ESCALA POWER5

Hardware Information

PCI adapter

REFERENCE
86 A1 11EW 00

BLANK

ESCALA POWER5

Hardware Information

PCI adapter

Hardware

July 2006

BULL CEDOC
357 AVENUE PATTON
B.P.20845
49008 ANGERS CEDEX 01
FRANCE

REFERENCE
86 A1 11EW 00

Printed in France

Suggestions and criticisms concerning the form, content, and presentation of this book are invited. A form is provided at the end of this book for this purpose.

To order additional copies of this book or other Bull Technical Publications, you are invited to use the Ordering Form also provided at the end of this book.

Trademarks and Acknowledgements

Table of Contents

Table of Contents

PCI adapter

This topic contains procedures and reference information that you or your service provider can use to place, install or remove Peripheral Component Interconnect (PCI) or PCI-X features, including PCI adapters, PCI adapter cassettes, and PCI adapter dividers.

- **Printable PDF**
  Use this section to download a PDF of this information.
- **Model ESCALA PL 245T/R PCI adapters**
  These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model ESCALA PL 245T/R , with the system power off. This system does not support the removal, replacement, or installation of adapters with the system power on.
- **Model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters**
  These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
- **Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters**
  These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units.
- **Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters**
  These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-units.
- **Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PCI adapter dividers**
  The following procedures describe the removal and replacement of PCI adapter dividers in the following server models: ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+, ESCALA PL 450T/R, ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+, .
- **Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapters**
  Remove, replace, and install PCI adapters.
- **Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes**
  These procedures describe the removal, replacement, and installation of PCI or PCI-X adapter cassettes in the system unit model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or ESCALA PL 6450R; and the following expansion units: 05/88, 05/95, 50/74, 50/79, 50/88, 50/94, 50/95, 52/94, or 82/94.
- **PCI adapter placement in the system unit or expansion unit**
  Identify where PCI adapters should be placed in specified system and expansion units.
- **Updating the world-wide port name for a new 2766, 2787, or 280E IOA**
  If you have exchanged a 2766, 2787, or 280E Fibre Channel IOA, the external storage subsystem must be updated to use the world-wide port name of the new 2766, 2787, or 280E IOA. This section provides instructions.
- **Increasing I/O adapter memory allocation**
  Increase memory allocation for high-performance PCI adapters.

Printable PDF

Use this section to download a PDF of this information.

The PCI adapter PDF is 45 MB and it can be difficult to open over the internet. Right-click on the following link and save the PDF to your local drive in order to view it: PCI adapter (45 MB).

Saving PDF files

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF link in your browser.
2. Click the option that saves the PDF locally.
3. Navigate to the directory in which you want to save the PDF.
4. Click Save.

Downloading Adobe Reader

You need Adobe Reader installed on your system to view or print these PDFs. You can download a free copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep2.html).

Parent topic: PCI adapter

Model ESCALA PL 245T/R PCI adapters

These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model ESCALA PL 245T/R , with the system power off. This system does not support the removal, replacement, or installation of adapters with the system power on.

- **Prepare to remove or install model ESCALA PL 245T/R PCI adapters with the system power off**
- **Remove model ESCALA PL 245T/R PCI adapters with the system power off**
- **Install model ESCALA PL 245T/R PCI adapters with the system power off**
- **Complete the installation or removal of model ESCALA PL 245T/R PCI adapters with the system power off**

Parent topic: PCI adapter

Related information

PCI adapter placement in the system unit or expansion unit

Increasing I/O adapter memory allocation Printable PDF Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Prepare to remove or install model ESCALA PL 245T/R PCI adapters with the system power off

If you are installing a new adapter, determine the slot in which to place the PCI adapter. Refer to Model ESCALA PL 245T/R adapter placement. If you are replacing a failed adapter, you can use the light path diagnostics LED next to the each PCI slot to identify the failed adapter. To learn more about light path diagnostics, see Identify a failing part on a model ESCALA PL 245T/R.

Follow these steps to get to the PCI slots:

1. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.

Note: Leave the power cord connected if you need to identify a failed adapter using the light path diagnostics.

2. Perform the prerequisite tasks described in Before you begin.
3. Stop the system or logical partition.
4. If you are servicing a rack-mounted system, do the following steps:
    a. Open the front rack door.
    b. Place the system in the service position. See Place the rack-mounted model ESCALA PL 245T/R in the service position.
    c. Remove the side cover. See Remove and replace the model ESCALA PL 245T/R side cover. (A rack server's top cover has the same removal procedure as a tower server's side cover.)
5. If you are servicing a stand-alone system, remove the service access cover. See Remove and replace model ESCALA PL 245T/R covers and doors.
6. Choose one the following options:
    a. If you are removing an existing adapter, go to Remove model ESCALA PL 245T/R PCI adapters with the system power off.
    b. If you are installing a new adapter, go to Install model ESCALA PL 245T/R PCI adapters with the system power off.

Parent topic: Model ESCALA PL 245T/R PCI adapters

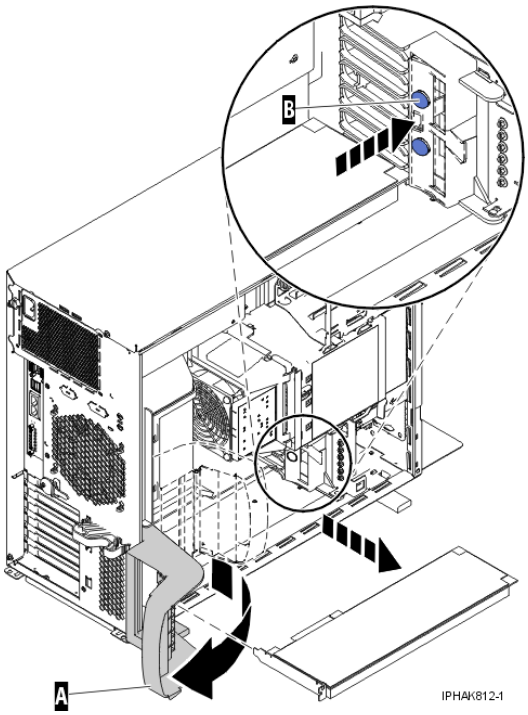
Remove model ESCALA PL 245T/R PCI adapters with the system power off

The following procedure describes how to remove PCI or PCI-X adapters with the system power off.

1. If you have not already done so, follow the steps in Prepare to remove or install model ESCALA PL 245T/R PCI adapters with the system power off.
2. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter. The light path diagnostics LEDs can be used to identify a failed adapter. A lit LED next to a PCI slot indicates the adapter in that slot has failed. The system does not need to be powered on to use light path diagnostics, however, the system must be connected to a power source.
3. Record the slot number and location of each adapter being removed. The adapter slots are numbered on the rear of the system.
4. Lift the adapter retention bracket A as shown in the following figure.
5. If you are removing a long adapter, retract the long adapter retention bracket B by pushing in on the blue buttons. Retract the bracket so that it clears the tail end of long adapters.

Figure 1. Removing an adapter

PCI adapter



6. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system.
7. Choose one of the following options:
    a. To install another adapter into the empty slot, go to step 3 in Install model ESCALA PL 245T/R PCI adapters with the system power off.
    b. If you do not plan to install another adapter, go to Complete the installation or removal of model ESCALA PL 245T/R PCI adapters with the system power off.

Parent topic: Model ESCALA PL 245T/R PCI adapters

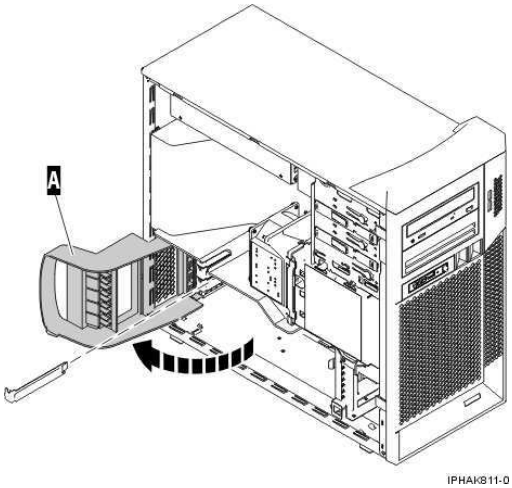
Video

Install model ESCALA PL 245T/R PCI adapters with the system power off

The following procedures describe how to install PCI or PCI-X adapters with the system power off.

1. If you have not already done so, follow the steps in Prepare to remove or install model ESCALA PL 245T/R PCI adapters with the system power off.
2. Lift the adapter retention bracket A as shown in the following figure.

Figure 1. Lift the adapter retention bracket

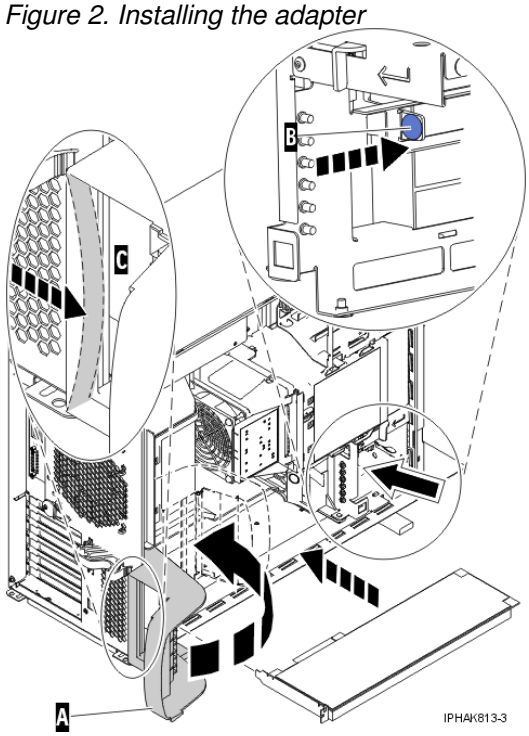


3. Ensure the slot is empty. Remove the adapter filler plate if one is present.
4. If you are installing a long adapter, retract the long adapter retention bracket by pushing in on the blue buttons on the bracket. This bracket is pictured in Figure 1. Retract the bracket so that it clears the tail end of long adapters.
5. Remove the new adapter from the antistatic package.

   Attention: Avoid touching the components and gold-edge connectors on the adapter.

6. Place the adapter, component-side up, on a flat, antistatic surface.
7. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
8. Press the adapter firmly into its connector. Be sure that it is completely and correctly seated in its connector.
9. If you are installing a long adapter, release the long adapter retention bracket using latch B as shown in the following figure. This bracket secures the tail end of long adapters.
10. Lower the adapter retention bracket A as shown in the following figure. First, release the adapter retention bracket from the chassis C.

Figure 2. Installing the adapter



11. Go to Complete the installation or removal of model ESCALA PL 245T/R PCI adapters with the system power off.

Parent topic: Model ESCALA PL 245T/R PCI adapters

Video

Complete the installation or removal of model ESCALA PL 245T/R PCI adapters with the system power off

The following procedures describe how to complete the installation or removal of a PCI or PCI-X adapters.

1. If you have not already done so, lower the adapter retention bracket back into the system.
2. Connect any adapter cables.
3. If you are servicing a rack-mounted system, route the cables through the cable-management arm.
4. Replace or close the covers. See Remove and replace model ESCALA PL 245T/R covers and doors.
5. On a rack-mounted system, place the system in the operating positions and close the rear rack door. See Place the rack-mounted model ESCALA PL 245T/R in the operating position.
6. Reconnect the power source to the system.
7. Start the system or logical partition.
8. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Model ESCALA PL 245T/R PCI adapters

Model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model ESCALA PL 250R-VL or ESCALA PL 450R-XS.

This system does not support the installation of PCI adapters with the system power on.

- **Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters**
- **Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters**
- **Replace a model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapter**

Parent topic: PCI adapter

Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

To install PCI or PCI-X adapters, use the following procedures.

- **Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off**

Parent topic: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off

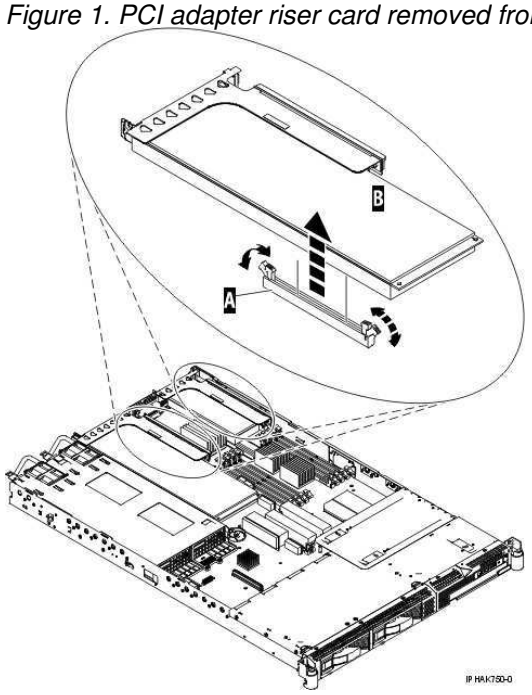
If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

1. Determine if there are any slot restrictions. See PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
2. Perform the prerequisite tasks described in Before you begin.
3. Stop the system. See Stop the system or logical partition.
4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. Disconnect the power source from the system by unplugging the system.

DANGERThis system might be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

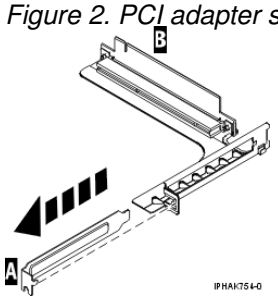
6. Place the system in the service position. See Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position.
7. Remove the service access cover. See Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
8. Take precautions to protect the adapters you will handle from static electricity. See Handling static-sensitive devices.
9. Locate the PCI adapter riser card.
10. Remove the PCI adapter riser card by doing the following:
    a. Push the riser card connector tabs **A** out and then down, as shown in the following figure.
    b. Pull the riser card **B** out of the connector.

Figure 1. PCI adapter riser card removed from the system unit



11. Ensure the riser card is ready to receive the adapter by removing any filler panels present adapters, or the slot shield from the adapter connector of the riser card.

Figure 2. PCI adapter slot shield removed



12. If necessary, remove the adapter to be installed from the antistatic package.

    Attention: Avoid touching the components and gold-edge connectors on the adapter.

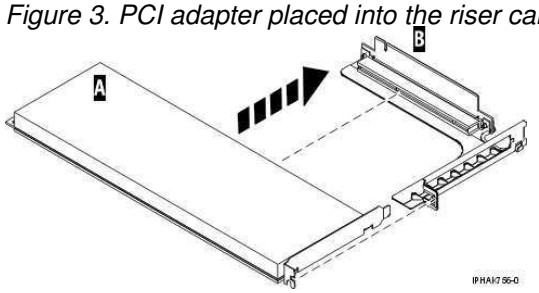
13. Place the adapter, component-side up, on a flat, antistatic surface.

    Note: Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type, remove the blue handle or support bracket from the adapter.

14. Press the adapter into its connector on the riser card.

    Attention: When you install an adapter into the riser card, be sure that it is completely and correctly seated in its connector.

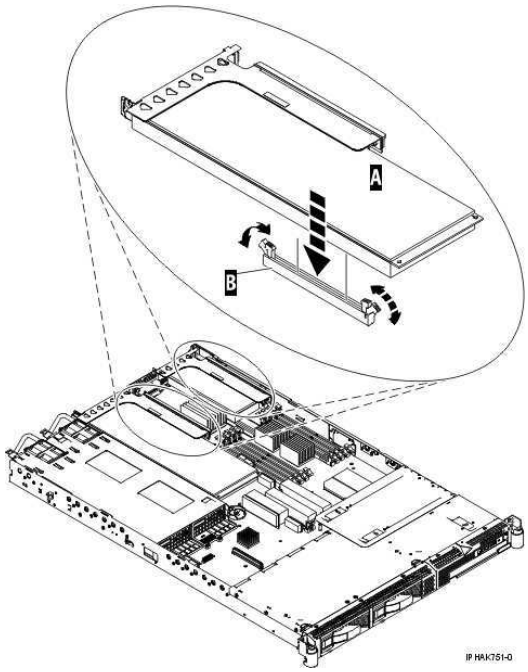
Figure 3. PCI adapter placed into the riser card



15. To install the adapter in the adapter slot, do the following:
    a. Ensure that the connector tabs are pushed out to the unlocked position **A** before installing the PCI adapter riser card as shown in the following figure.
    b. Carefully grasp the riser card, with the adapter, along two edges and align it with the connector.
    c. Insert the riser card **A** into the connector. Secure the riser card by pushing in the connector tabs **B**.

Figure 4. PCI adapter riser card placed into the system unit

PCI adapter



16. Connect any adapter cables.
17. Route the cables through the cable-management arm.
18. Replace the service access cover. See Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
19. Place the system in the operating position. See Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position.
20. Reconnect the power source to the system.
21. Close the rack door.
22. Start the system. See Start the system or logical partition.
23. Verify that the new resource is functional. See Verify the installed part.

Parent topic: Install model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

Videos

Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

To remove PCI or PCI-X adapters, use the following procedures.

- **Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off**

Parent topic: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

---

Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off

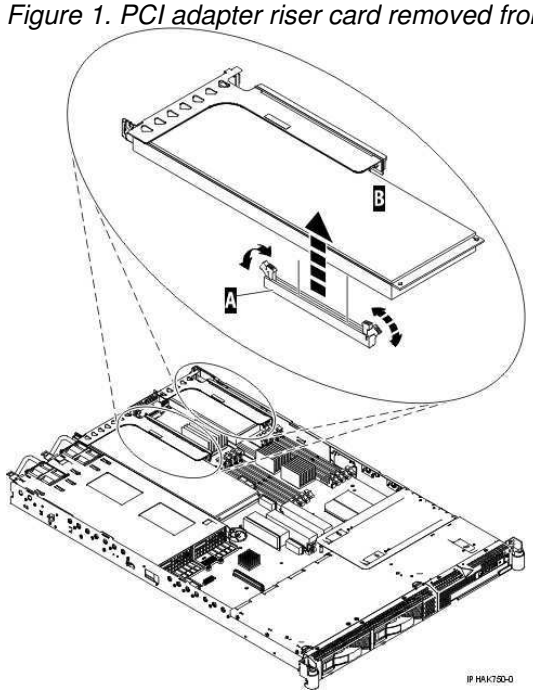
If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

1. Perform the prerequisite tasks described in Before you begin.
2. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter. Before handling any PCI adapter, see Handling static-sensitive devices.
3. Record the slot number and location of each adapter being removed. Adapter slots are numbered on the rear of the system.
4. Stop the system. See Stop the system or logical partition.
5. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
6. Disconnect the power source from the system by unplugging the system.

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

7. Open the front rack door.
8. Place the system in the service position. See Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the service position.
9. Remove the service access cover. See Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
10. Locate the PCI adapter riser card.
11. Remove the PCI adapter riser card by doing the following:
    a. Push the riser card connector tabs **A** out and then down, as shown in the following figure.
    b. Pull the riser card **B** out of the connector.

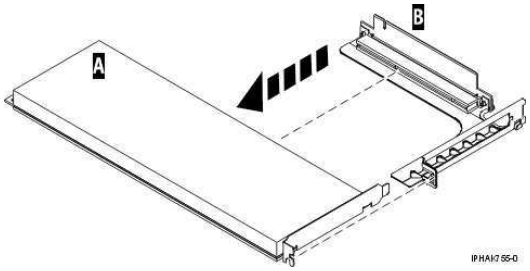
Figure 1. PCI adapter riser card removed from the system unit



12. Remove the adapter from the riser card and place it on a flat, antistatic surface.

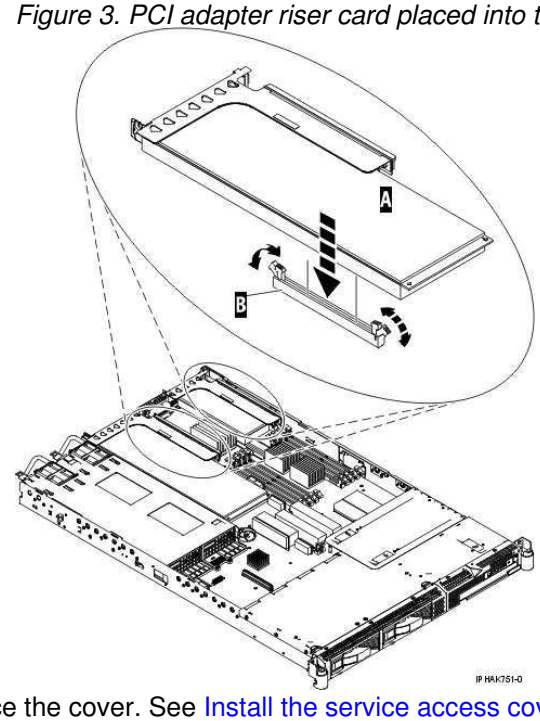
Figure 2. PCI adapter riser card removed from the system unit

PCI adapter



13. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.
14. If you plan to install another adapter into the vacated slot, go to Replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off; otherwise, continue with the next step.
15. Replace the slot shield in the riser card.
16. Place the PCI adapter riser card in the system by doing the following:
    a. Ensure that the connector tabs are pushed out to the unlocked position **A** before installing the PCI adapter riser card as shown in the following figure.
    b. Carefully grasp the riser card, with the adapter, along two edges and align it with the connector.
    c. Insert the riser card into the connector. Secure the riser card by pushing in the connector tabs **B**.

Figure 3. PCI adapter riser card placed into the system unit (shown with adapter in place)



17. Replace the cover. See Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
18. Place the system in the operating position. See Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position.
19. Reconnect the power source to the system.
20. Close the rack door.
21. Start the system. See Start the system or logical partition.
22. Verify that the new resource is functional. See Verify the installed part.

Parent topic: Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

Videos

Replace a model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapter

To replace PCI or PCI-X adapters, use the following procedures.

- **Replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off**

Parent topic: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters

Replace model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off

The following procedure describes the replacement of PCI adapters with the system power off. You must have already completed the procedure Remove model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapters with the system power off.

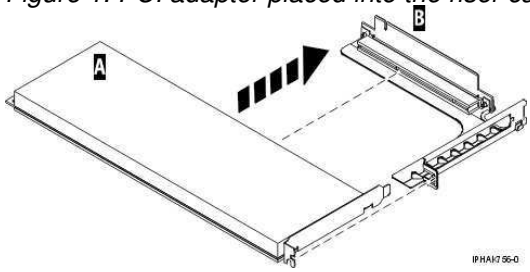
If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a PCI adapter. For instructions, see Replace a part using the Hardware Management Console.

To replace a PCI adapter with the system power off, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. If necessary, remove the adapter to be installed from the antistatic package.
3. Place the adapter, component-side up, on a flat, antistatic surface. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in this system, you must remove the blue handle or support bracket from the card.
4. Press the adapter into its connector on the riser card.

   Attention: When you install an adapter into the riser card, be sure that it is completely and correctly seated in its connector.

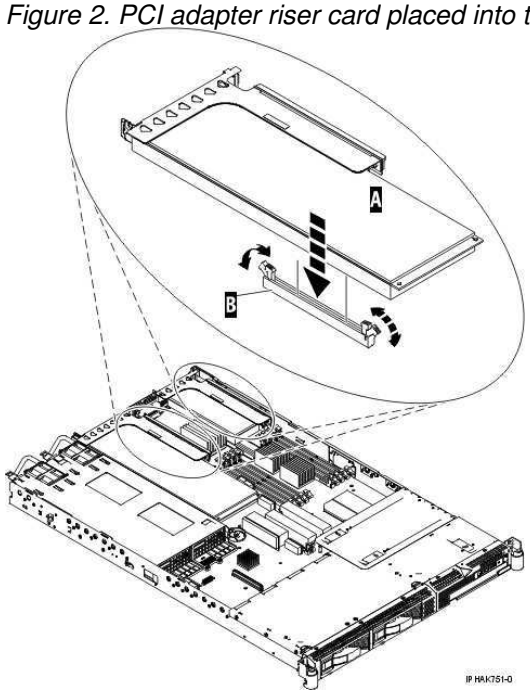
   Figure 1. PCI adapter placed into the riser card



5. To install the adapter in the adapter slot, do the following:
   a. Ensure that the connector tabs are pushed out to the unlocked position **A** before installing the PCI adapter riser card as shown in the following figure.
   b. Carefully grasp the riser card, with the adapter, along two edges and align it with the connector.

c. Insert the riser card **A** into the connector. Secure the riser card by pushing in the connector tabs **B**.

Figure 2. PCI adapter riser card placed into the system unit



6. Connect the adapter cables.
7. Route the cables through the cable-management arm.
8. Replace the cover. See Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
9. Place the system in the operating position. See Place the model ESCALA PL 250R-VL or ESCALA PL 450R-XS in the operating position.
10. Reconnect the power source to the system.
11. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
12. Close the rack door.
13. Start the system. See Start the system or logical partition.
14. Verify that the new resource is functional. See Verify the installed part.

Parent topic: Replace a model ESCALA PL 250R-VL or ESCALA PL 450R-XS PCI adapter

Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units.

To remove, replace, or install PCI or PCI-X adapters, use the following procedures.

- **Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters**
- **Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters**
- **Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters**

Parent topic: PCI adapter

Related information

PCI adapter placement in the system unit or expansion unit

Increasing I/O adapter memory allocation Printable PDF Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

To install PCI or PCI-X adapters, use the following procedures.

- **Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX**
- **Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in Linux**
- **Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off**

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

Note: If the system is partitioned, see Partitioning for AIX to learn more about working in partitions, then return here to continue the procedure.

To install a PCI adapter with the system power on in AIX, do the following:

1. Determine in which slot to place the PCI adapter by doing the following:
   - Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
   - Determine if the adapter will be placed in the base system unit or an expansion unit.

- ◊ If the adapter is to be placed into the base system unit, continue with this procedure by going to the next numbered step.
- ◊ If the adapter is to be placed into an expansion unit that does not contain PCI adapter cassettes, continue with this procedure by going to the next numbered step.
- ◊ If the adapter is to be placed into an expansion unit that contains PCI adapter cassettes, go to the procedures for adapters in adapter cassettes. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.

2. Perform the prerequisite tasks described in Before you begin.
3. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
4. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to step 5.
   - ♦ If you are placing an adapter in a model 57/90 or 11D/11, use the PCI adapter cassette procedures. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
   - ♦ Installing, removing, or replacing a PCI adapter in a 11D/10, 57/91, or 57/94 expansion unit is not a customer procedure. Contact your service provider.
   - ♦ For the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - · 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+, .
        - · Open the model 05/95, 50/95, or 11D/20 service access cover.
   - ♦ For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - · Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - · Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - · Open the model 05/95, 50/95, or 11D/20 service access cover.
5. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - ♦ 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 back door and cover from the 50/95 expansion unit.
6. If necessary, remove the adapter expansion slot shield.
7. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

8. Place the adapter, component-side up, on a flat, antistatic surface.
9. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in this system, you must remove the blue handle or support bracket from the card.
10. Refer to PCI hot-plug manager access for AIX, and follow the steps in the procedure to select PCI Hot Plug Manager. Then return here to continue.
11. From the PCI Hot-Plug Manager menu, select Add a PCI Hot-Plug Adapter and press Enter. The Add a Hot-Plug Adapter window displays.
12. Select the appropriate empty PCI slot from the ones that are listed, and press Enter.
13. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
14. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
15. If you are installing a short adapter, continue to the next step. If you are installing a long adapter, do the following:

a. Unlatch and open the PCI adapter light-pipe plate C that is attached to the fan tray as shown in figure Figure 1 or Figure 2.
b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.

16. Remove the adapter filler plate if one is present. If an adapter is present in the slot you want to use, see the instruction in Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters and then return here.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter or filler plate removed from the rack-mounted system unit

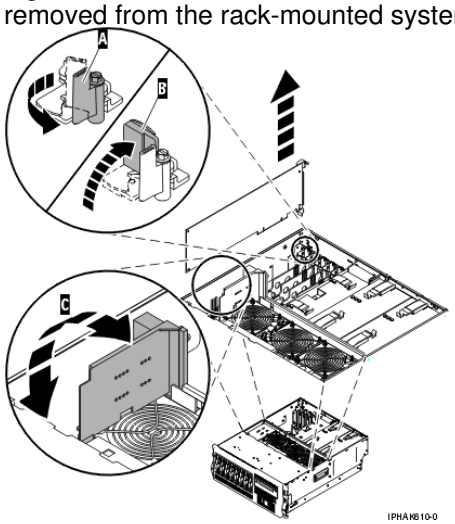
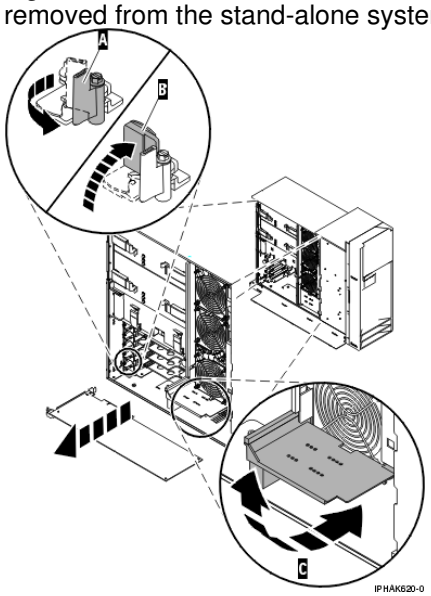


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter or filler plate removed from the stand-alone system unit



17. Follow the instructions on the screen to install the adapter until the LED for the specified PCI slot is set to the Action state. See Component LEDs.
18. When you are instructed to install the adapter in the adapter slot, carefully grasp the adapter by the edges and align the adapter in the slot guides. Insert the adapter fully into the adapter slot connector. If you are installing a full-length adapter, ensure that both ends of the adapter engage the card guides.
19. Press the adapter firmly into its connector.

Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

20. If you are installing a short adapter, continue to the next step.

    If you are replacing or installing a long adapter, close and latch the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 3 or Figure 4.

    Note: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

21. Secure the adapter. Lower the tab A onto the PCI adapter faceplate as shown in figure Figure 3 or Figure 4. Rotate the adapter locking latch B clockwise until it covers the tab at approximately a 45-degree angle.

    Figure 3. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the rack-mounted system unit

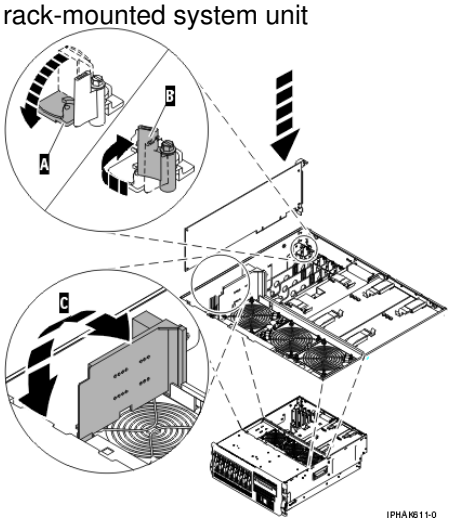
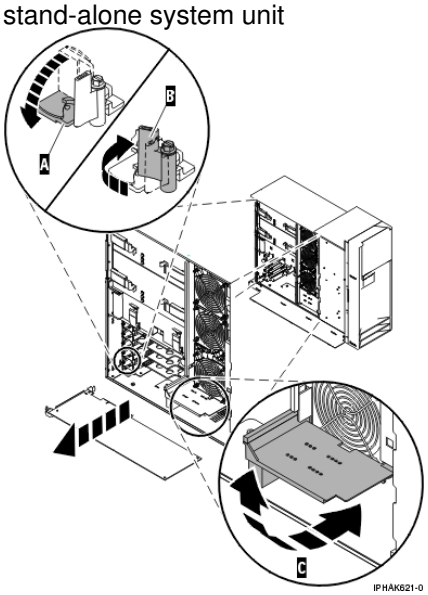


    Figure 4. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the stand-alone system unit



22. Connect any adapter cables.
23. Replace or close the covers.
24. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
25. On a rack-mounted system, close the rear rack door.
26. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in Linux

If the system is partitioned, see Partitioning for Linux to learn more about working in partitions, then return here to continue the procedure.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

To install a PCI adapter with the system power on in Linux, do the following:

1. Ensure that the system meets the Prerequisites for hot-plugging PCI adapters in Linux.
2. Verify that the Linux, hot-plug PCI tools are installed.
3. Determine in which slot to place the PCI adapter by doing the following:
    - Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
    - Determine if the adapter will be placed in the base system unit or an expansion unit.
        - If the adapter is to be placed into the base system unit, continue with this procedure by going to the next numbered step.
        - If the adapter is to be placed into an expansion unit that does not contain PCI adapter cassettes, continue with this procedure by going to the next numbered step.
        - If the adapter is to be placed into an expansion unit that contains PCI adapter cassettes, go to the procedures for adapters in adapter cassettes. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
4. Perform the prerequisite tasks described in Before you begin.
5. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
    - For the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
        a. Open the front rack door.
        b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
        c. Remove or open the service access cover as follows:
            - 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+, .
            - Open the model 05/95, 50/95, or 11D/20 service access cover.
    - For all other rack-mounted expansion units, follow these steps:
        a. Open the back rack door.
        b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following list:
            - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
            - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
            - Open the model 05/95, 50/95, or 11D/20 service access cover.

7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit.
8. If necessary, remove the adapter expansion slot shield.
9. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

10. Place the adapter, component-side up, on a flat, antistatic surface.
11. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ server, you must remove the blue handle or support bracket from the card.
12. Log in to the system console as the root user.
13. Use the lsslot command to list the hot-plug PCI slots that are available in the server or partition:

    `lsslot -c pci -a`

    The following is an example of the information displayed by this command:

```
# Slot          Description             Device(s)
U7879.001.DQD014E-P1-C1 PCI-X capable, 64 bit, 133MHz slot Empty
U7879.001.DQD014E-P1-C4 PCI-X capable, 64 bit, 133MHz slot Empty
U7879.001.DQD014E-P1-C5 PCI-X capable, 64 bit, 133MHz slot Empty
```

    Select the appropriate empty PCI slot from the ones listed by the **`lsslot -c pci -a`** command.
14. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
15. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
16. If you are installing a short adapter, continue to the next step. If you are installing a long adapter, do the following:

    a. Unlatch and open the PCI adapter light-pipe plate C that is attached to the fan tray as shown in figure Figure 1 or Figure 2.
    b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.
17. Ensure the slot is empty. Remove the adapter filler plate if one is present. If an adapter is present in the slot you want to use, see the instruction in Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters, and then return here.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter or filler plate removed from the rack-mounted system unit

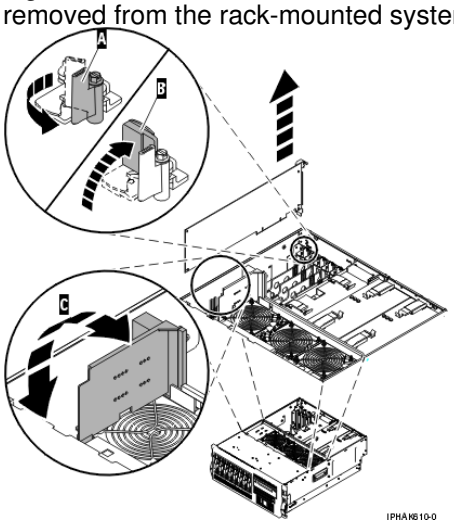
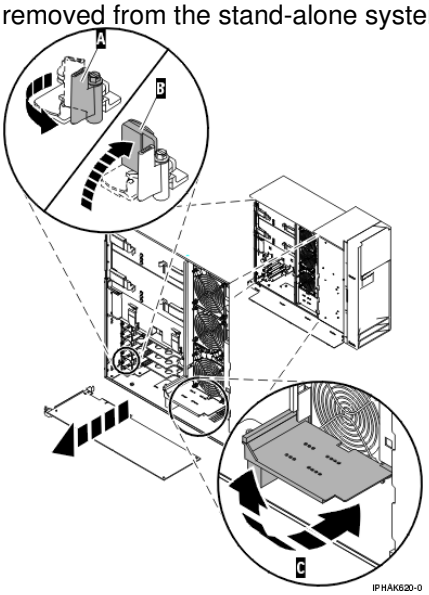


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter or filler plate removed from the stand-alone system unit



18. Run the drslot_chrp_pci command to enable an adapter to be installed.

    For example, to install the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

    ```
    drslot_chrp_pci -a -s U7879.001.DQD014E-P1-C3
    ```

    Follow the instructions on the display to complete the task.
19. When you are instructed to install the adapter in the adapter slot.
    a. Carefully grasp the adapter by the edges and align the adapter in the slot guides. Insert the adapter fully into the adapter slot connector. If you are installing a full-length adapter, ensure that both ends of the adapter engage the card guides.
    b. Press the adapter firmly into its connector.

       Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

    c. If you are installing a short adapter, continue to the next step.

       If you are replacing or installing a long adapter, close and latch the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 3 or Figure 4.

       Tip: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

    d. Secure the adapter. Lower the tab A onto the PCI adapter faceplate as shown in figure Figure 3 or Figure 4. Rotate the adapter locking latch B clockwise until it covers the tab at approximately a 45-degree angle.

       Figure 3. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the rack-mounted system unit

PCI adapter

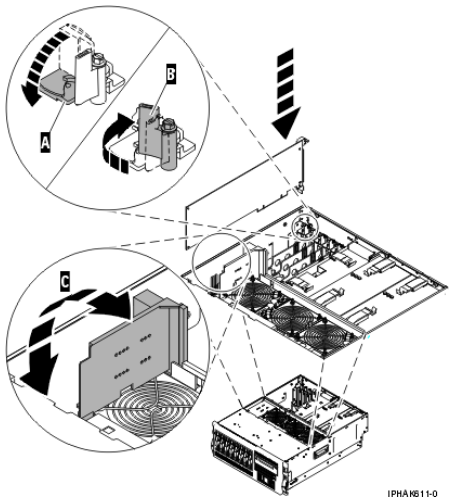
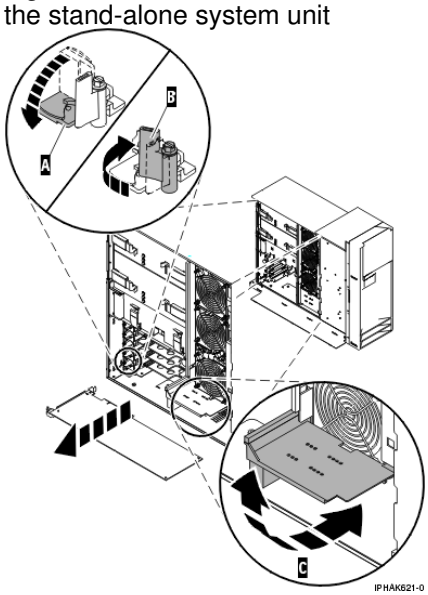


Figure 4. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the stand-alone system unit



e. Connect any adapter cables.

20. Run the lsslot command to verify that the slot is occupied.

    For example, Enter **`lsslot -c pci -s U7879.001.DQD014E-P1-C3`**

    The following is an example of the information displayed by this command:

```
# Slot          Description             Device(s)
U7879.001.DQD014E-P1-C3 PCI-X capable, 64 bit, 133MHz slot 0001:40:01.0
```

21. Replace or close the covers.
22. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted server. If you are servicing a stand-alone server, continue to the next step.
23. On a rack-mounted server, close the rear rack door.
24. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

---

Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off

The following procedure describes the installation of PCI adapters with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

Note: If the system is partitioned, select the appropriate information from the following list to learn more about working in a partitioned environment, and then return here:

- Partitioning for AIX
- Partitioning for Linux

To install a PCI adapter with the system power off, do the following:

1. Determine in which slot to place the PCI adapter by doing the following:
   - Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
   - Determine if the adapter will be placed in the base system unit or an expansion unit.
     - If the adapter is to be placed into the base system unit, continue with this procedure by going to the next numbered step.
     - If the adapter is to be placed into an expansion unit that does not contain PCI adapter cassettes, continue with this procedure by going to the next numbered step.
     - If the adapter is to be placed into an expansion unit that contains PCI adapter cassettes, go to the procedures for adapters in adapter cassettes. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
2. Perform the prerequisite tasks described in Before you begin.
3. Stop the system or logical partition.
4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. Disconnect the power source from the system by unplugging the system.

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

6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
   - For the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover using one of the following methods:
        - 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+, .
        - Open the model 05/95, 50/95, or 11D/20 service access cover.
   - For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following list:
        - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - Open the model 05/95, 50/95, or 11D/20 service access cover.
7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:

- 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 back door and cover from the 50/95 expansion unit.

8. If necessary, remove the adapter expansion slot shield.
9. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

10. Place the adapter, component-side up, on a flat, antistatic surface.

Note: Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type, remove the blue handle or support bracket from the adapter.

11. If you are installing a short adapter, continue to the next step. If you are installing a long adapter, do the following:
    a. Unlatch and open the PCI adapter light-pipe plate C that is attached to the fan tray as shown in figure Figure 1 or Figure 2.
    b. Note the guide grooves located toward the front of the system in the disk drive backplane when aligning the adapter.
12. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
13. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
14. Ensure the slot is empty. Remove the adapter filler plate if one is present. If an adapter is present in the slot you want to use, see the instructions in Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters, and then return here.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter or filler plate removed from the rack-mounted system unit

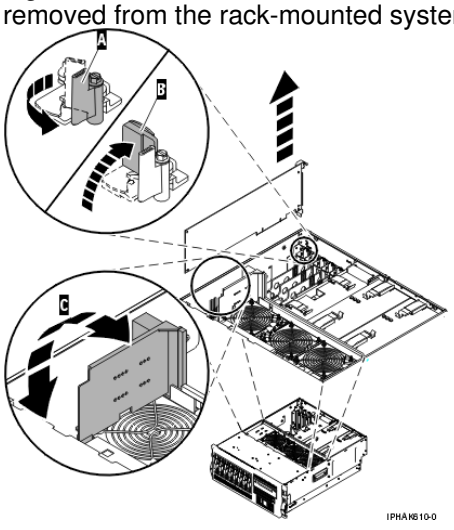
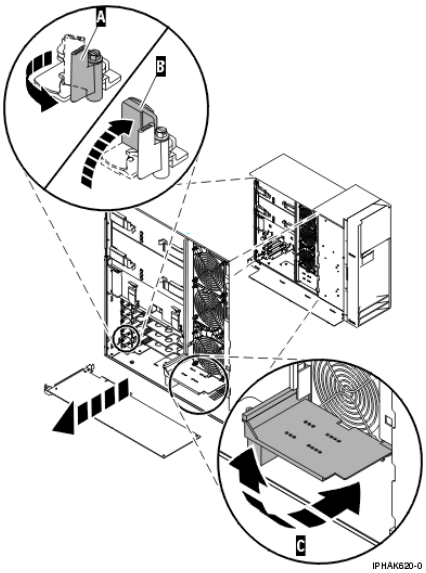


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter or filler plate removed from the stand-alone system unit



15. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
16. Press the adapter firmly into its connector.
17. If you are installing a short adapter, continue to the next step. If you are installing a long adapter, do the following:

    Close and latch the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 3 or Figure 4.

    Note: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

18. Secure the adapter. Lower the tab A onto the PCI adapter faceplate as shown in figure Figure 3 or Figure 4. Rotate the adapter locking latch B clockwise until it covers the tab at approximately a 45-degree angle.

Figure 3. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the rack-mounted system unit

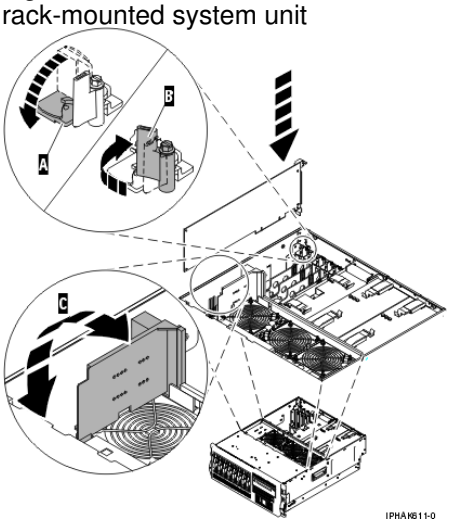
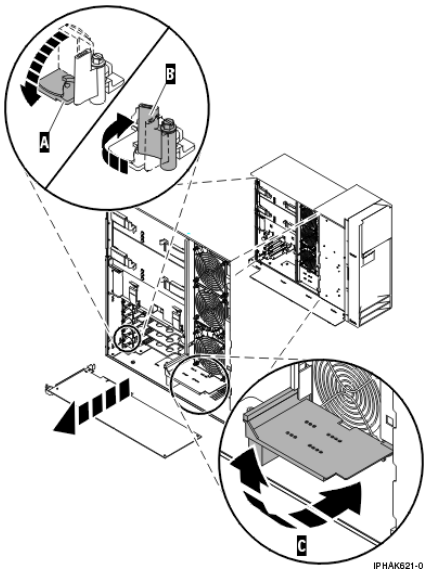


Figure 4. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the stand-alone system unit



19. Connect any adapter cables.
20. If you are servicing a rack-mounted system, route the cables through the cable-management arm.
21. Replace or close the covers.
22. On a rack-mounted system, close the rear rack door.
23. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
24. Reconnect the power source to the system.
25. Start the system or logical partition.
26. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

To remove PCI or PCI-X adapters, use the following procedures.

- **Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX**
- **Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux**
- **Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off**

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX

The following procedure describes the removal of PCI adapters with the system on in AIX.

- If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.
- Use this procedure to remove a PCI adapter and leave the slot in the system unit empty. To remove a failing adapter and replace it with the same adapter, see Remove and replace Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters with the system power on in AIX.
- If the adapter that is removed will be placed into a different slot or system, complete this removal procedure, then install the adapter as described in Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX.
- Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To remove a PCI adapter with the system power on in AIX, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
    - For the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
        a. Open the front rack door.
        b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
        c. Remove or open the service access cover as follows:
            - 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+,
            - Open the model 05/95, 50/95, or 11D/20 service access cover
    - For all other rack-mounted expansion units, follow these steps:
        a. Open the back rack door.
        b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
            - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
            - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
            - Open the model 05/95, 50/95, or 11D/20 service access cover
4. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
    - 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 back door and cover from the 50/95 expansion unit
5. Determine which adapters you plan to remove.
6. Record the slot number and location of each adapter being removed.

Note: Adapter slots are numbered on the rear of the system unit.

7. Ensure that any processes or applications that might use the adapter are stopped.
8. Enter the system diagnostics program by logging in as root user or as the celogin user, type diag at the AIX command line.
9. When the DIAGNOSTIC OPERATING INSTRUCTIONS menu displays, press Enter.
10. At the FUNCTION SELECTION menu, select Task Selection, then press Enter.
11. At the Task Selection list, select PCI Hot Plug Manager.
12. Select Unconfigure a Device, then press Enter.
13. Press F4 (or Esc+4) to display the Device Names menu.
14. Select the adapter you are removing in the Device Names menu.
15. Use the Tab key to respond NO to Keep Definition. Use the Tab key again to respond YES to Unconfigure Child Devices, then press Enter.
16. The ARE YOU SURE window displays. Press Enter to verify the information. If the change is successful an `OK` message displays next to the Command field at the top of the display.
17. Press F4 (or Esc+4) twice to return to the Hot Plug Manager menu.
18. Select replace/remove PCI Hot Plug adapter.
19. Select the slot that has the device to be removed from the system.
20. Select remove.

Note: A fast-blinking amber LED located at the back of the machine near the adapter indicates that the slot has been identified.

21. Press Enter. This places the adapter in the action state, meaning it is ready to be removed from the system.
22. Label, and then disconnect all cables attached to the adapter you plan to remove.
23. If you are removing a short adapter, continue to the next step.

    If you are removing a long adapter, unlatch and open the PCI adapter light-pipe plate C attached to the fan tray as shown in Figure 1 or Figure 2.
24. Rotate the adapter locking latch A counterclockwise.
25. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
26. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter removed from the rack-mounted system unit

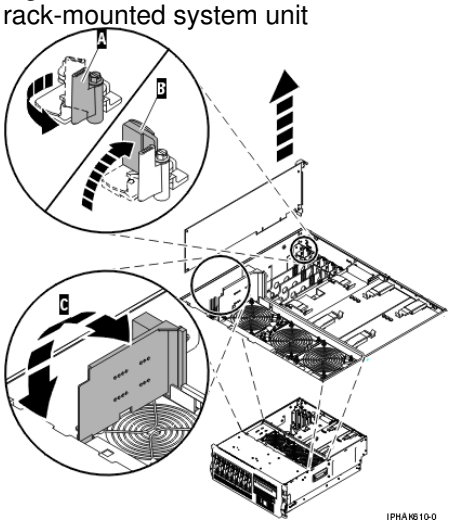
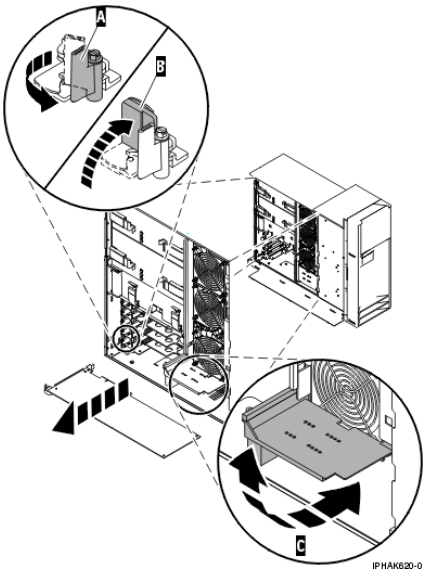


Figure 2. PCI adapter removed from the stand-alone system unit



27. If you plan to install another adapter into the vacated slot, go to Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX; otherwise, continue with the next step.
28. Seal the expansion slot using an expansion-slot cover.
29. Lower the plastic retainer seat over the PCI adapter faceplate.
30. Rotate the locking latch clockwise until it clicks into the locked position.
31. Continue to follow the online instructions until you receive a message that the adapter removal is successful.
32. If you have other adapters to remove, press the F3 key to return to the PCI Hot-Plug Manager menu.
33. When you are finished removing adapters, press F10 to exit the Hot-Plug Manager.
34. Run the **`diag -a`** command the AIX command line. If the system responds with a menu or prompt, follow the instructions to complete the device configuration.
35. Replace or close the covers.
36. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system.
37. On a rack-mounted system, close the back rack door.

Parent topic: Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux

The following procedure describes the removal of PCI adapters with the system power on in a server or partition running Linux.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

To remove a PCI adapter with the system power on in Linux, do the following:

1. Ensure that the system meets the Prerequisites for hot-plugging PCI adapters in Linux.
2. Verify that the Linux, hot-plug PCI tools are installed.
3. Perform the prerequisite tasks described in Before you begin.

4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.

   Note:

   a. If you are placing an adapter in a model 57/90 or 11D/11, use the PCI adapter cassette procedures. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
   b. Installing, removing, or replacing a PCI adapter in a 11D/10, 57/91, or 57/94 expansion unit is not a customer procedure. Contact your service provider.

   - For the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - 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+,
        - Open the model 05/95, 50/95, or 11D/20 service access cover
   - For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - Open the model 05/95, 50/95, or 11D/20 service access cover
6. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
7. Determine which adapters you plan to remove.
8. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system unit.

9. Ensure that any processes or applications that might use the adapter are stopped.
10. Label, and then disconnect all cables attached to the adapter you plan to remove.

    Note: Before performing a PCI hot-plug removal of storage devices, ensure file systems on those devices are unmounted.

11. Run the drslot_chrp_pci command to enable the adapter to be removed:

    For example, to remove the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

    ```
    drslot_chrp_pci -r -s U7879.001.DQD014E-P1-C3
    ```

    Follow the instructions on the display to complete the task.
12. If you are removing a short adapter, continue to the next step. If you are removing a long adapter, do the following:

Unlatch and open the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 1 or Figure 2.

13. Rotate the adapter locking latch A counterclockwise.
14. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
15. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter removed from the rack-mounted system unit

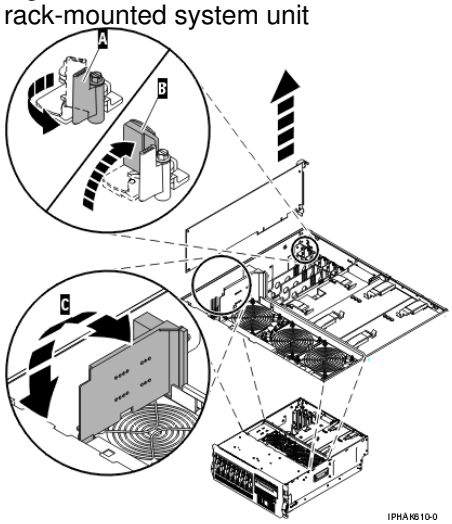
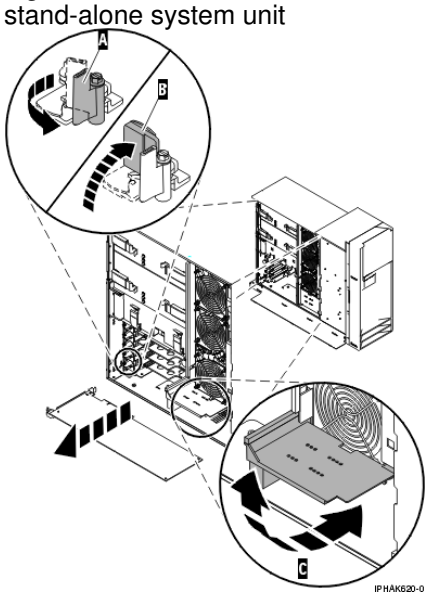


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter removed from the stand-alone system unit



16. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.
17. If you plan to install another adapter into the vacated slot, go to Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in Linux; otherwise, continue with the next step.
18. Seal the expansion slot using an expansion-slot cover.
19. Lower the plastic retainer seat over the PCI adapter faceplate.
20. Rotate the locking latch clockwise until it clicks into the locked position.
21. Replace or close the covers.
22. On a rack-mounted system, close the rear rack door.
23. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
24. To replace the PCI adapter, see Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters.

Parent topic: Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off

The following procedure describes the removal of PCI adapters with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

To remove a PCI adapter with the system power off, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
4. Stop the system or logical partition.
5. Disconnect the power source from the system by unplugging the system.

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

6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
   - For the ESCALA PL 250T/R system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - 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+,
        - Open the model 05/95, 50/95, or 11D/20 service access cover
   - For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - Open the model 05/95, 50/95, or 11D/20 service access cover
7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit

8. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter.
9. Record the slot number and location of each adapter being removed.

Note: Adapter slots are numbered on the rear of the system.

10. If you are removing a short adapter, continue to the next step. If you are removing a long adapter, do the following:

    Unlatch and open the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 1 or Figure 2.
11. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
12. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
13. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. PCI adapter removed from the rack-mounted system unit

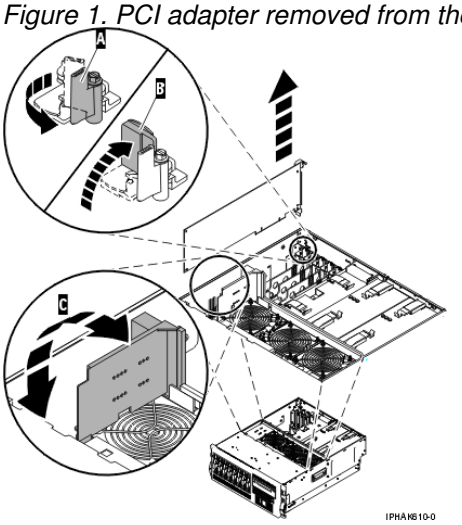
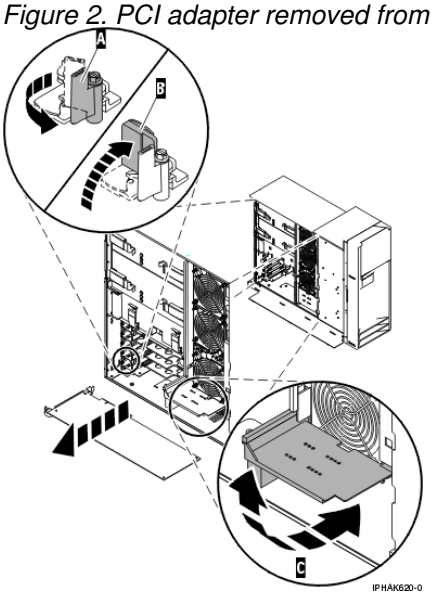


Figure 2. PCI adapter removed from the stand-alone system unit



14. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.

15. If you plan to install another adapter into the vacated slot, go to Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off; otherwise, continue with the next step.
16. Seal the expansion slot using an expansion-slot cover.
17. Replace or close the covers.
18. Reconnect the power source to the system.
19. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
20. On a rack-mounted system, close the rear rack door.
21. Start the system or logical partition.
22. To replace the PCI adapter, see Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters.

Parent topic: Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

---

Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters

To replace PCI or PCI-X adapters, use the following procedures.

- **Remove and replace Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters with the system power on in AIX**
- **Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux**
- **Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off**

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove and replace Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters with the system power on in AIX

The following procedure describes the removal and replacement of a PCI adapter with the system power on in AIX. Read the following notes to determine if this is the correct procedure for the task to be performed.

Note:

1. Use this procedure if you intend to remove a failing PCI adapter and replace it with the same type of adapter.
2. If you plan to remove a failing adapter and leave the slot empty, see Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX.
3. This procedure should not be used to remove an existing adapter and install a different type of adapter. To install a different adapter, remove the existing adapter as described in Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX, then install the new adapter as described in Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX.
4. Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To replace a failing PCI adapter in the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ with the system power on in AIX, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are replacing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
   - For the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - 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+,
        - Open the model 05/95, 50/95, or 11D/20 service access cover
   - For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - Open the model 05/95, 50/95, or 11D/20 service access cover
4. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
5. Determine which adapter you plan to remove.
6. Adapter slots are numbered on the rear of the system unit, record the slot number and location of each adapter being removed.
7. Ensure that any processes or applications that might use the adapter are stopped.
8. Enter the system diagnostics by logging in as root user or as the celogin user, type diag at AIX command line.
9. When the DIAGNOSTIC OPERATING INSTRUCTIONS menu displays, press Enter.
10. At the FUNCTION SELECTION menu, select Task Selection, then press enter.
11. At the Task Selection list, select PCI Hot Plug Manager.
12. Select Unconfigure a Device, then press Enter.
13. Press F4 (or Esc +4) to display the Device Names menu.
14. Select the adapter you are removing in the Device Names menu.

15. In the Keep Definition field, use the Tab key to answer `Yes`. In the Unconfigure Child Devices field, use the Tab key again to answer `YES`, then press Enter.
16. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the Command field at the top of the screen.
17. Press F4 (or Esc +4) twice to return to the Hot Plug Manager menu.
18. Select replace/remove PCI Hot Plug adapter.
19. Select the slot that has the device to be removed from the system.
20. Select remove.

    Note: A fast-blinking amber LED located at the back of the machine near the adapter indicates that the slot has been identified.

21. Press Enter. This places the adapter in the action state, meaning it is ready to be removed from the system.
22. Label, and then disconnect all cables attached to the adapter you plan to remove.
23. Remove the adapter. If you are removing a short adapter, continue to the next step.

    If you are removing a long adapter, unlatch and open the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 1 or Figure 2.
24. Rotate the adapter locking latch A counterclockwise.
25. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
26. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter removed from the rack-mounted system unit

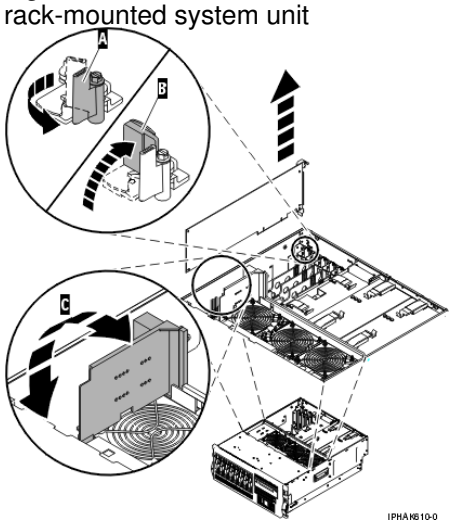
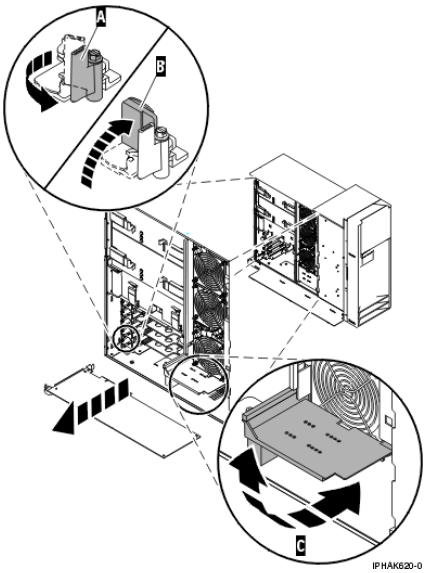


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter removed from the stand-alone system unit



27. If necessary, remove the replacement adapter from the antistatic package.

    Attention: Avoid touching the components and gold-edge connectors on the adapter.

28. Carefully grasp the replacement adapter by its top edge, and align it with the expansion slot and its connector on the system backplane.
29. Press the adapter firmly into its connector.

    Ensure that it is completely and correctly seated in its connector.
30. If you are replacing a short adapter, continue to the next step. If you are replacing a long adapter, do the following:

    a. Close and latch the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 3 or Figure 4.

       Note: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

    b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.
31. Secure the adapter. Lower the tab A onto the PCI adapter faceplate as shown in figure Figure 3 or Figure 4. Rotate the adapter locking latch B clockwise until it covers the tab at approximately a 45-degree angle.

Figure 3. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the rack-mounted system unit

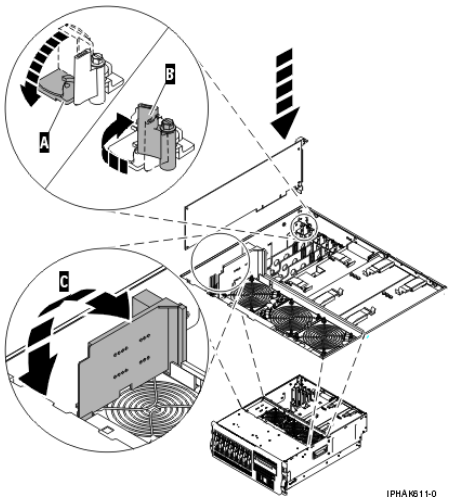
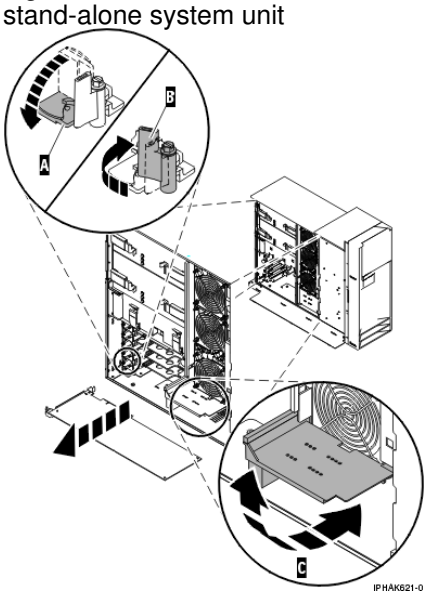


Figure 4. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the stand-alone system unit



32. Connect the adapter cables.
33. Press enter and continue to follow the screen instructions until you receive a message that the replacement is successful. Successful replacement is indicated by the `OK` message displayed next to the Command field at the top of the screen.
34. Press the F3 (or Esc+3) key to return to the PCI Hot-Plug Manager menu.
35. Press the F3 (or Esc+3) key to return to the TASK selection list.
36. Select Log Repair Action.
37. Select the resource just replaced, press Enter, press Commit (F7 or Esc+7), then press Enter.
38. Press F3 (or Esc+3) to return to TASK Selection List.
39. Select Hot Plug Task, press enter.
40. Select PCI Hot Plug Manager, then select Configure a defined device, then press Enter.
41. Select the device just replaced from the list, then press Enter. The device is now configured.
42. Press the F10 key to exit the diagnostic program.

Note: If you are running the standalone diagnostics, do not exit the program completely.

43. Verify the PCI adapter by using the following instructions:
    a. Did you replace the adapter with the system power on?
        ◊ Yes - Go to the next step.
        ◊ No - Load the diagnostic program by doing the following:
            · If AIX is available, boot AIX, login as root or CELOGIN, then enter the diag command.
            · If AIX is not available, boot the standalone diagnostics

b. Type the diag command if you are not already displaying the diagnostic menus
c. Select Advance Diagnostic Routines, then select Problem Determination.
d. Select the name of the resource just replaced from the menu. If the resource just replaced is not shown, choose the resource associated with it. Press Enter, then press Commit ((F7 or Esc+7)).
e. Did the Problem Determination identify any problems?
   ◊ No: Continue to the next step.
   ◊ Yes: A problem is identified.
      · If you are a customer, record the error information, then contact your service provider.
      · If you are an authorized service provider, return to map 210-5.

44. Press the F10 key to exit the diagnostic program.
45. On a rack-mounted system, close the rear rack door.
46. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
47. Replace or close the covers.
48. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters

Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux

The following procedure describes the replacement of PCI adapters with the system power on in Linux.

To start this procedure you must have completed the Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux.

To replace an ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter with the system power on in Linux, do the following:

1. If necessary, remove the adapter from the antistatic package.

   Attention: Avoid touching the components and gold-edge connectors on the adapter.

2. Place the adapter, component-side up, on a flat, antistatic surface.
3. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ server, you must remove the blue handle or support bracket from the card.
4. Run the drslot_chrp_pci command to enable an adapter to be replaced:

   For example, to replace the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

   ```
   drslot_chrp_pci -R -s U7879.001.DQD014E-P1-C3
   ```

   Follow the instructions on the screen to complete the task. When you are instructed to insert the adapter in the adapter slot, carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
5. Press the adapter firmly into its connector.

Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

6. If you are replacing a short adapter, continue to the next step.

   If you are replacing a long adapter, do the following:

   a. Close and latch the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 1 or Figure 2.

      Note: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

   b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.
7. Secure the adapter. Lower the tab A onto the PCI adapter faceplate as shown in figure Figure 1 or Figure 2. Rotate the adapter locking latch B clockwise until it covers the tab at approximately a 45-degree angle.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the rack-mounted system unit

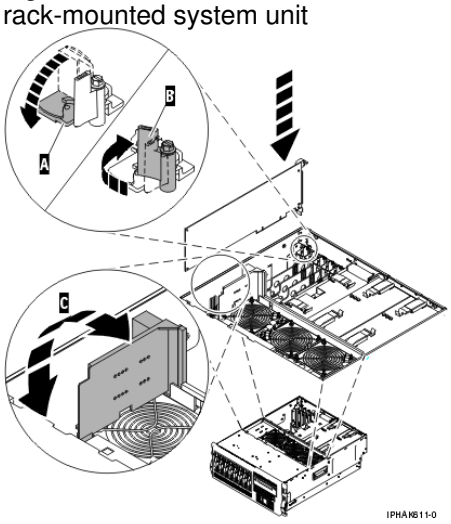
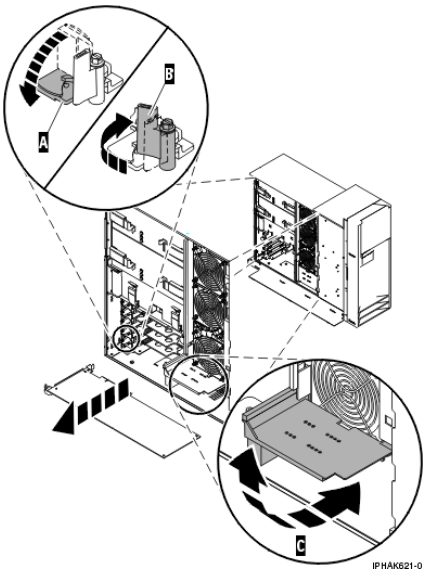


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the stand-alone system unit



8. Connect any adapter cables.
9. Run the lsslot command to verify that the slot is occupied.

   For example, Enter **`lsslot -c pci -s U7879.001.DQD014E-P1-C3`**

   The following is an example of the information displayed by this command:

```
# Slot          Description             Device(s)
U7879.001.DQD014E-P1-C3 PCI-X capable, 64 bit, 133MHz slot 0001:40:01.0
```

10. Replace or close the covers.
11. On a rack-mounted server, close the rear rack door.
12. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted server. If you are servicing a stand-alone server, continue to the next step.

Parent topic: Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters

Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off

The following procedure describes the replacement of PCI adapters with the system power off. You must have already completed the procedure Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a PCI adapter. For instructions, see Replace a part using the Hardware Management Console.

To replace a ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter with the system power off, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

3. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
4. Press the adapter firmly into its connector.

Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

5. If you are replacing a short adapter, continue to the next step.

   If you are replacing a long adapter, do the following:

   a. Close and latch the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 1 or Figure 2.

      Note: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

   b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter properly.
6. Secure the adapter. Lower the tab A onto the PCI adapter faceplate as shown in figure Figure 1 or Figure 2. Rotate the adapter locking latch B clockwise until it covers the tab at approximately a 45-degree angle.

Figure 1. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the rack-mounted system unit

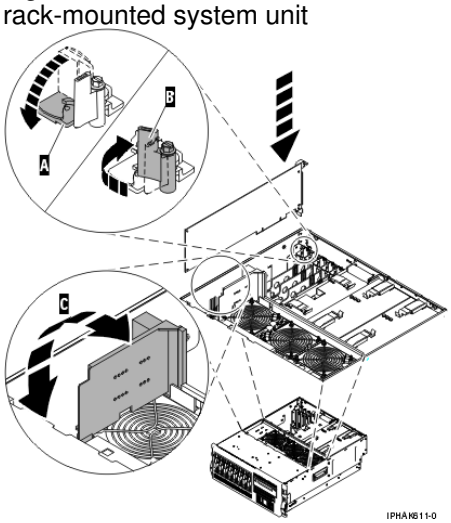
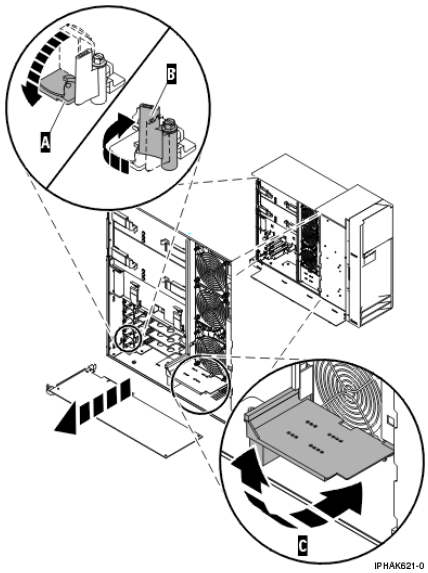


Figure 2. Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter replaced in the stand-alone system unit



7. Connect the adapter cables.
8. If you are servicing a rack-mounted system unit, route the cables through the cable-management arm.
9. Replace or close the covers.
10. Reconnect the power source to the system.
11. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
12. On a rack-mounted system, close the rear rack door.
13. Start the system or logical partition.
14. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Replace model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-units, PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

These procedures describe how to remove, replace, or install PCI or PCI-X adapters in the model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-units.

To remove, replace, or install PCI or PCI-X adapters, use the following procedures.

- **Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters**
- **Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters**
- **Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters**

Parent topic: PCI adapter

Related information

PCI adapter placement in the system unit or expansion unit

Increasing I/O adapter memory allocation Printable PDF Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

To install PCI or PCI-X adapters, use the following procedures.

- **Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX**
- **Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapter with system power on in Linux**
- **Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off**

Parent topic: Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX

The following procedure describes the installation PCI adapters with the system power on in AIX.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

If the system is partitioned, see Partitioning for AIX to learn more about working in partitions, then return here to continue the procedure.

To install a PCI adapter with the system power on in AIX, do the following:

1. Determine in which slot to place the PCI adapter by doing the following:
   - Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
   - Determine if the adapter will be placed in the base system unit or an expansion unit.

- ◊ If the adapter is to be placed into the base system unit, continue with this procedure by going to the next numbered step.
- ◊ If the adapter is to be placed into an expansion unit that does not contain PCI adapter cassettes, continue with this procedure by going to the next numbered step.
- ◊ If the adapter is to be placed into an expansion unit that contains PCI adapter cassettes, go to the procedures for adapters in adapter cassettes. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.

2. Perform the prerequisite tasks described in Before you begin.
3. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
4. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
   - ♦ For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - · 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+,
        - · Open the model 05/95, 50/95, or 11D/20 service access cover
   - ♦ For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - · Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - · Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - · Open the model 05/95, 50/95, or 11D/20 service access cover
5. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - ♦ 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 back door and cover from the 50/95 expansion unit
6. If necessary, remove the adapter expansion slot shield.
7. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

8. Place the adapter, component-side up, on a flat, antistatic surface.
9. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in this system, you must remove the blue handle or support bracket from the card.
10. Refer to PCI hot-plug manager access for AIX, and follow the steps in the access procedure to select PCI Hot Plug Manager. Then return here to continue.
11. From the PCI Hot-Plug Manager menu, select Add a PCI Hot-Plug Adapter and press Enter. The Add a Hot-Plug Adapter window displays.
12. Select the appropriate empty PCI slot from the ones listed on the screen, and press Enter.
13. Rotate the adapter locking latches counterclockwise as shown in Figure 1 or Figure 2.
14. Lift the black tab attached to the adapter retainer assembly, and keep the black tab in a vertical position.
15. Remove the adapter filler plate if one is present. If an adapter is present in the slot you want to use, see the instruction in Remove model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters and then return here.

Figure 1. PCI adapter or filler plate removed from the rack-mounted system unit

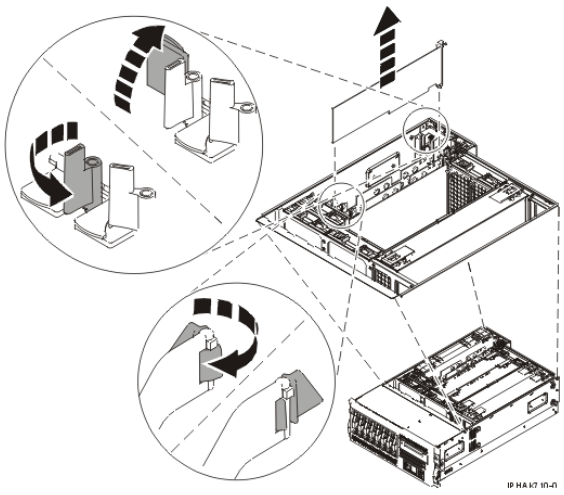
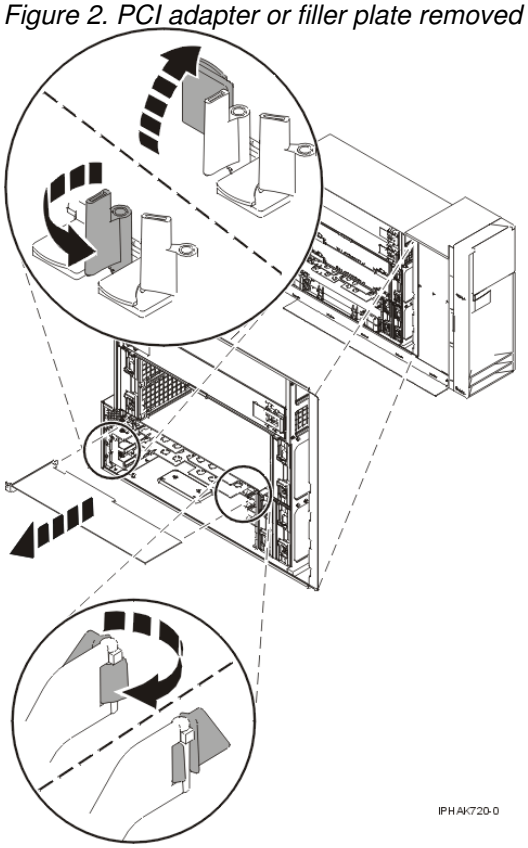


Figure 2. PCI adapter or filler plate removed from the stand-alone system unit



16. Follow the instructions on the screen to install the adapter until the LED for the specified PCI slot is set to the Action state. See Component LEDs.
17. When you are instructed to install the adapter in the adapter slot, carefully grasp the adapter by the edges and align the adapter in the slot guides. Insert the adapter fully into the adapter slot connector. If you are installing a full-length adapter, ensure that both ends of the adapter engage the card guides.
18. Press the adapter firmly into its connector.
19. Secure the adapter. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latches clockwise as shown in Figure 3 or Figure 4.

Figure 3. PCI adapter replaced in the rack-mounted system unit

PCI adapter

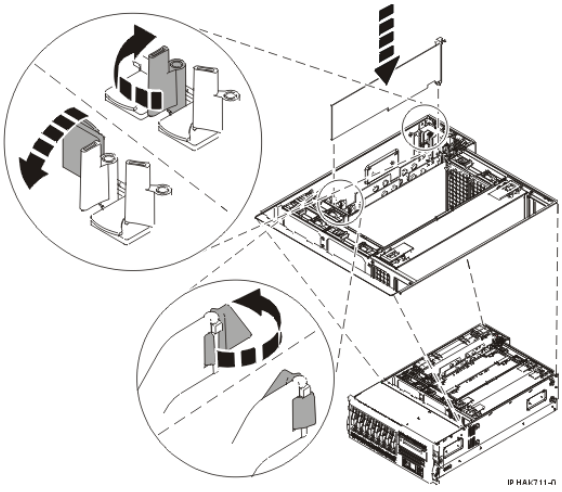
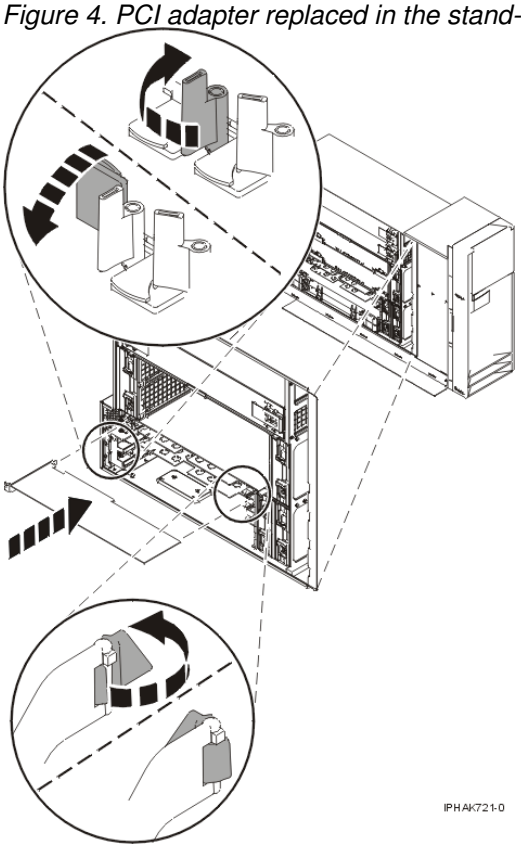


Figure 4. PCI adapter replaced in the stand-alone system unit



20. Connect any adapter cables.
21. Replace or close the covers.
22. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
23. On a rack-mounted system, close the rear rack door.
24. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapter with system power on in Linux

The following procedure describes the installation PCI adapters with the system power on in Linux.

If the system is partitioned, see Partitioning for Linux to learn more about working in partitions, then return here to continue the procedure.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

To install a PCI adapter with the system power on in Linux, do the following:

1. Ensure that the system meets the Prerequisites for hot-plugging PCI adapters in Linux.
2. Verify that the Linux, hot-plug PCI tools are installed.
3. Determine in which slot to place the PCI adapter by doing the following:
   - Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
   - Determine if the adapter will be placed in the base system unit or an expansion unit.
     - If the adapter is to be placed into the base system unit, continue with this procedure by going to the next numbered step.
     - If the adapter is to be placed into an expansion unit that does not contain PCI adapter cassettes, continue with this procedure by going to the next numbered step.
     - If the adapter is to be placed into an expansion unit that contains PCI adapter cassettes, go to the procedures for adapters in adapter cassettes. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
4. Perform the prerequisite tasks described in Before you begin.
5. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
   - For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - 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+,
        - Open the model 05/95, 50/95, or 11D/20 service access cover
   - For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - Open the model 05/95, 50/95, or 11D/20 service access cover
7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
8. If necessary, remove the adapter expansion slot shield.
9. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

10. Place the adapter, component-side up, on a flat, antistatic surface.
11. Log in to the system console as the root user.

12. Run the lsslot tool to list the hot-plug PCI slots that are available in the server or partition:

    lsslot -c pci -a

    The following is an example of the information displayed by this command:

    ```
    # Slot          Description             Device(s)
    U7879.001.DQD014E-P1-C1 PCI-X capable, 64 bit, 133MHz slot Empty
    U7879.001.DQD014E-P1-C4 PCI-X capable, 64 bit, 133MHz slot Empty
    U7879.001.DQD014E-P1-C5 PCI-X capable, 64 bit, 133MHz slot Empty
    ```

    Select the appropriate empty PCI slot from the ones listed by the command.
13. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
14. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
15. Ensure the slot is empty. Remove the adapter filler plate if one is present.

Figure 1. PCI adapter or filler plate removed from the rack-mounted system unit

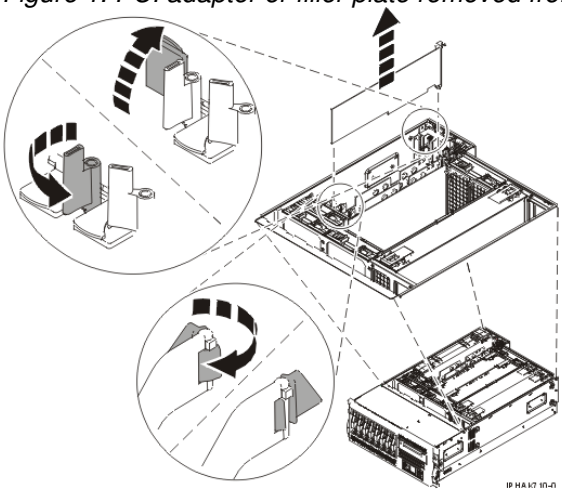
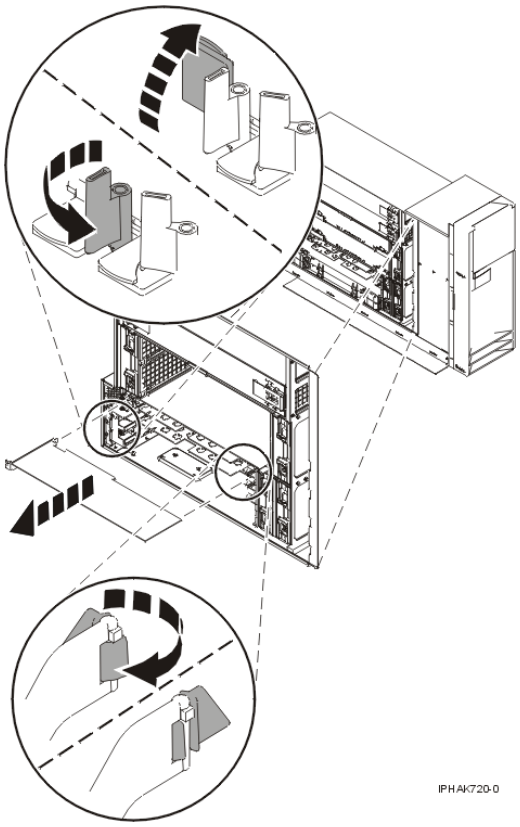


Figure 2. PCI adapter or filler plate removed from the stand-alone system unit

PCI adapter



16. Run the drslot_chrp_pci command to enable an adapter to be installed. For example, to install an adapter into PCI slot U7879.001.DQD014E-P1-C3, enter the following command:

    drslot_chrp_pci -a -s U7879.001.DQD014E-P1-C3

    The following displays:

    ```
    The visual indicator for the specified PCI slot has been set to the
    identify state. Press Enter to continue or enter x to exit.
    ```

17. Press Enter.

    The following displays:

    ```
    The visual indicator for the specified PCI slot has been set to the
    action state. Insert the PCI card into the identified slot, connect any
    devices to be configured and press Enter to continue. Enter x to exit.
    ```

18. When you are instructed to install the adapter in the adapter slot, carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
19. Press the adapter firmly into its connector.

    Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

20. Secure the adapter. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latches clockwise as shown in Figure 3 or Figure 4.
21. Connect any adapter cables.
22. Run the lsslot command to verify that the slot is occupied.

    For example, Enter **lsslot -c pci -s U7879.001.DQD014E-P1-C3**

    The following is an example of the information displayed by this command:

    ```
    # Slot          Description             Device(s)
    U7879.001.DQD014E-P1-C3 PCI-X capable, 64 bit, 133MHz slot 0001:40:01.0
    ```

23. If you are servicing a rack-mounted system, route the cables through the cable-management arm.
24. Replace or close the covers.
25. On a rack-mounted system, close the rear rack door.

26. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.

Figure 3. PCI adapter replaced in the rack-mounted system unit

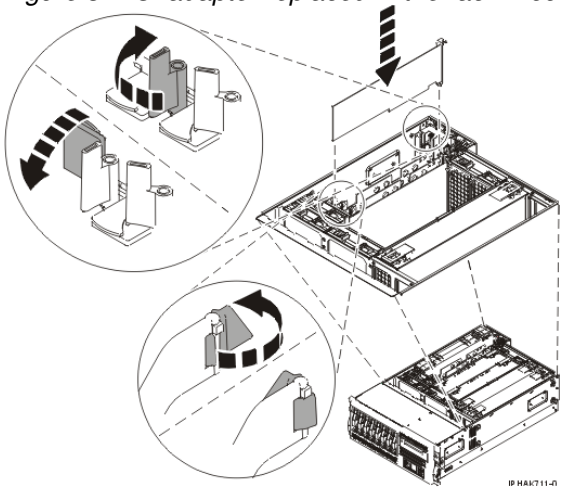
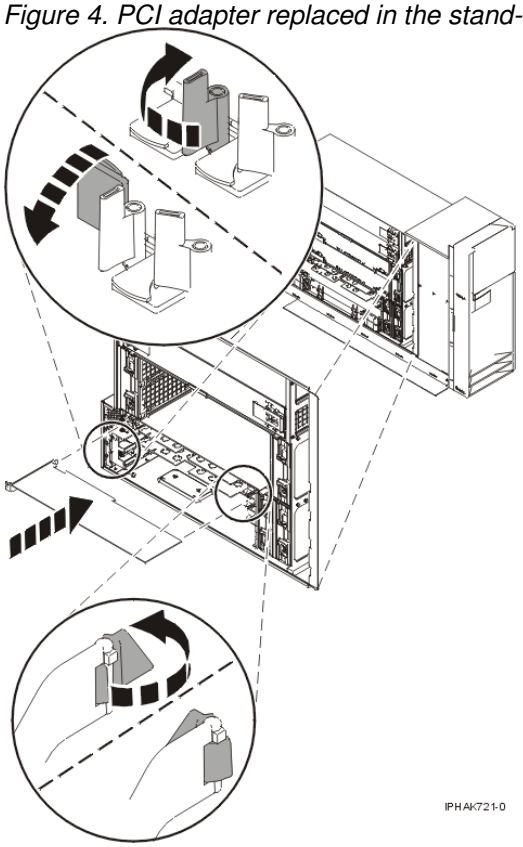


Figure 4. PCI adapter replaced in the stand-alone system unit



Parent topic: Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off

The following procedure describes the installation of PCI adapters with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

Note: If the system is partitioned, select the appropriate information from the following list to learn more about working in a partitioned environment, then return here:

- Partitioning for AIX
- Partitioning for Linux

To install a PCI adapter with the system power off, do the following:

1. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
2. Determine in which slot to place the PCI adapter by doing the following:
   - Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
   - Determine if the adapter will be placed in the base system unit or an expansion unit.
     - If the adapter is to be placed into the base system unit, continue with this procedure by going to the next numbered step.
     - If the adapter is to be placed into an expansion unit that does not contain PCI adapter cassettes, continue with this procedure by going to the next numbered step.
     - If the adapter is to be placed into an expansion unit that contains PCI adapter cassettes, go to the procedures for adapters in adapter cassettes. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
3. Perform the prerequisite tasks described in Before you begin.
4. Stop the system or logical partition.
5. Disconnect the power source from the system by unplugging the system.

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

6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to step 7.
   - If you are placing an adapter in a model 57/90 or 11D/11, use the PCI adapter cassette procedures. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
   - Installing, removing, or replacing a PCI adapter in a 11D/10, 57/91, or 57/94 expansion unit is not a customer procedure. Contact your service provider.
   - For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - 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+,
        - Open the model 05/95, 50/95, or 11D/20 service access cover

- For all other rack-mounted expansion units, follow these steps:
  a. Open the back rack door.
  b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
     - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
     - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
     - Open the model 05/95, 50/95, or 11D/20 service access cover

7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
8. If necessary, remove the adapter expansion slot shield.
9. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

10. Place the adapter, component-side up, on a flat, antistatic surface.
11. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in this system, you must remove the blue handle or support bracket from the card.
12. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
13. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
14. Ensure the slot is empty. Remove the adapter filler plate if one is present. If an adapter is present in the slot you want to use, see the instructions in Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters and then return here.

Figure 1. PCI adapter or filler plate removed from the rack-mounted system unit

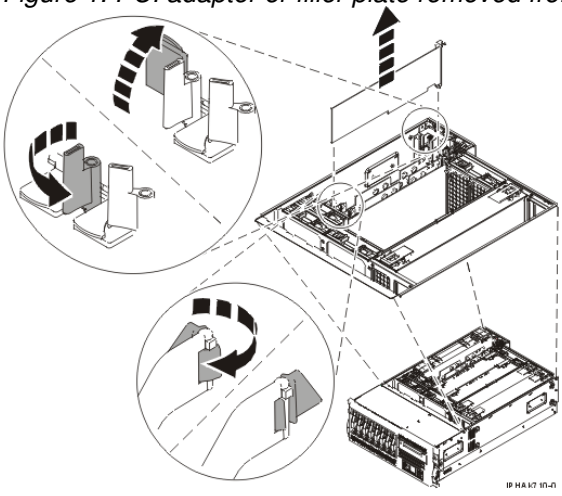
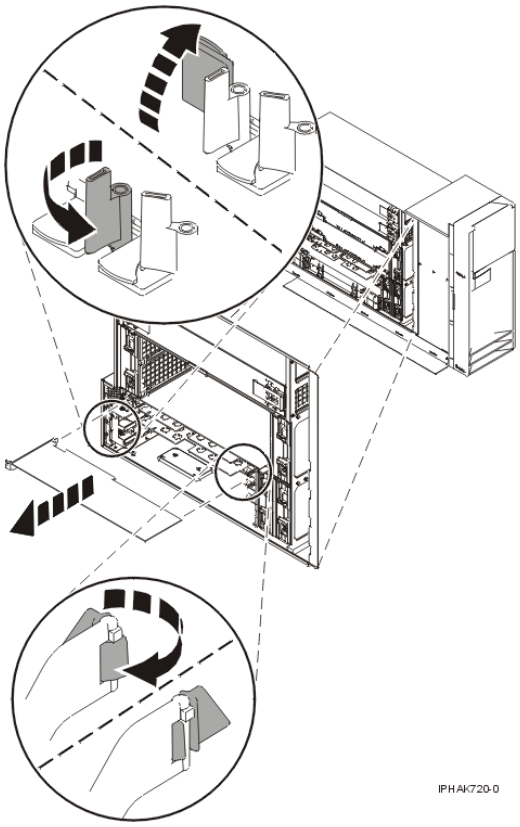


Figure 2. PCI adapter or filler plate removed from the stand-alone system unit



15. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
16. Press the adapter firmly into its connector.
17. Secure the adapter. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latches clockwise as shown in Figure 3 or Figure 4.

Figure 3. PCI adapter replaced in the rack-mounted system unit

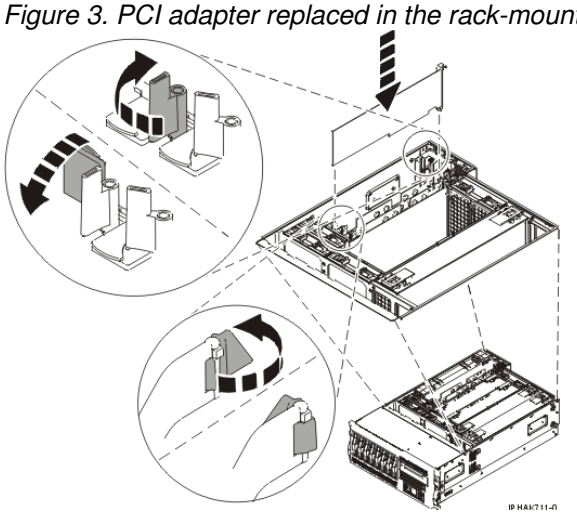
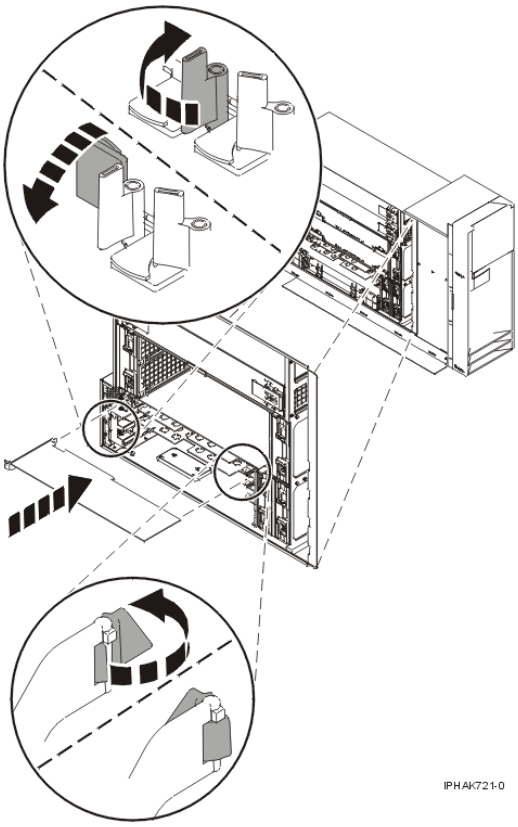


Figure 4. PCI adapter replaced in the stand-alone system unit

PCI adapter



18. Connect any adapter cables.
19. If you are servicing a rack-mounted system, route the cables through the cable-management arm.
20. Replace or close the covers.
21. On a rack-mounted system, close the rear rack door.
22. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
23. Reconnect the power source to the system.
24. Start the system or logical partition.
25. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

To remove PCI or PCI-X adapters, use the following procedures.

- **Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX**
- **Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux**
- **Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off**

Parent topic: Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX

The following procedure describes the removal of PCI adapters with the system on in AIX. Use this procedure to remove a PCI adapter and leave the slot in the system unit empty. To remove a failing adapter and replace it with the same adapter, see Remove and replace ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX. If the adapter that is removed will be placed into a different slot or system, complete this removal procedure, then install the adapter as described in Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

Note: Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To remove a PCI adapter with the system power on in AIX, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
4. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
    - For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
        a. Open the front rack door.
        b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
        c. Remove or open the service access cover as follows:
            - 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+,
            - Open the model 05/95, 50/95, or 11D/20 service access cover
    - For all other rack-mounted expansion units, follow these steps:
        a. Open the back rack door.
        b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
            - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.

- Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
- Open the model 05/95, 50/95, or 11D/20 service access cover

5. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
6. Determine which adapters you plan to remove.
7. Record the slot number and location of each adapter being removed. Adapter slots are numbered on the rear of the system unit.
8. Ensure that any processes or applications that might use the adapter are stopped.
9. Follow these steps to place the adapter in the action state using the PCI Hot-Plug Manager:

   a. Enter the system diagnostics by logging in as root user or as the celogin user, type diag at the AIX command line.
   b. When the DIAGNOSTIC OPERATING INSTRUCTIONS menu displays, press Enter.
   c. At the FUNCTION SELECTION menu, select Task Selection, then press Enter.
   d. At the Task Selection list, select PCI Hot Plug Manager.
   e. Select Unconfigure a Device, then press Enter.
   f. Press F4 (or Esc +4) to display the Device Names menu.
   g. Select the adapter you are removing in the Device Names menu.
   h. Use the Tab key to answer NO to Keep Definition. Use the Tab key again to answer YES to Unconfigure Child Devices, then press Enter.
   i. The ARE YOU SURE window displays.
   j. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the Command field at the top of the screen.
   k. Press F4 (or Esc +4) twice to return to the Hot Plug Manager menu.
   l. Select replace/remove PCI Hot Plug adapter.
   m. Select the slot that has the device to be removed from the system.
   n. Select remove. A fast-blinking amber LED located at the back of the machine near the adapter indicates that the slot has been identified.
   o. Press Enter. This places the adapter in the action state, meaning it is ready to be removed from the system.

10. Label, and then disconnect all cables attached to the adapter you plan to remove.
11. Rotate the adapter locking latch A counterclockwise.
12. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
13. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. PCI adapter removed from the rack-mounted system unit

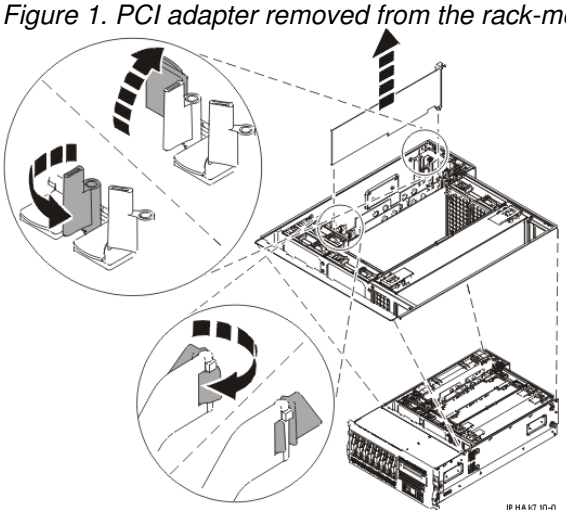
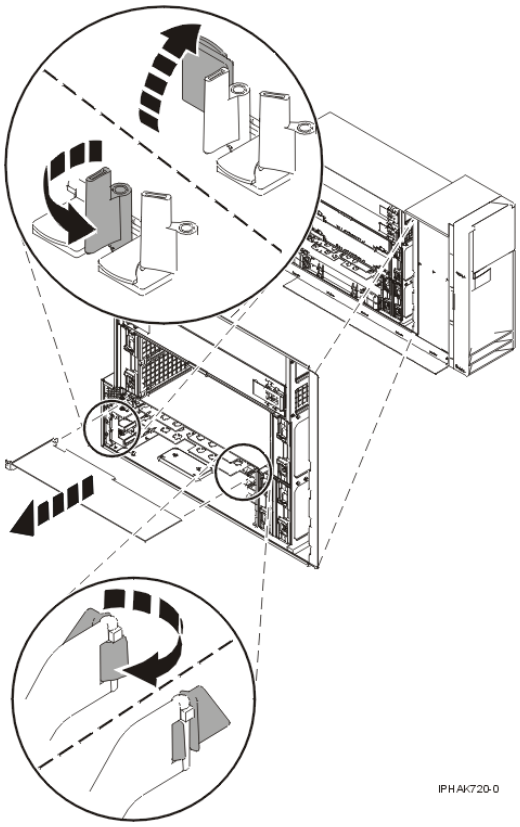


Figure 2. PCI adapter removed from the stand-alone system unit

PCI adapter



14. If you plan to install another adapter into the vacated slot, go to Install model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX; otherwise, continue with the next step.
15. Seal the expansion slot using an expansion-slot cover.
16. Lower the plastic retainer seat over the PCI adapter faceplate.
17. Rotate the locking latch clockwise until it clicks into the locked position.
18. Continue to follow the screen instructions until you receive a message that the adapter removal is successful. Successful removal is indicated by the `OK` message displayed next to the Command field at the top of the screen.
19. If you have other adapters to remove, press the F3 key to return to the PCI Hot-Plug Manager menu and then return to step 10.

    OR

    If you do not have other adapters to remove, continue with the next step.
20. Press F10 to exit the Hot-Plug Manager.
21. Run the **`diag -a`** command. If the system responds with a menu or prompt, follow the instructions to complete the device configuration.
22. Replace or close the covers.
23. On a rack-mounted system, close the rear rack door.
24. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
25. To replace the PCI adapter, see Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters.

Parent topic: Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

---

Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux

This procedure provides the steps you must take to remove a PCI adapter in a server, expansion unit, or partition that is running the Linux.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

To remove a PCI adapter with the system power on in Linux, do the following:

1. Ensure that the system meets the Prerequisites for hot-plugging PCI adapters in Linux.
2. Verify that the Linux, hot-plug PCI tools are installed.
3. Perform the prerequisite tasks described in Before you begin.
4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.
   - For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
     c. Remove or open the service access cover as follows:
        - 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+,
        - Open the model 05/95, 50/95, or 11D/20 service access cover
   - For all other rack-mounted expansion units, follow these steps:
     a. Open the back rack door.
     b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
        - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
        - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
        - Open the model 05/95, 50/95, or 11D/20 service access cover
7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
8. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter.
9. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system.

10. Label, and then disconnect all cables attached to the adapter you plan to remove.

    Note: Before performing a PCI hot-plug removal of storage devices, ensure file systems on those devices are unmounted.

11. Run the drslot_chrp_pci command to enable an adapter to be removed:

    For example, to remove the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

```
drslot_chrp_pci -r -s U7879.001.DQD014E-P1-C3
```

Follow the instructions on the display to complete the task.

12. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
13. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
14. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. PCI adapter removed from the rack-mounted system unit

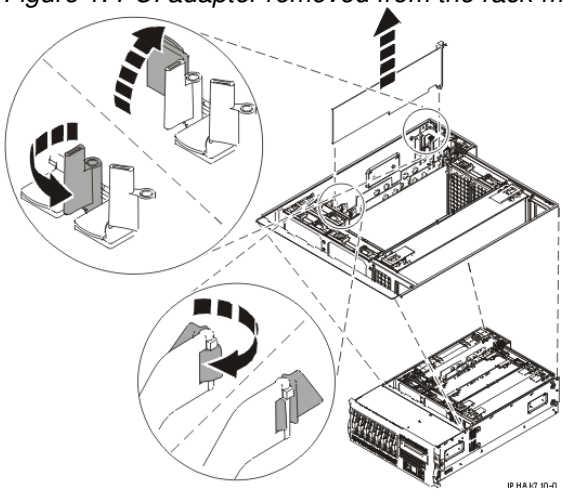
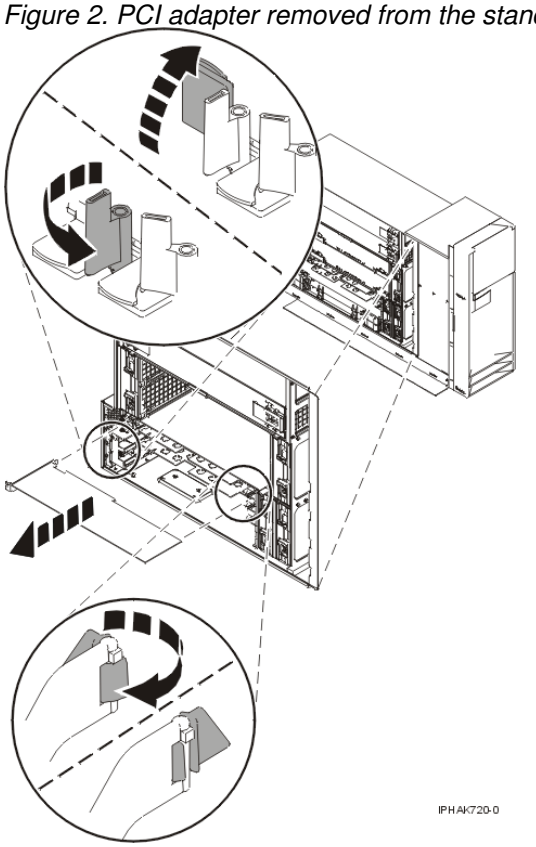


Figure 2. PCI adapter removed from the stand-alone system unit



15. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.
16. If you plan to install another adapter into the vacated slot, go to Replace a model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapter with the system power on in Linux; otherwise, continue with the next step.
17. Seal the expansion slot using an expansion-slot cover.

18. Replace or close the covers.
19. Reconnect the power source to the system.
20. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
21. On a rack-mounted system, close the rear rack door.
22. Start the system or logical partition.
23. To replace the PCI adapter, see Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters.

Parent topic: Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off

The following procedure describes the removal of PCI adapters with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

To remove a PCI adapter with the system power off, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
4. Stop the system or logical partition.
5. Disconnect the power source from the system by unplugging the system.

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

6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.

   Note:

   a. If you are placing an adapter in a model 57/90 or 11D/11, use the PCI adapter cassette procedures. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.
   b. Installing, removing, or replacing a PCI adapter in a 11D/10, 57/91, or 57/94 expansion unit is not a customer procedure. Contact your service provider.

   - For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
     a. Open the front rack door.
     b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.

c. Remove or open the service access cover as follows:
   - 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+,
   - Open the model 05/95, 50/95, or 11D/20 service access cover

- For all other rack-mounted expansion units, follow these steps:
  a. Open the back rack door.
  b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
     - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
     - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
     - Open the model 05/95, 50/95, or 11D/20 service access cover

7. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
8. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter.
9. Record the slot number and location of each adapter being removed.

   Note: Adapter slots are numbered on the rear of the system.

10. Rotate the adapter locking latch A counterclockwise as shown in Figure 1 or Figure 2.
11. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
12. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. PCI adapter removed from the rack-mounted system unit

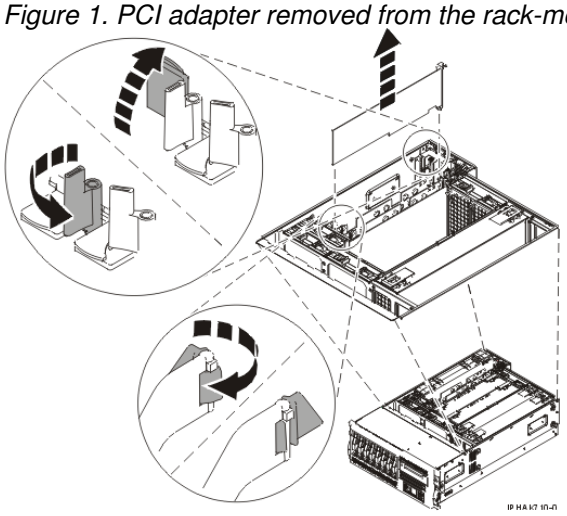
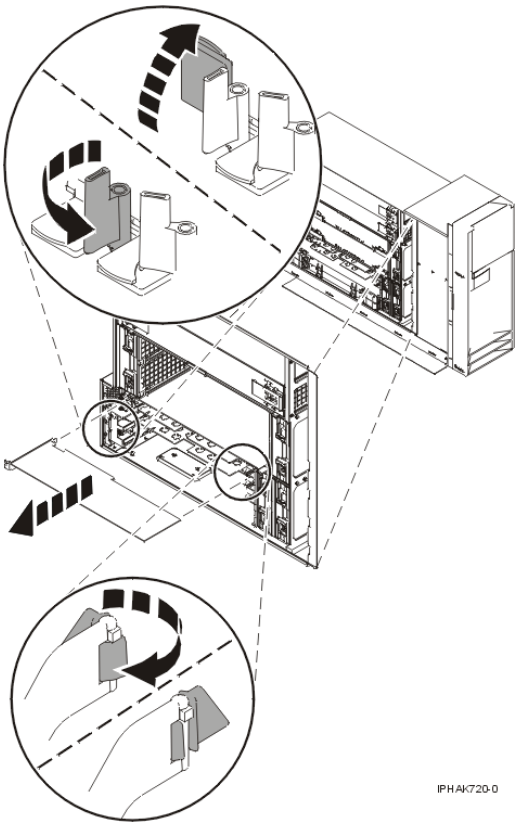


Figure 2. PCI adapter removed from the stand-alone system unit

PCI adapter



13. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.
14. If you plan to install another adapter into the vacated slot, go to Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off; otherwise, continue with the next step.
15. Seal the expansion slot using an expansion-slot cover.
16. Replace or close the covers.
17. Reconnect the power source to the system.
18. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
19. On a rack-mounted system, close the rear rack door.
20. Start the system or logical partition.
21. To replace the PCI adapter, see Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters.

Parent topic: Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

To replace PCI or PCI-X adapters, use the following procedures. It is assumed that you have already completed the procedures in Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters.

- **Remove and replace ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX**

- **Replace a model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapter with the system power on in Linux**
- **Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off**

Parent topic: Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Remove and replace ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX

The following procedure describes the replacement of PCI adapters with the system power on in AIX. Read the following notes to determine if this is the correct procedure for the task to be performed.

Note:

1. If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a PCI adapter. For instructions, see Replace a part using the Hardware Management Console.
2. Use this procedure if you intend to remove a failing PCI adapter and replace it with the same type of adapter.
3. If you plan to remove a failing adapter and leave the slot empty, see Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX.
4. This procedure should not be used to remove an existing adapter and install a different type of adapter. To install a different adapter, remove the existing adapter as described in Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in AIX, then install the new adapter as described in Install model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with system power on in AIX.
5. Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To replace a PCI adapter with the system power on in AIX, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
4. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps. If you are servicing a stand-alone system, go to the next step.

   Note:

   a. If you are placing an adapter in a model 57/90 or 11D/11, use the PCI adapter cassette procedures. See Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes.

b. Installing, removing, or replacing a PCI adapter in a 11D/10, 57/91, or 57/94 expansion unit is not a customer procedure. Contact your service provider.

- For the ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ system unit, the 05/95, 50/95, or 11D/20 expansion unit, follow these steps:
  a. Open the front rack door.
  b. Place the system or expansion unit in the service position. See Place the rack-mounted system or expansion unit in the service position.
  c. Remove or open the service access cover as follows:
     - 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+,
     - Open the model 05/95, 50/95, or 11D/20 service access cover
- For all other rack-mounted expansion units, follow these steps:
  a. Open the back rack door.
  b. Remove the cover or covers. For instructions on removing covers, select the appropriate procedure from the following:
     - Remove the back door from the 50/74, 50/79, and 50/94 expansion unit. These steps also apply to the 52/94, 82/94, and 91/94 expansion units. When the cover is removed, remove the PCI adapter access plate.
     - Remove the back cover from the 05/88 expansion unit. These steps also apply to the model 50/88.
     - Open the model 05/95, 50/95, or 11D/20 service access cover

5. If you are installing a PCI adapter in a stand-alone system or expansion unit, follow these steps:
   - 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 back door and cover from the 50/95 expansion unit
6. Determine which adapters you plan to remove.
7. Record the slot number and location of each adapter being removed.

Note: Adapter slots are numbered on the rear of the system unit.

8. Ensure that any processes or applications that might use the adapter are stopped.
9. Enter the system diagnostics by logging in as root user or as the celogin user, type diag at AIX command line.
10. When the DIAGNOSTIC OPERATING INSTRUCTIONS menu displays, press Enter.
11. At the FUNCTION SELECTION menu, select Task Selection, then press enter.
12. At the Task Selection list, select PCI Hot Plug Manager.
13. Select Unconfigure a Device, then press Enter.
14. Press F4 (or Esc +4) to display the Device Names menu.
15. Select the adapter you are removing in the Device Names menu.
16. Use the Tab key to answer `NO` to Keep Definition. Use the Tab key again to answer `YES` to Unconfigure Child Devices, then press Enter.
17. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the Command field at the top of the screen.
18. Press F4 (or Esc +4) twice to return to the Hot Plug Manager menu.
19. Select replace/remove PCI Hot Plug adapter.
20. Select the slot that has the device to be removed from the system.
21. Select remove.

Note: A fast-blinking amber LED located at the back of the machine near the adapter indicates that the slot has been identified.

22. Press Enter. This places the adapter in the action state, meaning it is ready to be removed from the system.
23. Label, and then disconnect all cables attached to the adapter you plan to remove.
24. Rotate the adapter locking latch A counterclockwise.

25. Lift the black tab B attached to the adapter retainer assembly, and keep the black tab in a vertical position.
26. Carefully grasp the PCI adapter by its top edge or upper corners, and remove it from the system. Store the adapter in a safe place.

Figure 1. PCI adapter removed from the rack-mounted system unit

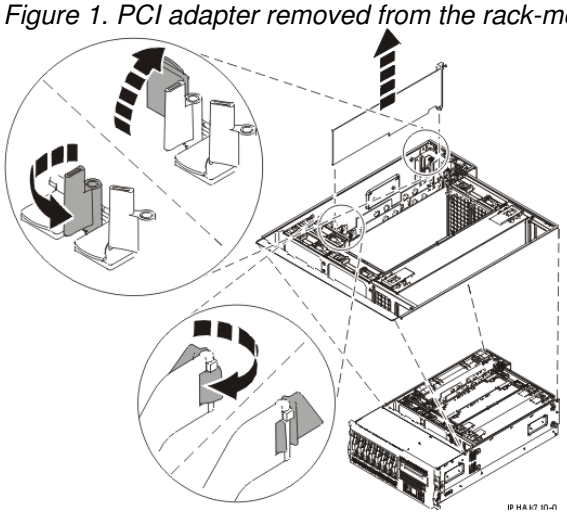
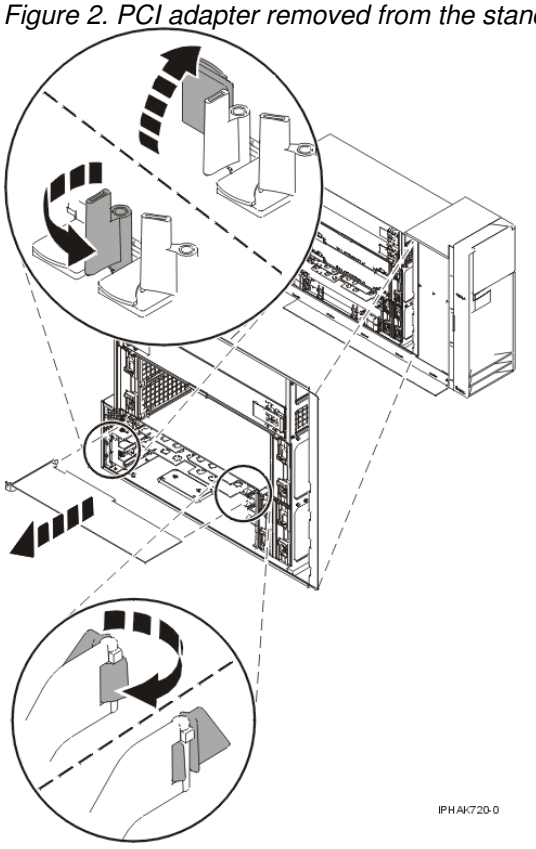


Figure 2. PCI adapter removed from the stand-alone system unit



27. If necessary, remove the replacement adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

28. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
29. Press the adapter firmly into its connector.

Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

30. Secure the adapter Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latches clockwise as shown in Figure 3 or Figure 4.

Figure 3. PCI adapter replaced in the rack-mounted system unit

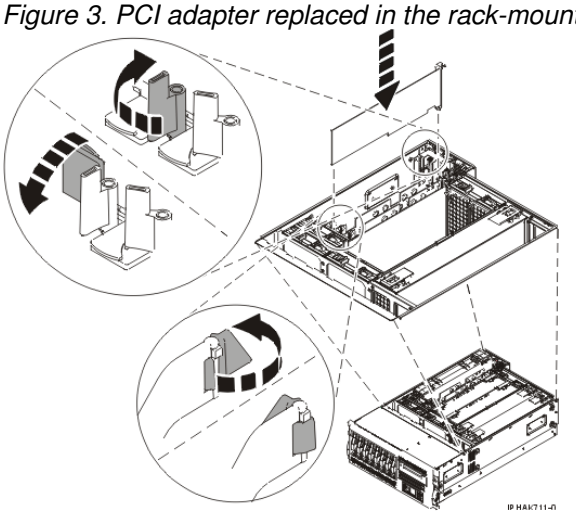
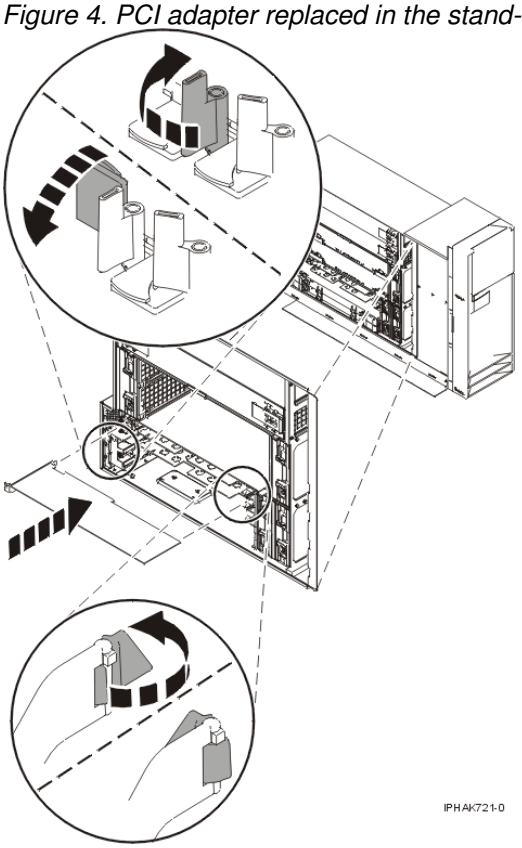


Figure 4. PCI adapter replaced in the stand-alone system unit



31. Connect the adapter cables.
32. Press enter and continue to follow the instructions in the system diagnostics until you receive a message that the replacement is successful. Successful replacement is indicated by the `OK` message displayed next to the Command field at the top of the menu.
33. Press the F3 (or Esc+3) key to return to the PCI Hot-Plug Manager menu.
34. Press the F3 (or Esc+3) key to return to the TASK selection list.

35. Select Log Repair Action.
36. Select the resource just replaced, press Enter, press Commit (F7 or ESC 7), then press Enter.
37. Press F3 (or Esc+3) to return to TASK Selection List.
38. Select Hot Plug Task, press enter.
39. Select PCI Hot Plug Manager, then select Configure a defined device, then press Enter.
40. Select the device just replaced from the list, then press Enter. The device is now configured.
41. Press the F10 key to exit the diagnostic program.

Note: If you are running the standalone diagnostics, do not exit the program completely.

42. Verify the PCI adapter by using the following instructions:
    a. Did you replace the adapter with the system power on?
        ◊ Yes - Go to the next step.
        ◊ No - Load the diagnostic program by doing the following:
            · If AIX is available, boot AIX, login as root or CELOGIN, then enter the diag command.
            · If AIX is not available, boot the standalone diagnostics
    b. Type the diag command if you are not already displaying the diagnostic menus
    c. Select Advance Diagnostic Routines, then select Problem Determination.
    d. Select the name of the resource just replaced from the menu. If the resource just replaced is not shown, choose the resource associated with it. Press Enter, then press Commit ((F7 or Esc+7)).
    e. Did the Problem Determination identify any problems?
        ◊ No: Continue to the next step.
        ◊ Yes: A problem is identified
            · If you are a customer, record the error information, then contact your service provider.
            · If you are an authorized service provider, return to map 210-5.
43. Press the F10 key to exit the diagnostic program.
44. Replace or close the covers.
45. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
46. On a rack-mounted system, close the rear rack door.
47. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Replace a model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapter with the system power on in Linux

The following procedure describes the replacement PCI adapters with the system power on in Linux. You must have already completed the procedure Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power on in Linux.

To replace a PCI adapter with the system power on in Linux, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

4. Place the adapter, component-side up, on a flat, static-protective surface.
5. Run the drslot_chrp_pci command to enable an adapter to be replaced:

   For example, to replace the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

   ```
   drslot_chrp_pci -R -s U7879.001.DQD014E-P1-C3
   ```

   Follow the instructions on the display to complete the task.
6. Press the adapter firmly into its connector.

   Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

7. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
8. Press the adapter firmly into its connector.

   Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

9. Secure the adapter. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latches clockwise as shown in Figure 1 or Figure 2.

Figure 1. PCI adapter replaced in the rack-mounted system unit

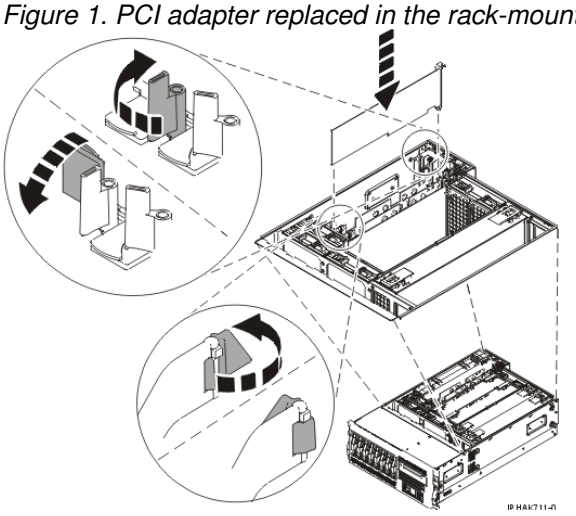
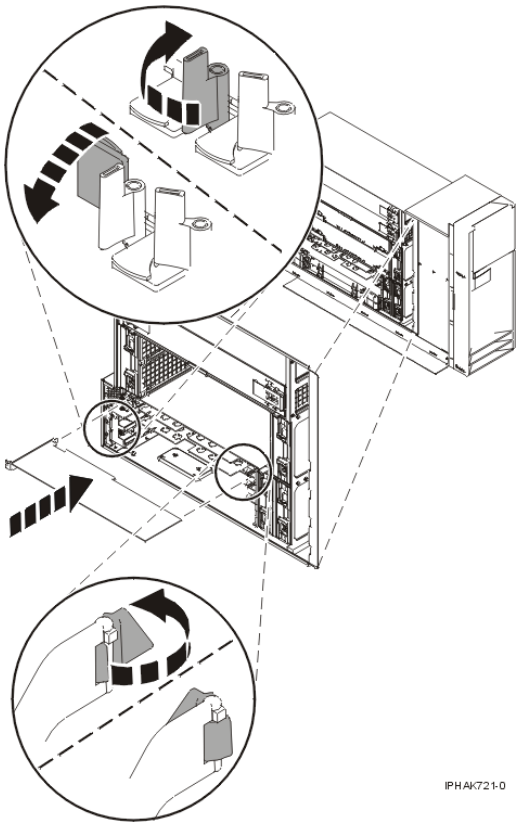


Figure 2. PCI adapter replaced in the stand-alone system unit

PCI adapter



10. Connect the adapter cables.
11. Run the lsslot command to verify that the slot is occupied.

    For example, Enter **`lsslot -c pci -s U7879.001.DQD014E-P1-C3`**

    The following is an example of the information displayed by this command:

    ```
    # Slot          Description             Device(s)
    U7879.001.DQD014E-P1-C3 PCI-X capable, 64 bit, 133MHz slot 0001:40:01.0
    ```
12. If you are servicing a rack-mounted system, route the cables through the cable-management arm.
13. Replace or close the covers.
14. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
15. On a rack-mounted system, close the rear rack door.
16. Start the system or logical partition.
17. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off

The following procedure describes the replacement of a PCI adapter with the system power off.

You must have already completed the procedure Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters with the system power off in order to have the slot powered off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a PCI adapter. For instructions, see Replace a part using the Hardware Management Console.

To replace a PCI adapter with the system power off, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If necessary, remove the adapter from the antistatic package.

   Attention: Avoid touching the components and gold-edge connectors on the adapter.

4. Place the adapter, component-side up, on a flat, static-protective surface.
5. Carefully grasp the adapter by its top edge, and align the adapter with the expansion slot and its connector on the system backplane.
6. Press the adapter firmly into its connector.

   Attention: When you install an adapter into the system, be sure that it is completely and correctly seated in its connector.

7. Lower the tab onto the PCI adapter faceplate. Rotate the adapter locking latches clockwise as shown in Figure 1 or Figure 2.

Figure 1. PCI adapter replaced in the rack-mounted system unit

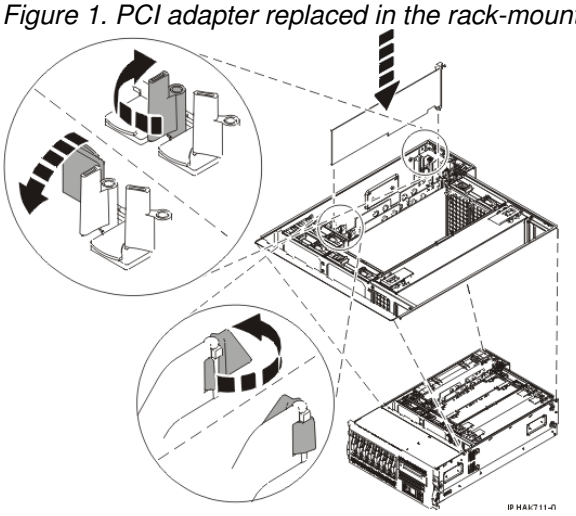
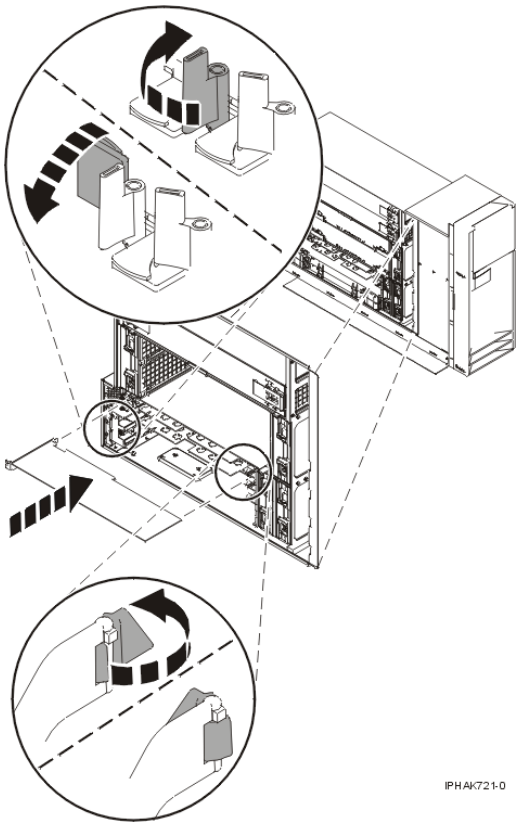


Figure 2. PCI adapter replaced in the stand-alone system unit



8. Connect the adapter cables.
9. If you are servicing a rack-mounted system, route the cables through the cable-management arm.
10. Replace or close the covers.
11. Reconnect the power source to the system.
12. Place the rack-mounted system or expansion unit in the operating position if you are servicing a rack-mounted system. If you are servicing a stand-alone system, continue to the next step.
13. On a rack-mounted system, close the rear rack door.
14. Start the system or logical partition.
15. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters

Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PCI adapter dividers

The following procedures describe the removal and replacement of PCI adapter dividers in the following server models: ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+, ESCALA PL 450T/R, ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+, .

- **Remove model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter dividers**
- **Replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter dividers**
- **Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ PCI adapter dividers**
- **Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ PCI adapter dividers**

Parent topic: PCI adapter

Related information

PCI adapter placement in the system unit or expansion unit

Increasing I/O adapter memory allocation Printable PDF Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter dividers

The following procedure describes the removal of the PCI adapter divider with the system power off. This procedure can be done with the system power on by omitting the steps related to powering off the system.

To remove a divider, do the following:

1. Perform prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. Stop the system or logical partition.
4. Disconnect the power source from the system by unplugging the system.

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

5. Place the rack-mounted system or expansion unit in the service position.
6. 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. Locate the PCI adapter divider you want to remove.
8. If you are removing a short adapter divider, continue to the next step. If you are removing a long adapter divider, do the following:
   a. Unlatch and open the PCI adapter light-pipe plate C attached to the fan tray as shown in figure Figure 1 or Figure 2.
   b. Note the guide grooves located toward the front of the system in the disk drive backplane for correct alignment.
9. Remove the adapter. Pull the front edge PCI adapter divider A out of the system and then pull the back edge of the adapter B away from the retention notches in the system chassis.

Figure 1. PCI-adapter divider removed from the rack-mounted system unit

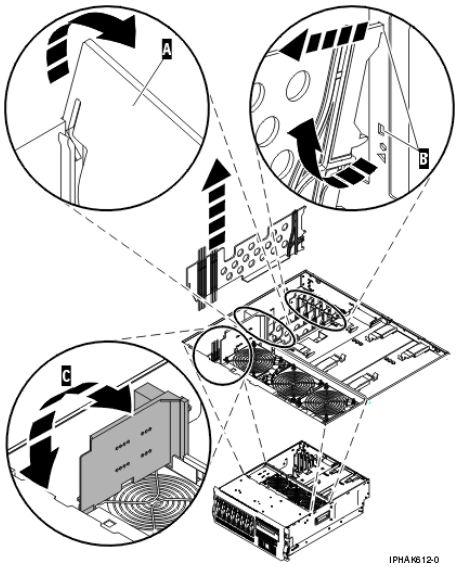
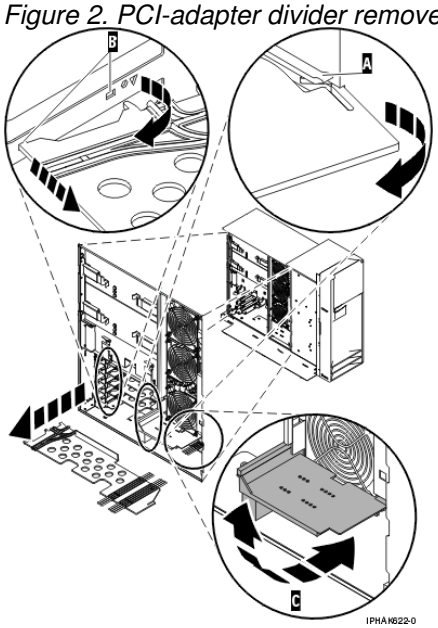


Figure 2. PCI-adapter divider removed from the stand-alone system unit



10. If you are removing the PCI adapter divider as part of another procedure, return to that procedure now. To replace the divider, see Replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter dividers.

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PCI adapter dividers

Replace model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter dividers

The following procedure describes the replacement of PCI adapter dividers with the system power off. This procedure can be done with the system power on by omitting the steps related to powering on the system. You must have already completed the procedure Remove model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ PCI adapter dividers.

To replace a divider, do the following:

1. Locate the PCI adapter divider slot that you want to use.
2. Carefully grasp the adapter divider by its top edge and then align tab A and tab B on the back edge of the divider with the notches in the system chassis. See the following figures.
3. Insert the front edge of the divider C into the slot located at the front of the system and then press the divider into place.

Figure 1. PCI-adapter divider replaced in the rack-mounted system unit

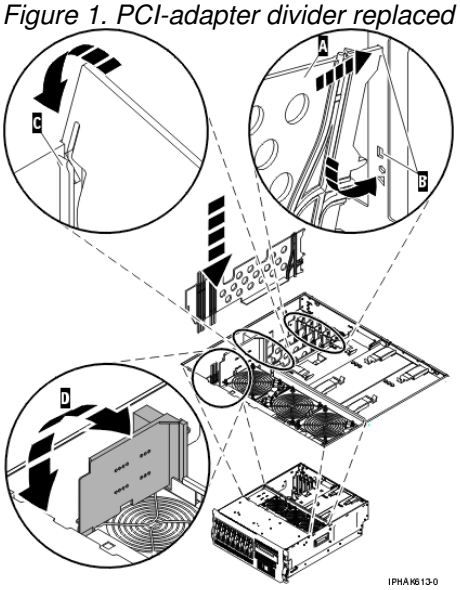
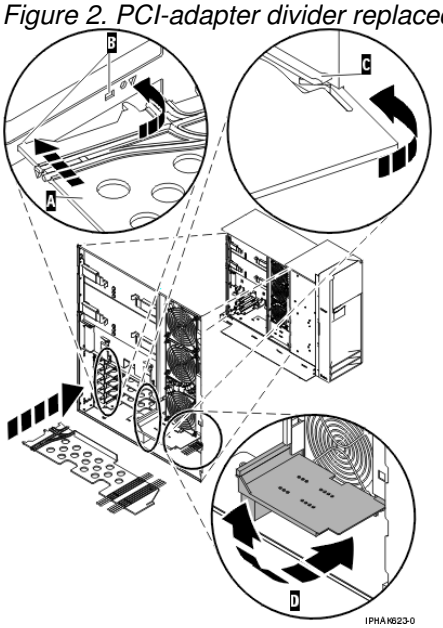


Figure 2. PCI-adapter divider replaced in the stand-alone system unit



4. If you are replacing or installing a short adapter divider, continue to the next step. If you are replacing or installing a long adapter, do the following:
    a. Close and latch the PCI adapter light-pipe plate D attached to the fan tray.

    Note: The light pipes below the light-pipe plate must fit through the holes in the plate for it to latch correctly.

   b. Note the guide grooves located toward the front of the system in the disk drive backplane, and align the adapter divider correctly.
5. 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+, .
6. Place the rack-mounted system or expansion unit in the operating position.
7. Reconnect the power source to the system.
8. Start the system or logical partition.

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PCI adapter dividers

Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ PCI adapter dividers

The following procedure describes the removal of PCI adapter dividers with the system power off. This procedure can be done with the system power on by omitting the steps related to powering off the system.

To remove a divider, do the following:

1. Perform prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. Stop the system or logical partition.
4. Disconnect the power source from the system by unplugging the system.

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

5. Place the rack-mounted system or expansion unit in the service position.
6. 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. Locate the PCI adapter divider you want to remove.
8. Remove the adapter. Pull the front edge PCI adapter divider A out of the system and then pull the back edge of the adapter B away from the retention notches in the system chassis.

   Figure 1. PCI-adapter divider removed from the rack-mounted system unit

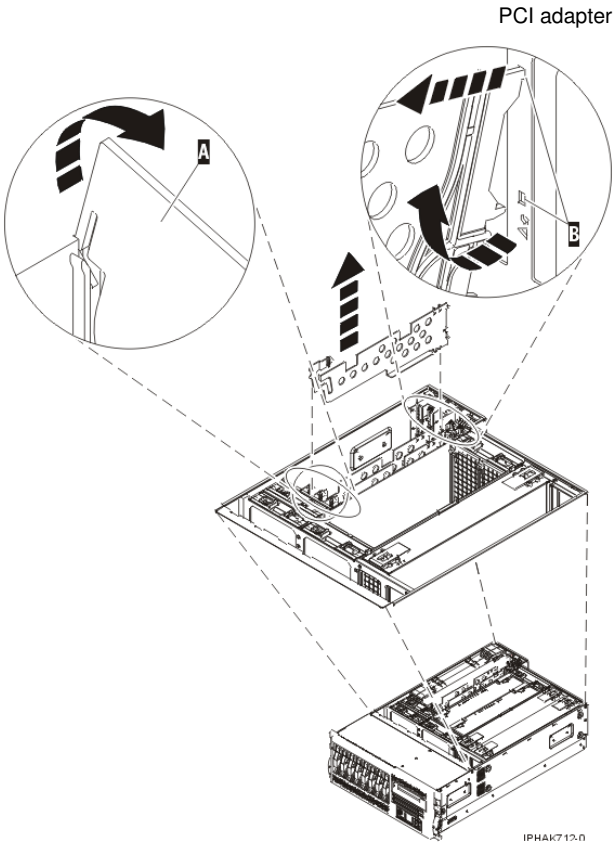
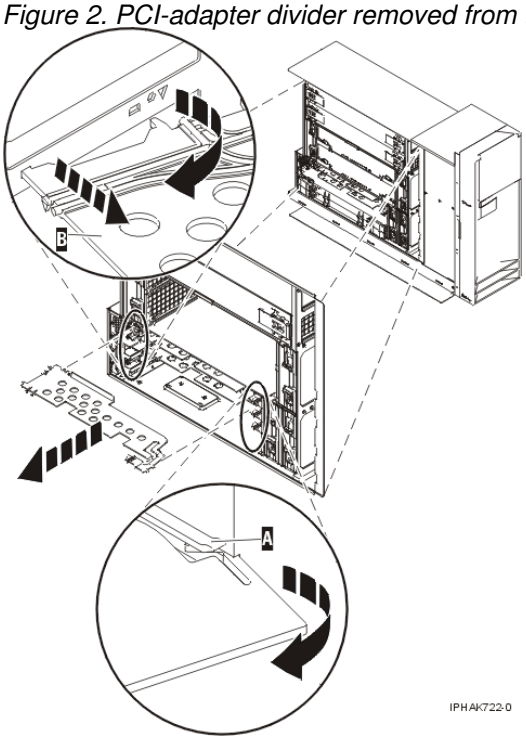


Figure 2. PCI-adapter divider removed from the stand-alone system unit



9. If you are removing the PCI adapter divider as part of another procedure, return to that procedure now. To replace the divider, see Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ PCI adapter dividers.

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PCI adapter dividers

Replace model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ PCI adapter dividers

The following procedure describes the replacement of model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+, PCI adapter dividers with the system power off. This procedure can be done with the system power on by omitting the steps related to powering on the system. You must have already completed the procedure Remove model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+ PCI adapter dividers.

To replace a divider, do the following:

1. Locate the PCI adapter divider slot that you want to use.
2. Carefully grasp the adapter divider by its top edge and then align tab A and tab B on the back edge of the divider with the notches in the system chassis. See the following figures.
3. Insert the front edge of the divider C into the slot located at the front of the system and then press the divider into place.

Figure 1. PCI-adapter divider replaced in the rack-mounted system unit

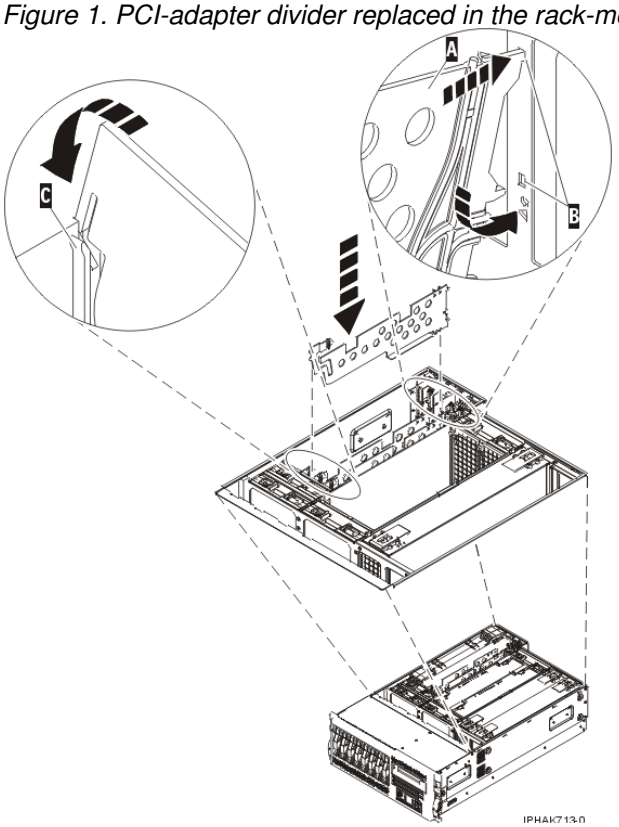
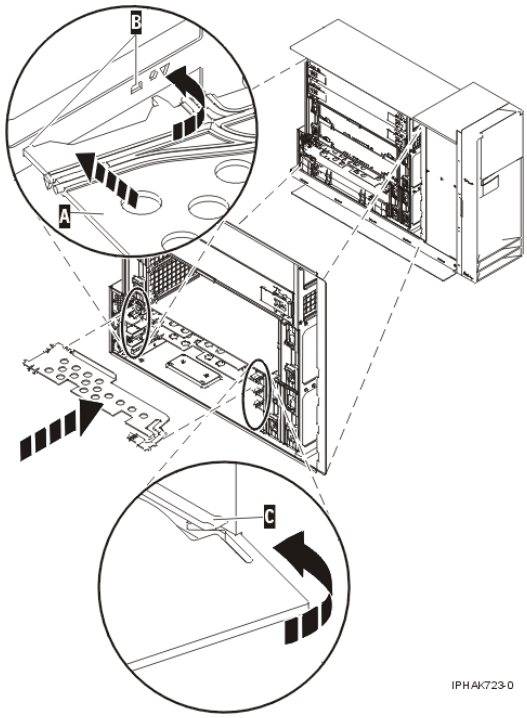


Figure 2. PCI-adapter divider replaced in the stand-alone system unit



4. 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+, .
5. Place the rack-mounted system or expansion unit in the operating position.
6. Reconnect the power source to the system.
7. Start the system or logical partition.

Parent topic: Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PCI adapter dividers

Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapters

Remove, replace, and install PCI adapters.

To install, remove, or replace model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ , or attached expansion-unit, PCI or PCI-X adapters, use the following procedures.

- **Install a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter**
- **Remove a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter**
- **Replace a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter**

Parent topic: PCI adapter

Related information

PCI adapter placement in the system unit or expansion unit

Increasing I/O adapter memory allocation Printable PDF Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter

The following procedure describes the installation of PCI adapters with the system power off. This system does not support the installation of PCI adapters with the system power on.

Note: If the system is partitioned, select the appropriate information from the following list to learn more about working in a partitioned environment, then return here:

- Partitioning for AIX
- Partitioning for Linux

To install a PCI adapter with the system power off, do the following:

1. Determine in which slot to place the PCI adapter. Refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for adapters used in this system.
2. Perform the prerequisite tasks described in Before you begin.
3. Stop the system or logical partition.
4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. Disconnect the power source from the system by unplugging the system.

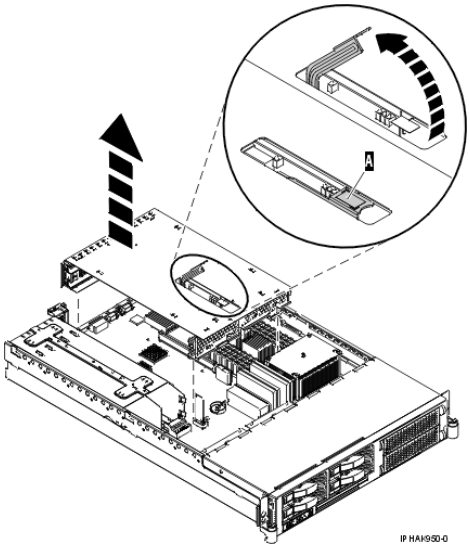
   Note: This system might be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

6. Open the front rack door.
7. Place the system in the service position. See Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ __in the service position.
8. 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+, .
9. Ensure that any cables attached to the adapter to be removed are proper labeled, then disconnect the cables.
10. Open the PCI adapter enclosure handle A.

    Note: With the enclosure handle in the open position, the enclosure riser card is still connected to the system backplane. Care must be taken to lift the enclosure straight out of the system without rocking it back and forth or lifting one end of the enclosure first. Failure to do so might result in damage to the system backplane or the riser card.

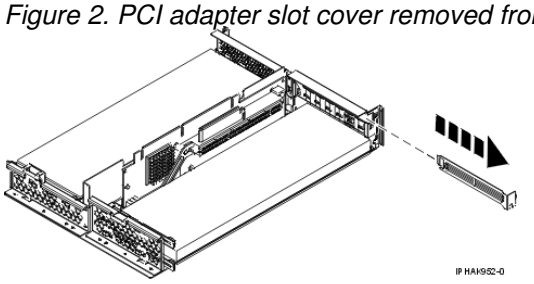
11. Grasping the enclosure by its top edges, front and back, lift the enclosure straight out of the system unit.

    Figure 1. PCI adapter assembly removed from the system unit



12. Rotate it so that the enclosure opening is facing upwards.
13. Place the enclosure on a flat, antistatic surface.
14. If necessary, remove the adapter expansion slot shield.

Figure 2. PCI adapter slot cover removed from the assembly

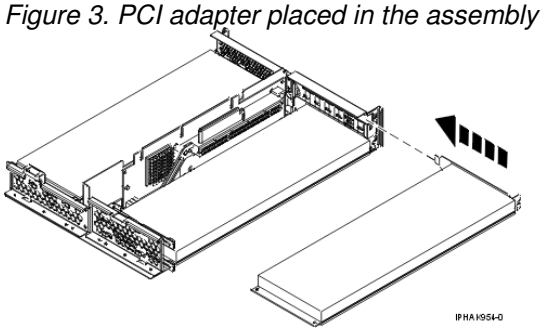


15. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

16. Place the adapter, component-side up, on a flat, antistatic surface.
17. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in this system, you must remove the blue handle or support bracket from the card.
18. Slide the adapter into the assembly as shown in the following figure.

Figure 3. PCI adapter placed in the assembly



19. Place the adapter into its slot in the enclosure, then press the adapter firmly into its connector.

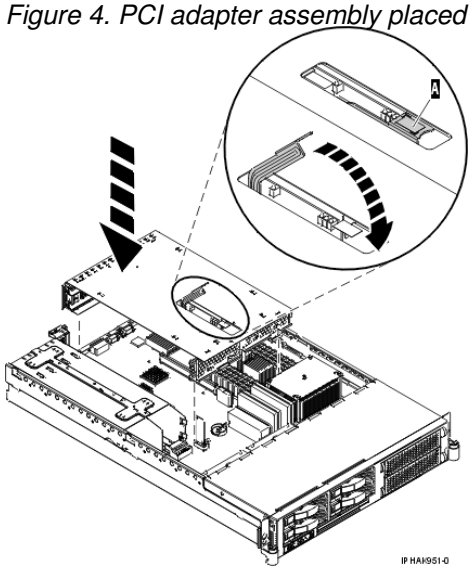
Note: If you are placing a long adapter into the enclosure, ensure the adapter fits into the blue plastic guides at the end of the enclosure. Fit the blue plastic retaining clip over the hole in the lower right

side of long adapters.

20. Rotate the PCI adapter enclosure so the handle faces away from the system unit with the handle in the open position.
21. While holding the enclosure by its top edges, align the two guide posts on the back of the enclosure with the guide slots at the back of the system unit.
22. Slowly lower the enclosure into the system unit while watching for correct alignment, then press it into the slot to connect the riser card. Pressing the enclosure into place will cause the handle to partially close.
23. Lock the enclosure into place by closing the handle A the rest of the way.

Attention: Do not force the handle A past the stop. Doing so can unseat a long adapter installed in PCI slot 2.

Figure 4. PCI adapter assembly placed in the system unit



24. 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+, .
25. Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ __in the operating position.
26. Close the back rack door.
27. Reconnect the power source to the system.
28. Start the system or logical partition.
29. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapters

Remove a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter

The following procedure describes the removal of PCI adapters with the system power off. This system does not support the removal of PCI adapters with the system power on.

To remove a PCI adapter, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
3. Stop the system or logical partition.
4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. Disconnect the power source from the system by unplugging the system.

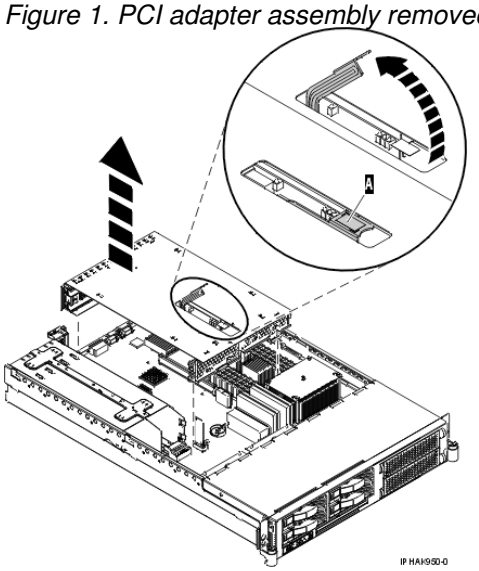
   Note: This system might be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

6. Open the front rack door.
7. Place the system in the service position. See Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ __in the service position.
8. 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+, .
9. Ensure that any cables attached to the adapter to be removed are proper labeled, then disconnect the cables.
10. Open the PCI adapter enclosure handle A.

    Note: With the enclosure handle in the open position, the enclosure riser card is still connected to the system backplane. Care must be taken to lift the enclosure straight out of the system without rocking it back and forth or lifting one end of the enclosure first. Failure to do so might result in damage to the system backplane or the riser card.

11. Grasping the enclosure by its top edges, front and back, lift the enclosure straight out of the system unit.

    Figure 1. PCI adapter assembly removed from the system unit

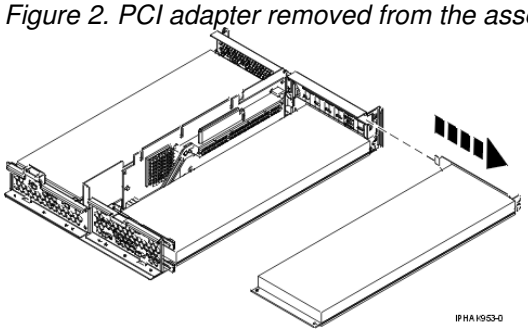


12. Rotate it so that the enclosure opening is facing upwards.
13. Place the enclosure on a flat, antistatic surface.
14. Before handling any PCI adapter, see Handling static-sensitive devices.
15. Determine which adapter you plan to remove, then label and disconnect all cables attached to that adapter.
16. Record the slot number and location of each adapter being removed.

Note: Adapter slots are numbered on the back of the system.

17. Slide the adapter out of the assembly as shown in the following figure.

Figure 2. PCI adapter removed from the assembly



18. If you are removing a PCI adapter as part of another procedure, return to that procedure. If not, continue to the next step.
19. If you plan to install another adapter into the vacated slot, go to Replace a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter; otherwise, continue with the next step.
20. Seal the expansion slot using an expansion-slot cover.
21. Replace the cover.
22. Reconnect the power source to the system.
23. Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ __in the operating position.
24. Close the back rack door.
25. Start the system or logical partition.

Parent topic: Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapters

Replace a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter

The following procedure describes the replacement of PCI adapters with the system power off. This system does not support the removal of PCI adapters with the system power on. You must have already completed the procedure Remove a model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapter.

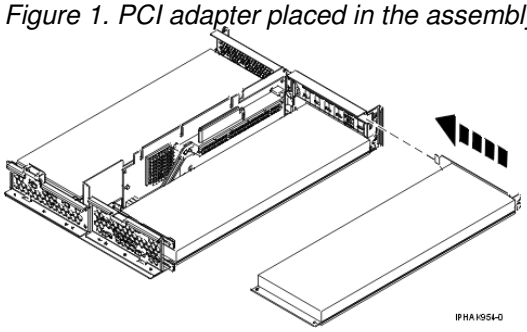
To replace a PCI adapter with the system power off, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. If necessary, remove the adapter from the antistatic package.

Attention: Avoid touching the components and gold-edge connectors on the adapter.

3. Place the adapter, component-side up, on a flat, antistatic surface.
4. Some PCI adapter cards are shipped from the manufacturer with a blue handle or support bracket along the back edge of the card. To use adapters of this type in this system, you must remove the blue handle or support bracket from the card.
5. Slide the adapter into the assembly as shown in the following figure.

Figure 1. PCI adapter placed in the assembly



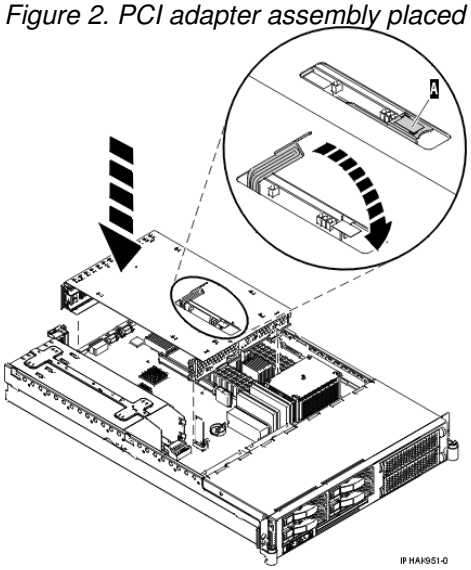
6. Place the adapter into its slot in the enclosure, then press the adapter firmly into its connector.

Note: If you are placing a long adapter into the enclosure, ensure the adapter fits into the blue plastic guides at the end of the enclosure. Fit the blue plastic retaining clip over the hole in the lower right side of long adapters.

7. Rotate the PCI adapter enclosure so the handle faces away from the system unit with the handle in the open position.
8. While holding the enclosure by its top edges, align the two guide posts on the back of the enclosure with the guide slots at the back of the system unit.
9. Slowly lower the enclosure into the system unit while watching for correct alignment, then press it into the slot to connect the riser card. Pressing the enclosure into place will cause the handle to partially close.
10. Lock the enclosure into place by closing the handle A the rest of the way.

Attention: Do not force the handle A past the stop. Doing so can unseat a long adapter installed in PCI slot 2.

Figure 2. PCI adapter assembly placed in the system unit



11. 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+, .
12. Place the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ __in the operating position.
13. Reconnect the power source to the system.
14. Close the back rack door.
15. Start the system or logical partition.

16. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ PCI adapters

Related information

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

These procedures describe the removal, replacement, and installation of PCI or PCI-X adapter cassettes in the system unit model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or ESCALA PL 6450R; and the following expansion units: 05/88, 05/95, 50/74, 50/79, 50/88, 50/94, 50/95, 52/94, or 82/94.

- **Install a PCI adapter contained in a cassette**
- **Remove a PCI adapter contained in a cassette from the system**
- **Replace a PCI adapter contained in a cassette in the system**
- **PCI adapter single-width cassette**
- **PCI adapter double-wide cassette**
- **Other PCI adapter cassettes**
  This section contains procedures for the model ESCALA PL 6450R.

Parent topic: PCI adapter

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install a PCI adapter contained in a cassette

Use the following procedures to install a PCI adapter contained in a cassette, in a model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or attached expansion-units.

- **Install a PCI adapter contained in a cassette with the power on in AIX**
- **Install a PCI adapter contained in a cassette with the power on in Linux**
- **Install a PCI adapter contained in a cassette with the power off**

Parent topic: Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

---

Install a PCI adapter contained in a cassette with the power on in AIX

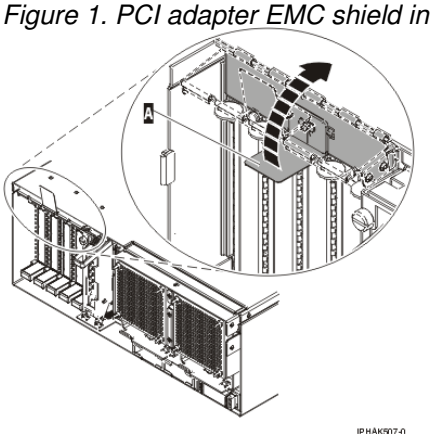
The following procedure describes the installation of a PCI adapter in a cassette with the system power on in AIX.

Note: If the system is partitioned, see Partitioning for AIX to learn more about working in partitions, then return here to continue the procedure.

To install an adapter with the system power on in AIX, do the following:

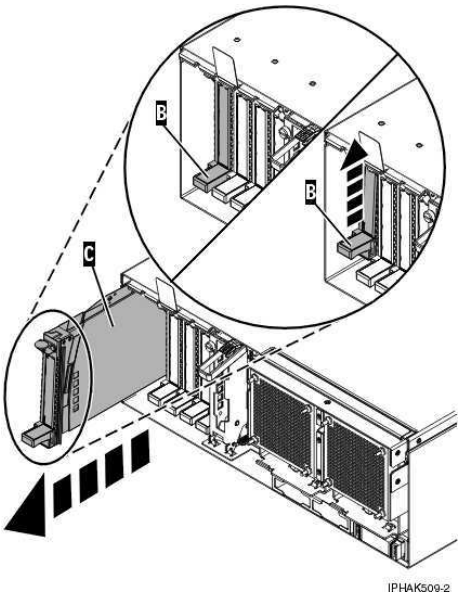
1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. To determine in which slot to place the PCI adapter, refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for the adapters that can be used in this system.
4. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:
    a. Open the rear rack door.
    b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.
5. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
6. Refer to PCI hot-plug manager access for AIX, and follow the steps in the access procedure to select PCI Hot Plug Manager. Then return here to continue.
7. From the PCI Hot-Plug Manager menu, select Add a PCI Hot-Plug Adapter and press Enter. The Add a Hot-Plug Adapter window displays.
8. Select the appropriate PCI slot from the ones listed on the screen, and press Enter.
9. Locate the PCI adapter slot and cassette you want to use.
10. If the cassette you want to use does not contain a PCI adapter, continue to the next step. If the cassette you want to use does contain an active PCI adapter, see Remove a PCI adapter contained in a cassette from the system with the power on in AIX.
11. Lift and hold the PCI adapter EMC shield A in the open position.

Figure 1. PCI adapter EMC shield in the open position



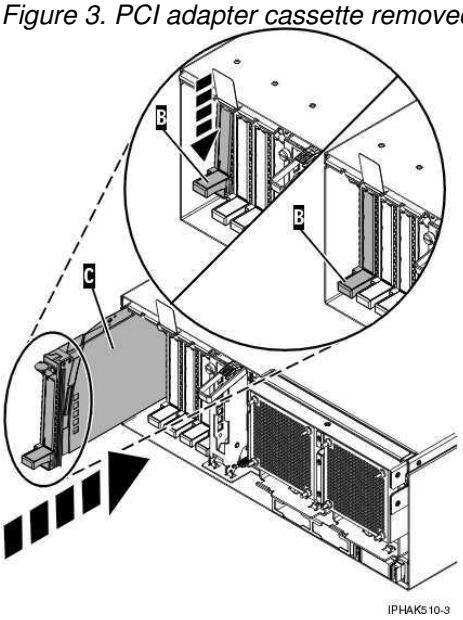
12. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

Figure 2. PCI adapter cassette removed from the system unit.



13. Install the adapter into the PCI adapter cassette using the following instructions:
    - Place an adapter in the PCI adapter single-width cassette
    - Remove an adapter from the PCI adapter single-width cassette
14. Ensure the lower cassette handle is pressed up toward the retainer clip. This places the adapter in the correct position to be docked in the system.
15. Lift and hold the PCI adapter EMC shield A in the open position. See Figure 1.
16. Follow the instructions on the screen to install the adapter until the LED for the specified PCI slot is set to the Action state. See Component LEDs.
17. Slide the cassette C into the cassette slot as shown in the following figure.
18. When the cassette is fully inserted into the system, firmly press downward on the lower cassette handle B to lock the adapter in its connector.

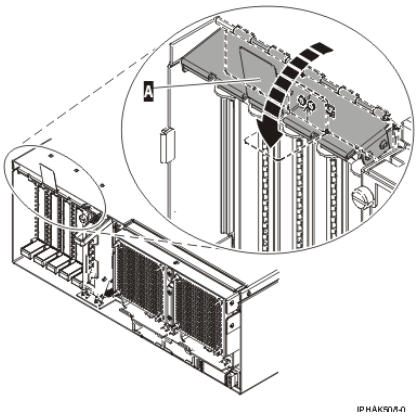
Figure 3. PCI adapter cassette removed from the system unit



19. Lower the PCI adapter EMC shield A into the closed position, close the shield latch, then close the rear rack door.

Figure 4. PCI adapter EMC shield in the closed position

PCI adapter



20. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install a PCI adapter contained in a cassette

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install a PCI adapter contained in a cassette with the power on in Linux

The following procedure describes the installation of a PCI adapter in a cassette with the system power on in Linux.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

If the system is partitioned, see Partitioning for Linux to learn more about working in partitions, then return here to continue the procedure.

To install an adapter with the system power on in Linux, do the following:

1. Perform prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. To determine in which slot to place the PCI adapter, refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for the adapters that can be used in this system.
4. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:
    a. Open the rear rack door.
    b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.

5. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
6. Log in to the system console as the root user.
7. Use the lsslot tool to list the hot-plug PCI slots that are available in the server or partition:

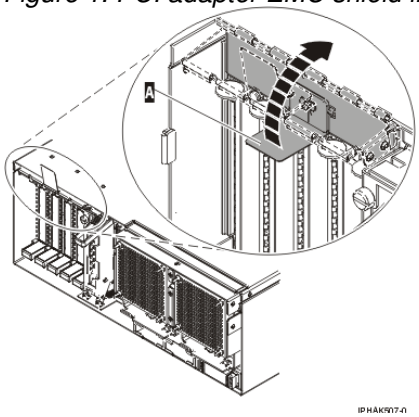
   lsslot -c pci -a

   The following is an example of the information displayed by this command:

   ```
   # Slot          Description             Device(s)
   U7879.001.DQD014E-P1-C1 PCI-X capable, 64 bit, 133MHz slot Empty
   U7879.001.DQD014E-P1-C4 PCI-X capable, 64 bit, 133MHz slot Empty
   U7879.001.DQD014E-P1-C5 PCI-X capable, 64 bit, 133MHz slot Empty
   ```

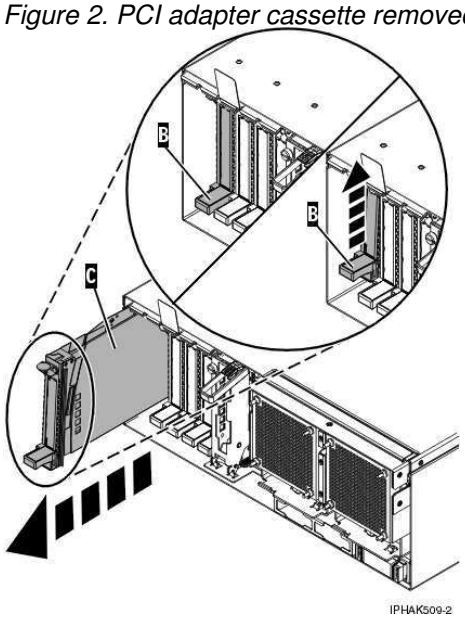
   Select the appropriate empty PCI slot from the ones listed by the command.
8. Lift and hold the PCI adapter EMC shield A in the open position.

   Figure 1. PCI adapter EMC shield in the open position

9. Remove the cassette. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

   Figure 2. PCI adapter cassette removed from the system unit

10. Install the adapter into the PCI adapter cassette using the following instructions:
    - Place an adapter in the PCI adapter single-width cassette
    - Remove an adapter from the PCI adapter single-width cassette
11. Ensure the lower cassette handle is pressed up toward the retainer clip. This places the adapter in the correct position to be docked in the system.
12. Run the drslot_chrp_pci command to enable an adapter to be installed.

For example, to install an adapter in slot U7879.001.DQD014E-P1-C3, run:

```
drslot_chrp_pci -a -s U7879.001.DQD014E-P1-C3
```

The following displays:

```
The visual indicator for the specified PCI slot has been set to the
identify state. Press Enter to continue or enter x to exit.
```

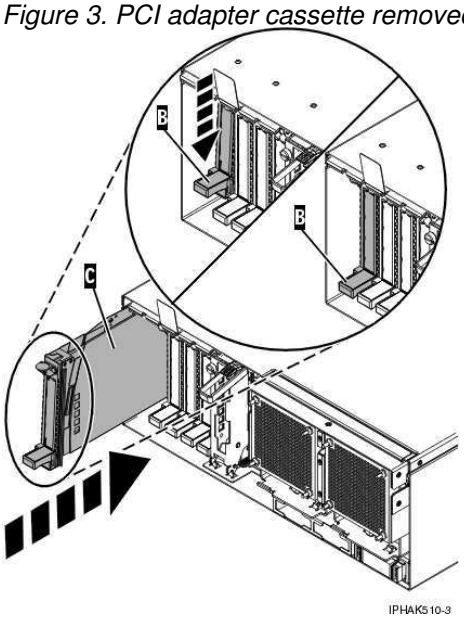
13. Press Enter.

    The following displays:

    ```
    The visual indicator for the specified PCI slot has been set to the
    action state. Insert the PCI card into the identified slot, connect any
    devices to be configured and press Enter to continue. Enter x to exit.
    ```

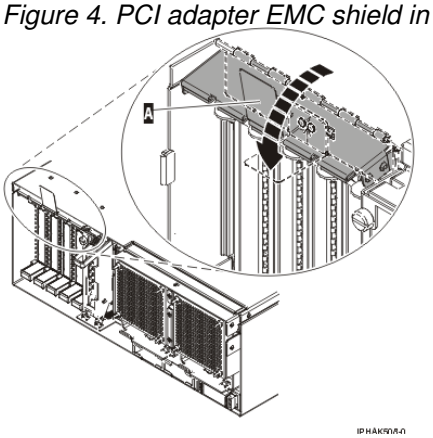
14. When you are instructed to install the adapter in the adapter slot, lift and hold the PCI adapter EMC shield A in the open position. See Figure 1.
15. Slide the cassette C into the cassette slot as shown in the following figure.
16. When the cassette is fully inserted into the system, firmly press downward on the lower cassette handle B to lock the adapter in its connector.

Figure 3. PCI adapter cassette removed from the system unit



17. Lower the PCI adapter EMC shield A into the closed position, close the shield latch, then close the rear rack door.

Figure 4. PCI adapter EMC shield in the closed position



18. Use the lsslot command to verify that U7879.001.DQD014E-P1-C3 is occupied.

    Enter lsslot -c pci -s U7879.001.DQD014E-P1-C3

The following is an example of the information displayed by this command:

```
# Slot          Description             Device(s)
U7879.001.DQD014E-P1-C3 PCI-X capable, 64 bit, 133MHz slot 0001:40:01.0
```

Parent topic: Install a PCI adapter contained in a cassette

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Install a PCI adapter contained in a cassette with the power off

The following procedure describes the installation of a PCI adapter in a cassette with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for installing a PCI adapter. For instructions, see Install a feature using the Hardware Management Console.

Note: If the system is partitioned, select the appropriate information from the following list to learn more about working in a partitioned environment, then return here:

- Partitioning for AIX
- Partitioning for Linux

To install an adapter with the system power off, do the following:

1. Perform prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. To determine in which slot to place the PCI adapter, refer to PCI adapter placement in the system unit or expansion unit for information regarding slot restrictions for the adapters that can be used in this system.
4. Stop the system or logical partition.
5. Disconnect the power source from the system by unplugging the system.

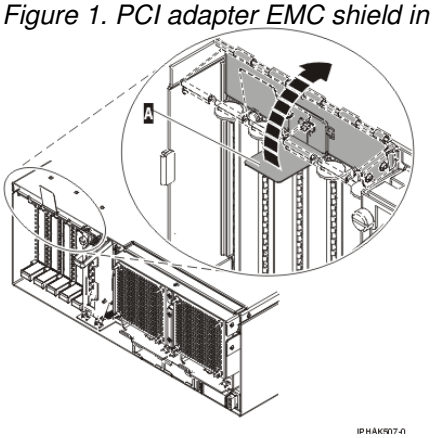
   Note: This system might be equipped with a second power supply. Before continuing with this procedure, ensure that the power source to the system has been completely disconnected.

6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:

a. Open the rear rack door.
b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.

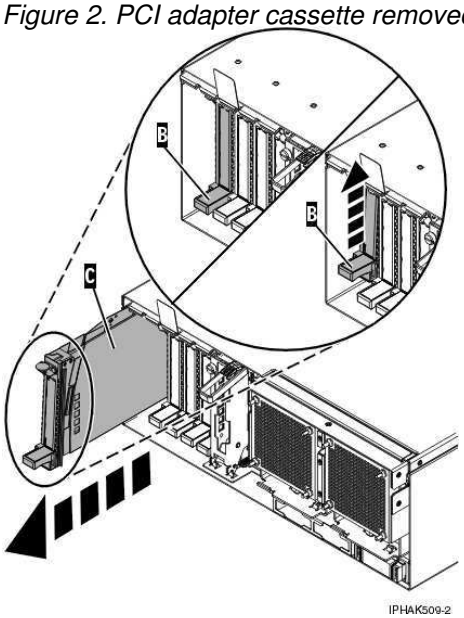
7. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
8. Determine the location of PCI adapter in the system.
9. Lift and hold the PCI adapter EMC shield A in the open position.

Figure 1. PCI adapter EMC shield in the open position



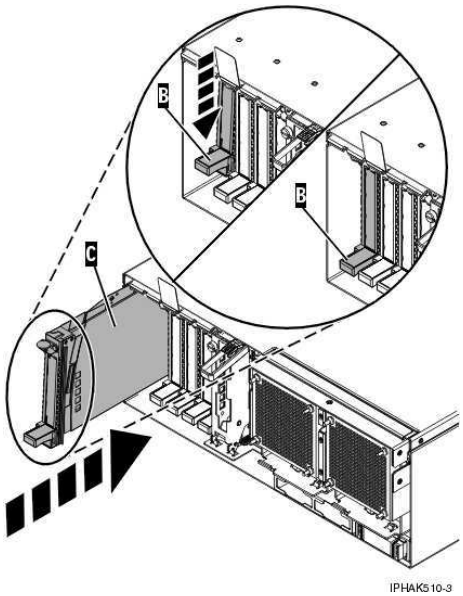
10. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

Figure 2. PCI adapter cassette removed from the system unit



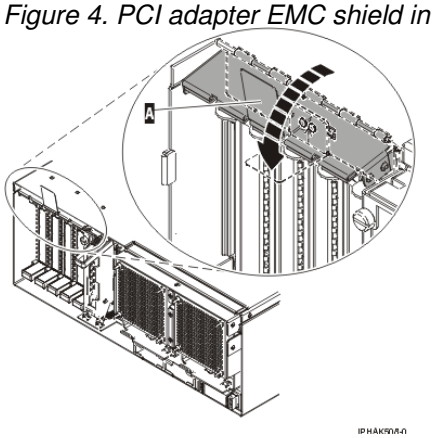
11. Install the adapter into the PCI adapter cassette using the following instructions:
    - Place an adapter in the PCI adapter single-width cassette
    - Remove an adapter from the PCI adapter single-width cassette
12. Ensure the lower cassette handle is pressed up toward the retainer clip. This places the adapter in the correct position to be docked in the system.
13. Lift and hold the PCI adapter EMC shield A in the open position. See Figure 1.
14. Slide the cassette C into the cassette slot as shown in the following figure.
15. When the cassette is fully inserted into the system, firmly press downward on the lower cassette handle B to lock the adapter in its connector.

Figure 3. PCI adapter cassette removed from the system unit



16. Lower the PCI adapter EMC shield A into the closed position, close the shield latch, then close the rear rack door.

Figure 4. PCI adapter EMC shield in the closed position



17. Start the system or logical partition.
18. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Install a PCI adapter contained in a cassette

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove a PCI adapter contained in a cassette from the system

Use the following procedures to remove a PCI adapter contained in a cassette, in a model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or attached expansion-units.

- **Remove a PCI adapter contained in a cassette from the system with the power on in AIX**
- **Remove a PCI adapter contained in a cassette from the system with the power on in Linux**
- **Remove a PCI adapter contained in a cassette from the system with the system power off**

Parent topic: Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

Remove a PCI adapter contained in a cassette from the system with the power on in AIX

The following procedure describes the removal of a PCI adapter in a cassette from the system with the system power on in AIX. Read the following notes to determine if this is the correct procedure for the task to be performed.

Note:

1. Use this procedure to remove a PCI adapter and leave the slot in the system unit empty. To remove a failing adapter and replace it with the same adapter, see Remove and replace a PCI adapter contained in a cassette in the system with the power on in AIX.
2. If the adapter that is removed will be placed into a different slot or system, complete this removal procedure, then install the adapter as described in Install a PCI adapter contained in a cassette with the power on in AIX.
3. Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To remove an adapter, do the following:

1. Perform the prerequisite tasks as described in Before you begin.
2. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:
    a. Open the rear rack door.
    b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.
3. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
4. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
5. Determine the location of PCI adapter in the system.
6. Record the slot number and location of each adapter being removed.

    Note: Adapter slots are numbered on the rear of the system unit.

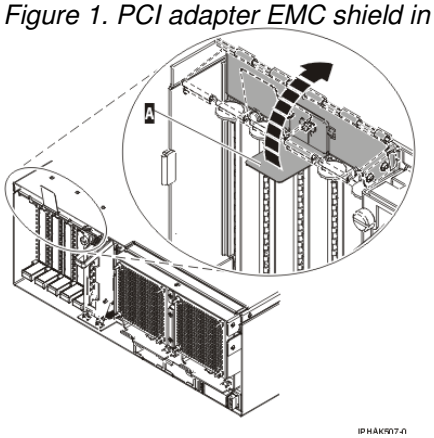
7. Ensure that any processes or applications that might use the adapter are stopped.
8. Enter the system diagnostics by logging in as root user or as the celogin user, type diag at AIX command line.

9. When the DIAGNOSTIC OPERATING INSTRUCTIONS menu displays, press Enter.
10. At the FUNCTION SELECTION menu, select Task Selection, then press enter.
11. At the Task Selection list, select PCI Hot Plug Manager.
12. Select Unconfigure a Device, then press Enter.
13. Press F4 (or Esc +4) to display the Device Names menu.
14. Select the adapter you are removing in the Device Names menu.
15. Use the Tab key to answer `NO` to Keep Definition. Use the Tab key again to answer `YES` to Unconfigure Child Devices, then press Enter.
16. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the Command field at the top of the screen.
17. Press F4 (or Esc +4) twice to return to the Hot Plug Manager menu.
18. Select replace/remove PCI Hot Plug adapter.
19. Select the slot that has the device to be removed from the system.
20. Select remove.

Note: A fast-blinking amber LED located at the back of the machine near the adapter indicates that the slot has been identified.

21. Press Enter. This places the adapter in the action state, meaning it is ready to be removed from the system.
22. Label, and then disconnect all cables attached to the adapter you plan to remove.
23. Before handling any PCI adapter, see Handling static-sensitive devices.
24. Lift and hold the PCI adapter EMC shield A in the open position.

Figure 1. PCI adapter EMC shield in the open position

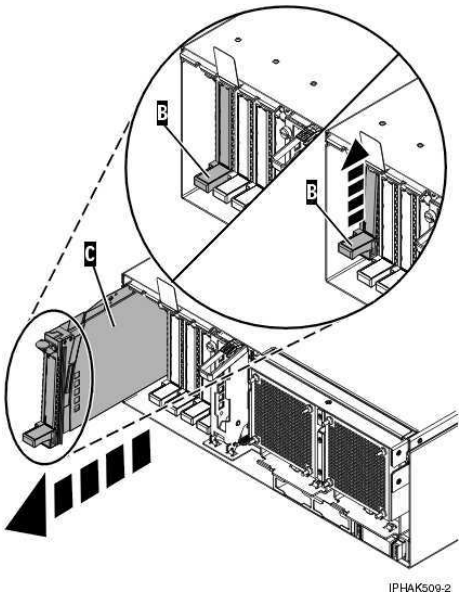


25. Remove the cassette. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

Figure 2. PCI adapter cassette removed from the system unit

PCI adapter



26. Place the cassette with the cover facing up on an approved ESD surface.

    Note: The cover will have a label on it.

27. Continue to follow the screen instructions until you receive a message that the adapter removal is successful. Successful removal is indicated by the `OK` message displayed next to the Command field at the top of the screen.
28. If you have other adapters to remove, press the F3 key to return to the PCI Hot-Plug Manager menu and then return to step 22.

    OR

    If you do not have other adapters to remove, continue with the next step.
29. Press F10 to exit the Hot-Plug Manager.
30. Run the diag -a command. If the system responds with a menu or prompt, follow the instructions to complete the device configuration.
31. Place an empty cassette into the unused PCI slot for proper air flow.
32. The procedure is complete.
    - To remove the adapter from the PCI adapter cassette, see Remove an adapter from the PCI adapter single-width cassette.
    - To install an adapter in the system, see Install a PCI adapter contained in a cassette with the power on in AIX.

Parent topic: Remove a PCI adapter contained in a cassette from the system

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove a PCI adapter contained in a cassette from the system with the power on in Linux

The following procedure describes the removal of a PCI adapter in a cassette from the system with the system power on in a server or partition that is running Linux.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management Console.

To remove an adapter do the following:

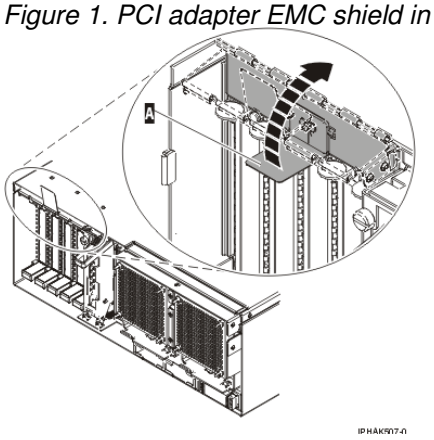
1. Ensure that the system meets the Prerequisites for hot-plugging PCI adapters in Linux.
2. Verify that the Linux, hot-plug PCI tools are installed.
3. Perform the prerequisite tasks as described in Before you begin.
4. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
5. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:
    a. Open the rear rack door.
    b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.
6. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
7. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
8. Determine the location of PCI adapter in the system.
9. Label, and then disconnect all cables attached to the adapter you plan to remove.
10. Run the drslot_chrp_pci command to enable an adapter to be removed:

    For example, to remove the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

    ```
    drslot_chrp_pci -r -s U7879.001.DQD014E-P1-C3
    ```

    Follow the instructions on the display to complete the task.
11. Lift and hold the PCI adapter EMC shield A in the open position.

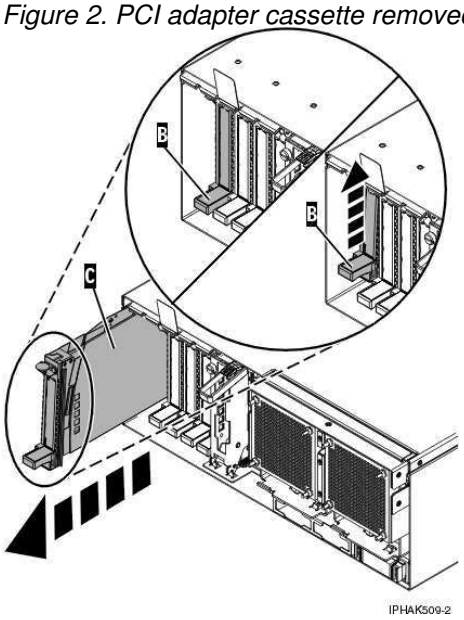
    Figure 1. PCI adapter EMC shield in the open position

12. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

    Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

Figure 2. PCI adapter cassette removed from the system unit



13. Place the cassette with the cover facing up on an approved ESD surface.

    Note: The cover will have a label on it.

14. Remove an adapter from the PCI adapter single-width cassette.

To replace the adapter in the system, see Replace a PCI adapter contained in a cassette in the system with the power on in Linux.

Parent topic: Remove a PCI adapter contained in a cassette from the system

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Remove a PCI adapter contained in a cassette from the system with the system power off

The following procedure describes the removal of a PCI adapter in a cassette from the system with the system power off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing a PCI adapter. For instructions, see Remove a part using the Hardware Management

Console.

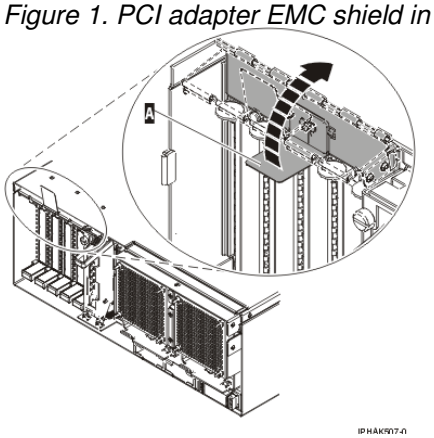
To remove an adapter, do the following:

1. Perform the prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are removing a failing PCI adapter, see Identify a failing part. If you are removing the PCI adapter for other reasons, continue to the next step.
4. Stop the system or logical partition.
5. Disconnect the power source from the system by unplugging the system.

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

6. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:
   a. Open the rear rack door.
   b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.
7. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
8. Determine the location of PCI adapter in the system.
9. Lift and hold the PCI adapter EMC shield A in the open position.

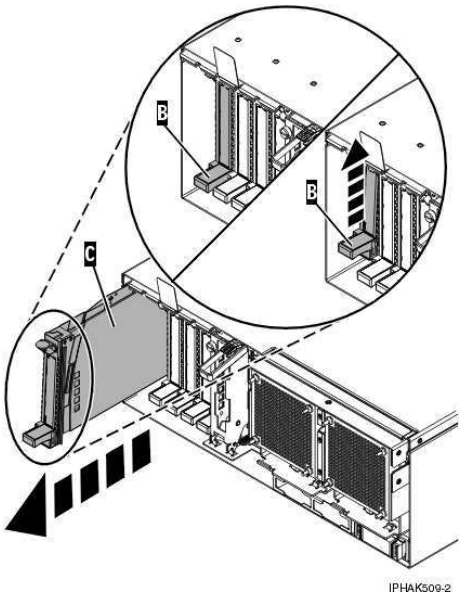
Figure 1. PCI adapter EMC shield in the open position



10. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

    Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

Figure 2. PCI adapter cassette removed from the system unit



11. Place the cassette with the cover facing up on an approved ESD surface.

    Note: The cover will have a label on it.

12. Remove an adapter from the PCI adapter single-width cassette.

To replace the adapter in the system, see Replace a PCI adapter contained in a cassette in the system.

Parent topic: Remove a PCI adapter contained in a cassette from the system

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Replace a PCI adapter contained in a cassette in the system

To replace a PCI adapter contained in a cassette, use the following procedures.

Use the following procedures to replace a PCI adapter contained in a cassette, in a model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or attached expansion-units.

- **Remove and replace a PCI adapter contained in a cassette in the system with the power on in AIX**
- **Replace a PCI adapter contained in a cassette in the system with the power on in Linux**
- **Replace a PCI adapter contained in a cassette in the system with the system power off**

Parent topic: Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

Remove and replace a PCI adapter contained in a cassette in the system with the power on in AIX

The following procedure describes the replacement of a PCI adapter in a cassette in the system with the power on in AIX. Read the following notes to determine if this is the correct procedure for the task to be performed.

Note:

1. Use this procedure if you intend to remove a failing PCI adapter and replace it with the same type of adapter.
2. If you plan to remove a failing adapter and leave the slot empty, see Remove a PCI adapter contained in a cassette from the system with the power on in AIX.
3. This procedure should not be used to remove an existing adapter and install a different type of adapter. To install a different adapter, remove the existing adapter as described in Remove a PCI adapter contained in a cassette from the system with the power on in AIX, then install the new adapter as described in Install a PCI adapter contained in a cassette with the power on in AIX.
4. Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To replace an adapter, do the following:

1. Perform the prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If you are installing a PCI adapter in a rack-mounted system or expansion unit, follow these steps:
    a. Open the rear rack door.
    b. Remove the units cover or covers if applicable. For instructions see the *Related information* links at the end of the page.
4. If you are installing a PCI adapter in a stand-alone expansion unit, remove the units back cover, if applicable. For instructions see the *Related information* links at the end of the page.
5. Determine the location of the PCI adapter in the system.
6. Record the slot number and location of each adapter being removed.

    Note: Adapter slots are numbered on the rear of the system unit.

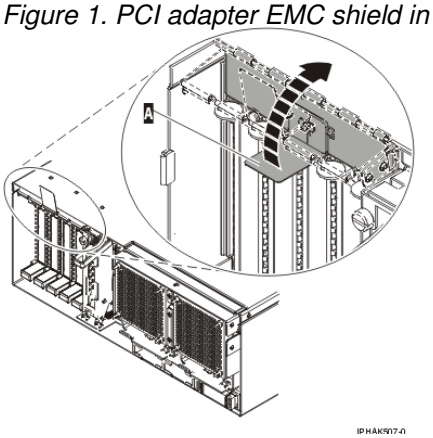
7. Ensure that any processes or applications that might use the adapter are stopped.
8. Enter the system diagnostics by logging in as root user or as the celogin user, type diag at AIX command line.
9. When the DIAGNOSTIC OPERATING INSTRUCTIONS menu displays, press Enter.
10. At the FUNCTION SELECTION menu, select Task Selection, then press enter.
11. At the Task Selection list, select PCI Hot Plug Manager.
12. Select Unconfigure a Device, then press Enter.
13. Press F4 (or Esc +4) to display the Device Names menu.
14. Select the adapter you are removing in the Device Names menu.
15. Use the Tab key to answer `NO` to Keep Definition. Use the Tab key again to answer `YES` to Unconfigure Child Devices, then press Enter.
16. The ARE YOU SURE screen displays. Press Enter to verify the information. Successful unconfiguration is indicated by the `OK` message displayed next to the Command field at the top of the

screen.
17. Press F4 (or Esc +4) twice to return to the Hot Plug Manager menu.
18. Select replace/remove PCI Hot Plug adapter.
19. Select the slot that has the device to be removed from the system.
20. Select remove.

Note: A fast-blinking amber LED located at the back of the machine near the adapter indicates that the slot has been identified.

21. Press Enter. This places the adapter in the action state, meaning it is ready to be removed from the system.
22. Label, and then disconnect all cables attached to the adapter you plan to remove.
23. Lift and hold the PCI adapter EMC shield A in the open position.

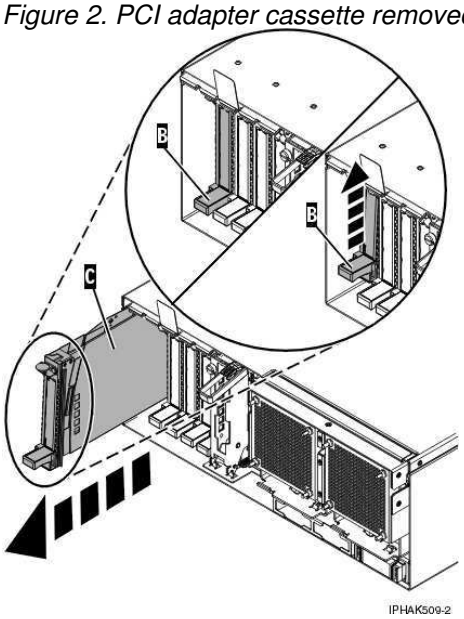
Figure 1. PCI adapter EMC shield in the open position



24. Remove the cassette. Lift up the lower cassette handle B as shown in the following figure. Pull the PCI cassette C out of the system.

Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

Figure 2. PCI adapter cassette removed from the system unit

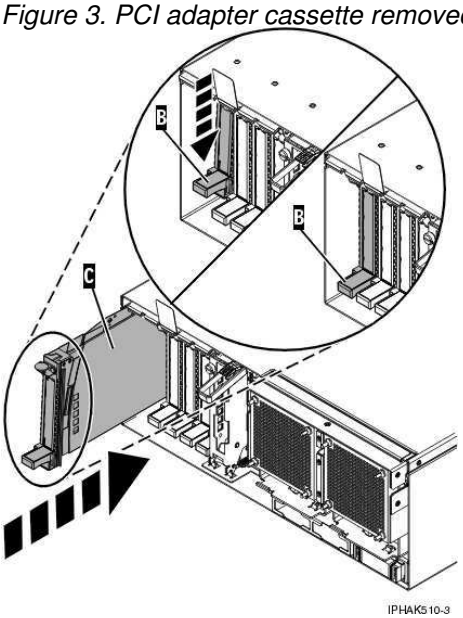


25. Place the cassette with the cover facing up on an approved ESD surface.

    Note: The cover will have a label on it.

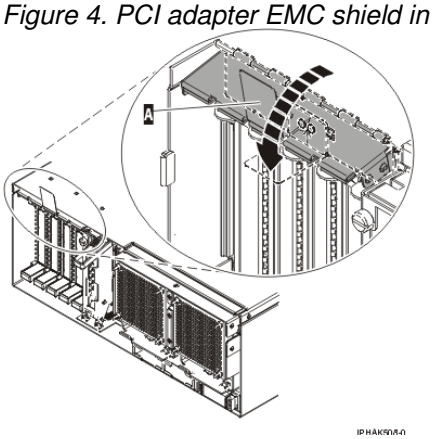
26. Install the replacement adapter into the PCI adapter cassette using the following instructions:
    - Place an adapter in the PCI adapter single-width cassette
    - Remove an adapter from the PCI adapter single-width cassette
27. At the back of the system, lift the cassette cover flap and identify the cassette slot you want to use.
28. Ensure the lower cassette handle is pressed up toward the retainer clip. This places the adapter in the correct position to be docked in the system.
29. Lift and hold the PCI adapter EMC shield A in the open position. See Figure 1.
30. Slide the cassette C into the cassette slot as shown in the following figure.
31. When the cassette is fully inserted into the system, firmly press downward on the lower cassette handle B to lock the adapter in its connector.

Figure 3. PCI adapter cassette removed from the system unit



32. Connect the adapter cables.
33. Lower the PCI adapter EMC shield A into the closed position, close the shield latch, then close the rear rack door.

Figure 4. PCI adapter EMC shield in the closed position



34. Press enter and continue to follow the screen instructions until you receive a message that the replacement is successful. Successful replacement is indicated by the OK message displayed next to the Command field at the top of the screen.
35. Press the F3 (or Esc+3) key to return to the PCI Hot-Plug Manager menu.
36. Press the F3 (or Esc+3) key to return to the TASK selection list.

37. Select Log Repair Action.
38. Select the resource just replaced, press Enter, press Commit (F7 or ESC 7), then press Enter.
39. Press F3 (or Esc+3) to return to TASK Selection List.
40. Select Hot Plug Task, press enter.
41. Select PCI Hot Plug Manager, then select Configure a defined device, then press Enter.
42. Select the device just replaced from the list, then press Enter. The device is now configured.
43. Press the F10 key to exit the diagnostic program.

    Note: If you are running the standalone diagnostics, do not exit the program completely.

44. Verify the PCI adapter by using the following instructions:
    a. Did you replace the adapter with the system power on?
        ◊ Yes - Go to the next step.
        ◊ No - Load the diagnostic program by doing the following:
            · If AIX is available, boot AIX, login as root or CELOGIN, then enter the diag command.
            · If AIX is not available, boot the standalone diagnostics
    b. Type the diag command if you are not already displaying the diagnostic menus
    c. Select Advance Diagnostic Routines, then select Problem Determination.
    d. Select the name of the resource just replaced from the menu. If the resource just replaced is not shown, choose the resource associated with it. Press Enter, then press Commit ((F7 or Esc+7)).
    e. Did the Problem Determination identify any problems?
        ◊ No: Continue to the next step.
        ◊ Yes: A problem is identified
            · If you are a customer, record the error information, then contact your service provider.
            · If you are an authorized service provider, return to map 210-5.
45. Press the F10 key to exit the diagnostic program.

Parent topic: Replace a PCI adapter contained in a cassette in the system

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

Replace a PCI adapter contained in a cassette in the system with the power on in Linux

The following procedure describes the replacement of a PCI adapter in a cassette in the system with the power on in Linux. You must have already completed the procedure Remove a PCI adapter contained in a cassette from the system with the power on in Linux in order to have the slot powered off.

Note: Use this procedure only when you are replacing an adapter with an identical adapter. If you are replacing an adapter with an adapter that is not identical to the adapter removed, go to Remove a PCI adapter contained in a cassette from the system with the power on in Linux and Install a PCI adapter contained in a cassette with the power on in Linux.

To replace an adapter with the power on in Linux, do the following:

1. Perform prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If the adapter needs to be placed in the PCI adapter cassette, see Place an adapter in the PCI adapter single-width cassette.
4. At the back of the system, lift the cassette cover flap and identify the cassette slot you want to use.
5. Ensure the lower cassette handle is pressed up toward the retainer clip. This places the adapter in the correct position to be docked in the system.
6. Run the drslot_chrp_pci command to enable an adapter to be replaced:

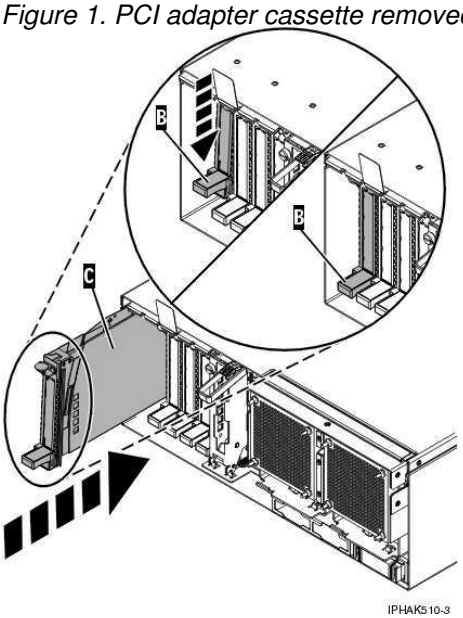
   For example, to replace the PCI adapter in slot U7879.001.DQD014E-P1-C3 run this command:

   ```
   drslot_chrp_pci -R -s U7879.001.DQD014E-P1-C3
   ```

   Follow the instructions on the display to complete the task.

   When you are instructed to insert the adapter in the adapter slot, lift and hold the PCI adapter EMC shield A in the open position. See Figure 1.
7. Slide the cassette C into the cassette slot as shown in the following figure.
8. When the cassette is fully inserted into the system, firmly press downward on the lower cassette handle B to lock the adapter in its connector.

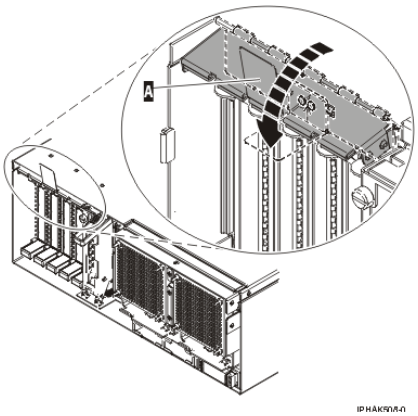
Figure 1. PCI adapter cassette removed from the system unit



9. Lower the PCI adapter EMC shield A into the closed position, close the shield latch, then close the rear rack door.

Figure 2. PCI adapter EMC shield in the closed position

PCI adapter



10. Run the lsslot command to verify that the slot is occupied.

    For example, Enter **`lsslot -c pci -s U7879.001.DQD014E-P1-C3`**

    The following is an example of the information displayed by this command:

```
# Slot          Description             Device(s)
U7879.001.DQD014E-P1-C3 PCI-X capable, 64 bit, 133MHz slot 0001:40:01.0
```

Parent topic: Replace a PCI adapter contained in a cassette in the system

Replace a PCI adapter contained in a cassette in the system with the system power off

The following procedure describes the replacement of a PCI adapter in a cassette in the system with the system power off.

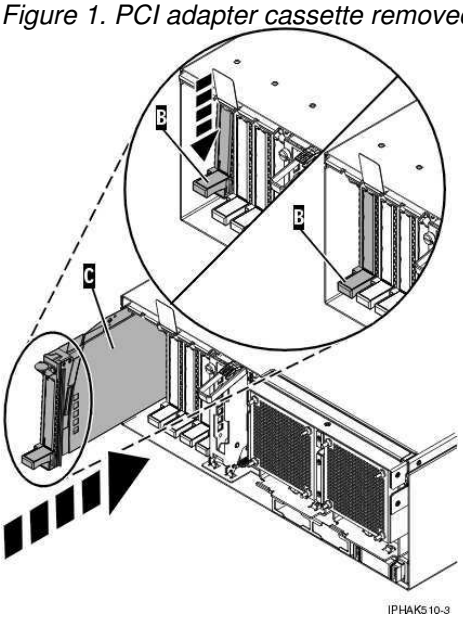
Attention: You must have already completed the procedure Remove a PCI adapter contained in a cassette from the system with the system power off in order to have the slot powered off.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing a PCI adapter. For instructions, see Replace a part using the Hardware Management Console.

To replace an adapter with the system power off, do the following:

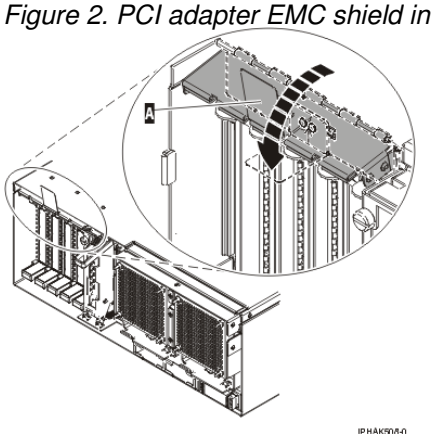
1. Perform prerequisite tasks as described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. If the adapter needs to be placed in the PCI adapter cassette, see Place an adapter in the PCI adapter single-width cassette.
4. At the back of the system, lift the cassette cover flap and identify the cassette slot you want to use.
5. Ensure the lower cassette handle is pressed up toward the retainer clip. This places the adapter in the correct position to be docked in the system.
6. Lift and hold the PCI adapter EMC shield A in the open position. See Figure 1.
7. Slide the cassette C into the cassette slot as shown in the following figure.
8. When the cassette is fully inserted into the system, firmly press downward on the lower cassette handle B to lock the adapter in its connector.

Figure 1. PCI adapter cassette removed from the system unit



9. Lower the PCI adapter EMC shield A into the closed position, close the shield latch, then close the rear rack door.

Figure 2. PCI adapter EMC shield in the closed position



10. Reconnect the system to the power source.
11. Start the system or logical partition.
12. Verify that the new resource is functional. Refer to Verify the installed part.

Parent topic: Replace a PCI adapter contained in a cassette in the system

PCI adapter single-width cassette

The following procedures describe the removal and placement of PCI or PCI-X adapters in PCI adapter single-width cassettes.

This procedure applies to models 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or attached expansion-units.

- **Remove an adapter from the PCI adapter single-width cassette**
- **Place an adapter in the PCI adapter single-width cassette**

Parent topic: Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

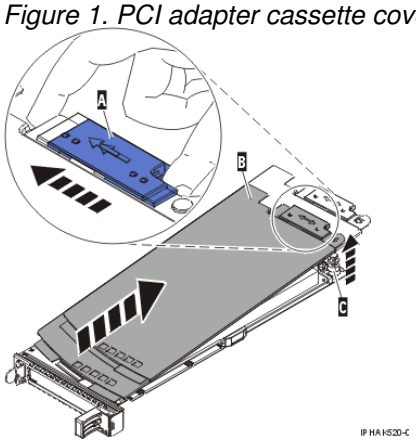
Remove an adapter from the PCI adapter single-width cassette

The following procedure describes the removal of adapters from PCI adapter single-width cassettes.

To remove an adapter from the single-width cassette, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. Remove a PCI adapter contained in a cassette from the system.
4. Remove the cassette cover by doing the following:
    a. Slide the cover latch A to disengage it from the pivot pin C as shown in the following figure.
    b. Lift the cover B off of the pivot pin.
    c. Slide the cover off of the cassette.

Figure 1. PCI adapter cassette cover removed



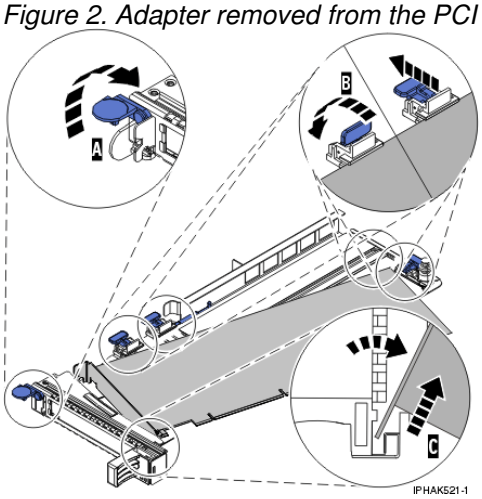
5. Remove the adapter from the cassette by doing the following:
    a. Unlock the adapter retainers by rotating the retainer clip A into the horizontal position. See Figure 2.

        Note:

        i. The edge of the adapter located at the end of the cassette that contains the cassette handles is called the adapter tailstock.
        ii. Two retainers are located at the top of the cassette, along the top edge of the adapter. Two more retainers are located at the edge of the cassette opposite of the adapter tailstock.
        iii. When the retainer clip is in the horizontal position, the adapter retainers are unlocked and can slide away from the card.
        iv. If the corner support retainer is used, unlock it, and then slide the corner support retainer away from the card.

    b. Push the adapter retainers B away from the adapter.
    c. Unlock the adapter tailstock clamp C.
    d. Rotate the adapter out of the cassette by grasping the edge of the adapter opposite the tailstock, and then firmly rotate the adapter toward the bottom of the cassette.
    e. Lift the adapter out of the tailstock retaining channel.

Figure 2. Adapter removed from the PCI adapter cassette



f. Put the adapter in a safe place.

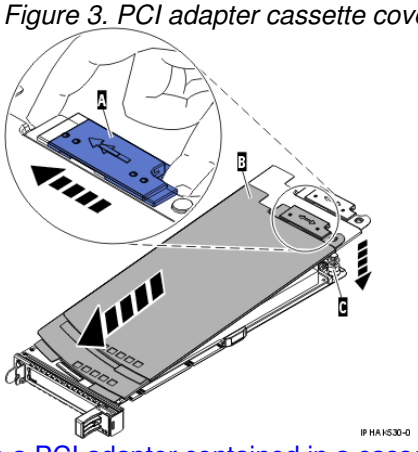
Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

g. Place an adapter in the PCI adapter single-width cassette.

Note: If the cassette is not going to contain a PCI adapter, use this same procedure to place an adapter filler panel in the cassette.

h. Replace the cassette cover by doing the following:
   i. Slide the cover B into position on the cassette.
   ii. While holding the cover latch A in the open position, place the cover over the pivot pin C.
   iii. Release the cover latch to lock the cover into place.

Figure 3. PCI adapter cassette cover replaced



i. Replace a PCI adapter contained in a cassette in the system.

Parent topic: PCI adapter single-width cassette

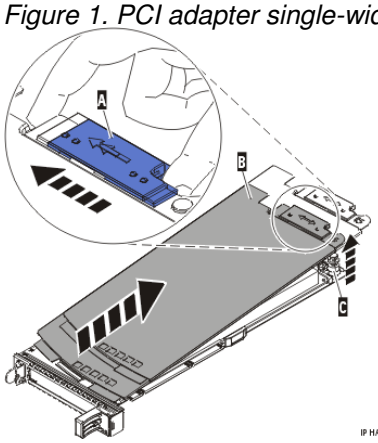
Place an adapter in the PCI adapter single-width cassette

The following procedure describes placing adapters in PCI adapter single-width cassettes.

To place an adapter in a cassette, do the following:

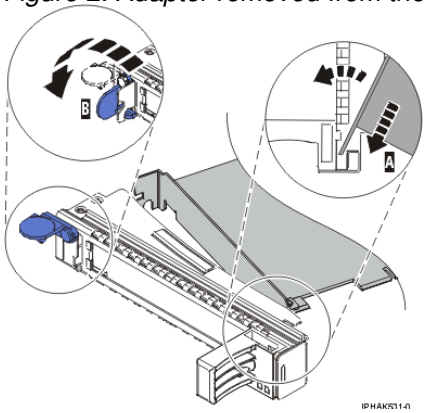
1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. Remove a PCI adapter contained in a cassette from the system.
4. Remove any shipping handles or brackets attached to the adapter.
5. Remove the cassette cover by doing the following:
    a. Slide the cover latch A to disengage it from the pivot pin C as shown in the following figure.
    b. Lift the cover B off of the pivot pin.
    c. Slide the cover off of the cassette.

Figure 1. PCI adapter single-width cassette cover removed



6. Ensure the cassette is prepared to receive an adapter by doing the following:
    a. Ensure the cassette is empty by doing one of the following:
        ◊ Remove an adapter from the PCI adapter single-width cassette.
        ◊ Remove the adapter filler panel from the cassette.
    b. Ensure that all of the adapter retainers have been pushed out to the edges of the cassette to allow the placement of the adapter.
    c. Place the tailstock clamp in the open position by pressing the cassette handle towards the retainer clip.
7. Place the adapter in the cassette by doing the following:
    a. With the tailstock clamp in the open position, insert the adapter firmly into the tailstock retaining channel A. See Figure 2.
    b. Rotate the adapter toward the top of the cassette and into place.
    c. Close the tailstock clamp.

Figure 2. Adapter removed from the PCI adapter single-width cassette



    d. Position the adapter retainers to support the adapter, and then rotate the retainer clip B into the closed position. See Figure 2.

Note:

i. Two retainers are located at the top of the cassette, along the top edge of the adapter. Two more retainers are located at the edge of the cassette opposite of the adapter tailstock.
ii. When the adapter retainer clip is in the horizontal position, the adapter retainers are unlocked and can slide toward the adapter.
iii. Place the retainers on the adapter according to the length of the adapter being used. Select the appropriate instructions:

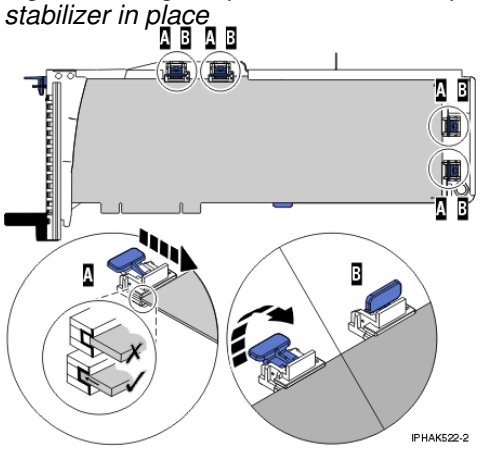
Adapter-cassette retainer placement for large adapters

1. Place and lock the retainers B. See Figure 3.

Attention: Use of the lower corner support retainer might interfere with the docking of the PCI card when positioned within the system. Ensure the retainer does not interfere with the adapter connectors on the system backplane.

2. Ensure the adapter edge is seated in each retainer groove A. If the shape of the adapter or the presence of a connector will not allow the adapter edge to be seated into the retainer groove, ensure the retainer is still locked firmly against that edge or connector.

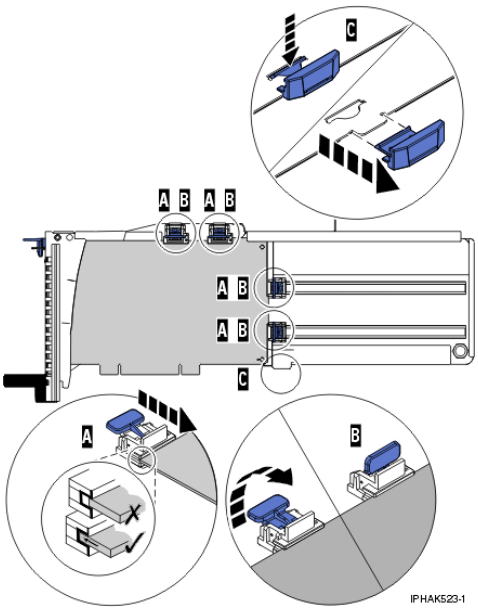
Figure 3. Long adapter in the PCI adapter cassette with the supports and stabilizer in place



Adapter-cassette retainer placement for mid-sized adapters

1. Remove the adapter stabilizer C. See Figure 4.
2. Place and lock the retainers B.
3. Ensure the adapter edge is seated in each retainer groove A. If the shape of the adapter or the presence of a connector will not allow the adapter edge to be seated into the retainer groove, ensure the retainer is still locked firmly against that edge or connector.

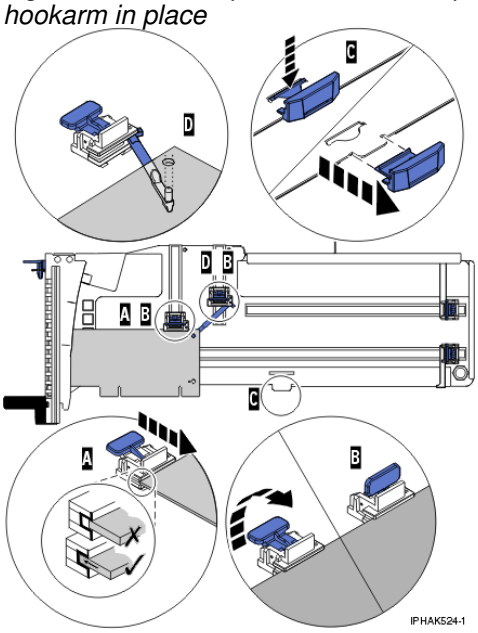
Figure 4. Medium-length adapter in the PCI adapter cassette with the supports in place



Adapter-cassette retainer placement for small adapters

1. Remove the adapter stabilizer C. See Figure 5.
2. Place the hookarm D into the hole in the corner of the adapter. This supports the card when it is undocked from the connector on the system backplane.
3. Place and lock the retainers B.
4. Ensure the adapter edge is seated in each retainer groove A. If the shape of the adapter or the presence of a connector will not allow the adapter edge to be seated into the retainer groove, ensure the retainer is still locked firmly against that edge or connector.

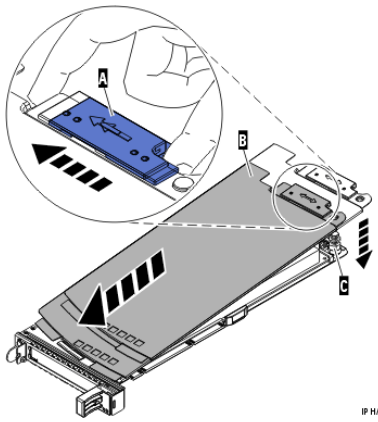
Figure 5. Short adapter in the PCI adapter cassette with the supports and the hookarm in place



8. After the retainers are placed, replace the cassette cover by doing the following:
   a. Slide the cover B into position on the cassette as shown in the following figure.
   b. While holding the cover latch A in the open position, place the cover over the pivot pin C.
   c. Release the cover latch to lock the cover into place.

Figure 6. PCI adapter cassette cover replaced

PCI adapter



9. Replace a PCI adapter contained in a cassette in the system.

Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

Parent topic: PCI adapter single-width cassette

Related information

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

Remove the back cover from the 05/88 expansion unit Remove the back door and cover from the 50/95 expansion unit PCI adapter placement in the system unit or expansion unit Updating the world-wide port name for a new 2766, 2787, or 280E IOA

PCI adapter double-wide cassette

The following procedures describe the removal and placement of PCI or PCI-X adapters in PCI adapter double-wide cassettes.

These procedures apply to models 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, or attached expansion-units.

- **Remove an adapter from the PCI adapter double-wide cassette**
- **Place an adapter in the PCI adapter double-wide cassette**

Parent topic: Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

PCI-X double-wide, quad channel Ultra320 SCSI RAID controller (FC 5739, 5778)(CCIN 571F)

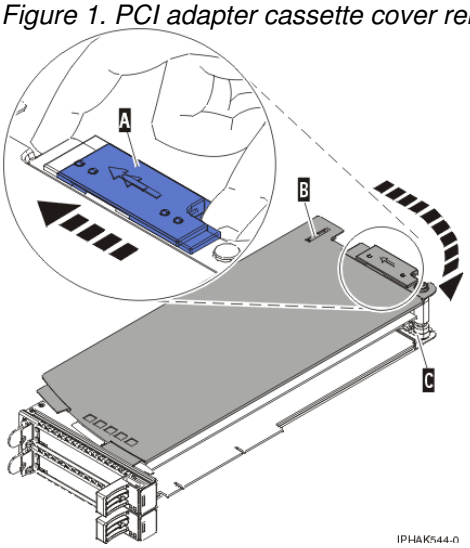
Remove an adapter from the PCI adapter double-wide cassette

The following procedure describes the removal of adapters from PCI adapter double-wide cassettes.

To remove an adapter from the cassette, do the following:

1. Perform the prerequisite tasks described in Before you begin.
2. Take appropriate precautions for avoiding electric shock and handling static-sensitive devices. For information, see Avoiding electric shock and Handling static-sensitive devices.
3. Remove a PCI adapter contained in a cassette from the system.
4. Remove any shipping handles or brackets attached to the adapter.
5. Remove the cassette cover by doing the following:
    a. Slide the cover latch A to disengage it from the pivot pin C as shown in the following figure.
    b. Lift the cover B off of the pivot pin.
    c. Slide the cover off of the cassette.

Figure 1. PCI adapter cassette cover removed



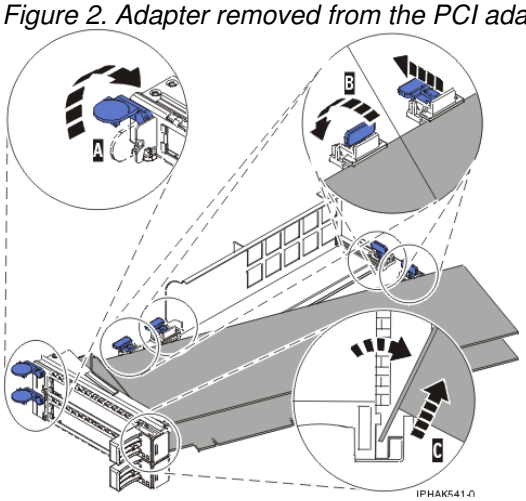
    d. Unscrew pivot pin C and put it in a safe place
6. Remove the adapter from the cassette by doing the following:
    a. Unlock the adapter retainers by rotating the retainer clip A into the horizontal position. See Figure 2.

    Note:

        i. The edge of the adapter located at the end of the cassette that contains the cassette handles is called the adapter tailstock.
        ii. Two retainers are located at the top of the cassette, along the top edge of the adapter. Two more retainers are located at the edge of the cassette opposite of the adapter tailstock.
        iii. When the retainer clip is in the horizontal position, the adapter retainers are unlocked and can slide away from the card.
        iv. If the corner support retainer is used, unlock it, and then slide the corner support retainer away from the card.

    b. Push the adapter retainers B away from the adapter.
    c. Unlock the adapter tailstock clamp C.
    d. Rotate the adapter out of the cassette by grasping the edge of the adapter opposite the tailstock, and then firmly rotate the adapter toward the bottom of the cassette.
    e. Lift the adapter out of the tailstock retaining channel.

Figure 2. Adapter removed from the PCI adapter cassette



f. Put the adapter in a safe place.

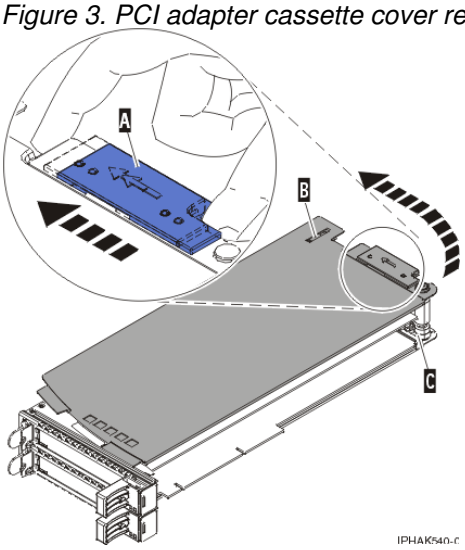
Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

g. Place an adapter in the PCI adapter double-wide cassette.

Note: If the cassette is not going to contain a PCI adapter, use this same procedure to place an adapter filler panel in the cassette.

h. Replace the cassette cover by doing the following:
   i. Screw pivot pin C into place.
   ii. Slide the cover B into position on the cassette.
   iii. While holding the cover latch A in the open position, place the cover over the pivot pin C.
   iv. Release the cover latch to lock the cover into place.

Figure 3. PCI adapter cassette cover replaced



i. Replace a PCI adapter contained in a cassette in the system.

Parent topic: PCI adapter double-wide cassette

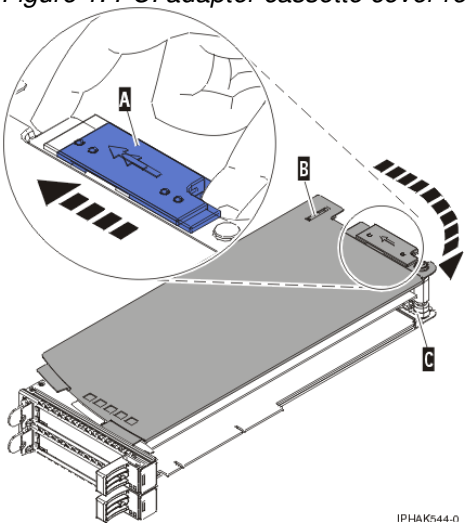
Place an adapter in the PCI adapter double-wide cassette

The following procedure describes placing adapters in PCI adapter double-wide cassettes.

To place an adapter in a cassette, do the following:

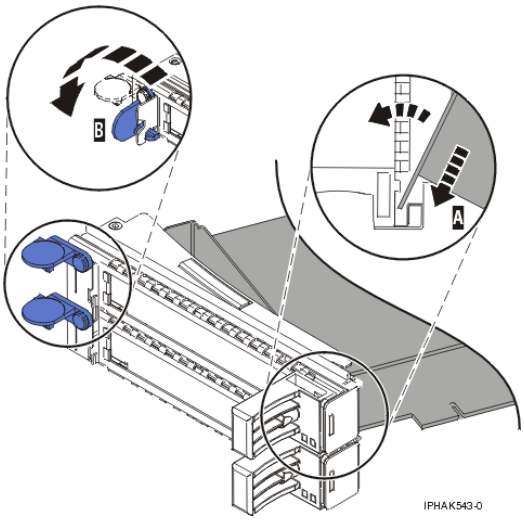
1. Perform the prerequisite tasks described in Before you begin.
2. Remove a PCI adapter contained in a cassette from the system.
3. Remove the cassette cover by doing the following:
    a. Slide the cover latch A to disengage it from the pivot pin C as shown in the following figure.
    b. Lift the cover B off of the pivot pin.
    c. Slide the cover off of the cassette.

Figure 1. PCI adapter cassette cover removed



    d. Unscrew pivot pin C and put it in a safe place
4. Ensure the cassette is prepared to receive an adapter by doing the following:
    a. Ensure the cassette is empty by doing one of the following:
        ◊ Remove an adapter from the PCI adapter double-wide cassette.
        ◊ Remove the adapter filler panel from the cassette.
    b. Ensure that all of the adapter retainers have been pushed out to the edges of the cassette to allow the placement of the adapter.
    c. Place the tailstock clamp in the open position by pressing the cassette handle towards the retainer clip.
5. Place the adapter in the cassette by doing the following:
    a. With the tailstock clamp in the open position, insert the adapter firmly into the tailstock retaining channel A. See Figure 2.
    b. Rotate the adapter toward the top of the cassette and into place.
    c. Close the tailstock clamp.

Figure 2. Adapter replaced in the PCI adapter cassette



d. Position the adapter retainers to support the adapter, and then rotate the retainer clip B into the closed position. See Figure 2.

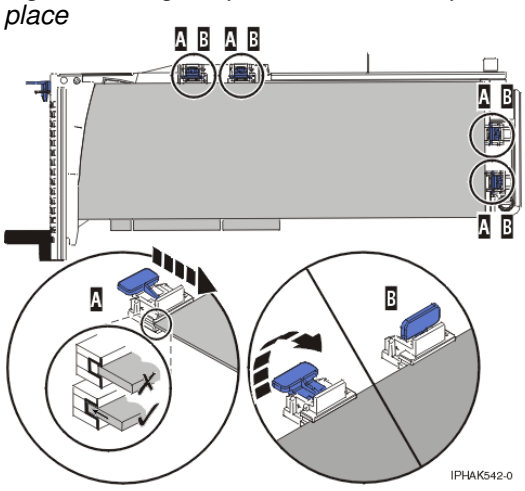
Note:

i. Two retainers are located at the top of the cassette, along the top edge of the adapter. Two more retainers are located at the edge of the cassette opposite of the adapter tailstock.
ii. When the adapter retainer clip is in the horizontal position, the adapter retainers are unlocked and can slide toward the adapter.
iii. Place and lock the retainers B. See Figure 3.

Attention: Use of the lower corner support retainer might interfere with the docking of the PCI card when positioned within the system. Ensure the retainer does not interfere with the adapter connectors on the system backplane.

iv. Ensure the adapter edge is seated in each retainer groove A. If the shape of the adapter or the presence of a connector will not allow the adapter edge to be seated into the retainer groove, ensure the retainer is still locked firmly against that edge or connector.

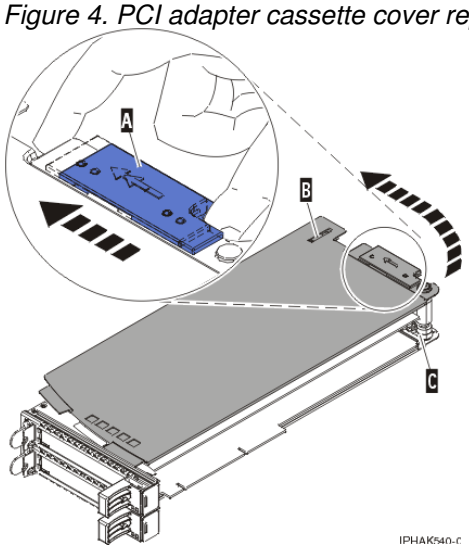
Figure 3. Long adapter in the PCI adapter cassette with the supports and stabilizer in place



6. After the retainers are placed, replace the cassette cover by doing the following:
   a. Screw pivot pin C into place.
   b. Slide the cover B into position on the cassette as shown in the following figure.

c. While holding the cover latch A in the open position, place the cover over the pivot pin C.
d. Release the cover latch to lock the cover into place.

Figure 4. PCI adapter cassette cover replaced



7. Replace a PCI adapter contained in a cassette in the system.

Attention: A cassette containing either a PCI adapter or filler panel must be placed in the PCI adapter slot of the system unit for proper air flow and cooling.

Parent topic: PCI adapter double-wide cassette

Other PCI adapter cassettes

This section contains procedures for the model ESCALA PL 6450R.

For information about removing, replacing, and installing adapters and adapter cassettes in the model ESCALA PL 6450R system unit, see the Installation Guide, SA38-0587. See the section called Installing Options.

Parent topic: Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

PCI adapter placement in the system unit or expansion unit

Identify where PCI adapters should be placed in specified system and expansion units.

Some adapters must be placed in specific PCI slots to function correctly at optimum performance. Use the following information to determine where to install PCI adapters in your server:

- **PCI adapter placement for servers system units and expansion units**
- **PCI adapter placement for models system units and expansion units**
- **PCI adapter placement for o/p system units and expansion units**

Parent topic: PCI adapter

PCI adapter placement for servers system units and expansion units

Use this information to determine if specific slot requirements exist for adapters you are installing.

Some adapters must be placed in specific PCI slots to function correctly at optimum performance. Use the following information to determine where to install adapters in your server.

- **servers PCI and PCI-X adapters**
- **Logical partition (LPAR) considerations**
- **Model ESCALA PL 245T/R adapter placement**
- **Model 112/85 adapter placement**
- **Model ESCALA PL 250R-VL or ESCALA PL 450R-XS adapter placement**
- **Model ESCALA PL 250R-L adapter placement**
- **Model ESCALA PL 250R-L+ or ESCALA PL 450R-VL+ adapter placement**
- **Model ESCALA PL 250T/R adapter placement**
- **Model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ adapter placement**
- **Model ESCALA PL 450T/R adapter placement**
- **Model ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+ adapter placement**
- **Model ESCALA PL 1650R-L+ adapter placement**
- **Model ESCALA PL 850R/PL 1650R/R+ adapter placement**
- **Model 185/75 adapter placement**
- **Model ESCALA PL 3250R or ESCALA PL 6450R adapter placement**
- **Expansion unit AIX adapter placement**
  For expansion units 5791, 5794, 7040-61D, D11, and D20 on servers

Parent topic: PCI adapter placement in the system unit or expansion unit

servers PCI and PCI-X adapters

The following table shows the servers PCI and PCI-X adapters that are supported by the AIX operating system.

Note:

1. Adapters supported in Linux have a Y in the Linux Support column.
2. All adapters support Extended Error Handling (EEH).

Feature/ CCIN	Description	Adapter characteristics	Linux support	Other information
1905/1905	4 Gb Single-Port Fibre Channel PCI-X 2.0 DDR Adapter	Short, 32 or 64-bit, 3.3V	Y	• High bandwidth
1910/1910	4 Gb Dual-Port Fibre Channel PCI-X 2.0 DDR Adapter	Short, 64-bit, 3.3V	Y	• Extra-high bandwidth
1912/1912	PCI-X DDR Dual Channel Ultra320 LVD SCSI Adapter	Short, 64-bit, 3.3V	Y	• High bandwidth
1913/1913	PCI-X DDR Dual Channel Ultra320 LVD SCSI RAID Adapter	Long, 64-bit 3.3V	Y	• High bandwidth
1954/1954	4-Port 10/100/1000 Base-TX PCI-X Adapter	Short, 64-bit, 3.3V	Y	• High bandwidth
1957/1957	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth

1958/1958	Gigabit Ethernet-SX Low Profile PCI-X Adapter (Fibre)	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1959/1959	10/100/1000 Base-TX Ethernet Low Profile PCI-X Adapter (Copper)	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1974/1974	PCI-X Dual Channel Ultra 320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	Y	• High bandwidth
1975/1975	PCI-X Dual Channel Ultra 320 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3V	Y	• High bandwidth
1977/197E	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1978/1978	Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1979/1979	10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32-bit, 3.3 or 5V	Y	• High bandwidth
1980/1980	GXT135P Graphics Accelerator with Digital Support	Short, 32-bit, 3.3 or 5V	Y	
1981/1981	10 Gigabit Ethernet -SR PCI-X Adapter	Short, 64-bit, 3.3V	Y	• Extra-high bandwidth
1982/1982	10 Gigabit Ethernet-LR PCI-X Adapter	Short, 64-bit, 3.3V	Y	• Extra-high bandwidth
1983/1983	2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1984/1984	2-Port Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1985/1985	10/100 Mbps Ethernet PCI Adapter II	Short, 32-bit, 3.3 or 5V	Y	
1986/573B	1 Gigabit-TX iSCSI TOE PCI-X Adapter	Short, 32 or 64 bit, 3.3 or 5V	Y	• High bandwidth
1987/573C	1 Gigabit-SX iSCSI TOE PCI-X Adapter	Short, 32 or 64 bit, 3.3 or 5V	Y	• High bandwidth
1990/1990	Low Profile Dual Port Gigabit ENET (UTP)	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
1999/1999	Low Profile Dual Port Gigabit ENET (Fiber)	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
2498/4-X	PCI 4-Channel Ultra3 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3 or 5V	N	
2737/N-D	Keyboard/Mouse Attachment Adapter	Short, 32-bit, 3.3 or 5V	Y	
2738/2738	2 Port USB PCI Adapter	Short, 32-bit, 3.3 or 5V	Y	
2842/2842	POWER GXT4500P Graphics Accelerator	Long, 32 or 64-bit, 3.3 or 5V	Y	
2843/2843	POWER GXT6500P Graphics Accelerator	Long, 64-bit, 3.3 or 5V	Y	
2848/I-X	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32-bit, 3.3 or 5V	Y	• Not hot-pluggable
2849/2849	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32 or 64-bit, 3.3V	Y	• Not hot-pluggable
2943/3-B	8-Port Asynchronous Adapter EIA-232/RS-422, PCI bus	Short, 32-bit, 3.3 or 5V	N	
2944/3-C	128-Port Asynchronous Controller, PCI bus	Short, 32-bit, 3.3 or 5V	N	
2946/A-B	Turboways 622 Mbps PCI MMF ATM Adapter	Short, 64-bit, 3.3 or 5V	N	• High bandwidth
2947/9-R			N	

	ARTIC960Hx 4-Port Multiprotocol PCI Adapter	Long, 32-bit, 3.3 or 5V		
2962/9-L	2-Port Multiprotocol PCI Adapter	Short, 32-bit, 3.3 or 5V	N	
4764/4764	PCI-X Cryptographic Coprocessor	Short, 64-bit, 3.3V	Y	
4953/A-C	64bit/66MHz PCI ATM 155 UTP Adapter	Short, 32 or 64-bit, 3.3 or 5V	N	
4957/A-D	64bit/66MHz PCI ATM 155 MMF Adapter	Short, 32 or 64-bit, 3.3 or 5V	N	
4959/9-Y	Token-Ring PCI Adapter	Short, 32-bit, 3.3 or 5V	Y	
4960/6-J	Cryptographic Accelerator	Short, 32-bit, 3.3 or 5V	N	
4961/A-E	Universal 4-Port 10/100 Ethernet Adapter	Long, 32 or 64-bit, 3.3 or 5V	Y	
4962/A-F	10/100 Mbps Ethernet PCI Adapter II	Short, 32-bit, 3.3 or 5V	Y	
4963/6-I	PCI Cryptographic Coprocessor (FIPS-4)	Short, 32-bit, 3.3 or 5V	N	
5700/5700	Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
5701/5701	10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
5703/5703	PCI-X Dual Channel Ultra320 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3V	Y	• High bandwidth
5706/5706	2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
5707/5707	2-Port Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
5710/5702	PCI-X Dual Channel Ultra320 SCSI Blind Swap Adapter	64-bit, 3.3 volt	Y	• High bandwidth
5711/5703	PCI-X Dual Channel Ultra320 SCSI RAID Blind Swap Adapter	Long, 32 or 64-bit, 3.3V	Y	• High bandwidth
5712/5712	PCI-X Dual Channel Ultra 320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	Y	• High bandwidth
5713/5713	1 Gigabit-TX iSCSI TOE PCI-X Adapter	Short, 32 or64-bit, 3.3 or 5V	Y	• High bandwidth
5714/5714	1 Gigabit-SX iSCSI TOE PCI-X Adapter	Short, 32 or64-bit, 3.3 or 5V	Y	• High bandwidth
5716/280B	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	Y	• High bandwidth
5718/5718	10 Gigabit-SR Ethernet PCI-X Adapter	Short, 64-bit, 3.3V	Y	• Extra-high bandwidth
5719/5719	10 Gigabit-LR Ethernet PCI-X Adapter	Short, 64-bit, 3.3V	Y	• Extra-high bandwidth
5721/573A	10 Gb-SR Ethernet PCI-X 2.0 DDR Adapter	Short, 64 bit, 3.3 V	Y	• Extra-high bandwidth
5722/576A	10 Gb-LR Ethernet PCI-X 2.0 DDR Adapter	Long, 64-bit, 3.3 V	Y	• Extra-high bandwidth
5723/5723	2-Port EIA-232 Asynch PCI Adapter	Short, 32 bit, 3.3V or 5V	Y	• High bandwidth
5732/5732	Low Profile Dual Port Gigabit Enet (Fiber)	Short, 32 to 64-bit, 3.3V or 5V	Y	• High bandwidth
5736/ 5736			Y	

	PCI-X DDR 2.0 Dual Channel Ultra320 SCSI Adapter	Short, 32 to 64-bit, 3.3V		• High bandwidth
5737/ 5737	PCI-X Dual Channel Ultra320 SCSI Raid- 2.0 DDR Adapter	Long, 64-bit, 3.3V	Y	• High bandwidth
5740/5740	4-Port 10/100/1000 Base-TX PCI-X Adapter	Short, 64-bit, 3.3V	Y	• High bandwidth
5758/5758	4 Gb Single-Port Fibre Channel PCI-X 2.0 DDR Adapter	Short, 32 or 64-bit, 3.3V	Y	• High bandwidth
5759/5759	4 Gb Dual-Port Fibre Channel PCI-X 2.0 DDR Adapter	Short, 64-bit, 3.3V	Y	• Extra-high bandwidth
6203/4-Y	PCI Dual Channel Ultra3 SCSI Adapter	Long, 32 to 64-bit, 3.3V or 5V	Y	
6204/4-U	PCI Universal Differential Ultra SCSI Adapter	Short, 32-bit, 3.3 or 5V	Y	
6228/4-W	2 Gigabit Fibre Channel Adapter for 64-bit PCI Bus	Short, 32 to 64-bit, 3.3V or 5V	Y	• High bandwidth
6230/4-P	Advanced Serial RAID Plus Adapter	Long, 32 to 64-bit, 3.3V or 5V	N	• High bandwidth
6239/5704	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 to 64-bit, 3.3V or 5V	Y	• High bandwidth
6310/6310	ARTIC960RxD Quad Digital Trunk PCI Adapter	Long, 32-bit, 3.3 or 5V	N	• Digital Trunk adapters have an internal cable and must be in contiguous slots.
6312/6312	Quad Digital Trunk Telephony PCI Adapter	Long, 32 or 64-bit, 3.3 or 5V	N	• Digital Trunk adapters have an internal cable and must be in contiguous slots.
8244/8244	Audio PCI Adapter for Workstations	Short, 32-bit, 3.3V	N	• Not hot-pluggable in model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+

Parent topic: PCI adapter placement for servers system units and expansion units

Logical partition (LPAR) considerations

Place redundant devices in separate I/O units for the best performance. Place nonredundant devices in the same I/O unit. If you place nonredundant devices in one unit, the system is less exposed to other-unit failures.

Some devices do not have enhanced error handling capabilities built in to their device drivers. If these devices fail, the PCI bridge set in which they are placed are affected. If the I/O subsystem encounters a severe error, all slots in the PCI bridge set are also affected. To clear this condition, you can reboot the system. In addition, it is also possible to remove the failed PCI slots on an affected PCI bridge set from the partition profile or profiles that include these PCI slots, and reboot the partition or partitions that terminated at the time of the error.

To avoid PCI bridge set errors related to non-enhanced error handling adapters, it is strongly recommended that if a non-enhanced error handling adapter is used, all slots on that PCI bridge set should be assigned to a single partion.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 245T/R adapter placement

The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

System unit back view

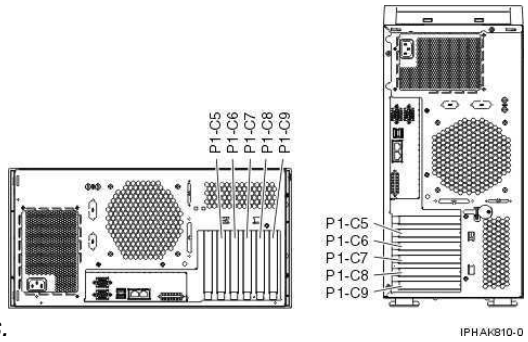


Figure 1. System unit back view with location codes for PCI slots.

PCI slot descriptions

The model ESCALA PL 245T/R has 4 PCI-X slots, and 1 PCI slot, and supports a total of 5 PCI/PCI-X adapters. The following table describes the PCI/PCI-X slots:

PHB0			PHB1	PHB2		PHB3	PHB4	
Slot 1 (P1-C5)	Integrated IDE	Integrated USB (2)	Slot 2 (P1-C6)	Integrated Dual 1 Gb Ethernet	Integrated SCSI U320	Slot 3 (P1-C7)	Slot 4 (P1-C8)	Slot 5 (P1-C9)
Short			Long			Long	Long	Long
32-bit 3.3V, 33 MHz			64-bit 3.3V, 133 MHz	100 MHz	100 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 100 MHz	64-bit 3.3V, 100 or 133* MHz

* Slot 5 is capable of 133 MHz only if slot 4 is empty. If slot 4 is occupied, slot 5 is capable of 100 MHz

PCI Host Bridge (PHB) descriptions

- PHB0: South bridge
- PHB1: Upper HyperTransport Tunnel bridge A
- PHB2: Upper HyperTransport Tunnel bridge B
- PHB3: Lower HyperTransport Tunnel bridge B
- PHB4: Lower HyperTransport Tunnel bridge A

Recommended system unit slot placement and maximum number of adapters

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Feature code	Base unit slot priority	Maximum number of adapters allowed	
		ESCALA PL 245T/R	471/85
2842 [1]	2, 3	NA	2
2843 [1]	2	NA	1
1954 *	2, 3	2	2
5740 *	2, 3	2	2
1984 *	2, 3, 5/4	3	3
5706 *	2, 3, 5/4	3	3
5707 *	2, 3, 5/4	3	3
1983 *	2, 3, 5/4	3	3
1978 *	2, 3, 5, 4	4	4
1979 *	2, 3, 5, 4	4	4
5700 *	2, 3, 5, 4	4	4
5701*	2, 3, 5, 4	4	4
5759**	2, 3, 5, 4	3	3
1910**	2, 3, 5, 4	3	3
1905*	2, 3, 5, 4	4	4
5758*	2, 3, 5, 4	4	4
1986 *	2, 3, 5, 4	3	3
1987*	2, 3, 5, 4	3	3
5713 *	2, 3, 5, 4	3	3
5714*	2, 3, 5, 4	3	3
1977 *	2, 3, 5, 4	3	1
5716 *	2, 3, 5, 4	3	1
1912*	2, 3, 5, 4, 1	4	4
5736*	2, 3, 5, 4, 1	4	4
1913*	2, 3, 5, 4	4	4
5737*	2, 3, 5, 4	4	4
1980	2, 3, 4, 5	2	4
2849	2, 3, 4, 5	2	4
2947	4, 5, 3, 2	3	3
5723	1, 4, 5, 3, 2	2	2
2943	1, 4, 5, 3, 2	2	2

** Extra-high bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

[1] This feature is only for the 471/85

Performance notes (for optimum performance)

System unit information:

- No more than three EHB adapters can be placed in the system. If an EHB adapter is placed in the system, it must be the only EHB or HB adapter attached to the PHB it uses.
- No more than four HB adapters can be placed in the system
- No more than three Gb Ethernet ports per PHB.
- No more than three 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an adapter lists slot 5/4, this indicates the adapter can go in slot 5 or 4, but not both 5 and 4.

Parent topic: PCI adapter placement for servers system units and expansion units

Model 112/85 adapter placement

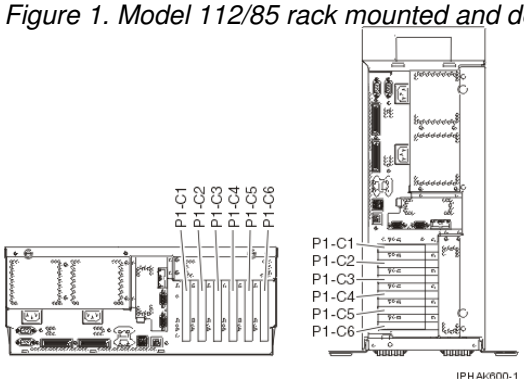
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model 112/85 rack mounted and deskside system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model 112/85 Slot location description

PHB0			PHB2	PHB3			
Slot 1	Slot 2	Integrated Dual 1 Gb Ethernet	Slot 4	Slot 3	Slot 5	Slot 6	Integrated SCSI U320
Short	Short		Graphics adapter	Short	Long (see note)	Long	
64-bit 3.3V, 133 MHz	32-bit 3.3V, 66 MHz	133 MHz	64-bit 3.3V, 266 MHz	32-bit 3.3V, 66 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz
Un-P1-C1	Un-P1-C2		Un-P1-C4	Un-P1-C3	Un-P1-C5	Un-P1-C6	

- Slot C4 is dedicated to a graphics adapter.
- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slot C5 can only accommodate short cards if feature 6594 is present in the system unit.
- Short adapters can go in short or long slots.
- For best performance 64-bit adapters should go in 64-bit slots.
- All slots support Enhanced Error Handling (EEH)

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, the limit is the number of slots available.

Feature Code	Base Unit slot priority	Maximum number of adapters allowed
		Base Unit
2843	4	1
2842	4, 5	2
2849	2, 3, 6, 1, 5	4
5721**	5, 1, 6	2
5722**	5, 1, 6	2
1982**	5, 1, 6	1
5719**	5, 1, 6	1
1981**	5, 1, 6	1
5718**	5, 1, 6	1
1954*	5, 1, 6	3
5740*	5, 1, 6	3
1984*	5, 1, 6, 3, 2	5
5707*	5, 1, 6, 3, 2	5
1983*	5, 1, 6, 3, 2	5
5706*	5, 1, 6, 3, 2	5
1978*	5, 1, 6, 3, 2	5
5700*	5, 1, 6, 3, 2	5
1979*	5, 1, 6, 3, 2	5
5701*	5, 1, 6, 3, 2	5
1910 **	5, 1, 6	2
5759 **	5, 1, 6	2
1905 *	5, 1, 6, 3, 2	5
5758 *	5, 1, 6, 3, 2	5
1987*	5, 1, 6,	3
5714*	5, 1, 6,	3
1986*	5, 1, 6	3
5713*	5, 1, 6	3
1977*	5, 1, 6, 3, 2	5
5716*	5, 1, 6, 3, 2	5
6239*	5, 1, 6, 3, 2	5
1913*	6, 5	2
5737*	6, 5	2
1974*	5, 1, 6, 3, 2	5
5712 *	5, 1, 6, 3, 2	5
5736*	5, 1, 6, 3, 2	5
1912*	5, 1, 6, 3, 2	5
1975*	6, 5	2
5703*	6, 5	2
6204	2, 3, 6, 1, 5	3
1985	2, 3, 6, 1, 5	3
4962	2, 3, 6, 1, 5	3

2738	2, 3, 6, 1, 5	3
1980	2, 3, 6, 1, 5	4
2943	2, 3, 6, 1, 5	2
2944	2, 3, 6, 1, 5	2
2947	6, 5	2
2962	2, 3, 6, 1, 5	4
5723	2, 3, 6, 1, 5	2
4959	2, 3, 6, 1, 5	4
8244	2, 3, 6, 1, 5	1

** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. This total includes the two integrated Gb Ethernet ports on PHB 2.
- No more than three high bandwidth adapters per PHB; four per base system; eight per entire system with one or more expansion units
- No more than one 10 Gb Ethernet port per 2 CPUs in a system. If one 10 Gb Ethernet port is present per 2 CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than three 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 250R-VL or ESCALA PL 450R-XS adapter placement

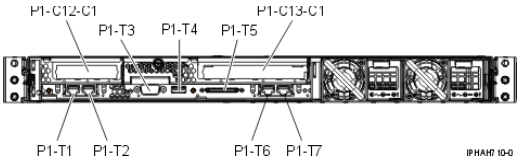
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Back view of the system unit and its connectors



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 250R-VL or ESCALA PL 450R-XS Slot location description

PHB 0	PHB 3
Slot 1	Slot 2
Short, low profile	Long
64-bit 3.3V, 266 MHz	64-bit 3.3V, 266 MHz
Un-P1-C12-C1	Un-P1-C13-C1

- Short adapters can go in short or long slots.
- For best performance 64-bit adapters should go in 64-bit slots.
- All slots support Enhanced Error Handling (EEH)
- None of the slots in this system are hot-pluggable.

Recommended system unit slot placement

See the following table to identify the recommended system unit slot placement of specified adapters. Slot 1 can only hold a short, low profile adapter. Slot 2 can only hold a short or long standard-profile adapter.

Feature Code	Slot 1	Slot 2
5721**		X
5722**		X
1982**		X
1981**		X
5718**		X
5719**		X
1954*		X
5740*		X
1984*		X
5707*		X
1983*		X
5706*		X
1990*	X	
5706*		X
5707*		X
1978*		X
5700*		X
1979*		X
1959*	X	
1910**		X
5759**		X

1905**		X
5758**		X
5701*		X
5758*		X
1987*		X
5714*		X
1986*		X
5713*		X
1977*		X
1957*	X	
5716*		X
1913*		X
5737*		X
1912*		X
1974*		X
5736*		X
1975*		X
5703*		X
5712*		X
4764		X
5723		X
1985		X
2738		X
2943		X
2947		X
2849		X
4962		X
1980		X

** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

  Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 250R-L adapter placement

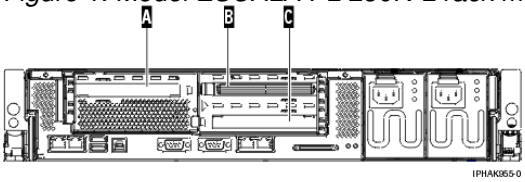
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model ESCALA PL 250R-L rack mounted system unit back view with three PCI slots available.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 250R-L Slot location description

PHB2		
Slot 1 (A)	Slot 2 (B)	Slot 3 (C)
Long	Long	Long
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz
Un-P2-C1	Un-P2-C2	Un-P2-C3

- Slots C1 through C3 are compatible with PCI and PCI-X adapters.
- All slots are long slots
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- None of the slots in this system are hot-pluggable.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, there is no maximum limit for that adapter.

Feature Code	Base Unit slot priority	Maximum number of adapters allowed
5721 **	1, 2, 3	1
5722 **	1, 2, 3	1
5719**	1, 2, 3	1
5718**	1, 2, 3	1
1954 *	1, 2, 3	2
5740 *	1, 2, 3	2

5707*	1, 2, 3	3
5706*	1, 2, 3	3
5701*	1, 2, 3	3
5700*	1, 2, 3	3
5758*	1, 2, 3	2
5759**	1, 2, 3	2
5713*	1, 2, 3	2
1986*	1, 2, 3	2
5714*	1, 2, 3	2
1987*	1, 2, 3	2
5716*	1, 2, 3	3
5736*	1, 2, 3	3
1912*	1, 2, 3	3
5737*	1, 2, 3	3
5712*	1, 2, 3	3
5703*	1, 2, 3	3
4764	1, 2, 3	3
2738	1, 2, 3	1
2849	1, 2, 3	1
4962	1, 2, 3	3
5723	1, 2, 3	3
2943	1, 2, 3	3
2944	1, 2, 3	3
2962	1, 2, 3	3
2947	1, 2, 3	3
** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter. * High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.		

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- A maximum of one 10 Gb Ethernet port allowed on a 2 way system.
- No more than three Gb Ethernet ports per PHB or system.
- No more than three high-bandwidth adapters per PHB or system.
- If one 10 Gb port is present, no other 10 Gb or 1 Gb ports are allowed for optimum performance.
- No more than three Gb Ethernet ports per one CPU in a system.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 250R-L+ or ESCALA PL 450R-VL+ adapter placement

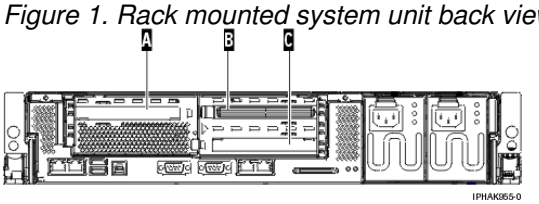
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Rack mounted system unit back view with three PCI slots available.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 250R-L+ or ESCALA PL 450R-VL+ Slot location description

PHB0	PHB2			PHB3
Slot 1 (A)	Slot 2 (B)	Integrated Dual 1 Gb Ethernet	Integrated SCSI U320	Slot 3 (C)
Long	Long			Long
64-bit 3.3V, 266 MHz	64-bit 3.3V, 133 MHz	133 MHz	133 MHz	64-bit 3.3V, 266 MHz
P1-C13-C1	P1-C14-C1			P1-C14-C2

- Slots C1 through C3 are compatible with PCI and PCI-X adapters.
- All slots are long slots
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- None of the slots in this system are hot-pluggable.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, there is no maximum limit for that adapter.

Feature Code	Base Unit slot priority	Maximum number of adapters allowed
5721**	1, 3, 2	1
5722**	1, 3, 2	1
1981 **	1, 3, 2	1
5718**	1, 3, 2	1

1982**	1, 3, 2	1
5719**	1, 3, 2	1
1954 *	1, 3, 2	3
5740 *	1, 3, 2	3
1983*	2, 1, 3	3
1984*	2, 1, 3	3
5706*	2, 1, 3	3
5707*	2, 1, 3	3
1979*	2, 1, 3	3
1978*	2, 1, 3	3
5701*	2, 1, 3	3
5700*	2, 1, 3	3
1910 **	1, 3, 2	3
5759 **	1, 3, 2	3
1905*	1, 3, 2	3
5758*	1, 3, 2	3
1987*	2, 1, 3	3
1986*	2, 1, 3	3
5714*	2, 1, 3	3
5713*	2, 1, 3	3
1977*	2, 1, 3	3
5716*	2, 1, 3	3
1912*	2, 1, 3	3
1913*	2, 1, 3	2
5736*	2, 1, 3	3
5737*	2, 1, 3	2
1974*	2, 1, 3	3
5712*	2, 1, 3	3
5703*	2, 1, 3	3
4764	2, 1, 3	3
2738	2, 1, 3	2
5723	2, 1, 3	2
2943	2, 1, 3	2
2944	2, 1, 3	2
1985	2, 1, 3	3
4962	2, 1, 3	3
2947	2, 1, 3	2
1980	2, 1, 3	2
2849	2, 1, 3	2
2962	2, 1, 3	2
** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter. * High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.		

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- A maximum of one 10 Gb Ethernet port allowed on a 2 way system.
- No more than three Gb Ethernet ports per PHB or system.
- No more than three high-bandwidth adapters per PHB or system.
- If one 10 Gb port is present, no other 10 Gb or 1 Gb ports are allowed for optimum performance.
- No more than three Gb Ethernet ports per one CPU in a system.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 250T/R adapter placement

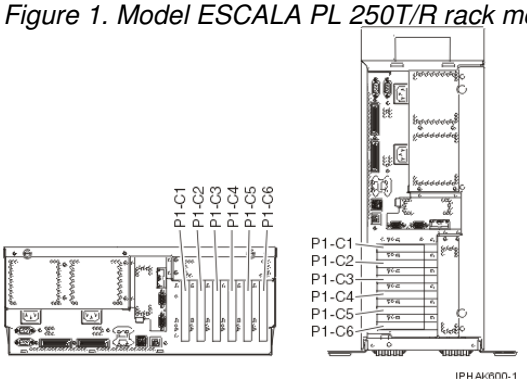
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model ESCALA PL 250T/R rack mounted and deskside system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 250T/R Slot location description

PHB0				PHB2			
Slot 3	Slot 5	Slot 6	Integrated SCSI U320	Slot 1	Slot 2	Slot 4	Integrated Dual 1 Gb Ethernet
Short	Long	Long		Short	Short	Long	
			133 MHz				133 MHz

32-bit 3.3V, 66 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz		64-bit 3.3V, 133 MHz	32-bit 3.3V, 66 MHz	64-bit 3.3V, 133 MHz	
Un-P1-C3	Un-P1-C5	Un-P1-C6		Un-P1-C1	Un-P1-C2	Un-P1-C4	

- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slot C5 can only accommodate short cards if feature 6594 is present in the system unit.
- Short adapters can go in short or long slots.
- For best performance 64-bit adapters should go in 64-bit slots.
- All slots support Enhanced Error Handling (EEH)
- The system supports up to a total of 4 expansion units; models 11D/11 and 11D/20.
- The model 11D/20 expansion unit, with most its features, can migrate from other servers systems.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, the limit is the number of slots available.

Feature Code	Base Unit slot priority	Maximum number of adapters allowed		
		Base Unit	Expansion Unit	System
6312[1]	4, 5, 6	3		18
5721**	1, 6, 4, 5	3	4	4
5722**	1, 6, 4, 5	3	4	4
5719**	5, 6	1	1	1
5718**	5, 6	1	1	1
5740*	1, 6, 4, 5	4		4
5707*	5, 6, 1, 4, 3, 2	6		
5706*	5, 6, 1, 4, 3, 2	6		
5701*	5, 6, 1, 4, 3, 2	6		
5700*	5, 6, 1, 4, 3, 2	6		
5758*	5, 1, 6, 4	4		20
5759**	5, 1, 6, 4	4		20
5713*	1, 5, 4, 6	4		20
5714*	1, 5, 4, 6	4		20
5716*	5, 6, 1, 4, 3, 2	4		
6239*		0		
6228*		0		
5737*	5, 6, 4	3		
5736*	5, 6, 1, 4, 3, 2	6		
5712*	5, 6, 1, 4, 3, 2	6		
5703*	5, 6, 4	3		
2946*		0		6
6230*	5, 6, 4	0		16
6231	128 MB DRAM Option Card for feature 6230			
6235	32 MB Fast-Write Cache Option Card for feature 6230			
4764	2, 3, 4, 1, 6, 5			8
2498		0		16
2737		0	4	4

2738	2, 3, 4, 1, 6, 5	2	6	6
2848		0	4	4
2849	2, 3, 4, 1, 6, 5	4	6	6
2943	2, 3, 4, 1, 6, 5	6		10
2944	2, 3, 4, 1, 6, 5	6		10
6310	4, 5, 6	2		
2947	4, 5, 6	3	4	4
2962	2, 3, 4, 1, 6, 5	6		10
4953		0		20
4957		0		20
4959	2, 3, 4, 1, 6, 5	4		20
4960		0		16
4961		0		20
4962	2, 3, 4, 1, 6, 5	6		
4963		0		8
5709	Attaches to CEC IO - no slot used	1		
5723	2, 3, 4, 1, 6, 5	2		10
6203		0		16
6204	2, 3, 4, 1, 6, 5	2		10
8244	2, 3, 4, 1, 6, 5	1	1	1

** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

[1] Digital Trunk adapters have an internal cable and must be in contiguous slots.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. This total includes the two integrated Gb Ethernet ports on PHB 2.
- No more than three high bandwidth adapters per PHB; four per base system; eight per entire system with one or more expansion units
- No more than one 10 Gb Ethernet port per 2 CPUs in a system. If one 10 Gb Ethernet port is present per 2 CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than three 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Related information

11D/11 expansion unit

11D/20 expansion unit

Model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ adapter placement

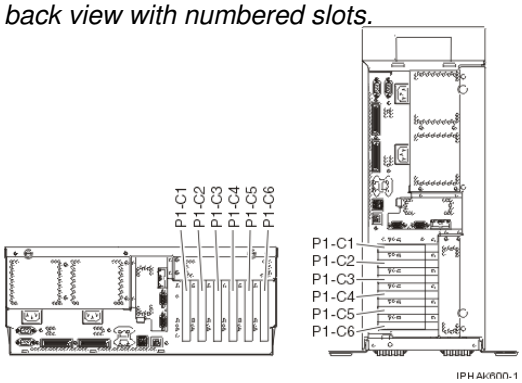
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ rack mounted and deskside system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ Slot location description

PHB0			PHB2	PHB3			
Slot 1	Slot 2	Integrated Dual 1 Gb Ethernet	Slot 4	Slot 3	Slot 5	Slot 6	Integrated SCSI U320
Short	Short		Long	Short	Long (see note)	Long	
64-bit 3.3V, 133 MHz	32-bit 3.3V, 66 MHz	133 MHz	64-bit 3.3V, 266 MHz	32-bit 3.3V, 66 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz
Un-P1-C1	Un-P1-C2		Un-P1-C4	Un-P1-C3	Un-P1-C5	Un-P1-C6	

- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slot C5 can only accommodate short cards if feature 6594 is present in the system unit.
- Short adapters can go in short or long slots.
- For best performance 64-bit adapters should go in 64-bit slots.
- All slots support Enhanced Error Handling (EEH)

- The system supports up to a total of 4 expansion units; models 11D/11 and 11D/20.
- The model 11D/20 expansion unit, with most its features, can migrate from other servers systems.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, the limit is the number of slots available.

Feature code	Base unit slot priority	Maximum number of adapters allowed		
		Base unit	Per expansion unit	System
6312	6, 5, 4	3		
5721**	4, 5, 1, 6	3	4	9
5722**	4, 5, 1, 6	3	4	9
1982**	4, 5, 1, 6	2	2	10
5719**	4, 5, 1, 6	2	2	10
1981**	4, 5, 1, 6	2	2	10
5718**	4, 5, 1, 6	2	2	10
1954*	4, 5, 1, 6	4		
5740*	4, 5, 1, 6	4		
1984*	5, 1, 6, 4, 3, 2	6	7	34
5707*	5, 1, 6, 4, 3, 2	6	7	34
1983*	5, 1, 6, 4, 3, 2	6	7	34
5706*	5, 1, 6, 4, 3, 2	6	7	34
1979*	5, 1, 6, 4, 3, 2	6	7	34
5701*	5, 1, 6, 4, 3, 2	6	7	34
1978*	5, 1, 6, 4, 3, 2	6	7	34
5700*	5, 1, 6, 4, 3, 2	6	7	34
1910**	4, 5, 1, 6	4	4	20
5759**	4, 5, 1, 6	4	4	20
1905*	4, 5, 1, 6, 3, 2	6	4	22
5758*	4, 5, 1, 6, 3, 2	6	4	22
1986*	5, 1, 6, 4, 3, 2	5	4	21
1987*	5, 1, 6, 4, 3, 2	5	4	21
5713*	5, 1, 6, 4, 3, 2	5	4	21
5714*	5, 1, 6, 4, 3, 2	5	4	21
1977*	5, 1, 6, 4	4	7	32
5716*	5, 1, 6, 4, 3, 2	6	7	34
6239*	5, 1, 6, 4, 3, 2	6	7	34
1913*	4, 5, 6	3	7	31
5737*	4, 5, 6	3	7	31
1912*	4, 5, 1, 6, 3, 2	6	7	34
5736*	4, 5, 1, 6, 3, 2	6	7	34
1974*	5, 1, 6, 4, 3, 2	6		
5712*	5, 1, 6, 4, 3, 2	6		
1975*	6, 5, 4	3		
5703*	6, 5, 4	3		
4764	2, 3, 6, 1, 5, 4	6		8
6204	2, 3, 6, 1, 5, 4	2		

1985	2, 3, 6, 1, 5, 4	6		
4962	2, 3, 6, 1, 5, 4	6		
1980	2, 3, 6, 1, 5, 4	2		
2849	2, 3, 6, 1, 5, 4	2		
6310	6, 5, 4	3		
2947	6, 5, 4	3		
5723	2, 3, 6, 1, 5, 4	2	2	10
4959	2, 3, 6, 1, 5, 4	2		
2943	2, 3, 6, 1, 5, 4	2		
2944	2, 3, 6, 1, 5, 4	2		
2738	2, 3, 6, 1, 5, 4	3		
2962	2, 3, 6, 1, 5, 4	4		
8244	2, 3, 6, 1, 5, 4	1		

** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

[1] Digital Trunk adapters have an internal cable and must be in contiguous slots.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. This total includes the two integrated Gb Ethernet ports on PHB 2.
- No more than three high bandwidth adapters per PHB; four per base system; eight per entire system with one or more expansion units
- No more than one 10 Gb Ethernet port per 2 CPUs in a system. If one 10 Gb Ethernet port is present per 2 CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than three 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Related information

11D/11 expansion unit

11D/20 expansion unit ESCALA PL Series Prerequisite Web page

Model ESCALA PL 450T/R adapter placement

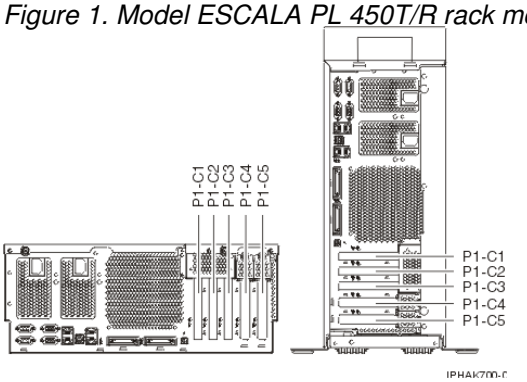
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model ESCALA PL 450T/R rack mounted and deskside system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 450T/R servers slot location descriptions

PHB0				PHB2		
Slot 1	Slot 2	Integrated Dual 1 Gb Ethernet	Integrated SCSI U320	Slot 3	Slot 4	Slot 5
Long	Long			Long	Long	Short
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz	133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	Short, 64-bit 3.3V, 133 MHz or GX+ adapter placement
Un-P1-C1	Un-P1-C2			Un-P1-C3	Un-P1-C4	Un-P1-C5

- Slots C1 through C5 are compatible with PCI and PCI-X adapters.
- Slots C5 can contain one PCI, PCI-X, or GX+ adapter. If a GX+ adapter is installed, it must be placed in the C5 slot.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- The system supports up to a total of 8 expansion units; model 11D/20.
- The model 11D/20 expansion unit, with most its features, can migrate from other servers systems.

Recommended system unit slot placement and maximums for the model ESCALA PL 450T/R

See the following table to identify the recommended system unit slot placement and the recommended maximum number of specified adapters.

Note: If the space in the Maximum number of adapters allowed is blank, the limit is the number of slots available.

Feature Code	Base unit slot priority	Maximum number of adapters allowed		
		Base Unit	Expansion Unit	System
6312[1]	1, 2, 3, 4	4		36
5721**	1, 3, 2, 4, 5	4	4	12
5722**	1, 3, 2, 4, 5	4	4	12
5719**	3, 1, 4, 2, 5	2	2	2
5718**	3, 1, 4, 2, 5	2	2	2
5740*	3, 1, 4, 2, 5	4		4
5707*	3, 4, 1, 5, 2	5		5
5706*	3, 4, 1, 5, 2	5		
5701*	3, 4, 1, 5, 2	5		
5700*	3, 4, 1, 5, 2	5		
5759**	1, 3, 2, 4, 5	4	4	
5758*	1, 3, 2, 4, 5	4	4	
5713*	3, 1, 4, 2, 5	4	4	36
5714*	3, 1, 4, 2, 5	4	4	36
5716*	3, 4, 1, 5, 2	5		
6228*		0		
6239*		0		
5737*	3, 4, 1, 2	4		
5736*	3, 4, 1, 5, 2	4		
5712*	3, 4, 1, 5, 2	5		
5703*	3, 4, 1, 2	4		
2946*		0		6
6230*	3, 4, 1, 2	0		32
4764	2, 5, 1, 4, 3	5		8
2498		0		11
2737		0		8
2738	2, 5, 1, 4, 3	2		8
2848		0		8
2849	2, 5, 1, 4, 3	2		8
2943	2, 5, 1, 4, 3	2		18
2944	2, 5, 1, 4, 3	2		18
6310	2, 1, 4, 3	4		8
2947	2, 1, 4, 3	4		8
2962	2, 5, 1, 4, 3	4		20
4953		0		20
4957		0		20
4959	2, 5, 1, 4, 3	4		20
4960		0		32
4961		0		20
4962	2, 5, 1, 4, 3	5		
4963		0		16

5723	2, 5, 1, 4, 3	2		18
6203		0		32
6204	5, 2, 4, 1, 3	2		18

** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

[1] Digital Trunk adapters have an internal cable and must be in contiguous slots.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. This total should include the two integrated Gb Ethernet ports on PHB 0.
- No more than three high bandwidth adapters per PHB; eight per entire system with one RIO-G loop; 16 per entire system with two RIO-G loops.
- No more than one Extra-high bandwidth adapter per PHB; two per base system; four per entire system with one RIO-G loop; eight per entire system with two RIO-G loops
- No more than one 10 Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Related information

11D/20 expansion unit

Model ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+ adapter placement

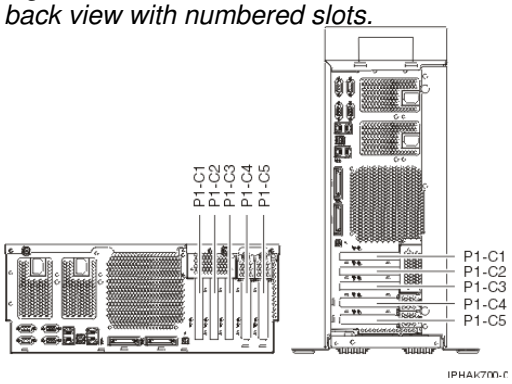
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+ rack mounted and deskside system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+ slot location description

PHB0			PHB2	PHB3		
Slot 1	Slot 2	Integrated Dual 1 Gb Ethernet	Slot 3	Slot 4	Slot 5	Integrated SCSI U320
Long	Long		Long	Short	Short	
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz	64-bit 3.3V, 266 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz
Un-P1-C1	Un-P1-C2		Un-P1-C3	Un-P1-C4	Un-P1-C5	

- Slots C1 through C5 are compatible with PCI and PCI-X adapters.
- Slots C5 can contain one PCI, PCI-X, or GX+ adapter. If a GX+ adapter is installed, it must be placed in the C5 slot.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- The system supports up to a total of 8 expansion units; model 11D/20.
- The model 11D/20 expansion unit, with most its features, can migrate from other servers systems.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and the recommended maximum number of specified adapters.

Note: If the space in the Maximum number of adapters allowed is blank, the limit is the number of slots available.

Feature code	Base unit slot priority	Maximum number of adapters allowed		
		Base unit	Per expansion unit	System
5722**	3, 1, 4, 2, 5	3	4	16
5721**	3, 1, 4, 2, 5	3	4	16

1982**	3, 1, 4, 2, 5	2	2	18
5719**	3, 1, 4, 2, 5	2	2	18
1981**	3, 1, 4, 2, 5	2	2	18
5718**	3, 1, 4, 2, 5	2	2	18
1954**	3, 1, 4, 2, 5	4	2	21
5740 **	3, 1, 4, 2, 5	4	2	21
1983*	4, 5, 1, 3, 2	5	7	61
5706*	4, 5, 1, 3, 2	5	7	61
1984*	4, 5, 1, 3, 2	5	7	61
5707*	4, 5, 1, 3, 2	5	7	61
1978*	4, 5, 1, 3, 2	5	7	61
5700*	4, 5, 1, 3, 2	5	7	61
1979*	4, 5, 1, 3, 2	5	7	61
5701*	4, 5, 1, 3, 2	5	7	61
1910**	3, 1, 4, 2, 5	5	4	
5759**	3, 1, 4, 2, 5	5	4	
1905*	3, 1, 4, 2, 5	5	4	
5758*	3, 1, 4, 2, 5	5	4	
1986*	4, 5, 1, 3, 2	5	4	37
1987*	4, 5, 1, 3, 2	5	4	37
5713*	4, 5, 1, 3, 2	5	4	37
5714*	4, 5, 1, 3, 2	5	4	37
1977*	4, 5, 1, 3, 2	5	7	61
5716*	4, 5, 1, 3, 2	5	7	61
6239*	4, 5, 1, 3, 2	5	7	61
1913*	3, 1, 2	3		
5737*	3, 1, 2	3		
1912*	3, 1, 4, 2, 5	5	7	61
5736*	4, 5, 1, 3, 2	5	7	61
1974*	4, 5, 1, 3, 2	5		
5712*	4, 5, 1, 3, 2	5		
1975*	2, 1, 3	3		
5703*	2, 1, 3	3		
4764	2, 5, 1, 4, 3	5		32
6204	2, 5, 1, 4, 3	2		
1980	2, 5, 1, 4, 3	2		
2849	2, 5, 1, 4, 3	2		
2842	2, 1, 3	2		
2843	2, 1, 3	2		
6310	2, 1, 3	3		
2947	2, 1, 3	3		
2944	2, 5, 1, 4, 3	2		
4962	2, 5, 1, 4, 3	5		
1985	2, 5, 1, 4, 3	5		
4959	2, 5, 1, 4, 3	4		
2962	2, 5, 1, 4, 3	4		
2943	2, 5, 1, 4, 3	2		
2738	2, 5, 1, 4, 3	3		
5723	2, 5, 1, 4, 3	2	2	18

PCI adapter
** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.
* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.
1 Digital Trunk adapters have an internal cable and must be in contiguous slots.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. This total should include the two integrated Gb Ethernet ports on PHB 0.
- No more than three high bandwidth adapters per PHB; eight per entire system with one RIO-G loop; 16 per entire system with two RIO-G loops.
- No more than one Extra-high bandwidth adapter per PHB; two per base system; four per entire system with one RIO-G loop; eight per entire system with two RIO-G loops
- No more than one 10 Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Related information

11D/20 expansion unit

ESCALA PL Series Prerequisite Web page

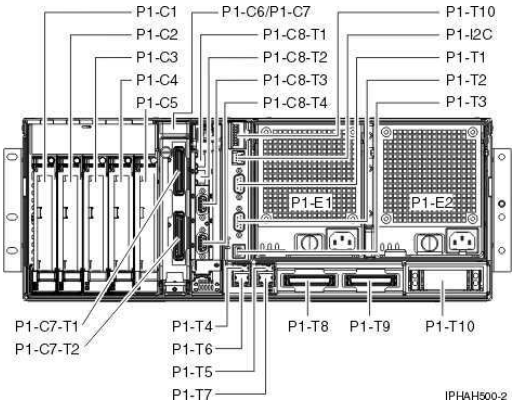
Model ESCALA PL 1650R-L+ adapter placement

The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

System unit back view

Figure 1. Rack mounted system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Slot location description

PHB1				PHB2		
Slot 3	Slot 4	Slot 5	Slot 6	Slot 1	Slot 2	Integrated SCSI U320
Long	Long	Long	Short	Long	Long	
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz RIO-2	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz
Un-P1-C3	Un-P1-C4	Un-P1-C5	Un-P1-C6	Un-P1-C1	Un-P1-C2	

- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slot C6 is a short slot. This space can be occupied by a PCI adapter or a high-speed link (RIO-2) card.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed per system unit is blank, the limit is the number of slots available.

Feature Code	Suggested system unit slot priority	Maximum number of adapters allowed per system unit
5721**	1, 3, 4, 2, 5, 6	4
5722**	1, 3, 4, 2, 5, 6	4
1982**	1, 3, 4, 2, 5, 6	2
1981**	1, 3, 4, 2, 5, 6	2
5719**	1, 3, 4, 2, 5, 6	2
5718**	1, 3, 4, 2, 5, 6	2
1954*	3, 1, 4, 2, 5, 6	4
5740*	3, 1, 4, 2, 5, 6	4
1983*	3, 1, 4, 2, 5, 6	6
1984*	3, 1, 4, 2, 5, 6	6
5706*	3, 1, 4, 2, 5, 6	6
5707*	3, 1, 4, 2, 5, 6	6

1978*	3, 1, 4, 2, 5, 6	6
1979*	3, 1, 4, 2, 5, 6	6
5700*	3, 1, 4, 2, 5, 6	6
5701*	3, 1, 4, 2, 5, 6	6
1910**	1, 3, 4, 2, 5, 6	4
5759**	1, 3, 4, 2, 5, 6	4
1905*	3, 1, 4, 2, 5, 6	4
5758*	3, 1, 4, 2, 5, 6	4
1986*	3, 1, 4, 2, 5, 6	4
1987*	3, 1, 4, 2, 5, 6	4
5713*	3, 1, 4, 2, 5, 6	4
5714*	3, 1, 4, 2, 5, 6	4
1977 *	3, 1, 4, 2, 5, 6	6
5716 *	3, 1, 4, 2, 5, 6	6
6228 *	3, 1, 4, 2, 5, 6	6
6239 *	3, 1, 4, 2, 5, 6	6
1913*	3, 4, 1, 5, 2	5
1912*	3, 4, 1, 5, 2, 6	6
5737*	3, 4, 1, 5, 2	5
5736*	3, 4, 1, 5, 2, 6	6
1974*	3, 4, 1, 5, 2, 6	6
5712*	3, 4, 1, 5, 2, 6	6
1975*	3, 4, 1, 5, 2	5
5703*	3, 4, 1, 5, 2	5
2498*	3, 4, 1, 5, 2	5
6203*	3, 4, 1, 5, 2	5
6230*	3, 4, 1, 5, 2	5
1980	6, 2, 5, 1, 4, 3	4
1985	6, 2, 5, 1, 4, 3	6
6204	6, 2, 5, 1, 4, 3	6
2738	6, 2, 5, 1, 4, 3	6
2848	6, 2, 5, 1, 4, 3	6
2849	6, 2, 5, 1, 4, 3	6
2944	6, 2, 5, 1, 4, 3	6
2943	6, 2, 5, 1, 4, 3	2
2946	6, 2, 5, 1, 4, 3	
4953	6, 2, 5, 1, 4, 3	
4957	6, 2, 5, 1, 4, 3	
4959	6, 2, 5, 1, 4, 3	
4960	6, 2, 5, 1, 4, 3	
4961	2, 5, 1, 4, 3	
4962	6, 2, 5, 1, 4, 3	
4963	6, 2, 5, 1, 4, 3	
2947	2, 5, 1, 4, 3	5
2962	6, 2, 5, 1, 4, 3	
5723	6, 2, 5, 1, 4, 3	2
2737	6, 2, 5, 1, 4, 3	4

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

**Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter. [1] Digital Trunk adapters have an internal cable and must be in contiguous slots.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. There are no integrated gigabit Ethernet ports attached to PHB 1 or PHB 2.
- No more than three high bandwidth adapters per PHB; five per base system.
- No more than one extra-high bandwidth adapter per PHB; two per base system; four per entire system with one RIO-G loop; eight per entire system with two RIO-G loops.
- No more than one 10 Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 850R/PL 1650R/R+ adapter placement

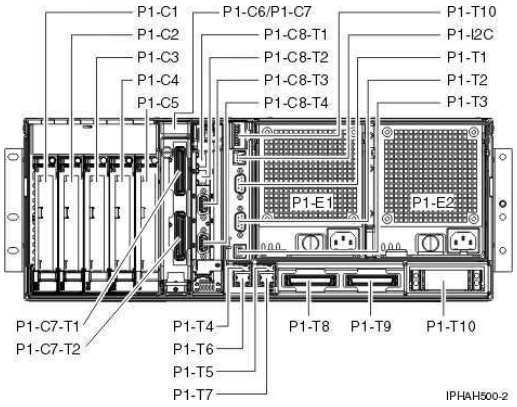
The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model ESCALA PL 850R/PL 1650R/R+ rack mounted system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model ESCALA PL 850R/PL 1650R/R+ servers slot location description

PHB1				PHB2		
Slot 3	Slot 4	Slot 5	Slot 6	Slot 1	Slot 2	Integrated SCSI U320
Long	Long	Long	Short	Long	Long	
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz RIO-2	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz
Un-P1-C3	Un-P1-C4	Un-P1-C5	Un-P1-C6	Un-P1-C1	Un-P1-C2	

- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slot C6 is a short slot. This space can be occupied by an adapter or a high-speed link (RIO-2) card.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- The system supports up to a total of 4 base units connected to up to a total of 20 expansion units, models 11D/10, 11D/11, and 11D/20. The first base unit supports up to a total of 8 expansion units, the next 3 base units can support up to a total of 4 expansion units each.
- The model 11D/10 and model 11D/20 expansion unit, with most its features, can migrate from other servers systems.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, the limit is the number of slots available.

Feature Code	Suggested system unit slot priority	Maximum number of adapters allowed		
		Per base unit	Per expansion unit	System
6312[1]		0	4	4 per attached expansion-unit
5721**	1, 3, 2, 4, 5, 6	4	4	20
5722**	1, 3, 2, 4, 5, 6	4	4	20
5719**	1, 3, 2, 4, 5, 6	2	2	
5718**	1, 3, 2, 4, 5, 6	2	2	
5740*	1, 3, 2, 4, 5, 6	4		
5707*	3, 4, 1, 5, 2, 6	6		
5706*	3, 4, 1, 5, 2, 6	6		

5701*	3, 4, 1, 5, 2, 6	6		
5700*	3, 4, 1, 5, 2, 6	6		
5759**	1, 3, 2, 4, 5, 6	4	4	
5758*	3, 4, 1, 5, 2, 6	4	4	
5713*	3, 4, 1, 5, 2, 6	4	4	84
5714*	3, 4, 1, 5, 2, 6	4	4	84
5716*	3, 4, 1, 5, 2, 6	6		
6239*	3, 4, 1, 5, 2, 6	6		
6228*	3, 4, 1, 5, 2, 6	0		
5737*	3, 4, 1, 5, 2	5		
5736*	3, 4, 1, 5, 2, 6	6		
5712*	3, 4, 1, 5, 2, 6	6		62
5703*	3, 4, 1, 5, 2	5		61
2946*	3, 4, 1, 5, 2, 6	6		20
6230*	3, 4, 1, 5, 2	0		103
4764	6, 2, 5, 1, 4, 3	6		32
2498	2, 5, 1, 4, 3	0		103
2737	6, 2, 5, 1, 4, 3	4		8
2738	6, 2, 5, 1, 4, 3	6		8
2848	6, 2, 5, 1, 4, 3	6		8
2849	6, 2, 5, 1, 4, 3	6		8
2943	6, 2, 5, 1, 4, 3	2		42
2944	6, 2, 5, 1, 4, 3	2		42
2947	2, 5, 1, 4, 3	5		19
2962	6, 2, 5, 1, 4, 3	4		44
4953	6, 2, 5, 1, 4, 3	6		20
4957	6, 2, 5, 1, 4, 3	6		20
4959	6, 2, 5, 1, 4, 3	6		20
4960	6, 2, 5, 1, 4, 3	6		32
4961	2, 5, 1, 4, 3	5		79
4962	6, 2, 5, 1, 4, 3	6		
4963	6, 2, 5, 1, 4, 3	6		32
4964	2, 5, 1, 4, 3	5		
5723	6, 2, 5, 1, 4, 3	2		42
6203	2, 5, 1, 4, 3	5		79
6204	6, 2, 5, 1, 4, 3	6		42

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

**Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

[1] Digital Trunk adapters have an internal cable and must be in contiguous slots.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. There are no integrated gigabit Ethernet ports attached to PHB 1 or PHB 2.
- No more than three high bandwidth adapters per PHB; five per base system; eight per entire system with one RIO-G loop; 16 per entire system with two RIO-G loops.

- No more than one extra-high bandwidth adapter per PHB; two per base system; four per entire system with one RIO-G loop; eight per entire system with two RIO-G loops.
- No more than one 10 Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model 185/75 adapter placement

The following information provides direction on which adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Model 185/75 rack mounted system unit back view with four PCI slots available.

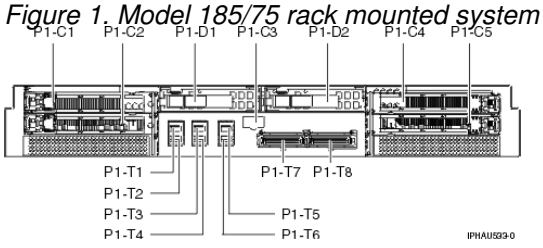
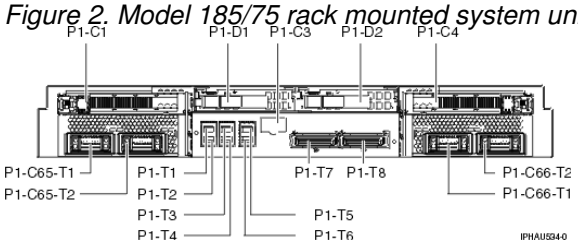


Figure 2. Model 185/75 rack mounted system unit back view with two PCI slots available and two IXS slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model 185/75 servers slot location description

PHB1		PHB2	
Slot 1	Slot 2	Slot 4	Slot 5
Long	Long or IXS	Long	Long or IXS
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz
Un-P1-C1	Un-P1-C2	Un-P1-C4	Un-P1-C5

- Slots 1, 2, 4 and 5 are compatible with PCI and PCI-X adapters.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- If feature 7910 is present in the system, it can block the use of slot 2 or slot 5.
- The base unit will support 1 expansion unit; models 57/91, 57/94, and 406/1D.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended.

Feature Code	Suggested system unit slot priority	Maximum number of adapters allowed		
		Base Unit	Expansion Unit	System
5721**	1, 4, 2, 5	4	12	16
5722**	1, 4, 2, 5	4	12	16
5719**	1, 4, 2, 5	2	6	8
5718**	1, 4, 2, 5	2	6	8
5740*	1, 4, 2, 5	4	6	10
5707*	1, 4, 2, 5	4	12	16
5706*	1, 4, 2, 5	4	12	16
5701*	1, 4, 2, 5	4	12	16
5700*	1, 4, 2, 5	4	12	16
5759**	1, 4, 2, 5	4	12	16
5758*	1, 4, 2, 5	4	12	16
5713*	1, 4, 2, 5	4	12	16
5714*	1, 4, 2, 5	4	12	16
5716*	1, 4, 2, 5	4	20	24
6239*	1, 4, 2, 5	0	20	20
6228*	1, 4, 2, 5	0	20	24
5711*	1, 4, 2, 5	4	20	24
5736*	1, 4, 2, 5	4	20	24
5737*	1, 4, 2, 5	4	20	24
5710*	1, 4, 2, 5	4	20	24
2946*	1, 4, 2, 5	0	20	20
6230*	1, 4, 2, 5	0	12	12
2737	1, 4, 2, 5	0	8	8
2738	1, 4, 2, 5	4	4	8
2848	1, 4, 2, 5	0	4	4
2849	1, 4, 2, 5	4	4	8
2943	1, 4, 2, 5	4	20	24
2944	1, 4, 2, 5	4	20	24

2947	1, 4, 2, 5	4	16	20
2962	1, 4, 2, 5	4	20	24
4963	1, 4, 2, 5	0	8	8
4953	1, 4, 2, 5	0	20	20
4957	1, 4, 2, 5	0	20	20
4959	1, 4, 2, 5	4	20	24
4960	1, 4, 2, 5	0	8	8
4961	1, 4, 2, 5	0	20	20
4962	1, 4, 2, 5	4	20	24
4963	1, 4, 2, 5	0	8	8
4964	1, 4, 2, 5	0	8	8
5723	1, 4, 2, 5	4	20	24
6203	1, 4, 2, 5	0	10	10
6204	1, 4, 2, 5	1	10	11
** Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter. * High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter. [1] Digital Trunk adapters have and internal calbe and must be in contiguous slots.				

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. There are no integrated gigabit Ethernet ports attached to PHB 1 or PHB 2.
- No more than three high bandwidth adapters per PHB.
- No more than one Extra-high bandwidth adapter per PHB; two per base system; four per entire system with one RIO-G loop.
- No more than one 10Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If an extra high-performance adapter is placed in the system, it must be the only extra high-performance or high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be an extra high-performance or high-performance adapter.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for servers system units and expansion units

Model ESCALA PL 3250R or ESCALA PL 6450R adapter placement

PCI adapters connected to the model ESCALA PL 3250R or ESCALA PL 6450R servers system units are placed in expansion units. For information about PCI adapter placement for these systems, see Expansion units 57/91, 57/94, and 406/1D.

Parent topic: PCI adapter placement for servers system units and expansion units

Expansion unit AIX adapter placement

For expansion units 5791, 5794, 7040-61D, D11, and D20 on servers

Use this placement information for the following expansion units.

- **Expansion units 57/91, 57/94, and 406/1D**
- **11D/11 expansion unit**
- **11D/20 expansion unit**

Parent topic: PCI adapter placement for servers system units and expansion units

Expansion units 57/91, 57/94, and 406/1D

The following information provides direction on which adapters can be placed in the 57/91, 57/94, and 406/1D expansion units and where adapters should be placed for optimum performance.

Note:

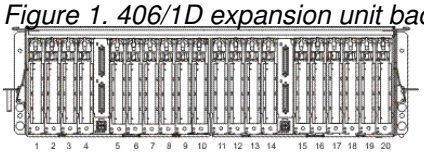
1. Model 57/91 and 57/94 expansion units can be ordered for servers servers.
2. Model 406/1D expansion units can be migrated to servers servers the 406/1D contains the PCI-X planar (FC 6571). Units with the non-PCI-X planar (FC 6563) cannot be migrated.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

Expansion unit back view

Figure 1. 406/1D expansion unit back view with numbered slots.



PCI slot description

The following tables show the slot properties and PHB connections.

Table 1. Model 406/1D expansion unit slot location description (PHB 1 and 2)

	PHB0				PHB2			
Planar 1	1	2	3	4	5	6	7	Integrated SCSI U160
Planar 2	11	12	13	14	15	16	17	
	Long	Long	Long	Long	Long	Long	Long	66 MHz

	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	

Table 2. Model 406/1D expansion unit slot location description (PHB 3)

	PHB3			
Planar 1	8	9	10	Integrated SCSI U160
Planar 2	18	19	20	
	Long	Long	Long	66 MHz
	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	

- Slots 1 through 20 are compatible with PCI or PCI-X adapters.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH).
- The model 185/75 can support 1 expansion unit.
- The model ESCALA PL 3250R can support up to a total of 8 expansion units.
- The model ESCALA PL 6450R can support up to a total of 12 expansion units.

Note: The Uffff.ccc.sssssss.Pn.Cm..... represents the physical location code, which provides information that identifies the enclosure, backplane, PCI adapter(s), and connectors in the system. The ffff.ccc.sssssss in the location code represents the following:

- ffff = feature code of the enclosure (drawer or node)
- ccc = the sequence number of the enclosure
- sssssss = the serial number of the enclosure.

Recommended system unit slot placement and maximums

Feature Code	Expansion unit slot priority	Expansion unit maximum	System maximum
		These maximums are for connectivity	
5721**	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	12	• 120 for model ESCALA PL 6450R • 60 for model ESCALA PL 3250R
5722**	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	12	• 120 for model ESCALA PL 6450R • 60 for model ESCALA PL 3250R
5719**	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	4	• 24 for model ESCALA PL 6450R

			• 16 for model ESCALA PL 3250R
5718**	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	4	• 24 for model ESCALA PL 6450R • 16 for model ESCALA PL 3250R
5740 *	1 ,5 ,8, 11, 15, 18, 2, 6, 9, 12, 16, 19, 3, 7, 10, 13, 17, 20, 4, 14	12	• 120 for model ESCALA PL 6450R • 60 for model ESCALA PL 3250R
5707*	1, 11 ,6, 16, 9, 19, 2, 12, 7, 17, 4, 14	12 for model 590/595 6 (for 1 planar expansion) for model 575	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R • 16 (node maximum) for model 575
5706*	1, 11 ,6, 16, 9, 19, 2, 12, 7, 17, 4, 14	12 for model 590/595 6 (for 1 planar expansion) for model 575	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R • 16 (node maximum) for model 575
5701*	1, 11 ,6, 16, 9, 19, 2, 12, 7, 17, 4, 14	12 for model 590/595 6 (for 1 planar expansion) for model 575	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R • 16 (node maximum) for model 575
5700*	1, 11 ,6, 16, 9, 19, 2, 12, 7, 17, 4, 14	12 for model 590/595 6 (for 1 planar expansion) for model 575	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R • 16 (node maximum) for model 575
5759**	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	12	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R

5758*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	12	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R
5713*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	12	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R
5714*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	12	• 144 for model ESCALA PL 6450R • 96 for model ESCALA PL 3250R
5716*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	20	• 192 for model ESCALA PL 6450R • 160 for model ESCALA PL 3250R
6228*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20		
6239*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20		
5736*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20		
5737*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20		
5710*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	20	62
5711*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	20	62
6203*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	20	62
6230*	1, 11 , 5, 15 , 8, 18, 2, 12, 6, 16, 9, 19, 3, 13, 4, 14, 7, 17, 10, 20	20	62
4764	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	8	32
2737	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	4	16
2738	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	4	16
2848		4	16

	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
2849	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	4	16
2943	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	32
2944	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	32
4953	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
4957	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
4960	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
4961	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
4963	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
4964	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
2946	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11		
2947	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	16	16
2962	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	32
4959	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	20
4962	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	• 192 for model ESCALA PL 6450R • 160 for model ESCALA PL 3250R
5723	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	32
6204	10, 20, 9, 19, 8, 18, 7, 17 , 6, 16, 5, 15, 4, 14, 3, 13, 2, 12, 1, 11	20	32

**Extra-high Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the *Performance notes* before installing this adapter.

For more information about the adapters that are listed, see servers PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB.
- No more than three high bandwidth adapters per PHB.
- No more than one Extra-high bandwidth adapter per PHB.
- No more than one 10 Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.
- If a model 5718 or 5719 adapter is placed in the system, it must be the only high-performance adapter attached to the PHB it uses. No other adapters attached to the same PHB as one of these adapters can be a high-performance adapter.

Note: The combined cumulative total for feature 5718, 5719, 5721, and 5722 is 12.

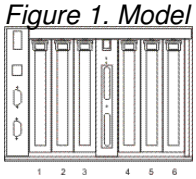
Parent topic: Expansion unit AIX adapter placement

11D/11 expansion unit

The following information provides direction on which adapters can be placed in the expansion unit and where adapters should be placed for optimum performance.

System unit back view

Figure 1. Model 11D/11 expansion unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model 11D/11 expansion unit slot location description

PHB1			PHB2		
Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6
Long	Long	Long	Long	Long	Long
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz
Un-P1-C1	Un-P1-C2	Un-P1-C3	Un-P1-C4	Un-P1-C5	Un-P1-C6

- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)

Recommended system unit slot placement and maximums

- Slot priority for all adapters is: 1, 4, 2, 5, 3, 6
- For a list of supported adapters, refer to the placement information for the base system unit the expansion unit is attached to. If the adapter is support by the base unit, it is supported by the expansion unit. If the adapter is not supported by the base unit, it is not supported by the expansion unit.

Parent topic: Expansion unit AIX adapter placement

Model ESCALA PL 250T/R adapter placement

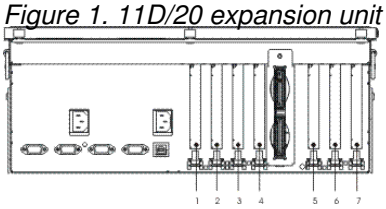
Model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ adapter placement Model ESCALA PL 450T/R adapter placement Model ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+ adapter placement Model ESCALA PL 1650R-L+ adapter placement Model ESCALA PL 850R/PL 1650R/R+ adapter placement Model 185/75 adapter placement

11D/20 expansion unit

The following information provides direction on which adapters can be placed in the expansion unit and where adapters should be placed for optimum performance.

System unit back view

Figure 1. 11D/20 expansion unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model 11D/20 expansion unit slot location description

PHB1				PHB2		
Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7
Long	Long	Long	Long	Long	Long	Long
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz
Un-P1-C1	Un-P1-C2	Un-P1-C3	Un-P1-C4	Un-P1-C5	Un-P1-C6	Un-P1-C7

- Slots 1 through 7 are compatible with PCI and PCI-X adapters.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)

Recommended system unit slot placement and maximums

- Slot priority for all adapters is: 1, 5, 2, 6, 3, 7, 4

- For a list of supported adapters, refer to the placement information for the base system unit the expansion unit is attached to. If the adapter is support by the base unit, it is supported by the expansion unit. If the adapter is not supported by the base unit, it is not supported by the expansion unit.

Parent topic: Expansion unit AIX adapter placement

Model ESCALA PL 250T/R adapter placement

Model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ adapter placement Model ESCALA PL 450T/R adapter placement Model ESCALA PL 450T/R+ or ESCALA PL 850T/R-L+ adapter placement Model ESCALA PL 1650R-L+ adapter placement Model ESCALA PL 850R/PL 1650R/R+ adapter placement Model 185/75 adapter placement

---

PCI adapter placement for models system units and expansion units

To determine the slot placement of PCI adapters in models system units and expansion units, use the instructions in the following procedures. Refer to the provided tables for more information as required.

- **Determine the best place to install your adapter**
  This section provides placement guidelines and detailed tables containing adapter numbers, descriptions, performance values, and restrictions.
- **High performance SCSI, DASD controller placement**
  Determine which PCI slots can accommodate the 0649, 2780, 5580, 5590, 5582, 5583, 5738, 5739, 5746, 5777, 5778, 5781, 5782, 5799, and 5800 SCSI controllers on models systems.
- **Configuration tables for models system units and expansion units**
- **Examples of placement tables**
- **Linux PCI adapters**
  The PCI adapters listed in this section are supported on models models with the Linux operating system.
- **AIX PCI adapters**
  The PCI adapters listed in this section are supported on models models with the AIX operating system.

Parent topic: PCI adapter placement in the system unit or expansion unit

Related information
See these topics for information about installing PCI adapters.

Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

---

Determine the best place to install your adapter

This section provides placement guidelines and detailed tables containing adapter numbers, descriptions, performance values, and restrictions.

Note:

- Adapters have different capabilities. Some adapters are 32 bit, some are 64 bit. Adapters also run at different frequencies, some at 33 MHz, 66 MHz, 133 MHz and 266 MHz. Systems and towers also have adapter slots that come in the same bit lengths and frequencies. For best performance the adapters should be placed in a slot with the same characteristics as the adapter. To the extent that an adapter does not match the slot, the performance may be reduced.
- In the 5074/5079 tower there are some 5V slots. You cannot place 3V (3.3V) adapters in these slots. To identify these slots, see 50/74 expansion unit and 50/79 expansion unit.
- For optimal adapter performance use the following placement guidelines, which are for adapters that are moderately to highly active.
  - Place high-bandwidth and extra-high bandwidth adapters in PCI-X slots in the system unit first, and then PCI-X slots in the expansion units.
  - Limit one extra-high performance adapter per multi-adapter bridge, with no other extra-high performance adapters on the same multi-adapter bridge.
  - Spread out high-bandwidth and extra-high bandwidth adapters across multi-adapter bridges, towers/drawers and loops.

1. Are you installing an IOPless IOA? (Examples of IOPless IOAs include: 06*xx*, 4806, 5583, 5706, 5707, 5721, 5722, 5775, 5776, 6800, 6801, 6803/9493, and 6804/9494.)
   - No: Continue with the next step.
   - Yes: These do not require an IOP. Select an available slot using the Configuration tables for models system units and expansion units and return to the PCI adapter installation instructions that sent you here.

   Maximum total of three IXS 2790/2890, 2791/2891, 2792/2892, 2799/2899, 4710/4810, 4811/4812/4813/9744/9812/9813 in any combination per 5074/5079/0574, 5088/0588, 5094/0694/5294, 8294/9194 tower.
2. Are you installing a 289x or 4810 feature?
   - No: Continue with the next step.
   - Yes: The 289x and 4810 IOP (IXS) adapter are customer installable unless the 289x or 4810 is being installed in a 5074, 5079, 5294, 9194, 8294, or 5094 expansion unit, contact your service provider to install the feature.
     - ◊ You might need to install memory on the 289x or 4810 IOP (IXS) adapter.
     - ◊ The 289x and 4810 are not installable in the ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, and ESCALA PL 850R/PL 1650R/R+ system units.
     - ◊ In the expansion units, the 2890, 2891, and 2899 adapters occupy two adapter positions, and a third adapter position is reduced to a short adapter position. The 2892 and the 4810 occupy two adapter positions.
     - ◊ For feature 2890, 2891, and 2899, place the first LAN IOA in the short adapter position following the IXS. All IXS LAN adapters must be in the same multi-adapter bridge as the IXS.
     - ◊ If you have a second LAN, place that adapter in the next position.
     - ◊ If you have a third LAN, place that adapter in the next position.
     - ◊ Check your current system configuration to see if the IXS position and the LAN IOA position are available. If not, you need to move adapters. For more information on how to remove and replace adapters, see PCI adapter.

   Continue to step 4.
3. Are you installing a 2843, 2847, or 2844 IOP feature?
   - Yes: Continue with the next step.
   - No: Go to step 6.
4. Use Table 1 to locate the values of your current configuration, then continue to the next step.

Note:

a. You can install the IOP in any adapter position labeled IOP. Refer to Configuration tables for models system units and expansion units for the IOP locations.
b. You might need to move an IOA to install your IOP. If you need to move an IOA, go to step 6 to determine where to move the adapter.
c. By installing an IOP, you are creating a new IOP adapter group.

d. IOPs cannot be placed in consecutive positions. IOPs can be placed in the position following 2792, 2892, 4710, or 4810.
e. You can install features 289x and 4810 only in any adapter position labelled IXS.

Table 1. IOP adapter numbers, names, memory values, performance values, and restrictions

Feature number	CCIN	Description	Restrictions	Max number IOAs	Memory value	Perf. value
2790 2791 2799	2890 001 2890 002 2890 003	PCI Integrated Server	♦ Not customer installable. ♦ These features get converted.	3		
2792	2892 001	PCI Integrated Server	♦ Not customer installable. ♦ These features get converted.	3		
2842	2842	PCI Node Input/Output Processor (IOP)	Not supported with 5xx systems and attached expansion-units.	4	100	100
2843	2843	PCI Node Input/Output Processor (IOP)	♦ IOPs cannot be placed in consecutive positions. ♦ 3 volt slot required, short or long slot	4	211	100
2847	2847	PCI IOP for SAN Load Source	♦ This is a dedicated IOP for SAN load Source and is only supported with 2766, 2787, and 5760 IOAs ♦ IOP can not be placed where embedded adapters require an IOP, therefore, do not place this IOP in the following system slots: ◊ ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+: slots C6, C5, or C3. ◊ 5/50: slots C1 and C2 ◊ 5/70: slots C1 and C2	1		
2844 9744 9844	2844	PCI Input/Output Processor	♦ IOPs cannot be placed in consecutive positions. ♦ 3 volt slot required, short or long slot	4	211	100
2890 2891 2899	2890 001 2890 002 2890 003	PCI Integrated Server Input/Output Processor (IOP)	♦ Only customer installable in 05/95, 50/95, and 50/88. ♦ An authorized service representative must install or remove this adapter in the model 50/74, 50/79, 50/94, 9194, 8294. and 52/94 expansion unit. ♦ Maximum total of three IXS 2790/2890, 2791/2891, 2792/2892,	3		

				2799/2899, 4710/4810, 4811/4812/4813/9744/9812/9813 in any combination per 5078/0578, 5074/5079/0574, 5088/0588, 5094/0694/5294, 8294/9194 tower. ♦ IOPs cannot be placed in consecutive positions. ♦ Only 2744, 2743, 2760, 4838 IOAs can be added in the same CCIN 2890 adapter group. ♦ Two positions are used by the CCINs 2890 adapter and the third position is reduced to half length.			
2892	2892	001	PCI Integrated Server	♦ Only customer installable in 05/95, 50/95, and 50/88. ♦ An authorized service representative must install or remove this adapter in the model 50/74, 50/79, 50/94, 52/94, 9194, and 8294 expansion unit. ♦ Maximum total of three IXS 2790/ 2890, 2791/ 2891, 2792/ 2892, 2799/ 2899, 4710/ 4810, 4811/ 4812/ 4813/ 9744/ 9812/ 9813 in any combination per 5078/ 0578, 5074/ 5079/ 0574, 5088/0588, 5094/0694/5294, 8294/9194 tower. ♦ Only 2744, 5700, 5701 IOAs can be added in the same IOP adapter group. ♦ Two positions are used by the 2892 and the 4810 adapter.	3		
4710	2892	002	PCI Integrated Server	♦ Not customer installable. ♦ These features get converted. ♦ Maximum total of three IXS 2790/2890, 2791/2891, 2792/2892, 2799/2899, 4710/4810, 4811/ 4812/ 4813/ 9744/ 9812/ 9813 in any combination per 5078/0578, 5074/ 5079/ 0574, 5088/0588, 5094/0694/ 5294, 8294/9194 tower.	3		
4810	2892	002	PCI Integrated Server	♦ Only customer installable in 05/95, 50/95, and 50/88. ♦ Only 2744, 5700, 5701 IOAs can be added in the same IOP adapter group.	3		

			♦ Two positions are used by the 2892 and the 4810 adapter. ♦ An authorized service representative must install or remove this adapter in the model 50/74, 50/79, 50/94, 9194, 9294, and 52/94 expansion unit. ♦ Maximum total of three IXS 2790/2890, 2791/2891, 2792/2892, 2799/2899, 4710/4810, 4811/ 4812/ 4813/ 9744/ 9812/ 9813 in any combination per 5078/0578, 5074/5079/0574, 5088/0588, 5094/0694/5294 8294/9194 tower.			

5. To install your IOP adapter, return to the PCI adapter installation instructions that sent you here.
6. When going through the following steps, refer to the Examples of placement tables to determine the best place to install or move your IOA, using the adapter information in the Configuration tables for models system units and expansion units.
    a. Locate the first IOP (2843, 2844).
    b. Determine the IOAs controlled by the IOP (IOP adapter group).
        ◊ An IOP adapter group is an IOP and all IOAs controlled by that IOP.
        ◊ IOP adapter groups cannot cross PCI bridge set boundaries. Refer to Configuration tables for models system units and expansion units.
        ◊ The Model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, and 570 system units have integrated SCSI controllers. If the integrated SCSI controller is being used with an IOP, be sure to include this adapter when determining IOP memory and performance limits.
    c. Locate the first IOP adapter group that has an empty position.
    d. Find and enter (on the placement table) the values of each IOA that is currently installed in this IOP adapter group that has an empty position. Use Table 2 to find the values.
    e. Install the new adapter in the next available position in the IOP adapter group. Do not leave open positions if possible.

       You should try to not move your console position.
    f. Write down the feature number or CCIN of the new adapter in the table.
    g. Find and enter the values of the new adapter in the placement table.
    h. Add together the IOA *Memory Value* and record it in the *IOA totals*.
    i. Add together the IOA *Performance Value* and record it in the *IOA totals*.
    j. If the totals are not greater than the value of the IOP for that adapter group, verify the restrictions, such as adapter length, to make sure the adapter can be installed in the empty position. If the restrictions are not met, choose another empty position and repeat the process. Otherwise, you are ready to install the new adapter in that empty position.
    k. If the totals are greater than either IOP adapter value, move to the next available IOP adapter group that has an empty adapter position and repeat the steps to complete another placement worksheet.
    l. Return to the PCI adapter installation instructions that sent you here.

Table 2. Adapter numbers, descriptions, restrictions, memory values, and performance values

Feature number	CCIN	Description	Restrictions	Adapter length	Memory value	Performance value
0092	2689	Integrated Adapter for		Long		
N/A	571E		IOPless	Long		

		PCI-X Ultra320 SCSI disk controller				
2742	2742	PCI Two-line WAN		Short	15	14
2743	2743	PCI Ethernet/IEEE 802.3 adapter	Only TCP/IP supported. These restrictions do not apply if 2743 is part of a CCIN 2890 IOP adapter groups. ♦ Do not place in a 5V position. ♦ Place in a 64-bit position. ♦ An IOP with a 2743 supports a maximum of one other IOA of any kind.	Short	2	26
2744	2744	PCI 100/16/4MB Token-Ring	A maximum of two 4838, 4805, 2849, and 2744 in any combination allowed per IOP, except for CCIN 289x and 4810 IOPs.	Short	25	36
2749	2749	PCI Ultra Magnetic Media Controller		Short	22	25
2757	2757	PCI-X Ultra RAID Disk Unit Controller	See Restriction footnotes.	Long	29	30
2760	2760	PCI 1 Gbps Ethernet UTP	These restrictions do not apply if 2760 is part of a CCIN 2890 IOP adapter group. ♦ Do not place in a 5V position. ♦ Place in a 64-bit position. ♦ An IOP with a 2743 supports a maximum	Short	2	26

			of one other IOA of any kind.			
2763	2763	PCI 2-Port RAID Disk Unit Controller	Use only in05/95 and 50/95. A maximum of two allowed per IOP.	Long	29	21
2765	2765	PCI Fibre Channel Tape Controller	For best performance, place in a 64-bit position. There can be a maximum of two 2765, 2766, 2787, 5704, 5760, or 5761 adapters (any combination) per PCI bridge set boundary.	Short	36	50
2766	2766	PCI Fibre Channel Disk Unit Controller	For best performance, place in a 64-bit position. Only one per IOP and no other IOAs. This IOA can be used in Multipath configurations. To improve the availability provided by Multipath configurations, it is recommended that each IOA and its IOP be placed on separate HSL loops, in different expansion units or on different multi-adapter bridges. See Restriction footnotes.	Short		
2768	2768	Magnetic Media Controller	**Attention:** you cannot use this adapter with 5xx systems. Do not plug this adapter into 5xx system units or damage might result.			

2772	2772	Dual WAN/Modem Adapter	Non-CIM (complex impedance matching).	Short	15	14
2773	2773	Dual WAN/Modem Adapter	CIM (complex impedance matching).	Short	15	14
2780	2780	PCI-X Ultra 4 RAID Disk Unit Controller	See Restriction footnotes. There can be a maximum of three, 2757, 2780, 9748, 4778, 9778, 5703, 5705, or 5737 adapter per IOP in any combination. There can be a maximum of three CCIN 2757, 2780 per tower CCIN 5079-100, 5094 adapters regardless of operating system, when used in a RAID configuration. Otherwise, you can use a maximum of four adapters.	Long	29	30
2782	2782	PCI-X RAID Disk Unit Controller	See Restriction footnotes.	Long	29	21
2787	2787	PCI-X Fibre Channel Disk Unit Controller	For best performance, place in a 64-bit position. Only one per IOP and no other IOAs. A maximum of two 2765, 2766, 2787, or 5704 (any combination) per PCI bridge set boundary. This IOA can be used in Multipath configurations. To improve the availability provided by Multipath configurations, it is recommended	Short		

			that each IOA and its IOP be placed on different HSL loops, in different expansion units or on different multi-adapter bridges.			
2793	2793	PCI 2 Line WAN with Modem	Non-CIM (complex impedance matching)	Short	15	14
2794	2793	PCI 2 Line WAN with Modem	CIM (complex impedance matching)	Short	15	14
2805	2805	PCI Quad Modem IOA	Non-CIM (Complex impedance matching)	Long	15	14
2806	2805	PCI Quad Modem IOA	CIM (Complex impedance matching)	Long	15	
2849	2849	PCI 100/10 Mbps Ethernet	A maximum of two 2849 and 2744 in any combination allowed per IOP.	Short	25	36
2886/ 9876	2886	Optical Bus Adapter				
2887/ 9887	2887	HSL-2 Bus Adapter				
4723	2723	PCI Ethernet/IEEE 10		Short	25	12
4745	2745	PCI Two-Line		Short	15	14
4746	9746	PCI Twinaxial Workstation Controller		Short	10	6
4778/ 9778	2748	PCI RAID Disk Unit Controller	A maximum of three 4748, 9748, 2757, 2780, 2782, 5703, 5705, 4778, or 9778 allowed per IOP. Not supported in 5xx system units.	Long	29	21
4778/ 9778	2778/ 4778/ 9778	PCI RAID Disk Unit Controller	See Restriction footnotes. You cannot use this adapter in a 5xx system unit.	Long	29	25
4801	4758	PCI Cryptographic Coprocessor	Cannot be controlled by the load source IOP.	Short	11	18
4805	2058	PCI Cryptographic	Cannot be controlled by the	Short	2	26

		Accelerator	load source IOP. A maximum of two 4805, 5700, or 5701 in any combination per IOP			
4811 4812 4813 9812 9813	4812	PCI Integrated Server	Maximum of 1 per IOP. Requires 2 consecutive long slots. For 5xx system units, must be placed in the following slots: ♦ ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+; C04 (feature code 4811), unless you have the 1.9 GHz model ESCALA PL 250T/R then, place 4811 starting in C05. ♦ ESCALA PL 450T/R; C02 ♦ ESCALA PL 850R/PL 1650R/R+; C04 (requires blind swap cassette, feature code 4813) ♦ ESCALA PL 3250R; no restrictions Requires feature 2844 to serve as	Long, double-width	25	51

			the IOP. Requires 3.3 v PCI slot. 64 bit slot recommended for best performance, but not required.			
4838	2838	PCI 100/10 Mbps Ethernet	A maximum of two 4838, 2849, and 2744 in any combination allowed per IOP, except for CCIN 2890 IOPs.	Short	25	36
5580	N/A	2780 Disk Controller with a secondary, auxiliary write cache IOA. (CCIN 5708)	See Restriction footnote.	Long	29	30
5581	N/A	2757 Disk Controller with a secondary, auxiliary write cache IOA. (CCIN 5708)	See Restriction footnotes.	Long	29	30
5582	N/A	5738 Disk Controller with a secondary, auxiliary write cache IOA. (CCIN 574F)	See Restriction footnotes.	Long	29	30
5583	N/A	5738 Disk Controller with a secondary, auxiliary write cache IOA. (CCIN 574F)	See Restriction footnotes.	Long	IOPless	IOPless
5590	N/A	2780 Disk Controller with a secondary, auxiliary write cache IOA. (CCIN 574F)	See Restriction footnote.	Long	29	30
5591	N/A	2757 Disk Controller with a secondary, auxiliary write cache IOA. (CCIN 574F)	See Restriction footnotes.	Long	29	30
5700 5701	5700 5701	PCI-X 1 Gbps Ethernet	If installing in the 5074 and 5079, place in the 32-bit position. Place in PCI-X slot if available (64-bit slot preferred.)	Short	2	26

			A cross-over cable is not supported. The following restrictions do not apply if 5700/5701 is part of a CCIN 2892 IOP adapter group. ♦ Can be combined with a maximum of one other IOA. ♦ A maximum of two 4805, 5700, or 5701 in any combination per IOP. ♦ Only TCP/IP supported. ♦ Half Duplex (HDX) mode is not supported. ♦ SNA is not supported.			
5702	5702	PCI-X Ultra Tape Controller	See Restriction footnotes.	Short	29	21
5703	5703	PCI-X RAID Disk Unit Controller	See Restriction footnotes.	Long	29	21
5704	5704	PCI-X Fibre Channel Tape Controller	For best performance, place in a 64-bit position. A maximum of two 2765, 2766, 2787, or 5704, in any combination, per PCI bridge set boundary.	Short	36	50
5705	5702	PCI Tape/Disk Unit Controller	5705 is not supported in the model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ and ESCALA PL 850R/PL 1650R/R+	Short	29	21

			system units. This feature can be converted to a 5702.			
5709	5709	RAID Enabler Card	Supported on model ESCALA PL 250T/R and ESCALA PL 450T/R. For installation instructions, see Backplanes and cards.	N/A	29	21
5712	5702	PCI-X Tape Controller	See Restriction footnote 1.	Short	29	21
5715	5702	PCI-X Tape/DASD Unit Controller	See Restriction footnotes.	Short	29	21
5721	573A	10 Gbps Ethernet IOA (short range)	PCI-X slots are required. You cannot use the adapter in 32 bit slots or PCI slots. Limited to six adapters per RIO-G loop.	Short	IOPless	IOPless
5722	576A	10 Gbps Ethernet IOA (long range)	PCI-X slots are required. You cannot use the adapter in 32 bit slots or PCI slots. Limited to six adapters per RIO-G loop.	Short	IOPless	IOPless
5726	5709	RAID Enabler Card	Supported on model ESCALA PL 850R/PL 1650R/R+. For installation instructions, see Backplanes and cards.	N/A	29	21
5727	573D	Integrated Cache 40 MB	Supported on model ESCALA PL 250T/R and ESCALA PL 450T/R. For installation instructions, see Backplanes and cards.	N/A	29	21
5728	573D	Integrated Cache 40 MB	Supported on model ESCALA PL 850R/PL 1650R/R+. For installation instructions, see Backplanes and cards.	N/A	29	21

5736	571A	PCI-X Disk/Tape Controller	See Restriction footnotes.	Short	29	21
5737	571B	PCI-X Disk Controller - 90MB	See Restriction footnotes.	Long	29	21
5738	571E	PCI-X Ultra320 SCSI Disk Controller	See Restriction footnotes.	Long	29	30
5739	571F	PCI-X Ultra320 SCSI Disk Controller with auxiliary write cache	♦ Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. (The controller side is the side with the external SCSI connectors.) ♦ When used in an Logical Partition (LPAR) environment this double wide adapter must have both slots of the adapter assigned to the same logical partition. When doing Dynamic Logical Partitioning (DLPAR), both slots of the adapter	Long, double-width	29	30

			must be managed together. ♦ Because of the complexity of this adapter, concurrent maintenance is not supported through the HMC. Concurrent maintenance must be done from the Hardware Service Manager (HSM).			
5760	280E	PCI-X Fibre Channel Disk Unit Controller	For best performance, place in a 64-bit position. Only one per IOP and no other IOAs. A maximum of two 2765, 2766, 2787, 5704, 5758, 5760, or 5761 (any combination) per PCI bridge set boundary. This IOA can be used in Multipath configurations. To improve the availability provided by Multipath, it is recommended that each IOA and its IOP be placed on different HSL loops, in different expansion units or on different multi-adapter bridges.	Short	N/A	N/A
5761	280D	PCI-X Fibre Channel Tape Controller	For best performance, place in a 64-bit position. A maximum of	Short	36	50

			two 2765, 2766, 2787, 5704, 5708, or 5761 in any combination, per PCI bridge set boundary.			
5777	571E	PCI-X Ultra320 SCSI Disk Controller	See Restriction footnotes.	Long	IOPless	IOPless
5778	571F	PCI-X Ultra320 SCSI Disk Controller with auxiliary write cache	♦ Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. (The controller side is the side with the external SCSI connectors.) ♦ When used in an Logical Partition (LPAR) environment this double wide adapter must have both slots of the adapter assigned to the same logical partition. When doing Dynamic Logical Partitioning (DLPAR), both slots of the adapter	Long, double-width	IOPless	IOPless

			must be managed together. ♦ Because of the complexity of this adapter, concurrent maintenance is not supported through the HMC. Concurrent maintenance must be done from the Hardware Service Manager (HSM).			
5781	571F	PCI-X Ultra320 SCSI Disk Controller with auxiliary write cache	♦ Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. (The controller side is the side with the external SCSI connectors.) ♦ When used in an Logical Partition (LPAR) environment this double wide adapter must have both slots of the adapter assigned	Long, double-width	29	30

			to the same logical partition. When doing Dynamic Logical Partitioning (DLPAR), both slots of the adapter must be managed together. ♦ Because of the complexity of this adapter, concurrent maintenance is not supported through the HMC. Concurrent maintenance must be done from the Hardware Service Manager (HSM).			
5783	573B	iSCSI Host Bus Adapter (copper)		Short	IOPless	IOPless
5784	573C	iSCSI Host Bus Adapter (fibre)		Short	IOPless	IOPless
5799	571F	PCI-X Ultra320 SCSI Disk Controller with auxiliary write cache	♦ Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. (The controller side is the side with the external	Long, double-width	29	30

			SCSI connectors.) ♦ When used in an Logical Partition (LPAR) environment this double wide adapter must have both slots of the adapter assigned to the same logical partition. When doing Dynamic Logical Partitioning (DLPAR), both slots of the adapter must be managed together. ♦ Because of the complexity of this adapter, concurrent maintenance is not supported through the HMC. Concurrent maintenance must be done from the Hardware Service Manager (HSM).			
6800 6801	5700 5701	PCI-X 1 Gbps Ethernet	Not supported in the 5074 and 5079. Place in PCI-X slot if available (64-bit slot preferred.	Short	IOPless	IOPless

			A cross-over cable is not supported. Only TCP/IP supported. Half Duplex (HDX) mode is not supported. SNA is not supported. **Note:** Starting with V5R3M5 on model ESCALA PL 250T/R (feature code 8325, 8327 or 8330) and V5R4M0 for the rest of the 5xx models, this is a dual mode adapter that is capable of functioning IOPless or IOP controlled. If an IOP is placed on the same multi-adapter bridge number and at a lower address number, then this adapter will be under IOP control and will not function as an IOPless adapter. See feature code 5700 and 5701 for this adapter when used with an IOP.			
6803	2793	PCI 2-Line WAN with Modem	Non-CIM (complex impedance matching) **Note:** Starting with V5R3M5 on model ESCALA PL 250T/R (feature code 8325, 8327 or 8330) and V5R4M0 for	Short	IOPless	IOPless

			other 5xx models, this is a dual mode adapter that is capable of functioning IOPless or IOP controlled. If an IOP is placed on the same multi-adapter bridge number and at a lower address number, then this adapter will be under IOP control and will not function as an IOPless adapter.			
6804	2793	PCI 2-Line WAN with Modem	CIM (complex impedance matching) **Note:** Starting with V5R3M5 on model ESCALA PL 250T/R (feature code 8325, 8327 or 8330) and V5R4M0 for other 5xx models, this is a dual mode adapter that is capable of functioning IOPless or IOP controlled. If an IOP is placed on the same multi-adapter bridge number and at a lower address number, then this adapter will be under IOP control and will not function as an IOPless adapter.	Short	IOPless	IOPless
9509	5709	RAID Enabler Card	Supported on model 9405-520.For installation instructions, see Backplanes and cards.	N/A	29	21

9510	5709	RAID Enabler Card	Supported on model 9405-520.For installation instructions, see Backplanes and cards.	N/A	29	21
9771	2771	PCI 2-Line WAN w/Modem	Only one per system.	Short	15	14
Installed	570B	Integrated Base SCSI Controller	If 5709 is installed then CCIN 570B is not used.	N/A	29	21
N/A	5708	Auxiliary Write Cache IOA	Integrated into feature codes 5580 and 5581.	Long	29	1
N/A	574F	Auxiliary Write Cache IOA	Integrated into feature numbers 5582 and 5583.	Long	29	1

Restriction footnotes for Table 2

1. A maximum of three, 2757, 2780, 4748, 4778, 5580, 5581, 5582, 5583, 5590, 5591, 5736, 5702, 5703, 5705, 5712, 5715, 5736, 5738, 5739, 5737, 5781, 5799 allowed per IOP in any combination. Feature codes 5580, 5581, 5582, 5583, 5590, 5591, 5739, 5781, and 5799 contain two adapters. An auxiliary write cache IOA also counts as one IOA towards the maximum of three. For example, 5580 consists of 2 adapters so 5580 counts as two towards the three maximum when located under the same IOP.
2. A maximum of six 0627, 0649, 2757, 2780, 5580, 5581, 5582, 5583, 5738, 5739, 5778, 5777, 5781, 5782, 5799, and 5800 allowed per 8294 or 9194 unit enclosure regardless of operating system. Features that include a SCSI controller paired with an auxiliary write-cache IOA, either as 2 separate adapters, or one double-wide adapter, count as 2 towards the 6 maximum.
3. A maximum of six 0627, 2757, 2780, 5580, 5581 allowed per 0574/5074 or 0694/5094 unit enclosure regardless of operating system. Features that include a SCSI controller paired with an auxiliary write-cache IOA, either as 2 separate adapters, or one double-wide adapter, count as 2 towards the 6 maximum.
4. The auxiliary write cache IOAs cannot be placed in the system units of the ESCALA PL 250T/R, ESCALA PL 450T/R and ESCALA PL 850R/PL 1650R/R+. These IOAs can be placed in an attached expansion unit.
5. The 0649, 2757, 2780, 5738, or 5777 disk controllers cannot be placed in the system units of the ESCALA PL 250T/R, ESCALA PL 450T/R and ESCALA PL 850R/PL 1650R/R+. These controllers can be placed in an attached expansion unit.

Parent topic: PCI adapter placement for models system units and expansion units

Related information
See these topics for information about installing PCI adapters.

Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

High performance SCSI, DASD controller placement

Determine which PCI slots can accommodate the 0649, 2780, 5580, 5590, 5582, 5583, 5738, 5739, 5746, 5777, 5778, 5781, 5782, 5799, and 5800 SCSI controllers on models systems.

Overview and Prerequisites

This section provides special placement information for the SCSI controllers and auxiliary-write cache adapters listed in Table 1. This information supplements the placement information in Determine the best place to install your adapter.

If you are installing a new feature, ensure that you have the software required to support the new feature and that you determine if there are any existing PTF prerequisites. To do this, use the ESCALA PL Series Prerequisite Web page at www-912.ibm.com/e_dir/eServerPrereq.nsf.

Use the list in Table 1 to cross reference adapter feature codes with their CCIN numbers and descriptions. See also the adapter tables in Determine the best place to install your adapter for more detailed descriptions, notes, and restrictions for these adapters.

Then go to one of the following system or expansion unit tables to determine which PCI slots can accommodate these adapters.

- 50/74 or 50/79 expansion unit
- 50/94 or 52/94 expansion unit
- 50/88 or 05/88 expansion unit
- 50/95 or 05/95 expansion unit
- 57/90 expansion unit
- ESCALA PL 250T/R system unit with 1.6 GHz processors
- ESCALA PL 250T/R system unit with 1.9 GHz, POWER5+ processors
- ESCALA PL 450T/R system unit with 1.6 GHz processors
- ESCALA PL 450T/R system unit with 1.9 GHz, POWER5+ processors
- ESCALA PL 850R/PL 1650R/R+ system unit with 1.6 GHz processors
- ESCALA PL 850R/PL 1650R/R+ system unit with 1.9 GHz, POWER5+ processors

CAUTION:Place these adapters only in an allowed slot. Placing these adapters in an unsupported slot may result in early-life, adapter failure.

Table 1. High performance SCSI controllers.

Feature codes	CCIN numbers	Description	Variables
0627	2780	PCI-X Ultra 4 RAID Disk Unit Controller	Direct attach
2780	2780	PCI-X Ultra 4 RAID Disk Unit Controller	IOP controlled
5580, 5590	2780 and 574F	2780 Disk Controller with a secondary, auxiliary-write cache IOA	IOP controlled
0649	571E	PCI-X Ultra320 SCSI Disk Controller	Direct attach
5738	571E	PCI-X Ultra320 SCSI Disk Controller	IOP controlled
5582	571E and 574F	5738 Disk Controller with a secondary, auxiliary-write cache IOA	IOP controlled
5777	571E	PCI-X Ultra320 SCSI Disk Controller	IOPless
5583	571E and 574F	5777 Disk Controller with a secondary, auxiliary-write cache IOA	IOPless
5739, 5746,	571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled

5781, 5799		Double-wide adapter. 571F is the controller. 575B is the auxiliary-write cache.	
5778, 5782, 5800	571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache Double-wide adapter. 571F is the controller. 575B is the auxiliary-write cache.	IOPless

50/74 or 50/79 expansion unit

571E, and the double-wide adapter 571F/575B, are not supported on the 50/74 or 50/79.

2780 and 574F are supported in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
2780	PCI-X Ultra 4 RAID Disk Unit Controller	IOP controlled	2, 3, 4, 9, 10, 14, 15
		IOPless or direct attach	2, 3, 4, 5, 9, 10, 11, 14, 15
574F	Auxiliary-Write Cache IOA	IOP controlled	2, 3, 4, 9, 10, 14, 15
		IOPless or direct attach	1, 2, 3, 4, 5, 9, 10, 11, 14, 15

50/94 or 52/94 expansion unit

571E, and the double-wide adapter 571F/575B, are not supported on the 50/94 or 52/94.

2780 and 574F are supported in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
2780	PCI-X Ultra 4 RAID Disk Unit Controller	IOP controlled	2, 3, 4, 6, 7, 8, 9, 12, 13, 14, 15
		IOPless or direct attach	2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15
574F	Auxiliary-Write Cache IOA	IOP controlled	2, 3, 4, 6, 7, 8, 9, 12, 13, 14, 15
		IOPless or direct attach	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15
571E	PCI-X Ultra320 SCSI Disk Controller	IOP controlled	2, 3, 4, 6, 7, 8, 9
		IOPless or direct attach	1, 2, 3, 4, 5, 6, 7, 8, 9
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide*	2, 3, 4, 8, 9
		IOPless or direct attach double-wide*	1, 2, 3, 4, 5, 6, 8, 9

* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slots with bold numbers can be used for the SCSI controller side of the adapter. Slots where the number is underlined can be used for either side of the adapter. The remaining slot numbers can be used for the cache side (575B) of the adapter.

50/88 or 05/88 expansion unit

2780, 574F, and 571E are not supported on the 50/88 or 05/88.

The double-wide adapter 571F/575B is supported in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide*	8, 9
		IOPless double-wide*	8, 9
* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair can be placed in slot 8. The cache side of the adapter would then go in slot 9.			

50/95 or 05/95 expansion unit

571E, and the double-wide adapter 571F/575B, are not supported on the 50/95 or 05/95.

2780 and 574F are supported in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
2780	PCI-X Ultra 4 RAID Disk Unit Controller	IOP controlled	2, 3, 4, 7, 8
		IOPless or direct attach	1, 2, 3, 4, 6, 7, 8
574F	Auxiliary-Write Cache IOA	IOP controlled	2, 3, 4, 7, 8
		IOPless or direct attach	1, 2, 3, 4, 6, 7, 8

57/90 expansion unit

2780, 574F, and 571E are not supported on the 57/90.

The double-wide adapter 571F/575B is supported in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide*	2, 3, 6, 7
		IOPless double-wide*	1, 2, 3 5, 6, 7
* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slots with bold numbers can be used for the SCSI controller side (571F) of the adapter. Slots where the number is underlined can be used for either side of the adapter. The remaining slot numbers can be used for the cache side (575B) of the adapter.			

ESCALA PL 250T/R system unit with 1.6 GHz processors

2780, 574F, and 571E are not supported on the 1.6 GHz ESCALA PL 250T/R.

The double-wide adapter 571F/575B is supported on the 1.6 GHz ESCALA PL 250T/R in the slots shown in the Allowed slots column.

The ESCALA PL 250T/R version of the 571F/575B has special, thermal features that are designed specifically for the ESCALA PL 250T/R system unit. Use only adapter, feature codes that are approved for the ESCALA PL 250T/R when installing this adapter.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide*	4, 5
		IOPless double-wide	None. IOPless is not supported.
* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slot 4 can be used for the SCSI controller side (571F) of the adapter. Slot 5 can be used for the cache side (575B) of the adapter.			

ESCALA PL 250T/R system unit with 1.9 GHz, POWER5+ processors

2780, 574F, and 571E are not supported on the 1.9 GHz ESCALA PL 250T/R.

The double-wide adapter 571F/575B is supported on the 1.9 GHz ESCALA PL 250T/R in the slots shown in the Allowed slots column.

The ESCALA PL 250T/R version of the 571F/575B has special, thermal features that are designed specifically for the ESCALA PL 250T/R system unit. Use only adapter, feature codes that are approved for the ESCALA PL 250T/R when installing this adapter.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write	IOP controlled double-wide	None. IOP controlled is not supported.

	cache	IOPless double-wide*	4, 5, 6
* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slot 4 can be used for the SCSI controller side (571F) of the adapter. Slot 5 can be used for either side of the adapter. Slot 6 can be used for the cache side (575B) of the adapter.			

ESCALA PL 450T/R system unit with 1.6 GHz processors

2780, 574F, 571E, and 571F/575B are not supported in the 1.6 GHz ESCALA PL 450T/R system unit.

ESCALA PL 450T/R system unit with 1.9 GHz, POWER5+ processors

2780, 574F, and 571E are not supported in the 1.9 GHz ESCALA PL 450T/R system unit.

The double-wide adapter 571F/575B is supported in the 1.9 GHz ESCALA PL 450T/R system unit in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide	None. IOP controlled is not supported.
		IOPless double-wide*	1, 2, 3, 4
* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slot 1 can be used for the SCSI controller side (571F) of the adapter. Slots 2 and 3 can be used for either side of the adapter. Slot 4 can be used for the cache side (575B) of the adapter.			

ESCALA PL 850R/PL 1650R/R+ system unit with 1.6 GHz processors

2780, 574F, and 571E are not supported in the 1.6 GHz ESCALA PL 850R/PL 1650R/R+ system unit.

The double-wide adapter 571F/575B is supported in the 1.6GHz ESCALA PL 850R/PL 1650R/R+ system unit in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide*	4, 5
		IOPless double-wide	None. IOPless is not supported.
* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slot 4 can be used for the SCSI controller side (571F) of the adapter. Slot 5 can be used for the			

cache side (575B) of the adapter.

ESCALA PL 850R/PL 1650R/R+ system unit with 1.9 GHz, POWER5+ processors

2780, 574F, and 571E are not supported in the 1.9 GHz ESCALA PL 850R/PL 1650R/R+ system unit.

The double-wide adapter 571F/575B is supported in the 1.9 GHz ESCALA PL 850R/PL 1650R/R+ system unit in the slots shown in the Allowed slots column.

CCIN number(s)	Description	Variables	Allowed slots
571F B	PCI-X Ultra320 SCSI Disk Controller with auxiliary-write cache	IOP controlled double-wide*	4, 5
		IOPless double-wide*	3, 4, 5

* Double-wide adapter, requires 2, adjacent slots. The SCSI controller side of the adapter pair requires a 64-bit slot. Slots with bold numbers can be used for the SCSI controller side (571F) of the adapter. Slots where the number is underlined can be used for either side of the adapter. The remaining slot numbers can be used for the cache side (575B) of the adapter.

Parent topic: PCI adapter placement for models system units and expansion units

Related information

Determine the best place to install your adapter

Configuration tables for models system units and expansion units Linux PCI adapters AIX PCI adapters

Configuration tables for models system units and expansion units

This section provides configuration tables for models system units and expansion units.

Parent topic: PCI adapter placement for models system units and expansion units

Related information
The following procedures describe the removal, replacement, and installation of PCI adapters.

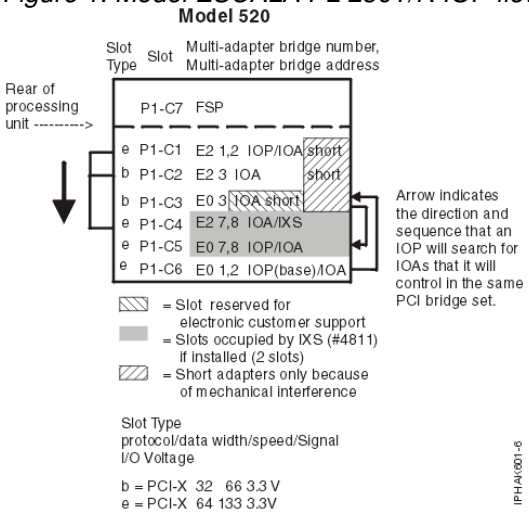
Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

Model ESCALA PL 250T/R system unit

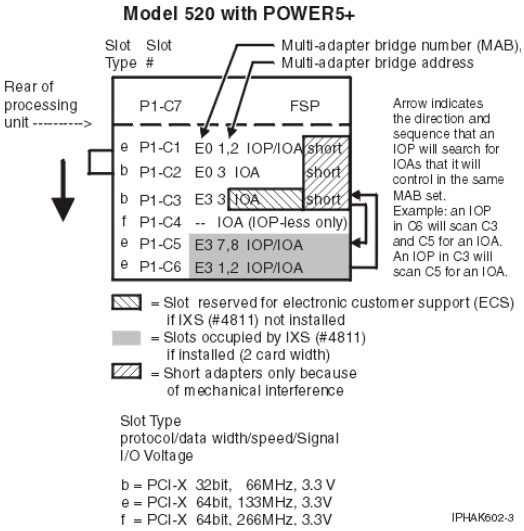
This section provides configuration information for the models 9405-520 and 9406-520. For the model ESCALA PL 250T/R system unit, the arrows in Figure 1 indicate the direction and sequence that an IOP will search for IOAs that it will control in the same PCI bridge set.

Figure 1. Model ESCALA PL 250T/R IOP flow chart



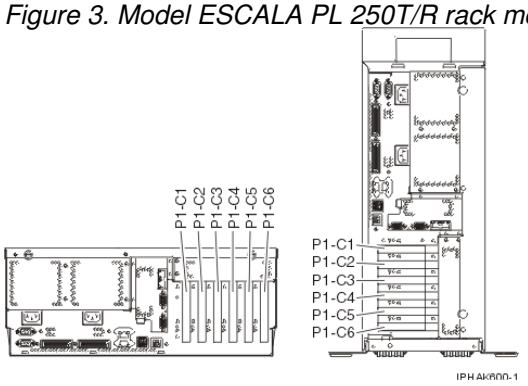
For the model ESCALA PL 250T/R with 1.9 GHz processor system unit, the arrows in Figure 2 indicate the direction and sequence that an IOP will search for IOAs that it will control in the same PCI bridge set. If you have a system feature code of 8325, 8327 or 8330, refer to Figure 2. These feature codes are for model ESCALA PL 250T/R systems that have a double data rate (DDR) IOPless only slot (C4) The DDR slot only supports IOPless adapters. The DDR slot is best for extra high bandwidth, IOPless adapters as indicated in the tables in this section. However, the DDR slot is also backward compatible slower PCI adapters.

Figure 2. Model ESCALA PL 250T/R with 1.9 GHz processor IOP flow chart



The planar layout shown in Figure 2 is capable of supporting dual mode adapters at V5R3M5 and later. Dual mode adapters are adapters that can be either IOPless or IOP controlled. If an IOP is placed on the same multi-adapter bridge number and at a lower address number, then this adapter will be under IOP control and will not function as an IOPless adapter. This also applies to the embedded SCSI controller. For example, if an IOP is place in C6 then the embedded SCSI controller would be under IOP control since the embedded SCSI controller is at multi-adapter bridge number E3 and multi-adapter bridge address 5, 6 (not show in diagram) and the IOP is at multi-adapter bridge number E3 and multi-adapter bridge address 1, 2. Since the address of the IOP is lower on the embedded SCSI controller the IOP will control it.

Figure 3. Model ESCALA PL 250T/R rack mounted and deskside system unit back view with numbered slots.



- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slots C1, C2, and C3 are short slots.
- Slots C4, C5, and C6 are long slots.

Note: When feature 6584 is installed, only short PCI cards can be plugged into PCI slot P1-C4. When feature 6594 is installed, only short PCI cards can be into PCI slot P1-C5.

- Short adapters can go in short or long slots.
- 32 or 64-bit adapters can go in 32-bit slots.
- 32 or 64-bit adapters can go in 64-bit slots.
- For best performance, 64-bit adapters should go in 64-bit slots.

Table 1. Slot location reference for the model ESCALA PL 250T/R with 1.5 or 1.6 GHz Processors

Slot	PCI bridge set	Planar	Location code	Slot characteristics
1	2	1	Un-P1-C1	Short, 64-bit 3.3V, 133 MHz
2	2	1	Un-P1-C2	Short, 32-bit 3.3V, 66 MHz
3	0	1	Un-P1-C3	Short, 32-bit 3.3V, 66 MHz
4	2	1	Un-P1-C4	Long, 64-bit 3.3V, 133 MHz
5	0	1	Un-P1-C5	Long, 64-bit 3.3V, 133 MHz
6	0	1	Un-P1-C6	Long, 64-bit 3.3V, 133 MHz

Table 2. Slot location reference for the model ESCALA PL 250T/R with 1.9 GHz Processors

Slot	PCI bridge set	Planar	Location code	Slot characteristics
1	0	1	Un-P1-C1	Short, 64-bit 3.3V, 133 MHz
2	0	1	Un-P1-C2	Short, 32-bit 3.3V, 66 MHz
3	3	1	Un-P1-C3	Short, 32-bit 3.3V, 66 MHz
4	-	1	Un-P1-C4	Long, 64-bit 3.3V, 266 MHz, IOPless only
5	3	1	Un-P1-C5	Long, 64-bit 3.3V, 133 MHz
6	3	1	Un-P1-C6	Long, 64-bit 3.3V, 133 MHz

To identify compatible PCI adapters, see the following tables:

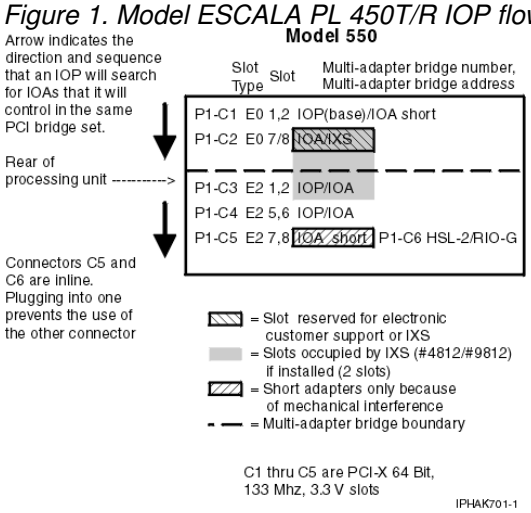
- AIX PCI adapters
- Linux PCI adapters

Parent topic: Configuration tables for models system units and expansion units

Model ESCALA PL 450T/R system unit

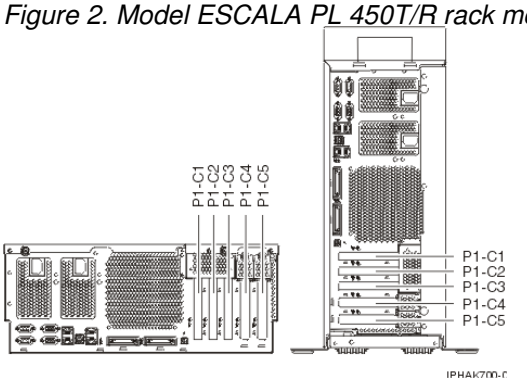
This section provides configuration information for the model 9406-550. The arrows in the following figure indicate the direction and sequence that an IOP will search for IOAs that it will control in the same PCI bridge set.

Figure 1. Model ESCALA PL 450T/R IOP flow chart



Embedded SCSI is Multi-adapter bridge number E0 and address 5, 6

Figure 2. Model ESCALA PL 450T/R rack mounted and deskside system unit back view with numbered slots.



- Slots C1 through C5 are compatible with PCI and PCI-X adapters.
- Slots C1 through C4 are long slots.
- Slots C5 is a short slot.
- Slots C5 can contain one PCI, PCI-X, or GX+ adapter. If a GX+ adapter is installed, it must be placed in the C5 slot.
- Short adapters can go in short or long slots.
- A 32-bit or 64-bit adapter can go in a 64-bit slot.
- A 32-bit or 64-bit adapter can go in a 32-bit slot.
- For best performance 64-bit adapters should go in 64-bit slots.
- All slots support Enhanced Error Handling (EEH).
- The model ESCALA PL 450T/R with the 1.9 GHz processor does not come with a base IOP and is capable of supporting dual mode adapters at V5R4 and later. Dual mode adapters are adapters that

can be either IOPless or IOP controlled. If an IOP is placed on the same multi-adapter bridge number and at a lower address number, then this adapter will be under IOP control and will not function as an IOPless adapter. This also applies to the embedded SCSI controller. For example, if an IOP is place in C1 then the embedded SCSI controller would be under IOP control since the embedded SCSI controller is at multi-adapter bridge number E0 and multi-adapter bridge address 5, 6 (not show in diagram) and the IOP is at multi-adapter bridge number E0 and multi-adapter bridge address 1, 2. Since the address of the IOP is lower on the embedded SCSI controller the IOP will control it.

Table 1. Model ESCALA PL 450T/R slot location reference

Slot	PCI bridge set	Planar	Location code	Slot characteristics
1	0	1	Un-P1-C1	Long, 64-bit 3.3V, 133 MHz
2	0	1	Un-P1-C2	Long, 64-bit 3.3V, 133 MHz
3	2	1	Un-P1-C3	Long, 64-bit 3.3V, 133 MHz
4	2	1	Un-P1-C4	Long, 64-bit 3.3V, 133 MHz
5	2	1	Un-P1-C5	Short, 64-bit 3.3V, 133 MHz

To identify compatible PCI adapters, see the following tables:

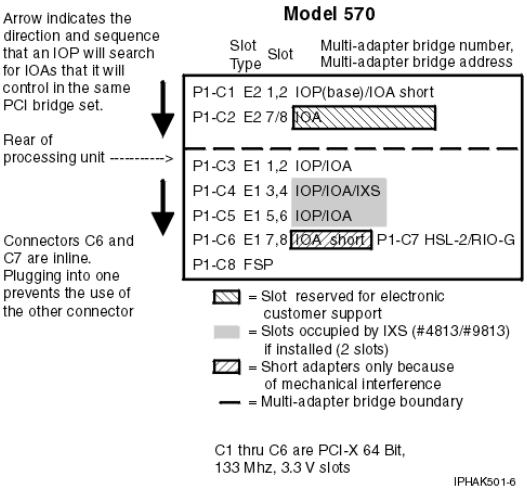
- AIX PCI adapters
- Linux PCI adapters

Parent topic: Configuration tables for models system units and expansion units

Model ESCALA PL 850R/PL 1650R/R+ system unit

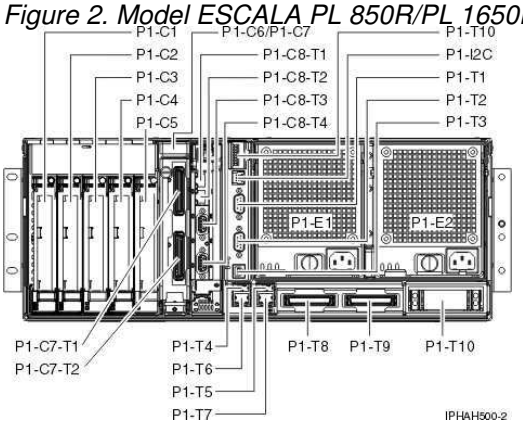
This section provides configuration information for the model 9406-570. The arrows in the following figure indicate the direction and sequence that an IOP will search for IOAs that it will control in the same PCI bridge set.

Figure 1. Model ESCALA PL 850R/PL 1650R/R+ IOP flow chart



Embedded SCSI is multi-adapter bridge number E2 and address 3,4. If feature code 5728 or 5726 is installed, then all 6 DASD are controlled by address 3,4. Without these features, address 3,4 controls only 3 DASD bays. The other 3 DASD bays are controlled by multi-adapter bridge number E0, address 1 (IOPless only).

Figure 2. Model ESCALA PL 850R/PL 1650R/R+ rack mounted system unit back view with numbered slots.



- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Slots C1, C2, C3, C4, and C5 are long slots.
- Slot C6 is a short slot. This space can be occupied by a PCI adapter or a high-speed link (HSL-2/RIO-G) card.
- Short adapters can go in short or long slots.
- A 32-bit or 64-bit adapter can go in a 64-bit slot.
- A 32-bit or 64-bit adapter can go in a 32-bit slot.
- For best performance, 64-bit adapters should go in 64-bit slots.
- The model ESCALA PL 850R/PL 1650R/R+ with the 1.9 GHz or faster processor does not come with a base IOP and is capable of supporting dual mode adapters at V5R4 and later. Dual mode adapters are adapters that can be either IOPless or IOP controlled. If an IOP is placed on the same multi-adapter bridge number and at a lower address number, then this adapter will be under IOP control and will not function as an IOPless adapter. This also applies to the embedded SCSI controller. For example, if an IOP is place in C1 then the embedded SCSI controller would be under IOP control since the embedded SCSI controller is at multi-adapter bridge number E2 and multi-adapter bridge address 3,4 (not show in diagram) and the IOP is at multi-adapter bridge number E2 and multi-adapter bridge address 1, 2. Since the address of the IOP is lower on the embedded SCSI controller the IOP will control it.

Table 1. ESCALA PL 850R/PL 1650R/R+ slot location reference

Slot	PCI bridge set	Planar	Location code	Slot characteristics
1	2	1	Un-P1-C1	Long, 64-bit 3.3V, 133 MHz
2	2	1	Un-P1-C2	Long, 64-bit 3.3V, 133 MHz
3	1	1	Un-P1-C3	Long, 64-bit 3.3V, 133 MHz
4	1	1	Un-P1-C4	Long, 64-bit 3.3V, 133 MHz
5	1	1	Un-P1-C5	Long, 64-bit 3.3V, 133 MHz
6	1	1	Un-P1-C6	Short, 64-bit 3.3V, 133 MHz or HSL-2/RIO-G adapter placement

To identify compatible PCI adapters, see the following tables:

- AIX PCI adapters
- Linux PCI adapters

Parent topic: Configuration tables for models system units and expansion units

Model ESCALA PL 6450R system unit

PCI adapters connected to the model ESCALA PL 6450R system units are placed in expansion units. For information about PCI adapter placement for these systems, refer to the information for the model of expansion unit that is attached to the system. .

Parent topic: Configuration tables for models system units and expansion units

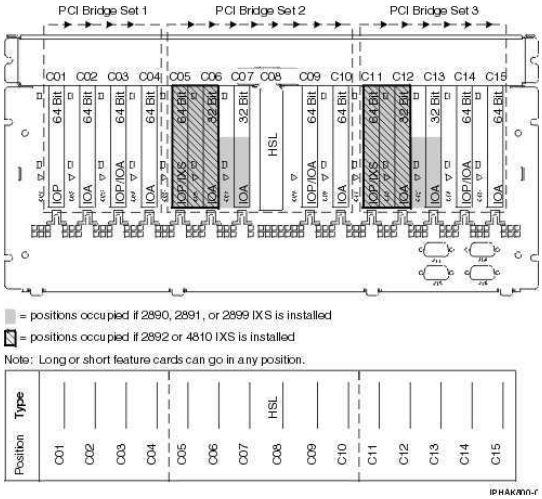
50/74 expansion unit

You need one diagram for each expansion unit that is attached to the system unit. Copy the diagram for your use.

- Place the first disk unit controller card in position C02, C03, or C04.
- Slots C06, C07, C12, and C13 are 5 Volt slots. Adapter cards must be 5 Volt compatible to go in these slots.
- Maximum of 3 IXS (CCIN 2890, 2892, 4812) per expansion unit.
- IOPs control IOAs in the direction of the arrows in the PCI bridge sets.

Resource name: _____

PCI adapter



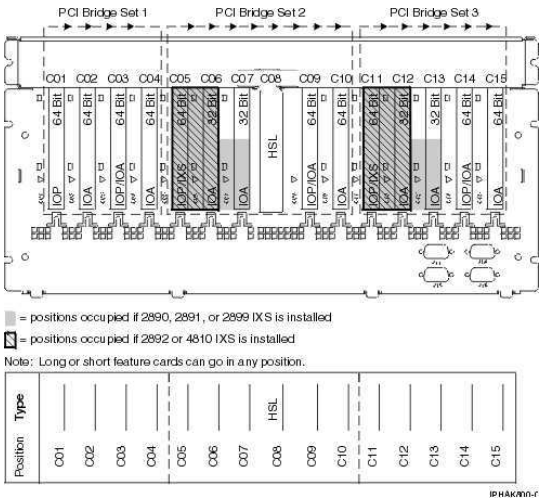
Parent topic: Configuration tables for models system units and expansion units

50/79 expansion unit

You need one diagram for each expansion unit that is attached to the system unit. Copy the diagram for your use.

- Place the first disk unit controller card 2757, 2780, 4778 or 5703 in position C02, C03, or C04.
- Slots C06, C07, C12, and C13 are 5 Volt slots. Adapter cards must be 5 Volt compatible to go in these slots.
- Maximum of 3 IXS (CCIN 2890, 2892, 4812) per expansion unit.
- IOPs control IOAs in the direction of the arrows in the PCI bridge sets.

Resource name: _____

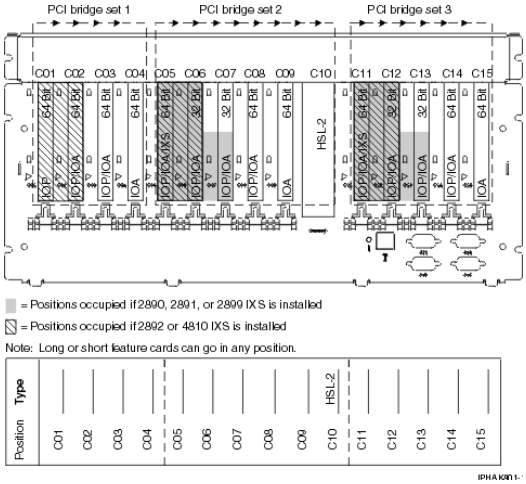


Parent topic: Configuration tables for models system units and expansion units

50/88 or 05/88 expansion unit

- Features 2892 and 4810 are the only IXS cards allowed in C01.
- Maximum of 3 IXS (CCIN 2890, 2892, 4812) per expansion unit.
- IOPs control IOAs in the direction of the arrows in the PCI bridge sets.

Resource name: _____



Parent topic: Configuration tables for models system units and expansion units

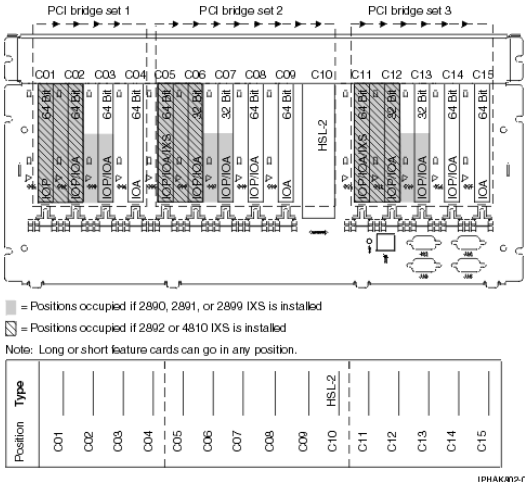
50/94 and 91/94 expansion unit

You need one diagram for each expansion unit that is attached to the system unit. Copy the diagram for your use.

- Place the first disk unit controller adapter in position C02, C03, C04, C05, C06, C07, C08, or C09.
- Maximum of 3 IXS (CCIN 2890, 2892, 4812) per expansion unit.
- IOPs control IOAs in the direction of the arrows in the PCI bridge sets.

Resource name: _____

PCI adapter



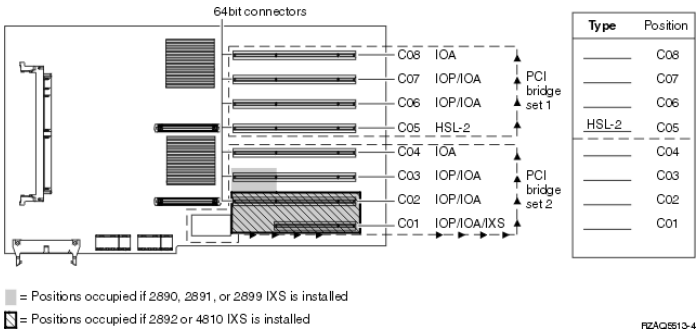
Parent topic: Configuration tables for models system units and expansion units

05/95 or 50/95 expansion unit

You need one diagram for each expansion unit that is attached to the system unit. Copy the diagram for your use.

- The IOP controls C02 and possibly C03 and C04.
- IOPs control IOAs in the direction of the arrows in the PCI bridge set.
- SCSI in the diagram indicates the disk unit controller position (adapters 2757, 2780, 4778, 5703).

Resource name: _____



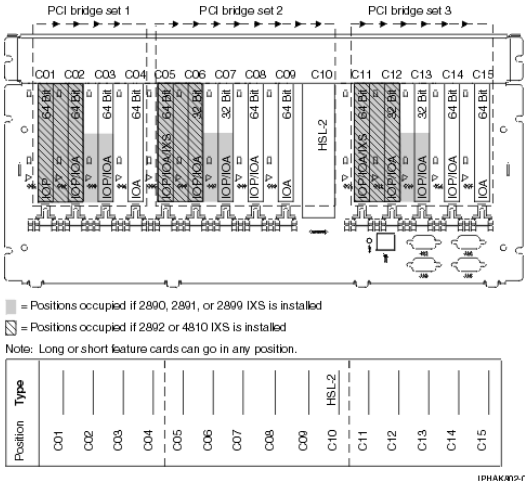
Parent topic: Configuration tables for models system units and expansion units

52/94 and 82/94 expansion unit

You need one diagram for each expansion unit that is attached to the system unit. Copy the diagram for your use.

- Place the first disk unit controller adapter in position C02, C03, or C04, C05, C06, C07, C08, or C09.
- Maximum of 3 IXS (CCIN 2890, 2892, 4812) per expansion unit.
- IOPs control IOAs in the direction of the arrows in the PCI bridge sets.

Resource name: _____



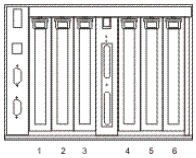
Parent topic: Configuration tables for models system units and expansion units

57/90 or 11D/11 expansion unit

You need one diagram for each expansion unit that is attached to the system unit. Copy the diagram for your use.

- IOPs control IOAs in the direction of slots 1 3, and 4 6.

Resource name: _____



- The following table shows the slot properties and PHB connections.

Table 1. Model 57/90 or 11D/11 slot location description

PHB1			PHB2		
Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6
Long	Long	Long	Long	Long	Long

PCI adapter

64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz
Un-P1-C1	Un-P1-C2	Un-P1-C3	Un-P1-C4	Un-P1-C5	Un-P1-C6

- Slots C1 through C6 are compatible with PCI and PCI-X adapters.
- Short adapters can go in short or long slots.

Parent topic: Configuration tables for models system units and expansion units

Examples of placement tables

If your unit is shut down, look at the back of the unit and record the numbers on the adapters in the applicable table below. Use the Configuration tables for models system units and expansion units to locate the embedded IOPs.

Use one worksheet for each IOP in all of your units.

Example of a completed placement table

IOP adapter groupAdapter positionFeature number or CCIN number from type columnMemory valuePerformance value C2844211100 C C C C IOA totals

289x or 4810 integrated server IOP

CCIN 2890 (feature codes 2743, 2760, 2790, 2791, 2799, 2890, 2891, 2899, and 4838) restrictions:

- Add only 2744, 2743, 2760, 4838 IOAs.
- The 2890 adapter uses three positions (if an IOA is used).
- Memory and performance values have no maximum limits.

CCIN 2892 (feature codes 2792, 2892, 4710, and 4810) restrictions:

- Add only 2744, 5700, and 5701 IOAs.
- Two positions are used.
- Memory and performance values have no maximum limits.

This IOP is not allowed in model ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+ , ESCALA PL 450T/R, or ESCALA PL 850R/PL 1650R/R+ processing units.

IOP adapter group	Adapter position	Feature number or CCIN number from adapter position
	C	289x IXS
	C	
	C	
	C	

IOP adapter group	Adapter position	Feature number or CCIN number from type column	Memory value	Performance value
IOP	C01	2843	211	100

IOA	C02	2748	30	21
IOA	C03	4745	15	7
IOA	C04	4746	10	6
IOA	C05		26	37
	IOA totals		81	71

Parent topic: PCI adapter placement for models system units and expansion units

Linux PCI adapters

The PCI adapters listed in this section are supported on models models with the Linux operating system.

The following Linux PCI adapters are ordered when the function of that adapter is required, but the card will be controlled by a Linux operating system. Cards controlled by a Linux operating system do not use or require PCI IOPs.

Feature/ CCIN	Systems/ Expansion units				Description	Adapter characteristics	Other information
	520	550	570	595			
0601/2743	X	X	X	X	Direct Attach-2743	Short, 64-bit, 66MHz	
0602/2760	X	X	X	X	Direct Attach-2760	Short, 64-bit, 66MHz	
0603/2744	X	X	X	X	Direct Attach Token Ring	Short, 32-bit, 66MHz	
0607/4838	X	X	X	X	Direct Attach-4838: PCI 100/10 Mbps Ethernet IOA	Short, 32-bit, 33 MHz	
0608/2745	X	X	X	X	Direct Attach-4745: PCI Two-Line WAN IOA	Short, 32-bit, 33MHz	
0609/2772	X	X	X	X	Direct Attach-2772: PCI Dual WAN/Modem IOA	Short, 32-bit, 33MHz	
0610/2772	X	X	X	X	Direct Attach-2773: PCI Dual WAN/Modem IOA (ANSI)	Short, 32-bit, 33MHz	
0611/2765	X	X	X	X	Direct Attach-2765: PCI Fibre Channel Tape Controller	Short, 64-bit, 66MHz	• High bandwidth
0612/2766	X	X	X	X	Direct Attach-2766: PCI Fibre Channel Disk Unit Controller	Short, 64-bit, 66MHz	• High bandwidth
0613/2742	X	X	X	X	Direct Attach-2742: PCI Two-Line WAN IOA	Short, 32-bit, 66MHz	
0614/2793	X	X	X	X	Direct Attach-2793: PCI 2-Line WAN with Modem	Short, 32-bit, 66MHz	
0615/2793	X	X	X	X	Direct Attach-2794: PCI 2-Line WAN with Modem (complex impedance matching)	Short, 32-bit, 66MHz	

0616/2805	X	X	X	X	Direct Attach-2805: PCI Quad Modem IOA	Long, 32-bit, 66MHz	
0617/2805	X	X	X	X	Direct Attach-2806: PCI Quad Modem IOA (complex impedance matching)	Long, 32-bit, 66MHz	
0620/5700	X	X	X	X	Direct Attach-5700: Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• EEH Supported • High Bandwidth • Place in 64-bit PCI-X slot if available • If this feature is placed in a model 50/74 or 50/79 tower, it must be placed in 32 bit slot
0621/5701	X	X	X	X	Direct Attach-5701: 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• EEH Supported • High Bandwidth • Place in 64-bit PCI-X slot if available • If this feature is placed in a model 50/74 or 50/79 tower, it must be placed in 32 bit slot"
0623/2849	X	X	X	X	Direct Attach-2849	Short, 32-Bit, 33 MHz, 3.3 or 5 V	• EEH Supported
0624/5702	X	X	X	X	Direct Attach-5702: PCI-X Dual Channel Ultra320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	• EEH Supported • High Bandwidth
0625/5704	X	X	X	X	Direct Attach-5704, Fibre Channel	Short, 32 or 64-bit, 3.3V	• High Bandwidth
0626/2787	X	X	X	X	Direct Attach-2787: PCI-X Fibre Channel Disk Unit Controller	Short, 64-bit, 133MHz	• High Bandwidth
0627/2780	X	X	X	X	Direct Attach-2780: PCI-X Ultra4 RAID Disk Ctrl	Long, 64-bit, 133MHz	• High Bandwidth • This feature is not supported in slot C01 of models 50/74, 50/79, 50/94, and 52/94
0628/5703	X	X	X	X	Direct Attach-5703: PCI-X Dual Channel Ultra320 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3V	• EEH supported • High Bandwidth • Supported in AIX
0632	X	X	X	X	PCI USB 2.0 Adapter	Short, 32-bit, 3.3 or 5V	
0633	X	X	X	X	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32 or 64-bit, 3.3V	• Not hot-pluggable
0637			X	X	4 Port Ethernet 10/100"	Long, 32 or 64-bit, 3.3 or 5V	
0645/5702	X	X	X	X	Direct Attach-5712: PCI-X Dual Channel Ultra320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	• EEH Supported
0646	X	X	X	X	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High Bandwidth • Supported in AIX
0647/571A	X	X	X	X	Direct Attach-5736: PCI-X Dual Channel	Short, 32 or 64-bit, 3.3V	• EEH Supported

					Ultra320 SCSI Adapter		• High Bandwidth
0648/571B	X	X	X	X	Direct Attach-5736: PCI-X Dual Channel Ultra320 SCSI Raid Adapter	Long, 32 or 64-bit, 3.3V	• EEH Supported • High Bandwidth
0649/571E	X	X	X	X	PCI-X Dual Channel Ultra320 SCSI Raid Adapter	Long, 32 or 64-bit, 3.3V. 133 MHz	• Dual-mode capable adapter • EEH Supported • High bandwidth • The 0649, 2757, 2780, 5738, or 5777 disk controllers cannot be placed in the system units of the ESCALA PL 250T/R, ESCALA PL 450T/R and ESCALA PL 850R/PL 1650R/R+. These controllers can be placed in an attached expansion unit.
2737	X	X	X	X	PCI USB 1.1 adapter	Short, 32-bit, 3.3 or 5V	
2848	X	X	X	X	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32-bit, 3.3 or 5V	• Not hot-pluggable
4962	X	X	X	X	10/100 Mbps Ethernet PCI Adapter II	Short, 32-bit, 3.3 or 5V	• EEH Supported
5706/5706	X	X	X	X	Direct Attach-5706	Short, 64-bit, 3.3 or 5 V	• High Bandwidth • Place in 64-bit PCI-X slot if available • If this feature is placed in a model 5074 or 5079 tower, it must be placed in 32 bit slot
5707/5707	X	X	X	X	Direct Attach-5706	Short, 64-bit, 3.3 or 5 V	• High Bandwidth • Place in 64-bit PCI-X slot if available • If this feature is placed in a model 5074 or 5079 tower, it must be placed in 32 bit slot
5709/5709	X	X	X		RAID Enabler Card, Special adapter card for RAID	Custom location slot	
5713/573B	X	X	X	X	iSCSI TOE Gigabit ENET (Copper), PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High Bandwidth
5714/573C	X	X	X	X	iSCSI TOE Gigabit ENET (Fiber) PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High Bandwidth
5721/573A	X	X	X	X	10 Gb Ethernet-SR PCI-X 2.0 DDR Adapter	Short, 64-bit, 3.3V	• Extra high bandwidth • None allowed in PCI slots (PCI-X is acceptable) • None allowed in 32 bit slots • Recommended in DDR slots
5722/576A	X	X	X	X	10 Gb Ethernet-LR PCI-X 2.0 DDR Adapter	Short, 64-bit, 3.3V	

							• Maximum of 6 per RIO loop.
5727/573D	X	X			Integrated Cache 40 MB	NA	
5728/573D			X		Integrated Cache 40 MB	NA	
5740/5740	X	X	X	X	4-Port 10/100/1000 Base-TX PCI-X Adapter	Short, 64-bit, 3.3V	• High bandwidth
5741	X	X	X	X	Single Bus Ultra320 SCSI Repeater		
5758/280D	X	X	X	X	Direct Attach, Fibre Channel	Short, 32 or 64-bit, 3.3V	• Extra-high bandwidth
5759/5759	X	X	X	X	4 Gigabit PCI-X 2.0 Dual Port Fibre Channel Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth
6203			X	X	ULTRA3 SCSI ADAPTER		
6303	X	X	X	X	PCI Ultra3 SCSI Adapter		• High Bandwidth
6204	X	X	X	X	PCI Universal Differential Ultra SCSI Adapter	Short, 32-bit, 3.3 or 5V	• EEH Supported

Parent topic: PCI adapter placement for models system units and expansion units

Related information
See these topics for information about installing PCI adapters.

Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

AIX PCI adapters

The PCI adapters listed in this section are supported on models models with the AIX operating system.

Adapters can be serviced with the system power on (Hot-pluggable) unless noted that they must be serviced with the system power off (Not hot-pluggable).

All adapters support Extended Error Handling (EEH).

Feature/ CCIN	Systems/ Expansion Units				Description	Adapter characteristics	Other information
	520	550	570	595			
0611/2765	X	X	X	X			

					Direct Attach-2765: PCI 2 Gb Fibre Channel Tape Controller	Short, 64-bit, 66MHz	• High bandwidth
0620/5700	X	X	X	X	Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
0621/5701	X	X	X	X	10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
0625/5704	X	X	X	X	Direct Attach-5704	Short, 32 or 64-bit, 3.3V	• High Bandwidth
0627/2780	X	X	X	X	Direct Attach-2780: PCI-X Ultra4 RAID Disk Ctrl	Long, 64-bit, 133MHz	• High Bandwidth • This feature is not supported in slot 1 of models 50/74, 50/79, 50/94, and 52/94
0628	X	X	X	X	PCI-X Dual Channel Ultra320 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3V	• High Bandwidth
0632	X	X	X	X	PCI USB 2.0 Adapter	Short, 32-bit, 3.3 or 5V	• High Bandwidth
0633	X	X	X	X	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32 or 64-bit, 3.3V	• Not hot-pluggable
0634	X	X	X	X	128-Port Asynchronous Controller, PCI bus	Short, 32-bit, 3.3 or 5V	
0635	X	X	X	X	2-Port Multiprotocol PCI Adapter	Short, 32-bit, 3.3 or 5V	
0637			X	X	100/10Mbps 4-port Ethernet Adapter	Long, 32 or 64-bit, 3.3 or 5V	
0638			X		Advanced Serial RAID Plus Adapter	Short, 32 to 64-bit, 3.3V or 5V	• High bandwidth
0639					128 MByte DRAM Option Card for feature 6230/ 4-P		
0640					32 MByte Fast-Write Cache Option Card for feature 6230/ 4-P		
0642	X		X		PCI Ultra-3 RAID Adapter	Long, 32 or 64-bit, 3.3 or 5V	• High bandwidth
0643	X	X	X	X	2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
0644	X	X	X	X	2-Port Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
0645	X	X	X	X	PCI-X Dual Channel Ultra320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	• High bandwidth
0646	X	X	X	X	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
0647/571A	X	X	X	X	Direct Attach-5736: PCI-X Dual Channel Ultra320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	• EEH Supported • High bandwidth
0648/571B	X	X	X	X	Direct Attach-5736: PCI-X Dual Channel Ultra320 SCSI Raid Adapter	Long, 32 or 64-bit, 3.3V	• EEH Supported • High bandwidth
2737			X	X	PCI USB 1.1 adapter	Short, 32-bit, 3.3 or 5V	

2848			X		POWER GXT135P Graphics Accelerator with Digital Support	Short, 32-bit, 3.3 or 5V	• Not hot-pluggable
2943	X	X	X	X	8-Port Asynchronous Adapter EIA-232/RS-422, PCI bus	Short, 32-bit, 3.3 or 5V	
2946			X		Turboways 622 Mbps PCI MMF ATM Adapter	Short, 64-bit, 3.3 or 5V	• High bandwidth
2947	X	X	X	X	ARTIC960Hx 4-Port Multiprotocol PCI Adapter	Long, 32-bit, 3.3 or 5V	
4959	X	X	X	X	Token-Ring PCI Adapter	Short, 32-bit, 3.3 or 5V	
4960		X	X		Cryptographic Accelerator	Short, 32-bit, 3.3 or 5V	
4962	X	X	X	X	10/100 Mbps Ethernet PCI Adapter II	Short, 32-bit, 3.3 or 5V	
4963			X		PCI Cryptographic Coprocessor (FIPS-4)	Short, 32-bit, 3.3 or 5V	
5706/5706	X	X	X	X	2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5707/5707	X	X	X	X	2-Port Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5709/5709	X	X	X		Dual Channel SCSI RAID Enablement Card	Custom slot	
5713	X	X	X	X	ISCSI TOE Gigabit ENET(Copper), PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5714	X	X	X	X	ISCSI TOE Gigabit ENET(Fiber) PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5715/5702	X	X	X	X	PCI-X Tape/DASD Unit Controller	Short, 32 or 64-bit, 3.3V	
5714	X	X	X	X	ISCSI TOE Gigabit ENET(Fiber) PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5718	X	X	X	X	10 Gigabit Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3V	• Extra-high bandwidth
5719	X	X	X	X	10 GIGABIT ENET (FIBER), PCIX	Short, 32 to 64-bit, 3.3V	• Extra-high bandwidth
5721/573A	X	X	X	X	10 Gbps Ethernet (short reach)	Short, 64-bit, 3.3V	• Extra-high bandwidth • None allowed in PCI slot (PCI-X is acceptable) • None allowed in 32 bit slot • Place in slots 5-9 when the adapter is used in one of these expansion units: 5094, 5294, 0588, 5088, 0694, 8294, or 9194 • Recommended in DDR slot • Maximum of 6 per RIO loop, however, when

							significant adapter bandwidth is used, install fewer adapters for better performance
5722/576A	X	X	X	X	10 Gbps Ethernet (long reach)	Short, 64-bit, 3.3V	
5723	X	X	X	X	2 Port EIA-232 Asynch PCI Adapter	Short, 32 bit, 3.3V or 5V	
5726/5709			X		RAID Enabler Card	NA	
5727/573D	X	X			Integrated Cache 40 MB	NA	
5728/573D			X		Integrated Cache 40 MB	NA	
5740/5740	X	X	X	X	4-Port 10/100/1000 Base-TX PCI-X Adapter	Short, 64-bit, 3.3V	• High bandwidth
5758/280D	X	X	X	X	Direct Attach-5704	Short, 32 or 64-bit, 3.3V	• High bandwidth
5759/5759	X	X	X	X	4 Gigabit PCI-X 2.0 Dual Port Fibre Channel Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth
5760/280E	X	X	X	X	PCI-X Fibre Channel Disk Unit Controller	Short, 32 or 64-bit, 3.3V	• High bandwidth
5761/208D	X	X	X	X	PCI-X Fibre Channel Tape Controller	Short, 32 or 64-bit, 3.3V	• High bandwidth
6203			X		PCI Dual Channel Ultra3 SCSI Adapter	Long, 32 to 64-bit, 3.3V or 5V	
6204	X	X	X	X	PCI Universal Differential Ultra SCSI Adapter	Short, 32-bit, 3.3 or 5V	
6312	X	X			Quad Digital Trunk Telephony PCI Adapter	Long, 32 or 64-bit, 3.3 or 5V	Digital Trunk adapters have an internal cable and must be in contiguous slots.
6800/5700	X	X	X	X	PCI-X 1 Gbps Ethernet	Short, 32 or 64-bit, 3.3 or 5V	
6801/5701	X	X	X	X	PCI-X 1 Gbps Ethernet	Short, 32 or 64-bit, 3.3 or 5V	
6803/2793	X	X	X	X	PCI 2-Line WAN with Modem	Short	Non-CIM (complex impedance matching)
6804/2793	X	X	X	X	PCI 2-Line WAN with Modem	Short	CIM
6805/2742	X	X	X	X	PCI Two-line WAN	Short	
6808/2805	X	X	X	X	PCI Quad Modem IOA	Long	Non-CIM
6809/2805	X	X	X	X	PCI Quad Modem IOA	Long	CIM
7818				X	HSL-2/RIO-G 2-Ports Copper	Custom slot	Two port RIO-G (copper) bus adapter for model ESCALA PL 6450R
7819				X	HSL/RIO 2-Ports Optical	Custom slot	Two port RIO-G (optical) bus adapter for model ESCALA PL 6450R
8244	X				Audio PCI Adapter for Workstations	Short, 32-bit, 3.3V	Not hot-pluggable in model ESCALA PL 250T/R
9509/5709	X				RAID Enabler Card	NA	
9510/5709	X				RAID Enabler Card	NA	
9771/2771	X	X	X	X	PCI 2-Line WAN w/Modem	Short, 32 bit, 3.3V or 5V	Only one per system.

Parent topic: PCI adapter placement for models system units and expansion units

Related information
See these topics for information about installing PCI adapters.

Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, or attached expansion-unit, PCI adapters

Model ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, or attached expansion-unit, PCI adapters Model 5/60, ESCALA PL 850R/PL 1650R/R+, ESCALA PL 3250R, ESCALA PL 6450R, and attached expansion-units, PCI adapters and cassettes

PCI adapter placement for o/p system units and expansion units

Use this information to determine if specific slot requirements exist for adapters you are installing.

Some adapters must be placed in specific PCI slots to function correctly at optimum performance. Use the following information to determine where to install adapters in your server.

- **o/p PCI and PCI-X adapters**
- **Logical partition (LPAR) considerations**
- **Model 9123-710 adapter placement**
- **Model 9124-720 adapter placement**

Parent topic: PCI adapter placement in the system unit or expansion unit

o/p PCI and PCI-X adapters

The following table shows the o/p PCI and PCI-X adapters supported by the Linux operating system.

Note:

1. Adapters can be serviced with the system power on (Hot-pluggable) unless noted that they must be serviced with the system power off (Not hot-pluggable).
2. All adapters support Extended Error Handling (EEH).

Feature/CCIN	Description	Adapter characteristics	Other information
1905/1905	4 Gigabit PCI-X 2.0 Single Port Fibre Channel Adapter	Short, 32 or 64-bit, 3.3V	• High bandwidth
1910/1910	4 Gigabit PCI-X 2.0 Dual Port Fibre Channel Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth

1912/1912	PCI-X DDR Dual Channel Ultra320 LVD SCSI Adapter	Short, 64-bit, 3.3V	• High bandwidth
1913/1913	PCI-X DDR Dual Channel Ultra320 LVD SCSI Adapter	Long, 64-bit, 3.3V	• High bandwidth
1957/1957	2 Gigabit Fibre Channel PCI-X Short PIC bracket Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
1974/1974	PCI-X Dual Channel Ultra320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	• High bandwidth
1975/1975	PCI-X Dual Channel Ultra320 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3V	• High bandwidth
1977/197E	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
1978/1978	Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
1979/1979	10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32-bit, 3.3 or 5V	• High bandwidth
1980/1980	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32-bit, 3.3 or 5V	
1981/1981	10 Gigabit Ethernet-SR PCI-X Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth
1982/1982	10 Gigabit Ethernet-LR PCI-X Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth
1983/1983	2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
1984/1984	2-Port Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
1985/1985	10/100 Mbps Ethernet PCI Adapter II	Short, 32-bit, 3.3 or 5V	
1986/573B	1 Gigabit-TX iSCSI TOE PCI-X Adapter	Short, 32 or 64 bit, 3.3 or 5V	• High bandwidth
1987/573C	1 Gigabit-SX iSCSI TOE PCI-X Adapter	Short, 32 or 64 bit, 3.3 or 5V	• High bandwidth
2738/2738	2 Port USB PCI Adapter	Short, 32-bit, 3.3 or 5V	
2849/2849	POWER GXT135P Graphics Accelerator with Digital Support	Short, 32 or 64-bit, 3.3V	Not hot-pluggable in model 7/20
4962/A-F	10/100 Mbps Ethernet PCI Adapter II	Short, 32-bit, 3.3 or 5V	
5700/5700	Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5701/5701	10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5703/5703	PCI-X Dual Channel Ultra320 SCSI RAID Adapter	Long, 32 or 64-bit, 3.3V	• High bandwidth

5706/5706	2-Port 10/100/1000 Base-TX Ethernet PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5707/5707	2-Port Gigabit Ethernet-SX PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5712/5712	PCI-X Dual Channel Ultra 320 SCSI Adapter	Short, 32 or 64-bit, 3.3V	• High bandwidth
5713/5713	1 Gigabit-TX iSCSI TOE PCI-X Adapter	Short, 32 or 64 bit, 3.3 or 5V	• High bandwidth
5714/5714	1 Gigabit-SX iSCSI TOE PCI-X Adapter	Short, 32 or 64 bit, 3.3 or 5V	• High bandwidth
5716/280B	2 Gigabit Fibre Channel PCI-X Adapter	Short, 32 or 64-bit, 3.3 or 5V	• High bandwidth
5718/5718	10 Gigabit-SR Ethernet PCI-X Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth
5719/5719	10 Gigabit-SR Ethernet PCI-X Adapter	Short, 64-bit, 3.3V	• Extra-high bandwidth
5723/5723	2-Port EIA-232 Asynch PCI Adapter	Short, 32 bit, 3.3V or 5V	• High bandwidth

Parent topic: PCI adapter placement for o/p system units and expansion units

Logical partition (LPAR) considerations

Place redundant devices in separate I/O units for best availability performance. Place nonredundant devices in the same I/O unit. If you place nonredundant devices in one unit, the system is less exposed to other-unit failures.

Some devices do not have enhanced error handling capabilities built in to their device drivers. If these devices fail, the PCI bridge set in which they are placed are affected. If the I/O subsystem encounters a severe error, all slots in the PCI bridge set are also affected. To clear this condition, you can reboot the system. In addition, it is also possible to remove the failed PCI slots on an affected PCI bridge set from the partition profile or profiles that include these PCI slots, and reboot the partition or partitions that terminated at the time of the error.

To avoid PCI bridge set errors related to non-enhanced error handling adapters, it is strongly recommended that if a non-enhanced error handling adapter is used, all slots on that PCI bridge set should be assigned to a single partition.

Parent topic: PCI adapter placement for o/p system units and expansion units

Model 9123-710 adapter placement

The following information provides direction on what adapters can be placed in the system and where adapters should be placed for optimum performance.

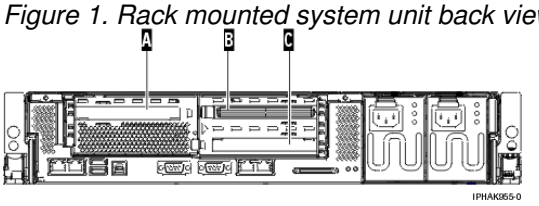
Select the appropriate information from this list:

- System unit back view
- PCI slot description

- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Rack mounted system unit back view with three PCI slots available.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Slot location description

PHB2		
Slot 1 (A)	Slot 2 (B)	Slot 3 (C)
Long	Long	Long
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz
Un-P2-C1	Un-P2-C2	Un-P2-C3

- Slots C1 through C3 are compatible with PCI and PCI-X adapters.
- All slots are long slots
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)
- None of the slots in this system are hot-pluggable.

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and maximum number of specified adapters recommended. If the space in the Maximum number of adapters allowed is blank, there is no maximum limit for that adapter.

Feature Code	Base Unit slot priority	Maximum number of adapters allowed
5721 **	1, 2, 3	1
5722**	1, 2, 3	1
1982**	1, 2, 3	1
1981**	1, 2, 3	1
1954*	1, 2, 3	2
5740*	1, 2, 3	2
1984*	1, 2, 3	3
1983*	1, 2, 3	3
1978*	1, 2, 3	3
1979*	1, 2, 3	3
1910 **	1, 2, 3	1
5759 **	1, 2, 3	1
1905 *	1, 2, 3	2

5758 *	1, 2, 3	2
1986 *	1, 2 ,3	3
5713 *	1, 2 ,3	3
1987*	1, 2 ,3	3
5714*	1, 2 ,3	3
1977*	1, 2, 3	3
1913 *	1, 2, 3	3
5737 *	1, 2, 3	3
1912 *	1, 2, 3	3
1974*	1, 2, 3	3
1975*	1, 2, 3	3
1980	1, 2, 3	1
1985	1, 2, 3	1
5723	1, 2, 3	2
2738	1, 2, 3	1

** Extra High Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the Performance notes before installing this adapter.

For more information about listed adapters, see o/p PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- A maximum of one 10 Gb Ethernet port allowed on a 2 way system.
- No more than three Gb Ethernet ports per PHB or system.
- No more than three high-bandwidth adapters per PHB or system.
- If one 10 Gb port is present, no other 10 Gb or 1 Gb ports are allowed for optimum performance.
- No more than three Gb Ethernet ports per on CPU in a system.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for o/p system units and expansion units

Model 9124-720 adapter placement

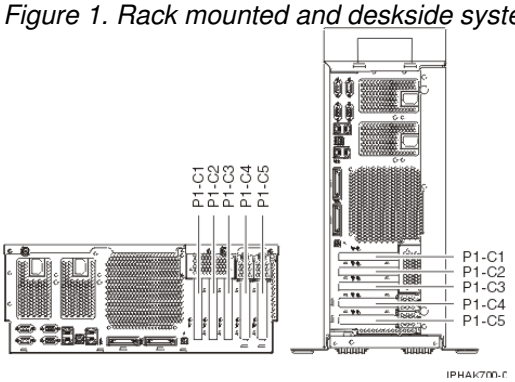
The following information provides direction on what adapters can be placed in the system and where adapters should be placed for optimum performance.

Select the appropriate information from this list:

- System unit back view
- PCI slot description
- Recommended system unit slot placement and maximums
- Performance notes (for optimum performance)

System unit back view

Figure 1. Rack mounted and deskside system unit back view with numbered slots.



PCI slot description

- The following table shows the slot properties and PHB connections.

Table 1. Model 7/20 slot location descriptions

PHB0				PHB2		
Slot 1	Slot 2	Integrated Dual 1 Gb Ethernet	Integrated SCSI U320	Slot 3	Slot 4	Slot 5
Long	Long			Long	Long	Short
64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	133 MHz	133 MHz	64-bit 3.3V, 133 MHz	64-bit 3.3V, 133 MHz	Short, 64-bit 3.3V, 133 MHz
Un-P1-C1	Un-P1-C2			Un-P1-C3	Un-P1-C4	Un-P1-C5

- Slots C1 through C5 are compatible with PCI and PCI-X adapters.
- Short adapters can go in short or long slots.
- All slots support Enhanced Error Handling (EEH)

Recommended system unit slot placement and maximums

See the following table to identify the recommended system unit slot placement and the recommended maximum number of specified adapters.

Feature Code	Base unit slot priority	Maximum number of adapters allowed in base unit
5721**	1, 3, 2, 4, 5	1
5722**	1, 3, 2, 4, 5	1
1982**	1, 3, 2, 4, 5	1
1981**	1, 3, 2, 4, 5	1
1954*	1, 3, 2, 4, 5	4
5740*	1, 3, 2, 4, 5	4
1984*	1, 3, 2, 4, 5	5
1983*	1, 3, 2, 4, 5	5
5706*	1, 3, 2, 4, 5	5
5707*	1, 3, 2, 4, 5	5
1979*	1, 3, 2, 4, 5	5
1978*	1, 3, 2, 4, 5	5
5701*	1, 3, 2, 4, 5	5
5700*	1, 3, 2, 4, 5	5

1910*	1, 3, 2, 4, 5	2
5759*	1, 3, 2, 4, 5	2
1905*	1, 3, 2, 4, 5	4
5758*	1, 3, 2, 4, 5	4
1986*	1, 3, 2, 4, 5	4
1987*	1, 3, 2, 4, 5	4
5713*	1, 3, 2, 4, 5	4
5714*	1, 3, 2, 4, 5	4
1977*	1, 3, 2, 4, 5	5
5716*	1, 3, 2, 4, 5	5
1913*	1, 3, 2, 4	5
5737*	1, 3, 2, 4	5
1912*	1, 3, 2, 4, 5	5
1974*	1, 3, 2, 4, 5	5
5712*	1, 3, 2, 4, 5	5
5703*	1, 3, 2, 4	4
1975*	1, 3, 2, 4	4
2849	2, 5, 1, 4, 3	2
1980	2, 5, 1, 4, 3	2
4962	2, 5, 1, 4, 3	5
1985	2, 5, 1, 4, 3	5
5723	2, 5, 1, 4, 3	2
2738	2, 5, 1, 4, 3	2
2738	3, 1, 4, 2, 5	2

** Extra High Bandwidth (EHB) adapter. See the *Performance notes* before installing this adapter.

* High Bandwidth (HB) adapter. See the Performance notes before installing this adapter.

For more information about listed adapters, see o/p PCI and PCI-X adapters.

Performance notes (for optimum performance)

System unit information:

- No more than three Gb Ethernet ports per PHB. This total should include the two integrated Gb Ethernet ports on PHB 0.
- No more than three high bandwidth adapters per PHB
- No more than one extra high bandwidth adapter per PHB and two per base system
- No more than one 10 Gb Ethernet port per two CPUs in a system. If one 10 Gb Ethernet port is present per two CPUs, no other 10 Gb or 1 Gb ports allowed for optimum performance.
- No more than two 1 Gb Ethernet ports per one CPU in a system. More Ethernet adapters can be added for connectivity.

Note: The cumulative sum of extra high-performance adapters cannot exceed the system max for extra high-performance adapters.

Parent topic: PCI adapter placement for o/p system units and expansion units

Updating the world-wide port name for a new 2766, 2787, or 280E IOA

If you have exchanged a 2766, 2787, or 280E Fibre Channel IOA, the external storage subsystem must be updated to use the world-wide port name of the new 2766, 2787, or 280E IOA. This section provides instructions.

The world-wide port name can be found using the Hardware Service Manager in SST or DST. Display detail on the 2766, 2787, or 280E IOA Logical Hardware Resource information, and use the port worldwide name field.

The 16-digit world-wide port name can also be determined by appending the digits "1000" to the beginning of the 12-digit IEEE address found on the tailstock label of the Fibre Channel IOA. For the 2105 external storage subsystem, use the TotalStorage Enterprise Storage Server User's Guide (SC26-7445) to update the world-wide port name in the host configuration. This guide can be found at the TotalStorage Web site . In the Resources column select Technical documentation under Service and support.

Parent topic: PCI adapter

Increasing I/O adapter memory allocation

Increase memory allocation for high-performance PCI adapters.

The memory allocation for certain PCI slots can be increased to take advantage of the performance improvements in PCI adapters designed to use this feature. Not all adapters will benefit from the increased memory. To see if an adapter is designed to use increased memory allocation, consult the documentation that comes with the adapter.

When this feature is not enabled, which is the default setting, 128 MB of memory is allocated for 32-bit PCI slots and 256 MB of memory is allocated for PCI 64-bit slots.

To enable increased I/O adapter memory allocation, see Enabling I/O adapter memory allocation.

The following tables show the memory allocation for each slot when the additional memory allocation feature is enabled. The PCI memory size column shows the amount of PCI memory that is allocated to the adapter at boot time, while the Translation Control Entry (TCE) range shows the memory allocated to the adapter at runtime. The rows in bold show the slots with enhanced memory allocation.

Model ESCALA PL 250T/R system unit

Slot	PHB	EADS slot number	PCI memory size	TCE range
C1	2	1, 2	128 MB	256 MB
C2	2	3	127 MB	128 MB
C3	0	3	128 MB	128 MB
C4	2	7, 8	1536 MB	1024 MB
C5	0	7, 8	128 MB	256 MB
C6	0	1, 2	1536 MB	1024 MB

Model ESCALA PL 450T/R system unit

Slot	PHB	EADS slot number	PCI memory size	TCE range
C1	0	1, 2	128 MB	256 MB
C2	0	7, 8	640 MB	1024 MB
C3	2	1, 2	128 MB	256 MB
C4	2	5, 6	128 MB	256 MB
C5	2	7, 8	1536 MB	1024 MB

Model ESCALA PL 850R/PL 1650R/R+ system unit

Slot	PHB	EADS slot number	PCI memory size	TCE range
C1	2	1, 2	128 MB	256 MB
C2	2	7, 8	640 MB	1024 MB
C3	1	1, 2	127 MB	256 MB
C4	1	3, 4	128 MB	256 MB
C5	1	5, 6	128MB	256 MB
C6	1	7, 8	1536 MB	1024 MB

Model 5/75 processor node

Slot	PHB	EADS slot number	PCI memory size	TCE range
C1	1	1, 2	1023 MB	1024 MB
C2	1	5, 6	1024 MB	1024 MB
C3	2	1, 2	511 MB	1024 MB
C4	2	5, 6	512 MB	1024 MB

Model 57/90 and the 11D/11 expansion drawer

Slot	PHB	EADS slot number	PCI memory size	TCE range
C1	1	1, 2	127 MB	256 MB
C2	1	3, 4	128 MB	256 MB
C3	1	7, 8	1792 MB	1024 MB
C4	2	1, 2	127 MB	256 MB
C5	2	3, 4	128 MB	256 MB
C6	2	7, 8	1792 MB	1024 MB

Models 50/95, 05/95, and the 11D/20 expansion drawers and desk-side units

Slot	PHB	EADS slot number	PCI memory size	TCE range

C1	2	1, 2	127 MB	256 MB
C2	2	3, 4	128 MB	256 MB
C3	2	5, 6	128 MB	256 MB
C4	2	7, 8	1664 MB	1024 MB
C5	0	1, 2	127 MB	256 MB
C6	0	3, 4	128 MB	256 MB
C7	0	7, 8	1792 MB	1024 MB

Model 406/1D expansion drawer

Slot	PHB	EADS slot number	PCI memory size	TCE range
C1	1	1, 2	127 MB	256 MB
C2	1	3, 4	128 MB	256 MB
C3	1	5, 6	128 MB	256 MB
C4	1	7, 8	1664 MB	1024 MB
C5	2	1, 2	128 MB	256 MB
C6	2	3, 4	128 MB	256 MB
C7	2	5, 6	640 MB	1024 MB
C8	0	1, 2	128 MB	256 MB
C9	0	3, 4	128 MB	256 MB
C10	0	7, 8	640 MB	1024 MB

Parent topic: PCI adapter

Related procedures

This section includes procedures that are related to removing or replacing a PCI adapter.

- **Avoiding electric shock**
  Read this information before servicing your system.
- **Handling static-sensitive devices**
  Read this information before servicing your system.
- **PCI hot-plug manager access for AIX**
  Information required for servicing PCI adapters with the system power on in AIX.
- **Prerequisites for hot-plugging PCI adapters in Linux**
  The following section describes the prerequisites for removing, replacing, and installing PCI adapters with the system power on in a server or partition running Linux.
- **Verify that the Linux, hot-plug PCI tools are installed**
- **Location codes**
  How to read location codes when identifying system components.
- **Before you begin**
  Understand prerequisites for installing, removing, or replacing features and parts.
- **Model ESCALA PL 245T/R**
  Related procedures for the model ESCALA PL 245T/R.
- **Model ESCALA PL 250R-VL or ESCALA PL 450R-XS**
  Related procedures for the model ESCALA PL 250R-VL or ESCALA PL 450R-XS.
- **Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,**
  Related procedures for the 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server, 710, .
- **Model ESCALA PL 850R/PL 1650R/R+**
  Releated procedures for the model ESCALA PL 850R/PL 1650R/R+.
- **Expansion units**
  The following procedures describe how to access expansion units.
- **Place the rack-mounted system or expansion unit in the service position or operating position**
- **Start or stop the system or logical partition**
  Learn how to start or stop a system or logical partition.
- **Identify a failing part**
  The following procedures describe how to locate and identify a failing part on your system or expansion unit.
- **Verify the installed part**
- **Install a feature using the Hardware Management Console**
- **Remove a part using the Hardware Management Console**
- **Replace a part using the Hardware Management Console**

Related concepts

PCI adapter

Avoiding electric shock

Read this information before servicing your system.

DANGERWhen 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:

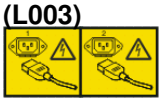
  1. Turn off everything (unless instructed otherwise).
  2. Attach all cables to the devices.
  3. Attach the signal cables to the connectors.
  4. Attach the power cords to the outlets.
  5. Turn on the devices.

(D005)

DANGERTo prevent a possible shock from touching two surfaces with different protective ground (earth), use one hand, when possible, to connect or disconnect signal cables. (D001)

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

(L003)



or

Parent topic: Related procedures

Handling static-sensitive devices

Read this information before servicing your system.

Electronic boards, adapters, media drives, and disk drives are sensitive to static electricity discharge. These devices are wrapped in antistatic bags to prevent this damage. Take the following precautions to prevent damage to these devices from static electricity discharge:

- 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.
- Do not remove the device from the antistatic bag until you are ready to install the device in the system.
- With the device still in its antistatic bag, touch it to the metal frame of the system.
- Grasp cards and boards by the edges. Avoid touching the components and gold-edge connectors on the adapter.
- If you need to lay the device down while it is out of the antistatic bag, lay it on the antistatic bag. Before picking it up again, touch the antistatic bag and the metal frame of the system at the same time.
- Handle the devices carefully to prevent permanent damage.

Parent topic: Related procedures

PCI hot-plug manager access for AIX

Information required for servicing PCI adapters with the system power on in AIX.

The instructions for servicing PCI adapters with the system power on in AIX refer you to these procedures when it is appropriate to perform them.

Note: For an adapter to be serviced with the system power on, both the adapter and the system unit must support hot-plug procedures. To identify adapters that are hot-pluggable in the system you are servicing, refer to the following placement information:

- PCI adapter placement for servers system units and expansion units

- **Accessing hot-plug management functions**
- **PCI hot-plug manager menu**
- **Component LEDs**

Parent topic: Related procedures

Accessing hot-plug management functions

Note: Procedures performed on a PCI adapter with the system power on in AIX, also known as hot-plug procedures, require the system administrator to take the PCI adapter offline prior to performing the operation. Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

To access the hot-plug menus, do the following:

1. Log in as root user.
2. At the command line, type `smitty`.
3. Select Devices.
4. Select PCI Hot Plug Manager and press Enter.
5. The PCI Hot-Plug Manager menu displays. Return to the procedure that directed you here. The following section describes the menu options.

Parent topic: PCI hot-plug manager access for AIX

PCI hot-plug manager menu

The following options are available from the PCI Hot Plug Manager menu:

Note: For information about the PCI slot LED states, see Component LEDs.

List PCI hot-plug slots

Provides a descriptive list of all slots that support PCI hot-plug capability. If the listing for a slot indicates it holds an "Unknown" device, select the Install/configure Devices added after IPL to configure the adapter in that slot.

Add a PCI hot-plug adapter

Allows the user to add a new PCI hot-plug-capable adapter to the slot with the system turned on. You will be asked to identify the PCI slot that you have selected prior to the actual operation. The selected PCI slot will go into the Action state and finally into the On state.

Note: The system will indicate the slot holds an "Unknown" device until you perform the Install/configure devices added after IPL option to configure the adapter.

Replace/remove a PCI hot-plug adapter

Allows the user to remove an existing adapter, or replace an existing adapter with an identical one. For this option to work, the adapter must be in the Defined state (see the "Unconfigure a Device" option).

You will be asked to identify the PCI slot prior to the actual operation. The selected PCI slot will go into the Action state.

Identify a PCI hot-plug slot

Allows the user to identify a PCI slot. The selected PCI slot will go into the Identify state. See Component LEDs.

Unconfigure a device

Allows the user to put an existing PCI adapter into the Defined state if the device is no longer in use.

This step must be completed successfully before starting any removal or replacement operation. If this step fails, the customer must take action to release the device.

Configure a defined device

Allows a new PCI adapter to be configured into the system if software support is already available for the adapter. The selected PCI slot will go into the On state.

Install/configure devices added after IPL

The system attempts to configure any new devices and tries to find and install any required software from a user-selected source.

The add, remove, and replace functions return information to the user indicating whether the operation was successful. If additional instructions are provided on the screen, complete the recommended actions. If the instructions do not resolve the problem, do the following:

- If the adapter is listed as Unknown, perform the Install/configure devices Added After IPL option to configure the adapter.
- If you receive a warning indicating that needed device packages are not installed, the system administrator must install the specified packages before you can configure or diagnose the adapter.
- If you receive a failure message indicating a hardware error, the problem might be either the adapter or the PCI slot. Isolate the problem by retrying the operation in a different PCI slot, or trying a different adapter in the slot. If you determine that you have failing hardware, call your service representative.
- *Do not* use Install/configure devices added after IPL if your system is set up to run HACMP clustering. Consult with your system administrator or software support to determine the correct method to configure the replacement device.

Parent topic: PCI hot-plug manager access for AIX

Component LEDs

Individual LEDs are located on or near the failing components. The LEDs are located either on the component itself or on the carrier of the component (for example, memory card, fan, memory module, or processor). LEDs are either green or amber.

Green LEDs indicate either of the following:

- Electrical power is present.
- Activity is occurring on a link. (The system could be sending or receiving information.)

Amber LEDs indicate a fault or identify condition. If your system or one of the components on your system has an amber LED turned on or blinking, identify the problem and take the appropriate action to restore the system to normal.

- **Resetting the LEDs in AIX**

Parent topic: PCI hot-plug manager access for AIX

Resetting the LEDs in AIX

After the repair action is completed, do the following:

1. Log in as root user.
2. At the command line, type `diag`.
3. Select Task Selection.
4. Select Log Repair Action.
5. Select the device that was repaired.
6. Press F10 to exit diagnostics.

If the Attention LED remains on after you have completed the repair action and reset the LEDs, call for service support.

Parent topic: Component LEDs

Prerequisites for hot-plugging PCI adapters in Linux

The following section describes the prerequisites for removing, replacing, and installing PCI adapters with the system power on in a server or partition running Linux.

The Linux, system administrator needs to take the PCI adapter offline prior to removing, replacing, or installing a PCI adapter with the system power on (hot-plugging). Before taking an adapter offline, the devices attached to the adapter must be taken offline as well. This action prevents a service representative or user from causing an unexpected outage for system users.

Before hot-plugging adapters for storage devices, ensure file systems on those devices are unmounted. After hot-plugging adapters for storage devices, ensure the file systems on those devices are remounted.

Before hot-plugging an adapter, ensure that the server or partition is at the correct level of the Linux operating system (Linux 2.6 or later).

Install the POWER Linux Service Aids. These service aids enable system serviceability, as well to improve system management.

If you are using a Linux on POWER distribution with Linux kernel version 2.6 or greater, you can install the Service Aids that gives you access to more capabilities, which can help you diagnose problems on your system.

This software is available at the Service and productivity tools for Linux on POWER Web site.

Parent topic: Related procedures

Verify that the Linux, hot-plug PCI tools are installed

1. Enter the following command to verify that the hot-plug PCI tools are installed:

```
rpm -aq | grep rpa-pci-hotplug
```

If the command does not list any rpa-pci-hotplug packages, the PCI Hot Plug tools are not installed.

2. Enter the following command to ensure that the rpaphp driver is loaded:

```
ls -l /sys/bus/pci/slots/
```

The directory should contain data. If the directory is empty, the driver is not loaded or the system does not contain hot-plug PCI slots. The following is an example of the information displayed by this command:

```
drwxr-xr-x 15 root root 0 Feb 16 23:31 .
drwxr-xr-x  5 root root 0 Feb 16 23:31 ..
drwxr-xr-x  2 root root 0 Feb 16 23:31 0000:00:02.0
drwxr-xr-x  2 root root 0 Feb 16 23:31 0000:00:02.2
drwxr-xr-x  2 root root 0 Feb 16 23:31 0000:00:02.4
drwxr-xr-x  2 root root 0 Feb 16 23:31 0001:00:02.0
drwxr-xr-x  2 root root 0 Feb 16 23:31 0001:00:02.2
drwxr-xr-x  2 root root 0 Feb 16 23:31 0001:00:02.4
drwxr-xr-x  2 root root 0 Feb 16 23:31 0001:00:02.6
drwxr-xr-x  2 root root 0 Feb 16 23:31 0002:00:02.0
drwxr-xr-x  2 root root 0 Feb 16 23:31 0002:00:02.2
drwxr-xr-x  2 root root 0 Feb 16 23:31 0002:00:02.4
drwxr-xr-x  2 root root 0 Feb 16 23:31 0002:00:02.6
```

If the directory does not exist, run the following command to mount the filesystem:

```
mount -t sysfs sysfs /sys
```

3. Ensure the following tools are available in the /usr/sbin directory.
   - lsslot
   - drslot_chrp_pci
4. Return to the procedure that sent you here.

Parent topic: Related procedures

Location codes

How to read location codes when identifying system components.

Note: If your server uses machine type and model number in its location codes, read through column one in the following table. If your server uses feature codes and sequence numbers in its location codes read through column two in the following table. Each column defines the numbers following the U in the beginning of the location code.

U*tttt.mmm.sssssss*-A1	U*ffff.ccc.sssssss*-A1
The leftmost code is always U	The leftmost code is always U
tttt represents the unit type of the enclosure (drawer or node) **Note:** Unit type is also known as machine type. This is the four digit name given to the system. Examples of unit type are: 9111, 9114, 7310 and 7040.	*ffff* represents the feature code of the enclosure (drawer or node) **Note:** The feature code is a four digit number used by your systems marketing and sales team to order expansion units and other features for the system unit. An example of a feature code is: 8691 which is the (feature) or order number for the 7040-W42 server expansion frame.

mmm represents the model of the enclosure	*ccc* represents the sequence number of the enclosure
sssssss represents the serial number for the enclosure	*sssssss* represents the serial number of the enclosure

Note: The *mmm* or *ccc* number might not be displayed on all location codes for all servers. If the *mmm* value is not displayed, the location code is displayed in one of the following forms:

```
Utttt.sssssss-A1
```

OR

```
Ufffff.sssssss-A1
```

Parent topic: Related procedures

Before you begin

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

DANGERWhen 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)

DANGERObserve 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

Model ESCALA PL 245T/R

Related procedures for the model ESCALA PL 245T/R.

- **Identify a failing part on a model ESCALA PL 245T/R**
- **Place the rack-mounted model ESCALA PL 245T/R in the service position or operating position**
- **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 side cover**
- **Gain access to the model ESCALA PL 245T/R control panel**

Parent topic: Related procedures

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

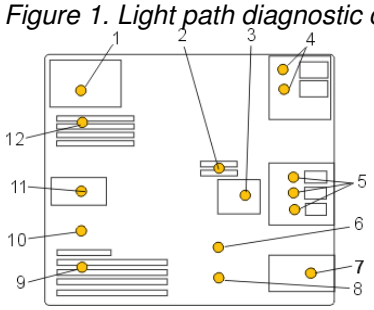
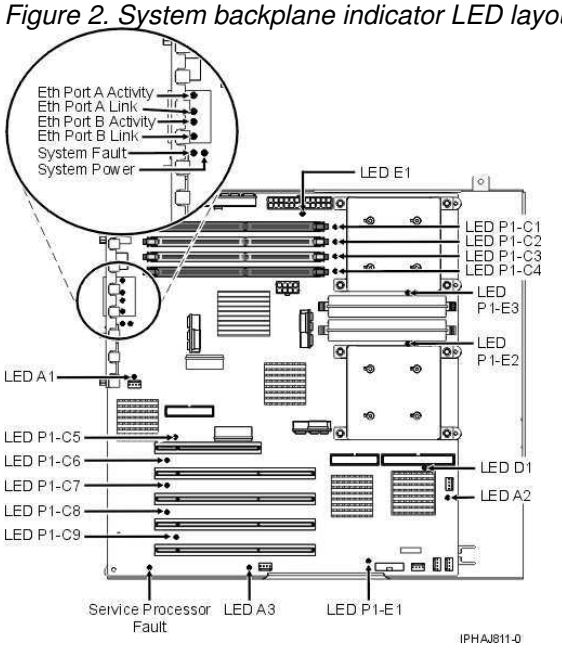


Table 1. ESCALA PL 245T/R Fault-indicator LEDs

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: Model ESCALA PL 245T/R

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

Parent topic: Model ESCALA PL 245T/R

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

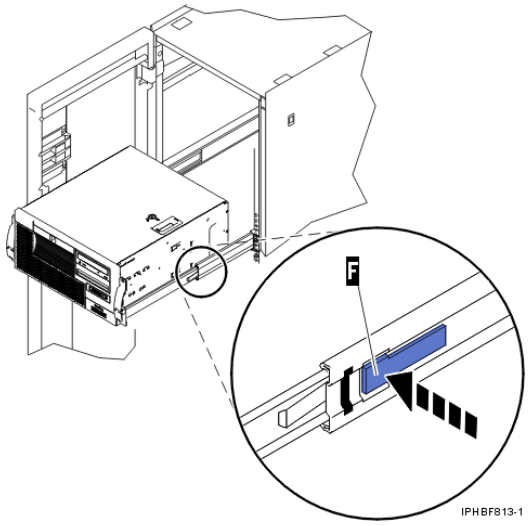
By placing the rack-mounted system unit in the operating position, you make the unit available for use.

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

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.

DANGERWhen 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)

DANGERObserve 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)

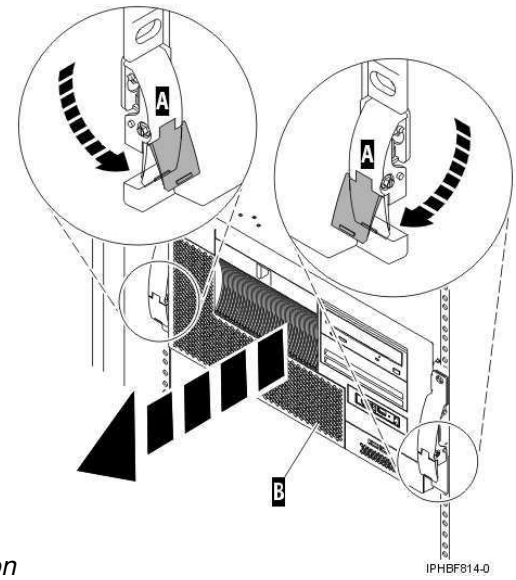
1. If necessary, open the front rack door.
2. Release the rack latches A on both the left and right sides as shown in the following figure.
3. Review the following note, and then slowly pull the system unit B out from the rack until the rails are fully extended and locked.

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

PCI adapter



position

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

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: Model ESCALA PL 245T/R

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:

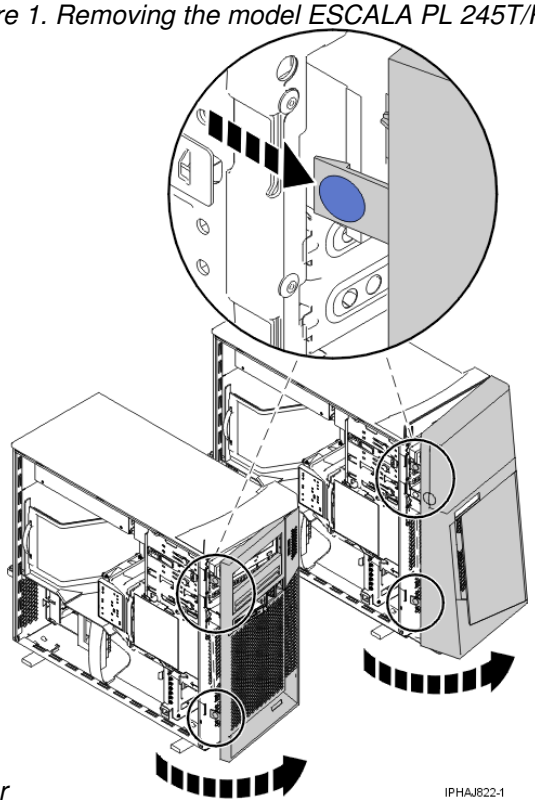
1. Remove the side cover. See, Remove and replace the model ESCALA PL 245T/R side cover
2. Lift each of the tabs on the front cover until it is released from the system unit, as shown in the following figure.

   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.

PCI adapter

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



cover

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:

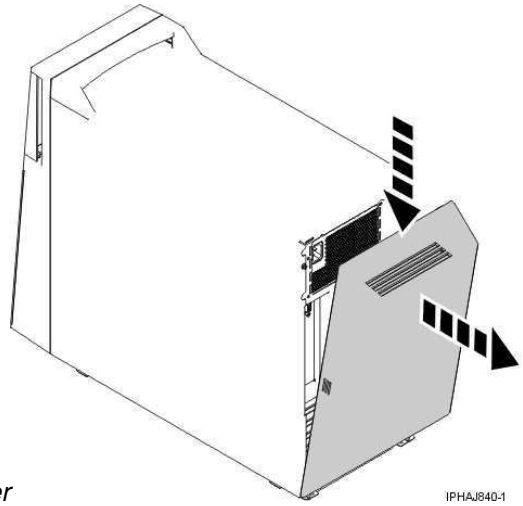
1. Press down on the center tab of the cover until you unseat it from the back of the system unit, as shown in the following figure.

   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

PCI adapter

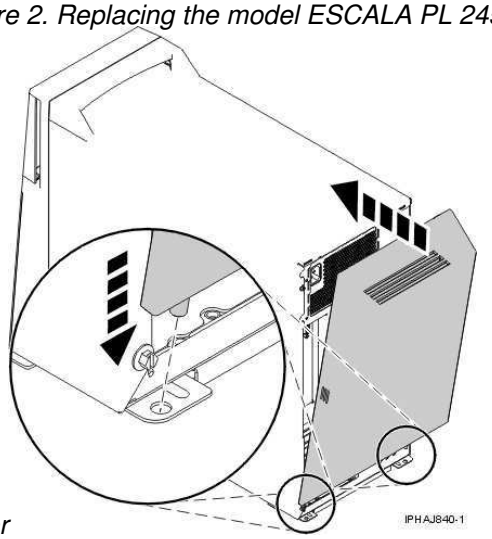


To replace the back cover from the model ESCALA PL 245T/R, follow these steps:

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.

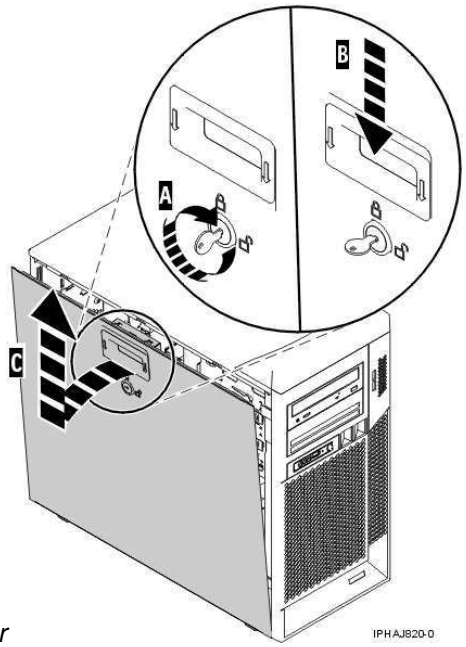


Figure 1. Removing the model ESCALA PL 245T/R side cover

Parent topic: Remove and replace model ESCALA PL 245T/R covers and doors **Parent topic:** Model ESCALA PL 245T/R

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.

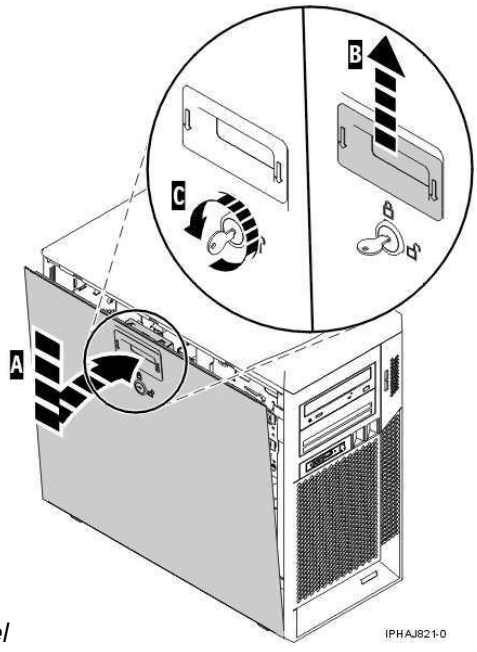


Figure 2. Replacing the service panel

3. Lock the security lock C if needed.

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.

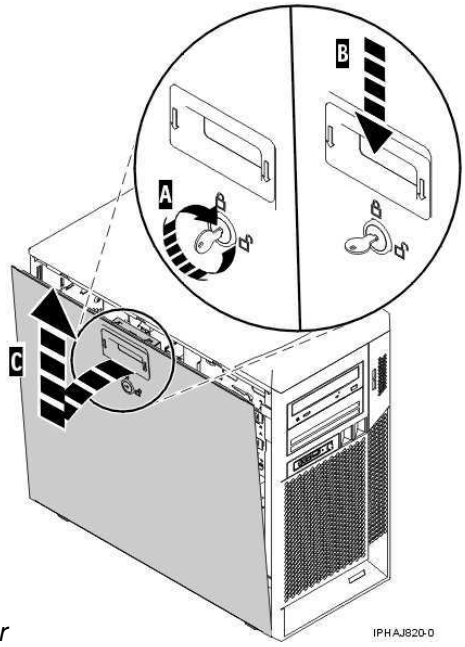


Figure 1. Removing the model ESCALA PL 245T/R side cover

Parent topic: Remove and replace model ESCALA PL 245T/R covers and doors **Parent topic:** Model ESCALA PL 245T/R

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.

PCI adapter

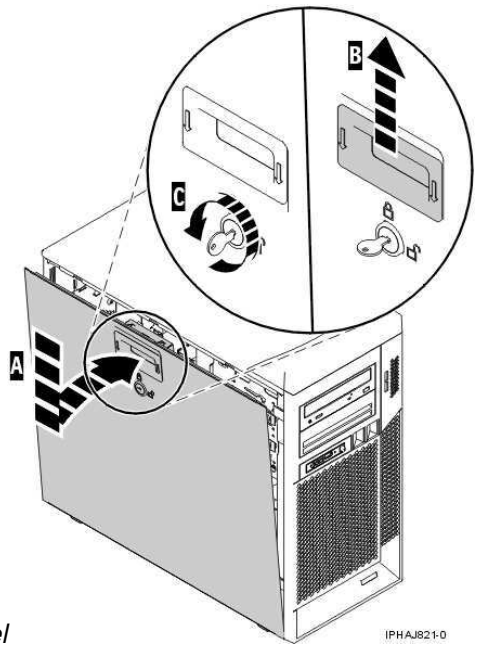


Figure 2. Replacing the service panel

3. Lock the security lock C if needed.

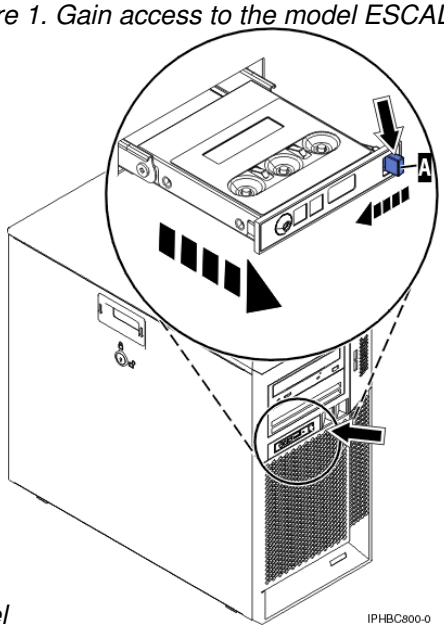
Gain access to the model ESCALA PL 245T/R control panel

Since only part of the model ESCALA PL 245T/R control panel is visible from the front of the server, the following procedure describes how to gain access to all of the control panel's features, including the display.

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

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

Figure 1. Gain access to the model ESCALA PL 245T/R control



panel

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.

Parent topic: Model ESCALA PL 245T/R

Model ESCALA PL 250R-VL or ESCALA PL 450R-XS

Related procedures for the model ESCALA PL 250R-VL or ESCALA PL 450R-XS.

- **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.
- **Open the model ESCALA PL 250R-VL or ESCALA PL 450R-XS service access panel**
- **Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS**

Parent topic: Related procedures

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.

DANGERWhen 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)

DANGERObserve 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.

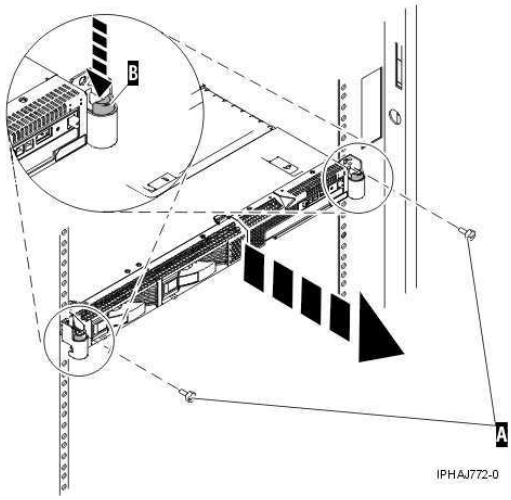
CAUTION

- 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.

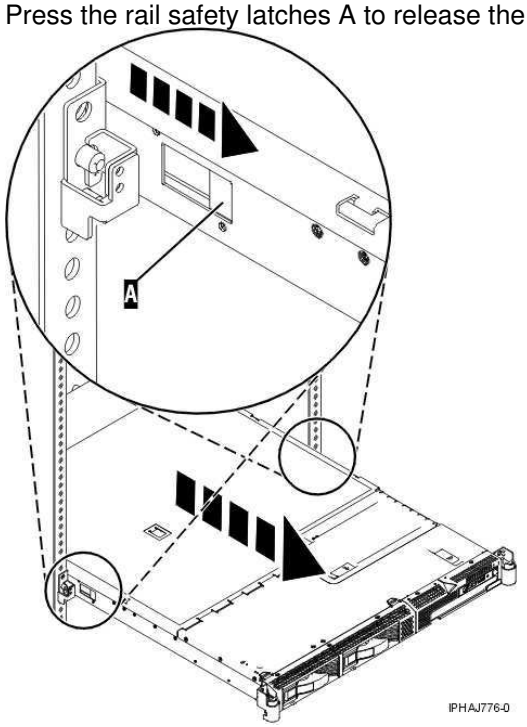


7. Release the rack latches B on both the left and right sides as shown in the previous figure.
8. Review the following notes, and then slowly pull the system unit out from the rack until the system unit is fully extended and locked.

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: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS

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.

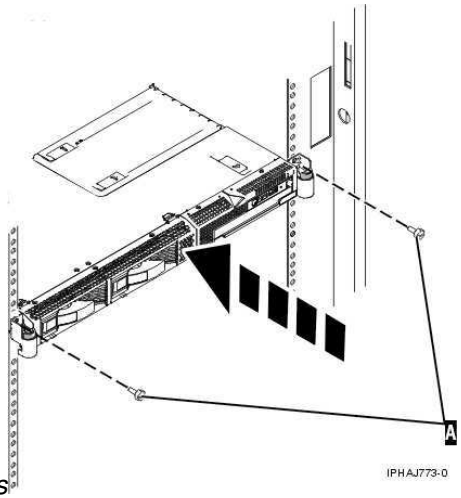


Figure 1. Replace the thumbscrews

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

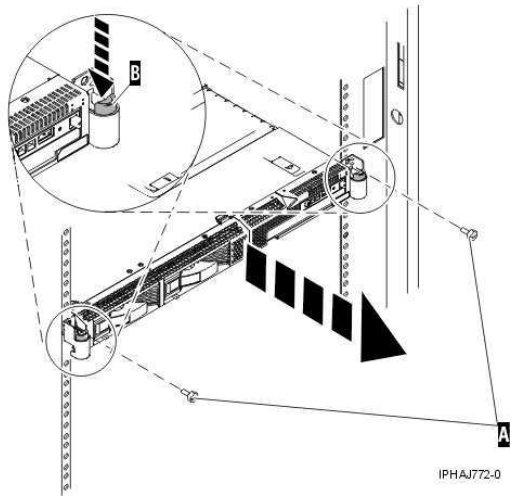
Parent topic: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS

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



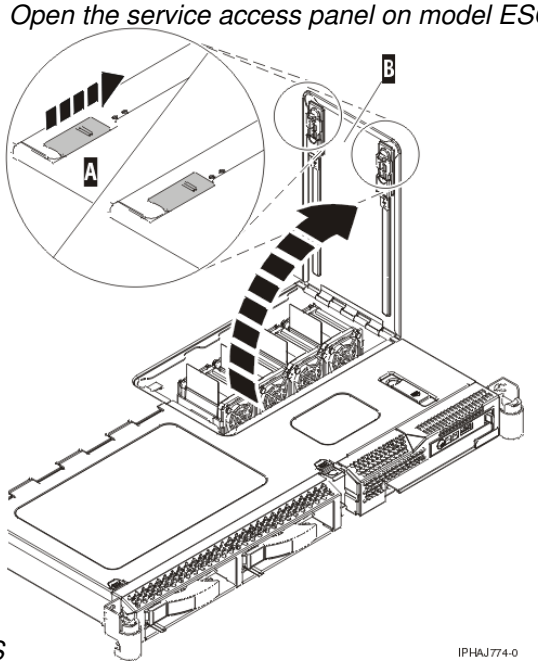
3. Release the rack latches B on both the left and right sides as shown in the previous figure.

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.

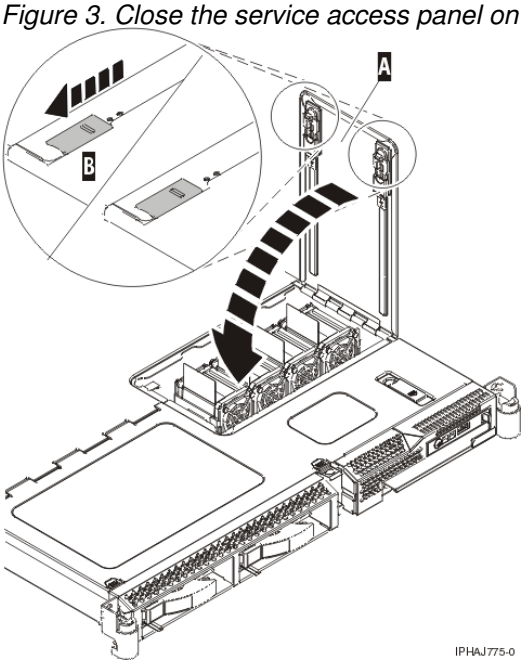
Figure 2. Open the service access panel on model ESCALA PL 250R-VL or ESCALA PL 450R-XS



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: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS

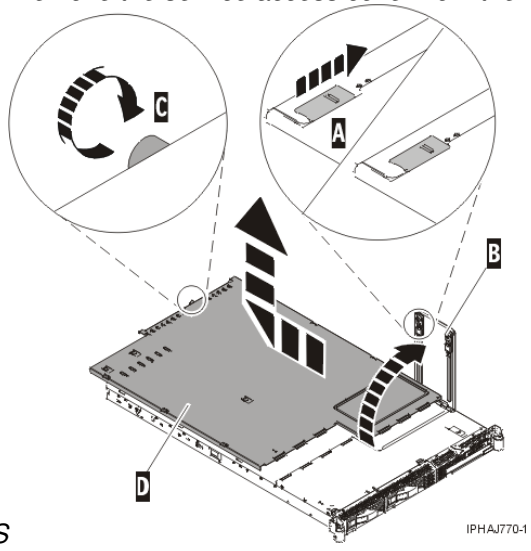
Remove the service access cover from the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS

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 450R-XS



Parent topic: Model ESCALA PL 250R-VL or ESCALA PL 450R-XS

Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server, 710,

Related procedures for the 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server, 710, .

- **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+, .
- **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 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.
- **Remove the front cover from the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+**
- **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.
- **Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels**

Parent topic: Related procedures

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: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

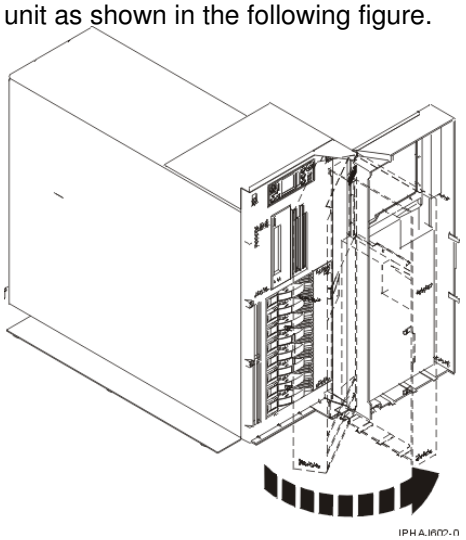
---

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+,

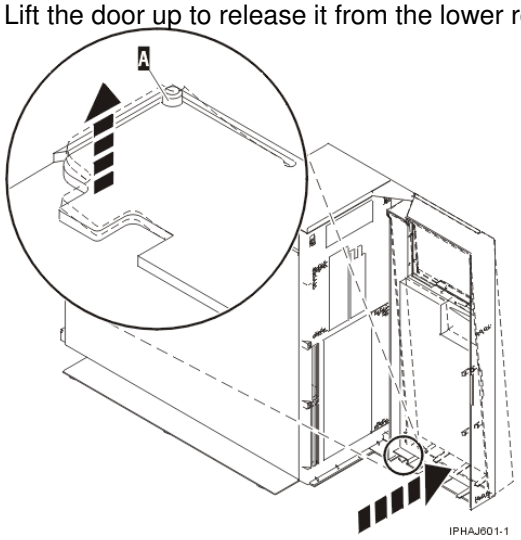
To remove the door from the model 112/85 or ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ see, Remove the door from the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+.

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

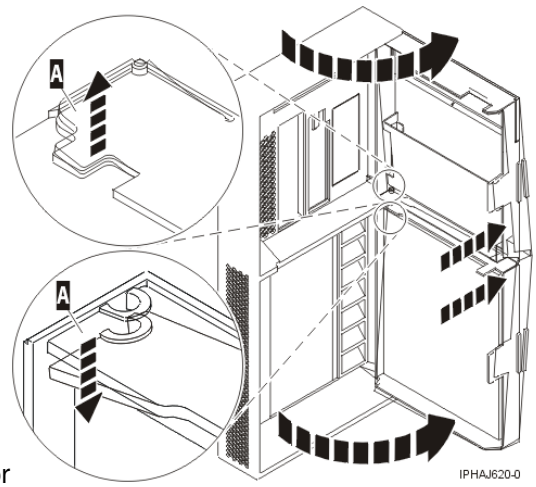
Remove the door from the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+

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+

PCI adapter



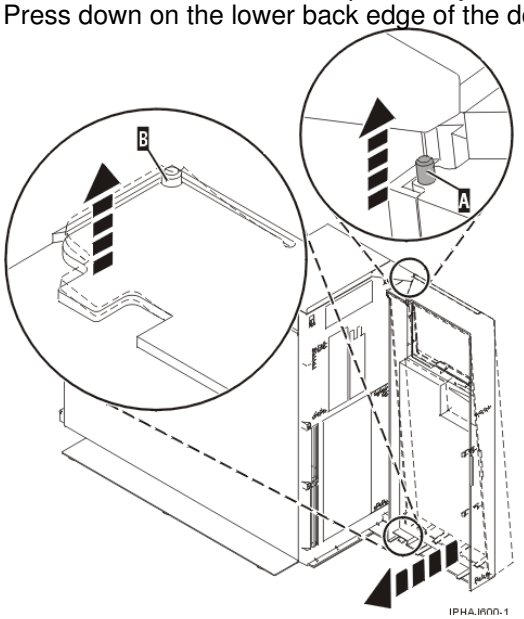
door

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+,

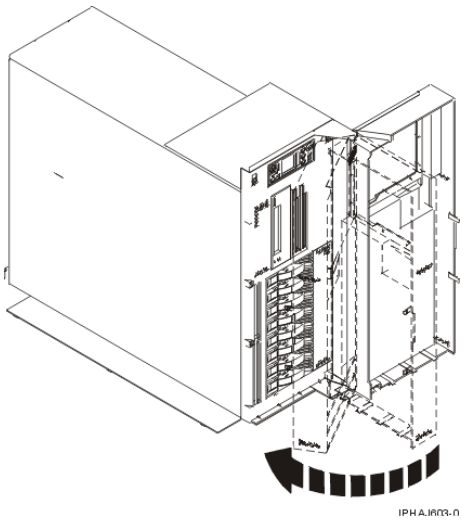
To install the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ with acoustic feature front door see, Install the door on the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+

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.



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.

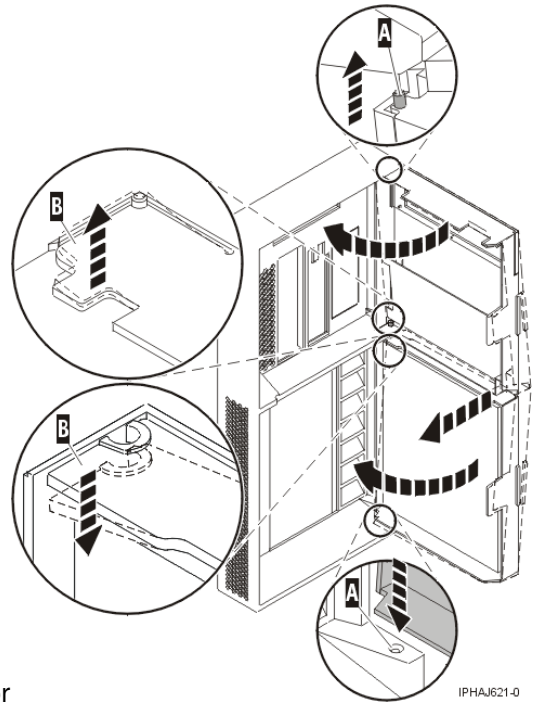


Figure 1. Installing the model 112/85 door

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.

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 rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS**
- **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: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

---

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+,**

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

---

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+,

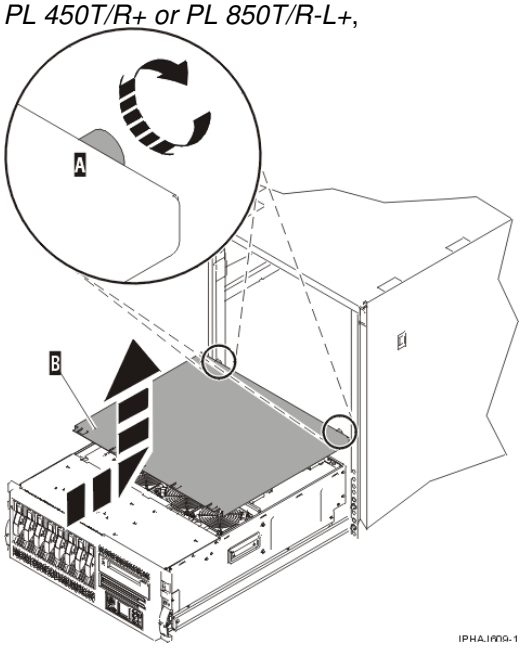
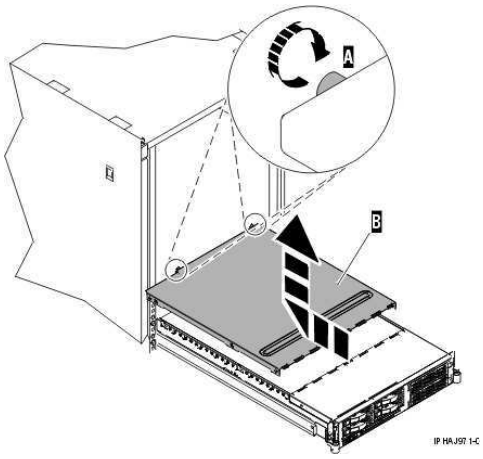


Figure 2. Remove the service access cover from the ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10



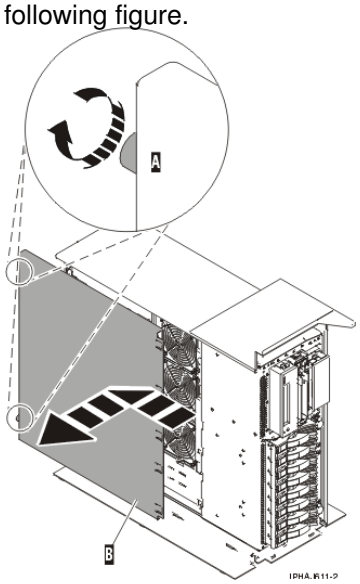
Parent topic: Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

---

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+,

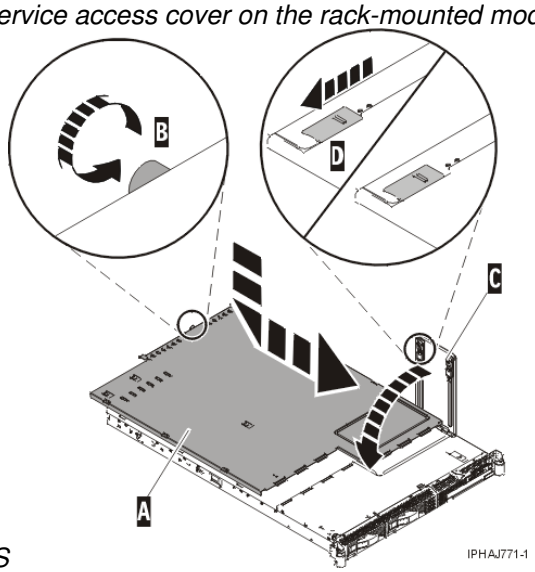
Install the service access cover on the rack-mounted model ESCALA PL 250R-VL or ESCALA PL 450R-XS

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 ESCALA PL 450R-XS



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

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

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+,**

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

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+,

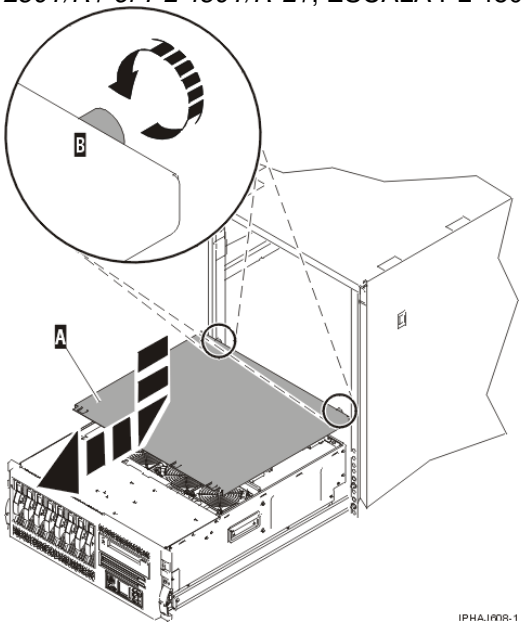
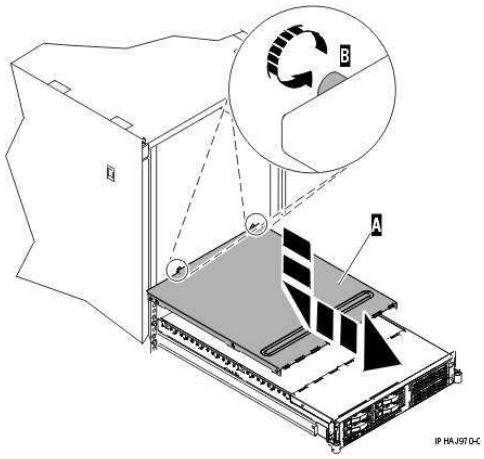


Figure 2. Install the service access cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or7/10



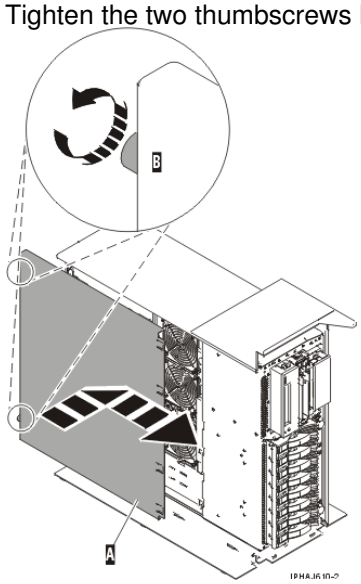
Parent topic: Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

---

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+,

---

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: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

---

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

---

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:

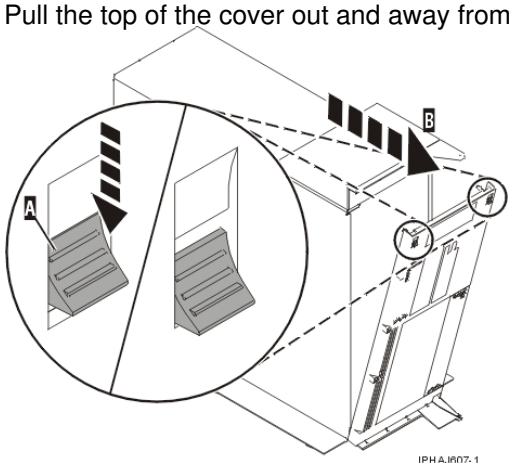
1. Open the front rack door.
2. Remove the two thumbscrews A that secure the system or expansion unit B to the rack as shown in the following figure.
3. Push both cover-release latches C in the direction of the arrows to release the cover from the system or expansion unit.
4. Pull the cover out and away 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

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.

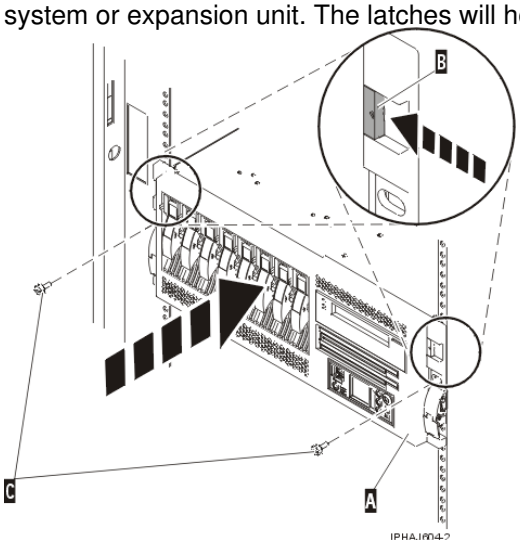
- **Install the front cover on the rack-mounted model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, , or the 05/95 expansion unit**
- **Install the front cover on the stand-alone model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL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



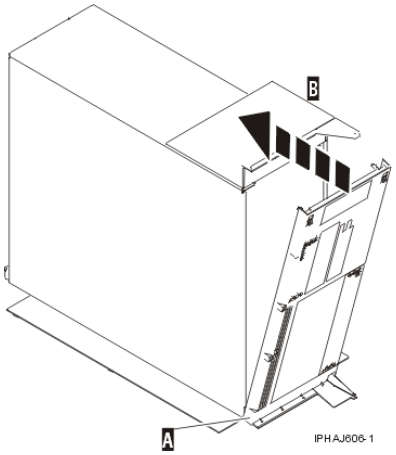
3. Tighten the thumbscrews.
4. Close the front rack door.

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.



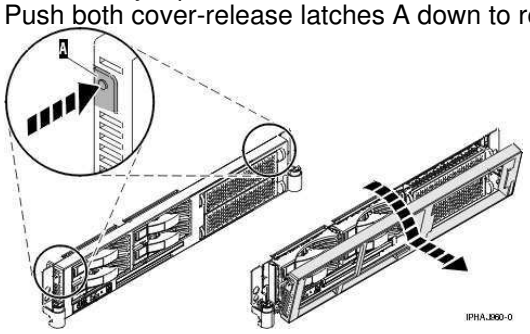
2. Rotate the cover up toward the top of the system, ensuring that the aligning pins are aligned with their matching slots located on the system.
3. Gently push the cover in until the two cover-release levers are seated in their respective slots.
4. Install or replace the door on the model 112/85, ESCALA 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

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.

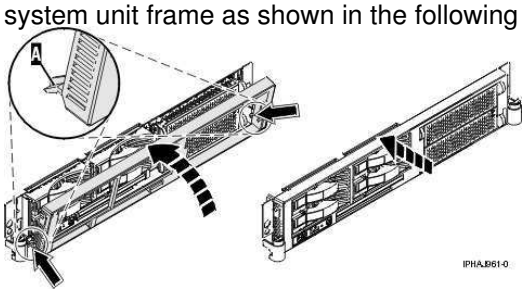
- **Install the front cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+**

Parent topic: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

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: Remove the front cover from the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+

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.

DANGERWhen 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)

DANGERObserve 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.

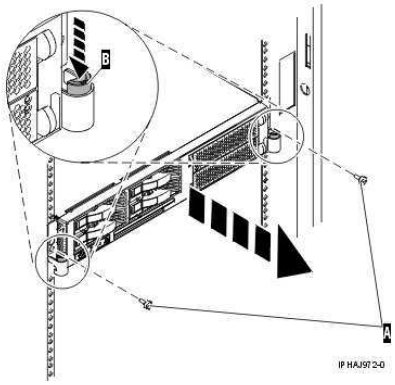
CAUTION

- 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: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

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.

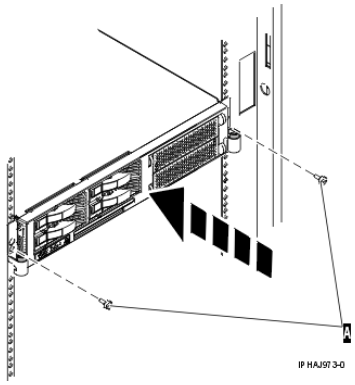
Tip: Some of the figures in these procedures might not look exactly like the system unit that you have. However, the steps to perform the task are the same.

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: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

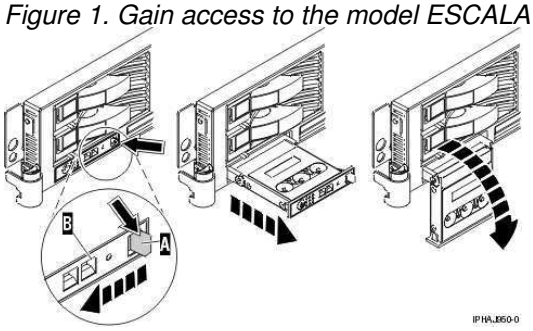
Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels

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:

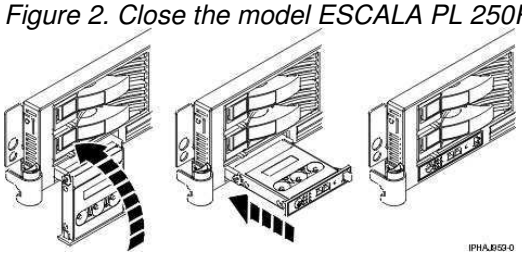
1. Press inward on the spring-loaded tab A located on the right side of the control panel B so that it pops out slightly, as shown in the following figure.

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



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



Parent topic: Model 112/85, ESCALA PL 250R-L, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, server,

Model ESCALA PL 850R/PL 1650R/R+

Releated procedures for the model ESCALA PL 850R/PL 1650R/R+.

- **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

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+**

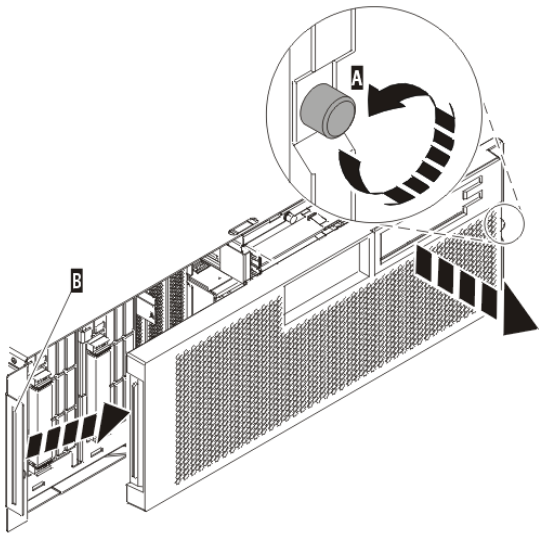
Parent topic: Model ESCALA PL 850R/PL 1650R/R+

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.

PCI adapter



IPHAJ501-1

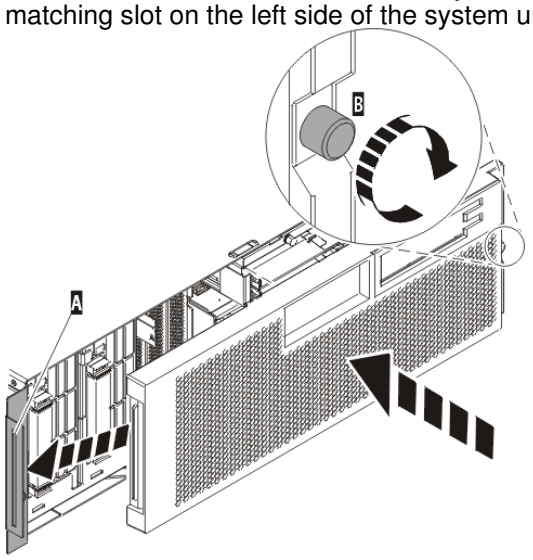
3. Slide the cover to the right and remove it from the system unit.

Parent topic: Front cover for the model ESCALA PL 1650R-L+ or ESCALA PL 850R/PL 1650R/R+

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.



IPHAJ500-1

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+

Expansion units

The following procedures describe how to access expansion units.

- **Expansion unit cover or door**
  Learn how to remove and install expansion unit covers and doors.
- **Open the model 05/95, 50/95, or 11D/20 service access cover**
  For servicing the system unit.

Parent topic: Related procedures

Expansion unit cover or door

Learn how to remove and install expansion unit covers and doors.

- **Remove the front door from the 50/74 or 50/94 expansion unit**
- **Remove the front door from the 50/79 or 52/94 expansion unit**
- **Remove the back door from the 50/74, 50/79, and 50/94 expansion unit**
- **Remove the front cover from the 50/95 expansion unit**
- **Remove the back door and cover from the 50/95 expansion unit**
- **Remove the back cover from the 05/88 expansion unit**
- **Remove and install the front cover on the 57/91 or 57/94 expansion unit**
  These procedures describe how to remove and install the cover of the 57/91 or 57/94 expansion unit.

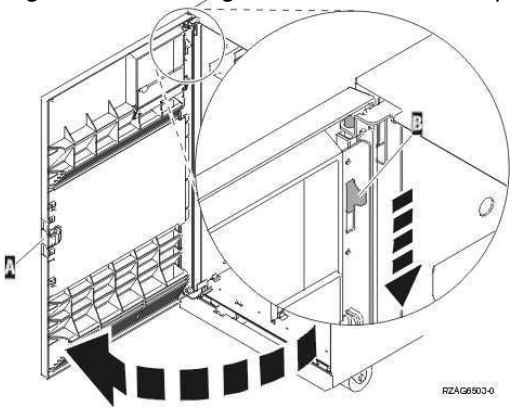
Parent topic: Expansion units

Remove the front door from the 50/74 or 50/94 expansion unit

To remove the front door from the expansion unit, follow these steps:

1. Open the front door A as shown in the following figure.
2. Press the latch B to remove the door.

Figure 1. Removing the 50/74 or 50/94 expansion unit front door



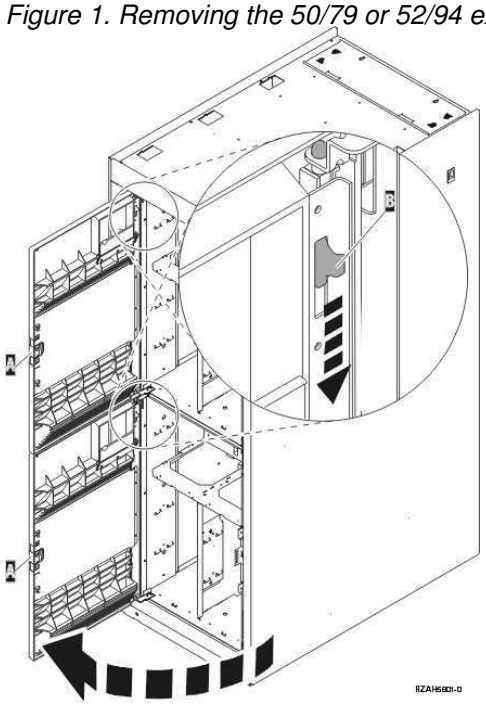
Parent topic: Expansion unit cover or door

Remove the front door from the 50/79 or 52/94 expansion unit

To remove the front door from the expansion unit, follow these steps:

1. Open the front door A as shown in the following figure.
2. Press the latch B to remove the door.

Figure 1. Removing the 50/79 or 52/94 expansion unit front door



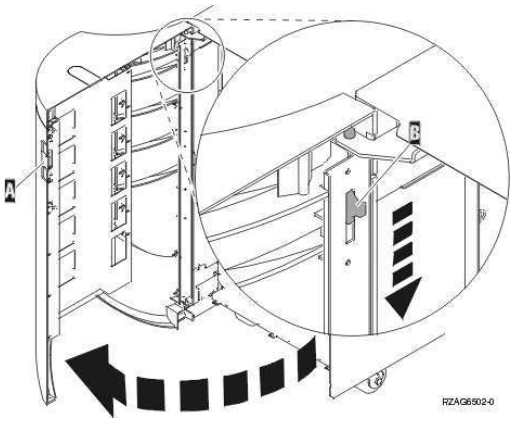
Parent topic: Expansion unit cover or door

Remove the back door from the 50/74, 50/79, and 50/94 expansion unit

To remove the back door from the expansion unit, follow these steps:

- Open the back door A as shown in the following figure.
- Press the latch B to remove the door.

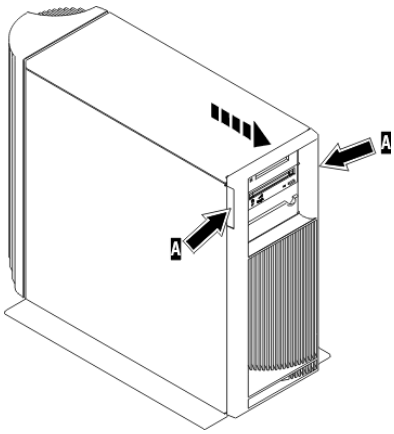
Figure 1. Removing 50/74, 50/79, and 50/94 expansion unit back door



Parent topic: Expansion unit cover or door

Remove the front cover from the 50/95 expansion unit

To remove the front cover from the expansion unit, grip the sides of the cover A and pull the cover toward you, as shown in the following figure.



Parent topic: Expansion unit cover or door

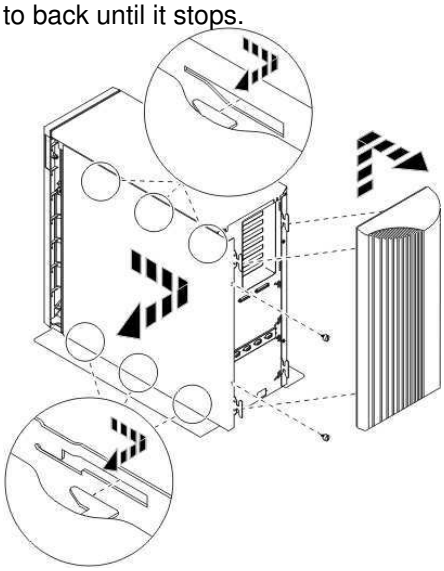
Remove the back door and cover from the 50/95 expansion unit

To remove the back door and cover from the expansion unit, follow these steps:

1. Place your hand near the bottom of the back cover and lift up and out.

   Attention: If you remove the cover while the server is powered on, errors might occur due to electromagnetic interference.

2. Remove the left cover, view from back, by loosening the thumbscrews and sliding the cover from front to back until it stops.

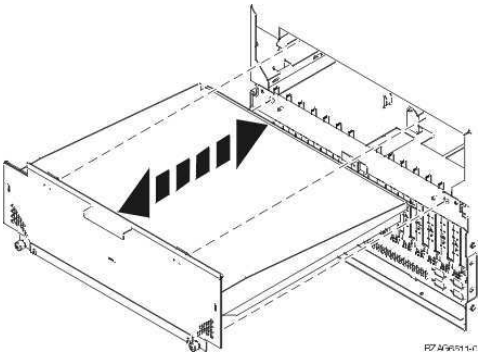


3. Pull the cover out.

Parent topic: Expansion unit cover or door

Remove the back cover from the 05/88 expansion unit

Open the back cover and remove the air flow shield, as shown in the following figure.



Parent topic: Expansion unit cover or door

Remove and install the front cover on the 57/91 or 57/94 expansion unit

These procedures describe how to remove and install the cover of the 57/91 or 57/94 expansion unit.

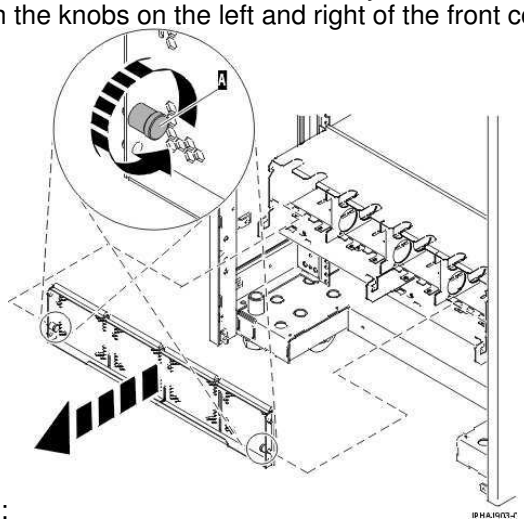
- **Remove the front cover from the 57/91 or 57/94 expansion unit**
- **Install the front cover on the 57/91 or 57/94 expansion unit**

Parent topic: Expansion unit cover or door

Remove the front cover from the 57/91 or 57/94 expansion unit

To remove the front cover, follow these steps:

1. Open the rack front door, if necessary.
2. Pull in the knobs on the left and right of the front cover as shown in the following figure:



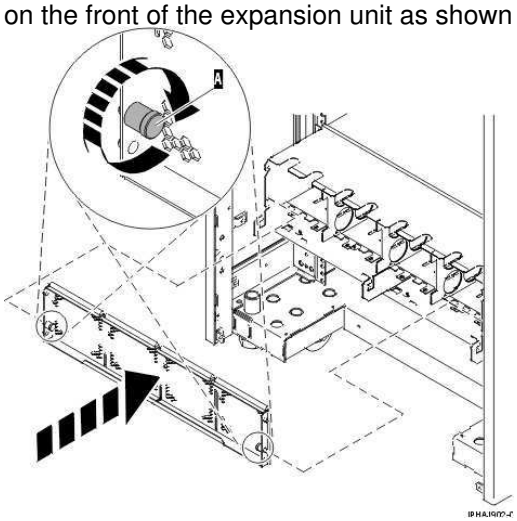
3. Pull the cover out and away from the expansion unit.

Parent topic: Remove and install the front cover on the 57/91 or 57/94 expansion unit

Install the front cover on the 57/91 or 57/94 expansion unit

To install the front cover, follow these steps:

1. Position the cover on the front of the expansion unit so that the pins on the cover line up with the slots on the front of the expansion unit as shown in the following figure:



2. Pull in the knobs on the left and right of the front cover.
3. Push the cover on to the front of the expansion unit.
4. Release the knobs on the left and right of the front cover.

Parent topic: Remove and install the front cover on the 57/91 or 57/94 expansion unit

Open the model 05/95, 50/95, or 11D/20 service access cover

For servicing the system unit.

The following procedure describes how to open the service access cover for the model 05/95, 50/95, or 11D/20 expansion units.

To open the service access cover, do the following:

1. Ensure the expansion unit in the service position as described in Place the rack-mounted system or expansion unit in the service position.
2. Loosen the three thumbscrews located on the cover at the back of the system.
3. Lift the cover into the open position.

Parent topic: Expansion units

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

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.

DANGERWhen 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)

DANGERObserve 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.

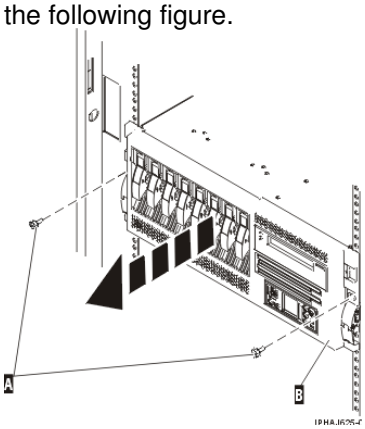
CAUTION

- 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.

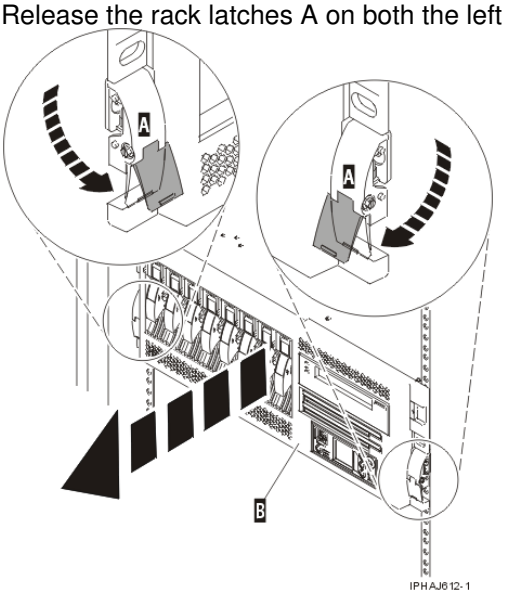
(R001)

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

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

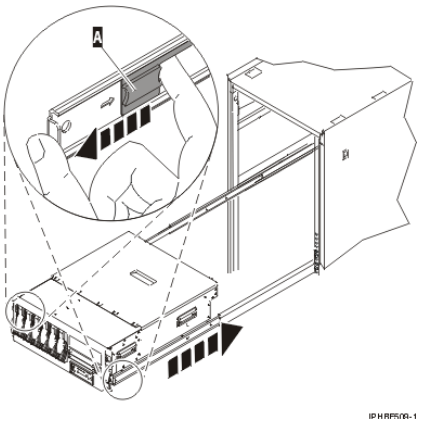
By placing the rack-mounted system or expansion unit in the operating position, you make the unit available for use.

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.

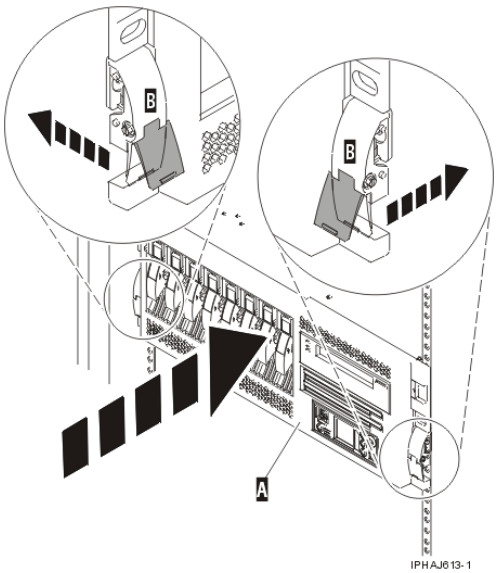
To place the rack-mounted system or expansion unit into the operating position, follow these steps:

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.

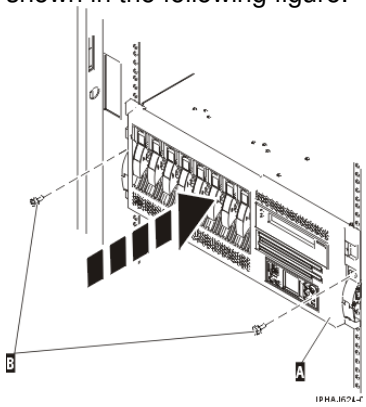
   Note: Ensure that the cables at the rear of the system or expansion unit do not catch or bind as you push the unit back into the rack.



   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

---

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

Start the system or logical partition

Use these instructions to start a system or logical partition.

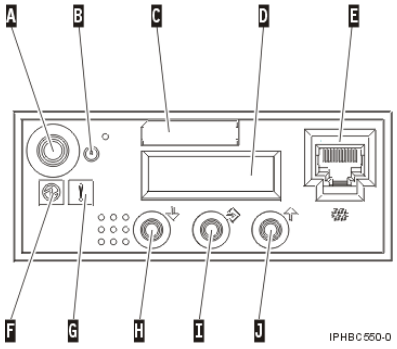
- **Start a system that is not managed by a Hardware Management Console**
- **Start the system or logical partition using the Hardware Management Console**

Parent topic: Start or stop the system or logical partition

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

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

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

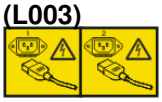
To stop a system, follow these steps:

1. Log in to the system as a user with the authority to run the `shutdown` or `pwrdwnsys` (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

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.

Parent topic: Stop the system or logical partition

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 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

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

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

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 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.
- **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

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

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)

Parent topic: Verify the installed part

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

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

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

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

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

Technical publication remarks form

Title :	ESCALA POWER5 Hardware Information PCI adapter

Reference N° :	86 A1 11EW 00	**Date:**	July 2006

ERRORS IN PUBLICATION

SUGGESTIONS FOR IMPROVEMENT TO PUBLICATION

Your comments will be promptly investigated by qualified technical personnel and action will be taken as required.
If you require a written reply, please include your complete mailing address below.

NAME : _____ Date : _____

COMPANY : _____

ADDRESS : _____

_____

Please give this technical publication remarks form to your BULL representative or mail to:

Bull - Documentation Dept.
1 Rue de Provence
BP 208
38432 ECHIROLLES CEDEX
FRANCE
info@frec.bull.fr

Technical publications ordering form

To order additional publications, please fill in a copy of this form and send it via mail to:

BULL CEDOC
357 AVENUE PATTON
B.P.20845
49008 ANGERS CEDEX 01
FRANCE

Phone: +33 (0) 2 41 73 72 66
FAX: +33 (0) 2 41 73 70 66
E-Mail: srv.Duplicopy@bull.net

CEDOC Reference #	Designation	Qty
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		
_ _ _ _ _ _ _ _ _ [_ _]		

[_ _] : The latest revision will be provided if no revision number is given.

NAME: ______________________________ Date: __________

COMPANY: ______________________________

ADDRESS: ______________________________

____

PHONE: ____________________ FAX: ____________________

E-MAIL: ______________________________

For Bull Subsidiaries:

Identification: ______________________________

For Bull Affiliated Customers:

Customer Code: ______________________________

For Bull Internal Customers:

Budgetary Section: ______________________________

For Others: Please ask your Bull representative.

BLANK

BULL CEDOC
357 AVENUE PATTON
B.P.20845
49008 ANGERS CEDEX 01
FRANCE

REFERENCE
86 A1 11EW 00