

Power Supplies



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ESCALA

Power Supplies

Hardware

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BULL CEDOC
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Safety notices

Safety notices may be printed throughout this guide.

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

World Trade safety information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, 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.

Laser safety information

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

Laser compliance

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 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 metalically 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 metalically 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.

Chapter 1. Power supplies

You might need to install, or remove and replace a power supply. Use the following procedures to complete these tasks.

Removing the model 34E/MA, 17M/MA power supply with power off

If your system is already powered off, or if you need to perform another service task, you might need to remove the power supply with the system power off. Use the procedure in this section to perform this task.

About this task

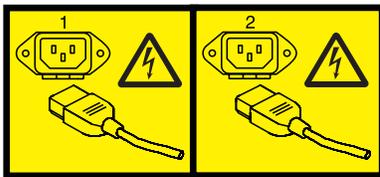
If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a power supply. For instructions, see “Removing a part using the Hardware Management Console” on page 63.

To remove the power supply while the system power is off, complete the following steps:

1. Perform the prerequisite tasks described in “Before you begin” on page 15.
2. Identify the power supply that needs to be replaced. For instructions, see “Service Action Log (SAL)” on page 23.
3. If the system is running, stop the system. For instructions, see “Stop a system or logical partition” on page 30.
4. Open the back rack door.
5. Disconnect the power cable from the back of the power supply that you want to remove.

Note: This 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



6. Push the release latch (A) into the open position, and lift the handle (B) as shown in the following figure.

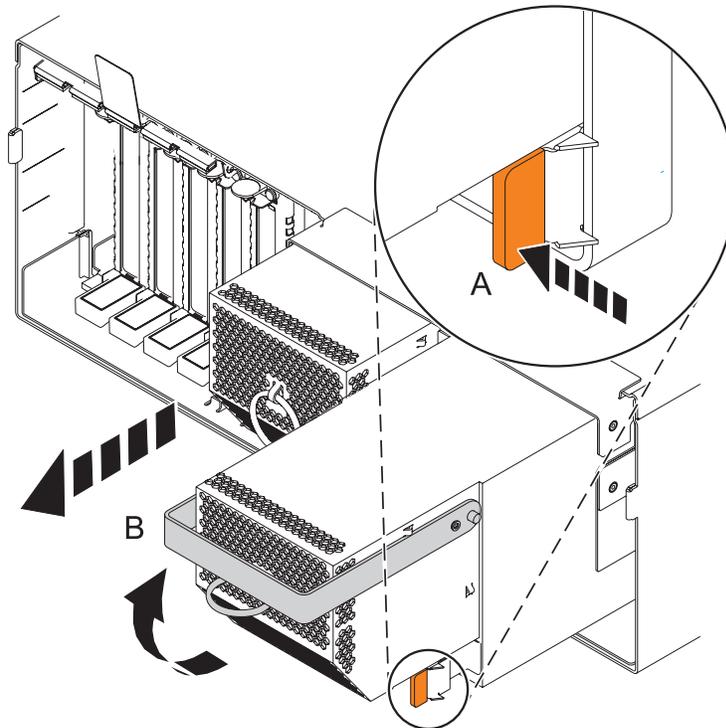


Figure 1. Power supply unlocked

7. Pull the power supply out of the system.

Removing the model 34E/MA, 17M/MA power supply with power on

You might need to remove the power supply with the system power on to replace a failing power supply or as a part of another service action. Use the procedure in this section to perform this task.

About this task

Attention: Two power supplies must be present in the system to power on the system unit. If one power supply fails, or you have a system failure that does not stop the fans, the system will continue to operate. *You can remove and replace the power supply with the system power on if it is done in less than five minutes.* After five minutes, the system will power down to prevent the system from overheating. If the system power is off, go to “Replacing the model 34E/MA, 17M/MA power supply with power off” on page 4.

If your system is managed by the Hardware Management Console (HMC), you can use the HMC to complete the steps for removing a power supply. For instructions, see “Removing a part using the Hardware Management Console” on page 63.

To remove the power supply while the system power is on, complete the following steps:

1. Perform the prerequisite tasks described in “Before you begin” on page 15.
2. On a rack-mounted system unit, open the back rack door.
3. Identify the power supply that needs to be replaced. For instructions, see “Service Action Log (SAL)” on page 23.
4. Disconnect the power cable from the back of the power supply that you want to remove.

Attention:

- Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge (ESD) from damaging your hardware.
 - When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
5. As shown in Figure 2 on page 4, push the release tab (A) into the open position and lift the handle (B).

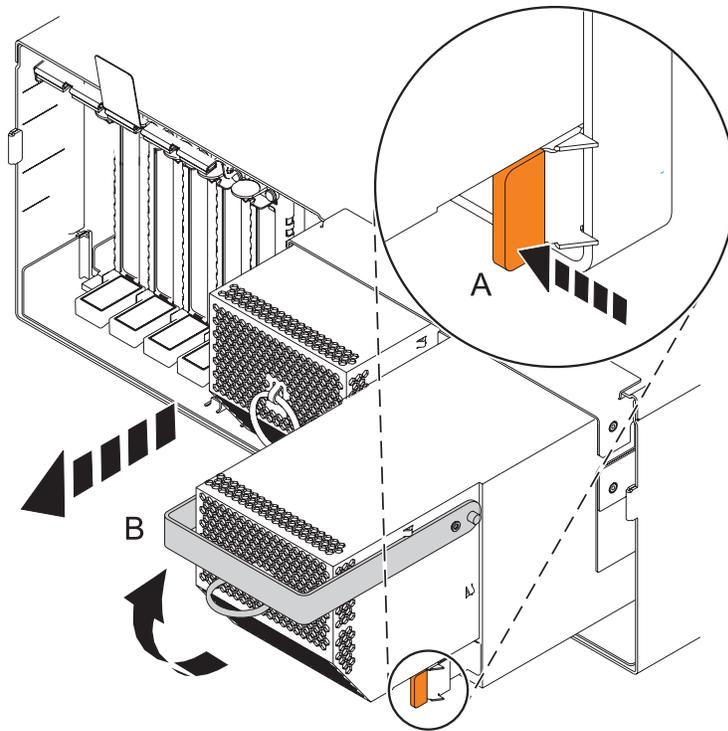


Figure 2. Power supply unlocked

6. Pull the power supply out of the system.

Note: When you remove a power supply with the system power on, an error is logged. No action is required for this error.

Replacing the model 34E/MA, 17M/MA power supply with power off

You might need to replace a power supply with the system power off. Use the procedure in this section to perform this task.

About this task

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a power supply. For instructions, see “Exchange a part using the Hardware Management Console” on page 64.

To replace the power supply while the system power is off, complete the following steps:

1. To remove the power supply, see “Removing the model 34E/MA, 17M/MA power supply with power off” on page 1.
2. With the locking handle in the open position, place the new power supply in the power supply bay.
3. Push the power supply (A) into place as shown in the following figure.
4. Close the locking handle (B) until the locking tab (C) snaps into the closed position.

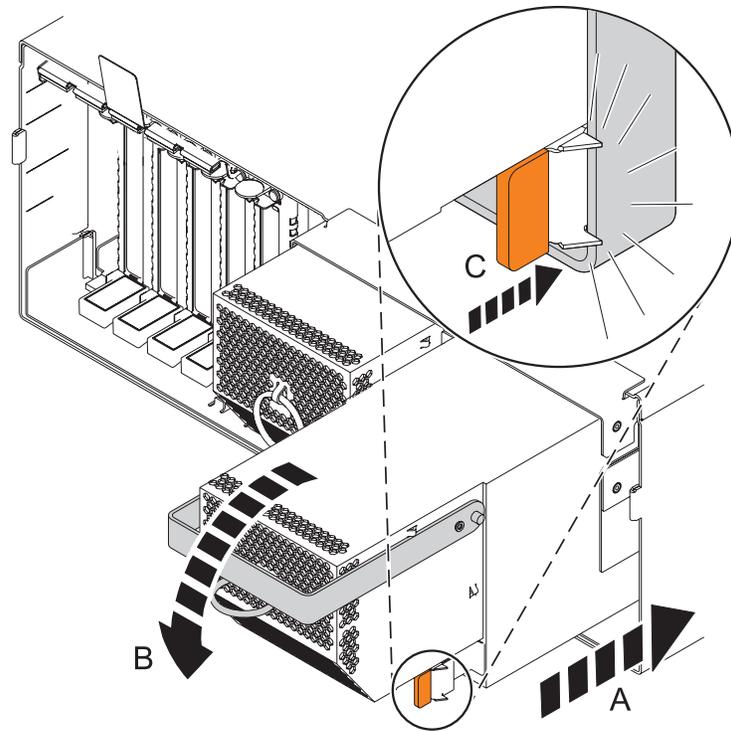


Figure 3. Replacing a power supply

5. Reconnect the power cable to the back of the power supply by routing it through the ring, if provided.
6. Start the system. For instructions, see “Start the system or logical partition” on page 26.
7. Note the state of the light-emitting diodes (LEDs) on the power supply. For more information, see “Power supply LEDs” on page 14. If the LEDs indicate that the power supply is operating normally, that is both of the green LEDs are on solid (not blinking), continue to the next step. If not, remove the power supply from the system and repeat the procedure starting with step 2 on page 4. If, after repeating the procedure, the power supply is not operating normally, contact your service provider.
8. Close the back rack door.

Replacing the model 34E/MA, 17M/MA power supply with power on

You might need to replace a power supply with the system power on. Use the procedure in this section to perform this task.

About this task

Attention: Two power supplies must be present in the system to power on the system unit. If one power supply fails, or you have a system failure that does not stop the fans, the system will continue to operate. You can remove and replace the power supply with the system power on if it is done in less than five minutes. After five minutes, the system will power off to prevent the system from overheating. If the system power is off, go to “Replacing the model 34E/MA, 17M/MA power supply with power off” on page 4.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a power supply. For instructions, see “Exchange a part using the Hardware Management Console” on page 64.

To replace the power supply while the system power is on, complete the following steps:

1. To remove the power supply, see “Removing the model 34E/MA, 17M/MA power supply with power on” on page 2.
2. Perform the prerequisite tasks described in “Before you begin” on page 15.

Attention:

- Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge (ESD) from damaging your hardware.
 - When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
3. With the locking handle in the open position, place the new power supply in the power supply bay.
 4. Push the power supply (A) into place as shown in Figure 4.
 5. Close the locking handle (B) until the locking tab (C) locks into the closed position.

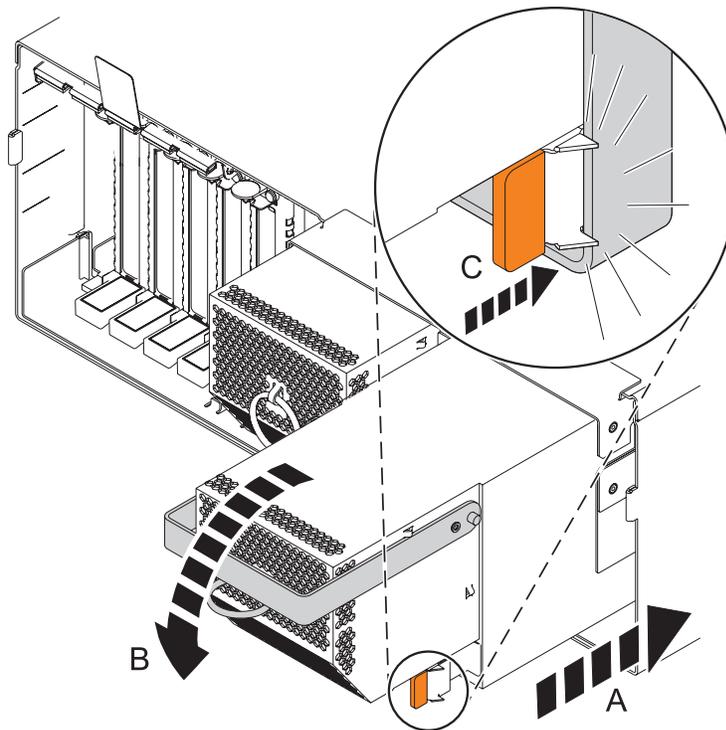
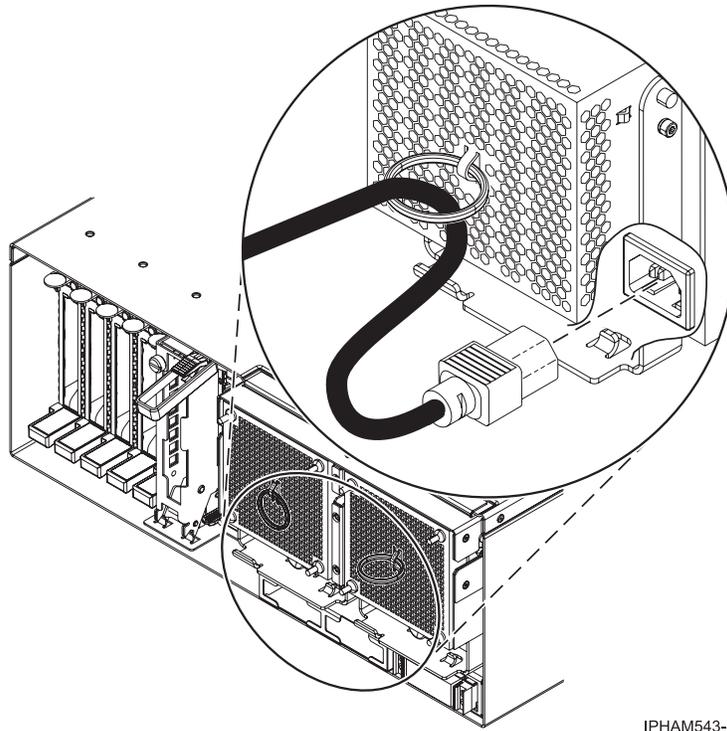


Figure 4. Replacing the power supply

6. Reconnect the power cable to the back of the power supply by routing it through the ring, if provided. If your server is equipped with a retention ring, route the power cord through the ring before you plug it into the back of the server.



IPHAM543-1

Figure 5. Cable routed through power supply ring

7. Note the state of the light-emitting diodes (LEDs) on the power supply. For more information, see “Power supply LEDs” on page 14. If the LEDs indicate the power supply is operating normally, that is both of the green LEDs are on solid (not blinking), continue to the next step. If not, remove the power supply from the system and repeat the procedure starting with step 3 on page 6. If, after repeating the procedure, the power supply is not operating normally, contact your service provider.
8. Close the back rack door.

Removing the model 03E/4A, 04E/8A power supply with power off

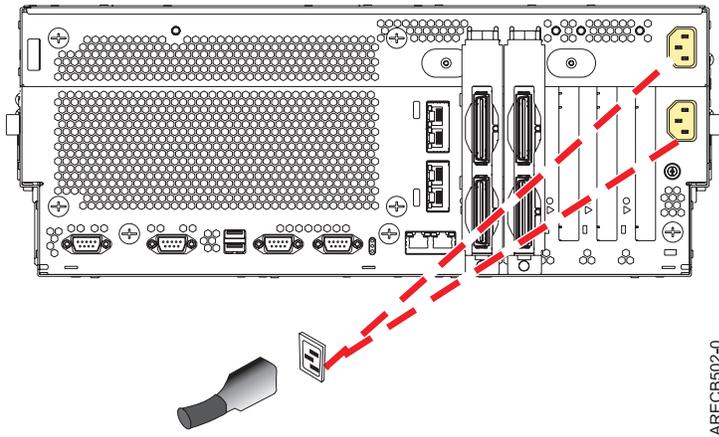
If your system is already powered off, or if you need to perform another service task, you might need to remove the power supply with the system power off. Use the procedure in this section to perform this task.

About this task

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a power supply. For instructions, see “Removing a part using the Hardware Management Console” on page 63.

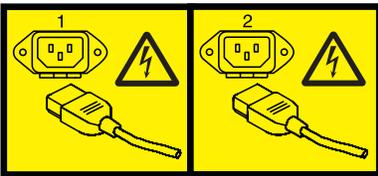
1. Perform the prerequisite tasks described in “Before you begin” on page 15.
2. Identify the power supply that needs to be replaced. For instructions, see “Service Action Log (SAL)” on page 23.
3. If the system is running, stop the system. For instructions, see “Stop a system or logical partition” on page 30.
4. Open the front rack door.
5. Remove the front cover. For instructions, see “Removing the front cover from a rack mounted model 03E/4A, 04E/8A” on page 47 or “Remove the front cover from the stand-alone model 03E/4A, 04E/8A” on page 49.

6. Disconnect the power cable from the back of the system that you want to remove.



Note: This 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



7. Disconnect the power cable (A) from the front of the power supply as shown in the following figure.

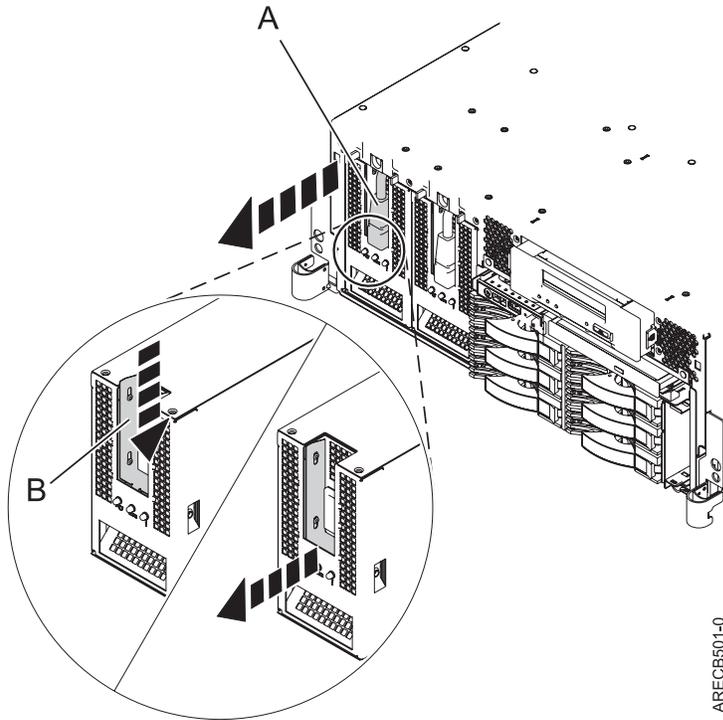


Figure 6. Removing power supply from rack-mounted model

8. Press the locking lever (B) down into the open position.
9. Pull the power supply out of the system.

Removing the model 03E/4A, 04E/8A power supply with power on

You might need to remove the power supply with the system power on to replace a failing power supply or as a part of another service action. Use the procedure in this section to accomplish this task.

About this task

If your system is managed by the Hardware Management Console (HMC), you can use the HMC to complete the steps for removing a power supply. For instructions, see “Removing a part using the Hardware Management Console” on page 63.

1. Perform the prerequisite tasks described in “Before you begin” on page 15.
2. On a rack-mounted system unit, open the front rack door.
3. Remove the front cover, see “Removing the front cover from a rack mounted model 03E/4A, 04E/8A” on page 47 or “Remove the front cover from the stand-alone model 03E/4A, 04E/8A” on page 49.
4. Identify the power supply that needs to be replaced. For instructions, see “Service Action Log (SAL)” on page 23.
5. Disconnect the power cable (A) from the front of the power supply as shown in Figure 7 on page 10.

Attention:

- Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge (ESD) from damaging your hardware.
 - When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
6. Push down on the locking latch (B) as shown in Figure 7, and then use the locking handle to pull the power supply out of the system.

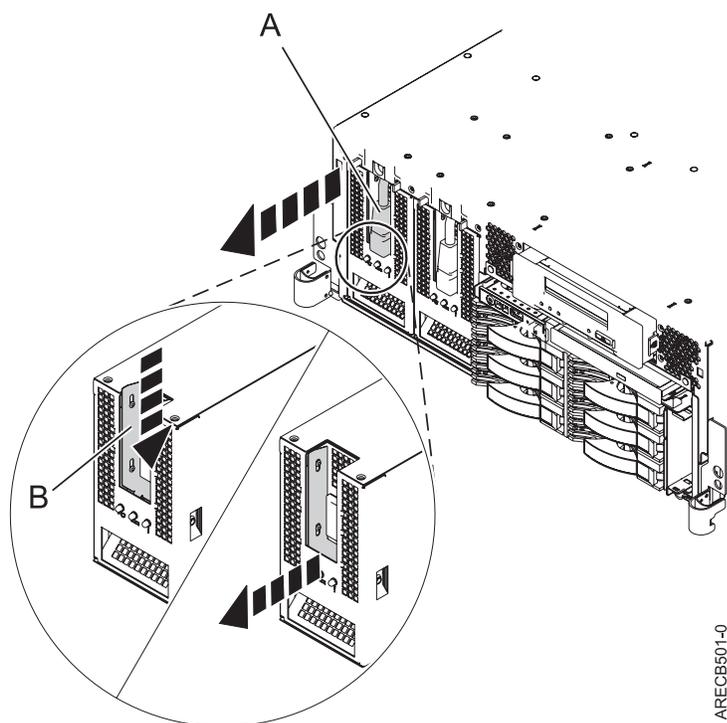


Figure 7. Removing the power supply

Replacing the model 03E/4A, 04E/8A power supply with power off

You might need to replace a power supply with the system power off. Use the procedure in this section to perform this task.

About this task

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a power supply. For instructions, see “Exchange a part using the Hardware Management Console” on page 64.

1. To remove the power supply, see “Removing the model 03E/4A, 04E/8A power supply with power off” on page 7.
2. Push the power supply (A) into the system until the latch locks in place as shown in the following figure.

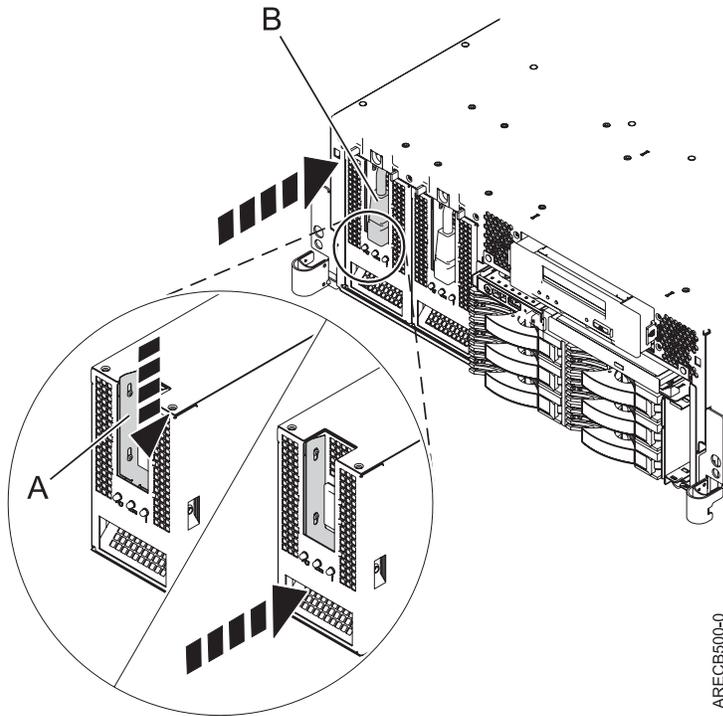
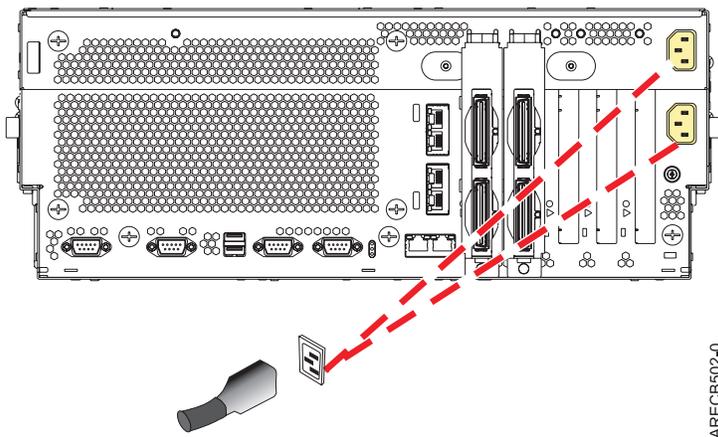


Figure 8. Replacing a power supply

3. Reconnect the power cable to the front of the power supply (B).
4. Reconnect the power cable to the back of the system.



5. Start the system. For instructions, see “Start the system or logical partition” on page 26.
6. Note the state of the light-emitting diodes (LEDs) on the power supply. For more information, see “Power supply LEDs” on page 14. If the LEDs indicate the power supply is operating normally, that is both of the green LEDs are on solid (not blinking), continue to the next step. If not, remove the power supply from the system and repeat the procedure. If, after repeating the procedure, the power supply is not operating normally, contact your service provider.
7. Replace the front cover. For instructions, see “Installing the front cover on the rack-mounted model 03E/4A, 04E/8A” on page 48 or “Installing the front cover on a stand-alone model 03E/4A, 04E/8A” on page 50.
8. Close the back rack door.

Replacing the model 03E/4A, 04E/8A power supply with power on

You might need to install a second power supply or replace a redundant power supply with the system power on. Use the procedure in this section to perform this task.

About this task

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a power supply. For instructions, see “Exchange a part using the Hardware Management Console” on page 64.

Important: You must have a functioning power supply in the system to use the following steps.

1. If you are replacing a redundant power supply because of a failure, remove the failing power supply. For instructions see “Removing the model 03E/4A, 04E/8A power supply with power on” on page 9.
2. Perform the prerequisite tasks described in “Before you begin” on page 15.

Attention:

- Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge (ESD) from damaging your hardware.
 - When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
3. Push the power supply (A) into place until the locking latch snaps into place as shown in the following figure.

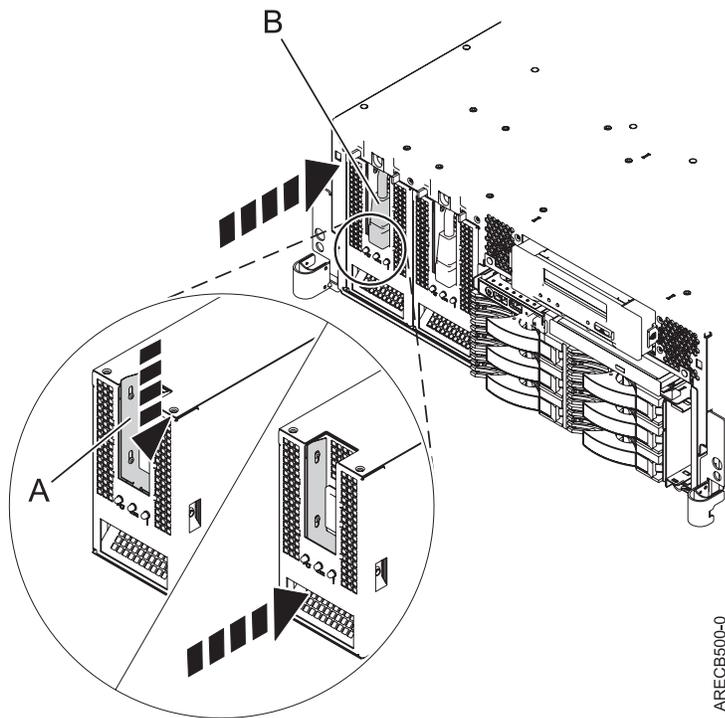


Figure 9. Replacing a power supply

4. Reconnect the power cable (B) to the front of the power supply.
5. Replace the front cover. For instructions, see “Installing the front cover on the rack-mounted model 03E/4A, 04E/8A” on page 48 or “Installing the front cover on a stand-alone model 03E/4A, 04E/8A” on page 50.
6. Close the front rack door.

Installing the model 03E/4A, 04E/8A power supply with power on

You might need to install a second power supply while the system power is on. Use the procedure in this section to perform this task.

About this task

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a power supply. For instructions, see “Exchange a part using the Hardware Management Console” on page 64.

Important: You must have a functioning power supply in the system to use the following steps.

1. Perform the prerequisite tasks described in “Before you begin” on page 15.

Attention:

- Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge (ESD) from damaging your hardware.
 - When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
2. Remove the front cover. For instructions, see “Remove the front cover from the stand-alone model 03E/4A, 04E/8A” on page 49 or “Removing the front cover from a rack mounted model 03E/4A, 04E/8A” on page 47.
 3. Remove the power supply filler by grasping the filler and pulling it out of the system.
 4. Pull the power cable out of the slot. The power cable might be secured under the plate at the top of the power supply slot. If so, release the plate by completing the following steps:
 - a. Release the plate by squeezing the two tabs on the top of the power supply slot.
 - b. Remove the cable and pull it gently forward.
 - c. Lift the plate back up and squeeze the two tabs until the plate is secure.
 5. Push the power supply (A) into place until the locking latch snaps into place as shown in the following figure.

Note: Ensure that the power cable does not become pinched while installing the power supply.

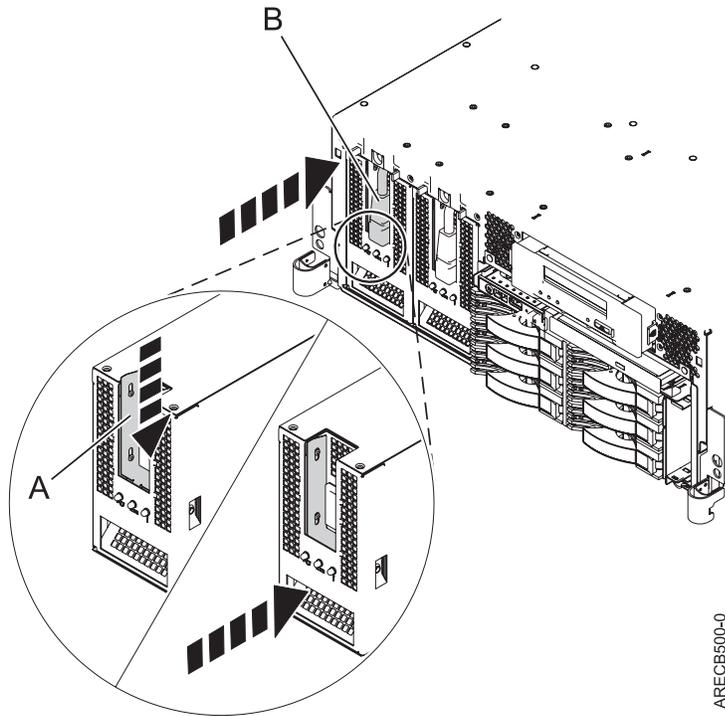


Figure 10. Replacing a power supply

6. Connect the power cable (B) to the front of the power supply.
7. Replace the front cover. For instructions, see “Installing the front cover on the rack-mounted model 03E/4A, 04E/8A” on page 48 or “Installing the front cover on a stand-alone model 03E/4A, 04E/8A” on page 50.
8. Close the front rack door.

Power supply LEDs

The different states of the power supply light-emitting diodes (LEDs) can be used to identify or verify a power supply that you are servicing.

The power supply has three LEDs that indicate the power supply status: an ac power LED (green), a dc power LED (green), and an error and identify function LED (amber).

To locate the power supply LEDs, look on the top or the back of an exposed power supply. You might have to remove covers or panels to expose the power supply. Follow the instructions to remove covers or panels for the power supply you are working with, then return here.

To activate the identify function, see “Service Action Log (SAL)” on page 23.

Descriptions for the states of the power supply LEDs follow:

- If both the ac power and dc power (**green**) LEDs are on solid (not blinking) and the error and identify function (**amber**) LED is off, the power supply is operating correctly.
- If the ac power LED is on, the dc power LED is blinking, and the error and identify function (**amber**) LED is off, then the system is turned off, but the power supply is still connected to the power source.
- If the error and identify function (**amber**) LED is blinking, the power supply is not operating correctly or the identify function has been selected.

Chapter 2. Common Procedures

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

Before you begin

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

About this task

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 provided power cord. Do not use the 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.

(D005a)

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.
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.
6. If parts are incorrect, missing, or visibly damaged, do the following:
 - If you are replacing a part, contact your service provider or next level of support.
 - If you are installing a feature, contact one of the following:
 - Your service provider or next level of support.
7. If you encounter difficulties during the installation, contact your service provider, 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 details, see the Logical partitioning and then return to these instructions. To view the PDF file of Logical partitioning, approximately 3 MB in size, see

oemiphat.pdf 

Managing the Advanced System Management Interface

The Advanced System Management Interface (ASMI) is the interface to the service processor that is required to perform general and administrator-level service tasks, such as reading service processor error logs, reading vital product data, setting up the service processor, and controlling the system power.

The ASMI might also be referred to as the service processor menus.

Accessing the ASMI without an HMC

You can access the ASMI through a Web browser or an ASCII terminal.

Accessing the ASMI using a PC and Web browser

Connect a PC or mobile computer to the server to access the Advanced System Management Interface (ASMI). The Web interface to the ASMI is available during all phases of system operation including the initial program load (IPL) and run time.

About this task

The Web interface to the ASMI is accessible through Microsoft® Internet Explorer 6.0, Netscape 7.1, or Opera 7.23 running on a PC or mobile computer connected to the service processor. The Web interface is available during all phases of system operation including the initial program load (IPL) and run time. However, some of the menu options in the Web interface are unavailable during IPL or run time to prevent usage or ownership conflicts if the system resources are in use during that phase.

The following instructions apply to systems that are *not* connected to an HMC.

If you are managing the server using an HMC, refer to Access the ASMI using the HMC.

To set up the Web browser for direct or remote access to the ASMI, complete the following tasks:

1. Connect the power cord from the server to a power source, and wait for the control panel to display 01.
2. Select a PC or mobile computer that has Microsoft Internet Explorer 6.0, Netscape 7.1, or Opera 7.23 to connect to your server.

If you do not plan to connect your server to your network, this PC or mobile computer will be your ASMI console.

If you plan to connect your server to your network, this PC or mobile computer will be temporarily connected directly to the server for setup purposes only. After setup, you can use any PC or mobile computer on your network that is running Microsoft Internet Explorer 6.0, Netscape 7.1, or Opera 7.23 as your ASMI console.

3. Connect an Ethernet cable from the PC or mobile computer to the Ethernet port labeled HMC1 on the back of the managed system. If HMC1 is occupied, connect an Ethernet cable from the PC or mobile computer to the Ethernet port labeled HMC2 on the back of the managed system.
4. Configure the Ethernet interface on the PC or mobile computer to an IP address and subnet mask within the same subnet as the server so that your PC or mobile computer can communicate with the server. For instructions, see “Setting the IP address on your PC or mobile computer” on page 19. Use the following table to help you determine these values:

Table 1. PC or mobile computer network configuration information

Service processor	Server connector	Subnet mask	IP address
Service processor A	HMC1	255.255.255.0	169.254.2.147
	HMC2	255.255.255.0	169.254.3.147
Service processor B (if installed)	HMC1	255.255.255.0	169.254.2.146
	HMC2	255.255.255.0	169.254.3.146

For example, if you connected your PC or mobile computer to HMC1, the IP address for your PC or mobile computer could be 169.254.2.146 and the subnet mask would be 255.255.255.0. Set the gateway IP address to the same IP address as the PC or mobile computer.

5. Use Table 1 to determine the IP address of the Ethernet port that your PC or mobile computer is connected to, and type the IP address in the Address field of your PC’s or mobile computer’s Web browser. For example, if you connected your PC or mobile computer to HMC1, type <https://169.254.2.147> in your PC’s or mobile computer’s Web browser.
6. When the login display appears, enter one of the following default user IDs and passwords:

Table 2. Default user IDs and passwords for the Web interface

User ID	Password
general	general
admin	admin

7. Change the default password when prompted. For information, see “ASMI authority levels” on page 20.
8. If you plan to connect your PC or mobile computer to your network, complete the following steps:
 - a. From the navigation area, expand **Network Services**.
 - b. Click **Network Configuration**.
 - c. If your PC or mobile computer is connected to HMC1, fill in the section labeled Network interface eth0.
If your PC or mobile computer is connected to HMC2, fill in the section labeled Network interface eth1.
Ensure that the following fields are filled in correctly.

Table 3. Fields and values for network configuration

Field	Value
Configure this interface?	Selected
Type of IP address	Static
Host name	Enter a new value.

Table 3. Fields and values for network configuration (continued)

Field	Value
Domain name	Enter a new value.
IP address	This is a set IP address obtained from the network administrator. Note: To verify you are using the correct IP address, perform control panel function 30, CEC FSP IP address and location.
Subnet mask	This is a set subnet mask obtained from the network administrator.

Note: For information about the other fields and values, refer to “Configuring network interfaces” on page 22.

- d. Click **Continue**.
- e. Click **Save Settings**.
- f. Disconnect your PC or mobile computer from the server.
- g. Connect the server to your company network.
- h. Go to any PC or mobile computer on your company network that is running Microsoft Internet Explorer 6.0, Netscape 7.1, or Opera 7.23, and type the following in the Address field of your browser:

https://host name.domain name

where *host name* and *domain name* are the host name and domain name you entered when completing step 8c on page 18.

- i. Log in to the ASMI.
9. Change the time of the day on the server. For details, see “Changing the time of day” on page 22.

Setting the IP address on your PC or mobile computer:

To access the ASMI through a Web browser you first need to set the IP address on your PC or mobile computer. The following procedures describe setting the IP address on PC and mobile computers running Microsoft Windows® and Linux®.

Setting the IP address in Windows XP and Windows 2000:

To set the IP address within Windows XP and Windows 2000, complete these steps.

1. Click **Start** → **Settings** → **Control Panel**.
2. On the control panel, double-click **Network Connections**.
3. Right-click **Local Area Connection**.
4. Click **Properties**.

Attention: Record the current settings before making any changes. This will allow you to restore these settings if you disconnect the PC or mobile computer after setting up the ASMI Web interface.

Note: If Internet Protocol (TCP/IP) does not appear in the list, do the following:

- a. Click **Install**.
- b. Select **Protocol**, and then click **Add**.
- c. Select **Internet Protocol (TCP/IP)**.
- d. Click **OK** to return to the Local Area Connection Properties window.
5. Select **Internet Protocol (TCP/IP)**, and then click **Properties**.
6. Select **Use the Following IP Address**.

7. Complete the **IP address**, **Subnet mask**, and **Default gateway** fields by using the values in step 4 on page 18 from Accessing the ASMI using a Web Browser.
8. Click **OK** on the Local Area Connection Properties window. It is not necessary to restart your PC.

Setting the IP address in Linux:

To set the IP address in Linux, complete these steps.

About this task

You will need the information from step 4 on page 18 in Accessing the ASMI using a Web Browser to complete step 4 in the following procedure.

1. Make sure you are logged on as a root user.
2. Start a terminal session.
3. Type `ifconfig` at the command prompt.
Attention: Record or print the current settings before making any changes. This allows you to restore these settings if you disconnect the PC or mobile computer after setting up the ASMI Web interface.
4. Type `ifconfig eth0 xxx.xxx.xxx.xxx netmask xxx.xxx.xxx.xxx`, where the `xxx.xxx.xxx.xxx` values are the values from step 4 on page 18 for IP address and Subnet mask.
5. Press Enter.

Setting the IP address in Vista:

To set the IP address in Vista, complete these steps.

1. Click **Start** → **Control Panel**.
2. Ensure **Classic View** is selected.
3. Select **Network and Sharing Center**.
4. Select **View status** in the Public network area.
5. Click **Properties**.
6. If the security dialog appears, click **Continue**.
7. Highlight **Internet Protocol Version 4**.
8. Click **Properties**.
9. Select **Use the following IP address**.
10. Complete the **IP address**, **Subnet mask**, and **Default gateway** fields by using the values in step 4 on page 18 from Accessing the ASMI using a Web Browser.
11. Click **OK** → **Close** → **Close**.

ASMI authority levels:

Several authority levels are available for accessing the service processor menus by using the ASMI.

The following levels of access are supported:

General user

The menu options presented to the general user are a subset of the options available to the administrator and authorized service provider. Users with general authority can view settings in the ASMI menus. The login ID is `general` and the default password is `general`.

Administrator

The menu options presented to the administrator are a subset of the options available to the authorized service provider. Users with administrator authority can write to persistent storage,

and view and change settings that affect the server's behavior. The first time a user logs into the ASMI after the server is installed, a new password must be selected. The login ID is `admin` and the default password is `admin`.

Authorized service provider

This login gives the authorized service provider access to all functions that could be used to gather additional debug information from a failing system, such as viewing persistent storage, and clearing all deconfiguration errors. There are three authorized service provider login IDs: **celogin**, **celogin1**, and **celogin2**.

- **celogin** is the primary service provider account. It is enabled by default, and it can enable or disable the other two service provider IDs (**celogin1** and **celogin2**). The login ID is **celogin**; the password is generated dynamically and must be obtained by calling technical support. **celogin** can be disabled by the **admin** user.
- **celogin1** and **celogin2** are disabled by default. If the IDs are enabled, a static password must be set for them. The default password for both IDs is **celogin**. The default password must be changed the first time the ID is enabled. The **admin** user can also disable and enable these login IDs.
- To reset the password for **celogin1** or **celogin2**, the **admin** user can disable, then re-enable the ID. As soon as the ID is re-enabled, the password must be changed.
- If enabled, **celogin**, **celogin1**, or **celogin2** can be used to reset the admin password, if necessary.

During the initial administrator and general user logins, the only menu option available is **Change Password**. In order to gain access to additional ASMI menus, you must change the administrator and general user default passwords. If you are an authorized service provider, you cannot change your password. For information about how to change your password, see "Changing ASMI passwords."

Changing ASMI passwords:

Change the general user, administrator, and HMC access passwords.

About this task

You can change the general user, administrator, and HMC access passwords. If you are a general user, you can change only your own password. If you are an administrator, you can change your password and the passwords for general user accounts. If you are an authorized service provider, you can change your password, the passwords for general and administrator user accounts, and the HMC access password.

Passwords can be any combination of up to 64 alphanumeric characters. The default password for the general user ID is `general`, and the default password for the administrator ID is `admin`. After your initial login to the ASMI and after the reset toggle jumpers are moved, the general user and administrator passwords must be changed.

The HMC access password is usually set from the HMC during initial login. If you change this password using the ASMI, the change takes effect immediately.

To change a password, follow these steps:

Note: As a security measure, you are required to enter the current user's password into the **Current password for current user** field. This password is not the password for the user ID you want to change.

1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **Login Profile**.
3. Select **Change Password**.
4. Specify the required information, and click **Continue**.

Configuring network interfaces:

You can configure network interfaces on the system. The number and type of interfaces vary according to the specific needs of your system.

About this task

Attention: This operation can be performed when the system is powered on as well as powered off. Because network configuration changes occur immediately, existing network sessions, such as HMC connections, are stopped. If a firmware update is in progress, do not perform this operation. The new settings must be used to re-establish any network connections. Additional errors might also be logged if the system is powered on.

You can change the network configurations when the system is in any state.

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

- Administrator
- Authorized service provider

To configure network interfaces, do the following:

1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **Network Services**.
3. Select **Network Configuration**.

Important: If you are attempting to configure a network connection on a multi-drawer system, you must select the primary or secondary service processor, and then click **Continue**.

4. In the right pane, locate the interface that you want to change. Select the box corresponding to the **Configure this interface?** field of the identified interface. If this box is not selected, the corresponding field changes are ignored.
5. Select the **Type of IP address** from the following options:

Static The IP address, subnet mask, broadcast address, default gateway and first DNS server address must be entered. The second and third DNS server addresses are optional.

Dynamic

No additional input is required.

6. Click **Continue**. The next screen allows you to verify the IP settings that have been entered.

Attention: If incorrect network configuration information is entered, you may not be able to use the ASMI after the changes are made. To remedy this situation, you must reset the service processor to the default settings by removing the service processor assembly from the server and moving the reset jumpers. Resetting the service processor also resets all user IDs and passwords to their default values.

Note: To reset network configuration settings to the default factory settings, click **Reset Network Configuration**.

7. Click **Save settings** to make the changes.

Changing the time of day:

You can display and change the system's current date and time. The date and time can only be changed when the system is powered off. The time is stored as UTC (Coordinated Universal Time), formerly expressed as Greenwich mean time (GMT).

About this task

To perform this operation, your authority level must be one of the following:

- Administrator
- Authorized service provider

Note: You can change the time of day only when the system is powered off.

To change the time of day, do the following:

1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration**.
3. Select **Time of Day**. If the system is powered off, the right pane displays a form that shows the current date (month, day, and year) and time (hours, minutes, seconds).
4. Change either the date value or the time value or both, and click **Save settings**.

Accessing the ASMI using the HMC

Complete these steps to access the ASMI through the HMC interface.

About this task

To access the Advanced System Management Interface (ASMI) using the HMC, complete the following steps:

1. From the **System Management** tasks list, select **Operations**.
2. From the Operations task list, select **Advanced System Management (ASM)**.

Service Action Log (SAL)

The Service Action Log (SAL) is a subset of the PAL.

To access the SAL, select the following options, in order, from a DST or SST menu:

- Start a service tool
- Hardware service manager
- Work with service action log

The SAL is a utility that scans the PAL and displays entries that require service representative action. It pulls out the relevant information from those entries and formats it to the display to show service information, such as failing resource names, field replaceable unit (FRU) part numbers, and FRU locations. If FRU part numbers and locations cannot be determined, the SAL display shows symbolic FRU names and isolation procedure names, which then correspond to problem analysis procedures for the service representative. The SAL runs before the operating system is operational.

A **shadow** log is maintained by LIC on the load source disk. The 128 K-byte shadow log contains a duplicate of the most recent or latest Product Activity Log entries that occurred before IPL began and those entries that were logged since the beginning of IPL. The *Product Activity Log* option uses the shadow log when the system is operating in limited paging environment.

If Product Activity Log initialization is not complete, only the shadow log is accessible to this option. Also, the *Product Activity Log* menu offers only a few specific Product Activity Log options. The Main menu informs the user that log initialization has not completed, that all Product Activity Log entries are not accessible, and to IPL the operating system to complete initialization. If initialization completes after the *Product Activity Log* option has been selected, the option must be selected again to make all Product Activity Log options available for use and to generate reports that show all the log entries.

Identifying a failing part on an AIX system or logical partition

Use these instructions to learn how to locate a failing part, and then activate the indicator light for that part on a system or logical partition running the AIX[®] operating system.

Locating a failing part in an AIX system or logical partition

You might need to use AIX tools, before activating the indicator light, to locate a part that is failing. Use the procedure in this section to accomplish this task.

1. Log in as root user or celogin-.
2. At the command line, type `diag` and press Enter.
3. From the Function Selection menu, select **Task Selection** and press Enter.
4. Select **Display Previous Diagnostic Results** and press Enter.
5. From the Display Previous Diagnostic Results display, select **Display Diagnostic Log Summary**. A Display Diagnostic Log display shows a chronological list of events.
6. Look in the **T** column for the most recent **S** entry. Select this row in the table and press Enter.
7. Select **Commit**. The details of this log entry are shown.
8. Record the location information and the SRN value shown near the end of the entry.
9. Exit to the command line.

Results

Use the location information for the failing part to activate the indicator light that identifies the failing part.

Activating the indicator light for the failing part

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

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

Identifying a failing part on a Linux system or logical partition

Use the instructions in this section to identify a failing part on a system or logical partition running the Linux operating system.

Locateing a failing part in a system or logical partition running the operating system

If the service aids have been installed on a system or logical partition you need to locate the failing part and then activate the indicator light for that part.

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

Use these instructions to retrieve the location code of the failing part, if you do not know the location code.

About this task

To locate the failing part in a system or logical partition follow these steps:

1. Log in as root user.
2. At the command line, type `grep diagela /var/log/platform` and press Enter.

3. Look for the most recent entry that contains a system reference code (SRC).
4. Record the location information.

Activating the indicator light for the failing part

If you know the location code of the failing part, activate the indicator light to help you locate which part to replace.

About this task

To activate the indicator light, follow these steps:

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

Deactivating the failing-part indicator light

After you complete a removal and replacement procedure, use this task to deactivate the failing-part indicator light.

About this task

To deactivate the indicator light, follow these steps:

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

Locate a failing part in a Virtual I/O Server system or logical partition

You might need to use Virtual I/O Server (VIOS) tools, before activating the indicator light, to locate a part that is failing. Use the procedure in this section to accomplish this task.

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

Results

Use the location information for the failing part to activate the indicator light that identifies the failing part. For instructions, see “Identifying a part using the Virtual I/O Server.”

Identifying a part using the Virtual I/O Server

Use these instructions to turn on the indicator light to help you physically locate a part using the Virtual I/O Server (VIOS).

1. Log in as root user.
2. At the command line, type `diagmenu` and press Enter.
3. From the Function Selection menu, select **Task Selection**. Press Enter.
4. From the Task Selection menu, select **Identify and Attention Indicators**. Press Enter.
5. From the list of lights, select the location code for the failing part and press Enter.

6. Select **Commit**. This turns on the system attention and indicator light for the failing part.
7. Exit to the command line.

Starting or stopping the system or logical partition

Learn how to start or stop a system or logical partition to perform a service action or restart the system.

Start the system or logical partition

You might need to start a system or logical partition after performing a service action or system upgrade. You can use this procedure to start the system or logical partition.

About this task

Start 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.

About this task

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 blinking.
 - 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 17M/MA.

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

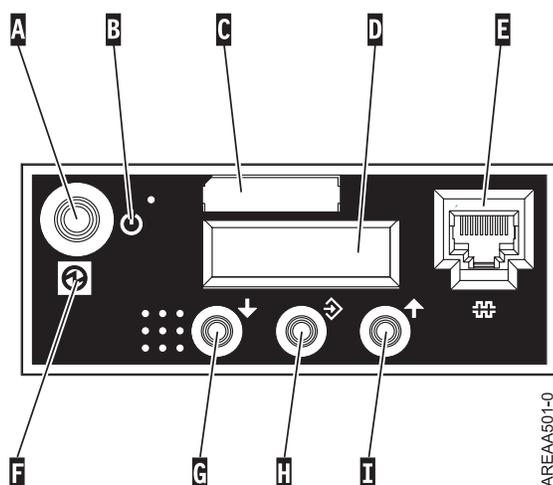


Figure 11. 5/70 control panel

- 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 blinking 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 blinking to solid. During the transition period, you might observe the blinking intervals speed up.

- **G:** Decrement button
- **H:** Enter button
- **I:** Increment button

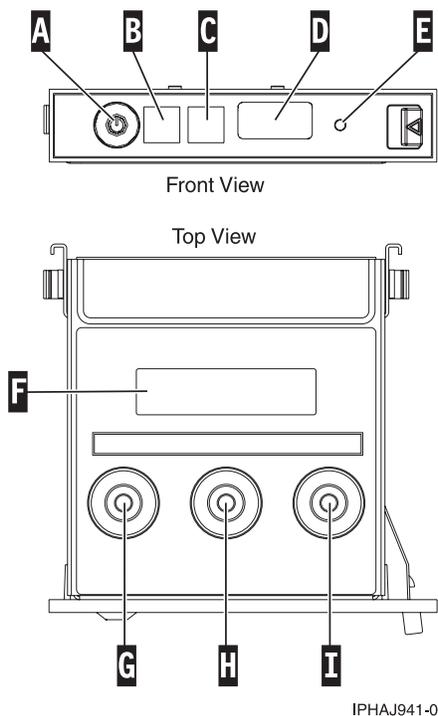


Figure 12. Control panel for the 03E/4A, 04E/8A.

- **A:** Power-on button
- **B:** Power LED
 - A blinking 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 blinking to solid. During the transition period, you might observe the blinking intervals speed up.

- **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 blink 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 blinking and remains on, indicating that system power is on.

What to do next

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 “Managing the Advanced System Management Interface” on page 17.
2. Start the system using the ASMI. For instructions, see “Powering the system on and off.”

Powering the system on and off:

View and customize various initial program load (IPL) parameters.

About this task

You can start and shut down the system in addition to setting IPL options.

To perform these operations, your authority level must be one of the following:

- Administrator
- Authorized service provider

Several IPL options that you can set pertain to the server firmware. Firmware is an integral part of the server that is stored in *flash memory*, whose contents are preserved when the system is powered off. The firmware is code that automatically starts when the server is turned on. Its main purpose is to bring the server to a state where it is ready to operate, which means the server is ready to install or boot an operating system. Firmware also enables the handling of exception conditions in the hardware and provides extensions to the functions of the server hardware platform. You can view the server’s current firmware level on the Advanced System Management Interface (ASMI) Welcome pane.

This server has a permanent firmware boot side, or P side, and a temporary firmware boot side, or T side. When updating the firmware, install new levels of firmware on the temporary side first to test the compatibility with your applications. When the new level of firmware has been approved, copy it to the permanent side.

To view and change IPL settings, perform the following steps:

1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **Power/Restart Control** and select **Power On/Off System**.
3. Set the following desired boot settings.

Note: On systems with the EM310_xxx release of system firmware installed, *slow* and *fast* are the only two boot speeds available.

System boot speed

Select the speed for the next boot:

Slow All IPL diagnostic tests are run, and the full memory test is run.

Fast Several IPL diagnostic test are skipped, and a shorter memory test is run.

Note: This is the default setting on systems with firmware EX310_xxx or later installed.

Hyper This option is available only when hyperboot is enabled. The majority of the initial program load (IPL) diagnostics are skipped, and cached data is used for vital product data (VPD), system configuration, and main store data. Since there is minimal VPD verification that the hardware is the same as the previous boot, this speed setting should only be used if there have not been any hardware changes since the last system boot.

Firmware boot side for next boot

Select the side from which the firmware boots the next time: **Permanent** or **Temporary**. Test firmware updates by booting from the temporary side before being copied into the permanent side.

System operating mode

Select the operating mode: **Manual** or **Normal**. Manual mode overrides various automatic power-on functions, such as auto-power restart, and enables the power button.

Boot to system server firmware

Select the state for the server firmware: **Standby** or **Running**. When the server is in the server firmware standby state, logical partitions can be set up and activated.

System power off policy

Select the system power off policy. The system power off policy is a system parameter that controls the system's behavior when the last partition (or the only partition in the case of a system that is not managed by an HMC) is powered off.

Default partition environment

Select **Default** (valid only if the BR keyword is not S0), **AIX**, , or **Linux**.

Notes:

- If the default partition environment is changed from any other value to , the enable/disable setting is automatically changed to Enabled.
- If the default partition environment is changed from to any other value, the enable/disable setting is not affected.

Current[®] hyperboot mode state

This setting is displayed if the hyperboot feature is activated for the system. The hyperboot mode states are: **Capable** and **Enabled**. When the mode state is changed to **Enabled**, the mode state initializes in the ASMI and displays **Capable** until the system is restarted. After the system has restarted the state changes to **Enabled**. Any time you restart the system in the enabled state, it starts in hyperboot mode.

4. Perform one of the following steps:

- Click **Save settings** to save the selected options. The power state does not change.
- Click **Save settings and power on/off**. All selected options are saved and the system turns on or off. The power-on option is available only if the system is powered off. The power-off option is available only if the system is powered on.
- Click **Save settings and continue server firmware boot** to save the selected options, and turn the server firmware on or off. This option is available only if the server firmware is in *standby* mode.

Start the 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.

About this task

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.

Powering on a managed system:

Understand how to power on a managed system using the HMC.

About this task

You can use the HMC to power on a managed system and to monitor the power-on state.

To power on a managed system, you must be a member of one of the following roles:

- super administrator
- service representative
- operator
- product engineer

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

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 On**.
5. Select the desired power-on mode and click **OK**.

Stop a system or logical partition

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

About this task

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 begin

Before you stop the system, follow these steps:

1. Ensure that all jobs are completed and end all applications.
2. Ensure that the operating system is stopped.

Attention: Failure to do so can result in the loss of data.

About this task

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

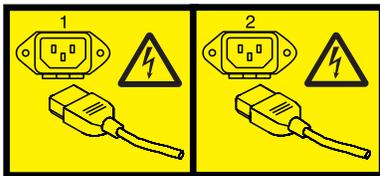
1. Log in to the system as a user with the authority to run the shutdown or Power Down System (pwrdownsys) command.
2. At the command line, enter one of the following commands:
 - If your system is running the AIX operating system, type **shutdown**.
 - If your system is running the Linux operating system, type **shutdown -h now**.
 - If your system is running the operating system, type **PWRDWN SYS**. If your system is partitioned, use the PWRDWN SYS command to power down each of the secondary partitions. Then, use the PWRDWN SYS 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



Stop the system or logical partition using the Hardware Management Console

About this task

You can use the Hardware Management Console (HMC) user interface to stop the system or a logical partition. For instructions on stopping the system, see.

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.

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 desired power-off mode and click **OK**.

Disconnect the SMP processor cable from a system unit

You might need to disconnect this cable to add or remove memory or processors. Use the procedure in this section to accomplish this task.

About this task

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 provided power cord. Do not use the 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.

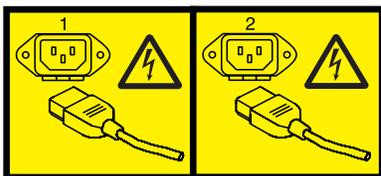
(D005a)

To disconnect an SMP processor cable connection from a system unit, complete the following steps:

1. If necessary, open the front door of the rack.
2. 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.

(L003)



or



3. "Removing the front cover from the model 34E/MA, 17M/MA, or " on page 51.
4. Remove the left edge of the trim kit on the system rack to expose the left edge of the SMP processor cable.

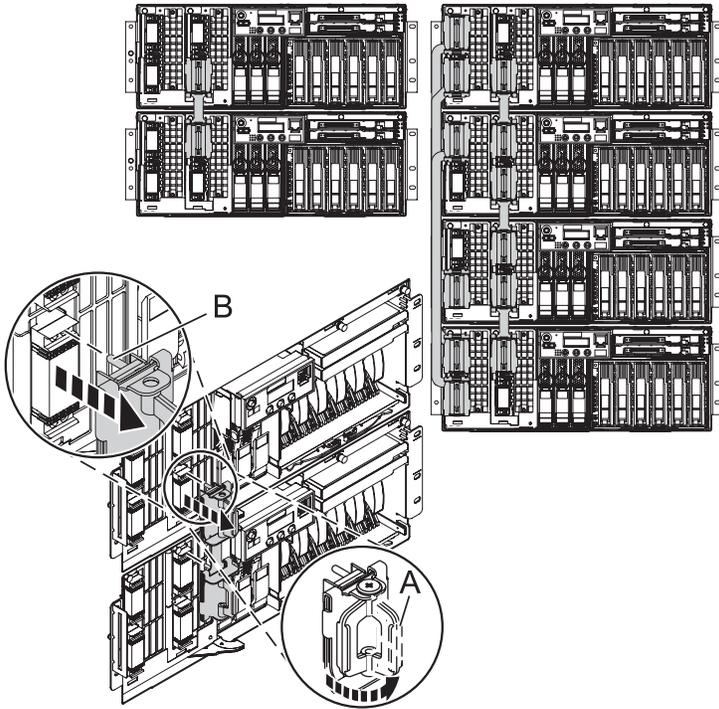
Attention:

Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.

When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.

If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.

5. Unlatch the plastic fastener **A**, as shown in the following figure.
6. Lift the latch handle **B** until the connector is unseated.



7. Carefully pull the connector from the system.
8. When the guide pins are free, carefully pull the cable away from the system unit.

Reconnect the SMP processor cable to a system unit

You might need to reconnect this cable after adding or removing memory or processors. Use the procedure in this section to accomplish this task.

About this task

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 provided power cord. Do not use the 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.

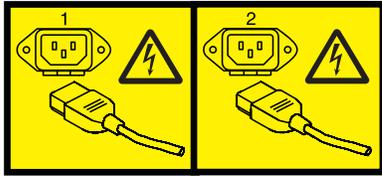
(D005a)

To connect an SMP processor cable to a single system unit, complete the following steps:

1. Perform prerequisite tasks as described in “Before you begin” on page 15.
2. Stop all system units. Refer to “Stop a system or logical partition” on page 30.
3. If necessary, open the front rack door.
4. 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.

(L003)



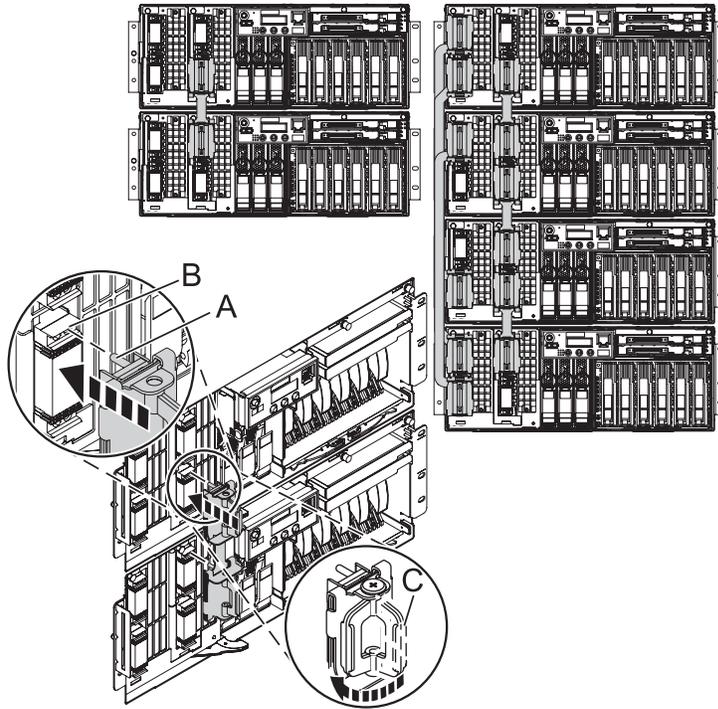
or



5. If necessary, remove the left edge of the trim kit on the system rack.

Attention:

- Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge (ESD) from damaging your hardware.
 - When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
6. Lift the latch handle C to the open position.



7. Align the guide pins **A** with the connector **B** on the system unit.
8. Carefully push the cable connector into the system unit connection.

Note: Evenly press the connector in place, using firm straight pressure on both the top and bottom of each cable-end. At the same time, press evenly at the top and bottom of each cable-end. Use the SMP tool to seat the cable as shown in the following figure.

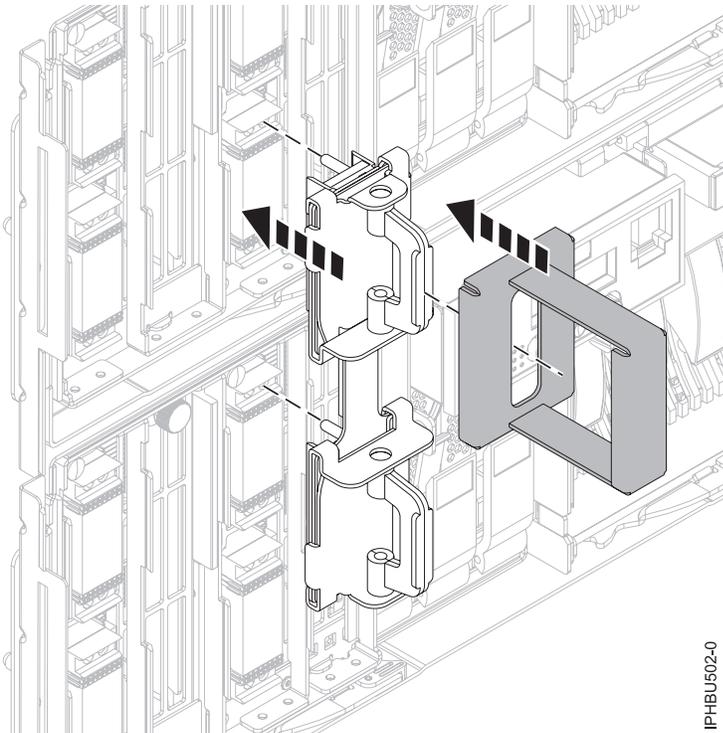


Figure 13. Using the SMP cable tool

9. Push the latch handle down to seat the pins.
10. Replace the left edge of the trim kit.
11. “Installing the front cover on the model 34E/MA, 17M/MA” on page 52.
12. Close the front rack door.

Results

Removing and replacing expansion unit cover or door

You might need to remove, replace, or install covers or doors on an expansion unit as a part of accessing components or servicing your unit.

Remove the front cover on model 14G/30

You might need to remove the front cover to perform service to the system. Use the instructions in this section to accomplish these tasks.

1. Remove the two thumbscrews (**B**) located on the left and right of the cover.

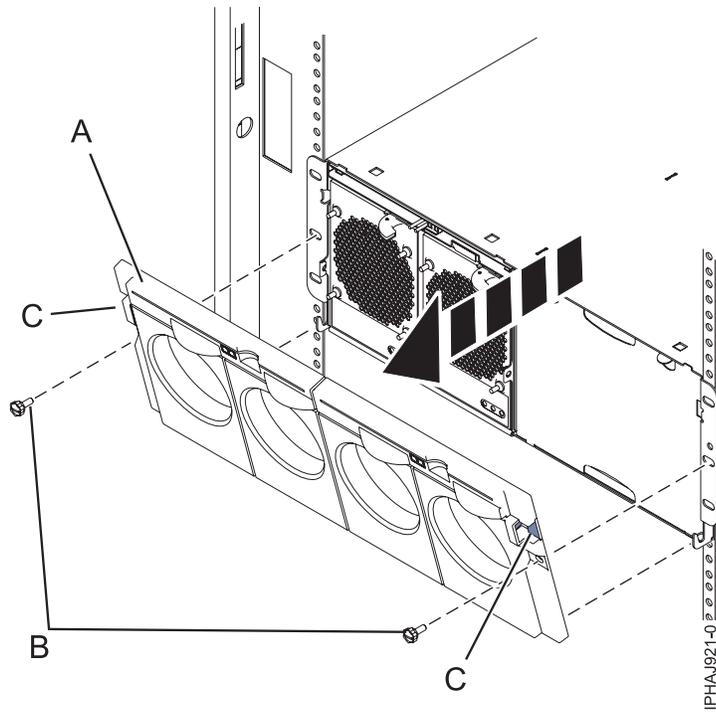


Figure 14. Remove the front cover for model 14G/30

2. Press in on the two latches (C) located left and right of the cover to release the cover.
3. Lift the cover (A) out and away from the chassis.

Tip: If an airflow block is present on an unpopulated side of the chassis do not remove it unless you are populating that side of the chassis.

Installing the front cover on a model 14G/30

You might need to install the front cover after installing the system or performing a service action.

Before you begin

If you only have one side of the chassis populated, ensure that the airflow block is present on the unpopulated side.

1. Insert the posts on the bottom of the cover (A) into the hooks on the chassis of the enclosure.
2. Press in on the two latches (C) on the right and left of the front cover.

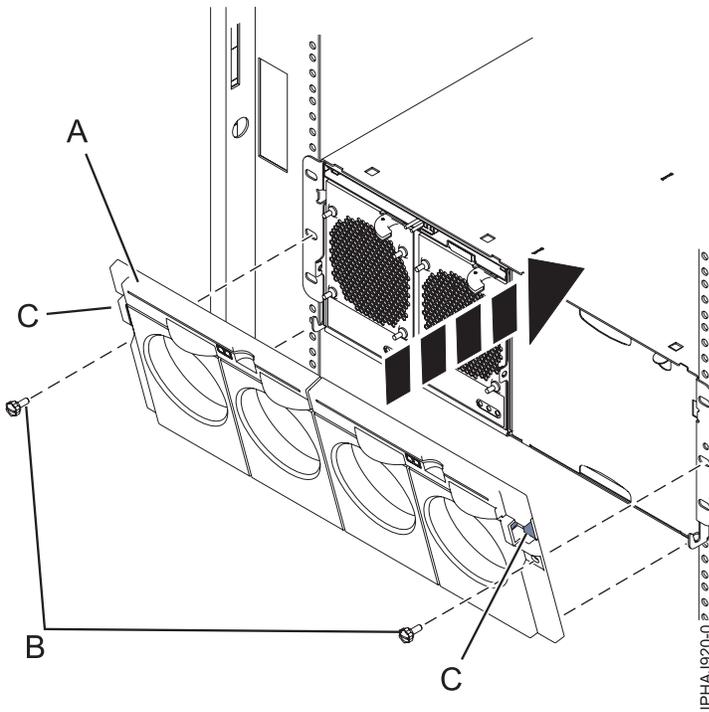


Figure 15. Front cover on a model 14G/30

3. Push the cover onto the chassis and release the latches. The cover should securely snap into place.
4. Replace the two thumbscrews (B) into the slots on the left and right of the front cover.

Removing the front cover from a 11D/11 expansion unit

You might need to remove the cover to access components or perform service. Use the procedure in this section to accomplish this task.

About this task

To remove the front cover, follow these steps:

1. Open the rack front door, if necessary.
2. Press down on both release tabs and pivot the cover from the top forward.
3. Pull the cover out and away from the expansion unit.

Install the front cover on the 11D/11 expansion unit

You might need to install the cover after accessing components or performing service. Use the instructions in this section to accomplish this task.

About this task

To install the front cover, follow these steps:

1. Position the cover on the front of the expansion unit so that the pins on the cover line up with the slots on the front of the expansion unit.
2. Insert the tabs on the bottom of the cover into the slots at the front of the expansion unit.
3. Push the cover up and forward until the tabs on the top secure the cover in place.

Removing a front cover from the 11D/20 expansion unit

You might need to remove the cover to access components or perform service.

About this task

To remove the expansion unit front cover, follow these steps:

1. If necessary, open the front rack door.
2. Remove the thumbs screws that are securing the covers to the rack.
3. Push both cover-release latches in the direction of the arrows to release the cover as shown in the following figure.

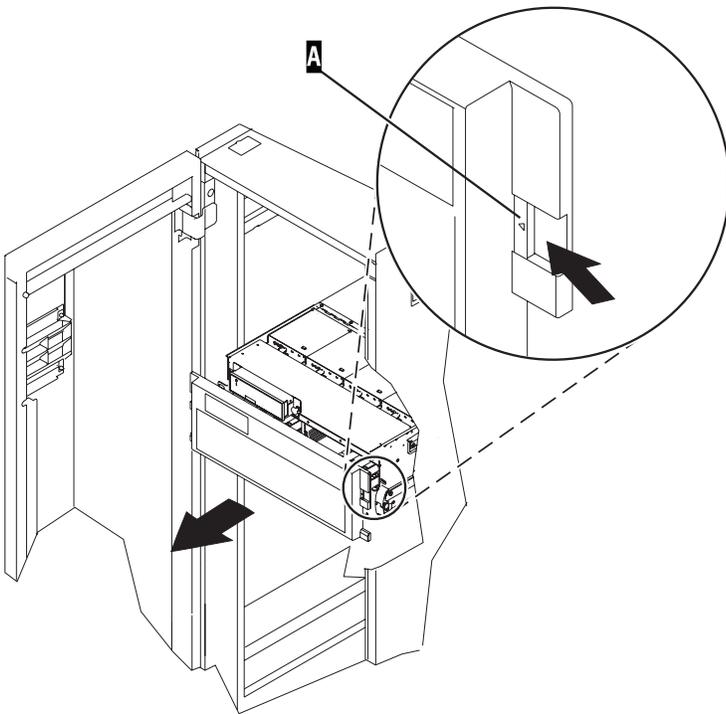


Figure 16. Removing the front cover

4. Pivot the cover from the bottom and swing the top of the cover out.
5. Pull the bottom of the cover up and then away from the expansion unit. This releases the two tabs located on the bottom of the cover.
6. Put the cover in a safe place.

Installing a front cover on the 11D/20 expansion unit

You might need to install the cover after accessing components or performing service.

About this task

To install the expansion unit front cover, follow these steps:

1. If necessary, open the front rack door.

2. Insert the two tabs located on the bottom edge of the cover into their locking slots, located on the expansion unit frame.
3. Pivot the front cover up toward the top of the expansion unit frame.
4. Align the tabs to the matching slots located on the front of the expansion unit frame.
5. Gently push the tabs into the slots until the cover seats against the front of the expansion unit.
6. Install the thumbs screws to secure the covers to the rack.
7. Close the front rack door.

Results

Removing and Replacing Covers and Doors

You might need to remove, replace, or install covers to access components or perform service.

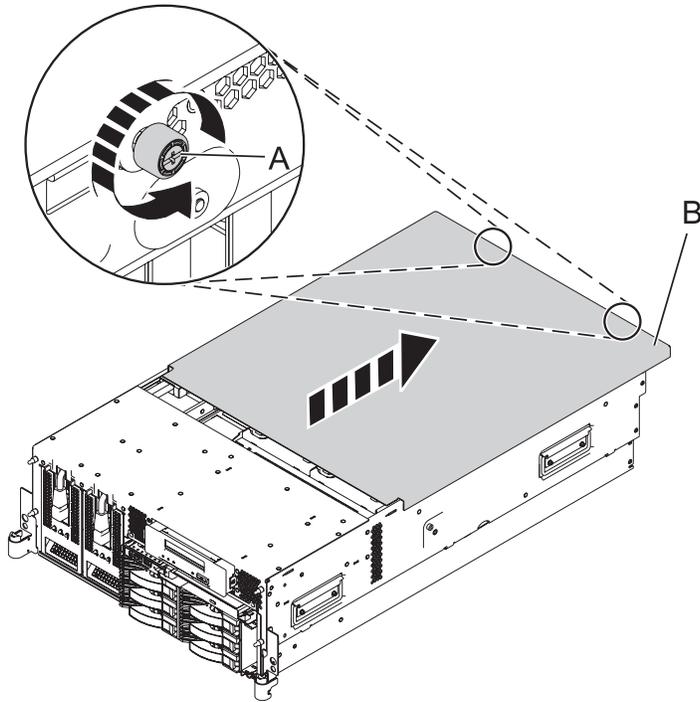
Removing the service access cover from a rack-mounted model 03E/4A, 04E/8A

You might need 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 model 03E/4A, 04E/8A in the service position” on page 58.
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.

Results

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.



IPHAJ851-0

Figure 17. Remove the service access cover from a rack-mounted model

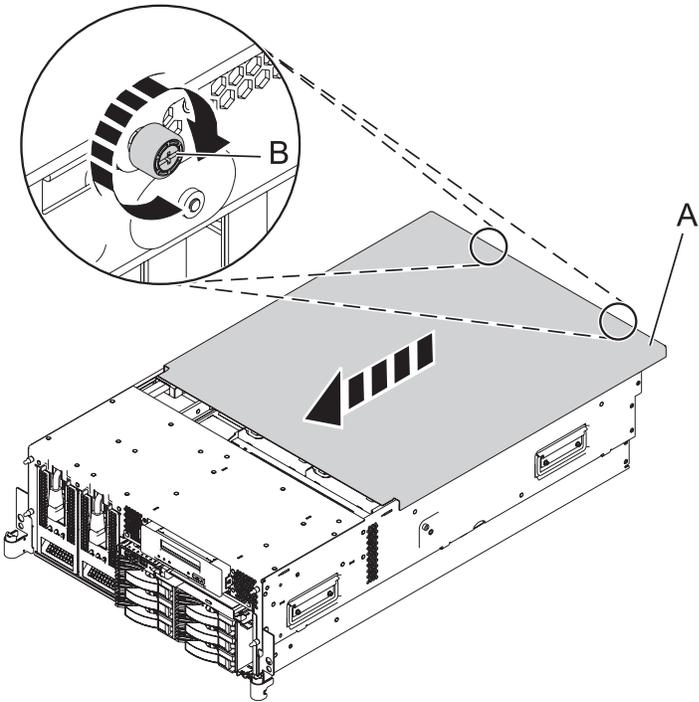
Install the service access cover on a rack-mounted model 03E/4A, 04E/8A

You might need to install the service access cover after performing service or accessing internal components. Use the procedure in this section to perform this task.

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.

Important: Ensure that the fan LED cables do not get caught on the front edge of the service access cover as you move it forward.

3. Tighten the thumbscrews (B) located at the back of the cover.



IPHAJ850-0

Figure 18. Install the service access cover on the rack-mounted model

Removing the service access cover from a stand-alone model 03E/4A, 04E/8A

You might need to remove the service access cover to perform service or to gain access to internal components.

About this task

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

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 unit. When the front of the cover clears the front frame ledge, lift the cover 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.

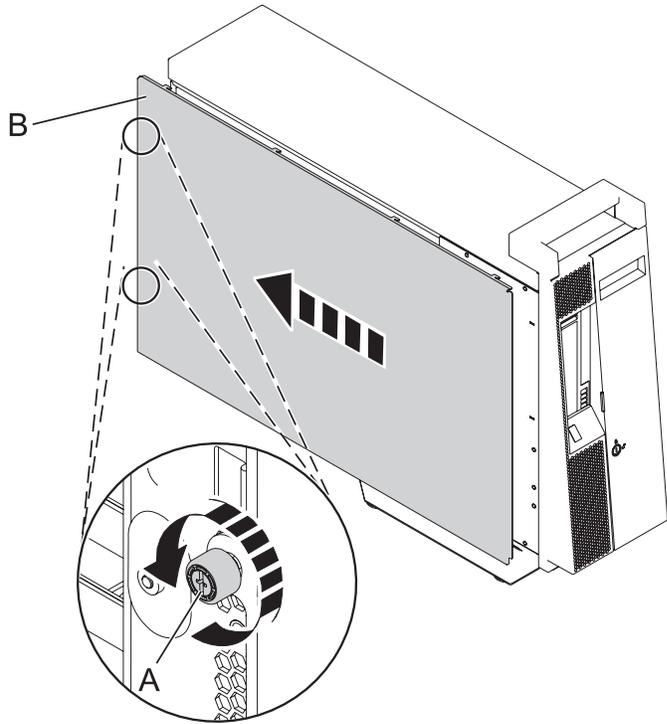


Figure 19. Removing the service access cover from the stand-alone model

Installing the service access cover on a stand-alone model 03E/4A, 04E/8A

You might need 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.

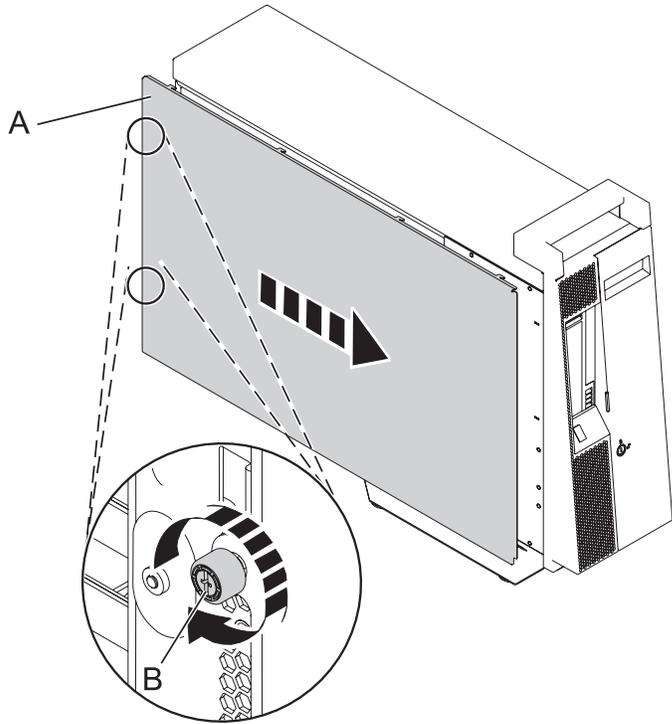


Figure 20. Installing the service access cover on a stand-alone model

Removing the front cover from a rack mounted model 03E/4A, 04E/8A

You might need 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.

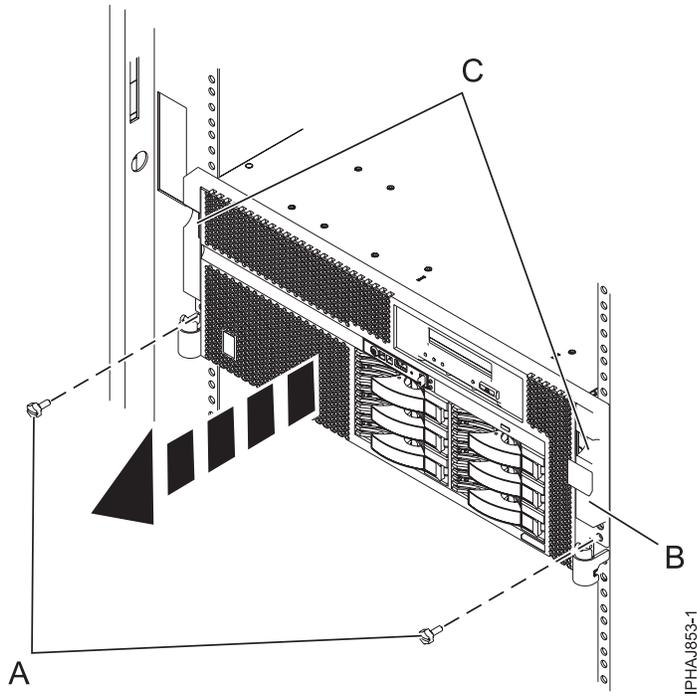


Figure 21. Removing the front cover from a rack-mounted model

Installing the front cover on the rack-mounted model 03E/4A, 04E/8A

You might need to install the cover after accessing components or performing service.

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

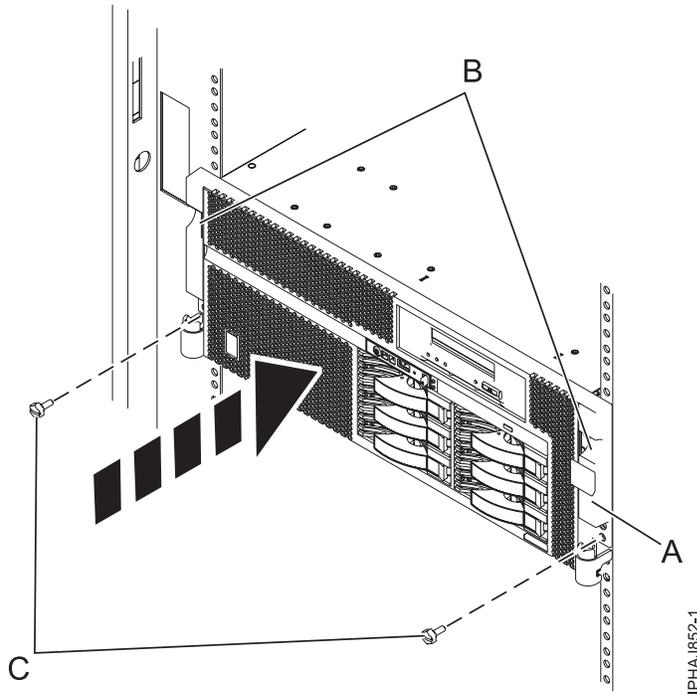


Figure 22. Installing the front cover on a rack-mounted model

Removing the door from a model 04E/8A

You might need to remove the door to access components or perform service. Use the procedure in this section to accomplish this task.

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 a model 04E/8A

You might need 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.

Remove the front cover from the stand-alone model 03E/4A, 04E/8A

You might need to remove the cover to access components or perform service.

1. Open the door covering 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.

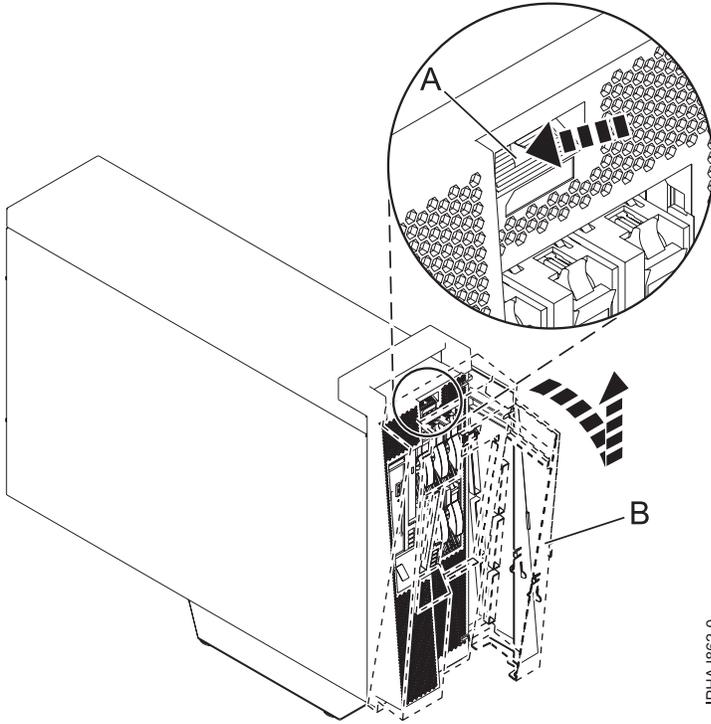


Figure 23. Remove the door from the model

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

Installing the front cover on a stand-alone model 03E/4A, 04E/8A

You might need to install the cover after accessing components or performing service. Use the procedure in this section to accomplish this task.

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.

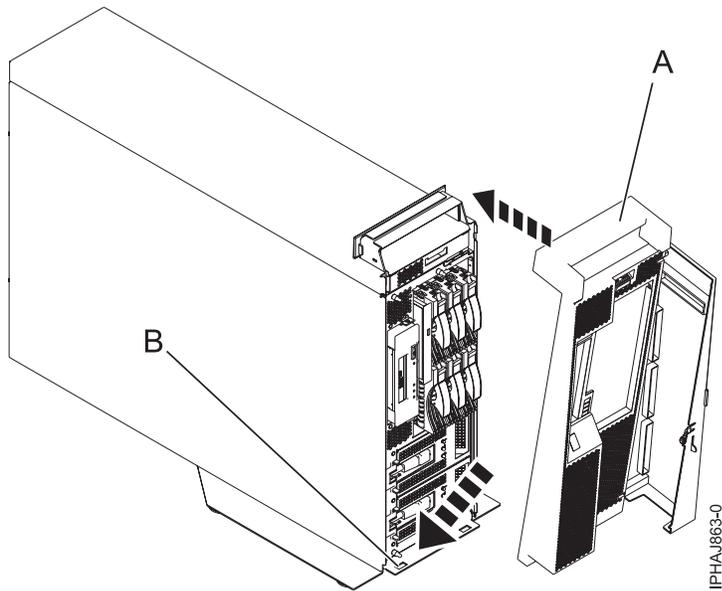


Figure 24. Replacing the cover on the model

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.

Results

Front cover for the model 34E/MA, 17M/MA

You might need to remove and replace the cover to access components or perform service.

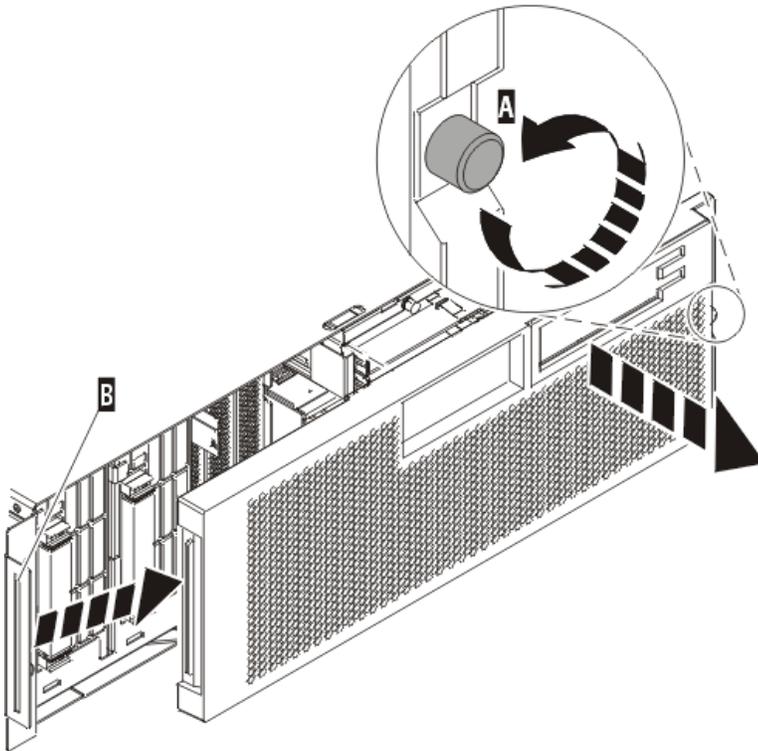
Removing the front cover from the model 34E/MA, 17M/MA, or

You might need to remove the cover to access components or perform service.

About this task

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.



IPHAIF01-1

Figure 25. Removing the front cover

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

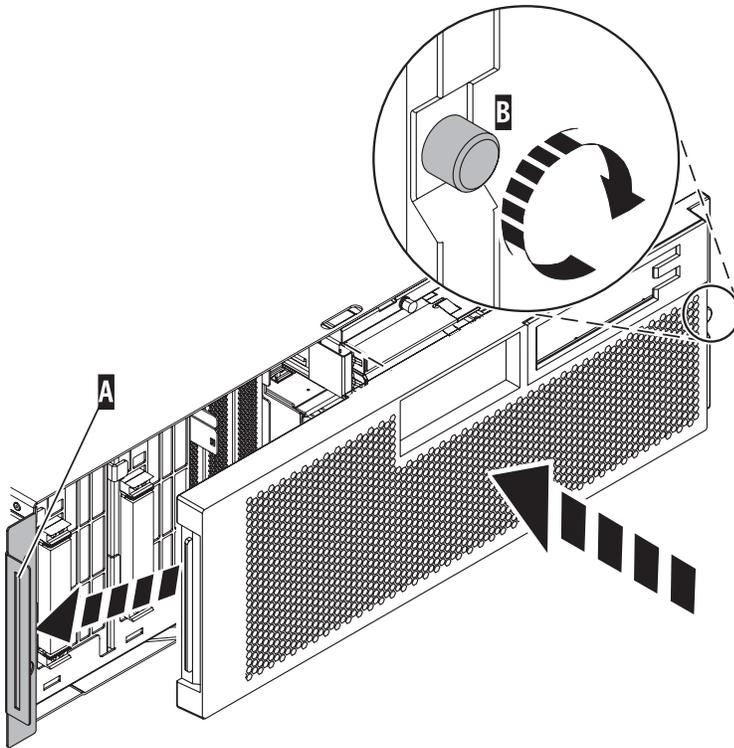
Installing the front cover on the model 34E/MA, 17M/MA

You might need to install the cover after accessing components or performing service.

About this task

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 26. Installing the front cover

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

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

You might need 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

You might need to perform service or gain access to internal components by placing the rack-mounted system or expansion unit in the service position.

About this task

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 provided power cord. Do not use the 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.

(D005a)

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.

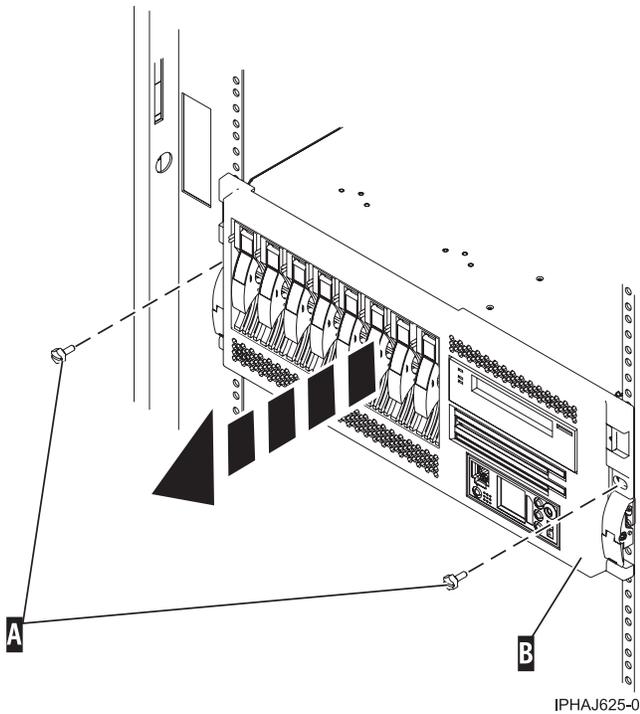


Figure 27. Removing the thumbscrews from the system and rack

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

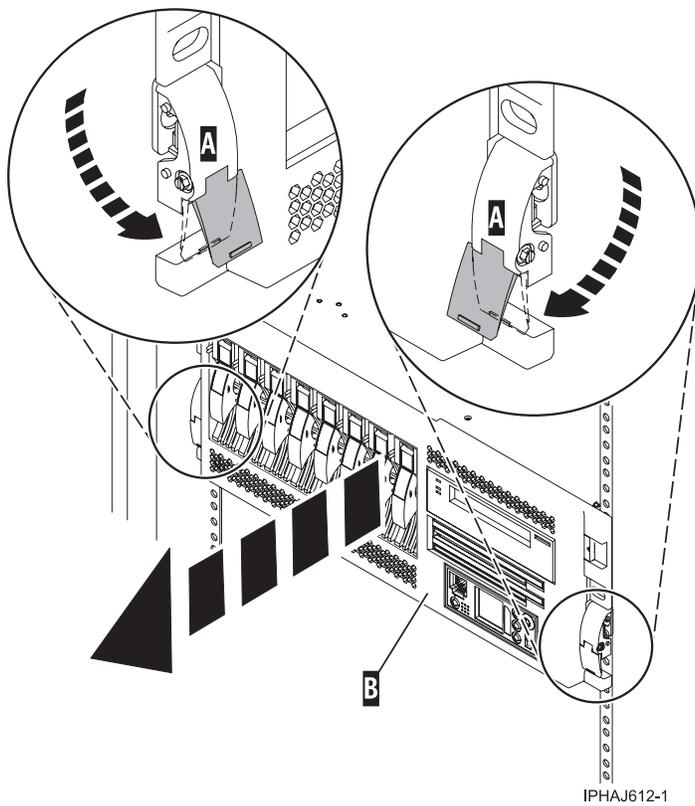


Figure 28. Releasing the rack latches

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.

Note:

- 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

You might need to place the rack-mounted system or expansion unit in the operating position to make the unit available for use.

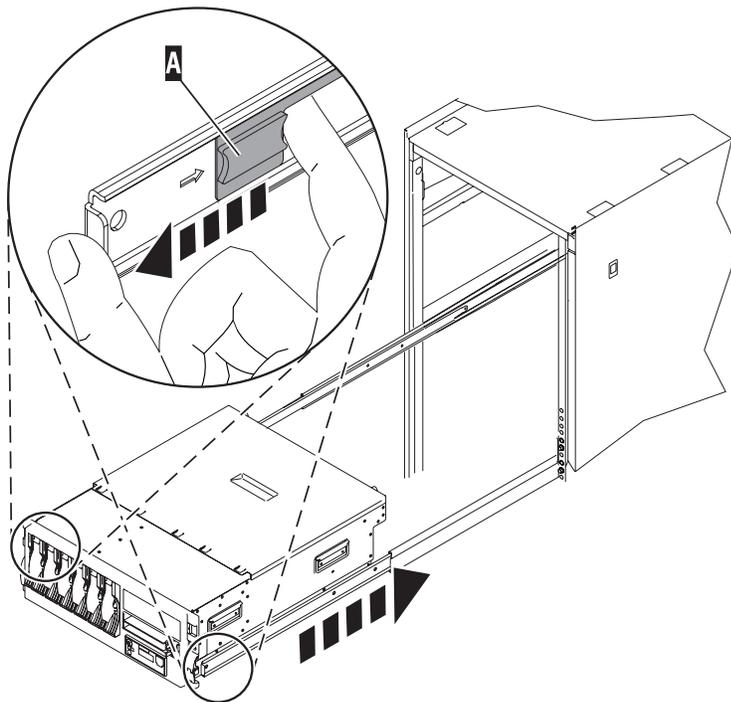
About this task

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 29. 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.

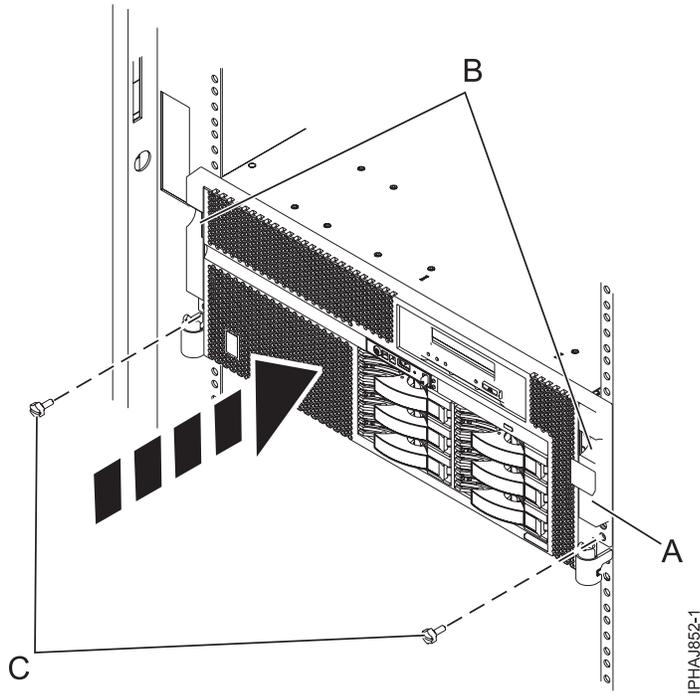


Figure 30. Pushing the system into the rack and attaching the thumbscrews

3. Close the front rack door.

Placing a rack-mounted model 03E/4A, 04E/8A in the service position

You might need to perform service or gain access to internal components by placing the rack-mounted system or expansion unit in the service position. Use the procedure in this section to accomplish this task.

About this task

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 provided power cord. Do not use the 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.

(D005a)

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.

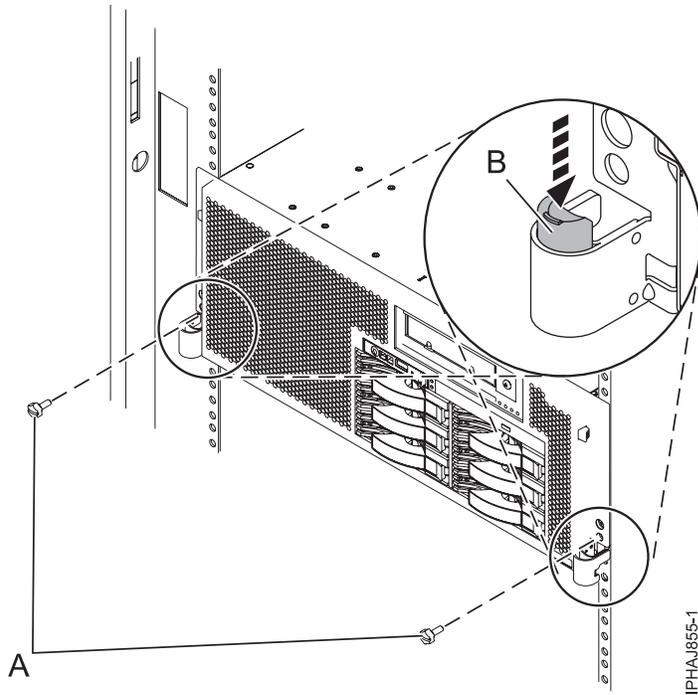


Figure 31. Releasing the rack latches

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.

Note:

- 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 03E/4A, 04E/8A in the operating position

You might need to place the rack-mounted system or expansion unit in the operating position to make the unit available for use.

About this task

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.

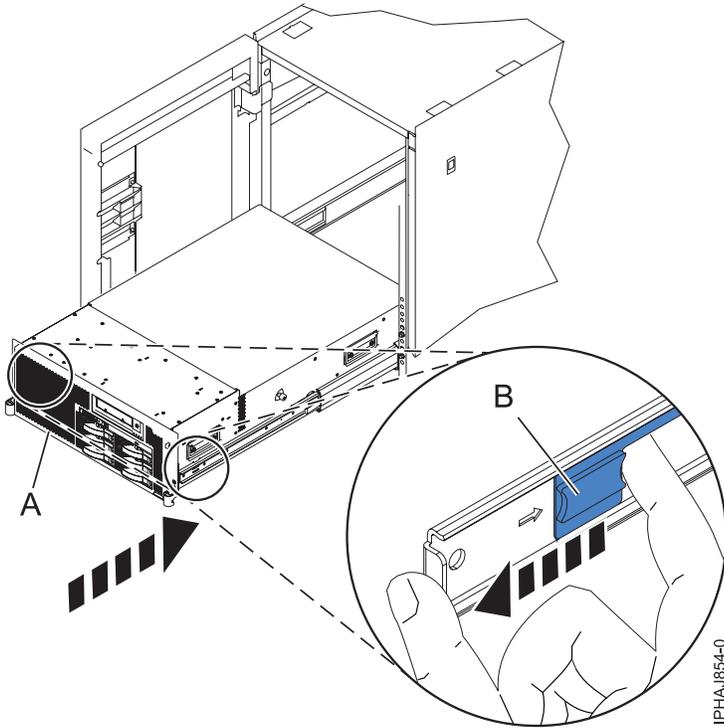


Figure 32. Releasing the rail safety latches

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.

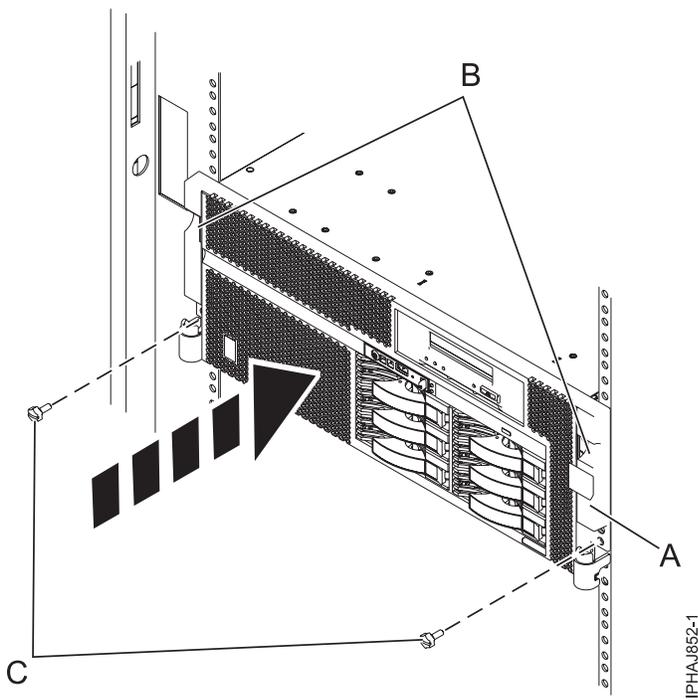


Figure 33. Replacing the thumbscrews

3. Close the front rack door.

Viewing existing firmware levels

Find out how to view the level of firmware that currently runs on your server.

About this task

You can view the current and backup levels of server firmware on the managed system.

Using the HMC to view the existing firmware levels

Learn how to view the level of firmware that currently runs on your server using the HMC.

1. In the Navigation area, click **Updates**.
2. Ensure that the managed system Status is Power Off, Standby, or Operating.
3. Record the level that appears in the EC Number field. For example, 01EM310.

Using the ASMI to view the existing level of server firmware

Find out how to use the ASMI to view the level of firmware that currently runs on your server.

About this task

On the ASMI Welcome pane, view the existing level of server firmware in the upper-right corner below the copyright statement, for example, 01EM310.

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.

Before you begin

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**.
2. Expand **Servers**.
3. Select the managed system you will install the part in.
4. In the Tasks area expand **Serviceability**.
5. Expand **Hardware**.
6. Select **Add FRU**.
7. In the Add/Install/Remove Hardware window select the system or enclosure into which you are installing the feature.
8. Select the type of feature you are installing from the menu and click **Next**.
9. Select the location code for where you will install the feature and click **Add**.
10. Once the FRU is in pending actions 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 these instructions to install the feature.

Removing a part using the Hardware Management Console

Use the Hardware Management Console (HMC) to facilitate removing a part from your managed system.

About this task

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**.
2. Expand **Servers**.
3. Select the managed system from which you are removing a part.
4. In the Tasks area expand **Serviceability**.
5. Expand **Hardware**.
6. Select **Remove FRU**.
7. In the Add/Install/Remove Hardware - Remove FRU, Select FRU Type window, select the system or enclosure from which you are removing the part.
8. Select the type of part you are removing from the menu and click **Next**.
9. Select the location of the part you are removing and click **Add**.
10. 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.

Exchange a part using the Hardware Management Console

About this task

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, "Exchange a part using the HMC Version 7."

Exchange a part using the HMC Version 7

1. In the navigation area, expand **Systems Management**.
2. Expand **Servers**.
3. Select the managed system in which you are exchanging a part.
4. In the Tasks area expand **Serviceability**.
5. Expand **Hardware**.
6. Select **Exchange FRU**.
7. 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.
8. Select the type of part you will exchange from the menu and click **Next**.
9. Select the location code of the part you will exchange from the menu and click **Add**.
10. Once the part is listed in **Pending Actions** click **Launch Procedure** and follow the instructions to exchange the part.

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

Hardware Service Manager — Verify

Use the Hardware Service Manager to verify communications or devices.

About this task

To verify communications or devices on any 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.

Results

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.

Verify 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. Use the procedure in this section to accomplish this task.

About this task

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**. Press Enter.
4. From the **Diagnostic Mode Selection** menu, select **System Verification**. 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 AIX

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

1. Did you replace the part using either AIX 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?
 - Yes:** If the system supports slow boot, set the system to perform a slow boot. For information, see "Using the HMC to perform a slow boot" on page 68.
 - No:** Go to step 4.
3. Start the system and wait until the AIX operating system login prompt displays or until apparent system activity on the operator panel or display has stopped.

Did the AIX login prompt display?

 - **Yes:** Go to step 4
 - **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: .
If the system is partitioned, note the logical partition in which you replaced the part. Contact your service provider for assistance.
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 `diag` and press Enter.
 - b. From the **Function Selection** menu, select **Advanced Diagnostics Routines**. Press Enter.
 - c. From the **Diagnostic Mode Selection** menu, select **System Verification**. 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. Press Enter.

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

 - No:** Go to step 6 on page 67.

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**. 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. 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. After replacing a part, you must select the resource for that part from the *Resource Repair Action* menu. This updates 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.

Follow these steps:

- 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. The parent or child of the resource you just replaced may also require that you run the Resource Repair Action option on it. 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. After replacing that part, you must select the resource for that part from the *Resource Repair Action* menu. This updates 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.

Follow these steps:

- 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 value 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 one of the following for instructions:
 - “Changing service indicators” on page 69

Using the HMC to perform a slow boot

Learn how to perform a slow boot using the HMC.

About this task

In some cases, you need to perform a slow-mode boot in order to perform extended diagnostic testing.

Note: A slow-mode boot might yield a new reference code on the control panel, or new errors in the service processor error log. When the server reports a new error code, record it for use in subsequent steps.

1. Record any reference codes appearing on the control panel or HMC. For details, see Collecting reference codes and system information.
2. Shut down all logical partitions and the server.
3. In the navigation area, select **Systems Management** → **Servers**.
4. Select the server you want to perform a slow boot on.
5. In the **Tasks** portion of the content area, select **Properties**.
6. Click the **Power-On Parameters** tab.
7. Record the current boot setting in the Power-on speed override box.
8. Select **slow** in the Power-on speed override list.

Note: These settings will apply to all future boots. After you complete the service action, change the settings back to what you recorded in step 7.

9. Click **OK**.
10. After you are done, return to the step in the procedure that caused you to perform a slow boot. **This ends the procedure.**

Using the control panel to collect reference codes and system information:

When selected, functions 11 - 20 on the control panel display reference codes and system information.

About this task

Note: Ensure you have a printed copy of the appropriate problem reporting form to document the information you collect here.

To collect reference codes and system information using the control panel, perform the following steps:

1. On the control panel, press the increment button until function 11 is shown on the function/data display.
2. Press the middle button.
3. Record the data.
4. Repeat steps 1 - 3 for functions 12 - 20, until you have recorded the machine type, model, and serial number shown by function 20.

Results

Notes:

1. If 11 is shown in the function/data display on the control panel display, the numbers that follow are the reference codes.

2. If a number other than 11 is shown in the function/data display, the number might not indicate a problem with the system. These reference codes might indicate functions you select from the control panel display.
3. If you have a console with Type and Reference Code columns on it, record the data under the Type column as the first 4 characters of function 11 on the problem reporting form. If an A, B, C, or D is displayed as the first character in the Type column, use the data in the Reference Code column as the last 4 characters of function 11.

Changing service indicators

Turn off the system attention indicator, enable enclosure indicators, change indicators by location code, and perform an LED test on the control panel.

The service indicators alert you that the system requires attention or service. It also provides a method for identifying a field-replaceable unit (FRU) or a specific enclosure within the system.

A hierarchical relationship exists between FRU indicators and enclosure indicators. If any FRU indicator is in an *identify* state, then the corresponding enclosure indicator will change to an *identify* state automatically. You cannot turn off the enclosure indicator until all FRU indicators within that enclosure are in an *off* state.

Turning off the system attention indicator:

The system attention indicator provides a visual signal that the system as a whole requires attention or service.

About this task

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

To perform this operation, your authority level must be one of the following:

- Administrator
- Authorized service provider

To turn off the system attention indicator, do the following:

1. On the ASMI Welcome pane, specify your user ID and password, and click **Log In**.
2. In the navigation area, expand **System Configuration** and **Service Indicators**.
3. Select **System Attention Indicator**.
4. In the right pane, click **Turn off system attention indicator**. If the attempt is unsuccessful, an error message is displayed.

Verify the installed part on a Linux system or logical partition (run AIX diagnostics)

If you have installed a new part, use the instructions in this section to learn how to verify that the system recognizes the part.

About this task

To verify the newly installed or replaced part, continue with “Verify an installed part using stand-alone diagnostics” on page 70.

Verify an installed part using stand-alone diagnostics

If you have installed or replaced a part, verify that the system recognizes the new part. Use the procedure in this section to accomplish this task.

About this task

You can use stand-alone diagnostics to verify an installed part in a Linux system, expansion unit, or logical partition. 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” on page 71.

Prerequisites

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

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 without an HMC” on page 17 for information on using the ASMI.
 - b. On the ASMI main menu, click on **Power/Restart Control**.
 - c. Click on Power On/Off System.
 - d. Select the **Service mode boot from default boot list** option in the AIX/Linux logical partition mode boot drop-down menu.
 - e. Click on **Save settings and power on**. As soon as the optical drive has power, insert the standalone diagnostic CD-ROM.
 - f. Go to step 5.
4. Turn on the system unit power and immediately insert the diagnostics CD-ROM into the optical drive.
5. After the **keyboard** POST indicator displays on the system console and before the last POST indicator (**speaker**) displays, press the numeric 5 key on the system console to indicate that a service mode boot should be initiated using the default service mode boot list.
6. Enter any requested password.
7. At the *Diagnostic Operating Instructions* display, press Enter.

Note: If an SRN or other reference code is displayed, suspect a loose adapter or cable connection.

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

8. If the terminal type is requested, you must use the **Initialize Terminal** option on the *Function Selection* menu to initialize the operating system before you can continue.
9. From the Function Selection menu, select **Advanced Diagnostics Routines**. Press Enter.
10. From the Diagnostic Mode Selection menu, select **System Verification**. Press Enter.

11. When the Advanced Diagnostic Selection menu appears, select **All Resources**, or test only the part you replaced, and any devices that are attached to the part you replaced, by selecting the diagnostics for the individual part. Press Enter.
12. Did the *Testing Complete, No trouble was found* message appear?
 - **No:** There is still a problem. Contact your service provider.
 - **Yes:** Go to step 13.
13. If you changed the service processor or network settings, as instructed in previous procedures, restore the settings to the value they had prior to servicing the system.
14. If the indicator lights are still on, follow these steps:
 - a. Select **Identify and Attention Indicators** from the *Task Selection* menu to turn off the system attention and indicator lights. 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.

Running stand-alone diagnostics from a Network Installation Management server

If you have AIX installed but it cannot be started, or you have Linux installed, you can run the diagnostics from a Network Installation Management (NIM) server.

About this task

Note: Only perform this procedure if you are directed from another procedure or by your next level of support.

Diagnostics, which are available for AIX and Linux systems and logical partitions, can help you perform hardware analysis. If a problem is found, you will receive a service request number (SRN) that can help pinpoint the problem and determine a corrective action.

A client system connected to a network with a NIM server can boot stand-alone diagnostics from the NIM server if the client-specific settings on both the NIM server and client are correctly configured.

Notes:

- For NIM clients that have adapters that would typically require that supplemental media be installed when stand-alone diagnostics are run from CD, the support code for these adapters must be installed into the directory pointed to by the NIM SPOT from which you want to boot that client. Before running stand-alone diagnostics on these clients from the NIM server, the NIM server system administrator must ensure that any needed support for these devices is installed on the server.
- All operations to configure the NIM server require root user authority.
- If you replace the network adapter in the client, the network adapter hardware address settings for the client must be updated on the NIM server.
- Ensure that the **Cstate** for each stand-alone diagnostics client on the NIM server is kept in the *diagnostic boot has been enabled* state.
- On the client system, the NIM server network adapter should be put in the bootlist after the boot disk drive. This allows the system to boot in stand-alone diagnostics from the NIM server if there is a problem booting from the disk drive.

Configuring the NIM server

For information about performing the following tasks, refer to the "Performing advanced NIM configuration tasks" chapter of the AIX Installation and Migration guide. Contact your next level of support to obtain the guide.

- Registering a client on the NIM server
- Enabling a client to run diagnostics from the NIM server

To verify that the client system is registered on the NIM server and the diagnostic boot is enabled, run the command from the command line on the NIM server: `lsnim -a Cstate -z ClientName`. Refer to the following table for system responses.

Note: The ClientName is the name of the system on which you want to run stand-alone diagnostics.

Table 4. Verification that the client system is registered on the NIM server and the diagnostic boot is enabled

System response	Client status
#name:Cstate:ClientName:diagnostic boot has been enabled:	The client system is registered on the NIM server and enabled to run diagnostics from the NIM server.
#name:Cstate:ClientName:ready for a NIM operation: or #name:Cstate:ClientName:BOs installation has been enabled:	The client is registered on the NIM server but not enabled to run diagnostics from the NIM server. Note: If the client system is registered on the NIM server but Cstate has not been set, no data will be returned.
0042-053 lsnim: there is no NIM object named "ClientName"	The client is not registered on the NIM server.

Configuring the client and running the stand-alone diagnostics from a NIM server

Perform the following steps to run stand-alone diagnostics on a client from the NIM server:

1. Let the system administrator and system users know that the system unit might be shut down.
2. Stop all programs including the AIX or Linux operating system. If you need help, contact the system administrator.
3. Remove all tapes, diskettes, and CDs.
4. Choose from the following options:
 - If you are running stand-alone diagnostics in a full system partition profile, verify with the system administrator and system users that the system unit can shut down using the shutdown command. Then power down the system.
 - If you are running on a logically partitioned system, make sure the CD drive is available to the partition used to run stand-alone diagnostics. Verify with the system administrator and system users using that partition that all applications on that partition must be stopped, and that the partition will be restarted. Stop all programs on that partition, including the operating system.
5. Choose from the following options:
 - If you are in a full system partition, power on the system unit to run stand-alone diagnostics.
 - If you are in a logically partitioned system, restart the partition to run stand-alone diagnostics.
6. When the keyboard indicator is displayed (the word *keyboard* on an HMC virtual terminal window or the keyboard icon on a graphical display) press the number 1 key on the keyboard to display the SMS menus.
7. Enter any requested passwords.
8. Select **Set Up Remote IPL** (Initial Program Load).
9. Enter the client address, server address, gateway address, if applicable, and subnet mask. If there is no gateway between the NIM server and the client, set the gateway address to 0.0.0.0.

To determine if there is a gateway, either ask the system network administrator or compare the first three octets of the NIM server address and the client address. If they are the same, (for example, if

- the NIM server address is 9.3.126.16 and the client address is 9.3.126.42, the first 3 octets (9.3.126) are the same), then set the gateway address in the Remote IPL field to 0.0.0.0.
10. If the NIM server is set up to allow pinging from the client system, use the Ping test option in the Remote IPL option to verify that the client system can ping the NIM server.
 11. Under the Ping test option, choose the network adapter that provides the attachment to the NIM server to do the ping operation. If the ping returns with an OK prompt, the client is prepared to boot from the NIM server. If ping returns with a FAILED prompt, the client cannot proceed with the NIM boot.
 12. Return to the SMS main menu screen.
 13. Select **Select Boot Options** → **Install or Boot a Device** → **Network**.
 14. Record the current bootlist settings. You will need to set the bootlist back to the original settings after running diagnostics from the NIM server.
 15. Change the bootlist so the network adapter attached to the NIM is first in the bootlist.
 16. Set the network parameters for the adapter from which you want to boot.
 17. Exit completely from SMS. The system will start loading packets while doing a bootp from the network.
 18. Follow the on-screen instructions.
 - If Diagnostic Operating Instructions Version *x.x.x* displays, stand-alone diagnostics have installed successfully.
 - If the AIX login prompt displays, stand-alone diagnostics did not load. Continue with step 19.
 19. If the diagnostics did not load, check the following items:
 - The bootlist on the client might be incorrect.
 - **Cstate** on the NIM server might be incorrect.
 - Network problems might be preventing you from connecting to the NIM server.
 - Verify the settings and the status of the network. Contact your next level of support to obtain the guide.
 20. After running diagnostics, restart the system and use SMS to change the IP settings and bootlist sequence back to the original settings.

Verify the presence of an installed part using Hardware Management Console (HMC)

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

1. At the HMC, examine the service action event log for any open service action events. See “Viewing serviceable events” on page 75 for details.
2. Are there any service action events that are open?
 - No:** If the system attention LED is still on, use the HMC to turn off the LED. See “Activating and deactivating LEDs” on page 74. **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.
 - **Yes:** Continue with the next step.
 - **No:** Choose from the following options:
 - Review the other serviceable events and 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.
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 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.

About this task

Choose from the following:

- “Deactivate a system attention LED or partition LED”
- “Activate or deactivate identify LED”

Deactivate a system attention LED or partition LED:

About this task

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.

Activate or deactivate identify LED:

About this task

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 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. 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.

About this task

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.

Verify an installed feature or replaced part on a Virtual I/O Server (VIOS) system or logical partition

If you installed feature or replaced a part you might want to use the tools in VIOS to verify that the feature or part is recognized by the system or logical partition. Use the procedure in this section to accomplish this task.

About this task

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**. Press Enter.
4. From the **Diagnostic Mode Selection** menu, select **System Verification**. 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 on page 77.
2. Is the system powered off?
 - Yes:** If the system supports slow boot, set the system to perform a slow boot. For information, see "Using the HMC to perform a slow boot" on page 68.

No: Go to step 4.

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?

- **Yes:** Go to step 4
- **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: .
If the system is partitioned, note the logical partition in which you replaced the part. Contact your service provider for assistance.

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**. Press Enter.
- c. From the **Diagnostic Mode Selection** menu, select **System Verification**. 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. 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`. Press Enter.

Tip: This action changes the indicator light for the part from the fault state to the normal state.
Go to step 9 on page 78

7. When a test is run on a resource in system verification mode, and that resource has an entry in the VIOS error log, if the test on the resource was successful, the *Resource Repair Action* menu appears. After replacing a part, you must select the resource for that part from the *Resource Repair Action* menu. This updates the VIOS 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.

Follow these steps:

- 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. The parent or child of the resource you just replaced may also require that you run the Resource Repair Action option on it. When a test is run on a resource in system verification mode, and that resource has an entry in the VIOS error log, if the test on the resource was successful, the *Resource Repair Action* menu appears. After replacing that part, you must select the resource for that part from the *Resource Repair Action* menu. This updates the VIOS 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. Follow these steps:
- 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 value 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 one of the following for instructions:
 - “Changing service indicators” on page 69

Gain access to the model 04E/8A, 03E/4A control panels

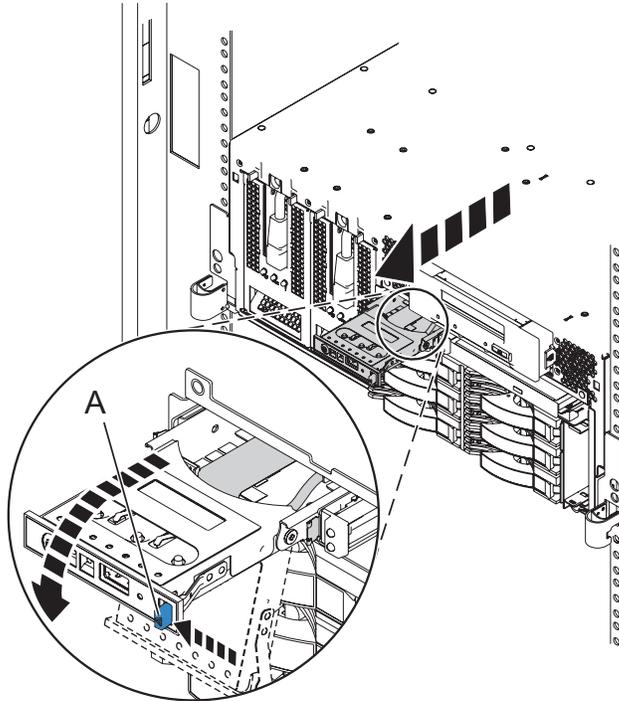
Since only part of the control panel is visible from the front of the server, you can use this procedure to gain access to all of the control panel’s features, including the display.

About this task

Because only part of the control panel is visible from the front of the server, the following procedure describes how to gain access to all of the control panel’s features, including the display.

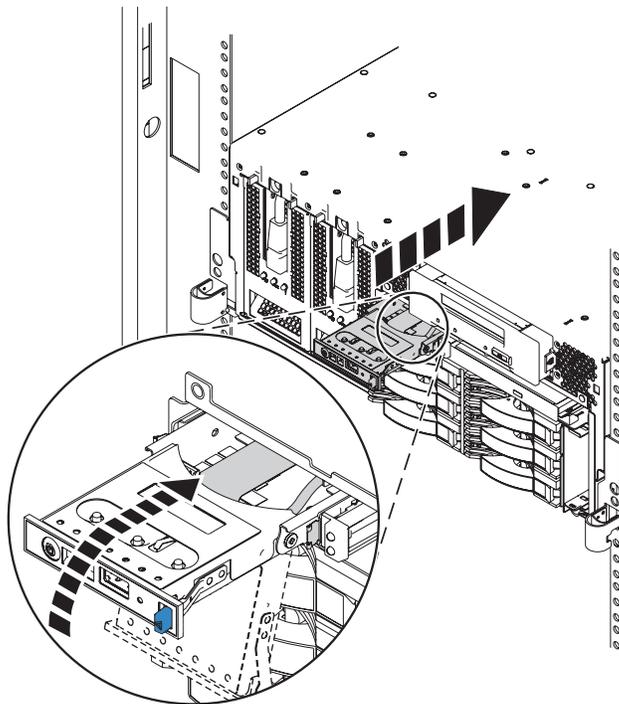
To access all of the control panel’s features, complete the following steps:

1. Press inward on the spring-loaded tab **A** located on the right side of the control panel so that it pops out slightly, as shown in the following figure.



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2. Pull the control panel out, toward the front of the system, until it can be pivoted downward on its hinge.
3. To move the control panel back into the device enclosure, lift the control panel up to align it with the opening and push it into place until you feel the tab lock, as shown in the following figure.



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Appendix. Notices

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Electronic emission notices

Class A Notices

The following Class A statements apply to the servers.

Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment

generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. 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

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

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

声 明

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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

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

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Electromagnetic Interference (EMI) Statement - Korea

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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.

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"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

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BULL CEDOC
357 AVENUE PATTON
B.P.20845
49008 ANGERS CEDEX 01
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86 A1 57EW 03