

# Hardware Information

Memory modules

ESCALA POWER5



REFERENCE  
86 A1 14EW 00



# ESCALA POWER5

## Hardware Information

### Memory modules

#### **Hardware**

July 2006

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FRANCE

#### **REFERENCE**

86 A1 14EW 00

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## Memory modules

The following procedures describe how to remove, replace, and install dual in-line memory modules (DIMMs).

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

- **Printable PDF**  
Use this to view and print a PDF of this information.
  - **Model ESCALA PL 245T/R memory modules**  
These procedures describe how to remove, replace, and install memory modules.
  - **Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules**  
These procedures describe how to remove, replace, and install memory modules.
  - **Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules**  
These procedures describe how to remove, replace, and install memory modules.
  - **Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules**  
These procedures describe how to remove, replace, and install memory modules.
  - **Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules**  
These procedures describe how to remove, replace, and install memory modules.
  - **Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules**  
These procedures describe how to remove, replace, and install memory modules.
- 

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4. Click Save.

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Parent topic: [Memory modules](#)

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## Model 471/85 or ESCALA PL 245T/R memory modules

These procedures describe how to remove, replace, and install memory modules.

Complete the following procedures to remove, replace, or install memory modules in a model 471/85 or ESCALA PL 245T/R.

- **Remove and replace model ESCALA PL 245T/R memory modules**  
Learn how to remove and replace memory modules.
- **Install model ESCALA PL 245T/R memory modules**  
This procedure describes how to install memory modules.

Parent topic: [Memory modules](#)

---

## Remove and replace model 471/85 or ESCALA PL 245T/R memory modules

Learn how to remove and replace memory modules.

These procedures describe how to remove and replace the memory modules in a model 471/85 or ESCALA PL 245T/R.

1. [Remove model ESCALA PL 245T/R memory modules](#)
2. [Replace model ESCALA PL 245T/R memory modules](#)

Parent topic: [Model ESCALA PL 245T/R memory modules](#)

---

## Remove model 471/85 or ESCALA PL 245T/R memory modules

To replace the memory modules in a model 471/85 or ESCALA PL 245T/R, complete the following procedure:

**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.

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If you are removing the memory modules for a system upgrade or as part of another procedure, continue to the next step. If you are removing the memory modules because of a system failure, use the service action log to help identify the failing part. For more information, see [Identify a failing part](#).
3. If necessary, [Place the rack-mounted model ESCALA PL 245T/R in the service position](#).
4. Remove the side cover. For instructions, see [Remove and replace model ESCALA PL 245T/R covers and doors](#).

### 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. If you are removing the memory modules because of a system failure, look at the LEDs to determine the location of the failed memory module. The LEDs are located on light path diagnostic card, see

Identify a failing part on a model ESCALA PL 245T/R.

6. Stop the system. For instructions, see [Stop the system or logical partition](#).
7. Disconnect the power source from the system by unplugging the system.

**Note:** This system may 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)

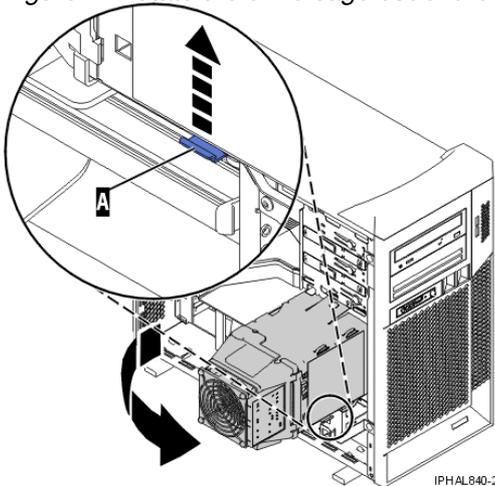


or



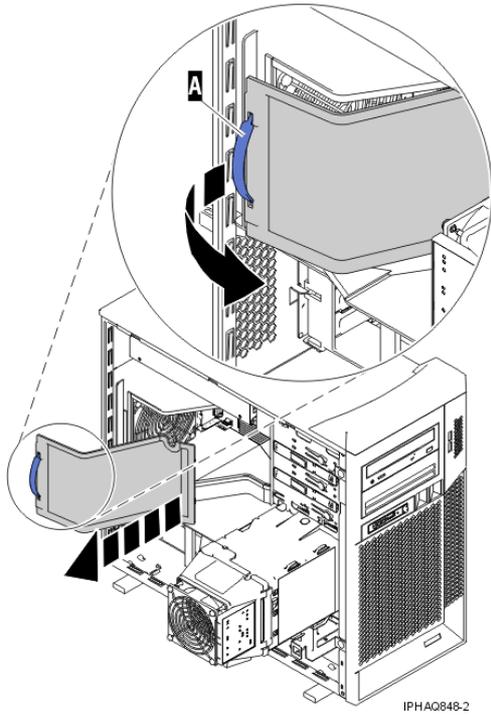
8. Push the drive-cage release tab A up and rotate the drive cage all the way out of the system until it locks into place over the drive-cage retention tab, as shown in the following figure.

*Figure 1. Rotate the drive cage out of the system*



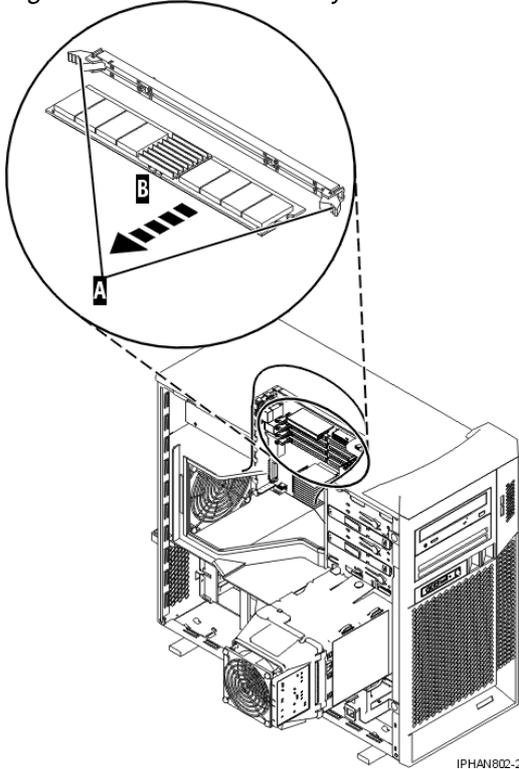
9. Remove the air baffle door by pulling outward on the handle A, as shown in the following figure.

*Figure 2. Remove the air baffle door*



10. Remove the memory module by pushing the locking tabs A out and then down, as shown in the following figure. The lever action of the tabs forces the memory module out of the connector.
11. Pull the memory module B out of the connector.

Figure 3. Remove a memory module



**Parent topic:** [Remove and replace model ESCALA PL 245T/R memory modules](#) **Next topic:** [Replace model ESCALA PL 245T/R memory modules](#)

## Identify a failing part on a model ESCALA PL 245T/R

Light path diagnostics provide a path that you can follow to help you identify the source of an error. The server must be connected to a power source for the light-emitting diodes (LED) inside the server to be lit; the server does not have to be turned on for the LEDs to be lit.

The server is designed so that LEDs remain lit when the server is connected to an ac power source but is not turned on, provided that the power supply is operating correctly. This feature helps you to isolate the problem when the operating system is shut down.

Many errors are first indicated by a lit information LED or system-error LED on the operator information panel on the front of the server. If one or both of these LEDs are lit, one or more LEDs elsewhere in the server might also be lit and can direct you to the source of the error.

To identify a failing part on a model ESCALA PL 245T/R follow these steps:

1. If this is a rack mounted server, [Place the rack-mounted model ESCALA PL 245T/R in the service position or operating position.](#)
2. [Remove and replace the model ESCALA PL 245T/R side cover.](#)
3. Find the light-path diagnostic card on top of the fan attached to the disk drive cage. Use the following figure and table to identify each light on the card.

Figure 1. Light path diagnostic card indicator LED layout

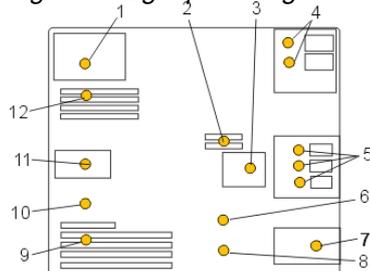
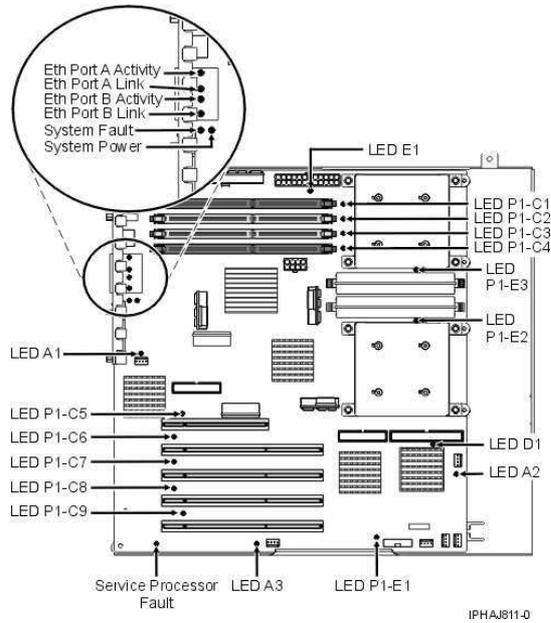


Table 1. ESCALA PL 245T/R Fault-indicator LEDs

1 Power supply fault-indicator LED	7 Front fan fault-indicator LED
2 Voltage-regulator module fault-indicator LED	8 Battery fault-indicator LED
3 Disk-drive bay fan fault-indicator LED	9 PCI adapter fault-indicator LED
4 Optical-media bay fault-indicator LEDs	10 Thermal fault-indicator LED
5 Disk-drive bay fault-indicator LEDs	11 Rear fan fault-indicator LED
6 System backplane fault-indicator LED	12 Memory fault-indicator LED

4. Refer to the service label on your system or the following figure to locate an LED on the system backplane for replaceable parts.

Figure 2. System backplane indicator LED layout



Parent topic: [Identify a failing part](#)

## Stop the system or logical partition

Learn how to stop a system or logical partition.

**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:

- [Stop the system that is not managed by a Hardware Management Console](#)
- [Stop the system or logical partition using the Hardware Management Console](#)

Parent topic: [Start or stop the system or logical partition](#)

### Related tasks

[Start the system or logical partition](#)

## Stop the system that is not managed by a Hardware Management Console

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

### Prepare to stop the system

Before you stop the system, do the following:

1. Ensure that all jobs are completed and end all applications.
2. Ensure that the operating system is stopped. Failure to do so can result in the loss of data.
3. Write down the information displayed on the control panel if you are stopping your system due to an error or to make a repair. For more information, see [Collecting reference codes and system information](#).

### Stop the system

To stop a system, follow these steps:

1. Log in to the system as a user with the authority to run the `shutdown` or `pwrdownsys` (Power Down System) command.
2. At the command line, enter one of the following commands:
  - ◆ If your system is running AIX, type `shutdown`.
  - ◆ If your system is running Linux, type `shutdown -h now`.
 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



Parent topic: [Stop the system or logical partition](#)

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## Stop the system or logical partition using the Hardware Management Console

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 [Powering off the managed system](#).

## Replace model 471/85 or ESCALA PL 245T/R memory modules

To replace the memory modules in a model 471/85 or ESCALA PL 245T/R, complete the following procedure:

**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.

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If necessary, remove the memory module from its antistatic package.

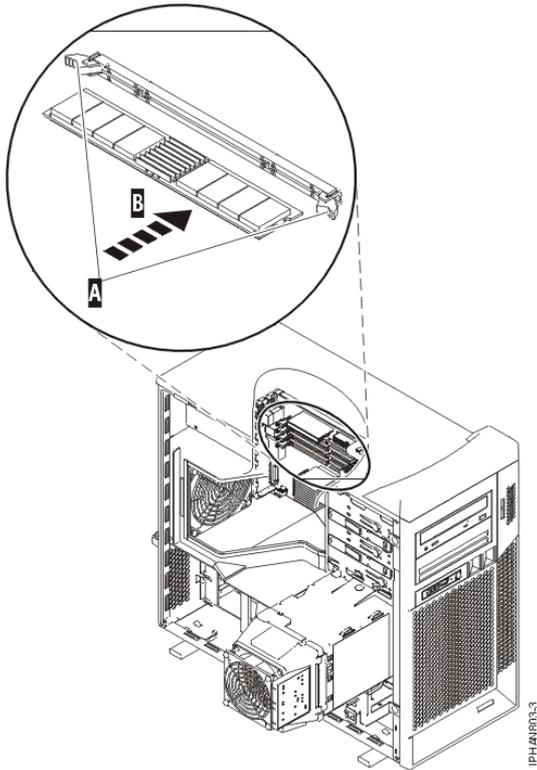
### Attention:

- ◆ 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.
3. Ensure that the connector locking tabs A are pulled out to the unlocked position before installing the new memory module, as shown in [Figure 1](#).

**Attention:** Memory modules are keyed to prevent a module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before installing the memory module.

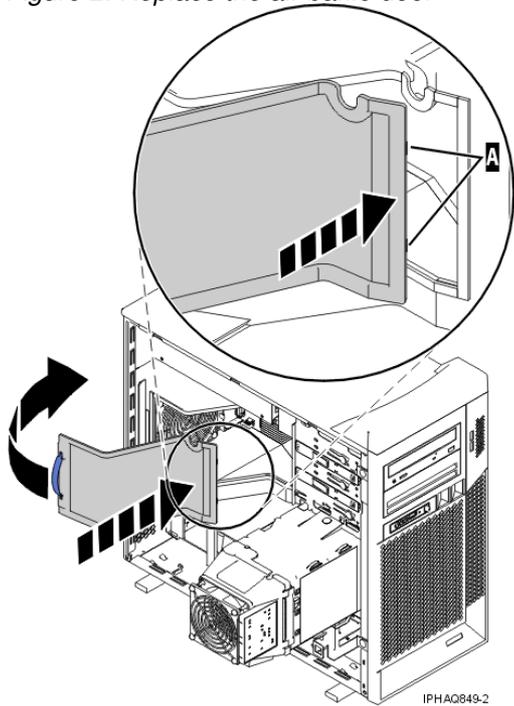
4. Carefully grasp the memory module along two edges and align the connector.
5. Insert the memory module B firmly into the connector, as shown in the following figure.
6. Secure the memory module with the locking tabs A located at each end of the memory module connector.

*Figure 1. Install a memory module*



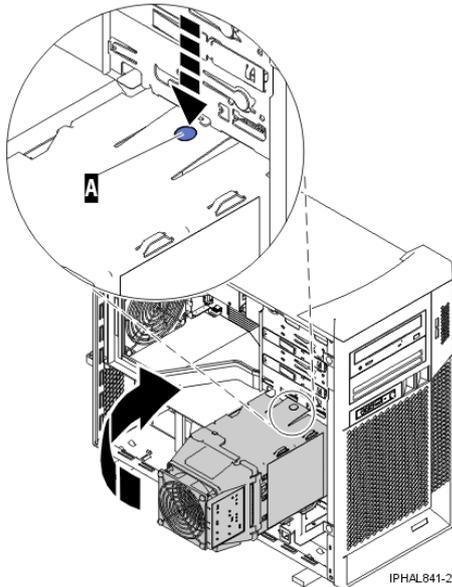
7. Replace the air baffle door by sliding the lower edge A in to the system first, as shown in the following figure.

*Figure 2. Replace the air baffle door*



8. Push the disk-drive cage slightly forward, press the release tab A, and lower the cage into the system, as shown in the following figure.

*Figure 3. Rotate the drive cage into the system*



9. Replace the side cover. For instructions, see [Remove and replace model ESCALA PL 245T/R covers and doors](#).
10. If necessary, [Place the rack-mounted model ESCALA PL 245T/R in the operating position](#).
11. Reconnect all power and signal cables to their respective connectors.
12. Start the system. For instructions, see [Start the system or logical partition](#).
13. Verify that the new resource is functional. For instructions, see [Verify the installed part](#).

**Parent topic:** [Remove and replace model ESCALA PL 245T/R memory modules](#) **Previous topic:** [Remove model ESCALA PL 245T/R memory modules](#)

---

## Start the system or logical partition

Use these instructions to start a system or logical partition.

- [Start a system that is not managed by a Hardware Management Console](#)
- [Start the system or logical partition using the Hardware Management Console](#)

**Parent topic:** [Start or stop the system or logical partition](#)

### Related tasks

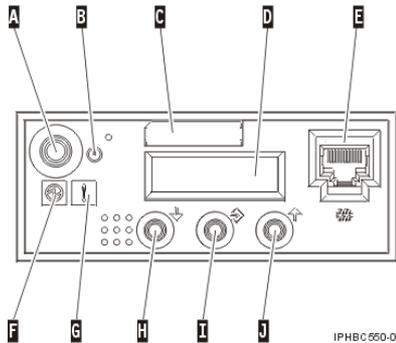
[Stop the system or logical partition](#)

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## Start a system that is not managed by a Hardware Management Console

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

1. On a rack-mounted system unit, open the front rack door, if necessary. On a stand-alone system unit, open the front door.
2. Before you press the power button on the control panel, ensure that power is connected to the system unit as follows:
  - ◆ All system power cables are connected to a power source.
  - ◆ The power-on light F, as shown in the following figure, is slowly blinking.
  - ◆ The top of the display D, as shown in the following figure, contains 01 V=F.



**Tip:** The system attention light G, as shown in the previous figure, does not appear on the control panel on the model ESCALA PL 850R/PL 1650R/R+.

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

**Note:** On the 7/10 or model ESCALA PL 250R-L, the power button is on the operations panel.

4. Observe the following after pressing the power button:
  - ◆ The power-on light begins to blink visibly 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.

**Tip:** If pressing the power button does not start the system, use the following instructions to start the system using the Advanced System Management Interface (ASMI).

- Set up access to the ASMI. For instructions, see [Accessing the ASMI](#).
- Start the system using the ASMI. For instructions, see [Powering the system on and off](#).

**Parent topic:** [Start the system or logical partition](#)

## Start the system or logical partition using the Hardware Management Console

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

For instructions on working with the HMC, see [Managing the Hardware Management Console](#). For instructions on starting a logical partition, see [Activating a partition profile](#). 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. The power-on light on the control panel stops blinking and remains on, indicating that system power is on.

**Parent topic:** [Start the system or logical partition](#)

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## Install model 471/85 or ESCALA PL 245T/R memory modules

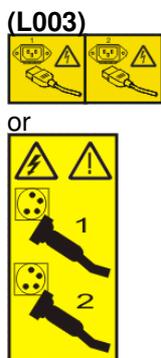
This procedure describes how to install memory modules.

To install memory modules in a model 471/85 or ESCALA PL 245T/R, complete the following procedure:

**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.

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Stop the system. For instructions, see [Stop the system or logical partition](#).
3. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



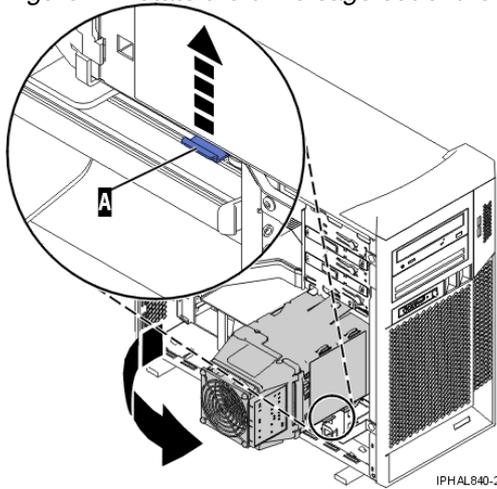
4. If necessary, [Place the rack-mounted model ESCALA PL 245T/R in the service position](#).
5. Remove the side cover. For instructions, see [Remove and replace model ESCALA PL 245T/R covers and doors](#).

**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.

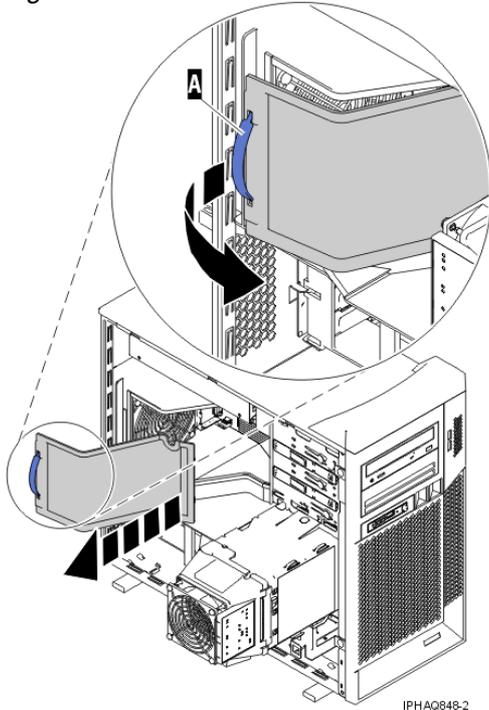
6. Push the drive-cage release tab A up and rotate the drive cage all the way out of the system until it locks into place over the drive-cage retention tab, as shown in the following figure.

Figure 1. Rotate the drive cage out of the system



7. Remove the air baffle door by pulling outward on the handle A, as shown in the following figure.

Figure 2. Remove the air baffle door



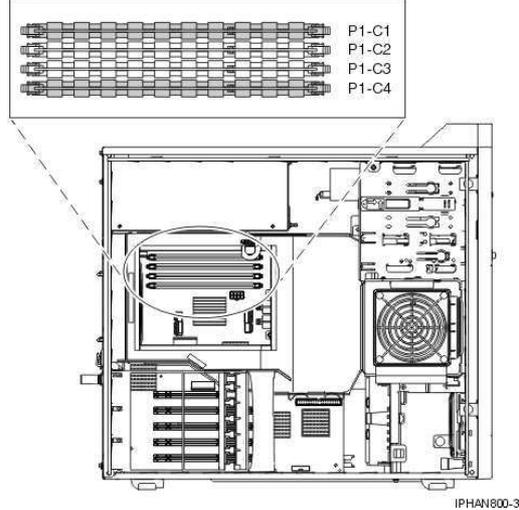
8. Determine the slots in which the memory modules will be placed.

**Note:** Server configurations support a single pair of memory modules on initial order, and must be upgraded in pairs of modules when adding memory to the system unit. Use the following rules to

install memory modules (see [Figure 3](#) for memory module slot locations on the system backplane):

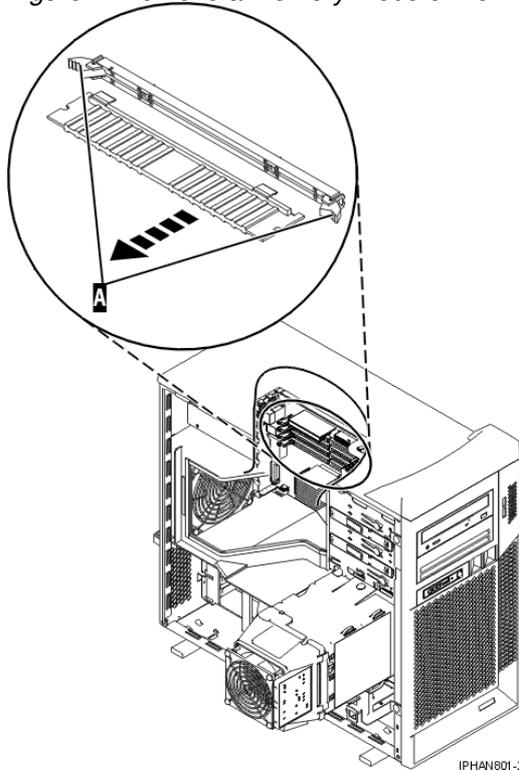
- ◆ The first memory module pair is placed into memory module slots P1-C1 and P1-C4.
- ◆ The second memory module pair is placed into memory module slots P1-C2 and P1-C3.

*Figure 3. Model 1/85 or ESCALA PL 245T/R system backplane connector locations*



9. If necessary, remove the memory module from its antistatic package.
10. If necessary, remove the memory module filler by pushing the locking tabs A out and then down, as shown in the following figure. The lever action of the tabs forces the memory module filler out of the connector.

*Figure 4. Remove a memory module filler*

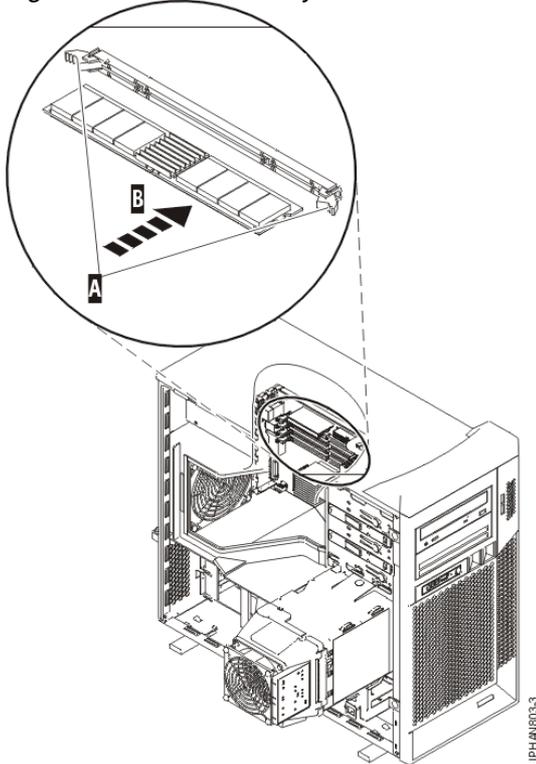


11. Ensure that the connector locking tabs A are pushed out in the unlocked position before installing a new memory module, as shown in [Figure 4](#).

**Attention:** Memory modules are keyed to prevent a module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

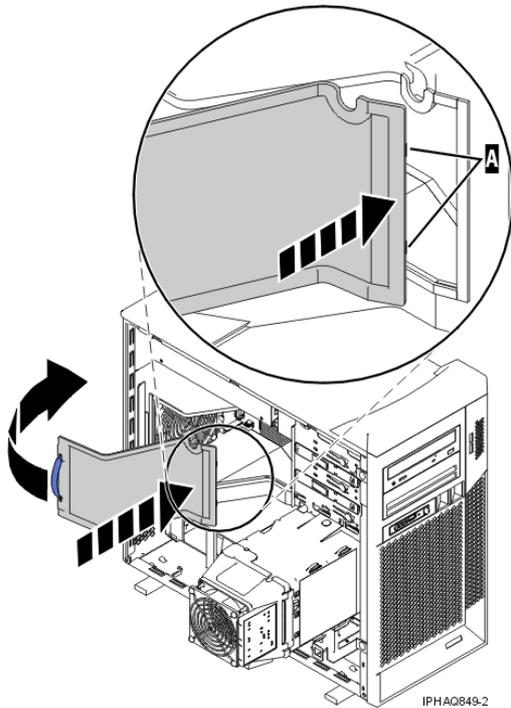
12. Carefully grasp the memory module along two edges and align the connector.
13. Insert the memory module firmly into the connector.
14. Secure the memory module B with the locking tabs A located at each end of the memory module connector, as shown in the following figure.

*Figure 5. Install a memory module*



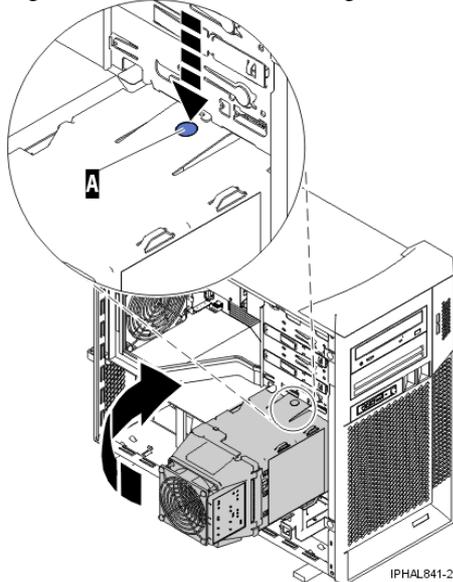
15. Replace the air baffle door by sliding the lower edge A in to the system first, as shown in the following figure.

*Figure 6. Replace the air baffle door*



16. Push the disk drive cage slightly forward, press the release tab A, and lower the cage into the system, as shown in the following figure.

Figure 7. Rotate the drive cage into the system



17. Replace the side cover. For instructions, see [Remove and replace model ESCALA PL 245T/R covers and doors](#).
18. If necessary, [Place the rack-mounted model ESCALA PL 245T/R in the operating position](#).
19. Reconnect all power and signal cables to their respective connectors.
20. Start the system. For instructions, see [Start the system or logical partition](#).
21. Verify that the new resource is functional. For instructions, see [Verify the installed part](#).

Parent topic: [Model ESCALA PL 245T/R memory modules](#)

## Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules

These procedures describe how to remove, replace, and install memory modules.

To complete these procedures for the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ models, you need to print the following instructions, and then return here. If the ESCALA Power5 Hardware Information is available on a PC or a notebook that is close to the system on which you are installing or replacing parts, you can use the online version of these procedures:

- [Fan tray assembly](#)
- [Service processor](#)
- [Power supply](#)
- [Voltage regulator](#)

If you are planning to use this information in printed form, be sure to print all of the information you need. You can find all of the information, in both HTML and PDF format, in the [Installing features](#) topic. Go to the procedures listed above, print them, and then return here.

- **[Remove and replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)**  
Learn how to remove and replace memory modules.
- **[Install model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)**  
This procedure describes how to install memory modules.

Parent topic: [Memory modules](#)

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## Remove and replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules

Learn how to remove and replace memory modules.

These procedures describe how to remove and replace the memory modules in the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ models.

1. [Remove model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)
2. [Replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)

Parent topic: [Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)

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## Remove model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules

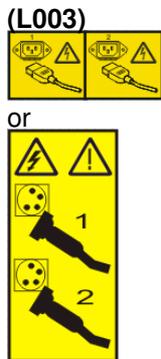
If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing memory modules from the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ models. For instructions, see [Remove a part using the Hardware Management Console](#). If you do not have an HMC, do the following to remove the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If you are removing the memory modules for a system upgrade or as part of another procedure, continue to the next step. If you are removing the memory modules because of a system failure, use the service action log to help identify the failing part. See [Identify a failing part](#).
3. Place the system in the service position. For instructions, see [Place the rack-mounted system or expansion unit in the service position](#).
4. Remove the service access cover. For instructions, see [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

### 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. If you are removing the memory modules because of a system failure, look at the LEDs to determine the location of the failed memory module. The LEDs are located on the fan tray assembly.
  6. Stop the system. For instructions, see [Stop the system or logical partition](#).
  7. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



8. If necessary to access memory module positions on the system backplane, disconnect the cables from the power supplies or service processor assembly at the back of the system.
9. Remove the fan tray assembly. For instructions, see [Remove the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ fan tray assembly](#).
10. If necessary, [Remove the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ power supply](#) to access memory modules on the system backplane.
11. If necessary, [Remove the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ service processor assembly](#) to access memory modules on the system backplane.
12. Remove the memory module by pushing the tabs A out and then down, as shown in [Figure 1](#) or [Figure 2](#). The tabs' lever action forces the memory module out of the connector.
13. Pull the memory module out of the connector.

**Note:** When removing a memory module, be sure to press the tabs A back to the upright position. Failure to do so might cause the fan assembly to not seat correctly, which might cause the system to power off.

*Figure 1. Remove a memory module from a rack-mounted system unit*

Memory modules

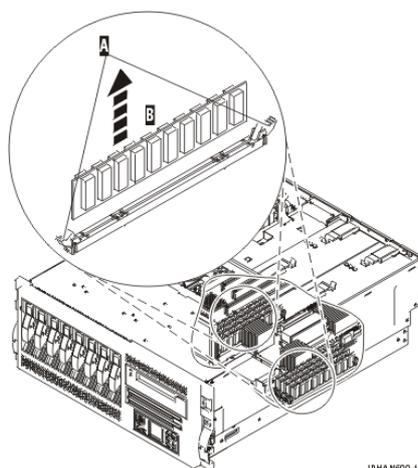
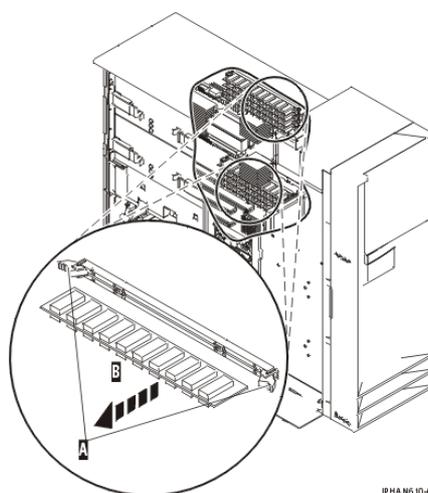


Figure 2. Remove a memory module from a stand-alone system unit



**Parent topic:** [Remove and replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)  
**Next topic:** [Replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)

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## Replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing the memory modules in the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ models. For instructions, see [Replace a part using the Hardware Management Console](#). If you do not have an HMC, do the following to replace the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If necessary, remove the memory module from its antistatic package.

### Attention:

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

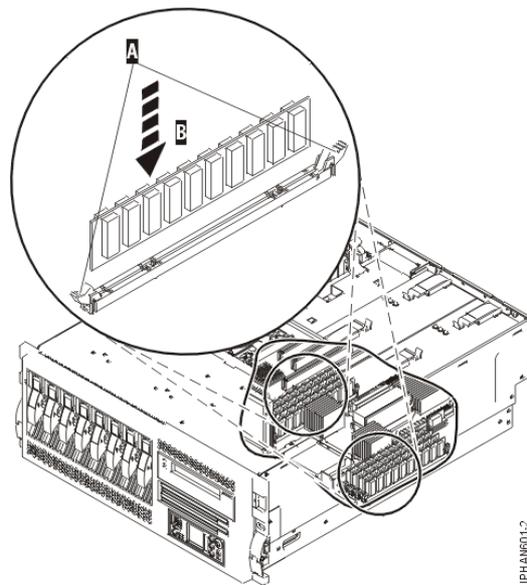
## Memory modules

- ◆ 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. Ensure that the connector locking tabs are pushed out in the unlocked position before installing the new memory module.

**Attention:** Memory modules are keyed to prevent a module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

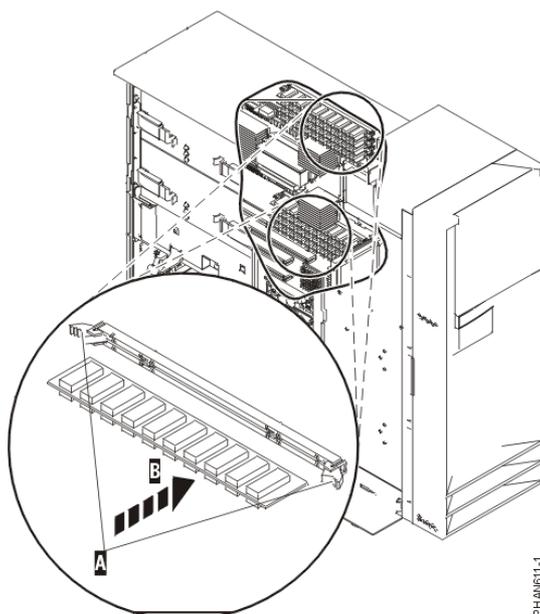
4. Carefully grasp the memory module along two edges and align the connector.
5. Insert the memory module A firmly into the connector, as shown in [Figure 1](#) or [Figure 2](#).
6. Secure the memory module B with the locking tabs A located at each end of the memory module connector.

*Figure 1. Replace a memory module in a rack-mounted system unit*



*Figure 2. Replace a memory module in a stand-alone system unit*

Memory modules



7. Replace the service processor if it was removed from the system. For instructions, see [Replace the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ service processor assembly](#).
8. Replace the power supply if it was removed from the system. For instructions, see [Replace the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ power supply](#).
9. Replace the fan tray. For instructions, see [Replace the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ fan tray assembly](#).
10. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
11. If you are servicing a rack-mounted system unit, [Place the rack-mounted system or expansion unit in the operating position](#).
12. Reconnect all power and signal cables to their respective connectors.
13. Start the system. For instructions, see [Start the system or logical partition](#).
14. Verify the installed part. For instructions, see [Verify the installed part](#).

**Parent topic:** [Remove and replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#) **Previous topic:** [Remove model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)

## Install model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules

This procedure describes how to install memory modules.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing the memory modules in the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ models. For instructions, see [Install a feature using the Hardware Management Console](#). If you do not have an HMC, do the following to install the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. [Place the rack-mounted system or expansion unit in the service position](#).
3. Remove the service access cover. For instructions, see [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
4. Stop the system. For instructions, see [Stop the system or logical partition](#).
5. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



6. If necessary to access memory module positions on the system backplane, disconnect the cables from the power supplies or service processor assembly at the back of the system.

**Attention:**

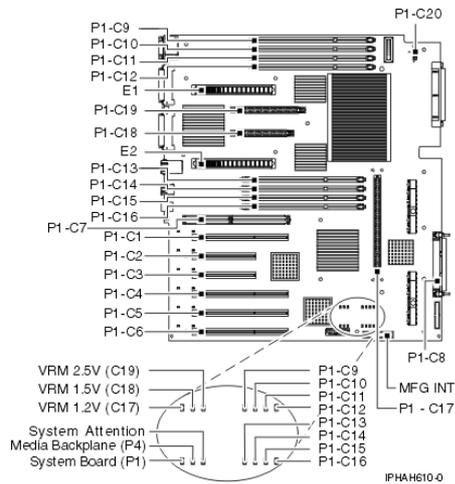
- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.
  - ◆ When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving 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.
7. Remove the fan tray assembly. For instructions, see [Remove the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ fan tray assembly](#).
  8. If necessary, [Remove the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ power supply](#) to access memory modules on the system backplane.
  9. If necessary, [Remove the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ service processor assembly](#) to access memory modules on the system backplane.
  10. Determine the slots the memory modules will be placed in.

**Notes:**

- ◆ Some server configurations support a single pair of memory modules on initial order, and must be upgraded to quads of modules when adding memory (see [Figure 1](#) for memory module slot locations on the system backplane):
  - a. The first memory module pair is placed into memory module slots C9 and C16.
  - b. The second memory module pair is placed into memory module slots C11 and C14.
  - c. The third memory module pair is placed into memory module slots C10 and C15.
  - d. The fourth memory module pair is placed into memory module slots C12 and C13.
- ◆ All other server configurations are ordered and installed with memory quads (see [Figure 1](#) for memory module slot locations on the system backplane):
  - a. The first quad of memory modules is placed into memory module slots C9, C11, C14, and C16.
  - b. The second quad of memory modules is plugged into memory module slots C10, C12, C13, and C15.

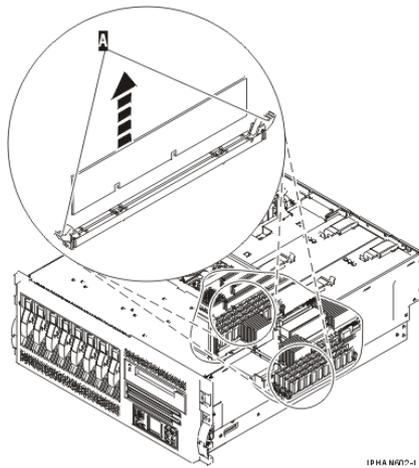
*Figure 1. Backplane connector locations for the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ models*

## Memory modules

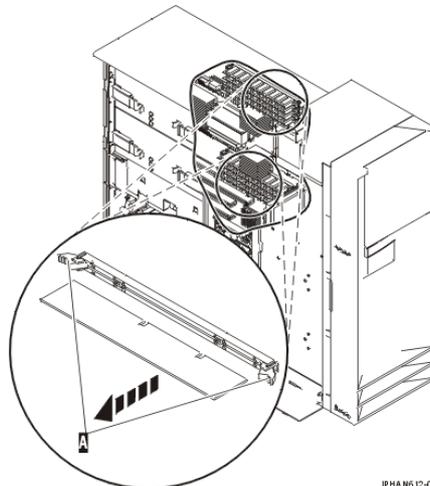


11. If necessary, remove the memory module from its antistatic package.
12. Ensure the connector is ready to receive the memory module by removing the memory module filler, if one is present, by pushing the tabs A out and then down. The tabs' lever action forces the memory module filler out of the connector.

*Figure 2. Remove a memory module filler from a rack-mounted system unit*



*Figure 3. Remove a memory module filler from a stand-alone system unit*



13. Ensure that the connector locking tabs are pushed out to the unlocked position before installing a new memory module.

**Attention:** Memory modules are keyed to prevent a module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

14. Carefully grasp the memory module along two edges and align the connector.
15. Insert the memory modules firmly into the connector.
16. Secure the memory module B with the locking tabs A located at each end of the memory module connector, as shown in the following figure.

Figure 4. Memory module installation in a rack-mounted system unit

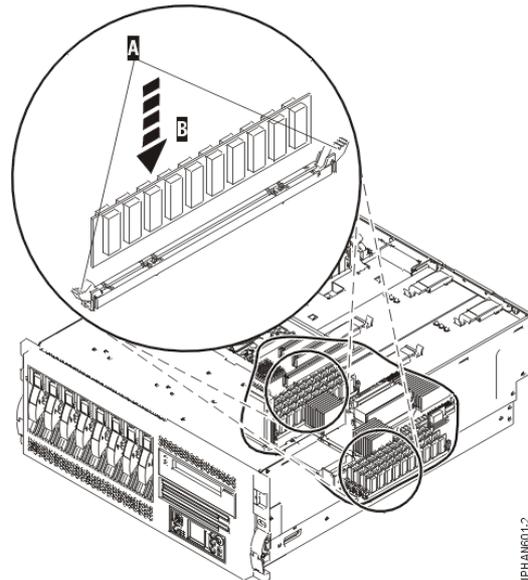
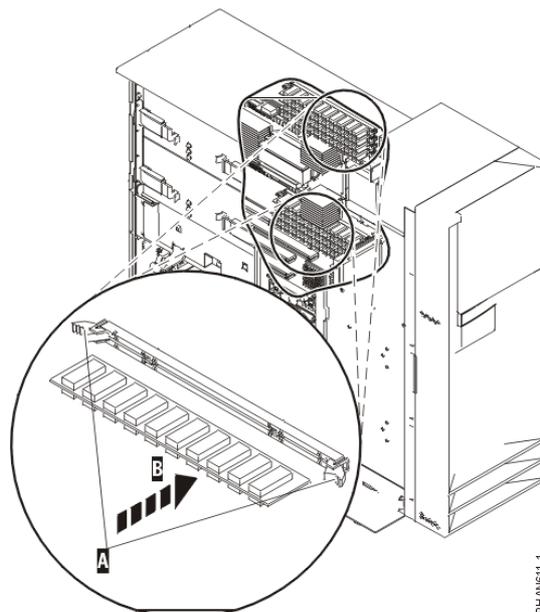


Figure 5. Memory module installation in a stand-alone system unit



17. Replace the service processor, if it was removed from the system. For instructions, see [Replace the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ service processor assembly](#).
18. Replace the power supply, if it was removed from the system. For instructions, see [Replace the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ power supply](#).

19. Replace the fan tray. For instructions, see [Replace the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ fan tray assembly](#).
20. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
21. If you are servicing a rack-mounted system unit, [Place the rack-mounted system or expansion unit in the operating position](#).
22. Reconnect all power and signal cables to their respective connectors.
23. Start the system. For instructions, see [Start the system or logical partition](#).
24. Verify the installed part. For instructions, [Verify the installed part](#).

**Parent topic:** [Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ memory modules](#)

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## Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules

These procedures describe how to remove, replace, and install memory modules.

The following procedures describe the installation, removal, and replacement of memory modules in the server.

- [Remove and replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)  
Learn how to remove and replace memory modules.
- [Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)  
This procedure describes how to install memory modules.

**Parent topic:** [Memory modules](#)

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## Remove and replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules

Learn how to remove and replace memory modules.

These procedures describe how to remove and replace memory modules in the server.

1. [Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)
2. [Replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)

**Parent topic:** [Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)

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## Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing memory modules from the server. For instructions, see [Remove a part using the Hardware Management Console](#). If you do not have an HMC, do the following to remove the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If you are removing the memory modules for a system upgrade or as part of another procedure, continue to the next step. If you are removing the memory modules because of a system failure, use the service action log to help identify the failing part. See [Identify a failing part](#).
3. Place the system unit into the service position. For instructions, see [Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position](#).
4. Remove the service access cover. For instructions, see [Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS](#).

**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. If you are removing the memory modules because of a system failure, look at the LEDs to determine the location of the failed memory module. The LEDs are located on the system backplane next to the memory modules.
6. Stop the system. For instructions, see [Stop the system or logical partition](#).
7. Disconnect the power source from the system by unplugging the system.

**Note:** This system may 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)**

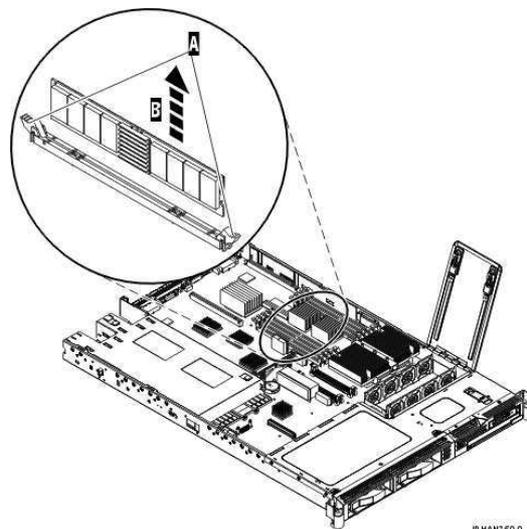


or



8. Remove the memory module by pushing the locking tabs A out and then down. The tabs' lever action forces the memory module B out of the connector.
9. Pull the memory module out of the connector, as shown in the following graphic.

*Figure 1. Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory module removal*



Parent topic: [Remove and replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)

Next topic: [Replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)

## Replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing the memory modules in the server. For instructions, see [Replace a part using the Hardware Management Console](#). If you do not have an HMC, do the following to replace the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If necessary, remove the memory module from its antistatic package.

### 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.
3. Determine the slots the memory modules will be placed in. Memory can be plugged in pairs or quads. The minimum memory requirement is 1 GB. The maximum memory that is supported is 32 GB.

Figure 1. Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory module slot locations

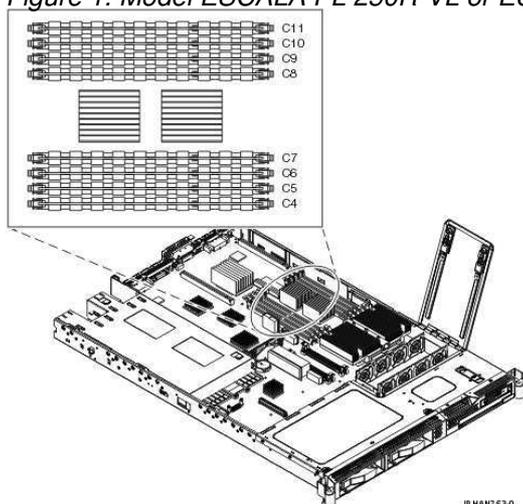


Table 1. Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory balancing

Memory	Location	Priority
Two memory modules		

## Memory modules

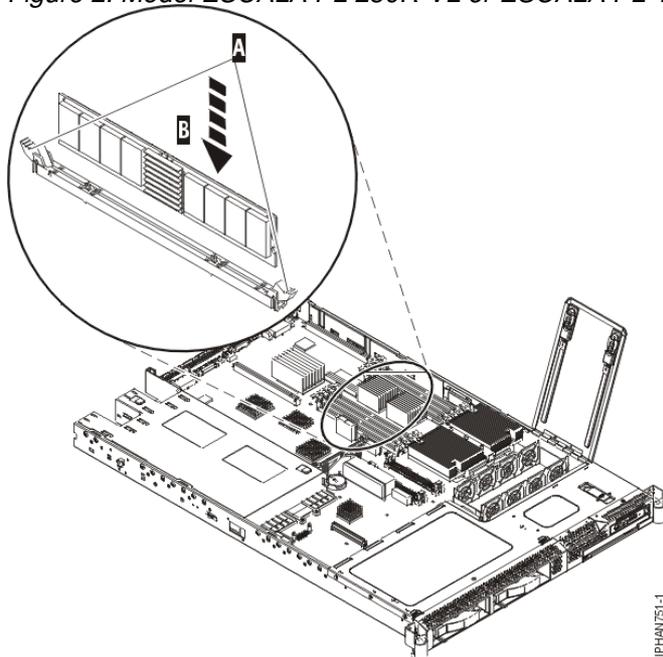
	C4 and C11	1
	C6 and C9	2
	C5 and C10	3
	C7 and C8	4
<b>Four memory modules</b>		
	C4, C11, C6, and C9	1
	C5, C10, C7, and C8	2
<b>Six memory modules</b>		
	C4, C11, C6, C9, C5, and C10	1
	C6, C9, C7, C8, C4 and C11	2

- Ensure that the connector locking tabs are pushed out in the unlocked position before installing the new memory module.

**Attention:** Memory modules are keyed to prevent a module from being installed improperly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

- Carefully grasp the memory module B along two edges and align the connector, as shown in [Figure 2](#).
- Insert the memory card firmly into the connector.
- Secure the memory module with the locking tabs A located at each end of the memory module connector, as shown in [Figure 2](#).

*Figure 2. Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory module installation*



- Replace the service access cover. For instructions, see [Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS](#).
- If you are servicing a rack-mounted system unit, [Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position](#).
- Reconnect all power and signal cables to their respective connectors.
- Start the system. For instructions, see [Start the system or logical partition](#).
- Verify the installed part. For instructions, see [Verify the installed part](#).

**Parent topic:** [Remove and replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)  
**Previous topic:** [Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)

## Memory modules

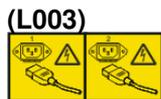
## Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules

This procedure describes how to install memory modules.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing the memory modules in a model server. For instructions, see [Install a feature using the Hardware Management Console](#). If you do not have an HMC, do the following to install the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Stop the system. For instructions, see [Stop the system or logical partition](#).
3. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



or



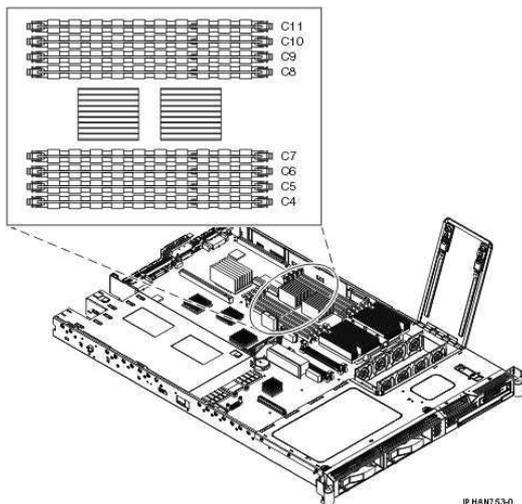
4. Place the system unit in the service position. For instructions, see [Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position](#).
5. Remove the service access cover. For instructions, see [Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS](#).

### 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.
6. Determine the slots the memory modules will be placed in. Memory can be plugged in pairs or quads. The minimum memory requirement is 1 GB. The maximum memory that is supported is 32 GB.

Figure 1. Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory module slot locations

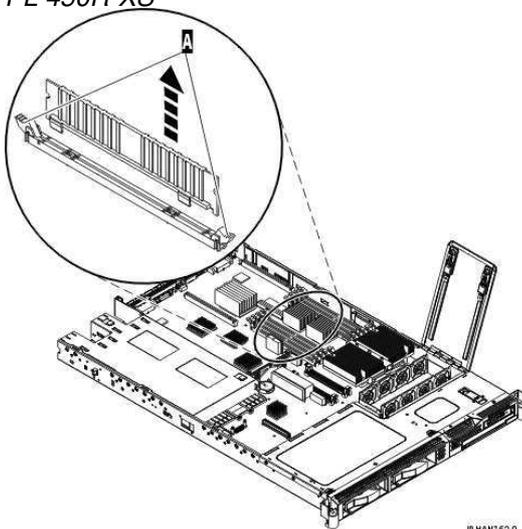
## Memory modules



Memory	Location	Priority
<b>Two memory modules</b>		
	C4 and C11	1
	C6 and C9	2
	C5 and C10	3
	C7 and C8	4
<b>Four memory modules</b>		
	C4, C11, C6, and C9	1
	C5, C10, C7, and C8	2
<b>Six memory modules</b>		
	C4, C11, C6, C9, C5, and C10	1
	C6, C9, C7, C8, C4 and C11	2

7. If necessary, remove the memory module from its antistatic package.
8. Ensure the connector is ready to receive the memory module by removing the memory module filler, if one is present, by pushing the tabs A out and then down as shown in [Figure 2](#). The tabs' lever action forces the memory module filler out of the connector.

*Figure 2. Remove memory module filler from rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS*

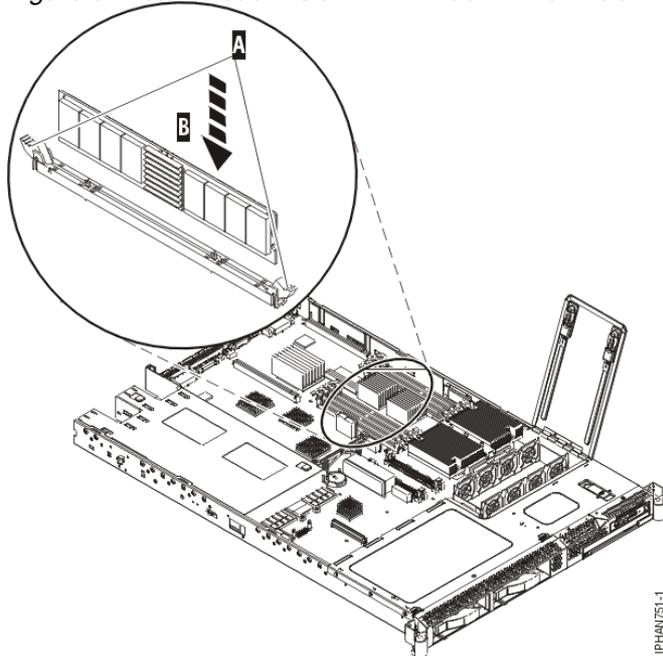


9. Ensure that the connector locking tabs are pushed out in the unlocked position before installing a new memory module.

**Attention:** Memory modules are keyed to prevent a module from being installed improperly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

10. Carefully grasp the memory module along two edges and align the connector.
11. Insert the memory card firmly into the connector.
12. Secure the memory module B with the locking tabs A located at each end of the memory module connector, as shown in [Figure 3](#).

Figure 3. Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules



13. Install the service access cover. For instructions, see [Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS](#).
14. If you are servicing a rack-mounted system unit, [Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position](#).
15. Reconnect all power and signal cables to their respective connectors.
16. Start the system. For instructions, see [Start the system or logical partition](#).
17. Verify the installed part. For instructions, see [Verify the installed part](#).

**Parent topic:** [Model ESCALA PL 250R-VL or ESCALA PL 450R-XS memory modules](#)

## Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules

These procedures describe how to remove, replace, and install memory modules.

To complete these procedures for the models ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ , you need to print the following instructions, and then return here. If the ESCALA Power5 Hardware Information is available on a PC or a notebook that is close to the system on which you are installing or replacing parts, you can use the online version of these procedures:

- [Control panel and signal cable](#)
- [Power supply](#)
- [PCI Adapters](#)

If you are planning to use this information in printed form, be sure to print all of the information you need. You can find all of the information, in both HTML and PDF format, in the [Installing features](#) topic. Go to the procedures listed above, print them, and then return here.

- [Remove and replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)  
Learn how to remove and replace memory modules.
- [Install model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)  
This procedure describes how to install memory modules.

Parent topic: [Memory modules](#)

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## Remove and replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules

Learn how to remove and replace memory modules.

These procedures describe how to remove and replace memory modules in the models ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ .

1. [Remove model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)
2. [Replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)

Parent topic: [Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)

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## Remove model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing memory modules from the models ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ . For instructions, see [Remove a part using the Hardware Management Console](#). If you do not have an HMC, do the following to remove the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If you are removing the memory modules for a system upgrade or as part of another procedure, continue to the next step. If you are removing the memory modules because of a system failure, use the service action log to help identify the failing part. See [Identify a failing part](#).
3. Remove the front cover. For instructions, see [Remove the front cover from the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ .](#)
4. Place the system unit in the service position. For instructions, see [Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ \\_\\_ in the service position](#).
5. Remove the service access cover. For instructions, see [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

### 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.

6. If you are removing the memory modules because of a system failure, look at the LEDs to determine the location of the failed memory module. The LEDs are located on the system backplane next to the memory modules.
7. Stop the system. For instructions, see [Stop the system or logical partition](#).
8. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

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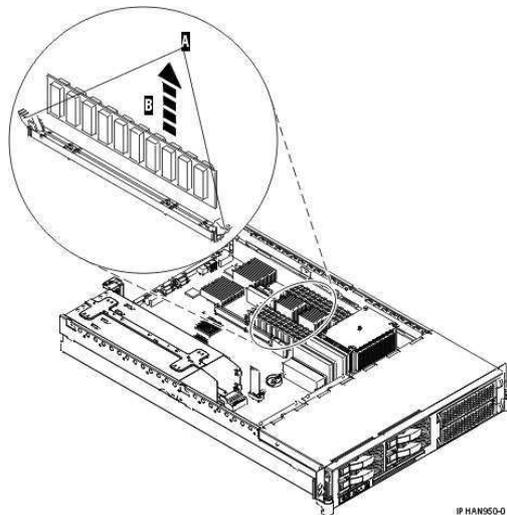


or



9. Remove the PCI adapter enclosure. For instructions, see [Remove the PCI adapter enclosure](#).
10. Remove the memory module by pushing the locking tabs A out and then down. The lever action of the tabs forces the memory module out of the connector.
11. Pull the memory module out of the connector, as shown in the following figure.

Figure 1. Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory module removal



**Parent topic:** [Remove and replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#) **Next topic:** [Replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)

## Replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing the memory modules in the models ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ .

For instructions, see [Replace a part using the Hardware Management Console](#). If you do not have an HMC, do the following to replace the memory modules:

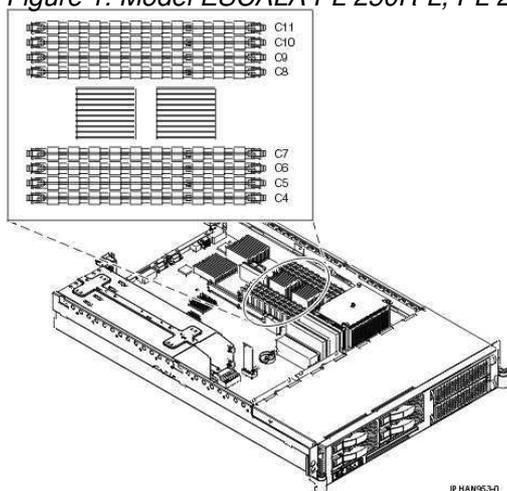
1. Perform the prerequisite tasks described in [Before you begin](#).
2. If necessary, remove the memory module from its antistatic package.

**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.

3. Determine the slots that the memory modules will be placed in. Memory can be plugged in pairs or quads.

Figure 1. Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory module slot locations



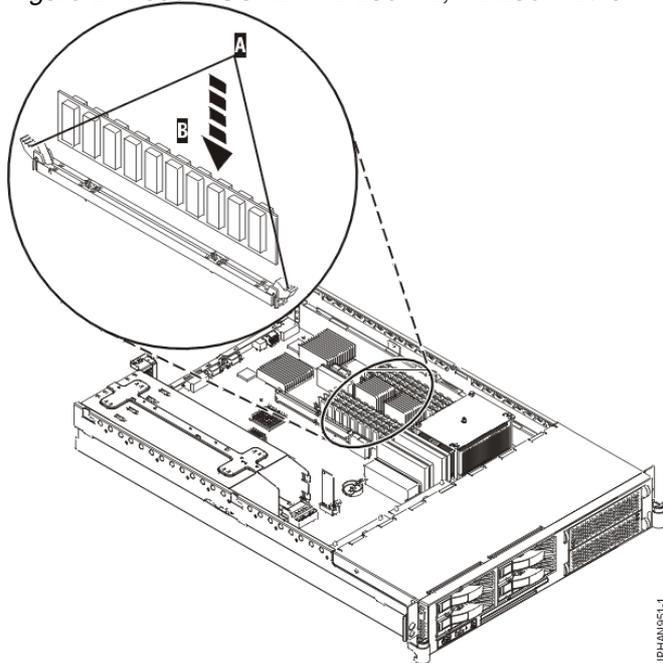
Memory	Location	Priority
<b>Two memory modules</b>		
	C11 and C4	1
	C9 and C6	2
	C10 and C5	3
	C8 and C7	4
<b>Four memory modules</b>		
	C11, C4, C9, and C6	1
	C10, C5, C8, and C7	2
<b>Six memory modules</b>		
	C11, C4, C9, C6, C10, and C5	1
	C11, C4, C9, C6, C8 and C7	2

4. Ensure that the connector locking tabs are pushed out in the unlocked position before installing the new memory module.

**Attention:** Memory modules are keyed to prevent a module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

5. Carefully grasp the memory module along two edges and align the connector.
6. Insert the memory card firmly into the connector.
7. Secure the memory module with the locking tabs A located at each end of the memory module connector, as shown in the following figure.

Figure 2. Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory module replacement



8. Replace the PCI adapter enclosure. For instructions, see [Replace the PCI adapter enclosure](#).
9. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
10. If you are servicing a rack-mounted system unit, see [Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ \\_\\_ in the operating position](#).
11. Reconnect all power and signal cables to their respective connectors.
12. Install the front cover, see [Install the front cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ .](#)
13. Start the system. For instructions, see [Start the system or logical partition](#).
14. Verify the installed part. For instructions, see [Verify the installed part](#).

**Parent topic:** [Remove and replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#) **Previous topic:** [Remove model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)

## Install model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules

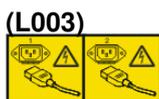
This procedure describes how to install memory modules.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing the memory modules in the models ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ . For instructions, see [Install a feature using the Hardware Management Console](#). If you do not have an HMC,

do the following to install the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Stop the system. For instructions, see [Stop the system or logical partition](#).
3. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



or



4. Remove the front cover, see [Remove the front cover from the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+](#) .
5. Place the system unit in the service position. For instructions, see [Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ in the service position](#).
6. Remove the service access cover, see [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

**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.
7. Determine the slots that the memory modules will be placed in. Memory can be plugged in pairs or quads.

*Figure 1. Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory module slot locations*

## Memory modules

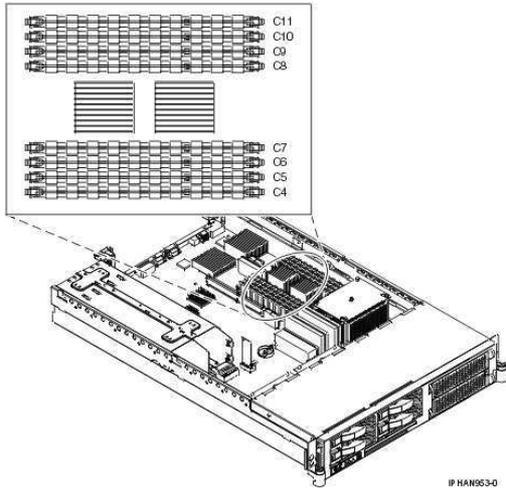
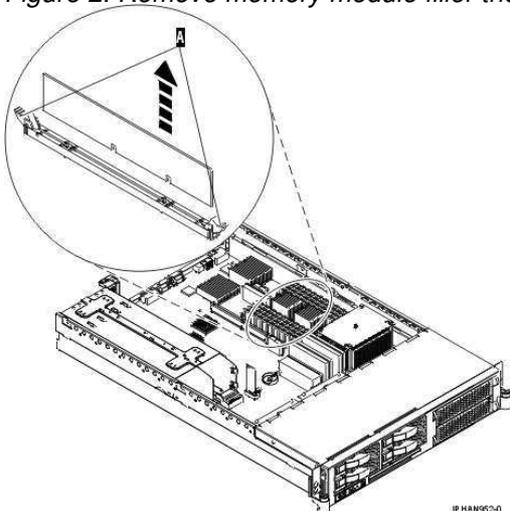


Table 1. Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory balancing

Memory	Location	Priority
<b>Two memory modules</b>		
	C11 and C4	1
	C9 and C6	2
	C10 and C5	3
	C8 and C7	4
<b>Four memory modules</b>		
	C11, C4, C9, and C6	1
	C10, C5, C8, and C7	2
<b>Six memory modules</b>		
	C11, C4, C9, C6, C10, and C5	1
	C11, C4, C9, C6, C8 and C7	2

8. If necessary, remove the memory module from its antistatic package.
9. Ensure the connector is ready to receive the memory module by removing the memory module filler, if one is present, by pushing the locking tabs A out and then down. The tabs' lever action forces the memory module filler out of the connector.

Figure 2. Remove memory module filler the system unit

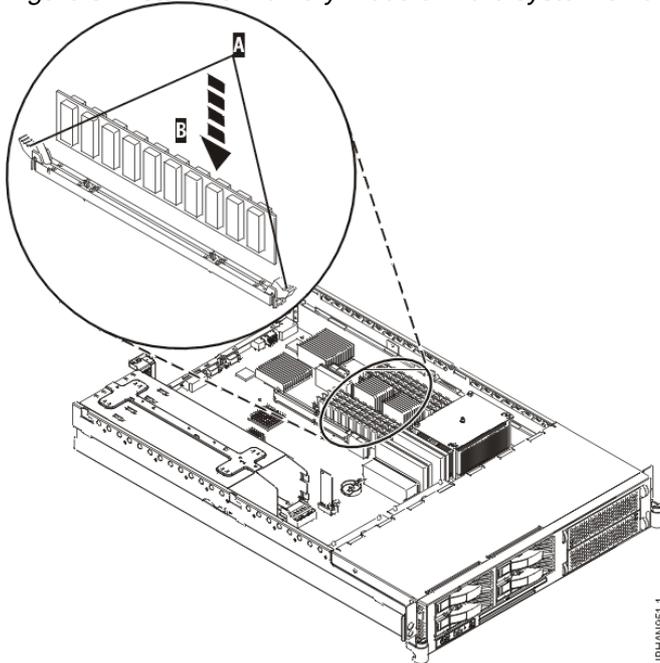


10. Ensure that the connector locking tabs are pushed out in the unlocked position before installing a new memory module.

**Attention:** Memory modules are keyed to prevent a module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

11. Carefully grasp the memory module along two edges and align the connector.
12. Insert the memory card firmly into the connector.
13. Secure the memory module with the locking tabs A located at each end of the memory module connector, as shown in the following figure.

Figure 3. Install the memory module in the system unit



14. Replace the PCI adapter enclosure. For instructions, see [Replace the PCI adapter enclosure](#).
15. Replace the service access cover, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
16. If you are servicing a rack-mounted system unit, see [Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ \\_\\_in the operating position](#).
17. Reconnect all power and signal cables to their respective connectors.
18. Replace the front cover, see [Install the front cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ .](#)
19. Start the system. For instructions, see [Start the system or logical partition](#).
20. Verify the installed part. For instructions, [Verify the installed part](#).

**Parent topic:** [Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ memory modules](#)

## Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules

These procedures describe how to remove, replace, and install memory modules.

To complete these procedures for the models ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ or 7/20, you need to print the instructions for the [System processor assembly](#), and then return here. If the ESCALA Power5 Hardware Information is available on a PC or a notebook that is close to the system on which you are installing or replacing parts, use the online version of this procedure.

- [Remove and replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)  
Learn how to remove and replace memory modules.
- [Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)  
This procedure describes how to install memory modules.

Parent topic: [Memory modules](#)

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## Remove and replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules

Learn how to remove and replace memory modules.

These procedures describe how to remove and replace memory modules in models ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ or 7/20.

1. [Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)
2. [Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)

Parent topic: [Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)

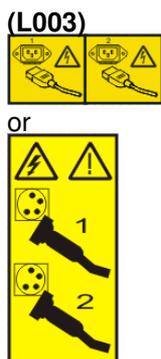
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## Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing memory modules from models ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ or 7/20. For instructions, see [Remove a part using the Hardware Management Console](#). If you do not have an HMC, do the following procedure to remove the memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If you are removing the memory modules for a system upgrade or as part of another procedure, continue to the next step. If you are removing the memory modules because of a system failure, use the service action log to help identify the failing part, see [Identify a failing part](#). Identification LEDs for failing memory modules are on the top of the system processor assembly.
3. Stop the system. For instructions, see [Stop the system or logical partition](#).
4. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

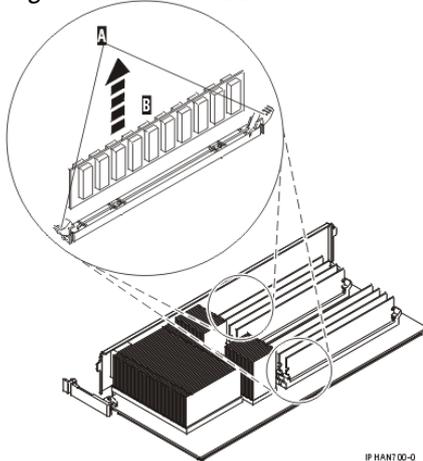


- Remove the system processor assembly. For instructions, see [Remove the model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system processor assembly](#).

**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.
- Locate the memory module that you want to remove.
  - Unlock the memory module by pushing the locking tabs A out and then down. The tabs' lever action forces the memory module out of the connector.
  - Lift the memory module out of the connector, as shown in the following figure.

Figure 1. Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory module removal



**Parent topic:** [Remove and replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#) **Next topic:** [Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)

## Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing the memory modules in models ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ or 7/20. For instructions, see [Replace a part using the Hardware Management Console](#). If you do not have an HMC, use the following procedures to replace memory modules:

- Perform the prerequisite tasks described in [Before you begin](#).
- If necessary, remove the memory module from its antistatic package.
- Ensure that the connector locking tabs are pushed out in the unlocked position before installing a new memory module.

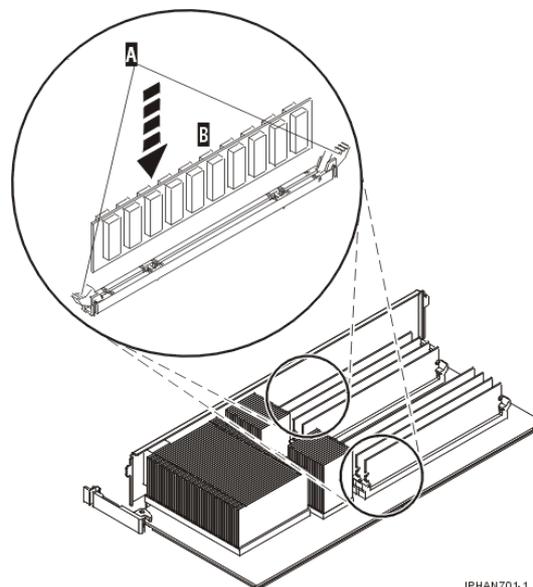
**Attention:** Memory modules are keyed to prevent a memory module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to the memory module.

4. Carefully grasp the memory module along two edges and align the connector.
5. Insert the memory card firmly into the connector.

**Note:** If you are adding new memory modules, ensure that the memory modules are balanced correctly. See [Table 1](#).

6. Secure the memory module with the locking tabs A located at each end of the memory module connector, as shown in the following figure.

Figure 1. Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory module replacement



7. Replace the system processor assembly, see [Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system processor assembly](#).
8. Verify the installed part. For instructions, see [Verify the installed part](#).

**Parent topic:** [Remove and replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#) **Previous topic:** [Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)

## Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules

This procedure describes how to install memory modules.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing memory modules in models ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ or 7/20. For instructions, see [Install a feature using the Hardware Management Console](#). If you do not have an HMC, do the following procedure to install memory modules:

1. Perform the prerequisite tasks described in [Before you begin](#).

2. Stop the system. For instructions, see [Stop the system or logical partition](#).
3. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



4. Remove the system processor assembly. See [Remove the model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system processor assembly](#).

**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. If necessary, [Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#) from the system processor assembly.
  6. Determine the slots in which the memory modules will be placed. Refer to [Table 1](#) to ensure memory modules are balanced. Each system processor assembly has eight memory module slots. The memory modules should be plugged into the slots as shown in the following table (see [Figure 1](#) for memory module slot locations in the system processor assembly).

**Notes:**

- ◆ When installing a quad of memory modules, all four memory module must be the same type.
- ◆ When two processors are installed, alternate installing memory modules between the first processor and the second processor.

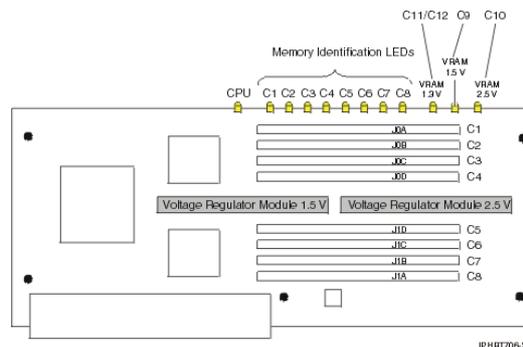
Table 1. Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory balancing

Processors and memory	Where to install memory modules
Memory added in pairs	<ul style="list-style-type: none"> <li>◆ Plug the first pair of memory modules into memory module slots P1-C8-C1 and P1-C8-C8, or slots P1-C9-C1 and P1-C9-C8.</li> <li>◆ Plug the second pair of memory modules into memory module slots P1-C8-C3 and P1-C8-C6, or slots P1-C9-C3 and P1-C9-C6.</li> </ul>

Memory modules

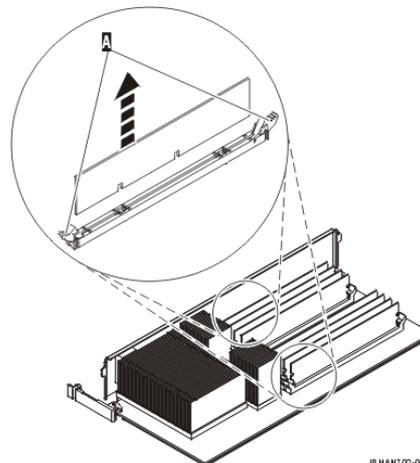
	<ul style="list-style-type: none"> <li>◆ Plug the third pair of memory modules into memory module slots P1-C8-C2 and, P1-C8-C7, or slots P1-C9-C2 and P1-C9-C7.</li> <li>◆ Plug the fourth pair of memory modules into memory module slots P1-C8-C4 and P1-C8-C5, or slots P1-C9-C4 and P1-C9-C5.</li> </ul>
One processor, memory plugged in quads	<ul style="list-style-type: none"> <li>◆ First quad of memory modules is plugged into memory module slots P1-C8-C1, P1-C8-C3, P1-C8-C6, and P1-C8-C8, or slots P1-C9-C1, P1-C9-C3, P1-C9-C6, and P1-C9-C8.</li> <li>◆ Second quad of memory modules is plugged into memory module slots P1-C8-C2, P1-C8-C4, P1-C8-C5, and P1-C8-C7, or slots P1-C9-C2, P1-C9-C4, P1-C9-C5, and P1-C9-C7.</li> </ul>
Two processors, memory plugged in quads	<p>Memory should be balanced on each processor card.</p> <ul style="list-style-type: none"> <li>◆ Plug the first quad of memory modules into memory module slots P1-C8-C1, P1-C8-C3, P1-C8-C6, and P1-C8-C8 on each processor card, or slots P1-C9-C1, P1-C9-C3, P1-C9-C6, and P1-C9-C8 on each processor card.</li> <li>◆ Plug the second quad of memory modules into memory module slots P1-C8-C2, P1-C8-C4, P1-C8-C5, and P1-C8-C7 on each processor card or, slots P1-C9-C2, P1-C9-C4, P1-C9-C5, and P1-C9-C7 on each processor card.</li> </ul>

Figure 1. Memory module slot locations in the processor assembly



7. Ensure that the connector is ready to receive the memory module. Remove the memory module filler, if one is present, by pushing the tabs A out and then down. The lever action of the tabs forces the memory module filler out of the connector.

Figure 2. Memory module filler removal

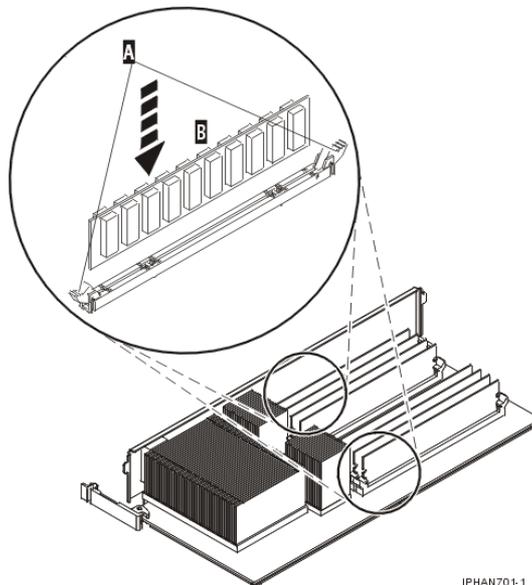


8. Remove the memory module from its antistatic package, if necessary.
9. Ensure that the connector locking tabs A are pushed out into the unlocked position before installing a new memory module.
10. Carefully grasp the memory module B along two edges and align it with the connector.

**Attention:** Memory modules are keyed to prevent a memory module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

11. Push the memory module B firmly into the connector until the connector locking tabs engage.

Figure 3. Memory module replacement



12. Replace the system processor assembly. For instructions, see [Replace the model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system processor assembly](#).
13. Verify the installed part. For instructions, see [Verify the installed part](#).
14. If you are installing memory modules as part of another procedure, return to the procedure now.

**Parent topic:** [Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ memory modules](#)

## Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules

These procedures describe how to remove, replace, and install memory modules.

To complete these procedures for model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+, you need to print the following instructions, and then return here. If the ESCALA Power5 Hardware Information is available on a PC or a notebook that is close to the system on which you are installing or replacing parts, use the online version of these procedures:

- [Control panel and signal cable](#)
- [System backplane](#)
- [Voltage regulator](#)

If you are planning to use this information in printed form, be sure to print all of the information you need. You can find all of the information, in both HTML and PDF format, in the [Installing features](#) topic. Go to the procedures listed above, print them, and then return here.

- [Remove and replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)  
Learn how to remove and replace memory modules.
- [Install model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)  
This procedure describes how to install memory modules.

Parent topic: [Memory modules](#)

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## Remove and replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules

Learn how to remove and replace memory modules.

These procedures describe how to remove and replace memory modules in a model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+.

1. [Remove model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)
2. [Replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)

Parent topic: [Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)

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## Remove model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules

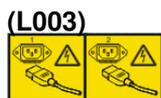
If your model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing memory modules. For instructions, see [Remove a part using the Hardware Management Console](#). If you do not have an HMC, do the following to remove memory modules:

Parent topic: [Remove and replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#) Next topic: [Replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)

### Prepare the system

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If you are removing the modules for a system upgrade or as part of another procedure, continue to the next step. If you are removing the memory modules because of a system failure, use the service action log to help identify the failing part. See [Identify a failing part](#).
3. Stop the system. For instructions, see [Stop the system or logical partition](#).
4. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.



or



5. Remove the front cover. For instructions, see [Remove the front cover from the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#).

**Attention:**

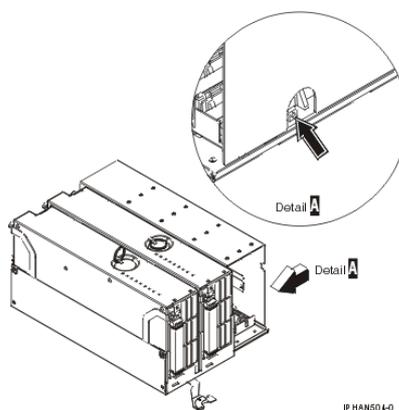
- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.
  - ◆ When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving 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.
6. If necessary, [Disconnect the SMP processor cable from a system unit.](#)
  7. Remove the control panel. For instructions, see [Remove the control panel with power off.](#)
  8. Remove the voltage regulator card assemblies, as described in [Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ voltage regulator assembly.](#)
  9. Remove the system backplane assembly. For instructions, see [Remove the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system backplane.](#) Skip any steps that you may have already completed.

**Remove memory modules**

1. If you are removing the memory modules because of a system failure, look at the LEDs C located on the top processor assembly to identify the location of the failing memory modules. See [Figure 1](#). You can light the LEDs by doing the following:
  - ◆ If you used the service action log, ASMI, or HMC to activate the identify function prior to removing the processor backplane, the LEDs located on the top processor card assembly can be illuminated to identify the failing memory modules.
  - ◆ To illuminate the location LED for the failing memory module, press the LED actuator button located on the right side of the assembly. See [Figure 1](#) for the location of the LED actuator button A.

**Note:** The actuator button must be used soon after the system backplane assembly is removed from the system. The assembly retains the energy to light the LEDs only for a short period of time after the assembly is disconnected from the system power source.

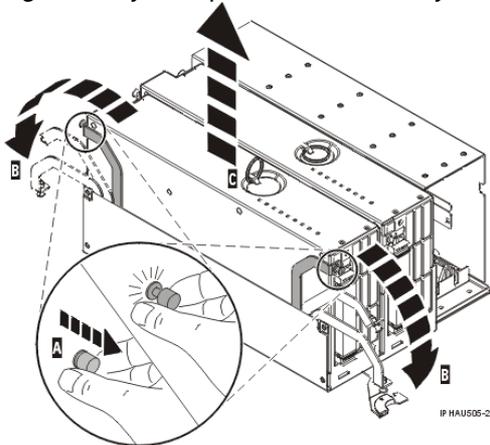
*Figure 1. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ backplane assembly LED activation*



2. As shown in the following figure, pull out on the locking knobs A until you feel them unlock. Push the locking arms B down and out to unlock the processor assembly, and then lift it out of the system backplane assembly C.

**Tip:** If you are removing more than one processor assembly to access memory modules, record the location of each processor assembly being removed for use during reinstallation.

Figure 2. System processor assembly removal from the system backplane assembly



3. Remove the system processor assembly cover A by unlocking the two retention knobs B and pulling back and lifting up the cover, as shown in the following figure.

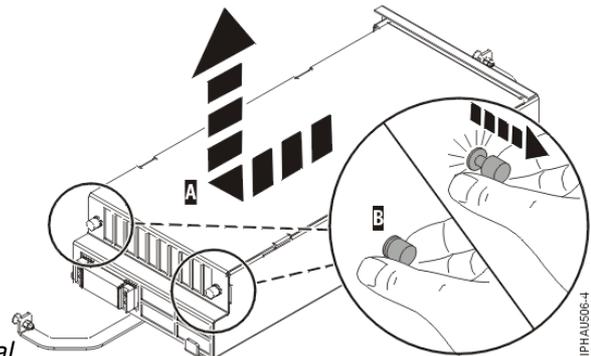
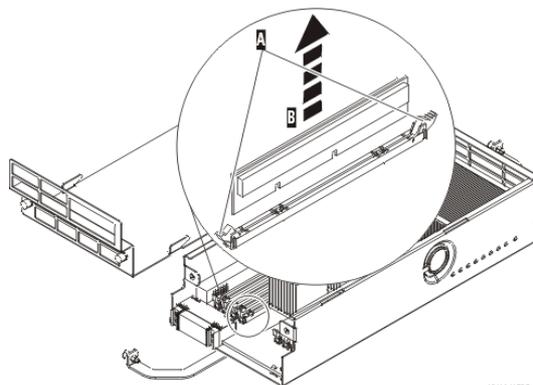


Figure 3. System processor assembly cover removal

4. If a Mylar cover is installed over the memory modules, remove the cover.
5. Locate the memory module you want to remove.
6. As shown in Figure 4, unlock the memory module by pushing the connector tabs A out. The lever action of the tabs forces the memory module B out of the connector.
7. Lift the memory module B out of the connector.

Figure 4. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory module removal



8. To replace memory modules, see [Replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules.](#)

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## Replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing memory modules in a model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+. For instructions, see [Replace a part using the Hardware Management Console](#). If you do not have an HMC, use the following procedures to replace memory modules:

**Parent topic:** [Remove and replace model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#) **Previous topic:** [Remove model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)

### Replace memory modules

1. Perform the prerequisite tasks described in [Before you begin](#).
2. If necessary, [Remove model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#) from the processor card assembly.

#### Attention:

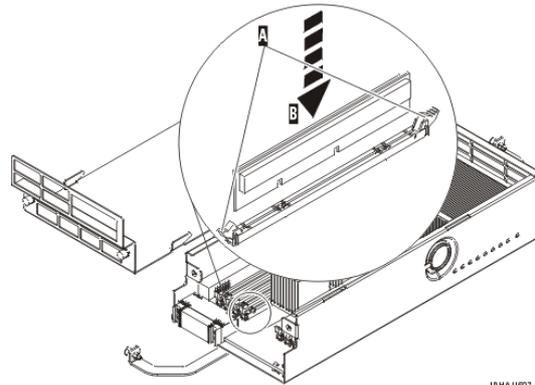
- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.
  - ◆ When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving 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.
3. If necessary, remove the memory module from its antistatic package.
  4. As shown in [Figure 1](#), ensure that the connector locking tabs A are pushed out into the unlocked position before installing a new memory module.
  5. Carefully grasp the memory module B along two edges and align it with the connector.

**Attention:** Memory modules are keyed to prevent a memory module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

6. Push the memory module B firmly into the connector until the connector locking tabs engage.

*Figure 1. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory module replacement*

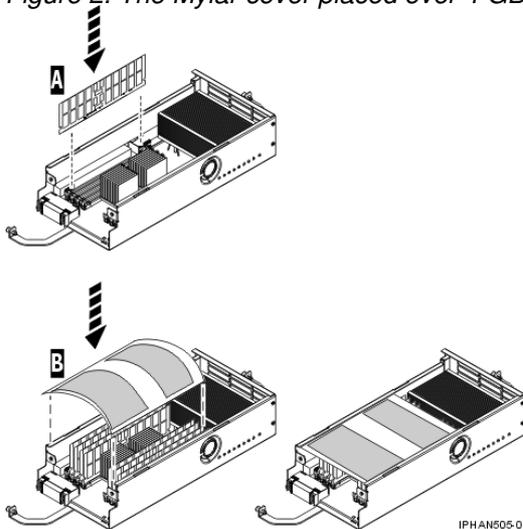
### Memory modules



7. If you have tall 4 GB or 8 GB memory modules, use the Mylar cover to prevent the memory modules from contacting the lid. When you have finished inserting the memory modules A, place the Mylar cover B over them, as shown in Figure 2. If you replace tall 4 GB or 8 GB memory modules with any other size memory modules, remove the Mylar cover. Failing to remove the Mylar cover might restrict airflow in the unit.

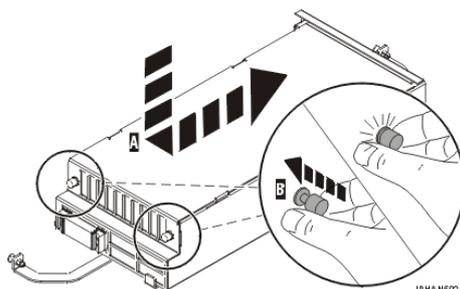
**Attention:** Do not install 8 GB memory modules on a processor assembly with any size memory modules other than 4 GB memory modules. Installing 8 GB memory modules with sizes other than 4 GB memory modules might unconfigure the other size memory modules and you will see an associated System Reference Code of B123F688. Your system might have other size memory modules on a different processor assembly.

Figure 2. The Mylar cover placed over 4 GB or 8 GB memory modules



8. As shown in the following figure, place the cover A on the processor card assembly, and then lock the two retention knobs B.

Figure 3. System processor assembly cover replacement



**Complete the procedure**

1. Replace the system backplane, see [Replace the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system backplane](#).
2. Replace the voltage regulator card assemblies as described in [Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ voltage regulator assembly](#).
3. Replace the control panel. For instructions, see [Replace the control panel with the power off](#).
4. Reconnect the SMP processor cable. For instructions, see [Reconnect the SMP processor cable to a system unit](#).
5. Install the front cover. For instructions, see [Install the front cover on the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#).
6. Reconnect all power and signal cables to their respective connectors.
7. Stop the system. For instructions, see [Start the system or logical partition](#).
8. Verify the installed part. For instructions, see [Verify the installed part](#).
9. If you are replacing memory modules as part of another procedure, return to the procedure now.

## Install model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules

This procedure describes how to install memory modules.

If your system is managed by the Hardware Management Console (HMC), see [Table 1](#) for the order in which you place the memory modules, and then use the HMC to complete the steps for installing memory modules. For instructions, see [Install a feature using the Hardware Management Console](#). If you do not have an HMC, do the following procedure to install memory modules in a model ESCALA PL 1650R-L+ or 5/70:

**Parent topic:** [Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules](#)

**Prepare the system**

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Stop the system. For instructions, see [Stop the system or logical partition](#).
3. Disconnect the power source from the system by unplugging the system.

**Note:** This system may be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

(L003)



or



4. Remove the front cover from the system unit. For instructions, see [Remove the front cover from the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#).

**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. If necessary, [Disconnect the SMP processor cable from a system unit.](#)
6. Remove the control panel. For instructions, see [Remove the control panel with power off.](#)
7. Remove the voltage regulator card assemblies, as described in [Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ voltage regulator assembly.](#)
8. Remove the system backplane assembly. For instructions, see [Remove the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system backplane.](#) Skip any steps that you have already completed.
9. Remove the system processor assembly cover A by unlocking the two retention knobs B and pulling back and lifting up the cover, as shown in the following figure.

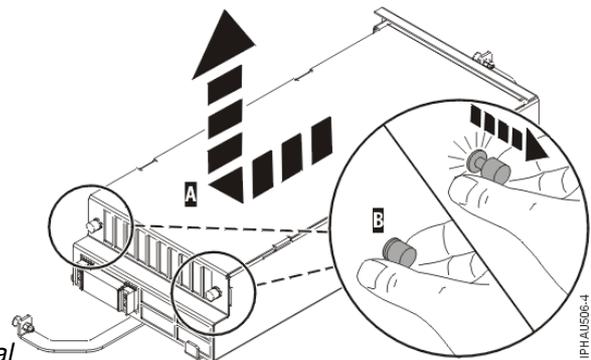


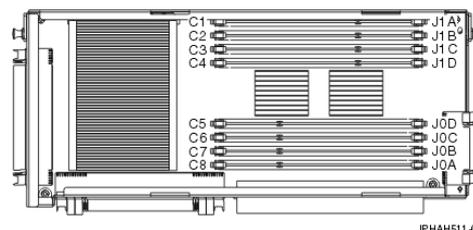
Figure 1. System processor assembly cover removal

10. If a Mylar cover is installed over the memory modules, remove the cover.
11. If necessary, remove memory modules from the processor card assembly. For instructions, see [Remove model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory modules.](#)
12. Remove the memory module filler, if one is present, by pushing the locking tabs out and then down. The lever action of the tabs forces the memory module filler out of the connector.
13. Determine the slots in which the memory modules will be placed.

**Notes:**

- ◆ All memory module configurations are ordered and installed with memory in quads in each processor assembly.
- ◆ A minimum of four memory modules is required in each processor assembly for proper system operation, and all four memory modules must be the same size.
- ◆ Each processor assembly has eight memory module slots. The memory modules should be plugged into the slots as follows (see [Figure 2](#) for memory module slot locations in the processor assembly):
  - ◇ First quad of memory modules is plugged into memory module slots P2-Cx-C1, P2-Cx-C3, P2-Cx-C6, and P2-Cx-C8.
  - ◇ Second quad of memory modules is plugged into memory module slots P2-Cx-C2, P2-Cx-C4, P2-Cx-C5, and P2-Cx-C7.

Figure 2. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory module slot locations in the processor assembly



- ◆ A quad set of 8 GB memory modules can only be installed in a processor card as a set alone, with another 8 GB quad set, or with a 4 GB quad set.

- ◆ For a maximum 16-way configured system, fill additional quads according to the order in [Table 1](#). When adding additional memory modules, begin with the first open quad. If the system is less than a 16-way configured system, eliminate the appropriate number of enclosures and processor cards.

Table 1. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory plugging order

System unit	Processor card	Where to install memory modules
Enclosure 1	P2-C1	Slots C1, C3, C6, and C8
Enclosure 1	P2-C2	Slots C1, C3, C6, and C8
Enclosure 2	P2-C1	Slots C1, C3, C6, and C8
Enclosure 2	P2-C2	Slots C1, C3, C6, and C8
Enclosure 3	P2-C1	Slots C1, C3, C6, and C8
Enclosure 3	P2-C2	Slots C1, C3, C6, and C8
Enclosure 4	P2-C1	Slots C1, C3, C6, and C8
Enclosure 4	P2-C2	Slots C1, C3, C6, and C8
Enclosure 4	P2-C1	Slots C2, C4, C5, and C7
Enclosure 4	P2-C2	Slots C2, C4, C5, and C7
Enclosure 3	P2-C1	Slots C2, C4, C5, and C7
Enclosure 3	P2-C2	Slots C2, C4, C5, and C7
Enclosure 2	P2-C1	Slots C2, C4, C5, and C7
Enclosure 2	P2-C2	Slots C2, C4, C5, and C7
Enclosure 1	P2-C1	Slots C2, C4, C5, and C7
Enclosure 1	P2-C2	Slots C2, C4, C5, and C7

#### Install memory modules

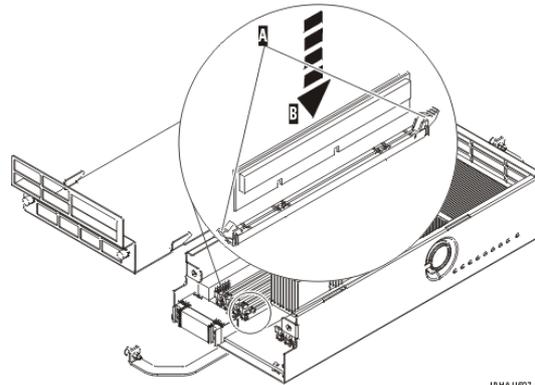
1. If necessary, remove the memory module from its antistatic package.
2. As shown in [Figure 3](#), ensure that the connector locking tabs A are pushed out into the unlocked position before installing a new memory module.
3. Carefully grasp the memory module B along two edges and align it with the connector.

**Attention:** Memory modules are keyed to prevent a memory module from being installed incorrectly. Note the locations of the key tabs within the memory module connector before attempting to install the memory module.

4. Push the memory module B firmly into the connector until the connector locking tabs A engage.

*Figure 3. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ memory module replacement*

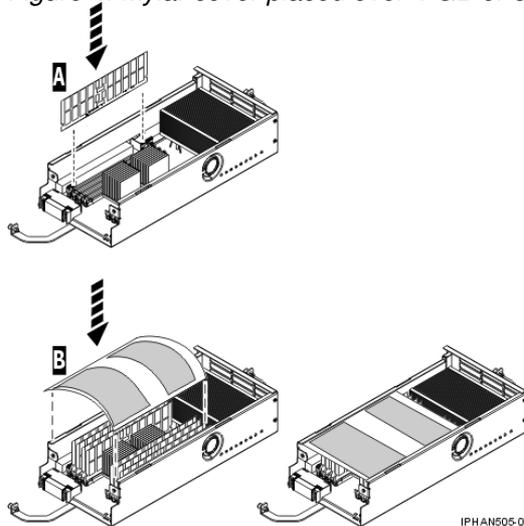
### Memory modules



5. If you have tall 4 GB or 8 GB memory modules, use the Mylar cover to prevent the memory modules from contacting the lid. When you have finished inserting the memory modules A, place the Mylar cover B over them as shown in [Figure 4](#). If you replace tall 4 GB or 8 GB memory modules with any other size memory modules, remove the Mylar cover. If you do not to remove the Mylar cover it might restrict airflow in the unit.

**Attention:** Do not install 8 GB memory modules on a processor assembly with any size memory modules other than 4 GB memory modules. Installing 8 GB memory modules with sizes other than 4 GB memory modules might unconfigure of the other size memory modules and you will see an associated System Reference Code of B123F688. Your system might have other size memory modules on a different processor assembly.

*Figure 4. Mylar cover placed over 4 GB or 8 GB memory modules*

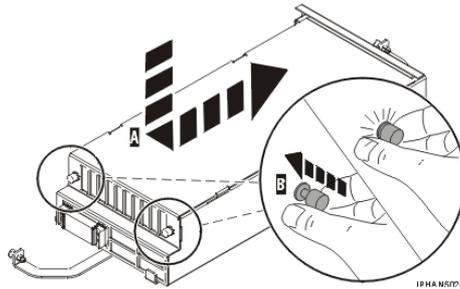


### Complete the procedure

1. As shown in [Figure 5](#), place the cover A on the processor assembly and then lock the two retention knobs B.

*Figure 5. Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system processor assembly cover replacement*

## Memory modules



2. Replace the system backplane. For instructions, see [Replace the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system backplane](#).
  3. Replace the voltage regulator card assemblies, as described in [Model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ voltage regulator assembly](#).
  4. Replace the control panel. For instructions, see [Replace the control panel with power off](#).
  5. Install the front cover. For instructions, see [Install the front cover on the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#).
  6. Reconnect all power and signal cables to their respective connectors.
  7. Start the system. For instructions, see [Start the system or logical partition](#).
  8. Verify the installed part. For instructions, see [Verify the installed part](#).
  9. If you installed memory modules as part of another procedure, return to the procedure now.
-

## Memory modules

## Related procedures

View and print information related to the installation, removal, and replacement of dual in-line memory modules (DIMMs).

- **Install a feature using the Hardware Management Console**
  - **Remove a part using the Hardware Management Console**
  - **Replace a part using the Hardware Management Console**
  - **Before you begin**

Understand prerequisites for installing, removing, or replacing features and parts.
  - **Start or stop the system or logical partition**

Learn how to start or stop a system or logical partition.
  - **Place the rack-mounted system or expansion unit in the service position or operating position**
  - **Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ \_\_ in the service position**

Learn how to place the unit into the service position.
  - **Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ \_\_ in the operating position**

Learn how to place the unit into the operating position.
  - **Place the rack-mounted model ESCALA PL 245T/R in the service position or operating position**
  - **Open the model ESCALA PL 250R-VL or ESCALA PL 450R-XS service access panel**
  - **Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position**
  - **Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position**

Learn how to place the unit into the operating position.
  - **Model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, service access cover**

This topic describes how to remove and install the service access cover for the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, .
  - **Front cover**

The following procedures describe how to remove and install the front cover of the system or expansion unit.
  - **Remove and replace model ESCALA PL 245T/R covers and doors**

Learn how to remove and replace covers and doors.
  - **Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, door**

Learn how to remove and replace the front door of the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .
  - **Remove the front cover from the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+**
  - **Install the front cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+**
  - **Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels**
  - **Identify a failing part**

The following procedures describe how to locate and identify a failing part on your system or expansion unit.
  - **SMP processor cable connections**
  - **Verify the installed part**
- 

## Start or stop the system or logical partition

Learn how to start or stop a system or logical partition.

- **Start the system or logical partition**

Use these instructions to start a system or logical partition.
- **Stop the system or logical partition**

Learn how to stop a system or logical partition.

**Parent topic:** [Related procedures](#)

---

## Install a feature using the Hardware Management Console

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

1. In the navigation area, expand **Management Environment**.
2. Expand the managed system into which you are installing a feature.
3. Expand **Service Applications**.
4. Select **Service Focal Point**.
5. In the contents area, select **Install/Add/Remove Hardware**.
6. In the **Install/Add/Remove Hardware** window, highlight system or unit into which you are installing a feature.
7. Click **Selected**.
8. From the Selected menu, select **Add FRU**.
9. In the **Enclosure type** field, select the system or expansion unit into which you are installing a feature.
10. In the FRU types for selected enclosure, select the feature you are installing.
11. Click **Next**.
12. Follow the instructions to install the feature.

**Note:** The HMC might open the ESCALA Power5 Hardware Information instructions for installing the feature. If so, follow these instructions to install the feature.

Parent topic: [Related procedures](#)

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## Remove a part using the Hardware Management Console

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

1. In the navigation area, expand the **Management Environment**.
2. Expand the managed system in which you are replacing a part.
3. Expand **Service Applications**.
4. Select **Service Focal Point**.
5. In the contents area, select **Install/Add/Remove Hardware**.
6. In the **Install/Add/Remove Hardware** window, click System Processor.
7. From the Selected menu, select **Remove FRU**.
8. In the **Installed enclosure types** field, select the system or expansion unit from which you are removing a part.
9. In the Available FRU types for selected enclosure, select the part you are removing.
10. Click **Next**.
11. Follow the instructions to remove the part.

**Note:** The HMC might open the ESCALA Power5 Hardware Information instructions for removing the part. If so, follow these instructions to remove the part.

Parent topic: [Related procedures](#)

---

## Replace a part using the Hardware Management Console

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

1. In the navigation area, expand the **Management Environment**.
2. Expand the managed system in which you are replacing a part.
3. Expand **Service Applications**.
4. Select **Service Focal Point**.
5. In the contents area, select **Repair Serviceable Event**.
6. Select the system and click **OK**.
7. In the window, click the problem number for the part you want to replace.
8. Follow the instructions to replace the part.

**Note:** The HMC might open the ESCALA Power5 Hardware Information instructions for replacing the part. If so, follow these instructions to replace the part.

**Parent topic:** [Related procedures](#)

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### Before you begin

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

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

Electrical voltage and current from power, telephone, and communication cables are hazardous. To avoid a shock hazard:

- Connect power to this unit only with the 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.

(D005)

**DANGER** Observe the following precautions when working on or around your IT rack system:

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



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

**CAUTION**

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

(R001)

Before you begin a replacement or installation procedure, perform these tasks:

1. If you are installing a new feature, ensure that you have the software required to support the new feature and determine if there are any existing PTF prerequisites.
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).

For information on backing up your system or logical partition, select from the following:

- ◆ [AIX backup](#)
  - ◆ [Linux backup](#)
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 information, see [Partitioning the server](#), and then return to these instructions.

**Parent topic:** [Related procedures](#)

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

Learn how to place a rack-mounted system or expansion unit into the service position or the operating position.

- **[Place the rack-mounted system or expansion unit in the service position](#)**  
By placing the rack-mounted system or expansion unit in the service position, you can access the inside of the unit.
- **[Place the rack-mounted system or expansion unit in the operating position](#)**  
By placing the rack-mounted system or expansion unit in the operating position, you make the unit available for use.

**Parent topic:** [Related procedures](#)

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

By placing the rack-mounted system or expansion unit in the service position, you can access the inside of the unit.

**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.

(D005)

**DANGER** Observe the following precautions when working on or around your IT rack system:

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



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

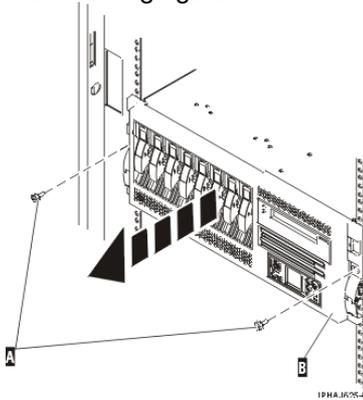
**CAUTION**

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

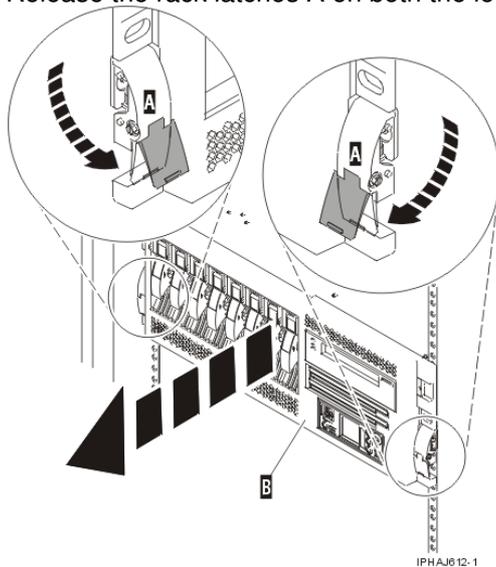
(R001)

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

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



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



4. Review 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.

**Parent topic:** [Place the rack-mounted system or expansion unit in the service position or operating position](#)

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

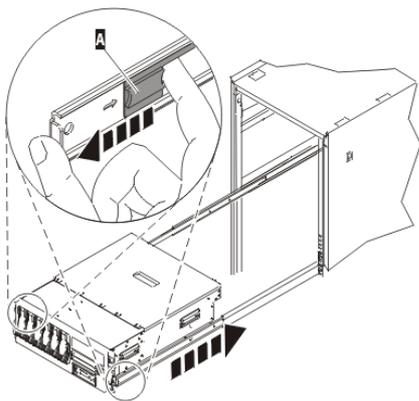
By placing the rack-mounted system or expansion unit in the operating position, you make the unit available for use.

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

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

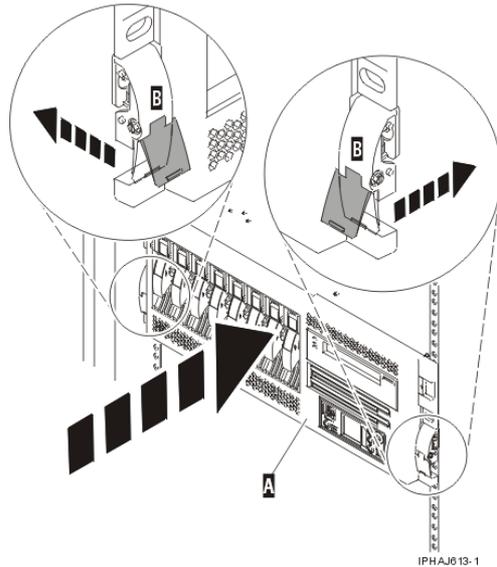
1. Simultaneously release the blue rail safety latches A, located near the front of each rail, and push the system or expansion unit into the rack as shown in the following figure.

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

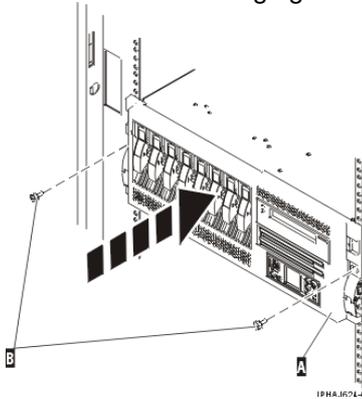


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- a. Both rack latches B should lock into position as shown in the following figure.



2. Replace and tighten the two thumbscrews B that secure the system or expansion unit A to the rack as shown in the following figure.



3. Close the front rack door.

**Parent topic:** [Place the rack-mounted system or expansion unit in the service position or operating position](#)

## Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10 in the service position

Learn how to place the unit into the service position.

**Note:** Some of the figures in these procedures might not look exactly like the system 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.

(D005)

**DANGER** Observe the following precautions when working on or around your IT rack system:

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



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

**CAUTION**

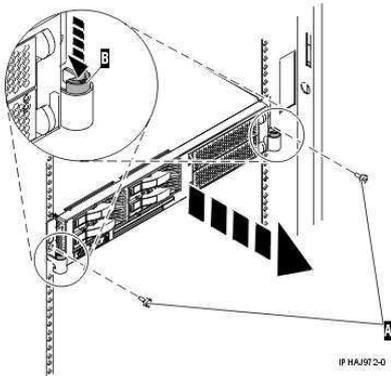
- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.
- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.

- (For sliding drawers.) Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.
- (For fixed drawers.) This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.

(R001)

To place the rack-mounted system 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 previous figure.
4. Review the following note, and then slowly pull the system 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 unit, do so before you pull the unit out from the rack.
- ◆ Ensure that the cables at the rear of the system 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 unit from being pulled out too far.

Parent topic: [Related procedures](#)

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## Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10 in the operating position

Learn how to place the unit into the operating position.

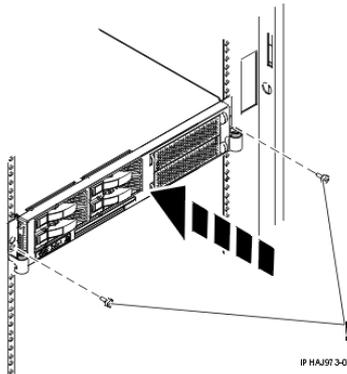
**Tip:** Some of the figures in these procedures might not look exactly like the system unit that you have. However, the steps to perform the task are the same.

To place the system unit into the operating position, follow these steps:

1. Simultaneously release the blue rail safety latches, located near the middle of each rail, and push the system unit into the rack. Both rack latches should lock into position.

**Important:** Ensure that the cables at the rear of the system unit do not catch or bind as you push the unit back into the rack.

2. Replace and tighten the two thumbscrews A that secure the system unit to the rack as shown in the following figure.



3. Close the front rack door.

Parent topic: [Related procedures](#)

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## Place the rack-mounted model ESCALA PL 245T/R in the service position or operating position

Learn how to place a rack-mounted model ESCALA PL 245T/R into the service position or the operating position.

- **Place the rack-mounted model ESCALA PL 245T/R in the service position**  
By placing the rack-mounted system unit in the service position, you can access the inside of the unit.
- **Place the rack-mounted model ESCALA PL 245T/R in the operating position**  
By placing the rack-mounted system unit in the operating position, you make the unit available for use.

Parent topic: [Related procedures](#)

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## Place the rack-mounted model ESCALA PL 245T/R in the service position

By placing the rack-mounted system unit in the service position, you can access the inside of the unit.

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

To place the rack-mounted system unit into the service position, follow these steps.

### **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.

(D005)

### **DANGER**Observe the following precautions when working on or around your IT rack system:

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



- Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.

- Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
- An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

#### CAUTION

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

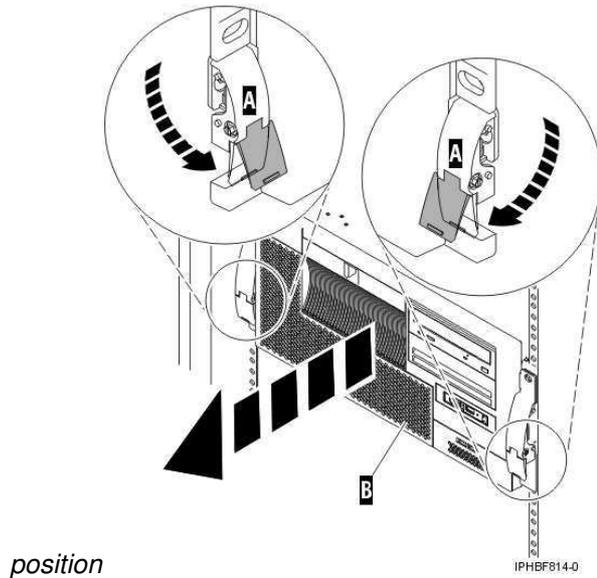
(R001)

1. If necessary, open the front rack door.
2. Release the rack latches A on both the left and right sides as shown in the following figure.
3. Review the following note, and then slowly pull the system unit B 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 unit, do so before you pull the unit out from the rack.
- ◆ Ensure that the cables at the rear of the system 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 unit from being pulled out too far.

*Figure 1. Placing the model ESCALA PL 245T/R in the service*



**Parent topic:** [Place the rack-mounted model ESCALA PL 245T/R in the service position or operating position](#)

## Place the rack-mounted model ESCALA PL 245T/R in the operating position

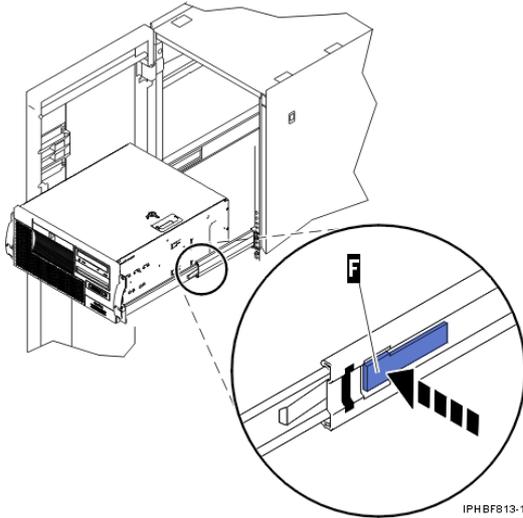
By placing the rack-mounted system unit in the operating position, you make the unit available for use.

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

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

1. Simultaneously release the blue rail safety latches F 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 unit do not catch or bind as you push the unit back into the rack.



- a. Both rack latches should lock into position.
2. Replace and tighten the two thumbscrews that secure the system unit to the rack.
3. Close the front rack door.

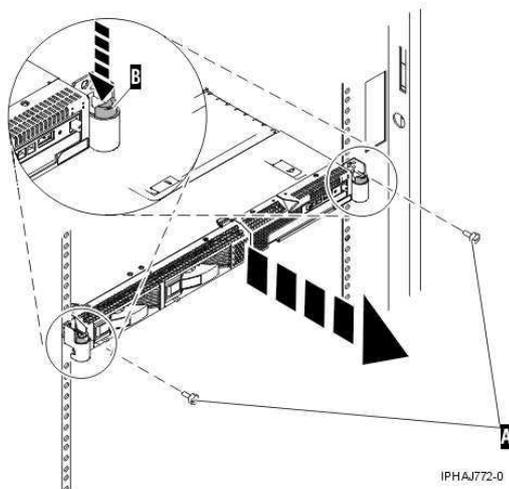
**Parent topic:** [Place the rack-mounted model ESCALA PL 245T/R in the service position or operating position](#)

## Open the model ESCALA PL 250R-VL or ESCALA PL 450R-XS service access panel

To open the service access panel on a rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS follow these steps:

1. If necessary, open the front rack door.
2. If they are present, remove the two thumbscrews A that secure the system unit to the rack as shown in the following figure.

*Figure 1. Remove thumbscrews from model ESCALA PL 250R-VL or ESCALA PL*



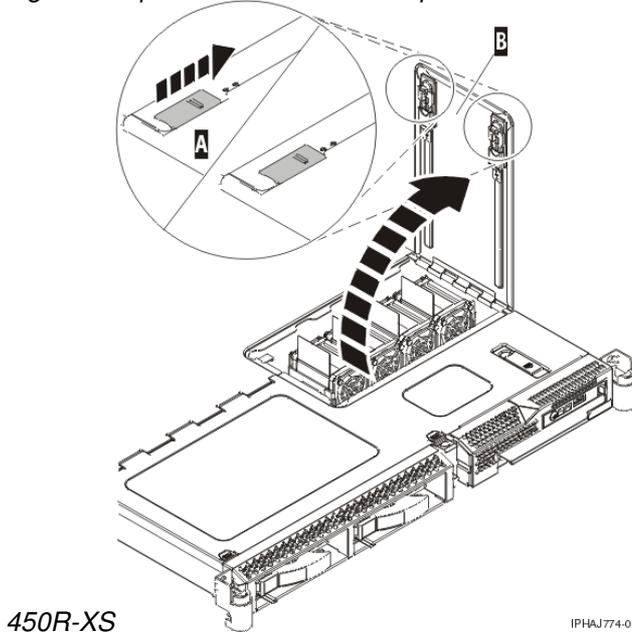
*450R-XS*

3. Release the rack latches B on both the left and right sides as shown in the previous figure.

**Note:**

- ◆ Ensure that the cables at the rear of the system unit do not catch or bind as you pull the unit out from the rack.
  - ◆ When the rails are fully extended, the rail safety latches lock into place. This action prevents the system unit from being pulled out too far.
4. Slowly pull the system unit out from the rack until the service access panel is completely exposed.
  5. Push the panel release tabs A until you can open the panel lid, as shown in the following figure.
  6. Lift the panel lid B to its fully opened position.

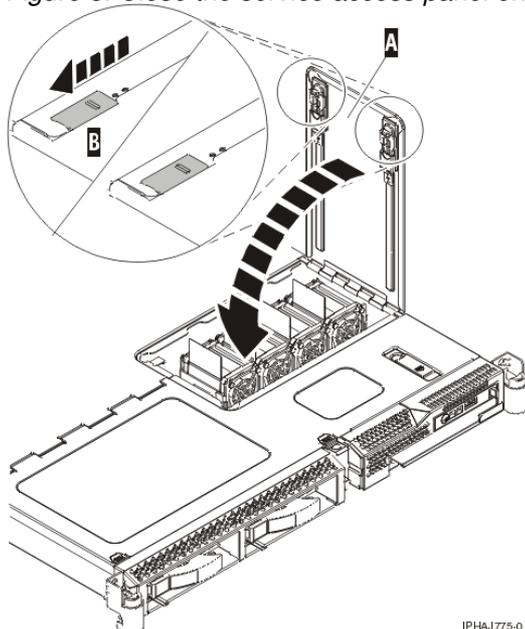
Figure 2. Open the service access panel on model ESCALA PL 250R-VL or ESCALA PL



Complete the following steps to close the service access panel:

1. Close the panel lid A, as shown in the following figure.

Figure 3. Close the service access panel on model ESCALA PL 250R-VL or ESCALA PL 450R-XS.



2. Push the panel release tabs B back into the locked position.

3. Gently push the server back into the rack until the rack latches lock into place.
4. Replace the thumbscrews if necessary.

Parent topic: [Related procedures](#)

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## Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position

If you are servicing the fans or control panel see: [Open the model ESCALA PL 250R-VL or ESCALA PL 450R-XS service access panel](#).

**Important:** To place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position you will need to remove the system unit from the rack.

**Note:** Some of the figures in these procedures might not look exactly like the system 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.

(D005)

## **DANGER** Observe the following precautions when working on or around your IT rack system:

- Heavy equipment personal injury or equipment damage might result if mishandled.
  - Always lower the leveling pads on the rack cabinet.
  - Always install stabilizer brackets on the rack cabinet.
  - To avoid hazardous conditions due to uneven mechanical loading, always install the heaviest devices in the bottom of the rack cabinet. Always install servers and optional devices starting from the bottom of the rack cabinet.
  - Rack-mounted devices are not to be used as shelves or work spaces. Do not place objects on top of rack-mounted devices.
- 
- Each rack cabinet might have more than one power cord. Be sure to disconnect all power cords in the rack cabinet when directed to disconnect power during servicing.
  - Connect all devices installed in a rack cabinet to power devices installed in the same rack cabinet. Do not plug a power cord from a device installed in one rack cabinet into a power device installed in a different rack cabinet.
  - An electrical outlet that is not correctly wired could place hazardous voltage on the metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

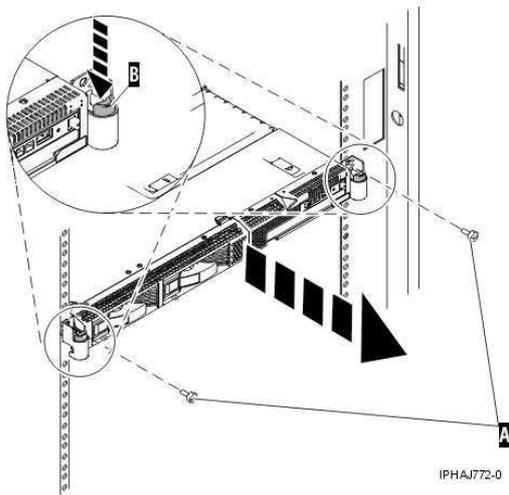
## CAUTION

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

(R001)

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

1. Record any error or log messages before you stop the system.
2. Stop the system. For instructions see, [Stop the system or logical partition](#).
3. If necessary, open the front rack door.
4. Carefully label and remove all cables and cords from the unit.
5. Remove the cable management arm from the system by doing the following:
  - a. Pull the release latch in the lower-left corner into the unlocked position.
  - b. Slide the cable management arm to the right detaching it from the system unit.
6. Remove the two screws A that secure the system unit to the rack as shown in the following figure.

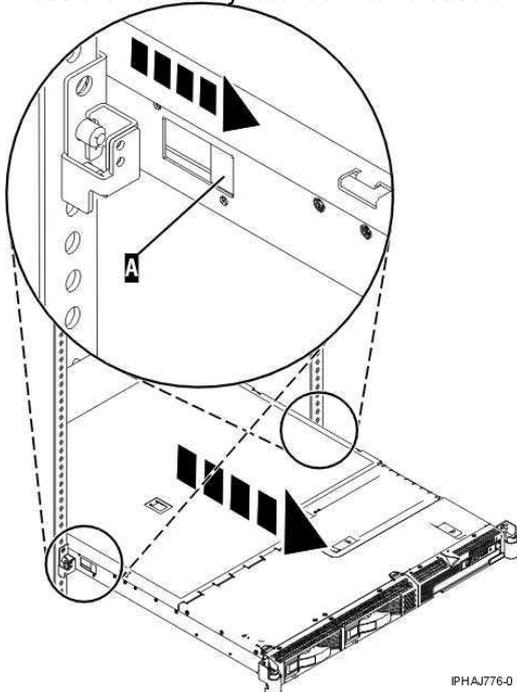


7. Release the rack latches B on both the left and right sides as shown in the previous figure.
8. Review the following notes, and then slowly pull the system unit out from the rack until the system unit is fully extended and locked.

**Note:**

- ◆ Ensure that the cables at the rear of the system 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 unit from being pulled out too far.

9. Press the rail safety latches A to release the system from the rack, as shown in the following figure.



10. Grasp each side of the system unit and pull the system unit out of the rack.

**CAUTION:** This unit weighs approximately 17 kg (37 pounds). Be sure you can safely support this weight when removing the system unit from the rack.

11. Place the system unit on a sturdy flat surface capable of safely supporting the system unit while you are servicing it.

**Parent topic:** [Related procedures](#)

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## Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position

Learn how to place the unit into the operating position.

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

To place the system unit into the operating position, follow these steps:

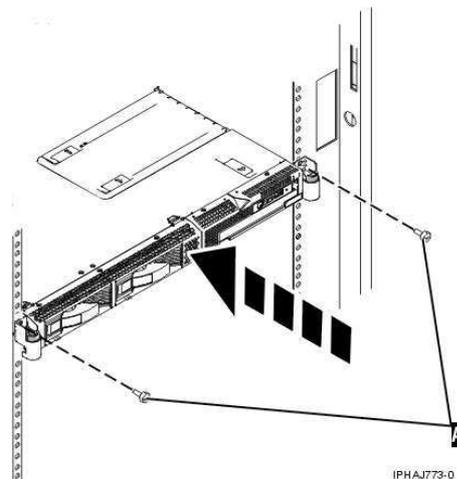
1. Lift the system unit, and position over the rails.

**CAUTION:** This unit weighs approximately 17 kg (37 pounds). Be sure you can safely support this weight when placing the system unit from the rack.

2. Simultaneously release the safety latches, located near the middle of each side of the system, and push the system unit into the rack. Both rack latches should lock into position.

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

3. Replace and tighten the two screws A that secure the system unit to the rack as shown in the following figure.



*Figure 1. Replace the thumbscrews*

4. Connect the cables and cords.
5. Replace the cable management arm.
6. Close the front rack door.

**Parent topic:** [Related procedures](#)

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## Memory modules

## Model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, service access cover

This topic describes how to remove and install the service access cover for the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, .

- **Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**

The following procedures describe how to remove the service access cover for the rack-mounted and stand-alone model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, .

- **Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**

The following procedures describe how to install the service access cover on the rack-mounted and stand-alone model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, .

Parent topic: [Related procedures](#)

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## Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10,

The following procedures describe how to remove the service access cover for the rack-mounted and stand-alone model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, .

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

- **Remove the service access cover from the rack-mounted model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**
- **Remove the service access cover from the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**
- **Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS**

Parent topic: [Model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, service access cover](#)

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## Remove the service access cover from the rack-mounted model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL

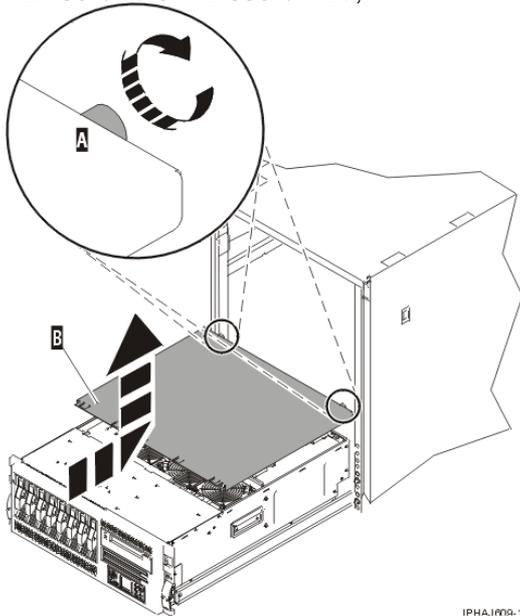
## 850T/R-L+, 7/10,

To remove the service access cover from a rack-mounted model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, , refer to [Figure 1](#) and [Figure 2](#) , and follow these steps:

1. Place the rack-mounted system or expansion unit in the service position.
2. Loosen the two thumbscrews located at the back of the cover.
3. Slide the cover toward the back of the system unit. When the front of the service access cover clears the upper frame ledge, lift the cover up and off the system unit.

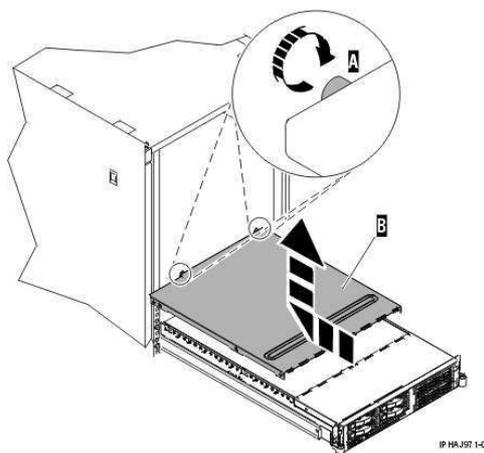
**Attention:** For proper cooling and airflow, install the cover before starting the system. Operating the system without the cover for more than 30 minutes could damage the system components.

*Figure 1. Remove the service access cover from the rack-mounted ESCALA PL 250T/R, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,*



IPHA1R00-1

*Figure 2. Remove the service access cover from the ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10*

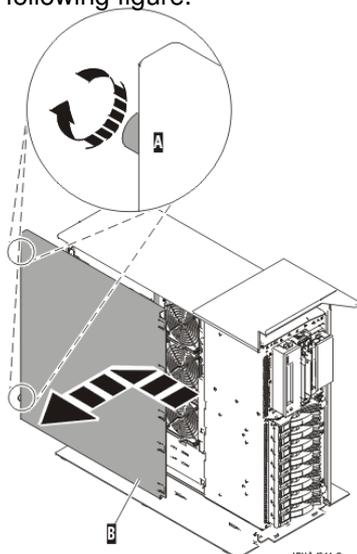


**Parent topic:** [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

## Remove the service access cover from the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

To remove the service access cover from a stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , do the following:

1. Loosen the two thumbscrews located at the back of the service access cover as shown in the following figure.



2. Slide the service access cover 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.

**Parent topic:** Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

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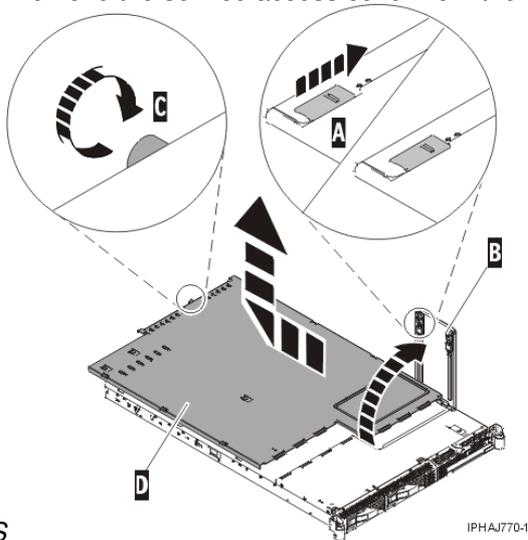
## Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS

To remove the service access cover from a rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS and follow these steps:

1. Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position.
2. Push the release tab A to open the service access panel B, as shown in the following figure.
3. Loosen the thumbscrew located at the back of the cover C.
4. Slide the cover D toward the back of the system unit. When the front of the service access cover clears the upper frame ledge, lift the cover up and off the system unit.

**Attention:** For proper cooling and airflow, install the cover before starting the system. Operating the system without the cover for more than 30 minutes could damage the system components.

Figure 1. Remove the service access cover from the model ESCALA PL 250R-VL or ESCALA PL



**Parent topic:** Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

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**Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**

**7/10,**

The following procedures describe how to install the service access cover on the rack-mounted and stand-alone model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, .

- **Install the service access cover on the rack-mounted model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**
- **Install the service access cover on the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**
- **Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS**

**Parent topic:** Model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, service access cover

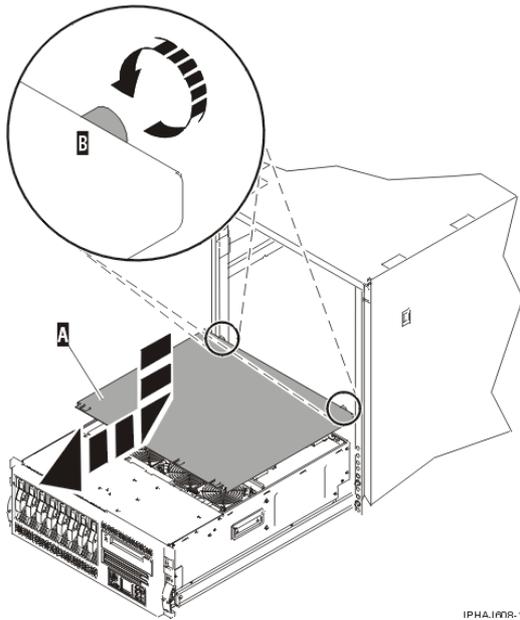
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## **Install the service access cover on the rack-mounted model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10,**

To install the service access cover on a rack-mounted model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, 7/10, , refer to [Figure 1](#) and [Figure 2](#), and follow these steps:

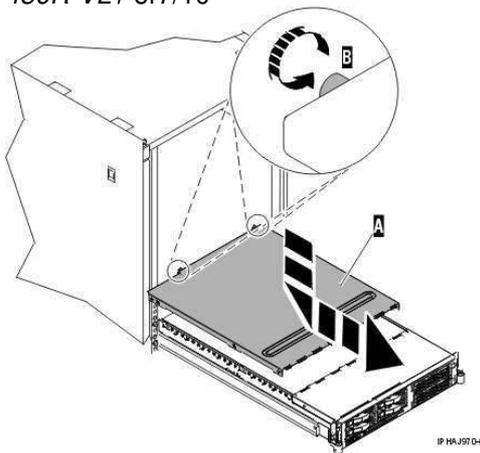
1. Place the service access cover A on the top of the system unit, approximately 25 mm (1 in.) from the front of the system unit.
2. Hold the service access cover against the system unit, and slide it toward the front of the system. Ensure that the fan LED cables do not get caught on the front edge of the service access cover as you move it forward. The tabs on the service access cover slide beneath the upper chassis ledge, and the two thumbscrews align with the screw holes at the back of the system unit.
3. Tighten the thumbscrews B located at the back of the cover.

*Figure 1. Install the service access cover on the rack-mounted model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,*



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Figure 2. Install the service access cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10



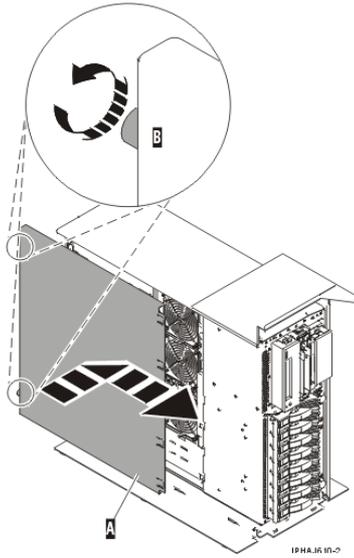
IP HA397 D-C

**Parent topic:** [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

## Install the service access cover on the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

To install the service access cover on a stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , follow these steps:

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, as shown in the following figure.
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.



**Parent topic:** [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

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## Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS

To install the service access cover on a rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS and follow these steps:

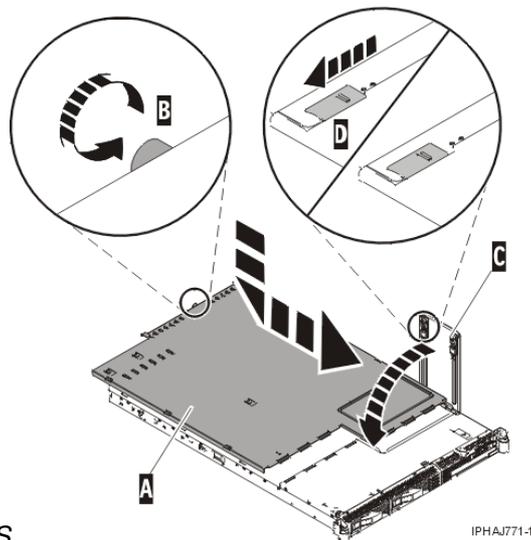
1. Ensure that the service access panel C is open while installing the service access cover.
2. Place the service access cover A on the top of the system unit, approximately 25 mm (1 in.) from the front of the system unit, as shown in the following figure.
3. Hold the service access cover against the system unit, and slide it toward the front of the system. Ensure that the fan LED cables do not get caught on the front edge of the service access cover as you move it forward.

The tabs on the service access cover slide beneath the upper chassis ledge, and the thumbscrew aligns with the screw hole at the back of the system unit.

4. Tighten the thumbscrew B located at the back of the cover.

*Figure 1. Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or*

## Memory modules



ESCALA PL 450R-XS

5. Close the service access panel C and ensure the tabs D lock into place.

**Parent topic:** [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

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## Front cover

The following procedures describe how to remove and install the front cover of the system or expansion unit.

- **Front cover for models ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, and the 05/95 expansion unit**

The following procedures describe how to remove and install the front cover of the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , or the 05/95 expansion unit.

- **Front cover for the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+**

The following procedures describe how to remove and install the front cover for rack-mounted ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system units.

**Parent topic:** [Related procedures](#)

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## Front cover for models 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, and the 05/95 expansion unit

The following procedures describe how to remove and install the front cover of the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , or the 05/95 expansion unit.

- **Remove the front cover from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit**

The following procedures describe how to remove the front cover of the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit.

- **Install the front cover on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit**

The following procedures describe how to install the front cover for the rack-mounted and stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit.

**Parent topic:** [Front cover](#)

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## Memory modules

## **Remove the front cover from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit**

The following procedures describe how to remove the front cover of the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit.

- **Remove the front cover from the rack-mounted model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, and the 05/95 expansion unit**
- **Remove the front cover from the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**

**Parent topic:** [Front cover for models ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, and the 05/95 expansion unit](#)

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## **Remove the front cover from the rack-mounted model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, and the 05/95 expansion unit**

To remove the rack-mounted system or expansion unit front cover, follow these steps:

1. 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.
3. Push both cover-release latches C in the direction of the arrows to release the cover from the system or expansion unit.
4. Pull the cover out and away from the system or expansion unit.

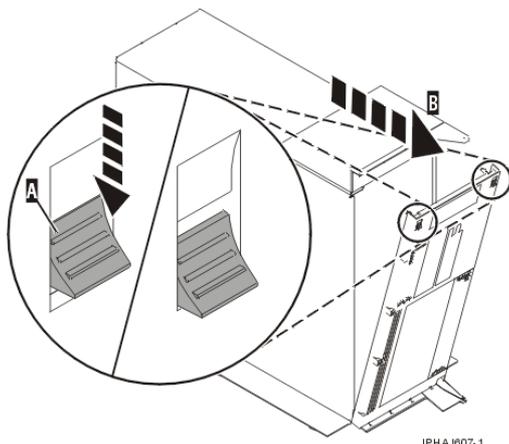
**Parent topic:** [Remove the front cover from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit](#)

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## **Remove the front cover from the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,**

To remove the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, front cover, follow these steps:

1. [Remove the door from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
2. Press down on the two cover-release levers.
3. Pull the top of the cover out and away from the system as shown in the following figure.



4. Gently pull the cover up and off the base, releasing the lower cover-locking tabs.

**Parent topic:** [Remove the front cover from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit](#)

## Install the front cover on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit

The following procedures describe how to install the front cover for the rack-mounted and stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit.

- [Install the front cover on the rack-mounted model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , or the 05/95 expansion unit](#)
- [Install the front cover on the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

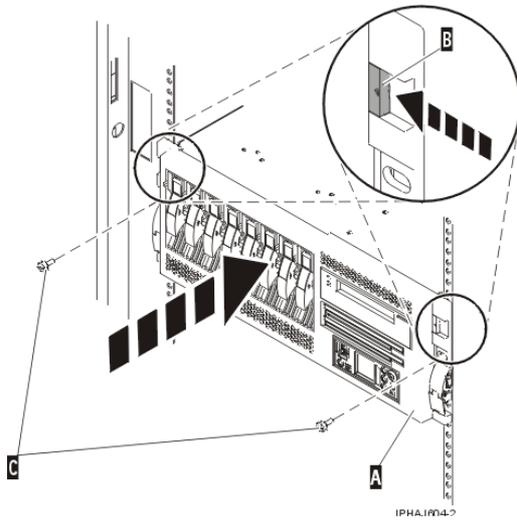
**Parent topic:** [Front cover for models ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, and the 05/95 expansion unit](#)

## Install the front cover on the rack-mounted model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , or the 05/95 expansion unit

To install the front cover on a rack-mounted model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95, follow these steps:

1. Position the cover on the front of the system or expansion unit so that the two thumbscrews C align with the screw holes on the front of the system or expansion unit A, as shown in the following figure.
2. Push the cover-release latches B in the direction of the arrows to attach the cover to the front of the system or expansion unit. The latches will hold the cover in place.

## Memory modules



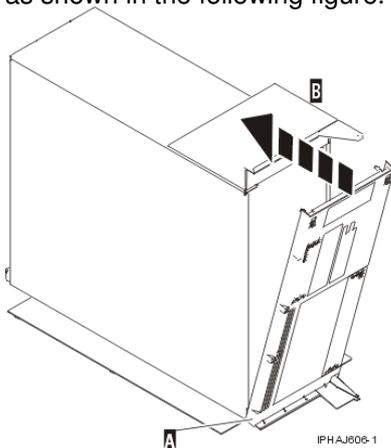
3. Tighten the thumbscrews.
4. Close the front rack door.

**Parent topic:** [Install the front cover on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit](#)

## Install the front cover on the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

To install the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, front cover, follow these steps:

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.



2. Rotate the cover up toward the top of the system, ensuring that the aligning pins are aligned with their matching slots located on the system.
3. Gently push the cover in until the two cover-release levers are seated in their respective slots.
4. [Install or replace the door on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

**Parent topic:** [Install the front cover on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or the 05/95 expansion unit](#)

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## Front cover for the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+

The following procedures describe how to remove and install the front cover for rack-mounted ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+ system units.

- [Remove the front cover from the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#)
- [Install the front cover on the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#)

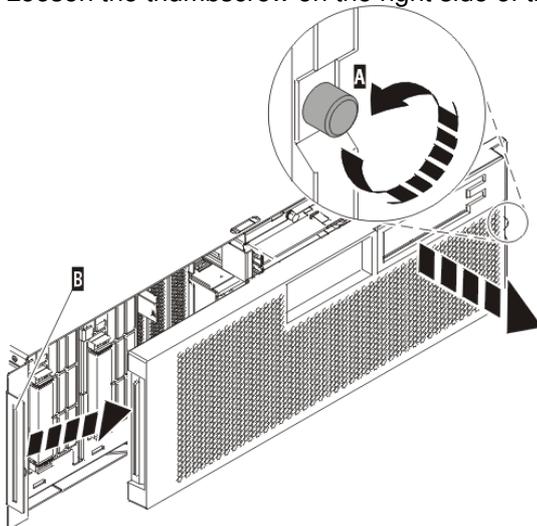
**Parent topic:** [Front cover](#)

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## Remove the front cover from the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+

To remove the front cover from the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+, 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.



IPHAI/P01-1

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

**Parent topic:** [Front cover for the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#)

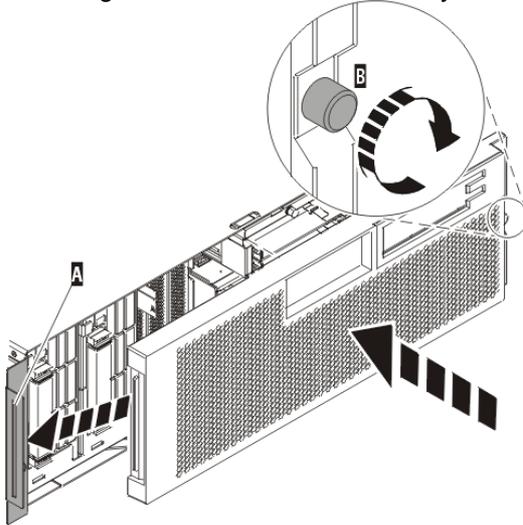
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## Install the front cover on the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+

To install the front cover on the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+, 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.



IPHA1500.1

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

**Parent topic:** [Front cover for the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+](#)

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## Remove and replace model ESCALA PL 245T/R covers and doors

Learn how to remove and replace covers and doors.

- [Remove and replace the model ESCALA PL 245T/R front cover](#)
- [Remove and replace the model ESCALA PL 245T/R acoustic-feature back cover](#)  
The model ESCALA PL 245T/R has a removable back cover only if you have ordered the acoustic covers feature.
- [Remove and replace the model ESCALA PL 245T/R side cover](#)

**Parent topic:** [Related procedures](#)

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## Remove and replace the model ESCALA PL 245T/R front cover

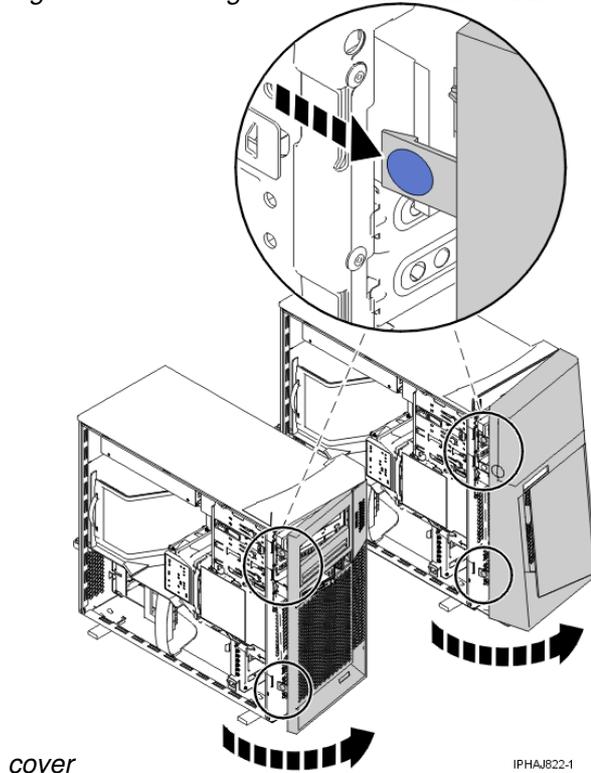
To remove the front cover from the model ESCALA PL 245T/R, follow these steps:

1. Remove the side cover. See, [Remove and replace the model ESCALA PL 245T/R side cover](#)
2. Lift each of the tabs on the front cover until it is released from the system unit, as shown in the following figure.

**Tip:** On the open face cover there are two tabs to release. On the acoustic feature front cover there are three tabs to release.

3. Pull the cover open until it can be removed from the system unit.

Figure 1. Removing the model ESCALA PL 245T/R front



Parent topic: [Remove and replace model ESCALA PL 245T/R covers and doors](#)

## Remove and replace the model ESCALA PL 245T/R acoustic-feature back cover

The model ESCALA PL 245T/R has a removable back cover only if you have ordered the acoustic covers feature.

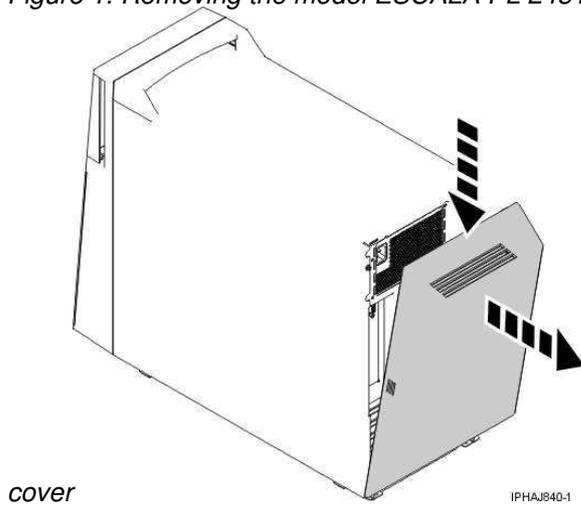
To remove the back cover from the model ESCALA PL 245T/R, follow these steps:

1. Press down on the center tab of the cover until you unseat it from the back of the system unit, as shown in the following figure.

**Remember:** Use care not to dislodge any of the cables or cords attached to the system unit during this procedure.

2. Lift the top of the cover until the pins on the bottom clear the holes and the cover can be removed.

Figure 1. Removing the model ESCALA PL 245T/R back

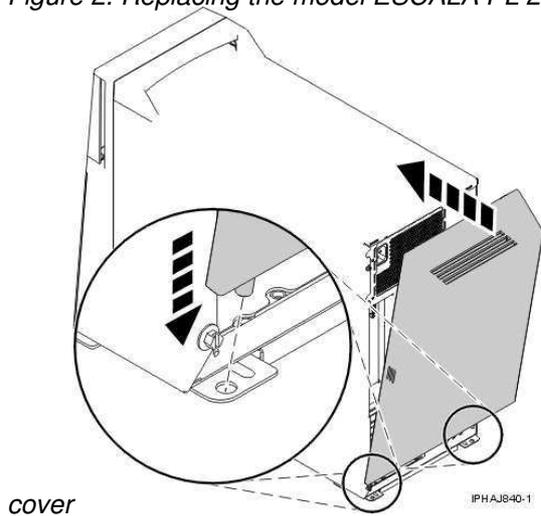


To replace the back cover from the model ESCALA PL 245T/R, follow these steps:

1. Attach all cables and cords.
2. Place the pins on the bottom of the cover into the slot at the bottom of the system unit, as shown in the following figure.
3. Rotate the cover until it snaps into place on the back of the system unit.

**Remember:** Use care not to dislodge any of the cables or cords attached to the system unit during this procedure.

Figure 2. Replacing the model ESCALA PL 245T/R back



**Parent topic:** [Remove and replace model ESCALA PL 245T/R covers and doors](#)

## Remove and replace the model ESCALA PL 245T/R side cover

To remove the side cover from the model ESCALA PL 245T/R, follow these steps:

1. Unlock the security lock A if it is locked, as shown in the following figure.
2. Press down on the latch B to open the cover and pull it away from the system unit.
3. Lift the panel out of the ledge on the bottom of the system unit.

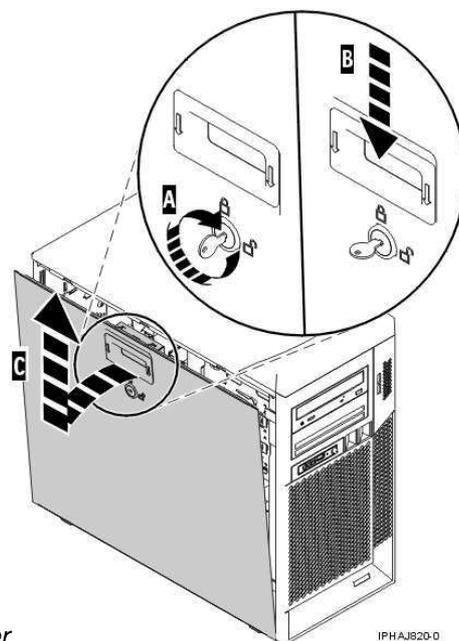


Figure 1. Removing the model ESCALA PL 245T/R side cover

**Parent topic:** [Remove and replace model ESCALA PL 245T/R covers and doors](#)

### Replace the side cover in a model ESCALA PL 245T/R

To replace the side cover on the model ESCALA PL 245T/R, follow these steps:

1. Insert the bottom lip of the cover into the ledge on the bottom of the system unit.
2. Rotate the panel up A until the latch snaps into place B, as shown in the following figure.

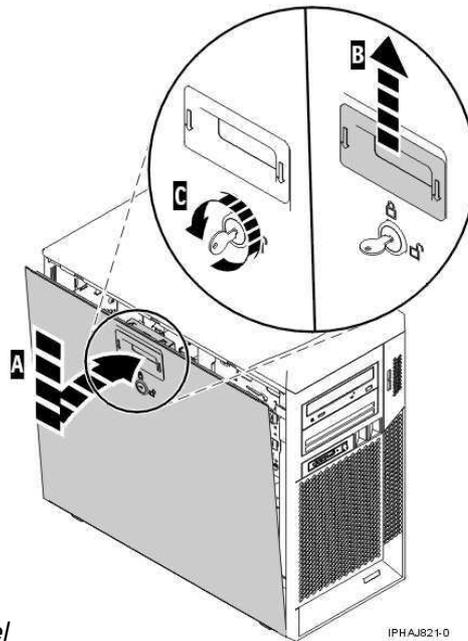


Figure 2. Replacing the service panel  
3. Lock the security lock C if needed.

## Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, door

Learn how to remove and replace the front door of the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .

- Remove the door from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,
- Install or replace the door on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

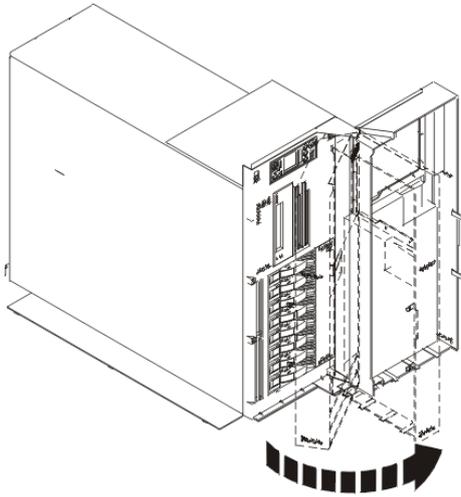
Parent topic: [Related procedures](#)

## Remove the door from the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

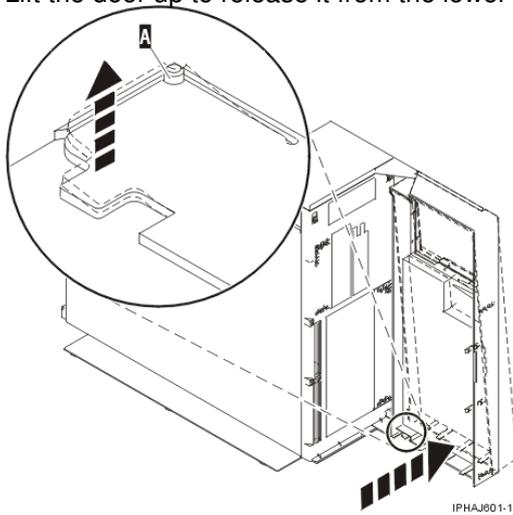
To remove the door from the model 112/85 or ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ see, [Remove the door from the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+](#).

To remove the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, door, do the following:

1. Open the front door by grasping the door handle and pulling the door out and away from the system unit as shown in the following figure.



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.



**Parent topic:** [Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, door](#)

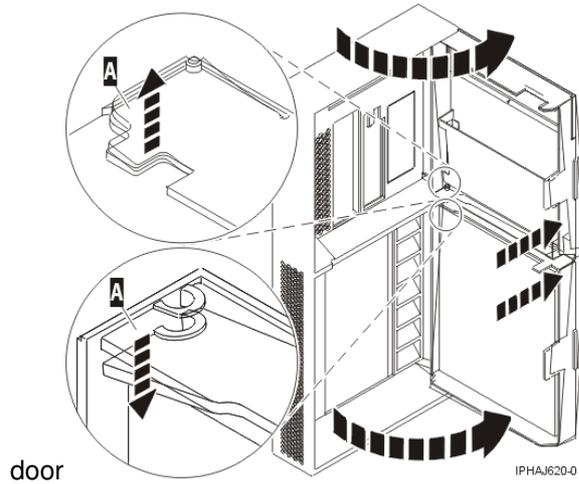
#### **Remove the door from the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+**

The model 112/85 or ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ has two doors. The top door allows access to the media and the bottom allows access to the DASD. Use the following procedure for removing both doors.

1. Open the door that you want to remove and release the tab at the center hinge point as shown in the following figure.
  - a. Lift up the bottom tab at hinge A to release the top door.
  - b. Press down on the top tab at the hinge A to release the bottom door
2. Gently swivel the top back edge of the door forward until it releases from the system unit.

*Figure 1. Removing the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+*

Memory modules



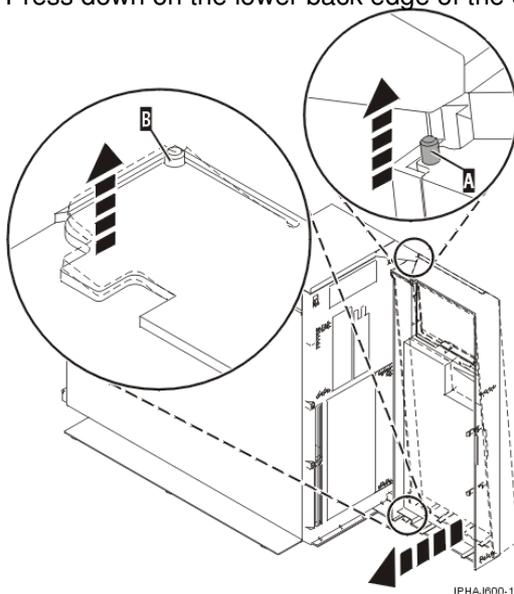
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## Install or replace the door on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

To install the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ with acoustic feature front door see, [Install the door on the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+](#)

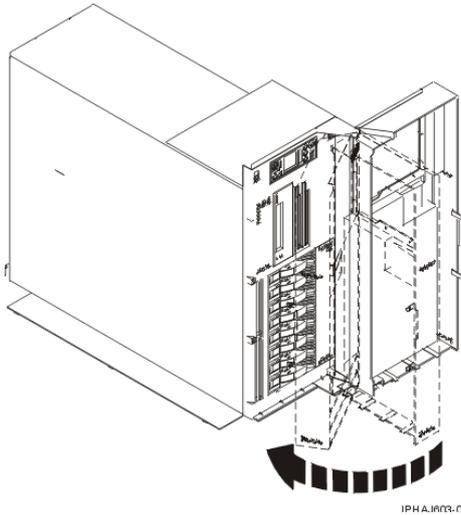
To install the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, front door, do the following:

1. Set the door on the lower retaining post B, as shown in the following figure.
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 A into its matching slot.



4. Close the door.

## Memory modules

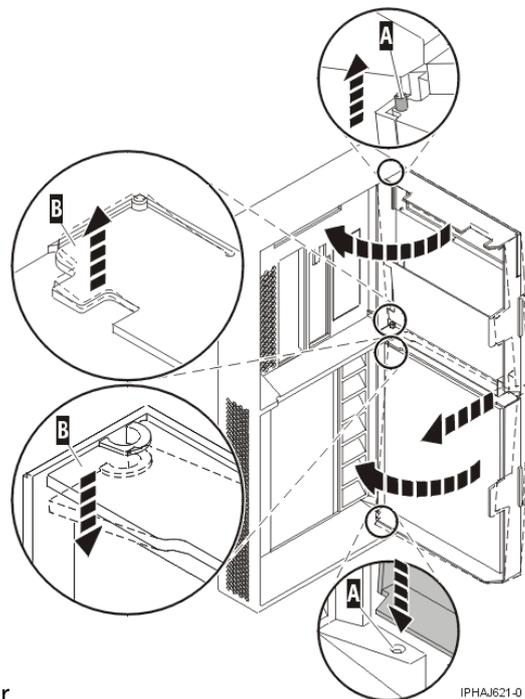


**Parent topic:** [Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, door](#)

### Install the door on the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+

The model 112/85 or ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ has two doors. The top door covers the media bays, and the bottom door covers the DASD bays.

1. Set the door into the retaining post A.



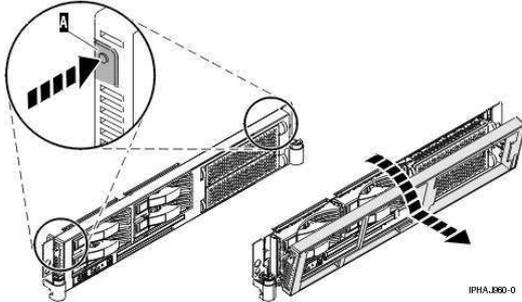
*Figure 1. Installing the model 112/85 door*

2. Rotate the door toward the system unit.
3. Press down on the back edge of the door, and seat the post B into its matching slot.
4. Close the door.

## Remove the front cover from the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10

To remove the front cover, follow these steps:

1. If necessary, open the front rack door.
2. Push both cover-release latches A down to release the cover as shown in the following figure.



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

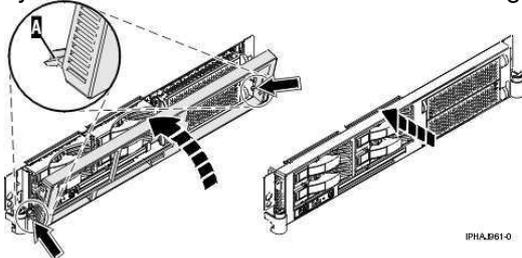
Parent topic: [Related procedures](#)

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## Install the front cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10

To install the front cover, follow these steps:

1. If necessary, open the front rack door.
2. Insert the two tabs A located on the bottom edge of the cover into their locking slots, located on the system unit frame as shown in the following figure.



3. Pivot the front cover up toward the top of the system unit frame.
4. Align the tabs to the matching slots located on the front of the system unit frame.
5. Gently push the tabs into the slots until the cover seats against the front of the system unit.
6. Close the front rack door.

Parent topic: [Related procedures](#)

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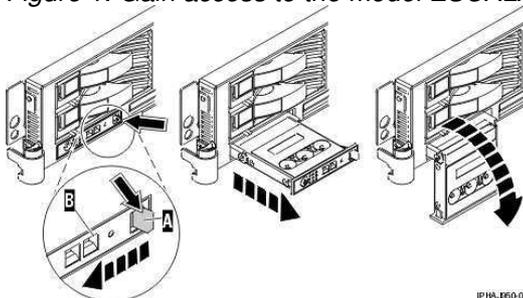
## Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels

Because only part of the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels 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 B so that it pops out slightly, as shown in the following figure.

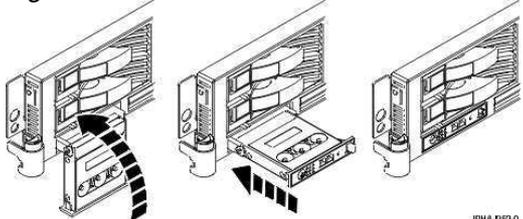
Figure 1. Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels



IPHA.860-0

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.

Figure 2. Close the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels



IPHA.850-0

Parent topic: [Related procedures](#)

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## Identify a failing part

The following procedures describe how to locate and identify a failing part on your system or expansion unit.

- [Identify a failing part on a model ESCALA PL 245T/R](#)
- [Identify a failing part on an AIX system or logical partition](#)
- [Identify a failing part on a Linux system or logical partition](#)
- [Identify a failing part using the Advanced System Management Interface](#)

Use this task to identify a failing part if the Linux operating system is running on the system or logical partition.

Parent topic: [Related procedures](#)

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## Identify a failing part on an AIX system or logical partition

To identify a failing part on a system or logical partition running AIX, you must locate the failing part, and then activate the indicator light for that part.

- [Locate a failing part in an AIX system or logical partition](#)
- [Activate the indicator light for the failing part](#)

Parent topic: [Identify a failing part](#)

---

## Locate a failing part in an AIX system or logical partition

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

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

Use the location information for the failing part to activate the indicator light that identifies the failing part. For instructions, see [Activate the indicator light for the failing part](#).

Parent topic: [Identify a failing part on an AIX system or logical partition](#)

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## Activate the indicator light for the failing part

The indicator light helps you locate which part to replace. To activate the indicator light, follow these steps:

1. Log in as root user.
2. At the command line, type `diag` and press Enter.
3. From the **Function Selection** menu, select Task Selection. 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.

Parent topic: [Identify a failing part on an AIX system or logical partition](#)

---

## Identify a failing part on a Linux system or logical partition

There are a number of methods to identify a failing part on a system or logical partition running Linux.

- **Locate a failing part and activate the indicator light**  
Use this task to locate a failing part if the service aids have been installed.
- **Activate the indicator light for the failing part**  
Use these instructions to activate the indicator light. The indicator light helps you locate which part to replace.
- **Deactivate the failing-part indicator light**  
After replacing a failing part, use this task to deactivate the failing-part indicator light.
- **Identify a failing part using stand-alone diagnostics**  
Use this task if the operating system is stopped or if you need to stop the system or logical partition to replace the failing part.

**Parent topic:** [Identify a failing part](#)

---

### Locate a failing part and activate the indicator light

Use this task to locate a failing part if the service aids have been installed.

To identify a failing part on a system or logical partition running Linux, you must locate the failing part, and then activate the indicator light for that part.

- **Locate a failing part in a Linux system or logical partition**  
Use these instructions if you do not know the location code of the failing part. If you know the location code proceed to the next task to activate the indicator light.

**Parent topic:** [Identify a failing part on a Linux system or logical partition](#)

---

### Locate a failing part in a Linux system or logical partition

Use these instructions if you do not know the location code of the failing part. If you know the location code proceed to the next task to activate the indicator light.

To locate the failing part in a system or logical partition running Linux, 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.

**Parent topic:** [Locate a failing part and activate the indicator light](#)

---

## Activate the indicator light for the failing part

Use these instructions to activate the indicator light. The indicator light helps you locate which part to replace.

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. Substituting the location code of the failing unit for `<location code>`.
3. Look for the system attention light to identify the enclosure that contains the failing part.

**Parent topic:** [Identify a failing part on a Linux system or logical partition](#)

---

## Deactivate the failing-part indicator light

After replacing a failing part, use this task to deactivate the failing-part indicator light.

After replacing a failing part, follow these steps to deactivate the failing-part indicator light:

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

**Parent topic:** [Identify a failing part on a Linux system or logical partition](#)

---

## Identify a failing part using stand-alone diagnostics

Use this task if the operating system is stopped or if you need to stop the system or logical partition to replace the failing part.

You can use stand-alone diagnostics to identify a failing 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 the stand-alone diagnostics from a Network Installation Management server](#).

### Prerequisites:

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

To use stand-alone diagnostics from a CD-ROM, 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.

**Note:** The next step starts the server or logical partition from the stand-alone diagnostic CD-ROM. If the CD-ROM or DVD-ROM drive is not available as the startup device on the server or logical partition on which you are working, follow these steps:

- a. Access the Advanced System Management Interface (ASMI). See [Managing your server using the Advanced System Management Interface](#) for information on using the ASMI.
  - b. On the ASMI main menu, click **Power/Restart Control**.
  - c. Click **Power On/Off System**.
  - d. Select the **Service mode boot** from **default boot list** option in the AIX or Linux logical partition mode boot list.
  - e. Click **Save settings** and power on the system. As soon as the optical drive has power, insert the AIX diagnostic diskette.
  - f. Go to step 5.
4. Turn on the system unit power and insert the diagnostics CD-ROM into the CD-ROM drive.
  5. After the keyboard POST indicator displays on the firmware console and before the last POST indicator (speaker) displays, press the 5 key on either the directly attached keyboard or the ASCII terminal. This indicates 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.

**Tip:** If the Diagnostic Operating Instructions display does not appear, contact your support center for assistance.

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

**Parent topic:** [Identify a failing part on a Linux system or logical partition](#)

---

## Identify a failing part using the Advanced System Management Interface

Use this task to identify a failing part if the Linux operating system is running on the system or logical partition.

To activate the indicator light for a failing part, follow these steps:

1. If the unit ID does not match the label on the system or expansion unit, update the configuration information.
  - ◆ For information on setting up the ASMI refer to [Accessing the Advanced System Management Interface](#).
  - ◆ For information on using the ASMI, refer to [Managing your server using the Advanced System Management Interface](#)
2. Turn on the failing part indicator light. For instructions, see [Changing service indicators](#).

**Parent topic:** [Identify a failing part](#)

---

## Memory modules

## SMP processor cable connections

This feature is installed by a service provider. However, you might need to disconnect and reconnect this cable to add or remove memory or processors.

The following procedures describe how to disconnect and reconnect the SMP processor cable from individual model ESCALA PL 850R/PL 1650R/R+ system units.

- **Disconnect the SMP processor cable from a system unit**  
Learn how to disconnect an SMP processor cable.
- **Reconnect the SMP processor cable to a system unit**  
Learn how to reconnect an SMP processor cable.

Parent topic: [Related procedures](#)

---

### Disconnect the SMP processor cable from a system unit

Learn how to disconnect an SMP processor cable.

#### **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.

(D005)

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

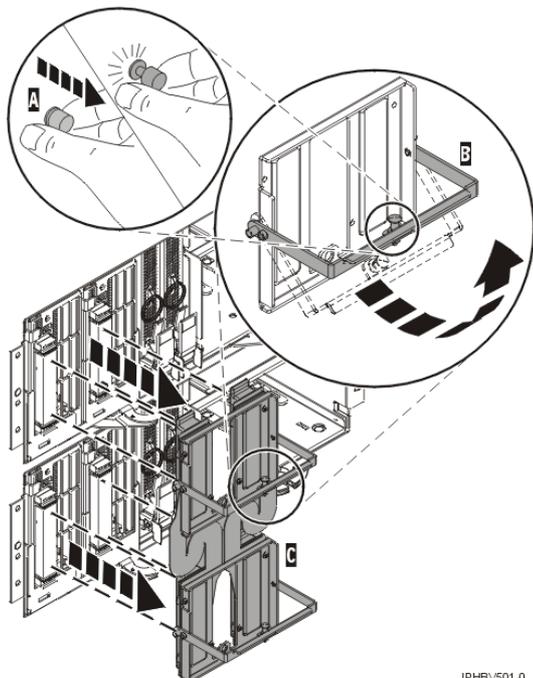


3. [Remove the model ESCALA PL 850R/PL 1650R/R+ front cover.](#)
4. Remove the left edge of the trim kit on the system rack to expose the left edge of the SMP processor cable.

**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 flexible cable C away from the system unit to gain access to the system unit.

Parent topic: [SMP processor cable connections](#)

## Reconnect the SMP processor cable to a system unit

Learn how to reconnect an SMP processor cable.

### **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:

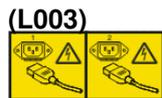
1. Turn off everything (unless instructed otherwise).
2. Attach all cables to the devices.
3. Attach the signal cables to the connectors.
4. Attach the power cords to the outlets.
5. Turn on the devices.

(D005)

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](#).
2. Stop all system units. Refer to [Stop the system or logical partition](#).
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.



or

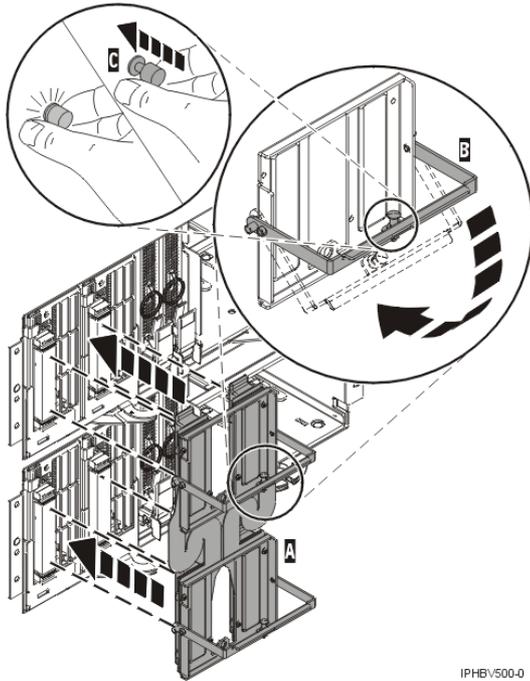


5. If necessary, remove the left edge of the trim kit on the system rack.

**Attention:**

- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge 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 B to the open position, as shown in the following figure.



IPHBV500-0

7. Align the guide pins with the connector on the system unit.
8. Carefully push the connector A into the system unit connection.
9. Push the latch handle down to seat the pins.
10. Secure the plastic fastener C.
11. Replace the left edge of the trim kit.
12. [Install the model ESCALA PL 850R/PL 1650R/R+ front cover.](#)
13. Close the front rack door.

Parent topic: [SMP processor cable connections](#)

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## Verify the installed part

This topic describes how to verify a newly installed or replaced part on your system, logical partition, or expansion unit. Verify an installed feature or replaced part by selecting the appropriate procedure for the operating system or for the console as follows.

- [Verify an installed feature or replaced part on an AIX system or logical partition](#)
- [Verify the installed part on a Linux system or logical partition \(run AIX diagnostics\)](#)
- [Verify the presence of an installed part using Hardware Management Console \(HMC\)](#)  
Use these instructions to verify an installed part using the Hardware Management Console (HMC). If you have reference codes, symptoms, or location codes that you used during the service action, locate the records to use during this procedure.
- [Verify the presence of an installed part using the Advanced System Management Interface \(ASMI\)](#)  
Use these instructions to verify a newly installed part or replaced part using the Advanced System Management Interface (ASMI).

Parent topic: [Related procedures](#)

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## Verify an installed feature or replaced part on an AIX system or logical partition

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

- [Verify the installed feature using AIX](#)
- [Verifying the replaced part using AIX](#)

Verify the installed feature using AIX:

1. Log in as root user.
2. At the command line, type `diag` and press Enter.
3. Select **Advanced Diagnostics Routines**. 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. You can learn more about these codes in [Reference codes](#). 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 [Performing a slow boot](#).
  - ◆ **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. You can learn more about these codes in the [Reference codes](#). Review the procedures for the part that you replaced to ensure that the new part is installed correctly. If you cannot correct the problem, collect all SRNs or any other reference code information that you see. If the system does not start or you have no login prompt, see: [Problems with loading and starting the operating system](#).

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

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 .
  - 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.
  - ◆ **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:
    - ◇ [Identify a failing part using stand-alone diagnostics](#)
    - ◇ [Running the stand-alone diagnostics from a Network Installation Management server](#)
    - ◇ [Changing service indicators with the ASMI menus](#)

Parent topic: [Verify the installed part](#)

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

To verify the newly installed or replaced part, choose one of the following:

- [Verify the presence of an installed part using the Advanced System Management Interface \(ASMI\)](#)
- [Verify an installed part using the stand-alone diagnostics](#)  
Use these instructions to verify an installed part in a Linux system, expansion unit, or logical partition.

Parent topic: [Verify the installed part](#)

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## Verify an installed part using the stand-alone diagnostics

Use these instructions to verify an installed part in a Linux system, expansion unit, or logical partition.

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 the stand-alone diagnostics from a Network Installation Management server](#).

### 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 [Managing your server using the Advanced System Management Interface](#) 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. 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 will not boot or you have no login prompt go to [Problems with loading and starting the operating system](#).

**Note:** If you received an SRN or any other reference code when you attempted to start the system, you can learn more about these codes in [Reference codes](#).

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.

Parent topic: [Verify the installed part on a Linux system or logical partition \(run AIX diagnostics\)](#)

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

Use these instructions to verify an installed part using the Hardware Management Console (HMC). If you have reference codes, symptoms, or location codes that you used during the service action, locate the records to use during this procedure.

Use this procedure to update your HMC records after you have completed a service action on your server. If you have reference codes, symptoms, or location codes that you used during the service action, locate the records 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](#) 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](#). **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.

Parent topic: [Verify the installed part](#)

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## Verify the presence of an installed part using the Advanced System Management Interface (ASMI)

Use these instructions to verify a newly installed part or replaced part using the Advanced System Management Interface (ASMI).

To verify the newly installed or replaced part, follow these steps:

1. If the unit ID does not match the label on the system or expansion unit, update the configuration

information.

- ◆ For information on accessing up the ASMI, refer to [Accessing the Advanced System Management Interface](#)
  - ◆ For information on using the ASMI [Managing your server using the Advanced System Management Interface](#).
2. Turn off the failing part indicator light. For instructions, see [Changing service indicators](#).

**Parent topic:** [Verify the installed part](#)

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## Memory modules

## Technical publication remarks form

<b>Title :</b> ESCALA POWER5 Hardware Information Memory modules
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<b>Reference N° :</b> 86 A1 14EW 00
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<b>Date:</b> July 2006
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### ERRORS IN PUBLICATION

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