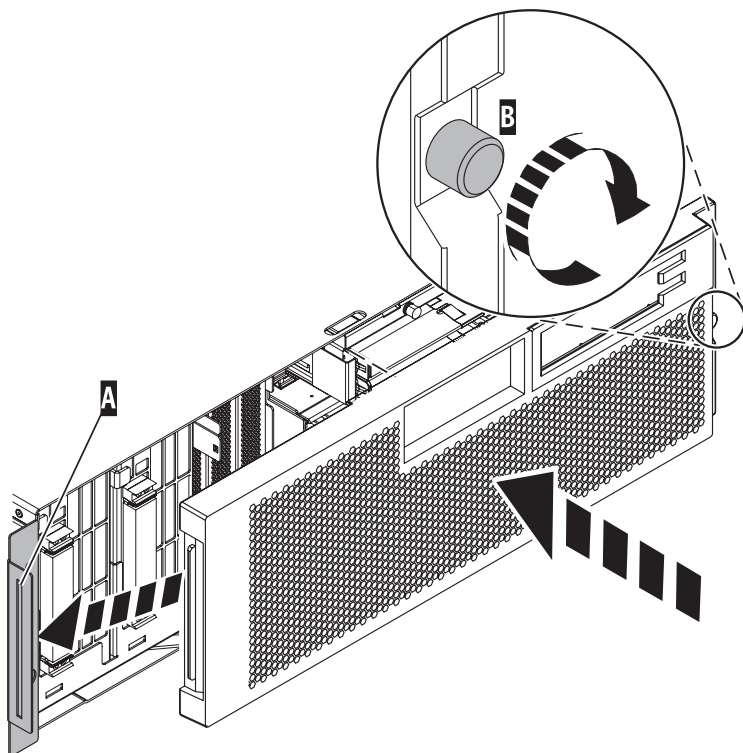
IPHAJ500-1

Figure 31. Installing the front cover

2. Tighten the thumbscrew on the right side of the cover.
3. Close the front rack door.

Placing the rack-mounted system or expansion unit in the service position or operating position

Use these procedures to place a system or expansion unit into the service position or operating position to perform service or to gain access to internal components.

Placing the rack-mounted system or expansion unit in the service position

Use this procedure to perform service or gain access to internal components by placing the rack-mounted system or expansion unit in the service position.

Note: Some of the figures in these procedures might not look exactly like the system or expansion unit that you have. However, the steps to perform the task are the same.

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)

To place a rack-mounted system or expansion unit into the service position, follow these steps:

1. If necessary, open the front rack door.
2. Remove the two thumbscrews (A) that secure the system or expansion unit (B) to the rack as shown in the following figure.

Figure 32. Removing the thumbscrews from the system and rack

3. Release the rack latches **(A)** on both the left and right sides as shown in the following figure.

Figure 33. Releasing the rack latches

4. Read the following note, and then slowly pull the system or expansion unit out from the rack until the rails are fully extended and locked.

   Remember:
   - If the procedure you are performing requires you to unplug cables from the back of the system or expansion unit, do so before you pull the unit out from the rack.
   - Ensure that the cables at the rear of the system or expansion unit do not catch or bind as you pull the unit out from the rack.
   - Ensure the rails are fully extended. When the rails are fully extended, the rail safety latches lock into place. This action prevents the system or expansion unit from being pulled out too far.

Placing the rack-mounted system or expansion unit in the operating position

Use this procedure to place the rack-mounted system or expansion unit in the operating position to make the unit available for use.

Tip: Some of the figures in these procedures might not look exactly like the system or expansion unit that you have. However, the steps to perform the task are the same.

To place the rack-mounted system or expansion unit into the operating position, follow these steps:

1. Simultaneously release the blue rail safety latches **(A)**, located near the front of each rail, and push the system or expansion unit into the rack as shown in the following figure.

   Note: Ensure that the cables at the rear of the system or expansion unit do not catch or bind as you push the unit back into the rack.
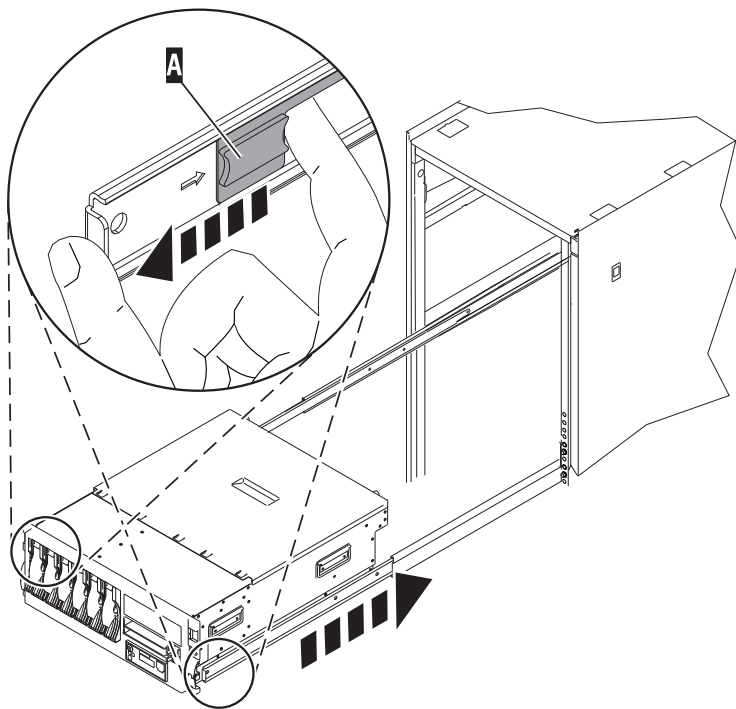
IPHBF509-1

Figure 34. Releasing the rail safety latches

2. Replace and tighten the two thumbscrews **(C)** that secure the system or expansion unit **(A)** to the rack as shown in the following figure.
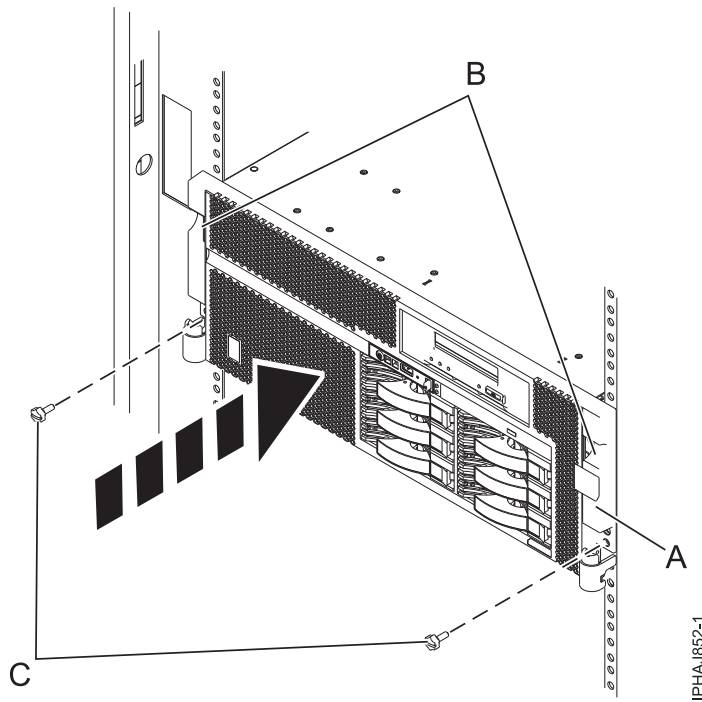
Figure 35. Pushing the system into the rack and attaching the thumbscrews

3. Close the front rack door.

Placing a rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 in the service position

Use this procedure to perform service or gain access to internal components by placing the rack-mounted system or expansion unit in the service position.

Note: Some of the figures in these procedures might not look exactly like the system or expansion unit that you have. However, the steps to perform the task are the same.

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)

To place the rack-mounted system or expansion unit into the service position, follow these steps:

1. If necessary, open the front rack door.
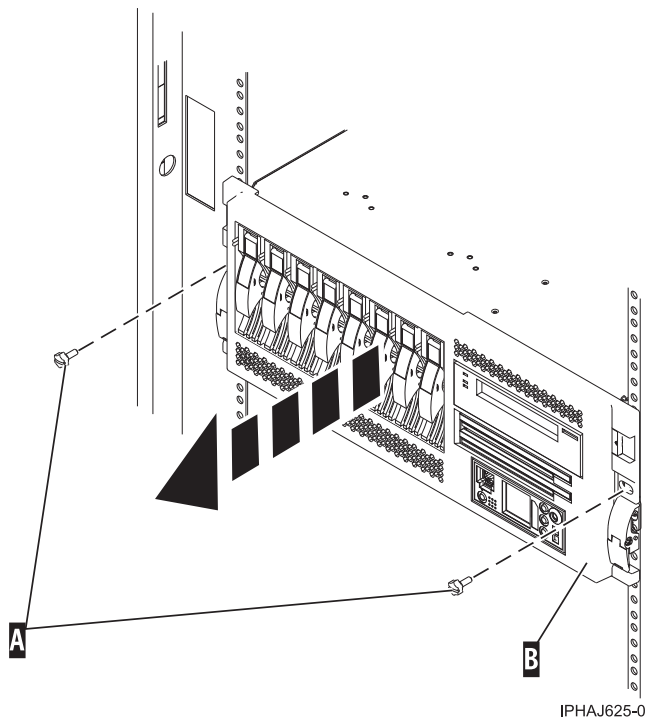2. Remove the two thumbscrews **(A)** that secure the system unit to the rack as shown in the following figure.
3. Release the rack latches **(B)** on both the left and right sides as shown in the following figure.
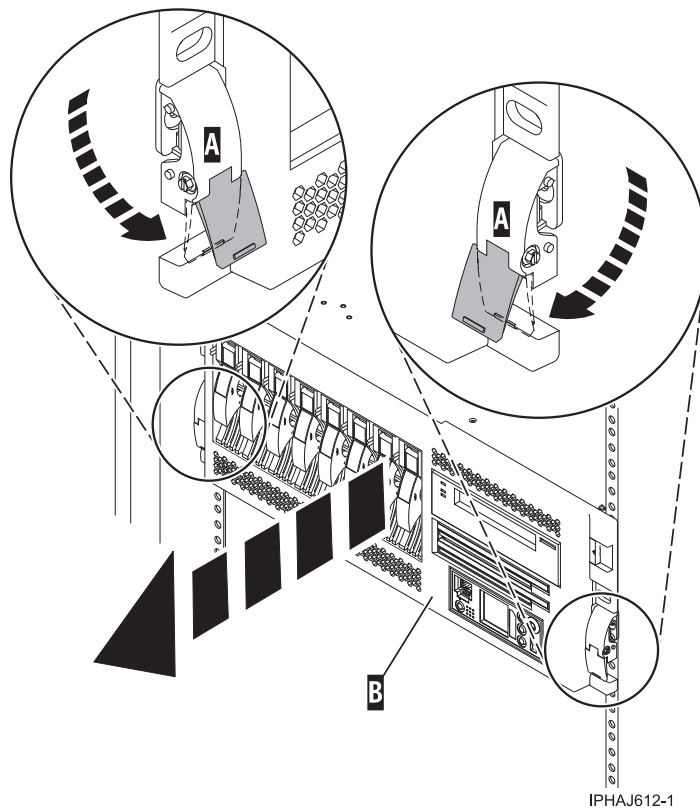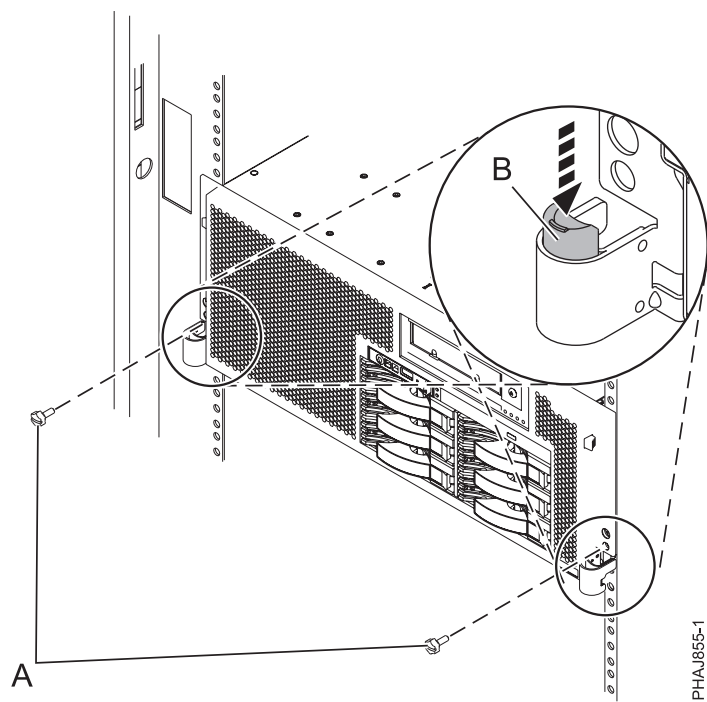
Figure 36. Releasing the rack latches

4. Read the following note, and then slowly pull the system or expansion unit out from the rack until the rails are fully extended and locked.

   Remember:
   - If the procedure you are performing requires you to unplug cables from the back of the system or expansion unit, do so before you pull the unit out from the rack.
   - Ensure that the cables at the rear of the system or expansion unit do not catch or bind as you pull the unit out from the rack.
   - Ensure the rails are fully extended. When the rails are fully extended, the rail safety latches lock into place. This action prevents the system or expansion unit from being pulled out too far.

Placing the rack-mounted 8203-E4A, 8204-E8A, 8261-E4S, 9407-M15, 9408-M25, or 9409-M50 in the operating position

Use this procedure to place the rack-mounted system or expansion unit in the operating position to make the unit available for use.

To place the rack-mounted model into the operating position follow these steps:

Tip: Some of the figures in these procedures might not look exactly like the system or expansion unit that you have. However, the steps to perform the task are the same.

1. Simultaneously release the blue rail safety latches **(B)**, located near the front of each rail, and push the system or expansion unit into the rack as shown in the following figure.

   Note: Ensure that the cables at the rear of the system or expansion unit do not catch or bind as you push the unit back into the rack.
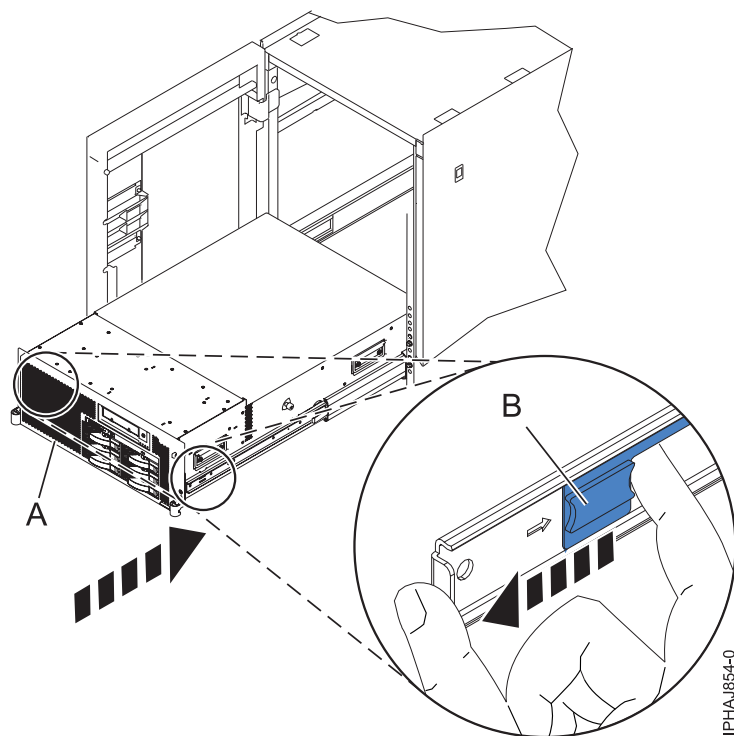
Figure 37. Releasing the rail safety latches

2. Replace and tighten the two thumbscrews **(C)** that secure the system or expansion unit **(A)** to the rack as shown in the following figure.
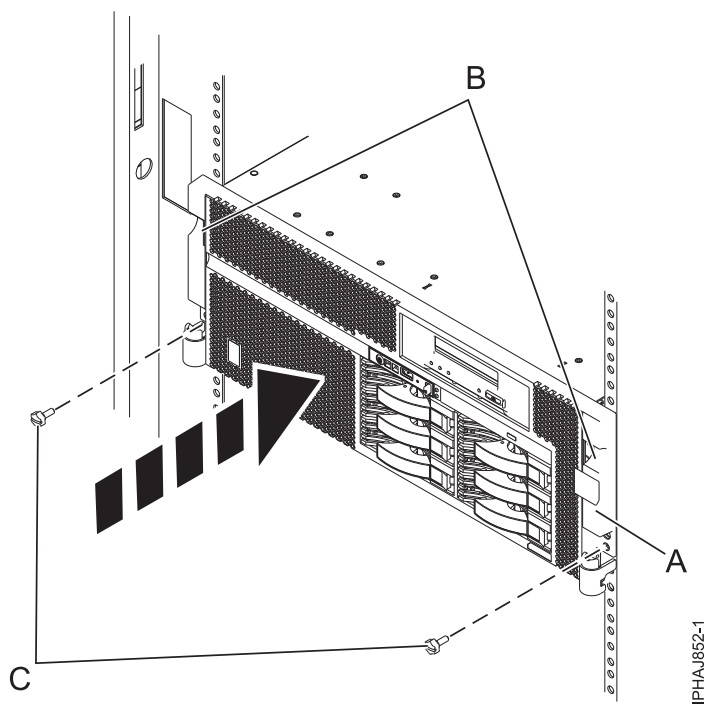
Figure 38. Replacing the thumbscrews

3. Close the front rack door.

Hardware service manager Verify option

Use the hardware service manager to verify communications or devices.

To verify communications or devices on any System i® model using the hardware service manager *Verify* option, perform the following procedure:

Note: Before running a verification test, ensure that the customer is not using the resource you want to test and that all communication jobs on the resource to be tested are ended.

1. From the Start a Service Tool display, select the *Hardware Service Manager* option.
2. From the Hardware Service Manager display, select the *Logical hardware resources* option.
3. From the Logical Hardware Resources display, select the *System bus resources* option.

   This display lists all the I/O processors.
4. Select the *Resources associated with IOP* option for the attached IOP in the list.
5. Select the *Verify* option for the communications, tape, optical storage unit, or File Server adapter that you want to test.
6. When the test completes, the system responds with either a `Test is successful` message or a `Test failed` message.

   This ends the procedure.

Notes:

1. Hardware units might perform automatic self-tests when they are powered on.
2. You can test some workstations by using the *Test Request* function key while the operating system Sign On display is shown.
3. See the specific device information for possible off-line tests that you can run.

Verifying an installed feature or replaced part on an AIX system or logical partition

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

To verify the operation of a newly installed feature or replacement part, select the appropriate procedure:

* Verify the installed feature using AIX
* Verifying the replaced part using AIX

Verify the installed feature using AIX:

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, do one of the following:
   * 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 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.

Verify the replacement part using AIX:

To verify the operation of a newly installed feature or replacement part, follow these 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.
2. Is the system powered off?

    No: Go to step 4.

    Yes: If the system supports slow boot, set the system to perform a slow boot. For information, see Performing a slow boot.
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.

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.

Verifying an installed part on an IBM i system or logical partition

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

To verify the installed part follow these steps:

1. Deactivate the failing item indicator light. For instructions, see "Deactivating the failing-part indicator light."
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.

Deactivating the failing-part indicator light

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. Select option **7** (Indicator off) to turn off the indicator light.
2. Select the **Acknowledge all errors** function at the bottom of the Service Action Log display, if all problems have been resolved.
3. Close the log entry by selecting option **8** (Close new entry) on the Service Action Log Report display.

Verifying the installed part on a Linux system or logical partition

If you have installed a new part, learn how to verify that the system recognizes the part.

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

Verifying an installed part 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 a 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 has 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 Network Installation Management (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 the boot device on the server or logical partition on which you are working, follow these steps:
   a. Access the ASMI. See Accessing the ASMI for information on using the ASMI.
   b. On the ASMI main menu, click on **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**. As soon as the optical drive has power, insert the standalone diagnostic CD-ROM.
4. 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 should be initiated using the default-service mode boot list.
5. Enter any requested password.
6. 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..
7. If the terminal type is requested, select the **Initialize Terminal** option on the Function Selection menu to initialize the operating system.
8. From the Function Selection menu, select **Advanced Diagnostics Routines** and press Enter.
9. From the Diagnostic Mode Selection menu, select **System Verification** and press Enter.
10. 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.
11. Did the `Testing Complete, No trouble was found` message appear?
    - **No:** There is still a problem. Contact your service provider.
    - **Yes:** Go to step 12.
12. 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.
13. 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 using Hardware Management Console

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 an installed part, complete these steps:

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

   No: If the system attention or identify LED is still on, use the HMC to turn off the LED. See Activating and Deactivating LEDs. **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.

Activating and deactivating LEDs

Use this procedure to activate or deactivate LEDs using Service Focal Point for the HMC.

Choose from the following:
- "Deactivating a system attention LED or partition LED"
- "Activating or deactivating identify LED" on page 58

Deactivating a system attention LED or partition LED:

You can deactivate a system attention LED or a logical partition LED. For example, you might determine that a problem is not a high priority and decide to repair the problem at a later time. However, you want to be alerted if another problem occurs, so you must deactivate the system attention LED so that it can be activated again if another problem occurs.

1. In the navigation area, open **Systems Management**.
2. Open **Servers** and select the appropriate system.
3. In the content area, check the box for the appropriate Partition.
4. Select **Tasks**, then **Operations**, and then **Manage Attention LED**.
5. Select the appropriate Partition.
6. Select **Deactivate System Attention LED** from the **Action** menu. 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 activate the system attention LED.
7. Select one of the logical partitions in the lower table, and select **Deactivate partition LED** from the **Partition Operations** menu. A confirmation window is displayed that provides the following information:
   - 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 activate the logical partition LED.

Activating or deactivating identify LED:

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

You can activate or deactivate the following types of identify LEDs:

- **Identify LED for an enclosure** If you want to add an adapter to a specific drawer (enclosure), you need to know the machine type, model, and serial number (MTMS) of the drawer. To determine whether you have the correct MTMS for the drawer that needs the new adapter, you can activate the LED in a drawer and verify that the MTMS corresponds to the drawer that requires the new adapter.
- **Identify LED for a FRU associated with a specified enclosure** 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), and then physically check to see where you should hook up the cable. This is especially useful when you have several adapters with open ports.

To activate or deactivate an identify LED for an enclosure or FRU, follow these steps:

1. In the navigation area, open **Systems Management**.
2. Select **Servers**.
3. In the content area, check the box for the appropriate system.
4. Select **Tasks**, then **Operations**, then **LED Status**, and then **Identify LED**.
5. To activate or deactivate an identify LED for an enclosure, select an enclosure from the table, and click either **Activate LED** or **Deactivate LED**. The associated LED is either turned on or off.
6. To activate or deactivate an identify LED for a FRU, select an enclosure from the table, select **Selected** → **List FRUs**.
7. Select one or more FRUs from the table, and click either **Activate LED** or **Deactivate LED**. The associated LED is either turned on or off.

Viewing serviceable events

Use this procedure to view a serviceable event, including details, comments, and service history.

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. In the navigation area, select **Service Management**.
2. Select **Manage Serviceable Events**.
3. 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 perform actions on the serviceable events.
4. 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.
5. 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 associated with the selected error.
   d. When you are finished viewing the service history, click **Close**.
6. When you are finished, click **Cancel** twice to close the Serviceable Event Details window and the Serviceable Event Overview window.

Verifying the installed part by using Systems Director Management Console

If you installed or replaced a part, use the IBM Systems Director Management Console (SDMC) to update your SDMC 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 these steps:

1. From the SDMC, examine the service action event log for any open service action events. See "Viewing serviceable events by using the IBM Systems Director Management Console" on page 61 for details.
2. Are there any service action events that are open?

   No: If the system attention LED is still on, use the SDMC to turn off the LED. See "Activating and deactivating LEDs by using the SDMC" on page 60. **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 **Delete** or **Ignore**.

   Note: These options are only available from the problem event log.

Activating and deactivating LEDs by using the SDMC

Use this procedure to activate or deactivate LEDs by using the IBM Systems Director Management Console (SDMC).

Choose from the following:
* "Deactivating a system attention LED or partition LED"
* "Activating or deactivating identify LED by using the SDMC"

Deactivating a system attention LED or partition LED:

You can deactivate a system attention LED or a logical partition LED. For example, you might determine that a problem is not a high priority and decide to repair the problem at a later time. However, you want to be alerted if another problem occurs, so you must deactivate the system attention LED so that it can be activated again if another problem occurs.

1. On the Resources tab, select the appropriate host or virtual server.
2. Select **Actions** → **Service and Support** → **Hardware** → **System Attention LED**.
3. Select **Deactivate System 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 activate the system attention LED.
4. Select one of the virtual servers, and select **Deactivate System 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 logical partition.
   * An indication that you cannot activate the virtual server LED.

Activating or deactivating identify LED by using the SDMC:

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

You can activate or deactivate the following types of identify LEDs:
* **Identify LED for an enclosure** If you want to add an adapter to a specific drawer (enclosure), you need to know the machine type, model, and serial number (MTMS) of the drawer. To determine whether you have the correct MTMS for the drawer that needs the new adapter, you can activate the LED for a drawer and verify that the MTMS corresponds to the drawer that requires the new adapter.
* **Identify LED for a FRU associated with a specified enclosure** 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), and then physically check to see where you should hook up the cable. This is especially useful when you have several adapters with open ports.

To activate or deactivate an identify LED for an enclosure or FRU, follow these steps:
1. On the Resources tab, select the appropriate host or virtual server.
2. Select **Actions** → **Service and Support** → **Hardware** → **Identify LED**.
3. In the Identify LED, Select Enclosure window, select the system unit or enclosure.

4. To activate or deactivate an identify LED, click either **Activate LED** or **Deactivate LED**. The associated LED is either turned on or off.
5. To activate or deactivate an identify LED for a FRU, select a system or enclosure from the table, and then select **List FRUs...**.
6. Select one or more FRUs from the table, and click either **Activate LED** or **Deactivate LED**. The associated LED is either turned on or off.

Viewing serviceable events by using the IBM Systems Director Management Console

Use this procedure to view a serviceable event, including details, comments, and service history.

To view serviceable events, follow these steps:

1. On the Resources tab, select the appropriate host or virtual server.
2. Select **Actions** ▸ **System Status and Health** ▸ **Event Log**.
3. Optional: You can narrow the event criteria using the Event filter menu.
4. Select a line in the Events window, and select **Actions** ▸ **Properties** The Properties window opens, showing detailed information about the serviceable event. The table shows information, such as problem number, reference code, and the field replaceable units (FRUs) associated with this event.

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

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

To verify the operation of a newly installed feature or replacement part, select the appropriate procedure:

- Verify the installed feature using VIOS
- Verifying the replaced part using VIOS

Verify the installed feature using VIOS:

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:
   - 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 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 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.

Verify the replacement part using VIOS:

To verify the operation of a newly installed feature or replacement part, follow these steps:

1. Did you replace the part 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: If the system supports slow boot, set the system to perform a slow boot. For information, see Performing a slow boot.

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.

       Yes: Go to step 7 on page 63.

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.

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 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 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 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.

   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. For instructions, see Changing service indicators

Installing a feature using the Hardware Management Console

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

To use the Hardware Management Console user interface to install a feature or part into a system or expansion unit that is managed by an HMC, follow these steps:

1. In the navigation area, expand **Systems Management** → **Servers**.
2. Select the managed system you will install the part in.
3. In the Tasks area expand **Serviceability** → **Hardware**.
4. Select **Add FRU** (field replaceable unit).
5. In the Add/Install/Remove Hardware window select the system or enclosure into which you are installing the feature.
6. Select the type of feature you are installing from the menu and click **Next**
7. Select the location code for where you will install the feature, and click **Add**.
8. After the FRU is placed in the **pending actions** category 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 using the Hardware Management Console

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

To use the Hardware Management Console user interface to remove a part in a system or expansion unit that is managed by an HMC, follow these steps:

1. In the navigation area, expand **Systems Management** → **Servers**.
2. Select the managed system from which you are removing a part.
3. In the Tasks area, expand **Serviceability** → **Hardware**.
4. Select **Remove FRU**.
5. In the Add/Install/Remove Hardware - Remove FRU, Select FRU Type window, select the system or enclosure from which you are removing the part.
6. Select the type of part you are removing from the menu and click **Next**.
7. Select the location of the part you are removing and click **Add**.
8. After the part is listed in the **Pending Actions** display click **Launch Procedure** and follow the instructions to remove the part.

   Note: The HMC might open the information center instructions for removing the part. If so, follow those instructions to remove the part.

Exchanging a part using the Hardware Management Console

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

If you are exchanging a part to repair a serviceable event follow those instructions. If you are exchanging a part as a part of any other procedure using HMC Version 7 or later use these steps:

1. In the navigation area, expand **Systems Management** → **Servers**.
2. Select the managed system in which you are exchanging a part.
3. In the Tasks area expand **Serviceability** → **Hardware**.
4. Select **Exchange FRU**.
5. In the Replace Hardware - Replace FRU, Select FRU Type window select the system or enclosure in which you will exchange a part from the list.
6. Select the type of part you will exchange from the menu and click **Next**.
7. Select the location code of the part you will exchange from the menu and click **Add**.

8. After the FRU is placed in the **pending actions** category click **Launch Procedure** and follow the instructions to exchange the feature.

    Note: The HMC might open external instructions for replacing the part. If so, follow those instructions to replace the part.

Installing a part by using the Systems Director Management Console

You can use the IBM Systems Director Management Console (SDMC) to perform many service actions, including the installation of a new field-replaceable unit (FRU) or part.

To use the SDMC user interface to install a part into a system or expansion unit that is managed by an SDMC, follow these steps:

1. In the Power Systems Resources area, select the system on which you want to install a part.
2. From the **Actions** menu, expand **Service and Support** ⟶ **Hardware** ⟶ **MES Tasks** ⟶ **Add FRU**.
3. On the **ADD FRU** tab, select the system or enclosure type.
4. Select the FRU type you are installing from the menu and click **Next**
5. Select the location code for where you want to install the part, and click **Add**.
6. After the FRU is placed in the **pending actions** category, click **Launch Procedure** and follow the instructions to install the part.

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

Removing a part by using the Systems Director Management Console

You can use the IBM Systems Director Management Console (SDMC) to perform many service actions, including the removal of a field replaceable unit (FRU) or part.

To use the SDMC user interface to remove a part in a system or expansion unit that is managed by an SDMC, follow these steps:

1. In the Power Systems Resources area, select the managed system from which you are removing a part.
2. Select one of the following options:
    *   If you are installing a new part as part of an upgrade, from the **Actions** menu, expand **Service and Support** ⟶ **Hardware** ⟶ **MES Tasks**.
    *   If you are removing a part as part of a service action, from the **Actions** menu, expand **Service and Support** ⟶ **Hardware** ⟶ **Exchange FRU**.
3. To install a new part as part of an upgrade, select **Add FRU**. To replace a part as part of a service action, select **Exchange FRU**.
4. On the Add FRU tab or the Exchange FRU tab, select the system or expansion unit from which you are removing the part.
5. Select the type of part you are removing from the menu and click **Next**.
6. Select the location of the part you are removing and click **Add**.
7. After the part is listed in the **Pending Actions** window, click **Launch Procedure** and follow the instructions to remove the part.

    Note: The SDMC might open external instructions for removing the part. If so, follow those instructions to remove the part.

Replacing a part by using the Systems Director Management Console

You can use the IBM Systems Director Management Console (SDMC) to perform many service actions, including exchanging a field replaceable unit (FRU) or part.

If you are exchanging a part to repair a serviceable event follow those instructions.

1. In the Power Systems Resource area, select the managed system in which you are exchanging a part.
2. Select one of the following options:
   - If you are replacing a part that is not part of a serviceable event, from the **Actions** menu, expand **Service and Support** → **Hardware** → **Exchange FRU**.
   - If you are exchanging a part to repair a serviceable event, see Starting a repair action.
3. To replace a part as part of a service action, select **Exchange FRU**.
4. From the Exchange FRU tab, select the system or expansion unit in which you want to exchange a part.
5. Select the type of part you want to exchange from the menu and click **Next**.
6. Select the location code of the part you want to exchange from the menu and click **Add**.
7. After the FRU is placed in the **Pending actions** window, click **Launch Procedure** and follow the instructions to exchange the part.

   Note: The SDMC might open external instructions for replacing the part. If so, follow those instructions to replace the part.

Appendix. Notices

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Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than

recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

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

Industry Canada Compliance Statement

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

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A respecte est conforme à la norme NMB-003 du Canada.

European Community Compliance Statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

European Community contact:
IBM Technical Regulations
Pascalstr. 100, Stuttgart, Germany 70569
Tele: 0049 (0)711 785 1176
Fax: 0049 (0)711 785 1283
E-mail: tjahn@de.ibm.com

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Statement - Japan

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

The following is a summary of the VCCI Japanese statement in the box above:

This is a Class A product based on the standard of the VCCI Council. If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Japanese Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guideline (products less than or equal to 20 A per phase)

高調波ガイドライン適合品

Japanese Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guideline with Modifications (products greater than 20 A per phase)

高調波ガイドライン準用品

Electromagnetic Interference (EMI) Statement - People's Republic of China

声　明

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

Declaration: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may need to perform practical action.

Electromagnetic Interference (EMI) Statement - Taiwan

警告使用者：
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

The following is a summary of the EMI Taiwan statement above.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

IBM Taiwan Contact Information:

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

Electromagnetic Interference (EMI) Statement - Korea

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자
또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 판매 또는
구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use.

Germany Compliance Statement

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

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

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

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:
"Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A.

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

Verantwortlich für die Konformitätserklärung nach des EMVG ist die IBM Deutschland GmbH, 70548 Stuttgart.

Generelle Informationen:

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

Electromagnetic Interference (EMI) Statement - Russia

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

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