

Hardware Information

RIO or InfiniBand adapters
and cables

ESCALA POWER5



REFERENCE
86 A1 17EW 00

ESCALA POWER5

Hardware Information

RIO or InfiniBand adapters and cables

Hardware

July 2006

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49008 ANGERS CEDEX 01
FRANCE

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RIO or InfiniBand adapters and cables

RIO or InfiniBand adapters and cables

The information and procedures in this topic are for remote input/output (RIO), or InfiniBand adapters and cables, including connector locations and installing, removing, or replacing the RIO or InfiniBand adapters.

- **Printable PDF**
Use this section to download a PDF of this information.
 - **System unit cable options**
Identify the RIO cables for the model numbers and machine types identified.
 - **Expansion unit cable options**
Identify the RIO cables for the expansion units identified.
 - **Identify RIO and SPCN cables**
Identify the RIO and SPCN cables for the expansion unit.
 - **Before you begin**
Understand prerequisites for installing, removing, or replacing features and parts.
 - **Replacing RIO or InfiniBand cables**
Learn more about replacing RIO or InfiniBand cables.
 - **Model ESCALA PL 250T/R integrated RIO adapter**
Learn more about the integrated RIO adapter.
 - **Model ESCALA PL 250T/R with 1.9 GHz processor RIO adapter**
Learn more about the model ESCALA PL 250T/R with 1.9 GHz processor RIO customer-replaceable adapter.
 - **Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter**
Learn more about the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.
 - **Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter**
Learn more about the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.
 - **Installing or replacing RIO adapters in expansion units**
Learn more about installing or replacing RIO adapters in expansion units.
-

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Parent topic: [RIO or InfiniBand adapters and cables](#)

System unit cable options

Identify the RIO cables for the model numbers and machine types identified.

Use the following table to identify the RIO cables for the model numbers and machine types identified.

Table 1. System unit RIO cable options

Cable feature	ESCALA PL 250T/R	9405-520 9406-520	ESCALA PL 450T/R	9406-550	ESCALA PL 850R/PL 1650R/R+	9406-570	185/75	ESCALA PL 3250R or ESCALA PL 6450R	111/00 ²
1307 (copper)									X
1308 (copper)									X
1460 (copper)									X
1461 (copper)									X
1462 (copper)									X
1470 (fiber optic)									X
1471 (fiber optic)									X
1472 (fiber optic)									X
1473 (fiber optic)									X
1474 (copper)									X
1475 (copper)									X
1481 (copper)									X
1482 (copper)									X
1483 (copper)									X
1485 (copper)	X								X
1487 (copper)		X		X		X			X

3146 (copper)	X ¹		X ¹		X		X		
3147 (copper)	X		X		X			X	
3148 (copper)	X		X		X				
3156 (copper)	X ¹		X ¹		X ¹				
3168 (copper)	X				X		X		
3170 (copper)								X	
7924 (copper)							X	X	X

Notes:

1. This cable can be used only for stand-alone system units due to its length.
2. For more information about 111/00, go to [Model 111/00 features and parts](#).

Parent topic: [RIO or InfiniBand adapters and cables](#)

Expansion unit cable options

Identify the RIO cables for the expansion units identified.

Use the following table to identify the RIO cables for the expansion units identified.

Table 1. Expansion unit RIO cable options

Cable feature	IXA card	HCA card	50/74, 50/79	05/88, 50/88	50/94, 52/94, 0694, 91/94	50/95, 05/95	11D/11	11D/20	57/90
1307 (copper)				X	X	X			X
1308 (copper)				X	X	X			X
1460 (copper)	X		X	X	X	X			X
1461 (copper)	X		X	X	X	X			X
1462 (copper)	X		X	X	X	X			X
1470 (fiber optic)			X	X	X	X			X
1471 (fiber optic)			X	X	X	X			X
1472 (fiber optic)			X	X	X	X			X
1473 (fiber optic)			X	X	X	X			X

RIO or InfiniBand adapters and cables

1474 (copper)	X		X	X	X	X			X
1475 (copper)	X		X	X	X	X			X
1481 (copper)				X	X	X			X
1482 (copper)				X	X	X			X
1483 (copper)				X	X	X			X
1485 (copper)				X	X	X			X
1832						X			
1833						X			
1834						X			
1835		X							
1836		X							
1837						X			
1838						X			
1839		X							
3146 (copper)							X	X	
3147 (copper)							X	X	
3148 (copper)							X	X	
3156 (copper)									
3168 (copper)									

Parent topic: [RIO or InfiniBand adapters and cables](#)

Identify RIO and SPCN cables

Identify the RIO and SPCN cables for the expansion unit.

The system uses RIO to send and receive customer data and auxiliary control information to and from the expansion unit and to download expansion unit firmware. The SPCN network is used to control power to the expansion units and as a backup to the RIO for auxiliary control and firmware control.

The following expansion units do not use SPCN cables:

- 57/91
- 57/94
- 406/1D

Power is controlled by the rack bulk-power assembly (BPA) through UPIC cables.

Table 1. RIO cables

Cable feature	CCIN	Cable type	Length	Part number
1307 (copper)	1307	HSL-2	1.75 meters	00P5238
1308 (copper)	1308	HSL-2	2.5 meters	00P5239
1460 (copper)	0343	HSL	3 meters	44L0005
1461 (copper)	0361	HSL	6 meters	97H7490
1462 (copper)	0368	HSL	15 meters	97H7491
1470 (fiber optic)	1470	Fiber optic	6 meters	21P5014

1471 (fiber optic)	1471	Fiber optic	30 meters	21P5015
1472 (fiber optic)	1472	Fiber optic	100 meters	21P5016
1473 (fiber optic)	1473	Fiber optic	250 meters	21P6326
1474 (copper)	1474	HSL to HSL-2	6 meters	21P5477
1475 (copper)	1475	HSL to HSL-2	10 meters	21P5458
1481 (copper)	1481	HSL-2	1 meters	21P5454
1482 (copper)	1482	HSL-2	3.5 meters	53P2676
1483 (copper)	1483	HSL-2	10 meters	21P5456
1485 (copper)	1485	HSL-2	15 meters	21P5457
1487 (copper)	1487	HSL to HSL-2	3 meter	53P5243
3146 (copper)	3146	HSL-2	1 meter	21P5454
3147 (copper)	3147	HSL-2	3.5 meters	53P2676
3148 (copper)	3148	HSL-2	10 meters	21P5456
3156 (copper)	3156	HSL-2/RIO-g	1.75 meters	00P5238
3168 (copper)	3168	HSL-2/RIO-g	2.5 meters	00P5239
3170 (copper)	3170	HSL-2/RIO-g	8 meters	
7924 (copper)	7924	HSL-2/RIO-g	0.6 meters	

Table 2. SPCN cables

Cable feature	CCIN	Length	Part number
0369 (fiber optic)	0369	100 meters	21F9415
1463	9206	2 meters	87G6235
1464	9219	6 meters	21F9469
1465	9213	15 meters	21F9358
1466	9214	30 meters	21F9359
1468 (fiber optic)	1468	250 meters	21P6325
1827 (serial to SPCN)	1827	0.14 meter	97P4299
6001	6001	2 meters	87G6235
6006	6006	3 meters	09P1251
6007	6007	15 meters	21F9358
6008	6008	6 meters	21F9469
6029	6029	30 meters	21F9359

Parent topic: [RIO or InfiniBand adapters and cables](#)

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)

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

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

CAUTION

- Do not install a unit in a rack where the internal rack ambient temperatures will exceed the manufacturer's recommended ambient temperature for all your rack-mounted devices.
- Do not install a unit in a rack where the air flow is compromised. Ensure that air flow is not blocked or reduced on any side, front, or back of a unit used for air flow through the unit.

- Consideration should be given to the connection of the equipment to the supply circuit so that overloading of the circuits does not compromise the supply wiring or overcurrent protection. To provide the correct power connection to a rack, refer to the rating labels located on the equipment in the rack to determine the total power requirement of the supply circuit.
- *(For sliding drawers.)* Do not pull out or install any drawer or feature if the rack stabilizer brackets are not attached to the rack. Do not pull out more than one drawer at a time. The rack might become unstable if you pull out more than one drawer at a time.
- *(For fixed drawers.)* This drawer is a fixed drawer and must not be moved for servicing unless specified by the manufacturer. Attempting to move the drawer partially or completely out of the rack might cause the rack to become unstable or cause the drawer to fall out of the rack.

(R001)

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

1. If you are installing a new feature, ensure that you have the software required to support the new feature and determine if there are any existing PTF prerequisites.
2. If you are performing an installation or replacement procedure that might put your data at risk, ensure, wherever possible, that you have a current backup of your system or logical partition (including operating systems, licensed programs, and data).

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

- ◆ [AIX backup](#)
- ◆ [Linux backup](#)

3. Review the installation or replacement procedure for the feature or part.
4. Note the significance of color on your system.

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

5. Ensure that you have access to a medium, flat-blade screwdriver.
6. If parts are incorrect, missing, or visibly damaged, do the following:
 - ◆ If you are replacing a part, contact your service provider or next level of support.
 - ◆ If you are installing a feature, contact one of the following:
 - ◇ Your service provider or next level of support.
7. If you encounter difficulties during the installation, contact your service provider, or your next level of support.
8. If you are installing new hardware in a logical partition, you need to understand and plan for the implications of partitioning your system. For information, see [Partitioning the server](#), and then return to these instructions.

Parent topic: [RIO or InfiniBand adapters and cables](#) **Parent topic:** [Related procedures](#)

Replacing RIO or InfiniBand cables

Learn more about replacing RIO or InfiniBand cables.

This procedure describes the replacement of the RIO or InfiniBand cables concurrently, that is, while the system is still powered on. You will need to perform the following steps for both ends of the cable that you are replacing.

Attention: When the RIO or InfiniBand cable is disconnected, it might result in the connection being lost between the units even after the cable is reconnected. This happens in rare cases depending on the state of the RIO or InfiniBand hardware at both ends of the cable when the cable is disconnected.

Note: Additional information can be found in [Setup your expansion unit](#). You do not need to power off the system or expansion unit. If you are replacing a cable between a system unit and an expansion unit, connect the expansion-unit end of the cable first. This will reduce the chances of the problem identified in the previous **Attention** notice from happening with the system unit. However, in rare cases the problem might still occur with the I/O unit.

Note: For additional systems that are not listed in this section, go to [finding part locations](#). 

1. Disconnect both ends of the cable. See the previous note.
2. Is the connection an optical link?
 - ◆ **No:** Wait at least 30 seconds.
 - ◆ **Yes:** Clean the optical RIO or InfiniBand cable connectors on the new cables and the cable port using the tools and procedures listed in the instructions that are included in the optical cleaning kit.

Attention: For copper cables, you must fully connect the cable and tighten the connector's screws, if present, within 30 seconds of when the cable makes contact with the port. If you do not, the link will fail and you must disconnect and reconnect the cable again. If the connector screws are not tightened, errors will occur on the link and the link will fail.

3. Connect both ends of the new cable.
4. Verify that the repair was made successfully. After replacing a failed cable, the message **B7006985** with **4 of 12003206** (RIO loop recovered) is displayed, and **B7006985** with **12003208** (RIO link recovered)

Parent topic: [RIO or InfiniBand adapters and cables](#)

Model ESCALA PL 250T/R integrated RIO adapter

Learn more about the integrated RIO adapter.

The following information describes the model ESCALA PL 250T/R integrated RIO adapter.

To set up your RIO or InfiniBand cabling, see the [Expansion unit](#) topic.

- **Model ESCALA PL 250T/R RIO connector locations**
Learn more about model ESCALA PL 250T/R RIO connector locations

Parent topic: [RIO or InfiniBand adapters and cables](#)

Model ESCALA PL 250T/R RIO connector locations

Learn more about model ESCALA PL 250T/R RIO connector locations

The model ESCALA PL 250T/R RIO functionality is built into the system backplane. No additional cards or adapters are required. The RIO connectors are located on the back of the system unit. The RIO1 connector is at location P1-T3, and the RIO0 connector is at location P1-T4. See the following figures for the connector

locations:

Figure 1. Model ESCALA PL 250T/R rack-mounted system unit connectors

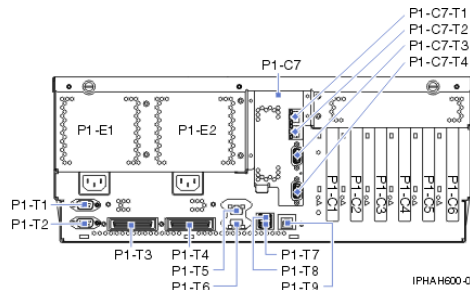
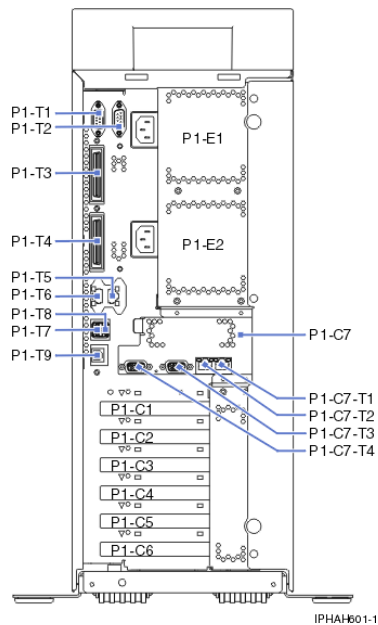


Figure 2. Model ESCALA PL 250T/R stand-alone system unit connectors



Parent topic: [Model ESCALA PL 250T/R integrated RIO adapter](#)

Model ESCALA PL 250T/R with 1.9 GHz processor RIO adapter

Learn more about the model ESCALA PL 250T/R with 1.9 GHz processor RIO customer-replaceable adapter.

The following information describes the model ESCALA PL 250T/R with 1.9 GHz processor RIO customer replaceable adapter.

To set up your RIO or InfiniBand cabling, see the [Expansion unit](#) topic.

- **Remove a RIO adapter from a model ESCALA PL 250T/R with 1.9 GHz processor**
Learn more about removing a RIO adapter from a model ESCALA PL 250T/R with 1.9 GHz processor.
- **Replace a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor**
Learn more about replacing a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor.
- **Install a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor**
Learn more about installing a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor.

Parent topic: [RIO or InfiniBand adapters and cables](#)

Remove a RIO adapter from a model ESCALA PL 250T/R with 1.9 GHz processor

Learn more about removing a RIO adapter from a model ESCALA PL 250T/R with 1.9 GHz processor.

The following procedure describes the removal of a RIO adapter from a model ESCALA PL 250T/R with 1.9 GHz processor.

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

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Power off the system unit to remove a RIO adapter. See [Stop the system or logical partition](#).
3. If necessary, disconnect any cables connected to the adapter at the back of the system.
4. Place the server or unit in the service position. See [Place the rack-mounted system or expansion unit in the service position](#).
5. Remove the cover from the system unit. Unscrew the retaining screws A and then slide back cover B to remove.

Figure 1. Model ESCALA PL 250T/R with 1.9 GHz processor cover removal on a stand-alone system

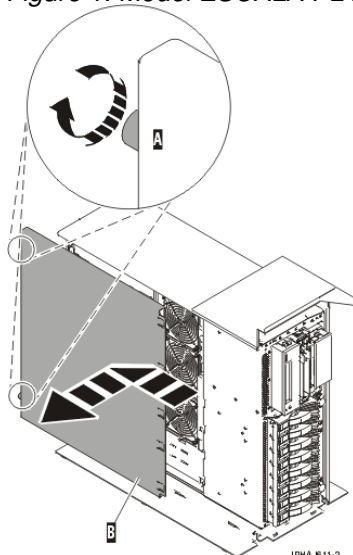
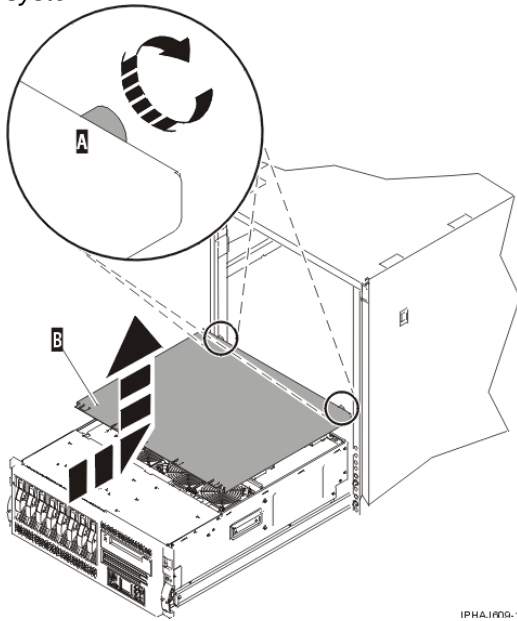


Figure 2. Model ESCALA PL 250T/R with 1.9 GHz processor cover removal on a rack-mounted system



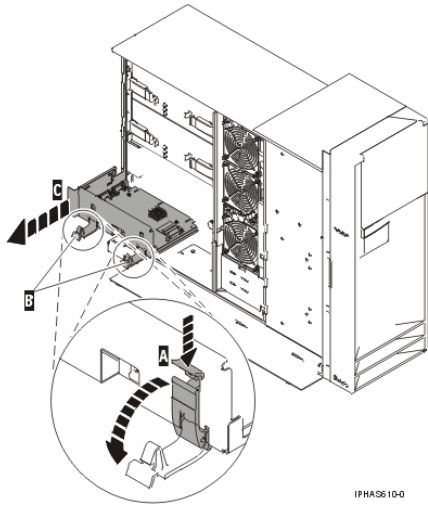
6. Attach the wrist strap.

Attention:

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

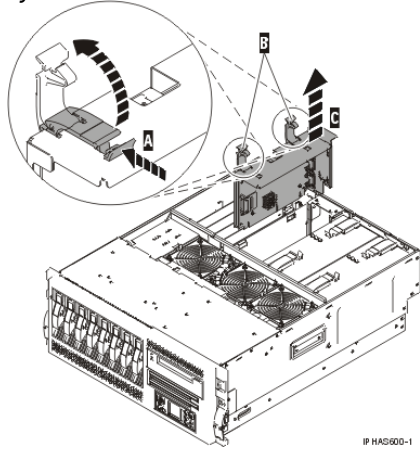
7. Press tabs on the blue locking latches A on the FSP card inward, then pull up on latches until they unlatch B. See following figure.
8. Remove the FSP card and RIO adapter. The RIO adapter is attached to the FSP card mounting bracket. The RIO adapter mounting bracket has a hole at the bottom. The FSP card mounting bracket has a stud at the bottom of the bracket that fits into the hole in the RIO adapter bracket. The top of the FSP bracket has two small latches that slide into the cutouts on the top of the RIO bracket.

Figure 3. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card removal on a stand-alone system



IPHAS610-0

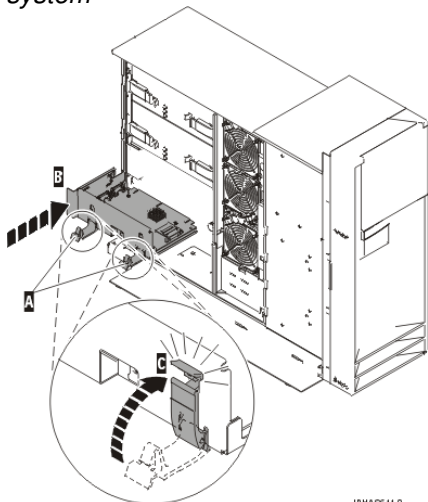
Figure 4. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card removal on a rack-mounted system



IPHAS600-1

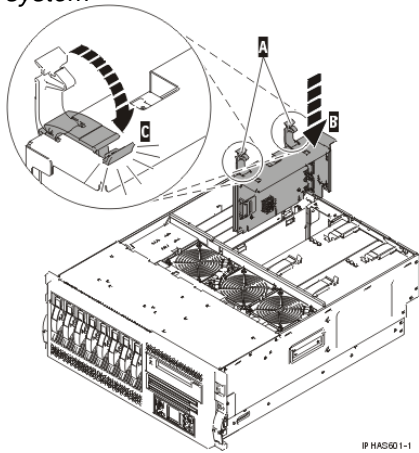
9. Remove the RIO adapter from the FSP card mounting bracket. Slide the RIO adapter bracket back to disengage the latches on the FSP card mounting bracket. Make sure the stud on the bottom of the FSP card mounting bracket is unseated from the RIO adapter bracket.
10. Reinstall the FSP card.
11. Push down on the blue locking latches A until they latch C.

Figure 5. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card installation on a stand-alone system



IPHAS611-0

Figure 6. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card installation on a rack-mounted system



12. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

Figure 7. Installing a model ESCALA PL 250T/R with 1.9 GHz processor cover on a stand-alone system

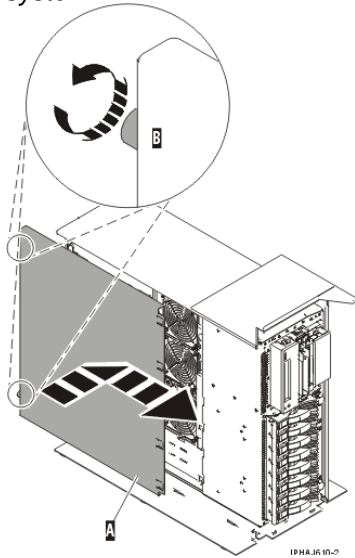
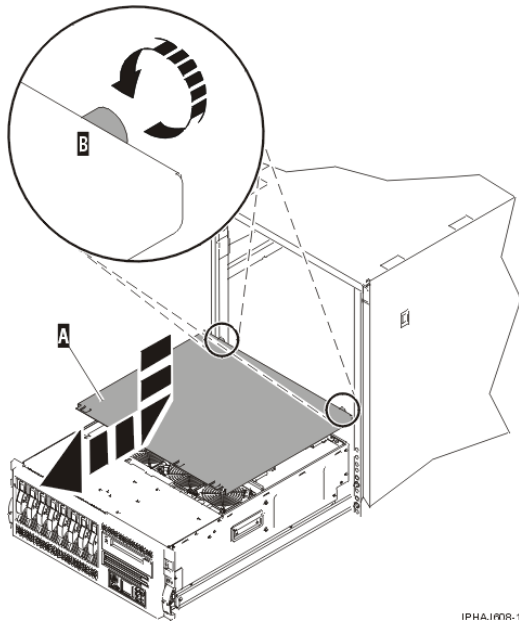


Figure 8. Installing a model ESCALA PL 250T/R with 1.9 GHz processor cover on a rack-mounted system



13. If you are working on a rack-mounted system unit, ensure that the system cables are routed correctly through the cable-management arm.
14. Place the server or unit in the operating position. See [Place the rack-mounted system or expansion unit in the operating position](#).
15. Reconnect all power and signal cables to their respective connectors.
16. Close the back rack door or the back system door.
17. Start the system. See [Start the system or logical partition](#).
18. Verify that the new resource is working correctly. For instructions, see [Verify the installed part](#).

Parent topic: [Model ESCALA PL 250T/R with 1.9 GHz processor RIO adapter](#)

Stop the system or logical partition

Learn how to stop a system or logical partition.

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

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

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

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

Related tasks

[Start the system or logical partition](#)

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

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

Prepare to stop the system

Before you stop the system, do the following:

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

Stop the system

To stop a system, follow these steps:

1. Log in to the system as a user with the authority to run the `shutdown` or `pwrdownsys` (Power Down System) command.
2. At the command line, enter one of the following commands:
 - ◆ If your system is running AIX, type `shutdown`.
 - ◆ If your system is running Linux, type `shutdown -h now`.
 The command stops the operating system. The system power turns off, the power-on light begins to slowly blink, and the system goes into a standby state.
3. Set the power switches of any devices connected to the system to off.
4. Unplug any power cables that are attached to the unit from electrical outlets. Ensure that you unplug power cables from peripheral devices, such as printers and expansion units.

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

(L003)



or



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

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](#)

Start the system or logical partition

Use these instructions to start a system or logical partition.

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

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

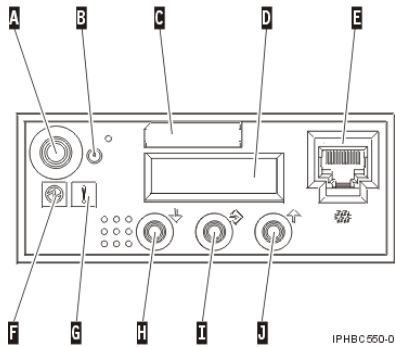
Related tasks

[Stop the system or logical partition](#)

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](#)

Replace a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor

Learn more about replacing a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor.

The following procedure describes the replacement of the RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor.

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

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Power off the system unit to remove a RIO adapter. See [Stop the system or logical partition](#).
3. If necessary, disconnect any cables connected to the adapter at the back of the system.
4. Place the server or unit in the service position. See [Place the rack-mounted system or expansion unit in the service position](#).
5. Remove the cover from the system unit. Unscrew the retaining screws A and then slide back cover B to remove.

Figure 1. Model ESCALA PL 250T/R with 1.9 GHz processor cover removal on a stand-alone system

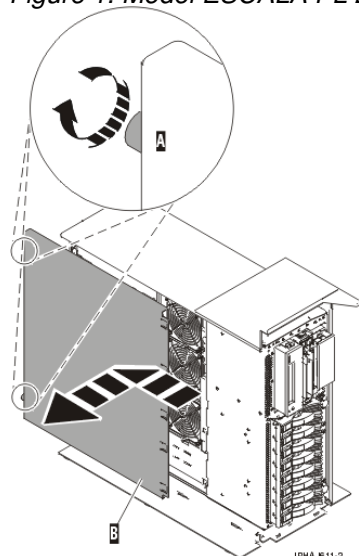
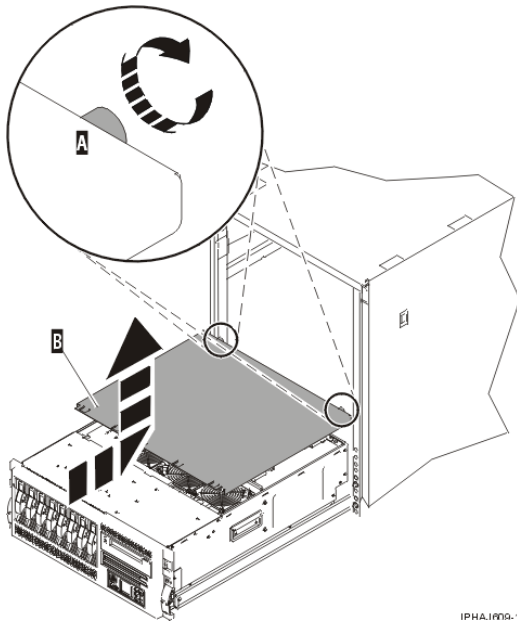


Figure 2. Model ESCALA PL 250T/R with 1.9 GHz processor cover removal on a rack-mounted system



6. Attach the wrist strap.

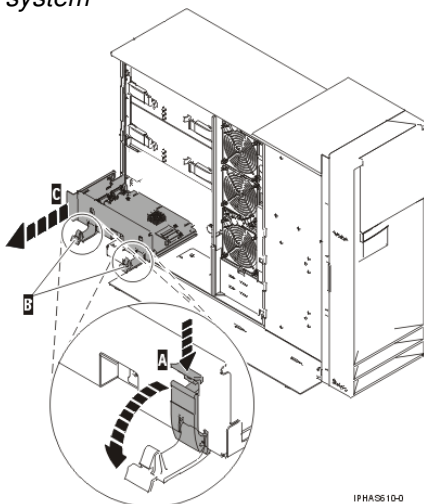
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Attention:

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

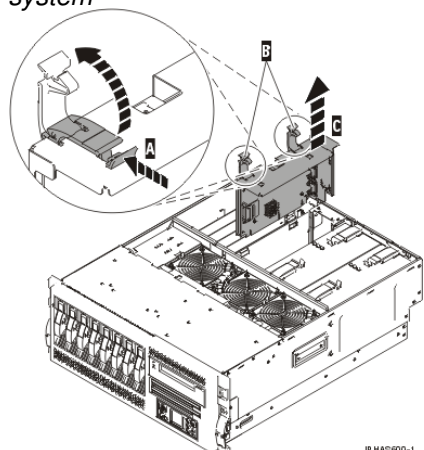
7. Press tabs on the blue locking latches A on the FSP card inward, then pull up on latches until they unlatch B. See following figure.
8. Remove the FSP card and RIO adapter. The RIO adapter is attached to the FSP card mounting bracket. The RIO adapter mounting bracket has a hole at the bottom. The FSP card mounting bracket has a stud at the bottom of the bracket that fits into the hole in the RIO adapter bracket. The top of the FSP bracket has two small latches that slide into the cutouts on the top of the RIO bracket.

Figure 3. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card removal on a stand-alone system



IPHAG610-0

Figure 4. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card removal on a rack-mounted system



9. Remove the existing RIO adapter from the FSP card mounting bracket. Slide the RIO adapter bracket back to disengage the latches on the FSP card mounting bracket. Make sure the stud on the bottom of the FSP card mounting bracket is unseated from the RIO adapter bracket.
10. Install a new RIO adapter. Slide the retaining tabs of the RIO adapter into the appropriate slots on the FSP card mounting bracket. Seat the stud on the FSP card mounting bracket into the retaining hole on the RIO adapter.
11. Reinstall the FSP card.

Important: When installing the FSP card mounting bracket with the RIO adapter inserted, all memory latches must be closed. If there are empty memory slots and the memory latches are left open, the FSP card mounting bracket with the RIO adapter inserted cannot be installed.

12. Push down on the blue locking latches A until they latch C.

Figure 5. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card installation on a stand-alone system

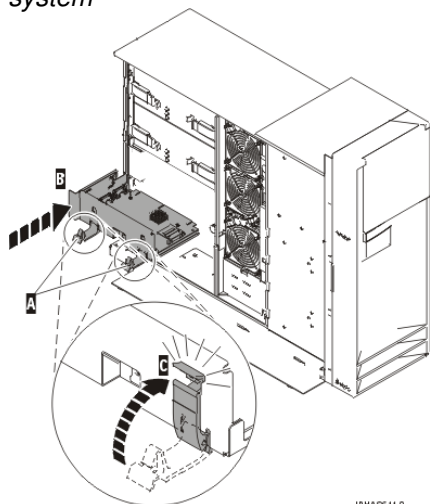
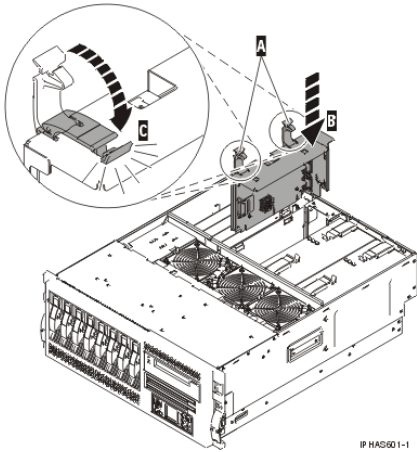


Figure 6. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card installation on a rack-mounted system



13. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

Figure 7. Model ESCALA PL 250T/R with 1.9 GHz processor cover install on a stand-alone system

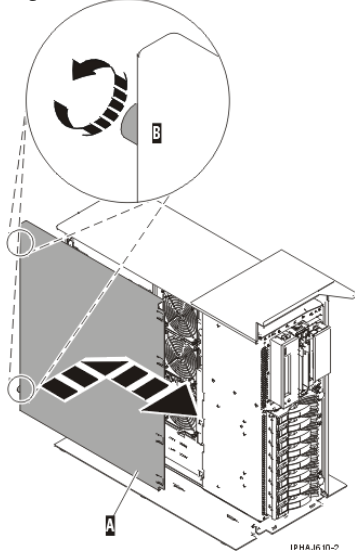
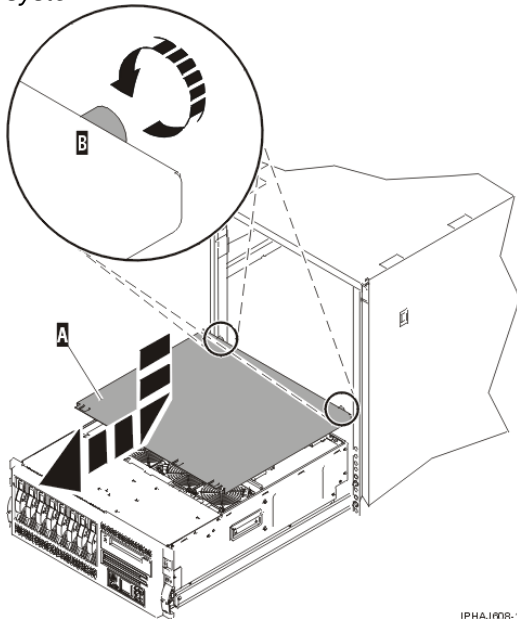


Figure 8. Model ESCALA PL 250T/R with 1.9 GHz processor cover installation on a rack-mounted system



14. If you are working on a rack-mounted system unit, ensure that the system cables are routed correctly through the cable-management arm.
15. Place the server or unit in the operating position. See [Place the rack-mounted system or expansion unit in the operating position](#).
16. Reconnect all power and signal cables to their respective connectors.
17. Close the back rack door or the back system door.
18. Start the system. See [Start the system or logical partition](#).
19. Verify that the new resource is working correctly. For instructions, see [Verify the installed part](#).

Parent topic: [Model ESCALA PL 250T/R with 1.9 GHz processor RIO adapter](#)

Install a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor

Learn more about installing a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor.

The following procedure describes the installation of a RIO adapter in a model ESCALA PL 250T/R with 1.9 GHz processor.

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

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Power off the system unit to remove a RIO adapter. See [Stop the system or logical partition](#).
3. If necessary, disconnect any cables connected to the adapter at the back of the system.
4. Place the server or unit in the service position. See [Place the rack-mounted system or expansion unit in the service position](#).
5. Remove the cover from the system unit. Unscrew the retaining screws A and then slide back cover B to remove.

Figure 1. Model ESCALA PL 250T/R cover removal on a stand-alone system

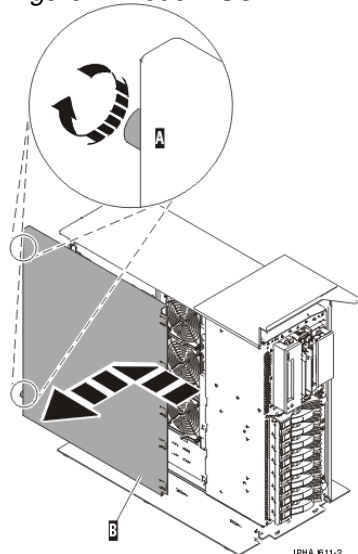
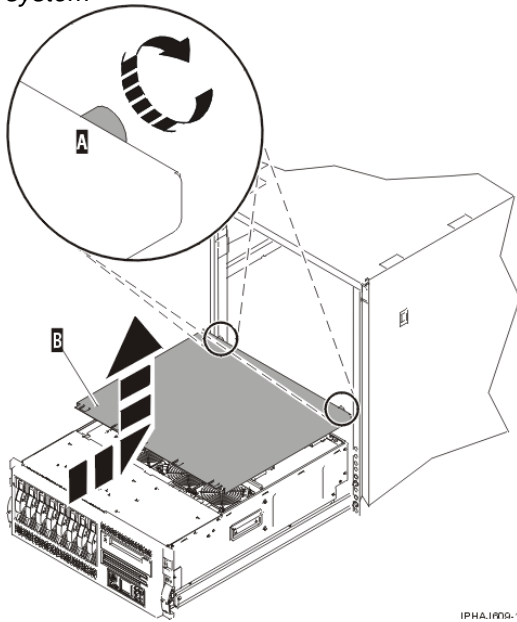


Figure 2. Model ESCALA PL 250T/R with 1.9 GHz processor cover removal on a rack-mounted system



6. Attach the wrist strap.

Attention:

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

7. Press tabs on the blue locking latches A on the FSP card inward, then pull up on latches until they unlatch B. See following figure.

8. Remove the FSP card.

Figure 3. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card removal on a stand-alone system

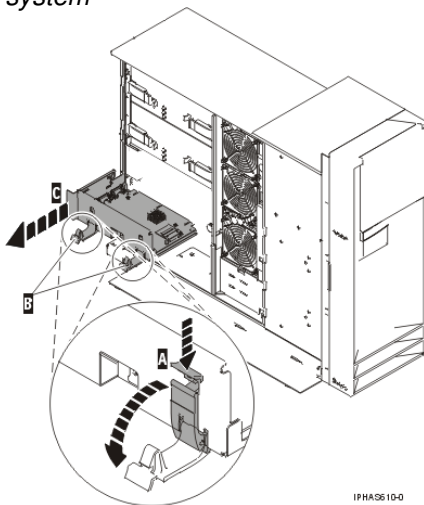
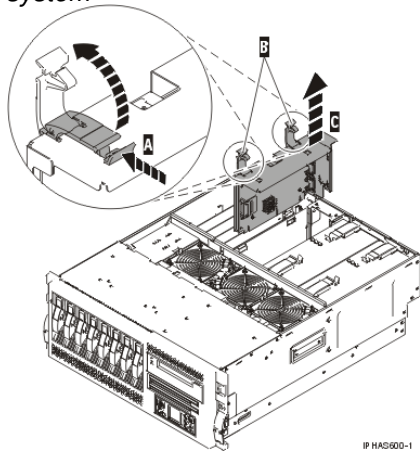


Figure 4. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card removal on a rack-mounted system



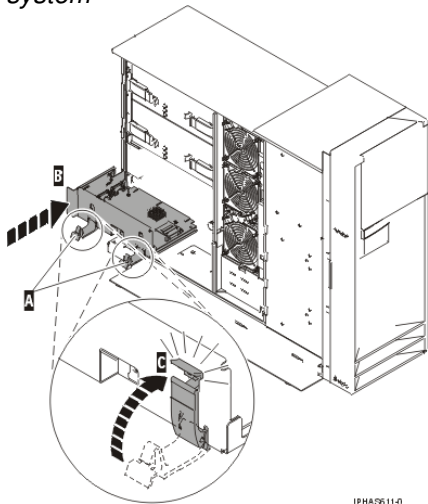
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9. Install a new RIO adapter. Slide the retaining tabs of the RIO adapter into the appropriate slots on the FSP card mounting bracket. Seat the stud on the FSP card mounting bracket into the retaining hole on the RIO adapter.
10. Reinstall the FSP card.

Important: When installing the FSP card mounting bracket with the RIO adapter inserted, all memory latches must be closed. If there are empty memory slots and the memory latches are left open, the FSP card mounting bracket with the RIO adapter inserted cannot be installed.

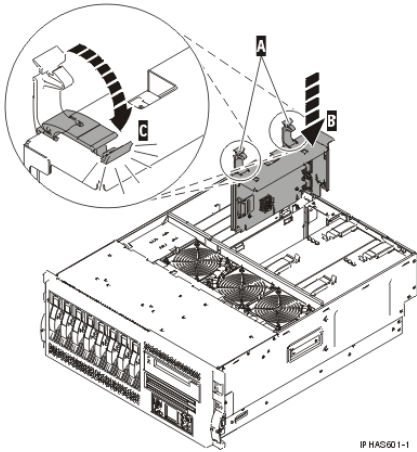
11. Push down on the blue locking latches A until they latch C.

Figure 5. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card installation on a stand-alone system



IP HAS611-0

Figure 6. Model ESCALA PL 250T/R with 1.9 GHz processor FSP card installation on a rack-mounted system



12. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)

Figure 7. Model ESCALA PL 250T/R with 1.9 GHz processor cover installation on a stand-alone system

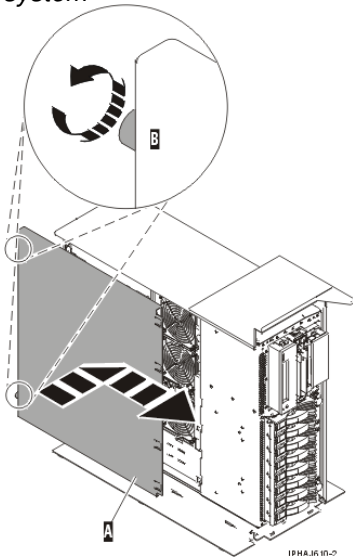
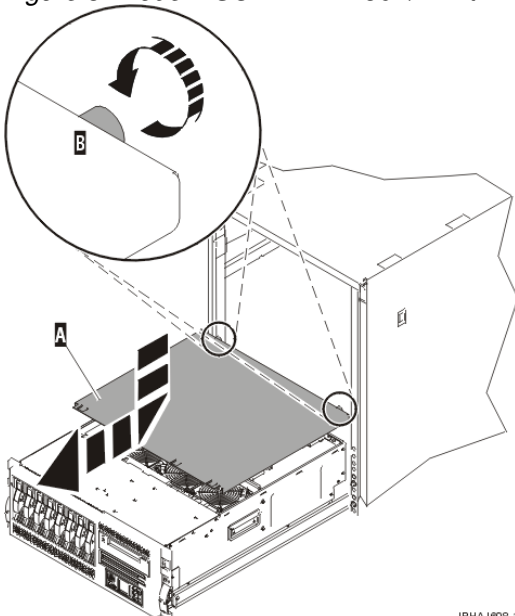


Figure 8. Model ESCALA PL 250T/R with 1.9 GHz processor cover install on a rack-mounted system



13. If you are working on a rack-mounted system unit, ensure that the system cables are routed correctly through the cable-management arm.
14. Place the server or unit in the operating position. See [Place the rack-mounted system or expansion unit in the operating position](#).
15. Reconnect all power and signal cables to their respective connectors.
16. Close the back rack door or the back system door.
17. Start the system. See [Start the system or logical partition](#).
18. Verify that the new resource is working correctly. For instructions, see [Verify the installed part](#).

Parent topic: [Model ESCALA PL 250T/R with 1.9 GHz processor RIO adapter](#)

Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter

Learn more about the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

The following procedures describe the removal, replacement, and installation of the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

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

To set up your RIO or InfiniBand cabling, see the [Expansion unit](#) topic.

- [Remove a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#)
Learn more about removing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.
- [Replace a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#)
Learn more about replacing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.
- [Install a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#)
Learn more about installing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter

Parent topic: [RIO or InfiniBand adapters and cables](#)

Remove a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter

Learn more about removing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

The following procedure describes the removal of the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the following steps for removing the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter. See [Remove a part using the Hardware Management Console](#).

To remove the adapter from a system that is not managed by the HMC, complete the following steps:

1. Perform the prerequisite tasks described in [Before you begin](#).
2. Identify the failing part. For instructions, see [Identify a failing part](#).
3. Stop the system. See [Stop the system or logical partition](#).
4. On a rack-mounted system unit, open the back rack door.
5. Disconnect the power source from the system by unplugging the system.

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

6. If necessary, disconnect any cables connected to the adapter at the back of the system.
7. Place the server or unit in the service position. See [Place the rack-mounted system or expansion unit in the service position](#).
8. Remove the access cover. See [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
9. Attach the wrist strap.

Attention:

- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.
 - ◆ When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - ◆ If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
10. On the RIO or InfiniBand adapter assembly, located in expansion slot 5, press together and pull up on the blue locking latches A until they unlatch B.
 11. Carefully grasp the RIO or InfiniBand adapter assembly and pull it out of the expansion slot C.

Figure 1. Model ESCALA PL 450T/R, server, RIO or InfiniBand removal on a rack-mounted system

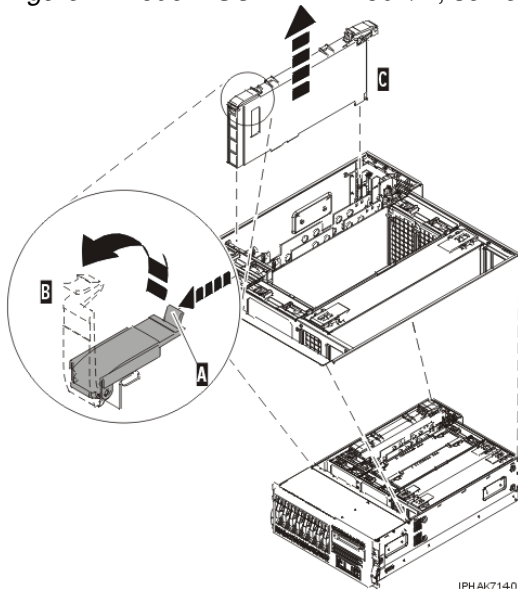
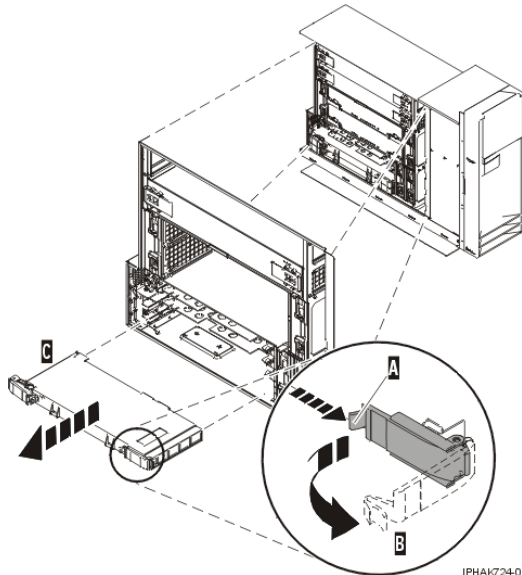


Figure 2. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter removal on a stand-alone system



12. Place an adapter or a filler panel in the expansion slot of the system unit for proper air flow and cooling.
 - ◆ To replace the adapter, see [Replace a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#).
 - ◆ If you are not replacing the adapter, place a filler panel into the slot and continue with the next step.
13. Replace the adapter-retaining bracket for the expansion slot.

Figure 3. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter-retaining-bracket installation on a rack-mounted system

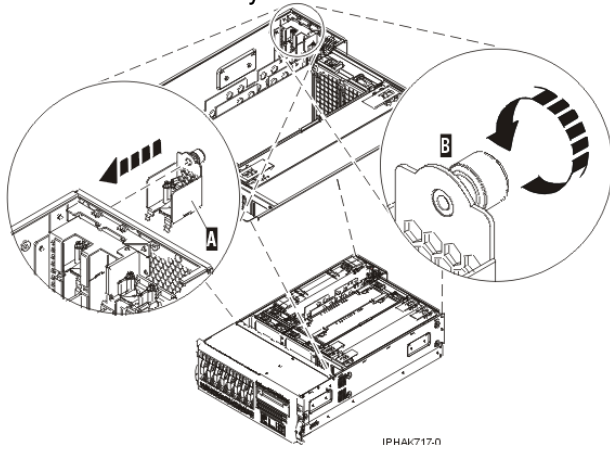
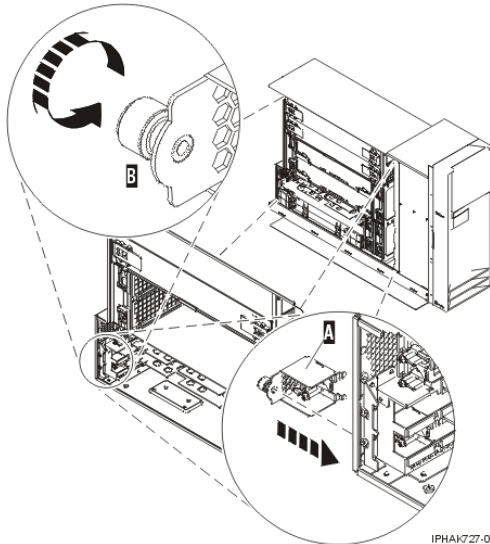


Figure 4. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter retaining bracket installation on a stand-alone system



14. Seal the expansion slot using an expansion slot cover.
15. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
16. If you are working on a rack-mounted system unit, ensure that the system cables are routed correctly through the cable-management arm.
17. Place the server or unit in the operating position. See [Place the rack-mounted system or expansion unit in the operating position.](#)
18. Reconnect all power and signal cables to their respective connectors.
19. Close the back rack door or the back system door.
20. Start the system. See [Start the system or logical partition.](#)
21. Verify that the new resource is working correctly. For instructions, see [Verify the installed part.](#)

Parent topic: [Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#)

Replace a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter

Learn more about replacing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

The following procedure describes the replacement of the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

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

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for replacing the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter. See [Replace a part using the Hardware Management Console.](#)

Attention: When you replace an InfiniBand adapter, you must review the LPAR partition and GUID offset settings. See "Installing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter" in [Guide to Clustering systems using InfiniBand \(IB\) hardware.](#)

To replace the adapter on a system that is not managed by the HMC, complete the following steps:

1. Remove the adapter from the system unit. See [Remove a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#).
2. Attach the wrist strap.

Attention:

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

3. Carefully grasp the RIO or InfiniBand adapter assembly by its top edge, and align the adapter assembly with the slot and its connector on the system backplane.
4. Press the RIO or InfiniBand adapter assembly firmly into its connector A.

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

5. Push down evenly on both of the blue locking latches at the same time until the latches snap into place, indicating that the RIO or InfiniBand adapter assembly is seated correctly and locked into position B.

Figure 1. Model ESCALA PL 450T/R, server, RIO, or InfiniBand adapter installation on rack-mounted system

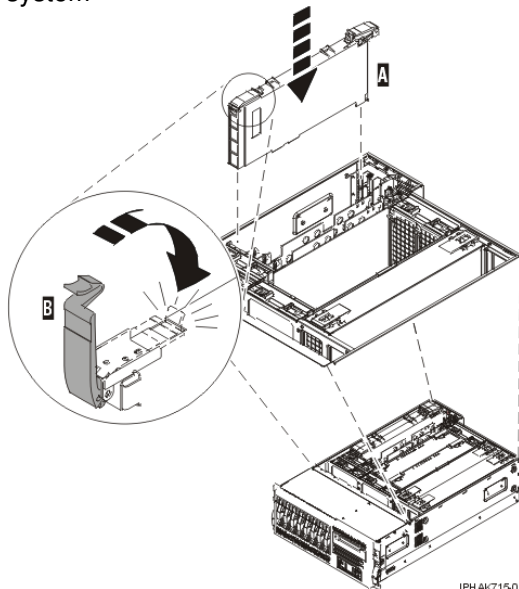
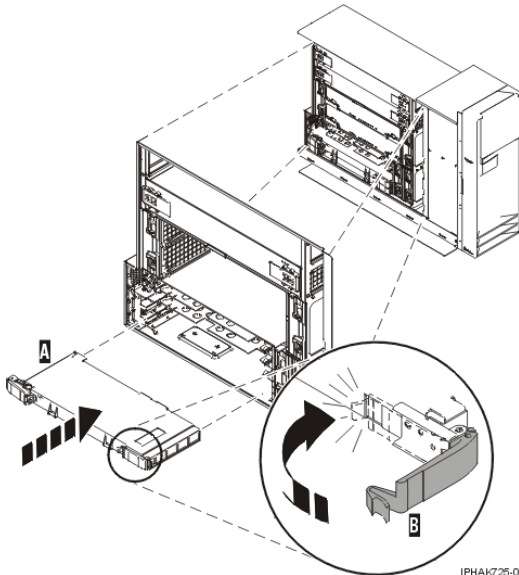


Figure 2. Model ESCALA PL 450T/R, server, RIO, or InfiniBand adapter installation on a stand-alone system



6. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
7. If you are working on a rack-mounted system unit, ensure that the system cables are routed through the cable-management arm correctly.
8. Place the server or unit in the operating position. See [Place the rack-mounted system or expansion unit in the operating position.](#)
9. Reconnect all power and signal cables to their respective connectors.
10. Close the back rack door or the back system door.
11. Start the system. See [Start the system or logical partition.](#)
12. Verify that the new resource is working correctly. For instructions, see [Verify the installed part.](#)

Parent topic: [Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#)

Install a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter

Learn more about installing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter

The following procedure describes the installation of the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter.

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

If your system is managed by the HMC, use the HMC to complete the steps for installing the model ESCALA PL 450T/R, server, RIO or InfiniBand adapter. See [Install a feature using the Hardware Management Console.](#)

Attention: When you install an InfiniBand adapter, you can set the LPAR partition and GUID offset settings. See "Installing a model ESCALA PL 450T/R, server, RIO or InfiniBand adapter" in [Guide to Clustering systems using InfiniBand \(IB\) hardware.](#)

To install the adapter on a system that is not managed by the HMC, complete the following steps:

1. Perform the prerequisite tasks as described in [Before you begin](#).
2. On a rack-mounted system unit, open the back rack door.
3. Disconnect the power source from the system by unplugging the system.

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

4. If necessary, disconnect any cables connected to the adapter at the back of the system.
5. Place the server or unit in the service position. See [Place the rack-mounted system or expansion unit in the service position](#).
6. Remove the access cover. See [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
7. Attach the wrist strap.

Attention:

- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.
 - ◆ When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - ◆ If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
8. If one is present, remove PCI adapter in slot 5. For instructions, see [PCI adapters](#).
 9. Remove the adapter-retaining bracket located in expansion slot 5 by unscrewing it A and pulling it out B.

Figure 1. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter-retaining bracket removal on rack-mounted system

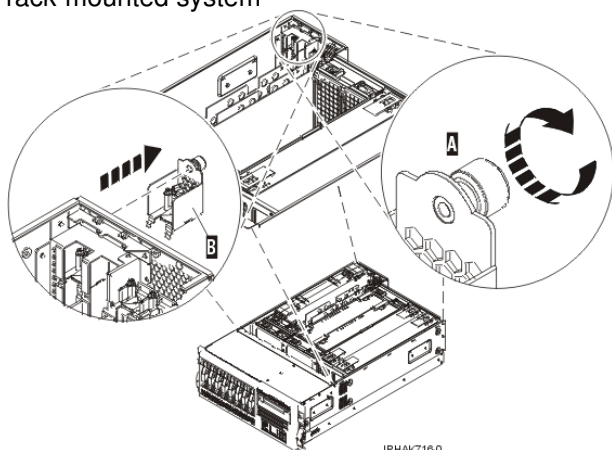
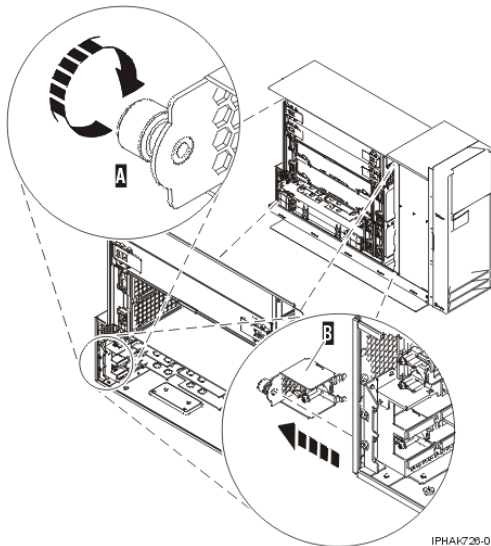


Figure 2. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter-retaining bracket removal on stand-alone system



10. Unlatch the blue locking latches on the RIO or InfiniBand adapter assembly by pushing them together and pulling them up until they unlatch.
11. Carefully grasp the RIO or InfiniBand adapter assembly by its top edge, and align the adapter assembly with the slot and its connector on the system backplane.
12. Press the RIO or InfiniBand adapter assembly firmly into its connector A.

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

13. Push down evenly on both of the blue locking latches at the same time until the latches snap into place, indicating that the RIO or InfiniBand adapter assembly is seated correctly and locked into position B.

Figure 3. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter installation on a rack-mounted system

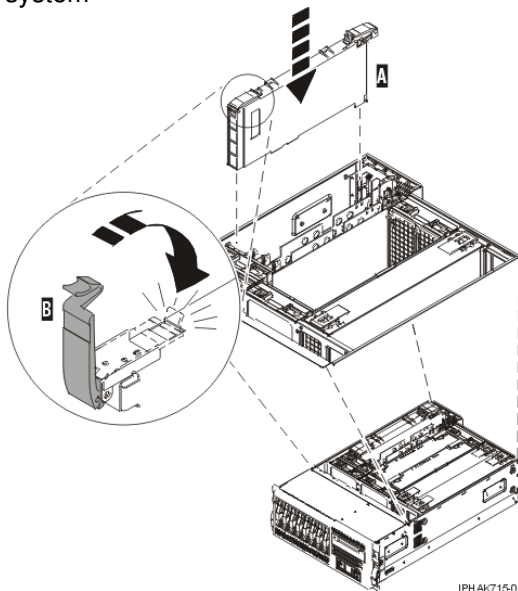
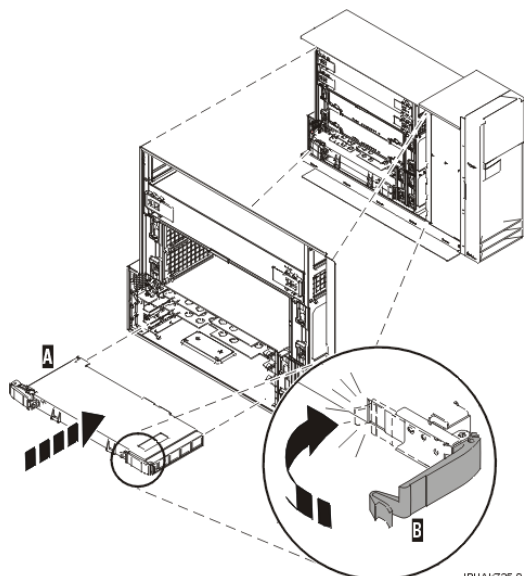


Figure 4. Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter installation on a stand-alone system



14. Replace the service access cover. For instructions, see [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, .](#)
15. If you are working on a rack-mounted system unit, ensure that the system cables are routed through the cable-management arm correctly.
16. Place the server or unit in the operating position. See [Place the rack-mounted system or expansion unit in the operating position.](#)
17. Reconnect all power and signal cables to their respective connectors.
18. Close the back rack door or the back system door.
19. Start the system. See [Start the system or logical partition.](#)
20. Verify that the new resource is working correctly. For instructions, see [Verify the installed part.](#)

Parent topic: [Model ESCALA PL 450T/R, server, RIO or InfiniBand adapter](#)

Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter

Learn more about the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

The following procedures describe the removal, replacement, and installation of the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

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

To set up your RIO or InfiniBand cabling, see the [Expansion unit](#) topic.

- [Remove a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#)
Learn more about removing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter
- [Replace a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#)
Learn more about replacing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.
- [Install a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#)
Learn more about installing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

Parent topic: [RIO or InfiniBand adapters and cables](#)

Remove a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter

Learn more about removing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter

The following procedure describes the removal of the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

If your system is managed by the Hardware Management Console (HMC), use the HMC to complete the steps for removing the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter. See [Remove a part using the Hardware Management Console](#).

To remove the adapter on a system that is not managed by the HMC, complete the following steps:

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

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

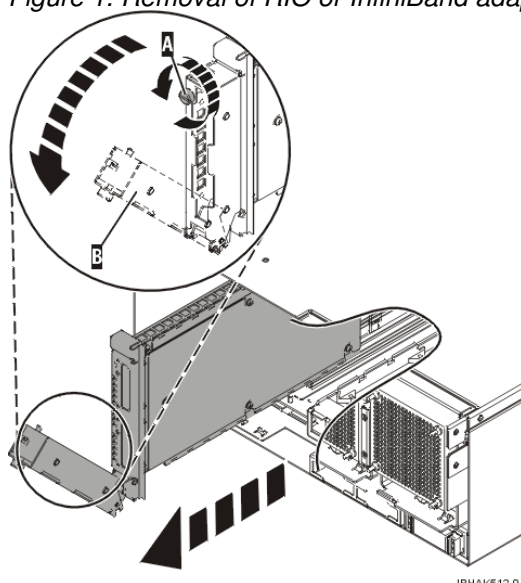
5. If necessary, disconnect any cables connected to the adapter at the back of the system.
6. Attach the wrist strap.

Attention:

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

7. Turn the thumbscrew A until the adapter is loose.
8. Pull the handle B down.
9. Slide the adapter out of the system.

Figure 1. Removal of RIO or InfiniBand adapter in a model ESCALA PL 850R/PL 1650R/R+



Parent topic: [Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#)

Replace a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter

Learn more about replacing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

The following procedure describes the replacement of the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

If your system is managed by the HMC, use the HMC to complete the steps for replacing the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter. See [Replace a part using the Hardware Management Console](#).

Attention: When you replace an InfiniBand adapter, you must review the LPAR partition and GUID offset settings. See "Installing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter" in [Guide to Clustering systems using InfiniBand \(IB\) hardware](#).

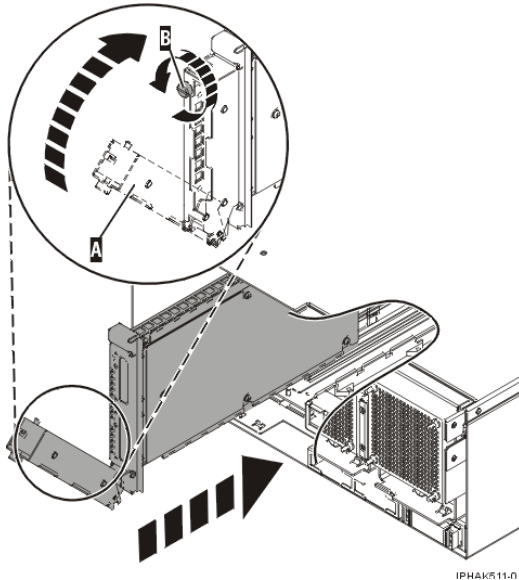
To replace the adapter on a system that is not managed by the HMC, complete the following steps:

1. Remove the adapter from the system unit. See [Remove a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#).
2. Attach the wrist strap.

Attention:

- ◆ Attach a wrist strap to an unpainted metal surface of your hardware to prevent electrostatic discharge from damaging your hardware.
 - ◆ When using a wrist strap, follow all electrical safety procedures. A wrist strap is for static control. It does not increase or decrease your risk of receiving electric shock when using or working on electrical equipment.
 - ◆ If you do not have a wrist strap, just prior to removing the product from ESD packaging and installing or replacing hardware, touch an unpainted metal surface of the system for a minimum of 5 seconds.
3. Align the RIO or InfiniBand with the slot in the system.
 4. Slide the RIO or InfiniBand adapter into the system.
 5. Push the handle A up and toward the system until the handle stops against the adapter.
 6. Turn the thumbscrew B until tight.

Figure 1. Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter replacement



7. Reconnect all power and signal cables to their respective connectors.
8. Close the back rack door.
9. Start the system. See [Start the system or logical partition](#).
10. Verify that the new resource is working correctly. For instructions, see [Verify the installed part](#).

Parent topic: [Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#)

Install a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter

Learn more about installing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

The following procedure describes the installation of the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter.

If your system is managed by the HMC, use the HMC to complete the steps for installing the model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter. See [Install a feature using the Hardware Management Console](#).

Attention: When you install an InfiniBand adapter, you can set the LPAR partition and GUID offset settings. See "Installing a model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter" in [Guide to Clustering systems using InfiniBand \(IB\) hardware](#).

To install the adapter on a system that is not managed by the HMC, complete the following steps:

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

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

4. Open the back rack door.

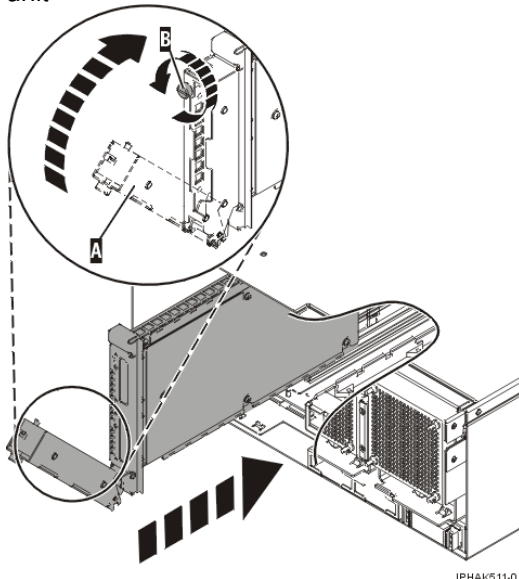
5. Attach the wrist strap.

Attention:

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

6. If a PCI adapter is present in slot 6, remove the PCI adapter and relocate it to another slot. For instructions, see [PCI adapters](#).
7. Align the RIO or InfiniBand adapter with the slot in the system.
8. Slide the RIO or InfiniBand adapter into the system.
9. Push the handle A up and toward the system until the handle stops against the adapter.
10. Turn the thumbscrew B until tight.

Figure 1. Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter installed in the system unit



11. Reconnect all power and signal cables to their respective connectors.
12. Close the back rack door.
13. Start the system. See [Start the system or logical partition](#).
14. Verify that the new resource is working correctly. For instructions, see [Verify the installed part](#).

Parent topic: [Model ESCALA PL 850R/PL 1650R/R+ RIO or InfiniBand adapter](#)

Installing or replacing RIO adapters in expansion units

Learn more about installing or replacing RIO adapters in expansion units.

If you have any of the expansion units listed in the following table, you can install or replace RIO adapters.

Table 1. Placement table for RIO adapter connectivity

Feature Code	Expansion Units					Description	Information
	05/95	50/95	50/94	52/94	82/94		
6417	X	X	X	X	X	Enables existing HSL-connected and optical-HSL-connected expansion units to have the option of switching to copper HSL-2/RIO-G connectivity.	Required: HSL adapter slot in expansion unit.

- **Expansion unit models 05/95 and 50/95 RIO adapter locations**
Learn more about the expansion unit models 05/95 and 50/95 RIO adapter locations.
- **Expansion unit models 50/94, 52/94, and 82/94 RIO adapter locations**
Learn more about expansion unit models 50/94, 52/94, and 82/94 RIO adapter locations.

Parent topic: [RIO or InfiniBand adapters and cables](#)

Expansion unit models 05/95 and 50/95 RIO adapter locations

Learn more about the expansion unit models 05/95 and 50/95 RIO adapter locations.

The expansion unit models 05/95 and 50/95 RIO adapters are located on the back of the system unit. The adapter is at location CB1-C05. See the following figures for the adapter locations:

Figure 1. 05/95 expansion unit

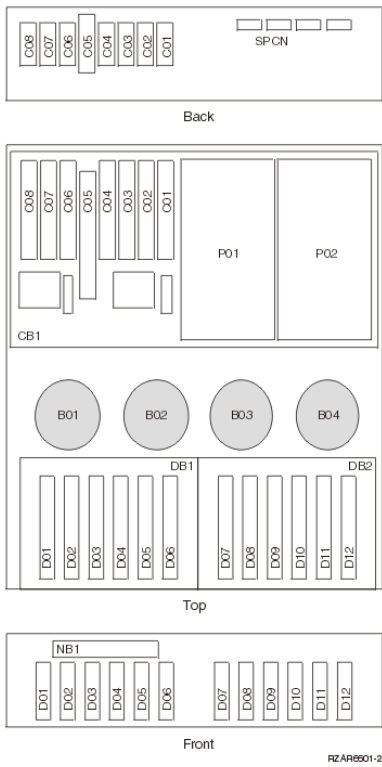
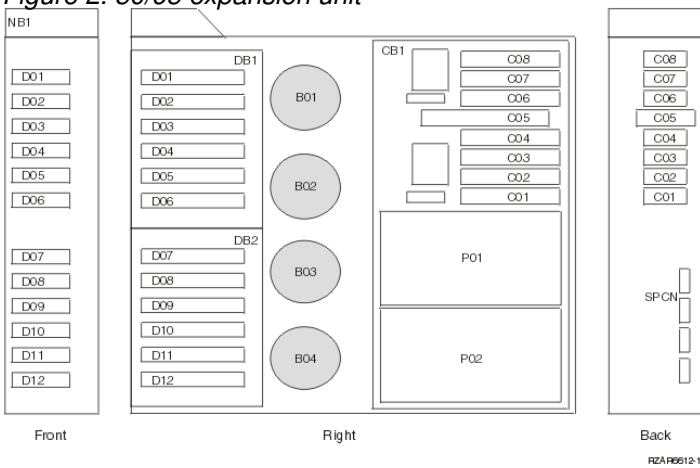


Figure 2. 50/95 expansion unit



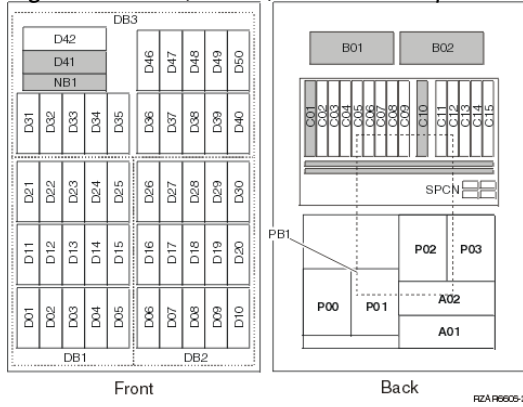
Parent topic: [Installing or replacing RIO adapters in expansion units](#)

Expansion unit models 50/94, 52/94, and 82/94 RIO adapter locations

Learn more about expansion unit models 50/94, 52/94, and 82/94 RIO adapter locations.

The expansion unit models 50/94, 52/94 and 82/94 RIO adapters are located on the back of the system unit. The adapter is at location CB1-C10. See the following figures for the adapter locations:

Figure 1. 50/94, 52/94, and 82/94 expansion unit



Parent topic: [Installing or replacing RIO adapters in expansion units](#)

RIO or InfiniBand adapters and cables

Related procedures

- **Before you begin**
Understand prerequisites for installing, removing, or replacing features and parts.
 - **Start or stop the system or logical partition**
Learn how to start or stop a system or logical partition.
 - **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, .
 - **Place the rack-mounted system or expansion unit in the service position or operating position**
 - **Install a feature using the Hardware Management Console**
 - **Remove a part using the Hardware Management Console**
 - **Replace a part using the Hardware Management Console**
 - **Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels**
 - **Verify the installed part**
 - **Identify a failing part**
The following procedures describe how to locate and identify a failing part on your system or expansion unit.
-

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](#)

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)

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

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



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

CAUTION

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

(R001)

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

1. If you are installing a new feature, ensure that you have the software required to support the new feature and determine if there are any existing PTF prerequisites.
2. If you are performing an installation or replacement procedure that might put your data at risk, ensure, wherever possible, that you have a current backup of your system or logical partition (including operating systems, licensed programs, and data).

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

- ◆ [AIX backup](#)
 - ◆ [Linux backup](#)
3. Review the installation or replacement procedure for the feature or part.
 4. Note the significance of color on your system.

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

5. Ensure that you have access to a medium, flat-blade screwdriver.
6. If parts are incorrect, missing, or visibly damaged, do the following:
 - ◆ If you are replacing a part, contact your service provider or next level of support.
 - ◆ If you are installing a feature, contact one of the following:
 - ◇ Your service provider or next level of support.
7. If you encounter difficulties during the installation, contact your service provider, or your next level of support.
8. If you are installing new hardware in a logical partition, you need to understand and plan for the implications of partitioning your system. For information, see [Partitioning the server](#), and then return to these instructions.

Parent topic: [RIO or InfiniBand adapters and cables](#) **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+,](#)

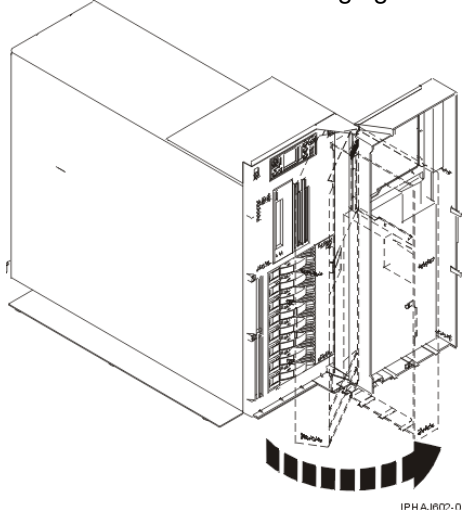
Parent topic: [Related procedures](#)

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

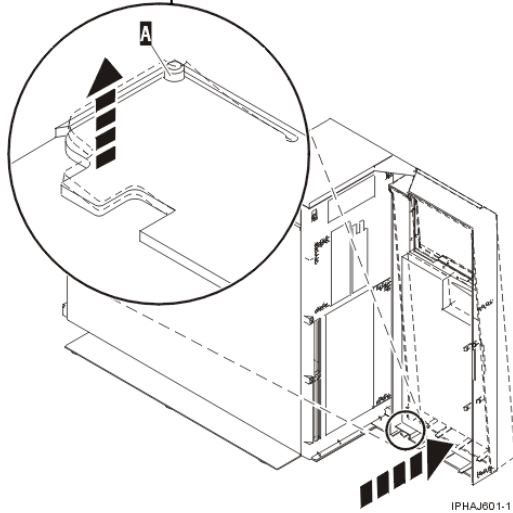
To remove the door from the model 112/85 or ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ see, [Remove the door from the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+.](#)

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

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



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



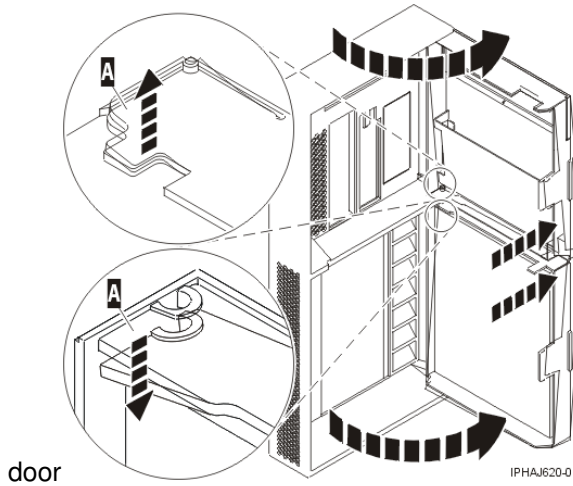
Parent topic: [Model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+, door](#)

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

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

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

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

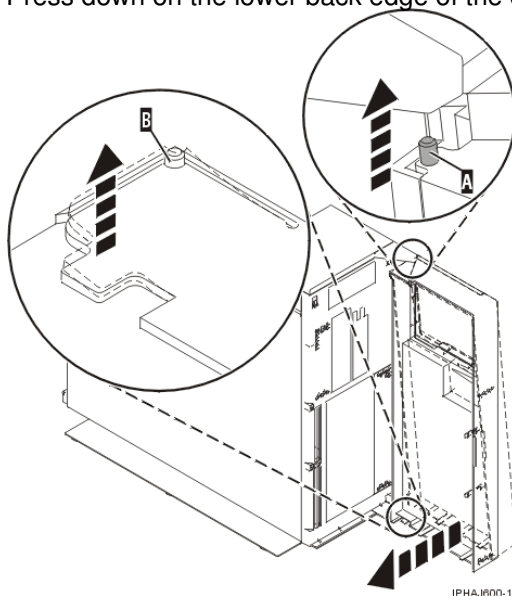


Install or replace the door on the model 112/85, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,

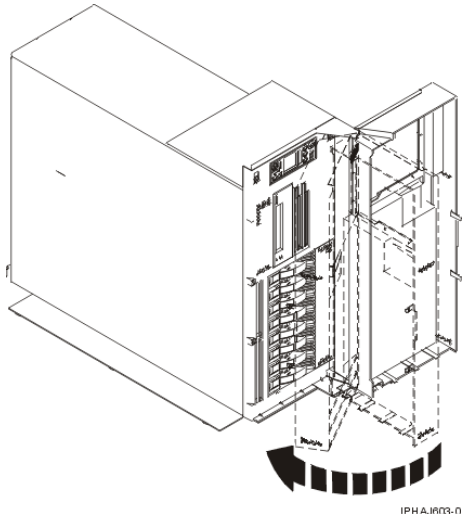
To install the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+ with acoustic feature front door see, [Install the door on the model ESCALA PL 250T/R+ or ESCALA PL 450T/R-L+](#)

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.

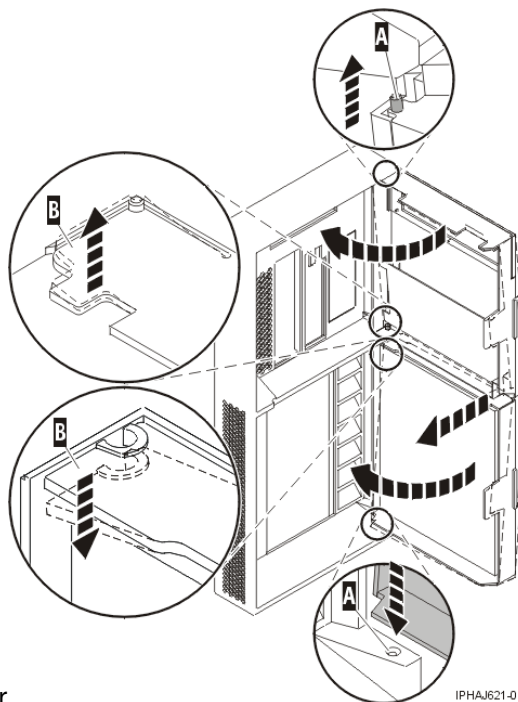


Figure 1. Installing the model 112/85 door

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

Parent topic: [Related procedures](#)

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+,

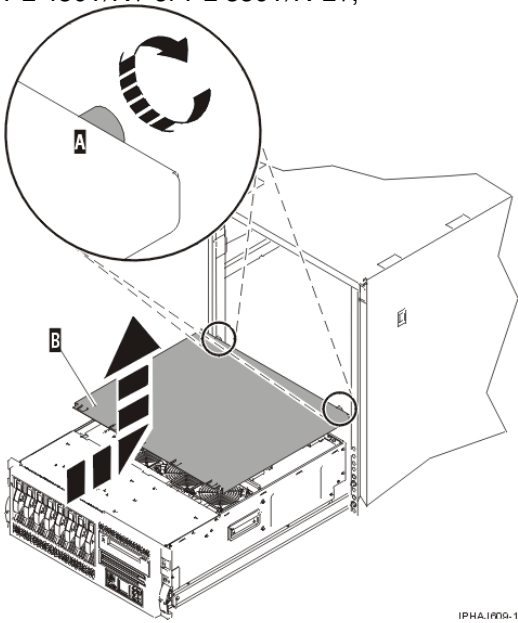
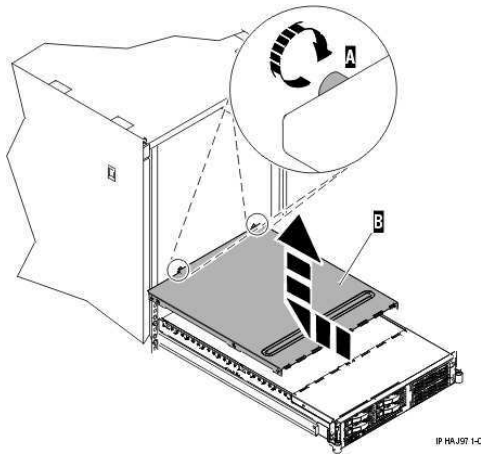


Figure 2. Remove the service access cover from the ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10

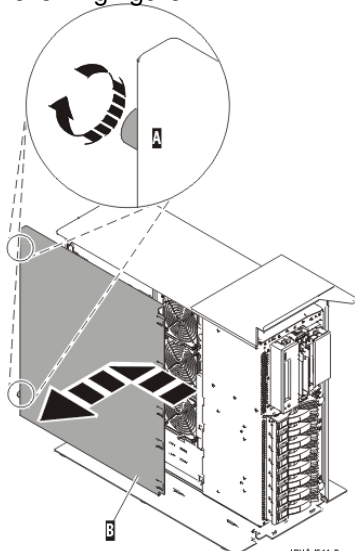


Parent topic: [Remove the service access cover from the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

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 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+,

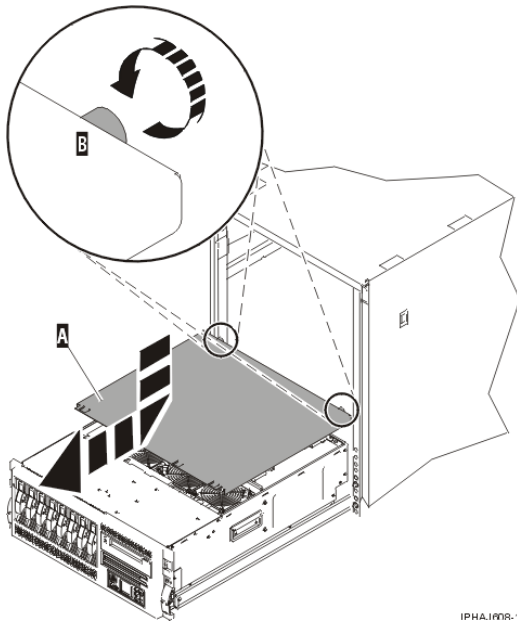
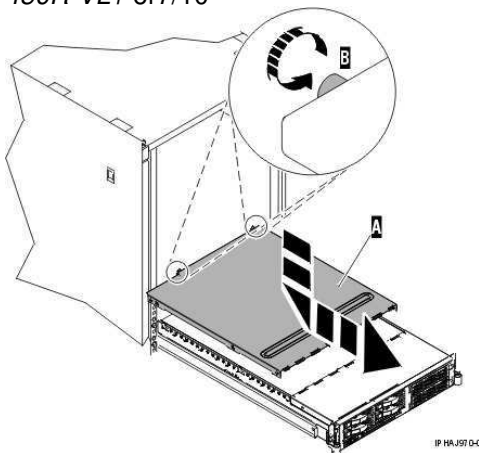


Figure 2. Install the service access cover on the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ or 7/10

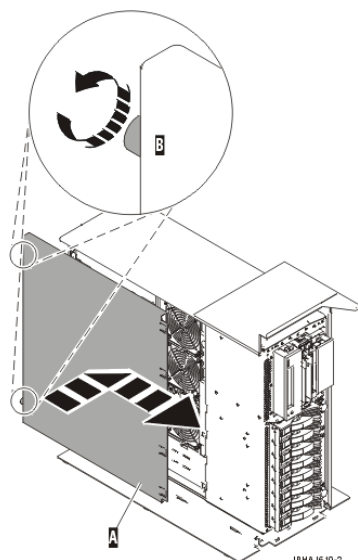


Parent topic: [Install the service access cover on the model 112/85, ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+, ESCALA PL 250T/R, PL 250T/R+ or PL 450T/R-L+, ESCALA PL 450T/R, PL 450T/R+ or PL 850T/R-L+,](#)

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+,](#)

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.

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

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


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

To Connect:

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

(D005)

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

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

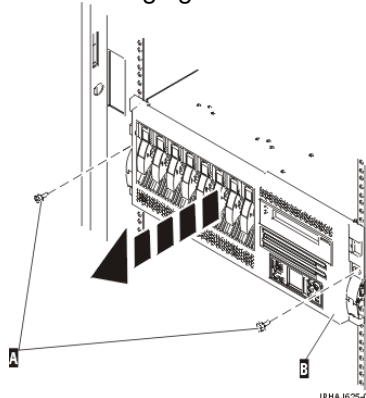
CAUTION

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

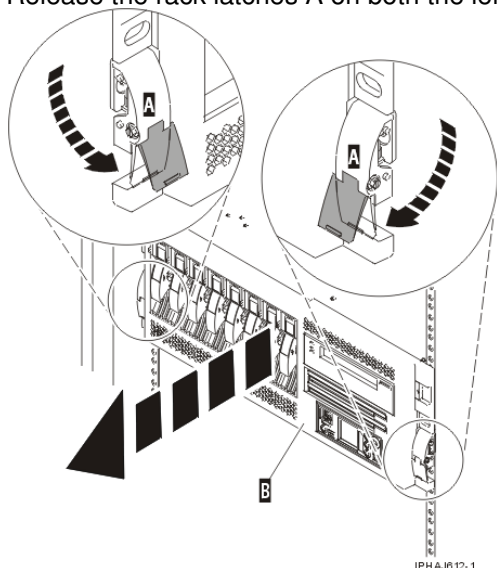
(R001)

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

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



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



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

Note:

- ◆ If the procedure you are performing requires you to unplug cables from the back of the system or expansion unit, do so before you pull the unit out from the rack.

- ◆ Ensure that the cables at the rear of the system or expansion unit do not catch or bind as you pull the unit out from the rack.
- ◆ Ensure the rails are fully extended. When the rails are fully extended, the rail safety latches lock into place. This action prevents the system or expansion unit from being pulled out too far.

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

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

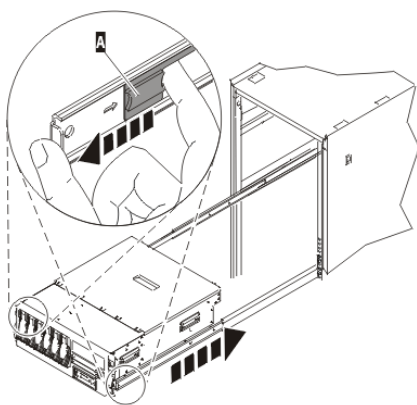
By placing the rack-mounted system or expansion unit in the operating position, you make the unit available for use.

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

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

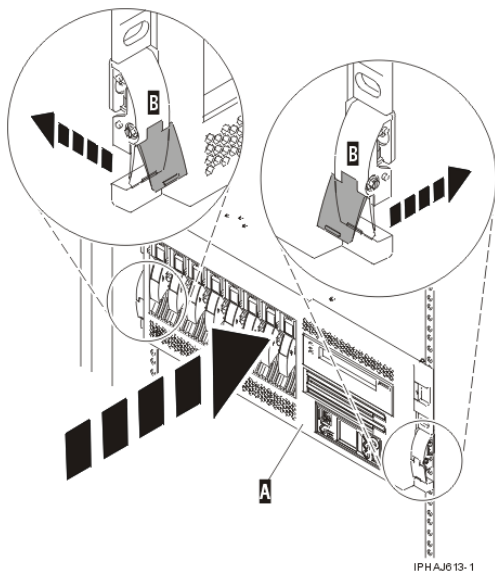
1. Simultaneously release the blue rail safety latches A, located near the front of each rail, and push the system or expansion unit into the rack as shown in the following figure.

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

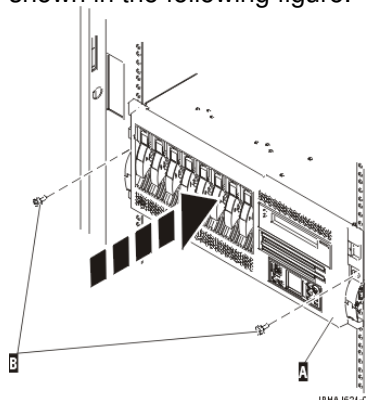


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- a. Both rack latches B should lock into position as shown in the following figure.



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



3. Close the front rack door.

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

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](#)

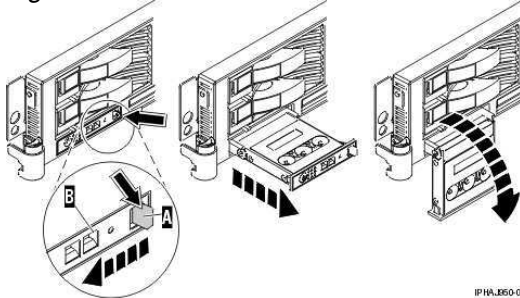
Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels

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.

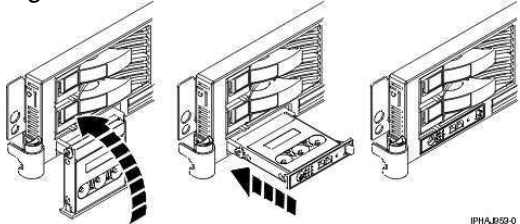
Figure 1. Gain access to the model ESCALA PL 250R-L, PL 250R-L+ or PL 450R-VL+ control panels



IPHA1850-0

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

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



IPHA1850-0

Parent topic: [Related procedures](#)

Verify the installed part

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

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

Parent topic: [Related procedures](#)

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

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

Verify an installed part using the stand-alone diagnostics

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

You can use stand-alone diagnostics to verify an installed part in a Linux system, expansion unit, or logical partition. You access these diagnostics from a CD-ROM or from the Network Installation Management (NIM) server. This procedure describes how to use the diagnostics from a CD-ROM. For information on running diagnostics from the Network Installation Management (NIM) server, see [Running the stand-alone diagnostics from a Network Installation Management server](#).

Prerequisites

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

To use stand-alone diagnostics, follow these steps:

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

Note: If an SRN or other reference code is displayed, suspect a loose adapter or cable connection. Review the procedures for the part that you replaced to ensure that the new part is installed correctly. If you cannot correct the problem, collect all SRNs or any other reference code information that you see. If the system will not boot or you have no login prompt go to [Problems with loading and starting the operating system](#).

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

8. If the terminal type is requested, you must use the **Initialize Terminal** option on the *Function Selection* menu to initialize the operating system before you can continue.
9. From the Function Selection menu, select **Advanced Diagnostics Routines**. Press Enter.
10. From the Diagnostic Mode Selection menu, select **System Verification**. Press Enter.
11. When the Advanced Diagnostic Selection menu appears, select **All Resources**, or test only the part you replaced, and any devices that are attached to the part you replaced, by selecting the diagnostics for the individual part. Press Enter.
12. Did the *Testing Complete, No trouble was found* message appear?
 - ◆ **No:** There is still a problem. Contact your service provider.
 - ◆ **Yes:** Go to step 13.

13. If you changed the service processor or network settings, as instructed in previous procedures, restore the settings to the value they had prior to servicing the system.
14. If the indicator lights are still on, follow these steps:
 - a. Select **Identify and Attention Indicators** from the *Task Selection* menu to turn off the system attention and indicator lights. Press Enter.
 - b. Select **Set System Attention Indicator to NORMAL** and press Enter.
 - c. Select **Set All Identify Indicators to NORMAL** and press Enter.
 - d. Choose **Commit**.

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

- e. Exit to the command line.

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

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](#)

Identify a failing part

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

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

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

Parent topic: [Related procedures](#)

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

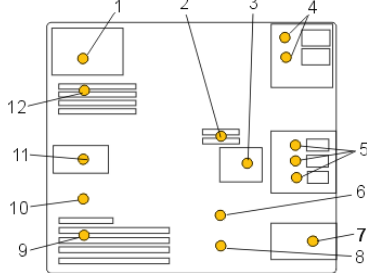
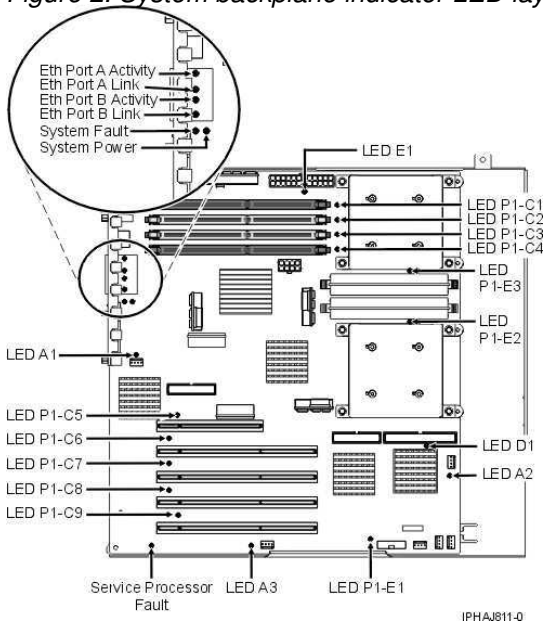


Table 1. ESCALA PL 245T/R Fault-indicator LEDs

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



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

- [Remove and replace the model ESCALA PL 245T/R side cover](#)

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

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: [Identify a failing part on a model ESCALA PL 245T/R](#)

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

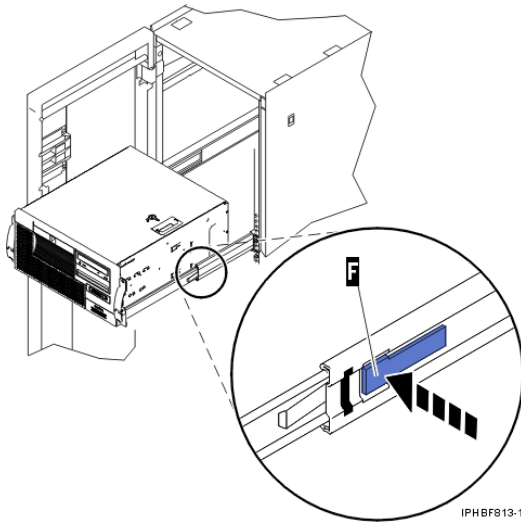
By placing the rack-mounted system unit in the operating position, you make the unit available for use.

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)

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

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



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

CAUTION

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

(R001)

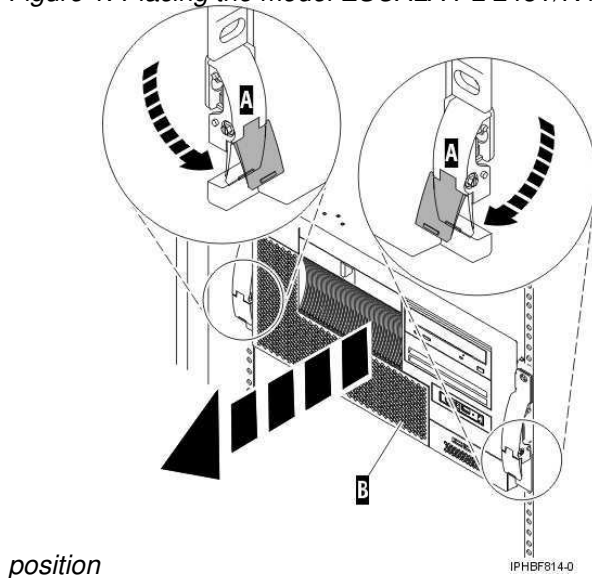
1. If necessary, open the front rack door.

2. Release the rack latches A on both the left and right sides as shown in the following figure.
3. Review the following note, and then slowly pull the system unit B out from the rack until the rails are fully extended and locked.

Note:

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

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



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

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.

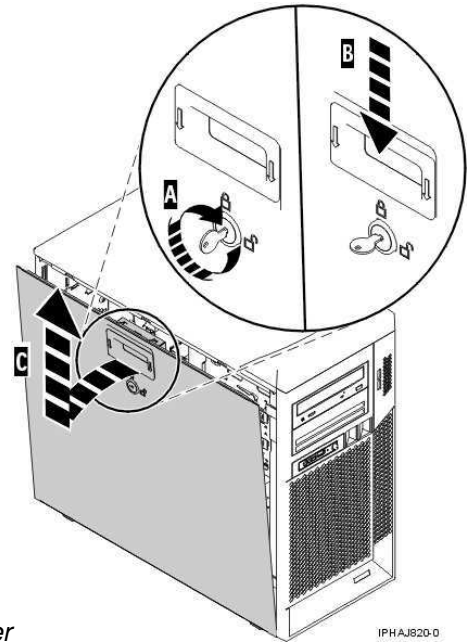


Figure 1. Removing the model ESCALA PL 245T/R side cover

Parent topic: [Identify a failing part on a 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.

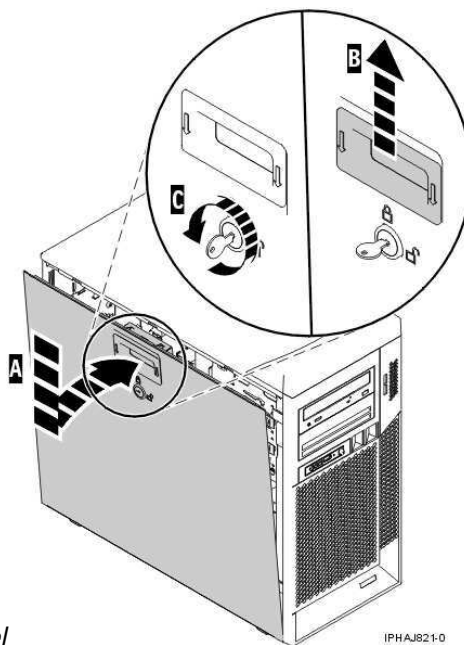


Figure 2. Replacing the service panel

3. Lock the security lock C if needed.

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](#)

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